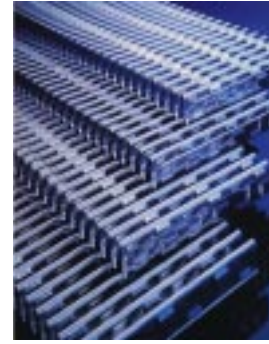




#### SCHMIDT-BRETTE

Schmidt-Bretten plate heat exchangers serving the chemical, pharmaceutical and food & beverage industries for over a century. Plate and frame designs

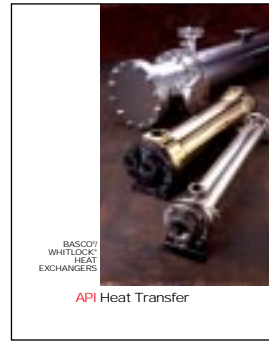
available with a variety of plate surface areas, sizes, thicknesses, corrugations and materials. Gasket options include nitrile, EPDM and Viton®. Compressed fiber or Teflon® for harsher service. The compact design, versatility and expandability deliver benefits in thermal transfer applications where weight, space and cost are of concern. Welded and brazed designs for gasket-free requirements. Applications include heating, cooling, evaporating and condensing of water, glycols, light oils, viscous and other process fluids, including solids-containing fluids. Ask for product bulletins.



#### AIRTECH

Serving the compressor and off-highway markets since 1985. Air cooled, aluminum vacuum brazed heat exchangers. High efficiency coolers used for cooling a

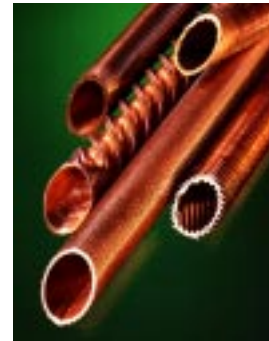
variety of liquids and compressed gases with ambient air. Lightweight and compact yet rugged. Capable of cooling multiple fluid and/or gas circuits in a single unit. Core depths range from 1.25"(3.18 cm) to 6"(15.24 cm) and tube lengths available up to 60"(152.4 cm). Product applications include charge air coolers, hydraulic oil coolers, transmission oil coolers, engine oil coolers and combination oil/aftercoolers. Ask for product bulletins.



#### BASCO/WHITLOCK

Basco® and Whitlock® shell and tube heat exchangers serving a variety of industries since 1957 and 1891, respectively. Standard and custom designs available. Shells range from 2" (5.1 cm)

to 10 feet (3.05 m) in diameter and up to 30 feet (3.05 m) in length. Materials range from carbon steel to titanium. Design options include straight or U-tube, fixed or removable tube bundles, floating head or tubesheet, tube sizes, materials and enhancements, and sanitary finish. ASME, TUV, API, HEI and other standards. All TEMA designs (to 3000 PSIG). Products used in compressor, power generation, chemical process, hydraulic and other OEM and after-market applications. Ask for product bulletins.



#### ACME

Acme® refrigeration equipment serving the needs of the market since 1919. Chiller barrels, condensers and completely assembled, wired and piped chillers. The package line includes water cooled and air

cooled units such as process water chillers, tank chillers, ice rink chillers, anodizing chillers, brine and glycol chillers. Standard and custom chiller barrels, condensers and marine condensers available to 1000 tons. Same day shipment available on many condensers and chiller barrels from strategically located warehouses. Ask for product bulletins.

## HEAT TRANSFER PRODUCTS

# API Heat Transfer

**API Ketema** - Acme® Refrigeration Equipment / Whitlock® Shell & Tube Heat Exchangers  
2300 West Marshall Drive, Grand Prairie, TX 75051 • (972) 647-2626 • FAX: (972) 641-1518

**API Basco** - Basco® Shell & Tube Heat Exchangers  
2777 Walden Avenue, Buffalo, NY 14225 • (716) 684-6700 • FAX: (716)684-2129

**API Airtech** - Air Cooled Aluminum Heat Exchangers  
91 North Street, P.O. Box 68, Arcade, NY 14009-0068 • (716) 496-5755 • FAX: (716) 684-2129

**API Schmidt-Bretten Inc.** - Plate Heat Exchangers  
91 North Street, Arcade, New York 14009 • (716) 496-7550 • Fax: (716) 496-1004

