



GREEN FURNACE TECHNOLOGY



Induction melting furnaces



Thermoprocessing plants



*„Identifying all problems without bias,
finding the solution through joint scientific and practical enterprise, and
supplying the result to the customer in the form of quality products.“*

Guiding principle of our company's founder, Dr.-Ing. E. h. Otto Junker



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OTTO JUNKER Group

Green Furnace Technology



Foundation of
OTTO JUNKER GmbH
at Lammersdorf

1924

Establishment of
Otto Junker
Foundation

1970

Foundation of
Junker Inc. in the USA

1985

Take-over of
Elhaus GmbH

1989

Foundation of
Junker Industrial
Equipment s.r.o.
in the Czech Republic

1995

OTTOJUNKER is one of the most successful manufacturers of complex industrial furnace plants, especially for the metal industry, all over the world.

More than 700 employees in 6 locations the world over design and build equipment for melting, coating and annealing as well as the recycling of metallic materials.

Decades of experience in combination with an excellently equipped Technology Center ensure highest innovation potential.

- Inductive multi-frequency heating as well as resistance heating or gas firing are used in the best possible way depending on the process and resources.
- Complemented by heat recovery and heat storage systems, waste air/waste gas afterburning systems, recuperation.
- Supported by mathematically modelled process control systems.

OTTO JUNKER Foundation

Promoters of science and technology



Take-over of Thermcon ovens B.V.

Foundation of Otto Junker Metallurgical in China

Foundation of Otto Junker Middle East in Dubai

Take-over of Induga GmbH & Co. KG

Foundation of Otto Junker India in Mumbai

2003

2004

2005

2006

2022

The Otto Junker Foundation is the sole owner of OTTO JUNKER GmbH and ranks among the largest private sponsors of the Technical University of Aachen (RWTH).

The foundation established by Otto Junker in 1970, which has remained the sole owner of OTTO JUNKER GmbH since his death, has the chartered mandate of advancing science and technology and of promoting young engineering talent at the Technical University of Aachen (RWTH).

To this day, well over 100 research projects have been funded by the Foundation. It allocates substantial sums in grants and prize money for the Otto Junker Awards conferred in recognition of outstanding degree theses every year.



Every year, the Foundation honours RWTH students for outstanding academic achievements.

Manufacture

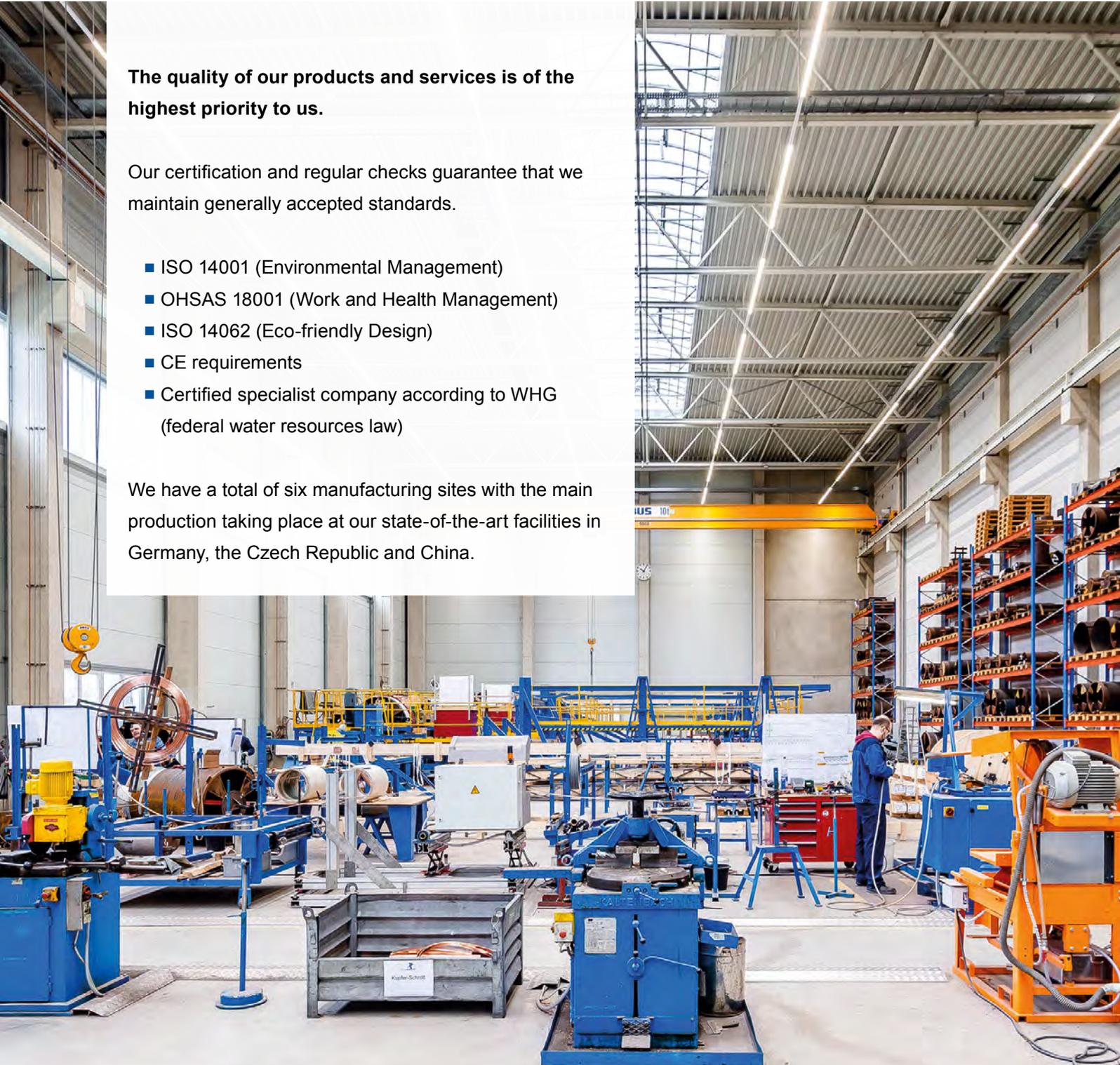
Quality and innovation „Made by OTTOJUNKER“

