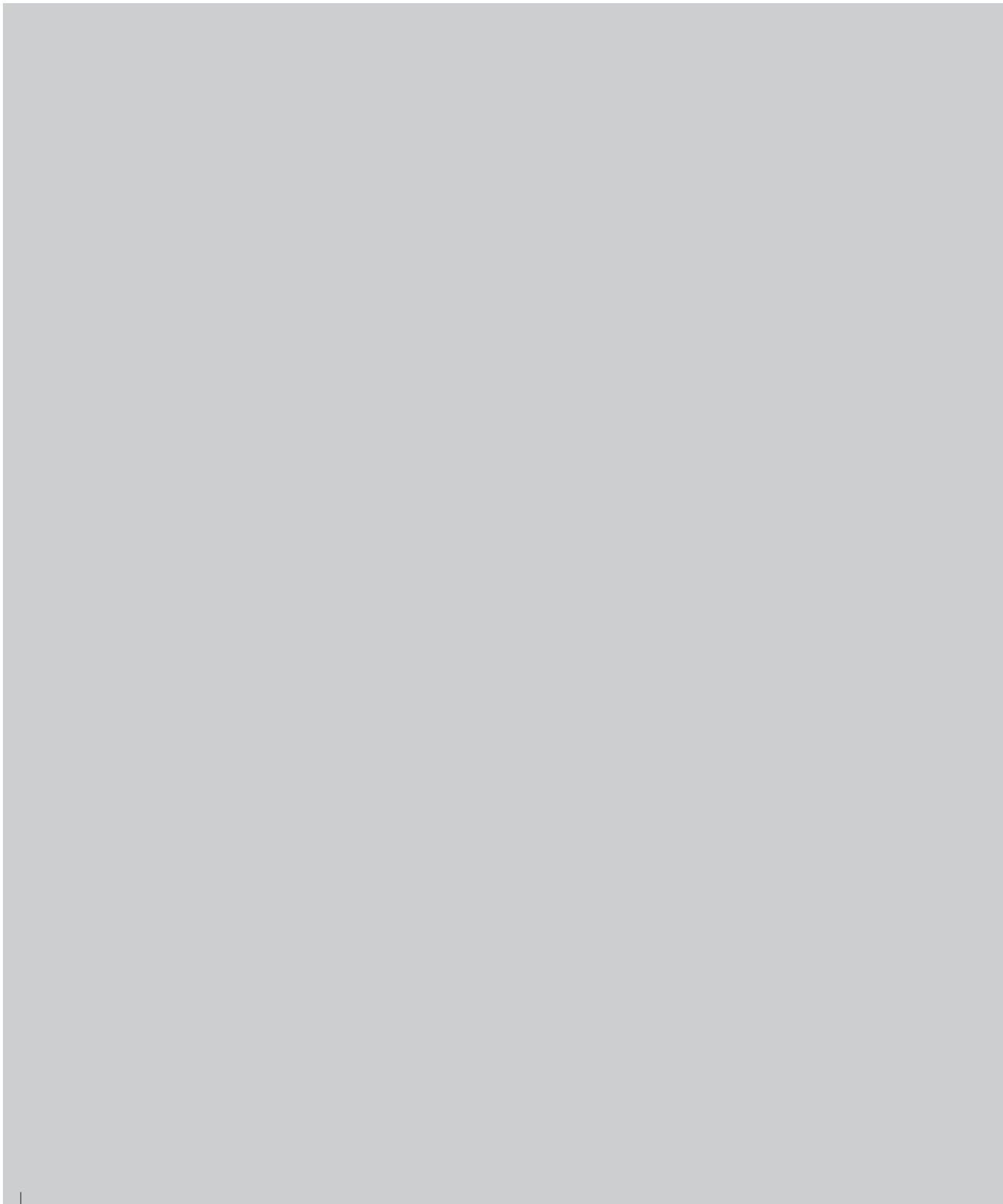




Leading Manufacturers of Melting, Thermal Processing & Production Systems for the Metals & Materials Industry Worldwide

