

Construction Features

Coil Design

Coils are designed and manufactured according to the stringent requirements of ASME B31.5 (2001), which now addresses heat transfer component design. All coils are pressure tested to 350 psig with air under water. Units are shipped with a nitrogen holding charge.

Tubes - BAC Aircoil™ Evaporators are constructed with 0.875" diameter stainless steel, aluminum, or galvanized steel tubes, staggered in the direction of airflow to ensure maximum air turbulence and coil heat transfer efficiency.

Fins - Die-formed, flat pattern fins are a continuous design with a clean full collar to optimize performance, resistance to airflow, and cleanability. The flat pattern also reduces resistance to airflow, providing performance comparable to corrugated fins at a given horsepower.

Circuiting - Each coil is individually circuited for specific applications in recirculated, flooded, direct expansion, or control pressure receiver refrigeration systems along with water, glycols, or brines.

Tube Frame

The coil incorporates a heavy-duty rectangular structural tube frame, which improves rigidity, squareness, and long-term stability, rather than a less robust angle design. The tube frame also improves cleanability by reducing cavities and it encloses and protects BAC supplied wiring options.

Header

Headers are constructed of schedule 80 or schedule 40 pipe as required by ASME B31.5.*

* Does not apply to coils of copper tube construction.

Casing

AS, AM, AL, AC - Casings are constructed of durable, corrosion resistant G-235 (Z700 metric) galvanized steel with 2.35 oz/ft² zinc coating (700 g/m²). Load carrying components are engineered with reinforcing panel breaks and hardware particularly suited for the application. Fans are individually compartmented with continuous tube sheets to permit fan cycling.

AR - Casings are constructed of heavy-gauge, corrosion resistant Type 304 stainless steel. Casing panels are removable to permit access to both faces of the tube bundle for maintenance and cleaning.

Hangers

Heavy-duty support hangers are engineered with rigging points to permit safe and easy hanging.

Hinged Fan Panel

AS, AM - Fan orifice panels are constructed with smooth, large radius orifices. Fan panels are hinged to permit unrestricted access to both faces of the tube bundle, for maintenance and cleaning.

AL - This feature is available as an option.

Drain Pan

AS, AM, AL, AC - Inner drain pans are constructed of heavy-gauge welded aluminum for corrosion resistance, light weight, and good heat conductance for pan defrost.

AR - Inner drain pans are constructed of heavy-gauge welded Type 304 stainless steel for corrosion resistance and durability.

All pans are furnished with an extra large drain connection, when coupled with the flatness and smoothness of the sloped aluminum pan, permits swift and total drainage.



Fans

BAC has optimized the fan proximity to the coil face, fan positioning within the tapered fan orifice, and the coil aspect ratio to maximize performance of selected fans.

AS, AR - Direct-drive fans with contoured aluminum blades are selected and installed to maximize performance and efficiency. Fan motors are basket-mounted in a heavy gauge, PVC-coated steel fan guard.

AM - Direct-drive solid aluminum cast fans are selected and installed to maximize performance and efficiency. Fan motors are mounted on a heavy-gauge steel support platform with four points of contact riveted to the swing-away fan panel. Fan guards are heavy-gauge steel with a corrosion resistant PVC coating.

AL - Direct-drive, cast aluminum fans are selected and installed to maximize performance and efficiency. Fan motors are foot-mounted on stainless steel base plates for durability and supported by fan housings constructed of heavy-gauge G-235 galvanized steel.

AC - Centrifugal fans are selected and installed to maximize performance and efficiency. Fan motors are easily accessible and serviceable from outside unit, and motors 10 HP and above are factory installed on a swinging motor base for easy field installation.

Wiring

AS, AM, AR - Motors are pre-wired to a common non-fused disconnect, as standard. Flexible conduit from the motor to the air unit frame permits opening of the hinged fan panel on AS and AM units. Wiring is run through the structural tube frame and terminated in a factory mounted NEMA 4 enclosure.

AL, AC - Motors are pre-wired to individual terminal strips mounted in composite NEMA 4 enclosures, as standard.

Motors

Motors are a totally enclosed air over (TEAO), furnished with low temperature grease and are otherwise designed to ensure reliability and longevity in a harsh environment.



AL Series



AR Series

Optional Features

Coil Materials

Galvanized steel tubes and fins - A conventional choice for decades, carbon steel coils are hot-dip galvanized per ASTM A-123 for corrosion protection.

Aluminum tubes with aluminum fins - Aluminum coils weigh far less than galvanized steel coils and have superior thermal conductivity, improving performance in both cooling and defrost modes.

