Pre-engineered & custom-engineered heat exchangers, designed to TEMA specs.

Engineered for life
As the recognized leader in heat exchanger products, systems and technology, ITT Standard has been providing state-of-the-art solutions to heat transfer problems for more than 75 years.

Today, the company is devoted exclusively to the design, engineering and manufacture of shell-and-tube, gasketed plate, brazed plate and air-cooled heat exchanger products. ITT Standard heat exchangers are engineered and manufactured by experienced craftsmen who have been devoted to the science of heat transfer not just for years, but for generations. And because we offer such a wide assortment of different heat exchanger designs, we can assure you of getting the optimum heat transfer solution to your specific application, without bias toward any one particular (or proprietary) product line.

**Century Series Heat Exchangers**

*ITT Standard is headquartered in one of the largest and best-supported heat exchanger centers in the world.*

*Our design staff and computerized selection process will help you choose the best heat exchanger for your application.*

*High standards of quality are found in every aspect of manufacturing, packaging and shipping.*

*Century Series heat exchangers combine choice of options and control of custom design with economies of standardization and production, to give you the precise heat exchanger you need at the lowest cost.*

*Century series heat exchangers can be designed and manufactured to the standards and guidelines of the following: TEMA (Tubular Equipment Manufacturers Association), ASME (American Society of Mechanical Engineers), API (American Petroleum Institute), ABS (American Bureau of Shipping), The Pressure Equipment Directive (97/23/EC), USN (U.S. Navy) and others. At ITT Standard, we work directly with these organizations, and frequently offer our facilities — particularly our advanced thermal research laboratory — along with our expertise to help set, clarify and implement standards that contribute to the overall strength of the heat transfer industry.*

*Century Series heat exchangers are manufactured with rugged construction for tough day-to-day operations.*

*Engineers are increasingly finding answers to these challenges in the Century Series heat exchangers from ITT Standard. This line of products offers a vast range of combinations in design, performance, materials and options for virtually any heat transfer problem.*

*Whatever the application requires, chances are there’s a Century Series heat exchanger that’s right for the job:*  
- Fixed or floating tubesheet, single- or multi-pass, straight or U-tube, fixed tubesheet or removable bundle  
- Steel or stainless, copper or bronze, nickel or exotic alloys, Hastelloy®, Monel® or titanium
Selecting the right heat exchanger.

Your ITT Standard representative has complete information on Century series and other heat exchanger products to help you meet your particular application requirements. The latest industry standards and computer technology help us provide the most accurate heat transfer calculations. We can use commercial heat transfer programs such as BJAC® and HTRI®, or programs based upon research from our own heat transfer laboratory for complete, accurate and timely heat transfer ratings.

Our advanced thermal research lab is one of the largest and best equipped facilities in the industry. Staffed by a team of experienced chemical, mechanical and metallurgical engineers, it is used to solve heat transfer problems and identify opportunities for product improvement and development. It is also made available to industry groups, to develop standards and guidelines for product design, manufacturing and testing.

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### Heat Exchanger SELECTION

#### Century CPK Standard Design Capabilities

<table>
<thead>
<tr>
<th></th>
<th>Design Pressure</th>
<th>Design Temperature</th>
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<tbody>
<tr>
<td>Tube side</td>
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<tr>
<td></td>
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</table>

### Advantages:
- Floating tubesheet allows differential expansion between the shell and tubes.
- Maximum tube count per shell diameter.
- Shell side can be steam or mechanically cleaned.
- Bundle can be easily replaced or repaired.
- Less costly than full internal floating head type construction.

### Limitations:
- Both shell side and tube side exposed to packing. Volatile and/or toxic fluids should be avoided.
- Packing limits design pressure and temperature for both shell and tube sides.

