

Instruction Manual
Electric Toploaders for Ceramics up to 1320°C



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1. PREFACE

Congratulations, you have chosen a ROHDE product - a high-quality product meeting highest requirements. This Toploader has resulted from intense research in the field of small to medium-sized ceramic kilns. We are pleased to offer you a kiln fitted with high-quality lining, suitable for different types of ceramic and glass applications. This instruction manual will help you to familiarise yourself with your new kiln. We have put together some important information and guidelines that will make operating your kiln as safe and simple as possible. Please read the instruction manual carefully before using your kiln for the first time. Make sure you understand the features and functions of the kiln and control unit.

2. PRODUCT FAMILY

Model Volume	Tmax °C	Int. dimensions mm			Ext. dimensions mm			Output kW	Supply A	Connector Plug	Furniture batts w x d mm	Weight kg
		w	d	h	W	D	H					
Ecotop 20	1320	330		230	640	640	660	2,3	10,0	Schuko	ø 290	44
Ecotop 43 L	1320	400		340	700	730	770	2,9	13,0	Schuko	ø 350	58
Ecotop 50	1320	400		380	700	730	830	3,6	16,0	Schuko	ø 350	58
Ecotop 50 S	1320	400		380	700	730	830	4,5	6,5	CEE 16 A	ø 350	58
Ecotop 60 L	1200	400		450	700	730	900	2,9	13,0	Schuko	ø 350	60
Ecotop 60	1320	400		450	700	730	900	3,6	16,0	Schuko	ø 350	60
Ecotop 60 S	1320	400		450	700	730	900	5,0	7,5	CEE 16 A	ø 350	60

*PLEASE NOTE: Different Tmax for Ecotop 60 L.

Model Volume	Tmax °C	Int. dimensions mm			Ext. dimensions mm			Output kW	Supply A	Connector Plug	Furniture batts w x d mm	Weight kg
		w	d	h	W	D	H					
TE 75 MCC+	1320	ø 470		460	760	730	780	6,0	13	CEE 16 A	410	82
ZWR 75 MCC+		ø 470		230	760	730	230	3,0	-	-	-	23
TE 110 MCC+	1320	ø 470		680	760	810	1010	9,0	13	CEE 16 A	410	105
TE 100 MCC+	1320	ø 520		460	800	800	780	7,0	15	CEE 16 A	470	89
ZWR 100 MCC+		ø 520		230	800	800	230	3,5	-	-	-	20
TE 150 MCC+	1320	ø 520		680	800	870	1000	10,5	15	CEE 16 A	470	109
TE 130 MCC+	1320	ø 590		460	860	880	780	7,3	16	CEE 16 A	540	106
ZWR 130 MCC+		ø 590		230	860	880	230	3,7	-	-	-	25
TE 190 MCC+	1320	ø 590		680	860	940	1010	11,0	16	CEE 16 A	540	125
TE 200 MCC+	1320	ø 740		460	1020	1010	780	9,2	20	CEE 32 A	Cut to size	130
ZWR 200 MCC+		ø 740		230	1020	1010	230	4,6	-	-	-	32
TE 300 MCC+	1320	ø 740		680	1030	1030	1010	13,8	20	CEE 32 A	Cut to size	70

*ZWR = Supplementary ring for extension

Model Volume	Tmax °C	Int. dimensions mm			Ext. dimensions mm			Output kW	Supply A	Connector Plug	Furniture batts w x d mm	Weight kg
		w	d	h	W	D	H					
TE 80 S	1320	ø 450		460	790	800	780	6,0	13	CEE 16 A	410	99
ZWR 80 S		ø 450		150	790	800	150	3,0	-	-	-	20
TE 100 S	1320	ø 450		610	790	850	930	9,0	13	CEE 16 A	410	117
TE 95 S	1320	ø 520		460	850	860	790	7,3	16	CEE 16 A	470	113
ZWR 95 S		ø 520		230	850	860	230	3,7	-	-	-	29
TE 145 S	1320	ø 520		680	850	910	1020	11,0	16	CEE 16 A	470	142
TE 130 S	1320	ø 610		460	930	930	790	8,8	19	CEE 32 A	540	130
ZWR 130 S		ø 610		230	930	930	230	4,4	-	-	-	33
TE 200 S	1320	ø 610		680	930	990	1020	13,2	19	CEE 32 A	540	166
TE 165 S	1320	730	630	460	1050	930	790	10,0	22	CEE 32 A	Cut to size	144
TWR 165 S		730	630	230	1050	930	230	5,0	-	-	-	36
TE 250 S	1320	730	630	680	1050	980	1020	15,0	22	CEE 32 A	Cut to size	180
TE 300 S	1320	840	640	680	1060	950	1020	15,0	22	CEE 32 A	Cut to size	204

