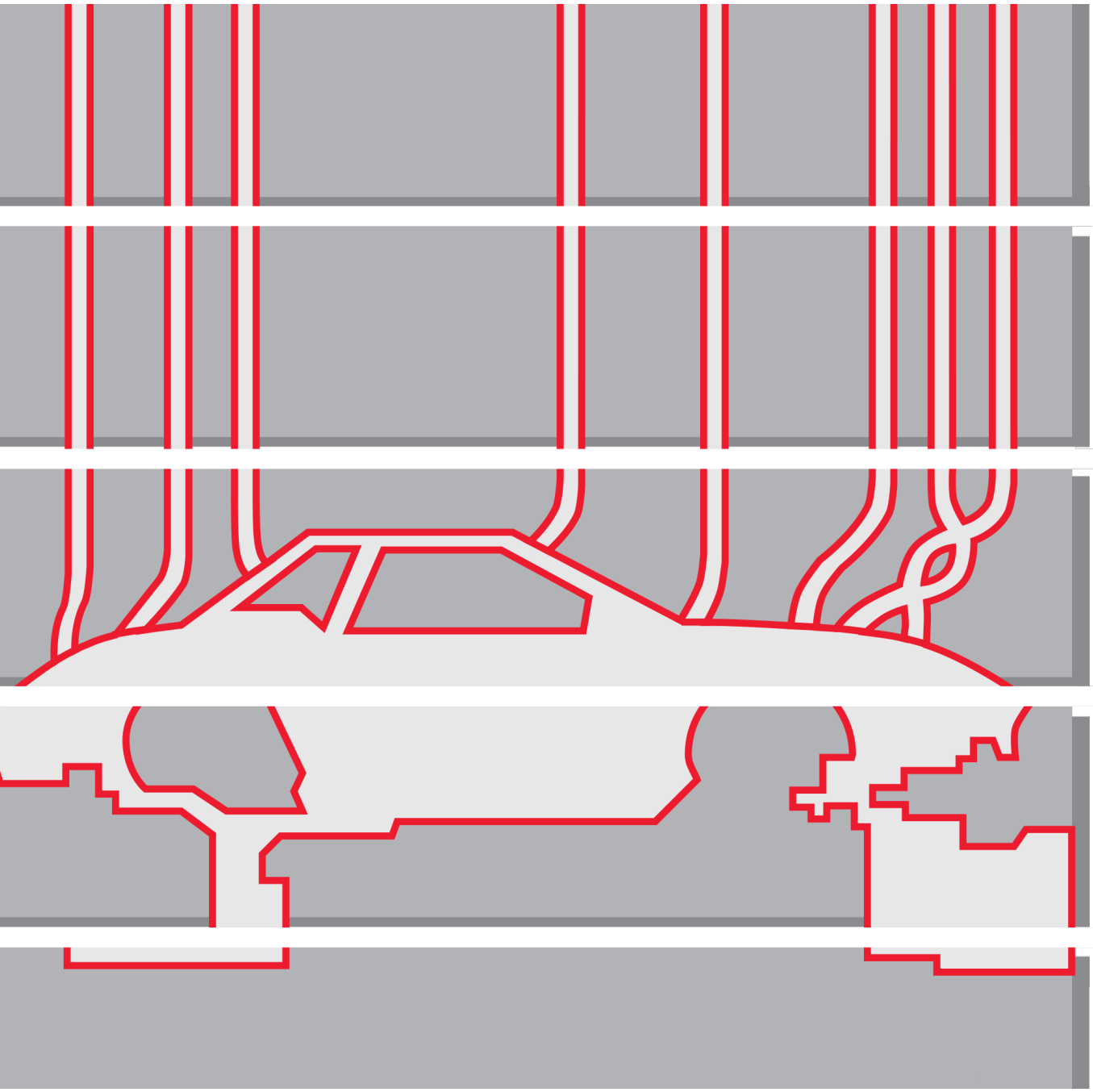
Application Literature
Industry Overview

