

Heating tools

Mounting

Remote control makes the heater easy and safe to use

Magnetic temperature probe, on the inner ring, helps prevent bearing overheating



Foldable bearing support arms allow larger diameter bearings to be heated

It's a fact.

Incorrect mounting methods account for up to 16% of premature bearing failures

To reduce the risk of incorrect mounting, SKF helped pioneer the use of portable induction heaters for bearing mounting applications in the 1970's. Since that time, there have been many advances in technology and SKF has been at the forefront in developing safer, more efficient and user-friendly bearing induction heaters.

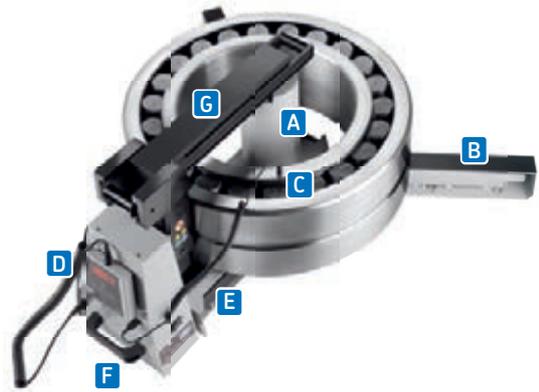
SKF induction heaters are probably the best performing heaters available. Their unique design typically consumes just 50% of the electrical power needed by most competitors' bearing induction heaters to heat a bearing.

As a result, by using an SKF induction heater, the total cost of ownership is often significantly lower. Ergonomics and safety are also an important consideration for operators. SKF induction heaters are equipped with design features that make them easy to use and safe. Bearing support arms reduce the risk of the bearing toppling during heating, and ergonomically designed yokes help reduce operator fatigue. In addition, the unique remote control enables the operator to control the heater at a safe distance from the hot bearing, enhancing operator safety.

Features and benefits

The comprehensive SKF induction header range can be used for efficiently heating bearings and workpieces, both large and small. Their innovative design offers significant advantages to both owners and operators:

- Advanced power electronics, with accurate electric current control, helps control the temperature rate increase
- Two step power setting option (50% / 100%), enables small bearings to be heated safely and at a lower power consumption
- For heating components other than bearings, all heaters are equipped with a heating time mode
- Thermal overheating protection reduces the risk of damage to the induction coil and the electronics, enhancing reliability and safety
- Automatic demagnetisation reduces the risk of ferrous debris contamination after heating
- Available in different voltage variants, to suit most operating voltages worldwide
- Supplied with heat-resistant gloves for improved operator safety
- Comprehensive 3 year warranty



- A** Induction coil located outside the heater's housing enables a shorter heating time and lower energy consumption
- B** Foldable bearing support arms allow larger diameter bearings to be heated, and reduce the risk of the bearing toppling during heating
- C** Magnetic temperature probe, combined with a temperature mode pre-set at 110 °C (230 °F), helps prevent bearing overheating
- D** Unique SKF remote control, with operating display and control panel, makes the heater easy and safe to use
- E** Internal yoke storage, for smaller yoke(s), reduces the risk of yoke damage or loss
- F** Integrated carrying handles allow for easy movement of the heater in the workshop
- G** Sliding or swivel arm allows for easy and quick bearing replacement, reducing operator fatigue (not for TIH 030m)

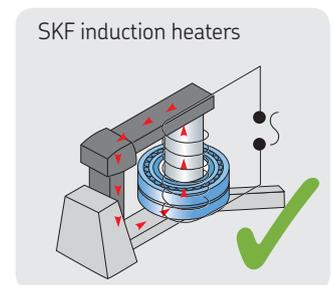
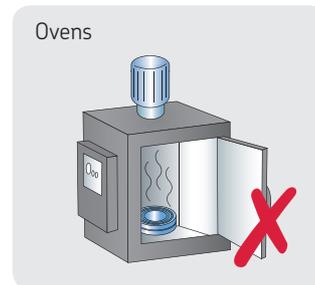
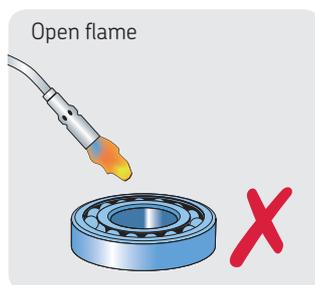
Induction heating has many advantages over other bearing heating methods

The use of an open flame to heat a bearing is not only inefficient and uncontrolled, but often leads to bearing damage. This method should not be used.