Stainless steel tubes with aluminum fins - In addition to the durability of stainless steel tubes, stainless-aluminum coils weigh far less than galvanized steel coils and have the superior thermal conductivity of aluminum fins, improving performance in both cooling and defrost modes.

EcoArmor™ Protection System

EcoArmor™ Protection System is a metallic impregnated polymeric coating specifically designed to provide outstanding corrosion protection without affecting the heat transfer capabilities. The coating is applied to an Aircoil™ Evaporator constructed of 3003-O aluminum alloy. See page M20 for more details.

Vari-Fin

For severe frost applications, fins on the air inlet face of the coil have wider spacing than the remainder of the coil. Fin spacing is 2 fins/inch (fpi) or 1.5 fpi for the first 2 rows and 4 fpi or 3 fpi, respectively, for the remaining rows. Performance must be de-rated accordingly.

Casing

AS, AM, AL, AC - Optional casing materials include Type 304 stainless steel or BAC's thermosetting hybrid polymer which is baked on galvanized steel in a meticulously controlled process at the BAC manufacturing facility. These casing material upgrades offer varying degrees of corrosion resistance, durability, and enhanced appearance.

AR - The standard casing material is Type 304 stainless steel given the inherent requirements of process room applications.

Pan material

AS, AM, AL, AC - Heavy-gauge stainless steel is available as an alternative to aluminum. Stainless steel provides a broader resistance to airborne impurities and cleaning agents that could damage aluminum or galvanized steel.

AR - The standard pan material is heavy-gauge stainless steel given the inherent requirements of process room applications.

Reheat Coils

Finned reheat coils produce continuous dehumidification and reduce sweating by heating the air after it leaves the cooling coil section. The reheat section is separated from the cooling section by an air break. This break in the fins eliminates thermal conductance between the sections and prevents water from migrating to the reheat coil, reducing wasted artificial loads and providing better dehumidification. Contact your local BAC Representative for performance ratings and other information.



Swing Away Fan



Air Discharge Alternatives

On applicable models, air discharge alternatives include long throw adapters, forty-five degree (45°) down discharge, 90° down discharge (penthouse adapters), and fans selected for external static pressure (ESP). 45° and penthouse options feature heavy-duty discharge housings that tilt the cast aluminum fans 45° down from the vertical plane. These housings ship installed for ease of installation. Access panels are provided on penthouse adapters to permit service access.



Forty-five Degree Down

Insulated Pan with Cover

Insulated drain pans have closed-cell insulation and an outer pan cover. Outer pan covers are constructed of either galvanized steel, stainless steel, or a thermosetting hybrid polymer (see description for casing alternatives).

Hot Gas Pan

A corrosion resistant stainless steel pan coil, hydro-statically expanded into aluminum extrusions, delivers maximum heat transfer to an aluminum drain pan. Interconnecting piping is contained within the pan profile and the right-angle check valve is welded into place to prevent flanged connections. Side walls are at a 90° angle to the pan bottom for easy cleaning.



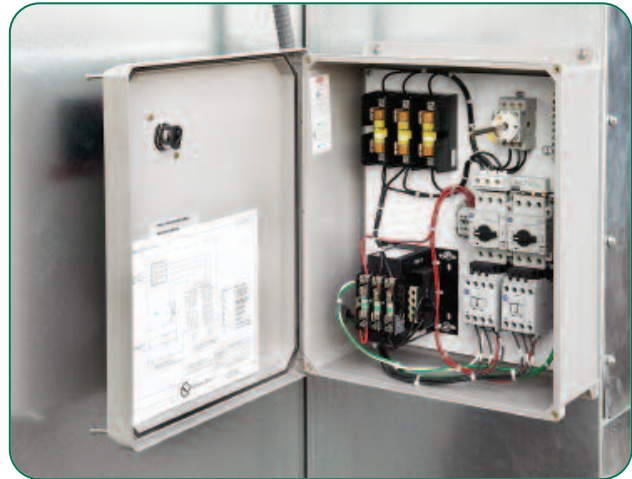
Interconnecting Piping Within Pan Profile

Motors

Motor options available include inverter duty, premium efficiency, 2-speed/1-winding and 2-speed/2-winding alternatives. Standard voltages include 208, 230, 460, and 575 for 3-phase, 60-Hz applications. Contact your local BAC Representative for 50-Hertz and other applications.

Electrical

Several electrical panel and pre-wiring options are available. Wiring options are designed to reduce field installation time, labor, and cost. Contact your local BAC Representative for more information.



Electrical Panel

Water Defrost

A water defrost pan is available to wet the entire finned surface during water defrost. The material of construction matches the selected casing material. The pan increases the unit height by 6-1/2".

Legs

Galvanized or stainless steel support legs are available for floor or beam-mounted installations.