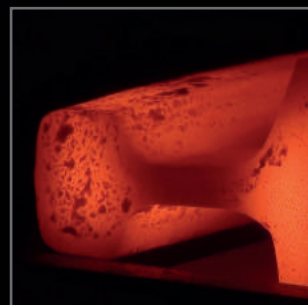


TERMETAL[®]

INDUCTION HEATING SYSTEMS



TERMETAL®

| | |
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TERMETAL
41-940 Piekary Śląskie, ul. Graniczna 7, Poland
tel.: + 48 32 287 12 56, + 48 32 287 25 91, fax: + 48 32 287 25 41
e-mail: termetal@termetal.com.pl
www.termetal.com.pl

ABOUT COMPANY

TERMETAL is a Polish company that designs and manufactures induction heating systems. The company was founded in 1992 and till now installed over 600 induction heating systems.

From the beginning, the company based on its own technical solutions. It has experienced design and construction personnel, so it can flexibly fit into customer needs. Years of experience with permanent improvements of technical solutions makes possible to offer induction heating systems that meet all requirements of modern production lines.

The induction heating systems can be used in the process of forging, melting, hardening, brazing, welding, annealing, tempering, coating, drying etc.. They can be equipped with a wide range of automation and parameters control systems.

The company production range includes the manual heating systems as well as the complete automatic production lines.

The company is open for new challenges concerning use of induction heating in new technologies. Our R&D department still looks for new improvements and let us make tests in the initial phase of each project.





THE FREQUENCY CONVERTERS

The power source of the induction heating system are the frequency converters.

The converters are our own project that has been developed for the last 20 years in order to meet our customers' demands.

The power range is 3kW÷4000kW and the frequency range is 150Hz÷500kHz. The converters operate in series, parallel or series-parallel resonance circuit depending on the application. They base on the IGBT, MOSFET or thyristor technology.

The variety of converters types make possible to supply the induction forging, melting, hardening, brazing systems and many other applications.

The converters can be custom made. They can be installed inside individual sized housing. They can have multiple power outputs and operate with two different frequency range.

The control, communication and logging systems included in the frequency converters can easily name them as Industry 4.0 ready.

BASIC FEATURES

- microprocessor control system that guarantees failure-free operation
- PLC control with touch screen operator panel
- communication via ethernet or different protocols
- self diagnostic mode
- heating parameters storing
- easy integration into production line
- high electric efficiency

ADDITIONAL FEATURES

- internet diagnostic system
- integrated closed cooling units
- handheld transformers

MF FREQUENCY CONVERTERS

- microprocessor control system that guarantees failure-free operation.
- PLC controlled, with touch screen operator panel
- self diagnostic system
- ethernet or different protocols for communication
- heating parameters storing
- Power 5kW-800kW
- frequency 500Hz÷150kHz
- easy integration into production lines
- optional handheld transformers
- Industry 4.0 ready
- universal solution for different applications



| Type | Active power [kW] | Frequency [kHz] | Input power [kVA] | Supply voltage [V]** | Cooling water w[l/min]** |
|------------|----------------------|-----------------------|----------------------|-------------------------|-----------------------------|
| MHF-5/150 | 5 | 30...100 or 150...300 | 6 | 3 x 400 | 5 |
| MHF-10/150 | 10 | 30...100 or 150...300 | 12 | 3 x 400 | 8 |
| MF-15/100 | 15 | 15...50 or 100...300 | 18 | 3 x 400 | 13 |
| MF-20/100 | 20 | 15...50 or 100...300 | 24 | 3 x 400 | 18 |
| MF-30/100 | 30 | 15...50 or 100...300 | 36 | 3 x 400 | 22 |
| MF-50/100 | 50 | 10...50 or 100...300 | 60 | 3 x 400 | 32 |
| MF-100/100 | 100 | 3...50 or 100...300 | 120 | 3 x 400 | 55 |
| MF-150/50 | 150 | 3...50 or 100...200 | 180 | 3 x 400 | 75 |
| MF-200/30 | 200 | 1...30 or 50...100 | 240 | 3 x 400 | 90 |
| MF-250/20 | 250 | 1...20 or 30...80 | 300 | 3 x 400 | 105 |
| MF-300/15 | 300 | 1...10 or 30...50 | 360 | 3 x 400 | 120 |
| MF-400/10 | 400 | 0,5...10 or 3...20 | 480 | 3 x 400 | 160 |
| MF-600/10 | 600 | 0,5...5 or 3...10 | 720 | 3 x 400 | 220 |
| MF-800/10 | 800 | 0,5...3 or 3...10 | 960 | 3 x 400 | 320 |

