Best route
to real-world
energy performance
YORK® YK chillers deliver maximum efficiency

Real-world energy performance is essential

YORK® model YK centrifugal chillers, manufactured by Johnson Controls, provide the best route to real-world energy performance — the combined performance at all operating conditions, not just design. Because chillers in the real world operate nearly 99% of the time at off-design conditions, off-design performance is the major factor in energy consumption. That's why YK centrifugal chillers are engineered for maximum efficiency at both design and off-design conditions.

Unsurpassed Integrated Part Load Value

The Air-conditioning, Heating, and Refrigeration Institute (AHRI) Chiller Certification Program endorses the validity of off-design analysis to compare chiller energy consumption. Measured with AHRI’s Integrated Part Load Value (IPLV), YK centrifugal chillers are unsurpassed in energy efficiency. Equipped with an OptiSpeed™ variable-speed drive, they can reduce energy usage as low as 0.20 kW/TR at off-design conditions.

Adaptive capacity control optimizes performance

When a YORK YK chiller is equipped with an OptiSpeed drive, it incorporates advanced Adaptive Capacity Control logic, which continually optimizes chiller operation. It closely examines critical operating parameters, and then determines the most efficient way to operate. In addition, it lets you optimize your savings when using intelligent control strategies, such as chilled-water reset. Adaptive Capacity Control logic also accommodates the characteristics of the refrigerant used in the chiller — today and tomorrow.

The capacity range of the YORK model YK chiller is 250 to 3,000 TR (880 to 10,540 kW). Both low-voltage (250 to 575 V) and medium-voltage (2,300 to 13,800 V) designs are available.
Take advantage of colder entering-condenser water
Unlike competitive chillers which require entering condenser-water temperature (ECWT) from the cooling tower to be held artificially high, YORK YK centrifugal chillers can utilize ECWT as low as 55°F (13°C). The lower ECWT reduces the compressor workload, and that can reduce instantaneous energy consumption as much as 50%.

Powerful control center saves energy
YK chillers feature the OptiView™ Control Center, which uses microprocessor capabilities to save you energy. Operation at just 1° below the designed chilled-water-temperature setpoint can increase chiller energy consumption by as much as 3%, wasting thousands of kilowatt-hours and dollars each year. The digital precision of the OptiView Control Center lets you set chilled-water temperature to a resolution of ± 0.1°. As a result, you eliminate the energy wasted by drifting a degree or more from the setpoint. The OptiView Control Center can also be used to schedule daily operating hours and holidays. No longer is energy accidentally wasted cooling the facility when it’s not needed.

The OptiView Control Center helps you operate your YORK YK chiller more efficiently by allowing for the precise setting of chilled-water temperature and operating schedule.
Maximum control with OptiView™ Control Center

Easy to operate
The intuitive, full-color OptiView Control Center offers you a higher level of monitoring and control. Data input is foolproof, and data outputs are shown in association with illustrations of the appropriate chiller components. For convenience, all data can be displayed in eleven different languages, in addition to Imperial or SI units.

Easy to monitor
The OptiView Control Center allows on-board trending of up to six different values, selected from over 100 variables. The values and sampling interval are all user-selectable. This flexibility allows you to select parameters that are critical for your operation and to perform trending without a BAS interface and separate monitor.

Easy to integrate
Energy savings and ease-of-use can be fully realized when the HVAC system is an integrated part of the building-automation system. The OptiView Control Center is designed to communicate with the Johnson Controls Metasys® system. It can also communicate with most control systems on the market today using its optional ELink communication card.

Data outputs on the OptiView Control Center are accompanied with an illustration of the appropriate chiller component, making chiller operation more intuitive.

The trending screen provided performance insights not possible with snap shot observations.
Environmental responsibility
The environmental impact of your chiller can be significant. You can reduce your impact by specifying YORK YK chillers. You'll get the benefit of refrigerant HFC-134a, which has zero ozone depletion potential (ODP). Plus, the high efficiency of the chillers reduces the indirect global warming potential (GWP), which is 98% of the total impact, caused by greenhouse-gas emissions produced by your utility to power the chiller. In addition, because of the chillers' high efficiency, your building could earn points for the Optimize Energy Performance (EAc1) credit in the Leadership in Energy and Environmental Design® (LEED) program.

Falling-film technology, utilized in the evaporator of YK chillers, reduces the refrigerant charge by up to 40%. It is available in YK chillers up to about 1,000 TR (based on conditions), and will help your building to qualify for maximum LEED points for Enhanced Refrigerant Management (EAc4).

Reduced noise levels
Traditional centrifugal chillers can generate a substantial amount of objectionable noise, but the YORK YK chiller is equipped with the innovative OptiSound™ Control, which reduces noise at off-design conditions. The control continuously monitors the characteristics of the compressor-discharge gas and optimizes the diffuser spacing of the compressor to minimize noisy gas-flow disruptions from the impeller. Chiller operation is also stabilized.

Flexible heating option
The YORK YK chiller can also be configured as a heat-recovery chiller, for use in facilities with simultaneous heating and cooling requirements. The heat-recovery unit takes advantage of the free heat that is typically rejected by the cooling towers. The heat can be used to control humidity, reheat the air, and preheat domestic hot water. Heat-recovery units have outstanding heating coefficients of performance that can reach up to 11.4.

Quick restart and return to setpoint
The Quick Start feature available on the YORK YK chiller reduces the risks that temperature-sensitive facilities experience after a power interruption. YK chillers equipped with this feature restart and return to the specified chilled-water temperature faster, reducing the risks of expensive downtime.
Minimum reliability with minimum maintenance

**OptiView Control Center keeps you well-informed**
The OptiView Control Center provides complete information on your chiller’s operating condition. Safety–shutdown information includes day, time, cause of shutdown and type of restart required. Color–coding of fault messages allows easy determination of chiller status. Yellow messages signify shutdowns with automatic restart, requiring no operator intervention. Red messages are displayed for shutdowns requiring manual restart, alerting the operator that a system check may be required.

The Trending Screen can show changes in motor current, oil temperature and pressure, refrigerant pressures, or water temperatures, all of which can be valuable indicators of developing problems. This capability gives you ample time to take corrective measures before any expensive downtime is incurred. With the OptiView Control Center, you can see when to schedule routine maintenance in advance of actual need.

**Open drive is easy to maintain**
The YORK YK centrifugal chiller uses an open-motor driveline, which means less downtime. If a motor failure occurs, the chiller can be brought back online much faster and at a reduced cost. The motor is easy to remove, and can be repaired at a local motor shop. As a result, downtime due to motor failure is dramatically reduced.

**Electrical protection extends motor life**
Equipped with an OptiSpeed drive, the YK chiller starts “softly,” never letting the inrush current exceed 100% of the full-load amps. By limiting the inrush, the motor windings do not rub together with expansion, which results in longer motor life and less chiller downtime. Lower inrush also reduces torque stresses on the motor and compressor driveline.

**Start maximizing today**
For more information on how YORK YK chillers can deliver real–world energy performance, visit johnsoncontrols.com or contact your Johnson Controls representative.

Color–coded fault messages allow early determination of chiller status and required operator action.