HEADQUARTERS LOCATIONS

North American Commercial Group
La Crosse, WI, USA

Unitary Products Group
Tyler, TX, USA

International Group
Epinal, France -- European Region
Hong Kong -- Asia Pacific Zone
La Crosse, WI, USA -- Latin America Region
Dubai, U.A.E. -- Middle East, Africa, India Region

MANUFACTURING LOCATIONS

North American Commercial Group
Charlotte, NC
La Crosse, WI
Lexington, KY
Macon, GA
Minneapolis, MN
Pueblo, CO
Rushville, IN
Waco, TX

Unitary Products Group
Clarksville, TN
Ft. Smith, AR
Lynnhaven, FL
Springhill, LA
Trenton, NJ
Tyler, TX
Vidalia, GA

International Group
Bangkok, Thailand
Blacktown, Australia
Cairo, Egypt
Charmes, France
Colchester, England
Epinal, France
Jiangyin, China
Mirecourt, France
Penang, Malaysia
Sao Paulo, Brazil
Taicang, China
Taipei, Taiwan

The Trane Company
North American Commercial Group
3600 Pammel Creek Road
La Crosse, WI 54601-7599

An American Standard Company

1-24,195 (397)
Supersedes 1-24,195 (992)

TRANE

The History of The Trane Company

The Early Years

The Trane Company, today one of the world's largest suppliers of comfort systems for the heating, ventilating, air conditioning and building management industry, began as a family business more than a century ago.

Norwegian immigrant James Trane settled in La Crosse, WI, in 1864, finding work as a steam fitter and plumber. In 1885, he opened his own store, and within a few years had gained a reputation as one of the area's best plumbers.

James Trane's son, Reuben, shared his father's love for mechanical creativeness. Reuben earned a mechanical engineering degree at the University of Wisconsin in Madison, and joined his father's plumbing firm. In 1913, James and Reuben incorporated The Trane Company to produce a new type of low-pressure steam heating devised by James called Trane Vapor Heating. In addition to this innovative system, the company made valves and traps for conventional steam heating systems.

Groundwork Laid for the Future

By 1916, the Tranes were no longer in the plumbing business, but rather were focusing their attention on manufacturing heating products. After World War I, a man joined Trane who would set the financial policies of the company for many years. Frank Hood, Reuben Trane's brother-in-law, became a director, assistant general manager, and treasurer of the company.

Reuben and Frank made a good team: Reuben headed the drive for new product development and sales, while Frank managed the financial matters.

In these early years, patterns were established for the future. A handful of employees worked together in an informal setting. Workers often found James or Reuben talking to them about their personal well-being, their families, their friends. Often the talk turned to ways to improve the equipment they were making.

And from his searching for a better way, Reuben Trane, an inventive thinker, conceived the idea of the convector radiator in 1925.

The convector radiator was the product that launched The Trane Company on its road to success. Using a coil through which steam or hot water was circulated, the Trane convector was a lightweight, highly efficient replacement for the heavy, bulky, cast-iron radiators that prevailed at the time.

Reuben Trane knew that if the company was to take maximum advantage of this revolutionary product, a new approach to selling was required. In 1926 he began what is today known as the Trane Graduate Engineer Training Program--the first of its kind and still acknowledged as the industry's finest. In the program, engineering graduates from prominent colleges and universities are recruited to receive an intensive post-graduate training regimen encompassing sales, engineering, HVAC systems design and application. After successfully completing the six-month-long program, graduates advance to sales or management assignments in the company.

Convector sales soared, and that led to new sales opportunities worldwide.

An Air-Conditioning Pioneer

Trane's growing salesforce took on added importance when, several years later, knowledge gained during the development of the convector helped Trane become a pioneer in an entirely new field--air conditioning.

Trane's first air conditioning unit, the Trane Unit Cooler, was developed in 1931. It blew air past coils--similar to those used in the convector--through which cool well water was circulated. This unit was designed for offices, restaurants, shops, department stores and factories. The first commercial applications were movie theaters in Louisville, KY, and Indianapolis, IN.