* other voltage on request, cooling water consumption depends on coil type and operating parameters

HF FREQUENCY CONVERTERS

- microprocessor control system that guarantees failure-free operation.
- PLC controlled, with touch screen operator panel
- self diagnostic system
- ethernet or different protocols for communication
- heating parameters storing
- Power 3kW-200kW
- frequency 150Hz÷500kHz
- easy integration into production lines
- optional handheld transformers
- Industry 4.0 ready
- universal solution for different applications



| Type | Active power [kW] | Frequency [kHz] | Input power [kVA] | Supply voltage [V]** | Cooling water [l/min]** |
|------------|----------------------|--------------------|----------------------|-------------------------|----------------------------|
| HF-3/500 | 3 | 200...500 | 4 | 3 x 400 | 4 |
| HF-5/500 | 5 | 200...500 | 6 | 3 x 400 | 7 |
| HF-10/500 | 10 | 200...500 | 14 | 3 x 400 | 12 |
| HF-15/500 | 15 | 200...500 | 19 | 3 x 400 | 16 |
| HF-30/500 | 30 | 200...500 | 38 | 3 x 400 | 35 |
| HF-50/500 | 50 | 200...500 | 63 | 3 x 400 | 48 |
| HF-100/500 | 100 | 200...500 | 125 | 3 x 400 | 88 |
| HF-150/400 | 150 | 150...400 | 185 | 3 x 400 | 128 |
| HF-200/300 | 200 | 150...300 | 250 | 3 x 400 | 175 |

* other voltage on request, cooling water consumption depends on coil type and operating parameters

LF FREQUENCY CONVERTERS

- microprocessor control system that guarantees failure-free operation
- PLC controlled, with touch screen operator panel
- self diagnostic system
- ethernet or different protocols for communication
- storing of heating parameters
- load unit in separate housing
- power 5kW ÷ 4000kW
- frequency 150Hz ÷ 10kHz
- Industry 4.0 ready
- solution for heating large details, or melting



| Type | Active power [kW] | Frequency [kHz] |
|-------------|----------------------|--------------------|
| LF-8-600 | 600 | 1.8 |
| LF-8-800 | 800 | 0,5..8 |
| LF-4-1000 | 1000 | 0,5..6 |
| LF-1-1300 | 1300 | 0,25..4 |
| LF-0,5-1500 | 1000...2500 | 0,25..4 |
| LF-1-2000 | 1500...2500 | 0,25..2 |
| LF-0,5-2500 | 2500...4000 | 0,25..2 |
| LF-1-3000 | 1500...3000 | 0,25..1 |
| LF-0,5-4000 | 2500...4000 | 0,25..1 |

* other solutions on request



INDUCTION HEATING SYSTEMS

The induction heating systems are typically used in the process of forging but can be also used for annealing, quenching and tempering, drying or coating.

The systems are used to heat steel, stainless steel, brass, copper, aluminium and other materials. They are designed to heat round or rectangular billets, flat bars, bars, bars end, tubes, wires or sheets.

The power source of the heating system are the frequency converters with power 5kW ÷ 4000kW. All the systems can be equipped with automatic loading, unloading and transport systems. They also have advanced control systems to monitor and store the process parameters.

Our great experience make us possible to offer high quality products that meet requirements of modern forging plants. All the systems are equipped with a wide range of mechanical transport and handling systems. They are made in compact version (all in one) where the converter and the control system are installed in one housing holding the inductors on top. They can be equipped with a number of additional system like mechanical switching of inductors sets, double frequency converters, low capacity operation mode, ASHP system or advanced HMI.

ASHP system makes possible to automatically set the heating parameters after setting the workpiece dimension, capacity and output temperature. It also protects against melting the workpiece inside the inductor.

Advanced HMI with 3D process visualisation helps operator to control the complete process from one place. The service assistant enables troubleshooting from the operator panel and save maintenance time.

All the heating systems can easily cooperate with robotics handling systems and central data logging solutions.

The control, communication and logging solutions included in the heating systems can easily name them as Industry 4.0 ready.

