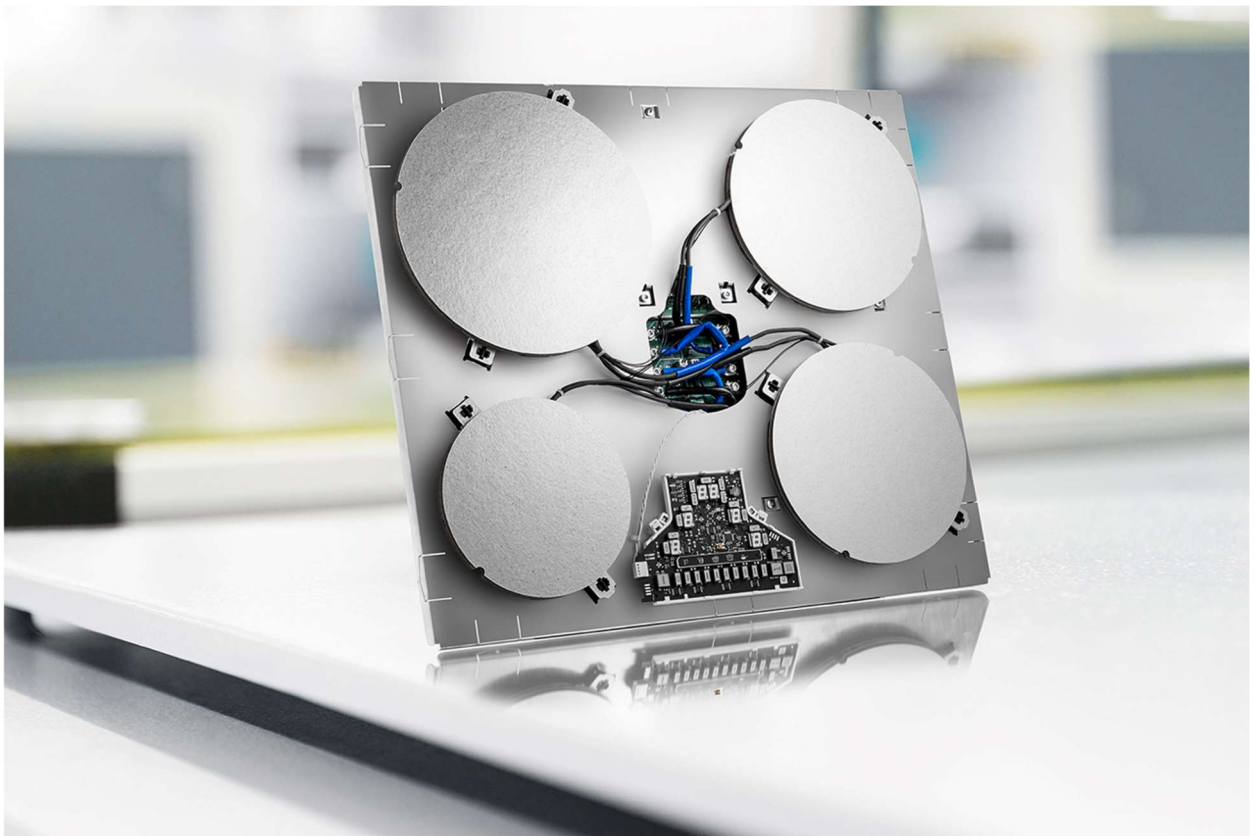

Operating Instructions



Induction Gx

90.60160.286-001-03-A

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1 About these operating instructions

1.1 Validity

These operating instructions are for the following material number range of induction coils, induction generators and systems:

- 75.9510x.xxx
- 75.0803x.xxx

1.2 Handling of these operating instructions

These operating instructions are part of the product and describe the intended use of the product.

- ▶ Read these operating instructions, especially the safety instructions, carefully before use.
- ▶ Observe all other applicable documents (see chapter 1.4).
- ▶ Keep these operating instructions during the product lifetime.
- ▶ Make sure that these operating instructions are available completely and legibly at all times.
- ▶ Pass these operating instructions to each subsequent owner or user of the product.

1.3 Revisions

Date	Version	What is new?
23 rd March 2022	01	Initially and preliminary version
4 th April 2022	02	Update overall one-step actions chapter 3 (transport and storage) and chapter 4
29 th June 2022	03	<ul style="list-style-type: none">• Layout 1.3• Update 2.1 (VDE)• Added torque tolerance in chapter 4.1.1• Added optional clamp terminal in chapter 4.1.2• Correction torque value in chapter 4.2.2• Added cable routings for exemplary configurations in chapter 4.3• Orthography, description and layout in chapter 5.3• Update mounting plate pictures





Date	Version	What is new?
26 th October 2022	04	<ul style="list-style-type: none">• Orthography and general page arrangement• Update cover sheet• Update of chapter 2.1 (user interfaces)• Added chapter 2.3.7 (cable fixation)• Update of chapter 2.3.18 (link to chapter 4.1)• Update of chapter 3 (transport)• Added minimum distances in chapter 4.1• Update of chapter 4.1.1 (mounting plate and inductors)• Update of chapter 4.1.2• Update of chapter 4.2.2 (exemplary connector and terminal descriptions, assembly and connection of user interface)• Update final steps in chapter 4.3• Update in chapter 5.2 (disassembly of inductors)• Orthography and layout in chapter 5.3.16
18 th November 2022	05	<ul style="list-style-type: none">• Cross-reference correction and update of round inductors in bridge mode in chapter 4.1.1• Update of pictures 13 and 22• Update of chapter 4.3 (assembly of glass ceramic surface)• Orthography
13 th February 2023	06	<ul style="list-style-type: none">• Update of chapter 4.3• Update of chapter 5.3 (assignment of error codes in systems)• Orthography

Tab. 1: Revisions

1.4 Other applicable documents

- Technical customer documentation Gx 90.60147.674
- Technical customer documentation TC Slim SmartKii 90.60081.217
- Technical customer documentation TC Lite Slider SmartKii 90.60080.646
- Technical customer documentation TC VArio SmartKii 90.60112.428
- Technical customer documentation cooking support functions 90.60141.173
- Drawing for customer (type-specific drawing)
- Customer datasheet (type-specific datasheet)

1.5 Symbols and markings

Symbols	Meaning
✓	Requirement of an action
▶	One-step action
▷	Measure to avoid a hazard in a warning
1.	<ul style="list-style-type: none">Step within a multi-step action listKeep order.
↪	Final result of an action
	Tip for easier work
 DANGER!	Hazardous situation that will lead to death or serious injuries, if the safety measures are not followed.
 WARNING!	Hazardous situation that can lead to death or serious injuries, if the safety measures are not followed.
 CAUTION!	Hazardous situation that can lead to minor injuries, if the safety measures are not followed.
NOTICE!	Hazardous situation that can lead to property damage if the safety measures are not followed.

Tab. 2: Symbols and markings

2 Safety

2.1 Intended use

EGO Induction Gx systems and components properly assembled into the final appliance are intended for heating food on cookers or hobs in domestic kitchen areas in fixed buildings. EGO Induction Gx systems and components must be used under a glass ceramic surface with a thickness of 4 mm for domestic appliances. Any other use is not allowed by default and needs written consent of E.G.O.. EGO Induction Gx is intended for supervised operation only.

All EGO Induction Gx components are - depending on the respective variant - certified for:

- VDE (for distribution within Europe or in areas where EN 60335 is valid)
- CQC (still in development, for distribution within China)
- UL (still in development, for distribution within USA / Canada)

KC certification (for distribution within Korea) must be done by the appliance manufacturer. Certain Gx systems are ready for KC certification.

Induction Gx is designed to be controlled by following EGO User Interfaces:

- Knob Control K6 (by request)
- Touch Control Flex (by request)
- Touch Control Lite Slider (by request)
- Touch Control Lite Slider SmartKii
- Touch Control Slim SmartKii
- Touch Control VArio SmartKii

NOTICE! Wrong use of user interface.

Generally, the software of the user interface has always to be adapted to Induction Gx, i.e. using a user interface which has been designed for another induction won't work.

Dismantling of Gx heating systems is not allowed unless for repair purposes. For EMC and safety reasons, it is not allowed to change the cable routing and fixation.

2.2 Staff qualification

These operating instructions are intended for following staff/staff groups:

Staff	Required qualification
Electrical and mechanical skilled staff (research & development, product engineering, quality) of the kitchen appliances manufacturer	<ul style="list-style-type: none">• Has detailed experience in design of electric kitchen appliances• Has detailed knowledge in valid norms and safety standards• Has detailed knowledge in using relevant tools and equipment for the production of electrical appliances

Staff	Required qualification
Qualified electrician	<ul style="list-style-type: none">• Knows the relevant standards and regulations for electrical installations.• Has experience in using the relevant tools and equipment for electrical installations.• Has knowledge of cooking appliances.• Has received training from the kitchen appliance manufacturer.

Tab. 3: Staff qualification

2.3 Residual risks

2.3.1 Installation with applied voltage

If there is voltage applied on the induction product by installation, electric shock hazard consists within the installation.

- ▶ Gx Induction coils, generators and systems must be installed or replaced by qualified staff only.
- ▶ Power supply of the cooking appliance must be completely switched off and verified before all installation or replacement work at an induction product.

2.3.2 Insufficient grounding

People could suffer an electric shock by having insufficient grounding.

- ▶ Gx Inductions must be connected correctly and permanently with ground potential.
- ▶ Pay attention to the regional regulations and include testing and documentation.

2.3.3 Voltages at metal parts of the mounting plate

Metal parts of the mounting plates may carry dangerous voltages if there is a fault inside an induction generator. There is a danger by electric shock.

- ▶ It is necessary to connect Induction to protective earth (PE) conductor.
- ▶ Ensure that PE conductor is well connected to provide low resistance.

2.3.4 Overloading the grid

A wrong selection of power per line conductor leads to an overload of the grid. The maximum power per line conductor must be adapted to the fuse in the house installation.

- ▶ Set the maximum permissible power dependent on your grid according to the manual of the user interface.

2.3.5 Generator connection box

An open generator connection box provides touchable live parts. The assembly of the clamp terminal with screw and the recommended housing cover is mandatory to achieve a proper protection against accidental contact.

- ▶ Assemble the suitable clamp terminal with screw and the recommended housing cover.

2.3.6 Incorrect cable routing

Improper cable routings, which affecting e.g., sharp edges or hot areas, could lead to a damage of the cable insulation. This could lead to a short-circuit risk or electric shock by having open wires.

- ▶ Cable routing must be done in a way to protect the cables from overheat and mechanical impacts (e.g., sharp edges).
- ▶ The suitable cable material and cross-section must be selected.

2.3.7 Missing cable fixation for the hot appliance plug of the domino induction

A missing cable fixation for the hot appliance plug of the induction with built-in socket, could lead to a pull-out of the plug within the assembly of the kitchen countertop. This could lead to a burning hazard.

- ▶ An additional fixation of cables for the hot plug connector must be considered in a built-in cooktop.

2.3.8 Accessible voltage-supplied parts

Gx induction generators have accessible voltage-supplied parts (e.g., connection terminals, contact parts...). Further accessible voltage-supplied parts can be accessible by using a thin metallic wire. These could lead to a hazard of electric shock.

- ▶ By a Gx induction generator delivery it must be secured that the holes in the mounting plate must be designed according to IEC 60335-1 and IEC 60335-2-6.

2.3.9 Charged capacitors

Charged capacitors could lead to a hazard of electric shock, if the generator is accessible.

- ▶ Check that the voltage of the capacitors is <60 V.

2.3.10 Unsuitable receptacles or wire material

Unsuitable receptacles or wire material. Insufficient electric contacts could lead to an excessive heating.

- ▶ Just use suitable wires and receptables.

2.3.11 Other electronic devices

The induction is compliant with valid EMC standards and EMF guidelines and should not cause any disturbances to other electronic devices.

In case that other electronic devices are not compliant with valid EMC standards and EMF guidelines, disturbances to these not compliant devices (e.g., heart pacemakers, other electronic implants, other household appliances...) could occur.

- ▶ Persons with heart pacemakers or other electronic implants should consult their doctor or the manufacturer of the implants to clarify if they provide a sufficient interference resistance.

2.3.12 Hot surfaces

Even if the cooktop itself is not heated during usage, the glass ceramic will get hot due to heat reflection of the cookware. This leads to a risk of a burning hazard.

- ▶ Do not touch the glass ceramic surface, which was used with the switched-on or recently used Gx product under it.

2.3.13 Humidity

In case of liquid entry to Gx inductions, a hazard of electric shock consists.

- ▶ Gx inductions must be protected from humidity and accessibility (e.g., liquid entry) from outside of the cooking appliance.

2.3.14 Dust

In case of liquid entry to Gx inductions, a hazard of electric shock consists.

- ▶ Gx inductions must be protected from dust.

2.3.15 Use of the induction outside its intended use

Induction Gx may be used only for the declared intended use (see chapter 2.1). Non-intended use of the EGO induction units may lead to hazards that are not described in this document.

- ▶ Use induction products just as described in this document and other applicable documents.
- ▶ Use induction products not outside their intended use.

2.3.16 Non-intended objects on the glass ceramic surface

Not intended objects on the cooking surface could lead to a burning hazard.

- ▶ Do not place or store any unsuitable objects on the glass ceramic surface.

2.3.17 Non-intended objects beyond the cookware

Not intended objects on the cooking surface could lead to a burning hazard.

- ▶ Place the cookware directly on the glass ceramic.
- ▶ Do not put any papers, cloths, trivets or other unsuitable objects beyond the pot.

2.3.18 Risk of unintended heating

Metal parts (e.g., a surrounding metal frame), which are located at the glass ceramic, may be heated up unintendedly, if these are located too close to the inductors.

- ▶ If the cooktop will be equipped with a surrounding metal frame, the overlap of the frame to the inner side of the mounting plate must be as described in chapter 4.1. E.G.O. recommends a mounting frame which is consisting of totally two similar parts, which are combined to a mounting frame.