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**Century CPK Type AEW or BEW.**

Can meet TEMA “B”, “C” and “R”, ASME Section VIII Div. “U” stamp and ASME Section III “N” stamp.
**Century C100**

**Advantages:**
- Less costly than removable bundle exchangers.
- Provides maximum heat transfer surface area per given shell and tube size.
- Easily interchangeable with designs of various other manufacturers.
- Tube side can be steam or mechanically cleaned.
- Only tube side fluids are exposed to gaskets.
- Volatile or toxic fluids possible on shell side.
- Easy accessibility for tube side cleaning and inspection.
- No packed joints.

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</table>

**Limitations:**
- Shell side limited to non-volatile and/or non-toxic fluids.
- Shell side packing limits design pressure and temperature.
- Less surface per given shell and tube size than TEMA type AEW or BEW designs.

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**Century C200 and C210**

**Advantages:**
- Single- or multi-pass tube arrangements for maximum efficiency over a wide variety of tube side flow volumes.
- An expansion joint can be added to compensate for severe temperature differentials.
- Standard shell sizes from 5 inches through 42 inches in diameter; custom designs up to 60 inches in diameter.

<table>
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**Limitations:**
- Shell side limited to non-volatile and/or non-toxic fluids.
- Shell side packing limits design pressure and temperature.
- Less surface per given shell and tube size than TEMA type AEW or BEW designs.
**Century C300 and C320 Standard Design Capabilities**

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</table>

**Note:** Custom designs to 3,600 psi/24,816 kPa and 1000°F/538°C, depending on shell diameter and design temperature.

**Advantages:**
- U-tube, removable bundle (C300) or suction-heater (open-end shell) construction (C320).
- Multi-pass tube arrangements for maximum efficiency over a variety of tube side flow volumes.
- The C320 is much like the C300, but has an open-end shell and special tube layout for tank suction heating applications.
- Standard shell sizes from 5 inches through 42 inches in diameter; custom designs up to 60 inches in diameter.
- Available for horizontal or vertical mounting.

**Limitations:**
- Individual tube replacement is difficult.
- Cannot be made single-pass on tube side, so true counter-current flow is not possible.
- Draining tube side is difficult in vertical (head-up) position.
- Tube side can be cleaned by chemical means only.

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**Century C400 Standard Design Capabilities**

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**Note:** Custom designs to 3,600 psi/24,816 kPa and 1000°F/538°C, depending on shell diameter and design temperature.

**Advantages:**
- Straight tube, internally bolted floating head, pull-through construction with removable bundle.
- Multi-pass tube arrangements for maximum efficiency over a wide variety of tube side flow volumes.
- Standard shell sizes from 8 inches through 42 inches in diameter; custom designs up to 60 inches in diameter.

**Limitations:**
- Less heat transfer surface area for given shell and tube size than other removable bundle designs.
- The costliest of all basic types of heat exchanger designs.
- Gasket leak detection not possible on floating head.

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**Century C300 Type “BEU”**

**Century C400 Type “AET”**
Advantages:

- Higher heat transfer surface area per given shell and tube size than pull-through designs (AET or BET Types).
- Allows for differential thermal expansion between the shell and tubes.
- Lack of packed joints allows for handling volatile and/or toxic fluids.
- Provides multi-pass tube arrangements.
- Bundle can be removed for shell side cleaning and maintenance.

Limitations:

- Shell cover, clamp ring and floating head cover must be removed prior to removing bundle. This results in higher maintenance cost compared to “pull-through” designs (AET or BET).
- More costly than fixed tubesheet and U-tube designs.

Century® Series heat exchangers are available with a wide range of custom features, design variations, special materials and options to meet virtually any heat transfer requirement.

Drawing on more than 75 years of thermal and mechanical design experience and heat transfer expertise, ITT Standard engineers have developed an unparalleled range of choices to help you select the precise heat exchanger you need to meet your specific requirements.

Century C500 Standard Design Capabilities

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Note: Custom designs to 3,600 psi/24,816 kPa and 1000°F/538°C, depending on shell diameter and design temperature.

Century® Series heat exchangers are available on all Century® Series units; consult your ITT Standard representative or the factory.

