

We pioneer motion

## Inductive Heating Devices

for environmentally-friendly and safe mounting





# Induction heating



Magnetic temperature sensor

Induction heating is a fast and controlled heating method. In contrast to traditional heating methods, such as furnaces, oil baths, and gas burners, it is the most advanced and simultaneously environmentally friendly form of induction heating. Moreover, this method is much better able to overcome the challenges of heating processes when it comes to precision, energy efficiency, safety, and cost.



## A proven technique

Bearing manufacturers consider induction heating to be the best method for mounting bearings. It prevents unnecessary damage and maintains the original bearing lubrication. Along with these benefits, induction heating also extends the life span of bearings and other workpieces.

## Typical applications

- Complete bearings or other ring-shaped ferromagnetic steel parts, including toothed wheels, couplings, bushings
- Inner rings of cylindrical roller bearings or needle bearings

Traditional heating methods are not very environmentally friendly and unsafe

# Broad portfolio – BASIC and SMART

## Install workpieces quickly and safely

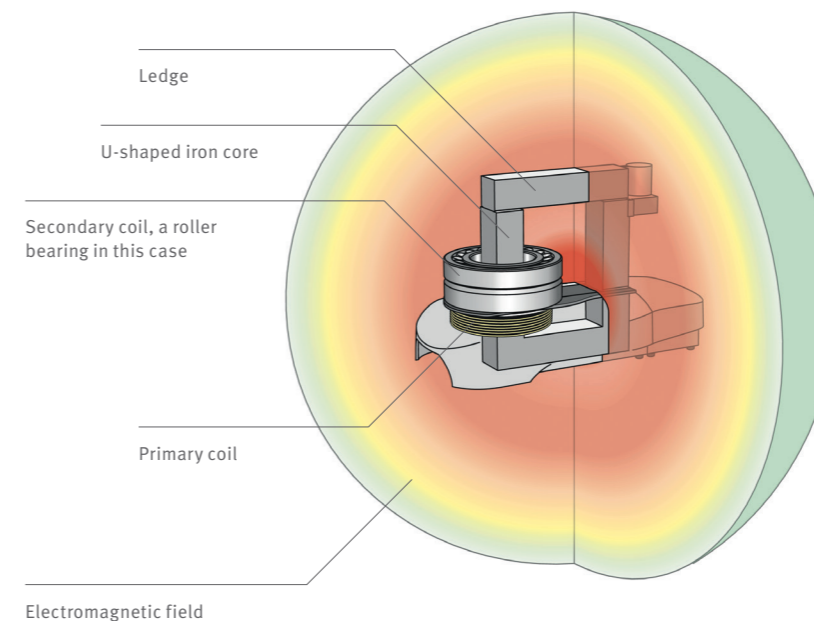
Schaeffler's inductive heating devices allow for quick and controlled heating of workpieces of various types. They are suitable for all sectors or industries.

Schaeffler's portfolio includes two models and thus meets maintenance requirements. With the two series BASIC and SMART for workpieces weighing up to 1,600kg, a broad portfolio is available to customers depending on their needs and requirements.

All HEATERS ensure even, controlled heating and a constantly good mounting quality. The workpieces are heated gently and always demagnetized automatically upon heating. Energy-efficient heating and short assembly times also help reduce operating costs.



Different workpieces up to 1600 kg can be heated with the HEATERS



## Operating principle of inductive heating devices

The primary coil generates an electromagnetic alternating field. This electromagnetic alternating field is transferred to the secondary coil via the iron core. A high induction current with low voltage is induced in the secondary coil. The induction current rapidly heats the workpiece. Non-ferromagnetic parts and the heating device itself remain cold.

An electromagnetic field is formed during heating. The field remains in place after the heating process stops, while the workpiece is demagnetized (max. 5 seconds).



# HEATER-BASIC

for safe heating with time and temperature control

The robust HEATER-BASICs ensure safe and controlled heating of workpieces. The environmentally friendly induction heating prevents damage to the workpieces.



**Induction heating**  
An inductive heating device generates a strong electromagnetic field and, in doing so, heats a ferromagnetic workpiece. The heating process causes the workpiece to expand, which makes it easier to mount.

