

CUSTOM MADE

We build custom induction heaters

Why custom made?

Sometimes standard products do not suffice. We can engineer and manufacture solutions for your specific applications. We have many years of experience and numerous examples of custom projects. Our team looks forward to developing your product in consultation with you.

Fast and accurate heating

Induction heaters can be used immediately, preheating is not required. Local heating up to 300°C within seconds is possible. Users can work safely, cleanly and deliver high quality thanks to smart electronics. Whether it involves special parts or serial heating.

Whatever your requirements, induction heating enables you to achieve:

- ✓ A clean and safe workplace
- ✓ Improved productivity
- ✓ Lower production costs
- ✓ Efficient energy consumption

Advantages of custom induction heaters

Induction heaters are the ideal solution for safe heating of special parts or serial heating. In addition, induction heaters offer the following advantages:

- ✓ Can be used immediately, no preheating required
- ✓ Controlled heating, no loss of quality
- ✓ Fast, safe, clean, stress-free heating
- ✓ Environmentally friendly and durable
- ✓ Capacities and designs to the client's requirements
- ✓ Thanks to the application of low-frequency 50/60 Hz, the investment may be lower compared to medium-frequency or high-frequency solutions

A clean and safe workplace

Instead of blow torches, ovens or oil baths, induction offers you:

- Process control
- No (open) flames
- No polluting fumes
- No excessive noise
- No hot oil

Safety first!

Our customised products are used in lots of different industries:

- Chemical industry
- Steel industry
- Paper industry
- Gearbox factories
- Machine tool industry
- Transport sector
- MRO/OEM sector
- Wind energy sector
- Power plants
- Mining industry



BETEX Twin Heater

For simultaneous heating of 2 bearings in the Rail industry.

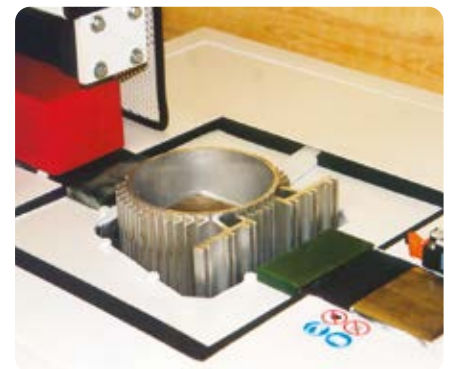
Temperature: 110°C

Time needed: 4 min.



BETEX 38 ESD

The pole of a standard heater is adapted to be able to heat special workpieces.



BETEX coil heaters

For heating various aluminium stator housings.

Temperature: 220°C

Time needed: 25 to 50 sec.



Custom made

This sandwich heater heats two aluminium parts simultaneously.

Thanks to induction heating, the time required is reduced by 50%, resulting in extremely fast heating.

Temperature: 220°C
Time needed: 20 sec. per 2 pieces



Custom made

Thanks to this coil heater, the heating time of a train wheel was reduced from 40 minutes to 16 minutes.

The outdated blow torches were discarded. This durable solution is safer, faster and offers complete control.

Temperature: 250°C
Time needed: 16 min.



Custom made

Coil heaters can be used to quickly heat aluminium housings prior to mounting. The heater heats 5 different sizes.

Temperature: 250°C
Time needed: 30 sec. to 4 min.



BETEX GIANT
Adapted for heating train wheels. The induction yoke is extendable.

Temperature: 240°C
Time needed: 27 min.



BETEX GIANT
Adapted for heating large stainless steel pipes (1100 kg), used in wind turbines.

Temperature: 270°C
Time needed: 3 hours



BETEX GIANT
Adapted for heating rails.

Temperature: 250°C
Time needed: 7 min.

INDUCTION HEATERS

BETEX MF Quick-Heaters – medium-frequency technology

Mounting, dismantling and preheating of metal components

Fast and/or controlled heating with ΔT

Thanks to medium-frequency technology, energy is transferred to the workpiece effectively, so it is heated easily and quickly. The BETEX MF Quick-Heater consists of a generator with a fixed or flexible inductor. Its compact dimensions make it easy to move.