Oil baths are sometimes used to heat bearings. Oil baths often take a long time to reach the required temperature and can be difficult to control the actual bearing temperature. The energy consumption of an oil bath is also significantly greater than using an induction heater. The risk of contaminating the bearing due to dirty oil is significant and can lead to premature bearing failure. Handling hot, oily and slippery bearings present significant hazards to the operator and great care must be taken to avoid potential injuries.

Ovens and hot plates are often used for batch heating of small bearings and this is an acceptable technique. However, for larger bearings, the use of ovens and hotplates is generally quite inefficient and time consuming and can present the operator with significant handling hazards.

Induction heaters are the modern, efficient and safe way to heat bearings. In operation, they are generally faster, cleaner, more controllable, and easier to use than other heating methods.



Induction heaters



TMBH 1

Portable induction heater weighing only 4,5 kg

- Portable, lightweight, high efficiency heater for bearings with an inner diameter ranging from 20 to 100 mm (0.8 to 4 in.), and a maximum weight of 5 kg (11 lb)
- Equipped with temperature and time control and automatic demagnetisation
- Supplied in a carrying case
- Wide operating voltage: 100–240 V/50–60 Hz



TIH 030m

Small induction heater with a 40 kg bearing heating capacity

- Compact lightweight design; just 21 kg (46 lb), facilitating portability
- Capable of heating a 28 kg (62 lb) bearing in just 20 minutes
- Supplied standard with three yokes, allowing bearings with a bore diameter from 20 mm (0.8 in.) up to a maximum weight of 40 kg (90 lb) to be heated
- Available in two versions: 230 V/50–60 Hz and 100–110 V/50–60 Hz

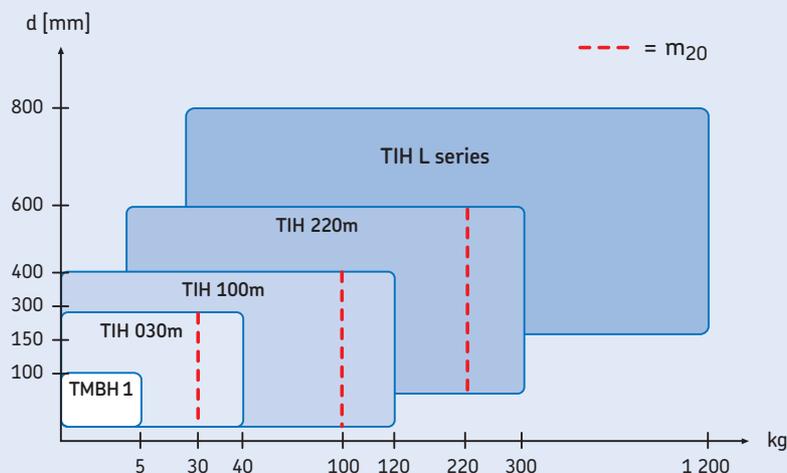


TIH 100m

Medium induction heater with a 120 kg bearing heating capacity

- Capable of heating a 97 kg (213 lb) bearing in less than 20 minutes
- Supplied standard with three yokes, allowing bearings with a bore diameter from 20 mm (0.8 in.) up to a maximum weight of 120 kg (264 lb) to be heated
- Swivel arm for large size yoke
- Available in two versions: 230 V/50–60 Hz and 400–460 V/50–60 Hz

SKF induction heater range



The comprehensive range of SKF induction heaters is suitable for most bearing heating applications. The chart gives general information on choosing an induction heater for bearing heating applications.*

The SKF m_{20} concept represents the weight (kg) of the heaviest SKF spherical roller bearing of series 231 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 consumption. Unlike other bearing heaters, there is a clear indication on how long it takes to heat a bearing, rather than just the maximum bearing weight possible.

* For heating components other than bearings, we strongly recommend that you contact SKF to help you select a suitable induction heater for your application.



