TRANTER
The heat transfer people

Tranter® plate heat exchangers provide EXTRA SECURITY AT SEA

TABLE OF CONTENT

A global team with knowledge 3

Superchanger®
Plate and frame for
maximum efficiency 6

Thermofit™ plate series
Featuring the unique
Omniflex™ plate pattern 8

Complete Tranter® plate series 9

Supermax®
When conditions are tough...
Think plates instead of tubes 18

NovusBloc®
For increased durability
and energy efficiency 22

Tranter FullServ®
Restoring plate heat exchangers
to optimized performance 26

There are times when the reliability of your equipment is crucial!

When conditions are tough, crew and equipment are really put to the test. The main engine oil cooler and central freshwater cooler simply have to work. There is no room for compromise when the sea is rough and the harbour is far away.

That's why Tranter offers you the very best. Reliable, compact, and efficient plate heat exchangers that are easy to service and maintain. So, it's no wonder they can be found on board countless vessels all around the world – from luxury yachts to huge container vessels, LNGCs, Tankers, bulk carriers and offshore rigs.

Tranter offers an extensive range of gasketed plate heat exchangers specially designed for marine applications. This, combined with our extensive experience and solid technical expertise within marine and industrial applications, makes us a reliable partner.

For many decades our plate heat exchangers have proved to be the perfect solution for various closed-circuit cooling systems at sea. They are also frequently found in other applications on board, such as exhaust gas cleaning systems, clean energy systems, tap water production systems and HVAC systems.

TRANTER.COM

OUR EXPERTS WILL GUIDE YOU TO THE RIGHT SOLUTION

Tranter is a global supplier of plate heat exchangers. We have extensive experience of heat transfer solutions for marine, off-shore, HVAC and industrial applications around the world. Our mission is to help you achieve the optimum solution with regard to performance efficiency, payback and energy conservation.

Our marine program encompasses plate heat exchangers that fulfill any capacity requirement. Our patented ThermoFit™ GT Series and classical Ultra flex design means that we can closely match precise heat exchanger requirements with fewer plate designs. Plates are provided in stainless steel, and titanium as standard, but are also available in other materials. We can also offer frames constructed from aluminium etc., when it is important to keep the weight low.

QUALITY ALL THE WAY

At Tranter we enlist cutting-edge technology in our manufacturing processes. Raw materials are subject to rigorous quality specifications. Exact measurements and metal urgical analyses are performed in accordance with our Total Quality Management System. Fully-automated plate presses ensure consistent high quality and plate uniformity time after time. After assembly each plate heat exchanger is tested, and the results are incorporated into a data bank. Before packing and shipping, we carry out a final check. Nothing is left to chance!

Plate heat exchangers provide extra security at sea

When you're miles from port and there's blue water breaking on deck, you need all your thermal systems running strong, reliably and efficiently. Since the sea isn't known for giving second chances, Tranter offers ways to optimize thermal systems aboard platforms and vessels with an extensive range of plate heat exchangers.

Our units are designed to provide maximum efficiency for various closed-circuit cooling systems at sea, as well as process other on-board applications including fresh water production and HVAC systems.

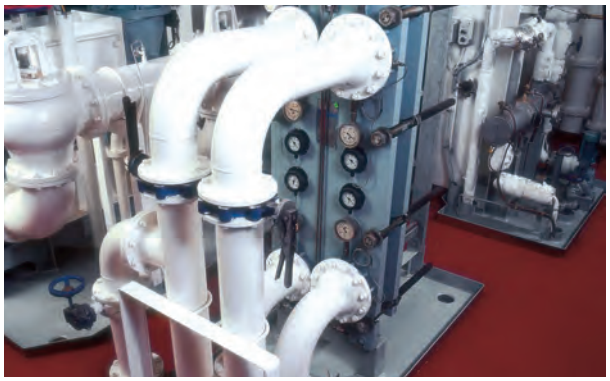
Titanium plates significantly enhance durability and long-lasting, uninterrupted performance in corrosive seawater cooling duties. Plus, their compact size and weight make them quick and easy to disassemble for inspection, cleaning and maintenance.

Why fill up engineering spaces and burden topsides with heavy, bulky equipment, when efficiency and economy are readily available with Tranter plate heat exchangers?

Central fresh water coolers

Main engine lube oil cooler

Jacket water cooler



Stern tube lube oil cooler

TRANTER´S PLATE HEAT EXCHANGERS

Compact heat exchangers for extreme temperatures, pressures and special designs that exceed gasket limitations. They offer high performance, small sizes, and minimal maintenance. The exchangers can handle liquids, gases, and two-phase mixtures at very high pressures and at low and high temperatures. They are manufactured to meet customer needs for the highest quality and efficiency.

Plate technology for reliability and efficiency offshore. From left: Supermax® shell and plate, Novusbloc™ Welded plate, Superchanger® Plate and frame.

Superchanger® plate and frame for maximum efficiency

Optimum performance is a promise Tranter has been fulfilling for many decades with Superchanger plate and frame heat exchangers. Tranter specializes in providing heat transfer solutions in all industries. Our complete engineering and manufacturing expertise brings you equipment that meets the highest standards of design excellence and quality workmanship.

