

# Heat Transfer Equipment

THE BROADEST SELECTION AVAILABLE FOR GENERAL HEATING AND COOLING.



**C. Emery Nelson, Inc.**

INDUSTRIAL AND POWER PLANT EQUIPMENT

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Standard **X**change  
a xylem brand

## PRE-ENGINEERED FOR GENERAL APPLICATIONS



### BCF/HCF®

Pre-engineered fixed tubesheet construction made with cast iron and copper alloys. Shell diameters in 2" through 8" with 1, 2, or 4 pass configurations.

**Applications:** To heat or cool water or lube oil; condense steam. Use for auxiliary machinery, turbines, engines, compressors and lasers. Excellent choice for pilot plants.

### SSCF®

Pre-engineered fixed tubesheet construction made with fluid surfaces in SS316. Shell diameters in 2" through 8" with 1, 2, or 4 pass configurations.

**Applications:** For heating or cooling corrosive fluids in chemical, pharmaceutical or refining processes.

### SX2000®

Pre-engineered fixed tubesheet construction made with cast iron, steel and copper. Shell diameters in 3" through 8" with 1, 2, or 4 pass configurations.

**Applications:** To cool lube oil, fluids or jacket water, and for use where copper is not practical.

### B300/SX2000U

Pre-engineered U-tube construction made with cast iron, steel and copper. Shell diameters in 3" through 8" with 1, 2, or 4 pass configurations.

**Applications:** For heating water or other fluids, using steam or hot water as the heating medium.

We'll be happy to **customize** a heat exchanger design to meet the precise needs of **your application.**

## CUSTOM FOR PROCESS APPLICATIONS

### C100®

External packed floating head allows differential thermal expansion between shell and tubes. No packing is exposed to tube side fluid. Large entrance area enables easier maintenance of removable tube bundle. 1-, 2-, 4- or 6-pass models. Meets ASME code and TEMA Types BEP/AEP. Shell sizes: 5" – 60"

**Applications:** For tube side circulation of corrosive liquids, high-fouling fluids, or gases and vapors.

### C200®/C210

Fixed tubesheet with removable channel or bonnet. Maximum heat transfer area in a given shell size. Available with shell expansion joint if desired. 1-, 2- 4- or 6-pass models. Accessible tube side makes cleaning easier. Meets ASME code and TEMA Types BEM, AEL/NEN. Shell sizes: 5" – 60"

**Applications:** For heating or cooling oil, water and chemical process fluids.

### C300®, C320 AND C330

U-type, removable-bundle design allows wide variation in fluid temperature, withstands thermal shock better. 2-, 4-, or 6-pass models. Most economical basic shell and tube configuration. Meets ASME code and TEMA Types BEU/AEU. Shell sizes: 5" – 60"

**Applications:** For heating or cooling oil, water and process fluids or condensing process steam or vapor.

### C400®

Straight tubes, internal bolted floating head cover, removable tube bundle. No special provisions needed for expansion. Meets ASME code and TEMA Types BET/AET. Shell sizes: 5" – 60"

**Applications:** For heating or cooling chemical or hydrocarbon fluids; condensing air or gases.



### C500®

Straight tubes, internal clamp-ring floating head cover. Tube bundle is removable for easy cleaning. Offers more surface per given shell and tube sizes than C400 or C100. Meets ASME code and TEMA Types BES/AES. Shell sizes: 5" – 60"

**Applications:** For the most rugged process plant service, including heating or cooling petrochemicals or condensing vapors.

### CPK

Flexible design with packed floating tubesheet, removable tube bundle. Wide choice of materials, components, and nozzle orientations. Meets ASME Code and TEMA. Shell sizes: 5" – 31"

**Applications:** Heat or cool electrolyte, condensate, brine, boiler blowdown or hydraulic, turbine, and compressor oils/fluids.

### S1000R®

Single-bank, balanced-flow packaged steam condensers. Low pressure drop over tubes and large entrance area to tube bank. Furnished with packaged air removal and/or other associated equipment. Shell sizes: 15" – 60"

**Applications:** For condensing steam from refrigeration machines, compressors, auxiliary generator drives, pump or blower drives.

