YORK® YMC²
MAGNETIC CENTRIFUGAL CHILLERS

Quiet cooling for performance halls, libraries and museums



Johnson Controls

Trust Johnson Controls to provide the quiet environment essential to your facility





The quietness, sustainability, efficiency, and reliability of YMC² chillers help create attractive venues for performance halls, libraries, and museums.

Proven experience in creating quiet environments

When it comes to creating high-performance building environments, YORK® chillers, manufactured by Johnson Controls, have quietly been building a reputation of innovation. When electricity prices climbed, we pioneered variable-speed drives and enhanced heat exchangers to keep energy consumption down. When CFC and HCFC refrigerants were designated for phase-out, we offered environmentally friendly alternatives to give facilities a sustainable future. And when you needed chiller control that was both powerful and intuitive, we created the first full-screen, full-color, microprocessor control center.

In today's changing world, Johnson Controls understands the challenges encountered by performance halls, libraries, galleries, and museums. Creating a quiet, comfortable, and energy-efficient environment presents a number of difficult challenges. Each room must meet an established Noise Criteria (NC) level which requires strictly controlling mechanical-equipment noise and vibration. Climate must be precisely and consistently regulated – especially where books, exhibits, and artwork are stored and displayed. In addition, a greener facility often attracts more patron and public support. And whether your facility is a non-profit or for-profit institution, minimizing energy and maintenance costs is always a priority. That's why we developed the YMC² chiller. It addresses all of these pressing concerns – sound, energy, sustainability, and reliability – to help you satisfy your demanding patrons.

Innovative chiller technology for a quieter, greener, more efficient facility

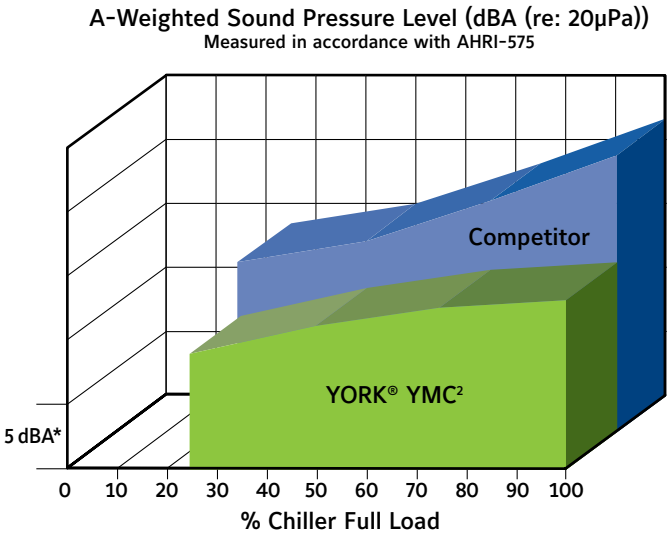
Lowest sound level creates higher comfort levels

Low noise levels are critical in performance halls, libraries, and museum display areas. That's why it is important to start with low sound levels in the mechanical room. The YORK YMC² chiller uses magnetic bearings to eliminate driveline noise produced by conventional bearings. Other noise-reduction measures include our patented OptiSound™ control, which reduces noise at off-design conditions. The result is a sound level that does not exceed 73 dBA at AHRI-575 full-load standard conditions – the volume of a typical cellphone ringtone. It is the lowest level on the market. In fact, it is so much quieter than competitive magnetic-bearing chillers, it sounds about half as loud.

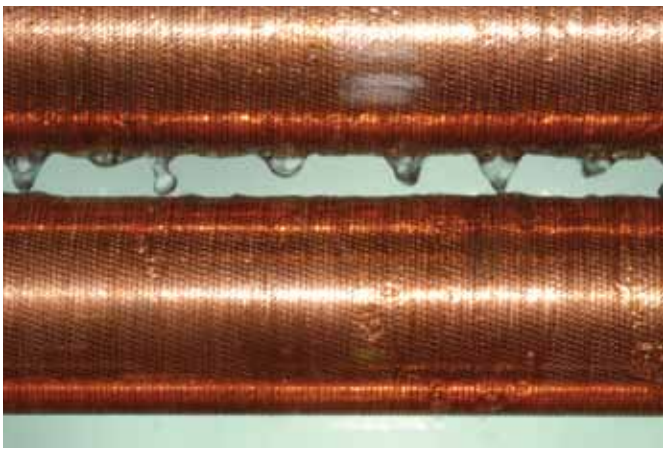
Conventional bearings also cause chiller vibration due to bearing contact. But with magnetic bearings, the YMC² drive shaft rotates in mid-air without bearing contact, eliminating bearing-induced vibrations. To further reduce vibration, the YMC² chiller employs anti-vibration software to ensure precise drive-shaft alignment.

Get the recognition that comes with being green

Being recognized as a responsible member of the community can encourage the public to support your mission. As a leader in energy-efficient, green-building technologies, Johnson Controls can improve your green rating with the YORK YMC² chiller. By employing an advanced falling-film heat exchanger that reduces the refrigerant charge, the YMC² chiller qualifies for the maximum number of points under the Leadership in Energy and Environmental Design® (LEED) Enhanced Refrigerant Management (EAc4) credit. And because a YMC² chiller makes it easy to raise baseline building performance above ASHRAE/IESNA Standard 90.1-2007, you could also earn additional points for the Optimize Energy Performance (EAc1) credit.



The YMC² chiller is so much quieter than competitive magnetic-bearing chillers, it sounds about half as loud. *Note: each segment on the Y axis = 5 dBA.



(Photo courtesy of the LTCM lab of the Ecole Polytechnique Fédérale de Lausanne, Switzerland)

A falling-film evaporator is more efficient because refrigerant is sprayed over the tubes, reducing refrigerant charge by 30%.

Improve energy efficiency

By employing advanced permanent-magnet motor and active magnetic-bearing technology, the YORK YMC² chiller eliminates the mechanical-contact losses associated with a conventional driveline. Our patented OptiSpeed™ variable-speed drive provides extremely efficient operation at off-design conditions. In addition, the OptiSpeed drive starts the chiller slowly, preventing power spikes that could incur high peak-demand charges. The result: the new YMC² chiller lowers electrical consumption by 10% compared to conventional, variable-speed chillers. Money not spent on energy can be directed to other important areas of your budget.

Greater reliability, increased uptime

While it is important to save energy, it is also critical to avoid costly breakdowns. That's why the YORK YMC² chiller uses active magnetic-bearing technology, which features fewer moving parts subject to breakdown and no mechanical-contact losses. In addition, it completely eliminates oil-related maintenance. The result is unprecedented reliability. That is why we've used magnetic drives in our military-grade chillers since 1999.

Our patented OptiSpeed™ variable-speed drive improves reliability with its soft-start capability that extends motor life. And our OptiView™ control panel provides complete monitoring and control capabilities to make sure the chiller operates within optimum parameters, and it enhances troubleshooting visibility if problems arise.

The YMC² chiller also features a field-serviceable driveline, which means a back-up driveline isn't needed. If service is ever required, Johnson Controls fields the industry's largest service force – 5,000 technicians worldwide in 169 local service branch offices – a strong resource in assuring reliability.

Performance counts

YORK chillers, manufactured by Johnson Controls, are the first choice for performance halls, libraries, and museums. Count on us for quieter, greener, energy-efficient solutions that can make your facility a productive and pleasant environment for your patrons.



To eliminate mechanical-contact losses in the driveline, the YMC² chiller utilizes a permanent-magnet motor and active magnetic-bearing technology.



The OptiView control center provides complete diagnostics to enhance troubleshooting visibility.

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