TIH 220m

Large induction heater with a 300 kg bearing heating capacity

- Capable of heating a 220 kg (480 lb) bearing in just 20 minutes
- Supplied standard with two yokes, allowing bearings with a bore diameter from 60 mm (2.3 in.) up to a maximum weight of 300 kg (660 lb) to be heated
- Sliding arm for large size yoke
- Available in two versions: 230 V/50–60 Hz and 400–460 V/50–60 Hz



TIH L series

Extra large induction heater with a 1 200 kg bearing heating capacity

- Using just 20 kVA of electrical power, the TIH L series can heat large bearings up to 1 200 kg (2 600 lb)
- Bearings and work pieces can be heated vertically or horizontally
- Compact design allows the TIH L series heaters to be easily transported by forklift
- Available in two versions: 230 V/50–60 Hz and 400–460 V/50–60 Hz
- Available with two different operating areas



Foldable bearing support arms



Technical data



Designation	TMBH 1	TIH 030m	TIH 100m	TIH 220m	TIH L44 TIH L77
Max. workpiece weight	5 kg (11 lb)	40 kg (88 lb)	120 kg (264 lb)	300 kg (662 lb)	1 200 kg (2 600 lb)
Bore diameter range	20–100 mm (0.8–4 in.)	20–300 mm (0.8–11.8 in.)	20–400 mm (0.8–15.7 in.)	60–600 mm (2.3–23.6 in.)	100–800 mm (3.9–31.5 in.)
Operating area (w × h)	52 × 52 mm (2 × 2 in.)	100 × 135 mm (3.9 × 5.3 in.)	155 × 205 mm (6.1 × 8 in.)	250 × 255 mm (9.8 × 10 in.)	TIH L44: 425 × 492 mm (16.7 × 19.4 in.) TIH L77: 725 × 792 mm (28.4 × 31.2 in.)
Coil diameter	N/A	95 mm (3.7 in.)	110 mm (4.3 in.)	140 mm (5.5 in.)	175 mm (6.8 in.)
Standard yokes (included) to suit bearing/workpiece minimum bore diameter	20 mm (0.8 in.)	65 mm (2.6 in.) 40 mm (1.6 in.) 20 mm (0.8 in.)	80 mm (3.1 in.) 40 mm (1.6 in.) 20 mm (0.8 in.)	100 mm (3.9 in.) 60 mm (2.3 in.)	150 mm (5.9 in.)
SKF m ₂₀ * performance	N/A	28 kg (61.7 lb)	97 kg (213 lb)	220 kg (480 lb)	N/A
Max. power consumption	350 Watt	2,0 kVA	3,6 kVA (230 V) 4,0–4,6 kVA (400–460 V)	10,0–11,5 kVA (400–460 V)	20–24 kVA (200–240 V)
Voltage**					
100–240 V/50–60 Hz	TMBH 1	–	–	–	–
100–120 V/50–60 Hz	–	TIH 030m/110 V	–	–	–
200–240 V/50–60 Hz	–	TIH 030m/230 V	TIH 100m/230 V	TIH 220m/LV	TIH L./LV
400–460 V/50–60 Hz	–	–	TIH 100m/MV	TIH 220m/MV	TIH L./MV
Temperature control	0 to 200 °C (32 to 392 °F)	20 to 250 °C (68 to 482 °F)	20 to 250 °C (68 to 482 °F)	20 to 250 °C (68 to 482 °F)	20 to 250 °C (68 to 482 °F)
Time control (minutes)	0–60	0–60	0–60	0–60	0–120
Demagnetisation according to SKF norms	N/A	<2 A/cm	<2 A/cm	<2 A/cm	<2A/cm
Max. temperature	200 °C (392 °F)	400 °C (750 °F)	400 °C (750 °F)	400 °C (750 °F)	400 °C (750 °F)
Dimensions (w × d × h)	330 × 150 × 150 mm (13 × 5.9 × 5.9 in.) Clamp: 115 × 115 × 31 mm (4.5 × 4.5 × 1.2 in.)	460 × 200 × 260 mm (18.1 × 7.9 × 10.2 in.)	570 × 230 × 350 mm (22.4 × 9 × 13.7 in.)	750 × 290 × 440 mm (29.5 × 11.4 × 17.3 in.)	TIH L44: 1 200 × 600 × 850 mm (47.3 × 23.6 × 33.5 in.) TIH L77: 1 320 × 600 × 1 150 mm (52 × 23.6 × 45.3 in.)
Total weight (incl. yokes)	4,5 kg (10 lb)	20,9 kg (46 lb)	42 kg (92 lb)	86 kg (189 lb)	TIH L44: 324 kg (714 lb) TIH L77: 415 kg (915 lb)

