

FAG



FAG heating devices PowerTherm for mounting of rolling bearings

Technical Product Information

SCHAEFFLER GROUP
INDUSTRIAL

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The designation system of the INA and FAG brands has been harmonised. This Technical Product Information contains the new ordering designations, which are currently only valid for Europe. Customers outside Europe are requested to continue using the old ordering designations (please see the comparison on page 28).

Mounting of rolling bearings in heated condition FAG heating devices PowerTherm · Accessories

Mounting of rolling bearings in heated condition

Where tight fits are to be achieved on cylindrical bearing seats, it is advisable to heat bearings for mounting. Sufficient expansion can be achieved at 80 to 100 °C. There is a wide range of FAG heating devices to cater for different bearing sizes.

When heating the bearings, the temperature must be precisely monitored. It must not under any circumstances rise above 120 °C, in order to prevent changes to the structure and hardness. Protective gloves should be worn when fitting the heated parts.

Suitable FAG accessories such as temperature measuring devices, gloves and transport and mounting tools can assist significantly with the reliable thermal mounting of rolling bearings.

FAG heating devices PowerTherm

Under the name **PowerTherm**, we offer a range of equipment which can heat rolling bearings and other rotationally symmetrical steel parts safely and cost-effectively.

FAG electric heating plates HEATER-PLATE are particularly suitable for smaller bearings and machine components.

The eight FAG induction heating devices **HEATER** for bearings up to a mass of 3000 kg have been improved further in terms of their performance and safety compared with their predecessors. In addition to the table-top devices HEATER10 to HEATER300 (accessories can also be added to the latter to convert it to a mobile design), FAG also offers standalone devices HEATER600 to HEATER3000 for larger bearings and workpieces.

Recommended FAG accessories

- Temperature measuring device **TEMP-CHECK-CONTACT**
- Gloves **GLOVE1** or **GLOVE2**
- Transport and mounting tool **BEARING-MATE...**

FAG accessories for thermal mounting of rolling bearings are described in detail from page 24 onwards.



Induction heating device HEATER10



Gloves GLOVE1



Transport and mounting tool
BEARING-MATE...

FAG electric heating plates

HEATER-PLATE

FAG electric heating plates

FAG heating plate HEATER-PLATE

The temperature-controlled FAG heating plate HEATER-PLATE can be used to heat rolling bearings (up to a maximum of 120 °C) or small machine components with a mass of up to 5 kg. The removable housing cover protects the workpieces from contaminants and ensures uniform and rapid heating. This inexpensive device is maintenance-free and easy to handle.

Dimensions (W×D×H):
390×270×156 mm
Plate size: 380×180 mm
Power: max. 1 500 W
at 230 V/50 Hz
Temperature control:
continuously variable from
+50 °C to +200 °C
Mass: 5,6 kg

Ordering designation:
HEATER-PLATE

Ordering designation for version
with 115 V/60 Hz:
HEATER-PLATE-115V



FAG heating plate HEATER-PLATE

Electric heating plate HEATER-PLATE-370C

The HEATER-PLATE-370C is used principally for heating the FAG aluminium heating rings HEATING-RING (see WL 80 250). It can also be used for the heating of rolling bearings (up to a maximum of 120 °C). The outside diameter of the workpieces can be up to a maximum of 370 mm, the mass can be up to 20 kg.

Dimensions (W×D×H):
360×360×170 mm
Plate size: 350×350 mm
Power: max. 2 200 W
at 230 V/50 Hz
Temperature control:
continuously variable from
+100 °C to +370 °C
Mass: 13 kg

Ordering designation:
HEATER-PLATE-370C

Ordering designation for version
with 115 V/60 Hz:
Upon request



FAG heating plate HEATER-PLATE-370C

FAG induction heating devices

Application · Designation system · Workpiece positioning · Advantages

FAG induction heating devices

Application

Many rolling bearings and other rotationally symmetrical parts made from steel have tight fits on the shaft. In particular, larger parts can be mounted more easily if they are heated first (rolling bearings must not be heated to more than 120 °C).

Induction heating is superior to the conventional methods (heating furnace, heating plate, oil bath).

Induction heating processes are quick and clean. They are therefore particularly suitable for batch mounting. The devices can be used for heating complete bearings, rings for cylindrical roller or needle roller bearings and rotationally symmetrical steel parts such as labyrinth rings, roll couplings, tyres etc.

We recommend that you coat the contact surfaces of the ledges with a thin layer of standard rolling bearing grease, e.g. Arcanol from FAG. This improves the transfer of heat and reduces the noise level.

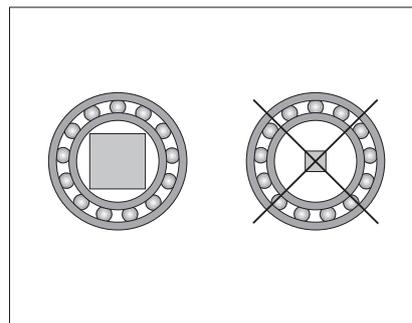
Designation system

In each case, the maximum mass of the workpiece can be identified from the new designation for the device, e.g. 35 kg in the case of HEATER35.

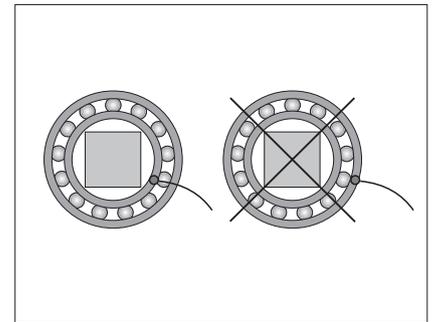
The ledges for the devices are characterised by the minimum bore diameter of the parts to be heated, e.g. ledge for a workpiece with a minimum bore of 20 mm: HEATER35.LEDGE-20, see selection examples.

Workpiece positioning

The inside diameter of the workpiece should be optimally filled. The larger the cross-section of the ledge used, the shorter the heating time.



