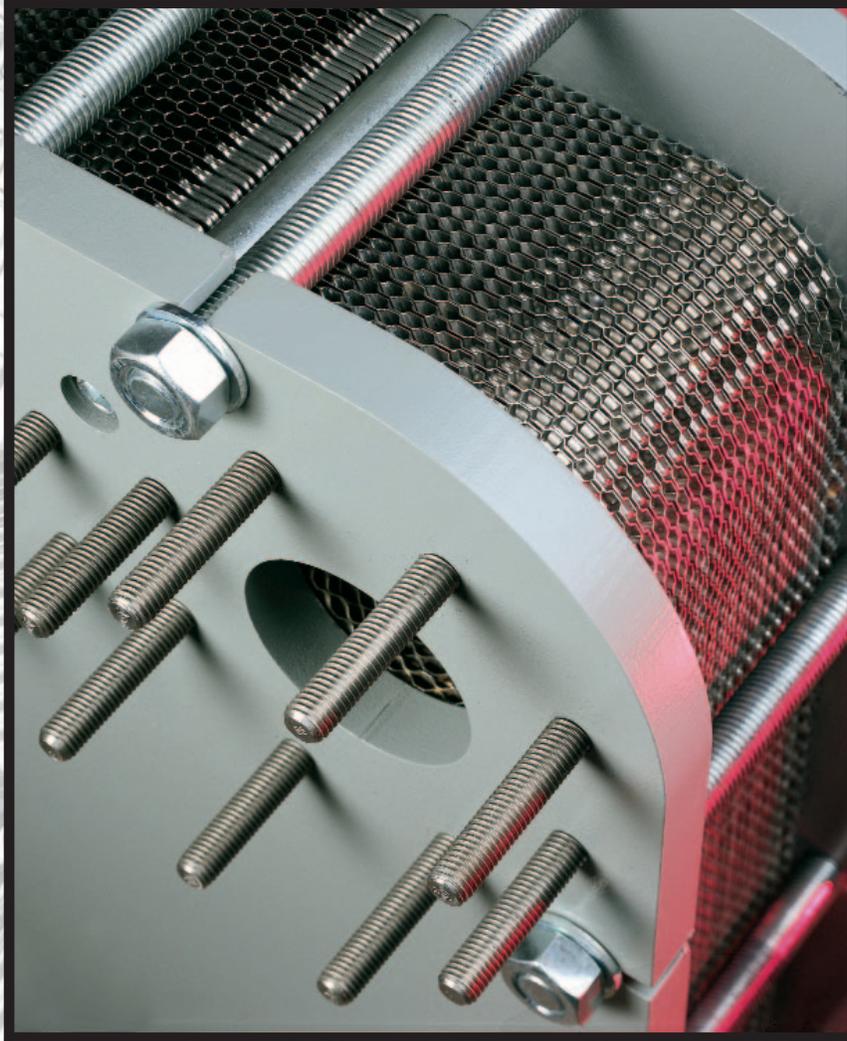


Plateflow® Plate and Frame Heat Exchangers



Efficient Heat Transfer.
Compact Design.

