

MADE IN ITALY



## PRODUCTS CATALOGUE INDUSTRY

**Teknel:**  
**leader in induction heating systems**

Quality Made in Italy  
[www.teknel.com](http://www.teknel.com)





## THE BEST INDUCTION HEATERS

### INDUCTION HEATING

Overheat any type of metal, including aluminium, in a few seconds and improve the quality of the finished product thanks to the Teknel induction heaters. Designed to operate in workshops, structural metal shops, factories and shipyards, they can perform the job in a few seconds.

With traditional heating methods with heating elements or flame, work is carried out slowly and unevenly.

Gas-fuelled flames bring the surface temperature of the metal over 3000°C, with inevitable changes in the structural characteristics.

Induction heating on the other hand only generates heat in the required spot and improves the quality standards of the finished job: it quickly raises the metal to high temperatures, but 500-600 ° C is sufficient to perform straightening, bending operations, pin, bearing, bolt replacement, etc.

Teknel is specialised in the design and production of induction heating systems and boasts a range of unrivalled models. Teknel induction heaters are used in over 40 countries around the world.



### NEW

The range of Teknel heaters is completely new: **it is possible to heat more quickly and work uninterruptedly**. The improved performance comes alongside a new, more modern design. Start working and see the difference for yourself. Teknel, the best heaters ever.

### EFFICIENT

Teknel induction heaters provide a very high efficiency. They heat more and consume less than other machines on the market.

If you use a low efficiency heater, consumption is high and the heating output is low.

Accordingly, on average, using a Teknel induction heater **will save you 300 hours of work** and 1000 € a year on your power bill.

Regardless of the high power of Teknel induction heaters, consumption is very low: this is because of the high efficiency and the very brief operating times of the machines.





## **ECOLOGICAL** - eliminate CO2 emissions.

Fossil fuels are not burned when using a Teknel induction heater.

Without using a flame you can **save up** to 50% and at the same time **help protect the environment avoiding CO2 emissions** due to fossil fuel combustion. If your company is also equipped with photovoltaic panels, greenhouse gas emissions are eliminated and you offer a significant contribution to fighting global warming.



## **SAFE**

No naked flames and cylinders means increased safety in the workplace.

All Teknel heaters are designed to guarantee maximum performance and reliability: each of them is equipped with an **INSULATION TRANSFORMER** to guarantee absolute operator safety, also in the most unexpected and adverse situations.



## **PATENTED CUTTING EDGE TECHNOLOGY**

The machines are managed by a powerful latest generation ARM-Cortex M4 processor with T-DIP (Teknel Digital Induction Processing) technology that guarantees process quality, high adjustment precision and high level of adaptability to various operating conditions.

All of our machines can be connected to company networks interfaced with PCs and PLCs through MODBUS protocol which allows **automating the machine**.

By connecting an external thermocouple or a pyrometer it is possible to take the temperature reading of the piece being heated with extreme precision. It is also possible to set the heating time.

They can also be built with hermetic seal for use in particularly critical environments such as foundries, extraction and industrial plants in general.

Our systems use high power, latest generation IGBT technology protected against short circuits and overcurrent.

Our **automatic temperature control is patented**. Upon reaching the Curie temperature (770 ° C for iron), the heating can be automatically stopped before changing the characteristics of the metal.

We can make torches and tubes of various lengths, with **patented connections for quick replacement** in less than 10 seconds.





<b>HELIOS</b>	Cod. HLS40
<b>40 kW</b>	INDUCTION HEATER

Helios is an exceptionally powerful induction heater, designed to **heat every type of metal including aluminium**; it generates heat within, without the use of a flame, improving the quality standards of the processed piece. This allows you to heat quickly and safely, even close to parts that are heat sensitive such as cables or pipes.



Built to guarantee the best performance and reliability, it is recommended for factories, mechanical workshops, shipyards and structural metal shops.

It is equipped with an **INSULATION TRANSFORMER** to ensure absolute operator safety, even in the most adverse and unexpected situations.

