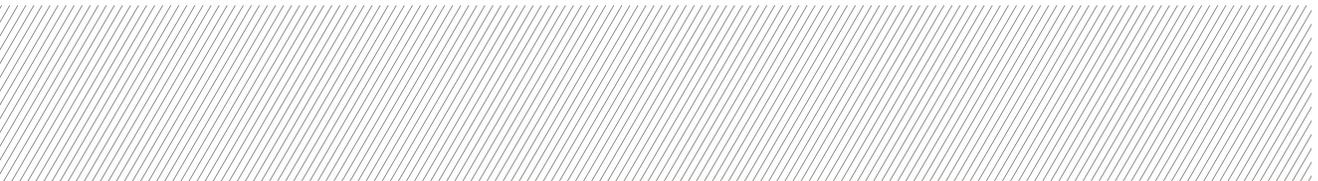




HEATCRAFT

Commercial/Industrial Products

LUVATA
Partnerships beyond metals



Company Overview



We are committed to engineering, quality and flexible manufacturing.

For over half a century, equipment manufacturers have recognized the *Heatcraft* name for state-of-the-art heat-transfer products. In 2006, we changed the name from Outokumpu Heatcraft to Luvata. However, because of the history associated with the name *Heatcraft*, we retained it as a badge of excellence. We continue to provide custom-made, 'guaranteed to fit' coils, manufactured to our customers' individual specifications.

Luvata's *Heatcraft* has gained a leading position in the global heat-transfer market through its uncompromising commitment to engineering, quality and flexible manufacturing. Our focus on the continuous improvement of all processes from order entry to fabrication, testing, and shipping has been relentless. We work to rigorous standards to maintain the quality of the materials we use in fabricating *Heatcraft* products. Quality inspections throughout the fabrication process, including leak testing of every heat exchanger, assure the customer of an uninterrupted supply of quality components.

Partnership successes

Thunder Horse. In the challenging world of oil exploration, we assisted DWD International in the development and design of the air equipment for the world's largest semi-submersible oil platform (the size of a modern football stadium). Working closely together, we developed condenser coils that not only cooled the control room and motor control center but also the living quarters for the 229 people on board.



Heatcraft answered the call for Florida's **Premier Cruise Lines** when cooling coils in two of the line's ships, the *Majestic* and the *Atlantic*, froze while they were dry-docked in Maryland. Replacing 46 different-sized coils, Heatcraft came through and both ships sailed on schedule.

Located at **Ames Research Center** in Mountain View, California, **NASA's** wind tunnels use 240,000 horsepower engines to produce the airflow needed to simulate flight for the testing of US commercial and military aircraft. The high-powered engines raise the air temperature inside the tunnels to over 400°F. Specially designed cooling coils must be used to quickly cool the internal air back down to 100°. After over 40 years of operation, the cooling coils had simply worn out. Heatcraft replaced over 40 coils with ones that were more efficient and had improved air-flow characteristics.



The **Butler-Warner Power Plant** in North Carolina – the world's largest thermal energy storage (TES) project to date – depends on a half-a-million feet of stainless steel tubing in 112 Heatcraft custom coils to help cool air used in generating electricity. The 112 cleanable Heatcraft coils were custom-made, delivered and installed one week ahead of schedule.

Partnership successes



Heatcraft retrofitted 216 coils in the **Sears Tower, Chicago** (one of the largest commercial office buildings in the world) one year earlier than originally scheduled – under budget and without any tenant shutdown.

Technicians lower one of 16 made-to-fit replacement coils constructed by Heatcraft for **Boston's World Trade Center**.

Since the center's main hall is booked all-year round for conventions, trade shows and special events, the coils had to be scheduled for delivery on Friday so that installation could be done when the convention center was empty.