- Higher “U” values and close temperature approaches
- Unique turbulent flow design resulting in lower fouling
- Immediate availability (made in factories strategically located worldwide)
- Space saving and light weight
- Expandability and easy servicing
- Design flexibility makes them ideally suited for a wide variety of shipboard cooling and heating applications
- Conform to American Bureau of Shipping, U.S. Coast Guard, shock testing per MIL-S-901C (U.S. Navy), vibration testing per MIL-STD-167-1 (Ships), ASME U stamp per Sec. VIII Div. 1 and DNV (Det Norske Veritas)
- Worldwide OEM service and parts

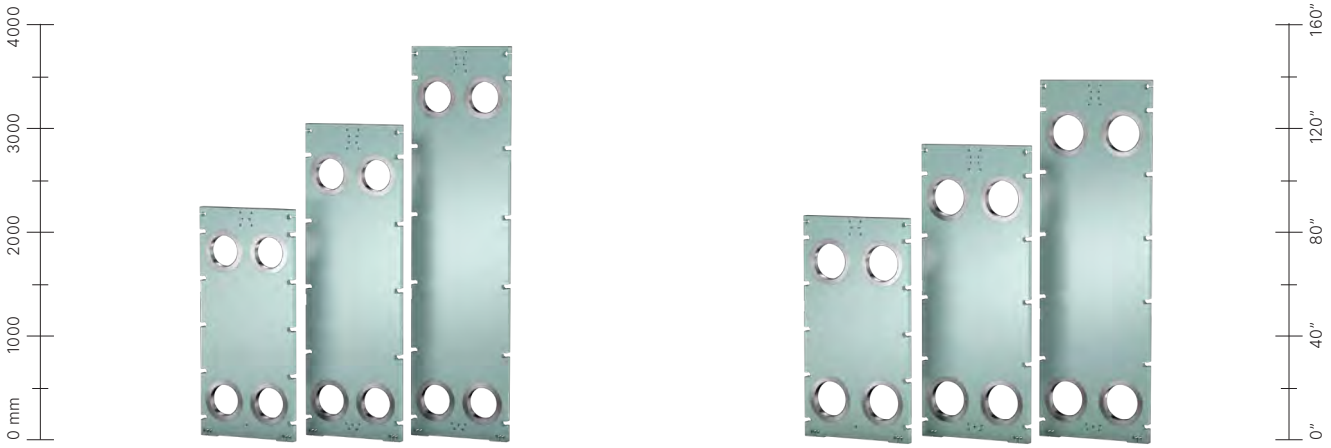
Flow ranges	0 – 5,750 m3/h
Max work pressure	25 bar / 363 psi
Temp range	-40 to 180C° / -40 to 356F°
Connections	25-500A / 1”- 20” Weld neck, flange or threaded

Specifications may be changed without prior notice. Please contact us for specific details.

Marine standard

PLATE HEAT EXCHANGER RANGE

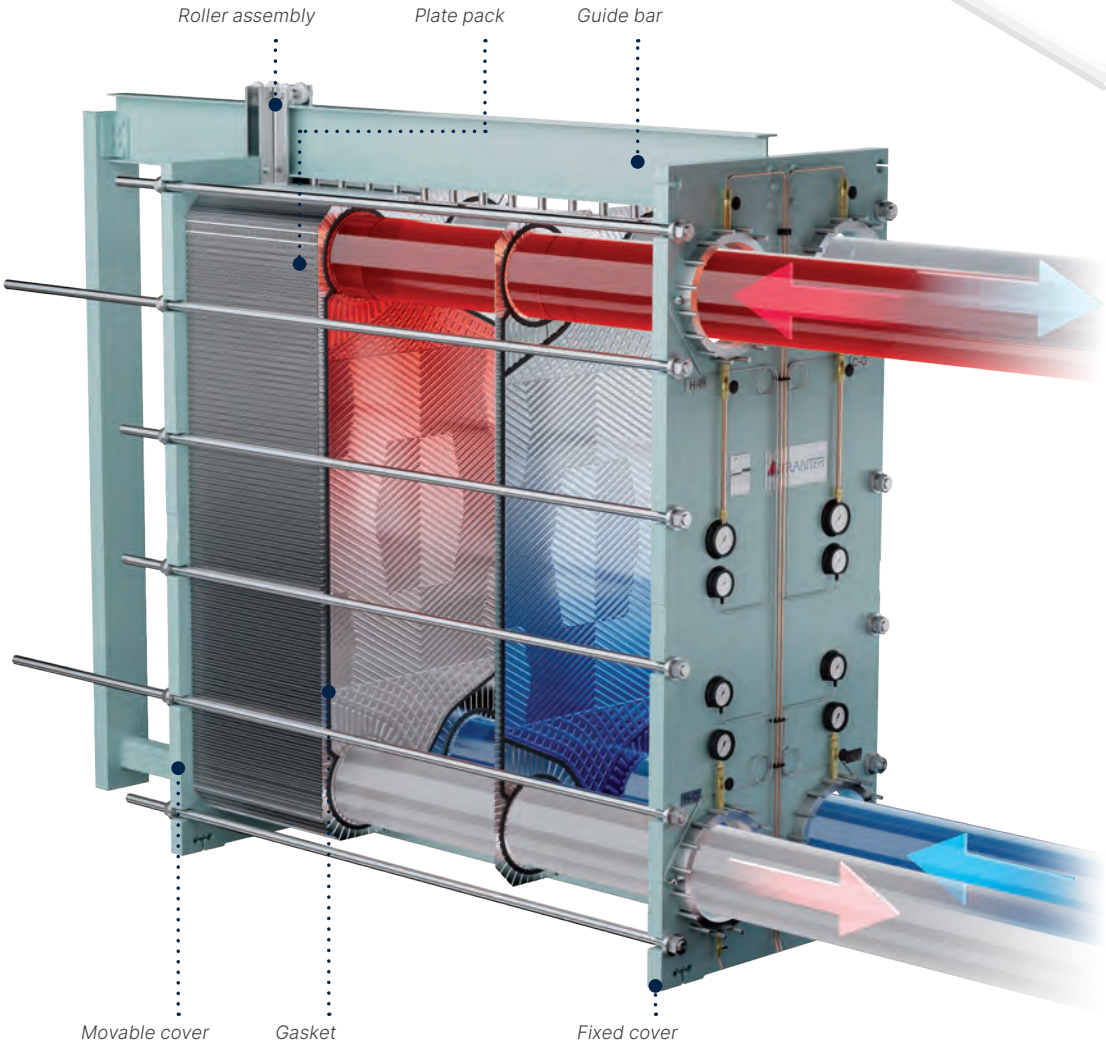
50A (2")	100A (4")		150A (6")			200A (8")		
GL-013	GXD-026	GXD-042	GTP-155	GTP-160	GTP-165	GTP-207	GTP-211	GTP-216
GC-016	GCP-026		GCP-052					



