MOBILE INDUCTION HEAT TREATMENT UNITS

Ti-M series
120kW and 60kW
Tried and tested quality for more than 35 years

Our customers – Our partners:
Owing to the many years of close cooperation with our customers, we know the special requirements and challenges in the field of heat treatment. The experiences we have gained over more than 35 years are the foundation of our success, this is what our individual customised solutions are based on. Our precisely coordinated system components always comply with the state of the art, making it possible for you to work flexibly and efficiently.

Your need for individual solutions, top-quality units and accessories is our top priority. This is why we have put our expertise and competence at our customers, disposal for more than 35 years – also at yours.

Our vision:
Especially heat treatment operations require reliable, precise solutions and powerful units that are versatile in application and easy to use in order to make your daily operations efficient and economical. Safety and quality are also of particular importance to you and consequently, also to us. We like to fully meet your personal needs and offer you solutions that make you flexible, so you also become one of our satisfied customers.

Our mission – Your competitive advantage:
Flexibility in individual sequences of operation provides a substantial competitive advantage. This also applies to heat treatment operations. This is why we have developed more compact and thus more mobile induction heat treatment units that are versatile in application and meet the highest quality requirements.

The result:
The Ti-M series mobile induction heat treatment units in the power variants:

120kW and 60kW
one innovation ahead

Compact and mobile:
The Ti-M series in 120kW and 60kW power variants is the ideal solution for hydraulic, apparatus, pressure vessel and mechanical engineering. Optimised in terms of performance, these induction heat treatment units are user friendly, versatile and reliable – featuring considerably reduced volume, weight and dimensions. The Ti-M series needs no more space than a Euro pallet and even the 120kW performance variant weighs considerably less than 1,000 kg. The induction heat treatment units can be quickly and easily transported using a forklift truck or a van.

Latest technology:
Process-optimised electronic control system and advanced power electronics such as the IGBT technology (Insulated-Gate Bipolar Transistor). Controlled heating by electronic monitoring. All significant process parameters are displayed.

Worldwide application:
Compatible with all three-phase voltages and power frequencies worldwide.

3 in 1:
The induction heat treatment unit TiM-120 (Power size 120kW) can be used in 30kW, 60kW and 120kW power variants.

Protection against inductor overloads:
The inductor current is protected against overload and is displayed separately. All electric parameters are monitored.

Preserving the tried and trusted

Optimum frequency range:
At an operating frequency between 2kH and 5kH – for an optimum compromise between penetration depth (through heating) and unit size.

Optimum power adjustment:
Variable compensation steps make it easier to adjust the power. The electronic control system ensures that the frequency is optimally adjusted to the work piece.

Easy to use:
Manual control via rotary potentiometers or via programme controller. The program controller can be operated as a two-point controller or a continuous controller.

No additional cooling required:
Water-cooled inductors are not required during standard operation.

Sturdy housing:
Splash-proof for optimum protection of the electronic system. Four transport eyebolts as standard equipment for lifting, and reinforced bottom-plate for transport by means of a forklift truck.
## Technical Data