2.3.19 High temperatures by using booster function

Using the booster function with a small amount of oil or fat may reach extremely high temperatures and could lead to a burning hazard.

- ▶ Booster function must only be used to heat-up water or usually frying procedures with oil.

2.3.20 Heating of magnetic tins

Closed tins may explode when heating up. Open tins may overheat because the temperature monitoring is not adapted to magnetic tins.

- ▶ Do not place and heat up magnet tins.

2.3.21 Use of damaged induction

If a Gx induction product is damaged (e.g., damaged through wrong transport and / or handling), it could lead to electric shock.

- ▶ Never use damaged induction products.

2.3.22 Insufficient glass ceramic material

A use of insufficient glass ceramic material could lead to a damage of the glass itself, an electric shock or burning hazard.

- ▶ Use glass ceramic with a thickness of 4 mm.
- ▶ Additional materials are not allowed in general.

2.3.23 Sharp edges

Packaging materials, electronic circuit boards, components of Gx induction generators or user interfaces (e.g., soldered points or board edges) could have sharp edges. Furthermore, the micanite and other components of the coil and the mounting plate of Gx induction heating systems could have sharp edges. People can cut themselves into hands or fingers.

- ▶ Wear safety gloves during transport and installation.

2.3.24 Weight

Induction system and components (e.g., generator...) could have a high weight. Within the handling of induction systems, modules or components, people can squeeze arms and hands. If these inductions fall, people may injure their feet. Furthermore, people can underestimate the weight and transport too high weight for their specific body properties. This could lead to physical stress.

- ▶ Handle induction products with care.
- ▶ Heavy induction components and systems must be carried by several persons.

2.3.25 Damage of the wires

Sharp edges or burs at the mounting plate or other aluminum sheets can damage wires. Damaged wires could lead to an electric shock hazard.

- ▶ The mounting plate must be free of burs and sharp edges or use other protection methods (e.g., edge protection).

2.3.26 Moving of inductors

A subsequent moving of inductors on the mounting plate of a Gx heating system is not allowed. By component delivery of inductors, it must be considered that user interfaces – especially those ones with SmartKii technology – are sensitive for overtemperatures. A wrong placement could lead to a damage of the user interface or burns.

- ▶ When going beyond the recommended minimum distances, make sure that the:
 - sensitivity of the touch buttons is not influenced significantly
 - not to exceed the max. allowed temperature for the user interface (see customer documentation of the corresponding user interface for more details)
 - not to exceed the max. allowed temperature on the glass ceramic's surface above the user interface (60 °C according to EN 60335 section 11.7).

2.3.27 Mounting plate construction

A component delivery is not including a mounting plate in the scope of delivery.

- ▶ When designing mounting plates, it must be secured that conductive parts like fixation pins, screws or nuts get not in touch with components on the printed circuit boards and the air and creepage distances are kept. This is especially valid for the chokes and capacitors.

2.3.28 Heating of furniture or wrong functionality

An oversized cookware, which is exceeding the maximum cookware dimension and covering unintended area, can heat up unintended areas. Furthermore, user interface keys can be covered. An activation or deactivation of functions or induction can be not possible.

- ▶ Use suitable and recommended cookware sizes mentioned in this document or the related technical customer documentation or which are illustrated by the serigraphy.

2.3.29 Wrong serigraphy

A serigraphy is used that temperature sensor is not covered completely by the pot or that the touch control keys are illustrated wrong. Electronic components as the user interface can be heated-up or cookware can be placed wrong on the glass ceramic. These lead to a burning hazard by oil ignition or heating of furniture. Keys of the user interface cannot be activated.

- ▶ Serigraphy must comply with cooking zones and touch control keys.

2.4 Avoidance of property damage

2.4.1 Empty cooking and insufficient cookware

The empty cooking protection works with many pots but cannot protect every pot from damages. Pots with an embossing stamp in the bottom, the empty cooking protection does not work reliably if the embossing punch is located directly on a multi-sensor and no further multi-sensors are covered by this pot. This may overheat the cookware or glass ceramic surface and creates the risk of damage to property.

- ▶ Use induction hobs and cookers just with suitable cookware.
- ▶ Do not cook empty or heat empty cookware.

2.4.2 Air gap

An air gap between cookware's bottom and glass ceramic surface (e. g. stamped imprints with the manufacturer's logo in the center point) will affect the temperature monitoring significantly and may cause damages (e. g. deformed bottom surfaces due to overheating).

- ▶ To ensure a good temperature monitoring, the cookware's bottom should be as even as possible.

2.4.3 Electrostatic discharge (ESD)

In case of electrostatic discharge, electric components of Gx induction can be damaged.

- ▶ Requirements under IEC 61340-5-1:2007 Electrostatics must be observed (not valid for induction coils).

2.4.4 Wrong voltage or frequency

Wrong voltage or frequency due to lightning or EMC disturbances from other devices, which do not fulfil the standards.

- ▶ Use the cooktop in the intended use.
- ▶ Gx induction is compliant with valid EMC standards and EMF guidelines.

2.4.5 High voltage

The Induction generator may be damaged previously if the high voltage is applied directly in full amount.

- ▶ Only use high voltage testers which are electronically controlled und apply the high voltage in a ramp.

2.4.6 Damage of contacts

Pollution on contacts (e.g., by touching them with dirty hands) could lead to damaged contacts or contact problems.

- ▶ Make sure that the contact areas are not polluted (e.g., by corrosion supporting substances).

2.4.7 EMC problems

A wrong cable routing or too long wires may cause EMC problems (interconnecting cable of generators).

- ▶ Perform the cable routing as recommended in the operating instruction and customer documentation.

2.4.8 Wrong storage or transportation

A wrong storage, packaging or transportation can damage induction products.

- ▶ Do storage and transportation as recommended in chapter 3.

3 Transport and storage

3.1 Transport

- ▶ Use suitable packaging to prevent damage to the product. Dynamic and static forces, vibrations and shocks must be avoided by the packaging. The induction components and systems are designed for the static operation.
- ▶ It is not allowed to change the product assembly e.g., positions of inductors or cable routings within the product transport. If induction components are mounted in an appliance of a third party, it's their responsibility to avoid any transport damages of the product in the new constellation. Induction systems are not designed for a free-swinging storage.
- ▶ A double or more stacking with the same product or with another pallet is not allowed.
- ▶ Have a transport temperature between -25 °C – $+70\text{ °C}$ with maximum 85 % relative humidity at 38 °C . This temperature range is limited to a short-term period for the transport.
- ▶ A condensation of the induction product must be avoided.

The following transport tests are considered for the product itself:

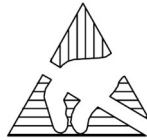
- IEC 60068-2-31
- IEC 60068-2-6

3.2 Storage

- ▶ Comply with the following storage conditions:
 - Have a storage temperature between 0 °C – 45 °C . Recommended is 10 °C – 25 °C with 50 – 60 % humidity for a storage with initial packaging.
 - Store dry in a closed room. The packaging of the induction is designed for a transport with maximum 85 % relative humidity at 38 °C for a short-term period.
 - Have a protection against corrosion and pollution. E.G.O. recommends storing in appropriate containers for electrical equipment to protect the induction particularly from corrosion and dirt.
 - A block storage by stacking pallets on top of each other is not allowed.
- ▶ Gx needs to be in the valid temperature operating range before handling. A condensate formation is not allowed. The relative humidity must not exceed 93 % ($T < 40\text{ °C}$).

4 Installation and commissioning

- ▶ Observe the corresponding type drawing and data sheet before assembling or connecting induction components.
- ▶ The ambient and operating temperatures must not exceed 85 °C.
- ▶ The minimum ambient and operating temperatures are 0 °C.
- ▶ The relative humidity must not exceed 93 % (T<40 °C).
- ▶ It must be ensured that there is no condensation on the electronics before commissioning.
- ▶ The maximum intake temperature of the fan must not exceed 70 °C.
- ▶ The nominal voltage of mains voltage is 230 V (50/60 Hz).
- ▶ The rated voltage of mains voltage is between 200 and 240 V.
- ▶ The working voltage range of mains voltage is between 160 and 264 V.
- ▶ CMOS circuit. Pay attention on ESD protection.

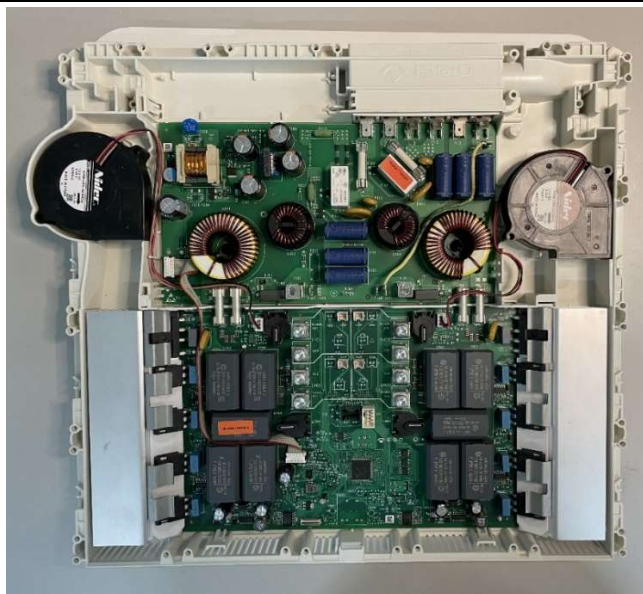


1 ESD protection

4.1 Assembly of components

This chapter is only relevant if Gx has been purchased as separate components or if repairing an Induction Gx heating system. The distances to the metal frame must be also considered for systems by having inwards looking frames related to the mounting plate.

The generators themselves are pre-assembled e.g., all generator-internal parts as well as the internal wiring (e.g., fans, filter board) have already been performed.



2 Exemplary VDE 4-burner generator

Preconditions

Necessary Tools:

- Power screwdriver with adjustable tightening torque and Torx TX15, 20 and 25 bits

Necessary screws:

Description of screw	Type numbers of references	Drawings of references
Screw for strain relief (side entrances Gx generator) and strain relief for connection box	969.173	90.03302.350-001
Screw for connection of Gx generator and mounting plate	98.302.04	C000018293-002
Screw for earthing terminal	967.279	967.279-002

Tab. 4: Necessary screws for Gx assembly

The following distances are recommended between different objects:

Description of objects	Recommended distances	Comments
Octa inductor – Octa inductor	Minimum and recommended in bridge mode: 10 mm Maximum: 35 mm	<p>The distances are based on the outer edge of the first inductor's mica sheet to the outer edge of the further inductor's mica sheet.</p> <ul style="list-style-type: none"> ▶ In bridge mode it must be secured that NTC sensors of both coils are covered by the cookware. A four-way bridging of Octa inductors (horizontally and vertically) is not allowed. ▶ It is recommended to check the minimum distance that two kinds of cookware can be used on bridgeable cooking zones within a deactivated bridge function. <p>A reduction of the minimum distance between inductors may cause louder noises. Furthermore, the lower pot detection limit may increase especially when two cookware on the concerned coils are operated at different power levels. Positioning coils too close to each other can cause cookware to be detected, which are not placed on this position. Therefore, a reduction under the recommended minimum distances must be avoided. By increasing the distances, the heat distribution in the cookware is decreasing. Larger coils distances and the same cookware size (compared to same coils, which are closer together) lead to less coverage on each inductor. This results in either significantly reduced power in the cookware or higher stress on the inductor. Furthermore, it must be ensured in the system that at least one of the NTC sensors is always covered by the cookware.</p>
Round inductor – Round inductor	Minimum: 10 mm Minimum in bridge mode: 10 mm Maximum: 35 mm (related to two 180 mm inductors)	

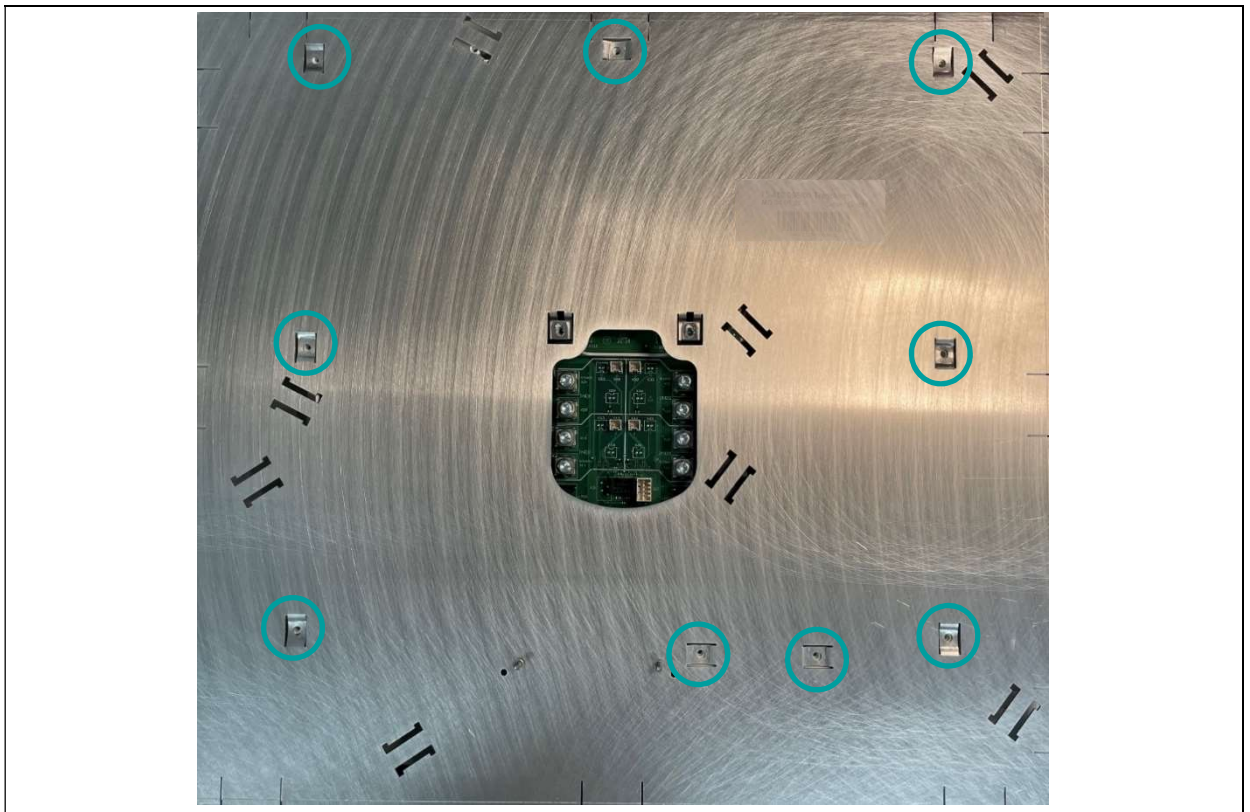
Description of objects	Recommended distances	Comments
Inductor to TC Slim SK	Minimum: 20 mm	<p>The distances are based on the outer edge of the inductor's mica sheet to the outer edge of the user interface's PCB or the edge of the electrically conductive material / metal frame. The user interfaces – especially those one with SmartKii technology – are sensitive for overtemperatures. When going beyond the recommended minimum distances, make sure that:</p> <ul style="list-style-type: none"> ▶ the sensitivity of the touch buttons is not influenced significantly. ▶ not to exceed the max. allowed temperature for the user interface (see customer documentation and customer drawing of the corresponding user interface) ▶ not to exceed the max. allowed temperature on the glass ceramic's surface above the user interface (60 °C according to EN 60335 section 11.7). ▶ the performance and lifetime are secured. ▶ the standards (safety, EMC, usability, efficiency, environments, approvals) of the technical customer documentation Gx and of the user interface are fulfilled.
Inductor to TC Lite Slider SK	Minimum: 20 mm	
Inductor to TC Vario SK (master and slaves)	Minimum: 20 mm	
User interface to adjacent electrically conductive materials	Minimum: 10 mm	
Inductor to metal frame (surrounding the glass ceramic)	Minimum: 5 mm (relating to an aluminum frame), 10 mm or individual testing (for other materials)	The distances are based on the outer edge of the inductor's mica sheet to the outer edge of the metal frame.

