

Induction heaters

BETEX MF Quick-Heaters - medium-frequency technology

Mounting, dismantling and preheating of metal components

Induction generators with medium-frequency technology are suitable not only for thermal assembly, but also for disassembly. Medium-frequency technology effectively transfers energy to the workpiece, allowing it to heat up 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 around.

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. This makes it possible to heat very large and heavy components.

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 3.5/10/22/44 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
- ✓ A flexible or fixed inductor is recommended depending on the application



To be used for

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

The BETEX MF Quick-Heater

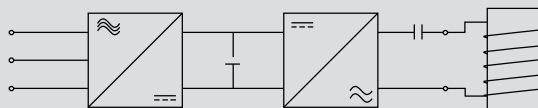
This heater consists of a generator and one or more inductors. The generator is designed for the connection of inductors used for heating ferromagnetic workpieces. Suitable materials include iron, steel, stainless steel, titanium and certain bronze alloys. The maximum capacity workpieces can be subjected to is 3.5, 10, 22 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.



Testing

For special applications, we can carry out tests in advance with components that the client provides for this purpose.

Custom made

If necessary, we can supply a customised application. For standard applications, we have a large database with examples. We also use simulation programmes.

Savings

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

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.



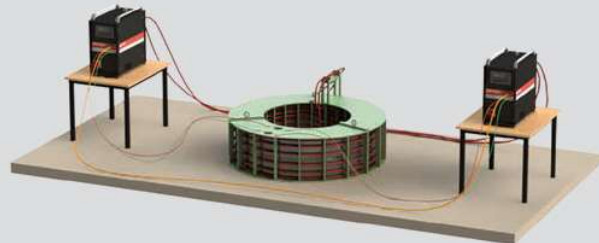
Fixed inductor in the workpiece

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.



Induction heaters

Medium-frequency projects



BETEX MF Quick-Heater 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 MF Quick-Heater 3.0, 22 kW
 Dismounting in a steel plant using a flexible inductor wrapped around a bearing ring.

Temperature: 200°C
 Time needed: 17 min.



BETEX MF Quick-Heater 3.0, 44 kW
 Dismounting of a coupling at a gearbox repair company.

Temperature: 100°C
 Time needed: 7 min.



BETEX MF Quick-Heater 3.0, 22 kW
 Preheating in preparation for laser cladding.

Induction heaters

BETEX MF Quick-Heater 3.0 - 3.5kW

New



ΔT

Delta T

3.5
power kW

4,3"
display inch

230
volts V

BETEX MF Quick-Heater 3.0 - 3.5kW

- Portable induction heater, weighs only 7.85 kg, ideal for working on site.
- Easy to connect to mains voltage (230V)
- Easy operation with 4,3" touchscreen
- Smart electronics ensure optimal operating frequency
- Dual temperature sensing (monitoring Delta T)
- Choice of flexible inductors: 5m, 7.5m, 10m (not included)

- Can heat according to preset temperature/time curve
- The heating process is displayed in a clear graph
- Log function to save and export data via a USB port

ΔT

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.

Type	MF Quick-Heater 3.0, 3,5kW
Power	3,5kW
Heat curve in display	Yes
Setpoint power	No
Setpoint temperature	Yes, via touchscreen
Setpoint temperature curve	Yes, via touchscreen
Setpoint timer	Yes, via touchscreen
Inductor recognition	No
USB connection	Yes
Network connection	No
Heating log	Yes
Weight generator	7,85 kg

Type	Art. no.	Voltage/Amp	Certification
MF Quick-Heater 3.0, 3,5kW	33035230	230V / 13A*	CE
MF Quick-Heater 3.0, 3,5kW	33035230-UK	230V / 16A**	UKCA

See page 49 for detailed technical specifications.



Flexible inductor 180°C



Log function and export to USB stick
(USB stick not included)