## Heating methods

- **Temperature mode**  
– For controlled heating to the desired temperature.
- **Time mode**  
– For serial heating without temperature sensors,  
– when the necessary heating time is known.

### Benefits at a glance

- Environmentally friendly and energy-efficient heating method
- Controlled heating for constantly good mounting quality
- More safety for both operator and workpiece
- Prevents bearing damage
- Preserves original bearing lubrication
- Easy to operate

### Features at a glance

- Operating modes: time or temperature control
- Robust design with membrane keyboard
- For workpieces of up to 1,600 kg
- For rolling bearings, toothed wheels, couplings, bushings, inner rings of needle and cylindrical roller



Robust design with membrane keyboard



Easy to operate



Heat-resistant gloves included in delivery scope



# HEATER-SMART

With log function for documentation and Delta-T control

HEATER SMART ensures even and controlled heating. Its log function provides profound documentation. Thanks to its Delta-T control, the HEATER SMART is especially suitable for bearings with low radial clearance. The environmentally friendly induction heating preserves the workpieces.



**The Delta-T:** In science, the term Delta-T ( $\Delta T$ ) is the difference in temperature between two measuring points.



Detailed documentation

## Heating methods

- **Temperature mode**  
– For controlled heating to the desired temperature.
- **Time mode**  
– For serial heating without temperature sensors, when the necessary heating time is known.
- **Time or temperature mode**  
– For controlled heating to the desired temperature or duration.
- **Temperature and speed mode**  
– For controlled heating with the maximum temperature gradient per unit of time, for example 40 °C per minute.

### Benefits at a glance

- Environmentally friendly and energy-efficient heating method
- Consistent, controlled heating
- Safe heating of roller bearings with reduced bearing clearance
- Documentation of the heating process
- Intuitive operation via touch screen
- Prevents bearing damage
- Conserves original bearing lubrication

### Easy to operate

### Features at a glance

- Operating modes: time, temperature, temperature and time mode, temperature and speed mode
- With two temperature sensors for delta T control (temperature measuring on inner and outer bearing ring)
- For workpieces up to 1,600 kg
- For rolling bearings, toothed wheels, couplings, bushings, inner rings of needle and cylindrical roller



Easy to operate



Intuitive touch screen operation



# HEATER-BASIC

for workpieces up to 1600 kg



Heater-BASIC	HEATER20-BASIC	HEATER50-BASIC	HEATER100-BASIC	HEATER150-BASIC	HEATER200-BASIC	HEATER400-BASIC	HEATER600-BASIC	HEATER800-BASIC	HEATER1600-BASIC
Frequency	50 – 60 Hz	50 – 60 Hz	50 – 60 Hz	50 – 60 Hz	50 – 60 Hz	50 – 60 Hz	50 – 60 Hz	50 – 60 Hz	50 – 60 Hz
Temperature measurement	Single					Single			
Modes	Time or temperature regulation					Time or temperature regulation			
Weight in kg	21	21	31	52	52	150	170	250	720
Max. temperature	150 °C / 302 °F	240 °C / 464 °F	240 °C / 464 °F	240 °C / 464 °F	240 °C / 464 °F	240 °C / 464 °F	240 °C / 464 °F	240 °C / 464 °F	240 °C / 464 °F
Max. bearing weight in kg	20	50	100	150	200	400	600	800	1600
Max. OD Ø mm	240	400	500	600	600	850	1050	1150	1700
Pole spacing in mm	120	120	180	210	210	320	400	430	710
Pole height in mm	135	130	185	205	205	305	315	515	780
Pole surface area in mm	40 x 40	40 x 50	50 x 50	70 x 80	70 x 80	80 x 100	90 x 110	180 x 180	230 x 230
Dimensions in mm (L x W x H)	460 x 240 x 280	600 x 226 x 272	702 x 256 x 392	788 x 315 x 456	788 x 315 x 456	1214 x 560 x 990	1344 x 560 x 990	1080 x 650 x 955 1080 x 650 x 1025*	1520 x 750 x 1415 1520 x 750 x 1485*

