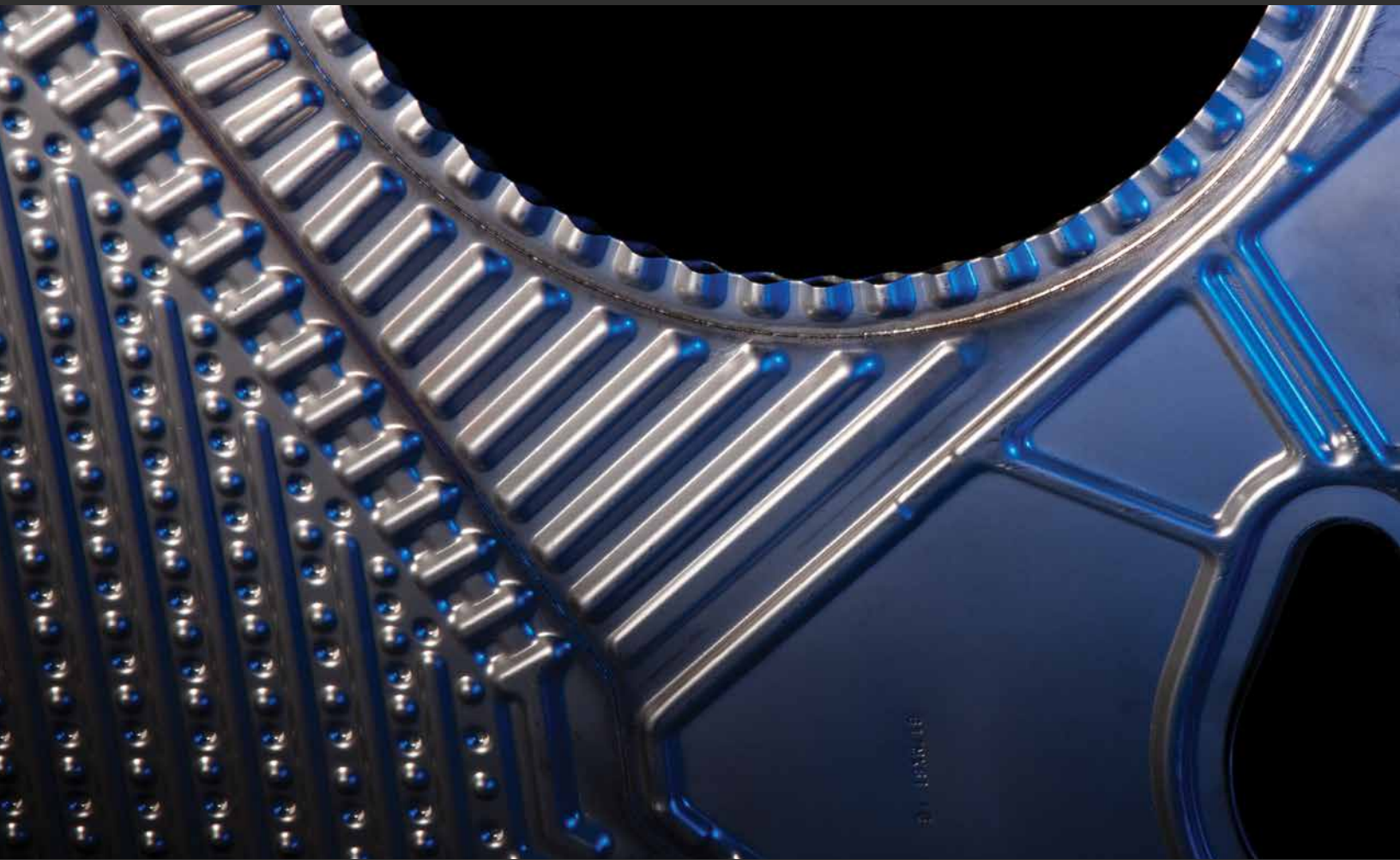


# LaZerWeld™ II Plate Heat Exchangers

Maximizing Thermal Efficiency  
For Industrial Refrigeration Applications

SINGLE SOURCE INDUSTRIAL REFRIGERATION SOLUTIONS

**Frick**  
INDUSTRIAL REFRIGERATION



# FRICK® Quality Heat Exchanger Solutions

## Proven Technology

LaZerWeld™ II series plate heat exchangers are in successful operation in a variety of applications for the food, dairy, beverage, pharmaceutical, chemical, industrial, HVAC, and power markets and are widely accepted in the industrial refrigeration market.