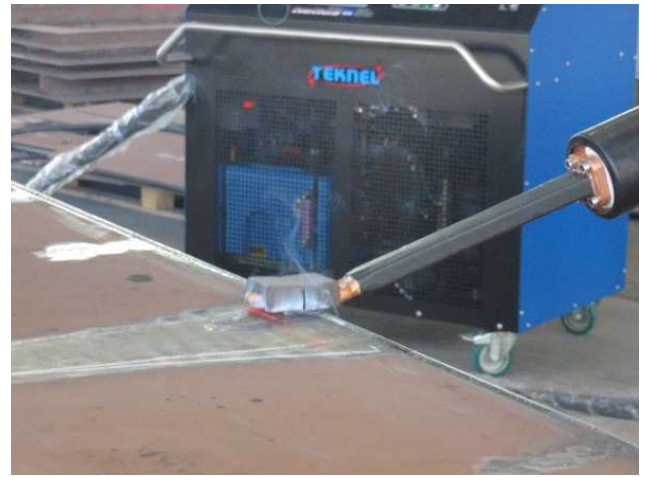
## PLC OPTIONAL

Colour touch screen for the control of all the functions.

It can be connected to the company network for process automation.

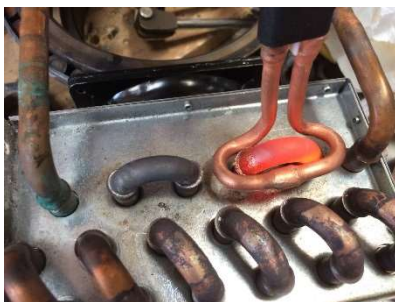
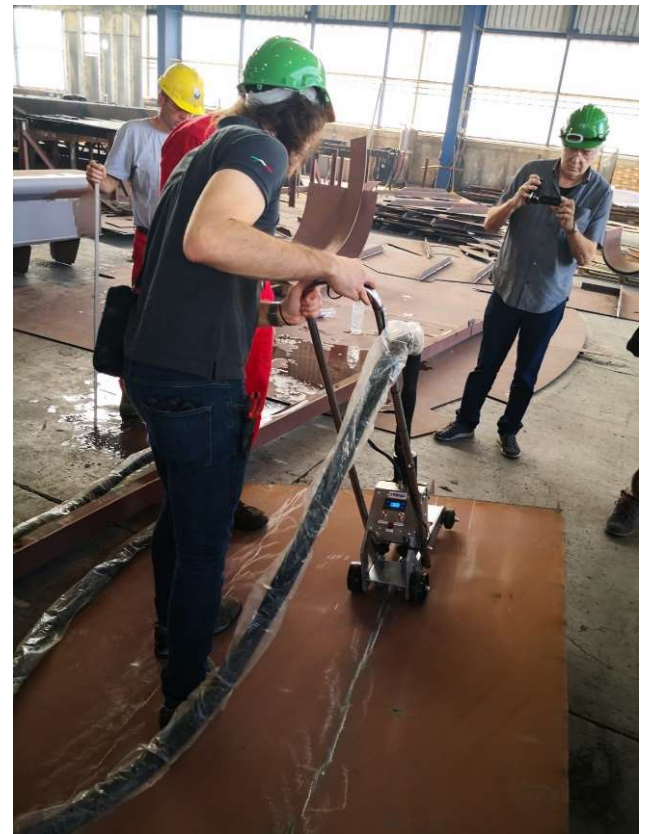
**Patented automatic temperature control.** Upon reaching the Curie temperature (770 ° C for iron), the heating can be automatically stopped before changing the characteristics of the metal.





## TECHNICAL FEATURES:

- Power: 40 kW with 10 levels of adjustment
- Frequency: 15- 50 kHz self-adjustment
- Power supply: 3x400V, 50 or 60 Hz
- Cooling: liquid (optional integrated chiller)
- 6 m long pipe bundle (optional 10 metres)
- 10 m power cable
- Braking, robust and sliding wheels for every type of terrain
- Optional: PLC – MODBUS to control time and temperature
- Optional: 480V 60Hz
- Optional: trolley supporting the heating tip (Cable length up to 10 metres)
- Optional pedal control







XPERIENCE 22 WIDE RANGE		Cod. XP22WR
22 kW	INDUCTION HEATER	

Incredibly powerful machine, designed for heating applications that cannot be carried out with other equipment.

