

Application

The SKF small induction heater TIH 030m is suitable for heating bearings with a maximum weight of 40 kg (88 lb) and solid components of a maximum weight of 20 kg (44 lb).

Description

The new TIH 030m is a portable heater, which is capable of heating a 28 kg (61.7 lb) bearing in just 20 minutes (m_{20}). 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 heater is equipped with temperature control, which is set at 110 °C, and temperature probe. It is also equipped with time control for heating components other than bearings. The LED operating display and control panel are integrated in a remote control.

The total weight of the TIH 030m is 20,9 kg (46 lb) including three yokes, which are supplied standard with the heater. Two arms fold out of the base of the heater to support the bearing during heating, allowing larger diameter bearings to be heated. The yokes can be stored inside these bearing support arms, reducing the risk of yoke damage or loss.

The smaller yoke is for heating smaller bearings at lower power level, which is selectable 50-100%.

The core cross-section is 45 x 45 mm (1.7 x 1.7 in). The TIH 030m is equipped with a power selection mode, which reduces the power by 50%. The TIH 030m is available in two voltage execution versions: 230V/50-60Hz and 100-110V/50-60Hz.

m_{20} concept

" m_{20} " 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 \rightarrow 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

Circuit breaker

The heater is fitted with a circuit breaker, which is supposed to be switched off when the heater is not used. Additionally, the circuit breaker provides the over-current protection of the heater.

Remote control panel

To improve the ease of use and to diminish the risk of contact with the hot bearing during operation, the TIH 030m heater is supplied with a remote control panel, which can be detached from the heater.

Start/stop

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

Power level selection function

In both the TEMP mode and the TIME mode the power level can be adjusted to 50% for slower heating of sensitive or small work pieces.

The temperature function

The SKF TIH 030m 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 heating using time mode or when the heater is not operational.

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 circuit breaker 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:

- Circuit breaker with over current protection
- 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

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|---|---|
| Designation | TIH 030M/230V TIH 030M/110V |
| Description | Small induction heater |
| Colour | Light grey |
| Maximum power consumption | 2,0 kVA |
| Voltage, V/Hz | 230V/50-60Hz or 100-110V/50-60Hz |
| Work piece: | |
| - Maximum weight | 40 kg (88 lb) |
| - Maximum bore diameter | 20 - 300 mm (0.8 - 11.8 in) |
| Temperature control: | |
| - Range | 0 - 250 °C (32 - 482 °F) |
| - Magnetic probe | Yes, K-type |
| - Accuracy (electronics) | ± 2 °C (± 3.6 °F) |
| Time control: | |
| - Range | 0 - 60 minutes |
| - Accuracy | ± 0,01 sec. |
| Maximum temperature (approx.) | 400 °C (750 °F) |
| Thermometer mode | Yes |
| Power level setting | 2-step; 50% or 100% |
| Demagnetisation according to SKF norms (automatic) | Yes (<2 A/cm) |
| Can heat sealed bearings | Yes |
| Can heat pre-greased bearings | Yes |
| Error guiding codes | Yes |
| Thermal overload protection | Yes |
| Control panel | Control panel and LED display integrated in remote control |
| Operating area (w x h) | 100 x 135 mm (3.9 x 5.3 in) |
| Coil diameter | 95 mm (3.7 in) |
| Dimensions (w x d x h) | 450 x 195 x 210 mm (17.7 x 7.6 x 8.2 in) |
| Total weight, including yokes | 20,9 kg (46.0 lb) |
| Standard yokes | 45 x 45 x 215 mm (1.7 x 1.7 x 8.4 in), for heating bearings with bore diameter of 65 mm (2.6 in) and larger. 28 x 28 x 215 mm (1.1 x 1.1 x 8.4 in), for heating bearings with bore diameter of 40 mm (1.6 in) and larger. 14 x 14 x 215 mm (0.5 x 0.5 x 8.4 in), for heating bearings with bore diameter of 20 mm (0.8 in) and larger. |
| Core cross section | 45 x 45 mm (1.7 x 1.7 in) |
| Bearing support arms | Yes, foldable |
| Yoke storage | Yes, internal |
| Housing material | Steel and glass filled polyamide |
| Warranty period | 3 years |
| Swivel arm | No |
| Cooling fan | No |

Replacement parts

| Designation | Description |
|--------------------|--|
| TIH 030-P230V | Power print 230V - 220-240 V, 50-60 Hz |
| TIH 030-P110V | Power print 110V - 100-120 V, 50-60 Hz |
| TIH CP | Control print |
| TIH RC | Remote control |
| TIH CB10A | Circuit breaker 10A for TIH 030M/230V |
| TIH CB20A | Circuit breaker 20A for TIH 030M/110V |
| TIH P20 | Temperature probe, K-type including cable and plug |
| TIH 030-Y7 | Standard yoke (spare part) 45 x 45 x 215 mm (1.8 x 1.8 x 8.5 in) |
| TIH 030-Y4 | Standard yoke (spare part) 28 x 28 x 215 mm (1.1 x 1.1 x 8.5 in) |
| TIH 030-Y2 | Standard yoke (spare part) 14 x 14 x 215 mm (0.5 x 0.5 x 8.5 in) |
| TIH 030-Y6 | Optional yoke 40 x 40 x 215 mm (1.6 x 1.6 x 8.5 in) |
| TIH 030-Y3 | Optional yoke 20 x 20 x 215 mm (0.8 x 0.8 x 8.5 in) |
| TIH 030-YS | Support yoke set (x2) 45 x 45 x 100 mm (1.8 x 1.8 x 3.9 in) |