300A (12")			350A (14")		
GTP-303	GTP-315	GTP-325	GTP-360	GTP-370	GTP-380
GTP-305					

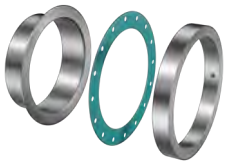
450A (18")			500A (20")	
GTP-410	GTP-420	GTP-430	GTP-520	GTP-530

Approvals: SAQ, TTK, TÜV, ABS, GL, LRS, NK, BV, DNV, RINA, KR, ChinaClass, USSR.

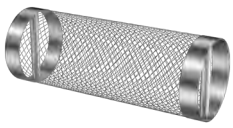


Back flush

Hydraulic tightening tool



Flange and Liner



Strainers

Channel plate materials	
AISI	304
AISI	316
Titanium Gr.1	

Max working pressure	
N	10 bar
P	16 bar
S	25 bar

Gaskets
NBR
EPDM
FKM

Max working temp.	
NBR	140°C
EPDM	160°C
FKM	180°C

Thermofit™ plate series featuring the unique Omniflex™ plate pattern

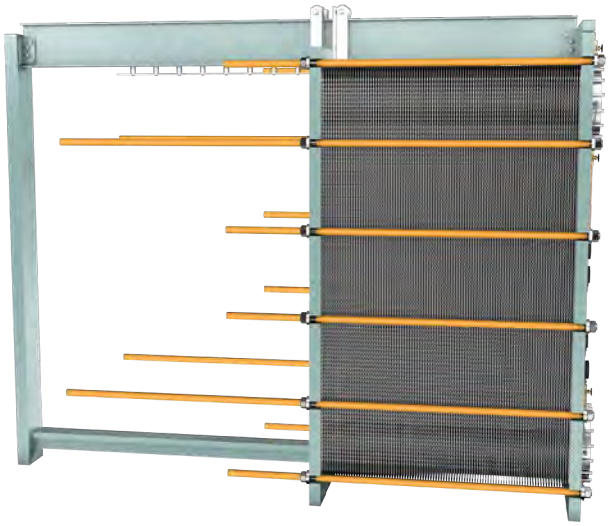
Tranter provides individual plate assemblies (with gasket already attached) or entireplate racks for your specific heat exchanger, including Tranter and non-Tranter brands.