It is possible to achieve red heat (approximately 800 ° C) on a surface of 25x25 mm with a depth of 6 mm in just one second.

Xperience 22 WR is the most versatile induction heater on the market because it is **able to operate with different types of inductors of various shapes and sizes**, adapting to customer needs. Thanks to its microprocessor it is able to instantaneously adapt the work frequency.

Avoiding naked flames means being able to work near cables, pipes or other heat sensitive parts.



Gas-fuelled flames bring the surface temperature of the metal over 3000°C, with inevitable changes in the structural characteristics.

Induction heating on the other hand only generates heat in the required spot and improves the quality standards of the finished product: it quickly raises the metal to high temperatures, but 500-600 ° C is sufficient to perform straightening, bending operations, pin, bearing, bolt replacement, etc.

With Teknel heaters it is possible to control the temperature to avoid exceeding the limits set for the various types of processing.

It is also equipped with a special **INSULATION TRANSFORMER** that guarantees maximum operator safety, even in the most unexpected situations.

The machine is suitable for use on **ferrous materials and metals in general, including aluminium**. It can operate uninterruptedly for a very long period of time thanks to its powerful double cooling system.

This machine is particularly suitable for use with needle inductors (maximum length of 1500mm) to tighten or loosen hollow bolts.

It saves up to 80% of the time in comparison to traditional tightening and loosening and eliminates the risk of burns and shocks.



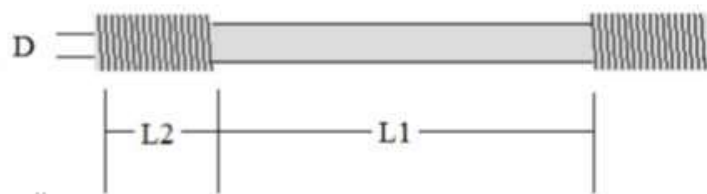
### APPLICATIONS:

- TIGHTENING AND LOOSENING HOLLOW LINKAGE (hollow bolts)
- PRE-HEATING FOR WELDING OF LARGE PIPES
- REMOVAL OF LARGE BEARINGS AND PINS
- CUSTOMISED INDUCTORS
- POSSIBILITY OF AUTOMATION WITH PLC AND CONNECTION TO COMPANY NETWORK



### PARTICULARLY SUITED FOR:

tightening and loosening hollow bolts, for the constructions and maintenance of electrical power plants.



It is necessary to specify the inside diameter of the bolt (D), the length of the thread (L2), the total length of the hollow bolt.



**We offer inductors up to 1500 mm long.**

**It works with the following bolts:**

M64, M68, M74, M82, M90, M100, M120, M140 etc.  
Minimum diameter of the bolt hole - 12 mm  
diameter of the bolt hole 25 mm, 30 mm and larger.



## **TECNICAL FEATURES:**

### **XP22 - XPERIENCE Dual Core WIDE RANGE**

Heating output: 22 kW with 10 levels of adjustment

Automatic frequency selection 10-50 kHz

Power supply: 380-400V, 3Ph, 32A

Weight: 195 kg

Dimensions 100 x 70 x 85

Braking, robust and sliding wheels for every type of terrain

tightening time of 700 mm bolts, less than 2 minutes

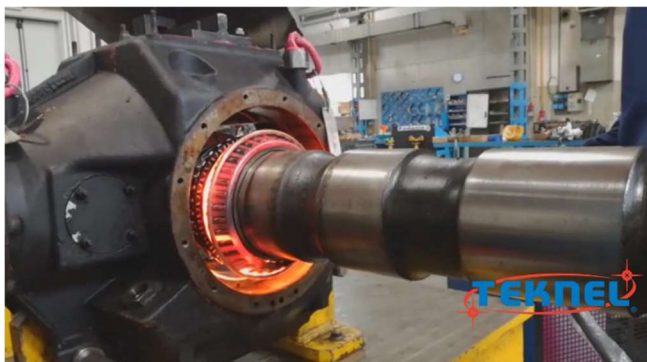
Heating on iron: 25x20 mm with depth of 6 mm in 1 second

