Induction Bearing Heaters
Induction heater usage is a safe and preferred method of heating a bearing in comparison to using a flame or oil bath. Bearing heaters produce strong alternating magnetic fields that induce eddy currents in the metals. The currents cause rapid and efficient heating of the component. The low voltage output eliminates any hazards caused by shocks or sparks.

Bearing heaters from NSK offer a fast, safe and efficient way to mount straight bore bearings on to shafts. They provide uniform inner ring heating that helps to reduce bearing mounting time and cost. Automatic temperature and demagnetizing control features, a light, compact design and the versatility to heat many different bearing sizes make NSK bearing heaters a must-have for maintenance professionals.
## Bearing Heater Standard Specifications

<table>
<thead>
<tr>
<th>Part Number</th>
<th>CE110</th>
<th>CE120</th>
<th>CE320</th>
<th>CE540</th>
<th>CE620</th>
<th>CE140</th>
<th>CE320</th>
<th>CE540</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healing Capacity</td>
<td>1kVA</td>
<td>3kVA</td>
<td>6kVA</td>
<td>11kVA</td>
<td>23kVA</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Applicable Bearing Size

- **Minimal Bore Diameter (mm ø):** 20, 35, 35, 50, 50
- **Maximum Outside Diameter (mm ø):** 200, 300, 350, 600, 800
- **Thickness (mm):** 70, 110, 200, 300, 400
- **Weight (kg):** 12, 40, 80, 300, 600

### Heated Bearing Type

- **Can Heat Pre-greased Bearing:** Yes
- **Can Heat Sealed Bearing:** Yes

### Power Supply Characteristics

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100-120V</td>
<td>50/60Hz</td>
<td>7.2A</td>
<td>H (mm)</td>
<td>347</td>
<td>38 – 250°C</td>
<td>°C</td>
<td>36 – 250°C</td>
</tr>
<tr>
<td></td>
<td>200-240V</td>
<td>50/60Hz</td>
<td>4.0A</td>
<td>L (mm)</td>
<td>75</td>
<td>0 – 100 min</td>
<td>°C</td>
<td>0 – 100 min</td>
</tr>
<tr>
<td></td>
<td>380-480V</td>
<td>50/60Hz</td>
<td>5.3A</td>
<td>W (mm)</td>
<td>30</td>
<td>1s</td>
<td>°C</td>
<td>1s</td>
</tr>
<tr>
<td></td>
<td>200-240V</td>
<td>50/60Hz</td>
<td>2.7A</td>
<td>Main Body Weight (kg)</td>
<td>43</td>
<td>By 10%</td>
<td>°C</td>
<td>By 10%</td>
</tr>
<tr>
<td></td>
<td>380-480V</td>
<td>50/60Hz</td>
<td>8.1A</td>
<td>Accessories Weight (kg)</td>
<td>61</td>
<td>50 – 100%</td>
<td>°C</td>
<td>50 – 100%</td>
</tr>
<tr>
<td></td>
<td>200-240V</td>
<td>50/60Hz</td>
<td>9.0A</td>
<td>Temperature Range</td>
<td>13.2</td>
<td>300 µT(3G)</td>
<td>°C</td>
<td>300 µT(3G)</td>
</tr>
<tr>
<td></td>
<td>380-480V</td>
<td>50/60Hz</td>
<td>27.0A</td>
<td>Control Temp. Sensor Type</td>
<td>241</td>
<td>Specifications</td>
<td>°C</td>
<td>Specifications</td>
</tr>
<tr>
<td></td>
<td>200-240V</td>
<td>50/60Hz</td>
<td>13.5A</td>
<td>Mode Accuracy</td>
<td>335</td>
<td>Control Mode</td>
<td>°C</td>
<td>Control Mode</td>
</tr>
<tr>
<td></td>
<td>380-480V</td>
<td>50/60Hz</td>
<td>6.6A</td>
<td>Time Range</td>
<td>64.2</td>
<td>Operation</td>
<td>°C</td>
<td>Operation</td>
</tr>
</tbody>
</table>

