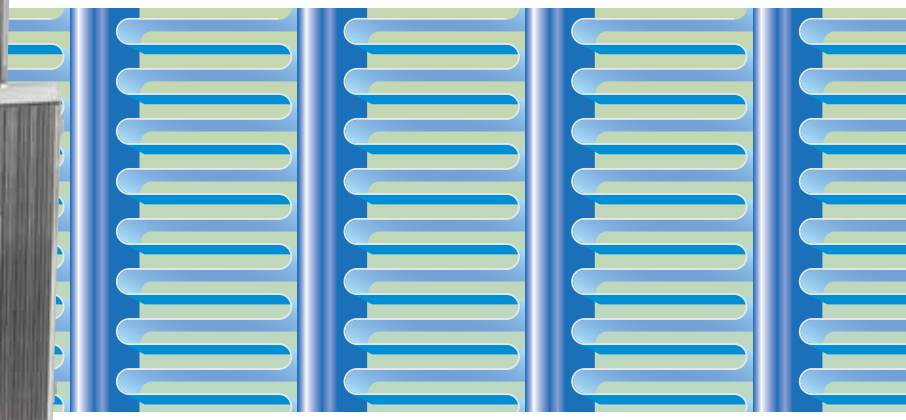
Alcoil®

Aluminum Heat Exchangers

Advanced Micro-Channel Technology™ for HVAC/R and Industrial Process



- **Higher Performance**
- **Lower Cost**
- **Smaller Footprint**
- **Less Refrigerant Charge**
- **R410a Ready**

www.Alcoil.net

Designing for the Future

The HVAC/R and industrial process industries are making a transition to brazed aluminum heat exchangers. This is evidenced by the wide use of Micro-Channel condensers by major HVAC/R manufacturers and many smaller OEMs manufacturing cooling and heating equipment. The trend is driven by the higher cost of copper, significant energy efficiency improvements, need for smaller footprints, and conversion to R410a and other refrigerants.

Alcoil is a premier manufacturer and developer of brazed aluminum heat exchangers for the HVAC/R and Industrial Process industries. Our Advanced Micro-Channel Technology™ provides higher performance, smaller size and features and capabilities not found in traditional fin/tube heat exchangers. Alcoil's focus is on the demanding HVAC/R design conditions, offering application flexibility and longer life.

It's All About Advanced MICRO-CHANNEL TECHNOLOGY™

Alcoil's C Model Condensers out-perform traditional fin/tube heat exchangers for a number of reasons. We use multi-port thin extrusion known as a micro-channel tube. These tubes are combined with louvered high performance fins, headers, fittings and sub-components, all integrally brazed together using aluminum alloys.

The integral brazing of the high performance fins, combined with the low profile flat tubes, provide both higher performance and lower airside pressure drops. The micro-channel tubes have very high heat transfer surface area and performance characteristics. The result is features and capabilities not found in traditional heat exchanger products.

Alcoil offers the most innovative and advanced HVAC/R condenser coil in the industry. Our refrigeration condenser design is optimized for R410a, R134a, R407c, R404a and other halocarbon refrigerants. It is maximized for energy efficiency and/or compact footprint, depending upon the application objectives.

Why Alcoil Brazed Aluminum Heat Exchangers?

Alcoil brazed aluminum heat exchangers are a significant improvement over traditional fin/tube coils.

Higher Efficiency & Performance

- 20% to 40% greater overall performance
- Airside pressure drops can be nearly half

Smaller Size & Less Weight

- 10% to 30% smaller or equal coil face (HxL Dimensions) depending upon design conditions
- Thin profile, takes up less space
- Up to 60% less weight means lower shipping costs, reduced equipment structural requirements.

