Speaking Chiller Language

By NASTASSHEA JOLENE ROZARIO
Assistant Manager, *Business Development*

In facilities management industry, we are required to be very knowledgeable in maintaining a wide variety of equipments in a building. That, of course, is specifically the requirement for the Operations team in our company. Nevertheless, for other staffs coming from different departments such as myself, it is still a necessity for us to learn and understand the basics of major equipments that buildings commonly have in order for us to be able converse well with each other as well as with clients.

I took the liberty to research on the topic of 'chiller' and here I am to share some of that information with you.

A chiller is a machine that removes heat from a liquid via a vapor-compression or absorption refrigeration cycle. This liquid can then be circulated through a heat exchanger to cool air or equipment as required. To cool down a large building, it is often better to have a central air conditioning system. It is simpler to have the refrigerant unit located at one place, and distributing the coolness using water. Chilled water is easily pumped and it is able to reach all floors in the building. The heart of the central air conditioning system is the chiller.

Use In Air Conditioning

In air conditioning systems, chilled water is typically distributed to heat exchangers, or coils, in air handling units, or other type of terminal devices which cool the air in its respective space(s), and then the chilled water is re-circulated back to the chiller to be cooled again. These cooling coils transfer sensible heat and latent heat from the air to the chilled water, thus cooling and usually dehumidifying the air stream. A typical chiller for air conditioning applications is rated between 15 to 1500 tons (180,000 to 18,000,000 BTU/h or 53 to 5,300 kW) in cooling capacity, and at least one company has a 2,700 ton chiller for special uses. Chilled water temperatures can range from 35 to 45 degrees Fahrenheit (1.5 to 7 degrees Celsius), depending upon application requirements.

Use In Industry

In industrial application, chilled water or other liquid from the chiller is pumped through process or laboratory equipment. Industrial chillers are used for controlled cooling of products, mechanisms and factory machinery in a wide range of industries. They are often used in the plastic industry in injection and blow molding, metal working cutting oils, welding equipment, die-casting and machine tooling, chemical processing, pharmaceutical formulation, food and beverage processing, paper and cement processing, vacuum systems, X-ray diffraction, power supplies and power generation stations, analytical equipment, semiconductors, compressed air and gas cooling. They are also used to cool high-heat specialized items such as MRI machines and lasers, and in hospitals, hotels and campuses.

cofreth is proud to be a Work Group Member by SIRIM TECHNICAL COMMITTEE in revising on the standards of Air-Conditioning and Mechanical Ventilation of MS1525:2012.

** Sources are extracted from Wikipedia and Free-Engineering websites.*