



## A/C condenser coil cleaning

BY JOHN AUER, JR.

**H**ow do you clean an A/C condenser coil? This is a question very few HVACR technicians are willing to ask. Fortunately for me, a Journeyman tech shared his opinion with me 32 years ago. Little did I know at the time, that was a life-changing conversation. He told me they should be sprayed from the inside out, with plain water, unless the coil has grease or oil on it. I tried his method and it worked very well, although I really didn't know why.

As you can see in the image to the right there are four rows of slots in these fins. These slots are little scoops, thousands of them, all through this coil. Their purpose is to grab the air as it passes through the coil to speed up the heat-transfer process. Unfortunately, they also grab the dirt as it passes through. If water cannot pass through the coil, how difficult will it be for air to pass through? If air cannot pass through, what happens to the efficiency of the heat transfer? Also, in a refrigeration circuit with a fixed-orifice metering device, a dirty condenser will make the system appear to be overcharged. So, before you start adjusting a refrigerant charge, make sure the condenser is clean!

There is only one way to flush the dirt out of these slots. I use the term "backwashing" to describe the act of washing the coil in the opposite direction of its normal air flow. This process works on all A/C coils, including spiny fin and evaporator coils. I know...what a hassle! You have to disassemble the unit in order to do this. Doing this process six or more times a day can be very exhausting, which is why I opted to work smarter and not harder...by inventing a tool that could simply slide through the fan grille (or other openings) of the condenser, to eliminate taking the unit apart to properly clean it.

I have three sons who worked with me since they were strong enough to carry a tool box. One day they said, "Dad, that's a really cool tool, you should sell it in stores. I would buy one!" So in 2006, I decided to bring it to market. Since that time, two major chemical companies have copied my tool, which is OK—competition is a good thing. I also feel it validates everything I'm telling you here in this column and my reasoning for creating this tool.

Using this tool, I have discovered a proven, multistep process to cleaning coils safely and effectively:

1. Always make sure the power is off to the unit before continuing;



« A close up, side view of the fins of a very common condenser coil.

2. Gently wet the outside of the coil to loosen the dirt;
3. Flush the coil (normal water pressure of 45 psi to 65 psi is sufficient), opposite the coil's normal air flow, with a generous and somewhat powerful spray of water;
4. Flush the coil, in the direction of the coil's normal air flow, again, with a generous and somewhat powerful spray of water;
5. Repeat step 2, just to ensure no dirt is left behind. If the coil is really dirty you should repeat the entire process until the coil is completely clean; and
6. Allow the air-conditioner to dry at least five minutes before turning the power and thermostat back on to prevent shorting out of electrical components from the water.

My point in sharing this story is that field technicians have knowledge about the job and equipment that product manufacturers don't always have on hand in their R&D departments. If you have a more effective approach to doing the job you do each and every day in a manner that saves time, providing the same results necessary to keep equipment running properly, why not be a part of the solution and bring it to market? If that is not an option for you, there are many manufacturing companies that request field testers as a part of their R&D process. Take advantage of these opportunities as they come your way. 📧

*John Auer, Jr., is a Journeyman HVACR Technician and currently works as the President of Water Saber Tool. Auer, who currently holds NATE certifications and mechanical licenses in St. Louis City and County, has served as the Project Engineer of Westfield Malls, has worked in the HVACR industry for 32 years and invented the Water Saber condenser cleaning tool. For more information, email [info@watersaber.com](mailto:info@watersaber.com) or visit [www.watersaber.com](http://www.watersaber.com).*