

Bearing heater TIH 240

Application

The TIH 240 is designed for the heating of bearings up to 700 kg (1,540 lb).

Description

The TIH 240 uses the principal of electrical induction to generate heat. It is basically done by putting the bearing as the secondary coil on a type of transformer. The primary coil, with a large number of windings, is then connected to high voltage, causing a low current to pass through the coil. This will create a magnetic field flowing through the mutual iron core, inducing low voltage and a very high current in the bearing. The electrical resistance of the bearing will thus cause it to heat rapidly. The TIH 240 is a floor model which easily can be transported by means of a standard fork lift. To ensure optimum performance the induction coil is supposed to be put inside the bore of the component to be heated. This is made possible by the positioning of the coil on one of the side post of the heater.

The heater is delivered with one yoke mounted on a sliding arrangement for easy positioning. To support the bearings two foldable legs are part of the base frame. The unit fits on a standard SKF pallet (600 x 800 mm). In case of transportation in confined spaces the control box can be dismantled.

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

On/off

The TIH 240 is equipped with a special ON/OFF key to be used when switching off the heater for short periods or in between jobs.

Start/stop

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

The power function

The power function allows the heater to be run on full power or 50% power. This feature decreases the risk of overheating small and sensitive workpieces.

The temperature function

In the TEMP mode the heating cycle is monitored by the temperature of the workpiece. Accordingly, the heater will

This will be indicated by a buzzer. Unless this is acknowledged by pressing the Start/Stop button, the heater will automatically re-start as soon as the temperature has dropped 10 °C (18 °F) below the pre-selected value. The desired temperature is simply set by using the numerical keys. The selected temperature is displayed on the LED-display until the heater is started. Once the heater is running, the actual temperature of the workpiece is displayed. The temperature unit can easily be changed from °C to °F or vice versa.

The bearing function

For added convenience the heater also offers a special bearing function that automatically selects 110 °C (230 °F), which is the recommended temperature when heating bearings.

The time function

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

Demagnetisation

The workpiece 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 ON/OFF key, 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 overload circuit breaker
- automatic overheating protection
- electronics protected by fuses
- a probe control function, checking that an increase of 1° is encountered every 15 seconds

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

automatically be switched off as soon as the selected temperature is reached.

Thermometer mode

The heater has a special thermometer function allowing you to measure temperatures while not using the heater.

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

Special executions

The TIH 240 is also available with increased operating areas (w x h)

TIH 240A	450 x 355 mm (17.7 x 13.9 in)
TIH 240B	330 x 900 mm (12.9 x 35.4 in)
TIH 240C	330 x 450 mm (12.9 x 17.7 in)

Other specials are available on request.

Spare parts

TIH 240-1	main circuit board 400V
TIH 240-3	yoke 65 x 65 x 570 mm
TIH 240A-3	yoke 65 x 65 x 690 mm
TIH 240-5	thyristor
TIH 240-7	main switch
TIH 240-10	support yoke set 100 x 100 x 150 mm
TIH 240-11	support yoke set 100 x 100 x 370 mm

Other spare parts or special yoke sizes are available on request.

Technical data

Designation	TIH 240	TIH 240/460V
Dimensions		
Voltage	2 x 400 V, 50/60 Hz (or 2 x 460 V, 60 Hz)	
Maximum current	60 A	
Power consumption	24 kVA	
Component weight	Bearings up to 700 kg (1,540 lb) Gear wheels up to 300 kg (660 lb)	
Operating area (w x h)	330 x 355 mm (12.9 x 13.9 in)	
Cross section of core	100 x 100 mm (3.9 x 3.9 in)	
Coil diameter	180 mm (7.1 in)	
Overall dimensions (w x b x h)	750 x 400 x 935 mm (30 x 16 x 37 in)	
Weight	300 kg (660 lb)	
Control features		
Temperature control		
Range	0 - 250 °C (32 - 482 °F)	
Probe type	Magnetic probe	
Accuracy (electronics)	± 3 °C (5 °F)	
Time control		
Range	0 - 60 minutes	
Accuracy	0,01 s	
Thermometer mode	Yes	
Power reduction	50%	
Demagnetisation	Below 2 A/cm	
Error guiding codes	Yes	
Thermal overload protection	Yes	
Heating examples		
Component	Temperature	Time
Bearing 23064 (80 kg)	100 °C (212 °F)	60 s
Bearing 24184 (445 kg)	110 °C (230 °F)	10 minutes
Bearing 23292 (695 kg)	110 °C (230 °F)	24 minutes
Gear wheel (100 kg)	150 °C (302 °F)	11 minutes
Wear rim for train wheels (120 kg)	100 °C (212 °F)	13 minutes
Crane wheel (150 kg)	85 °C (185 °F)	20 minutes
General		
Housing material	Sheet steel; foldable legs	
Way of transport	Standard fork-lift	
Warranty period	3 years	

Special executions

On request SKF can offer heaters made to size. To provide a quotation the following information is required:

- dimensions and weight of the component to be heated
- desired heating times

Replacement parts

Available on request.

■ preferred power supply