ITT Standard



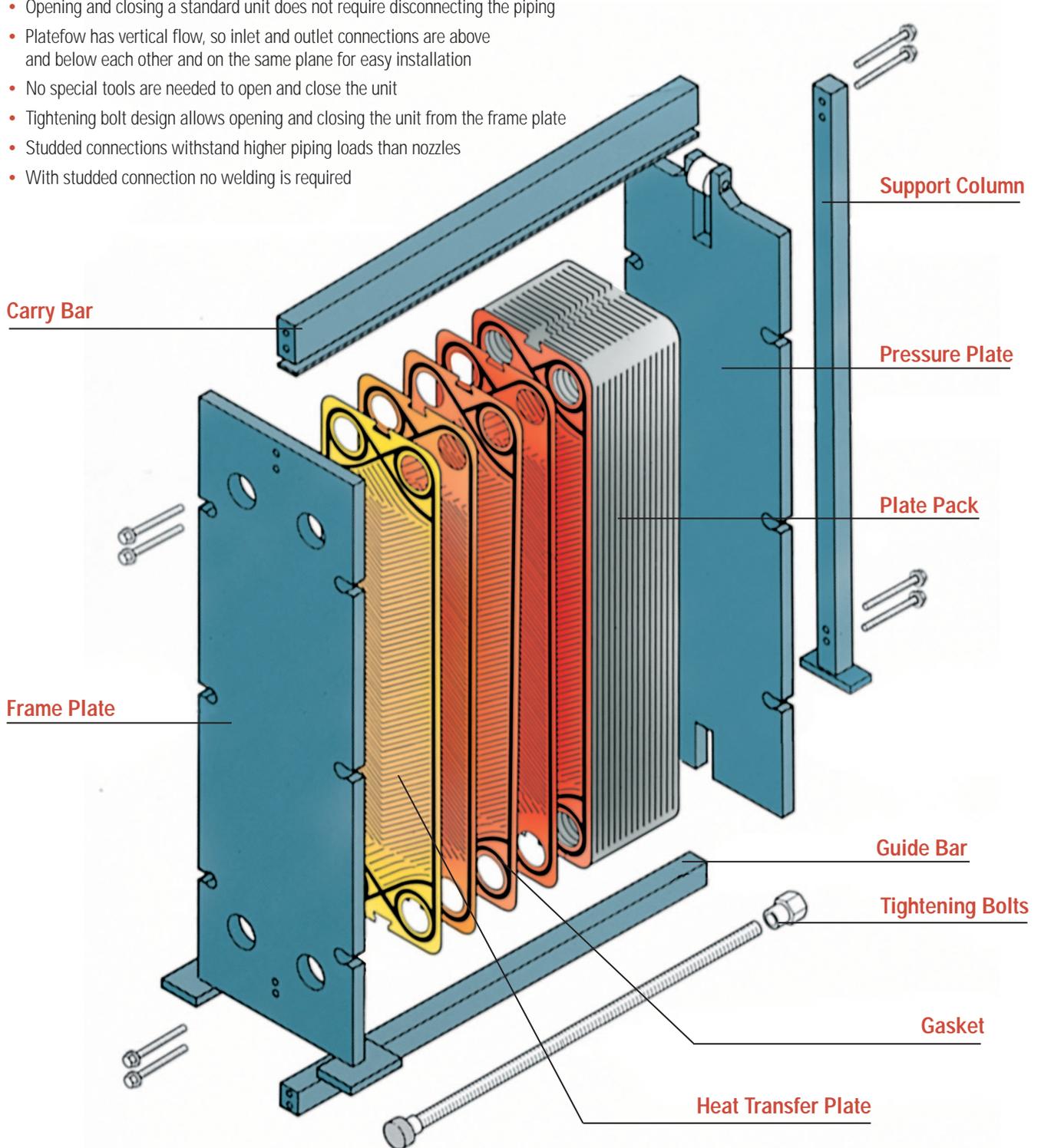
ITT Industries
Engineered for life

Exceptional Choice.

No other technology is more compact, efficient, or flexible than Plateflow.

Easy to install and maintain

- Easy to install and move
- Readily expandable and easy to inspect or clean
- Opening and closing a standard unit does not require disconnecting the piping
- Plateflow has vertical flow, so inlet and outlet connections are above and below each other and on the same plane for easy installation
- No special tools are needed to open and close the unit
- Tightening bolt design allows opening and closing the unit from the frame plate
- Studded connections withstand higher piping loads than nozzles
- With studded connection no welding is required



Compact Design.

Big on heat transfer.
Small on space.

Plateflow® heat exchangers provide more heat transfer in less space. The Plateflow® design is compact and efficient.

- Plateflow models have higher surface area to volume ratios than conventional shell and tube heat exchangers.
- Plateflow offers superior heat transfer coefficients compared to shell and tube heat exchangers. This is obtained through the unique plate designs that generate high turbulence.
- Plateflow offers “true” countercurrent flow. This maximizes the mean temperature difference between the fluids.



