



Polaris Plate Heat Exchangers

Quality

Technology

Service

**Polaris**

A SONDEX
Company



Quality • Tech

Polaris PHEs vs. Shell-and-Tube Exchangers

For all these reasons, your Polaris heat exchanger is a better choice than a shell-and-tube substitute.

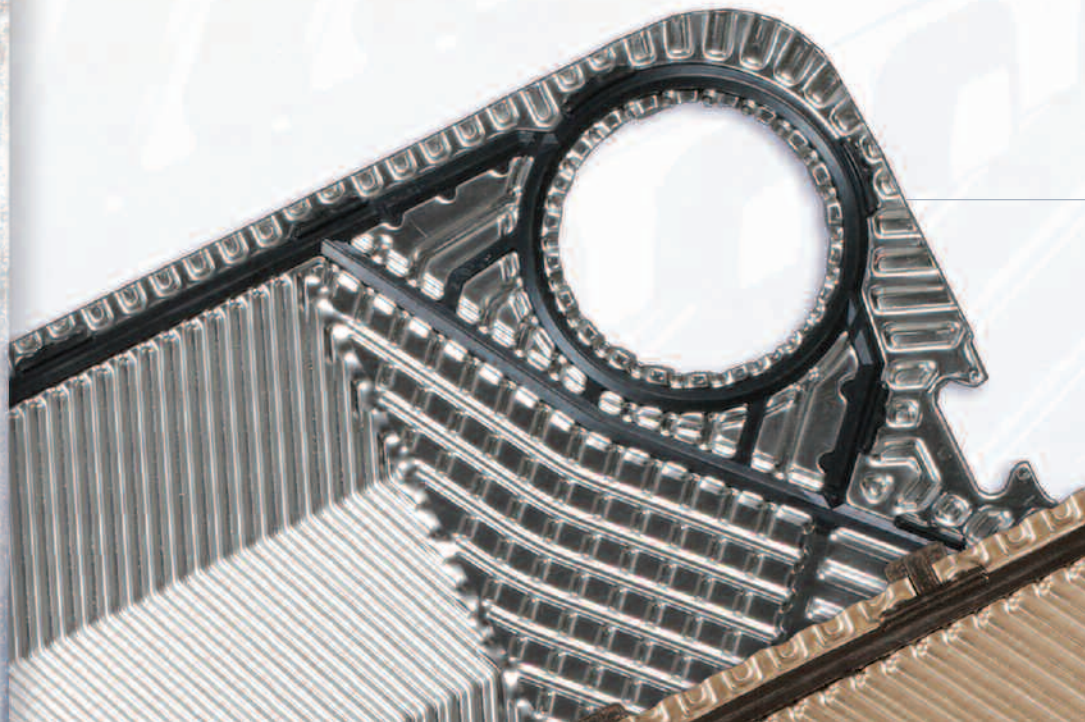
- **Compact design** enables efficient plate heat exchangers to accomplish the same work in far less space than shell-and-tube models.
- **Close temperature approach** maximizes temperature differentials and minimizes surface requirements.
- **Elimination of cross contamination** is assured by the Polaris gasket design.
- **Low hold-up volume** gives Polaris users shorter response times and better process control.
- **Fouling is minimized** with Polaris PHEs.
- **Versatility, expandability, and easy maintenance** are built into every Polaris unit.

Plate heat exchangers from Polaris bring maximum effectiveness and efficiency to an array of challenging applications – from HVAC specialties to automotive and general industrial needs, from food processing requirements to the special demands of chemical and pharmaceutical manufacturers.

In every field, Polaris PHEs are recognized for outstanding quality in design and construction – quality that proves out in long life, economical and trouble-free daily operation, and limited repair and maintenance schedules. It's a result that grows out of the most current heat-exchange technology, given form by exacting standards in plate pressing and unit assembly.