*ZWR = Supplementary ring for extension

Model Volume	Tmax °C	Int. dimensions mm			Ext. dimensions mm			Output kW	Supply A	Connector Plug	Furniture batts w x d mm	Weight kg
		w	d	h	W	D	H					
TE 84 S 80 liters	1290	ø 450		460	790	800	780	6,0	8,7	CEE 16 A	ø 410	99
TE 98 S BH 95 liters	1290	ø 520		460	850	860	790	7,3	10,5	CEE 16 A	ø 470	113
TE 134 S BH 130 liters	1290	ø 610		460	930	930	790	8,8	12,7	CEE 16 A	ø 540	130
TE 168 S BH 165 liters	1290	730	630	460	1050	930	790	10,0	14,5	CEE 16 A	Cut to size	144

* TE 84 S - 168 S not with supplementary ring for extension. TE 98 S - 168 S with floor heating (BH) by default.

3. OVERVIEW

Pressure spring-supported opening mechanism on cover

Cover can be opened easily to its widest angle, stable frame

Bricks are secured against displacement



Safety switch

Exhaust air socket



Solid State Relays standard for all TE-S and Ecotop models

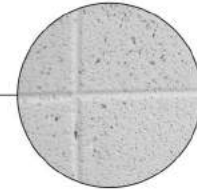
Metal handles for transport



Castors on back legs for easy transport (TE 20-110)

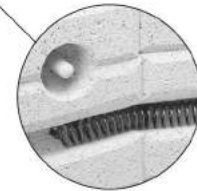


Unique swivel kiln stand



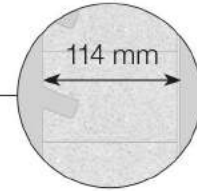
Kiln cover joined mortar-free

Heating elements fixed in exact position
Thermocouple installed in a safe position

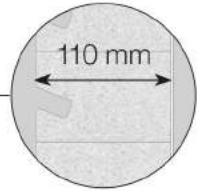


Tidy brick edges

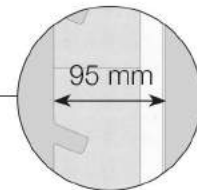
Adjustable and lockable cover sealing



Wall structure Toploader professional series TE-S



3-layer wall structure Ecotop



Wall structure Toploader studio series TE-MCC+

Air supply handle for all Toploader models



All models can be disassembled, some can be extended

4. IMPORTANT SAFETY INSTRUCTIONS

4.1. General information

Please make sure that you fully understand both the safety instructions and the safety icons, in order to eliminate potential dangers. Before starting to operate the kiln, make sure that you read and fully understand the following safety instructions.

Keep your instruction manual available at all times. For your own safety only use original spare parts!

Helmut Rohde GmbH does not assume any liability for damage resulting from incorrect or defective heating elements from other manufacturers. Use only original spare parts - otherwise all warranty claims become void.

4.2. General safety instructions



Caution: Hot surface.
Do not open while hot.



Caution: Dangerous electrically
live components.



Caution: Disconnect power plug
before opening the switch box!



The CE marking indicates that the
inspections for conformity have
been correctly carried out in
accordance with EC standards.

