

SOLDERING TECHNOLOGY OF INSTALLATION PIPES IN THE MANUFACTURING PROCESS OF VRV SYSTEMS

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Abstract

This paper presents application of the soldering technology used for installation pipes of modern VRV (Variable Refrigerant Volume) systems. The work defines important materials and methods of soldering and welding of installation pipes as well as, steel and copper characteristics, Freon and related tools. VRV offers the possibility of increasing the length of the pipeline, and since the system can be designed in a flexible way, it fits buildings of different shapes and dimensions. Nowadays, many buildings operate on the basis of separate heating, cooling and hot water systems. As the result, large energy losses occur. To achieve a much more efficient alternative, a VRV concept has been developed, which controls up to 50% of a building's energy consumption. This has great potential for cost reduction.

VRV systems, their configuration, mode of operation, installation, and application are presented in this research. A detailed example of installing a VRV system, copper pipes and tools necessary for installation is presented. At high temperatures, there is a problem with the soot inside the pipe during soldering copper pipes. The main goal of the paper was solving the problem that occurs during the installation of the VRV system, also removing the soot inside the pipe. VRV systems represent highly reliable air conditioning systems that bring users a number of benefits and profits after a certain period of use.

Keywords:

VRV systems, air conditioning, materials, soldering, welding

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