Today's Polaris relies on extensive manufacturing capabilities at our new-generation factory in Louisville, Ky. And we also deliver prompt, reliable service on estimates, installation, parts, consultation, and repairs from our U.S. headquarters in New Jersey.

It all adds up to a company that offers the same caliber of quality in its services that's long been established in its products. That's Polaris PHE – a leading provider of plate heat exchangers.



Technology • Service

Polaris is better by design...

Compare these exclusive advantages!

The Polaris Flex System

Maximum economy in any application

The Polaris Flex system provides the most economical, efficient design for any heat transfer application. The system features several plate sizes for each connection size, and plates are pressed in the patterns best suited to specific applications.

This variety of plate configurations makes all the difference. Combining the right plate geometry, patterns, and connections, the Flex system enables us to customize ideal designs for HVAC, chemical processing, food processing, automotive manufacturing, and many other uses.

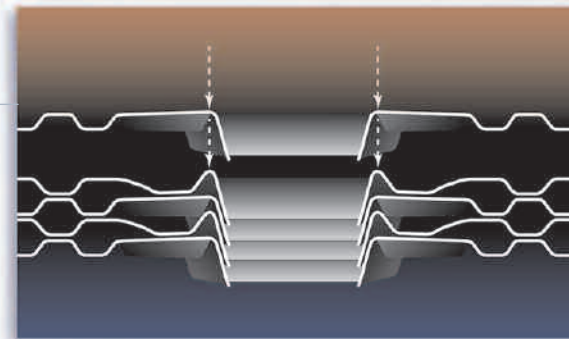
The system usually eliminates the need for multi-pass designs, so all connections can be located on the front of the exchanger. That means your Polaris heat exchanger can be opened and closed for maintenance, repair, or expansion without disturbing the piping.

The Polaris Flex System is your key to high-efficiency heat transfer.

THE POLARIS PLATE-LOCK™ SYSTEM

Precise Alignment and Dependable Sealing

A patented locking lip at the hanger and guide sections of each Polaris plate fastens plates securely together during the critical tightening operation. The Plate-Lock System keeps plates and gaskets closely aligned, and ensures a tight seal even at high working pressures.



THE POLARIS GASKETING SYSTEM

An Advanced Glue-free System

Clip-Tite gasketing from Polaris offers a combination of positive fluid separation, economy, and ease of use that's perfect for most applications. Integrated gasket clips fasten securely to the plate stampings. And because Clip-Tite gaskets can be fastened without tools, they're simple to replace.





**CONSTRUCTION
THAT'S
BETTER BY
DESIGN.**

Polaris quality demands careful attention to the materials and craftsmanship in every heat exchanger we make. Here's why you can expect superb efficiency, low maintenance, and long life from your Polaris unit.

PLATE-LOCK POSITIVE ALIGNMENT SYSTEM

A special locking lip secures the connection between plates, keeping them precisely aligned and tightly sealed even at high working pressures. *A Polaris exclusive!*

PLATE SEALING SYSTEMS

Polaris provides the proper plate sealing system for a wide range of applications. Choose from glued gaskets or Clip-Tite glueless gaskets.

HEAVY-DUTY FRAME HEADS

Polaris frame heads are built thicker to deliver even pressure to the plate pack. They eliminate the need for inferior welded-frame reinforcements. Opening the exchanger is fast and easy.

VERSATILE CONSTRUCTION

Polaris heat exchangers feature bolted construction for strength and accessibility. They can be assembled at the job site, and are easily expanded.

PROTECTIVE SHROUD

This safety feature complies with all applicable OSHA requirements; OSHA shrouds are included with every heat exchanger. Polaris also offers insulated shrouds to avoid condensation in humid locations.

HEAT TRANSFER PLATES

Polaris quality begins with our plates. They're constructed of rugged, heavy-duty stainless steel and pressed in designs that precisely fit a wide range of heat transfer applications. See our spec sheet for additional available plate materials.