In the case of rolling bearings, position the magnetic temperature sensor as centrally as possible on the end face of the inner ring. First remove any grease and oil residues.



Advantages

- Rapid, energy-efficient operation
- Suitable for rolling bearings and other ring-shaped steel parts
- Extremely safe operation
- Environmentally friendly, oil-free (no disposal required)
- Uniform, controlled heating
- Easy to use
- Automatic demagnetisation
- High cost-effectiveness through selection of the most suitable size of device for the particular application

Selection examples (the mass of the bearings to be heated should not exceed 30 kg)

Rolling bearing Designation FAG	Bearing mass kg	Bearing bore mm	Heating device Ordering designation FAG	Ledge Ordering designation FAG
22326-E1	28	130	HEATER35	HEATER35.LEDGE-70 ¹⁾
22310-E1	1,9	50		HEATER35.LEDGE-45
6404	0,4	20		HEATER35.LEDGE-20

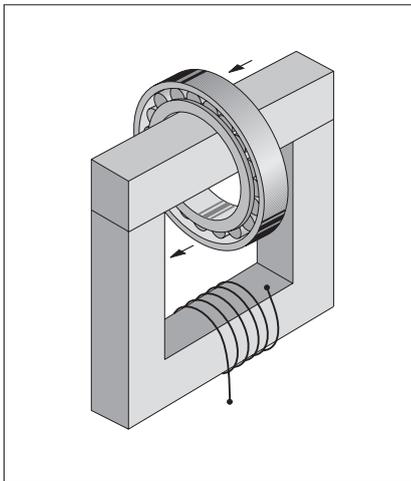
¹⁾ Included in delivery

FAG induction heating devices

Function · Operating modes · Safety

Function

The heating device basically consists of a current-carrying coil with an iron core (primary coil), which generates a high induction current at a low voltage in a short-circuited secondary (rolling bearings or other steel parts). The part to be mounted is heated quickly. Non-metallic components and the device itself remain cold.



Operating modes

In the **temperature control** mode the heating temperature is adjusted between 50 °C and 240 °C (max. of 120 °C for rolling bearings). The heating process starts when the Start key is activated. When the target temperature is reached, an acoustic signal is triggered and the display flashes. The device holds the workpiece at the preselected temperature. When the Stop key is pressed, the heating process terminates and the part is automatically demagnetised.

In the **time control** mode the heating time is set to any value up to 99 minutes 59 seconds. After the selected period the bearing is automatically demagnetised. An acoustic signal marks the end of the process. The time control mode is recommended for batches of the same bearings or for workpieces which have to be heated to a very high temperature (max. 400 °C).

It is possible to **reduce the output** of all FAG induction heating devices. This allows gentle heating of small and sensitive parts.

Safety

FAG heating devices bear the CE mark.

Operating errors or malfunctions are indicated by an acoustic or optical signal. This may happen if the temperature sensor is not correctly attached, if the sensor or the sensor wire is damaged, or if the part to be heated is too heavy for the device.

Every induction heating device generates a strong magnetic field. This magnetic field can have a negative effect on pacemakers and watches, disks, credit cards and other data carriers as well as electronic circuits in instruments. The safety distance is two metres.

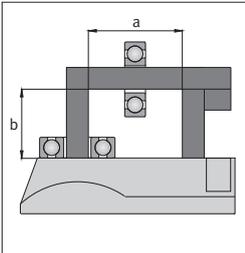
The devices should not be used in a damp environment or in areas at risk from explosions.

Every device is supplied with detailed operating instructions and safety gloves.

Induction heating devices

Range

Overview of induction heating devices

Heating device	HEATER10	HEATER20	HEATER35	HEATER150
				
Power consumption max. ¹⁾	2,3 kVA	3,6 kVA	3,6 kVA	12,8 kVA
Voltage/frequency ²⁾	230 V/50 Hz	230 V/50 Hz	230 V/50 Hz	400 V/50 Hz
Current	10 A	16 A	16 A	32 A
Mass	7 kg	17 kg	31 kg	51 kg
Length	230 mm	345 mm	420 mm	505 mm
Width	200 mm	200 mm	260 mm	260 mm
Height	240 mm	240 mm	365 mm	440 mm
Dimension a	65 mm	120 mm	180 mm	210 mm
Dimension b	95 mm	100 mm	160 mm	210 mm
Ledges (incl.) for workpieces with bore min.	20/45/65 mm (graduated supports)	20 mm 35 mm 60 mm	70 mm	100 mm
Ledges (accessories) for workpieces with bore min.	10 mm 15 mm	10 mm 15 mm	15 mm 20 mm 35 mm 45 mm 60 mm	20 mm 30 mm 45 mm 60 mm 70 mm 85 mm

Description of the induction heating devices

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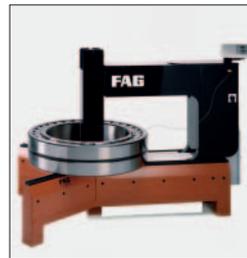
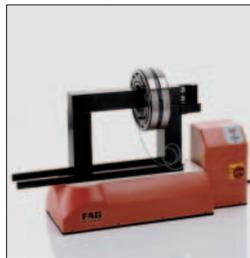
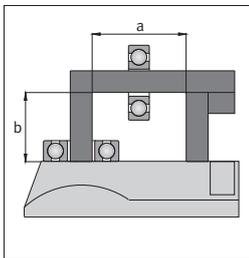
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¹⁾ If lower voltage is used, the power will be reduced.

²⁾ Upon request, FAG supplies heating devices with other rated voltages and frequencies and higher power levels.