Components of the energy intensive refrigeration cycle are changing rapidly to maximize the commercial payback and thermal efficiency. FRICK fulfills this need for efficiency with the LaZerWeld™ II plate heat exchanger series. They have proven reliability and high performance as both evaporators and liquid cooled condensers.



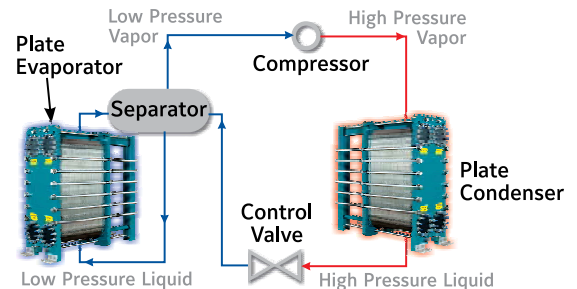
## The Refrigeration Processes

LaZerWeld™ II plate heat exchangers are used in a number of different refrigeration applications. They can function as:

- Evaporators: Flooded, DX or Overfeed
- Condensers: Liquid Cooled and Cascade
- Desuperheaters and Heat Recovery Systems
- Subcoolers and Economizers
- Oil Coolers and Floor Warmers

## Flooded Evaporation

A flooded evaporator has liquid refrigerant, at its saturation point, fed into the LaZerWeld™ II plate evaporator. The heat from the fluid being cooled causes the refrigerant to boil in the heat exchanger. In most cases, the basic system uses gravity to feed the refrigerant from a separator vessel and the differences in density of the two phase refrigerant causes it to flow through the heat exchanger and return to the separator. This is referred to as a natural recirculation or thermosyphon system.



The LaZerWeld™ II plate condenser cools and condenses the high pressure superheated vapor back to a liquid.

FRICK MODEL	SECONDARY FLUID CONN. SIZE <sup>(1)</sup>	REFRIGERANT CONNECTION SIZE <sup>(1)</sup>	NOMINAL LIQUID FLOW <sup>(2)</sup>	LENGTH <sup>(1)</sup>	WIDTH <sup>(1)</sup>	HEIGHT <sup>(1)</sup>	NOMINAL CAPACITY <sup>(2)</sup>
	Class 150 Flanges	Class 300 Flanges	(GPM)				(TONS)
LZWII-2M	2	2	310	14/55	13	37	65
LZWII-4B	4	4	800	20/83	18.5	24	200
LZWII-4E	4	4	910	20/84	18.5	24	200
LZWII-6B	6	6	2,000	35/95	26	59	440
LZWII-8K	8	8	3,600	35/142	31	60	640
LZWII-8B	8	8	7,500	35/142	31	86	1,100
LZWII-12M	12/14	12/14	8,700	47/190	46	115	2,400

1. Measurements in inches

2. Based on 35°F ammonia cooling water to 40°F

# LaZerWeld™ II Plate Heat Exchanger Versus Tubular Exchangers

Why LaZerWeld™ II Provides More for Your Investment

## Flexibility

The LaZerWeld™ II plate heat exchanger allows for future expansion when your refrigeration requirements grow. Semi-welded plate pairs can easily be added to the existing heat exchanger frame.

## Saves Energy

The LaZerWeld™ II plate heat exchanger provides approach temperatures as close as 2°F which allows for a higher suction temperature and higher coefficient of performance than a traditional shell and tube exchanger. This will help reduce compressor size and related components of a new refrigeration system.

