Frick

Committed to cold

We provide industry-leading single-source industrial refrigeration solutions.

The power behind **your mission**

Johnson Controls

Unrivaled expertise

Our values

- Integrity
- Customer satisfaction
- Innovation
- Sustainability

The FRICK® brand is produced by Johnson Controls, a globally diversified technology and industrial leader maintaining worldwide industrial refrigeration-focused operations and serving customers in more than 150 countries.

As part of Johnson Controls, FRICK has access to the technical and financial resources of a Fortune 100 company. This allows us to share knowledge among our various sales and service organizations around the world. Our global team creates quality products, services and solutions to optimize energy and operational efficiencies.

FRICK specializes in areas that include:

- Industrial refrigeration equipment for systems involved in the preparation and storage of food and beverages
- Central chilling
- Pharmaceutical

A reputation for making reliable products

We deliver innovative products that help the world run smoothly, smartly, simply and safely.

A reputation for reliable products

FRICK began building quality products in Waynesboro, PA, USA, in 1853. We built our first refrigeration compressor in 1883 and have been on the cutting edge of technology ever since. Each year, FRICK continues to strengthen its reputation for reliability, world-class engineering and application knowledge.

Engineering excellence

Engineers continually refine existing products, adding features and incorporating the newest technologies. This constant evolution of products ensures that FRICK will deliver customer satisfaction by providing the most technologically advanced equipment in the industry. As we make changes to improve the performance of current products, our engineers ensure these improvements can be applied to previous installations. This allows continual upgrades to existing equipment and enables you to keep your FRICK equipment current.

State-of-the-art technology

FRICK leads the industrial refrigeration industry with cutting-edge controls technology that allows for seamless system integration. Our product innovations continue to be a major focus as we strive to bring tomorrow's products to the marketplace today.

Quality, satisfaction and reliability

The industrial refrigeration industry places high demands on the equipment it uses. Today's equipment must be easy to maintain and meet high standards for quality, reliability and energy efficiency. Additionally, unit designs must be both robust and easily installed. FRICK products accomplish all of these goals. High-quality materials, innovative design and modern manufacturing methods add up to a product that is unmatched in overall quality.

Environmentally green

Facility owners and operators are focused on energy efficiency now more than ever. However, energy efficiency investments must provide a reasonable payback. With our many years of experience in the industrial refrigeration industry, we provide varied and innovative energy efficiency solutions for your system.

FRICK Factors

We work with an elite set of sales and installation partners – our FRICK Factors – whose dedication to your absolute satisfaction contributes to our successful products, processes and services. Find the FRICK Factors nearest you at www.frickcold.com.

Innovations that work for you

FRICK is the world's leading supplier of industrial refrigeration and compression equipment to the food and beverage industry. Coolware™ provides an easy and powerful way to select that equipment.

Industries using FRICK equipment

- Bakery
- Beverage
- Convenience food
- Food plants, including facilities and processing
- Food storage: Warehousing and distribution
- Fruit and vegetables
- Poultry – chicken and turkey
- Meat – beef, pork and lamb
- Seafood and fish
- Ice
- Recreation, including ice rinks

Coolware – easy and powerful

Coolware selection software enables the user to select the best system components for a refrigeration system. Coolware allows products to be selected, priced and placed directly into an order document, assuring that the correct equipment is ordered. It also provides flexibility in selection considerations to model a total system that is green, sustainable and efficient. Coolware is the most sophisticated and complete selection software found in industrial refrigeration today.

World-class solutions

FRICK, the leader in industrial refrigeration, is the only manufacturer to offer a full line of equipment for food and beverage applications. We have compressor packages, complete packaged systems, rooftop freezers, pressure vessels, hygienic air units, evaporators, condensers, heat exchangers and controls.

Compressor packages

Our compressors help you get the most out of your industrial refrigeration system. Our FRICK Rotary Screw Compressors feature advanced technology and inherent reliability. With dependability proven in thousands of installations, FRICK Compressor Packages operate with the most energy efficiency possible.

Packaged solutions

FRICK Packaged Ammonia Chillers reduce the need for field labor. Our compressors, heat exchangers, evaporators and condensers come in a compact package controlled by Quantum™ HD controls, the FRICK 'turnkey' software solution.

Pressure vessels

Our custom vessels are designed and manufactured to meet the exact specifications of your refrigeration facility. We make accumulators, intercoolers, economizers, surge drums, receivers, oil pots, oil separators, horizontal and vertical recirculator vessels, and vertical and horizontal remote evaporator packages.

Heat exchangers

Our plate heat exchangers are in successful operation in various applications for food and beverage markets and are widely accepted in the industrial refrigeration market.