Overview of induction heating devices

Heating device HEATER300 ²⁾ HEATER600 HEATER1200 HEATER3000



Power consumption max. ¹⁾

Voltage/frequency ²⁾

Current

12,8 kVA

400 V/50 Hz

32 A

25 kVA

400 V/50 Hz

63 A

40 kVA

400 V/50 Hz

100 A

100 kVA

400 V/50 Hz

250 A

Mass

Length

Width

Height

75 kg (+25 kg) ³⁾

870 mm

300 mm

580 mm

(900 mm) ³⁾

350 kg

1100 mm

850 mm

1250 mm

850 kg

1500 mm

1100 mm

1400 mm

1800 kg

2500 mm

1500 mm

1800 mm

Dimension a

Dimension b

330 mm

260 mm

430 mm

400 mm

700 mm

450 mm

700 mm

800 mm

**Ledges (incl.)
for workpieces
with bore min.**

115 mm

145 mm

215 mm

285 mm

**Ledges (accessories)
for workpieces
with bore min.**

30 mm

45 mm

60 mm

70 mm

85 mm

100 mm

45 mm

60 mm

70 mm

85 mm

100 mm

115 mm

130 mm

85 mm

115 mm

145 mm

145 mm

215 mm

Description of the induction heating devices

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³⁾ Convertible to a mobile version by adding HEATER300.TROLLEY

Induction heating devices

HEATER10

FAG heating device HEATER10

The FAG induction heating device HEATER10 for rolling bearings is suitable for bearings with bore diameters of 20 mm (with accessories 10 mm) and over and weighing up to 10 kg. This device can also be used to heat sealed and greased bearings and other rotationally symmetrical steel parts.

The heating device, complete with rocker ledge and magnetic temperature sensor, can be easily transported in a stable carry bag. It is particularly suitable for mobile mounting assignments.

With the rocker ledge raised, the bearing is positioned around the relevant section of the graduated support. The rocker ledge is then lowered.

The contact surfaces of the rocker ledge and the supports are ground so that loss of power remains low.

The heating device can be connected to any standard two-pin safety socket which is protected by a 10 A fuse.

The clearly structured control panel can also be operated while wearing work gloves.

The touch keyboard is oil-resistant, dustproof and waterproof. All functions can be controlled by means of three keys (two to set the temperature and one to start and stop the device).

The device offers a temperature control mode (see page 5).

Accessories

Support ledges are also available as accessories for parts with smaller bore diameters, see Technical Data.



Ordering designation:
HEATER10

Induction heating devices

HEATER10 · Technical Data

Application options

Temperature control	adjustable between 50 °C and 240 °C, with safety circuit for rolling bearings
Bearing bore d	min. 20 mm (with accessories min. 10 mm)
Bearing mass m	max. 10 kg

Electrical data

Operating voltage	230 V
Frequency	50 Hz
Power consumption	2,3 kVA
Rated current	10 A
Residual magnetism	< 2 A/cm
Duty cycle	100 %

Scope of delivery: Device, ready for use, with graduated support, rocker ledge and magnetic temperature sensor in a carry bag

Description	Ordering designation	Dimensions mm	for bore diameters from mm	Mass kg
Complete heating device	HEATER10	230×200×240	20	7

Spare parts

Description	Ordering designation	Dimensions mm	for bore diameters from mm	Mass kg
Rocker ledge	HEATER10.LEDGE-20	14×14×105	20	0,15
Magnetic temperature sensor	HEATER10.SENSOR			0,05
Electronic spare parts kit	HEATER10.ETRONIC			0,45

Accessories

Description	Ordering designation	Dimensions mm	for bore diameters from mm	Mass kg
Support ledge	HEATER10.LEDGE-10	7×7×105	10	0,04
Support ledge	HEATER10.LEDGE-15	10×10×105	15	0,08

Special designs

The device is also available for rated voltages of 110 V to 240 V, frequency 50/60 Hz.

Ordering example for 115 V/60 Hz: **HEATER10-115V-60HZ**

Induction heating devices

HEATER20

FAG heating device HEATER20

The FAG induction heating device HEATER20 for rolling bearings is suitable for bearings with bore diameters of 20 mm (with accessories 10 mm) and over and weighing up to 20 kg. This device can also be used to heat sealed and greased bearings and other rotationally symmetrical steel parts.

The heating device, complete with support ledges and magnetic temperature sensor, can be easily transported in a practical protective carry case. It is particularly suitable for mobile mounting assignments.

The two lateral supports carry the support ledge. The part to be heated can either be placed on the round surface over the induction coil or placed around one of the three support ledges.

The contact surfaces of the support ledges and the stands are ground so that loss of power remains low.

The heating device can be connected to any standard two-pin safety socket which is protected by a 16 A fuse.

The clearly structured control panel can also be operated while wearing work gloves. The touch keyboard is oil-resistant, dustproof and waterproof.

All functions can be controlled by means of three keys (two to set the temperature and one to start and stop the device).

The device offers a temperature control mode (see page 5).

Accessories

Appropriate support ledges are also available as accessories for parts with smaller bore diameters, see Technical Data.



Ordering designation:
HEATER20

Induction heating devices

HEATER20 · Technical Data

Application options

Temperature control	adjustable between 50 °C and 240 °C, with safety circuit for rolling bearings
Bearing bore d	min. 20 mm (with accessories min. 10 mm)
Bearing mass m	max. 20 kg

Electrical data

Operating voltage	230 V
Frequency	50 Hz
Power consumption	3,6 kVA
Rated current	16 A
Residual magnetism	< 2 A/cm
Duty cycle	100 %

Scope of delivery: Device, ready for use, with 3 support ledges and a magnetic temperature sensor in a protective carry case

Description	Ordering designation	Dimensions mm	for bore diameters from mm	Mass kg
Complete heating device	HEATER20	345×200×240	20	17

Spare parts

Description	Ordering designation	Dimensions mm	for bore diameters from mm	Mass kg
Support ledge	HEATER20.LEDGE-20	14×14×200	20	0,3
Support ledge	HEATER20.LEDGE-35	25×25×200	35	0,9
Support ledge	HEATER20.LEDGE-60	40×40×200	60	2,5
Magnetic temperature sensor	HEATER.SENSOR			0,05
Electronic spare parts kit	HEATER20.ETRONIC			0,45

Accessories

Description	Ordering designation	Dimensions mm	for bore diameters from mm	Mass kg
Support ledge	HEATER20.LEDGE-10	7×7×200	10	0,08
Support ledge	HEATER20.LEDGE-15	10×10×200	15	0,15

Special designs

The device is also available for rated voltages of 110 V to 240 V, frequency 50/60 Hz.

