



Handheld device for induction heating
MF-IDUCTOR-1.2KW, 2.0KW and 2.3KW
User manual

Contact

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ISO ISO 9001: 2015

Machine ID and certification: See product label

Warning! Read the manual and safety instructions before operating the device

- Check all parts for possible damage during transportation. In case of damage, please contact the forwarder immediately.
- Because our products are continuously subject to improvements, we reserve the right to make changes.

Vor Inbetriebnahme die Betriebsanleitung und die Sicherheitsvorschriften aufmerksam lesen

- Alle Teile auf möglichen Transportschaden kontrollieren. Eventuelle Schäden umgehend der Spedition melden.
- Da unsere Produkte ständig verbessert werden, behalten wir uns Änderungen vor.

Antes de la primera puesta en marcha, lea atentamente el manual de uso y las instrucciones de seguridad

- Revise todos los elementos para detectar posibles daños sufridos durante el transporte. En caso de observar algún daño, avise inmediatamente a la empresa de transporte.
- Debido a que nuestros productos están continuamente sujetos a mejoras, nos reservamos el derecho de realizar cambios.

Lisez le mode d'emploi et les consignes de sécurité avant la mise en service

- Vérifiez pour l'ensemble des pièces que celles-ci n'ont pas été endommagées pendant le transport. En cas de dommages, avertissez immédiatement le transporteur.
- Nos produits étant constamment améliorés, nous nous réservons le droit d'apporter des modifications.

Lees voor ingebruikname eerst de gebruiksaanwijzing en de veiligheidsvoorschriften

- Controleer alle onderdelen op mogelijke transportschade. Waarschuw bij schade onmiddellijk het transportbedrijf.
- Omdat onze producten voortdurend worden verbeterd, behouden wij ons het recht voor om wijzigingen aan te brengen.

Foreword The MF-IDUCTOR is suitable for the inductive heating of ferromagnetic components such as bearing rings, housings, nuts, bolts and pipes. Depending on the workpiece, either fixed or flexible inductors can be used. This makes the MF-IDUCTOR a versatile tool for assembly, disassembly or preheating. The PAD-inductor can be used to remove stickers, layers of paint or paint residues on steel parts. When disassembling shrink connections, the MF-IDUCTOR specifically heats the component to be removed from the outside, such as a bearing inner ring on the shaft. The bearing inner ring expands due to the rapid heating and can therefore be easily pulled off the shaft. The MF-IDUCTOR is also suitable for loosening rusted screw connections or glued connections.

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1. About the user manual


- 1.1 Current version** A current version and translations of this user manual, can be found at <http://medien.schaeffler.com>.
- 1.2 Availability** This user manual is supplied with each device and can also be ordered retrospectively.
- 1.3 Legal guidelines** The information in this manual corresponded to the most recent status at the close of editing. The illustrations and descriptions cannot be used as grounds for any claims relating to devices that have already been delivered. Schaeffler Technologies AG & Co. KG accepts no liability for any damage or malfunctions if the device or accessories have been modified or used in an incorrect manner.
- 1.4 Original user manual** The original user manual is taken to be a user manual in the Dutch language. A user manual in another language is to be taken as a translation of the original user manual.

2. Safety, warnings and potential hazards

2.1 Explanation of the pictograms The pictograms appearing on the MF-IDUCTOR have the following meanings:

	Forbidden for persons with pacemaker or other sensitive implants.
	Caution! This equipment generates a magnetic field which can erase magnetic data from credit cards and the like.
	Caution! This equipment includes components which may reach high temperatures.

2.2 Description of potential hazards

	<p>The MF-IDUCTOR must not be used by persons in the following groups:</p> <ul style="list-style-type: none"> ■ users with a pacemaker; ■ users with psychiatric or physical impairments whose use of the equipment would present a hazard to the user or their environment; ■ users below 16 years of age without the supervision of an adult.
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2.3 Safety measures to be taken

- The user must carefully read this manual and be familiar with the safety standards in the work practice.
- Follow the instructions in the manual at all times.

The following must be checked before the equipment is connected to the mains supply:

- The original mains lead with its IEC Lock is connected (in case of doubt, contact the supplier)
- The MF-IDUCTOR is undamaged (no cracks or holes in the housing);
- Only use original MF-IDUCTOR inductors. Do not modify the generator.

2.4 Error messages The MF-IDUCTOR has a number of (patented) internal safety features. If one of these trips the unit will switch off and the LED will flash when the on/off button is depressed. The MF-IDUCTOR is equipped with a patented microprocessor induction generator. In the event of overloading or overheating of the generator the processor automatically reduces the power to prevent damage to the induction generator.