Automotive Industry



SUPERCHANGER®
Plate & Frame HE

TRANTER®
The heat transfer people

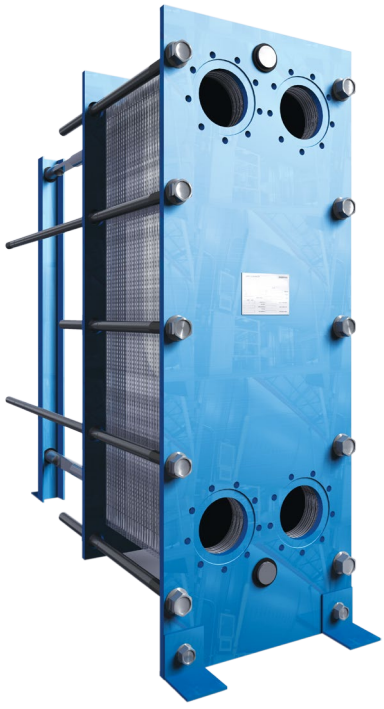
Tranter Brings Efficiency & Reliability to the Automotive Industry

Excellent efficiency and flexibility...optimum heat transfer...minimal maintenance...these are critical needs today in the automotive industry. Tranter provides these benefits and more, with SUPERCHANGER heat exchangers that are standards for the industry.

SUPERCHANGER® Plate & Frame Heat Exchangers

Plate and frame heat exchangers provide a more efficient and cost effective means of heat transfer than old, traditional shell-and-tube exchangers. This is particularly true in the automotive industry.

SUPERCHANGER plate and frame units are the best choice because they give you: (1) higher "U" values typically 3 to 5 times greater than shell-and-tube; (2) a unique turbulent flow design resulting in lower fouling; (3) closer temperature approach capability of less than 2°F, compared to the typical 10°F or higher with shell-and-tube; (4) space savings of 50% to 90% over shell-and-tube; (5) expandability and easy servicing, and (6) immediate availability, since they are made in the U.S.



Typical Automotive Installation for SUPERCHANGER Exchangers

These large SUPERCHANGER plate and frame heat exchangers cool closed loop water, which is used to cool automatic welding machines, for a major U.S. automobile manufacturer at its Maryland plant. The units have provided the company significant cost-efficiency in heat transfer since their installation.

SUPERCHANGER units are employed in a number of major applications in the automotive industry. Chief among these are: heating wash, phosphate and rinse solutions; temperature control of paint or plating solutions; waste liquid-to-water heat recovery; and efficient performance in quench oil to cooling water duty, by the use of mixed plates, among other applications.

PHE Standard Range General Specifications

	SUPERCHANGER® Plate & Frame Gasketed
PERFORMANCE	
Max. Pressure Rating, barg (psig)[a]	27.56 (400)
Max. Temperature Rating, °C (°F)	160 (320)
CONNECTIONS	
Max. Connections, DN (ANSI RF in.)	Contact Factory Also Studded Ports
MATERIALS	
Standard Plate Material[b]	304 SS, 316 SS, Titanium
Standard Frame/Shell Material[c]	Carbon Steel

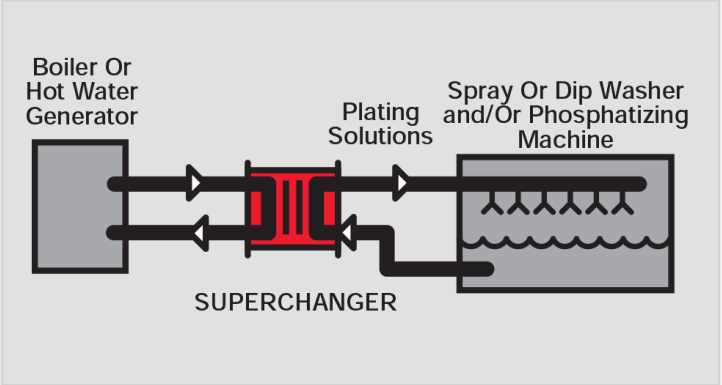
[a] Ratings offered as a general guide only. Certain combinations of physical and fluid properties may affect individual product specifications.
Contact the factory with your specific application data.