Shortly after the birth of the Trane Unit Cooler, the rapidly growing company met its severest test--the Depression. Construction came to a virtual standstill, and the national economic paralysis made selling heating products--let alone air conditioning--all but impossible. The Trane Company fell upon hard times. A sense of unity and community held the small firm together, however, and thanks to sacrifices at all levels, the company managed to remain solvent.

Even during this period of adversity, new products were developed, including the projection unit heater, self-contained gas unit, and the Custom-Air system for air conditioning large buildings. These same basic equipment designs, with modernization, are widely used today in many buildings, from the smallest office buildings to large skyscrapers.

Trane's Turbovac: A Bold New Idea

As the Depression's grip began to loosen, Trane introduced a revolutionary new machine which propelled the small La Crosse company into a giant in the emerging air conditioning field. Reuben Trane called the new machine the Turbovac--the industry's first hermetic centrifugal refrigeration machine. The year was 1938.

The Turbovac was improved and modernized over the years. It was the forerunner of today's CenTraVac®, Trane's highly successful refrigeration unit and the industry standard for large commercial air conditioning systems.

Also in the late 1930s, Trane began expanding its heating product lines and began manufacturing fans, primarily for use with Trane central station heating, ventilating and air conditioning equipment. The company entered the decade of the 1940s with optimism.

But Trane, just a few years out of the Depression, found itself thrust into the fires of war.

The War Years

During World War II, Trane utilized its proven technologies of heating, process cooling and air conditioning to create a number of products for the armed forces, such as the blackout ventilator, heaters for food dehydration processes, oil coolers for tempering steel Howitzer shells, as well as traps, fittings and heaters for thousands of ships. One Trane product--the aircraft intercooler--represented a major breakthrough for the war effort. It permitted Allied warplanes to fly higher and faster than ever before.

The aircraft intercooler was an entirely new design of heat exchanger, made possible through a Trane-developed aluminum brazing process. The new heat exchanger proved to be highly efficient, and performed the same functions as conventional ones in one-quarter the space and with one-third less weight. This basic heat exchanger design was used on the Lunar Rover of the Apollo 15 mission in 1971.

After World War II, Trane was quick to take advantage of the boom in construction. Trane expanded its air conditioning and fan lines, and in 1950 began manufacturing its own reciprocating compressors. Addition of the compressors solidified Trane's position as an industry leader, offering a complete line of large central station, or "applied" heating and air conditioning products for commercial, institutional and industrial buildings.

Trane Expands With Unitary Systems

Looking to the future, in the mid-1950s Trane began a new venture into unitary, or self-contained, air conditioning units for commercial use. Unitary systems are compact, packaged products which are designed, built and tested by the manufacturer at the factory and delivered to the customer ready for quick installation and operation. This contrasts with applied air conditioning systems consisting of individual components which must be selected and matched for assembly into a system at the job site.

Unitary systems' advantages include low installation costs, and better suitability for shorter, less costly construction schedules. Unitary systems, with a 2- to 120-ton capacity, are ideal for small- to medium-size buildings, while applied systems are more applicable for larger commercial, institutional or industrial buildings.

Today, the unitary market represents a growing segment of Trane's business, driven principally by expanding replacement, retrofit and add-on opportunities. In order to grow with this market, Trane has focused on the customer and has made substantial investments in research, development, engineering, and marketing programs and services aimed at meeting the customer's needs.

Success in the unitary market resulted in construction of a new plant in Clarksville, TN, in 1958. Unitary products manufactured at this facility today have cooling capacities ranging from 3- to 120-tons for light commercial, commercial and industrial applications.

Global Expansion

It was at this time that Trane once again sought to take advantage of the opportunities afforded by global operations. In 1958, Trane acquired a minority interest in CEMAT, a French corporation located in Epinal, France. Renamed Societe Trane, controlling interest in the firm was purchased by Trane in 1964, at which time a new manufacturing plant was built.

Another manufacturing plant was subsequently built in nearby Charmes, France, in 1973, and operations were begun in Mirecourt, France, and Colchester, U.K., in 1991. Today, Epinal serves as headquarters for Trane Europe. Products manufactured in the European plants are sold primarily in Europe, the Middle East and Africa, but are also exported to other regions of the world.