4.3. Operating safety instructions

The ROHDE kiln can only be operated safely if the safety instructions are carefully followed:

- When operated industrially, the kiln and controller must undergo a safety check to ensure correct functionality. This should be carried out by a qualified electrician before the initial operation and then at 4-year intervals in accordance with DGUV Regulation 3 (Deutsche Gesetzliche Unfallversicherung / German Social Accident Assurance).
- Maintenance and repair of electronic components must be carried out by a qualified electrician.
- For safety reasons the kiln must be disconnected from the mains supply before any maintenance work is carried out.
- The kiln must not be operated with an extension cable!

5. START-UP

5.1. Delivery / Unpacking of kiln

The ROHDE Toploader will usually be delivered on a pallet by a freight-forwarding agent. Immediately after delivery check the packaging for any visible damage. Should you detect any damage, unpack the pallet together with the driver and check the goods again for damage. If you detect any damage please enter details on the delivery note and let the driver countersign your remarks. Keep one copy of the complaint for yourself. Inform the freight-forwarding agency immediately of the damage. Complaints submitted at a later date cannot be taken into consideration.

5.2. Disposal of packing material

Contribute to a clean environment by disposing of wood, cardboard and plastic packaging material in your nearest waste disposal plant. For further information concerning the disposal of packaging material please contact your dealer or community council.

5.3. Installation environment / Location

When selecting a suitable place for your kiln, please note the following guidelines and prepare the kiln environment accordingly:

- Place the kiln on an even surface.
- The distance to the walls should be at least 50 cm on each side.
- The floor, ceiling insulation, walls, dividing walls, panelling, etc. must be made of flame resistant material.
- Make sure that the kiln environment can be properly ventilated. Otherwise a ventilation system must be installed. Please consult a qualified ventilation specialist to find out whether a ventilation system is necessary.
- Permissible ambient conditions:
 - Permissible ambient temperature = -5°C to $+30^{\circ}\text{C}$
 - Relative humidity = less than 80% (non-condensing)
 - Firing chamber atmosphere = oxidising

5.4. Assembly of kiln



figure 1

Check the enclosed accessories first (figure 1):

- 3 cordierite blocks (6 blocks for TE 165/250 and TE 300)
- 1 ceramic tube for exhaust air
- 2 sealing plugs
- 1 plastic cap for kiln stand
- 1 spare part for kiln stand
- 1 exhaust air socket and fixing screws
- 1 panel for mounting the controller and fixing screws (not shown)



figure 2

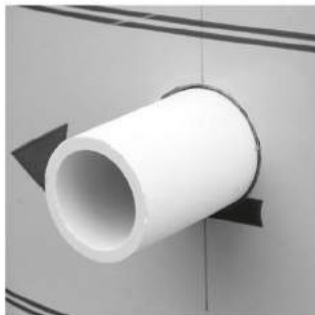


figure 3

You will also find enclosed the controller as well as two instruction manuals for the controller and the kiln. First screw the mounting panel (figure 2) into the holes indicated on the cover bolt (obey the enclosed assembly instructions).

Take the ceramic tube out of the box and plug it onto the exhaust air opening on the left side of the kiln (figure 3).

5.5. Installation of ventilation system

Please note: The exhaust socket has been designed to prevent heat from radiating against walls, surfaces or other objects.

Screw the exhaust air socket (figure 4) into the hole on the left side of the kiln. The opening has been located in a position that will allow fumes and gases to be released through an exhaust air socket (optional accessory). Plug the exhaust air tube into the exhaust air socket (figure 5) and use the fixing screw to fix it to the socket.



figure 4



figure 5

5.6. Air supply handle

All ROHDE Toploader models are equipped with an air supply handle (figure 6) on the kiln base. When the handle points to the left, the air supply is cut off. When the handle points to the right, the air supply is open.

You can significantly increase the service life of the heating elements by opening the air supply up to a temperature of 600–700°C.

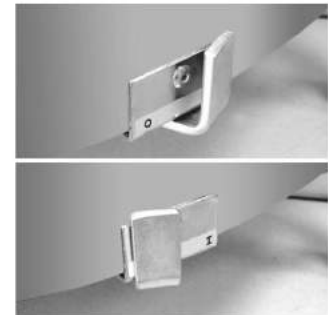


figure 6

5.7. Connecting to power supply / controller

The kiln is equipped with a mains supply cable. The power supply data can be seen on the type plate. The power supply must be suitable for the requirements of the kiln. The plug must be located next to the kiln.

