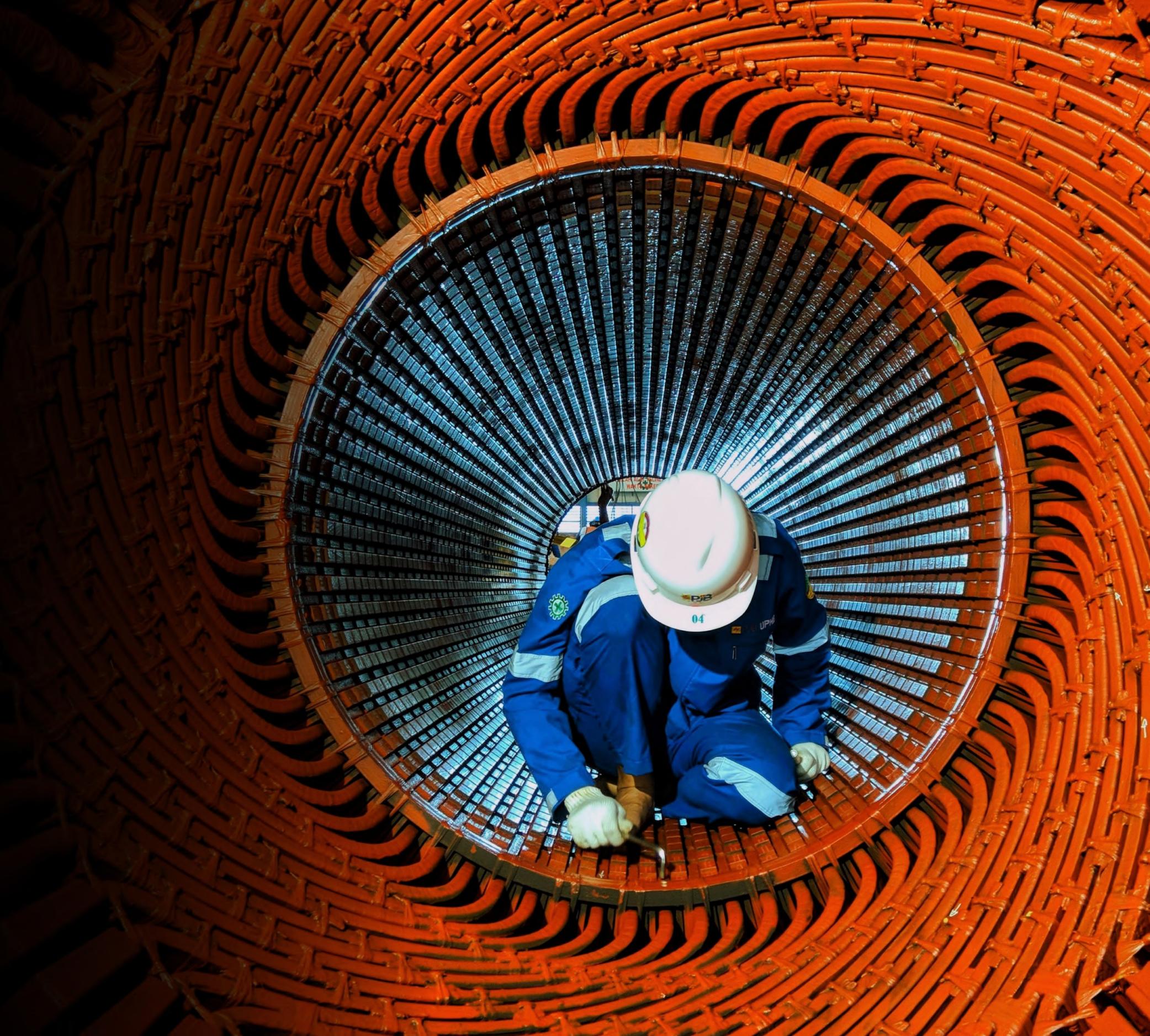




High Voltage motor & generators

Induction solutions



> 30

GH Induction provides complete and turn-key solutions for more than **30 years**.



The trend in motor and generator manufacturing is being more efficient both from energy and production point of view.



On the other hand, the final user requirements are more quality demanding.