[b] Higher performance materials are available.

[c] Corrosion-resistant marine coatings available.

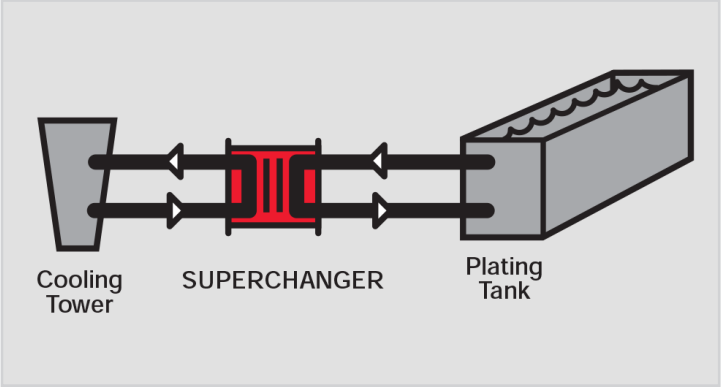
Heating Metal Finishing Solutions

There are hundreds of spray and dip type metal cleaning washers and phosphatizing machines in the automotive industry. In recent years the use of SUPERCHANGER plate and frame heat exchangers has become very common for heating the various solutions. Hot water is generally used for the phosphatizing solutions to reduce scaling, while steam is most common for the other caustic cleaner, rinse, etc. baths.



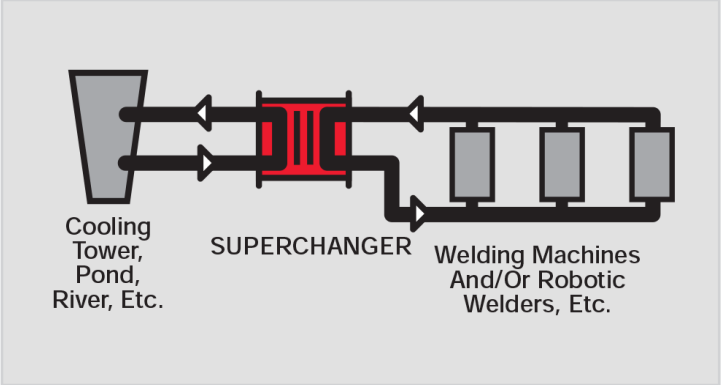
Heating and Cooling Plating Baths

Plating baths may require heating for start up and, generally, cooling during operation. SUPERCHANGER units are widely used, especially for cooling. The baths are operated in the 90°F range, and tower water temperature can be low enough in most locations to accomplish the cooling. The very efficient SUPERCHANGER heat exchangers act as isolators between the tower water and the closed circuit cooling water.



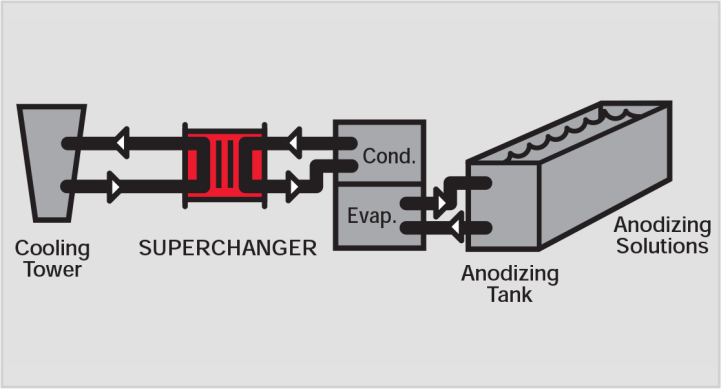
Cooling Welding Machines

Various types of welding machines require cooling. These include resistance seam welders, automatic spot and robotic machines. There are large installations in the industry which use SUPERCHANGER units for cooling many machines. Here again, tower water temperatures are low enough for cooling the clean loop water which is circulated through the welders. The SUPERCHANGER units isolate the two water streams.