Liquid cooling

Pipe bundle: 6m (optional up to 16 metres)

Power cable: 10 m

Work time: continuous at room temperature below 30 ° C







<b>INDUCTIONSHIP</b>	Cod. NIH-40
<b>40 kW</b>	INDUCTION HEATER

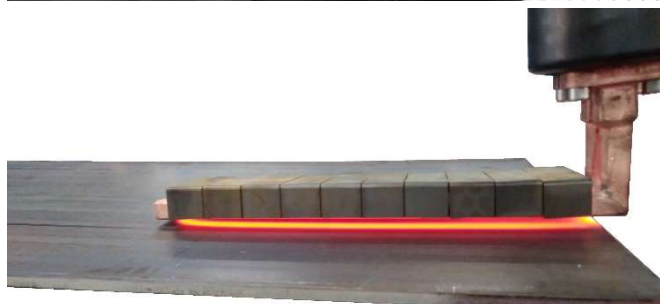
This machine was designed specially **to straighten big metal surfaces.**

Developed from the need to heat steel bridges on large vessels, it easily straightens the metal sheets after welding.

It has exceptional power and efficiency and creates heat directly inside the metal at a depth of 6 mm.

It creates red heat (approximately 800 °C) on a surface of 200 x 15 mm with a thickness of 6 mm in just 7 seconds.

No naked flames means it is possible to work near parts that are heat sensitive, such as cables or pipes.



Gas-fuelled flames bring the surface temperature of the metal over 3000°C, with inevitable changes in the structural characteristics.

Induction heating on the other hand only generates heat in the required spot and improves the quality standards of the finished job: it quickly raises the metal to high temperatures, but 500-600 ° C is sufficient to perform straightening or bending operations.

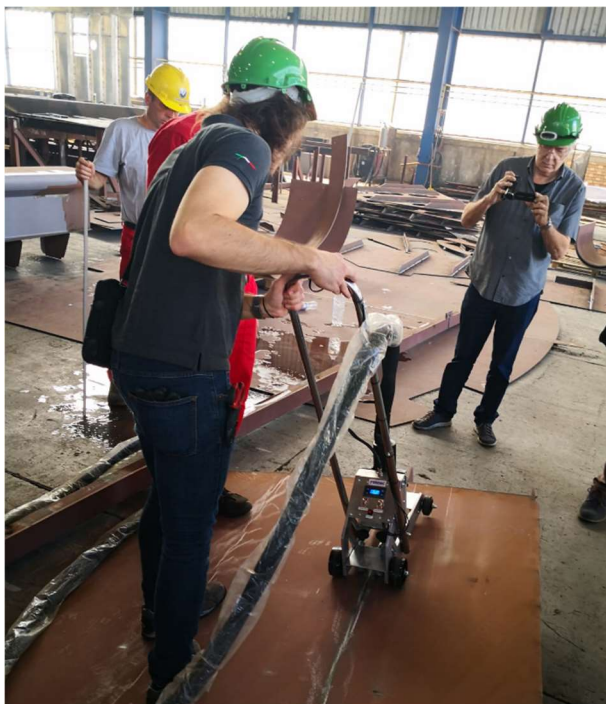
This machine was expressly designed to replace the torch in shipyards and to improve quality standards with faster and more precise work in straightening bridges and bulkheads.

## OPTIONAL: PLC

Colour touch screen for the control of all the functions.

It can be connected to the company network for process automation.

Patented automatic temperature control. Upon reaching the Curie temperature (770 ° C for iron), the heating can be automatically stopped before changing the characteristics of the metal.