2.5 Overheating protection The unit will stop heating whenever its internal temperature rises too high. Check:

1. that the fan is still operating
2. that the ventilation holes are unblocked
3. that power is connected, to ensure cooling
4. that only inductors approved by the manufacturer are being used.

Solution: Delay heating until the unit has cooled sufficiently. The unit monitors the temperature itself, and it will not be usable until the internal temperature has fallen sufficiently. This will be detectable as you will hear the fan switch off.

2.6 Connection safety feature Check:

1. that the inductor is correctly connected
2. that the inductors are not damaged
3. that the inductors are not causing a short-circuit to earth or between the inductors

2.7 Mains current protection Ensure that the power supply meets the requirements of the respective MF-IDUCTOR version. See also chapter 6.

2.8 Voltage and current protection Check:

1. that the mains voltage is not too high
2. that the inductor is not causing a short-circuit to earth, or internally
3. where the flexible inductor is being used, that not too many turns have been wound around the object to be heated.

Solution: Remove some turns from the object to be heated and retry.

3. Introduction



3.1 Application The MF-IDUCTOR is a power tool that uses mid frequency induction technology for heating ferromagnetic metals e.g.: screws, tubes, bushings or bearing inner rings. Depending on the application, different flexible inductors, fixed inductors and a PAD-inductor are available, see point 6.3 Accessories.

3.2 Operating conditions

- Temperature: -5°C to +40°C (23°F to 104°F)
- Humidity: 0 – 90%, non-condensing
- IP 20
- No higher than 2,000 metres above sea level

3.3 Plug types Due to the wide variety of plug types, the power cable supplied may not fit the wall socket. In such cases, obtain a power cable with an IEC C13 connector and a mains plug that fits.



IEC C13 connector



CEE 7/7 (CE)



Nema 5-15 (USA / Canada)



BS 1363 (UKCA)

4. Operation

4.1 Connecting inductors



A fixed or flexible inductor must be connected to the unit. This connection is extremely robust, thanks to the patented clamping mechanism. Fixed and flexible inductors are connected or removed by simultaneously depressing both buttons on the side of the unit.

The inductors contact points are then fully inserted in the holes at the front of the MF-IDUCTOR. The buttons should then be released. The patented clamping mechanism will ensure that the inductor is held very firmly in place. Before using the unit check that the contacts have been fully inserted and that the connection is tight.

WARNING!



Select a fixed inductor which will fit closely around the object to be heated without touching it. This allows the optimal transfer of magnetic energy so that the object heats up as fast as possible, as well as preventing the inductors protective sleeve from being damaged by contact or wearing faster due to overheating.



WARNING!



When using the flexible induction inductor and U-inductor it is important to wind as few turns around the object as possible. Where excessive turns are wound the current amperage will rise too high and the safety cut-out will trip. The optimal number of turns will vary between objects. Start with a single turn and gradually increase the number of turns as necessary.

WARNING!



If the MF-IDUCTOR is used in one of the lower power settings it may produce a ticking sound: this is normal and not a fault.

4.2 Rotary switch and push button

The patented rotary switch at the rear of the MF-IDUCTOR is used to adjust the heating time and power. These adjustments should be made before you press the push button on top of the unit to activate heating. The settings can not be adjusted during heating. Once adjustment is complete the inductor is held around the object to be heated and the button on top of the unit is depressed. In positions 1 to 5 the unit will switch off automatically after the specified time. In position 6 the unit will continue to heat until the button is released or the MF-IDUCTOR is switched off by the internal temperature safety cut-out. Once the MF-IDUCTOR has cooled sufficiently the heating process will start up again automatically when you press the button. The MF-IDUCTOR is active when the LED on the front is illuminated.



Power settings:

- 1: P = 50 % T = 20s
- 2: P = 75 % T = 20s
- 3: P = 100 % T = 30s
- 4: P = 100 % T = 60s
- 5: P = 100 % T = 90s
- 6: P = 100 % T = ∞

4.3 LED lighting and fan

The LED on the front of the unit will light up to illuminate the object when you press the button. The fan will then run to cool the system. The fan will remain active throughout the heating process and also thereafter if the measured internal temperature is high. Once the temperature has returned to a normal level the fan will switch off automatically. For this reason the mains connection should be maintained until the fan stops running. The MF-IDUCTOR will switch off (or fail to switch on) if a fault is detected. In that case the LED light will flash when the button is depressed. (See: “Error messages”.)

WARNING!