Ordering example for 115 V/60 Hz: **HEATER20-115V-60HZ**

Induction heating devices

HEATER35

FAG heating device HEATER35

The FAG induction heating device HEATER35 for rolling bearings is suitable for bearings with bore diameters of 70 mm (with accessories 15 mm) and over and weighing up to 35 kg. This device can also be used to heat sealed and greased bearings and other rotationally symmetrical steel parts.

The heating device has a sturdy, scratch-resistant polyurethane housing. It can be easily handled thanks to its lateral handholds.

The two lateral supports carry the slewing ledge. The part to be heated can either be placed on the

round surface over the induction coil or suspended from the horizontal slewing ledge.

The contact surfaces of the slewing ledge and the stands are ground so that loss of power remains low.

The heating device can be connected to any standard two-pin safety socket which is protected by a 16 A fuse.

The clearly structured control panel with clear-cut symbols for the different operating modes can also be operated while wearing work gloves. The touch keyboard is oil-resistant, dustproof and waterproof. All operating modes and functions can be operated by means of five keys.

The device offers temperature control and time control modes (see page 5).

Additional functions

- Display of actual values for temperature and time
- Temperature displayed in °C or °F

Accessories

For parts with a smaller bore diameter, FAG supplies support ledges and slewing sledges as special accessories, see Technical Data.



Ordering designation:
HEATER35

Induction heating devices

HEATER35 · Technical Data

Application options

Time control	adjustable up to 99 min 59 s (50 °C to 400 °C)
Temperature control	adjustable between 50 °C and 240 °C, with safety circuit for rolling bearings
Bearing bore d	min. 70 mm (with accessories min. 15 mm)
Bearing mass m	max. 35 kg

Electrical data

Operating voltage	230 V	Rated current	16 A
Frequency	50 Hz	Residual magnetism	< 2 A/cm
Power consumption	3,6 kVA	Duty cycle	100 %

Scope of delivery: Device, ready for use, with 1 slewing ledge and magnetic temperature sensor

Description	Ordering designation	Dimensions mm	for bore diameters from mm	Mass kg
Complete heating device	HEATER35	420×260×365	70	31

Spare parts

Description	Ordering designation	Dimensions mm	for bore diameters from mm	Mass kg
Slewing ledge	HEATER35.LEDGE-70	50×50×280	70	5,3
Magnetic temperature sensor	HEATER.SENSOR			
Electronic spare parts kit	HEATER35.ETRONIC			

Accessories

Description	Ordering designation	Dimensions mm	for bore diameters from mm	Mass kg
Support ledge	HEATER35.LEDGE-15	10×10×280	15	0,2
Support ledge	HEATER35.LEDGE-20	14×14×280	20	0,4
Slewing ledge	HEATER35.LEDGE-35	25×25×280	35	1,3
Slewing ledge	HEATER35.LEDGE-45	30×30×280	45	1,8
Slewing ledge	HEATER35.LEDGE-60	40×40×280	60	3,4

Special designs

The device is also available for rated voltages of 110 V to 240 V, frequency 50/60 Hz.

Ordering example for 115 V/60 Hz: **HEATER35-115V-60HZ**

Induction heating devices

HEATER150

FAG heating device HEATER150

The FAG induction heating device HEATER150 can be used to heat ring-shaped metal workpieces with bore diameters of 100 mm (with accessories 20 mm) and over up to a maximum of 400 °C. Due to the high efficiency of the device ($\cos \varphi > 0,6$), the workpiece can have a mass of up to 150 kg and is heated particularly quickly.

The heating device has a sturdy, scratch-resistant polyurethane housing.

The two lateral supports carry the slewing ledge. The part to be heated can either be placed on the round surface over the induction coil or suspended from the horizontal slewing ledge.

The clearly structured control panel with clear-cut symbols for the different operating modes can also be operated while wearing work gloves. The touch keyboard is oil-resistant, dustproof and waterproof.

The basic version of the device is supplied with a magnetic temperature sensor that can be used up to 240 °C.

The rated voltage is 400 V, the frequency is 50 Hz.

The device offers temperature control and time control modes (see page 5).

Additional functions

- Demagnetisation without heating
- Program interruption
- Actual temperatures can be called up

Accessories

For parts with a smaller bore diameter, FAG supplies support ledges and slewing sledges as special accessories, see Technical Data.



Ordering designation:
HEATER150

Induction heating devices

HEATER150 · Technical Data

Application options

Time control	adjustable from 0 to 99 min 59 s (50 °C to 400 °C)
Temperature control	adjustable between 50 °C and 240 °C, with safety circuit for rolling bearings
Bearing bore d	min. 100 mm (with accessories min. 20 mm)
Bearing mass m	max. 150 kg

Electrical data

Rated voltage	400 V	Rated current	32 A
Frequency	50/60 Hz	Residual magnetism	< 2 A/cm
Power consumption	12,8 kVA		

Scope of delivery: Device, ready for use, with slewing ledge and magnetic temperature sensor

Description	Ordering designation	Dimensions mm	for bore diameters from mm	Mass kg
Complete heating device	HEATER150	505×260×440	100	51

Spare parts

Description	Ordering designation	Dimensions mm	for bore diameters from mm	Mass kg
Slewing ledge	HEATER150.LEDGE-100	70×70×350	100	12,8
Magnetic temperature sensor	HEATER.SENSOR			0,05
Electronic spare parts kit	HEATER150.ETRONIC			0,45

Accessories

Description	Ordering designation	Dimensions mm	for bore diameters from mm	Mass kg
Support ledge	HEATER150.LEDGE-20	14×14×350	20	0,5
Slewing ledge	HEATER150.LEDGE-30	20×20×350	30	1,1
Slewing ledge	HEATER150.LEDGE-45	30×30×350	45	2,4
Slewing ledge	HEATER150.LEDGE-60	40×40×350	60	4,2
Slewing ledge	HEATER150.LEDGE-70	50×50×350	70	6,6
Slewing ledge	HEATER150.LEDGE-85	60×60×350	85	9,4

Special designs

The device is also available for rated voltages of 200 V to 600 V, frequency 50/60 Hz.