BETEX MF Quick-Heaters result in time savings as they can be deployed very rapidly (fewer actions) and heat faster than conventional methods. Energy use is much more efficient thanks to its lower power consumption. One of the major advantages of this type of induction heater is that they are not limited to components with a cylindrical shape: flexible inductors can be wound around any size or shape.

Advantages of BETEX MF Quick-Heaters

- ✓ For mounting, dismantling and preheating
- ✓ Suitable for steel, cast iron, stainless steel and titanium
- ✓ Temperature and/or time controlled heating
- ✓ Double temperature measurement (ΔT monitoring)
- ✓ Low connection power (32/63 Amp)
- ✓ Generators are adjustable from 2.5 to 22/44 kW
- ✓ Easy to use and flexible
- ✓ Suitable for production and maintenance applications
- ✓ No residual magnetism
- ✓ No fire hazard due to open flames
- ✓ No noise, fumes or smoke nuisance
- ✓ Air-cooled: no water cooling needed
- ✓ Because the work is carried out damage-free, expensive components can be reused



To be used for

- Bearings
- Labyrinth seals
- Bearing rings
- Bearing housings
- Gear wheels
- Rollers
- Tubes
- Bushings
- Couplings
- Train wheels/train wheel tyres
- Extruders
- Stator housings

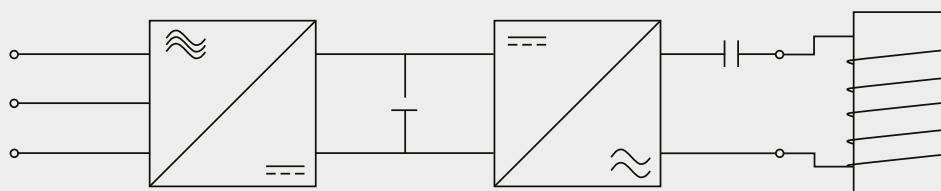
The BETEX MF Quick-Heater

This heater consists of a generator and one or more inductors. The generator is designed for the connection of inductors used for heating ferromagnetic workpieces. Suitable materials include iron, steel, stainless steel, titanium and certain bronze alloys. The maximum capacity workpieces can be subjected to is 22 kW or 44 kW, depending on the type of heater.

Operating principle

The three-phase voltage is rectified and smoothed. This rectified voltage is then converted by means of an inverter into an AC voltage with a frequency between 10 and 25 kHz. The power is then applied to the workpiece magnetically via a 'resonance capacitor' using an inductor (coil).

Since the frequency is relatively high, the penetration depth of the magnetic field is not too large, so that only the outer layer of the workpiece is heated. This principle makes heating using medium-frequency particularly suitable for dismantling purposes, such as removing bearing rings from shafts.



Flexible inductors

Flexible inductors are a multifunctional solution for various shapes or sizes. They can be used in or around a workpiece.



Heating a bore for bearing or shaft mounting



Heating a coupling for dismounting

Fixed inductors

Fixed inductors are used for serial work.



Heating bearing rings for dismounting



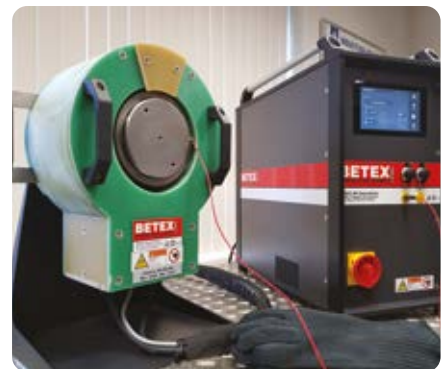
Heating labyrinth rings for dismounting

Testing

For special applications, we can carry out tests in advance with components that the client provides for this purpose. If necessary, we can supply a customised application.

For standard applications, we have a large database with examples. We also use simulation programmes.

By supplying optimum solutions, we achieve significant savings. In fact, measurable savings are guaranteed simply by working damage-free and hence, being able to reuse the parts.



INDUCTION HEATERS

BETEX MF Quick-Heaters – medium-frequency technology



44 kW

22/44
power kW

3.5"
display inch

**400/450/
500/600**
voltages V

BETEX MF Quick-Heater 2.5

- Compact design with 3.5" display
- User-friendly touchscreen operation
- Choice of 2 generators: 22 or 44 kW
- Smart electronics ensure optimum operating frequency
- Adjustable power regulation
- Double temperature measurement (ΔT monitoring)
- Choice between fixed and flexible inductors



22 kW

DT

For more control and stress-free mounting

Thanks to the Delta-T ΔT monitoring, it is possible to measure the internal and external temperature of a workpiece with 2 temperature probes. Thus the maximum preset temperature difference between 2 points can never be exceeded. This achieves even and uniform heating and prevents material stress.

