



TRANE®

Absorption Chillers in Commerce

THE
FLEXIBILITY
OF
CHOICE

OFFICES
HOSPITALS
SCHOOLS
RETAIL
CENTERS
HOTELS





Today, absorption chillers are sold for a wide variety of applications. Here's why...

THE FLEXIBILITY OF CHOICE

Changing Electrical Prices

The absorption chiller is remarkably flexible, using steam, hot water, natural gas or process-generated waste heat to produce cooling. Because these heat sources are often available at attractive rates compared to electric power, absorption chillers are sold for a wide variety of applications. And it is expected that once the price of electricity is fully deregulated, these savings will further boost absorption chiller popularity.

Advanced Designs

Recent advances in chiller design are another reason why system designers are looking to absorption. Designs with microprocessor controls, variable speed pump drives, and industrial grade construction have modernized absorption to higher levels of reliability, efficiency and performance.

The System Uses Refrigerant Water

The purchase of an absorption chiller is not only a good economic decision, it is also an excellent environmental choice that your employees, shareholders and neighbors can feel good about. Absorption chillers use water as the base refrigerant, eliminating environmental concerns about leaks and refrigerant disposal.

Robust Operation

Trane absorption chillers are able to adapt quickly to changes in load and water temperatures and keep chilled water temperatures constant. For example, Horizon™ chiller designs can deliver chilled water as cold as 40°F and start up with tower water temperatures as low as 45°F.

Additionally, the Horizon design exceeds ARI recommendations for cooling water flow and, in some cases, it can use the same flow capacity for compression chillers. A major benefit of Horizon's low-flow design is the reduced operating energy costs associated with smaller sized towers, pumps, piping, and fans. This low-flow operation allows Horizon chillers to be installed as direct replacements for electric chillers, without any changes to the cooling tower system.

Simplified Installation

Many Trane absorption chillers are offered with an option for disassembling the chiller into manageable sections at the job site. This option is ideal for customers where limited access to their equipment room makes installation of a full-size chiller extremely expensive.

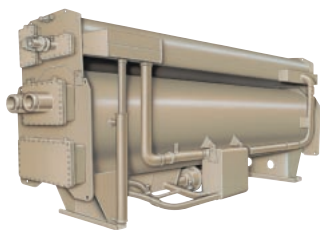
Also offered as standard or as an option, many Trane absorbers ship with the cooling-water crossover pipe, between the absorber and condenser, factory installed. This saves customers the additional cost of a crossover pipe and the added cost for installing it at the job site.

Trane absorption chillers are designed and manufactured on the premise that people want reliable cooling that lasts.

Chilled Water Delivery with Low-pressure Steam

Single-stage absorption chillers are a popular choice when an economic comparison of electrical and steam rates indicates a cost advantage that favors absorption. Trane's single-stage chillers are designed to use steam at pressures up to 14 psig or hot liquid at temperatures up to 270°F. This capability of making chilled water from comparatively low-temperature inputs is particularly important for energy conserving applications, such as waste-heat recovery and cogeneration and solar-energy-powered cooling.

Trane equips each single-stage absorption chiller with microprocessor controls and extensive unit diagnostics. Trane absorption microprocessor controls allow the chiller to continue to operate through a broad range of nonstandard conditions, keeping chilled water supplied as long as possible.

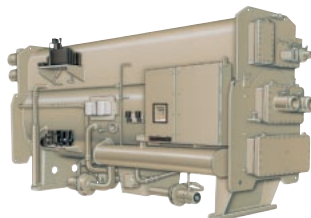


Horizon and Classic single-stage absorption for applications with low pressure steam, hot water or other hot fluids.

Chilled Water Delivery with Medium-pressure Steam

Horizon™ two-stage chillers are commonly used for either process or comfort cooling. The efficient, two-stage design provides maximum energy conversion from a supply of high-grade thermal heat — either medium-pressure, 135-psig process steam, or 370°F hot fluid.

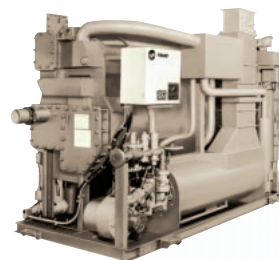
Although the Air Conditioning Refrigeration Institute's standard cooling-tower flow rate is 4.0 gpm/ton for two-stage absorption chillers, the Horizon chiller is designed for 3.6 gpm/ton. Lower flow rates through the condenser and absorber may permit downsizing of the cooling tower and cooling-tower pumps, fans, and piping. The result is lower equipment costs and less electrical usage by the chiller plant.



Horizon two-stage absorption for applications with medium pressure steam, hot water or other hot fluids.

Chilled Water or Hot Water Delivery with Natural Gas or Fuel Oil

Trane's Thermachill line of gas-fired absorption chillers is designed for applications requiring between 100 and 1100 tons of cooling, or applications requiring hot water for space heating. The chiller can function as a stand-alone unit or as part of a combined energy-source system coupled with an electric chiller or other equipment. Thermachill units achieve the greatest energy cost savings in applications having high peak cooling loads and electric demand charges.