Induction heating is an advanced manufacturing method to heat metals proving efficiency, accuracy, process control and safety which is ideal for:



ROTOR

Induction short-circuit
Ring brazing

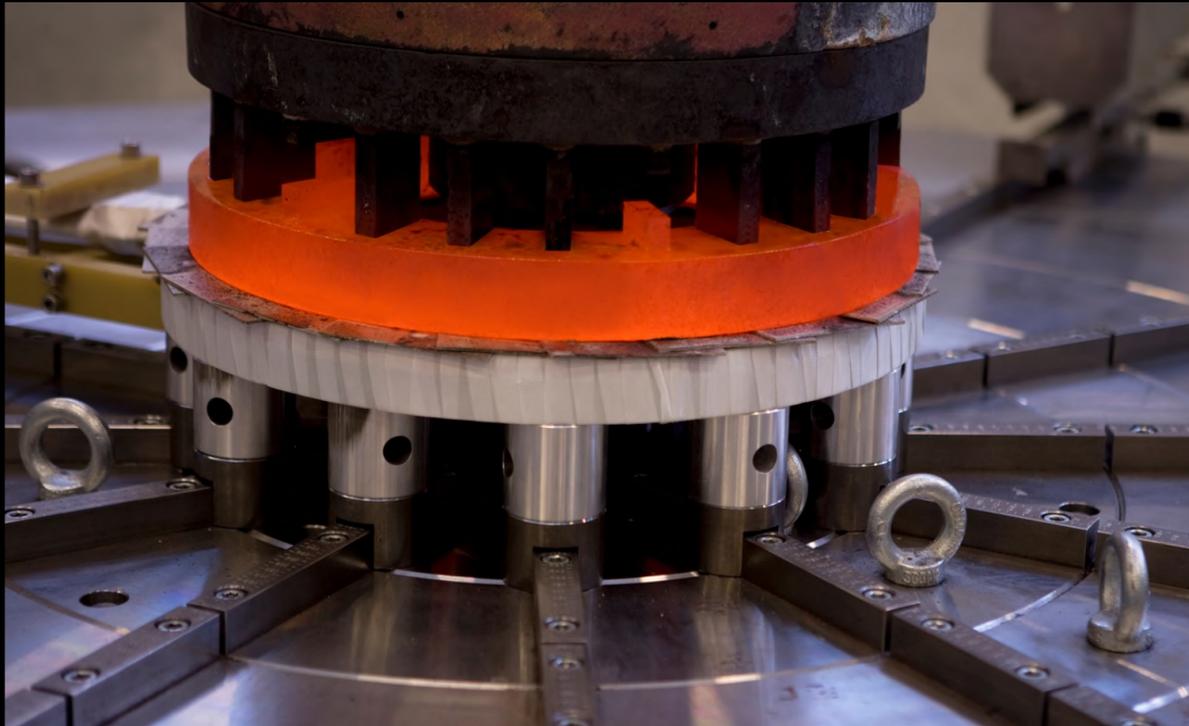
STATOR

Copper
Strips brazing



➤ Rotor solutions

Induction short-circuit ring brazing



GH-SCR SYSTEM

**The best temperature
homogeneity
to improve efficiency**

GH Induction technology is used to join the short-circuit copper ring to the conductive bars of the squirrel cage rotors with the highest temperature homogeneity up to 3m diameter rings.

The typical temperatures depending on the brazing alloys are:

- Copper - Phosphorous: [750, 850] °C / [1382, 1562] °F
- Silver: [630, 700] °C / [1112, 1292] °F

Traditionally flame torches are still being used however due to efficiency requirements, induction heating is becoming more and more the standard.

➤ Rotor solutions. Main benefits

Induction short-circuit ring brazing

PRODUCT QUALITY

- **Welding quality**
Increase of electrical conductivity
- **Homogeneity of temperature**

Thermal profile control
Bar and ring temperature management (pyrometers)
Special SCR inductor
- **Excellent rotor finishing**
- **Repeatability and traceability**

Process parameter stored

PRODUCTION

- **Cost of non quality reduction**

Less oxidation, no derusting
No deformation, no rebalance
- **Production versatility**

Thermal profiles for different rotors
One SCR inductor for many rotor' diameters
Quick inductor change system
- **Higher productivity**
keeping skilled operators

Localized and fast heating
minimize the heat transferred into laminations and shaft

