



induction straightening solution for decks and bulkheads



GH Group companies

Spain (Headquarters)
GH ELECTROTERMIA S.A.
46184 San Antonio de Benagéber
(Valencia) Spain
Tel: +34 961 352 020 Fax: +34 961 352 171
e-mail: info@ghinduction.com
web: www.ghinduction.com

Brazil
GH INDUÇÃO DO BRASIL LTDA.
China
GH INDUCTION SHANGHAI Co., Ltd.

France
GH ELECTROTHERMIE S.A.S.

Germany
GH INDUCTION DEUTSCHLAND

India
GH INDUCTION INDIA Pvt. Ltd.

Mexico
GH MEXICANA S.A. de C.V.

USA
GH INDUCTION ATMOSPHERES

www.ghinduction.com
info@ghinduction.com



Increase your productivity with the most efficient heating

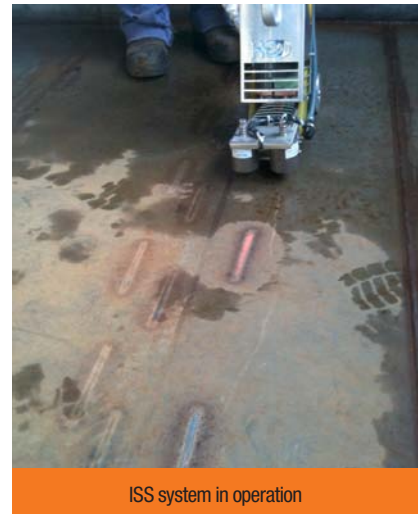
During the welding of plates to fixed structures, buckling stress is produced. In order to eliminate this distortion, different traditional deck and bulkhead straightening techniques are employed: welding of beads in non-visible areas, cutting and re-welding of plates and stress relieving using flame heating. These techniques are big time consumers, costly and do not provide any added value. Improving the efficiency of this process is paramount.

How to maximize the efficiency?

Your company can achieve optimal efficiency by replacing conventional deck straightening techniques with the GH Group induction heating solution. Induction heating is a well known, proven technology and it is widely known in the shipbuilding industry.

The main customer benefits of GH induction heating solution are:

BENEFIT	GH INDUCTION VS TRADITIONAL METHODS
Operation and Maintenance	
Up to 80% manpower saving	Faster, more efficient, repeatable
Flexibility	Ease of use, short training time
Other simultaneous works allowed.	Reduced work area
Low maintenance	No expendable materials
Quality	
Overheat Control	Below Curie temperature
Localized and accurate heating	High power density
Safety and work conditions	
Reduced burning risk	No flame
No flammable or toxic gases	Electrical power supply
Low fume. production	No combustion
Ergonomic	Designed for maximum comfort, efficiency, safety, and ease of use
Heated from the outside in	Heat can be given to just one side



ISS system in operation



Heat goes through the plate

Other industry applications

- Vehicle chassis for railway rolling-stock
- Cranes for heavy industry
- Beams, storage tanks and metal bridges for civil engineering projects.

GH turnkey solution



GH plate straightening turnkey solution includes:

- GH Customer service: From the proposal stage to the implementation of the system; from the installation to commissioning, trouble shooting and maintenance.
- Induction Straightening for Shipbuilding (ISS) system consists of a Transithermic ® 40 kW induction power supply system, cooling system, and heating tools.

ISS system features

Mobility

The equipment is placed at a support beam. Eyebolts are provided for easy movement and placing from one work site to the next. All the system needs is an electrical outlet and it is ready for use. The system can be placed on flat or tilted surfaces.

Operation

The ease of its three step operation allows use of the equipment after only a couple hours of training; 1: program selection based on plate thickness, 2: position the inductor on the tool at the heat location and 3: start the program. System works with closed and open doors.

Versatility

The equipment can be used in a horizontal and vertical operation with just a tool change. As an added bonus, this equipment can also be used for paint removal applications.



Ruggedness

The equipment is designed to work in a marine environment (IP55) and requires a low maintenance level. Cabinet is stainless steel.