Continuing its pattern of growth, in 1963 Trane built a new plant in Lexington, KY, to manufacture central station air handlers. During this period, the company also expanded its manufacturing, engineering, research and development capabilities in La Crosse. In 1972, a plant in Rushville, IN, began manufacturing the company's new line of variable air volume units.

Electronic Controls Leadership

To meet the demand for improved energy efficiency in heating and cooling equipment, Trane acquired Sentinel Electronics Corporation in 1978. This operation, now known as the Building Automation Systems Division (BASD), produces computerized energy management and building automation systems for commercial and industrial buildings and multibuilding complexes. BASD plays a major role in providing Integrated Comfort™ systems which combine the efficiencies of Trane products with factory-mounted controls and building automation to assure reliable comfort and reduced energy consumption with building management. Integrated Comfort systems are state-of-the-art, are user-friendly and provide the ability to remotely monitor the performance of the mechanical equipment.

Integrated direct digital controls are now standard on every commercial product Trane sells, and this has made Trane the acknowledged leader in Integrated Comfort systems.

In 1978, Trane acquired ServiceFirst®, a compressor remanufacturing operation in Charlotte, NC. Today, the operation is one of the country's largest remanufacturers of 10- through 100-ton compressors, and contributes measurably to Trane's ability to quickly respond to customers' needs for replacement compressors when original equipment is out of service. A new facility went into operation in Charlotte in 1983.

Continuing its industry leadership in the design and manufacture of centrifugal water chillers, in 1981 Trane introduced the innovative Trane Model CVHE CenTraVac®. The new design featured a unique three-stage design for unparalleled efficiency.

The G.E. Product Acquisition

In the fall of 1982, Trane took a major step toward continued growth in the worldwide central air conditioning market with the acquisition of the central air conditioning department of General Electric.

GE was the undisputed leader in air-cooled heat pump technology both from a product reliability and market share standpoint, and with this acquisition Trane achieved a long-sought, strong position in the market for small central air conditioning equipment, used primarily in residential buildings.
The purchase included manufacturing facilities located in Tyler, TX; Trenton, NJ, and Ft. Smith, AR, as well as GE's extensive and highly respected national distribution system.

Products manufactured in Tyler today include residential heat pump and residential air conditioning systems. Products manufactured at the Trenton facility include residential furnaces and air handling equipment. The Ft. Smith facility manufactures residential packaged products and light commercial unitary equipment.

A Part of American Standard Companies

On February 24, 1984, The Trane Company was acquired by American Standard Inc., and today is a fixture in the American Standard Companies business. Following a leveraged buyout in 1988, American Standard returned as a publicly held corporation in February 1995.

In addition to manufacturing air conditioning equipment, American Standard is one of the world's leading suppliers of plumbing products under the American Standard®, Ideal Standard® and Standard® names, WABCO® commercial and utility vehicle braking and control systems, and LARA™ and Copalis™ medical diagnostic systems.

American Standard and its 37 joint ventures operate more than 100 manufacturing facilities in 34 countries. The company employs approximately 43,000 people worldwide.

Advances In New Technologies

In 1987, the company advanced the state of compressor technology with the introduction of the Trane 3-D® scroll compressor, the industry's first scroll compressor designed specifically for the commercial air conditioning market. Trane continues as the world's leading manufacturer of orbiting scroll compressors for commercial applications.

Also in 1987, Trane introduced a new-generation water chiller, the Series R® CenTraVac®, and a new facility was constructed in Pueblo, CO, for its manufacture. This new product featured Trane's latest advancement in compressor technology--a helical-rotor design--and was designed for the growing replacement and renovation markets.

In 1988 Trane commenced manufacturing a new design of commercial self-contained products in Macon, GA, and the following year launched a new variable speed hermetic compressor for residential products. Continuing its globalization initiatives, in 1988 Trane acquired an air handling manufacturing facility in Penang, Malaysia, to serve the needs of customers in the Pacific Rim.

In 1989, a plant was opened in Springhill, LA, to manufacture electric heaters and control boxes for unitary products, and a year later Trane opened a facility in Vidalia, GA, to manufacture air handlers for residential applications.