The quality of our products and services is of the highest priority to us.

Our certification and regular checks guarantee that we maintain generally accepted standards.

- ISO 14001 (Environmental Management)
- OHSAS 18001 (Work and Health Management)
- ISO 14062 (Eco-friendly Design)
- CE requirements
- Certified specialist company according to WHG (federal water resources law)

We have a total of six manufacturing sites with the main production taking place at our state-of-the-art facilities in Germany, the Czech Republic and China.





„Made by OTTOJUNKER“ stands for highest quality and innovation.



Induction melting furnaces

... for the foundry industry

In the field of induction furnaces for the cast iron, steel, light and heavy metal industries, our success rests on a broad furnace portfolio addressing the most diverse applications.

Melting

- Medium-frequency coreless induction melting furnaces
- Vacuum-type coreless induction furnaces
- Channel-type induction melting furnaces

Holding

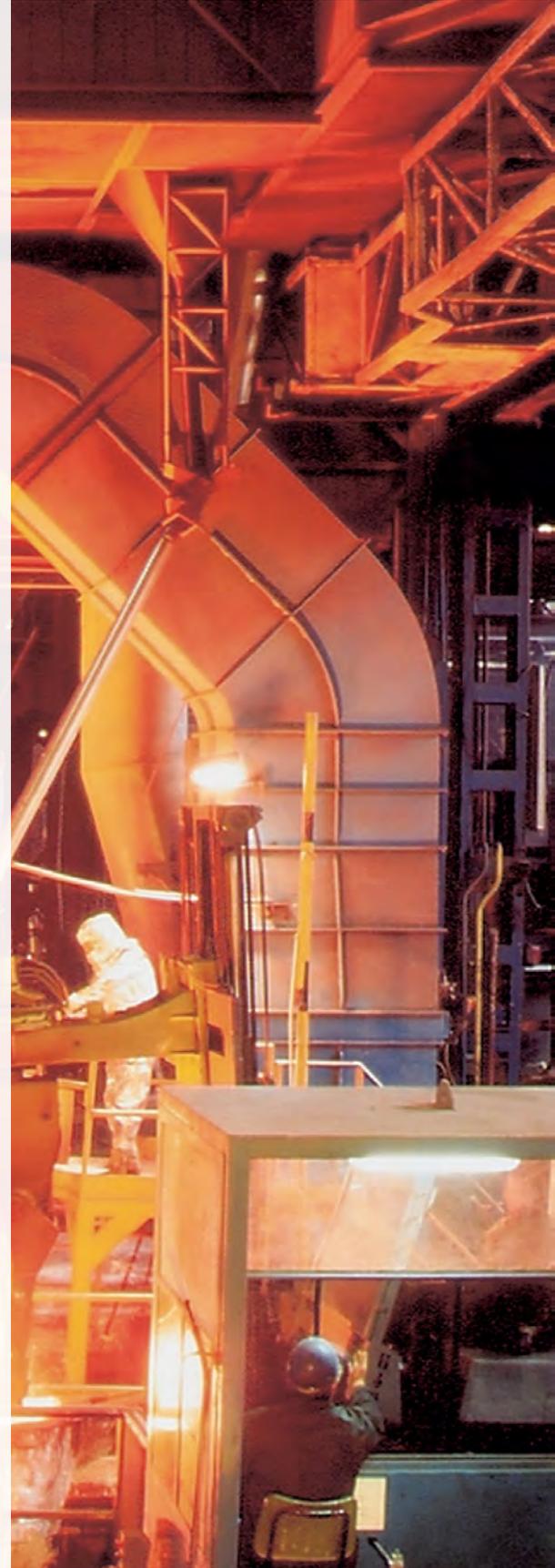
- Coreless induction furnaces
- Channel-type induction holding furnaces