## Power supply

Type	Type	Volt/Ampere	Power (KVA)	Certification
HEATER20-BASIC	HEATER20-BASIC-230V	230V/10A	2.3	CE
	HEATER20-BASIC-120V-US	120V/10A	1.2	QPS
	HEATER20-BASIC-240V-US	240V/5A	1.2	QPS
HEATER50-BASIC	HEATER50-BASIC-230V	230V/13A	3	CE
	HEATER50-BASIC-120V-US	120V/13A	1.5	QPS
	HEATER50-BASIC-240V-US	240V/13A	3.2	QPS
HEATER100-BASIC	HEATER100-BASIC-230V	230V/16A	3.7	CE
	HEATER100-BASIC-120V-US	120V/15A	1.8	QPS
	HEATER100-BASIC-240V-US	240V/15A	3.6	QPS
HEATER150-BASIC	HEATER150-BASIC-230V	230V/16A	3.7	CE
	HEATER150-BASIC-240V-US	240V/16A	3.8	QPS
HEATER200-BASIC	HEATER200-BASIC-400V	2 ~ 400V/20A	8	CE
	HEATER200-BASIC-450V	2 ~ 450V/16A	7.2	CE
	HEATER200-BASIC-500V	2 ~ 500V/16A	8	CE
	HEATER200-BASIC-480V-US	2 ~ 480V/16A	7.7	QPS
	HEATER200-BASIC-600V-US	2 ~ 600V/14A	8.4	QPS

Type	Type	Volt/Ampere	Power (KVA)	Certification
HEATER400-BASIC	HEATER400-BASIC-480V-US	2 ~ 480V/24A	12	QPS
	HEATER400-BASIC-600V-US	2 ~ 600V/20A	12	QPS
	HEATER400-BASIC-400V	2 ~ 400V/30A	12	CE
	HEATER400-BASIC-450V	2 ~ 450V/25A	12	CE
	HEATER400-BASIC-500V	2 ~ 500V/24A	12	CE
HEATER600-BASIC	HEATER600-BASIC-480V-US	2 ~ 480V/36A	18	QPS
	HEATER600-BASIC-400V	2 ~ 400V/45A	18	CE
	HEATER600-BASIC-450V	2 ~ 450V/40A	18	CE
	HEATER600-BASIC-500V	2 ~ 500V/36A	18	CE
HEATER800-BASIC	HEATER800-BASIC-480V-US	2 ~ 480V/48A	24	QPS
	HEATER800-BASIC-600V-US	2 ~ 600V/40A	24	QPS
	HEATER800-BASIC-400V	2 ~ 400V/60A	24	CE
	HEATER800-BASIC-450V	2 ~ 450V/50A	24	CE
	HEATER800-BASIC-500V	2 ~ 500V/48A	24	CE
HEATER1600-BASIC	HEATER1600-BASIC-480V-US	2 ~ 480V/80A	40	QPS
	HEATER1600-BASIC-600V-US	2 ~ 600V/65A	40	QPS
	HEATER1600-BASIC-400V	2 ~ 400V/100A	40	CE
	HEATER1600-BASIC-450V	2 ~ 450V/80A	40	CE
	HEATER1600-BASIC-500V	2 ~ 500V/80A	40	CE



# HEATER-SMART

for workpieces up to 1600 kg



Heater-SMART	HEATER50-SMART	HEATER100-SMART	HEATER150-SMART	HEATER200-SMART
Frequency	50 – 60 Hz	50 – 60 Hz	50 – 60 Hz	50 – 60 Hz
Temperature measurement	Dual, ΔT measurement, log function			
Modes	Time, temperature, temperature or time, temperature & speed			
Weight in kg	21	31	52	56
Max. temperature	240 °C / 464 °F	240 °C / 464 °F	240 °C / 464 °F	240 °C / 464 °F
Max. bearing weight in kg	50	100	150	200
Max. OD Ø mm	400	500	600	600
Pole spacing in mm	120	180	210	210
Pole height in mm	130	185	205	205
Pole surface area in mm	40 x 50	50 x 50	70 x 80	70 x 80
Dimensions in mm (L x W x H)	600 x 226 x 272	702 x 256 x 392	788 x 315 x 456	788 x 315 x 456