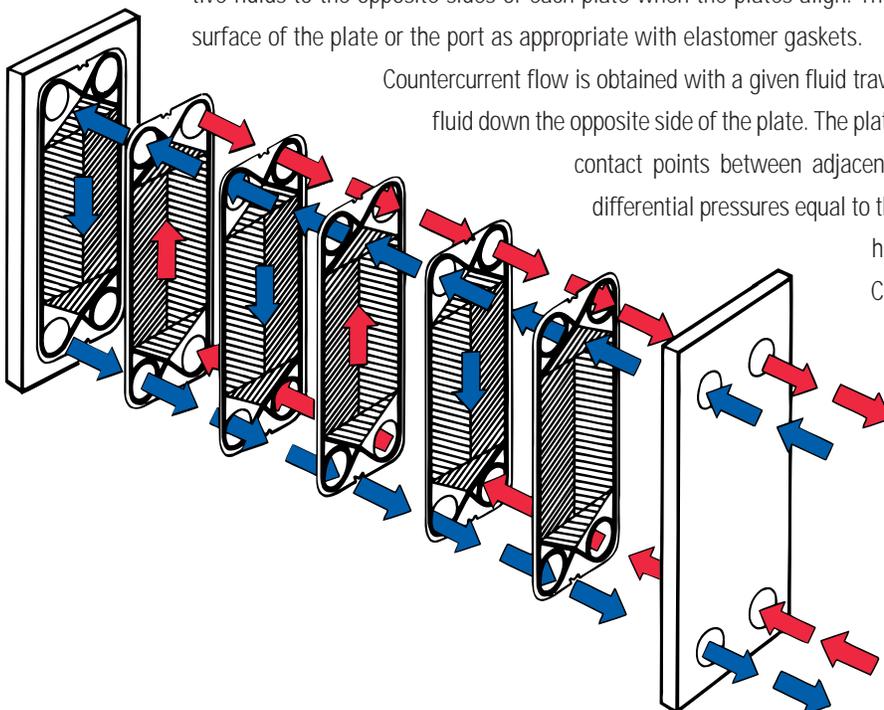
These attributes allow Plateflow to perform with one-third to one-fifth the surface area of a conventional shell and tube heat exchanger for the same application. The superior heat transfer capabilities make Plateflow an exceptional choice for heat transfer applications like heat recovery, applications with viscous fluids and large temperature cross situations.

ITT offers a numerous choice of models and options to suit your particular heat transfer requirements.

Efficient.

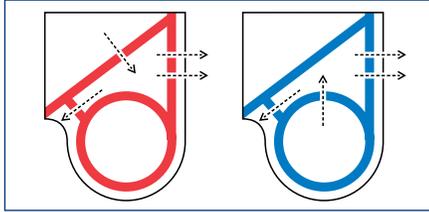
How
Plateflow works.

Plateflow uses a combination of chevron-style heat transfer plates sequenced between a frame plate and pressure plate. The heat transfer plates have holes at the four corners. These holes form a header that distributes the respective fluids to the opposite sides of each plate when the plates align. The fluids are confined to the heat transfer surface of the plate or the port as appropriate with elastomer gaskets.



Countercurrent flow is obtained with a given fluid traveling up one side of a plate and the other fluid down the opposite side of the plate. The plate's chevron patterns create metal to metal contact points between adjacent plates for added strength. This allows differential pressures equal to the design pressure. The entire assembly is held together with tightening bolts. Carry/guide bars are used to obtain the proper alignment. The Plateflow design is extremely flexible.

Gaskets. Low maintenance.



- *Double gasketing prevents cross-contamination.*



- *Glueless gasket option.*

Plateflow models include a one-piece molded gasket. This standard gasket is designed with two rings to confine each fluid to the appropriate port region of the plate, a field region of the gasket to confine the fluid to the heat transfer area of the plate and a vented region in between. This design creates a double gasket with a leak path to atmosphere through the vented region to prevent any cross contamination of the fluids due to a gasket failure. A leak due to a gasket failure is detected as a leak to atmosphere prior to any chance for cross contamination. ITT offers various options of glueless gaskets as well as glued gaskets.

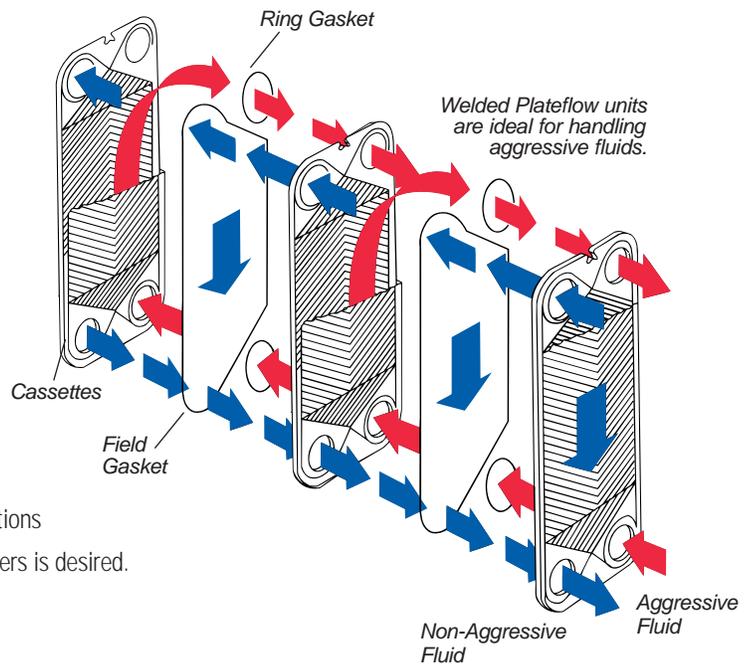
Welded Plate. Heavy duty.