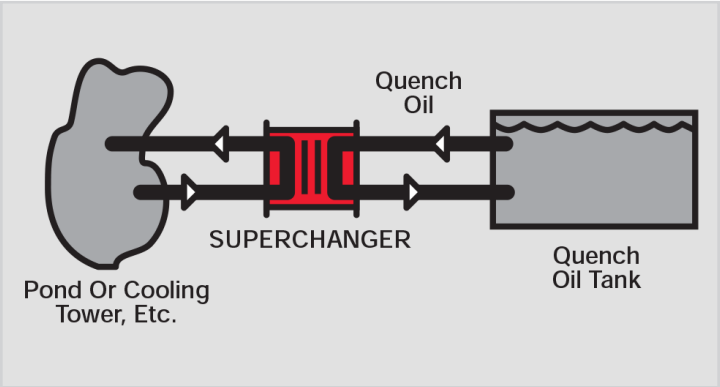
Cooling & Heating Anodizing System Solutions

The close temperature approach capability of SUPERCHANGER units makes them ideal for cooling conventional anodizing solutions which need to be maintained at about 72°F. Hard coat baths operate at a much lower temperature, requiring a refrigeration system. Many of the units are used to isolate the dirty tower water from the closed loop water which cools the condenser water from the refrigeration unit, or cools anodizing solutions directly. Bright dip, hot seal tanks, etc. in the anodizing systems are often heated with steam by using SUPERCHANGER units.



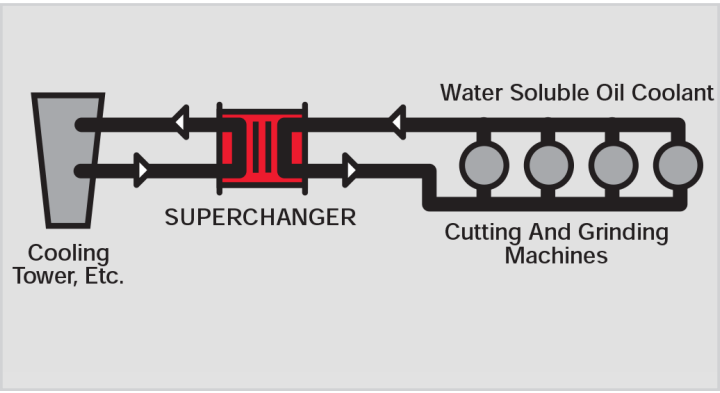
Cooling Quench Oils

SUPERCHANGER plate and frame heat exchangers are designed for efficient performance in quench oil to cooling water duty by the use of mixed plates. This capability tends to equalize the varying oil side and water side transfer rates so that optimum overall heat transfer rates are obtained. Typically the oil is pumped through the exchanger to be cooled by tower or pond water, etc.



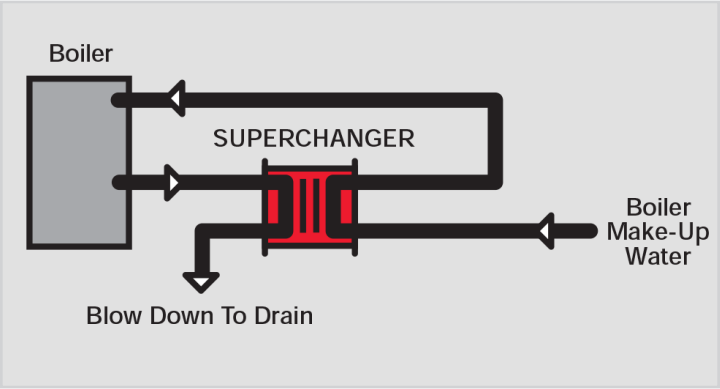
Cooling Machines & Grinding Coolants

Some plants have installed SUPERCHANGER units at various central locations throughout metal machining and grinding areas. The coolants are piped to each central station and circulated through SUPERCHANGER exchangers for cooling with tower, pond or river water, etc. The very small amount of space required and the excellent heat transfer efficiency were prime reasons these plants converted from shell-and-tube exchangers to SUPERCHANGER units.