## OPTIONAL: SATELLITE ON TROLLEY WITH RESONANT CIRCUIT

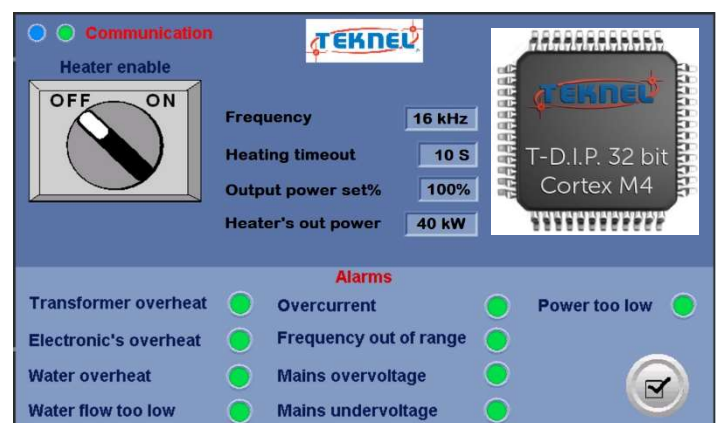
For remote operations the trolley is available to support the heating head with heating cycle control. It is possible to operate up to a distance of 50m from the machine

All of the cables of the heating head are isolated from the network and remain safe even in case of faults, damage or tampering. It is equipped with a timer for repetitive cycles.

Powerful electromagnets automatically block the inductor when heating begins until the work is finished.

## CUTTING EDGE TECHNOLOGY

The machine is managed by a powerful latest generation ARM-Cortex M4 processor with T-DIP (Teknel Digital Induction Processing) technology that guarantees complete reliability of machine and process, high adjustment precision and high level of adaptability to various operating conditions.







## FAST

Just a few seconds to achieve the required effect: in 7 seconds it brings a surface area of 200 x 15 mm with 6 mm depth to red heat.

## ECONOMICAL

Thanks to its high power, the operating times are reduced. Savings in comparison to the oxy welding torch range from 50% to 90%.

## SAFE

Maximum safety without gas cylinders. The heater is also equipped with a special INSULATION TRANSFORMER to guarantee the user with maximum safety even in the most adverse conditions, even with a faulty electrical system. It has passed strict testing with sophisticated equipment and has obtained all of the certifications required by European regulations, even in terms of electromagnetic field emissions.



## TECHNICAL FEATURES:

- Heating on iron 200 x 15 mm
- Heating depth of 6 mm in 7 seconds
- Power: 40 kW with 10 levels of adjustment (with single torch)
- Power: 80 kW with 10 levels of adjustment (with double torch for double heat)
- Frequency: 15- 50 kHz self-adjustment
- Power supply: 3x400V, 3Ph, 50Hz
- Cooling: liquid with integrated chiller for long work cycles
- Available with separate cooling system allowing the generator to be moved up to 50 meters away
- Long pipe bundle up to 50 meters
- Optional: wheeled satellite with resonant circuit (Cable length up to 50 metres)
- Total distance from the base up to 110 meters
- Optional: 480V 60Hz
- Optional: light torches for manual use (length from 6 to 10 meters) with patented connections for quick replacement (in less than 10 seconds).





<b>DOUBLE INDUCTIONSHP 80</b>		Cod. NIH2-80
<b>80 kW</b>	INDUCTION HEATER	

Double induction heater, "INDUCTIONSHP", for **2 parallel heating operations, simultaneously**, on the steel bridges of large ships. It easily straightens the sheet metal after welding thanks to the double heating tip.



#### Differences in comparison to the single InductionsHP:

Power: 80 kW with 10 levels of adjustment (40+40 kW)  
Cooling: liquid with integrated chiller in a container for long work cycles  
Larger wheeled satellite to support the double heating head.



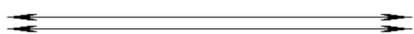


## USE DIAGRAM

Generator 2 x 40 kW



50 meters



Satellite



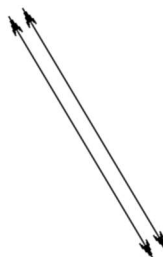
10 meters



Trolley torch



10 meters



Total 50m tube bundle  
from the chiller

usable for max 30 meters  
in height



two independent manual torches  
can be used  
Patented quick torch change





<b>MEGA</b> <b>50-80-120-200 kW</b>	Cod. IND 50-80- 120-200
<b>50-200 kW</b>	<b>HIGH POWER INDUCTION HEATERS</b>

Teknel manufactures, according to your needs, induction generators that improve the quality of the finished product, safety in the workplace, production process costs and reduce CO2 emissions. By replacing old heating systems with induction, the advantages are immediate.