In order to prevent damage the MF-IDUCTOR and the inductor must be allowed to cool thoroughly after use before they are returned to their storage box. Both the unit and the inductors can become hot in use.

WARNING!

The unit must always be connected to a supply network with a fuse rated at at least 5A and at most 16A. The unit does not have an internal fuse. An earth bonded wall socket should always be used on safety grounds (Class I).

WARNING!

The unit does not feature an on/off switch, as soon as the plug is inserted in the socket the unit will be powered up.

NOTE!

The use of a generator is permissible if it is able to deliver adequate power and the output delivers clean sinus form voltage in the correct frequency range (50 - 60 Hz).

5. Cleaning and maintenance

The MF-IDUCTOR is maintenance-free. The housing can be cleaned with a dry cloth.

WARNING!

Do not use a wet cloth or solvents: these can damage the unit or its operation. Do not use a flexible or fixed inductor if the insulating protective sleeve is damaged or worn.

6. Technical specifications and accessories

6.1 Technical specifications

Type	MF-IDUCTOR-1.2KW	MF-IDUCTOR-2.0KW	MF-IDUCTOR-2.3KW
Frequency	50-60Hz		
Frequency range	30-65kHz		
Power kW	1.2	2.0	2.3
Safety class	Class I		
Thermal protection	Yes		
Error message	Yes		
Fan	Yes		
LED lighting	Yes		
Dimensions mm (LxWxH)	150x490x390		
Weight kg	1,4		

6.2 Machine ID and certification See product label.

Available models

Name	Voltage/Amp	kW	Certification
MF-IDUCTOR-1.2KW-230V	230V/6A	1.2	CE
MF-IDUCTOR-1.2KW-230V-UK	230V/6A	1.2	UKCA
MF-IDUCTOR-2.0KW-120V	120V/15A	2.0	CE
MF-IDUCTOR-2.0KW-120V-UK	120V/15A	2.0	UKCA
MF-IDUCTOR-2.0KW-120V-US	120V/15A	2.0	USA / Canada
MF-IDUCTOR-2.3KW-230V	230V/10A	2.3	CE
MF-IDUCTOR-2.3KW-230V-UK	230V/10A	2.3	UKCA



6.3 Accessories MF-INDUCTOR flexible inductors and accessories



Flexible inductor 1,1 mtr



Flexible inductor 2,0 mtr



PAD-inductor (for removing striping, bumper stickers, glue, paint residu etc.)

Article	Wire thickness mm	Length mm	Min. winding diameter mm	Temperature isolation °C (°F)
MF-INDUCTOR-2.3KW-1.1M-D3.5	3,5	1100	25	650 (1202)
MF-INDUCTOR-2.3KW-2M-D3.5	3,5	2000	25	650 (1202)
MF-INDUCTOR-2.3KW-2.5M-D3.5	3,5	2500	25	650 (1202)
MF-INDUCTOR-2.3KW-3M-D3.5	3,5	3000	25	650 (1202)
MF-INDUCTOR-2.3KW-3.5M-D3.5	3,5	3500	25	650 (1202)
MF-INDUCTOR-2.3KW-PAD-D3.5	3,5	-	-	150 (302)
Heat protection gloves (up to 300°C)	-	-	-	300 (572)

NOTE!

Flexible inductors with a length of more than 2 metres are mainly used for larger and heavier components that require correspondingly higher power. We therefore recommend combining these with the MF-INDUCTOR variants with 2.0kW or 2.3kW capacity.

MF-INDUCTOR-1.2KW-D3.5-SET



Set of 9 (fixed) inductors

Set	Quantity	Wire thickness mm	Internal diameter mm	Bolt size metric (imperial)	Windings	Length mm	Temperature isolation °C (°F)
52M30-240	1	3,5	52	M30 (1 1/4")	2,5	240	325 (617)
47M24-240	1	3,5	47	M24 (1")	2,5	240	325 (617)
40M20-200	1	3,5	40	M20 (3/4")	3,5	200	325 (617)
32M16-200	1	3,5	32	M16 (9/16")	3,5	200	325 (617)
26M12-200	1	3,5	26	M12 (7/16")	3,5	200	325 (617)
23M10-250	1	3,5	23	M10 (7/16")	3,5	250	325 (617)
23M10-150	1	3,5	23	M10 (7/16")	3,5	150	325 (617)
18M08-150	1	3,5	18	M8 (5/16")	3,5	150	325 (617)
U-inductor 160-600	1	3,5	-	-	0,5	600	325 (617)