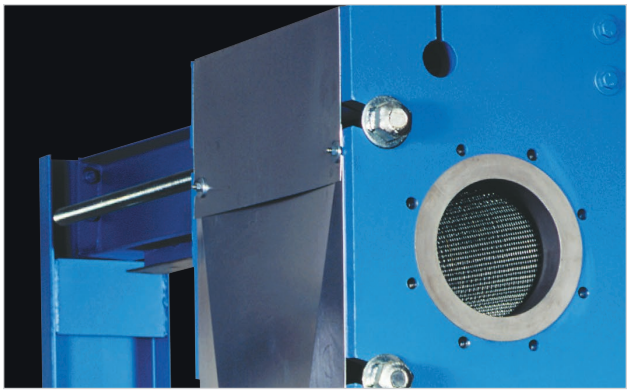


Heat Recovery

The typical waste liquid-to-water heat recovery installation utilizing SUPERCHANGER plate and frame heat exchangers will pay back in one to two years, often quicker. Almost any warm or hot waste steam can be used. Condensate from boiler blow down for preheating boiler feed water is a common application. Hot waste streams also often must be cooled before they can be discharged. This makes heat recovery a logical application.

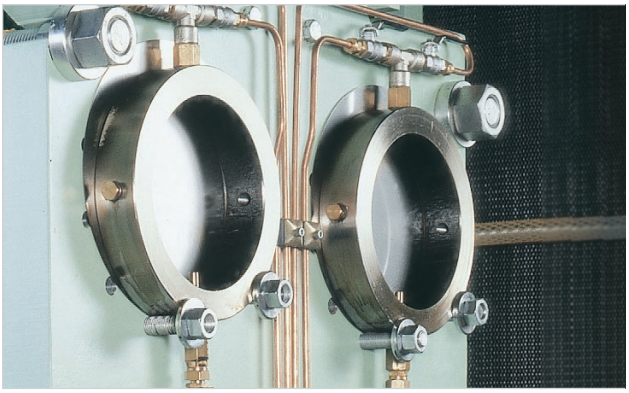


Maximize Maintenance Productivity and Efficiency with Plate & Frame Accessories



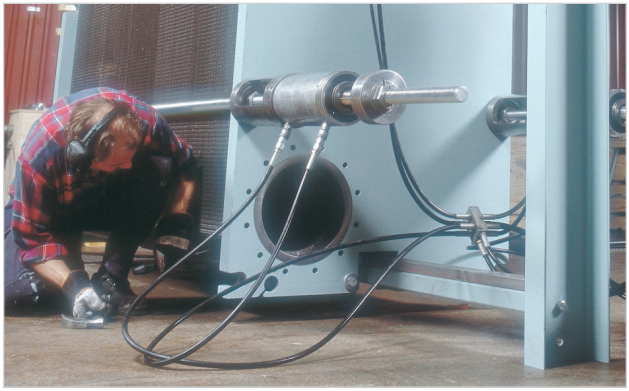
Shrouds

Shrouds provide protection in an aggressive environment, preventing damage to plates and gaskets.