The semi-welded Plateflow design expands the application envelope of plate heat transfer technology to applications that are aggressive to standard elastomers and other applications where leak prevention is critical.

The semi-welded Plateflow design utilizes two plates laser welded together to form a cassette.

The cassettes form channels within which the welded-side fluid flows. Two ring gaskets and a field gasket are used between adjacent cassettes in the same fashion as a typical gasket in the standard Plateflow design.

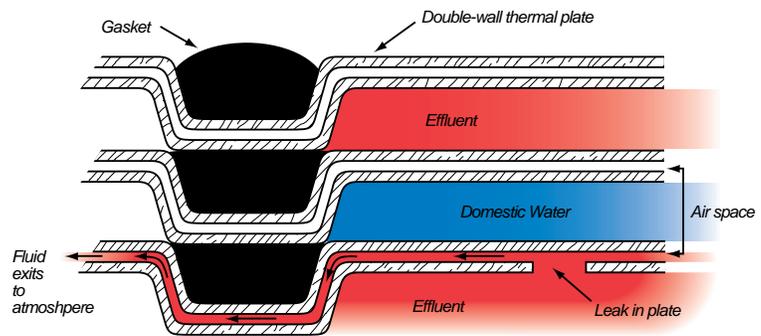
The ring gaskets confine the welded side fluid between the adjacent cassettes and can be made of highly resistant Teflon or more traditional elastomer gasket materials. The design eliminates the welded-side's exposed gasket surface by approximately 90%. The semi-welded Plateflow is exceptional for refrigerant, aggressive chemical, or any applications where reducing the fluid's contact with elastomers is desired.



Double-Wall.

Built for protection.

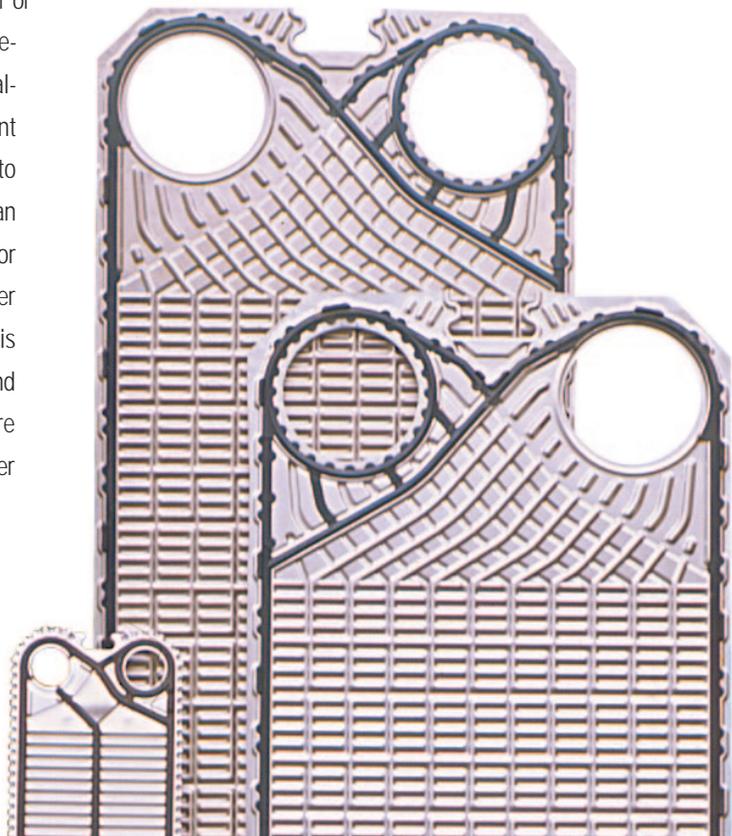
The nature of the basic Plateflow design includes a double gasketing feature for extra protection against gasket failure. With double-wall units, that additional protection is extended to guard against plate failure as well. Two plates are positioned together with a unique sealing mechanism at the port holes to form one assembly with air space between the plates. There are no welds. This unique feature protects against contamination of one fluid by another. If one of the plates should corrode and develop a leak, the fluid would enter the air space and exit to the atmosphere, instead of entering the opposing passageway.