* SKF m₂₀ performance represents the weight (kg) of the heaviest SKF spherical roller bearing of series 231, which can be heated from 20 to 110 °C (68 to 230 °F) in 20 minutes.

** Some special voltage versions are available for specific countries. For additional information, contact your SKF authorized distributor.



A unique and flexible heating solution for very large bearings and workpieces

Multi-core induction heaters, TIH MC series

The SKF multi-core induction heaters are energy efficient, custom-made heating solutions. Compared to other heating methods, they often can significantly save heating time.

The TIH MC series are similar to the standard TIH range, with a few key differences and additional features:

- Flexible design, consisting of a number of induction heating cores and coils controlled by a single control and power cabinet
- Suitable for heating large thin section workpieces, such as slewing rings and railway wheel tyres
- Heating capacities of several tonnes are possible, depending on application
- Enables a more even temperature gradient across the whole circumference. This is especially important for components sensitive to uneven induction heating
- Unique design allows for custom-made solutions to be quickly and economically produced
- SKF can configure the type of TIH MC series heater required, depending on the application. For additional information, contact your SKF authorized distributor



Thermostat controlled bearing heating

SKF Electric Hot Plate 729659 C

The SKF 729659 C is a heating device especially designed for pre-heating batches of small bearings prior to mounting.

The temperature of the plate can be adjusted to provide temperatures between 50 and 200 °C (120 and 390 °F). The flat heating surface ensures even bearing heating and the cover helps retain heat and keep contaminants out.

Technical data

Designation **729659 C**
729659 C/110V

Voltage 729659 C 230 V (50/60 Hz)
729659 C/110 V 115 V (50/60 Hz)

Power 1 000 W

Temperature range 50–200 °C (120–390 °F)

Plate dimensions (l × w) 380 × 178 mm (15 × 7 in.)

Height of cover 50 mm (2 in.)

Overall dimensions (l × w × h) 390 × 240 × 140 mm
(15.4 × 9.5 × 5.5 in.)

Weight 4,7 kg (10 lb)

Dismounting

SKF's range of heating equipment enables quick and safe dismounting of cylindrical roller bearing inner rings and covers a wide range of applications. Aluminium heating rings TMBR series are designed for dismounting inner rings of small and medium-size cylindrical roller bearings. Adjustable and fixed induction heaters EAZ series are suitable for frequent dismounting of various sizes of cylindrical roller bearing inner rings.



For regular dismounting of cylindrical roller bearings

SKF Aluminium Heating Rings TMBR series

The aluminium heating rings are designed for dismounting inner rings of cylindrical roller bearings.

They are available for all bearing sizes of the NU, NJ and NUP series. These series are bearings without flanges or with only one flange on the inner ring. The rings are available as standard for the following bearing sizes: 204 to 252, 304 to 340, 406 to 430.

- Simple and easy-to-use
- Avoids shaft and bearing inner ring damage

Technical data

Designation	TMBR Bearing designation; (e.g. TMBR NU216E)
Material	Aluminium
Maximum temperature	300 °C (572 °F)

Cylindrical roller bearings are essential machine components for applications in steel, railway and other industries. In many cases cylindrical roller bearings experience harsh operating conditions and need to be replaced frequently. Fixed size EAZ heaters and corresponding control cabinets are one SKF dismounting solution that supports fast, easy and safe dismounting of cylindrical roller bearing inner rings and similar components.



Fixed size EAZ heaters are customised SKF Induction Heaters for dismounting cylindrical roller bearing inner rings. Please contact SKF to assist you in finding an EAZ heater that suits your application. EAZ heaters are supplied without a control cabinet. SKF control cabinets are required to operate the fixed size EAZ heater and can be ordered separately.