Our product range



**Induction
heating units**



**Energy
supply**



**Sub-contract
hardening
shops**



**iINDUCTOR
express**

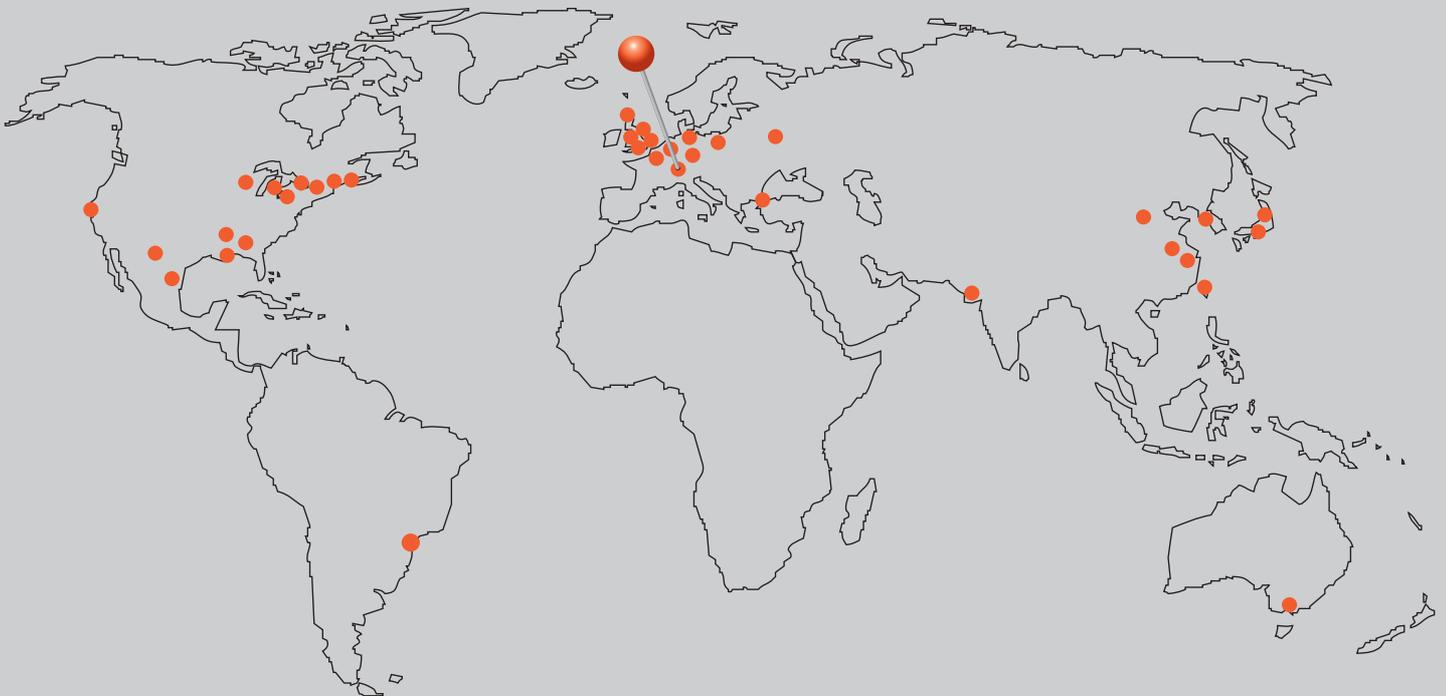


**Process
development**



INDUCTOHEAT Europe – The fire within
An excellent choice

- Induction hardening
- Induction melting and casting
- Induction pipe welding
- Smelting
- Solar crystal growing
- Inverters
- Project development





Corporate concept



Dear customers and interested parties,

Taming the elements has been a challenge for man from time immemorial. Even now, it still presents industry and crafts with new challenges and demands innovative solutions, which continually have to reach beyond the state of the art. Competence, security for the future and maximum profitability are what is demanded. And this is precisely where we see the pillars of our research and development work to do with inductive heat treatment.

In induction heating, fire and water, electricity and iron meet up in order to achieve purposeful the alterations of properties on high-quality components in a technologically matured, complex process. We believe that a service company which is a reliable partner, and problem-solver has to demonstrate a variety of outstanding qualities.

First and foremost, it must acquire and maintain its customers' trust. We see an expression of this in our world-wide partnerships of many years' standing. They confirm the trust which our customers have in the more than 60 years of team experience in our specialised field and the capability of a company which has recourse to a network of acknowledged specialists all over the world and the dynamism of which is reflected in the development of economical technologies and products.