ASME CODE STAMP AVAILABLE



ADVANCED HEAT EXCHANGE PRODUCTS

BRAZED PHEs

Ideal for refrigeration and process applications, Polaris brazed heat exchangers offer outstanding performance. These units give you critical advantages:

- A sealed, compact system
- High temperature and pressure capability
- Gasket-free construction
- Excellent thermal efficiency
- Highly competitive pricing

SAFETY-PAIR® DOUBLE WALL PHEs

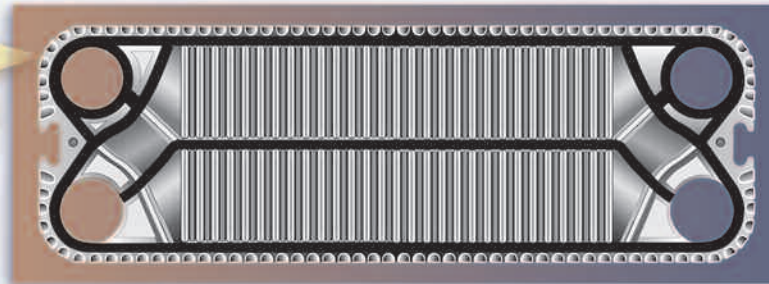
Where reliable separation of primary and secondary fluids is required, Polaris Safety-Pair PHEs deliver enhanced protection. For domestic hot water, dairy or other food processing, chemical manufacturing, or other critical applications, Safety-Pair PHEs from Polaris keep the fluids separated even if there's a plate failure. (Paired plates create an air space, allowing leaks to be seen from the outside. Any such leaks reach the atmosphere, either between plates or from the drain channels in the inlet/outlet areas. Media can never mix, so the risk of contamination is minimized.)

These versatile units can be assembled from almost any plate we press, so they are available in the widest possible range of shapes and sizes.

FREE-FLOW PLATES

The Polaris Free-Flow Plate Heat Exchanger accommodates viscous fluids or those containing fibrous materials. Its wide-channeled, horizontal-ribbed pattern with no metal-to-metal contact allows the free passage of particles that can block the flow in other heat exchangers.

NEW!
10mm gap units
now available



SEMI-WELDED PHEs

Polaris semi-welded plate heat exchangers handle the jobs conventional plate exchangers can't touch – including ammonia refrigeration and aggressive process fluids. Our semi-welded PHEs offer

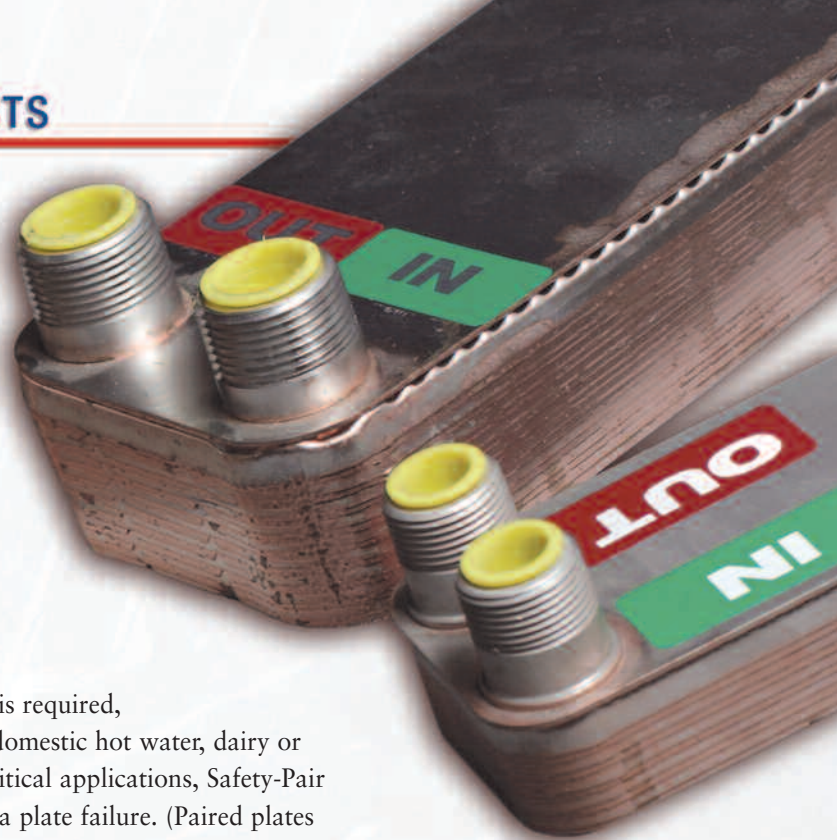
- Laser-welded plate cassettes
- Superior sealing capability
- Welds running outside the gasket groove for corrosion protection and increased heat transfer area
- Improved sealing under higher pressure
- Easy cleaning