SUSTAINABILITY

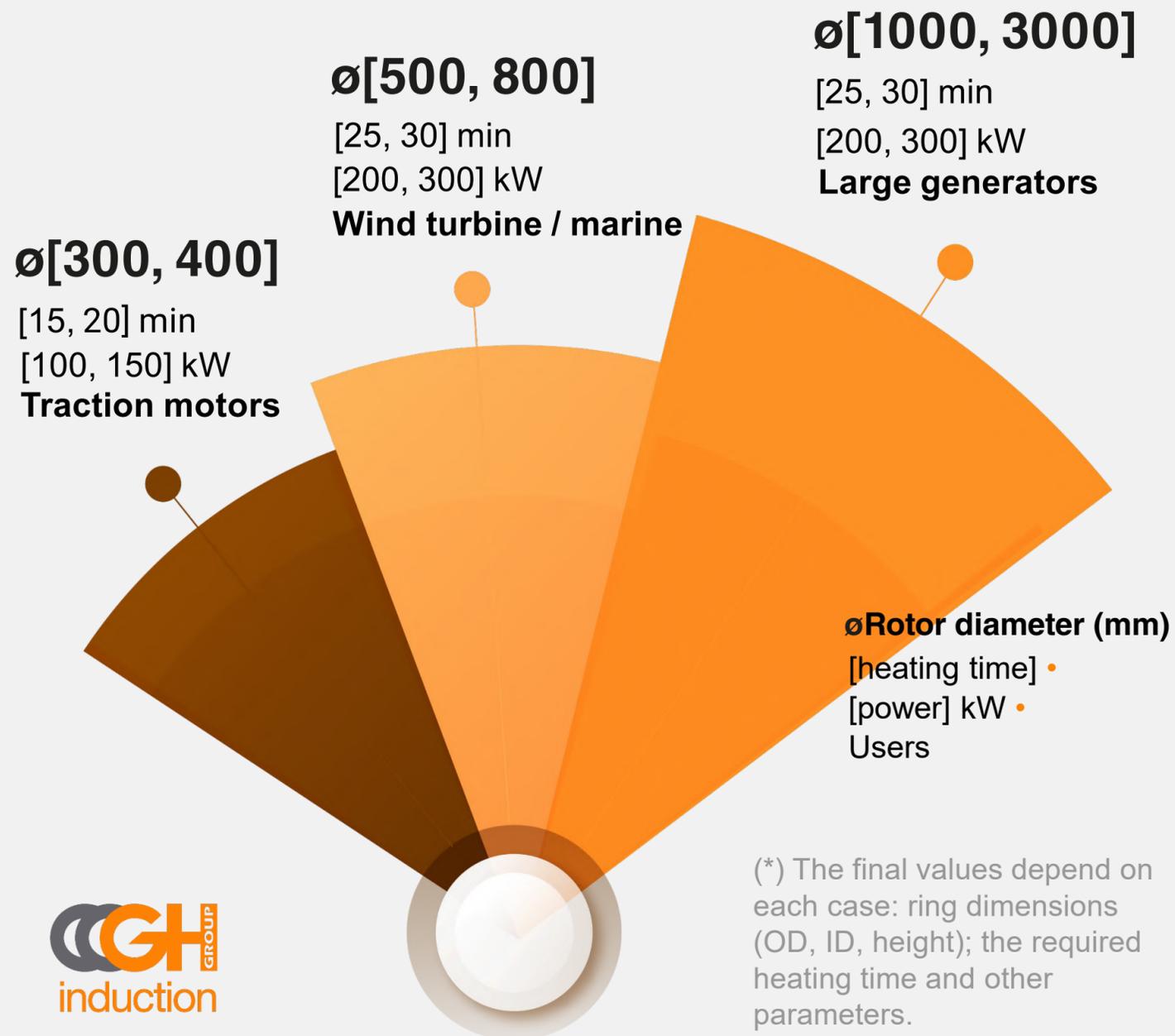
- **Energy-efficient system**

Higher efficiency power supplies (96%) and direct heating
- **Better working and enviromental conditions**