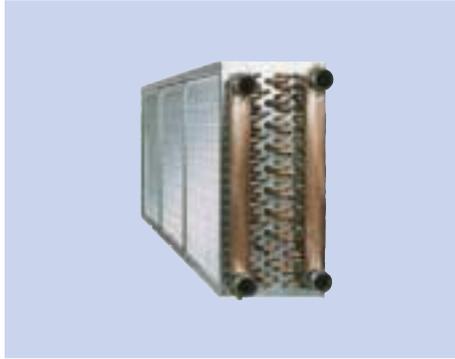


The **Mississippi Baptist Medical Center** – a 650-bed facility in Jackson on Heatcraft replacement coils to help supply air at a constant 55°F to a total of 720,000 square feet. Since the replacement, patient complaints have dropped “off the charts”.

The environmental testing chamber at **McKinley Climatic Laboratory at Eglin Air Force Base** depends on custom-installed Heatcraft coils to test the durability and performance of aircraft and weapon systems at temperatures as low as -65°F.

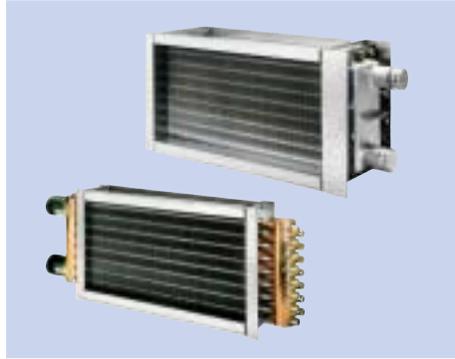


Custom made coils



Fluid Coils

A large variety of drainable circuiting options and many different materials and thicknesses make this a good choice for most general heat transfer applications.



Cleanable

Cooling and heating: 4, 6, 8, 10, or 12-row coils are furnished with removable carbon steel heads on either one or both ends. One or two rows are furnished with removable brass threaded plugs on either or both ends.



High-Pressure Cleanable

Designed for fluid applications up to 300 psig operating pressure. Removable heads on both ends allow for internal tube cleaning without clogging the ends of the coil tubes. Constructed of copper, cupro-nickel, stainless steel or carbon steel. Fins can be constructed of aluminum, copper, carbon steel and stainless steel.



Desaturation Coil

Two coils in one provide a combination of cooling and reheating in one common case that will both dehumidify and reheat the same air to the desired levels. Used in comfort cooling applications such as hospitals, clean rooms and science or research laboratories. Patent pending.



Booster

This can be used for most heating applications. We offer a wide variety of casing configurations including fully flanged, slip & drive, or end plates only. Available in 1/2" or 5/8" tubes with 1 or 2 rows.



DX (Direct Expansion)

Single, dual or quad compressor circuits allow precise capacity control. Unique interlaced circuiting options assure uniform refrigerant distribution over the entire face area of the coil. Wide fin spacing availability reduces the affect of frost build-up on low temperature applications.

Custom made coils



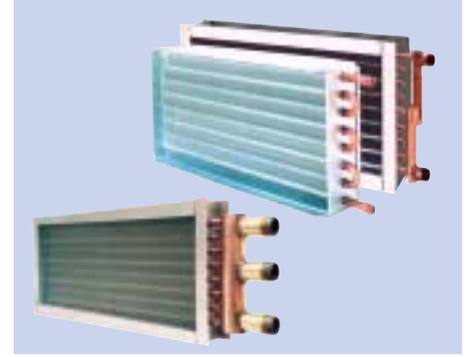
Condenser/Heat Reclaim

High-side refrigerant coils are individually engineered to customer requirements. Fin spacing, circuiting and design can be varied to assure performance while maintaining air and tube-side pressure-drop limitations.



Steam

Standard or steam-distributing construction is available for both high and low-pressure applications. Same or opposite end connections can be specified.



In-Stock

Our in-stock fluid coils are available in two casing styles and many different sizes. Coils are one or two-row, with case styles of 'slip and drive' (SD) or 'fully cased' (HC). Stock steam coils are also available in single row with pitched casing for both horizontal and vertical airflow.