Do not use extension cables! The mains supply cable must not come into contact with the hot kiln!

Regional voltage fluctuations are possible and will lead to fluctuations in the nominal output. In Germany, for instance, the nominal voltage of 230/400 is subject to voltage fluctuations of 10%. If the voltage drops from 230 to 210 under load, the output of the kiln will be reduced by 16%.

The controller (figure 7) is connected to the kiln with a 14-pin plug-and-screw connection. You will find the black socket (figure 8) next to the electric connection on the side of the switch cabinet.



figure 7

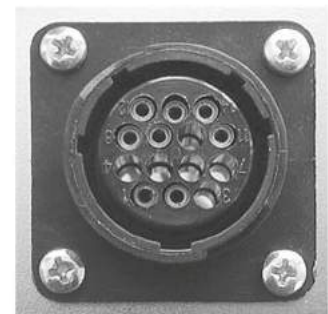


figure 8

First plug in the black plug of the controller. You might need to turn it a little until it locks into position. Then turn the screw connection ring, in order to protect the connection.



figure 9



figure 10

All connections required for extension (figure 9) of extendable Toploader kilns are already installed (figure 10).

5.8. Mounting the controller on the wall

Mounting the controller TC 304

Choose a safe and easily accessible place on a wall next to the kiln. First screw the two knurled screws into the holes indicated on the back of the control unit. They will be used later to fasten the controller in the fixing device.

Mount the holding bar of the control unit TC 304 using the 3 dowels and 3 screws, so that one fixing hole points upwards and the other two point downwards. Make sure that the transparent protective foil is correctly aligned!

Now the control unit can be plugged into the fixing device from above. You might have to loosen the knurled screws on the controller.

Mounting other controllers

Choose a safe and easily accessible place on a wall next to the kiln. Detach the wall fixing device from the control unit. Mount the fixing device on to the wall using 2 and 2 screws. Now the control unit can be plugged into the fixing device from above.

5.9. Kiln and furniture initial firing

CAUTION: First remove the protective foil from the entire kiln (floor rings and cover)!!!

Before starting to use the kiln in every day firing, you must carry out a dry firing. For this purpose make sure the exhaust air opening on the side of the kiln is open. The "burning-in" by means of a dry firing is important, in order to remove residual moisture from the kiln walls. It also generates a protective oxide layer on the heating elements which will considerably improve the service life of these components.

Settings for initial firing:

- heat up at 100° C/h
- end temperature 1050°C
- holding time 1 h 30 min.

Please note that the service life of the heating elements can be significantly increased by opening the air supply up to a temperature of 600-700°C. During the initial firing you can also "burn-in" the hollow stilts and additional furniture plates (optional accessories). For further information please see section 7.3.

After the first firing, the belts around the cover and the main ring must be retightened. For further information please see section 8.0.

5.10. Instructions power connection / Residual current protective device (RCD)

If you intend to operate the kiln in workshops or laboratories, a separate power supply with fuse protection must be installed by a qualified electrician.

Residual current protective devices (RCD) carrying a tripping current of 0.03 A (such as that used in damp rooms in flats) tend to trip early due to the high humidity of the rooms or fired goods.