Tab. 5: Distances

4.1.1 Exemplary assembly of a 4-burner hob with Gx induction

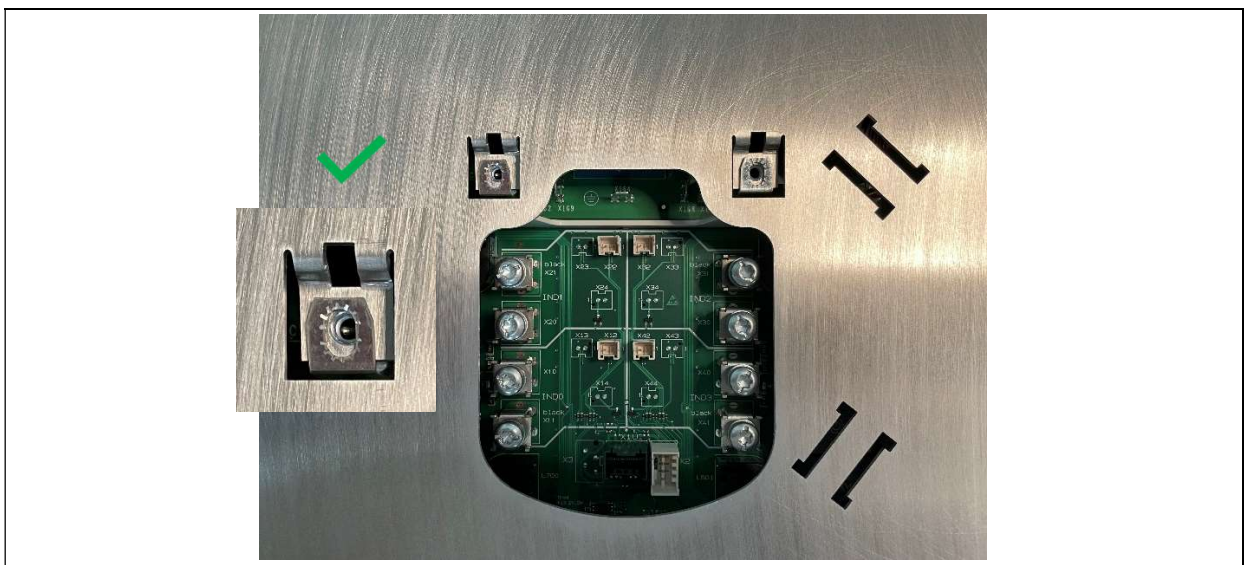
The following steps must be considered for the fixation of mounting plate and induction generator.

1. Align the mounting plate with the screw holes of the generator.
 - The mounting plate must be assembled directly on the housing of the generator. The gap between the mounting plate and the must be as small as possible to avoid a reduction of cooling and performance.
 - Consider all correct alignment positions as shown in the following illustration.



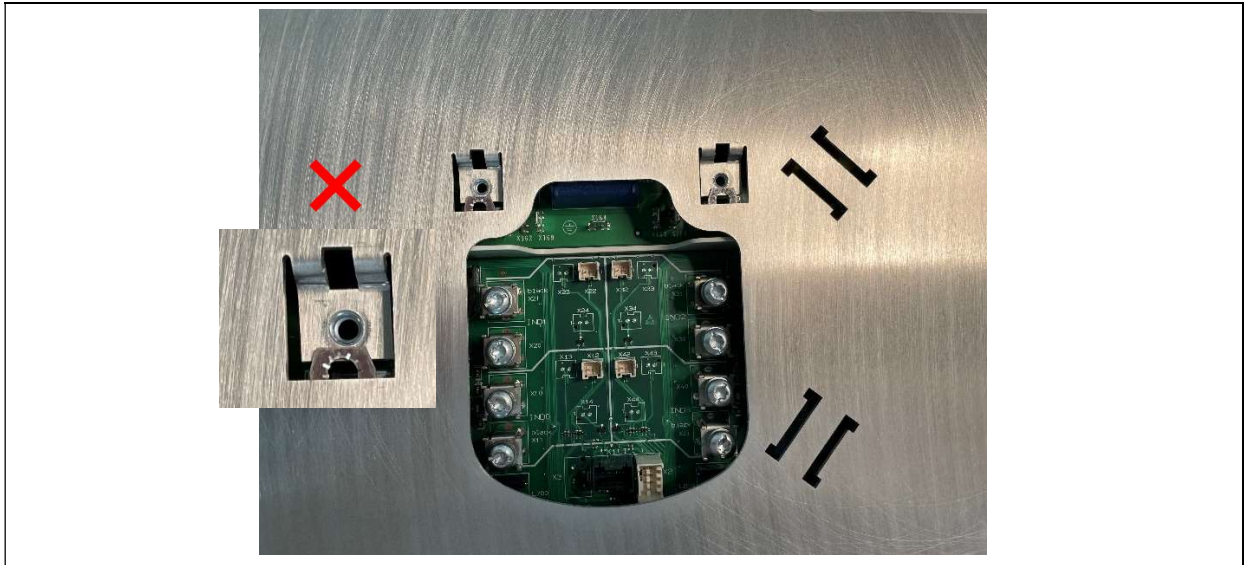
3 Positions for assembling the generator to the mounting plate

- Consider the correct alignment as shown in the following illustration. The mounting plate cut-out for the inductor terminals and NTC and user interface connectors must be accessible and correct positioned. Thermal and electric requirements must be fulfilled by the design of the cut-out.



4 Correct alignment

- An alignment as shown below is not allowed.



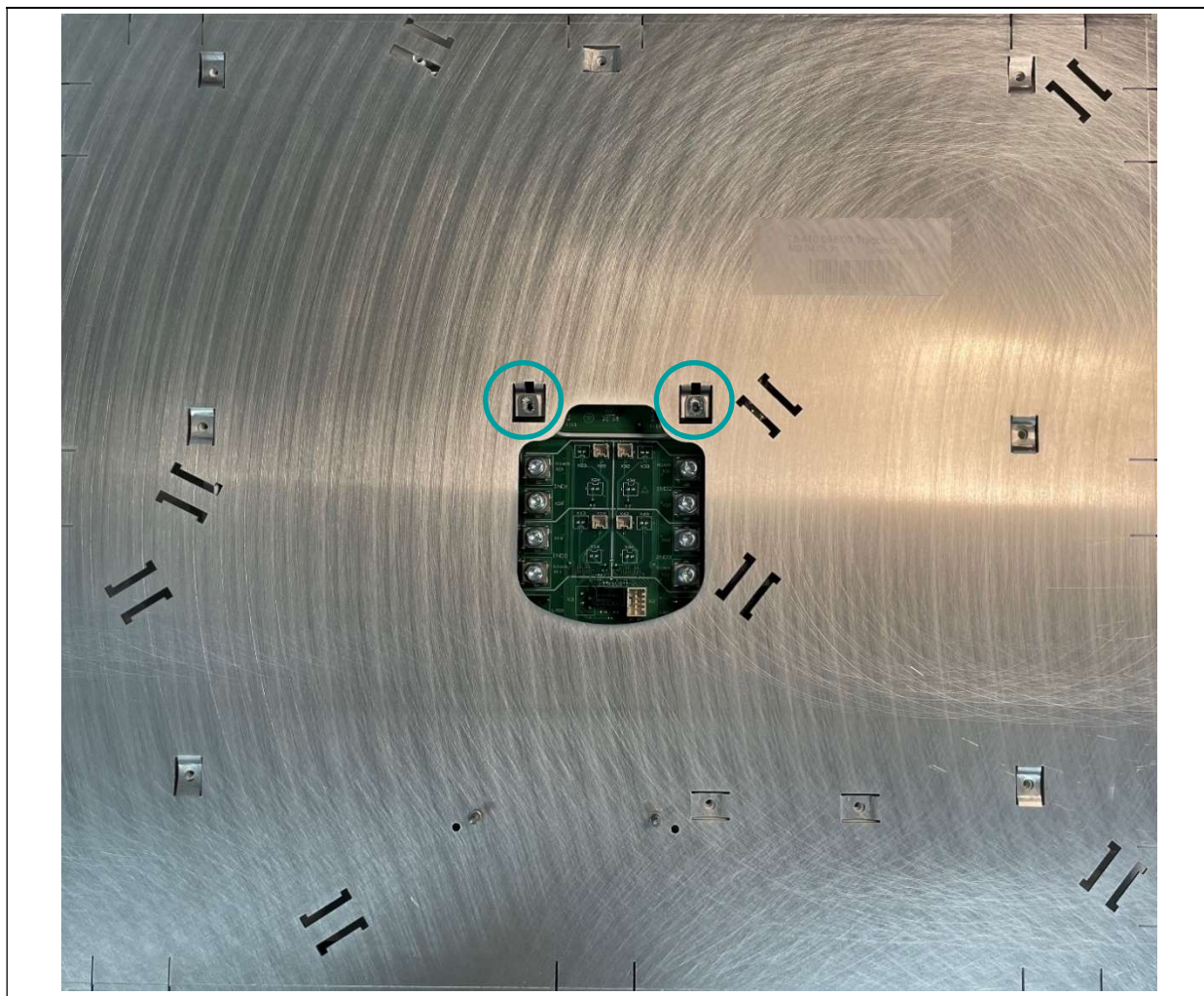
5 Wrong alignment

2. Turn in the screws for fixing the mounting plate and tighten them with $1.5 \text{ Nm} + 0.2 \text{ Nm}$.
 - Use screws with technical characteristics of 98.302.04.
 - Use an aluminum sheet with a thickness of 1.5 mm.

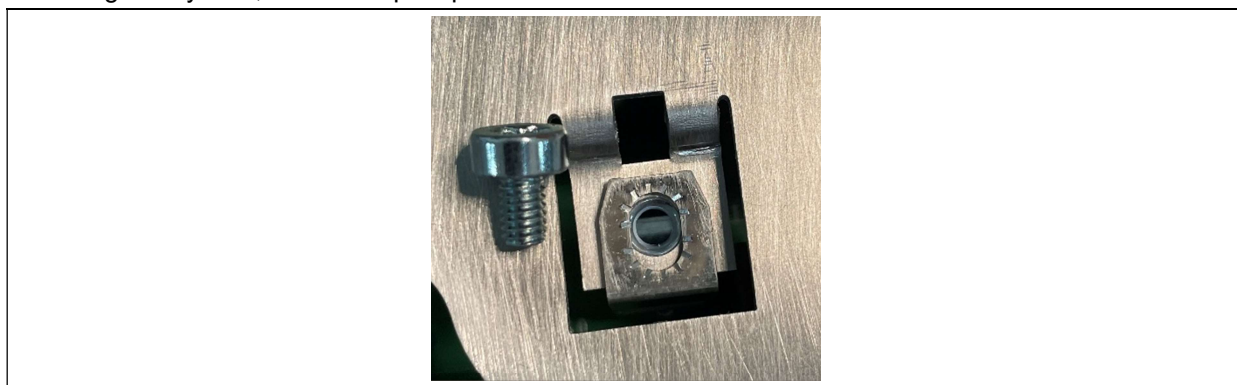


6 Screw for fixation of the mounting plate

3. Align the mounting plate with the screw holes of the generator for earth connection.
 - Consider all correct alignment positions as shown in the following illustration.



- 7 Positions for assembling the generator to the mounting plate for earth connection
4. Turn in both screws with technical characteristics of 967.279 for earth connection and tighten them with $1.5 \text{ Nm} \pm 0.2 \text{ Nm}$. This step is very important for electrical safety and EMC. The appliance and consequently the screw must fulfil the standard IEC60335-1 chapter 27 and 28. If this screw will be designed by own, it must be paid particular attention to this.



- 8 Screw for earth connection
- The mounting plate and the induction generator are fixed.