### Temperature Specifications

- **Temperature Display:** Celsius/Fahrenheit Changeover

### Operation Specifications

- **Operation:** Operator with LEDs
- **Sequence Operation:** Yes

### Temp. Display

- **Celsius/Fahrenheit Changeover:** Yes

### Type Core Bearing Installation Table

<table>
<thead>
<tr>
<th>Type</th>
<th>Sequence Operation</th>
<th>Temperature Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-CTC-300</td>
<td>lead length 300 mm</td>
<td>°C</td>
</tr>
<tr>
<td>N-CTC-500</td>
<td>lead length 500 mm</td>
<td>°C</td>
</tr>
<tr>
<td>N-CTC-1000</td>
<td>lead length 1000 mm</td>
<td>°C</td>
</tr>
</tbody>
</table>

### Remarks

1. Bearings should not be heated higher than 120°C (248°F).
2. Handle the heated product with care.
Three Advantages

1. Even Heating Without Bearing Damage
   The use of direct flame or a blowtorch to heat a bearing is hazardous, risky and may cause uneven thermal expansion and/or material alteration.

   NSK’s induction bearing heater uses the electromagnetic induction principle to heat bearings evenly, allowing them to thermally expand without causing damage to the bearings.

   This feature eliminates unnecessary damage, thereby improving work efficiency.

2. Quick and Efficient Heating
   NSK’s induction bearing heater has exciting coils embedded in a core similar to the primary winding in a transformer. AC current flowing through the coils induces a secondary current around the inner ring of the bearing, which generates heat due to the bearing’s resistance to electrical currents.

   This reduces energy waste and allows for quick heating of the bearing. The induction heating method provides high safety, reliability and work efficiency.

3. Clean Heating
   The oil bath shrink fit process requires extra time and cost to clean the bearing, even with the use of new oil. NSK’s induction bearing heaters heat cleanly and retain the original pre-lubrication, even on grease sealed bearings, without the use of oil.

   Oil storage management is not required, thereby improving the working environment.
NSK’s induction bearing heater provides a proper shrink-fitting process, which extends the life expectancy of a bearing. This process is less hazardous and better for personal health and safety. The force fit methods, using a hammer or a press, have a higher likelihood of causing damage to a bearing. This shortens bearing life expectancy. Traditional and conventional heating methods, such as ovens, oil baths or blowtorches, produce smoke, fumes or oil waste. These are hazardous to human health and impose a burden on the environment. NSK’s bearing heater provides a solution to these problems.
Three Features

1 Versatile
NSK’s induction bearing heater is designed primarily for the heating of bearings. However, it can heat bushings, gears, pulleys, couplings and other ring-shaped objects.

2 Built-in Demagnetization
NSK’s induction bearing heater is digitally controlled and demagnetizes a bearing automatically after heating. Manual demagnetization is also possible.

3 Temperature and Timer Control
NSK’s induction bearing heater has two control modes: Temperature and Time. In Temperature Control Mode, the temperature can be set up to 250°C as standard. The temperature indication can be changed to Fahrenheit or Celsius through the control panel. Temperature retention keeps the bearing at the set temperature until Stop is pressed. In Timer Control Mode, time can be set up to 60 minutes.

Slide Type Bearing Installation Table
Once a bearing and I-type core are installed in the Slide Type Bearing Installation Table, one simply has to move the table to the heating position. This device enables easy mounting and dismounting of hot and heavy bearings.

Temperature Sensor
The small and sensitive temperature sensor continuously monitors the bearing temperature to ensure precise detection of bearing temperature. The sensor works at high temperature rising rates as well as when the sensor is set in a confined area.

Power Supply Compatibility
NSK’s induction bearing heater is compatible with a wide range of voltage and frequency supplies. Stationary types of bearing heaters are connected to a 3-phase AC power supply, while portable types are connected to a single-phase AC power supply.
Fault Tolerance
When heating a bearing without installing the temperature sensor and in other abnormal incidences, NSK’s bearing heater detects the faults and stops heating automatically. This assures safe operation of the bearing heater.

Operation Panel
The operation panel is common to all types of NSK bearing heaters. The user-friendly panel is operated by use of push-button symbols. Symbols represent individual elemental commands of the bearing heater. The external control signal inputs and outputs are standard and allow the bearing heater to be embedded into your FA system.

Broad Range of Work Size
NSK’s bearing heaters accommodate a broad range of bearing sizes by selecting an I-type core suitable for the inner ring diameter.

Optimal Heating
NSK’s bearing heater senses the electrical properties of the bearing and the I-type core, heating the work using optimal conditions. IDBH series features a convenient Power Reduction function that sets the reduction rate 50-100% by 10% for delicate work requiring slow heating.