Thermachill™ direct-fired absorption for applications with access to economical natural gas or No. 2 fuel oil.



The flexibility of the hybrid chiller plant can lead to more cost-effective chilled water systems.

Chiller Plant Design Flexibility

Deregulated energy distribution, and the impact it is expected to have on electrical rates and demand charges, has caused a growing number of building owners to consider the hybrid chiller plant. Engineers who are designing new chiller plant systems, expanding existing systems or replacing older refrigeration equipment, recognize

the energy-saving benefits of absorption and multi-powered hybrid plants. For example, in a hybrid chiller plant that combines absorption and electric chillers, the electric chillers can tackle the problem of overall plant efficiency, while the absorption chillers minimize demand charges. The flexibility of this system can favorably position the plant so that the owner can capitalize on time-of-use, energy-saving offers or energy contract negotiations.

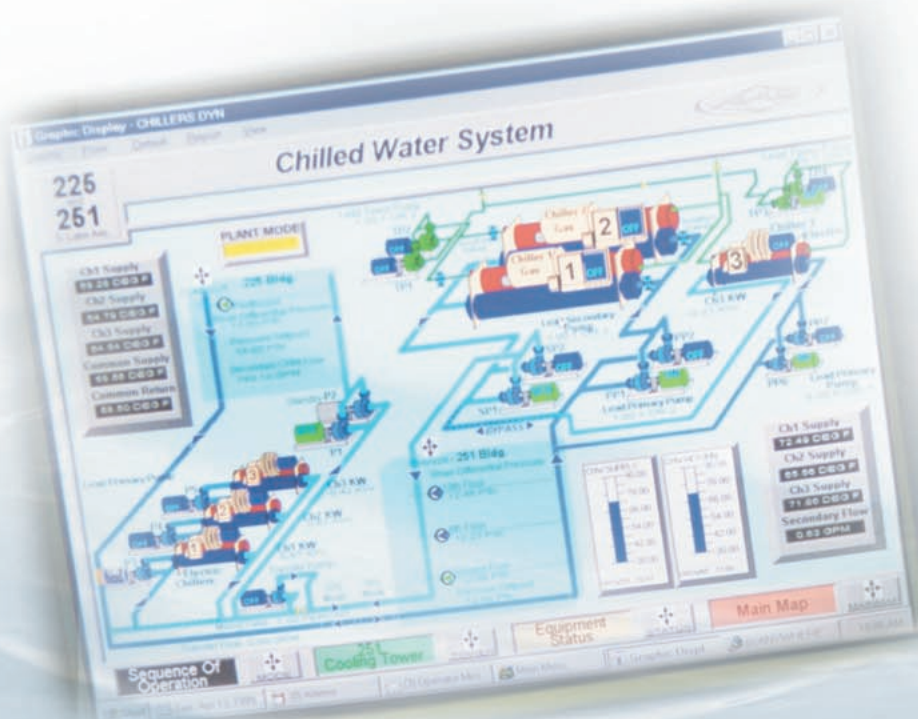


We Want You To Know These Opportunities Are Available

We realize that each application is unique and that an absorption chiller is not the right solution for every building. However, there are cases where absorption chillers produce outstanding savings for comfort cooling applications.

For More Information

For more information, contact your local Trane commercial sales office. Your Trane representative can help you evaluate the merits of using absorption cooling in your building or any of the other comfort system solutions Trane has to offer.



TYPICAL APPLICATIONS



- In **office buildings**, where tenant comfort is paramount, absorption chillers help protect your investment by operating quietly, efficiently and reliably.



- In **health care facilities**, where an economical source of steam or hot water is often available, absorption chillers provide reliable, cost-effective comfort year-round.



- For **educational facilities**, especially those with tight operating budgets, steam or natural-gas-fired absorption cooling may provide an economical solution.



- For **district cooling plants**, absorption is an ideal complement to electric chillers, reducing electric demand charges while making use of surplus steam.



- In **cogeneration applications**, exhaust heat captured from engines or combustion turbines can be supplied to absorption chillers for comfort cooling.



- In **hybrid chiller plants**, including those with thermal storage, absorption chillers work well with electric chillers. When fuel-switching is an option, owners can take advantage of incentive plans and negotiation opportunities offered by deregulated utilities that want to reduce prime-time energy use.

- In **many industrial applications**, where there is low-cost process steam, waste heat or low-cost gas fuel.

TYPICAL CONSIDERATIONS

If one or more of these conditions exist at your site, it's worth your time to consider absorption cooling:

- 1 High utility rates for electricity
- 2 Significant electrical demand charges coupled with a cooling-load profile that coincides with the utility's peak electric demand
- 3 Availability of economical fuels such as natural gas
- 4 Source of low- or medium-pressure steam
- 5 Access to cogeneration heat from a turbine or diesel generator
- 6 Availability of waste heat in the form of hot water or similar fluids



TRANE®

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www.trane.com**

*For more information contact
your local district office or
e-mail us at comfort@trane.com*

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Supersedes	New
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Since The Trane Company has a policy of continuous product and product data improvement, it reserves the right to change design and specifications without notice.