**Chiller Maintenance & Industry Trends**

Chillers are widely used in commercial and industrial facilities as effective cooling systems. As with all HVAC technology, chillers are advancing as well and we are seeing new improvements that improve energy efficiency and sustainability. Today, we discuss new industry trends and maintenance for your facility’s chiller cooling system.

**Chiller Trends**

Changing regulations that target environmental sustainability and energy efficiency play a large role in advancing technology throughout the [HVAC industry](https://www.achrnews.com/articles/141491-market-trends-in-the-chiller-industry?v=preview" \t "/Users/macbookpro/Documents\\x/_blank). Products evolve to meet these regulations and provide long-term solutions to customers. As the HVAC industry moves towards efficiency, sustainability, and connectivity, changes are seen in new chiller products.

Some of the new technologies that are utilized by chiller manufacturers today include:

Retrofit-optimized equipment: With more people moving from rural environments to cities across the globe, the demand for retrofit chiller equipment is growing. New chillers are developed with a smaller footprint so they are able to be accommodated in more installation applications. Equipment sound levels are dropping, and systems are moving from fossil fuels to electric-driven equipment.

Energy conservation: New chiller equipment moves to offer greater energy savings. One such system is the York YHAU Chiller/Heat Pump. This model uses absorption technology with zero-GWP water for refrigerant and utilizes waste heat to lower energy consumption and operating costs.

Connectivity: [LEED certification](https://new.usgbc.org/leed%22%20%5Ct%20%22/Users/macbookpro/Documents%5C%5Cx/_blank) and other programs aid building owners measure energy consumption and make informed conservation decisions. Artificial intelligence, connectivity, and equipment learning technology built in to chiller systems help building owners make informed operating decisions, prioritize maintenance, and further reduce energy consumption.

Part-load operation: Variable-speed operation and compressor technology are being used to enhance equipment turndown capabilities, as most chillers spend the majority of their operating time at capacities under their design point.

**Chiller Maintenance**

Chiller maintenance is essential to a facility [cooling system’s performance](https://www.achrnews.com/articles/141490-how-to-conduct-chiller-maintenance?v=preview" \t "/Users/macbookpro/Documents\\x/_blank) and energy conservation. Different chiller systems have varying maintenance needs – an annual maintenance tune up may be sufficient for one, while others need seasonal start-up and shutdown services.

The purchase and installation of a new chiller system is no insignificant investment for a facility. To the detriment of many businesses, maintenance is often overlooked when investing in new HVAC technology for a facility. A maintenance plan with a commercial HVAC contractor is an excellent investment in the performance, efficiency, and lifespan of chiller systems. Tailored options can be designed around a facility’s needs and goals, helping a business lower operating costs while reducing repair needs and associated downtime.

Annual inspections are a must for chiller systems. For example, the following procedures are involved in annual inspections for centrifugal chiller systems:

Electrical tests. Terminals are tightened on the starter, control panels, and main leads. Meg ohm readings are recorded for the oil pump and compressor motor.

Control tests and calibration. All controls related to operation, such as freeze and temperature sensors, flow switches, and transducers, are tested, and settings are recorded to verify accuracy.

Leak check and pressurization. The evaporator water bundle is heated to conduct leak testing in both low-pressure and positive pressure chillers.

Oil sampling and filter changes. In oil-fueled chiller systems, oil filters are changed to allow proper operation for the upcoming season on refrigeration and oil circuits.

Purge system maintenance for low-pressure chillers. This process removes the non-condensable gases that make their way into a chiller on the low-pressure side involving the filter, pump, and sometimes a refrigeration circuit.

Condenser tube cleaning. The water-side components of the chiller’s condenser are opened, brushed, flushed, and reinstalled.

Chiller maintenance ensures optimal system performance for the season to come. It benefits building owners by improving efficiency to lower operating costs while safeguarding the system from breakdowns that cause expensive downtime. Talk to your commercial HVAC company about your chiller’s maintenance needs for the best prevention of system issues this season.

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