



# Efficient. Reliable. Proven.

YORK® YVAA Air-Cooled Screw Chillers

Smarter and Healthier Buildings for a Sustainable Tomorrow  
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# YVAA Air-Cooled Screw Chiller

The YVAA air-cooled, variable-speed drive screw chiller from YORK® is designed to improve reliability and performance through proven technology and a customizable, highly optimized design. Installed across the globe, the YVAA offers a tailored solution for a broad range of applications. Patented, variable volume index (VI) technology improves part-load efficiency while a standard operating range of up to 131°F makes the YVAA a great choice in a variety of applications. With optional Quick Start technology, the YVAA air-cooled screw chiller is the more reliable, lower maintenance solution for high-efficiency cooling.

## Proven Technology

Over decades of use, and more than 22,000 units installed globally, the YVAA chiller has excelled in a variety of applications while defining what's possible in air-cooled chiller technology and durability. Our highly optimized component choices make the YVAA a more flexible, more reliable option for energy-efficient cooling.



### Variable-speed drive

Four decades ago, we introduced the first variable-speed drive (VSD) chiller. Our first VSD, air-cooled chiller came in 2004, and we've since installed more VSD chillers than all other manufacturers combined. VSDs help reduce energy consumption – particularly at off-design conditions – and can help lower annual energy costs as much as 50%. Our patented, liquid-cooled VSDs also require less maintenance, with glycol replacement required only every five years. And the variable-speed design dramatically reduces sound levels at off-design conditions – up to 16 dBA. Designed and manufactured by Johnson Controls, a 100% liquid-cooled VSD is standard on the YVAA.



### High-efficiency economizer

Our high-efficiency economizer boosts capacity, improves system efficiency and reduces operating costs.



### Optimized compressors with patented, variable volume index (VI) technology

With decades of experience varying compressor speeds, the YVAA incorporates advanced, patented technology in a proven design. Our VI design optimizes the compression ratio of the compressor to match the conditions between the evaporator and condenser. This optimized compression ratio prevents over-compression to minimize energy consumption. Every compressor is run-tested at the end of the production line to ensure reliable operation.



### Patented, hybrid falling film evaporator

A patented, hybrid falling film shell and tube style evaporator optimizes energy efficiency while minimizing refrigerant charge up to 15%.



### Quick Start

The optional Quick Start feature enables an industry-leading compressor restart of 34 seconds after power is restored. And because YVAA chillers contain a variable-speed drive, there is no inrush of current, so all compressors can be started together. This allows a faster ramp-up to full capacity than is possible with a typical chiller.



### Microchannel condenser coil

Carefully designed and tested for the unique conditions a building's HVAC system experiences, our next-generation microchannel heat exchangers use parallel flow aluminum alloy tubes that are easy to clean. Plus, our microchannel heat exchangers feature coating options that help increase reliability and durability in harsh environments.



### Oil separator

The YVAA oil management system uses differential pressure to ensure proper oil flow and eliminate the need for mechanical oil pumps.



### Smarter controls

Our built-in controls tolerate large variants in input power, shifts in liquid temperatures and changes in environmental conditions to maximize chiller uptime. And our controls integrate with industry-standard Building Automation Systems (BAS) and the world-class Metasys controls system for greater building energy management efficiency. Optional Mobile Access Port (MAP) provides remote monitoring for predictive maintenance, resulting in dependable operation.



# Exceptional Performance

YVAA air-cooled, VSD chillers are built from the ground up to provide exceptional reliability and performance in a compact package. It's why the YVAA meets or exceeds applicable industry benchmarks from AHRI, UL, ASHRAE, NEC, OSHA and ASME. It's why the YVAA is able to achieve a part-load value (IPLV) up to 22 EER. And it's why our air-cooled, variable-speed chillers can be found all over the world. Each component and technology is hand selected and rigorously tested to ensure the YVAA offers the exceptional real-world performance you expect from YORK®.

## Patented, proven efficiency

Our patented, hybrid falling film technology, combined with a proprietary microchannel alloy, increases efficiency up to 15%. To boost efficiency elsewhere, we use a completely sealed, liquid-cooled variable-speed drive. The VSD offers the highest ambient temperature and electronic reliability without putting load into the refrigeration cycle. And patented, VI technology matches compressor operation to conditions.

These technologies are optimized through our patented control of fan speed, staging and compressor volume ratios to provide the leading edge in efficiency.