No flames, fumes or noises

➤ Rotor solutions. Typical Values

Induction short-circuit ring brazing



Exclusive features

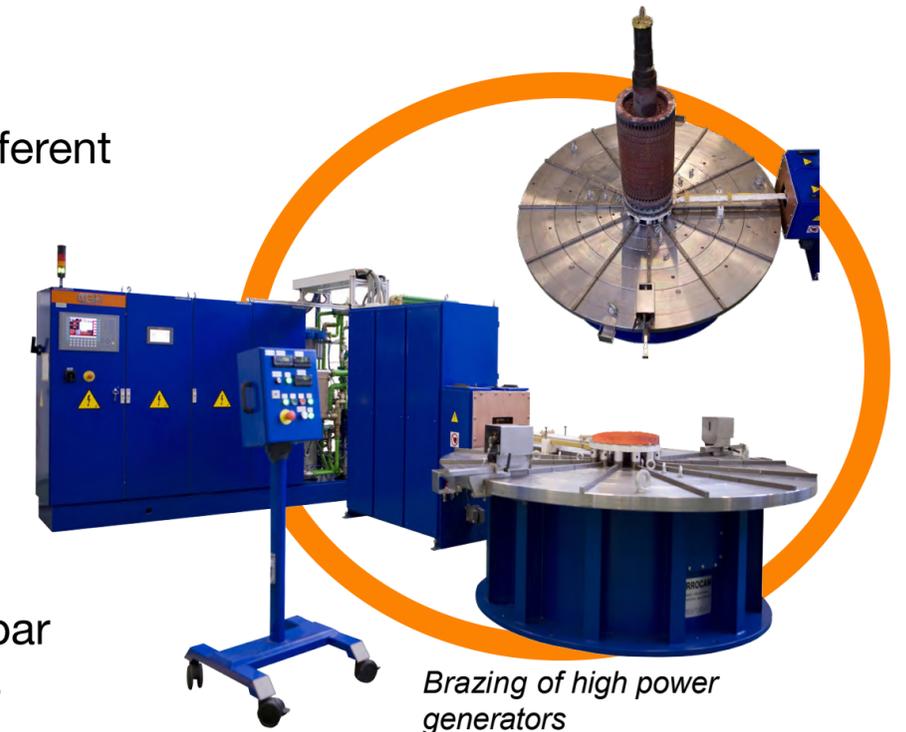
- Precise process control
- Quick and easy-change of inductors
- Special SCR inductor

Scope of supply

- High-efficiency power supply and cooling system
- Siemens PLC with advanced thermal process management
- Ring and/or bar pyrometers
- SCR inductors
- Self centering steel table for different diameters

Optionally

- Fumes exhaust system
- Code reading system (QR or bar codes) for different references



➤ Stator solutions

Copper strips brazing

Induction heating hand-held terminals replace flame torches offering better welding quality with improved working conditions.

Bar and strand types of connections can be brazed.

Benefits

- Mobile to carry inside workshop
- Ergonomic for freedom of movement
- Robust structure
- Versatile to operate out or inside the stator (for large stators)