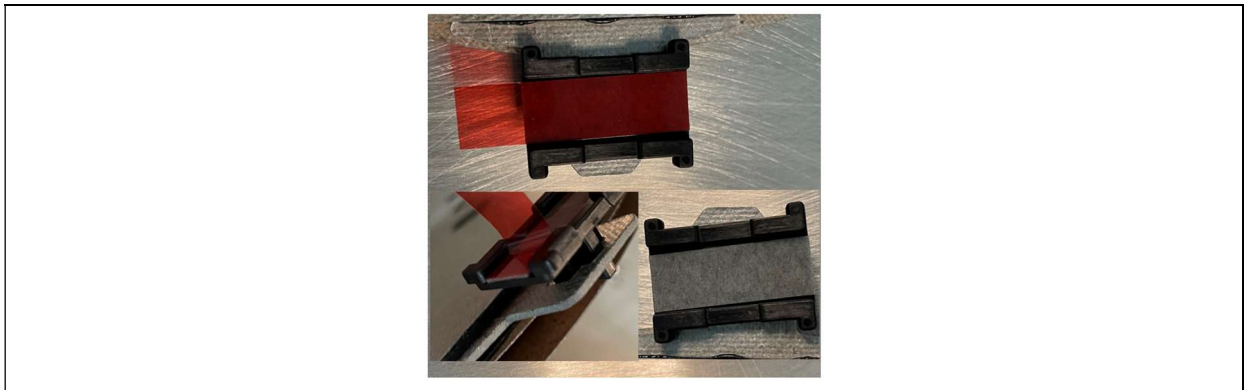
Next step is the assembly of the inductor on the mounting plate.

Preconditions

- Cleanliness requirements:
 - The surfaces of the mounting plate must be clean (e.g., free of dust and grease), dry and free of condensed moisture, which must be ensured by the supplier of the mounting plate, the appliance producer or the qualified electrician. This is important to ensure a secure bond of inductors and obtain a good performance of the induction heating system afterwards.
 - A surface tension from the top of the mounting plate of at minimum 35 mN/m is recommended.
- Application temperature:
 - The application temperature must be between 10 °C and 38 °C.

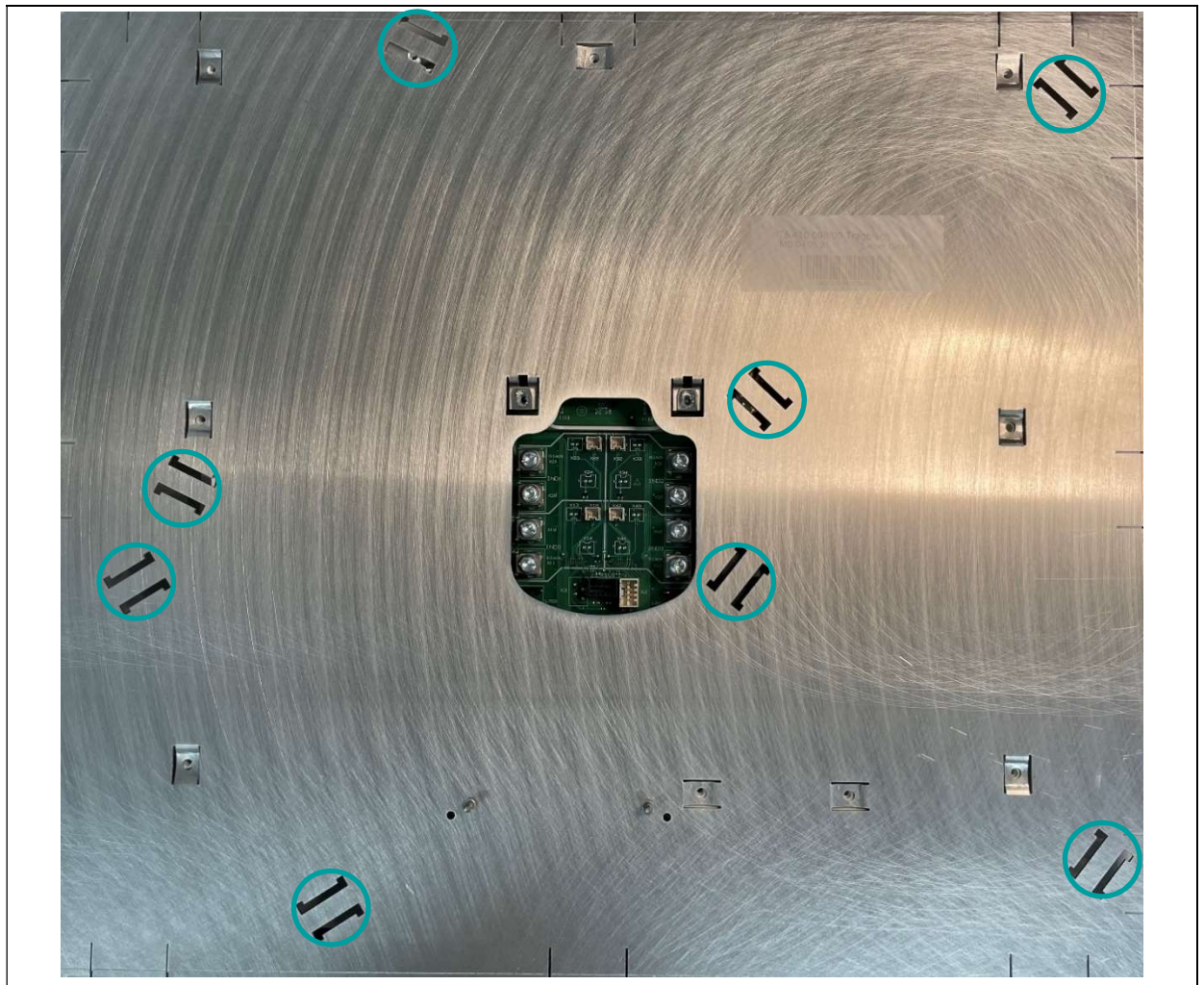
The following steps must be considered for the fixation of the inductors on the mounting plate.

1. Flip the inductor to the backside.
2. Peel off the protective film.



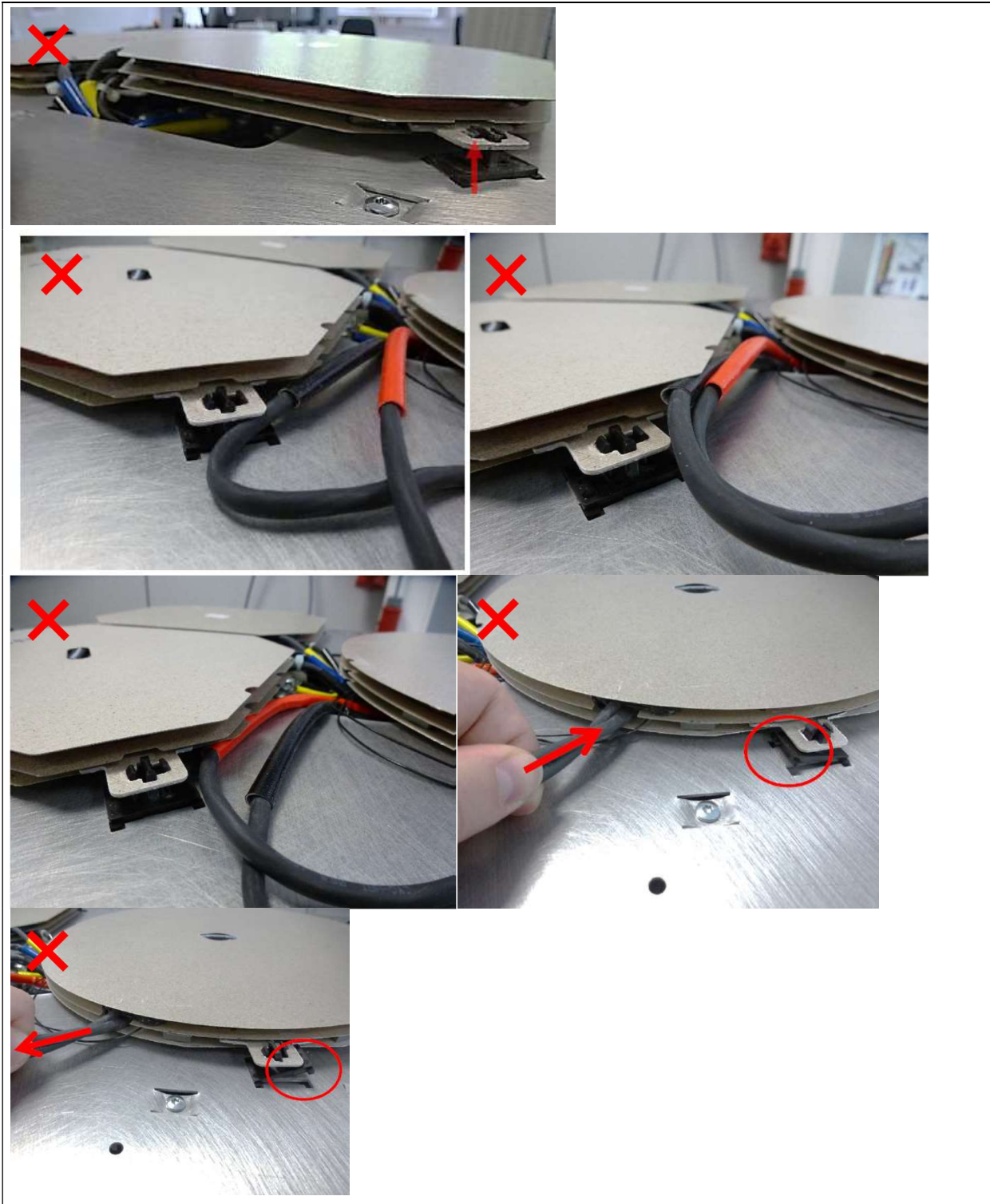
9 Protective film on the glue area of the inductor

3. Flip the inductor to the frontside and assemble it on the related slots (picture 10) on the mounting plate as shown in the following illustration. The clip must be pressed with a minimal force of 40 N (minimum pressure is 20 N/cm²), when applying the adhesive tape of one clip. The applying force is around one second.



10 Positions for assembling the inductors to the mounting plate

4. The cables of inductors must be put down without any push or pull forces towards the inductor (picture 12) that the inductors can bounce. It must be ensured that the NTCs of the inductors have always contact to the glass.
It must be ensured that the cables are not push up the inductor or from the side and are not prevent a free bouncing of inductors (picture 11). Therefore, a laying of the cables under the inductor and between the micanite discs is not allowed.

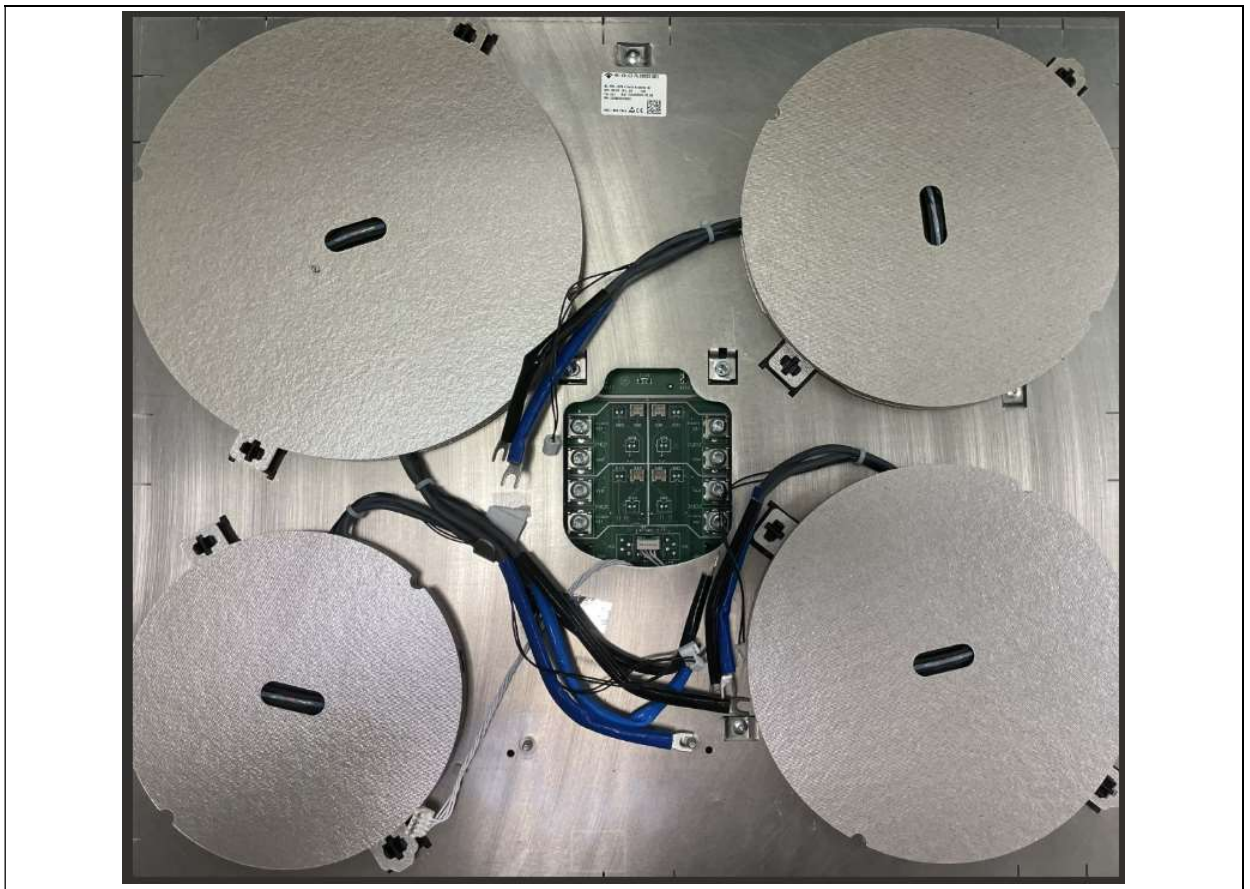


11 Wrong mountings of the inductor



12 Fixed inductor on the mounting plate

→ The inductors are fixed on the mounting plate.

