Induction Heater TIH 100m

Application
The SKF medium induction heater TIH 100m is suitable for heating bearings with a maximum weight of 120 kg (264.5 lb) and solid components of a maximum weight of 60 kg (132.2 lb).

Description
The new TIH 100m is capable of heating a 97,0 kg (213 lb) bearing in just 20 minutes (m20). The induction coil is positioned outside the heater's housing, the same concept as the TIH 030m, TIH 210m and TIH 240, which allows the bearing to be placed around the coil. This, combined with an enhanced power electronics design, results in a 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 ºC, 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 TIH 100m includes three yokes, which are supplied standard with the heater. The larger yoke incorporates a "swivel arm", which makes it easier to load a bearing, as the operator does not have to lift and remove the yoke in order to load a bearing. 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 small yoke is for heating smaller bearings at a lower power level, which is selectable with a 2-step power setting (50-100%). The 2-step power setting is ideal for sensitive bearings such as bearings with a C1 or C2 internal clearance.

The TIH 100m has a core cross-section of 56 x 56 mm (2.2 x 2.2 in) and is available in two voltage execution versions: 230V/50-60Hz (TIH 100M/230V) and 400-460V/50-60Hz (TIH 100M/MV).

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.

Safety
- Since the heater generates a magnetic field, 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

Remote control panel
To improve the ease of use and to diminish the risk of contact with the hot bearing during operation, the TIH 100m heater is supplied with a remote control panel, which can be detached from the heater.

Swivel arm for large yoke
The larger yoke incorporates a "swivel arm", which makes it easier to load a bearing as the operator does not have to lift and remove the yoke in order to load a bearing

Start / stop
The START/STOP key is pressed to start and stop the heating cycle. When the heating cycle is stopped the work piece is automatically demagnetised.

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 100m is equipped with temperature heating cycle mode, which is pre-set at 110 °C (230 °F) to prevent bearing over-heating.

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 heating.

Safety features
The induction heater is equipped with the following safety features:
-Remote control panel
-Circuit breaker with over current protection
-Automatic current control
-Automatic overheating protection
-A probe control function, checking that an increase of 1° C (33.8 °F) 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 heater, an error code will appear on the display to inform what is wrong and how to solve the problem. All coding can be found in the instructions for use.

Circuit breaker
The heater is fitted with a circuit breaker, which for safety reasons should be switched off when the heater is not used. Additionally, the circuit breaker provides the over-current protection.

Demagnetisation
The work piece is always automatically demagnetised at the end of each heating cycle. This an 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 for a short heating time such as 10 or 20 seconds.

Maintenance
For ultimate performance and lifetime:
-protect 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 100M/230V TIH 100M/MV
Description	Medium size induction heater
Colour	Light grey
Maximum power consumption	3.6 / 4.0 - 4.6 kVA
Voltage, V/Hz	230V/50-60Hz or 400-460V/50-60Hz
Work piece:	
- Maximum weight	120 kg (264 lb)
- Maximum bore diameter	20 - 400 mm (0.8 - 15.7 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)
Remote control panel	Yes
Thermometer mode	Yes
Power 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)	155 x 205 mm (6.1 x 8.0 in)
Coil diameter	110 mm (4.33 in)
Dimensions (w x d x h)	570 x 230 x 350 mm (22.4 x 9.0 x 13.7 in)
Total weight, including yokes	42 kg (92lb)
Standard yokes	56 x 56 x 296 mm (2.2 x 2.2 x 11.7 in), for heating bearings with bore diameter of 80 mm (3.1 in) and larger. 28 x 28 x 296 mm (1.1 x 1.1 x 11.7 in), for heating bearings with bore diameter of 40 mm (1.6 in) and larger. 14 x 14 x 296 mm (0.5 x 0.5 x 11.7 in), for heating bearings with bore diameter of 20 mm (0.8 in) and larger.
Core cross section	56 x 56 mm (2.2 x 2.2 in)
Bearing support arms	Yes, foldable
Yoke storage	Yes, internal
Housing material	Steel and glass fibre filled polyamide
Swivel arm	Yes, 56 x 56 mm (2.2 x 2.2 in) yoke only
Cooling fan	No
Warranty period	3 years

Replacement parts

Designation	Description
TIH 100-Y8	Standard yoke (spare part) 56 x 56 x 296 mm (2.2 x 2.2 x 11.6 in)
TIH 100-Y4	Standard yoke (spare part) 28 x 28 x 296 mm (1.1 x 1.1 x 11.6 in)
TIH 100-Y2	Standard yoke (spare part) 14 x 14 x 296 mm (0.5 x 0.5 x 11.6 in)
TIH 100-Y6	Optional yoke 40 x 40 x 296 mm (1.6 x 1.6 x 11.6 in)
TIH 100-Y3	Optional yoke 20 x 20 x 296 mm (0.8 x 0.8 x 11.6 in)
TIH RC	Remote control with integrated LED display and control panel
TIH 100-P230V	Power print 230V - 220-240V, 50-60 Hz
TIH 100-PMV	Power print 400-460V, 50-60 Hz
TIH 100-YS	Support yoke set - 56x56x100 mm (2x)
TIH CP	Control print
TIH CB16A	Circuit breaker 16A for TIH 100m/230V
TIH CB10A	Circuit breaker 10A for TIH 100m/MV
TIH P20	Temperature probe, K-type

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