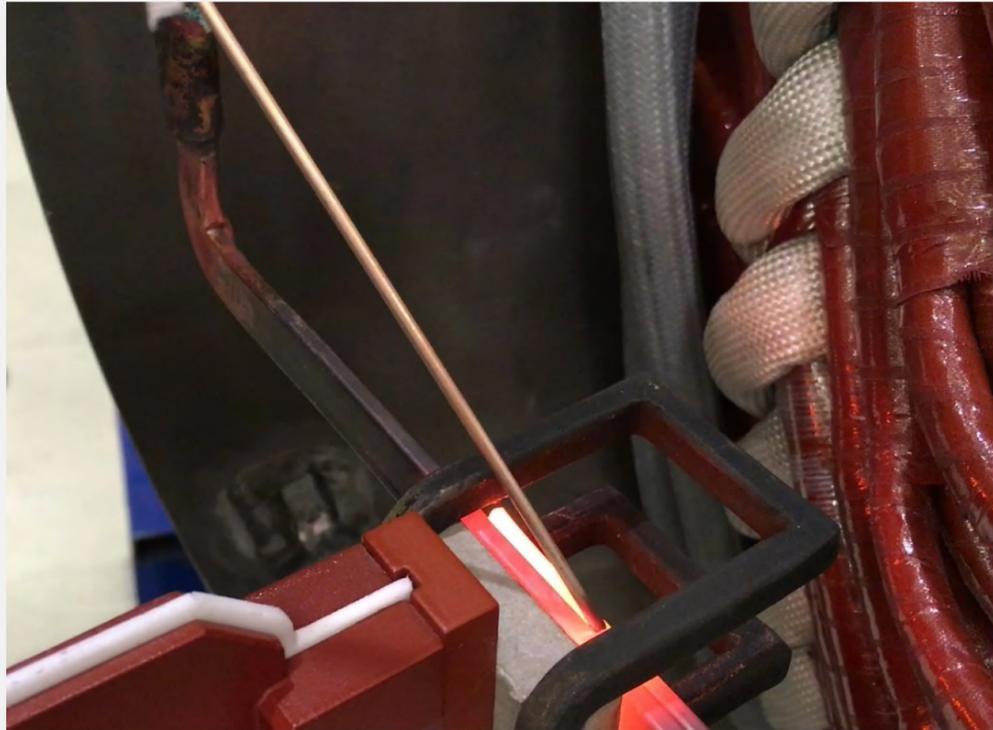


better welding
quality & working
conditions



➤ Stator solutions

Copper strips brazing



Scope of supply

- Agile induction heating system
- Hand-held terminal and inductors

Optionally

- Clamping system for brazing



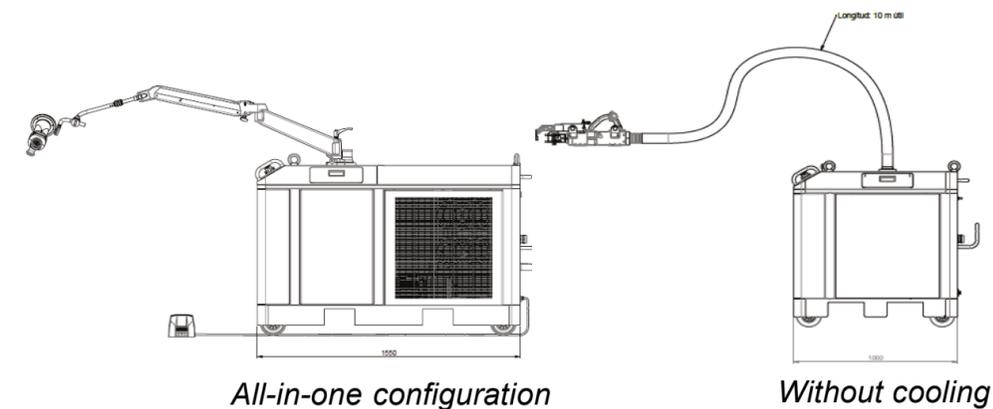
Brazing of railway
SCRs

Configurations

- All-in-one: all components in the steel frame
- Back-pack: all components except cooling
- Single output [10, 50] kW
- Double output [10+10] y [20+20] kW



Clamping system
To braze



All-in-one configuration

Without cooling

➤ Customer services

The following services are available

- **Advisory services**

GH experience, references and testing laboratory are available to support the customer in developing applications and selecting inductors.

- **Repair & Spare inductors**

A repair service and spares are offered for GH Inductors. For advanced manufacturing inductors, the industrialized process allows high dimensional accuracy in the copies and shorter delivery times for 3DPCoils.

- **On-line shop**

365 days x 24 hour service for technical, budgetary information and on-line payment.

- **Technical Assistance**

GH technical engineers support the customer in its daily operation.

- **Simulation & laboratory**

For induction application test and development hub.

- **Inductor training**

A set of training programs to understand GH induction solutions and the induction heating technology are available.

- **Inductor shop**

All types of complete inductors for the industry (automobile, industrial parts, brazing, etc) can be supplied ready to be installed in a customer system. GH Induction is the unique worldwide sales point for 3D printing and Microfusion Technology inductors.

➤ About GH Induction

GH Induction is the part of one of the largest groups of induction heating technology in the world. GH serves different industries by offering state-of-the-art solutions around the world.

Since 1961, more than five thousand customers around the world rely GH Group quality products. Automotive, off-road, wind power, tube, electro technical are among customers served by the GH Group solutions.



GH Induction is part of Park Ohio Holding with companies in:

Spain • Germany • France • India • China • Brazil • Mexico • United States

Product specifications and related information subject to change without notice.



High Voltage motor & generators

Induction solutions

info@ghinduction.com

www.ghinduction.com

+34 96 135 20 20



GHCOM02102EN.1