Ordering example for 460 V/60 Hz: **HEATER150-460V-60HZ**

Induction heating devices

HEATER300

FAG heating device HEATER300

The FAG induction heating device HEATER300 is suitable for heating ring-shaped metal workpieces with bore diameters of 115 mm (with accessories 30 mm) and over to a maximum temperature of 400 °C. Due to the high efficiency of the device ($\cos \varphi > 0,6$), the workpiece may weigh up to 300 kg and is heated particularly quickly.

The heating device has a sturdy, scratch-resistant polyurethane housing.

The two lateral supports carry the slewing ledge. The part to be heated can either be placed on the round surface over the induction coil or suspended from the horizontal slewing ledge.

The clearly structured control panel with clear-cut symbols for the different operating modes can also be operated while wearing work gloves. The touch keyboard is oil-resistant, dustproof and waterproof.

The basic version of the device is supplied with a magnetic temperature sensor that can be used up to 240 °C. The rated voltage is 400 V, the frequency is 50 Hz.

The device offers temperature control and time control modes (see page 5).

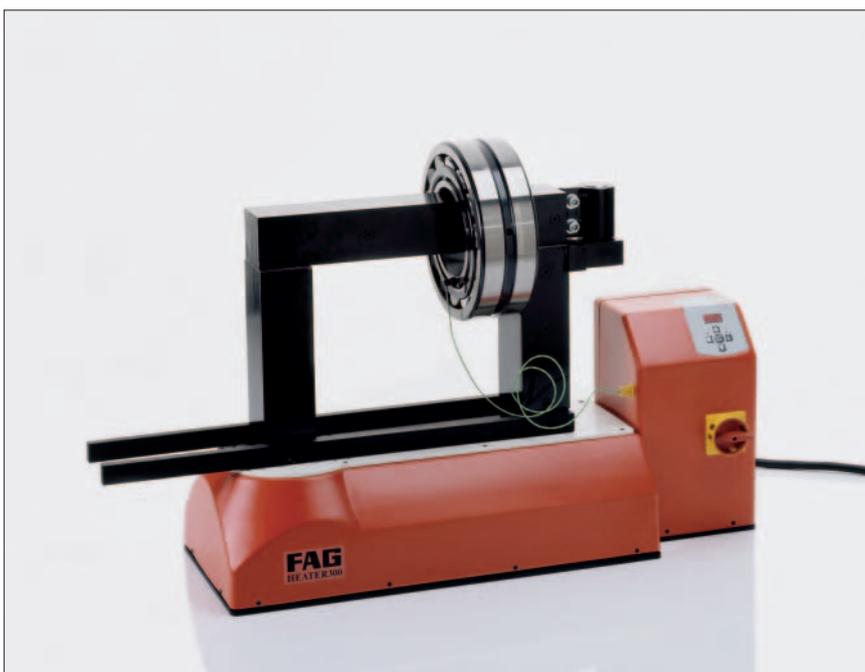
Additional functions

- Demagnetisation without heating
- Program interruption
- Target and actual temperatures and times are displayed

Accessories

Slewing ledges are also available as accessories for parts with smaller bore diameters, see Technical Data.

A mobile version is available on request. The heating device can be transported quickly and safely from one application to another using the trolley HEATER300.TROLLEY, which is available as an accessory.



Ordering designation:
HEATER300

Induction heating devices

HEATER300 · Technical Data

Application options

Time control	adjustable from 0 to 99 min 59 s (50 °C to 400 °C)
Temperature control	adjustable between 50 °C and 240 °C, with safety circuit for rolling bearings
Bearing bore d	min. 115 mm (with accessories min. 30 mm)
Bearing mass m	max. 300 kg

Electrical data

Rated voltage	400 V	Rated current	32 A
Frequency	50/60 Hz	Residual magnetism	< 2 A/cm
Power consumption	12,8 kVA		

Scope of delivery: Device, ready for use, with slewing ledge and magnetic temperature sensor

Description	Ordering designation	Dimensions mm	for bore diameters from mm	Mass kg
Complete heating device	HEATER300	870×300×580	115	75

Spare parts

Description	Ordering designation	Dimensions mm	for bore diameters from mm	Mass kg
Slewing ledge	HEATER300.LEDGE-115	80×80×490	115	23,5
Magnetic temperature sensor	HEATER.SENSOR			0,05
Electronic spare parts kit	HEATER300.ETRONIC			0,45

Accessories

Description	Ordering designation	Dimensions mm	for bore diameters from mm	Mass kg
Slewing ledge	HEATER300.LEDGE-30	20×20×490	30	1,5
Slewing ledge	HEATER300.LEDGE-45	30×30×490	45	3,3
Slewing ledge	HEATER300.LEDGE-60	40×40×490	60	5,9
Slewing ledge	HEATER300.LEDGE-70	50×50×490	70	9,2
Slewing ledge	HEATER300.LEDGE-85	60×60×490	85	13,2
Slewing ledge	HEATER300.LEDGE-100	70×70×490	100	18
Trolley	HEATER300.TROLLEY	900×500×490	–	25

Special designs

The device is also available for rated voltages of 200 V to 600 V, frequency 50/60 Hz.

Ordering example for 460 V, 60 Hz: **HEATER300-460V-60HZ**

Induction heating devices

HEATER600

FAG heating device HEATER600

The FAG induction heating device HEATER600 is suitable for heating ring-shaped metal workpieces with bore diameters of 145 mm (with accessories 45 mm) and over to a maximum temperature of 400 °C. Due to the high efficiency of the device ($\cos \varphi > 0,6$), the workpiece may weigh up to 600 kg and is heated particularly quickly.

