

INDUSTRIAL HEAT EXCHANGERS



COILS / INDUSTRIAL HEAT EXCHANGERS / NUCLEAR PRODUCTS

Overview

Certifications



CRN



Applications / Products

- 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
- 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



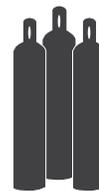
Steam



Water



Glycols /
Glycol Mixtures



Compressed Gas



Thermal Oil



Refrigerants

Industrial Heat Exchangers

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

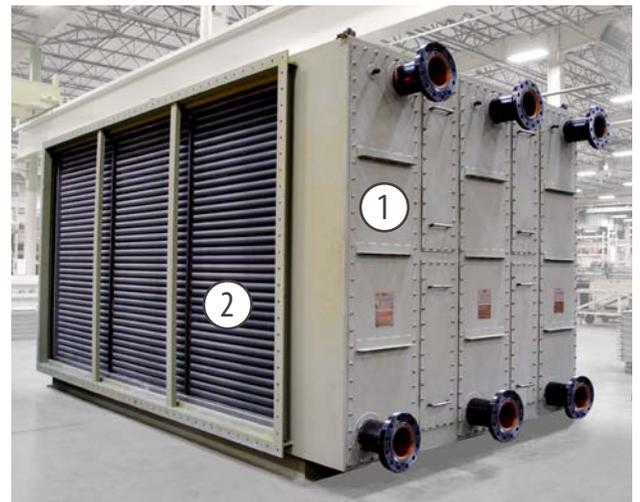
3

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

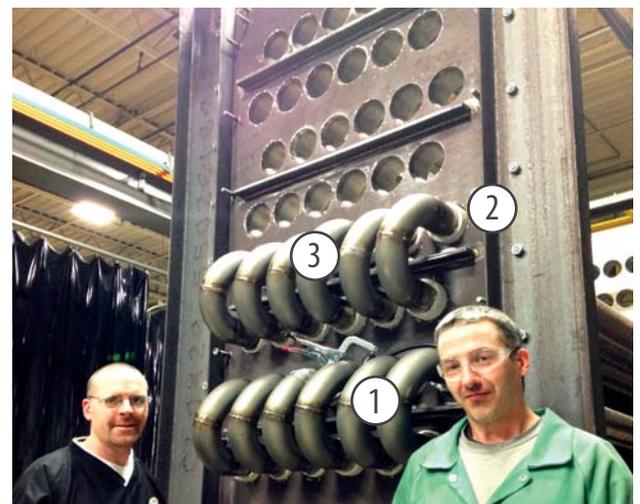
3

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 .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
- Cupro-Nickel (CuNi)
- Monel
- Chrome Molybdenum
- Titanium

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



Aluminum
Copper

Elliptical / L-Foot Fin

Heavier duty than edge wound. Can withstand heat cycling and vibration



Aluminum
Stainless Steel
Copper

Embedded Fin

Recommended for high temperature or cyclic services



Aluminum

Extruded Fin

Manufactured by extruding an aluminum sleeve with a parent tube. Recommended for moderate to heavy duty applications



Carbon Steel
Stainless Steel
Chrome-moly

Welded

Base fin is continuously welded to the tube. Recommended for heavy duty applications



Any Tube /
Copper Fin

Solder Coated

Recommended for replacement applications

Plate Fin: Up to 0.032" thick



Aluminum
Aluminized Steel
Carbon Steel
Stainless Steel

Flat Fin

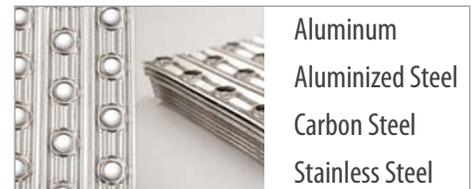
Recommended for environments with contamination in the airstream or heavy duty cleaning requirements



Aluminum
Aluminized Steel
Carbon Steel
Stainless Steel

Corrugated Fin

Provides good heat transfer capabilities with moderate air friction



Aluminum
Aluminized Steel
Carbon Steel
Stainless Steel

Sine Fin

Provides superior heat transfer capabilities

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

PMI: Positive Material Identification

- › Liquid (Dye) Penetrant
- › Magnetic Particle
- › Ultrasonic Testing
- › Radiography
- › Visual Examination



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