INDUSTRIAL HEAT EXCHANGERS
Certifications

Air Dryers
Compressed Natural Gas
Economizers
Engine & Turbine Exhaust
Ethanol Production
Fluidized Bed Dryers
Heat Recovery
High Pressure Aftercoolers
Motor & Generator Coolers
Natural Gas Coolers

Applications / Products

Overhead Stripper Condensers
Pollution Control
Primary Air Coolers
Process Cooling / Refrigeration
Process Heaters
Rotary Kilns
Steam Coil Air Preheaters
Superheaters
Turbine Inlet Air Coils

Featured Working Fluids

Steam
Water
Glycols / Glycol Mixtures
Compressed Gas
Thermal Oil
Refrigerants
Primary Air Cooler

The Customer Needed: SRC Engineered:

Variable operating conditions to meet customer demand

1. Modular air coolers that enabled operation from 10 - 110% of rated capacity

To minimize the impact of airborne contamination on product performance

2. An in-line fin pattern to minimize the risk of fouling and contamination

To reduce uncertainty of performance

3. Thermally modeled performance that included over 60 points of operation

To maximize quality and reliability

4. ASME U-Stamp Section VIII, Div. 1 / CRN Code requirements

Superheater / High Temperature Heat Recovery

The Customer Needed: SRC Engineered:

Corrosion free heat transfer for Chemical Refining process

1. A finned tube bundle that uses 304H stainless steel

Insulated core product to prevent energy loss and provide a safe operating environment

2. Heat exchanger with cast insulation that was designed for 1400°F gas temperatures

Produce superheated steam from entering steam temperature of 300°F

3. A heat exchanger with 3" schedule 40 welded fin pipe delivery a leaving steam temperature of 800°F

Compliance to high quality and performance standards

4. Unit designed to ASME Section VIII, Div. 1 Code and stringent Non-Destructive Testing.
**Industrial Heat Exchangers**

**Combustion Air Preheater**
- Tube: 0.875” x 0.109” wall carbon steel
- Fin: 0.032” aluminum plate
- Certification: ASME U-Stamp Section VIII, Div. 1
- Ports for daily washing
- Coils slide out for major cleaning

**Hot Water for a Dryer Exhaust System**
- Tube: 0.875” x 0.49” carbon steel
- Certification: ASME U-Stamp Section VIII, Div. 1
- Design: 32 row heat exchanger for 623,655 lb/hr of entering gas
- Fluid Temperature: 435°F
- Working Fluid: Mobiltherm 603

**Turbine Inlet Air Cooling Coil**
- Tube: 5/8” x 0.025” wall copper
- Header: 4” schedule 40 304 stainless steel
- Certifications: CRN
- Design: For -58°F entering air temperatures
- E-coated

**Primary Air Cooler**
- Tube: 1.0” x 0.083” carbon steel ASTM SA179 seamless
- Fin: 0.02” aluminum embedded spiral wrapped
- Flange: Class 600 carbon steel flanged raised face slip-on flanges
- Certification: ASME U-Stamp Section VIII, Div. 1 and CRN
- Weight: 12,500 lbs
Multi-Row Heat Recovery Unit
- Pipe: 5 rows of 2.0” x 0.134” chrome molybdenum
- Pipe: 11 rows of 2.0” x 0.134” carbon steel
- Fins: Carbon steel welded spiral wrap, 0.06” thick and 0.625” high
- Header: 6” schedule 120 headers with 6” 600# RFWN flanges
- Weight: 7,633 lbs

Process Water
- Tube: 1.0” x 0.049” wall 316L stainless steel
- Header: Schedule 40 316L stainless steel
- Hot dip galvanized coating

Overhead Stripper Condenser
- Tube: 1” x 0.083” carbon steel
- Fin: 0.015” thick aluminum L-foot spiral wrapped
- Header: SA-516 GR70 normalized plug box

Process Cooler
- Tube: 0.625” x 0.083” 304 stainless steel SA-213
- Fin: 0.0075” copper at 9 fpi
- Header: 3” nominal schedule 40 304 stainless steel
- Weight: 12,000 lbs
- Operating Pressure: 4,200 psig
Core Materials