SANITARY HEAT EXCHANGERS

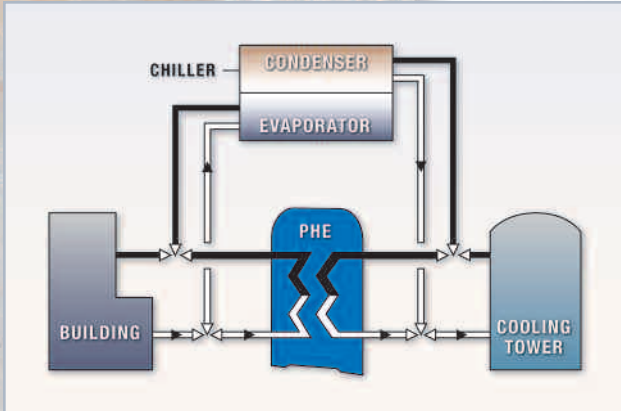
For food, dairy, and pharmaceutical processing, sanitary heat exchangers from Polaris combine low maintenance, high efficiency, and reliable separation of fluids. Plate gaps in these exchangers are sized to reduce fouling; the main pattern creates the needed turbulence for effective heat transmission.

FRESH WATER DISTILLING SYSTEMS

Utilizing the heat from diesel engine jacket cooling water, the Polaris Fresh Water Distiller evaporates seawater to produce pure drinking water. Contact us for details.



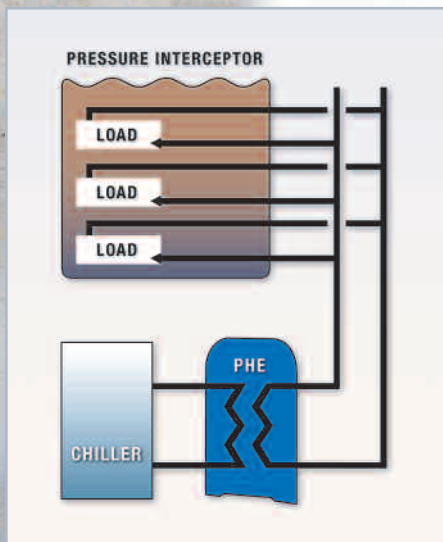
With engineering and manufacturing expertise backed up by broad field experience, Polaris meets the demanding requirements of multiple HVAC applications.



“FREE COOLING” (CHILLER BYPASS)

Large buildings often require year-round cooling to handle heat from computers, lights, and other building sources. Polaris PHEs offer the ideal way to reduce hours of mechanical chiller operation. When low ambient temperatures permit, tower flow can be diverted to the Polaris heat exchanger and the chiller turned off, achieving substantial operating savings.

In typical installations, retrofit is easy (no extra ductwork is needed as with air-side economizers) and the payback period is rapid. Chiller bypass applications extend chiller life, and Polaris PHEs’ close approach temperatures allow more operating hours than are possible with other types.