Hygienic air units

AcuAir® systems are precision engineered and painstakingly built to the high sanitary standards needed for food processing. AcuAir units provide temperature, pressure and humidity control. This delivers clean, sanitary air to the environment by managing condensation, removing contaminants and limiting air migration. An array of options allow you to customize the unit to meet your every need.

Evaporators

Our evaporators have precision-fit fan blades resulting in quieter operation. They are lighter because of low-weight, high-strength stainless steel tubing with aluminum fins. Hinged fan panels, drain pans and fans on davits allow units to be opened and cleaned. Additionally, our evaporators can be supplied with inherent variable speed control for energy savings.

Condensers

FRICK Condensers deliver a lifetime of savings, beginning with easier installation and easy access to components for reduced maintenance hours and costs. If you are looking for heat rejection technology that will minimize water use or a solution that will work in remote locations with degraded water quality, it's time to discover the advantages of a FRICK Condenser.

Controls

At a fraction of the cost, the Quantum HD is as close as you can get to a programmable logic controller (PLC). Our controls solutions engineers have designed and commissioned custom-engineered control systems worldwide.

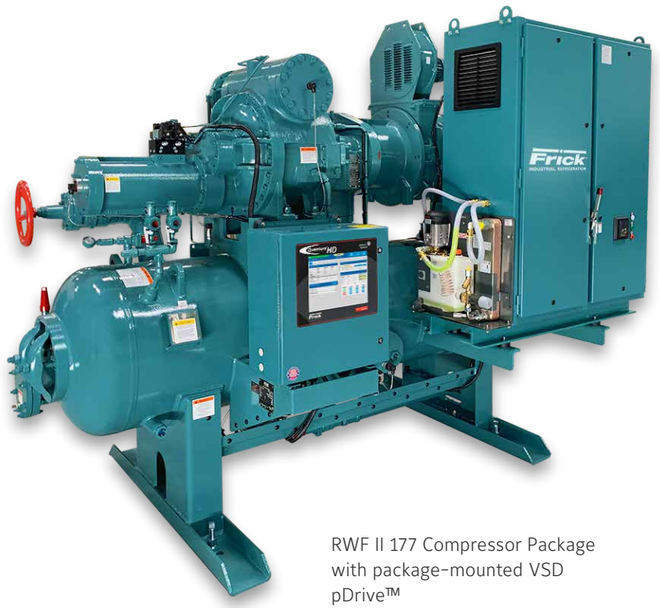
Compressor packages

RWF II and RXF Rotary Screw Compressor Packages

- Infinite and step volume control for maximum efficiency
- Infinite capacity control to match changing loads
- Variable speed drives ensure your compressor operates at the most energy-efficient level, dramatically reducing operating costs
- Smart Series™ motors offer NEMA Premium efficiency and low noise and come as standard with FRICK Compressor Packages
- Flange mounting eliminates troublesome field alignment between the low-noise motor and compressor
- Factory-mounted starter simplifies electrical installation
- Cold-start valve provides oil pressure without the need for a pump
- Fewer threads, less fittings and welded connections ensure precise and tightly sealed units
- Oil cooling options:
  - EZ-Cool™ Liquid Injection uses a motorized expansion valve controlled by the Quantum HD for optimum discharge temperature control
  - Thermosyphon oil cooling uses a plate and shell vessel to cool the oil, avoiding compressor capacity losses or power penalties

Quiet, reliable and efficient

FRICK Rotary Screw Compressor Packages lead the food and beverage industry with the most innovative and broadest product range available for industrial applications.

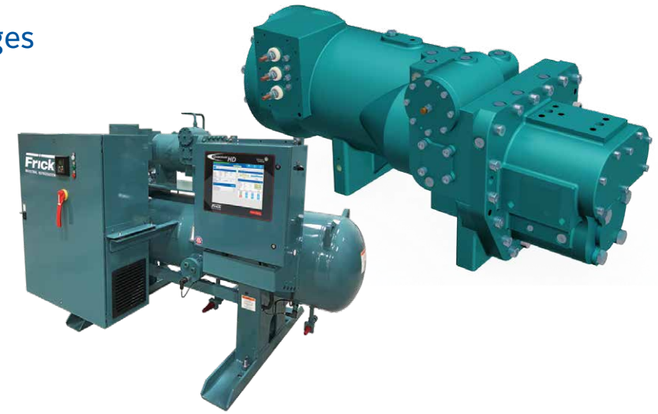


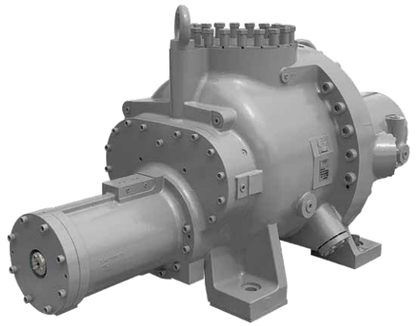
RWF II 177 Compressor Package with package-mounted VSD pDrive™

Our rotary screw compressors are manufactured to meet the exacting requirements of the gas compression industry. Each compressor is designed and manufactured to assure reliability, availability, accessibility and ease of service. Additionally, advanced energy-saving features significantly reduce operating costs, all of which explain why more than 150,000 FRICK Screw Compressors are operating around the globe.