Tube Bundle

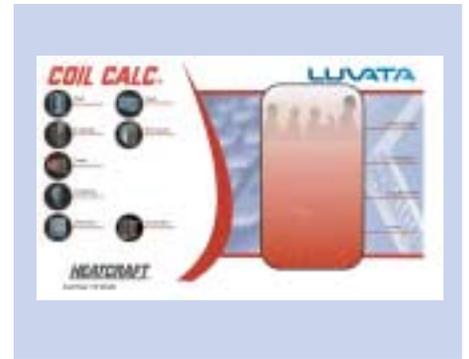
We are now able to supply replacement tube bundles. Our tube bundles are constructed of 20-gauge copper or cupro-nickel tubes, carbon steel tube sheets or brass tube sheets. The bundles can be constructed for liquid to liquid or steam to liquid applications. Constructed with all non-ferrous internal shell construction. One set of gaskets will be supplied at no extra charge.



M.A.R.C.

(Modular Auxiliary Removable Coil unit)

This replaces existing coil sections. The coil is removable through an access panel. It can be supplied with galvanized or stainless-steel casing, a stainless-steel drain pan and with single or double-wall insulation. This unit can be used for auxiliary/supplementary heating/cooling, as well as to add to make-up air units. An optional internal filter rack with an access door is also available.

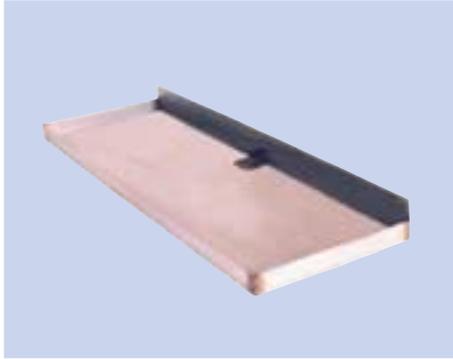


Coil Calc

Coil Calc is a coil selection and rating program for coils utilizing 0.375", 0.500" and 0.625" tubing for fluid, condenser and evaporator applications and 0.625" and 1.00" tubing for steam applications. This program allows the user to generate a complete submittal package, including the following:

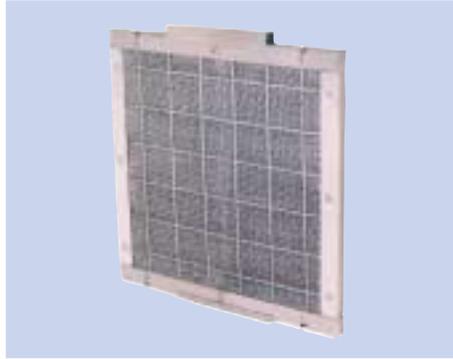
- Performance Data
- Coil Schedule
- Certified Approval Drawings

Custom made coils



Drain Pan

The drain pan is constructed with a minimum of 16-gauge 304L stainless-steel with the option for 316L. It features welded corners and is built per ASHRAE standard.



Mist Eliminator

The mist eliminator allows for higher-than-normal air flow without concern of moisture carry-over. It allows for reduction of the face size, thus lowering the cost of the coil, with a minimal increase in air-pressure drop.



Thermostatic Air Vent & Vacuum Breaker

The thermostatic air vent allows the system to purge itself of non-condensable gases (Air). As demand on a steam coil is reduced and the steam condenses to a liquid, a vacuum is created. The addition of a vacuum breaker will allow the coil to drain the liquid from the coil and keep the coil from a freezing condition. As the demand for heat returns, it will help eliminate a water-hammer condition.



CRN



The Air Conditioning and Refrigeration Institute (ARI)

ARI is an independent, non-profit organization dedicated to ensuring that heating and cooling equipment lives up to its performance ratings. ARI continually develops Standard 410 and monitors participants' coil-performance ratings. Because of its voluntary, non-profit status, it is recognized as the industry authority on product-rating procedures and performance monitoring. Heatcraft coils are ARI certified, showing our confidence in what we build. Coupled with our timely delivery, we have a tradition of satisfying our customers.



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