



Induction heating devices

HEATER-BASIC and HEATER-SMART

Technical Product Information

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1 Induction heating

Many ring-shaped components are mounted with a tight fit on the shaft. Larger rolling bearings, in particular, are considerably easier to mount when pre-heated. Induction heating is superior to conventional methods, such as heating furnaces, heating plates, and oil baths, and is regarded among bearing manufacturers as the best and safest method for mounting bearings. Induction heating is also suitable for frequent heating.

The following parts can be heated using this method:

- complete rolling bearings, including greased bearings
- inner rings of cylindrical roller bearings or needle roller bearings
- other ring-shaped, ferromagnetic steel parts, such as gears and bushings

2 series are available: HEATER-BASIC and HEATER-SMART. HEATER-BASIC is equipped with a robust membrane keyboard for straightforward operation and offers 2 heating methods. HEATER-SMART is equipped with a touch-sensitive screen and offers 4 heating methods, making it particularly suitable for heating rolling bearings with a low radial internal clearance. HEATER-SMART also features a documentation facility.

The HEATER-BASIC and HEATER-SMART series offer the following features:

- fast and uniform heating through automatic power regulation
- enhanced safety for workpiece and fitter through controlled heating
- preservation of the bearing's original lubrication
- energy efficiency and environmentally friendly operation
- cost savings due to low energy consumption
- different versions for workpiece weights up to 1600 kg

1.1 Heating temperature

A temperature difference of +80 °C to +120 °C is sufficient to achieve adequate expansion for a tight fit on the shaft. The temperature must be carefully monitored during heating. Ensure that the temperature does not exceed +120 °C. Wear protective gloves when fitting the heating component.

2 Function

2.1 Functional principle

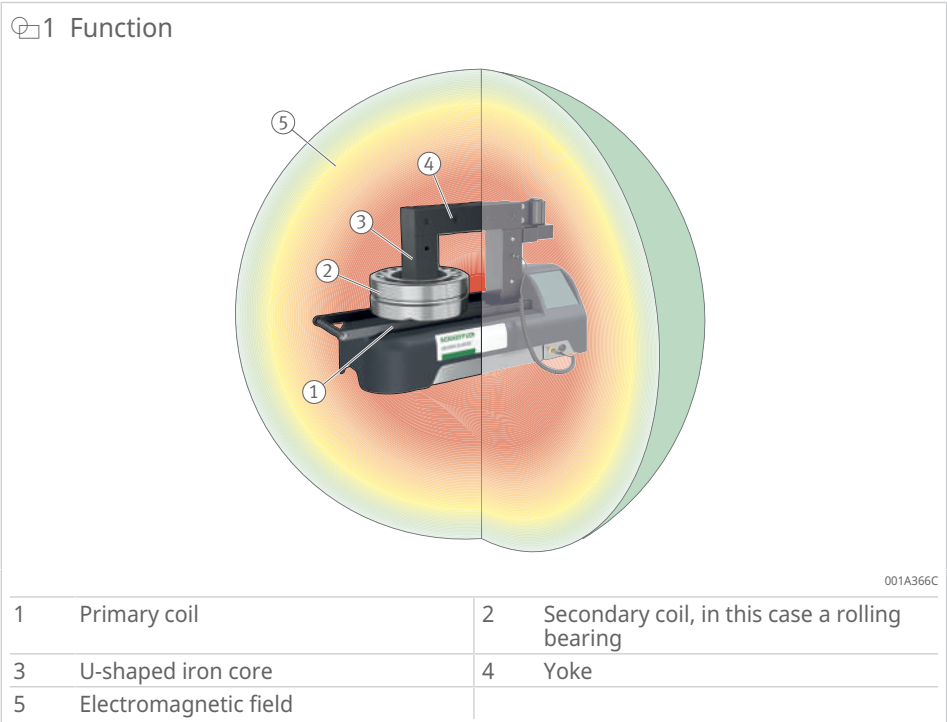
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A yoke connects the two poles of the U-shaped core, with the U-shaped core and yoke forming a magnetic circuit. This magnetic circuit basically acts as the primary coil. The primary coil generates an electromagnetic alternating field. This electromagnetic field is transmitted via the iron core to the secondary coil, for example a rolling bearing, inducing a high induction current at low voltage in the second coil.

The induction current causes rapid heating of the workpiece. Any parts that are not ferromagnetic, as well as the heating device itself, remain cold.

After the heating operation is stopped, the electromagnetic field is reduced to zero in order to demagnetise the workpiece.

The electromagnetic field is very strong directly at the heating device. The electromagnetic field becomes weaker with increasing distance from the heating device. The electromagnetic field decreases within a distance of 1 m to such an extent that it is below the applicable standard value of 0,5 mT.



3 Description

3.1 Heating devices

The HEATER-BASIC and HEATER-SMART heating devices have identical performance data, however, the devices differ in terms of their operation and functionality.

3.1.1 Control panel and connections on HEATER-BASIC

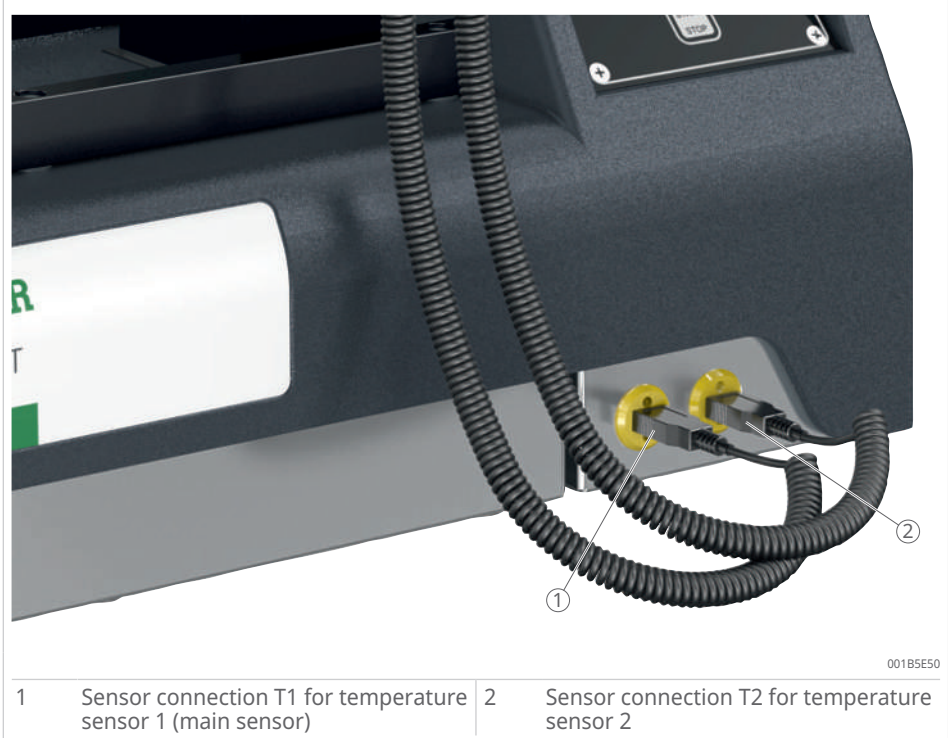
In the case of HEATER-BASIC heating devices, the display and the input interface are separate elements. The input interface consists of a robust membrane keyboard located beneath the display.