Work range

The basic equipment operates within a 40m radius. It can be increased up to 70m

ISS Horizontal tool



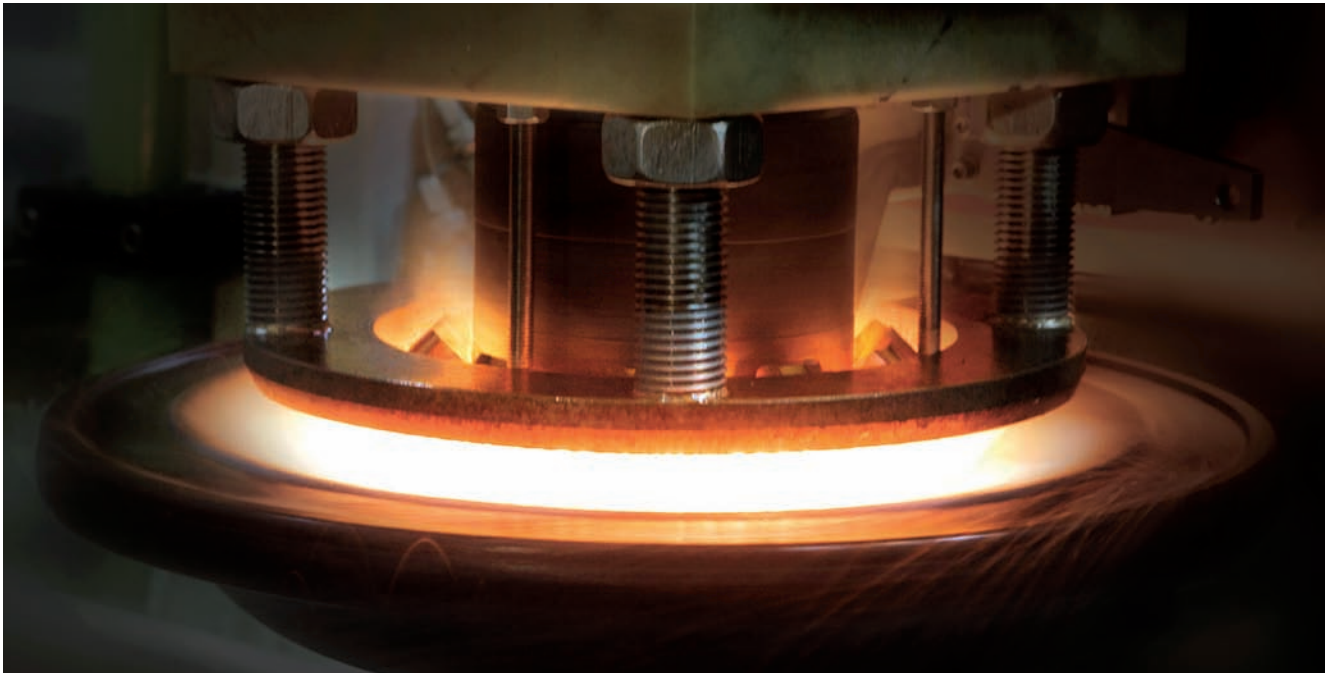
ISS Handtool



ISS system technical data

Supply	
Input	3X380V ± 10% 50/60Hz
Power factor	0,95
Mains cable length	5 m
Output	
Output power	40 kW
Output cable length	30 m
Cooling	
Refrigerant Type	R407C
Coolant	Demineralized water

Cabinet	
Volume (WxDxH)	2250 x 1635 x 2122 mm
Weight	1427 kg approx. (whole system)
Enclosure material	Stainless steel
Protection	IP55
Inductors	
Horizontal tool	13 kg
Vertical Handtool	5 kg
Plugging box	25 kg
Operation	
Plate thickness	4 - 20 mm
Material	Steel, aluminum
Heating time	1s/mm
Heating length	≈ 140 mm
Temperature	≈ 740°C
Operation	Horizontal & vertical

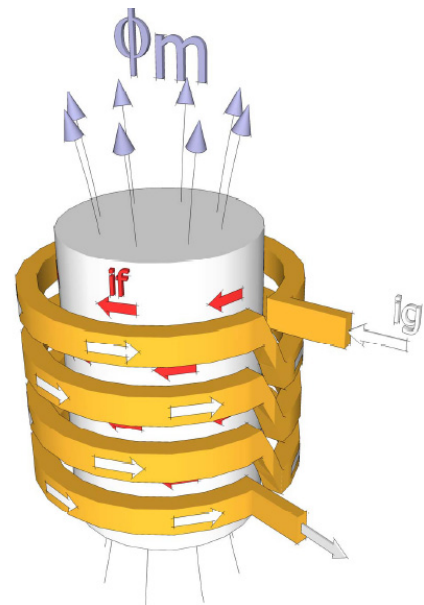


About induction heating

When a metal part is placed within the inductor and enters the magnetic field, circulating eddy currents are induced within the part. These eddy currents flow against the electrical resistivity of the metal, generating precise and localized heat due to the Joule effect, without any direct contact between the part and the inductor.

Main benefits

- Energy efficiency.
- Localized heat in the area to be heated.
- Short heating times.
- Repetitive and controllable process.
- Clean, fumeless, no contact.



About GH Group

GH Group is a worldwide induction heating technology cluster of companies serving different industries such as automotive, wind energy, machine tools, brazing, tube, cable among others. With more than 50 years of experience, GH Group has thousands of customers like GKN, Mercedes, BMW, Alstom, Honda, Vossloh, Nestlé, Siemens, Volvo Marine, Vicinay, DCNS, Metalships and Docks, etc.



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