Trane Classic Absorption Single-Stage Hot Water or Steam-Fired Absorption Chillers 112 to 465 Tons

Why Trane Absorption Makes Sense

Engineers and owners who are planning new chiller plants, expanding systems or processes, or replacing older refrigeration equipment, are more often considering the absorption option. The use of absorption chillers is on the rise due to their increased reliability and the benefits of hybrid chiller plant design. The absorption chiller has earned the reputation as a viable alternative to the electric chiller or in the example of a hybrid installation, a viable counterpart to the electric chiller.

Operates With Either Water or Steam Source

Absorption is particularly appropriate in cooling applications where there is a low-pressure steam or hot liquid source, a waste heat recovery option, or in areas where electric rates or demand charges are high. The Trane Classic single-stage absorption chiller is designed to use steam at pressures up to 14 psig and at temperatures to 340 F, or hot water temperatures up to 270 F. These chillers are ideal for situations requiring chilled water in the range of 40-50 F. They are a popular choice when an economic comparison of electrical rates versus fuel costs indicates an operating cost advantage for absorption.

The Classic single-stage absorption chiller features a time-tested design along with continuing advancements in component metallurgy and systems controls and control logic. This single-stage design is ideally suited for applications with low pressure steam or pressurized hot water. They are available in sizes from 112 to 465 tons and can be used in a wide range of process and comfort cooling applications, using either hot water or steam as an energy input. The chiller is a hermetic design and comes with a factory-mounted microprocessor-based control system. Units are available in voltages of 200, 380, 415, 460 or 575 VAC for either 60 or 50 Hz operation.

A full range economizer is standard for these units to precisely match the solution flow in proportion to the cooling load on the machine. This reduces the amount of heat input required and can result in significant operating economies.

Ships Completely Assembled

All Trane single-stage absorption units are fully assembled in the factory and ship in one piece. When they arrive at the jobsite, they are ready to be set in place. In addition to simplified installation, full factory assembly makes it possible for the customer to benefit from a stringent factory mass spectrometer leak test.

The units are shipped under a vacuum to assure that hermetic integrity is maintained through installation. By comparing machine vacuum at the jobsite with the factory record, the contractor and owner can be confident that there has been no damage to the machine and it is airtight, dry and clean.

Low Temperature Input Designs

Making chilled water from comparatively low temperature inputs is particularly important for energy conserving applications such as waste heat recovery and co-generation equipment and solar energy powered cooling. The same reliability and performance proven in thousands of conventional applications can be expected in low temperature applications.

Concentration Limit Control

A positive concentration limit (PCL) control is standard on all unit sizes. This system is designed to detect conditions where crystallization might occur and automatically pump dilute refrigerant into the system, and if crystallization continues, shut down the machine. This is valuable if the machine operates unattended and electrical power interruptions are common. It protects the machine from possible damage in the event the machine does not have the opportunity to go through the normal dilution cycle at shutdown.

UCP2™ Control Panel

The Classic absorption chiller is equipped with Trane's exclusive UCP2 control panel which includes microprocessor control capability and extensive unit diagnostics. It allows the chiller to continue to operate through a broad range of non-standard conditions, keeping chilled water supplied as long as possible. The unit diagnostics available as part of this control simplify troubleshooting and allow more efficient scheduled preventive maintenance.

The Absorption Refrigeration Cycle

The absorption cycle uses water as the refrigerant and heat as the energy input to create chilled water for comfort or process applications. In the absorption cycle, steam or hot water is used to boil a dilute solution of lithium bromide and water in a hermetic vessel. The water vapor produced is drawn through the condenser, where it gives up heat to the cooling tower water and through the absorption process, cools the system circulating water. This process is illustrated in the flow diagram on the reverse side.

Built/Designed In An ISO 9001 Quality Certified Facility

Trane absorption machines are built in an ISO 9001 quality certified facility in La Crosse, WI.

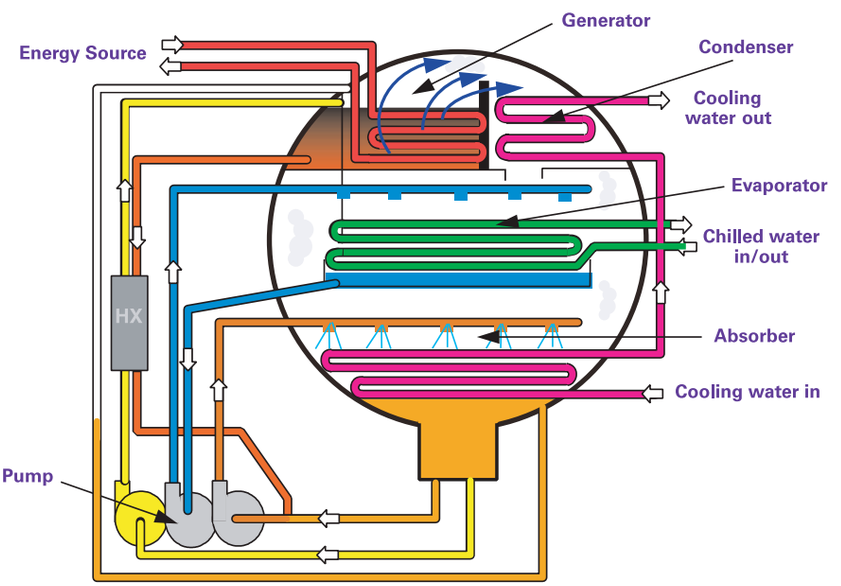
All Trane chillers include extensive aftermarket support. Training for unit operators is provided to assure that designated unit operators thoroughly understand absorption system operation and unit capabilities and limitations.

Factory-trained absorption service personnel are located throughout the country to support Trane chillers and perform periodic routine maintenance programs, as well as troubleshoot equipment if necessary. Records on the exact construction of each chiller are maintained by Trane. This assures that all appropriate parts are provided if service is necessary, and that the unit can be maintained exactly as it was intended.

Trane Absorption Leadership

Trane has been the market leader in absorption water chillers for over 40 years. The company is committed to research, development and application of absorption technology at its research facilities in La Crosse, Wisconsin.

Classic Absorption Refrigeration Cycle



Since 1959, Trane has shipped over 10,000 absorption units for use around the world. Trane's commitment to absorption technology includes laboratory testing and factory training of technicians for start-up and warranty service and emergency service support.

Standard Specification

- Single shell design
- Long-life cupronickel tubes in the concentrator, evaporator and absorber
- Factory leak tested to assure product integrity
- Tubes are individually replaceable from either end of machine
- Solution pump motor can be serviced without breaking vacuum or removing solution from machine
- Victaulic™ water connections
- Automatic decrystallization controls
- Start-up steam demand limit control

Optional Specification

- Special corrosion-resistant tubing
- Stainless steel evaporator pans
- Lithium bromide filter and valves
- Welded raised face flanges at all water connections
- NEMA 4 controls
- Chemically resistant epoxy paint
- Wooden pallets can be provided under each leg for handling at installation site or to facilitate international shipment

UCP2 Controls

- Improved reliability and performance
- Factory installed and commissioned
- Proportional integral derivative (PID) control. Adaptive Control™ strategies for stable, efficient, reliable and optimal chilled water temperature control
- Easy-to-use operator interface that includes
  - — English or SI units
  - — Standard and custom reports
  - — Two-line, 40 character backlit LCD display in clear language
  - — Over 200 diagnostics including time and date stamping.

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