Pouring

- Pressurized pouring units with stopper control system
- Pouring furnaces with channel-type or coreless inductor
- Dosing furnaces

We supply induction furnaces for melting, holding and pouring of

- Cast iron and steel
- Copper-based materials
- Aluminium-based materials
- Magnesium
- Silicon
- Silver
- Zinc
- Tin





Medium-frequency coreless induction furnace
 for the melting of 1 ton of aluminium within 80 minutes. The induction-heated melting furnace melts down aluminium without emitting CO₂.



Duomelt coreless induction furnace plant
 Capacity 16 tons | Power 10 MW
 for the melting of up to 20 tons of cast iron per hour.



MFT JUPITER Line Duomelt furnace plant
 of compact and standardized design
 Capacity 8 tons | Power 6 MW
 All JUPITER Line plants are equipped with state-of-the-art IGBT converters offering maximum equipment availability.



Movable INDUGA steel strip coating vessel
 with channel inductor heating. Coating vessels are used for up to 340 tons of zinc or aluminium alloys.



Medium-frequency coreless induction furnace
 Capacity 12 tons | Power 9 MW

Thermoprocessing plants

... for aluminium

Heating and homogenizing of rolling slabs

- Pusher-type furnaces
- Chamber furnaces
- Cartridge furnaces
- HiPreQ[®] slab quench

Solution annealing, heat treatment, drying of plates, profiles or strips

- Horizontal Heat Treatment Line HHT
- Strip flotation furnace for non-contact heat treatment of strips
- Both with HiPreQ[®] quench, mist quench, soft quench, hard quench, air cooling
- AMS 2750 E, AMS 2772 C, CQI9
- Pre-aging
- Varnish drying

Annealing of strip coils and foil coils

- Intermediate, final, temper annealing
- Nitrogen atmosphere or air
- Single or multi coil furnaces
- Overhead furnaces
- AMS and CQI9
- Cooling chambers or integrated recoiling
- Preheating chambers for heat recovery
- Charging machines

Technical features

- High convection technology
- Rapid heating and cooling
- High temperature accuracy
- Low overtemperatures
- Gas-fired or electrically heated, H₂ in preparation
- Exact adjustment of cooling rates for minimum deformation
- Low consumption due to high efficiency and excellent insulation
- Air or nitrogen atmosphere
- Thermal afterburning of solvents
- High flexibility
- Model-controlled furnace and quench controls
- Individual adaptation to the customer's requirements
- Maintenance friendly and long service life
- Fully automatic control systems
- Workmanlike and true-to-schedule installation
- Site management on site
- Professional service all over the world



HiPreQ[®] mist quench



Pusher furnace



Strip flotation furnace with HiPreQ®



Chamber furnace



Thermoprocessing plants

... for copper

Strips of copper, brass, bronze and special alloys

- Strip treatment lines for continuous degreasing, annealing and pickling
- Non-contact strip flotation furnace up to 850°C
- Non-contact vertical furnace up to 1,000°C
- Degreasing and pickling lines
- Brushing machines
- Coilers, strip accumulators, strip joiners
- Hot dip tinning lines
- Induction heated tin melting crucibles

