Bearing heaters TIH 025 and TIH 030

Application
SKF bearing beaters are all designed to heat bearings prior to mounting them with a shrink fit. The TIH 025 and TIH 030 are recommended for bearings with a weight up to approximately 30 kg (70 lb). The heaters can also be used for heating any other machinery component made of metal and forming a closed electrical loop such as bushings, labyrinth rings, shrink rings, belt pulleys, gears, etc. At the end of each heating cycle, the workpieces are automatically demagnetised.
The apparatus can also be used only for demagnetising. The maximum temperature which can be reached is approximately 400 °C (750 °F) but depends on the weight, geometry and material of the workpiece.

Safety
- Since a magnetic field is generated by the bearing heaters, people wearing a pacemaker should not work with or be in the immediate vincinity of the apparatus
- The bearing heaters should not be used in areas where there is a risk of explosion

Description
SKF bearing heaters use the principle of electrical induction to generate heat. It is basicly 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.

TIH 025
TIH 025 consists of a housing, three top yokes and a yoke tray. Maximum power consumption is 3,5 kVA. In order to provide highest possible efficiency a special power limitation device has been built in. The TIH 025 is provided with a main switch and the heating cycle can be monitored by means of a timer (0 - 15 minutes).

TIH 030
The TIH 030 is provided with an electronic timer (0 - 60 minutes) and electronic temperature control (0 - 250 °C/ 32 - 482 °F). The "heart" of the unit, meaning core and coils, is identical to the TIH 025.
Maximum recommended weight of the component to be heated is approximately 30 kg (70 lb).

Functions (TIH 025 / TIH 030)

Main switch
Both heaters are fitted with a main circuit breaker for improved safety. This switch is supposed to be used when the heaters are switched off for a long period.

Start/stop
The TIH 030 has a special START/STOP key which is pressed to start and stop the heating cycle with automatic demagnetisation.
On the TIH 025 the start / stop will be controlled by the mechanical timer.
A separate signal lamp will burn while the heater is in operation.

The desired temperature is set by using either of the two arrow keys in order to go up or down from to the preset temperature of 110 °C (230 °F). The selected temperature is displayed on the LED-display until the heater is started. Then the actual temperature of the workpiece will be displayed. The temperature unit can easily be changed from °C to °F.

Thermometer mode (TIH 030)
The TIH 030 has a special thermometer function allowing you to measure temperatures while not using the heater.

Overheating protection
The TIH 025 and TIH 030 are both equipped with automatic overheating protection. Once this function is activated, you need to wait until the heater cools down before you can operate it again. The TIH 030 also has
a separate probe control function, which checks that an increase of 1° is encountered every 15 seconds.

Error guiding codes (TIH 030)
In case of disturbances in the function of the TIH 030, a special fault code will be displayed in order to inform what is wrong and how to solve the problem.

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 either on the display (TIH 030) or by the position of the mechanical timer (TIH 025).

The temperature function (TIH 030)
In the TEMP mode the heating cycle is monitored by the temperature of the workpiece. Accordingly, the heater will automatically be switched off as soon as the selected temperature is reached. 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.

Stand-by (TIH 030)
The TIH 030 will automatically revert to a stand-by position, after a period of 12 minutes without being used.
The last setting will be remembered.

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 the main switch or by pulling the plug. When using the heater only for demagnetising, just the run the heater on shortest possible heating time.

Maintenance
It is recommended that the yoke supports and the yokes be protected against corrossion, damage and deformation. A perfect contact between the yoke and the yoke support is vital for optimum function. The heaters should also be protected from water and very high humidity.

