



Heating a 210 kg bearing now takes as long as a coffee break ...


SKF TIH Induction Heaters

Heating bearings can be a time and energy-consuming job, not anymore ...

Imagine placing a 210 kg bearing on an induction heater, going for a cup of coffee and when you come back the bearing is heated up and ready to be mounted. SKF makes that possible with its new generation of induction heaters. The new generation of SKF TIH induction heaters includes three different heaters, which all have been designed with efficiency and cost saving in mind. To achieve maximum heating efficiency, the induction coil of the SKF heaters is positioned outside the heater's housing allowing the bearing to be placed around it. This significant innovation results in reducing heating time and power consumption by up to 80%, ultimately saving up to 70% on heating costs. For example, the SKF TIH 210m heats a 210 kg (460 lb) bearing from 20 to 110 °C (68 to 230 °F) in just 20 minutes.

SKF 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.

- 
- 4-step power reduction, ranging from 20 to 80%, in combination with smaller yokes allows heating smaller bearings at lower power consumption
 - Thermal overheating protection of the induction coil and electronics
 - Time and temperature modes for heating components other than bearings
 - Automatic demagnetisation
 - Compact design
 - Light weight
 - Supplied standard with extra yokes

Once again SKF sets the standard for induction heating

Regardless of the size of your bearing, SKF offers you the right heater



TIH 210m

Heating a 210 kg bearing takes just 20 minutes

The SKF TIH 210m is an extremely efficient large induction heater, which is suitable for heating bearings weighing up to 300 kg (660 lb).

- One power supply execution ranging from 400V/50Hz to 460V/60Hz, the SKF TIH 210m detects the power supply and automatically adjusts its voltage accordingly
- Sliding arm facilitates easy placement and removal of the bearing
- Supplied standard with two yokes
- Compact, lightweight design, 75 kg (165 lb) including two yokes
- A fan version, TIH 210F, allowing continuous use is available



TIH 070m

TIH 090m

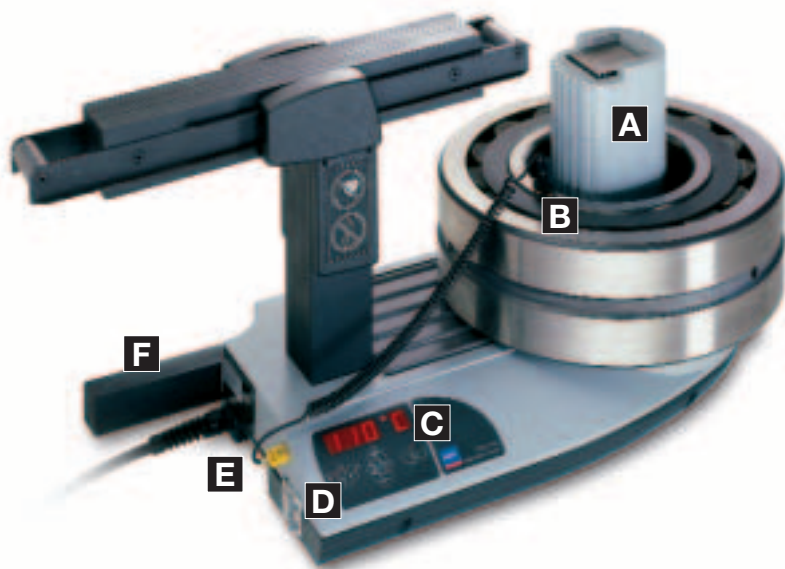
Heating small to medium size bearings three times faster and twice as cheap

For heating small to medium size bearings, SKF offers the TIH 070m. This small to medium size heater has a high heating capacity of up to 80 kg (176 lb).

- Available in two power executions; 230V/50Hz and 110V/60Hz
- Supplied standard with three yokes
- Compact, lightweight design, 35 kg (77 lb) including three yokes
- Swivel arm is optional
- A fan version, TIH 090m, allowing continuous use is available:
 - One Power supply ranging from 400V/50Hz to 460V/60Hz, the SKF TIH 090m detects the power supply and automatically adjusts its voltage accordingly
 - Swivel arm facilitates easy placement and removal of the bearing
 - Heating capacity up to 120 kg (260 lb)