Semi-Hermetic Compressor Packages

- Compact integral variable speed motor eliminates the need for a shaft seal
- Robust and reliable FRICK screw technology
- Industrial anti-friction roller bearings
- Optimized compression (Vi) for ammonia refrigeration applications
- Capacity control by VSD
- Built-in suction strainer
- Integral 3-micron absolute oil filter
- Rated to 300 PSI DWP
- UL-recognized compressor



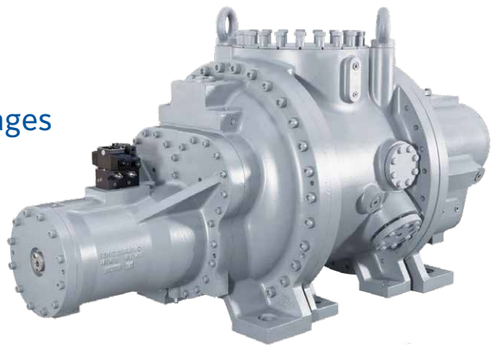


High-Pressure Screw Compressor Packages

- Electric motor, gas engine and steam turbine drive
- Slide valve for efficient capacity control
- Variable volume ratio (Vi) eliminate over/under compression
- High-efficiency oil removal systems
- DWP up to 1,100 psi

Sleeve-Bearing (SBTP) Compressor Packages

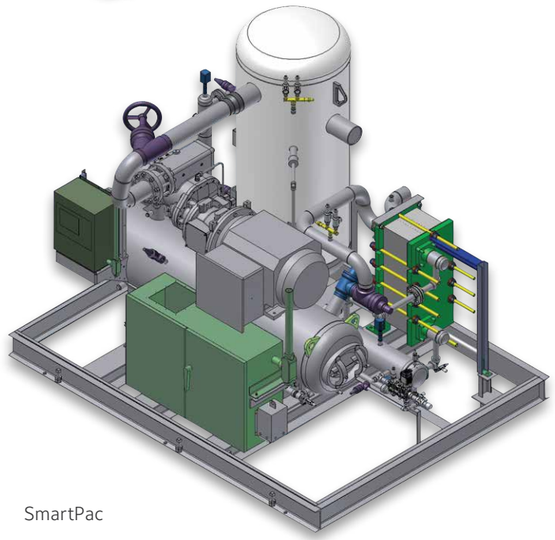
- Tilt-pad bearings and cast steel housings to meet the requirements of API-619
- Electric motor, gas engine and steam turbine drive
- Slide valve for efficient capacity control
- Variable volume ratio (Vi) eliminates over/under compression
- High-efficiency oil removal systems



Packaged solutions

Easy to install and easy to own

PowerPac



SmartPac

PowerPAC™

PowerPAC reduces the need for field labor by combining compressors, heat exchangers, evaporators and condensers in a compact package.
By putting advanced heat exchanger technology to work, the refrigerant charge quantity is reduced, maximizing operating efficiency.

- Less job-site labor means lower costs
- Optimized design means fewer welds
- Factory-built in a controlled environment, site-delivered and ready to operate
- Simplified electrical hookups
- Process side uses pumped glycol
- Freeze protection from three-directional expansion
- Plate and frame heat exchanger means less refrigerant charge

SmartPac™

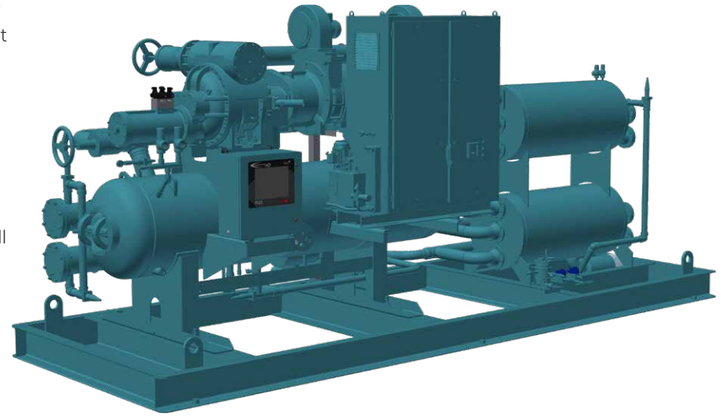
With the SmartPac, our screw compressors, heat exchangers, pressure vessels and controls all come together in a compact package ready to install. Advanced heat exchanger technology increases operating efficiency with a reduced refrigerant charge. When installed by a FRICK Factor, SmartPacs get a three-year warranty.