Magnetic holder

Optional: magnetic holders to secure the flexible inductors.





44 kW

22/44
power kW

7"
display inch

**400/450/
500/600**
voltages V

BETEX MF Quick-Heater 3.0

- Compact design with 7" display
- User-friendly touchscreen operation
- Choice of 2 generators: 22 or 44 kW
- Smart electronics ensure optimum operating frequency
- Adjustable power regulation
- Double temperature measurement (ΔT monitoring)
- Choice between fixed and flexible inductors
- Can heat according to preset temperature/time curve
- The heating process is displayed in a clear graph
- Create proof of work report
- Log function to save data or export it via a USB port



22 kW

Which inductor?

For the MF Quick-Heater, choose a suitable inductor for your application. Request our product questionnaire for proper advice and a quotation.



Flexible inductor



Fixed inductor



Fixed inductor



Pin inductor



Fixed inductor



Table inductor



Sandwich table inductor

SMART inductor recognition

When a fixed inductor is connected to the generator for a second time, it will automatically select the correct settings. All you have to do is press START.

Bearing rings and labyrinth rings can be dismantled using custom inductors.

INDUCTION HEATERS

Medium-frequency projects



BETEX 3.0, 22 kW

Mounting of wheels in an elevator plant using pin inductors. For this client, custom inductors were made, with the required lengths and diameters.



BETEX 3.0, 22 kW

Dismounting in a steel factory, using a flexible inductor wrapped around a bearing ring.

Temperature: 200°C
Time needed: 17 min.



BETEX 3.0, 44 kW

Dismounting of a coupling at a gearbox repair company.

Temperature: 100°C
Time needed: 7 min.



BETEX 3.0, 22 kW

Preheating in preparation for laser cladding.

INDUCTION HEATERS

Medium-frequency heating methods

Fixed inductor around the workpiece

Energy input from outside to inside. For dismounting of, for example, bearing rings, labyrinth rings, pipes and rings.



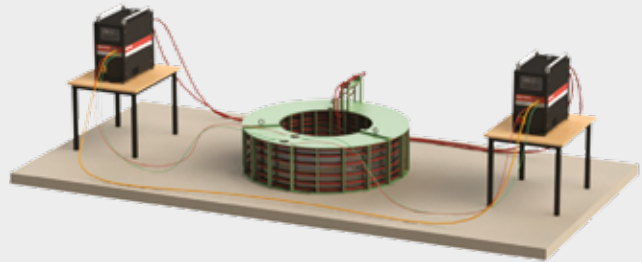
Fixed inductor in the workpiece

Heating a bore for bearing or shaft mounting.



Fixed inductor in and around the workpiece

For stress-free mounting of a bearing, two coupled generators are used. Inner and outer ring are heated simultaneously.



Pin inductor in the workpiece

Heating a bore for example for bearing or shaft mounting.



Table inductor

Local preheating for laser cladding.