🔍 2 Display and keys

1	Display in time mode	2	Unit min or s
3	Display in temperature mode	4	Unit °C or °F
5	[Arrow up]	6	[Arrow down]
7	[Time]	8	[Temperature]
9	[Start]	10	[Stop]

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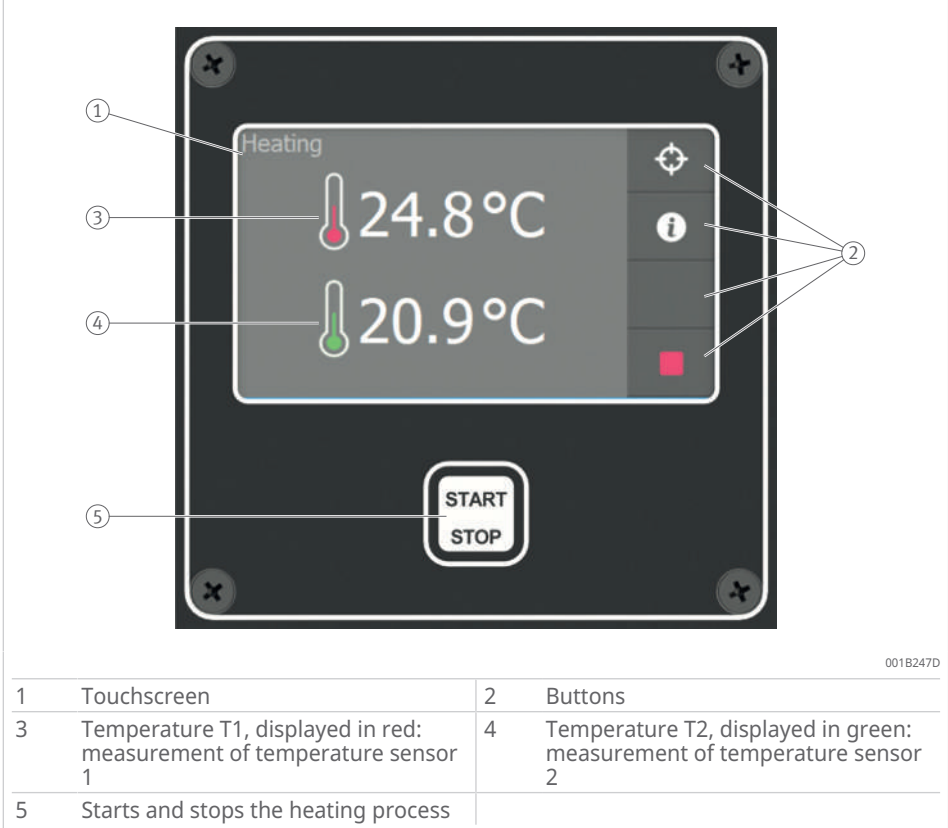
3 Connections for the temperature sensors



3.1.2 Control panel and connections on HEATER-SMART

In the case of HEATER-SMART heating devices, the input interface and the display are combined. The touchscreen serves as both the input interface and the display.

4 Control panel with touchscreen



5 Connections



1	Sensor connection T1 for temperature sensor 1 (main sensor)	2	Sensor connection T2 for temperature sensor 2
3	USB connection for logging heating data		

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3.2 Temperature sensors

The magnetic temperature sensors are included in the scope of delivery and are available to reorder.

For non-ferromagnetic workpieces, Schaeffler can provide quotes for special clamping sensors on request.

Design

- The temperature sensor is equipped with a magnetic clamp for easy attachment to the workpiece.
- The design of cable used with the temperature sensor is dependent on the heating device.

1 Temperature sensors

Ordering designation	Suitable for heating device	Design	Length	T _{max}		Ordering number
			mm	°C	°F	
HEATER.MPROBE-20-200	HEATER20 ... HEATER200	Spiral cable, black	2000, fully extended	240	464	097406554-0000-10
HEATER.MPROBE-400-800	HEATER400 ... HEATER800	Smooth cable, green	1100	350	662	097406562-0000-10
HEATER.MPROBE-1600	HEATER1600	Smooth cable, green	2000	350	662	097406716-0000-10

T_{max} °C or °F Max. temperature



001ACD45

1	HEATER.MPROBE-20-200	2	HEATER.MPROBE-400-800
3	HEATER.MPROBE-1600		



001A332C

1	Plug	2	Sensor head
3	Cables		

- Use
- The temperature sensors are used with a temperature mode during heating.
 - The temperature sensors may be used in time mode to assist with temperature control during heating.
 - The temperature sensors are connected to the heating device via temperature connections T1 and T2.
 - Temperature sensor 1 at sensor connection T1 is the main sensor that controls the heating process.
 - Temperature sensor 2 at sensor connection T2 is also used for the following cases:
 - activated Delta T function [Enable ΔT]: monitoring a temperature difference ΔT between 2 points on the workpiece
 - additional control

2 Operating conditions for temperature sensors	
Designation	Value
Operating temperature	0 °C ... +240 °C At temperatures > +240 °C, the connection between the magnet and the temperature sensor is broken. The heating device will switch off if the temperature sensor does not detect an increase in temperature.

Appearance of measurement values on the display:

- measured value at T1: red
- measured value at T2: green

 When removing the temperature sensor, do not pull it by the cable. Pull on the plug and sensor head only.

3.3 Heating methods

The heating device offers various heating methods to suit every application.

A HEATER-BASIC induction heating device can heat components using 2 heating methods. The HEATER-SMART induction heating device provides a choice of 4 heating methods.

3 Heating modes

Heating mode	HEATER-BASIC	HEATER-SMART
Temperature mode	✓	✓
Time mode	✓	✓
Temperature mode or time mode	-	✓
Temperature mode and speed mode	-	✓

✓ available
- not available

4 Overview of heating methods

[Heating mode]	Field	Function
Temperature mode	 Temperature	Controlled heating to the required temperature. The temperature hold function is available for use.
Time mode	 Time	Suitable for volume production: Heat in time mode if the time required to reach a certain temperature is known. Workaround if the temperature sensor is defective: Heat in time mode and monitor the temperature using an external thermometer.
Temperature mode or time mode	 Time or Temperature	Controlled heating to the required temperature or over a required time period. The heating device switches off as soon as one of the two values is reached.
Temperature mode and speed mode	 Temperature & speed	Controlled heating to the required temperature. The maximum rate at which the temperature increases per unit of time can be entered so that the workpiece is heated along a specified curve. The temperature hold function is available for use.