BASIC FEATURES

- compact design (all in one)
- high power density, fast heating, low amount of scale
- uniform temperature distribution
- low energy consumption
- automatic segregation
- automatic transport system
- temperature control of each workpiece
- temperature autoregulation system
- one inductor type for round and square billets
- high quality inductors
- heating process data storing
- heating of wide range of workpiece diameters and lengths without maintenance works

ADDITIONAL FEATURES

- ASHP system for automatic setting of heating parameters
- service assistant
- double frequency converters
- mechanical switching of inductors sets
- low capacity operation mode
- advanced HMI with 3D process visualisation
- remote diagnostic
- multiple power outputs

HEATING SYSTEMS FOR HEATING BILLETS

- typically used in the forging process
- compact design (all in one)
- fast heating, low scale, temperature uniformity
- automatic feeding, transport and segregation system from container tippler to the hammer or press
- one inductor type for round and square billets
- temperature control of each workpiece
- remote diagnostic
- ASHP system for automatic setting of heating parameters
- additional equipment with double frequency operation, inductors switching and low capacity mode
- advanced HMI interface with 3D process visualisation
- heating process parameters storing
- Industry 4.0 ready

| TYP | IF160 | IF250 | IF400 | IF600 | IF800 | IF1000 | IF1300 | IF2000 |
|--|-----------|-----------|-----------|-----------|------------|------------|------------|------------|
| Capacity when heating steel up to 1250°C | 400kg/h | 650kg/h | 1000kg/h | 1500kg/h | 2000kg/h | 2500kg/h | 3000kg/h | 4500kg/h |
| Active power | 160kW | 250kW | 400kW | 600kW | 800kW | 1000kW | 1300kW | 2000kW |
| Typical frequency | 4-20 kHz | 3-10 kHz | 2-8 kHz | 1-3 kHz | 0,5-2 kHz | 0,5-2 kHz | 0,5-2 kHz | 0,5-1 kHz |
| Typical billets diameter or square | Ø10-Ø30mm | Ø15-Ø50mm | Ø20-Ø70mm | Ø30-Ø90mm | Ø40-Ø110mm | Ø50-Ø130mm | Ø60-Ø160mm | Ø80-Ø240mm |
| Typical billets transport level | 1400mm | 1400mm | 1600mm | 1600mm | 1600mm | 1600mm | 1800mm | 2000mm |
| Max. heating temp. | 1300°C | 1300°C | 1300°C | 1300°C | 1300°C | 1300°C | 1300°C | 1300°C |

* other voltage on request, cooling water consumption depends on coil type and operating parameters

TYPICAL APPLICATIONS

- steel billets forging
- non-ferrous metals forging
- Industry 4.0 ready
- universal solution for different applications

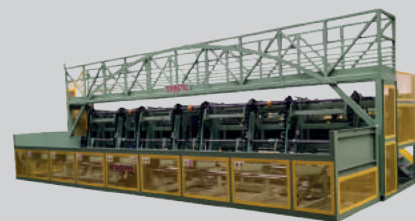


HEATING SYSTEMS FOR HEATING BARS AND TUBES

- used in process of forging, quenching and tempering, annealing, coating, drying
- fast heating, low scale, high temperature uniformity,
- automatic loading, unloading and transport systems
- temperature continuous measurement
- process parameters control, monitoring and storing system
- remote diagnostic
- ASHP system for automating setting of heating parameters
- advanced HMI interface with 3D process visualisation
- Industry 4.0 ready

TYPICAL APPLICATIONS

- forging
- rolling
- annealing
- coating
- tempering
- drying



HEATING SYSTEMS FOR BARS AND TUBES END

- typically used in the process of forging screws or anchors
- high capacity
- different complete lengths of heated workpieces
- manual, semi-automatic and automatic systems
- automatic loading and unloading
- process parameters control, monitoring and storing system
- remote diagnostic
- ASHP system for automating setting of heating parameters
- advanced HMI interface with 3D process visualisation
- Industry 4.0 ready

TYPICAL APPLICATIONS

- forging screws, anchors
- bending process
- annealing process
- zone heating

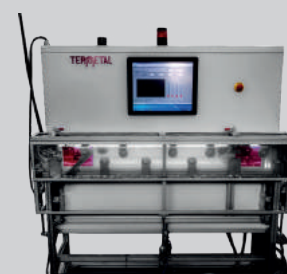


CUSTOM DESIGN INDUCTION HEATING SYSTEMS

- manual, semi-automatic and automatic systems
- individual housing
- custom designed inductors
- advanced process parameters control, monitoring and storing system
- unusual applications

TYPICAL APPLICATIONS

- graphite heating
- wire drying
- automotive custom designed solutions
- die heating



INDUCTION HARDENING SYSTEMS



HARDENING SYSTEMS

The induction hardening systems ensure high quality of the product, high reproducibility, decrease of the production costs and what is the most important, ensure continuous, failure free and safe operation.