Optional swivel arm





Features

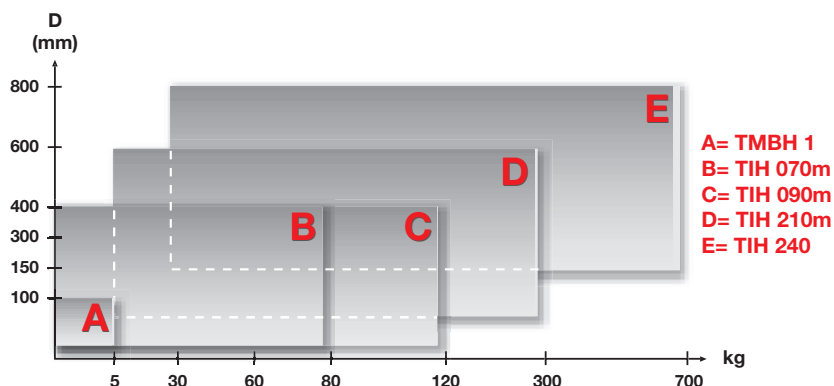
- A Induction coil outside the heater's housing**
Reduces heating time and energy consumption by 80%.
Reduces heating cost by 70%
- B Magnetic temperature probe**
Monitors bearing temperature during heating
- C Operating panel**
Keyboard with LED. Temperature mode pre-set at 110 °C (230 °F), helps preventing bearing overheating
- D 4-step power reduction**
Heats smaller bearings just as quickly but at lower power consumption
- E Integrated carrying handles**
Provide excellent grip when moving the TIH heaters around
- F Internal yoke storage**
Storage for the extra yokes reduces the risk of yoke damage or loss

The 43,5 kg bearing featured in these photographs was heated to 110 °C (230 °F) using the SKF TIH 210m in just 130 seconds!

Selection guide

Diameter / weight capacity SKF induction heaters

There are no totally restrictive guidelines to follow when choosing your SKF bearing heater. It will depend upon the type and geometrical dimensions of the components you want to heat. SKF offers the following helpful general selection guide.



Ordering details

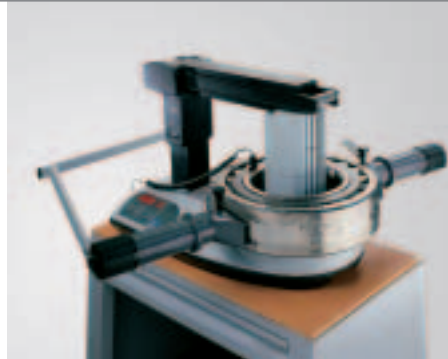
Designation	Description
729659C	Electric hot plate
TMBH 1	Portable induction heater
TIH 070M/230V	Small to medium size induction heater, 230V/50Hz power execution
TIH 070M/110V	Small to medium size induction heater, 110V/60Hz power execution
TIH 090M	Continuous use small to medium size induction heater equipped with a cooling fan
TIH 070/090-Y6	Optional yoke, 40 x 40 x 275 mm (1.6 x 1.6 x 10.8 in) for heating bearings with bore diameter of 60 mm (2.4 in) and larger
TIH 070/090-Y3	Optional yoke, 20 x 20 x 275 mm (0.8 x 0.8 x 10.8 in) for heating bearings with bore diameter of 30 mm (1.2 in) and larger
TIH 070/090-SA	Optional swivel arm
TIH 210M	Large induction heater
TIH 210F	Continuous use execution of the TIH 210m with a cooling fan
TIH 210-Y80	Optional yoke, 55 x 55 x 420 mm (2.2 x 2.2 x 16.5 in) for heating bearings with bore diameter of 80 mm (3.2 in) and larger
TIH 240	Large induction heater, 400V/50Hz power execution
TIH 240/460V	Large induction heater, 460V/60Hz power execution
TIH T1	Mobile trolley
TMMH 300/500	Bearing Handling Tool, for bearings with outer diameter 300 to 500 mm (12 to 20 in)
TMMH 500/700	Bearing Handling Tool, for bearings with outer diameter 500 to 700 mm (20 to 28 in)
TMBA G11	Heat resistant gloves
TMBA G11H	Heat and oil resistant gloves