3.3.1 Time mode

- Setting of the required heating time
- Heating of the workpiece over the defined time period
- Operating mode available for use if the time required to heat a specific workpiece to a specific temperature is already known
- No temperature sensor required as the temperature is not monitored
- If 1 or more temperature sensors are connected, the workpiece temperature is displayed but not monitored.
- After the heating process, the workpiece is demagnetised.

In order to determine the heating time for a workpiece, the workpiece is heated to the required temperature in temperature mode. The time required is noted as the heating time.

The advantage of time mode over temperature mode is that the temperature sensor is not necessary. Time mode is therefore particularly suitable in the following situations:

- Batch mounting:
It must be ensured that the initial temperature present when determining the heating time is also maintained in batch mounting.
- If the temperature sensor is defective:
In this case, continually check the current temperature using a temperature gauge.
- For workpieces that are too large:
If the mass exceeds the maximum permissible mass for horizontal workpieces, heat the workpiece while it is in a freely suspended position. This prevents mechanical overloading of the heating device. Since the thermal load is borderline, errors would be reported in temperature mode as the temperature increase is insufficient.

Once the set heating time has elapsed, the heating device automatically starts the process of demagnetising the workpiece. A continuous beep will sound once demagnetisation is complete.

3.3.2 Temperature mode

- Setting of the required heating temperature
- Heating of the workpiece to the set temperature
- Heating takes place as quickly as possible.
- Monitoring of the workpiece temperature throughout the entire process
- Choice of simple measurement and Delta T measurement under [System settings]
- Requires the use of 1 or more temperature sensors, which are attached to the workpiece. T1 (temperature sensor 1) is the main sensor and controls the heating process.
- The temperature hold function can be activated under [Temp. Hold]. If the workpiece temperature drops below the heating temperature, the workpiece is heated again. The limit for the permissible drop in temperature can be set in [T hold hysteresis] under [System settings]. The temperature hold function keeps the workpiece at the required heating temperature until the time set under [Hold time] has elapsed.
- After the heating process, the workpiece is demagnetised.

3.3.3 Temperature mode or time mode

- Setting of the required workpiece temperature and the required heating period. The heating device will switch off automatically once the set temperature is reached or the set time has elapsed.
- Setting of the required heating temperature
- Heating of the workpiece to the set temperature
- Heating takes place as quickly as possible.
- Monitoring of the workpiece temperature throughout the entire process
- Choice of simple measurement and Delta T measurement under [System settings]
- Requires the use of 1 or more temperature sensors, which are attached to the workpiece. T1 (temperature sensor 1) is the main sensor and controls the heating process.
- After the heating process, the workpiece is demagnetised.

3.3.4 Temperature mode and speed mode

- Setting of the rate of permissible temperature increase during the heating process
Example: Workpiece is heated to +120 °C at a rate of increase of 5 °C/min
- Heating of the workpiece to the set temperature
- Monitoring of the workpiece temperature throughout the entire process
- Choice of simple measurement and Delta T measurement under [System settings]
- Requires the use of 1 or more temperature sensors, which are attached to the workpiece. T1 (temperature sensor 1) is the main sensor and controls the heating process.
- The temperature hold function can be activated under [Temp. Hold]. If the workpiece temperature drops below the heating temperature, the workpiece is heated again. The limit for the permissible drop in temperature can be set in [T hold hysteresis] under [System settings]. The temperature hold function keeps the workpiece at the required heating temperature until the time set under [Hold time] has elapsed.
- After the heating process, the workpiece is demagnetised.

After activating the process, the heating device controls the power output so that the heating curve for the workpiece runs parallel to the set rate of increase. A white dashed line is displayed in the graphic representation, along which the heating process should ideally run. The actual curve will sit just above this line, as the controller initially seeks to achieve a balance between increase in temperature and corresponding power output.

Temperature mode and speed mode will only be executed correctly if the rate of increase is set at a realistic value. Additionally, the rate of increase must be proportional to the maximum power the heating device can deliver and transfer to the workpiece.

3.4 Scope of delivery

The scope of delivery is dependent on the series. HEATER-SMART devices are delivered with 2 temperature sensors, as 2 temperature sensors are required for the Delta T function.

The heating device is supplied with the following standard accessories.

- heating device
- 1 yoke or several yokes, depending on the size of the heating device
- HEATER-BASIC: 1 temperature sensor
- HEATER-SMART: 2 temperature sensors
- protective gloves, heat-resistant to +250 °C (+482 °F)
- petrolatum
- test certificate
- user manual

3.5 Device selection

The mass and dimensions of the workpiece are key factors when selecting a heating device. The maximum permissible mass of the workpiece is determined from the designation. With a HEATER20-BASIC, for example, the maximum permissible mass is 20 kg. The maximum permissible mass of the workpiece refers to the heating of workpieces to 100 °C at the specified power supply. In the event of a higher temperature or different power supply, please consult your contact at Schaeffler.

5 Suitable materials

Heating device	Power supply	Mass	Inside diameter	Outside diameter	Width
	max.	max.	min.	max.	max.
-	V	kg	mm	mm	mm
HEATER20	AC 230	20	10	240	120
HEATER50	AC 230	50	10	400	120
HEATER100	AC 230	100	15	500	180
HEATER150	AC 230	150	15	600	210
HEATER200	AC 400	200	15	600	210
HEATER400	AC 400	400	30	850	320
HEATER600	AC 400	600	60	1050	400
HEATER800	AC 400	800	60	1150	430
HEATER1600	AC 400	1600	85	1700	710

3.5.1 Energy input and heating time

The heating time is determined by the maximum possible energy input into the workpiece and is dependent on the following factors:

- mass of the workpiece
- geometry of the workpiece
- power supply

The energy input into the workpiece decreases with increasing distance from the yoke or U-shaped core. For workpieces with very large bore diameters, heating may take a very long time, or the desired target temperature may not be reached.

For physical reasons, heating devices with a power supply of AC 120 V have less power than devices with AC 230 V. The energy input is significantly lower and the heating time is extended.

Please direct any questions to your contact at Schaeffler.

3.5.2 Heating Manager

Selecting a suitable heating device is easy with the HEATING-MANAGER tool: <https://www.schaeffler.de/std/1FEA>.