The all-steel construction is coated with synthetic resin which is resistant to impacts and corrosion.

The vertical ledge is lifted manually or using hoisting equipment. The bearing is placed on the support rails and centred before the vertical ledge is lowered and locked into place.

The workpiece can also be pushed onto the horizontal ledge.

The clearly structured control panel with clear-cut symbols for the different operating modes can also be operated while wearing work gloves. The touch keyboard is oil-resistant, dustproof and waterproof.

The basic version of the device is supplied with a magnetic temperature sensor that can be used up to 240 °C. The rated voltage is 400 V, the frequency is 50 Hz.

The device offers temperature control and time control modes (see page 5).

Additional functions

- Demagnetisation without heating
- Program interruption

Accessories

Smaller ledges are also available as accessories for parts with smaller bore diameters, see Technical Data.



Ordering designation:
HEATER600

Induction heating devices

HEATER600 · Technical Data

Application options

Time control	adjustable from 0 to 99 min 59 s (50 °C to 400 °C)
Temperature control	adjustable between 50 °C and 240 °C, with safety circuit for rolling bearings
Bearing bore d	min. 145 mm (with accessories min. 45 mm)
Bearing mass m	max. 600 kg

Electrical data

Rated voltage	400 V	Rated current	63 A
Frequency	50/60 Hz	Residual magnetism	< 2 A/cm
Power consumption	25 kVA		

Scope of delivery: Device, ready for use, with ledge and magnetic temperature sensor

Description	Ordering designation	Dimensions mm	for bore diameters from mm	Mass kg
Complete heating device	HEATER600	1100×850×1250	145	350

Spare parts

Description	Ordering designation	Dimensions mm	for bore diameters from mm	Mass kg
Ledge	HEATER600.LEDGE-145	100×100×700	145	55
Magnetic temperature sensor	HEATER.SENSOR			0,05
Electronic spare parts kit	HEATER600.ETRONIC			0,45

Accessories

Description	Ordering designation	Dimensions mm	for bore diameters from mm	Mass kg
Ledge	HEATER600.LEDGE-45	30×30×700	45	4,7
Ledge	HEATER600.LEDGE-60	40×40×700	60	8,4
Ledge	HEATER600.LEDGE-70	50×50×700	70	13,8
Ledge	HEATER600.LEDGE-85	60×60×700	85	19,5
Ledge	HEATER600.LEDGE-100	70×70×700	100	26,9
Ledge	HEATER600.LEDGE-115	80×80×700	115	35
Ledge	HEATER600.LEDGE-130	90×90×700	130	44,5

Special designs

The device is also available for rated voltages of 200 V to 600 V, frequency 50/60 Hz.

Ordering example for 460 V: **HEATER600-460V**

Induction heating devices

HEATER1200

FAG heating device HEATER1200

The FAG induction heating device HEATER1200 is suitable for heating ring-shaped metal workpieces with bore diameters of 215 mm (with accessories 85 mm) and over to a maximum temperature of 400 °C. Due to the high efficiency of the device ($\cos \varphi > 0,6$), the workpiece may weigh up to 1200 kg and is heated particularly quickly.

The all-steel construction is coated with synthetic resin which is resistant to impacts and corrosion.

The vertical ledge is lifted manually or using hoisting equipment. The bearing is placed on the support rails and centred before the vertical ledge is lowered and locked into place.

The workpiece can also be pushed onto the horizontal ledge. The clearly structured control panel with clear-cut symbols for the different operating modes can also be operated while wearing work gloves. The touch keyboard is oil-resistant, dustproof and waterproof.

The basic version of the device is supplied with a magnetic temperature sensor that can be used up to 240 °C.

The rated voltage is 400 V, the frequency is 50 Hz. The device offers temperature control and time control modes (see page 5).

Additional functions

- Demagnetisation without heating
- Program interruption

Accessories

Smaller ledges are also available as accessories for parts with smaller bore diameters, see Technical Data.

The device HEATER1200 is delivered without a plug or cable.



Ordering designation:
HEATER1200

Induction heating devices

HEATER1200 · Technical Data

Application options

Time control	adjustable from 0 to 99 min 59 s (50 °C to 400 °C)
Temperature control	adjustable between 50 °C and 240 °C, with safety circuit for rolling bearings
Bearing bore d	min. 215 mm (with accessories min. 85 mm)
Bearing mass m	max. 1 200 kg

Electrical data

Rated voltage	400 V	Rated current	100 A
Frequency	50/60 Hz	Residual magnetism	< 2 A/cm
Power consumption	40 kVA		

Scope of delivery: Device, ready for use, with ledge and magnetic temperature sensor

Description	Ordering designation	Dimensions mm	for bore diameters from mm	Mass kg
Complete heating device	HEATER1200	1500×1100×1400	215	850

Spare parts

Description	Ordering designation	Dimensions mm	for bore diameters from mm	Mass kg
Ledge	HEATER1200.LEDGE-215	150×150×850	215	150
Magnetic temperature sensor	HEATER.SENSOR			0,05
Electronic spare parts kit	HEATER1200.ETRONIC			0,45

Accessories

Description	Ordering designation	Dimensions mm	for bore diameters from mm	Mass kg
Ledge	HEATER1200.LEDGE-85	60×60×850	85	24
Ledge	HEATER1200.LEDGE-115	80×80×850	115	42,7
Ledge	HEATER1200.LEDGE-145	100×100×850	145	66,8

Special designs

The device is also available for rated voltages of 200 V to 600 V, frequency 50/60 Hz.

Ordering example for 230 V, 60 Hz: **HEATER1200-230V-60HZ**

Induction heating devices

HEATER3000

FAG heating device HEATER3000

The FAG induction heating device HEATER3000 is suitable for heating ring-shaped metal workpieces with bore diameters of 285 mm (with accessories 145 mm) and over to a maximum temperature of 400 °C. Due to the high efficiency of the device ($\cos \varphi > 0,6$), the workpiece may weigh up to 3000 kg and is heated particularly quickly.