"MEGA" is a series of machines **designed for industrial applications**, for processing metals with high outputs that reach the required temperatures in a few minutes or, if necessary, in seconds.

While the flame brings the surface temperature of the metal to over 3000°C, inevitably modifying the characteristics, induction heating generates heat directly inside and only in the required specific spot, thereby increasing the quality of the finished product.



The machines are managed by a powerful latest generation ARM-Cortex M4 processor with T-DIP (Teknel Digital Induction Processing) technology that guarantees process quality, high adjustment precision and high level of adaptability to various operating conditions.

All of our machines can be connected to company networks interfaced with PCs and PLCs through MODBUS protocol which allows automating the machine.

By connecting an external thermocouple or a pyrometer it is possible to take the temperature reading of the piece being heated with extreme precision. It is also possible to set the heating time.



They can also be built with hermetic seal for use in particularly critical environments such as foundries, extraction and industrial plants in general.

Our systems use high power, latest generation IGBT technology protected against short circuits and overcurrent.



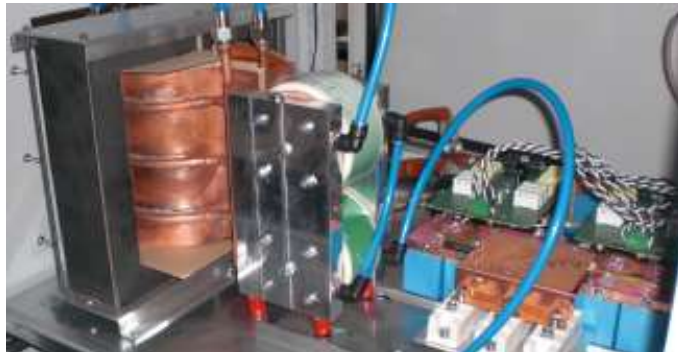
It is also equipped with a special **INSULATION TRANSFORMER** that guarantees maximum operator safety, even in the most unexpected situations.

Track hardening inductor  
- 240 kW



### PATENTED AUTOMATIC TEMPERATURE CONTROL

Upon reaching the Curie temperature (770 ° C for iron), the heating can be automatically stopped before changing the characteristics of the metal.



### TECHNICAL FEATURES:

- Power of 50, 100, 200 kW and greater
- Power supply: 400V 50/60 Hz (480 USA)
- Frequency of 5-50 kHz controlled by microprocessor
- Liquid cooling
- Possibility of connection to the industrial cooling system
- Designed dimensions



<b>PREHEAT 40</b>	Cod. PHE40
<b>40 kW</b>	INDUCTION HEATER

Exceptionally efficient high power machine for **pre-heating pipes before welding**. Used to build and service water lines, oil lines, ducts, gas lines, etc.

It creates heat directly inside the metal and quickly brings it to the optimum temperature for welding, improving the quality of the finished work; the gas-fuelled flames, on the other hand, bring the surface temperature of the metal to over 3,000 ° C, with inevitable changes to the structural characteristics of the metal itself.



#### SAFE

No naked flames means it is possible to work near cables, pipes or other heat-sensitive parts. Induction heating only generates heat at the required point, reaching the desired temperature quickly with an enormous advantage in terms of time and consumption. Maximum safety without gas cylinders. The machine is also equipped with a special **INSULATION TRANSFORMER** that guarantees maximum operator safety, even in the most unexpected situations.

## TECHNICAL FEATURES:

- Maximum power: 40 kW with 10 levels of adjustment
- Frequency: 10-50 kHz self-adjustment
- Power supply: 3x400V, 58A
- Different sizes of pipes for heating
- Liquid cooling
- 10 m power cable
- Possibility of setting heating time or temperature



## FAST

Just a few minutes to perform the required job.