To broaden its product lineup, in 1990 Trane acquired Command-Aire®, one of the country's leading manufacturers of water source heat pumps for commercial and residential applications. This operation has headquarters and manufacturing operations in Waco, TX.

In 1990 Trane acquired an operation in Taiwan to manufacture small chillers and fan coil units. The following year a joint venture was started in Thailand to manufacture minisplit air conditioning systems, a variety of unitary products, and small chillers. In addition, another joint venture manufacturing facility producing mini-splits came on line in Cairo, Egypt, in 1992. In 1994 Trane reacquired a plant in Blacktown, Australia, that manufactures Trane chillers and air handling units. This is part of a joint venture that includes sales and service offices throughout Australia.

To better focus on the specialized requirements of Trane customers in North America, the Asset Management Services Business Unit was formed in 1994. This operation supports the increasing needs of Trane's North American commercial sales offices to partner and subcontract, and to provide Trane customers with solutions to their building needs. The new business unit is located in St. Paul, MN.

In 1995 launched three joint ventures in China for the production of absorption chillers and unitary products, and opened a new facility in Lynnhaven, FL, for the production of air handling components for unitary products.

Sales and Distribution

A critical element in the company's history of growth is its highly respected global sales and distribution capabilities.

In North America, Trane commercial unitary and applied products are sold through a network of more than 125 sales offices located in major metropolitan centers throughout the U.S. and Canada, each of which is staffed by a team of the industry's most experienced sales engineering professionals. Residential and light commercial air conditioning products are sold in the U.S. through a nationwide network of independent distributors and company-owned offices and independent dealers.

In the European Region, which encompasses 34 countries in western and central Europe and Russia, Trane sells and distributes its products through more than 40 sales and service offices, and 10 distributors/dealers, supported by both company-owned and independent regional offices and more than 500 sales and service engineers.

The Middle East, Africa, India Region covers Saudi Arabia, United Arab Emirates, Kuwait, Egypt, Turkey, India, Central and West Africa and the rest of the Middle East. Trane sells and distributes its products throughout the region through 10 sales and service offices and 18 distributors/dealers, supported by both company-owned and independent regional offices. Sales are supported by service operations throughout the region.

In the Asia/Pacific Zone which encompasses 30 countries, Trane sells and distributes products through 38 sales offices, and through more than 300 distributors/dealers, supported by both company-owned and independent regional offices. Sales in the region are supported by more than 500 service engineers.

In the Latin America Region, Trane sells and distributes products through 12 sales and service offices and more than 200 distributors/dealers in Mexico, the Caribbean, and throughout Central and South America. Sales are supported by service operations employing nearly 100 service engineers.

Looking to the Future

While much has changed at Trane since James Trane opened his plumbing shop in downtown La Crosse more than a century ago, one thing that hasn't is an indomitable drive for excellence which has been the company's hallmark throughout its proud history.

Strengthened by this spirit, Trane believes its best days are still to come as it pursues its goal of becoming the global leader in the heating, ventilating, air conditioning and building management industries.