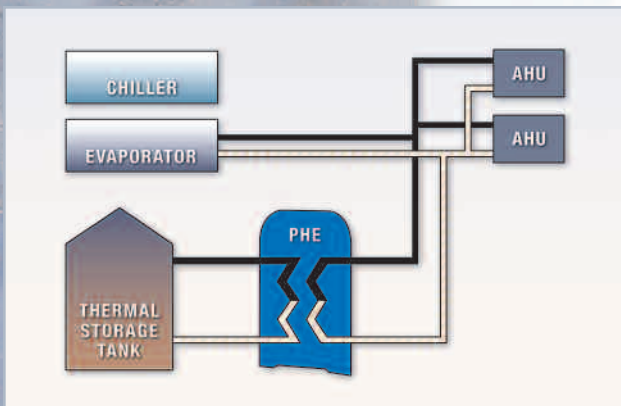


PRESSURE INTERCEPTOR (STATIC HEAD ISOLATION)

In tall buildings, static head pressure can be a problem – especially when glycol or water brines are used as cooling fluids. If separate loops at terminal units are employed, a Polaris plate heat exchanger can be installed to isolate the chiller or boiler from the system’s high pressure. It’s an arrangement that permits the use of substantially less expensive low-pressure pumps, valves, and other components.

COOLING TOWER ISOLATION

It’s common for tower water to be contaminated with solids and atmospheric debris. If foul water is pumped through expensive chillers or heat pumps, it may damage them. Using Polaris PHEs in the system instead avoids costly maintenance and component replacement.

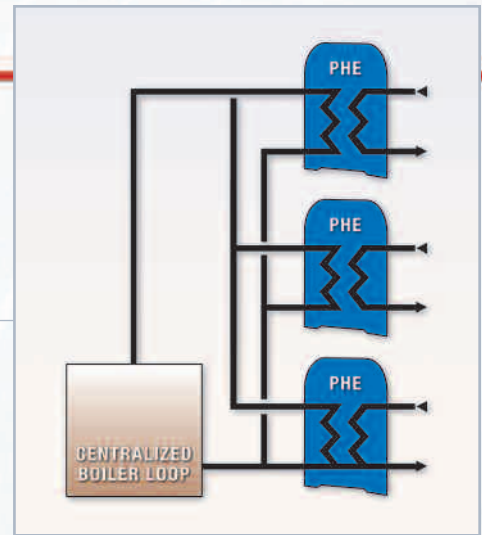


THERMAL STORAGE

Thermal storage systems maximize economy by operating refrigeration equipment during off-peak hours, chilling liquid in thermal storage tanks to provide cooling during peak demand periods. Designing in a Polaris PHE makes it possible to separate glycol brine from storage water and increase system efficiency.

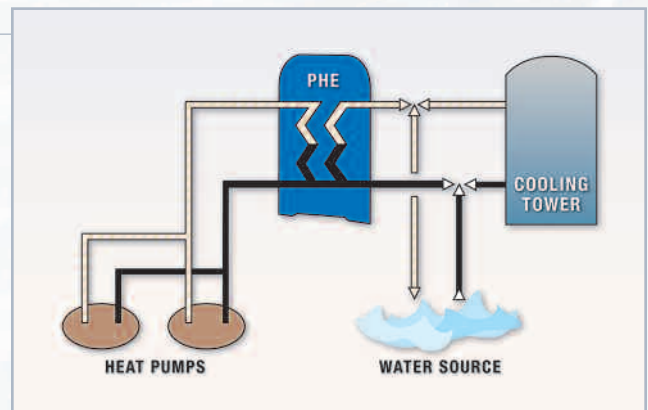
DISTRICT COOLING AND HEATING

Polaris plate heat exchangers are often used with low-pressure steam, hot water, or chilled water in district systems. Hot or cold water is sent through insulated pipes to buildings served by the system. PHEs in the buildings serve as instantaneous heaters or coolers, also providing building loop isolation and constant pressure drop to the central plant.