Lower Cost

- Reduced material cost (aluminum vs. copper)
- No sacrifice in quality

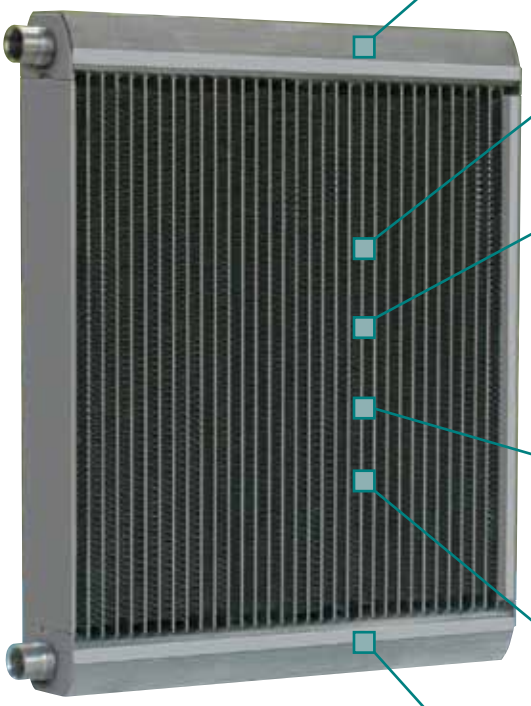
Less Refrigerant Charge

- Less internal volume, but not critically charged, with built-in mini-receiver

Proven Reliability

- Time tested manufacturing processes and materials
- Built-in reliability with higher quality levels
- More robust

Alcoil Brazed Aluminum Condenser Features



Easy OEM Mounting
The coil itself is an integral frame that provides air tight flush mounting, thereby eliminating unnecessary components and air bypass. Optional "L" brackets are recommended for easy mounting. Optional "U" channel casings and custom brackets are also available.

High Performance Fins
State of the art louver fin design provides low airside pressure drop and high heat transfer.

Vertical Micro-channel Tubes
Selected and optimized for various refrigerants and performance, Alcoil Advanced Micro-channel tubes are designed for a vertical condensing orientation. When combined with a low pressure drop inlet header, more predictable performance and improved air to refrigerant approach temperatures are achieved, including adequate refrigerant sub-cooling.

Connections and More Connections
Alcoil condensers are typically available with copper sweat connections from 1/4" IDS to 1-3/8" IDS, as well as aluminum connections. Rotolock and mechanical connections are also available.

Models and Sizes
Flexibility and completely variable sizes are tailored to our OEM customer needs. Custom and standard sizes are available from as small as 4" x 4" to a maximum of 48" x 120". Condenser capacities range from ¼ tons to over 30 tons, depending upon the design conditions.

Built-in Mini-Receiver
Unlike any HVAC/R coil, the lower header serves as a mini-receiver, reducing or eliminating any "critical refrigerant charge" issues. The mini-receiver provides greater latitude for system refrigerant charge and eliminates refrigerant backup into the condenser tubes. This assures proper refrigeration system operation and maximized energy efficiency at full and part load.

Wide Range of Applications in HVAC/R Equipment

- Air Conditioning Systems
- Process Chillers
- Equipment Cooling Systems
- Supermarket Refrigeration Systems
- Environmental Chambers
- Beverage & Ice Machines
- Transport Refrigeration
- Process Equipment Cooling

Product Innovation and Customer Service is the Core of Our Philosophy

Alcoil is dedicated to the manufacturing, development, and application of brazed aluminum heat exchangers used in the HVAC/R and Industrial process industries. We specialize in airside condensers, evaporators, heating/cooling coils, oil coolers, and process applications. Our manufacturing facility located near York, Pennsylvania uses the latest in manufacturing and testing equipment, and we are well positioned to serve OEM customers in North America and worldwide

Alcoil's manufacturing processes are unique and allow for fast customer prototypes and ample production capacity for small and large volume customers. We are dedicated to customer service and use the best possible software tools to predict heat exchanger performance and to support a wide range of applications.

Quality at Every Level

With Alcoil's Advanced Micro-Channel Technology™, every heat exchanger is precision assembled starting with micro-channel tube processing. Airside fins and manifold/headers are made on state-of-the-art machinery and the combined components are put into a final assembly cell.

The completed heat exchanger is put through a controlled atmosphere furnace where it integrally brazes into a leak-tight, structurally strong final product. All Alcoil products are proof-tested and helium leak-tested for quality assurance.

Available Uses

HVAC/R Coils		
Condensers	Yes	R410a, R22, R134a, R404a and other halocarbon refrigerants up to 30 ton (Hp) coil modules
Evaporators	No	Not available at this time
Heating Coils	Yes	Closed loop, water and glycols - up to 60 gpm per coil
Industrial Coils		
Cooling Coils	Yes	Closed loop, water and glycols – up to 60 gpm per coil
Heating Coils	Yes	Closed loop, water and glycols - up to 60 gpm per coil
Oil Cooling	Yes	Full range of hydraulic and lube oils
Special Fluids	Yes	Wide range of fluids, compatible with Aluminum

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