Years of experience in design and manufacturing of the induction hardening systems let us meet requirements of each customer. Induction hardening makes possible to heat and quench detail selected area. The system can be easily integrated into production line. The power source are the frequency converters with power 20÷500kW and frequency 0,5kHz ÷ 500kHz. The production range includes universal hardening systems for wide range of details lengths, diameters and shapes as well as custom designed induction systems for high volume applications. The hardening systems can be made in version with one or double spindle or use the turntable. They can be used for hardening of the automotive parts as well as typical shafts, bushes or gears. For the gears hardening process, the gap by gap or tooth by tooth method can be used.

All the systems are equipped with a PLC or CNC control and drive systems and easy to operate HMI. To increase the system capabilities, it can be equipped with HPMS system for control and monitoring of hardening parameters for each workpiece, advanced HMI control system with service assistant and converters with double frequency range to achieve different depths of the hardening zone.

The control, communication and logging solutions included in the hardening systems can easily name them as Industry 4.0 ready.

Our R&D department can design hardening inductors for different workpiece shapes, and hardening patterns.

BASIC FEATURES

- easy to operate HMI
- programmable hardening zones
- up to 4 individually programmable axis (x,y,z,r)
- single or double spindle and turntable solutions
- wide range of power supplies (20kW÷500kW, 0,5kHz÷500kHz)
- PLC or CNC controlled

ADDITIONAL FEATURES

- HPMS system for control and monitoring of hardening parameters for each workpiece
- service assistant
- induction tempering
- automatic positioning systems
- double frequency range for different hardening depths
- manipulator or robotic systems for loading and unloading
- advanced HMI with 3D process visualisation
- internet diagnostic system
- automatic filtering systems

VERTICAL HARDENING SYSTEMS

- universal systems for automotive parts as well as for typical shafts, bushes, gears and other details
- made in different size versions S, M, L, XL
- intuitive HMI with graphic process visualization
- power source 20kW÷500kW and frequency 0,5kHz÷500kHz
- wide range of workpiece sizes and shapes
- single or double spindle and turntable solutions
- PLC or CNC controlled
- HPMS system for control and monitoring of hardening parameters for each workpiece
- programmable hardening zone
- cooling fluids monitoring system

| | TYPES S | TYPE M | TYPE L | TYPE LK |
|------------------------|--------------------|--------------|-------------|---------------|
| Max. length | 600mm | 1000mm | 2500mm | 1000mm |
| Max. detail diameter | Ø150mm | Ø350mm | Ø500mm | Ø1500mm |
| Max. detail weight | 5, 20kg | 100, 250kg | 250, 500kg | 1000kg |
| Converter active power | 50 ÷ 100kW | 100 ÷ 250 kW | 250 ÷ 500kW | 100 ÷ 250kW |
| Converter frequency | 10, 30, 50, 100kHz | 5, 10, 30kHz | 3, 5, 10kHz | 10, 30, 50kHz |

*other configurations on request (one or double spindle or turntable solution possible)



HORIZONTAL HARDENING SYSTEMS

- systems for bars, tubes, wires and shafts
- intuitive HMI with graphic process visualization
- centerless systems for shafts with one or double tracks,
- automatic loading and unloading,
- programmable hardening zone,
- HPMS system for control and monitoring of hardening parameters for each workpiece
- easy in-line integration
- power source 20kW÷500kW and frequency 0,5kHz÷500kHz
- process parameters visualization and monitoring
- optional tempering systems

| TYP HP | |
|------------------------|----------------------|
| Transport system | Push-back system |
| Max. detail length | 50÷600mm |
| Detail diameter | Ø6÷40mm |
| Converter active power | 30, 50, 100, 150kW |
| Converter frequency | 50, 100, 200, 400kHz |