## Less Refrigerant Needed

The higher heat transfer coefficient significantly reduces the heat transfer area needed and the narrow plate passages have a low liquid holdup. The amount of refrigerant needed in a LaZerWeld™ II plate heat exchanger is only 20-30% of the capacity compared to a tubular unit. Less refrigerant means more savings on the system charge and is better for the environment.

## Smaller Installed Space, Easy to Maintain

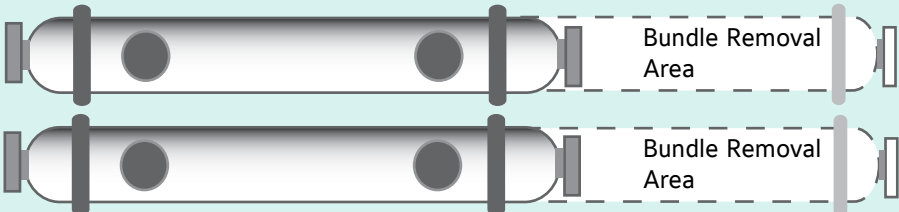
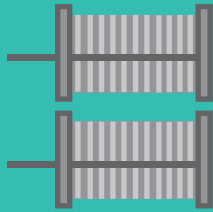
LaZerWeld™ II plate heat exchangers use 1/3 less floor space and weigh 1/6 the weight of a tubular heat exchanger. The plate heat exchanger can be maintained within the installed space and without the need to remove piping.



## Models

The LaZerWeld™ II plate heat exchanger is available in models that range in connection size from 2" to 14".

A single unit can handle up to 2,400 tons of refrigeration.

<b>Shell &amp; Tube</b>	 <p>Bundle Removal Area</p> <p>Bundle Removal Area</p>
<b>Plate &amp; Frame</b>	 <ul style="list-style-type: none"><li>• 1/3 Of The Floor Space</li><li>• 1/6 Of The Weight</li><li>• Maintenance Without Removing Piping</li></ul>