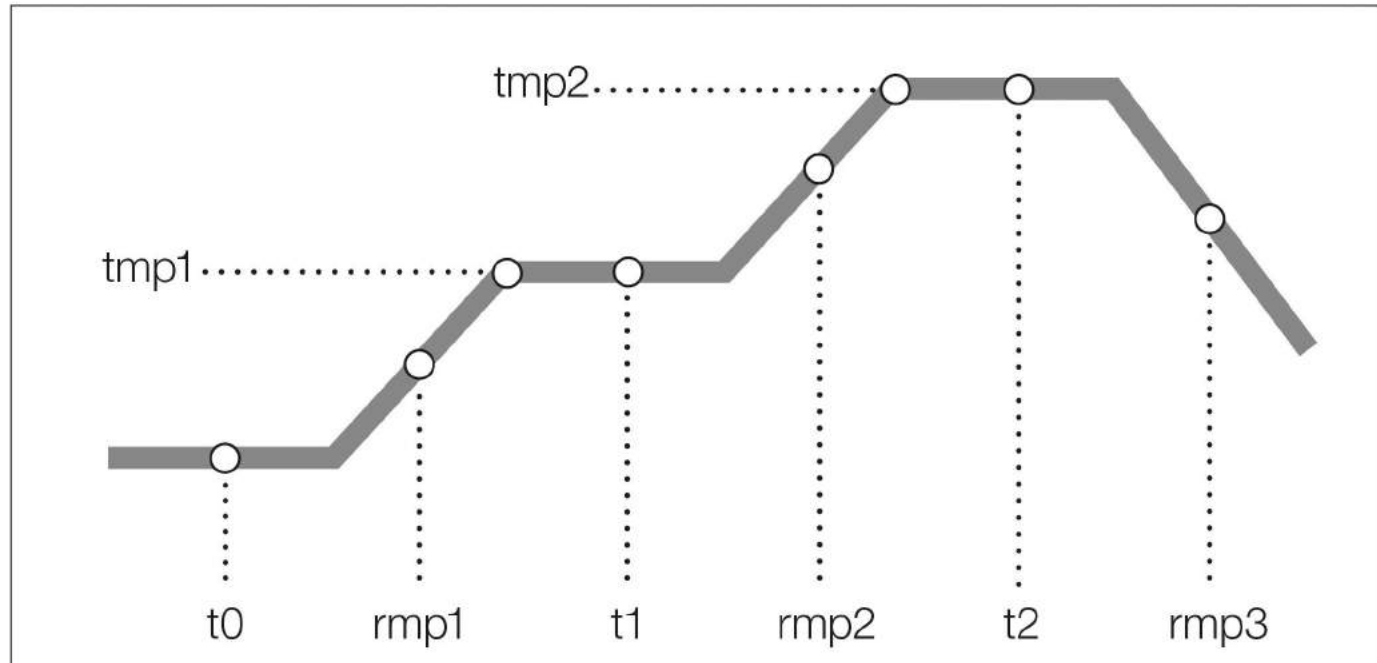
A larger sized RCD can be selected (we suggest 0.3 A) provided that the respective circuit is used only for the kiln. If this cannot be guaranteed, a fixed power connection must be provided.

6. GENERAL SAFETY INSTRUCTIONS

6.1. Operating instructions Controller

Please read the kiln control instruction manual carefully. The kiln is ready for operation after it has been connected to the mains supply and the controller.

Typical firing curve of a controller



Biscuit firing	0.00	100	600	0.10	150	950	0.05	SKIP
Glaze firing	0.00	150	300	0.05	150	1050	0.20	SKIP

6.2. Correct operation during firing

- Do not place flammable objects near the kiln.
- The kiln may only be used in a well-ventilated room. In order to guarantee safe operation, the kiln may be only operated up to an environmental temperature of +30°C.
- The kiln must be placed in a free-standing position in the room. Make sure that the heat release is not blocked. Do not place any objects on top of, or around, the kiln.
- Never open the kiln during operation or before it has cooled down completely. High temperatures are released and might cause physical injury and material damage. The manufacturer of the kiln does not assume any liability in such cases!
- When firing materials which release hazardous gases and fumes, an exhaust air system must be installed that directs these into the open air.
- Never use your kiln for firing inflammable materials or food.

7. OTHER FEATURES

7.1. Transport / Delivery

It may be necessary to dismantle the kiln to move it to its final operating position. This is not usually necessary for smaller models. However, it is easier to transport models from TE 60 upwards if the cover, rings and floor are disassembled. Only use the designated handles or the stand for transportation. When lifting the kiln do not pull the cover bolt next to the safety switch. There is a risk of pulling the safety switch out of the round hole, which would affect its functionality. If you pull the switch, this will cause the kiln to switch off and an error message will be displayed.