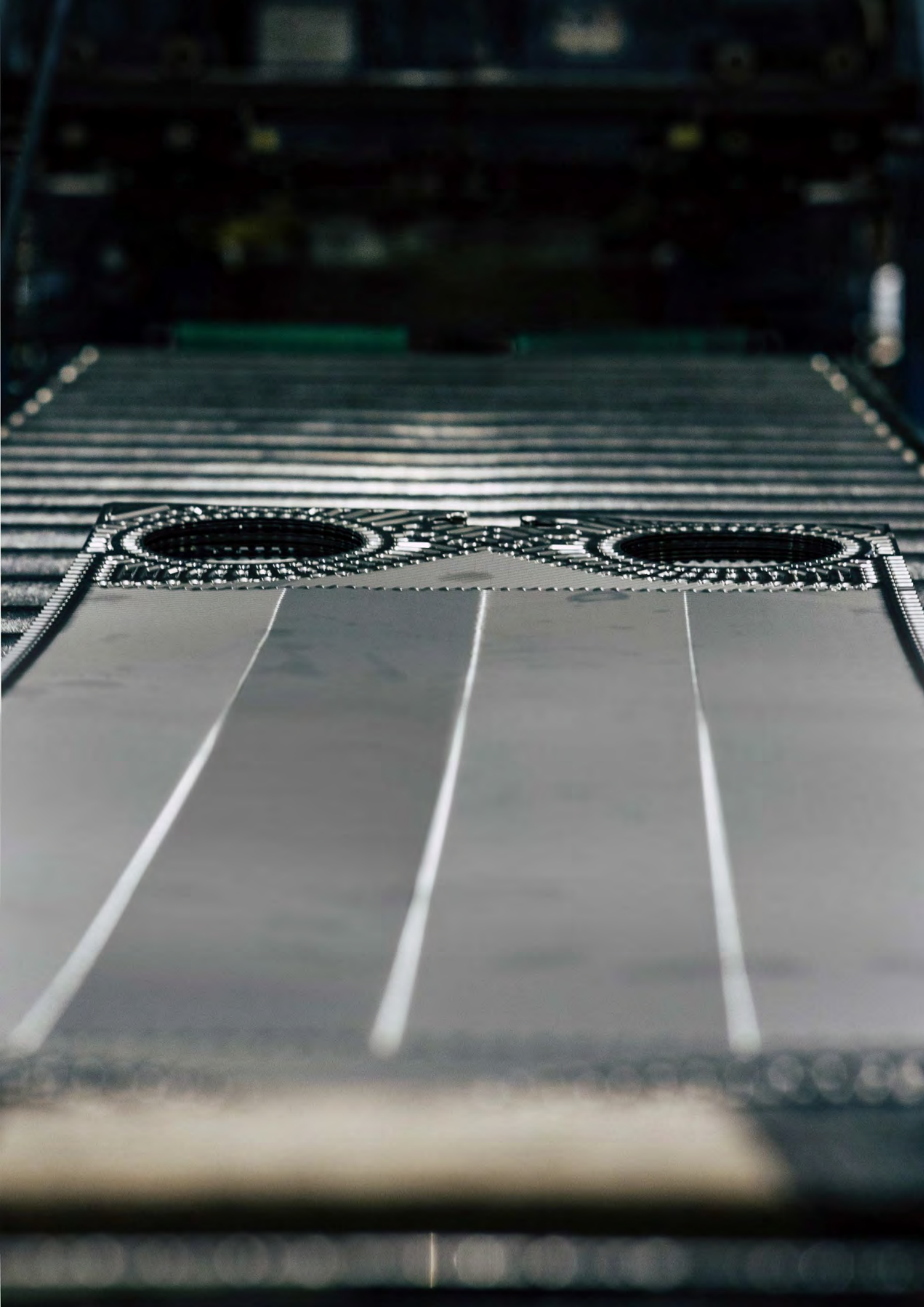
INNOVATION TO GREATER ENERGY EFFICIENCY

Sustainable energy utilization has become a global imperative. Tranter's wide range of gasketed plate and frame heat exchangers enables our customers to reduce their energy consumption and the greater thermal efficiency of the heat exchanger the more energy can be saved. Therefore, Tranter has developed highly efficient and innovative plate models in the plate series called ThermoFit, which will enable our customers to save even more energy!

OMNIFLEX PLATE PATTERN

The Omniflex plate pattern – A patented Tranter design enabling high energy efficiency. The unique plate pattern induce high turbulence and enhanced heat transfer rates, yet achieves low-pressure drop.





GT PLATE SERIES – THE GREATER THERMAL EFFICIENCY OF THE HEAT EXCHANGER THE MORE ENERGY CAN BE SAVED

The GT series features a deeper gasket groove for higher pressures – up to 450 psig, a shallow draw depth for tight temperature approaches, and an inside-out halo alignment system. The series is specifically designed for HVAC or other tight-temperature-approach applications. Models available in 6” in and higher port-sizes.

The plate series features HydroFit -variable draw depth to help distribute flow from port to heat transfer area and the Omniflex plate pattern – A patented Tranter design enabling high energy efficiency. The unique plate pattern induces high turbulence and enhanced heat transfer rates, with low pressure drop.

Type	Connection size
GTP-155	150A
GTP-160	150A
GTP-165	150A
GTP-207	200A
GTP-211	200A
GTP-216	200A
GTP-305	300A
GTP-315	300A
GTP-325	300A
GTP-360	350A
GTP-370	350A
GTP-380	350A
GTP-410	450A
GTP-420	450A
GTP-430	450A
GTP-520	500A
GTP-530	500A

GX PLATE SERIES

Especially when flows are unbalanced and the allowable pressure drops are reasonably close, Tranter utilizes its GX series plate designs. Tranter’s corrugated GX plates have a gasket along the periphery. There are also gaskets around two of the four ports, which means that only one of the two fluids has access to the heating surface. The next plate has gaskets around the other two ports. Thus, a channel system is created where two fluids pass through every other channel respectively. Leakage between the two fluids is not possible thanks to double gaskets around the ports.

Tranter’s unique, patented Ultraflex plate design features two angles for each plate size. The plates are available with a herringbone pattern with either an acute or obtuse angle, making it possible to achieve six combinations of channels. An obtuse angle (high-theta plate) gives high resistance, and an acute angle (low-theta plate) a low pressure drops. This allows our heat exchangers to be optimized for the characteristics for each individual application. If you have different flow rates in the primary and secondary circuits, your plate heat exchangers can be designed with asymmetrical channels for maximum heat transfer efficiency and economy.

Type	Connection size
GXD/GXP-026	100A
GXD/GXP-042	100A
GXD-051	150A
GXD-064	150A
GXD-091	150A
GXD-118	150A
GXD-060	200A
GXD-100	200A
GXD-140	200A
GXD-085	300A
GXD-145	300A
GXD-205	300A

GCP PLATE SERIES

Applications where low pressure drop is required or unit sizing is limited by pressure drop (low theta) are a perfect match for the GCP series plate. Tranter's GCP plate series are designed with a conventional herring-bone pattern, with the gasket groove in the bottom plane. The plate design uses parallel flow direction, in contrast to the GX series, which features diagonal flow across the plate. Due to the deeper draw depth and the pattern in the flow distribution area, the GCP series plates yield a significantly lower pressure drop than the corresponding GX series plates. Both high- and low-theta versions are available in all three GCP series plates. This allows the flexibility to satisfy a wide range of applications.

Standard plate materials are EN 1.4301 (304SS), EN 1.4401 (316SS), and titanium, but requirements for hastelloy C-276, 254SMO or other cold-formed alloys can be accommodated. Standard gasket materials are NBR, EPDM and fluor elastomer.

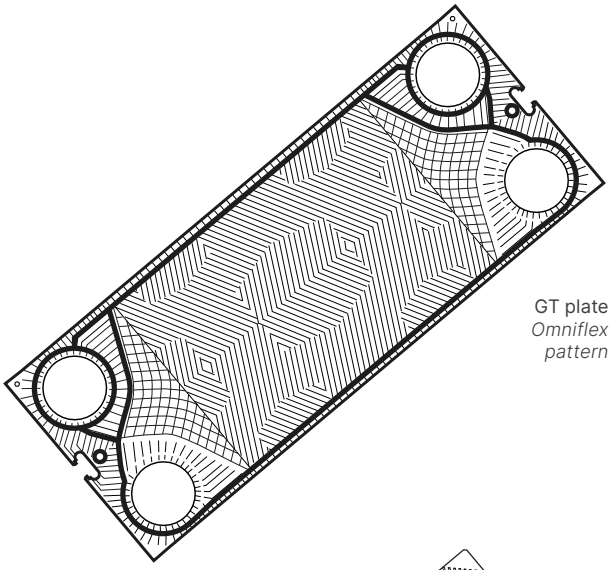
Type	Connection size
GCP-026	100A
GCP-052	150A