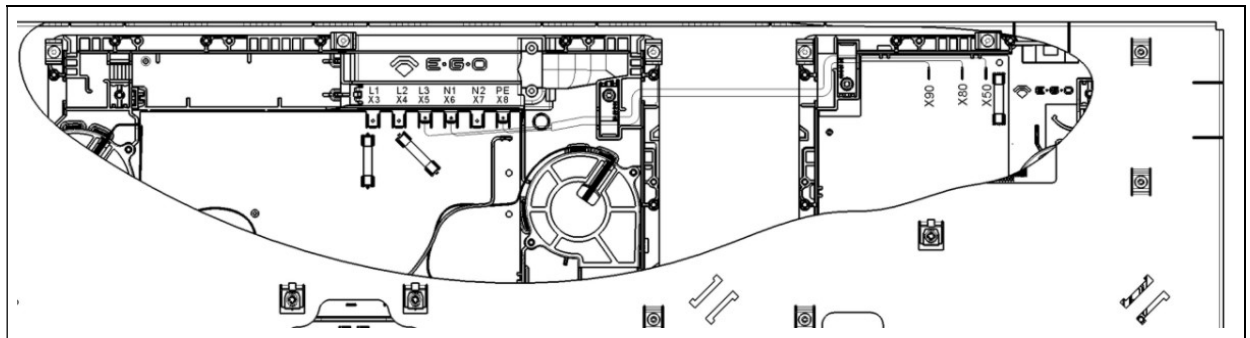


13 Fixed inductors on the mounting plate

4.1.2 Assembly of a hob with an additional Gx induction slave generator

6-burner cooktops are a combination of a 4-burner generator and a special variant of a 2-burner generator. Furthermore, a slave generator can be connected to a 2-burner master generator.

- ▶ Consider the exemplary assembly steps of the previous chapter.
- ▶ Consider the following remarks in addition:
 - Perform the connection between the two generators (L, N and PE conductor).



14 Exemplary connection between a 4-burner master and slave domino generator

Component	Terminal	Connect to
Black	X5	X50
Blue	X6	X80
Green-yellow	X8	X90

Tab. 6: Exemplary connection between a 4-burner master and slave domino generator

- Use clamp terminal 75.177.63/01, if needed for the specific appliance design.

4.2 Electrical connection of components

This chapter is only relevant if Gx has been purchased as separate components or if repairing an Induction Gx heating system.

The generators themselves are pre-assembled; i. e. all generator-internal parts as well as the internal wiring (e.g., fans, filter board) have already been performed.

Preconditions


Necessary Tools:

- Power screwdriver with adjustable tightening torque and Torx TX15, 20 and 25 bits

Necessary accessories:

Description of accessory	Type number of references	Drawings of references
Cover for connection box of the generator (VDE)	98.403.08	C000040984
Stranded cable 4-pin, twisted, 235 mm (Bus cable for UI)	95.501.12	-
Clamp terminal (recommended for thin cables \varnothing 7-14 mm depending on insulation material condition) for 4-burner generator	98.403.12	C000040890-002
Clamp terminal (recommended for thick cables \varnothing 13-20 mm depending on insulation material condition) for 4-burner generator	98.403.13	C000041074-002
Clamp terminal (optional for 2-burner generator)	75.177.63/01	90.03302.351
Connection bridge	75.97009.001	75.97009.001
Transportation pin (exemplary TC Lite Slider SmartKii)	969.319	C000056393

Tab. 7: Necessary accessories for electrical connection

 Tip: Stranded wires are available for samples, but not in series scope of delivery. The stranded wire type is depending on the type of components as user interfaces and distances.

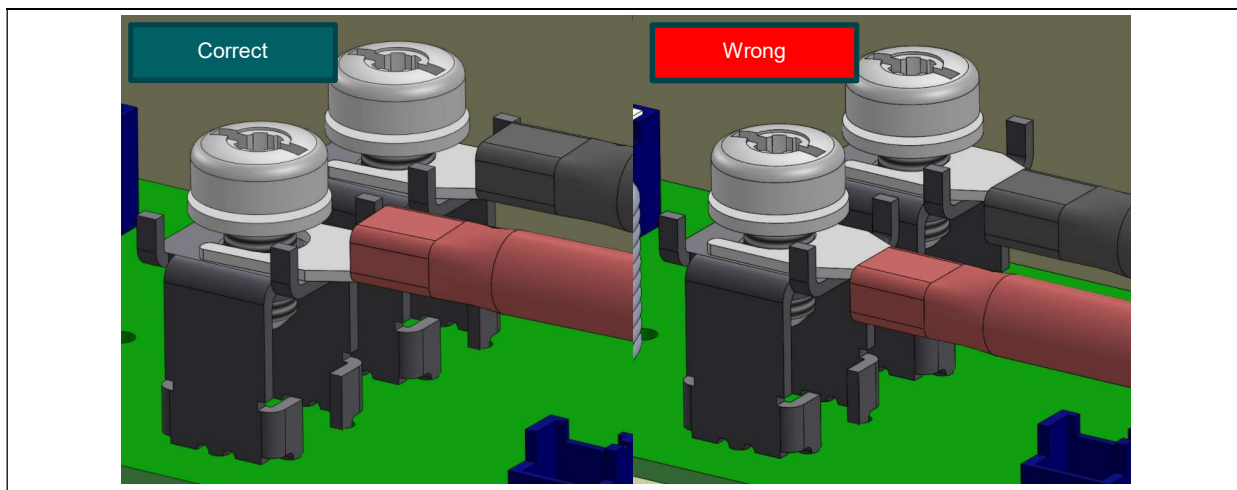
4.2.1 Power supply for bus participants

10 W are provided for user interfaces and other bus participants as well as for other suitable accessories (e.g., EGO Light Elements) These can be split into a rated voltage of 5 V or 13.2 V for supply of user interfaces.

4.2.2 Exemplary electrical connection of a 4-burner hob with Gx induction

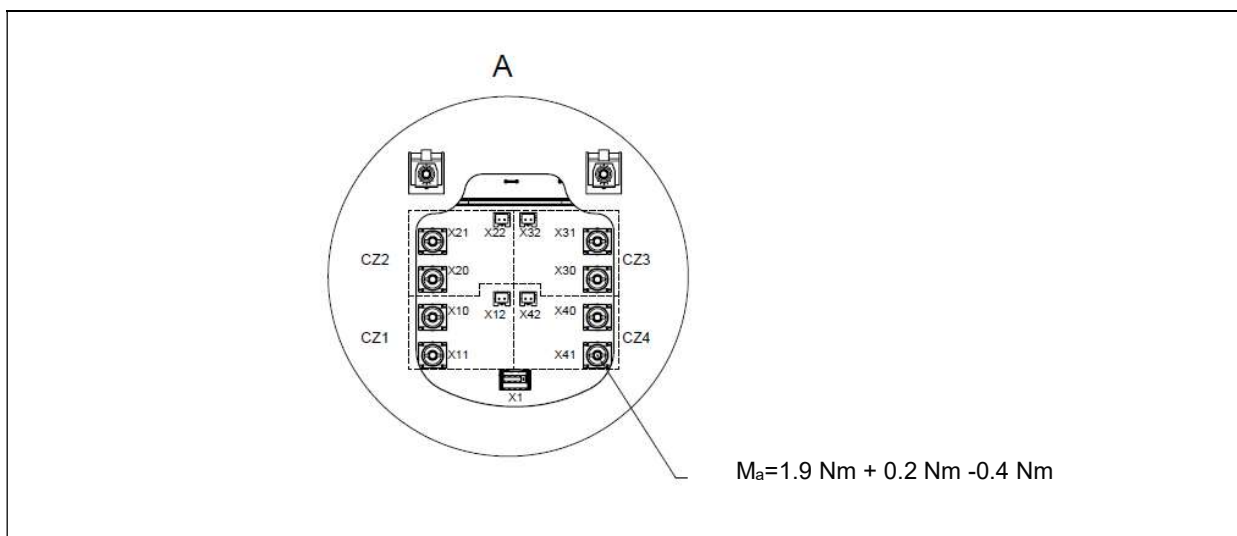
The following steps must be considered for electrical connection.

1. Do the assembly as described exemplary in chapter 4.1.1.
2. Perform the fastening and wiring of inductors by considering the remarks below. It is recommended to start the wiring with the temperature sensor cables and both cooking zones next to fans.
 - Consider connection diagram of the related type data sheet.
 - The black inductor terminal must be connected to the black position on the printed circuit board always. This is necessary for EMC reasons.
 - The crimped cable part must be faced upwards. It must be avoided that the cable lug's shrinking hose has contact to the adjacent cable lug.



15 Exemplary illustration of crimp contact direction

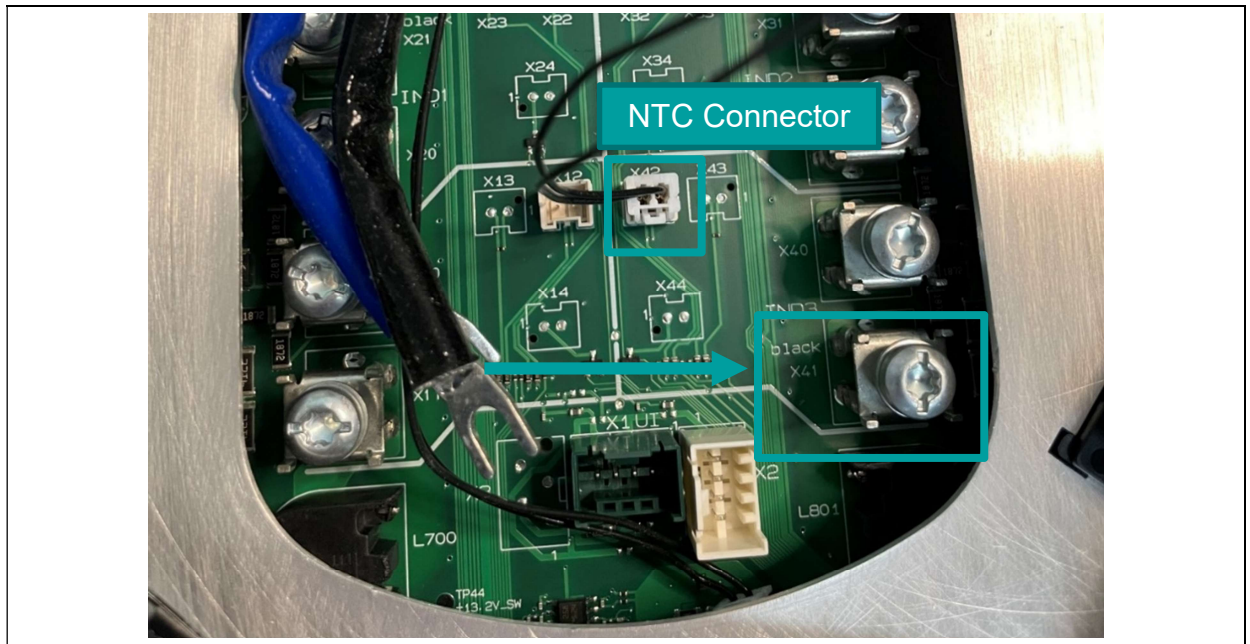
- It must be ensured that the allocation between temperature sensor and inductor power cable is kept.
- Fasten the terminal screws with a tightening torque of $1.9 \text{ Nm} + 0.2 \text{ Nm} - 0.4 \text{ Nm}$.



16 Exemplary illustration of terminals for inductors on a 4-burner generator

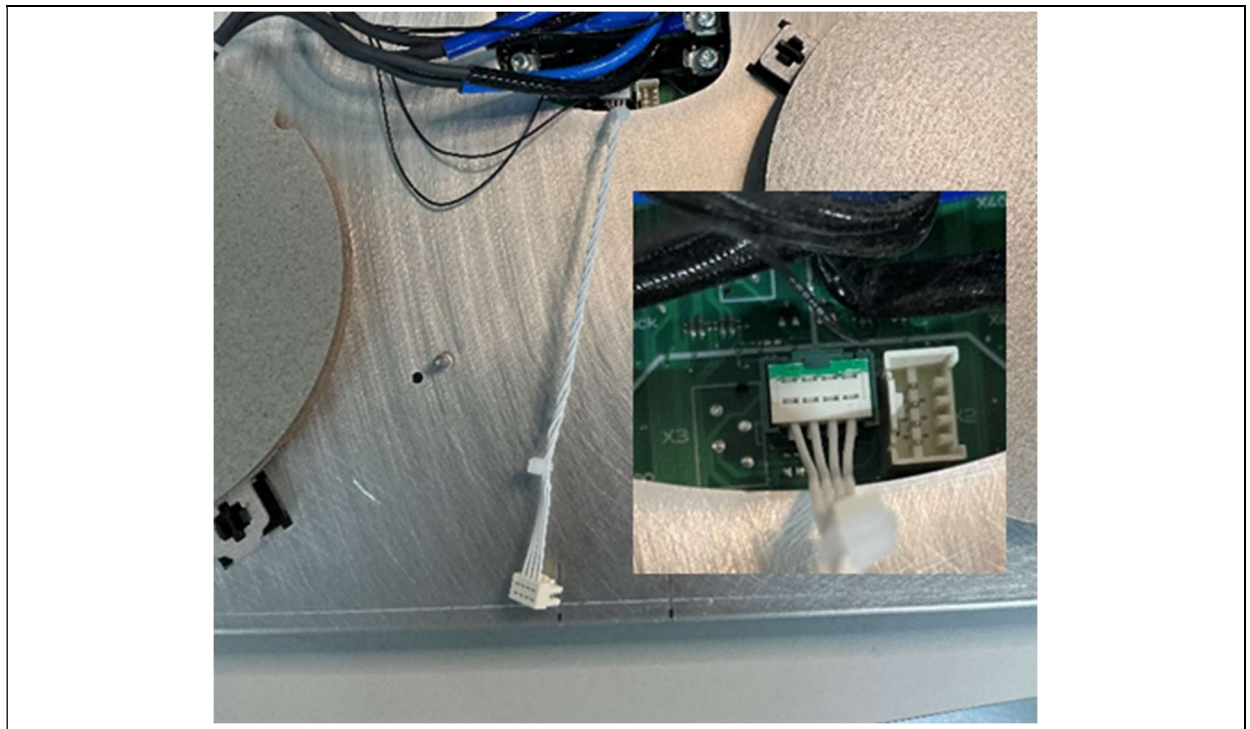
The maximum induction power of coil and generator converter must be equal.