TECHNICAL SPECIFICATIONS

Medium-frequency 2.5



Type	MF Quick-Heater 2.5, 22kW	MF Quick-Heater 2.5, 44kW
Forced air cooling	Yes	Yes
Power	22kW	44kW
Frequency	10-25 kHz	10-25 kHz
Voltage/Amperage	3 ~ 400V/32A	3 ~ 400V/63A
Voltage/Amperage	3 ~ 450V/30A	3 ~ 450V/59A
Voltage/Amperage	3 ~ 500V/28A	3 ~ 500V/55A
Voltage/Amperage	3 ~ 600V/23A	3 ~ 600V/45A
Frequency	50/60Hz	50/60Hz
Temperature measurement	For type K thermocouple	For type K thermocouple
Accuracy	± 3.5°C / ± 38.2 °F	± 3.5°C / ± 38.2 °F
Inductor recognition	Yes	Yes
Temperature sensor	Yes, for max 300°C / 572 °F	Yes, for max 300°C / 572 °F
Extra thermocouple input	Yes	Yes
Dimensions of generator LxWxH	600 x 300 x 600 mm	600 x 650 x 580 mm
Weight of generator	46 kg	78 kg
Trolley	Optional	Optional
Operation:		
Dimensions display	3.5"	3.5"
Heat curve in display	Yes	Yes
Setpoint power	Via touchscreen	Via touchscreen
Setpoint temperature	Via touchscreen	Via touchscreen
Setpoint temperature curve	Yes	Yes
Setpoint timer	Via touchscreen	Via touchscreen
Selection operating mode	Via touchscreen	Via touchscreen
Digital readings temperature	Setpoint and actual value on touchscreen	Setpoint and actual value on touchscreen
Digital readings time	Setpoint and actual value on touchscreen	Setpoint and actual value on touchscreen
Digital readings power	Actual value on touchscreen	Actual value on touchscreen
Digital readings frequency	Actual value on touchscreen	Actual value on touchscreen
USB connection	No	No
Network connection	No	No
Heating log	No	No
Signaling by:		
Installation in operational state	Green flash light	Green flash light
Error message	Red continuous light / acoustic signal	Red continuous light / acoustic signal
End of heating cycle	Green continuous light / acoustic signal	Green continuous light / acoustic signal

Min. winding diameter flexible inductors 22kW

Type m / °C	Diameter cable	Min. winding diameter
15/20/25/30m/180°C / 356 °F	Ø 12 mm	ca. 75 mm
15/20/25/30m/180°C / 356 °F	Ø 15 mm	ca. 100 mm
15/20/25/30m/300°C / 572 °F	Ø 20 mm	ca. 120 mm

Min. winding diameter flexible inductors 44kW

Type m / °C	Diameter cable	Min. winding diameter
15/20/25/30m/180°C / 356 °F	Ø 19 mm	ca. 140 mm
15/20/25/30m/300°C / 572 °F	Ø 28 mm	ca. 220 mm

TECHNICAL SPECIFICATIONS

Medium-frequency 3.0



Type	MF Quick-Heater 3.0, 22kW	MF Quick-Heater 3.0, 44kW
Forced air cooling	Yes	Yes
Power	22kW	44kW
Frequency	10-25 kHz	10-25 kHz
Voltage/Amperage	3 ~ 400V/32A	3 ~ 400V/63A
Voltage/Amperage	3 ~ 450V/30A	3 ~ 450V/59A
Voltage/Amperage	3 ~ 500V/28A	3 ~ 500V/55A
Voltage/Amperage	3 ~ 600V/23A	3 ~ 600V/45A
Frequency	50/60Hz	50/60Hz
Temperature measurement	For type K thermocouple	For type K thermocouple
Accuracy	± 3.5°C / ± 38.2 °F	± 3.5°C / ± 38.2 °F
Inductor recognition	Yes	Yes
Temperature sensor	Yes, for max 300°C / 572 °F	Yes, for max 300°C / 572 °F
Extra thermocouple input	Yes	Yes
Dimensions of generator LxWxH	600 x 300 x 600 mm	600 x 650 x 580 mm
Weight of generator	46 kg	78 kg
Trolley	Optional	Optional
Operation		
Dimensions display	7"	7"
Heat curve in display	Yes	Yes
Setpoint power	Via touchscreen	Via touchscreen
Setpoint temperature	Via touchscreen	Via touchscreen
Setpoint temperature curve	Yes	Yes
Setpoint timer	Via touchscreen	Via touchscreen
Selection operating mode	Via touchscreen	Via touchscreen
Digital readings temperature	Setpoint and actual value on touchscreen	Setpoint and actual value on touchscreen
Digital readings time	Setpoint and actual value on touchscreen	Setpoint and actual value on touchscreen
Digital readings power	Actual value on touchscreen	Actual value on touchscreen
Digital readings frequency	Actual value on touchscreen	Actual value on touchscreen
USB connection	Yes	Yes
Network connection	Yes	Yes
Heating log	Yes	Yes
Signaling by		
Installation in operational state	Light optional	Light optional
Error message	Acoustic signal / light optional	Acoustic signal / light optional
End of heating cycle	Acoustic signal	Acoustic signal