GCD plate series

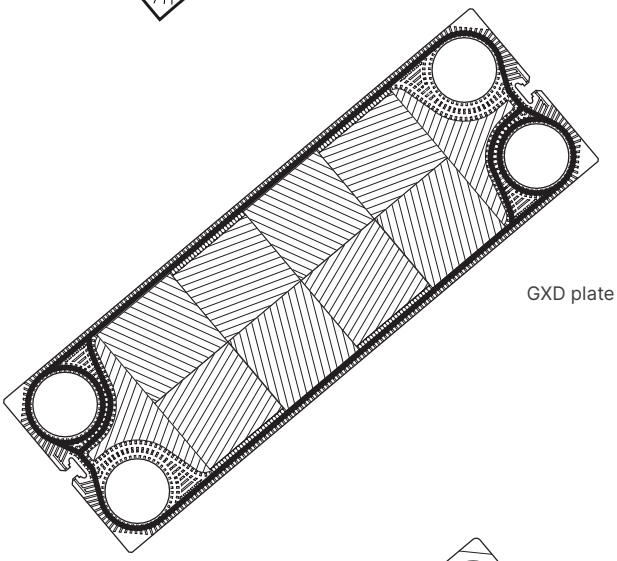
GCD plate series are ideal for applications with very small temperature differences. GCD-016, GCD-044 and GCD-054 plates are designed with a conventional herringbone pattern, diagonal flow direction and with the gasket groove in the bottom plane.

Standard plate materials are EN 1.4301 (304SS) and EN 1.4401 (316SS). Standard gasket material is NBR.

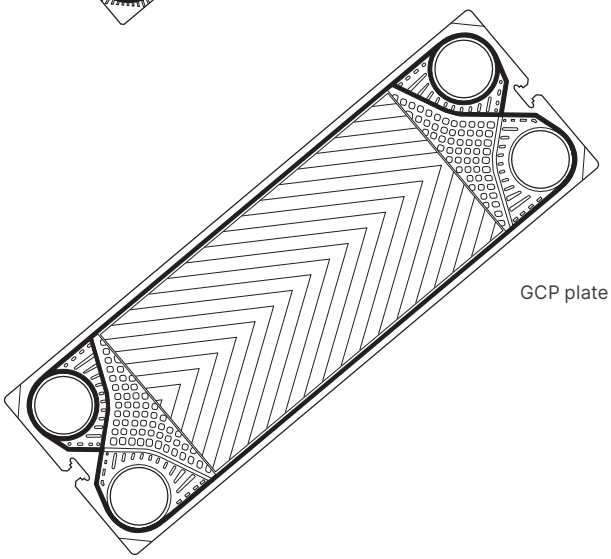
Type	Connection size
GCD-008	32A
GCD-009	40A
GCD-016	50A
GCD-044	100A
GCD-054	150A