FRICK Inline Packaged Ammonia Chillers

FRICK Inline Packaged Ammonia Chillers provide industry-leading reliability in a reduced footprint and cost-effective skidded package.

Features and benefits

- Maximum heat transfer with no gaskets to leak or replace, thanks to the efficient plate and shell heat transfer technology
- Low ammonia charge for reduced risk and maximum efficiency
- FRICK 5:1 screw compressor turndown saves energy every day. It gives exceptional part-load operating efficiency with optional VSD
- Long-term code compliance: Standard 1/16" corrosion allowance on the ASME evaporator shell and nozzles
- Standard chiller capacities in the 50 TR to 650 TR water chilling ranges and 30 TR to 400 TR glycol chilling ranges
- Space-saving footprint with our compact inline package layout
- Easy to ship, rig and install: These are standard-sized chillers that will not need oversized load permits and will fit through a typical overhead equipment service door
- Eliminates the need for a dedicated ASME separation vessel because of proprietary consolidated flooded evaporator technology.



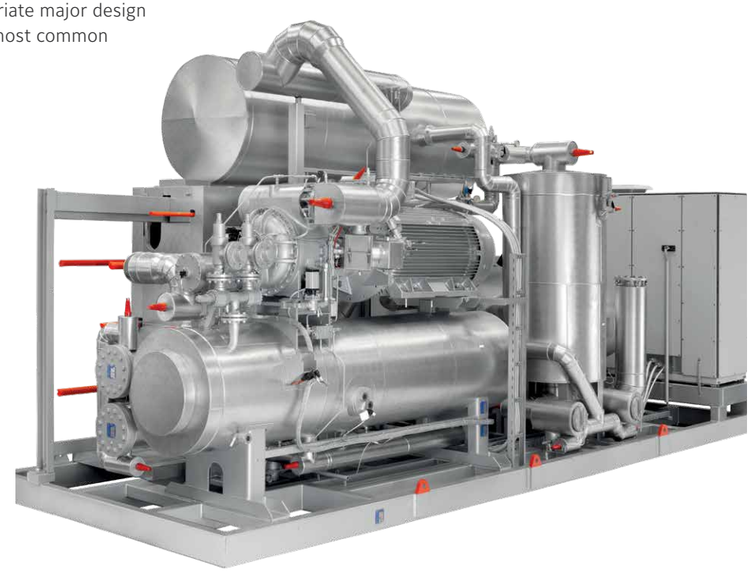
Heat pumps

Rock-solid reliability in a critical role

Johnson Controls heat pumps for industrial use result from intensive pioneer work, based on the idea of reaping energy benefits from using heat pumps in industry – long before heat pumps became Greentech.
We understand you need the most reliable heat-pump equipment to avoid costly downtime. Our industry-leading products provide you with unrivaled reliability.
Whether required for combined heating and cooling applications or waste heat recovery applications, our heat pumps are the ideal solution for effectively exploiting thermal energy from various source fluids to usable hot water.
Each unit is customized for its specific duty and installation, ensuring the minimum energy consumption provides the maximum thermal transfer effect. Additionally, refrigerant choice, source fluid and hot water output are all customizable.
Our high-pressure screw compressor heat pumps use ammonia as one example of the refrigerant solution we can provide for hot water up to and exceeding 203°F (95°C).
Our heat pumps are fully compliant with appropriate major design codes, and the specifications laid down by the most common classification societies.

The global leader in heat pumps

Our equipment has run in some of the most complicated processes in the most demanding industries for more than a century. We bring this unmatched experience to the world's most extensive range of screw compressors, with capacities of up to 8,212 CFM (13,952 m^3/hr) and 1,100 psi (76 bar).
Our vast experience, advanced technology and smart controls serve as your assurance of a reliable compressor solution that can continually meet your flow and pressure demands.



