



CuproBraz® Furnace Systems



Double layer of radiators being brazed in a SECO/WARWICK CuproBraz® furnace.

Lead-free Brazing • More Efficient Heat Transfer Better Corrosion Resistance

PROCESS: The CuproBraz® process is a brazing process specifically developed for the manufacturing of automotive and heavy-duty industrial heat exchangers. By using high strength copper alloys it is possible to manufacture light, strong, efficient and compact heat exchangers at a low cost with this environmentally friendly, lead-free process. The brazing of CuproBraz® radiators uses a non-toxic low temperature melting alloy that works well in a nitrogen based controlled

atmosphere furnace. The brazing material is lead free and there is no post-braze treatment required, such as rinsing. Binders and braze alloys can be applied to the tubes, fin tips or headers by spraying, brushing or rolling. After brazing, the brazed copper-brass joints are significantly stronger than the solder metal and do not suffer from galvanic corrosion. Developed for this process, anneal resistant header, fin and tube materials assure the strength of the products.

With the development of furnaces for the process, CuproBraz® brazing technology is challenging both aluminum and copper/brass systems.



Two Chamber CuproBraz® Batch Furnace.



Three Chamber Semi-Continuous CuproBraz® Furnace.



Continuous Operating CuproBraz® Furnace.

STANDARD FURNACE SIZES:

Model	Length	Width	Height
C-121204	1200 mm (48 in.)	1200 mm (48 in.)	400 mm (16 in.)
C-151204	1500 mm (60 in.)	1200 mm (48 in.)	400 mm (16 in.)
C-151504	1500 mm (60 in.)	1500 mm (60 in.)	400 mm (16 in.)
C-181806	1800 mm (72 in.)	1800 mm (72 in.)	600 mm (24 in.)

STANDARD FURNACES: SECO/WARWICK can provide either a two or three chamber CuproBraz® Furnace System. The two chamber pictured to the left is a front-loading furnace with a purging/cooling vestibule and a convection heating chamber. The furnace is a compact design with an internal recirculation fan and cooling blower that uses minimal floor space (8m x 8m). The heating system consists of a high pressure, high velocity recirculation fan passing the heated atmosphere over heating elements to provide optimum flow of nitrogen through the workload to obtain the tight temperature uniformity required for this process. At the operating temperatures of the furnace, convection heating is the quickest way of transferring heat to the workload.

CONTINUOUS FURNACE SYSTEMS: SECO/WARWICK has developed a large volume, continuous operating CuproBraz® furnace line. The system consists of a Convection Brazing Furnace, Water Jacketed Cooling Chamber Assembly, Air Blast Station and ACCUBRAZE® PLC Computer Control System. The heart of the system, the Convection Brazing Furnace, is split into multiple control zones. Each zone is equipped with direct fired, high velocity burners that are mounted horizontally above and below the muffle, and a variable speed fan. The SECO/WARWICK design allows continuous brazing of various sized loads and is specifically recommended for diversified production. Call SECO/WARWICK for a custom engineered solution for your large volume production requirements.

CONTROLS: A PLC based control system is responsible for temperature control, sequencing and logic required for the system with the option of adding SECO/WARWICK's ACCUBRAZE® computer controls to enhance the interfacing between the operator and the PLC.

The latest design, materials, and equipment specifications should be obtained from the company before any reliance is placed on the enclosed since changes may occur due to product improvement ©SECO/WARWICK 2010 Seneca/IM.



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