HEATER400-SMART	HEATER600-SMART	HEATER800-SMART	HEATER1600-SMART	
Frequency	50 – 60 Hz	50 – 60 Hz	50 – 60 Hz	
Temperature measurement	Dual, ΔT measurement, log function			
Modes	Time, temperature, temperature or time, temperature & speed			
Weight in kg	150	170	250	720
Max. temperature	240 °C / 464 °F	240 °C / 464 °F	240 °C / 464 °F	240 °C / 464 °F
Max. bearing weight in kg	400	600	800	1600
Max. OD Ø mm	850	1050	1150	1700
Pole spacing in mm	320	400	430	710
Pole height in mm	305	315	515	780
Pole surface area in mm	80 x 100	90 x 110	180 x 180	230 x 230
Dimensions in mm (L x W x H)	1214 x 560 x 990	1344 x 560 x 990	1080 x 650 x 955 1080 x 650 x 1025*	1520 x 750 x 1415 1520 x 750 x 1485*

## Power supply

Type	Type	Volt/Ampere	Power (KVA)	Certification
HEATER50-SMART	HEATER50-SMART-230V	230V/13A	3	CE
	HEATER50-SMART-120V-US	120V/13A	1.5	QPS
	HEATER50-SMART-240V-US	240V/13A	3.2	QPS
HEATER100-SMART	HEATER100-SMART-230V	230V/16A	3.7	CE
	HEATER100-SMART-120V-US	120V/15A	1.8	QPS
	HEATER100-SMART-240V-US	240V/15A	3.6	QPS
HEATER150-SMART	HEATER150-SMART-230V	230V/16A	3.7	CE
	HEATER150-SMART-240V-US	240V/16A	3.8	QPS
HEATER200-SMART	HEATER200-SMART-400V	2 ~ 400V/20A	8	CE
	HEATER200-SMART-450V	2 ~ 450V/16A	7.2	CE
	HEATER200-SMART-500V	2 ~ 500V/16A	8	CE
	HEATER200-SMART-480V-US	2 ~ 480V/16A	7.7	QPS
	HEATER200-SMART-600V-US	2 ~ 600V/14A	8.4	QPS

Type	Type	Volt/Ampere	Power (KVA)	Certification
HEATER400-SMART	HEATER400-SMART-480V-US	2 ~ 480V/24A	12	QPS
	HEATER400-SMART-600V-US	2 ~ 600V/20A	12	QPS
	HEATER400-SMART-400V	2 ~ 400V/30A	12	CE
	HEATER400-SMART-450V	2 ~ 450V/25A	12	CE
	HEATER400-SMART-500V	2 ~ 500V/24A	12	CE
HEATER600-SMART	HEATER600-SMART-480V-US	2 ~ 480V/36A	18	QPS
	HEATER600-SMART-600V-US	2 ~ 600V/30A	18	QPS
	HEATER600-SMART-400V	2 ~ 400V/45A	18	CE
	HEATER600-SMART-450V	2 ~ 450V/40A	18	CE
HEATER800-SMART	HEATER800-SMART-500V	2 ~ 500V/36A	18	CE
	HEATER800-SMART-480V-US	2 ~ 480V/48A	24	QPS
	HEATER800-SMART-600V-US	2 ~ 600V/40A	24	QPS
	HEATER800-SMART-400V	2 ~ 400V/60A	24	CE
HEATER1600-SMART	HEATER800-SMART-450V	2 ~ 450V/50A	24	CE
	HEATER800-SMART-500V	2 ~ 500V/48A	24	CE
	HEATER1600-SMART-480V-US	2 ~ 480V/80A	40	QPS
	HEATER1600-SMART-600V-US	2 ~ 600V/65A	40	QPS
	HEATER1600-SMART-400V	2 ~ 400V/100A	40	CE
	HEATER1600-SMART-450V	2 ~ 450V/80A	40	CE
	HEATER1600-SMART-500V	2 ~ 500V/80A	40	CE