**API Schmidt-Bretten GmbH.** - Plate Heat Exchangers  
PO Box 1580 D-75005 Bretten, Pforzheimer Strasse 46, D-75015 Bretten, Germany  
49 7252/53-101 • Fax: 49 7252/53-201

## BASCO®/WHITLOCK® HEAT EXCHANGERS



# API Heat Transfer

## Basco®/Whitlock®

The Basco and Whitlock product lines offered by API Heat Transfer represent two long-established entities in shell and tube heat exchanger manufacturing. The Whitlock line, offered through API Ketema, has been a leading force in heat transfer for the process and OEM industries since 1891. The Basco line, available from API Basco, has established a reputation – specifically in the compressor and air separation markets – for both standard and custom design units. This reputation dates back over 40 years.

The Basco/Whitlock product line addresses a variety of needs. Standard designs. Custom-engineered units. TEMA configurations. Straight tube or U-tube. Removable or fixed tube bundles. Options for materials, tube sizes and enhancements. Commercial and Code designs.

And API has breadth. With a broad base of application expertise and product offerings, API engineers will work closely with you to obtain the best heat transfer design for your application.

For more information on any API Heat Transfer product please contact your local representative or any API facility listed on the back.

# SHELL & TUBE HEAT EXCHANGERS

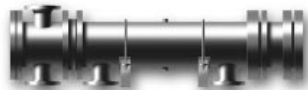
### TEMA TYPE BEU, AEU, CEU, BKU AND AKU

U-tube design, with removable tube bundle. Highly recommended where tube side fluid is relatively non-fouling. Excellent for operating conditions involving a considerable temperature difference between the tube side and shell side fluids, or where the temperature of fluids fluctuates, as each U-bend is free to expand or contract independently. Units can be furnished to comply with ASME code, TEMA, or other standards.



### TEMA TYPE BEM, NEN, AEL AND AEM

A straight tube/fixed tube sheet design, that is recommended where the shell side fluid is non-fouling. Straight tube allows easy mechanical cleaning on the tube side without disturbing pipe lines, when removable channel covers are provided. If temperature differential between tubes and shell is substantial, an expansion member can be incorporated in the shell to preclude over-stressing the tubes. Units can be furnished to comply with ASME code, TEMA, or other standards.



### TEMA TYPE BEP AND AEP

A straight tube/floating head heat exchanger featuring outside packed construction. Designed for low or medium shell side operating pressures. Gasketed joint at the floating head is external to the exchanger so that any leakage at the point is readily detected. Outside packed floating head permits free movement of floating end, independent of shell. Used for high pressure and/or lethal gas in the tube service. Units can be furnished to comply with ASME code, TEMA, or other standards.

### TEMA TYPE BES AND AES

A straight tube/floating head design utilizing a split ring floating assembly construction. With this straight-tube floating head (split ring) design, the shell cover must be removed before the floating head cover. This design permits a larger number of tubes to be used than in the T design. Widely employed in oil refinery service or other particularly severe applications. Units can be furnished to comply with ASME code, TEMA, or other standards.



### SANITARY HEAT EXCHANGERS

The Whitlock product line includes a wide variety of sanitary heat exchangers for pharmaceutical and food processing applications. API can deliver an efficient design for process conditions with both pre-engineered and custom engineered products to meet specified thermal requirements. Standard sanitary heat exchanger sizes range from 4" (10.2 cm) to 24" (61 cm) diameter, with larger sizes available in custom engineered designs. The tube side interior surfaces are mechanically polished and in some instances electropolished.



### TEMA TYPE OP, OPTIDESIGN® TEMA TYPE AEW AND BEW

Straight tube, removable bundle exchangers fabricated from standard components for common liquid and air applications. Exclusive floating tubesheet design provides for seal leak detection and easy maintenance. Shell diameters from 3" (7.62 cm) to 42" (106.68 cm). Custom AEW or BEW units designed with special materials or to operate at higher pressures and/or temperatures are available. ASME, TEMA, API, ABS and other code constructions available.



### TEMA TYPE BET AND AET

A straight tube/floating head design utilizing pull-through construction. This totally enclosed floating head design is constructed with a "pull-through" bundle which may be removed for inspection, cleaning and maintenance without disassembling the shell cover (if one is provided) or floating head. Type T is widely used in particularly severe service applications. Units can be furnished to comply with ASME code, TEMA, or other standards.