GT plate
Omniflex pattern



GXD plate

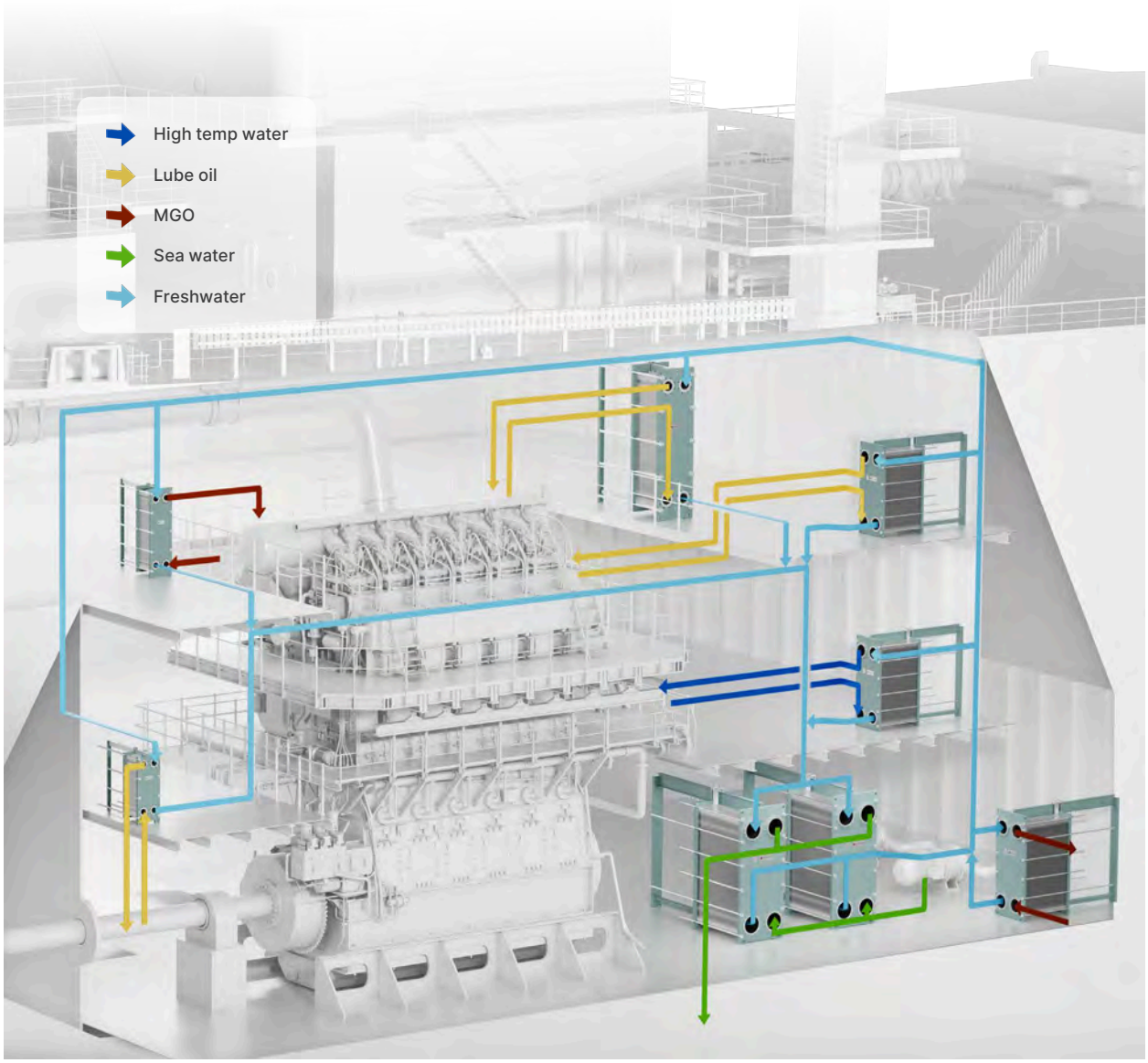


GCP plate

MAIN ENGINE JACKET WATER AND LUBE OIL TEMPERATURE CONTROL

With titanium-plate Superchanger plate and frame heat exchangers, seawater can be used as a practical isolation circuit jacket water coolant in diesel engines. Stainless steel-plate Superchanger units instantaneously preheat jacket water prior to startup using steam as the heating medium. They are also effective in lube oil coolers, cam oil coolers, steering gear coolers, bow thruster coolers and fuel oil conditioning heat exchangers for large engines. The cooling medium can be fresh water, or seawater when constructed with titanium plates.

Large Superchanger units use seawater to cool the ship's central fresh water system. Titanium plates provide corrosion-resistant, trouble-free exchanger service. High turbulence between plates reduces biofouling. Large vessels use this centrally cooled fresh water for many other cooling requirements, eliminating the need for titanium in those applications.



Supermax®
When conditions are tough… Think plates instead of tubes

Now you can obtain the thermal efficiency and compactness of gasketed heat exchangers in elevated pressure/high- and low-temperature applications. Tranter´s welded plate heat exchangers allow you to attain high heat transfer rates under elevated process conditions, in less space and at lower cost than shell and tube exchangers.

- Welded construction comprises a pressure vessel of high integrity with good thermal cycling performance
- Optional flanged cover model allows the plate pack to be removed for cleaning
- Particularly suited for large flow imbalances—distillation vapor condensers, economizers, aftercoolers, intercoolers and related service
- Removable cover HE is available as an option in all sizes

Possible applications:

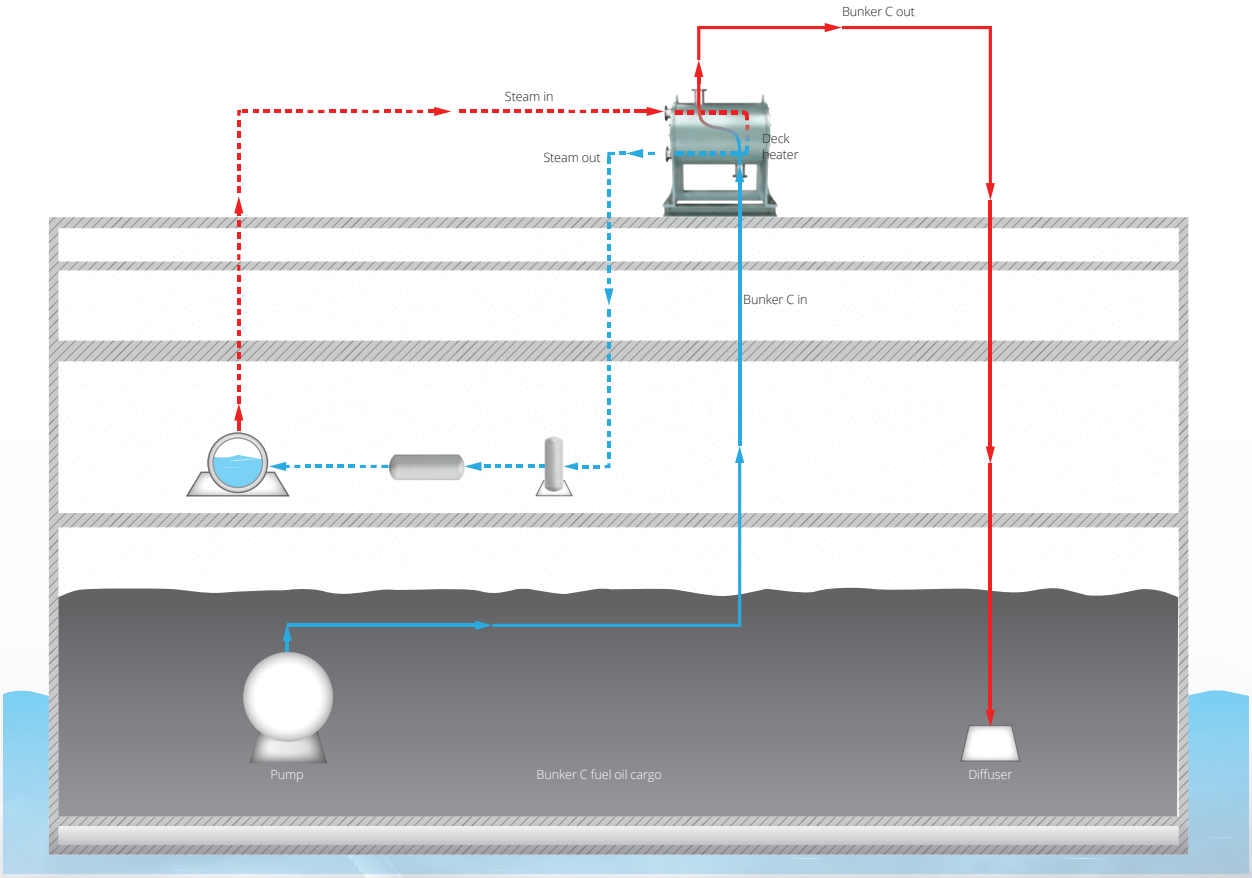
- Evaporator or pre-heater in FGSS system
- Boil-off gas (BOG) - LNG
- Ammonia system
- Gas treatment, liquefaction on FLNG or LNG terminal
- Cargo oil deck heater
- Condenser for removing non-condensible fractions
- LPG reliquefaction