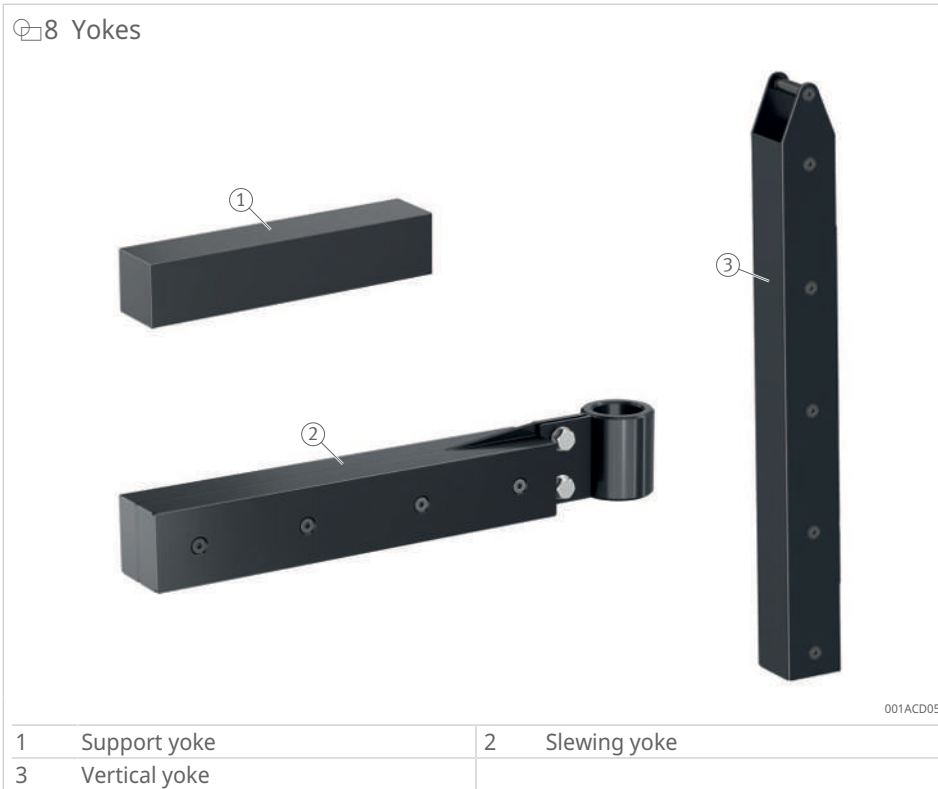
Enter the bearing designation, workpiece dimensions, or mass and the tool will display the most suitable heating device and alternative options. Data for multiple components can also be specified to allow viewing of all suitable heating devices and the most cost-effective solution.

4 Accessories

Accessories, such as temperature sensors and yokes, extend the functionality of an induction heating device.

4.1 Yokes

There are 3 types of yokes: Support yoke, slewing yoke, and vertical yoke.



Multiple yokes are available for each induction heating device. To achieve maximum heating power, use a yoke with the largest possible cross-section.

4.1.1 Support yoke

The workpiece and support yoke are placed together on the contact surfaces of the U-shaped core. For maximum performance, 2 support yokes can be stacked.

4.1.2 Slewing yoke

The slewing yoke is swivelled open, allowing the workpiece to be placed on the yoke, and then swivelled back again until it snaps into the safety cam.

4.1.3 Vertical yoke

The vertical yoke is lifted using a lifting tool. Once the workpiece is in position on the contact surface, the yoke is lowered back into place.

4.1.4 HEATER20-BASIC

6 Support yokes

Ordering designation	Dimensions	Mass	Min. bore diameter	Scope of delivery
	mm	kg	mm	
HEATER50.YOKE-10	7×7×200	0,08	10	✓
HEATER50.YOKE-15	10×10×200	0,15	15	✓
HEATER50.YOKE-20	14×14×200	0,32	20	✓
HEATER50.YOKE-30	20×20×200	0,61	30	✓
HEATER50.YOKE-60	40×40×200	2,42	60	✓

- ✓ included in delivery
o available as an option

4.1.5 HEATER50-BASIC and HEATER50-SMART

7 Support yokes

Ordering designation	Dimensions	Mass	Min. bore diameter	Scope of delivery
	mm	kg	mm	
HEATER50.YOKE-10	7×7×200	0,08	10	✓
HEATER50.YOKE-15	10×10×200	0,15	15	o
HEATER50.YOKE-20	14×14×200	0,32	20	✓
HEATER50.YOKE-30	20×20×200	0,61	30	o
HEATER50.YOKE-60	40×40×200	2,42	60	o
HEATER50.YOKE-65	40×50×200	3,02	65	✓

- ✓ included in delivery
o available as an option

4.1.6 HEATER100-BASIC and HEATER100-SMART

8 Support yokes

Ordering designation	Dimensions	Mass	Min. bore diameter	Scope of delivery
	mm	kg	mm	
HEATER100.YOKE-15	10×10×280	0,21	15	o
HEATER100.YOKE-20	14×14×280	0,4	20	o
HEATER100.YOKE-30	20×20×280	0,84	30	✓

- ✓ included in delivery
o available as an option

9 Slewing yokes

Ordering designation	Dimensions	Mass	Min. bore diameter	Scope of delivery
	mm	kg	mm	
HEATER100.YOKE-45	30×30×280	2,4	45	o
HEATER100.YOKE-60	40×40×280	3,87	60	o
HEATER100.YOKE-72	50×50×280	5,78	72	✓
HEATER100.YOKE-85	60×60×280	8,09	85	o

- ✓ included in delivery
o available as an option

4.1.7 HEATER150-BASIC and HEATER150-SMART

10 Support yokes

Ordering designation	Dimensions	Mass	Min. bore diameter	Scope of delivery
	mm	kg	mm	
HEATER200.YOKE-15	10×10×350	0,27	15	o
HEATER200.YOKE-20	14×14×350	0,51	20	o
HEATER200.YOKE-30	20×20×350	1,06	30	o

- ✓ included in delivery
o available as an option

11 Slewing yokes

Ordering designation	Dimensions	Mass	Min. bore diameter	Scope of delivery
	mm	kg	mm	
HEATER200.YOKE-45	30×30×350	3,67	45	✓
HEATER200.YOKE-60	40×40×350	5,51	60	o
HEATER200.YOKE-72	50×50×350	7,79	72	o
HEATER200.YOKE-85	60×60×350	10,69	85	o
HEATER200.YOKE-100	70×70×350	14,0	100	o
HEATER200.YOKE-110	70×80×350	15,90	110	✓

- ✓ included in delivery
o available as an option

4.1.8 HEATER200-BASIC and HEATER200-SMART

12 Support yokes

Ordering designation	Dimensions	Mass	Min. bore diameter	Scope of delivery
	mm	kg	mm	
HEATER200.YOKE-15	10×10×350	0,27	15	o
HEATER200.YOKE-20	14×14×350	0,51	20	o
HEATER200.YOKE-30	20×20×350	1,06	30	o