A further aspect to be fulfilled, not only in a technical regard, is no doubt that of security. We guarantee world-wide availability of our standards and services. In our technology centre, we develop tailor-made hardening processes for our clientele all over Europe and offer not only implementation in innovative equipment concepts, but also our service in ultra-modern sub-contract hardening shops – quickly, flexibly and also within 24 hours.

As a company in the group of the world's market-leader in the field of inductive heating – the INDUCTOTHERM Group – we offer our customers double security and are a reliable partner in every regard, in particular for future-orientated solutions. This gives us not only the possibility of keeping up with the changes on the market, but also of designing them together with our customers.

In the following pages, we want to give you an idea of our fields of activity and convince you of our product and service portfolio. Let's begin a dialogue about your needs so that we can work together to productively design the future.

Frank Andrä,
Managing Director
INDUCTOHEAT Europe

Induction hardening

For more than 60 years, we have been specialising in the process of induction hardening of steels and cast materials. The principle of this technology alone is convincing as a locally limited change of properties can be achieved quickly, at a favourable price and with very high precision compared with conventional methods. In induction surface hardening, the workpiece to be processed is heated

to a temperature above structural conversion by means of high-frequency alternating current and then cooled down according to the TTT diagram. The required change of property can be limited precisely to a certain part of the workpiece. The thermal or atmospheric load on the environment is negligibly slight. After all, the heating time and the temperature can be controlled precisely.



Induction hardening:

We offer you precision and documented quality.



This means an extraordinarily high reproducibility of the required material properties.

Thanks to the aforementioned features, the process can easily be integrated into automated production sequences.

The advantages speak out for themselves:

- easy on resources and environmentally beneficial
- quick and partial heating of the workpiece
- low energy consumption
- high throughputs
- consistency of hardness pattern and hardness values

- high reproducibility and automation capability
- low distortion and occurrence of scale
- little space required
- minimised investment necessary thanks to variants of equipment of standard and also special machines optimally coordinated with one another.



Quality:

This is what we see as the sum total of technology and experience.

Fields of activity

Our business activity is based on 4 fields of activity:

1. analysis, process development and application
2. equipment manufacturing
3. sub-contract hardening shops.
4. inductor manufacturing

From analysis to process development

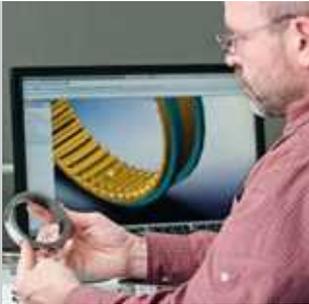
The decision to procure induction equipment is normally preceded by an analysis of the customer-specific requirements.

We make this analysis in our own testing and measurement laboratories. All metallographic and thermal examinations can

be held and documented here. The hardening accessories, which are specifically adapted to the customers' requirements, are then planned and designed in the INDUCTOHEAT Europe engineering department. In the end, the result is a detailed process documentation based on prototypes and job lots.

Equipment manufacturing

Our standard machines are not only ergonomically designed, they are above all designed by practitioners for practitioners. From the outset, top priority is given to simple operation aspect of our machines,



Process development:

Competent employees use ultra-modern means of production and measurement in order to accommodate your individual needs.

Inverter construction:

A wide array of high and middle frequency inverters cover a broad range of applications, e.g. IFF as a world first.

quick refitting and flexible extendibility. Whether it is for prototypes or series: with our modular design, each equipment is set up for new hardening processes in the shortest time possible. Your investments are always limited to the performance which you need at the time.

With the design and manufacturing of our tailor-made special machines we have convinced a large number of renowned customers. After all, our machines ensure maximum performance and give our customers decisive competitive benefits in this way.

Whether it is a standard or a special machine, individual machine or a complete equipment: thanks to the modular principle and the use of ultra-modern technology, our machines work in a maintenance-friendly and operationally secure way. They guarantee a high throughput in large series and also maximum profitability in job lots.

Sub-contract hardening shops

Be it individual pieces or series, we are also active as a service provider for you as sub-contract heat treaters. Quick, precise, reliable and profitable. If you are in a particular hurry, we also harden

within 24 hours. Over and above this, we also offer accompanying processes such as conventional and laser-based hardening via our cooperation partners.

Inductor manufacturing

Each application requires a specific inductor corresponding to the component in question. Our experienced staff manufactures specifically designed inductors for the individual types of components as well as all related hardening accessories – with short response time and original quality. This ensures maximum efficiency for our customers.