The TRANE Company

La Crosse, Wisconsin

A COMPLETE LINE OF AIR CONDITIONING, HEATING, VENTILATING AND AIR HANDLING EQUIPMENT

U. S. Branch Offices

Albany, New York
Allentown, Pa.
Amarillo, Texas
Appleton, Wis.
Atlanta, Ga.
Aurora, Ill.
Baltimore, Md.
Billings, Mont.
Birmingham, Ala.
Boston, Mass.
Buffalo, N.Y.
Canton, Ohio
Charleston, W.Va.
Charlotte, N.C.
Chattanooga, Tenn.
Chicago, Ill.
Cincinnati, Ohio
Clarksburg, W.Va.
Cleveland, Ohio
Columbia, S.C.
Columbus, Ohio
Dallas, Texas
Davenport, Iowa
Dayton, Ohio
Denver, Colo.
Des Moines, Iowa
Detroit, Mich.
Duluth, Minn.
Erie, Pa.
Fargo, N.D.
Flint, Mich.
Gainesville, Fla.
Grand Rapids, Mich.
Greensboro, N.C.
Greenville, S.C.
Harrisburg, Pa.
Houston, Tex.
Indianapolis, Ind.
Jackson, Miss.
Johnson City, Tenn.
Kansas City, Mo.
Knoxville, Tenn.
La Crosse, Wis.
Lansing, Mich.
Little Rock, Ark.
Los Angeles, Calif.
Louisville, Ky.
Madison, Wis.
Memphis, Tenn.
Miami, Fla.
Milwaukee, Wis.
Nashville, Tenn.
Newark, N.J.
New Orleans, La.
New York, N.Y.
North Tarrytown, N.Y.
Oklahoma City, Okla.
Omaha, Neb.
Pensacola, Fla.
Peoria, Ill.
Philadelphia, Pa.
Phoenix, Ariz.
Pittsburgh, Pa.
Portland, Maine
Portland, Ore.
Providence, R.I.
Raleigh, N.C.
Richmond, Va.
Roanoke, Va.
Rochester, N.Y.
St. Louis, Mo.
St. Paul, Minn.
Saginaw, Mich.
Salt Lake City, Utah
San Antonio, Texas
San Francisco, Calif.
Seattle, Wash.
Sioux City, Iowa
South Bend, Ind.
Spokane, Wash.
Syracuse, N.Y.
Toledo, Ohio
Trumbull, Conn.
Washington, D.C.
West Hartford, Conn.
Wichita, Kan.
Wilkes-Barre, Pa.
Wilmington, Del.
Worcester, Mass.

Sales Connections All Over The World

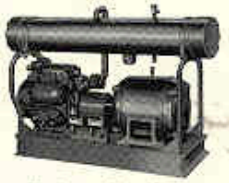
In Canada: Trane Company of Canada, Ltd., Mowat & King Sts., W., Toronto, Ont.

A COMPLETE LINE

The Trane Company builds a complete line of air conditioning, heating, ventilating and air handling equipment. So comprehensive is this line that all major items for any application can be supplied by Trane. This undivided responsibility assures architect, engineer and contractor that each piece of equipment will work with the others to give peak efficiency for the over-all system, from basement equipment room to roof ventilator.

RECIPROCATING COMPRESSORS AND CONDENSER UNITS

Compact, quiet-running Trane Reciprocating Compressors have internal capacity control that adjusts operating level and power needs to cooling loads automatically. Force-feed lubrication, processed valves add years of service to this all-new, all-Trane Compressor. Direct-drive, units start unloaded. Capacities 10 to 150 tons; Freon 12 and Freon 22.

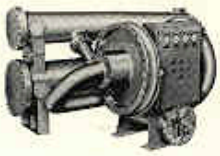


Reciprocating Compressor Model 20 CT

TRANE COLD GENERATORS

Complete factory-assembled packaged liquid chillers, designed to meet all normal requirements of chilled water systems. Only simple water and electrical connections are necessary for installation. No special foundations are required. All units are shipped from the factory with a complete operating charge of Freon 12. Available with capacities ranging from 10 to 150 tons. Heart of the Cold Generator is the Trane Reciprocating Compressor featuring unloaded starting and multistep capacity control. Automatic chilled water temperature controls are also available.

Trane Cold Generator



Trane CenTraVac

TRANE CENTRAVAC

Hermetic centrifugal refrigeration unit—a complete water-chilling system. Completely Trane-designed and built, the CenTraVac features automatic capacity control. No seals or gears. Capacities range from 45-400 tons. Unit performs efficiently at operating levels down to 10% of rated capacity.

EVAPORATIVE CONDENSERS

For installations in localities where the use of water for condensing the refrigerant in the air conditioning system is restricted, or where disposal of large quantities of water is a problem. These units condense refrigerants by the evaporative process using a constantly recirculated supply of water. The only water lost is that which is evaporated to cool the water being circulated. Sizes from 3 to 100 tons.

SELF-CONTAINED AIR CONDITIONERS

For the smaller installation such as home, office, store or shop, these compact units discharge fresh, clean air into

the zone of occupancy. Heating coils can be added for year-round use. These handsomely rugged units are available in sizes from 3 through 7½ hp.