<table>
<thead>
<tr>
<th>Mobile induction heat treatment unit</th>
<th>Type</th>
<th>Ti-M 120</th>
<th>Ti-M 60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply voltage:</td>
<td>V</td>
<td>400 / 500</td>
<td>400 / 500</td>
</tr>
<tr>
<td>Mains frequency:</td>
<td>Hz</td>
<td>40 to 60</td>
<td>40 to 60</td>
</tr>
<tr>
<td>Power input:</td>
<td>kVA</td>
<td>145</td>
<td>73</td>
</tr>
<tr>
<td>Rated power output:</td>
<td>kW</td>
<td>120</td>
<td>60</td>
</tr>
<tr>
<td>Mains current:</td>
<td>A</td>
<td>202</td>
<td>101</td>
</tr>
<tr>
<td>can also be operated at:</td>
<td>A</td>
<td>63 and 125</td>
<td>63</td>
</tr>
<tr>
<td>Output voltage:</td>
<td>V</td>
<td>650</td>
<td>650</td>
</tr>
<tr>
<td>Resonant circuit current:</td>
<td>A</td>
<td>1200</td>
<td>1200</td>
</tr>
<tr>
<td>Operating frequency:</td>
<td>kHz</td>
<td>2 - 5</td>
<td>2 - 5</td>
</tr>
<tr>
<td>Process controller:</td>
<td></td>
<td>T144</td>
<td>T144</td>
</tr>
<tr>
<td>Permissible ambient temperature:</td>
<td>°C</td>
<td>-20 to +35</td>
<td>-20 to +35</td>
</tr>
<tr>
<td>with integrated cooling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protection class:</td>
<td></td>
<td>IP 23 / IP 54</td>
<td>IP 23 / IP 54</td>
</tr>
<tr>
<td>Dimensions (W x D x H) approx:</td>
<td>mm</td>
<td>800x1200x1754</td>
<td>800x1200x1754</td>
</tr>
<tr>
<td>with transport eyebolts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight approx:</td>
<td>kg</td>
<td>935</td>
<td>785</td>
</tr>
</tbody>
</table>

We reserve the right of error and technical modifications.

---

### Your benefits:
- Compact and mobile
- Compact overall dimensions, low weight
- Integrated liquid/air recirculation system
- Suitable for van transport

### The experts

**for induction heat treatment units**

THERMOPROZESS has been developing and manufacturing heat treatment units for worldwide application in the fields of hydraulic, apparatus, pressure vessel and mechanical engineering for more than 35 years.

... Please contact us ...

... We will be glad to assist you ...

---

For you worldwide!
Your benefits

- Compact and mobile due to compact overall dimensions and low weight.
- Can be connected to the mains by means of standardised three-phase plug or direct connections possible.
- Flexible inductors ensure perfect adjustment to the dimension and geometry of the work piece.
- Possibility to connect portable inductors.
- Modern electronic system for control, adjustment and monitoring.
- Programme controller for programming the required heat treatment parameters.
- Mains and resonant circuit current monitoring and regulated output power.
- Internal potential isolation.
- Integrated liquid/air recirculation system: no additional cooling water supply required during standard operation.
- Additional connections for external cooling water supply at ambient temperatures of up to +50°C.
- Reliable operation even when passing through Curie-temperature.
Examples of use

- Heat treatment of a pressure vessel circumferential weld
  OD Ø 9.200 mm x 20 mm WT

- Heat treatment of a pressure vessel circumferential weld
  OD Ø 8.250 mm x 45 mm WT

- Heat treatment to detach a case-hardened pinion
  OD Ø 1.400 mm x ID Ø 275 mm x 925 mm width

- Heat treatment to join a coupling to a converter
  OD Ø 1.998 mm x ID Ø 950 mm x 655 mm width

- Heat treatment of a turbine rotor

- Heat treatment of a heat exchanger circumferential weld
  OD Ø 7.240 mm x 127 mm WT
Decades of experience in the field of heat treatment makes us your ideal partner to contact. We combine latest technology with modular system components to offer customised, economical solutions for your business – from single units to complete systems.

We – the group for you:

- Worldwide planning and implementation of heat treatment projects
  - Resistance
  - Induction
  - Hot air
- Dry out of refractory linings
- Planning, manufacture and distribution of resistance heat treatment units from 3kW to 400kW with infinitely variable power adjustment and programme control
- Planning, manufacture and distribution of induction heat treatment units in 60kW and 120kW power variants with infinitely variable power adjustment and programme control
- Accessories for resistance and induction heat treatment units
- Resistance heating elements from 20V to 400V as standard or customised variants: heating mats, snake heaters, rope heaters, wraparound heaters, preheaters, magnetised insulated preheaters, preheat cassettes, channel heaters and four banks
- Measuring and testing instruments
- TÜV-approved thermocouple attachment units
- Insulating material up to 1.500°C
- Mobile temporary heat treatment furnaces
- Surface heating technology, trace heating and special heating systems

We will be pleased to advise you according to your requirements and wishes individually.