- ✓ included in delivery
o available as an option

13 Slewing yokes

Ordering designation	Dimensions	Mass	Min. bore diameter	Scope of delivery
	mm	kg	mm	
HEATER200.YOKE-45	30×30×350	3,67	45	✓
HEATER200.YOKE-60	40×40×350	5,51	60	o
HEATER200.YOKE-72	50×50×350	7,79	72	o
HEATER200.YOKE-85	60×60×350	10,69	85	o
HEATER200.YOKE-100	70×70×350	14,0	100	o
HEATER200.YOKE-110	70×80×350	15,90	110	✓

- ✓ included in delivery
o available as an option

4.1.9 HEATER400-BASIC and HEATER400-SMART

14 Slewing yokes

Ordering designation	Dimensions	Mass	Min. bore diameter	Scope of delivery
	mm	kg	mm	
HEATER400.YOKE-30	20×20×500	3,12	30	o
HEATER400.YOKE-45	30×30×500	4,95	45	o
HEATER400.YOKE-60	40×40×500	7,55	60	o
HEATER400.YOKE-85	60×60×500	14,83	85	o
HEATER400.YOKE-115	80×80×500	25,40	115	✓

- ✓ included in delivery
o available as an option

4.1.10 HEATER600-BASIC and HEATER600-SMART

15 Slewing yokes

Ordering designation	Dimensions	Mass	Min. bore diameter	Scope of delivery
	mm	kg	mm	
HEATER600.YOKE-60	40×40×600	8,57	60	o
HEATER600.YOKE-85	60×60×600	17,43	85	o
HEATER600.YOKE-115	80×80×600	29,10	115	o
HEATER600.YOKE-130	90×90×600	37,90	130	✓

- ✓ included in delivery
o available as an option

4.1.11 HEATER800-BASIC and HEATER800-SMART

16 Vertical yokes

Ordering designation	Dimensions	Mass	Min. bore diameter	Scope of delivery
	mm	kg	mm	
HEATER800.YOKE-60	40×40×725	9	60	o
HEATER800.YOKE-72	50×50×725	14,5	72	o
HEATER800.YOKE-85	60×60×725	20,3	85	o
HEATER800.YOKE-115	80×80×725	36,10	115	o
HEATER800.YOKE-145	100×100×725	56,4	145	✓

- ✓ included in delivery
o available as an option

4.1.12 HEATER1600-BASIC and HEATER1600-SMART

17 Vertical yokes

Ordering designation	Dimensions	Mass	Min. bore diameter	Scope of delivery
	mm	kg	mm	
HEATER1600.YOKE-85	60×60×1140	32,5	85	o
HEATER1600.YOKE-115	80×80×1140	56,76	115	o
HEATER1600.YOKE-145	100×100×1140	88,69	145	o
HEATER1600.YOKE-215	150×150×1140	199,56	215	✓

- ✓ included in delivery
 o available as an option

5 Auxiliary equipment

The use of suitable auxiliary equipment plays a crucial role in ensuring the safe thermal installation of rolling bearings.

5.1 Lifting equipment for vertical yokes

Vertical yokes for HEATER800 and HEATER1600 devices must be lifted using suitable lifting equipment. Schaeffler offers suitable lifting equipment.

🔗9 Lifting equipment CRANE



001ACD15

📊18 Lifting equipment for vertical yokes

Ordering designation	Ordering number
HEATER800.CRANE	301338663-0000-10
HEATER1600.CRANE	301338671-0000-10

5.2 Wheels

The HEATER400 and HEATER600 free-standing devices are equipped with wheels, making them movable. The HEATER800 and HEATER1600 can be fitted with wheels. The MOBILE-KIT is available to customers for this purpose.

10 Wheels



19 Optional wheels

Ordering Designation	Ordering number
HEATER800.MOBILE-KIT	301340013-0000-10
HEATER1600.MOBILE-KIT	301340528-0000-10

5.3 Transport and mounting tool BEARING-MATE

BEARING-MATE is an accessory designed for the safe, rapid, and easy handling of medium-sized and large rolling bearings and comprises 2 handles and 2 steel strips. By turning the handles, the steel strips clamp firmly around the outer ring of the rolling bearing. The brackets included in the delivery are used with self-aligning ball bearings and spherical roller bearings to prevent the inner rings from tilting.

The tool is carried by 2 people or with a crane. Using 2 carrying slings allows the tool to be rotated into any position. 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.

The scope of delivery comprises the tool, grease, and short brackets.

11 Scope of delivery BEARING-MATE



1	BEARING-MATE	2	Short bracket (2×)
3	Multi-purpose grease Arcanol Multi2 in a 20g tube		

12 During the heating operation



The appropriate tool is determined by the outside diameter of the bearing.

20 Available tools

Designation	Bearing outside diameter		Bearing mass	Operating temperature	Tool mass
	min.	max.	max.	max.	
-	mm	mm	kg	°C	kg
BEARING-MATE250-450	250	450	500	160	6,3
BEARING-MATE450-650	450	650	500	160	6,5
BEARING-MATE650-850	650	850	500	160	6,7
BEARING-MATE850-1050	850	1050	500	160	6,9

Accessories and replacement parts are available.

21 Accessories

Description	Ordering designation
Long brackets to prevent tilting of self-aligning bearing inner rings, 2 pieces	BEARING-MATE.LOCKBAR270

22 Replacement parts

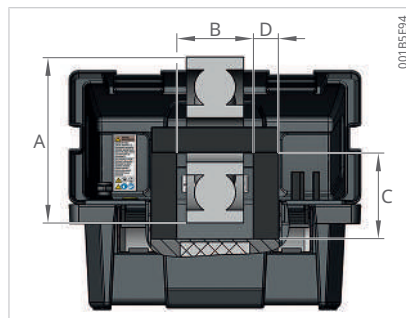
Description	Ordering designation
Short brackets to prevent tilting of inner rings of self-aligning bearings, 2 pieces	BEARING-MATE.LOCKBAR170
Kit of replacement parts	BEARING-MATE.SERVICE-KIT

6 Product tables

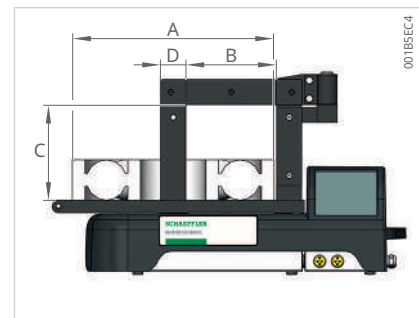
6.1 Explanations of the product tables

b	mm	Workpiece width
B	mm	Width
B	mm	Pole distance
C	mm	Distance pole to core
Cert.	-	Certification
d	mm	Inside diameter
D	mm	Outside diameter
d _h	mm	Max. inside diameter of workpiece in horizontal position
d _v	mm	Max. inside diameter of workpiece in vertical position
H	mm	Height
H _w	mm	Height including wheels
I	A	Amperage
L	mm	Length
m	kg	Mass
m _w	kg	Mass of the workpiece
P	kW	Power
t _{max}	h	Max. heating time
T _{max}	°C or °F	Max. temperature
U	V	Voltage