The all-steel construction is coated with synthetic resin which is resistant to impacts and corrosion.

The vertical ledge is lifted manually or using hoisting equipment. The bearing is placed on the support

rails and centred before the vertical ledge is lowered and locked into place.

The workpiece can also be pushed onto the horizontal ledge.

The clearly structured control panel with clear-cut symbols for the different operating modes can also be operated while wearing work gloves. The touch keyboard is oil-resistant, dustproof and waterproof.

The basic version of the device is supplied with a magnetic temperature sensor that can be used up to 240 °C.

The rated voltage is 400 V, the frequency is 50 Hz.

The device offers temperature control and time control modes (see page 5).

Additional functions

- Demagnetisation without heating
- Program interruption

Accessories

Smaller ledges are also available as accessories for parts with smaller bore diameters, see Technical Data.

The device HEATER3000 is delivered without a plug or cable.



Ordering designation:
HEATER3000

Induction heating devices

HEATER3000 · Technical Data

Application options

Time control	adjustable from 0 to 99 min 59 s (50 °C to 400 °C)
Temperature control	adjustable between 50 °C and 240 °C, with safety circuit for rolling bearings
Bearing bore d	min. 285 mm (with accessories min. 145 mm)
Bearing mass m	max. 3 000 kg

Electrical data

Rated voltage	400 V	Rated current	250 A
Frequency	50/60 Hz	Residual magnetism	< 2 A/cm
Power consumption	100 kVA		

Scope of delivery: Device, ready for use, with ledge and magnetic temperature sensor

Description	Ordering designation	Dimensions mm	for bore diameters from mm	Mass kg
Complete heating device	HEATER3000	2 500×1 500×1 800	285	1 800

Spare parts

Description	Ordering designation	Dimensions mm	for bore diameters from mm	Mass kg
Ledge	HEATER3000.LEDGE-285	200×200×1 250	285	392
Magnetic temperature sensor	HEATER.SENSOR			0,05
Electronic spare parts kit	HEATER3000.ETRONIC			0,45

Accessories

Description	Ordering designation	Dimensions mm	for bore diameters from mm	Mass kg
Ledge	HEATER3000.LEDGE-145	100×100×1 250	145	98,2
Ledge	HEATER3000.LEDGE-215	150×150×1 250	215	221

Special designs

The device is also available for rated voltages of 200 V to 600 V, frequency 50/60 Hz.

Ordering example for 480 V, 60 Hz: **HEATER3000-480V-60HZ**

FAG can also supply special induction heating devices for workpieces with a mass > 3 000 kg that are matched to the specific power and dimensions.

Accessories for thermal mounting

Temperature measuring device TEMP-CHECK-CONTACT

FAG temperature measuring device TEMP-CHECK-CONTACT

The contact-based FAG temperature measuring device TEMP-CHECK-CONTACT has a display range of -60 °C to $+1000\text{ °C}$.

The temperature sensor TEMP-CHECK-CONTACT.SENSOR included in the delivery can be used for a measurement range of -60 °C to $+300\text{ °C}$.

The device is suitable for measuring the temperature of

- rolling bearings, housings and lubrication systems for operational monitoring
- heated rolling bearings and joints during mounting

The microprocessor-controlled measuring device has a single line display, with a digit height of 14 mm. The touch keyboard has the following switching functions:

- On/Off
- Hold (hold the measurement value in the display)

Further functions:

- Battery voltage is displayed (low battery display)
- Automatic shut-off (Auto-OFF) after 14 min
- Switching from $^{\circ}\text{C}$ to $^{\circ}\text{F}$.



Accessories for thermal mounting

Temperature measuring device TEMP-CHECK-CONTACT

Technical data

Measurement range	-60 °C... +1000 °C
Resolution	0,1 °C/1 °C automatic conversion of resolution from 0,1 °C to 1 °C at +200 °C and higher
Accuracy (± 1 digit)	±1 °C; ±0,5 % of the measured value (-40 °C... +900 °C) ±2 °C; ±1 % of the measured value (over the remaining range)
Display	LCD, single line, digit height 14 mm
Operating temperature	0 °C...+40 °C
Permissible storage and transport temperature	-20 °C... +70 °C
Housing	Plastic (ABS) 190×57×42 mm (L×W×H)
Mass	approx. 300 g
Power supply	Battery 9 V IEC 6F 22 or 9 V accumulator
Battery life	> 100 h (alkaline- manganese)

Ordering designation and scope of
delivery:

TEMP-CHECK-CONTACT

(measuring device with sensor
TEMP-CHECK-CONTACT.SENSOR and
service case)

FAG temperature sensor as spare part (can be ordered individually):

Rapid reaction surface sensor
TEMP-CHECK-CONTACT.SENSOR
(NiCr-Ni thermocouple plug-and-
socket connection, type K)
Measurement range -60 °C...+300 °C
briefly up to +500 °C

Ordering designation:
TEMP-CHECK-CONTACT.SENSOR

FAG temperature sensor as accessory (can be ordered individually, for measuring the temperature of fluids, lubricants etc.):

Immersion/insertion sensor TEMP-
CHECK-CONTACT.SENSOR-IMMERSION
(NiCr-Ni thermocouple
plug-and-socket connection, type K)
Measurement range -60 °C...+400 °C

Ordering designation:
**TEMP-CHECK-CONTACT.SENSOR-
IMMERSION**



Accessories for thermal mounting

Gloves GLOVE1 · GLOVE2

Heat-resistant FAG gloves GLOVE1

Heat-resistant FAG gloves are particularly suitable for the handling of heated rolling bearings or other parts in mounting or dismounting. The outside comprises rugged polyester and can withstand temperatures up to +150 °C.

The inside is made from comfortable cotton.