Free-Flow.

Worry free.

Free-flow units offer the same features of basic Plateflow models, with the added benefit of exceptional clog-resistance for high-fiber or coarse-fiber applications. The ITT Free-flow models feature minimum or no metal-to-metal contact points between adjacent plates to reduce points for particles to catch on the plates. Free-flow models can handle fluids with particulate, pulp or fibrous materials up to 2mm in diameter and 5mm long. The free-flow feature is ideal for heat reclamation in pulp and paper or chemical processing, where wash water, white water, fibrous water slurries or high viscosity fluids are used.



Versatility.

Adaptable
construction.

A wide variety of plate construction materials are available, including 304 or 316 stainless steel, titanium, Hastelloy,[®] Incolloy,[®] and other metals. Various connection types are available to match the application requirements. Gasketed semi-welded, double wall, and free flow plates are designed to meet a wide variety of applications.

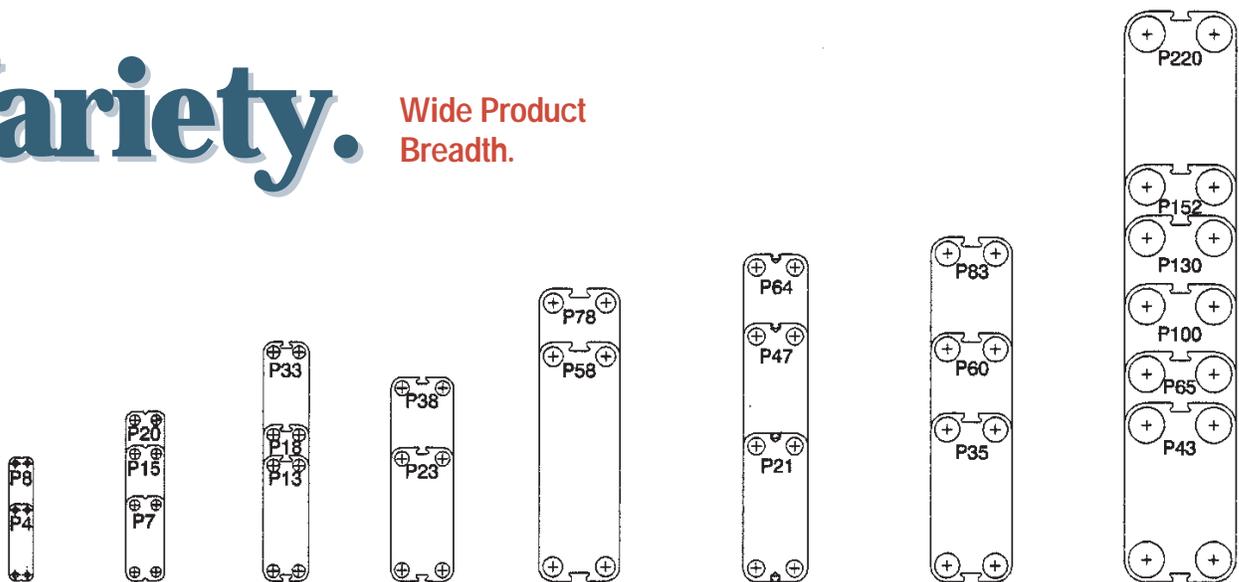
Technical Data

Performance: Maximum Flowrate (GPM)	up to 23,500 GPM
Max. Heat Transfer Area (Ft²)	up to 20,000 Ft ²
Connections: NPT Nozzles—Size (IN)	1 inch to 3 inch
ANSI Studded Connections—Size (IN)	4 inch to 18 inch
Connection Materials	Epoxy painted carbon steel, stainless steel, titanium, Hastelloy, rubber
Construction: Plate Materials	304 and 316 stainless steel, titanium, SMO 254, Hastelloy, Incolloy, palladium-titanium
Gasket Materials	Nitrile, EPDM, viton, neoprene, high temperature EPDM & nitrile
Frame Design Pressures	Standard designs of 150 psi and 300 psi*
Design Temperatures	-31°F to 338°F

* Frame designs exceeding 300 psi available upon request

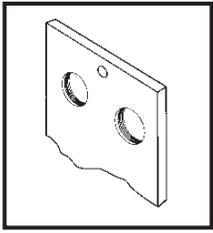
Variety.