Pressure vessels

Engineered for clean, safe operation

Accumulators
Vertical accumulators, with or without coils

Intercoolers
Vertical intercoolers, with or without coils

Receivers
- Horizontal and vertical high-pressure receivers
- Horizontal and vertical thermosyphon receivers
- Vertical high-pressure thermosyphon receivers

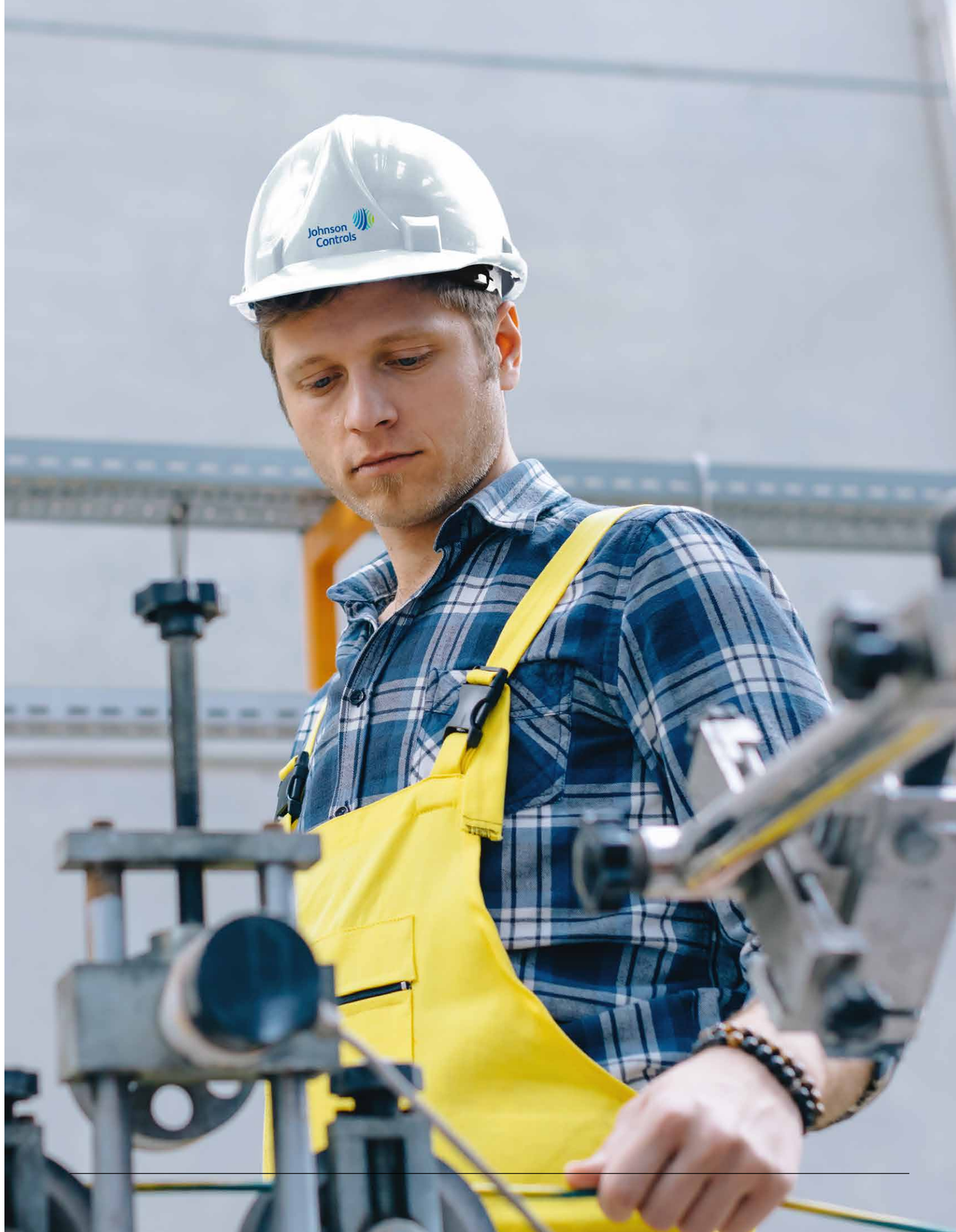
Oil pots
Horizontal oil pots

Economizers
Flash and shell-and-coil types

Surge drums
Horizontal surge drums with single-flow or dual-flow

Liquid recirculator vessels and packages
Our standard horizontal and vertical recirculator packages range from 24- to 106-inch diameter vessels. These come standard with a pair of semi-hermetic-style liquid pumps - one pump is a complete stand-by. The packages are completely factory-piped and come with a three-inch float column and three-level eyes. Standard ammonia packages also include an oil pot. Options include unit-mounted controls and starters, liquid level sensors and controllers, liquid make-up level control valves (shipped loose), oil pot heaters and variable speed drives.

Special vessels and packages
We also provide vessels and packages that can be custom-manufactured to specific application and design requirements.



Hygienic air units

Maximum efficiency and uptime

A properly sized hygienic air unit provides:

- Filtered and tempered air to space
- Room pressure maintenance
- Room humidity control

FRICK AcuAir Hygienic Air Units

FRICK AcuAir systems are engineered and built to help you meet United States Department of Agriculture requirements. These units are built with quality in mind and engineered to provide clean, tempered air to maintain a sanitary environment. Maintaining the process room's temperature, humidity, pressure and filtration is critical to providing a safe food processing environment that helps to meet the needs of the Food Safety Modernization Act.

