

Application

The new SKF induction heater TIH 210m is suitable for heating bearings with a maximum weight of 300 kg and solid components of a maximum weight of 150 kg.

Description

The new TIH 210m is capable of heating a 210 kg (460 lb) bearing in just 20 minutes. The induction coil is positioned outside the heater's housing, the same concept as the TIH 240, which allows the bearing to be placed around the coil. This results in heating time and power consumption reduction by up to 30% and reduces heating costs by up to 50% compared to similar heaters.

The total weight of the TIH 210m is 75 kg including two 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 70 x 70 mm. The TIH 210m 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.

TIH 210F

The TIH 210F is the continuous use version of the TIH 210m as it is standard equipped with a cooling fan. Except for the internal cooling fan, the technical data of the TIH 210F are identical to those of the TIH 210m (see below).

Safety

- Since a magnetic field is generated by the bearing heaters, people wearing a pacemaker should not work with or be in the immediate vicinity of the apparatus
- 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 210m has a standard execution ranging from 400V/50Hz to 460V/60Hz. Once connected to the power source, the TIH 210m 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 210m is equipped with temperature heating mode, which is pre-set at 110 °C (230 °F) to prevent bearing over-heating, as well as time

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 you to measure temperatures while not using the heater.

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 from 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 very high humidity

heating mode.

Technical data	
Designation	TIH 210m / TIH 210F
Description	Medium-size induction heater
Colour	Light grey
Maximum power consumption	Depending on voltage 10,0 kVA (400V/50Hz) 11,5 kVA (460V/60Hz)
Voltage	Self-adjusting; from 400V/50Hz to 460V/60Hz
Recommended maximum bearing weight	300 kg (660 lb)
m₂₀	210 kg (bearing 23168 CC/W33)
Temperature control:	
- Range	0 - 250 ° C (32 - 482 ° F)
- Magnetic probe	Yes, K-type
- Accuracy (electronics)	± 3 ° C (± 5 ° F)
Time control:	
- Range	0 - 60 minutes
- Accuracy	± 0,01 sec.
Maximum temperature (approx.)	400 C (750 F)
Thermometer mode	Yes
Power reduction	4-step; 20-40-60-80%
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
Maximum magnetic flux	1,5 T
Control panel	Key board with LED
Operating area (w x h)	250 x 250 mm (9.8 x 9.8 in)
Coil diameter	135 mm (5.3 in)
Dimensions (w x d x h)	600 x 350 x 420 mm (23.6 x 13.7 x 16.5 in)
Total weight, including yokes	75 kg (165 lb)
Standard yokes	70 x 70 x 420 mm (2.8 x 2.8 x 16.5 in), for heating bearings with bore diameter of 100 mm (3.9 in) and larger. 40 x 40 x 420 mm (1.6 x 1.6 x 16.5 in), for heating bearings with bore diameter of 60 mm (2.4 in) and larger.
Core cross section	70 x 70 mm (2.8 x 2.8 in)
Yoke storage	Yes, internal
Housing material	Aluminium
Warranty period	3 years
Sliding arm	Yes
Cooling fan	Optional (Standard TIH 210F)

Replacement parts	
Designation	Description
TIH 210-P	Power print 400-460 V, 50-60 Hz
TIH 210-S	Main switch 400-460 V
TIH 210-C	Coil 400-460 V
TIH 210-H	Heating pad and sealing
TIH 210-YH	Yoke roller housing
TIH 210-Y100	Yoke 70 x 70 x 420 (for bearings with minimum 100 mm bore)
TIH 210-Y80	Yoke 55 x 55 x 420 (for bearings with minimum 80 mm bore)
TIH 210-Y60	Yoke 40 x 40 x 420 (for bearings with minimum 60 mm bore)
TIH 210-YS	Support yoke set 70 x 70 x 150 (2x)
TIH CP	Control print
TIH P2	Temperature probe, K type

