

SECO/WARWICK GROUP  
is a leading global manufacturer of heat  
treatment furnaces and equipment

SECO/WARWICK is a technological leader in innovative heat treatment furnaces. Expertise includes end-to-end solutions in 5 categories: vacuum heat treatment, atmosphere, and aluminum thermal processing, controlled atmosphere brazing of aluminum heat exchangers and vacuum metallurgy. SECO/WARWICK Group has 9 companies located on three continents with customers in nearly 70 countries, has its production facilities in Poland, USA (2 factories: in California and Pennsylvania), and China. In addition, the Group includes a number of service and sales offices in such countries as Germany, Russia or France. The company provides standard or customized state-of-the-art heat processing equipment and technologies to leading companies in the following industries: automotive, aerospace, electronics, tooling, medical, recycling, energy including nuclear, wind, oil, gas, and solar and production of steel, titanium, and aluminum.

# CONTINUOUS HOMOGENIZING



**SECO/WARWICK**

[WWW.SECOWARWICK.COM](http://WWW.SECOWARWICK.COM)

## ENHANCED HEAT TRANSFER - VERTICAL AIRFLOW

The high velocity air jet is directed onto the top of each billet which results in higher heat transfer coefficients. Because the furnace consists of multiple zones, it is possible to apply higher air temperatures in each zone without risking damage to the product.

These higher air temperatures combined with higher heat transfer coefficient enables significantly higher convective heat transfer rates into the billets. Because it is possible to operate the zones at a higher temperature without compromising safety, radiative heat transfer is also enhanced. The improved heat transfer results in shorter heat-up times for small and large diameter billets.

## UNIFORM QUALITY

The temperature heat treatment process can be optimized as the continuous homogenizing furnace has a material flow with one layer of logs. Quality control is possible for each individual billet has the same performance. The cooling process can also be controlled and optimized.

SECO/WARWICK offer industrial furnaces equipped with advanced technology to reduce cycle times, conserve energy and improve cooling rates. Our five basic product groups include coil/foil annealing, solution heat treatment & ageing, log/ingot homogenising and melting/holding furnaces. Each system includes control and material handling packages designed to provide optimum performance in each unique production environment.

With over 50 years of experience working with the aluminium industry, we see your production needs and offer equipment with exceptional quality and value.

## PRODUCT TRACEABILITY

The PLC captures detailed historical data (position, temperature, degree of transformation, residence time) for each billet. The system also makes reports on single billets and batches of billet available based on the captured data. The data and reports can be used to improve the process and to respond to customer questions.

## MODULAR DESIGN - ONE PLANT

When building the continuous homogenizing plant our design team designs the plant in sections. This means that the plant is delivered to the customer's location in sections, re-assembled and put together. This way of building secures the function of the plant and the installation period is minimized in time to support the production.

## ENERGY EFFICIENCY

The control system constantly optimizes the furnace to perform the highest throughput without empty spaces independent of product mix. A continuous and optimized material flow lead to more efficient energy usage. The counter flow double-pipe heat exchanger recover a considerable amount of the exhaust energy. High-quality packing's and good insulation keep the wall losses to a minimum.

## AIRFLOW CONTROL

In the mechanical design process engineers optimize the furnace interior to activate the best possible performance to fulfill our customers different needs.

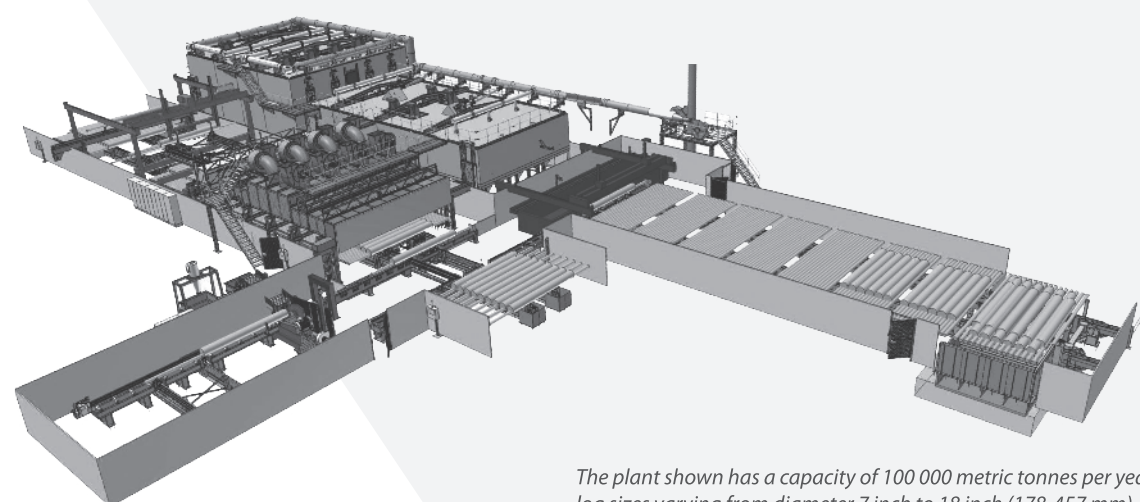
# CONTINUOUS HOMOGENIZING

## PRODUCTION FLEXIBILITY

Because of its multi-zone design, vertical airflow furnace technology is inherently flexible. The furnace can now process batches of different alloys and diameters without leaving empty saddles.

## AUTOMATIC HANDLING

The furnace's operation is completely automated by the control system. No user interaction is required during normal operation, when a stoppage occurs, or when the furnace needs to be restarted after a stoppage. Stoppages and restarts usually involve significant risks of product damage. Because the process is completely automated, all variations inherent in human control of such a process are eliminated and the consistency of the operation is improved.



*The plant shown has a capacity of 100 000 metric tonnes per year, log sizes varying from diameter 7 inch to 18 inch (178-457 mm) length = 5100-7100 mm.*