10, 15 AND 20-TON SELF-CONTAINED AIR CONDITIONERS

Available with either water cooled or integral evaporative condenser, these units are designed to meet year-round air conditioning requirements. They deliver air through a duct system. The units are shipped completely wired, piped, dehydrated, charged and tested for the operating conditions specified for each job. Filters, heating coils, face and by-pass dampers, and other components may be specified to meet individual requirements.

COOLING COILS

There is a Trane Extended Surface Coil for every comfort cooling or processing application. Trane Cooling Coils come in a wide variety of sizes and arrangements for use with either cold water or direct expansion refrigerants as the cooling medium.

TRANE CENTRIFUGAL FANS

Recommended for all types of heating, cooling, ventilating and air handling applications. Available in both forward curved and backwardly inclined blade designs, belt or direct drive, single or double widths. Wheel diameters (forward curved): 4½" to 89"; (backwardly inclined): 12" to 109".

CLIMATE CHANGERS

As its name implies, the Climate Changer is a unit type air conditioner for comfort or industrial processing applications. The complete unit can supply heating, cooling, ventilation, humidification, dehumidification and filtering. It can do all, or any combination, of these jobs. Capacities 1-60 tons.

MULTI-ZONE CLIMATE CHANGERS

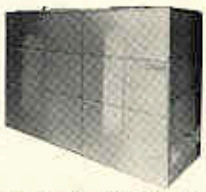
Single unit handles one to six zones simultaneously, providing each zone with exact amount of cooling or heating desired. Temperature in each zone is automatically controlled by separate set of dampers, making it possible to heat in one zone while cooling in another. Humidifiers and filters optional.

TRANE EVAPORATIVE COOLERS

Designed for cooling fluids in a closed system, such as quenching oil, engine jacket water, engine lubricating oil, etc.

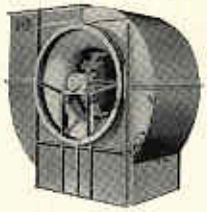
Evaporative Condenser Series 50

3, 5 & 7½-Ton Self-Contained Air Conditioner



10, 15 & 20-Ton Self-Contained Air Conditioners

Type DE Cooling Coil



BI Single Width Centrifugal Fan

Horizontal Climate Changer

Using this type of unit eliminates the possibility of contaminating the liquid being cooled and affords cooling without direct contact of fluids with the air.

UNITRANE

These multi-room air conditioning units utilize hot and cold water from the same piping circuit to provide year-round comfort. Each unit is tenant-controlled . . . can heat or cool, dehumidify, filter and circulate air without affecting other units in the system. Available in wide range of sizes and types—free standing, recessed, semi-recessed, ceiling-suspended—for exposed or concealed installation. Can introduce ventilation air directly through exterior wall, eliminating ductwork—or can be used with independent ventilation system.

TRANE DRY TYPE FLUID COOLER

Condenses refrigerants by air cooling, eliminating water loss and extensive water treatment. Condenses gases in closed system with minimum maintenance. Also suited for cooling engine jacket water and lubricating oil, process cooling and condensing. Available in 22 sizes, with vertical or horizontal air flow.

TRANE AIR CONDITIONING MANUAL

Trane offers the engineering profession an unbiased textbook covering the fundamentals of air conditioning. The Manual not only shows how to design every type of system, but clarifies the underlying principles as well, enabling both student and engineer to reason out their own problems. Price $5.00.

TRANE REFRIGERATION MANUAL

Published primarily as an aid in understanding and correcting installation, maintenance and repair problems. Revised 1953. Price $1.50.

OTHER TRANE EQUIPMENT

The complete Trane Line also includes —1. Trane Unit Ventilators for schoolroom air conditioning; 2. Trane Condensation and Centrifugal Pumps for a large variety of uses; 3. Trane Force-Flo Heaters for quiet heat and neat appearance; 4. Trane Railroad and Bus Air Conditioning Equipment of all kinds; 5. Trane Shell-and-Tube Heat Exchangers for cooling and heating vapors or liquids in a closed system; 6. Transformer Oil Coolers; 7. Convectors; 8. Heating Coils; 9. Unit Heaters; 10. Roof Ventilators; 11. Steam Heating Specialties; 12. Hot Water Specialties; 13. Wall-Fin Heaters; 14. Baseboard Convectors.