6.2 HEATER-BASIC, HEATER-SMART

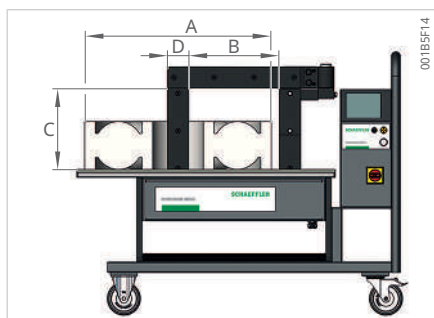


HEATER20

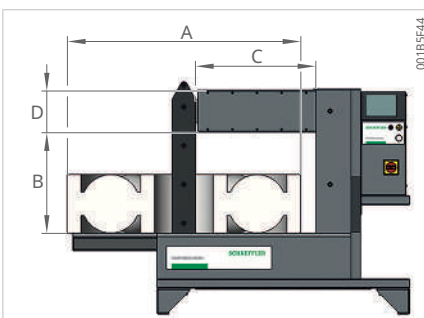


HEATER50 ... HEATER200

Ordering designation	Ordering number	Designation	U	F	I	P	L	W	H	H _w	B
-	-	-	V	Hz	A	kW	mm	mm	mm	mm	mm
HEATER20-BASIC-240V-US	4200250-C-US	BLF200	240	50 ... 60	5	1,2	460	240	280	-	120
HEATER20-BASIC-120V-US	4200150-C-US	BLF200	120	50 ... 60	10	1,2	460	240	280	-	120
HEATER20-BASIC-230V	4200250-CE	BLF200	230	50 ... 60	10	2,3	460	240	280	-	120
HEATER20-BASIC-230V-UK	4200250-UK	BLF200	230	50 ... 60	10	2,3	460	240	280	-	120
HEATER50-SMART-230V	4301230-CE	SLF301	230	50 ... 60	13	3	600	226	272	-	120
HEATER50-SMART-120V-US	4301130-C-US	SLF301	120	50 ... 60	13	1,5	600	226	272	-	120
HEATER50-SMART-230V-UK	4301230-UK	SLF301	230	50 ... 60	13	3	600	226	272	-	120
HEATER50-SMART-240V-US	4301230-C-US	SLF301	240	50 ... 60	13	3,1	600	226	272	-	120
HEATER50-BASIC-240V-US	4201230-C-US	BLF201	240	50 ... 60	13	3,1	600	226	272	-	120
HEATER50-BASIC-230V	4201230-CE	BLF201	230	50 ... 60	13	3	600	226	272	-	120
HEATER50-BASIC-120V-US	4201130-C-US	BLF201	120	50 ... 60	13	1,5	600	226	272	-	120
HEATER50-BASIC-230V-UK	4201230-UK	BLF201	230	50 ... 60	13	3	600	226	272	-	120
HEATER100-BASIC-240V-US	4202220-C-US	BLF202	240	50 ... 60	16	3,8	702	256	392	-	180
HEATER100-BASIC-230V	4202220-CE	BLF202	230	50 ... 60	16	3,7	702	256	392	-	180
HEATER100-BASIC-230V-UK	4202220-UKCA	BLF202	230	50 ... 60	13	2,9	702	256	392	-	180
HEATER100-SMART-120V-US	4302120-C-US	SLF302	120	50 ... 60	15	1,8	702	256	392	-	180
HEATER100-SMART-230V-UK	4302220-UKCA	SLF302	230	50 ... 60	13	2,9	702	256	392	-	180
HEATER100-BASIC-120V-US	4202120-C-US	BLF202	120	50 ... 60	15	1,8	702	256	392	-	180
HEATER100-SMART-240V-US	4302220-C-US	SLF302	240	50 ... 60	16	3,8	702	256	392	-	180
HEATER100-SMART-230V	4302220-CE	SLF302	230	50 ... 60	16	3,7	702	256	392	-	180
HEATER150-SMART-230V	4303220-CE	SLF303	230	50 ... 60	16	3,7	788	315	456	-	210
HEATER150-SMART-240V-US	4303220-C-US	SLF303	240	50 ... 60	16	3,8	788	315	456	-	210
HEATER150-SMART-230V-UK	4303220-UKCA	SLF303	230	50 ... 60	13	2,9	788	315	456	-	210
HEATER150-BASIC-240V-US	4203220-C-US	BLF203	240	50 ... 60	16	3,8	788	315	456	-	210
HEATER150-BASIC-230V	4203220-CE	BLF203	230	50 ... 60	16	3,7	788	315	456	-	210
HEATER150-BASIC-230V-UK	4203220-UKCA	BLF203	230	50 ... 60	13	2,9	788	315	456	-	210
HEATER200-BASIC-450V	4204720-CE	BLF204	450	50 ... 60	16	7,2	788	315	456	-	210
HEATER200-BASIC-480V-US	4204520-C-US	BLF204	480	50 ... 60	16	7,7	788	315	456	-	210
HEATER200-BASIC-500V	4204520-CE	BLF204	500	50 ... 60	16	8	788	315	456	-	210
HEATER200-BASIC-400V	4204420-CE	BLF204	400	50 ... 60	20	8	788	315	456	-	210
HEATER200-BASIC-600V-US	4204620-C-US	BLF204	600	50 ... 60	14	8,4	788	315	456	-	210
HEATER200-SMART-400V	4304420-CE	SLF304	400	50 ... 60	20	8	788	315	456	-	210
HEATER200-SMART-600V-US	4304620-C-US	SLF304	600	50 ... 60	14	8,4	788	315	456	-	210
HEATER200-SMART-500V	4304520-CE	SLF304	500	50 ... 60	16	8	788	315	456	-	210
HEATER200-SMART-480V-US	4304520-C-US	SLF304	480	50 ... 60	16	7,7	788	315	456	-	210
HEATER200-SMART-450V	4304720-CE	SLF304	450	50 ... 60	16	7,2	788	315	456	-	210
HEATER400-BASIC-500V	4205510-CE	BLF205	500	50 ... 60	24	12	1214	560	990	-	320
HEATER400-BASIC-400V	4205410-CE	BLF205	400	50 ... 60	30	12	1214	560	990	-	320
HEATER400-BASIC-450V	4205710-CE	BLF205	450	50 ... 60	25	12	1214	560	990	-	320
HEATER400-BASIC-480V-US	4205510-C-US	BLF205	480	50 ... 60	24	12	1214	560	990	-	320