- Connect NTC wire only to the corresponding NTC connector (e.g., x12/x22/x32/x42).
- Connect the black wire only to the corresponding black connector (e.g., x11/x21/x31/x41).
- Connect the blue wire only to next connector (e.g., x10/x20/x30/x40).
- Repeat the steps for further inductors.



17 NTC wire and connector

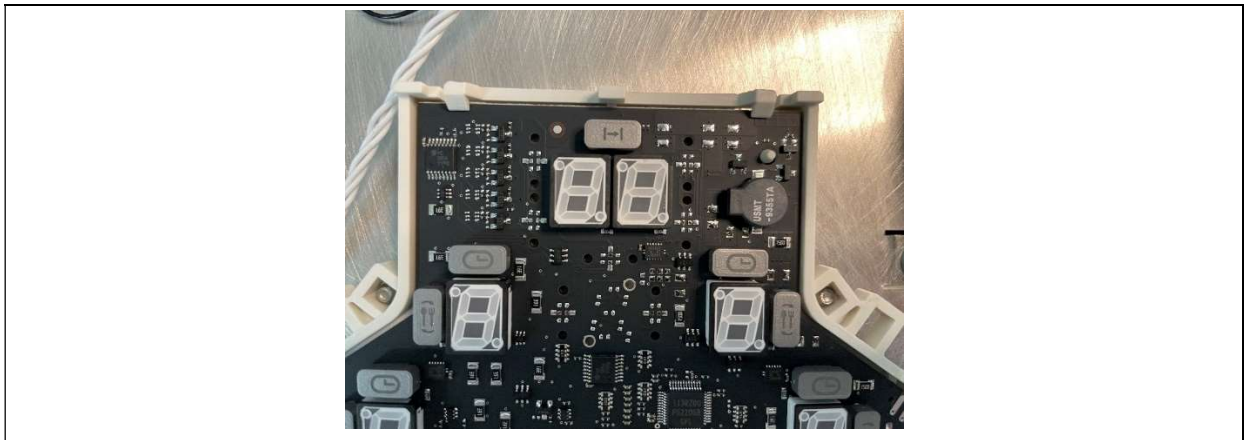
3. Connect the EGO BUS wire to the connector of the generator.



18 Connection of EGO Bus wire to the connector of the generator

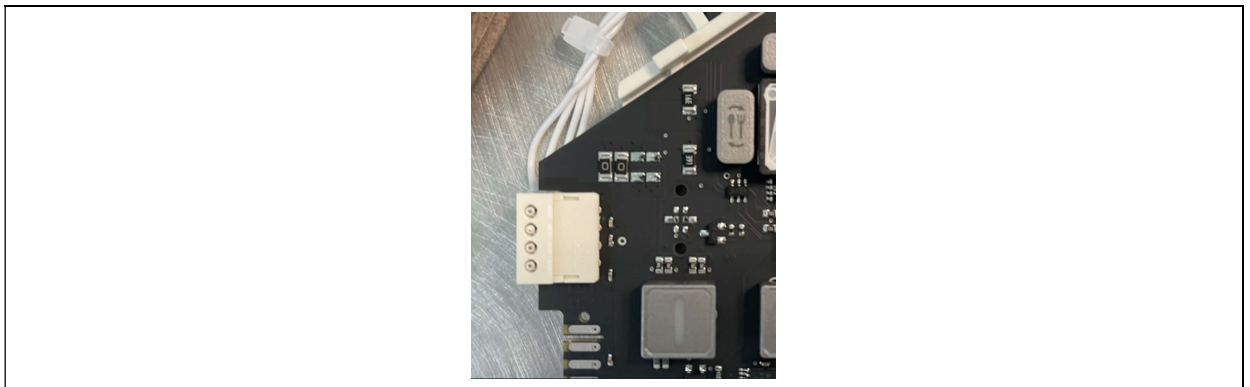
4. Assemble and connect TC Lite Slider SmartKii. Consider instructions of documentation 90.60080.646. It must be ensured that the NTCs of the user interface have always contact to the glass.

NOTICE! The assembly of the user interface is depending on each product family. Consider the customer documentation of the corresponding user interface for details.



19 Exemplary positioning of TC Lite Slider SmartKii

- Connect EGO Bus wire to the connector of the touch control. Cables must be laid on the direct direction from the mounting plate cut-out of the generator connectors. Cable routings must be done completely on the mounting plate. Cables must be drilled minimum four up to maximum ten times (complete turns). The four single wires must be routed and fixed together. It must be avoided that cables are routed under the user interfaces or mounting plate, especially in the position of the generator IGBTs and resonant circuits. Cables of inductors and user interfaces must be laid as far as possible from each other. Parallel routings of user interface and inductor cable must be avoided.

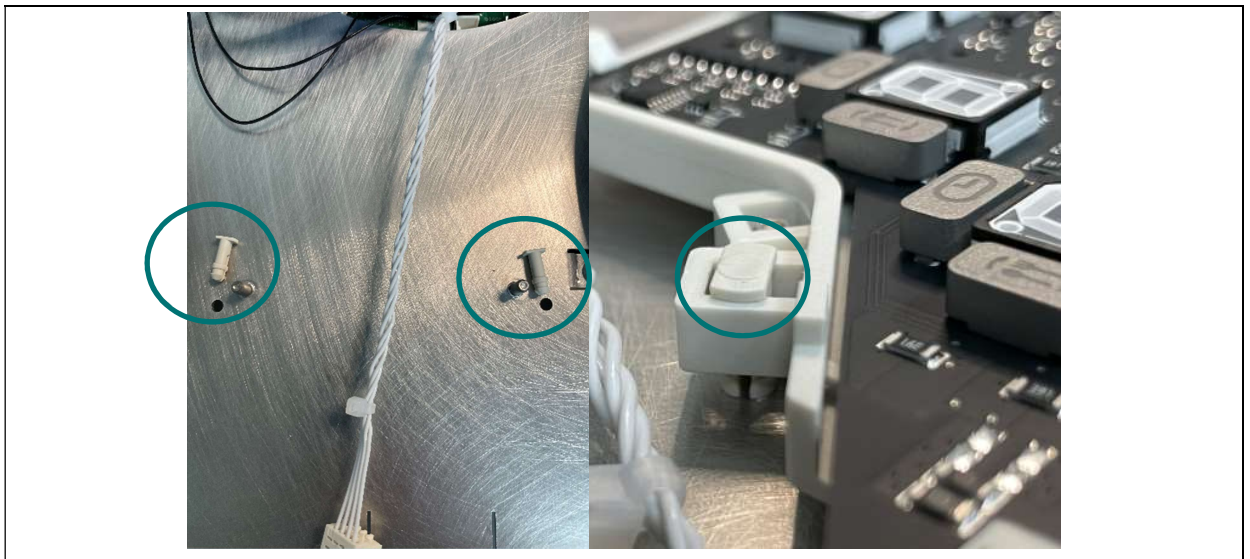


20 Exemplary connection of EGO Bus wire to the touch control

⚠ CAUTION! Risk of damaging the induction generator and touch control. A damaged EGO Bus cable (e.g., truncated insulation) may cause voltage flashover from low voltage to extra-low voltage side, e.g., during high voltage test.

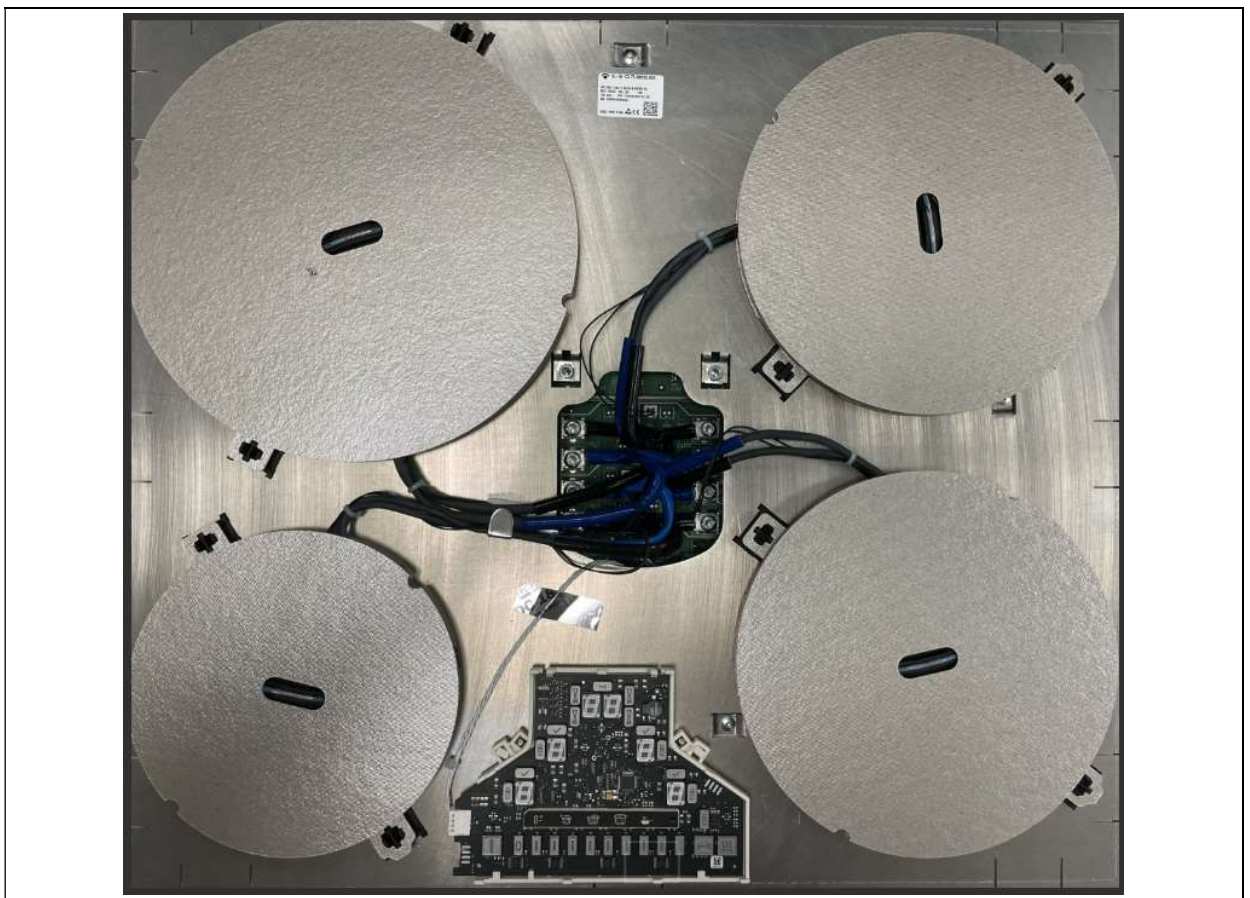
- ▶ The EGO Bus cable must not be jammed, kinked or guided over sharp edges.

- Use the plastic pins for transport protection.



21 Exemplary connection of EGO Bus wire to the touch control

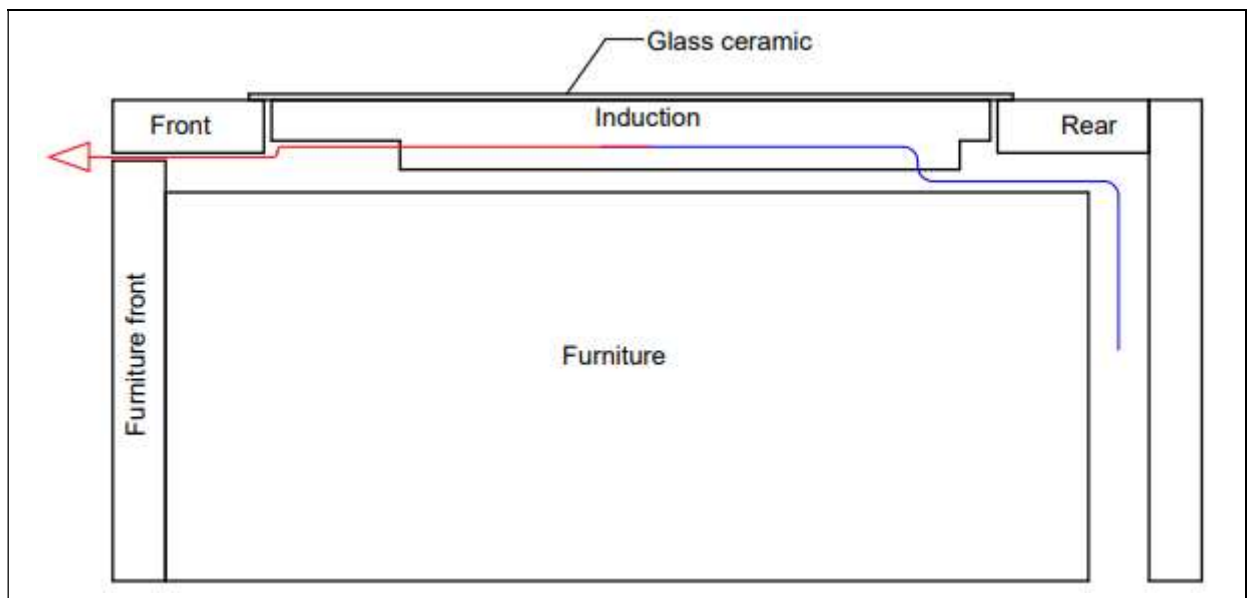
- The assembly of Gx components to a Gx heating system has been finished.