Technical data

Designation***		TIH 025	TIH 030
Voltage		230V/50/60Hz 115V/50/60Hz 100V/50/60Hz	230V/50/60Hz 115V/50/60Hz 100V/ 50/60Hz
Power consumption*	**230V**	3,5 kVA	3,5 kVA
(maximum)	**115V**	2,2 kVA	2,2 kVA
	100V	3,0 kVA	3,0 kVA
Recommended maximum bearing weight*		30 kg 70 lb	30 kg 70 lb
Temperature control		-	yes
Range		-	0-250 °C / 32-482 °F
Magnetic probe		-	
Accuracy (electronics)		-	± 3 °C (5 °F)
Time control		yes	yes
Range (min)		0-15	0-60
Accuracy		10 s	0,01 s
Maximum temperature* (approximately)		400 °C / 750 °F	400 °C / 750 °F
Thermometer mode		-	yes
Power reduction		PLD**	PLD**
Demagnetisation acc. to SKF norms (automatic)		yes	yes
Can heat sealed bearings		yes	yes
Can heat pre-greased bearings		yes	yes
Error guiding codes		-	yes
Thermal overload protection		yes	yes
Maximum magnetic flux		1,4 T	1,4 T
Operating area (w x h)		130 x 95 mm (5.1 x 3.7 in)	
Dimensions (w x d x h)		290 x 255 x 225 mm (11.4 x 10.0 x 8.9 in)	
Weight			
Heater body		19 kg (42 lb)	
With yokes		27 kg (60 lb)	
Standard yokes			
		14 x 14 x 240 mm (0.6 x 0.6 x 9.4 in) 30 x 30 x 240 mm (1.2 x 1.2 x 9.4 in) 55 x 55 x 240 mm (2.2 x 2.2 x 9.4 in)	
Optional yokes			
TIH 025/030-12		10 x 10 x 240 mm (0.4 x 0.4 x 9.4 in)	
TIH 025/030-10		20 x 20 x 240 mm (0.8 x 0.8 x 9.4 in)	
TIH 025/030-11		45 x 45 x 240 mm (1.8 x 1.8 x 9.4 in)	
Support yokes set			
TIH 025/030-6		55 x 55 x 100 mm (2.2 x 2.2 x 3.9 in)	
Yoke tray		yes	yes
Housing material		Glass-fiber reinforced polyester	
Warranty period		3 years	3 years

* *Depends on operating voltage and workpiece material/geometry*
** *Power Limitation Device*
*** *Indicate voltage when ordering (designations TIH 025 and TIH 030 are 230V/50/60Hz versions)*

Replacement parts

Designation	Description
TIH 025-0	Empty body complete
TIH 025-0A	Cover set complete

TIH 025-1	Print plate 230V complete
TIH 025-1/110V	Print plate 115V complete
TIH 025-2	Timer complete
TIH 025-3	Pilot lamp 230V
TIH 025-3/110V	Pilot lamp 115V
TIH 030-0	Empty body complete
TIH 030-0A	Cover set complete
TIH 030-0B	Keyboard foil
TIH 030-1	Power print 230V complete
TIH 030-1/110V	Power print 115V complete
TIH 030-2	Logic print plate
TIH P1	Temperature probe complete
TIH P1A	Probe plug set
TIH 025/030-1A	Triac 230V
TIH 025/030-1B	Triac 115/100V
TIH 025/030-2	Main switch
TIH 025/030-3	Yoke 14 x 14 x 240 mm (0.6 x 0.6 x 9.4 in)
TIH 025/030-4	Yoke 30 x 30 x 240 mm (1.2 x 1.2 x 9.4 in)
TIH 025/030-5	Yoke 55 x 55 x 240 mm (2.2 x 2.2 x 9.4 in)
TIH 025/030-6	Support yoke set 55 x 55 x 100 mm (2.2 x 2.2 x 3.9 in)
TIH 025/030-7	Overheating protection complete
TIH 025/030-8	Yoke tray
TIH 025/030-9	Rubber mat
TIH 025/030-10	Optional yoke 20 x 20 x 240 mm (0.8 x 0.8 x 9.4 in)
TIH 025/030-11	Optional yoke 45 x 45 x 240 mm (1.8 x 1.8 x 9.4 in)
TIH 025/030-12	Optional yoke 10 x 10 x 240 mm (0.4 x 0.4 x 9.4 in)