*other configurations on request

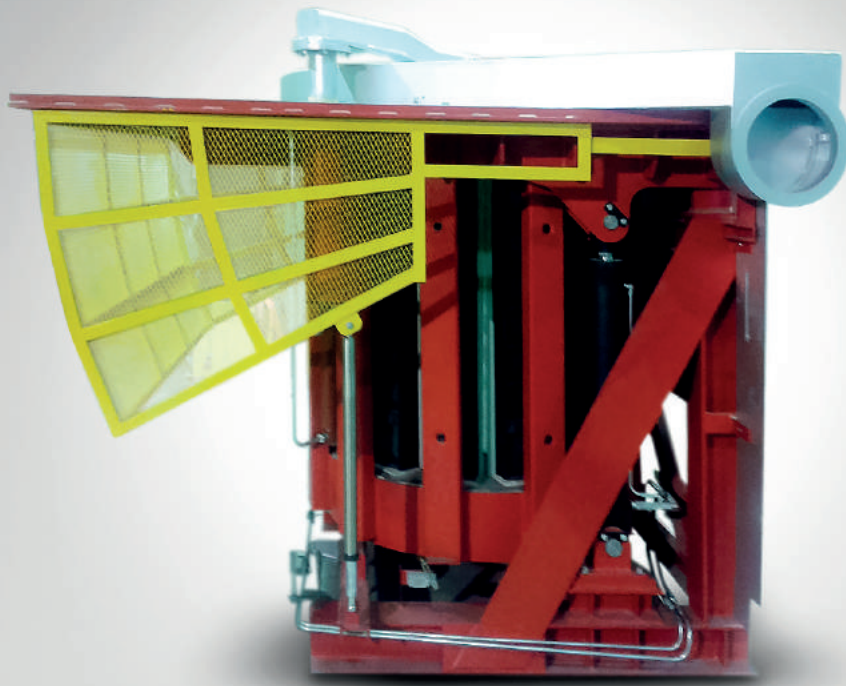


CUSTOM DESIGNED SYSTEMS

Custom designed induction hardening system for high capacity applications:

- automotive industry
- railway industry
- hand tools industry
- mining industry





MELTING SYSTEMS

The induction coreless furnaces can be installed in a large foundries as well as in a small casting houses or laboratories. The capacity range is 5kg ÷ 6000kg. The furnaces power supply are the frequency converters with power up to 4MW that guarantee continuous output power and low harmonics distortion.

All the furnaces types ensure high efficiency and low energy consumption when melting cast iron, cast steel or non-ferrous metals and their alloys. Depending on application the furnaces can be equipped with ceramic or isostatically pressed crucibles.

A wide range of furnace types that include open construction furnaces, closed construction furnaces, box type furnaces and continuous casting furnaces, let us be reliable partner in a modern casting industry.

The furnaces are equipped with push-out lining system, fume collectors, weight systems, coil insulation control and advanced melting process control systems.

AMPS is the automatic melting process system that protects against overheating the bath and helps the operator during the melting process.

The continuous casting furnaces are used in the process of horizontal continuous casting of copper and its alloys. The furnaces are equipped with isostatically pressed crucibles that ensure quick change of casting mould and frequent change of casting alloys. They work with melting furnaces and can be supplied individually or with complete casting line.

BASIC FEATURES

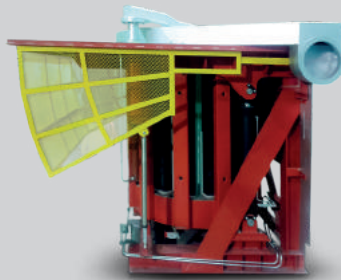
- continuous output power
- low harmonic distortion
- coil insulation control
- cooling water control system
- internet diagnostic system
- fume collectors
- crucible push-out system

ADDITIONAL FEATURES

- AMPS system for automatic melting
- service assistant
- double frequency for melting and stirring
- multiple outputs for melting and holding
- charging systems
- cooling systems

OPEN CONSTRUCTION TYPE CORELESS FURNACES

- systems for large foundries
- melting of cast iron, cast steel and non-ferrous metals
- open construction enables easy maintenance and coil monitoring
- maintenance personnel outside the electromagnetic field
- large furnace capacity
- multiple power outputs for metal melting and holding
- double frequency converters for melting and stirring
- charging systems
- push-out lining system
- AMPS system for automatic melting
- fume collectors



| Type | Capacity [kg] | Power [kW] | Melting capacity for cast iron up to 1480°C [kg/h] |
|--------------|---------------|------------|--|
| ITL 0.5/350 | 500 | 350 | 650 |
| ITL 0.75/450 | 750 | 450 | 900 |
| ITL 1.0/600 | 1000 | 600 | 1175 |
| ITL 1.5/800 | 1500 | 800 | 1650 |
| ITL 1.5/1000 | 1500 | 1000 | 2100 |
| ITL 2.0/1200 | 2000 | 1200 | 2520 |
| ITL 2.5/1500 | 2500 | 1500 | 3200 |
| ITL 3.0/1500 | 3000 | 1500 | 3150 |
| ITL 3.0/2000 | 3000 | 2000 | 4175 |
| ITL 4.0/2000 | 4000 | 2000 | 4100 |
| ITL 4.0/3000 | 4000 | 3000 | 6250 |
| ITL 6.0/4000 | 6000 | 4000 | 8300 |