MF-INDUCTOR-2.3KW-D3.5-SET



Set of 9 (fixed) inductors

Set	Quantity	Wire thickness mm	Internal diameter mm	Bolt size metric (imperial)	Windings	Length mm	Temperature isolation °C (°F)
52M30-240P+	1	3,5	52	M30 (1 1/4")	5,5	240	325 (617)
47M24-240P+	1	3,5	47	M24 (1")	5,5	240	325 (617)
40M20-200P+	1	3,5	40	M20 (3/4")	5,5	200	325 (617)
32M16-200P+	1	3,5	32	M16 (9/16")	5,5	200	325 (617)
26M12-200P+	1	3,5	26	M12 (7/16")	5,5	200	325 (617)
23M10-250P+	1	3,5	23	M10 (7/16")	5,5	250	325 (617)
23M10-150	1	3,5	23	M10 (7/16")	3,5	150	325 (617)
18M08-150	1	3,5	18	M8 (5/16")	3,5	150	325 (617)
U-inductor 160-600	1	3,5	-	-	0,5	600	325 (617)

6.4 Scope of delivery The Schaeffler MF-IDUCTOR is supplied as a complete set in a robust box with the following contents:

Scope of delivery	MF-IDUCTOR
MF-IDUCTOR	1 pc.
MF-INDUCTOR-2.3KW-2M-D3.5, Length 2mtr	1 pc.
Carrying case	✓
Heat protection gloves (up to 250°C)	✓
A mains cable with IEC Lock, Length 2,5 mtr	✓
Printed manual (English, German)	✓

7. Disclaimer

The manufacturer and/or supplier cannot be held liable for any damage to workpieces or consequential damage resulting from incorrect use of the device or damage to workpieces and any consequential damage resulting from a defect in the device.

8. Waste disposal

Power tools, accessories and packaging must be reused at the end of their life cycle in an environmentally sound manner. Do not dispose of used power tools as residual waste, but bring them to a recycling company that complies with the applicable environmental requirements.



9. CE certificate of conformity

CE DECLARATION OF CONFORMITY

We hereby declare that the product described below is in conformity with the applicable health and safety requirements of the EC Directive in terms of its design and type and in the execution we have brought into circulation. This declaration shall cease to be valid if any modification is made to the product without our agreement.

Product description:	Inductive heater
Product name/type:	<ul style="list-style-type: none">■ MF-IDUCTOR-1.2KW-230V■ MF-IDUCTOR-2.3KW-230V■ MF-IDUCTOR-2.0KW-120V
Comply with the requirements of:	<ul style="list-style-type: none">■ EMC Directive 2014/30/EU■ Low Voltage Directive 2014/35/EU■ RoHS Directive 2011/65/EU
Applicable harmonized standards:	<ul style="list-style-type: none">■ EN 55011 (2009) + A1 (2010): Conducted and radiated emission■ EN 61000-6-1 (2007): Immunity■ EN 61000-3-2 (2014): Emission■ EN 61000-3-3 (2013): Emission■ EN 60335-1 (2012): Safety of household and similar electrical appliances
Name and address of the authorized person for the technical documentation:	Schaeffler Technologies AG & Co. KG Georg-Schäfer-Straße 30 D-97421 Schweinfurt

H. van Essen
Managing Director
Bega International BV



Place, Date:
Vaassen, 01-12-2022



10. UKCA certificate of conformity

UK DECLARATION OF CONFORMITY

We hereby declare that the product described below is in conformity with the applicable UK regulations terms of its design and type and in the execution we have brought into circulation. This declaration shall cease to be valid if any modification is made to the product without our agreement.

Product description:	Inductive heater
Product name/type:	<ul style="list-style-type: none">■ MF-IDUCTOR-1.2KW-230V-UK■ MF-IDUCTOR-2.3KW-230V-UK
Comply with the requirements of:	<ul style="list-style-type: none">■ Electrical Equipment (Safety) Regulations 2016 S.I. 2016:1101■ Electromagnetic Compatibility Regulations 2016 S.I. 2016:1091■ RoHS Regulations 2012 S.I. 2012:3032
Applicable harmonized standards:	Electric Safety <ul style="list-style-type: none">■ EN 60335-1 EMC Emission <ul style="list-style-type: none">■ EN 55011■ EN 61000-3-2■ EN 61000-3-3 EMC Immunity <ul style="list-style-type: none">■ EN 61000-6-2
Name and address of the authorized person for the technical documentation:	Schaeffler Technologies AG & Co. KG Georg-Schäfer-Straße 30 D-97421 Schweinfurt

H. van Essen
Managing Director
Bega International BV



Place, Date:
Vaassen, 01-11-2022

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