Wide Product
Breadth.

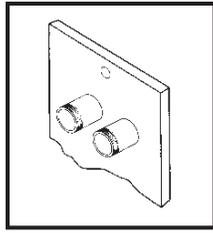


Gasketed Plates

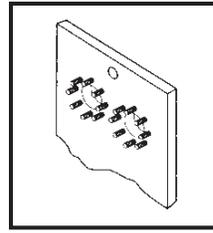
Multiple Connection Types



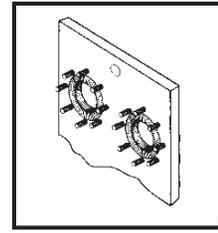
Standard threaded connection.



Threaded connection with alloy nozzle.

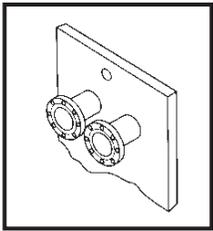


Standard studded connection.

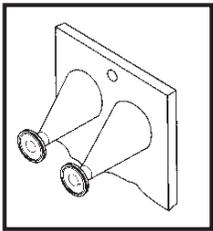


Studded connection with alloy lining.

Optional

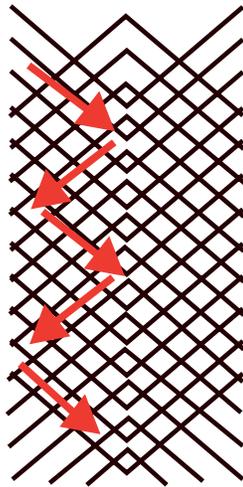


Flanged connection.

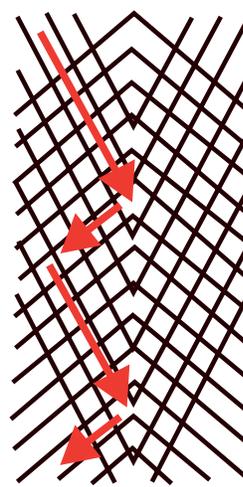


Sanitary Quick-Disconnect nozzle.

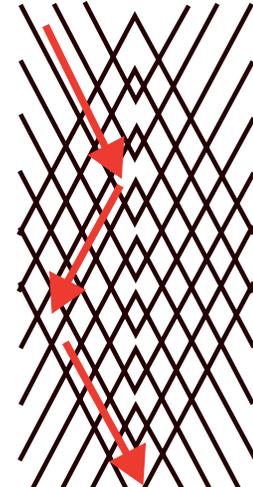
Variable Thermal Length Plates



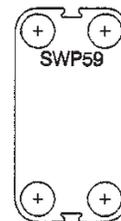
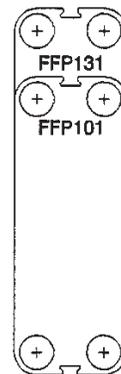
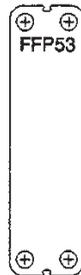
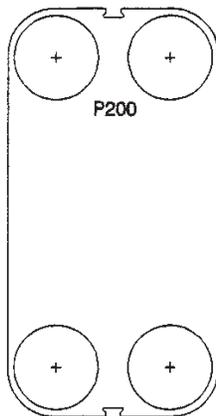
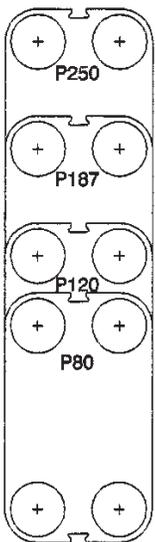
(2) Thermal Long Plates
"TL" Channel



(1) Thermal Long &
(1) Thermal Short Plate
"TM" Channel



(2) Thermal Short Plates
"TK" Channel



Free Flow Plates

Semi Welded Plates

ITT STANDARD PRODUCTS.

*Pre-engineered
shell-and-tube heat
exchangers for general
heating and cooling.*



**DESIGNED
TO MEET
VIRTUALLY
EVERY HEAT
TRANSFER
APPLICATION
REQUIREMENT.**

Efficiency.



*Engineered/customized heat
exchangers for process and
other heating/cooling
applications.*



*FanEx® air/oil,
air/air, or air/water
heat exchangers.*



*Brazepak™ compact,
vacuum-brazed,
general purpose
heat exchangers.*

Expertise.

*Heat
transfer
coils.*



*Packaged
steam
condensers.*



ITT Industries
Engineered for life

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