# In comparison

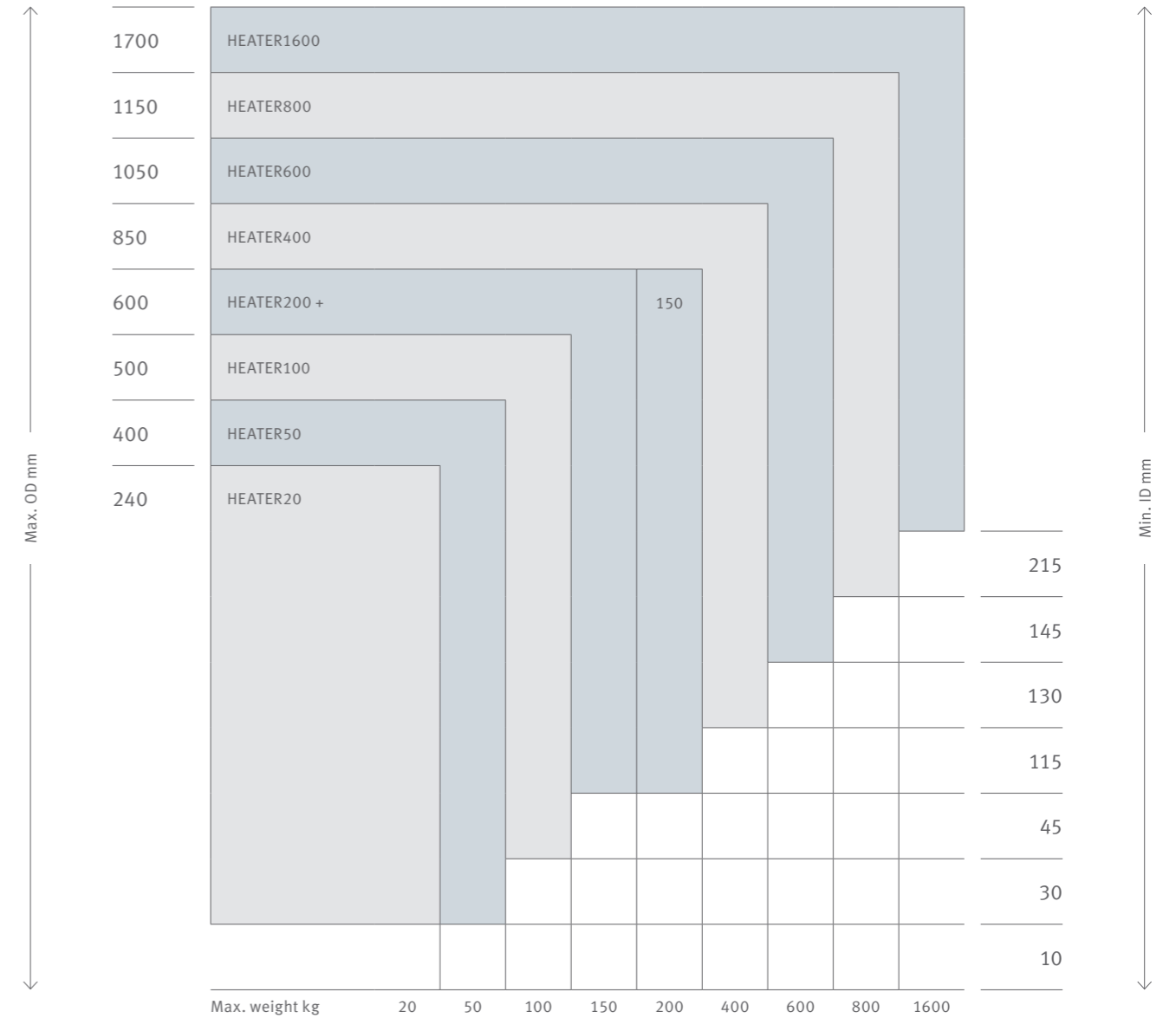
HEATER-BASIC and HEATER-SMART



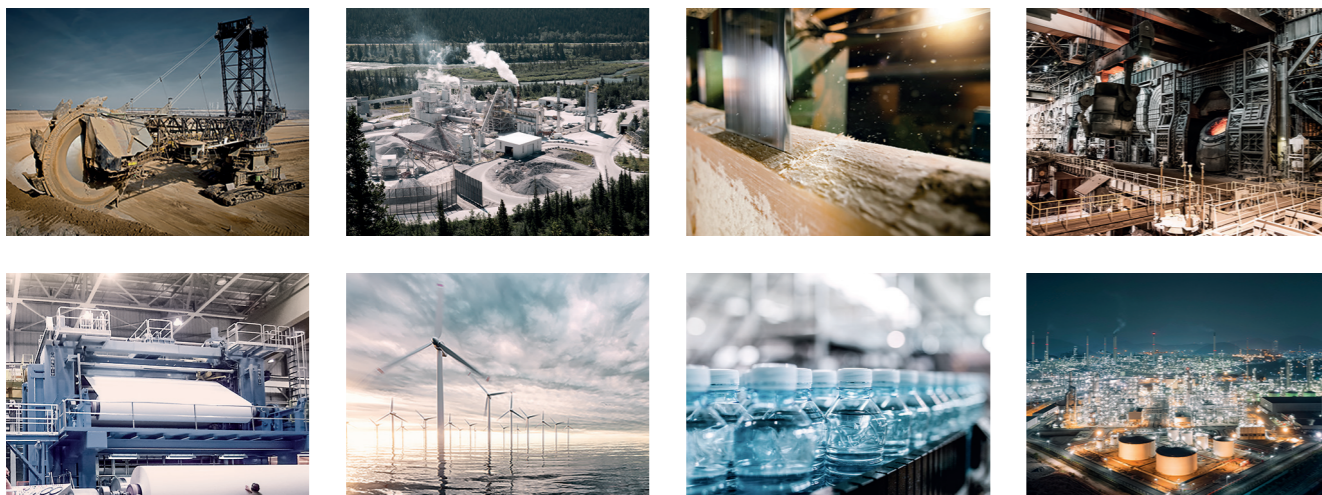
HEATER-BASIC		HEATER-SMART
+	Temperature mode	+
+	Time mode	+
-	Time or temperature mode	+
-	Temperature and speed mode	+
-	Delta-T control	+
-	Log function	+



# Heating manager



# Cross-industry solution



Type	Min. ID mm	Max. OD mm	Max. weight kg	Max. width mm
HEATER20	10	240	20	120
HEATER50	10	400	50	120
HEATER100	30	500	100	180
HEATER150	45	600	150	210
HEATER200	45	600	200	210
HEATER400	115	850	400	320
HEATER600	130	1050	600	400
HEATER800	145	1150	800	430
HEATER1600	215	1700	1600	710

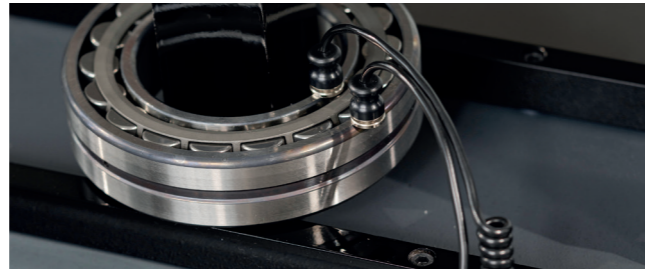


# Scope of delivery and accessories

## HEATER-BASIC and HEATER-SMART

### Included in the scope of delivery:

- Magnetic temperature sensor:  
(Magnetic temperature sensor, max. 240 °C)  
– 1 piece for HEATER-BASIC models  
– 2 pieces for HEATER-SMART models
- Heat protection gloves  
(up to 250 °C)
- Petroleum jelly (Can, 100 g): for lubrication of the contact surfaces to reduce wear and noise
- Test certificate
- User manual in English, German, Spanish, French, Dutch  
*Other language versions:*  
[medias.schaeffler.de/en/thermal-tools/heater](https://medias.schaeffler.de/en/thermal-tools/heater)



Material description	Version	HEATER-BASIC and -SMART
HEATER.MPROBE-20-200	Coiled cable	HEATER20 to HEATER200
HEATER.MPROBE-400-800	Cable length 1100 mm	HEATER400 to HEATER800
HEATER.MPROBE-1600	Cable length 2000 mm	HEATER1600