## PLATE OR BRAZED



### **BRAZEPAK®**

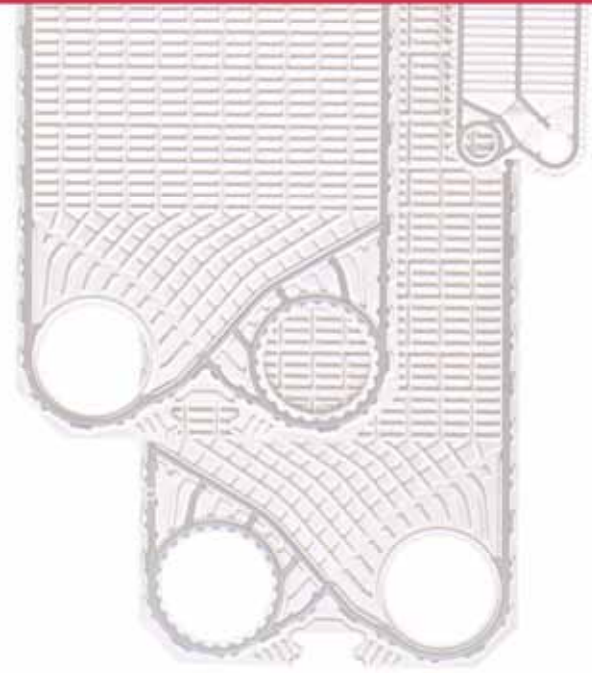
Vacuum brazed with stacked plate construction with SS316L plates copper brazed and options for nickel brazing. Connection sizes 3/4" through 4". Both single wall and double wall options available.

**Applications:** For general purpose oil, water and gas cooling. Use on compressors, hydraulic packages, lasers and diesel engines. Ideal for refrigerant evaporators, condensers, chillers or air dryers.

### **PLATEFLOW™**

Gasketed stacked plate construction with plates in SS304 and SS316, titanium and other nickel alloys. Wide gap, semi-welded, and double wall designs in addition to traditional single wall configuration. Nitrile, EPDM, and viton gaskets options are available. Connection sizes 1" through 26".

**Applications:** For close temperature control of fluids for heat recovery applications.



As the recognized leader in heat exchanger products, systems and technology, Standard Xchange has been providing state-of-the-art solutions to heat transfer problems for more than 90 years.

### **For More Information**

Call 1.800.447.7700,

or visit

[standard-xchange.com](http://standard-xchange.com)

# AIR/COOL



## AIREX™

Rugged vacuum brazed aluminum bar and plate construction. Connection sizes ranging from 1-5/16" through 3". Options available offering reduced fouling for dirty environments.

**Applications:** Oil cooling with air, where compact size and rugged construction are a must.

## FANEX®

Heavy duty copper tube aluminum plate fin construction with options for stainless steel tubing. Connection sizes ranging from 1" through 3". Options available for air to air to water service.

**Applications:** For cooling oil or other fluids with air, where compact size, cooling efficiency, safety and quiet operation are important.



## HEAVY DUTY HEATING COILS

Type H, HW1, HRC and HRP coils heat with steam, hot water or other fluids.

Type HD1 coils heat with steam only.

All are available in single or multi-row units with removable element assemblies.

Standard Xchange products are manufactured with the highest standards of quality.

Standard **X**change  
a xylem brand

# Heat Exchanger Models

Use this guide and the following charts to determine the heat exchanger you need. We hope you will find these guidelines useful; for more information, or specific recommendations, call your local Standard-Xchange representative.