Annealing of tubes, profiles, bars

- Roller hearth furnaces
- Vacuum chambers
- Cooling chambers or integrated recooling
- Preheating chambers for heat recovery
- Stacking and unstacking device

Technical features

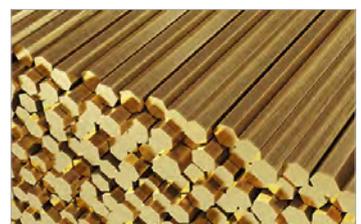
- High convection technology for rapid heating and cooling
- Excellent temperature uniformity
- Low overtemperatures
- Gas-fired or electrically heated, H₂ in preparation
- Low consumption due to high efficiency and excellent insulation
- Protective gas, forming gas, hydrogen atmosphere
- High flexibility
- CTP tube inside purging with protective gas
- Highest surface purity
- Tin layers of 1 - 15 µm
- Reduced whisker formation
- Model-controlled furnace controls
- Individual adaptation to the customer's requirements
- Single-source conception and delivery
- Maintenance friendly and long service life
- Fully automatic control systems
- Workmanlike and true-to-schedule installation
- Site management on site
- Professional service all over the world
- Certified specialist company according to § 62, § 63 WHG (federal water resources law)



Roller hearth furnace for copper tubes



Roller hearth furnace for brass rods



Thermoprocessing plants

... for pressworks

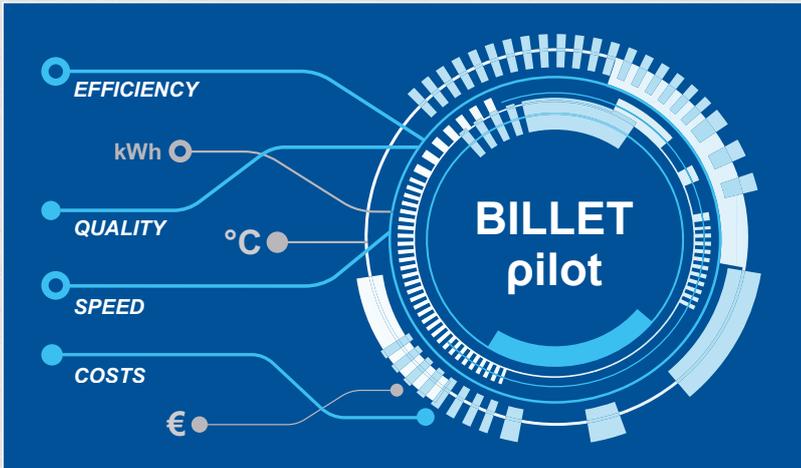
Heating of extrusion billets of aluminium and copper alloys

- Induction billet heating
JUNKERDynamicHeater®
- Billet preheating either gas-fired or electrically-heated
- Rod homogenization
- HiPreQ® billet quench
- Handling, vertical magazine, hot saw
- Preheating chambers for heat recovery
- Optimum combination between preheating and induction heating



Technical features

- Exact taper guidance
- Very high power density by IGBT technology
“Made by OTTO JUNKER”
- Very high flexibility
- In-house induction coil manufacture
- High convection technology for rapid heating and cooling
- High temperature accuracy
- Low overtemperatures, no micro-melting
- Induction heated, gas-fired or electrically heated, H₂ in preparation
- Low consumption due to high efficiency and excellent insulation
- Model-controlled furnace controls BILLET pilot
- Individual adaptation to the customer's requirements
- Maintenance friendly and long service life
- Fully automatic control systems
- Workmanlike and true-to-schedule installation
- Site management on site
- Professional service all over the world



Modern process control by mathematical modell

BILLET pilot

- Shorter cycle times due to quicker billet call-off
- Permanent reduction of costs and resources due to efficient use of energy
- Reduction of thermocouple maintenance



Billet heating complete with handling



Inductive billet heating JunkerDynamicHeater® (JuDy)



Service

Modernization and spare parts

For us, service, more than anything, means a high level of availability and service worldwide.

You can contact us at any time and receive quick assistance via the **OTTOJUNKER** Service Hotline:

- Phone +49 (2473) 601-555
- Email service@otto-junker.com

We are your experienced partner for the modernization and extension of existing equipment - from the planning stage until realization.

