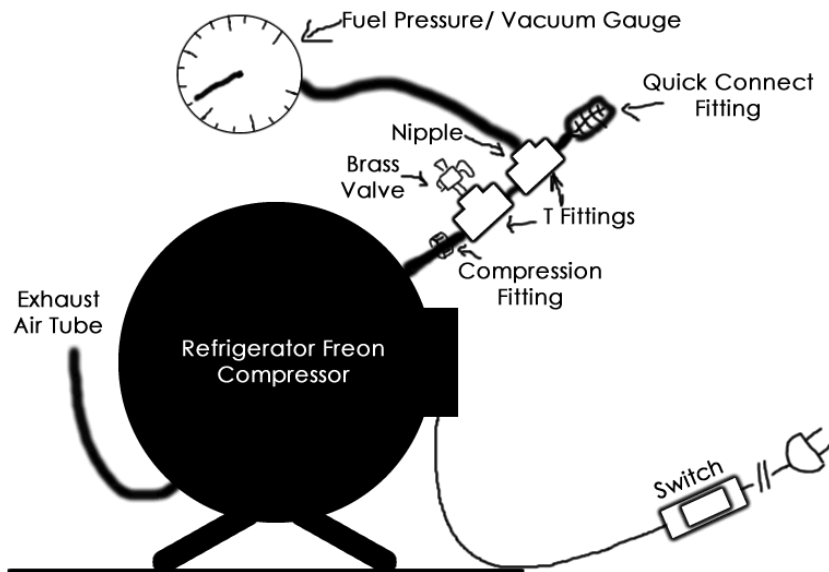


THE CHEAP LITTLE SUCKER



A vacuum pump for less than \$25 - why not? After looking around for different vacuum bagging kits selling for as much as \$300+, this young Berkut builder decided to use a little Texan Jerry-rigging. The resulting contraption is something I call "The Cheap Little Sucker." Seriously, vacuum bagging is the best way to build your aircraft light and strong - with the cost barrier broken and using Dave's techniques, there is really no excuse not to do it.

I first told Dave Ronneburg about the pump solution at Fun & Sun '93. After he picked his jaw up off the floor he asked me to impart this knowledge to you - so here it is: Let me start by telling y'all that there are several different ways of accomplishing the same goal. Some of you may wish to alter this idea - feel free!

Start by locating one of the following:

1. Refrigerator Freon Compressor (Sealed Unit)
2. Automobile Air-Conditioning Compressor and Electric Motor

In my opinion, the Refrigerator Freon Compressor (RFC) is the best overall choice. The refrigerator unit is quiet, compact and produces little heat. The auto compressor is piston based, produces large amounts of heat and requires an external electric motor. Again, whatever is easiest for you to acquire. My compressor came from a keg cooler that had been scraped because the thermostat was fused and it froze the beer. Look for junk yards, garage sales, and yes - the side of the road. "One man's junk is another man's treasure." You might be amazed where you can find a dead 'fridge. (Remember - the compressor must be operational, but the case, coils, and other parts will be discarded).

UPDATE NOTE: I have had considerable feedback from this article over the years. It seems that the newer compressor units (short barrel shaped ones) do not stand up to continued use in this way. Most all of the people have reported that they run fine for about 15-20 mins then burn out. In contrast, folks that use the older "cough-drop" shaped vertical unit like the one I have seem to have no problems at all and report great results. So, my advice is to look for this specific style from a repair shop or junk yard and not waste time on the newer

models.

Remove the compressor from the fridge and carefully cut the coils free, but leave some leader tube. Remember, the Freon in the compressor and systems will need to be re-cycled properly prior to cutting the lines. Examine the wiring and make sure that it is safe - also look around for a schematic of the units electrical connections. My unit had a thermistor (thermal fuse) still attached and operational. Moment of truth - plug it in and determine which is the exhaust and suction sides. While it is running, I suggest squirting a good amount of WD-40 or other lite oil into the intake side of the pump to help replace the lost oil.

The diagram shows the configuration I am using and contains several optional extras. As a minimum, use a compression fitting to clamp the 3/8 inch diameter brass pipe to the suction side of the compressor. Attach two T-fittings to the pipe and the compressor hose on the end. On the first T- fitting I used a simple brass valve for the pressure relief The vacuum gauge I used is an automobile Vacuum/Fuel pressure gauge (\$15 part at the local auto parts store) attached to a nipple on the outboard T-fitting. I had some air-compressor hoses so I incorporated a quick connect fitting to the end of the 2nd T-fitting. This made it possible to use, disconnect, and interchange the existing hoses with the air-compressor.

Another optional improvement is an extension tube for the vacuum bag seen in the diagram. It makes it easier to seal the bag and doesn't mess-up the end of a good compressor hose. Just food for thought. "The Cheap Little Sucker" got its first workout on the two winglets and performed flawlessly. It is very quiet and produces only a small amount of heat. It moves a good volume of air and seems to take a puffy winglet bag down to 13" in 3-4 minutes. Be careful though, these compressors have no problem pulling 30+ inches (enough to damage the foam).

Well, there it is...earth shattering information fresh from the heart of Texas. If you have any questions at all, feel free to send me an email: james@berkut13.com

Good luck and lets get those birds in the air!!!

James Redmon, CFII (Builder #013) and Tim Cook (Asst. Builder/Advisor)