Safe and easy bearing removal in just 3 minutes

SKF Fixed Induction Heater EAZ series

The fixed size EAZ induction heaters are designed to safely and easily dismount cylindrical roller bearing inner rings, which are often mounted with a very tight interference fit.

Heating the inner ring rapidly loosens the fit, as the shaft remains cool, enabling the ring to be removed without causing damage to the shaft or inner ring. With easy-to-use fixed size EAZ induction heaters, three minutes are usually enough time to professionally dismount cylindrical roller bearing inner rings or similar components.

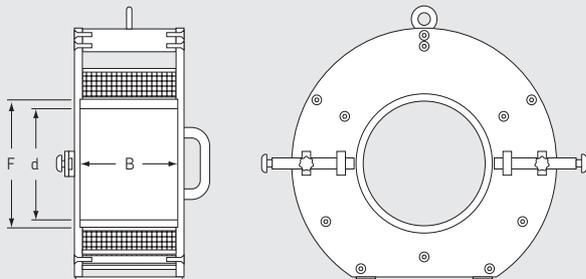


Control cabinet

- Control cabinets from SKF provide the necessary power to run fixed size EAZ heaters and are available with various voltages to operate EAZ heaters in almost any country. Special versions of the control cabinets are available that enable up to three EAZ heaters to be used simultaneously.
- In light section mills, rod wire mills or railway applications, EAZ heaters can often dismount cylindrical roller bearing inner rings with one or more rows of rollers or multiple inner rings at the same time.
- EAZ induction heaters can also be used to dismount non-bearing elements like sleeves or rings.

Examples of EAZ heater designations

Designation	Inner ring dimension (mm)			interference fit
	F	B	d	
EAZ F179	179	168	145	p6
EAZ F180	180	130	160	p6
EAZ F202	202	168	180	p6
EAZ F222-1	222	170	200	p6
EAZ F222	222	200	200	p6
EAZ F226	226	192	200	p6
EAZ F260	260	206	230	r6
EAZ F312	312	220	280	r6
EAZ F332	332	300	300	r6
EAZ F364	364	240	320	p6



Please, add corresponding F dimension as a suffix to the designation when ordering (e.g. EAZ F312MV).

Voltage classification

LV	Low voltage	190 to 230 V
MV	Medium voltage	400 to 480 V
HV	High voltage	500 to 575 V
HVC	High voltage, CSA ready	575 V

Add corresponding class as a suffix to the designation when ordering (e.g. EAZ F312MV).

Control cabinet versions

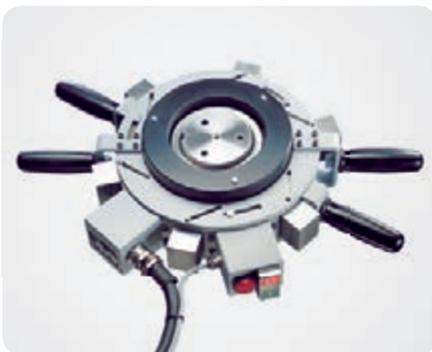
SS	1x fixed EAZ	max. 250 A
SSD	2x fixed EAZ	max. 350 A
SST	3x fixed EAZ	

Add corresponding cabinet version to the designation when ordering (e.g. SSD C350B).

Control cabinet base voltage and frequency code

A	230 V	50 Hz
B	400 V	50 Hz
C	460 V	60 Hz
E	575 V	60 Hz

Add corresponding control cabinet voltage and frequency code as a suffix to the designation when ordering (e.g. SSD C350B).



For frequent dismounting of cylindrical roller bearings

SKF Adjustable Induction Heaters EAZ series

The SKF EAZ 80/130 and EAZ 130/170 are used for frequent dismounting of cylindrical bearing inner rings. Where inner rings are removed infrequently, aluminium heating rings, SKF TMBR series, are also available. For larger cylindrical inner rings normally found in steel mill applications, SKF can supply special EAZ induction heaters.

