

Tech Tip Flushing the Lineset



I just read a very good article in the ACHR NEWS May 17, 2010 on flushing units. I will attempt to paraphrase in this paper but urge you all to read the article on pg 34.

First and foremost this Tech Tip should never replace manufacturers' recommendations! For R22 to 410A conversions many equipment Manufacturers recommend using only R22 as the flushing agent!

Many unit manufacturers vary in their willingness to endorse over the counter flushing agents so if you are going to use them anyway, at least use them properly.

These flushing procedures should help to identify a step by step process using over the counter flushing agents that can be built into most of your company's best practices.

Flushing agents dissipate oxygen. Only use them in a well ventilated area!

- Disconnect power to existing system and properly recover refrigerant
- Separate the lineset from the old evaporator and condenser
- Whenever possible braze in a ¼ access fitting to the two lines prior to purging. The rubber cone used by some manufacturers works great but if the access fitting is brazed on it frees up one of your hands during the flushing process
- Do not try to braze the lines together at one end and flush from the other, this causes you to force old oil uphill and then down, or downhill and then up. Working from the highest point downward on both lines will be the best practice.
- Purge liquid line with Nitrogen from the highest point to the lowest point forcing debris downward and out of the line. (approx 75-95 psi) Repeat the purging with nitrogen on the vapor line while collecting the waste oil in a bucket.
- Partially crimp off the copper at the outlet to the lineset on the lower end to help increase pressure in the line. By doing so the liquid solution remains in the lines longer, and it is the liquid that does the cleaning... not so much as a vapor. Be careful, this also increases the velocity of the flush solution as it exits the lines. Wear safety glasses with splash guards.
- Flush until the liquid runs clear into the bucket and repeat for both lines.
- Following the flushing solution, purge both lines *again* with Nitrogen and immediately seal the ends to prevent moisture from reentering the lines.

Manufacturers of the flushing solutions sometimes use the metric scale for the weight of their solutions. For your math refresher there are approximately 450 grams per pound, and each pound of solution typically will take care of a 4-5 ton system.

Some manufacturers do not recommend the practice of flushing the R22 *evaporators* for reuse with R410A. Besides the possible mix-up with it being rated or not rated, the simple question of "did I get all of the old oil out?" is still anyone's best guess.

Again follow manufacturers' recommendations!