WATER-SOURCE HEAT PUMPS

Where heat pumps rely on a water loop instead of outside air, Polaris PHEs can improve both the efficiency and the cleanliness of the system. Open cooling towers served by plate heat exchangers replace less efficient, more costly closed-circuit coolers. And where the system employs well or river water, the PHE isolates the system from possible contamination.



WASTE HEAT RECOVERY FROM BOILER BLOWDOWN AND CONDENSATE

Boiler blowdown, a major source of recoverable heat, makes many systems more economical. When Polaris PHEs are used to preheat incoming boiler feed water, the savings are magnified. (Returning condensate in these systems is cooled so it won't flash when drained to atmospheric pressure.)

GEOTHERMAL HEATING

While geothermal energy sources can save a lot of money, the water containing the heat is usually dirty and corrosive. Low fouling tendencies make Polaris PHEs (with properly specified plate material) the ideal equipment for isolating geothermal water from the building loop.

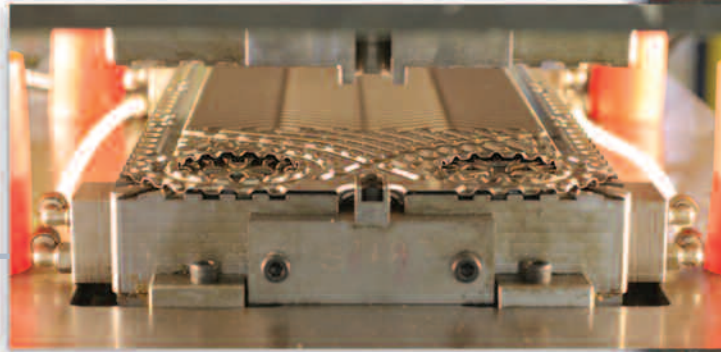
MARINE APPLICATIONS

If assembled with titanium plates, Polaris PHEs can be used to isolate seawater from fresh water in engine jacket and lube oil cooling for marine diesel engines. Polaris PHEs can also be used in shipboard fresh-water generation systems.



Prime technology,
practical experience,
dedicated service.

All from Polaris.



At Polaris, we combine longtime personal experience in the heat transfer industry with technological leadership from Sondex A/S of Denmark, one of the world's top manufacturers of heat transfer plates.

Sondex keeps us in the vanguard of technological development with the newest, most efficient designs in the industry. And now the manufacturing plant in Louisville, Ky. presses plates and assembles PHEs, taking advantage of home-grown American manufacturing expertise and labor skills.

We make only plate heat exchangers, so we're specialists in their application. Even more important, we're serious about service. You'll find us prompt in responding to your quotation requests and delivery needs. Most designs are completed and returned within hours. And we can respond without difficulty to requests for special materials or unusual designs.

Our nationwide network of manufacturer's representatives is always at your service.

Represented in your area by:



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Typical Polaris Applications

HVAC

Cooling Tower Isolation
Free Cooling/Chiller Bypass
Geothermal Heating
Pressure Interceptor
Thermal Storage
District Heating and Cooling
Water-Source Heat Pumps
Swimming Pool Heating
Greenhouse Heating
Boiler Blowdown Heat Recovery

CHEMICAL PROCESSING

Brine Heating and Cooling
Sulfuric Acid Processing
Caustic Soda Processing
Vapor Condensation
Salt Refining
Resin Cooling

AUTOMOTIVE

Phosphate Solution Cooling
Paint Heating
Induction Heater Cooling

GENERAL INDUSTRIAL

Plating Solution Cooling
Anodizing
Cutting Oil Cooling

FOOD PROCESSING

Beerwort Cooling
Edible Oil Heating/Cooling
Raw Milk Cooling
Milk Pasteurization
Hot Water Generators
Tomato Sauce Processing

MARINE

Fresh-Water Generator
Engine Jacket Cooling
Lube Oil Cooling