7.1.1. Dismounting kiln cover

Open the kiln cover. Use a screwdriver to push the metal sleeve on the top of the spring upwards (figure 11) until you can pull the gas-operated compression spring away from the ball-shaped head (figure 12). Have a second person hold the cover to prevent it from falling onto the main ring.



figure 11



figure 12

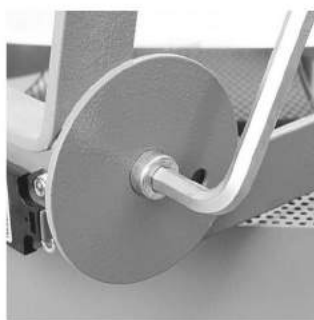


figure 13

Now use a size 8 Allen key to loosen and remove the two hexagon socket screws (figure 13). Now lift the cover and lay it to the side. Place the cover on a smooth, even surface. Never stand it vertically on its side! Please make sure that safety switch drops back into the round hole after assembling the Toploader. If this is not checked, the kiln will switch off and an error message will be displayed.

7.1.2. Dismounting kiln main ring

From model TE 60 onwards the main ring can be detached from the floor. For transportation the catch is protected with a pin. The protection pin must be removed in order to remove the main ring. Bend the protection pin (figure 14) so that it is horizontal and pull out of the catch.



figure 14

7.1.3. Dismounting supplementary ring

If your kiln is equipped with a supplementary ring you must remove it for transportation. Disconnect the electric connection from the switch cabinet and proceed as described in section 7.1.2. Place the main and supplementary rings on a smooth, even surface; otherwise the fire bricks might be damaged! Do not stand it vertically on its side!

7.1.4. Dismounting kiln stand

If necessary you can also remove the kiln stand from the floor.

To do this, loosen the supporting screws on the front (figure 15) and back (figure 16). Now you can lift the floor and place it horizontally on an even surface. Do not stand it vertically on its side!



figure 15



figure 16

7.2. Swivel kiln stand

We have designed a swivelling kiln stand (figure 17) that will allow you to adjust the height to your own requirements.

First detach the castors (only for models up to TE 75 MCC+) (figure 18).

Now loosen the black plastic feet and remove them from the kiln stand (figure 19).

Finally remove the plastic cap (figure 20) from the upper part of the kiln stand.

Now you can turn the kiln stand into the correct height. Change the respective components to the opposing fixing devices.



figure 17



figure 18



figure 19



figure 20

7.3. Example for positioning furniture plates

Place the enclosed 3 small cordierite blocks (figure 21) on the floor of the kiln, then place one of the furniture plates (optional equipment/accessory) on top (figure 22). Please note that all plates and stilts must be burnt-in (see section 5.9)!. Do not place the plates too close to the heating elements as this might cause the plates to crack. The distance to the heating element should be at least 20 mm.

We suggest that the furniture plates are supported in 3 points (figure 23) – for 2-piece furniture plates 3 stilts per plate – and that the stilts are positioned one on top of the other for each layer. Otherwise the plates might be exposed to stress from bending and suffer from deformation or cracking.



figure 21

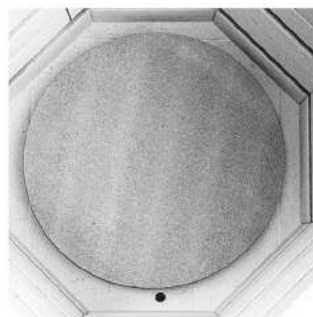


figure 22



figure 23

8. MAINTENANCE / CARE AND CLEANING

As the fire bricks give off residual moisture during the first operation the volume of the kiln might change slightly. It is therefore essential to readjust the tensioning belts of the stainless steel casing of the cover (figure 24) and main ring (figure 25) after the first firings (not applicable for Quattro and square or rectangular Toploader models).



figure 24



figure 25

Please make sure that no clays and glazes come into contact with the heating elements. This will cause the heating elements to malfunction during subsequent firings. If, however, impurities get onto the heating elements, clean them immediately, as burned-in glazes etc. will damage the heating elements and bricks. If there is substantial damage, please contact Helmut Rohde GmbH or your retailer.