CLOSED CONSTRUCTION TYPE CORELESS FURNACES

- systems for large and medium foundries
- melting of cast iron, cast steel and non-ferrous metals
- closed construction, no electromagnetic field outside the furnace construction
- multiple power outputs for metal melting and holding
- double frequency converters for melting and stirring
- small and medium capacity, manual charge loading
- low noise level
- easy installation, no ground works, loading level 800mm
- charging systems
- push-out lining system
- AMPS system for automatic melting
- fume collectors



| Type | Capacity [kg] | Power [kW] | Melting capacity for cast iron up to 1480°C [kg/h] |
|--------------|---------------|------------|--|
| ITL 0.025/35 | 25 | 35 | 44 |
| ITL 0.05/60 | 50 | 60 | 85 |
| ITL 0.075/75 | 75 | 75 | 110 |
| ITL 0.1/100 | 100 | 100 | 140 |
| ITL 0.2/175 | 200 | 175 | 290 |
| ITL 0.3/250 | 300 | 250 | 450 |
| ITL 0.5/350 | 500 | 350 | 650 |
| ITL 0.75/450 | 750 | 450 | 900 |
| ITL 1.0/600 | 1000 | 600 | 1175 |
| ITL 1.5/800 | 1500 | 800 | 1650 |

BOX TYPE CORELESS FURNACES

- systems for small foundries and laboratories
- melting of cast iron, cast steel and non-ferrous metals
- capacity up to 25kg
- manual or electric tilting
- simple construction, low price
- can be used with ceramic or graphite crucibles
- easy installations, no ground works



| Type | Capacity [kg] | Power [kW] | Melting capacity for cast iron up to 1480°C [kg/h] |
|--------------|---------------|------------|--|
| ITS 0.005/15 | 5 | 15 | 13 |
| ITS 0.01/20 | 10 | 20 | 19 |
| ITS 0.02/35 | 20 | 35 | 41 |
| ITS 0.025/50 | 25 | 50 | 65 |

CONTINUOUS CASTING FURNACES

- designed for continuous horizontal casting of copper and its alloys
- use isostatically pressed crucibles
- quick change of casting mould
- easy change of casting alloys
- supplied individually or with complete casting lines

TYPICAL APPLICATION

- industrial casting lines
- laboratory casting lines





BRAZING SYSTEMS

The induction brazing systems are designed for high quality joining process of copper, brass, steel, stainless steel or aluminium parts. They can be used to join tubes, fittings, connectors, flat bars, sheets, carbides and other details.

The brazing systems can work in manual, semi-automatic and fully automatic mode depending on the application and customer demands. They can be made in version with one, double, turntable or continuous positioning system. The power supplies guarantee brazing of wide range of details with demanded capacity.

The brazing systems can be made in version that uses protective gas to ensure clean and high quality product without additional costs.

The mobile induction brazing systems are still increasing their position in the brazing solutions market. In most cases, they can easily replace brazing with a torch. They are equipped with a handheld unit with inductor that can be used by operator or industrial robot. They ensure precise, repeatable and short heating time to avoid overheating of the part being brazed. They are a great solution when the space availability and short heating times are crucial. They can be equipped with advanced temperature control system, recipe based programming for each detail and integrated cooling systems.

The control, communication and logging solutions included in the brazing systems can easily name them as Industry 4.0 ready.

BASIC FEATURES

- PLC controlled
- programmable recipes for each brazing part
- wide range of power supplies power and frequencies
- manual or electric positioning systems (3-axis)
- single, double, turntable and continuous solutions
- custom designed inductors

ADDITIONAL FEATURES

- automatic inductor positioning system
- flux and braze dispensers
- protective atmosphere
- brazing parameters monitoring and storing system for each part
- joint overheating protection system
- cooling systems (stand alone or integrated)

MOBILE BRAZING SYSTEMS

- handheld transformer for easy access to the brazing parts
- mobile converter construction
- integrated or stand alone cooling system
- custom designed inductors
- joint overheating protection system
- recipe programming for each part
- PLC controlled
- replace torch brazing