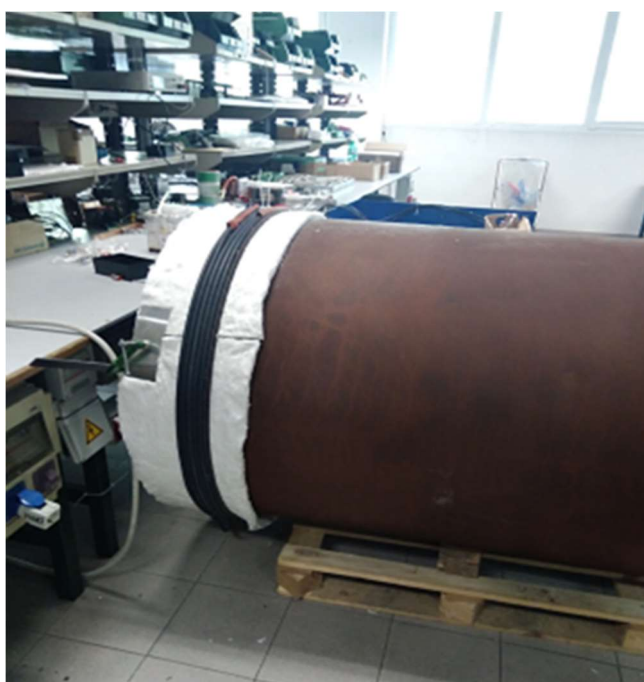
## ECONOMICAL

High efficiency and speed (work time reduced by 80/90%). In comparison to gas flames the savings are always greater than 50%.

### Laboratory testing with 40 kW:

Pipe diameter 101 cm, thickness 9 mm, initial temperature 33 °C

Time	Temperature on iron
0'00"	33°C
0'05"	47°C
0'30"	100°C
1'00"	192°C
1'30'	237°C
2'00'	300°C







## Wire Wound Inductor Heating

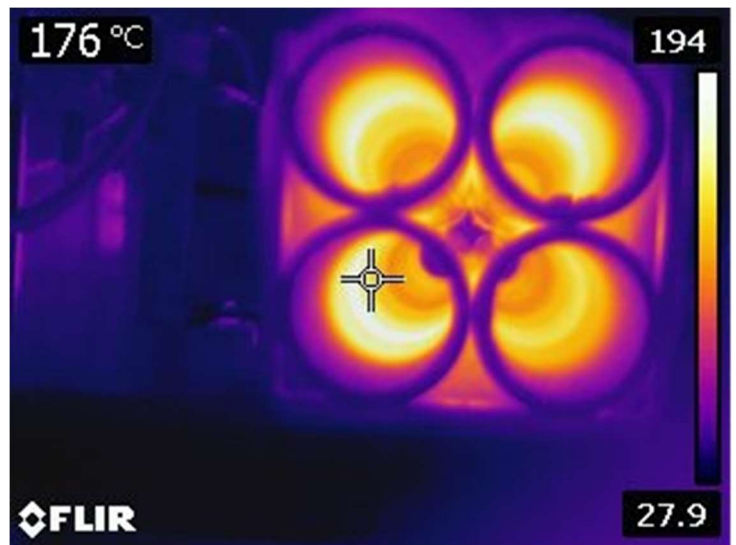
Inductor made with 25m of cable (5x5m) water-cooled, wire wound (24 coils) around 4 pipes with a thickness of  $\approx 10\text{mm}$ ;  $\varnothing = 115\text{mm}$ ,  $l. = 3\text{m}$

### Used:

- Generator 40KW (current limiter = 105A)
- Transformer  $N1/N2 = 7/4$
- Capacitor  $2\mu\text{F}$

The temperature of the piece reaches  $200^\circ\text{C}$  in approximately 8 minutes

Temperature of the water incoming to the generator =  $18 - 23^\circ\text{C}$  (Chiller)  
 Temperature outgoing from wound wire =  $45^\circ\text{C}$





# TEKNEl



## Induction heaters for:

- Sheet metal drawing
- Steel hardening
- Pulley hardening
- Braze welding
- Shrink fitting
- Pre-heating
- Sheet metal tempering
- Sheet metal drawing
- Tie rod straightening
- Frame straightening
- Bearing removal
- Grout and paint removal
- Bolt and nut release
- King pin removal
- Transmission shaft straightening
- Rigid axis straightening
- Spring straightening or bending
- Suspension and shock absorber removal
- Brake duct processing
- Ball joint release
- Muffler release
- Lambda probe release
- Steering arm release
- Exhaust release
- Wheel bolt release
- Rusty pins and captive screw release



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