Technical data			
Designation	TIH 070M	TIH 090M	TIH 210M
Description	Small to medium size induction heater	Continuous use small to medium size induction heater	Large size induction heater
SKF m₂₀ performance	60,5 kg (144 lb)	90,5 kg (200 lb)	210 kg (460 lb)
Voltage, V/Hz	230V/50/60Hz or 110V/50/60Hz	Self-adjusting; 400/50 - 460/60	Self-adjusting; 400/50 - 460/60
Work piece - Maximum weight - Maximum bore diameter	80 kg (176 lb) 20 - 400 mm (0.8 - 15.7 in)	120 kg (260 lb) 20 - 400 mm (0.8 - 15.7 in)	300 kg (660 lb) 60 - 600 mm (2.4 - 24 in)
Temperature control - Range - Magnetic probe - Accuracy (electronics)	0 - 250 °C (32 - 482 °F) Yes, K-type ± 3 °C (± 5 °F)	0 - 250 °C (32 - 482 °F) Yes, K-type ± 3 °C (± 5 °F)	0 - 250 °C (32 - 482 °F) Yes, K-type ± 3 °C (± 5 °F)
Time control - Range - Accuracy	0 - 60 minutes ± 0,01 sec.	0 - 60 minutes ± 0,01 sec.	0 - 60 minutes ± 0,01 sec.
Maximum temperature (approx.)	400 °C (750 °F)	400 °C (750 °F)	400 °C (750 °F)
Thermometer mode	Yes	Yes	Yes
Bearing temperature preset	Yes	Yes	Yes
Power reduction	4-step; 20-40-60-80%	4-step; 20-40-60-80%	4-step; 20-40-60-80%
Demagnetisation according to SKF norms (automatic)	Yes (<2 A/cm)	Yes (<2 A/cm)	Yes (<2 A/cm)
Can heat sealed bearings	Yes	Yes	Yes
Can heat pre-greased bearings	Yes	Yes	Yes
Error guiding codes	Yes	Yes	Yes
Thermal overload protection	Yes	Yes	Yes
Maximum magnetic flux	1,5 T	1,5 T	1,5 T
Control panel	Key board with LED	Key board with LED	Key board with LED
Operating area (w x h)	145 x 205 mm (5.7 x 8.0 in)	145 x 205 mm (5.7 x 8.0 in)	250 x 250 mm (9.8 x 9.8 in)
Coil diameter	115 mm (4.5 in)	115 mm (4.5 in)	135 mm (5.3 in)
Dimensions (w x d x h)	420 x 280 x 345 mm (16.5 x 11.0 x 13.6 in)	420 x 280 x 420 mm (16.5 x 11.0 x 16.5 in)	600 x 350 x 420 mm (24 x 13.7 x 16.5 in)
Total weight, including yokes	35 kg (77 lb)	38 kg (84 lb)	75 kg (165 lb)
Maximum power	3,6 / 2,0 kVA	6,4 kVA	10,0 kVA
Number of standard yokes	3	3	2
Standard yokes	55 x 55 x 275 mm (2.2 x 2.2 x 10.8 in), for heating bearings with bore diameter of 80 mm (3.1 in) and larger. 28 x 28 x 275 mm (1.1 x 1.1 x 10.8 in), for heating bearings with bore diameter of 40 mm (1.6 in) and larger. 14 x 14 x 275 mm (0.5 x 0.5 x 10.8 in), for heating bearings with bore diameter of 20 mm (0.8 in) and larger.	55 x 55 x 275 mm (2.2 x 2.2 x 10.8 in), for heating bearings with bore diameter of 80 mm (3.1 in) and larger. 28 x 28 x 275 mm (1.1 x 1.1 x 10.8 in), for heating bearings with bore diameter of 40 mm (1.6 in) and larger. 14 x 14 x 275 mm (0.5 x 0.5 x 10.8 in), for heating bearings with bore diameter of 20 mm (0.8 in) and larger.	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	55 x 55 mm (2.2 x 2.2 in)	55 x 55 mm (2.2 x 2.2 in)	70 x 70 mm (2.8 x 2.8 in)
Yoke storage	Yes, internal	Yes, internal	Yes, internal
Sliding arm	-	-	Yes
Swivel arm	Optional	Yes	-
Cooling fan	No	Standard	Optional
Housing material	Aluminium	Aluminium	Aluminium
Warranty period	3 years	3 years	3 years

Safe grip on handling medium and large size bearings

Handling medium and large size bearings can be a complicated, time consuming and hazardous job. To help ensure safe, easy and damage-free handling of bearings, SKF has developed its Bearing Handling Tool. The SKF Bearing Handling Tool facilitates the handling of both cold and heated bearings. Since it can withstand temperatures up to 160 °C (320 °F), the Bearing Handling Tool can remain around the bearing while it is being heated using an induction heater.



Electric hot plate 729659 C

Thermostat controlled small bearings heating

The SKF electric hot plate, 729659 C, is especially designed for heating small bearings. The temperature of the plate can be adjusted at the turn of a knob to provide a temperature range of between 50 and 200 °C (120 and 390 °F).