**Tube & Pipe**

**Sizes**
- Plate Fin OD: Up to 1"
- Spiral Wrapped Finned Tube OD: Up to 2"
- Specialty Fin Tube O.D.: Up to 12.75"
- Wall Thicknesses: Up to .134"

**Materials**
- Carbon Steel
- Stainless Steel
- Hastelloy
- AL6XN

**Turbulators**
- Ball
- Matrix
- Spring
- Twisted Tape

**Coatings**
- Blygold
- E-Coat
- Heresite / Baked Phenolic
- Hot Dip Galvanize
- Nickel Plating

**Fin Types**

**Spiral Wrap: From 2 - 12 fins per inch**

- **Elliptical / L-Foot Fin**
  - Heavier duty than edge wound. Can withstand heat cycling and vibration
  - Materials: Aluminum, Copper
  - Wall Thicknesses: Up to .134"

- **Welded**
  - Base fin is continuously welded to the tube. Recommended for heavy duty applications
  - Materials: Carbon Steel, Stainless Steel, Chrome-moly

- **Solder Coated**
  - Recommended for replacement applications
  - Materials: Aluminum, Aluminized Steel, Carbon Steel, Stainless Steel

- **Extruded Fin**
  - Manufactured by extruding an aluminum sleeve with a parent tube. Recommended for moderate to heavy duty applications
  - Materials: Aluminum, Aluminized Steel, Carbon Steel, Stainless Steel

- **Plate Fin: Up to 0.032” thick**

- **Flat Fin**
  - Recommended for environments with contamination in the airstream or heavy duty cleaning requirements
  - Materials: Aluminum, Aluminized Steel, Carbon Steel, Stainless Steel

- **Sine Fin**
  - Provides superior heat transfer capabilities
  - Materials: Aluminum, Aluminized Steel, Carbon Steel, Stainless Steel

- **Corrugated Fin**
  - Provides good heat transfer capabilities with moderate air friction
  - Materials: Aluminum, Aluminized Steel, Carbon Steel, Stainless Steel

**Additional Notes**

- **Core Materials**
  - Manufacturers list various core materials for use in heat exchangers and heat exchanger tubes, including carbon steel, stainless steel, and other alloys.
  - **Materials** section includes specific materials for different tube and fin types.
  - **Spiral Wrap** details vary from 2 to 12 fins per inch, suitable for different applications.
  - **Welded** fins are continuously welded, ideal for heavy-duty applications.
  - **Solder Coated** fins are recommended for replacement applications.
  - **Extruded Fin** is manufactured by extruding an aluminum sleeve with a parent tube, suitable for moderate to heavy-duty applications.
  - **Plate Fin** has a thickness of up to 0.032”, with materials including aluminum, aluminized steel, carbon steel, and stainless steel.
  - **Flat Fin** is recommended for environments with contamination or heavy-duty cleaning requirements.
  - **Sine Fin** offers superior heat transfer capabilities, while **Corrugated Fin** provides good heat transfer with moderate air friction.
Header Types & Inspection

Header Types

Pipe Headers
Suitable for most pressures and applications, pipe headers are the most common type of manifold.

Water Box with Removable Cover
This header type has a removable cover to enable inspection, cleaning and plugging of inner tube walls. This design can typically handle pressures up to 200 psi and is suitable for users concerned about corrosion or fouling in their operation.

Half Pipe “D Style” Headers
A less expensive configuration compared to the plug box and removable cover water box, which allows for multiple serpentine circuiting for selected applications. Users may consider this type of header if operating with clean fluids which do not require regular service intervals. Design pressures up to 300 psi are easily accommodated.

Plug Box Header
This is a general purpose header that allows for individual tube cleaning. Users should consider this type of header if they are concerned with fouling of the tubes and want minimal downtime.

Available Testing & Verification Services
NDE: Non-Destructive Examination Available
› Liquid (Dye) Penetrant
› Magnetic Particle
› Ultrasonic Testing
› Radiography
› Visual Examination

PMI: Positive Material Identification
COILS / INDUSTRIAL HEAT EXCHANGERS / NUCLEAR PRODUCTS

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