Heating elements are subject to wear. Their resistance (Ohm) increases with every firing. Over the course of time this will lead to delays in the firing cycle due to a drop in performance, especially in the upper temperature range. If there is excessive wear we recommend that you replace the complete set of heating elements rather than just single elements. Replacing individual elements might lead to variations in temperature inside the kiln.

Have a qualified electrician replace the heating elements!

A tip for the firing professional: Always keep a spare set of heating elements! In case of an emergency this will save you unnecessary delay and allow you to continue firing as quickly as possible.

Remove clay and stone dust regularly using a broom and a vacuum cleaner. This will also increase the service life of your heating elements.

Avoid reduction glaze firing, as this will cause the oxidation layer to decompose, thus significantly reducing the service life of the heating elements.

We recommend an empty firing (without furniture or goods) after every 20th firing. This will "clean" the heating elements and at the same time the oxide layer can renew itself which will extend the service life of the elements.

9. TROUBLESHOOTING TIPS

The controller cannot be switched on.

- Check if the controller has been connected to the switch cabinet of the kiln.
- Check if the kiln is connected to the mains supply.
- Check the micro-fuse on the switch cabinet of the kiln. This has a T 2A fuse.
- Have your house mains supplies (plugs), fuses and the current consumption of your kiln checked by a qualified electrician.

The controller displays an error message.

You will find the relevant explanation in your user's manual for the controller.

The firing chamber does not heat up. Check if the cover switch is working. The cover switch is probably not working and thus cannot operate the safety contactor. Make sure that the safety switch drops back in to the round hole. If this does not happen, the safety circuit is interrupted and the kiln cannot heat up.

The kiln heats up very slowly. The kiln does not reach the programmed temperatures. The controller displays an error message. Check the heating elements for visible damage, e.g. cracks.

The functionality of all ROHDE kilns is tested before they leave the factory!

10. WARRANTY

We guarantee excellent manufacturing and functionality of the kiln and provide a 36-month warranty from date of invoice.

As well as the heating elements (subject to wear) the following are excluded from the scope of warranty:



- Damage caused by the customer such as broken bricks on the cover caused by placing objects on top of the kiln.
- Damage caused by the fired material, e.g. due to temperature limits being exceeded.
- Damage caused by improper transport.
- Damage due to chemical reactions during firing for which the kiln is not intended (such as salt glaze).
- Corrosion caused by aggressive glazes or insufficient ventilation of the firing chamber. The manufacturer is not liable for any damage resulting from improper operation and resulting damages.

Please note: The firebricks of the kiln lining are exposed to significant temperature fluctuations. This may cause hairline cracks in the firebrick lining. This process is common and does not affect the functionality of the kiln. It cannot therefore be accepted as a reason for complaint.

What to do in the case of warranty / damage:

Please notify us - before incurring any costs. After contacting the manufacturer, Helmut Rohde GmbH, your retailer will then decide how to proceed.

If any claims arise, please state the **kiln type, product number** and the date of purchase or the **year of construction** (see type plate on switch cabinet).

 <small>Brennöfen und Maschinen für Keramik, Glas und Metall</small>		
Modell/Model:	SN:	Baujahr / Y. O. M.:
TE 95 S	# 32694	01 / 2013
Spannung/Voltage:	Strom/Current:	Leistung/Power:
3/N/PE AC 400 V	16 A	7,3 kW
Maximale Betriebstemperatur / Maximum operating temperature:	Frequenz:	
1320 °C	50 Hz	
Helmut Rohde GmbH Ried 9 D - 83134 Prutting		

We refer to the **General Terms and Conditions of Helmut Rohde GmbH.**

11. PROPERTY RIGHTS / TRADE NAMES AND DISCLAIMER

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We mention names, trade names, product identifications etc. without special identification, as they are generally known. Those names and identifications, however, may be the property of companies or institutions and subject to copyright.