### TYPE 500 (VHT/VHTR)

A pre-engineered compact heat exchanger available with fixed or removable straight tubes or U-tubes. Shell material is ferrous or stainless steel. This design results in a maximum heat transfer surface per foot of shell, high efficiency and a low cost of construction. U-tube units are best matched to applications where tube side fluids are relatively clean or can be chemically cleaned. If extreme temperature differences exist between the shell and tube side fluids, use the U-tube design. Shell diameters from 3" (7.6 cm) to 12" (30.5 cm). ASME, ASME-TEMA "C" and other standards available.



### TYPE HT/AHT/HTR/AHTR (550)

A pre-engineered "hub" design product line available with straight tube or U-tube construction; fixed or removable bundle. Material options include steel, stainless steel or non-ferrous (brass). Used for liquid-liquid, gas-gas and gas-liquid applications. Ideally suited for use with relatively low-fouling shell-side fluids, or where chemical cleaning is practical. Smaller sizes stocked for quick delivery. Shell diameters from 2" (5.1 cm) to 12" (30.5 cm). ASME and other codes.



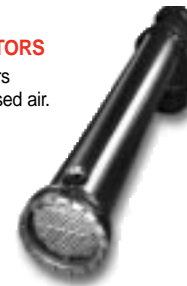
### PLATE-FIN (ES) HEAT EXCHANGERS

Unique, patented, Extended Surface plate-fin design for centrifugal or axial compressor intercooler and aftercooler applications. Minimal pressure loss. Removable bundle design with multi-pass tube side enhances maintenance. No need for external moisture separation - the design provides for separation internally. ASME code design is standard. Shell diameters from 22" (55.9 cm) to 120" (304.8 cm).



### PIPELINE AFTERCOOLERS & SEPARATORS

Efficient, straight tube, counterflow aftercoolers (PLACs) designed to yield cool, dry compressed air. Exclusive floating tubesheet provides easy maintenance. Wide variety of design codes. Shell diameters from 6" (15.2 cm) to 42" (106.7 cm). Available with or without accompanying moisture separators.



### OTHER UNITS

API Heat Transfer offers chlorine vaporizers, sampling exchangers and scale prevention devices. The vaporizer is used wherever process conditions require relatively large quantities of chlorine in dry gaseous form. The sampling exchangers are ideal for sample condensing, cooling or heating. The API Anti-Scaler™ prevents scale build-up in heat exchangers through a patented electronic agitation technology.



### SURFACE CONDENSERS

These units are used with steam turbine systems for plant generator sets, gas and refrigerant compressors, blowers, shipboard auxiliaries and various process equipment. Design includes fixed tubesheet, non-removable bundle, single or multi-pass, common or divided water box. Bundle penetration lanes assure good distribution of steam throughout the bundle at minimum pressure-drop. Shell diameters from 22" (55.9 cm) - 80" (203.2 cm).



### KETTLE REBOILER (TEMA TYPE BKU/BKS AND AKU/AKS)

A variation of Type BEU or BEM design, the kettle reboiler is primarily used in the process industry in conjunction with distillation columns. The expanded shell section of the kettle reboiler allows disengagement of vapor. Demister pads in stainless steel, copper alloy, synthetic fiber and other materials can be provided to eliminate liquid carry over. Properly sized weir can be provided for efficient use of tubes and separation of bottom products.



### TYPE FLC (TEMA TYPE BEM AND AEL) AND FLCR (BEU AND AEU)

A straight tube or U tube design flooded cooler is used to cool/condense process fluid on the tube side. The shell side boils off refrigerants such as R134A, R22, ammonia or hydrocarbons (i.e. propylene). A surge drum prevents carry over of liquids allowing only dry gas to return to the compressor. Various materials of construction, including carbon steel, stainless steel, copper alloys and exotic metals and alloys can be used for complete units or parts. Units are built to ASME code, TEMA, API and other applicable industry standards.



## Custom OEM Product Capability



API Heat Transfer manufactures a variety of custom OEM heat transfer products for use by other manufacturers in specialized markets. Some of the largest companies in the world use API equipment in their products. Contact API Heat Transfer today about your OEM heat transfer application.