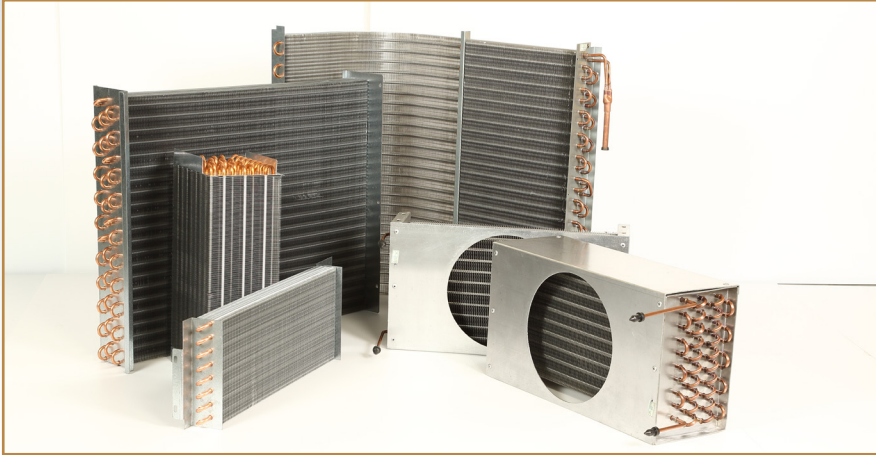


MicroGroove Small Diameter Copper is the New Benchmark for Tubes, Coils and Systems



SPIROTECH uses MicroGroove tubes in its coil designs.

Proponents of aluminum coils on occasion make claims about "reduced" refrigerant charge and "higher" energy efficiency. The question that should be asked is "compared to what?" A closer examination usually reveals that the latest aluminum coils are being compared to "conventional" coils, meaning coils made with large diameter copper tubes that were the norm ten or twenty years ago.

A more useful evaluation of tube technology would compare aluminum microchannel tubes with copper tubes having outer diameters that are between five and seven millimeters or even smaller. These are called MicroGroove tubes. Technical literature on the performance of MicroGroove tubes, coils and systems, including comparisons with microchannel technology, is available by following links to references at www.microgroove.net/technical-literature.

High Efficiency Tubes

The manufacture of copper tubes with small diameters and various types of internal enhancements is a well-established technology. These MicroGroove tubes have been available for years from members of the Copper Alliance. (For contact information, see "Suppliers" page on microgroove.net.)

The technology is available now. It makes no sense to compare microchannel to any other size tube. Sure, there are still applications where larger diameter copper tubes are specified for high flow rates. Nonetheless, where a high efficiency tube is desirable, many OEMs are already using MicroGroove tubes in their product designs.

High Efficiency Coils

Coil makers now routinely offer coil designs made from small diameter copper tube. Equipment for fabricating such coils is widely available from equipment makers such as Burr OAK Tools Inc. and Zhongshan OMS Industrial Company. Coil makers such as CanCoil, Lordan, Heatcraft, SPIROTECH and Super Radiator Coils and others are employing MicroGroove tubes in coils ranging in size from small condensers and evaporators for cold vending machines to large commercial heat exchangers with small diameter tubes two meters in length.

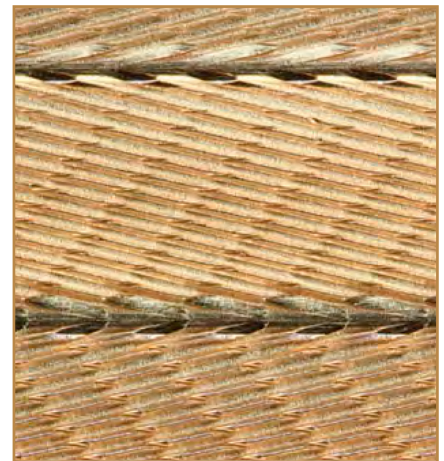
High Efficiency Systems

MicroGroove tubes are employed in products from OEMs such as Chigo, Daikin, Gree, Haier, Hisense Kelon, the LU-VE Group and Midea. Already, 15 million units with MicroGroove tubes have been produced globally. This figure includes

room air conditioners and residential air conditioners as well as heat pumps, refrigerated transport systems and commercial condensers. The use of MicroGroove tubes typically raises the capacity and the energy efficiency of such systems while also reducing the materials usage and volume of refrigerant charge.

MicroGroove Webinar Series

Visit www.microgroove.net to learn more about the "New Benchmark" in tubes, coils and systems and register for the next webinar in the MicroGroove Webinar series. On 20 January 2015 at 11 a.m. (ET), the technical staff from Burr OAK Tools Inc. will outline the latest advances in manufacturing equipment that allow for the wide adoption of MicroGroove technology by coil makers and OEMs.



Luvato HERRINGBONE CROSSHATCH tube (2V-XH).