TYPICAL APPLICATION

- repairs with heavy access
- manual or robot operation
- generators windings brazing



MANUAL BRAZING SYSTEMS

- manual loading and unloading
- manual flux and braze dispensers
- precise, manual 3-axis parts positioning system
- custom designed inductors
- joint overheating protection system
- recipe programming for each part
- PLC controlled
- replace torch brazing

TYPICAL APPLICATION

- armature parts
- heaters
- heat exchangers
- hand tools
- mining tools



SEMI-AUTOMATIC BRAZING SYSTEMS

- manual parts loading and unloading
- manual flux and braze dispensers
- automatic brazing process with high capacity
- turntable or continuous solutions
- replace torch brazing
- custom designed inductors
- protective atmosphere available
- joint overheating protection system
- recipe programming for each part
- PLC controlled

TYPICAL APPLICATION

- automotive industry
- fittings industry
- mining industry
- furniture industry
- cable industry



AUTOMATIC BRAZING SYSTEMS

- automatic loading and unloading
- automatic parts segregation system
- automatic brazing process with high capacity
- turntable or continuous solutions
- automatic flux and braze dispensers
- custom designed inductors
- protective atmosphere available
- joint overheating protection system
- recipe programming for each part
- PLC controlled

TYPICAL APPLICATION

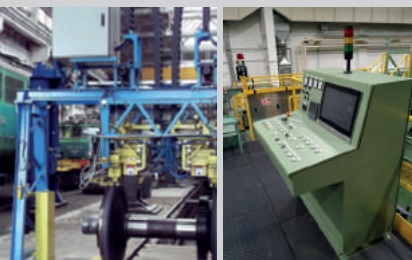
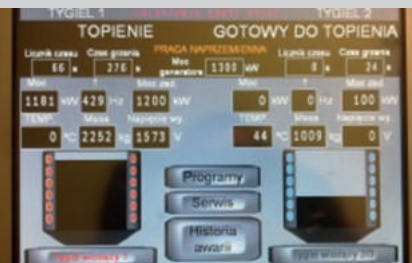
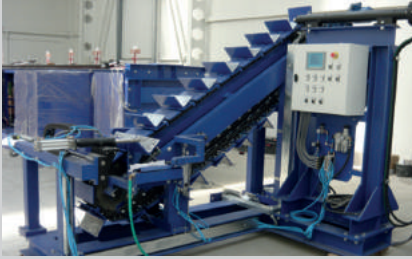
- automotive industry
- mining industry tools
- furniture industry



PRODUCTION PROCESS AUTOMATION

PRODUCTION PROCESS AUTOMATION

The process of heating is only a part of the production process. We know how important is reduction of the production costs, the quality improvement and the process reproducibility, so we provide number of systems that ensure automation in the induction based production lines. The automation systems production range include feeding, transport and segregation systems, manipulators, robots, temperature control systems, process parameters monitoring and storing systems. In most cases they can be installed in existing plants.



HEATING SYSTEMS AUTOMATION

- automatic billets feeding, transport and segregation system for existing forging equipment
- press feeding manipulators
- heating process parameters control and monitoring systems
- temperature measurement systems

HARDENING SYSTEMS AUTOMATION

- loading and unloading systems
- process transport systems
- process parameters control and monitoring for each detail
- internet diagnostic applications

BRAZING SYSTEMS AUTOMATION

- automatic loading, unloading and positioning systems
- turntable solutions
- braze and flux dispensers
- joint overheating control systems

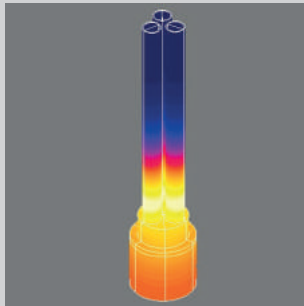
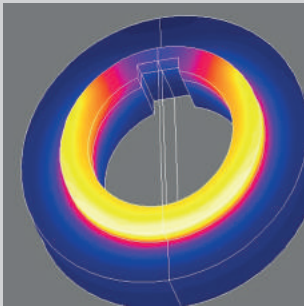
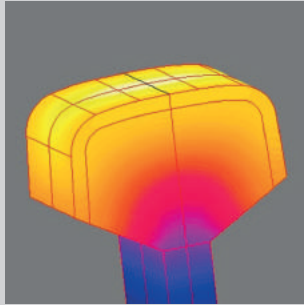
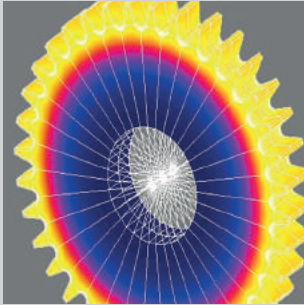
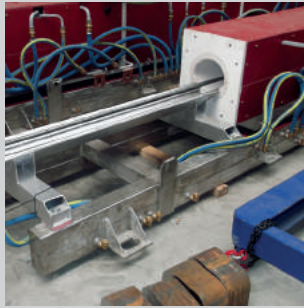
MELTING SYSTEMS AUTOMATION

