MEDIUM-FREQUENCY CORELESS INDUCTION FURNACES FOR THE ALUMINIUM INDUSTRY

OTTOJUNKER

WE UNDERSTAND METALS

OTTO JUNKER GmbH

Cutting-edge technology for the aluminium industry

Our success is based on satisfied customers. That is why we are constantly setting new standards with our systems in terms of technology, material quality, process reliability and energy efficiency. Industrial furnace systems from OTTO**JUNKER** are used successfully across the globe in the metal industry.

Thanks to the specific combination of different OTTO **JUNKER** technologies, our systems are the first choice for a wide range of applications in the aluminium industry.

Melting

- Milling chips
- Sawing chips (briquetted)
- Baled foils
- Solid materials
- Returns
- Ingots / slabs

Alloying

- Pure and ultra-pure aluminium
- Work-hardened alloys
- Heat-treatable alloys
- Master alloys
- Super alloys
- Grain refinement alloys (e.g. Al-Ti-B)

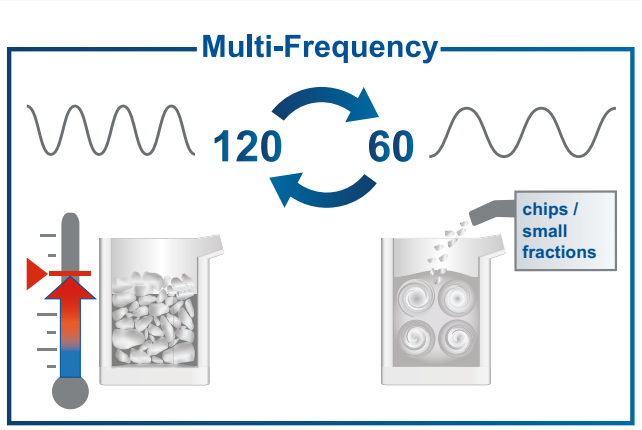
Features of OTTO**JUNKER** medium-frequency coreless induction furnaces

- **Metal loss < 1%**
  even with very small charge material (chips)
- **Energy consumption < 500 kWh/t**
  thanks to the OTTO**JUNKER** energy-saving coil
- **Impressively low emissions**
  CO_2-free / practically no NOx emissions
- **Stirring without heat-up**
  Stirring movement decoupled from heat supply
- **Highly suitable for alloying work**
- **No undesirable substances introduced**
  e.g. due to furnace atmosphere
- **Extremely compact design**

Advantage: Bath movement

... for targeted stirring without heating

With OTTO**JUNKER** induction furnaces, the direction and intensity of bath movement can be specifically adjusted, irrespective of the temperature increase of the melt. As a result, the smallest aluminium fractions, such as chips, can be melted with minimal metal loss (< 1 % for dry chips).

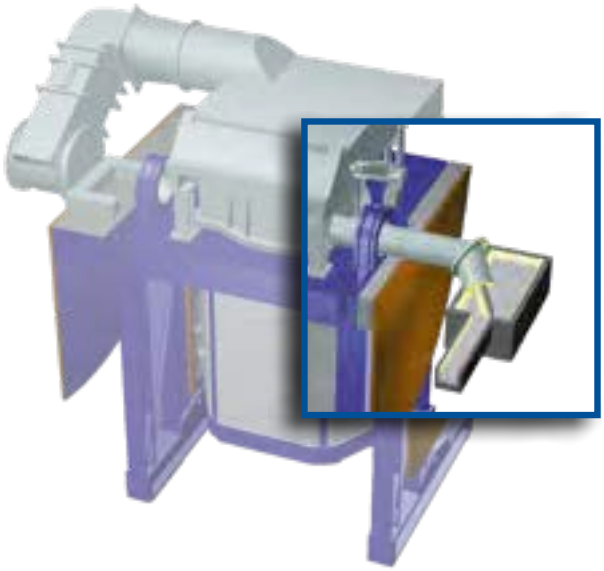


Advantage: metal discharge through the tilting bearing

... for melting and casting under controlled atmosphere

OTTO**JUNKER** has developed a special solution for controlled atmosphere melting and casting without having to rely on costly vacuum technology: the metal is poured via the tilting bearing.

The finished aluminium is not discharged via the pouring spout or launder, but rather through a conduit mounted in the axis of rotation of the induction furnace. On leaving the conduit, casting takes place in the next process step – also in a controlled atmosphere.



OTTO**JUNKER** video material

... for illustrating medium-frequency coreless induction furnaces

How an coreless induction furnace works

The video clearly shows the complete melting process in a coreless induction furnace. Furnaces from OTTO**JUNKER** GmbH offer a reliable technology that can be depended on even under the toughest conditions.

Turbulent metallurgical inductive reactor

The video shows a coreless induction furnace in various operating modes. You can clearly see how, thanks to the proven OTTO**JUNKER** technology, the bath movement can be controlled independently of the heat supply.

Melting aluminium chips and ingots

The first plant is a gas-fired melting furnace. Aluminium ingots are melted down in it. The second plant is a coreless induction furnace for melting aluminium chips, equipped with the proven OTTO**JUNKER** stirring technology. The molten aluminium is then cast in a continuous casting process.

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OTTO JUNKER GmbH
Jaegerhausstr. 22
52152 Simmerath
Germany

Phone: +49 2473 601-0
Email: sales@otto-junker.com
www.otto-junker.com