- Covers most cylindrical bearings 65 to 130 mm (2.5 to 5.1 in.) bore diameter
- Wide range of power supplies
- 1 year warranty
- Avoids shaft and bearing inner ring damage
- Fast and reliable bearing removal
- Up to n6 interference fit

Bearing selection chart (All E-types bearings included)

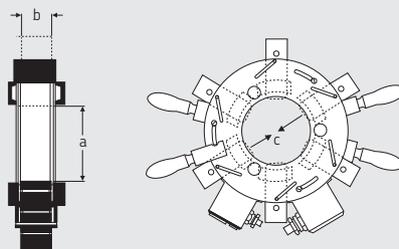
Designation	For bearings NJ-NUP					
EAZ 80/130	213–220	313–319	412–417	1014–1022	2213–2220	2313–2319
EAZ 130/170	222–228	321–324	419–422	1024–1030	2222–2228	2322–2324
Designation	For bearings NU					
EAZ 80/130	213–221	313–320	412–418	1014–1022	2213–2220	2313–2320
EAZ 130/170	222–228	321–326	419–424	1024–1030	2222–2228	2322–2326

Ordering designations

Designation	Power supply	Current	Designation	Power supply	Current
EAZ 80/130A	2 × 230 V/50 Hz	40 A	EAZ 130/170D	3 × 230 V/50 Hz	43 A
EAZ 80/130B	2 × 400 V/50 Hz	45 A	EAZ 130/170E	3 × 400 V/50 Hz	35 A
EAZ 80/130C	2 × 460 V/60 Hz	25 A	EAZ 130/170F	3 × 460 V/60 Hz	23 A
EAZ 80/130D	2 × 415 V/50 Hz	35 A	EAZ 130/170G	3 × 420 V/60 Hz	30 A
EAZ 130/170A	2 × 230 V/50 Hz	60 A	EAZ 130/170H	3 × 415 V/50 Hz	30 A
EAZ 130/170B	2 × 400 V/50 Hz	45 A			

Dimensions

Designation	EAZ 80/130	EAZ 130/170
Connection cable	5 m (16 ft)	5 m (16 ft)
Dimensions	a	134 mm (5.3 in.)
	b	50 mm (2.0 in.)
	c	80 ... 132 mm (3.1... 5.2 in.)
Weight	28 kg (62 lb)	35 kg (77 lb)



Accessories



Technical data

Designation	TMBA G11
Material	Hytex
Inner lining	Cotton
Size	9
Colour	White
Maximum temperature	150 °C (302 °F)
Pack size	1 pair

For safe handling of heated components up to 150 °C (302 °F)

SKF Heat Resistant Gloves TMBA G11

The SKF TMBA G11 are specially designed for the handling of heated bearings.

- Lint free
- Heat resistant up to 150 °C (302 °F)
- Cut resistant
- Tested and certified for mechanical risks (EN 388) and thermal risks (EN 407)



Technical data

Designation	TMBA G11ET
Material	Kevlar
Inner lining	Cotton
Size	10 (EN 420 size)
Colour	Yellow
Maximum temperature	500 °C (932 °F)
Pack size	1 pair

For safe handling of heated components up to 500 °C (932 °F)

SKF Extreme Temperature Gloves TMBA G11ET

The SKF TMBA G11ET are especially designed for the safe handling of heated bearings or other components for prolonged periods.

- Withstands extreme temperatures of up to 500 °C (932 °F) unless in the presence of hot liquid or steam
- Allows the safe handling of heated components
- High-degree of non-flammability reduces the risk of burning
- Extremely tough Kevlar gloves with high cut, abrasion, puncture and tear resistance for increased safety
- Lint free
- Tested and certified for mechanical risks (EN 388) and thermal risks (EN 407)



Technical data

Designation	TMBA G11H
Material	Polyaramid
Inner lining	Nitrile
Size	10
Colour	Blue
Maximum temperature	250 °C (482 °F)
Pack size	1 pair

For safe handling of oily and heated components up to 250 °C (482 °F)

SKF Heat and Oil Resistant Gloves TMBA G11H

The SKF TMBA G11H are specially designed for the handling of hot and oily bearings.

- Offers a high degree of heat, cut, oil and water resistance
- Melt and burn resistant
- Maximum temperature: 250 °C (482 °F)
- Cut resistant
- Lint free
- Suitable for submerging in liquids with a temperature up to 120 °C (248 °F) (e.g. hot oil bath)
- Remains heat resistant when wet
- Tested and certified for mechanical risks (EN 388) and thermal risks (EN 407)