- weight systems
- AMPS system for automatic melting process
- charging systems
- internet diagnostic applications

INDUSTRIAL PROCESS AUTOMATION

Automation solutions for non-induction industrial applications

- orientation and segregation systems
- feeding systems
- dispensing systems
- winding systems



INDUCTORS AND COILS REPAIRS

Our coils and inductors repairs facility let us be a partner during a longterm cooperation.

Years of experience let us provide repairs of the induction system components:

- furnace coils
- forging inductors
- hardening inductors
- brazing inductors
- MF transformers

R&D DEPARTMENT

We provide:

- process development in our R&D laboratory
- new technology tests
- induction heating process computer simulations with FEM software
- heating, hardening and brazing inductors computer design

SERVICE WORKS

The efficient heating system is as much important as the professional service. Our service team ensures quick and solid response. All important components are in our stock. We offer training, maintenance and access to the spare parts.

We also offer remote diagnostic of our systems through the internet. We ensure the aftermarket service.

UPGRADES AND MODERNIZATIONS

The company has years of experience in modifications and upgrades of the induction systems.

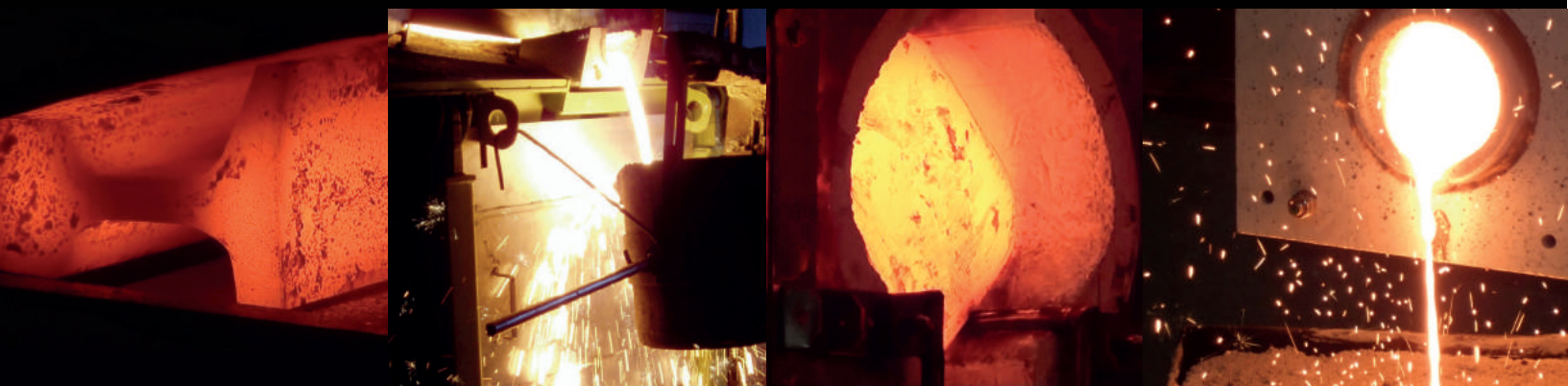
We are able to upgrade the existing systems to let them work in the modern production lines.

TERMETAL®

INDUCTION HEATING SYSTEMS

TERMETAL production range includes a wide range of systems for induction heating applications

- induction heating systems
- induction melting systems
- induction hardening systems
- induction brazing systems
- frequency converters
- process automation systems
- cooling systems
- frequency converters service
- coils and inductors repairs
- induction systems repairs, modifications and upgrades
- spare parts
- design and manufacture of hardening and heating inductors
- advanced temperature and process parameters control systems



TERMETAL

41-940 Piekary Śląskie, ul. Graniczna 7, Poland
+ 48 32 287 12 56, + 48 32 287 25 91, fax: + 48 32 287 25 41
e-mail : termetal@termetal.com.pl
www.termetal.com.pl