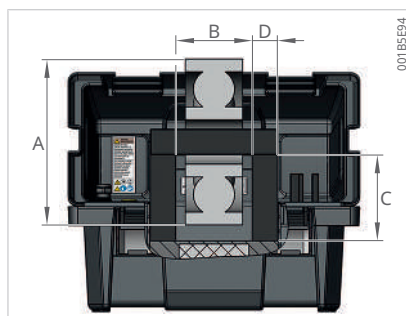
HEATER400, HEATER600



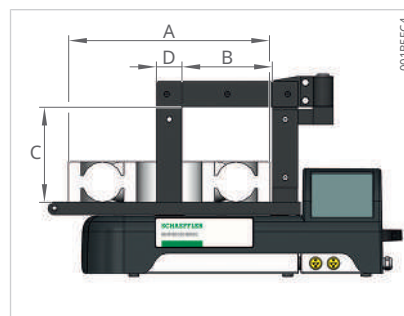
HEATER800, HEATER1600

C	D		Cert.	mw	T max.		t max.	A	d _v	d _h	b	m
mm	mm	mm	-	kg	°C	°F	h	mm	mm	mm	mm	kg
135	40	40	QPS	21	+150	+302	1,5	240	10	-	-	20
135	40	40	QPS	21	+150	+302	1,5	240	10	-	-	20
135	40	40	CE	21	+150	+302	1,5	240	10	-	-	20
135	40	40	UKCA	21	+150	+302	1,5	240	10	-	-	20
130	40	40	CE	21	+150	+302	0,5	400	10	65	125	50
130	40	40	QPS	21	+150	+302	0,5	400	10	65	125	50
130	40	40	UKCA	21	+150	+302	0,5	400	10	65	125	50
130	40	40	QPS	21	+150	+302	0,5	400	10	65	125	50
130	40	40	QPS	21	+150	+302	0,5	400	10	65	125	50
130	40	40	CE	21	+150	+302	0,5	400	10	65	125	50
130	40	40	QPS	21	+150	+302	0,5	400	10	65	125	50
130	40	40	UKCA	21	+150	+302	0,5	400	10	65	125	50
185	50	50	QPS	31	+240	+464	0,5	500	30	72	180	100
185	50	50	CE	31	+240	+464	0,5	500	30	72	180	100
185	50	50	UKCA	31	+240	+464	0,5	500	30	72	180	100
185	50	50	QPS	31	+240	+464	0,5	500	30	72	180	100
185	50	50	UKCA	31	+240	+464	0,5	500	30	72	180	100
185	50	50	QPS	31	+240	+464	0,5	500	30	72	180	100
185	50	50	QPS	31	+240	+464	0,5	500	30	72	180	100
185	50	50	CE	31	+240	+464	0,5	500	30	72	180	100
205	70	80	CE	52	+240	+464	0,5	600	45	110	200	150
205	70	80	QPS	52	+240	+464	0,5	600	45	110	200	150
205	70	80	UKCA	52	+240	+464	0,5	600	45	110	200	150
205	70	80	QPS	52	+240	+464	0,5	600	45	110	200	150
205	70	80	CE	52	+240	+464	0,5	600	45	110	200	150
205	70	80	UKCA	52	+240	+464	0,5	600	45	110	200	150
205	70	80	CE, UKCA	52	+240	+464	0,5	600	45	110	200	200
205	70	80	QPS	52	+240	+464	0,5	600	45	110	200	200
205	70	80	CE, UKCA	52	+240	+464	0,5	600	45	110	200	200
205	70	80	CE, UKCA	52	+240	+464	0,5	600	45	110	200	200
205	70	80	QPS	52	+240	+464	0,5	600	45	110	200	200
205	70	80	CE, UKCA	52	+240	+464	0,5	600	45	110	200	200
205	70	80	QPS	52	+240	+464	0,5	600	45	110	200	200
205	70	80	CE, UKCA	52	+240	+464	0,5	600	45	110	200	200
305	80	100	CE, UKCA	150	+240	+464	0,5	850	30	135	300	400
305	80	100	CE, UKCA	150	+240	+464	0,5	850	30	135	300	400
305	80	100	CE, UKCA	150	+240	+464	0,5	850	30	135	300	400
305	80	100	QPS	150	+240	+464	0,5	850	30	135	300	400