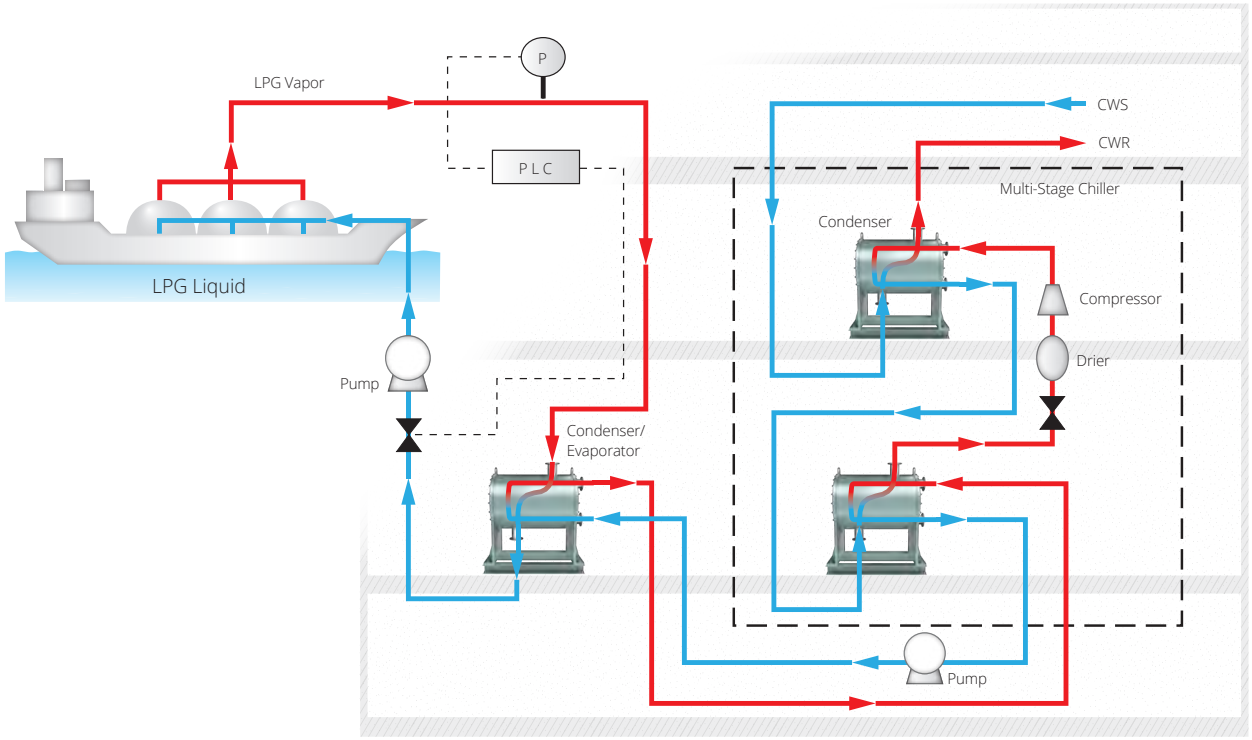
Plate model	Plate side connections	Shell-side connections
SPW-30	50A / ANSI 2”	20–150A / ANSI 0.75”–6”
DPW-30[2]	50A / ANSI 2”	20–150A / ANSI 0.75”–6”
SPW-40	80A / ANSI 3”	25–250A / ANSI 1”–10”
DPW-40[2]	80A / ANSI 3”	25–250A / ANSI 1”–10”
SPW-55	100A / ANSI 4”	32–350A / ANSI 1-1/4”–14”
DPW-55[2]	100A / ANSI 4”	32–350A / ANSI 1-1/4”–14”
SPW-83	150A / ANSI 6”	50–500A / ANSI 2”–20”
SPW-101	200A / ANSI 8”	100–700A / ANSI 4”–28”
DPW-101[2]	200A / ANSI 8”	100–700A / ANSI 4”–28”

[1]Dual inlets on both plate and shell sides are available.
[2]Deep draw depth plate.

DECK HEATERS

Supermax shell and plate exchangers used as deck heaters for direct cargo heating offer lower topside weight, smaller footprint and easier maintenance than shell and tube (S&T) units. High flow turbulence provides superior scaling and fouling resistance. Supermax can use steam, heat transfer oil or hot water to heat cargoes such as bunker oils, edible oils, non-edible oils, p-xylene and crude oil.





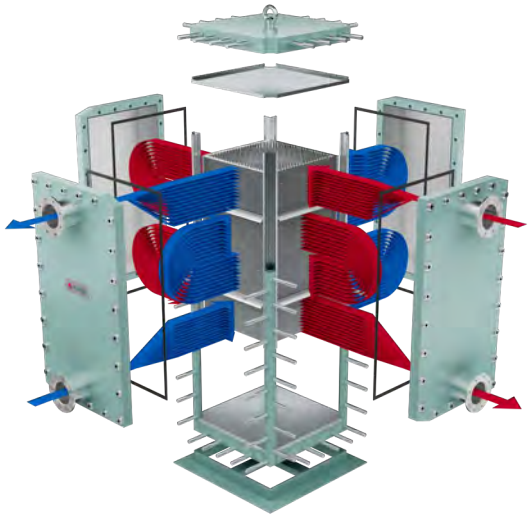
LPG RELIQUEFACTION

Supermax exchangers, configured as a multi-stage chiller and condenser system, can reliquefy LPG during transport. And multi-pass configurations perform well as condensers/evaporators where flow imbalances are significant.