Materials

- Standard designs
  - Shells: Steel, 304SS, 316SS, 304L SS, 316L SS, up to 42-inch diameter.
  - Tubesheets: Aluminum Bronze, 90/10 Cu/Ni, Muntz, RNB, 304SS, 316SS, 304L SS, 316L SS, Steel.
  - Tubing: Carbon Steel, Stainless Steel, Nickel and Nickel Alloys, Titanium and other Alloys.
  - Bare and Lo-Fin Tubing.

- Custom designs
  - Materials: Stainless steel(s) (including Alloy 20, 317SS, AL6XN, 304L SS, etc.), Hastelloy, Titanium, Monel, 90/10 CuNi, 70/30 CuNi, Inconel, Incoloy®.

Design Capabilities

- Hydraulic tube expansion
- Seal and strength welding of tubes to tubesheet
- Expansion joints (flanged and fixed head as well as bellows type)
- Surface finish analysis
- Heat transfer test laboratory (4,000 ft²)
- Helium leak testing
- Radiographic, ultrasonic and magnetic particle testing (sub-contracted)
- API oil flushing

Specifications

- ASME Section III “N” stamp
- ASME Section VIII Division 1
- TEMA Classes “B,” “C” and “R”
- API
- ABS
- US Navy (MIL-C-15730)
- The Pressure Equipment Directive (97/23/EC)
Models of efficiency.

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

Plateflow® plate-and-frame exchangers.

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

Heat transfer coils.

FanEx® and AirEx® air/oil, air/air, or air/water heat exchangers.

For more information on this product please contact:

Southgate Process Equipment, Inc.
87 Hickory Springs Industrial Dr.
Canton, GA 30115
Phone: (770) 345-0010
Email: Sales@southgateprocess.com
Website: www.southgateprocess.com

Standard Xchange
a xylem brand

Formally ITT Standard, American Standard, and Ross
HEAT TRANSFER AND ENERGY RECOVERY

HEAT EXCHANGERS AND PRESSURE VESSELS

STANDARD XCHANGE (formerly ITT STANDARD) Commercial and engineered (TEMA) shell and tube heat exchangers. Plate and frame heat exchangers with various material combinations, gasketed, welded and double wall designs. Brazed plate heat exchangers with standard and customized designs.

MUNTERS/DES CHAMPS Air to air economizers, tubular and plate style for high temperature applications.

HEAT EXCHANGER DESIGN, INC Longitudinally finned hairpin and double pipe heat exchangers, large shell and tube heat exchangers, tank heaters and suction heaters. TEMA B, C, and R.

INDUSTRIAL HEAT TRANSFER, INC Finned tube heat transfer coils with continuous plate fin design. Many combinations of metals and custom designs.

ENERQUIP, LLC Shell and tube heat exchangers, all stainless steel sanitary designs for pharmaceutical and food applications.

ELANCO Spiral heat exchangers, welded plate and shell, ASME VIII.

J D COUSINS, INC. Large fabricated tanks and shell and tube heat exchangers for chemical, power and general industrial.

FABSCO Air cooled forced draft finned tube heat exchangers. ASME VIII and API 661.

CIRCLE-S PRODUCTS Dry-Flo moisture separators, coalescers, receivers and dry types in stock and custom sizes. Surge tanks, small tanks and ASME VIII pressure vessels.

PACKAGED SYSTEMS & COMPONENTS

SPIRAX SARCO, INC. Steam control and condensate recovery systems, steam traps, control valves, regulators.


KERR PUMP & SUPPLY Custom designed skid mounted packaged systems with controls, filters, tanks, pumps, heat exchangers, etc.

ITT NEO-DYN & ITT CONOFLOW Regulators, transducers, actuators, positioners, temperature switches and pressure switches.

GAUMER COMPANY Electric heaters, custom and stock. Immersion, circulation, duct, strip and band heaters. Packaged systems with optional controls.

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