SCORPIO induction heater TMBH 1

Portable induction heater for bearings up to 5 kg

The SKF TMBH 1 is a portable lightweight induction heater for heating bearings with an inner diameter ranging from 20 to 100 mm (0.8 to 4 in) with a maximum corresponding weight of 4 to 5 kg (9 to 11 lb). The heater utilises a patented method of heating based on high frequency induction and provides optimised efficiency. The TMBH 1 is equipped with temperature and time control.



Large induction heater TIH 240

Fast and safe heating of large size bearings

The SKF TIH 240 induction heater is designed for the heating of large size bearings up to 700 kg (1,500 lb) and any other large components up to 300 kg (660 lb). This heater can heat a 445 kg (980 lb) bearing in just 10 minutes. It is designed for easy transport using a forklift.



SKF Gloves TMBA series

Safe handling of heated and oily bearings

SKF also offers heat and heat & oil resistant gloves for the safe handling of heated and oily bearings. These gloves are made of special fabrics, making them cut resistant and lint free. They have been tested and certified for mechanical and thermal hazards.



Technical data 729659 C

Designation	729659 C 729659 C/110V	
Voltage	729659 C	230V (50/60Hz)
	729659 C/110V	115V (50/60Hz)
Power	1.000 W	
Temperature range	50 - 200 °C (120 - 390 °F)	
Plate dimensions (l x w)	380 x 178 mm (15 x 7 in)	
Height of cover	50 mm (2 in)	
Overall dimensions (l x w x d)	400 x 240 x 130 mm (16 x 10 x 5 in)	
Weight	4,7 kg (10 lb)	
Length of connection cable	2 m (6.6 ft) (earth connection required)	



729659 C

Technical data TMBH 1

Designation	TMBH 1
Power:	
Voltage	100 - 240 V, 50 - 60 Hz
Power (maximum)	350 Watt
Cosine φ	> 0,95
Component size range:	
- inner diameter	20 - 100 mm (0.8 - 4 in)
- width	< 50 mm (2 in)
- weight	up to approximately 5 kg (11 lb)
Control functions:	
Time control	0 - 60 minutes
Temperature control	0 - 200 °C (32 - 392 °F)
Accuracy temperature control	± 3 °C (6 °F)
Maximum temperature	200 °C (392 °F)
Dimensions:	
Control box	150 x 330 x 105 mm (6 x 13 x 4 in)
Heating clamp	114 x 114 mm (4.5 x 4.5 in)
Operating space heating clamp	52 x 52 mm (2.0 x 2.0 in)
Complete unit in carrying case	370 x 240 x 130 mm (15 x 9 x 5 in)
Length clamp cable	75 cm (30 in)
Length power cable	2 m (80 in)
Length temperature probe cable	100 cm (40 in)
Weight complete unit	4,5 kg (10 lb)



TMBH 1



TIH 240

Technical data TIH 240

Heater model options <i>Other power supplies available on request</i>	Designation TIH 240 TIH 240/460V	Voltage 400V/50 Hz 460V/60 Hz	Heater model options <i>Other power supplies available on request</i>	Designation TIH 240 TIH 240/460V	Voltage 400V/50 Hz 460V/60 Hz
Power consumption (maximum)	24 kVA		Can heat sealed bearings	•	
Recommended maximum weight	Bearing 700 kg (1,500 lb)		Can heat pre-greased bearings	•	
Other components	300 kg (660 lb)		Error guiding codes	•	
Temperature control			Thermal overload protection	•	
- range	0 - 250 °C (32 - 482 °F)		Power overload protection	•	
- magnetic probe	•		Maximum magnetic flux	1,5 T	
- accuracy (electronics)	± 3 °C (5 °F)		Operating area (w x h)	330 x 355 mm (12.9 x 13.9 in)	
Time control			Dimensions (w x d x h)	750 x 400 x 935 mm (29.4 x 15.7 x 36.8 in)	
- range (min)	0-60		Weight - with yoke	300 kg (660 lb)	
- accuracy	0,01 s		Standard yoke	100 x 100 x 570 mm (4 x 4 x 22.4 in)	
Maximum temperature (approx)	400 °C (750 °F)		Warranty period	3 years	
Thermometer mode	•				
Bearing mode	•				
Power reduction	50%				
Demagnetisation acc. to SKF norms (automatic)	Below 2 A/cm				

In line with our policy of continuous development of our products we reserve the right to alter any part of the above specification without prior notice.

Although care has been taken to ensure the accuracy of this publication, SKF does not assume any liability for errors or omissions.

SKF Maintenance Products

© Copyright SKF 2003/06 www.mapro.skf.com