Novusbloc®
For increased durability and energy efficiency

Available for global energy intensive markets the Novusbloc welded plate heat exchanger encompasses a Tranter premium design concept offering a significant boost in heat exchange performance and durability for these processes.

- Fully accessible for mechanical cleaning and visual inspection
- A patented design that provides state of the art weld quality and resistance against cyclic pressure and temperature process conditions while minimizing unnecessary additional pressure loss
- Unique design features reduce stress in critical components thus mitigating the risk of failure due to elevated temperatures and pressures



Model	Max connection size	Max unit height (mm)
TB030	150A / ANSI 6”	1400
TB050	300A / ANSI 12”	2150
TB075	500A / ANSI 20”	3475
TB120	1000A / ANSI 40”	3570

TRANTER FULLSERV® FOR EVERY BRAND

Whatever brands of plate heat exchangers are installed in your facility, Tranter service centers want to ensure that you continue to enjoy best performing condition. Our fast, economical and reliable service means minimal downtime for your exchanger.

Global service support for the marine market and vessels

TRANTER HAS LONG EXPERIENCE IN HEAT TRANSFER SOLUTIONS

The marine market is constantly undergoing changes, new legislations and environmental laws which puts high demands on your ship´s energy efficiency. Marine conditions are tough, and both crew and equipment are put to the test, and equipment such as the main engine oil cooler and central freshwater cooler simply has to work. With regular service and maintenance you will keep control of your heat exchanger's conditions and maintain optimum performance. Tranter has extensive experience of heat transfer solutions for the marine market and our mission is to help you achieve the optimal solution with regard to performance efficiency, payback and energy conservation.

GLOBAL NETWORK OF MARINE SERVICE EXPERTS AND SERVICE CENTERS

Tranter has a global network of service centers that offers quick and reliable maintenance of your heat transfer equipment. 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 heat exchanger's condition and allow you to maintain the optimum performance. Tranter has service centers located worldwide, and are ready to assist with plates, gaskets, assembled plate packs, cleaning services and replacement units to get you back to optimum performance. With Tranter authorized service, you can always be sure that you get the right gaskets, the right plates with our guarantee and expert service.

Regular service and maintenance advantages:

- Prolong equipment lifetime
- Maximize reliability and performance
- Minimize downtime and operating costs

WHY LET TRANTER DO YOUR SERVICE

Tranter has been providing plate heat exchangers specially designed for marine applications for many decades. This, combined with our extensive experience and solid technical expertise within marine and industrial applications, makes us a reliable service partner for your heat transfer equipment. Allowing our experts to take care of your service jobs will mean that the right tools and methods will be used which will provide time-savings, eliminate mistakes and guarantee that original equipment manufacturers will be used.

Tranter performs service on all plates and models of plate heat exchangers. The service can be made in our service centers or directly on your vessel. We will offer tailor-made solutions adapted to your needs, including services such as:

- Hydraulic tightening
- Plate heat exchanger performance evaluation
- Units resize according to actual process data
- Cleaning-In-Place (CIP) Systems
- Cleaning of plates in chemical baths
- Reconditioning
- Removal of old gaskets
- Keep stock of spare parts customized for you
- Inspections
- Regasketing
- Refurbishments

Tranter´s global marine service and support are available 24/7, and are ready to assist you to receive maximum performance and uptime.

Tranter® service partnership programs

With Tranter as your maintenance and service partner, you will receive tailor-made solutions adapted to your needs.

With Tranter global marine service partnerships, Tranter can:

- Perform service jobs worldwide
- Supply spare parts for all brands worldwide
- Stock spare parts and equipment at all major ports
- Provide 24-hour service jobs
- Provide fixed prices for emergency service jobs

With Tranter global marine service partnerships, the customer will receive:

- Transparent cost control
- Time savings
- Cost savings
- Improved performance and uptime
- Receive quality improvements
- Guarantees that same material is used on all sites

Tranter can also offer training of your crew to train your own staff on how to best service and provide maintenance on your heat transfer equipment.


60
80
40
100
20
120
0
140
psi
bar

Maximize maintenance productivity and efficiency with plate and frame accessories

REPLACE YOUR FRESHWATER GENERATORS

Your fresh water generators are critical to your ship´s survival, but the sea water contains salt and dirt which can reduce the performance of heat exchangers over time. Tranter can replace your fresh water generator plates with our plates to maintain optimum heat transfer performance and ensure your ship´s survival. By replacing your fresh water generator plates you will gain improved performance, less maintenance will be required which provides cost savings and you will improve your fresh water generators lifetime.

New Tranter plates for your freshwater generator:

- Improved self-cleaning
- Improved gaskets groove
- Improved hanger type
- New modern gaskets design


Before


After

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.
- Portable clean-in-place systems
- Backflush valves
- Wrenches
- Grounding lugs
- Molybdenum bolt coatings
- Tie-rod protectors
- HexWrap insulation

AT THE FOREFRONT OF HEAT EXCHANGER TECHNOLOGY FOR MORE THAN 90 YEARS

Tranter is an American based global manufacturer of gasketed and welded plate heat exchangers and a full-service aftermarket provider for the plateheat exchanger industry. Significant manufacturing, research, design engineering and product development activities are based in the USA, Brazil, Sweden, China, India and Korea and enable responsiveness to local demands. Tranter is represented globally by a network of our own sales companies, licensees and agents.

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