To ensure that the YVAA performs exactly as expected, Johnson Controls performs operational testing of every chiller before it is shipped. We also offer performance testing on all models in an AHRI certified test lab, so you can be sure your YVAA chiller is custom tuned for your precise building requirements.



The fastest chiller restart and capacity recovery after power failure





## Greater Value

The YVAA from YORK® is designed to provide the best overall life-cycle costs through efficient performance, remarkable flexibility and optimized reliability. Closed-loop glycol only requires replacement every five years and there are no filters to change. These design features, along with easy access to service components, provide a low cost of ownership. And with features and options that ensure an optimized chiller and years of worry-free operation, the YVAA provides greater reliability and real-world efficiency.



Closed-loop glycol only requires replacement every five years and there are no filters to change.

### Value through flexibility

The YVAA can be tailored and tuned to match the capacity, efficiency, sound and footprint of your specific application. Customization options and built-in features include optimized compressor options, compact footprint size and optimized sound. Additional flexibility is provided through:

- Several variations of condenser fans, evaporator arrangements, protection enclosures and controls schemes
- Extended application range of up to 131°F with no additional kits required
- SilentNight, sound-optimized ratings and low-noise sound kits for acoustic performance
- High leaving-fluid temperature for extended application range
- Compact footprint for easy shipping container transport and simplified installation
- Global design and manufacturing for worldwide application

### Easier to install and maintain

An efficient motor design provides a wide operating range while refrigerant cooling and thermal protection increase compressor reliability. Our patented controls contribute to the field-proven reliability of the YVAA. Standard features include:

- Control center that provides automatic control of compressor start, stop, load, unload, condenser fans, evaporator pump and heater, unit alarm contacts and signal contacts
- Microchannel parallel flow aluminum alloy tubes that are proven through rigorous laboratory testing and are easy to clean with just water and a hose
- Full communication with BAS systems, including Metasys, for building-wide communication
- Peace of mind provided by the largest service and parts organization in the industry

### Proven across the world. Built specifically for yours.

The YVAA can be found in the most challenging conditions around the world. Our patented, liquid-cooled, variable-speed drive makes the YVAA reliable and efficient. And thanks to customizable sound and footprint designs, it's also one of the most flexible chillers available. When maintenance needs are considered, the YVAA proves itself to be one of the most affordable chillers on the market.





# A Legacy of Leadership

With over 4.5 million tons of air-cooled, variable-speed screw chillers installed worldwide, the innovation, reliability and value found in the YVAA is no accident. YORK® has a long history of developing leading-edge technology that delivers real-world results. For example, our patented falling film evaporator design improves heat exchanger performance while reducing refrigerant charge, and our patented control logic provides better turn-down and quickly responds to changes in building load to improve efficiency. Our variable-speed drives are another direct result of our focus on innovation. We first introduced VSDs in 1978, and since then we've installed more VSD chillers than all other manufacturers combined. In 2004, we used VSDs for the first time in our air-cooled models. With that legacy, we've led the industry in chillers utilizing VSD technology for better efficiency and proven longevity.

But we don't stop there: We use our legacy of leadership to design and manufacture our chiller-specific screw compressor. Since we created the screw compressor specifically for our chillers, it functions more effectively. And unlike single-screw designs that wear over time due to friction between the gate rotors and screw, our twin-screw design reduces friction, maintaining efficiency. With incomparable reliability, our elegantly simple design reduces the points of failure while boosting lifetime cost savings.

## From the name you trust

YORK® has built a reputation delivering chiller systems that are fully optimized for their environments and proven to be the best at operating efficiently in real-world conditions. We engineer, test and tune our own solutions rather than package off-the-shelf components from various suppliers, and have a long history of leadership in the aerodynamic engineering of centrifugal compressors. We were the first to offer a chiller with inverted temperature operation. And we have successfully transitioned from one refrigerant to the next with fully optimized, long-term solutions.

Now, with the YVAA air-cooled, variable-speed drive screw chiller, our legacy lives on in a proven, high-performance solution that's tailored and tuned to match the capacity, efficiency, sound and footprint requirements of your specific application.



When you partner with Johnson Controls Arabia, we treat your mission as our own. We put our deep expertise, leading technology and world-class products to work for you, never resting until you achieve your goals.

Whether your mission is to heal, teach, create or connect, Johnson Controls Arabia can help you achieve it. We provide the next generation of smart building technology for these industries:



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