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**Schmidt-Bretten
Process Systems
for Liquid Food
and Beverage
Industries**



API Heat Transfer

...world leaders in heat transfer technology

TECHNOLOGY for liquid foods and beverages

Schmidt-Bretten has been supplying industry with heat exchangers for thermal processing plants for more than 110 years. Now a part of API Heat Transfer, Schmidt-Bretten equipment is used worldwide in the food and beverage industries as well as industrial fields for the thermal treatment of different products. Our thermal processing systems, unit heat exchangers and heat exchanger packages stand out with their modern technology, high quality standards and long life supported by a worldwide servicing network. All of our equipment is designed, manufactured, assembled and commissioned by API to provide total customer satisfaction.

Concentration and aroma recovery plants

Designed for the concentration of malt, beer, wort, yeast, fruit juices, pulp and other liquid food products to remove water and stabilize enzymes prior to product storage. The heart of the system is the patented SIGMASTAR® plate with its unique metal-to-metal contact. It provides excellent product distribution and minimal thermal processing time.

The ADVANCE aroma recovery system captures and concentrates a full range of volatile aromatic compounds, or essences, resulting in a natural aroma with high yields. These are lost in the conventional processing of fruit juices and other beverages. This system is extremely versatile and can be used to produce a wide range of aroma concentrates.



Skid-mounted SIGMASTAR® Evaporator System with aroma recovery unit.



A five-effect SIGMASTAR® Plate Evaporator installation.



Mash heater for high viscosity fruit pulp.



A pasteurization system with product deaeration.

Other API Schmidt-Bretten Thermal Processing Systems

Dealcoholization plants

For the reduction of the alcohol percentage or removal of alcohol from beer, wine and champagne. This SIGMATEC system provides low temperature processing with minimal product aroma and flavor loss. The award winning process is extremely reliable, requires low maintenance and is highly energy efficient.

Desulphurization plants

For the reduction of the SO₂ content of sulphited fruit and grape juices when gas has been added for stabilization.

Deaeration plants

For the removal of dissolved and entrained oxygen from juices, beverages and fruit and vegetable mashes. This improves quality and prevents the formation of foam during filling or of air pockets in the case of pulpy juices. Deaeration can be combined with heating units and with concentration plants.

Reconstitution Plants

For the re-dilution of concentrates, aromas and sugars dissolved in pretreated water.

“2-Series” Plate Heat Exchangers



Flow channel pattern of “2-Series” heat transfer plate.

In addition to other advanced SIGMA plate heat exchangers, API Heat Transfer offers the unique “2-series” plate design for processing a variety of difficult-to-handle products. The SIGMA “2-series” plates form a unique sinusoidal flow channel. Contact points between adjacent plates are specially designed to prevent fibers from inter-weaving, eliminating blockages. This feature, along with 75% fewer plate-to-plate contact points, allows products which traditionally require more expensive heat exchangers (such as scraped-surface, tubular, spiral, etc.) to be processed without difficulty.

Products successfully run through SIGMA “2-series” plates include:

- Fruit purees (single or concentrated strength)
- Full pulp citrus juices
- Turbid fruit juices
- Dairy mixes
- Highly viscous liquids
- Products with insoluble solids and fibers
- Citrus pulp

The “2-series” plate delivers the operational and economic benefits of plate heat exchangers (such as high heat recovery), without the limitations of traditional plate designs.

Unit plate heat exchangers have many heating and cooling applications in the liquid food and beverage processing industries. These include:

- Thermal treatment of juices and beverages prior to hot filling
- Heating of wines and liqueurs for warm filling
- Cooling of wort and green beer
- Cooling of wine to precipitate potassium bitartrates
- Deep cooling of beer prior to filtration



Sanitary Plate and Frame Heat Exchanger

Heat Exchanger Packages

API Schmidt-Bretten designs heat exchanger packaged systems to address many applications. Multiple applications can be handled with a single heat exchanger with a number of different sections on the same frame. This approach offers a space saving, economic solution for multiple duties. Plate or tubular heat exchanger packages come pre-assembled from our factory for easy installation. All required control and measurement devices, valves, pumps, etc., are supplied and assembled with the heat exchanger.

Our customers save time and effort in designing, purchasing and installing the necessary accessories and equipment. API Schmidt-Bretten supplies a complete system, which is ready for immediate start-up.

Typical Plate Heat Exchanger packages include

- The pasteurization or aseptic processing of high acid fruit juices, syrups, concentrates and beverages.
- The pasteurization of prefiltered and keg beers, wine and champagne.

Up to 95% heat recovery is possible in Schmidt-Bretten plate heat exchangers.

Typical Tubular Heat Exchanger packages include

- Sterilizers for fruit mash and other liquid foods containing high solids.
- Heat treatment of mash for the production of dark wines.

Up to 60% heat recovery is possible in Schmidt-Bretten tubular heat exchangers.



Multiple juice pasteurization plants.

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**Call your local API Sales Representative or
API directly toll-free at 1-877-API HEAT.**

Visit us at www.apiheattransfer.com

Other Products Available from API Heat Transfer

OptiDesign®



Straight-tube, removable bundle exchangers made from standard components. Floating tube sheet for seal leak detection and easy maintenance. Diameters from 3" (7.62 cm) to 42" (106.68 cm). ASME, API, TEMA, ABS and other codes available.

TEMA Shell and Tube



A wide variety of TEMA types are available using pre-engineered or custom designs in various sizes and materials. Shell diameters from 6" (15.24 cm) to 60" (152.4 cm), ASME, TEMA, API, ABS, TUV, ISPEL and other code constructions available.

Extended Surface



Unique, patented plate-fin design for centrifugal or axial compressor intercooler and aftercooler applications and minimal pressure loss. Design eliminates separators. ASME code design is standard. Diameters from 20" (50.8 cm) to 120" (304.8 cm).

Refrigerant Evaporators & Condensers



Off-the-shelf, standard units reflect the latest in heat exchanger technology for maximum performance and low cost. Ideal for OEM or aftermarket applications. Numerous design and material options are available. Tonnage capacity ranges from 5 to over 400 tons.

Hubbed Shell and Tube Heat Exchangers



Straight or u-tube, fixed or removable tube sheet general purpose exchangers designed to cool oil, water, compressed air and other industrial fluids. A variety of port configurations and materials are available. Diameters from 3" (7.62 cm) to 12" (30.48 cm).

Brazed Plate Heat Exchangers



Off-the-shelf, standard units reflect the latest in plate heat exchanger technology for maximum performance and low cost. Ideal for OEM or aftermarket applications. Many models stocked and ready to ship. Models for process or refrigeration applications.

Air-Cooled Heat Exchangers



High efficiency, brazed aluminum coolers for cooling a wide variety of liquids and gases with ambient air. Lightweight, yet rugged. Capable of cooling multiple fluids in single unit. Models can be supplied with cooling fan and a variety of drives.

ACME® Packaged Chillers



Packaged chillers with or without pumping systems from 3 to over 400 tons with PLC controls available. Standard and custom designed chiller-barrels and condensers to 2,500 tons with same-day shipment on many units. DX and flooded evaporators available.