Features and benefits at a glance

- Precise control of unit functions with the Quantum HD Unity Controller
- Units are designed to withstand internal washdowns
- Customized unit configuration to meet your specific application

Make-up air units

Whether your application requires simple fresh-filtered air with little temperature conditioning or specific volumes of tempered air, the AcuAir applications team will help you to provide the correct solution to your project.

Features and benefits at a glance

- Large range of units, including standard and customized sizes
- Precision control of airflow with VSDs
- Faster unit washdown with recessed condensate drain pans throughout
- Removes contaminants from the air during pre- and post-filtration
- Optional UV-C lights for virus and bacterial eradication from the airstream
- Humidity control with reheat coils
- Sanitation heating to remove moisture and get production rooms in operation quicker
- Improved energy efficiency with new Quantum HD Unity controls

Evaporators

Innovative solutions

A heavy-duty evaporator provides:

- Reliable heat transfer for continuous operation at all temperature levels
- Design flexibility in geometry, fan selection and construction materials.

Quantum HD Unity Evaporator Controllers

- Efficient evaporator control
- Flexible defrost-sequencing control platform
- Control up to 30 evaporator zones from each Quantum HD Unity System Controller
- Remote evaporator I/O panels can be mounted wherever necessary to minimize installation cost
- Manages energy consumption during peak periods by load-shedding based on schedule, kW limits or a combination of schedule and kW limits
- Controls for dehumidification, heating and re-heating come as standard
- Modulating liquid feed and VSD fan operation come as standard for each zone
- Optional HOA switches for all basic control valves per zone

Air chilling evaporators

- FRICK Air Chillers provide reliable cooling options for all your food and beverage process and storage needs. We provide units to match the application, refrigerant feed options to integrate perfectly with the system and construction materials to fit the environment's needs.

Features and benefits

- Casing finish appropriate for your applications, including galvanized steel, powder-coated or stainless steel
- Quiet operation with precision fit fan blades inside long radius venturi
- Reduced unit weight with stainless steel refrigerant tubing and aluminum fins
- Free-floating fin coil designed to protect the refrigerant tubing from expansion and contraction wear
- Typical options: Drop-down drain pans and hinged fan panels for cleanability, streamers for enhanced air throw, epoxy-coated fins, EC fan motors, factory power and control wiring to common boxes.

Rooftop freezer systems

Penthouse unit features

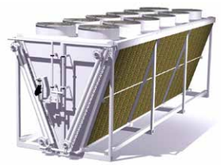
- Coolers (4" - R-28) and freezers (5 3/8" - R-38.5) thick foamed-in-place wall panels
- Stucco-embossed steel panels
- Weather-proof membrane provided
- OSHA guards on fan inlets
- All piping connections extended to unit exterior
- Variable speed drives (VSD) starters (optional)

Condensers

Energy-efficient and cost-effective

Powerful and reliable solutions

- Adiabatic Series: Combine the effectiveness of a dry condenser with the efficiency of an evaporative condenser with water savings of up to 90 percent.
- IDSC2 Stainless Steel Series: Our IDSC2 Stainless Steel Series is an induced draft condenser with 316L coil and 304L casing construction. IDSC2 units can deliver up to 70 percent savings in total life cycle costs.
- IDCF/IDC3 Induced Draft Series: This series is designed for resilient, heavy-duty construction. It offers maximized heat transfer and significantly reduced scale on the coil-over time. Additionally, capacity losses are reduced by 50 percent on the IDCF.
- XLP3 Forced Draft Series: Get enhanced energy efficiency, reliability and accessibility with our XLP3 Forced Draft Series. Additionally, this series offers the lowest installation, maintenance and operating costs.
- ECC/ECL Centrifugal Series: This is a forced draft evaporative condenser with low-sound centrifugal fans, easy assembly and multiple access packages for simple and efficient maintenance.



Low-cost installation

- Support: All models mount directly on two parallel I-beams and are shipped complete with motors and drives factory-installed and -aligned.
- Modular design: Large models are shipped in sections to minimize the size and weight of the heaviest lift, allowing for the use of smaller, less costly cranes.

Energy savings

- PE VFD motors: The fan motors offer premium efficiency inverter-duty operation.
- VFD starters: VFD starters are also available from FRICK.
- Design: This includes EC motors with built-in variable fan speed control, fans with improved sound characteristics and multiple fan motors providing increased redundancy. These come as standard on IDSC2 and are optional on the XLP3.

