

## **#6 FIREDRAGON Field Notes ©**

First of all, let's make a few observations. Did you ever notice that pump manufacturers always tell us to use a bleeder hose when bleeding a pump? Have you noted that they recommend that you only open that bleeder a ¼ to ½ turn? Have you also read somewhere that they want the end of that hose in a supply of oil? Well, here's why.

The idea behind the bleeder, the hose and the smaller hole is very simple, it's to keep the pump and the liquid from picking up anymore air. Putting the end of the bleed hose into the liquid also keeps the air out and the problem away, vacuum. If you have a hole and it's open to atmospheric pressure (14.6 psi), do you think air is trying to get in as you are trying to get air and oil out? Think about it.

The proper and only way to bleed a pump line, and everything else all the way back to the tank is the following: First of all make sure the pump is full of oil, if you have to fill it! Place the hose over the bleeder. A device like our #520 Bleed Wrench, shown in **Figure 1**, works great for this and is available on our website. Open the bleeder only a ¼ to ½ turn. Make sure that the open end of the bleed hose is immersed in oil in your pail or bucket to create a closed system from the ends of that hoses to the oil in the tank. Close the inlet valve at the pump and start the burner. Wait until the pump starts to whine. If you have a vacuum gauge inserted at this point it will show 20" to 25" of vacuum. By the way, if the hose starts to have white smoke coming out of it, you didn't fill the pump and it's burning up, oooooops! The old timers used motor oil to start and prime new pumps on stubborn jobs and as usual they were right, more lubrication and viscosity.



**Figure #1**

Open the inlet valve and watch what comes through the bleeder for several minutes. Normally if this was a tune-up you would see some oil, then lot's of bubbles and then air free oil. Once it's bled out, close the bleeder with the pump running and you've now done a 'vacuum power bleed'. I've used this method for a lot of years and I can get even the most troublesome jobs to work.

A lot of people will tell you overhead lines won't work, that's just bullshit or the ranting of a complete Moron! That fact is it's just a siphon, and it has to work. If the oil tank level is at or higher than the pump, it has to work, that's physics, but bleeding the system this way and using the correct size tubing for your oilburner supply line makes the pump work a lot easier.

Some of the same idiots are the one's that will also tell you that oil safety valves (osv's) don't work, unh-hunh! If you have gravity flow an osv will work, if you have a pure lift job, you don't need one. There are some basic guidelines for the proper use of the osv and all of them come from the people who make and approve them.

Imagine a straw in liquid, say a clear glass of cola. If you have a clear straw you can see the liquid level in the glass and in the straw, right? Now put your thumb over the end of the straw. Lift the straw out of the liquid and what happens? The liquid is trapped, right? That's vacuum! Take your thumb away, break the vacuum and you have a leak.

By the way, the #520 works great with our #223 and #224 RIELLO pump pressure adapter/bleeder and to find out how to properly bleed a RIELLO Pump read FIREDRAGON Field Note #9.