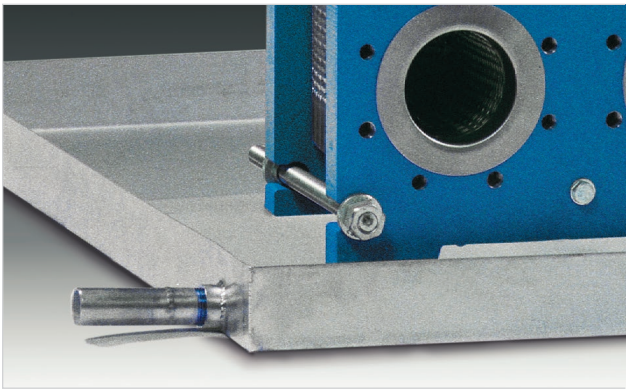
Instruments And Gauges

Special flanges are available with outlets for drainage and ventilation, pressure gauges and sensors.



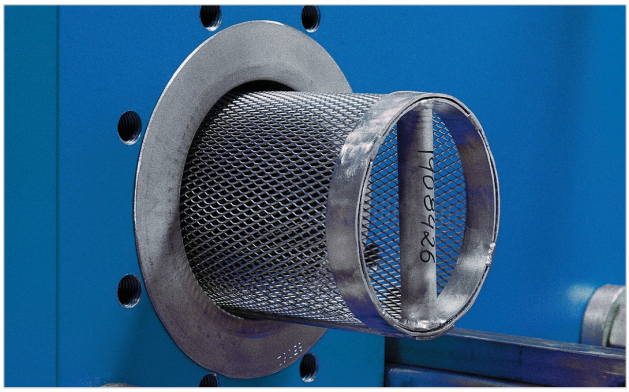
Hydraulic Tightening Devices

Hydraulic tightening devices facilitate assembly and reassembly of plate & frame heat exchangers fast, easily and securely.



Drip Pans

Drip pans prevent water and other liquids from flowing onto the floor when dismantling the heat exchanger.



Port Strainers

A strainer protects the plate pack from large particles that would otherwise foul and clog the channels. The length is adapted to the number of plates.

Other accessories include:

- Portable Clean-In-Place systems
- Backflush valves
- Wrenches
- Grounding lugs
- Molybdenum bolt coatings
- Tie-rod protectors
- HexWrap insulation

Quality, OEM Service and Maintenance Protect Your Plate HEs and Your Systems

Tranter offers extensive experience in both onshore and offshore applications. With manufacturing centers on three continents, Tranter sources systems close to major production and refining areas, minimizing lead-time and freight for accommodating tight project schedules.

Efficient operation is the key to optimum return of investment in your heat exchanger. Malfunctions and changes in heat transfer can have severe consequences on operational costs and may affect the product quality. Regular service and maintenance safeguard your exchanger's condition and allow you to maintain the optimum performance.

Tranter service only begins when the heat exchanger starts up. The Tranter service concept helps meet application requirements, prolongs the life of the exchangers and makes them top performers at all times.

With Tranter authorized service, you can always be sure that you get the right gaskets, the right plates, the friendliest service and our OEM Guarantee.

TRANTER MULTI-BRAND SERVICE & PARTS

Authorized Service Guarantees The Original Standards

To obtain additional information on operation and maintenance, contact your local Tranter, Inc., representative or the nearest Tranter, Inc., factory-authorized Service Center.

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Factory/Sales/Engineering Office
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Wichita Falls, TX 76306
Tel: 1-800-414-6908
E-mail: service@tranter.com

Tranter Midwest Service Center (USA)
30241 East Frontage Road
Farmersville, IL 62533
Tel: 217-227-3470
E-mail: service_il@tranter.com

Tranter Gulf Coast Service Center (USA)
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Tel: 1-713-467-0711
E-mail: service_hou@tranter.com

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At the forefront of heat exchanger technology for more than 85 years

Tranter top quality, high-performance, proprietary products are on the job in demanding industrial and commercial installations around the world. Backed by our comprehensive experience and worldwide presence, Tranter offers you exceptional system performance, applications assistance and local service. Tranter is close to its customers, with subsidiary companies, agents, distributors and representatives located worldwide. Contact us for a qualified discussion of your needs.

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