

## Application

The new SKF induction heater TIH 090m is equipped standard with a fan for continuous use and is suitable for heating bearings with a maximum weight of 120 kg (265 lb) and solid components of a maximum weight of 60 kg (132 lb).

## Description

The new TIH 090m is capable of heating a 90,5 kg (200 lb) bearing in just 20 minutes. The induction coil is positioned outside the heater's housing, the same concept as the TIH 210m, which allows the bearing to be placed around the coil. This results in considerable reduction of heating time and energy consumption as well as heating costs when compared to similar heaters.

The total weight of the TIH 090m is 38 (84 lb) kg including three yokes, which are supplied standard with the heater.

The yokes can be stored inside the heater's housing reducing the risk of yoke damage or loss. The smaller yoke is for heating smaller bearings at lower power consumption.

The coil core cross-section measures 55 x 55 mm (2.2 x 2.2 in). The TIH 090m is equipped with a 4-step power reduction, ranging from 20 to 80%.

## m20 concept

"m20" represents the weight (kg) of the heaviest SRB 231 bearing which can be heated from 20 to 110 °C (68 to 230 °F) in 20 minutes.

This defines the heater's power output instead of its power input: kVA, e.g. TIH 120 → 120 = 12,0 kVA.



## Safety

- Since a magnetic field is generated by the bearing heaters, people wearing a pacemaker should not work with or be within 5 m (16ft) of the heater during operation
- The bearing heaters should not be used in areas where there is a risk of explosion



## Functions

### Main switch

The heater is fitted with a main circuit breaker, which provides automatic overload protection. The main switch is supposed to be used when the heater is switched off for a longer period.

### Start/stop

The START/STOP key is pressed to start and stop the heating cycle with automatic demagnetisation.

### Input voltage self adjustment

The TIH 090m has a standard execution ranging from 400V/50Hz to 460V/60Hz. Once connected to the power source, the TIH 090m detects the power supply and adjusts its voltage accordingly.

### Power reduction function

In both the TEMP mode and the TIME mode the power level can be adjusted in steps of 20% for slower heating of sensitive or small work pieces.

### The temperature function

The SKF TIH 090m is equipped with temperature heating cycle mode, which is pre-set at 110 °C (230 °F) to prevent bearing over-heating, as well as time heating mode.

### The time function

By using the TIME mode, the heating cycle will be monitored by time. The remaining heating time will be displayed during operation.

### Thermometer mode

The heater has a special thermometer function allowing temperature measurement while not heating.

### Demagnetisation

The work piece is always automatically demagnetised at the end of each heating cycle. This most essential function is only eliminated if the heater is switched off by the main switch or by pulling the plug. When using the heater only for demagnetising, just run the heater on shortest possible heating time.

## Safety features

The induction heater is equipped with the following safety features:

- main switch with over current circuit breaker
- automatic current control
- automatic overheating protection
- a probe control function, checking that an increase of 1 is encountered every 15 seconds
- temperature mode pre-set at 110 °C (230 °F), preventing bearing over-heating

## Error guiding codes

In case of disturbances in the operation of the heaters, an error code will appear on the display to inform what is wrong and how to solve the problem.

## Maintenance

- For ultimate performance and lifetime:
- Protect the yoke supports and the yokes against corrosion, damage and deformation. A perfect contact between the yoke and the yoke support is vital for optimal performance
  - Protect the heater from water and high humidity

## Technical data

Designation	TIH 090M
Description	Small to medium size induction heater equipped with a cooling fan for continuous use
Colour	Light grey
Maximum power consumption	6,4 kVA

<b>Voltage, V/Hz</b>	Self-adjusting; from 400/50 to 460/60
<b>Recommended maximum bearing weight</b>	120 kg (260 lb)
<b>m<sub>20</sub></b>	90,5 kg (bearing 23152)
<b>Temperature control:</b>	
- Range	0 - 250 °C (32 - 482 °F)
- Magnetic probe	Yes, K-type
- Accuracy (electronics)	± 3 °C (± 5 °F)
<b>Time control:</b>	
- Range	0 - 60 minutes
- Accuracy	± 0,01 sec.
<b>Maximum temperature (approx.)</b>	400 C (750 F)
<b>Thermometer mode</b>	Yes
<b>Power reduction</b>	4-step; 20-40-60-80%
<b>Demagnetisation according to SKF norms (automatic)</b>	Yes (<2 A/cm)
<b>Can heat sealed bearings</b>	Yes
<b>Can heat pre-greased bearings</b>	Yes
<b>Error guiding codes</b>	Yes
<b>Thermal overload protection</b>	Yes
<b>Maximum magnetic flux</b>	1,5 T
<b>Control panel</b>	Key board with LED
<b>Operating area (w x h)</b>	145 x 205 mm (5.7 x 8.0 in)
<b>Coil diameter</b>	115 mm (4.5 in)
<b>Dimensions (w x d x h)</b>	420 x 280 x 420 mm (16.5 x 11.0 x 16.5 in)
<b>Total weight, including yokes</b>	38 kg (84 lb)
<b>Standard yokes</b>	55 x 55 x 275 mm (2.2 x 2.2 x 10.8 in), for heating bearings with bore diameter of 80 mm (3.1 in) and larger. 28 x 28 x 275 mm (1.1 x 1.1 x 10.8 in), for heating bearings with bore diameter of 40 mm (1.6 in) and larger. 14 x 14 x 275 mm (0.5 x 0.5 x 10.8 in), for heating bearings with bore diameter of 20 mm (0.8 in) and larger.
<b>Core cross section</b>	55 x 55 mm (2.2 x 2.2 in)
<b>Yoke storage</b>	Yes, internal
<b>Housing material</b>	Aluminium
<b>Warranty period</b>	3 years
<b>Swivel arm</b>	Standard
<b>Cooling fan</b>	Standard

## Replacement parts

Designation	Description
TIH 090-P	Power print 400-460 V, 50-60 Hz
TIH 090-S	Main switch
TIH 090-C	Coil 400-460 V
TIH 070/090-H	Heating pad and sealing
TIH 070/090-SA	Swivel arm
TIH 070/090-Y8	Yoke 55 x 55 x 275 mm (2.2 x 2.2 x 10.8 in) for heating bearings with bore diameter of 80 mm (3.1 in) and larger
TIH 070/090-Y6	Yoke 40 x 40 x 275 mm (1.6 x 1.6 x 10.8 in) for heating bearings with bore diameter of 60 mm (2.4 in) and larger
TIH 070/090-Y4	Yoke 28 x 28 x 275 mm (1.1 x 1.1 x 10.8 in) for heating bearings with bore diameter of 40 mm (1.6 in) and larger
TIH 070/090-Y3	Yoke 20 x 20 x 275 mm (0.8 x 0.8 x 10.8 in) for heating bearings with bore diameter of 30 mm (1.2 in) and larger
TIH 070/090-Y2	Yoke 14 x 14 x 275 mm (0.5 x 0.5 x 10.8 in), for heating bearings with bore diameter of 20 mm (0.8 in) and larger.
TIH 070/090-YS	Support yoke set 55 x 55 x 100 (2x) (2.2 x 2.2 x 3.9 in)
TIH070/090-CP	Control print for TIH 090m/400-460V
TIH P2	Temperature probe, K type