22 Assembled Gx heating system

4.3 Final steps from a system to a cooktop

The air inlet is directly on the bottom of the generator housing. Therefore, is an airgap mandatory. An airgap under 5 mm below the induction generator must be avoided. An airgap between 5 and 10 mm, leads to a performance decrease. Therefore, a minimum airgap of 10 mm below the generator is recommended. In addition, an air outlet in the furniture with minimum 2 mm in the front is recommended. A closed furniture around the induction cooktop, leads to a performance decrease. It is important to avoid that the warm air from the outlets is easily retaken by the blower of the air inlet. Further air gaps must be behind the furniture and between countertop and induction generator.



23 Exemplary air flow

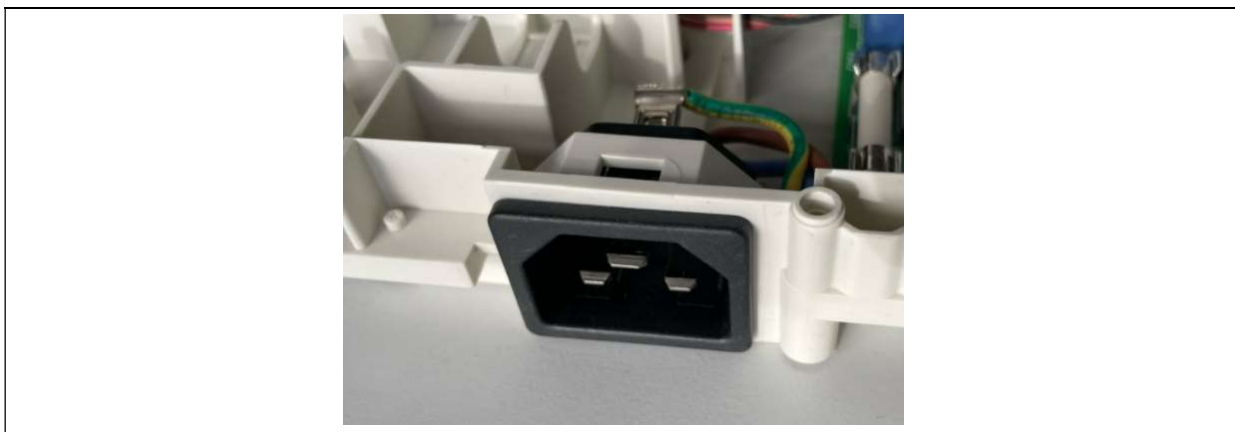
Another point to note is that the appliance is only intended for appliances with a net-plug which is constructed for the voltage of 220 – 240 V.

As the maximum permissible current of a plug is 16 A, the max. total power for modules to be used with a plug must be limited to 3.5 kW by the user interfaces to prevent the plugs and the power cord from any overloads. The cooktop should be connected directly to a fixed socket-outlet only. The usage of multiple plugs is forbidden. The fixed socket-outlet must be fused with a 16 A-fuse. No other electric devices must be connected to the same final circuit.

The connection must be carried out with a high-quality plug which is specified for 16 A current.

Another option is to use the optional domino generator with built-in socket for plug-in appliances.

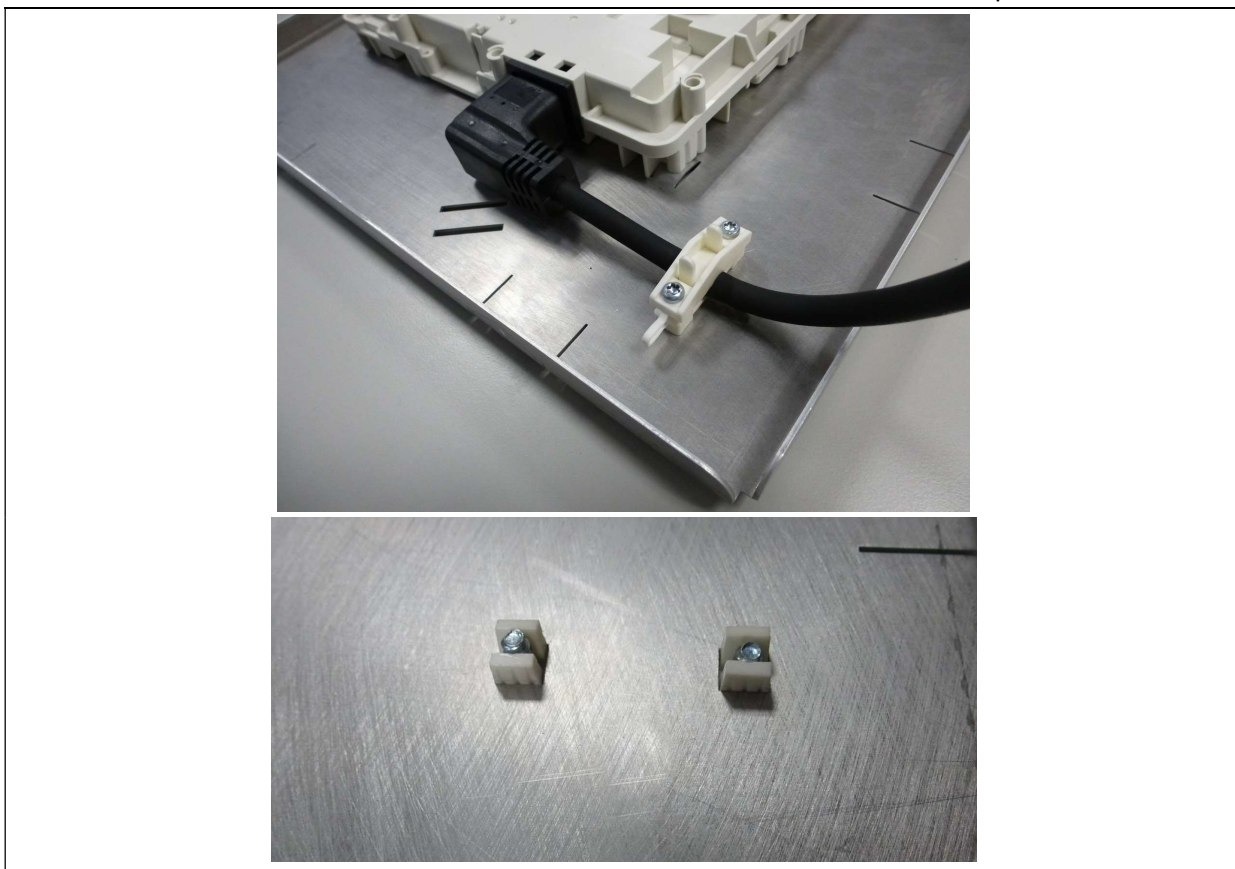
A cable C21 according to IEC 60320-1 has to be used for the induction generator socket C22 according to IEC 60320-1.



24 Optional built-in socket for domino master generators

An additional fixation of cables for the hot plug connector must be considered in a built-in cooktop.

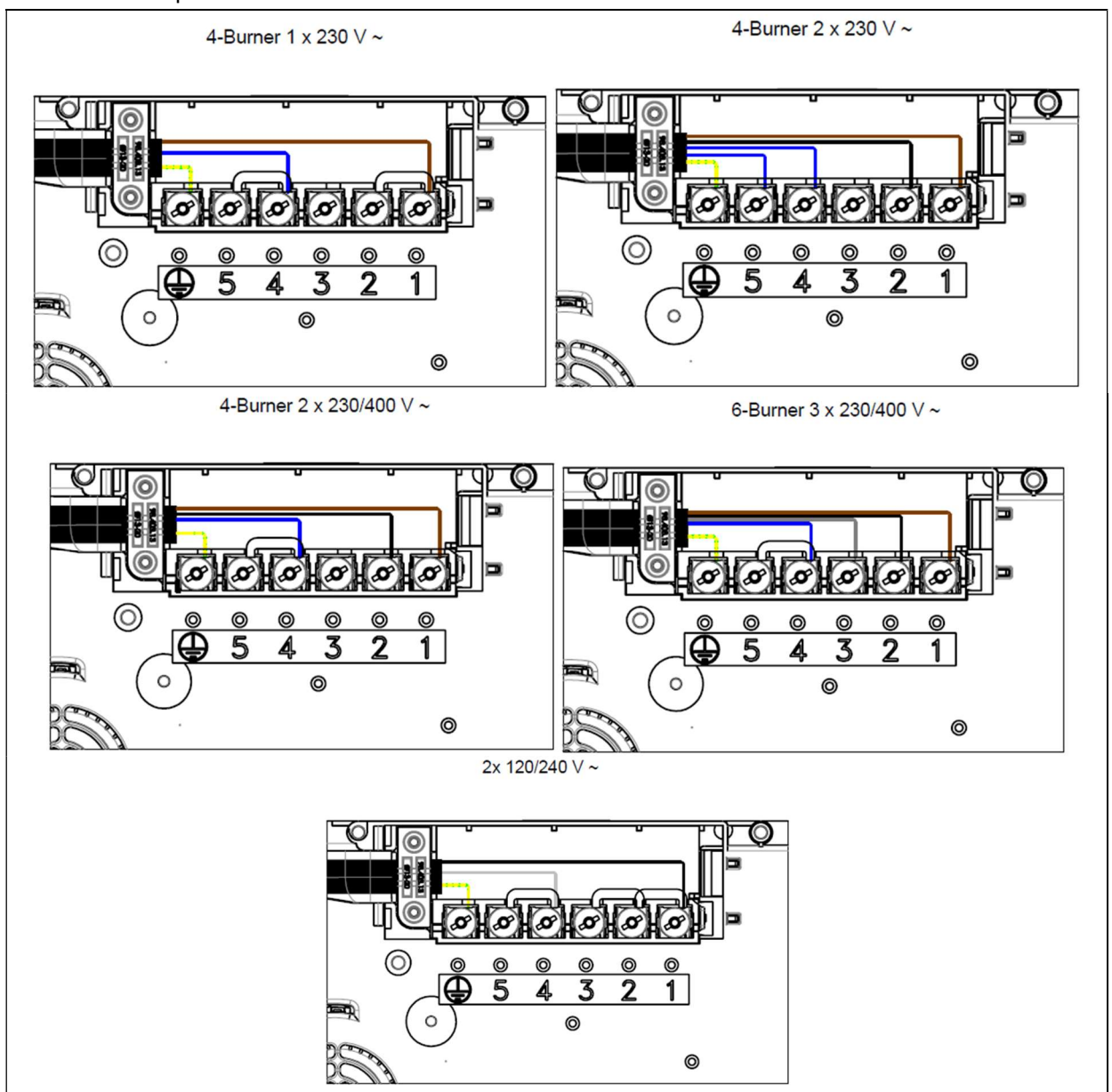
- ▶ It is not allowed to do the cable fixation under the user interface or the inductor.
- ▶ It must be considered that the screw of the cable fixation never affects the glass in any kind of working, storage, installation or transport conditions.
- ▶ It must be considered that clearance and creepage distances to user interfaces, inductors and cables are fulfilled.
- ▶ A recommended cable fixation is HMCC-1-01 from manufacturer Essentra Components.



25 Exemplary and recommended cable fixation (views from bottom and top of the mounting plate)

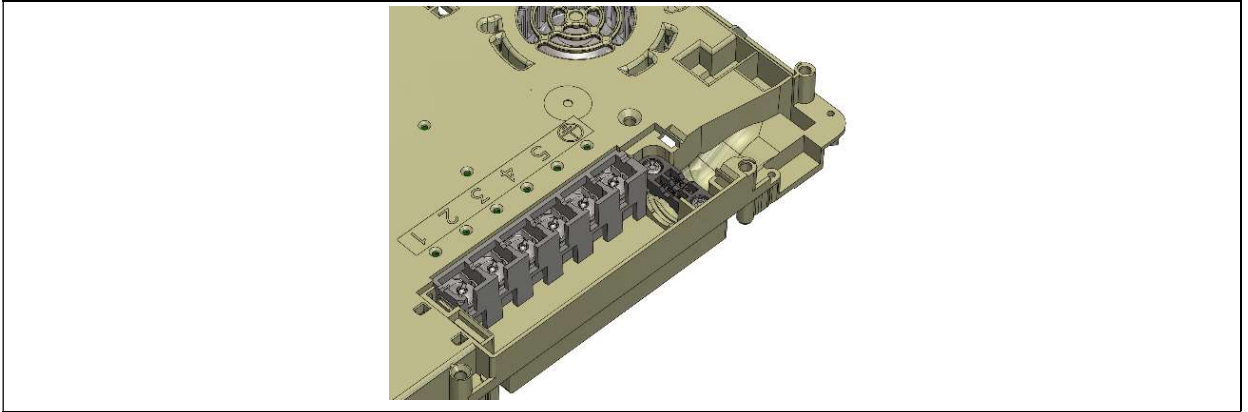
General final steps from a system to a cooktop:

- ▶ Assemble the glass ceramic. The top edge of the mounting plate and the bottom edge of the glass ceramic has a nominal height of 12.0 +1 mm for user interfaces and inductors. The glass ceramic must be assembled within 4 hours after the assembly of the induction coils. If this cannot be secured, the assembled induction coils must be pushed down with a weight of 9 kg until the glass ceramic assembly.
- ▶ Connect the mains cord.
 - Use only connection cords with a cross section of minimum 1.5 mm². Depending on local regulations and specific hob power requirements an increased cross section of e.g., 2.5 mm² or higher (independently from a use of a one- or two-phase connection) must be used.
 - No grounding and no power supply connection may be installed between the two generator boards.
 - The torque for the screws of the connection block is 2 Nm + 0.2 Nm.



26 Cable routings for exemplary configurations

- ▶ Perform a safety and function check.
- ▶ Enclose the cover, bridge pieces and clamp terminals with screws for the generator to your scope of delivery. The torque for the strain relief is 2 Nm + 0.2 Nm with reference screw 969.173.



27 Connection block

! DANGER! Risk of electric shock. An open generator connection box provides touchable live parts.