MODEL	CONSTRUCTION	ADVANTAGES
<b>BCF, HCF, TCF, SX2000, C200, C210, S1000R, SSCF, EF</b>	Non-removable bundle, fixed tubesheet	<ol style="list-style-type: none"> <li>1. Less costly than removable bundle heat exchangers</li> <li>2. Provides maximum heat transfer surface per given shell and tube size</li> <li>3. Provides multi-tube pass arrangements</li> <li>4. Interchangeable with competitive models</li> </ol>
<b>CPK, C100, BCP</b>	Removable bundle, packed floating tubesheet	<ol style="list-style-type: none"> <li>1. Floating end allows for differential thermal expansion between the shell and tubes</li> <li>2. Shell side can be steam or mechanically cleaned</li> <li>3. Bundle can be easily repaired or replaced</li> <li>4. Less costly than full interval floating head-type construction</li> <li>5. Maximum surface per given shell and tube size for removable bundle designs</li> </ol>
<b>C400</b>	Removable bundle, pull-through bolted internal floating head cover	<ol style="list-style-type: none"> <li>1. Allows for differential thermal expansion between the shell and tubes</li> <li>2. Bundle can be removed from shell for cleaning or repairing, without removing the floating head cover</li> <li>3. Provides multi-tube pass arrangements</li> <li>4. Provides large bundle entrance area</li> <li>5. Excellent for handling flammable and/or toxic fluids</li> </ol>
<b>C500</b>	Removable bundle, internal clamp ring-type floating head cover	<ol style="list-style-type: none"> <li>1. Allows for differential thermal expansion between the shell and tubes</li> <li>2. Excellent for handling flammable and/or toxic fluids</li> <li>3. Higher surface per given shell and tube size than C400</li> <li>4. Provides multi-tube pass arrangements</li> </ol>
<b>C300, C320, C330, BCU, SSCU, B-300S, B-300W, SX2000U</b>	Removable bundle, U-tube	<ol style="list-style-type: none"> <li>1. Less costly than floating head or packing floating tubesheet designs</li> <li>2. Provides multi-tube pass arrangements</li> <li>3. Allows for differential thermal expansion between the shell and tubes, as well as between individual tubes</li> <li>4. High surface per given shell and tube size</li> <li>5. Capable of withstanding thermal shock</li> </ol>
<b>FanEx</b>	Plate fin core with fan	<ol style="list-style-type: none"> <li>1. Uses air for cooling where water is unavailable, costly, or undesirable. Exhaust air can be used for space heating</li> </ol>
<b>AirEx</b>	Bar and Plate with fan	<ol style="list-style-type: none"> <li>1. Uses air for cooling where water is unavailable, costly, or undesirable. Exhaust air can be used for space heating</li> </ol>
<b>PlateFlow</b>	Removable partition plates with compression endplates and frame	<ol style="list-style-type: none"> <li>1. Ease of disassembly for cleaning or replacement parts</li> </ol>
<b>Brazepak</b>	Brazed plate	<ol style="list-style-type: none"> <li>1. Very compact and rugged</li> <li>2. Lightweight</li> <li>3. Many design options, including multiple passes, different plate styles, nozzle sizes and orientation</li> <li>4. High heat transfer performance</li> <li>5. No gaskets</li> </ol>
<b>HD1, H, HW1, HRC, HRP</b>	Heavy duty removable core type	<ol style="list-style-type: none"> <li>1. Tubes free to expand individually</li> <li>2. Heating elements totally removable for maintenance or replacement without disconnecting outer casing from ductwork</li> <li>3. Type HD1 provides maximum freeze-resistance when using sub-freezing air</li> <li>4. Type HD1 has steam distributing tube for flow pressure operation with modulating control</li> <li>5. Embedded or extruded fins available for higher design temperatures (750° F max.)</li> </ol>