We will support you in saving energy, increasing the capacity and lowering downtimes efficiently.

The **OTTOJUNKER** Service will make sure that your equipment technology is up-to-date at any time. Together with you, we will work out the solution best suited for your requirements.

You can rely on us!



Genuine spare parts



**Technical support
24/7 Hotline**





Monitoring / Analysis



Maintenance / Repairs



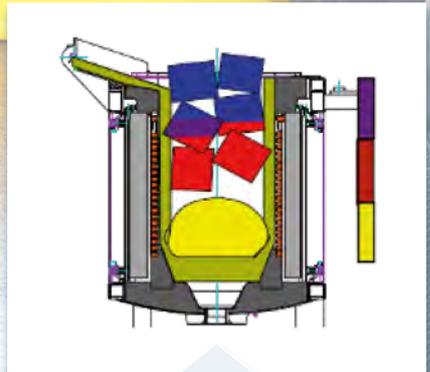
Process optimization



Modernization / Retrofitting



Instruction / Training



Refractory lining installation

Research and Development

Sustainable solutions for added value

- Decarbonization
- Recycling
- New Applications
- Digitalization

Together with our customers, partners and in close cooperation with universities and polytechnics, we develop sustainable solutions for our core products, i.e. heat treatment equipment and melting furnaces.

In the future, we shall exclusively focus on regenerative energies, recycling and raising the efficiency of our equipment. Testing at laboratory and pilot scale is carried out at our Technology Center in Germany.



Technology center at our Lammersdorf HQ





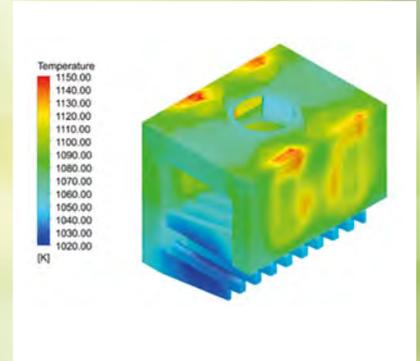
Experimental coreless melting furnace



Tilt rotary pyrolysis



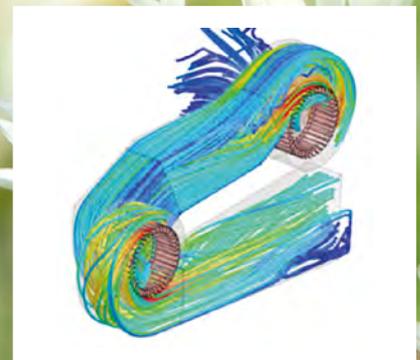
Floating model



FEM and CFD simulation



Quench



CFD simulation

Qualification and Training

Progress through knowledge

The training of young people and the focused and ongoing development of our employees is pursued by OTTOJUNKER with a high degree of commitment and to high standards.

As a forward-looking company, our aim is to train young people in technical or commercial professions with the aim of keeping them permanently employed in our company upon completion of their training.

Continuous development and the transfer of knowledge and experience form a key basis of our success.

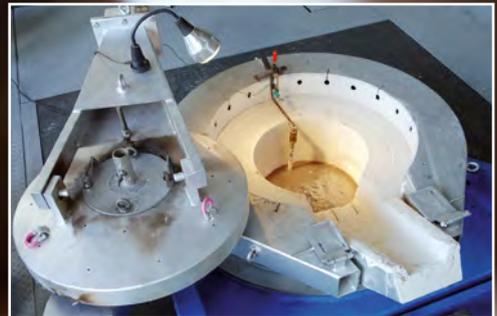


Welcome to the OTTOJUNKER ACADEMY

Equipment planning
and modernization

Cost efficiency
calculations

Practical
workshops



OTTO JUNKER Academy

The OTTOJUNKER Academy offers training programs for equipment operators and new customers on a regular basis.

The seminars focus on profitability, reliability, energy efficiency and safety.

Based on models, demonstration units, Virtual Reality simulations and test facilities, a training with a practical approach can be carried out.



OTTOJUNKER worldwide

OTTO JUNKER GmbH companies



Subsidiaries, cooperation partners and agencies in more than 40 countries offer every customer easy and quick access to the services provided by OTTOJUNKER.



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