- ▶ The assembly of the clamp terminal with screw 969.173 and the housing cover 98.403.08 is mandatory to achieve a proper protection against accidental contact.

! DANGER! Risk of electric shock. Cables which are routed outside a housing of a cooktop provide only a base isolation.

- ▶ If the cable can be touched by fingers after assembling, an additional isolation around both power supply and signal cables is needed. This can be performed best by using a shrinking tube.

! CAUTION! Risk of EMC problems. A wrong cable routing or too long wires may cause EMC problems (interconnecting cable of generators).

- ▶ Perform the cable routing as recommended in the operating instruction and customer documentation.
- ▶ Never use cables which are longer than recommended.
- ▶ Never route cables above filter components (chokes, capacitors).

5 Cleaning and maintenance

5.1 Cleaning

In the final appliance the Gx induction is not accessible for the end user, because it is mounted under a glass ceramic surface. Therefore, Gx induction must not be cleaned.

5.2 Maintenance and repair

NOTICE! On repair measurements allowed by E.G.O. may be performed by the customer. Any work on unpacked PCB's must be carried out by trained personnel who know how to handle devices that are sensitive to electrostatic discharges (ESD). Re-soldering PCB's or the replacement of single electronic components is generally not allowed.

Gx Induction does not need periodical maintenance. If there are customer complaints considering poor performance, following checks can be performed:

- Proper mounting of the cooktop (e.g., especially good ventilation).
- Unsuitable cookware can have a significant influence on the performance.

Induction Gx can be repaired related to defined components. Spare part kits with replaceable components are available for use during service. Spare parts of similar variants can vary because of different equipment. Spare parts are mainly ordered as individual parts or as a kit and could be packaged for transport as a package.

The following components are offered as spare parts:

- Power board kit
- Filter board kit
- Inductors
- User interfaces
- Fan

Precondition 1

Error code is displayed on the user interface.

- ▶ Check error code list and suitable repair procedure for affected component in chapter 5.3.
- ▶ Check and consider further information for replacement in this operating instruction.

Precondition 2

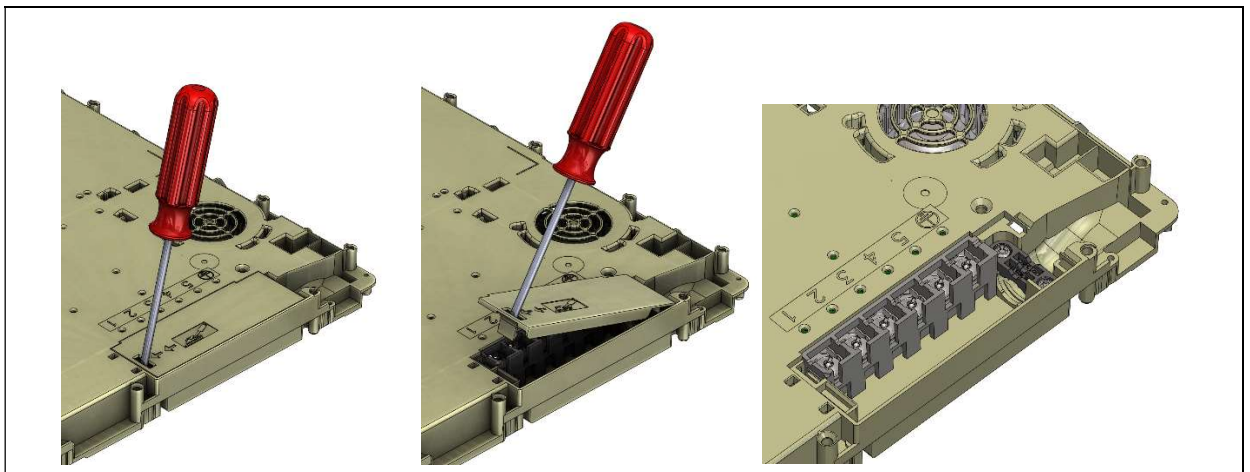
If no error code is displayed:

- ▶ Check power supply (voltage of line conductors, missing bridges and wrong connection to 400 V).

Precondition 3

If there are customer complaints considering poor performance, perform the following checks:

- ▶ Check proper mounting of the cooktop, especially for good ventilation.
- ▶ Check types of used cookware as they could have a significant influence on the performance.



28 Disassembly of generator cover

NOTICE! The coils can be disassembled through a carefully pressing of both inductor snap hooks by the fingers of the service technician.



29 Disassembling of inductors

5.3 Error codes

E.G.O.'s platform concept provides dedicated error codes for a quick and efficient trouble shooting. An error code always starts with the letters "E" or "ER":

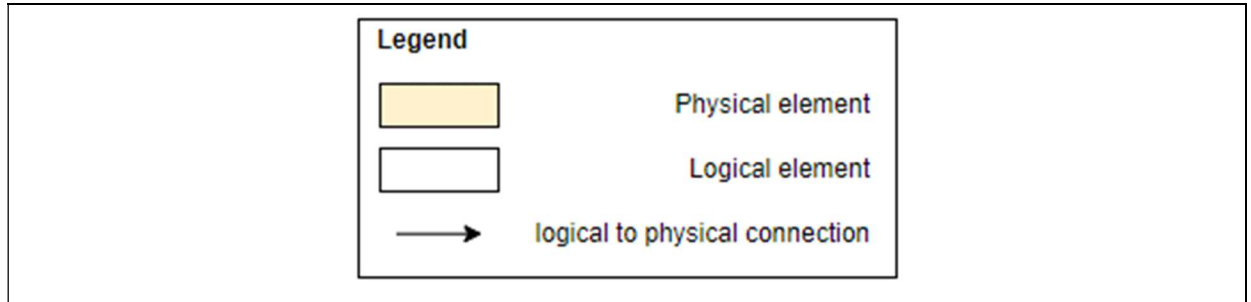
- Error codes starting with "E..." are included in the induction documentation and including a switch off the cooking zone.
 - Error codes starting with "ER..." are included in the induction documentation and including a switch off the system.
- Refer to the customer documentation of the user interface for details on those error codes.

Error code	Description	Behavior	Remedy
E2	Cooking zone overheating	Cooking zone switches off	Switch off cooking zone, remove all cookware and let the cooking appliance cool down. Restart the cooking appliance. If error persists: Exchange generator.
E4	Implausible configuration data	Cooking zone switches off	Exchange generator.
E6	Generator synchronization error	Cooking zone switches off	Check wiring and line connection. Exchange generator.
E8	Fan error	Cooking zone switches off	Exchange generator.
E9	Temperature measurement error	Cooking zone switches off	Check wiring and line connection. Exchange generator.
EA	Generator error	Cooking zone switches off	Switch off cooking zone, remove all cookware and let the cooking appliance cool down. Restart the cooking appliance. If error persists: Exchange generator.
EC (Er63)	Timeout	Cooking zone switches off	Switch off cooking zone, remove all cookware and let the cooking appliance cool down. Restart the cooking appliance.
EC (Er64)	Software error	Cooking zone switches off	Switch off cooking zone, remove all cookware and let the cooking appliance cool down. Restart the cooking appliance.
EF (Er65)	Hardware error	Cooking zone switches off	Exchange generator.
U400	Over voltage	Cooktop switches off	Check wiring. Exchange generator.
Blinking "H"	Fixed coil temperature	Blinking "H" is shown on display	Exchange the inductor package. Exchange generator.

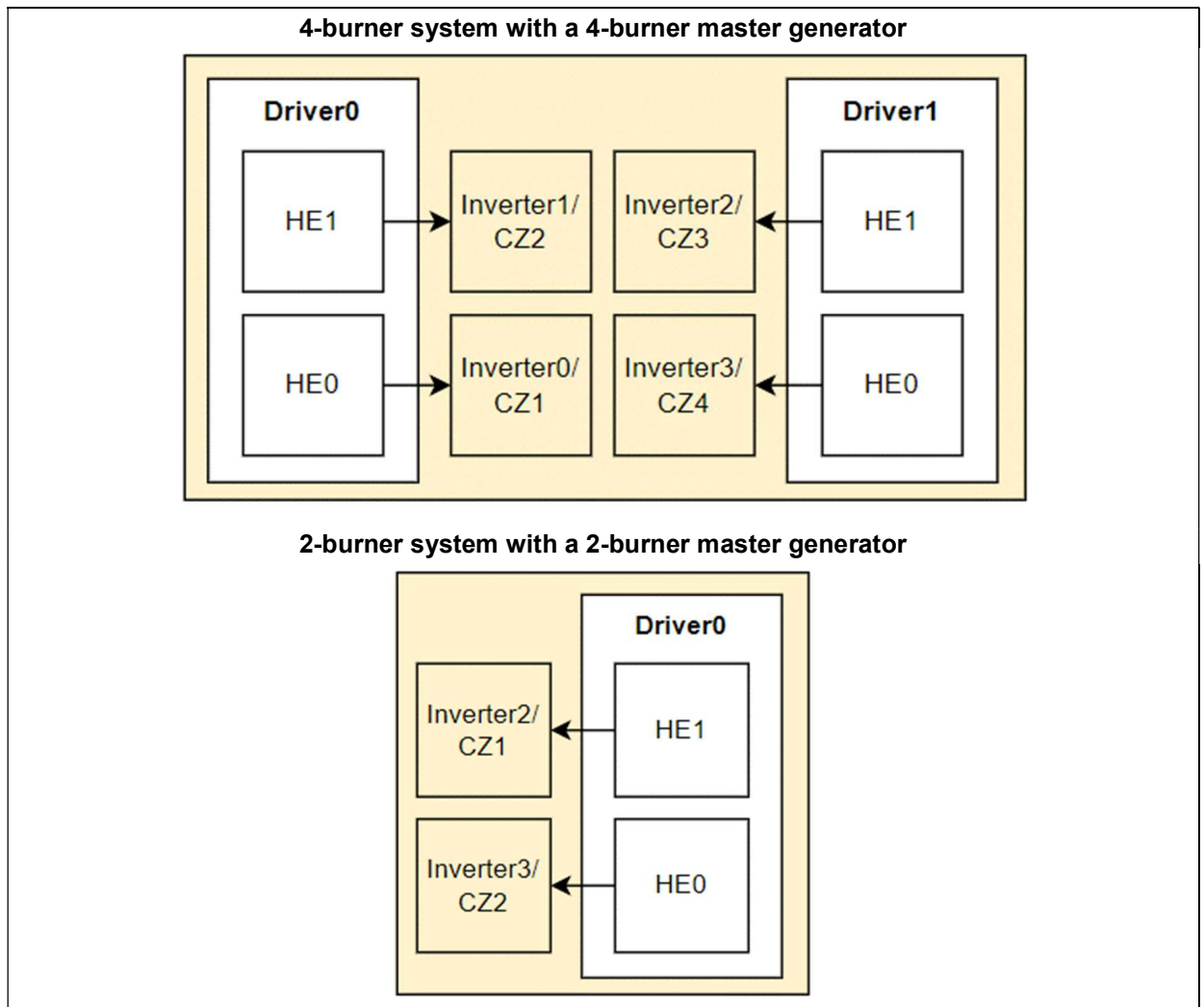
Tab. 8: Error codes and remedies

In addition to the general error codes, Gx induction provides the opportunity to demonstrate a further component index after the general error code. Therefore, the service technician can distinguish for example, which generator shall be replaced. The following overview shows the numbering and assignment of inverters, coils and drivers.

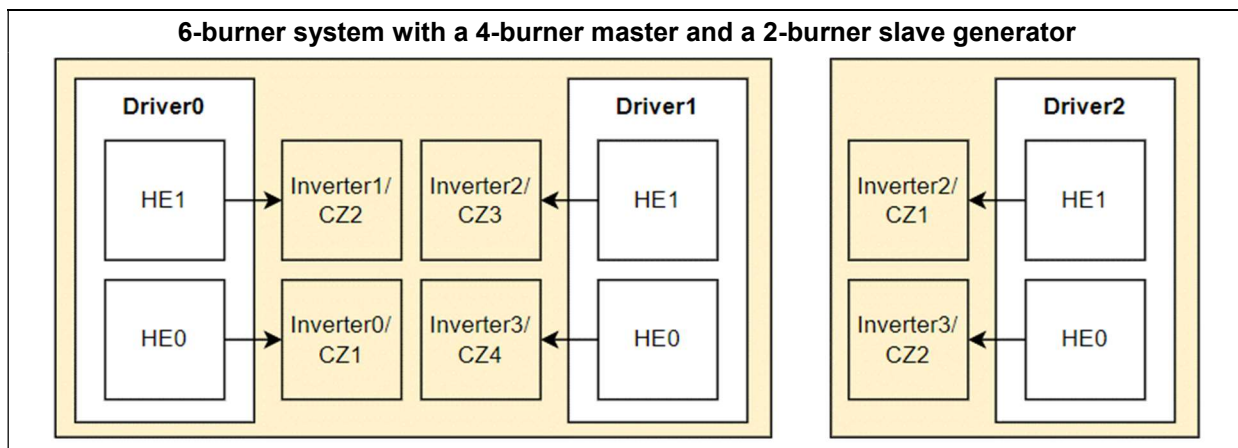
- ▶ Refer to the customer documentation of the user interface for details on those error codes.



30 Legend for numberings and assignments of inverters, coils and drivers



31 Exemplary numberings and assignments of inverters, coils and drivers with master generators



32 Exemplary numberings and assignments of inverters, coils and drivers with combined generators

- ▶ Align affected numberings of inverters, coils and drivers to the relating component index.

Index	Alignment
0	Common
1	Driver 0 and heating element (HE) 0
2	Driver 0 and heating element (HE) 1
3	Driver 0
4	Driver 1 and heating element (HE) 0
5	Driver 1 and heating element (HE) 1
6	Driver 1
7	Driver 2 and heating element (HE) 0
8	Driver 2 and heating element (HE) 1
9	Driver 2

Tab. 9: Component indices

6 Disposal

- ▶ Dispose according to local regulations.

7 Technical data

See type related drawing and data sheet for all technical data.

8 Contact

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