Sub-contract hardening shops:

As a service provider, we are reliable, quality-conscious and consistently customer-orientated.



Equipment manufacturing:

Our machines and installations are convincing thanks to individual solutions for your future requirements – made in Germany.



Guiding principles

The guiding principle of our corporate philosophy is to build on the traditions of the past, control the present and aim your sights at the future. We regard this as being a cornerstone for our own economic success. And naturally enough, we put this down to the success of our customers. This is why we have our own understanding of service and also take on responsibility for the future.

Extensive service

Our services range from competent consultancy via training and financing right down to maintenance and the provision of accessories in the sense of our "product lifetime support". You will get everything under one roof world-wide for as long as you use your equipment. Nobody can promise you any more.

The INDUCTOHEAT Europe Academy

In our INDUCTOHEAT Europe Academy we pass our experience and our knowledge on to the next generation. Here we train our employees for tomorrow's requirements and give our customers information worth knowing within our specialist field.



Inductor manufacturing:
Competence and technology secure long lifetimes.



Quality assurance:
We prove quality on ultra-modern measurement and testing devices.



Knowledge transfer:
Experience and creative drive characterize the cooperation among the generations of our employees. At our INDUCTOHEAT Europe Academy, we encourage a continuous transfer of knowledge.

Standards

In regard to design and engineering, we have our own ideas. Engineering is not good just because it is new. But new engineering is good, and is only good, if it contributes to increasing the overall output of a machine – naturally also taking economic and ecological aspects into account. And for us the same principle applies to design. Here too, we primarily think in the category of the possible benefits for our customers.

One example is our new, modular standard equipment concept INDUCTOSCAN. Innovative functions like our revolutionary IFP-inverter technology, the automatic adjustment of inductors and improved ergonomics were combined in a new design.

The new standard which we are setting in this way is for your benefit:

- simple operating
- maximum flexibility thanks to the IFP-inverter and the modular concept of our processing modules
- extremely short retooling times thanks to plug-and-play technology
- optimized process control
- improved accessibility within the control and work area
- optimized energy efficiency

Your benefit: minimised costs thanks to optimally matched equipment variants.

Setting standards in function and design:

This also makes an investment visually attractive.



IFP – inverter

rpm 100 %



FM – Modulation (Frequency):

Frequency modulation for controlling the operating frequency of the inverter

e. g. 30 %



PWM – Modulation (Power):

Pulse width modulation for controlling the output of the inverter

Modular concept with inverter adjustment aid: provides highly flexible conversion and cuts costs

**One company –
one group of companies –
one corporate group**

Global thinking is a must nowadays, as is local action. To be able to do both, the German INDUCTOHEAT Europe is part of the world-wide INDUCTOHEAT Group. All the companies in the group have recourse to central services – e.g. research and development – of the INDUCTOTHERM Group. In this way, we have experience which a single company can never develop. This is the basis on which we guarantee that we can analyse and solve our customers' specific heating tasks – with market and customer orientation – all over the world.

With over 100 employees in Germany, INDUCTOHEAT Europe offers its customers a well-matched portfolio under one roof:

- innovative solutions for induction heating
- reliability in assurance and handling
- redundancy in security of supply thanks to own sub-contract hardening shops
- world-wide 24-hour service
- competence and security of a world-wide group organisation
- more than 60 years of experience.



INDUCTOHEAT Europe:
As a part of a world-wide network, the company is indigenous to the Stuttgart industrial region.



INDUCTOTHERM Group Capabilities

Since 1953, the group, which has about 4,000 employees, has been guaranteeing complete coverage of all hardware and software areas for induction heat treatment. With its 97 individual companies, it offers global communication and simultaneously global service and additionally has a world-wide network of technology companies for after-sales service, equipment, appliance and measurement techniques. It coordinates the work in the development and competence centres and secures the international network of production locations as well as ensuring punctual procurement, also from overseas.

Our most important fields of business are:

- induction melting and casting
- induction heating
- induction tube welding
- vacuum induction, vacuum arc, ESR and precision casting systems
- vacuum heat treatment
- melting furnaces for steel heated by fossil fuel
- mass induction heating for rollers, continuous galvanic baths and galvanic smelting furnaces
- aluminium melting furnaces with fossil and electrical resistance heating.



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