LIMITATIONS	SELECTION TIPS
<ol style="list-style-type: none"> <li>1. Shell side can be cleaned only by chemical means</li> <li>2. No provisions to correct for differential thermal expansion between the shell and tubes. (Exception: expansion joint, available only on C200 and C210 exchangers)</li> </ol>	<ol style="list-style-type: none"> <li>1. For lube and oil and hydraulic oil coolers, put the oil through the shell side</li> <li>2. Corrosive or high fouling fluids should be put through the tube side</li> <li>3. In general, put the coldest fluid through the tube side</li> </ol>
<ol style="list-style-type: none"> <li>1. Shell side fluids limited to non-volatile and/or non-toxic fluids, i.e., lube oils, hydraulic oils</li> <li>2. Tube side arrangements limited to one or two passes Tubes expand as a group, not individually (as in U-tube unit); therefore, sudden shocking should be avoided</li> <li>3. Packing limits design pressure and temperature</li> </ol>	<ol style="list-style-type: none"> <li>1. For lube oil and hydraulic oil coolers, put the oil through the shell side</li> <li>2. For air intercoolers and aftercoolers on compressors, put air through the tube side</li> <li>3. Coolers with water through the tube side: clean or jacket water, use 3/8" tubes; raw water, use 5/8" or 3/4" tubes</li> <li>4. Put hot shell side fluid through at stationary end (to keep temperature of packing as low as possible)</li> </ol>
<ol style="list-style-type: none"> <li>1. For given set of conditions, it is the most costly of all the basic types of heat exchanger designs</li> <li>2. Less surface per given shell and tube size than C500</li> </ol>	<ol style="list-style-type: none"> <li>1. If possible, put the fluid with the lowest heat transfer coefficient through the shell side</li> <li>2. If possible, put the fluid with the highest working pressure through the tube side</li> <li>3. If possible, put the high fouling fluid through the tube side</li> </ol>
<ol style="list-style-type: none"> <li>1. Shell cover, clamp-ring and gloating head cover must be removed prior to removing the bundle. Results in higher maintenance cost than the C400</li> <li>2. More costly than fixed tube sheet or U-tube heat exchanger designs</li> </ol>	<ol style="list-style-type: none"> <li>1. If possible, put the fluid with the lowest heat transfer coefficient through the shell side</li> <li>2. If possible, put the fluid with the highest working pressure through the tube side</li> <li>3. If possible, put the high fouling fluid through the tube side</li> </ol>
<ol style="list-style-type: none"> <li>1. Tube side can be cleaned only by chemical means</li> <li>2. Individual tube replacement is difficult</li> <li>3. Cannot be made single pass on tube side; therefore, true counter-current flow is not possible</li> <li>4. Tube wall at U-bend is thinner than at straight portion of tube</li> <li>5. Draining tube side is difficult in vertical (head-up) position</li> </ol>	<ol style="list-style-type: none"> <li>1. For oil heaters, wherever possible put steam through the tube side to obtain the most economical size</li> <li>2. For water heating with steam or hot water, the B-300S or B-300W will prove most economical</li> </ol>
	<ol style="list-style-type: none"> <li>1. Refer to FanEx catalog for complete, step-by-step selection procedure</li> </ol>
	<ol style="list-style-type: none"> <li>1. Refer to AirEx catalog for complete, step-by-step selection procedure</li> </ol>
<ol style="list-style-type: none"> <li>1. Not Suitable for pressures over 300 psig</li> <li>2. Not Suitable for change of state or gaseous applications</li> </ol>	<ol style="list-style-type: none"> <li>1. For applications involving temperature crossing</li> <li>2. Economical when exotic metals are required</li> </ol>
<ol style="list-style-type: none"> <li>1. Can only be cleaned chemically</li> </ol>	<ol style="list-style-type: none"> <li>1. For applications involving temperature crossing or close temperature approach</li> <li>2. Ideal for refrigerant-to-liquid or refrigerant-to-gas applications</li> <li>3. Very economical when compared to all-stainless tubular construction</li> </ol>
<ol style="list-style-type: none"> <li>1. HW1 Coil not suitable for installation with tubes vertical</li> <li>2. Individual tubes cannot be cleaned or plugged</li> </ol>	<ol style="list-style-type: none"> <li>1. Refer to Heating Coil Product Selection Guide for information concerning special construction, limits and control</li> </ol>

# MODELS OF EFFICIENCY.



## CENTURY SERIES\*

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



## BRAZEPAK\*

Brazed plate  
heat exchanger.



## PLATEFLOW\*

Gasketed plate  
& frame heat  
exchanger.



## AIREX\* AND FANEX\*

Air/oil, air/air,  
or air/water  
heat exchangers.



## PRE-ENGINEERED SERIES

BCF\*/SSCF\*/  
SX2000\*/B300\*  
Pre-engineered  
shell and tube  
heat exchanger.

**Standard Xchange**  
a xylem brand

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