## Yoke designs HEATER-BASIC and HEATER-SMART

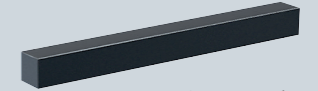
Type	SAP Description	min. Bore Diameter Workpiece	Dimension (L x W x H mm)	Yoke design	Scope of delivery	Optional
<b>HEATER20-BASIC</b>	HEATER50.YOKE-10	10	200 x 7 x 7	support yoke	x	
	HEATER50.YOKE-15	15	200 x 10 x 10	support yoke	x	
	HEATER50.YOKE-20	20	200 x 14 x 14	support yoke	x	
	HEATER50.YOKE-30	30	200 x 20 x 20	support yoke	x	
	HEATER50.YOKE-60	60	200 x 40 x 40	support yoke	x	
<b>HEATER50 BASIC + SMART</b>	HEATER50.YOKE-10	10	200 x 7 x 7	support yoke	x	
	HEATER50.YOKE-15	15	200 x 10 x 10	support yoke		x
	HEATER50.YOKE-20	20	200 x 14 x 14	support yoke	x	
	HEATER50.YOKE-30	30	200 x 20 x 20	support yoke		x
	HEATER50.YOKE-60	60	200 x 40 x 40	support yoke		x
<b>HEATER100 BASIC + SMART</b>	HEATER100.YOKE-15	15	280 x 10 x 10	support yoke		x
	HEATER100.YOKE-20	20	280 x 14 x 14	support yoke		x
	HEATER100.YOKE-30	30	280 x 20 x 20	support yoke	x	
	HEATER100.YOKE-45	45	280 x 30 x 30	slewing yoke		x
	HEATER100.YOKE-60	60	280 x 40 x 40	slewing yoke		x
	HEATER100.YOKE-72	72	280 x 50 x 50	slewing yoke	x	
	HEATER100.YOKE-85	85	280 x 60 x 60	slewing yoke		



Vertikal yoke



Slewing yoke



Support yoke

Type	SAP Description	min. Bore Diameter Workpiece	Dimension (L x W x H mm)	Yoke design	Scope of delivery	Optional
<b>HEATER150 BASIC + SMART and HEATER200 BASIC + SMART</b>	HEATER200.YOKE-15	15	350 x 10 x 10	support yoke		x
	HEATER200.YOKE-20	20	350 x 14 x 14	support yoke		x
	HEATER200.YOKE-30	30	350 x 20 x 20	support yoke		x
	HEATER200.YOKE-45	45	350 x 30 x 30	slewing yoke	x	
	HEATER200.YOKE-60	60	350 x 40 x 40	slewing yoke		x
	HEATER200.YOKE-72	72	350 x 50 x 50	slewing yoke		x
	HEATER200.YOKE-85	85	350 x 60 x 60	slewing yoke		x
	HEATER200.YOKE-100	100	350 x 70 x 70	slewing yoke		x
	HEATER200.YOKE-110	110	350 x 70 x 80	slewing yoke	x	
	<b>HEATER400 BASIC + SMART</b>	HEATER400.YOKE-30	30	20 x 20 x 500	slewing yoke	
HEATER400.YOKE-45		45	30 x 30 x 500	slewing yoke		x
HEATER400.YOKE-60		60	40 x 40 x 500	slewing yoke		x
HEATER400.YOKE-85		85	60 x 60 x 500	slewing yoke		x
HEATER400.YOKE-115		115	80 x 80 x 500	slewing yoke	x	
<b>HEATER600 BASIC + SMART</b>	HEATER600.YOKE-60	60	40 x 40 x 600	slewing yoke		x
	HEATER600.YOKE-85	85	60 x 60 x 600	slewing yoke		x
	HEATER600.YOKE-115	115	80 x 80 x 600	slewing yoke		x
<b>HEATER800 BASIC + SMART</b>	HEATER800.YOKE-60	60	40 x 40 x 725	vertical yoke		x
	HEATER800.YOKE-72	72	50 x 50 x 725	vertical yoke		x
	HEATER800.YOKE-85	85	60 x 60 x 725	vertical yoke		x
<b>HEATER1600 BASIC + SMART</b>	HEATER800.YOKE-115	115	80 x 80 x 725	vertical yoke		x
	HEATER800.YOKE-145	145	100 x 100 x 725	vertical yoke	x	
	HEATER1600.YOKE-85	85	60 x 60 x 1220	vertical yoke		x
	HEATER1600.YOKE-115	115	80 x 80 x 1140	vertical yoke		x
	HEATER1600.YOKE-145	145	100 x 100 x 1140	vertical yoke		x
	HEATER1600.YOKE-215	215	150 x 150 x 1140	vertical yoke	x	



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