Quantum HD Unity Condenser Controller

- This controller has a dynamic wet-bulb or fixed setpoint discharge pressure control.
- The redundant condenser pressure inputs mean no downtime for a failed pressure sensor.
- It includes settings for defrosting pressure control.
- The VSD fan control ensures steady operation even in upset conditions.
- Other features, such as bleed control and non-condensible gas warnings, help save system operational costs.

Heat exchangers

Industry-leading operation

Our plate heat exchangers successfully operate in various applications for the food and beverage markets and are widely accepted in the industrial refrigeration market.

Quality heat exchanger solutions

Components of the energy-intensive refrigeration cycle are changing rapidly to maximize commercial payback and thermal efficiency. Our plate heat exchangers fulfill this efficiency requirement. They have proved their reliability and high-performance output as evaporators and liquid-cooled condensers.

Flooded evaporation

A flooded evaporator has liquid refrigerant, at its saturation point, fed into the plate evaporator. The heat from the fluid being cooled causes the refrigerant to boil in the heat exchanger. The basic system uses gravity to feed the refrigerant from a separator vessel in most cases. The differences in density of the two-phase refrigerant cause it to flow through the heat exchanger and return to the separator. This is referred to as a natural recirculation or thermosyphon system.

FRICK Packaged LaZerWeld II - PLW II

Compact chilling solutions
Features

- Semi-welded plate heat exchanger
- Liquid level control with probe and controller
- Mounted proportional modulating liquid supply feed assembly
- Refrigerant level column with high-level float switch
- Efficient dual-flow surge drum

Controls

Quantum HD Unity Compressor Controllers

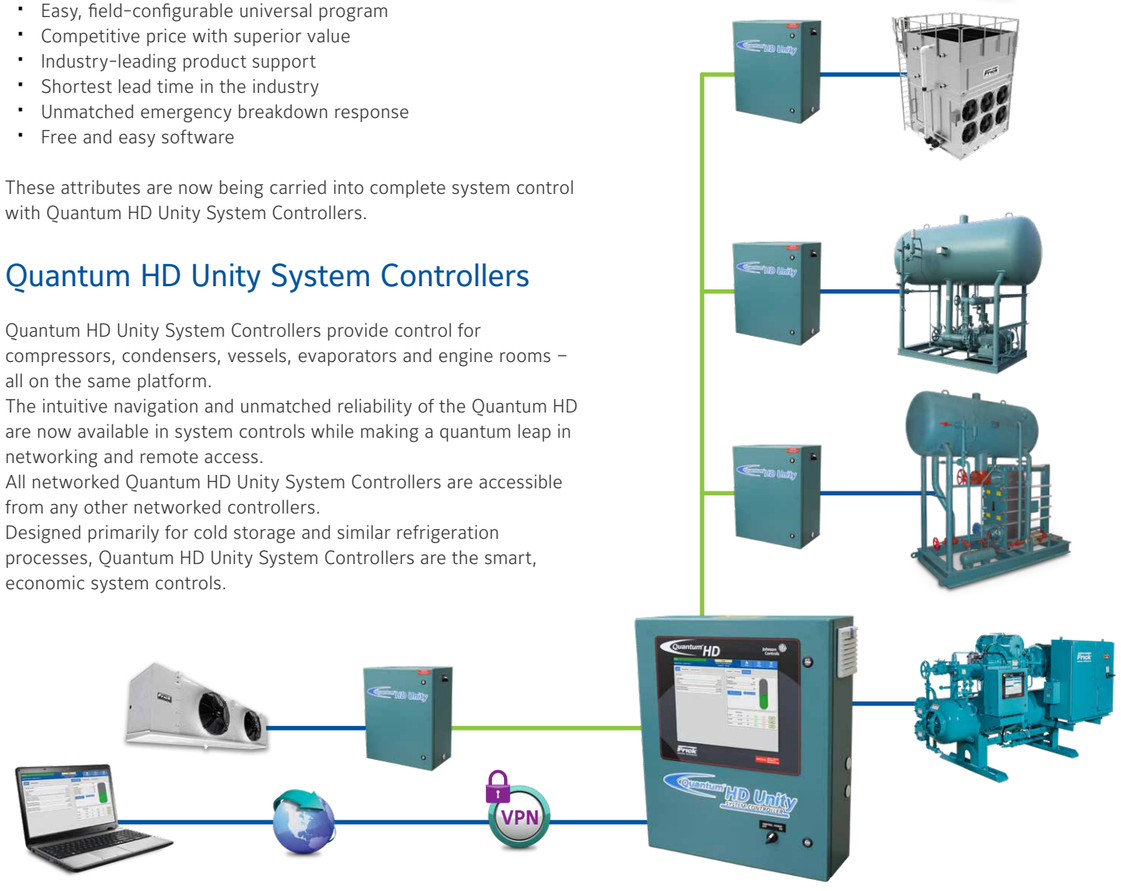
Quantum HD Unity Compressor Controllers are the most widely applied retrofit controllers in industrial refrigeration, outpacing all other retrofit options combined for the following reasons:

- Reliability
- Easy, field-configurable universal program
- Competitive price with superior value
- Industry-leading product support
- Shortest lead time in the industry
- Unmatched emergency breakdown response
- Free and easy software

These attributes are now being carried into complete system control with Quantum HD Unity System Controllers.