The principal characteristics are:

- resistant up to +150 °C
- lint-free
- asbestos-free
- comfortable
- cut-resistant

Ordering designation
GLOVE1



Heat-resistant and oil-resistant FAG gloves GLOVE2

Heat-resistant and oil-resistant FAG gloves are particularly suitable for the handling of heated and lubricated rolling bearings in mounting or dismounting.

Their principal characteristics derive from the multiple layer construction comprising different fibres.

The principal characteristics are:

- resistant up to +250 °C
- non-flammable
- heat-resistant even when damp
- authorised for protection against mechanical (DIN EN 388) and thermal (DIN EN 407) influences
- cotton-free
- cut-resistant

Ordering designation
GLOVE2



Accessories for thermal mounting

Transport and mounting tool BEARING-MATE

FAG transport and mounting tool BEARING-MATE

BEARING-MATE is an accessory for the secure, rapid and easy handling of medium-sized and large rolling bearings. It can also be used where bearings are heated prior to mounting.

The tool comprises two handles and two steel strips. Turning the handles clamps the steel strips firmly on the outer ring of the rolling bearing. The compact packaging also includes two brackets. These are used on self-aligning ball bearings and spherical roller bearings in order to prevent tilting of the inner rings.

The tool and bearing are carried either by two people or a crane. If two carrying slings are used, the rolling bearing can be rotated to any position when transported by crane. During heating on an induction heating device, the tool remains mounted on the bearing. The steel strips expand uniformly with the bearing. Optimum tension is thus maintained.

Three tool sizes are matched to different bearing outside diameters.



Accessories

Long brackets to prevent tilting of self-aligning bearing inner rings (2 pieces)

Ordering designation:
BEARING-MATE.LOCKBAR270

Carrying sling, 1 m long (2 pieces)
BEARING-MATE.SLING-1M

Spare parts

Long brackets to prevent tilting of self-aligning bearing inner rings (2 pieces)

Ordering designation:
BEARING-MATE.LOCKBAR170

Pack of spare parts
BEARING-MATE.SERVICE-KIT

FAG transport and mounting tool

Ordering designation Transport and mounting tool	Bearing outside diameter		Bearing mass max. kg	Operating temperature max. °C	Tool mass kg
	min. mm	max.			
BEARING-MATE250-450	250	450	500	160	6,3
BEARING-MATE450-650	450	650	500	160	6,4
BEARING-MATE650-850	650	850	500	160	6,5

Comparison of ordering designations

Ordering designation for Europe	Ordering designation for countries outside Europe
HEATER-PLATE HEATER-PLATE-115V HEATER-PLATE-370C	HEATER.PLATE HEATER.PLATE.V115 HEATER.PLATE.370C
HEATER10 HEATER10.ETRONIC HEATER10.LEDGE-10 (~15, ~20) HEATER10.SENSOR	HEATER10 HEATER10.ELECTRONIC HEATER10.L10 (~15, ~20) HEATER10.SENSOR
HEATER20 HEATER20.ETRONIC HEATER20.LEDGE-10 (~15, ~20, ~35, ~60) HEATER20.SENSOR	HEATER20 HEATER20.ELECTRONIC HEATER20.L10 (~15, ~20, ~35, ~60) HEATER20.SENSOR
HEATER35 HEATER35.ETRONIC HEATER35.LEDGE-15 (~20, ~35, ~45, ~60, ~70) HEATER35.SENSOR	HEATER35 HEATER35.ELECTRONIC HEATER35.L15 (~20, ~35, ~45, ~60, ~70) HEATER35.SENSOR
HEATER150 HEATER150.ETRONIC HEATER150.LEDGE-20 (~30, ~45, ~60, ~70, ~85, ~100) HEATER150.SENSOR	HEATER150 HEATER150.ELECTRONIC HEATER150.L20 (~30, ~45, ~60, ~70, ~85, ~100) HEATER150.SENSOR
HEATER300 HEATER300.ETRONIC HEATER300.LEDGE-30 (~45, ~60, ~70, ~85, ~100, ~115) HEATER300.SENSOR HEATER300.TROLLEY	HEATER300 HEATER300.ELECTRONIC HEATER300.L30 (~45, ~60, ~70, ~85, ~100, ~115) HEATER300.SENSOR HEATER300.TROLLEY
HEATER600 HEATER600.ETRONIC HEATER600.LEDGE-45 (~60, ~70, ~85, ~100, ~115, ~130, ~145) HEATER600.SENSOR	HEATER600 HEATER600.ELECTRONIC HEATER600.L45 (~60, ~70, ~85, ~100, ~115, ~130, ~145) HEATER600.SENSOR
HEATER1200 HEATER1200.ETRONIC HEATER1200.LEDGE-85 (~115, ~145, ~215) HEATER1200.SENSOR	HEATER1200 HEATER1200.ELECTRONIC HEATER1200.L85 (~115, ~145, ~215) HEATER1200.SENSOR
HEATER3000 HEATER3000.ETRONIC HEATER3000.LEDGE-145 (~215, ~285) HEATER3000.SENSOR	HEATER3000 HEATER3000.ELECTRONIC HEATER3000.L145 (~215, ~285) HEATER3000.SENSOR
TEMP-CHECK-CONTACT TEMP-CHECK-CONTACT.SENSOR TEMP-CHECK-CONTACT.SENSOR-IMMERSION	TEMP.MG TEMP.MG.SENSOR TEMP.MG.SENSOR-IMMERSION
GLOVE1 (~2)	HANDSCHUH1 (~2)
BEARING-MATE250-450 (~450-650; ~650-850) BEARING-MATE.LOCKBAR170 (~270) BEARING-MATE.SLING-1M BEARING-MATE.SERVICE-KIT	BEARING.MATE250-450 (~450-650; ~650-850) BEARING.MATE.LOCKBAR170 (~270) BEARING.MATE.SLING.1M BEARING.MATE.SERVICE.KIT

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TPI WL 80-54/2 EA