# LaZerWeld™ II Plate Heat Exchangers – Reliable, Efficient and Serviceable



**RefTight™** sealing system  
High performance gasket sealing for high-pressure duties.



**CurveFlow™** distribution area  
Improves media flow and minimizes risk of fouling.



**OmegaPort™** noncircular port holes  
Enhances media flow and thermal efficiency.



**ClipGrip™** gasket attachment  
Ensures perfect seal and trouble-free maintenance.



**Five-point alignment**  
Ensures reliable plate positioning and easy service of large units.



**T-bar roller**  
Provides a lower unit that is easy to service.

## A Vital Part of Other Quality FRICK® Products

PLW - Packaged LaZerWeld™ II



PowerPac™ Packaged Chillers



# FRICK® LaZerWeld™ II Series Plate Heat Exchanger

## Maximum Performance, Minimal Space and Low Volume Holdup

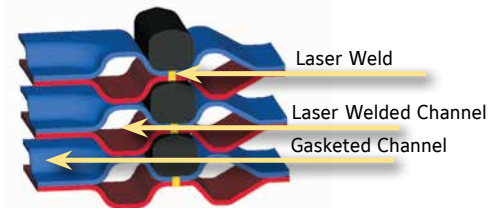
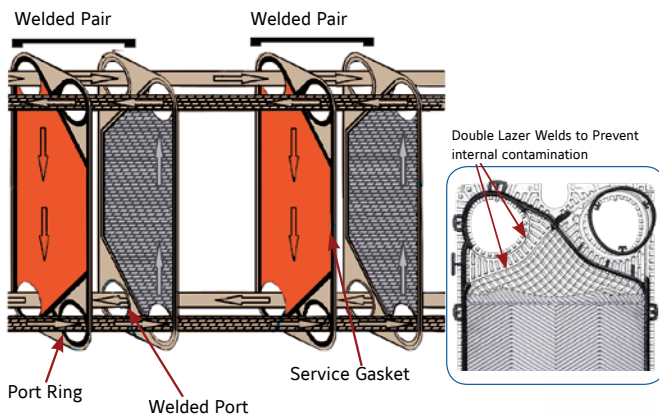
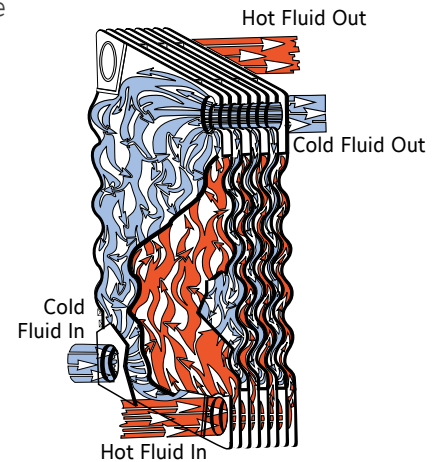
The heat transfer plates are the heart of the LaZerWeld™ II heat exchanger providing reliability, efficiency and economy of operation. These plates are stamped in a corrugated design pattern to induce turbulent flow, then laser welded together in pairs at the flow perimeter, minimizing liquid bypass at the edges via a patented plate design system. The refrigerant flows through this welded plate channel and the fluid to be cooled is in the gasketed channel.

The only gasketing in contact with the refrigerant is the circular port ring at the plate entrance and exit. Since the plates are welded pairs, the heat exchanger can easily be expanded should your duty requirements change in the future. Simply add more plate pairs to increase the refrigeration tonnage. Every heat transfer plate size is pressed and laser welded.

Plates are made of a variety of different alloys including 304 or 316 stainless steel, Hastelloy C2000, titanium and other ductile alloys. Titanium, 304ss and 316ss plate materials are stocked for faster delivery of new units and/or for spare parts.

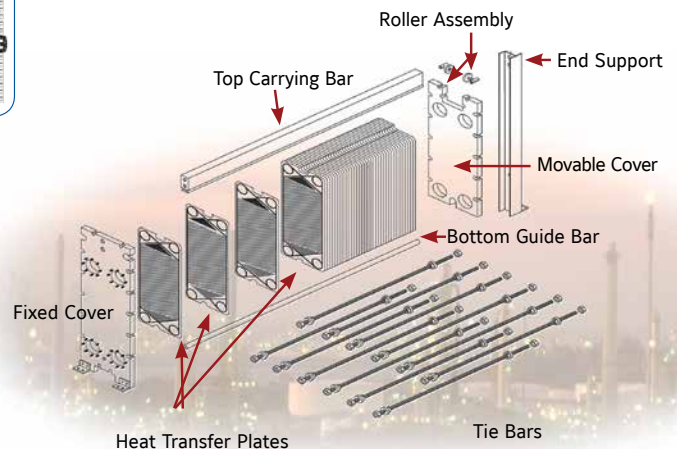
Gasket materials include FDA compliant Nitrile and EPDM's. Special, higher-grade CR refrigerant gaskets are used to reduce permeation and enhance safety. A two-piece design will reduce service cost and improve sealing performance.

Typical Flooded Evaporator



Welded pairs are aligned in a rigid, polyurethane painted carbon steel frame through the use of a top carrying bar and bottom guide bar as illustrated. Plates have a five-point alignment to ensure reliable plate positioning and easy service of large units.

Units can be designed for full vacuum up to 900 PSIG and temperatures from minus 40°F to 350°F.



# We promise to go further.

## SINGLE SOURCE INDUSTRIAL REFRIGERATION SOLUTIONS

### World-Class Solutions

FRICK creates confident customer experiences with our best-in-class solutions.

### Reliably Cold

FRICK is synonymous with refrigeration – we have generations of experience building refrigeration solutions.

### Unrivalled Expertise

FRICK offers quality that is unrivalled in the industry.



**Frick**<sup>®</sup>  
INDUSTRIAL REFRIGERATION

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