6.2 HEATER-BASIC, HEATER-SMART

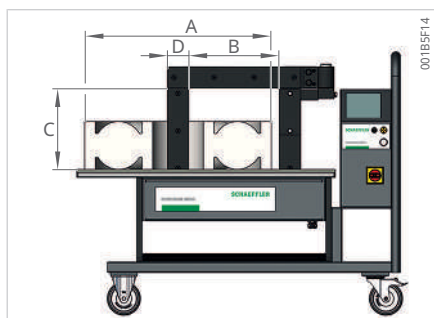


HEATER20

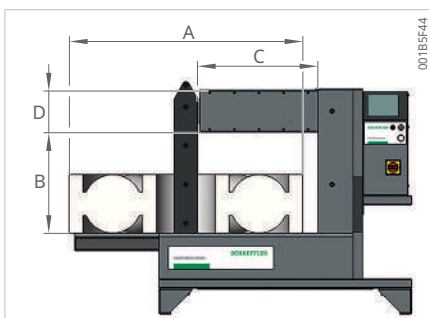


HEATER50 ... HEATER200

Ordering designation	Ordering number	Designation	U	F	I	P	L	W	H	H _w	B
-	-	-	V	Hz	A	kW	mm	mm	mm	mm	mm
HEATER400-BASIC-600V-US	4205610-C-US	BLF205	600	50 ... 60	20	12	1214	560	990	-	320
HEATER400-SMART-500V	4305510-CE	SLF305	500	50 ... 60	24	12	1214	560	990	-	320
HEATER400-SMART-450V	4305710-CE	SLF305	450	50 ... 60	25	12	1214	560	990	-	320
HEATER400-SMART-400V	4305410-CE	SLF305	400	50 ... 60	30	12	1214	560	990	-	320
HEATER400-SMART-480V-US	4305510-C-US	SLF305	480	50 ... 60	24	12	1214	560	990	-	320
HEATER400-SMART-600V-US	4305610-C-US	SLF305	600	50 ... 60	20	12	1214	560	990	-	320
HEATER600-SMART-600V-US	4306610-C-US	SLF306	600	50 ... 60	30	18	1344	560	990	-	400
HEATER600-SMART-500V	4306510-CE	SLF306	500	50 ... 60	36	18	1344	560	990	-	400
HEATER600-SMART-480V-US	4306510-C-US	SLF306	480	50 ... 60	36	18	1344	560	990	-	400
HEATER600-BASIC-400V	4206410-CE	BLF206	400	50 ... 60	45	18	1344	560	990	-	400
HEATER600-SMART-450V	4306710-CE	SLF306	450	50 ... 60	40	18	1344	560	990	-	400
HEATER600-SMART-400V	4306410-CE	SLF306	400	50 ... 60	45	18	1344	560	990	-	400
HEATER600-BASIC-500V	4206510-CE	BLF206	500	50 ... 60	36	18	1344	560	990	-	400
HEATER600-BASIC-480V-US	4206510-C-US	BLF206	480	50 ... 60	36	18	1344	560	990	-	400
HEATER600-BASIC-450V	4206710-CE	BLF206	450	50 ... 60	40	18	1344	560	990	-	400
HEATER600-BASIC-600V-US	4206610-C-US	BLF206	600	50 ... 60	30	18	1344	560	990	-	400
HEATER800-SMART-500V	4307510-CE	SLF307	500	50 ... 60	48	24	1080	650	955	1025	430
HEATER800-SMART-480V-US	4307510-C-US	SLF307	480	50 ... 60	48	24	1080	650	955	1025	430
HEATER800-SMART-450V	4307710-CE	SLF307	450	50 ... 60	50	24	1080	650	955	1025	430
HEATER800-BASIC-400V	4207410-CE	BLF207	400	50 ... 60	60	24	1080	650	955	1025	430
HEATER800-SMART-400V	4307410-CE	SLF307	400	50 ... 60	60	24	1080	650	955	1025	430
HEATER800-BASIC-600V-US	4207610-C-US	BLF207	600	50 ... 60	40	24	1080	650	955	1025	430
HEATER800-SMART-600V-US	4307610-C-US	SLF307	600	50 ... 60	40	24	1080	650	955	1025	430
HEATER800-BASIC-500V	4207510-CE	BLF207	500	50 ... 60	48	24	1080	650	955	1025	430
HEATER800-BASIC-480V-US	4207510-C-US	BLF207	480	50 ... 60	48	24	1080	650	955	1025	430
HEATER800-BASIC-450V	4207710-CE	BLF207	450	50 ... 60	50	24	1080	650	955	1025	430
HEATER1600-SMART-500V	4308510-CE	SLF308	500	50 ... 60	80	40	1520	750	1415	1485	710
HEATER1600-SMART-480V-US	4308510-C-US	SLF308	480	50 ... 60	80	40	1520	750	1415	1485	710
HEATER1600-SMART-450V	4308710-CE	SLF308	450	50 ... 60	80	40	1520	750	1415	1485	710
HEATER1600-SMART-400V	4308410-CE	SLF308	400	50 ... 60	100	40	1520	750	1415	1485	710
HEATER1600-BASIC-600V-US	4208610-C-US	BLF208	600	50 ... 60	65	40	1520	750	1415	1485	710
HEATER1600-BASIC-450V	4208710-CE	BLF208	450	50 ... 60	80	40	1520	750	1415	1485	710
HEATER1600-SMART-600V-US	4208610-C-US	SLF308	600	50 ... 60	65	40	1520	750	1415	1485	710
HEATER1600-BASIC-500V	4208510-CE	BLF208	500	50 ... 60	80	40	1520	750	1415	1485	710
HEATER1600-BASIC-480V-US	4208510-C-US	BLF208	480	50 ... 60	80	40	1520	750	1415	1485	710
HEATER1600-BASIC-400V	4208410-CE	BLF208	400	50 ... 60	100	40	1520	750	1415	1485	710



HEATER400, HEATER600



HEATER800, HEATER1600

C	D		Cert.	mw	T max.		t max.	A	d _v	d _h	b	m
mm	mm	mm	-	kg	°C	°F	h	mm	mm	mm	mm	kg
305	80	100	QPS	150	+240	+464	0,5	850	30	135	300	400
305	80	100	CE, UKCA	150	+240	+464	0,5	850	30	135	300	400
305	80	100	CE, UKCA	150	+240	+464	0,5	850	30	135	300	400
305	80	100	CE, UKCA	150	+240	+464	0,5	850	30	135	300	400
305	80	100	QPS	150	+240	+464	0,5	850	30	135	300	400
305	80	100	QPS	150	+240	+464	0,5	850	30	135	300	400
315	90	100	QPS	170	+240	+464	0,5	1050	60	150	310	600
315	90	100	CE, UKCA	170	+240	+464	0,5	1050	60	150	310	600
315	90	100	QPS	170	+240	+464	0,5	1050	60	150	310	600
315	90	100	CE, UKCA	170	+240	+464	0,5	1050	60	150	310	600
315	90	100	CE, UKCA	170	+240	+464	0,5	1050	60	150	310	600
315	90	100	CE, UKCA	170	+240	+464	0,5	1050	60	150	310	600
315	90	100	CE, UKCA	170	+240	+464	0,5	1050	60	150	310	600
315	90	100	QPS	170	+240	+464	0,5	1050	60	150	310	600
315	90	100	CE, UKCA	170	+240	+464	0,5	1050	60	150	310	600
315	90	100	QPS	170	+240	+464	0,5	1050	60	150	310	600
515	180	180	CE, UKCA	250	+240	+464	0,5	1150	260	60	505	800
515	180	180	QPS	250	+240	+464	0,5	1150	260	60	505	800
515	180	180	CE, UKCA	250	+240	+464	0,5	1150	260	60	505	800
515	180	180	CE, UKCA	250	+240	+464	0,5	1150	260	60	505	800
515	180	180	CE, UKCA	250	+240	+464	0,5	1150	260	60	505	800
515	180	180	QPS	250	+240	+464	0,5	1150	260	60	505	800
515	180	180	QPS	250	+240	+464	0,5	1150	260	60	505	800
515	180	180	CE, UKCA	250	+240	+464	0,5	1150	260	60	505	800
515	180	180	QPS	250	+240	+464	0,5	1150	260	60	505	800
515	180	180	CE, UKCA	250	+240	+464	0,5	1150	260	60	505	800
515	180	180	QPS	250	+240	+464	0,5	1150	260	60	505	800
780	230	230	CE, UKCA	720	+240	+464	0,5	1700	260	90	770	1600
780	230	230	QPS	720	+240	+464	0,5	1700	260	90	770	1600
780	230	230	CE, UKCA	720	+240	+464	0,5	1700	260	90	770	1600
780	230	230	CE, UKCA	720	+240	+464	0,5	1700	260	90	770	1600
780	230	230	QPS	720	+240	+464	0,5	1700	260	90	770	1600
780	230	230	CE, UKCA	720	+240	+464	0,5	1700	260	90	770	1600
780	230	230	QPS	720	+240	+464	0,5	1700	260	90	770	1600
780	230	230	CE, UKCA	720	+240	+464	0,5	1700	260	90	770	1600
780	230	230	QPS	720	+240	+464	0,5	1700	260	90	770	1600
780	230	230	CE, UKCA	720	+240	+464	0,5	1700	260	90	770	1600

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