Quantum HD Unity System Controllers

Quantum HD Unity System Controllers provide control for compressors, condensers, vessels, evaporators and engine rooms – all on the same platform.
The intuitive navigation and unmatched reliability of the Quantum HD are now available in system controls while making a quantum leap in networking and remote access.
All networked Quantum HD Unity System Controllers are accessible from any other networked controllers.
Designed primarily for cold storage and similar refrigeration processes, Quantum HD Unity System Controllers are the smart, economic system controls.



Engineered Controls Solutions

FRICK Engineered Controls Solutions (ECS) have been meeting the industrial refrigeration market's custom control needs for nearly 40 years, setting the standard in the following areas:

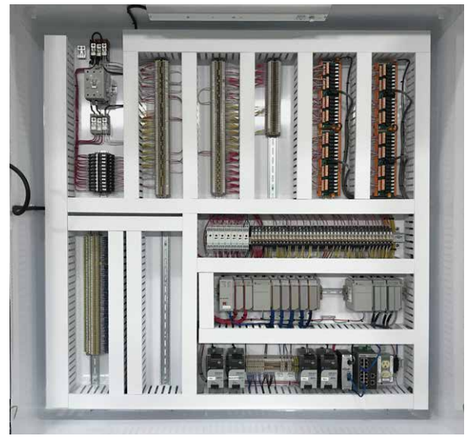
- Best control practices
- Energy savings
- Unmatched drawing packages
- Product support
- Free lifetime emergency support
- Non-proprietary hardware and software
- Total combined system experience
- Overall customer satisfaction.

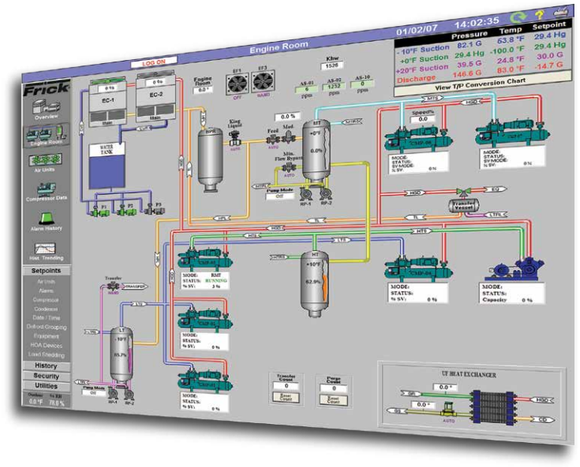
FRICK ECS offers both Allen-Bradley CompactLogix (shown) and ControlLogix, as well as Opto-22 PLCs as standard. First, we start with a solid base program. Then we build it to suit your needs.
Each system is:

- Commissioned and supported by the controls engineer who programmed it
- Built in our UL-508A shop
- Backed by free lifetime emergency support.

Operation and graphics

The refrigeration equipment controlled by the ECS system is displayed using customized graphics in a P&ID format. By depicting the facility's physical layout, they allow the operator to clearly understand the operating status of the entire system at a glance.





Allen-Bradley CompactLogix PLC Controller by FRICK Engineered Controls Solutions.

We promise to go further

World-class solutions
We create confident customer experiences with our best-in-class solutions.

Reliably cold
FRICK is synonymous with refrigeration – we have generations of experience building refrigeration solutions.

Unrivaled expertise
We offer quality that is unrivaled in the industry.

About Johnson Controls
At Johnson Controls, we transform the environments where people live, work, learn and play. From optimizing building performance to improving safety and enhancing comfort, we drive the outcomes that matter most. We deliver our promise in industries such ashealthcare, education, data centers and manufacturing. With a global team of 100,000 experts in more than 150 countries and over 135 years of innovation, we are the power behind our customers' mission. Our leading portfolio of building technology and solutions includes some of the most trusted names in the industry, such as Tyco®, YORK®, Metasys®, Ruskin®, Titus®, Frick®, Penn®, Sabroe®, Simplex®, Ansul® and Grinnell®. For more information, visit www.johnsoncontrols.com or follow us @johnsoncontrols on Twitter.

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