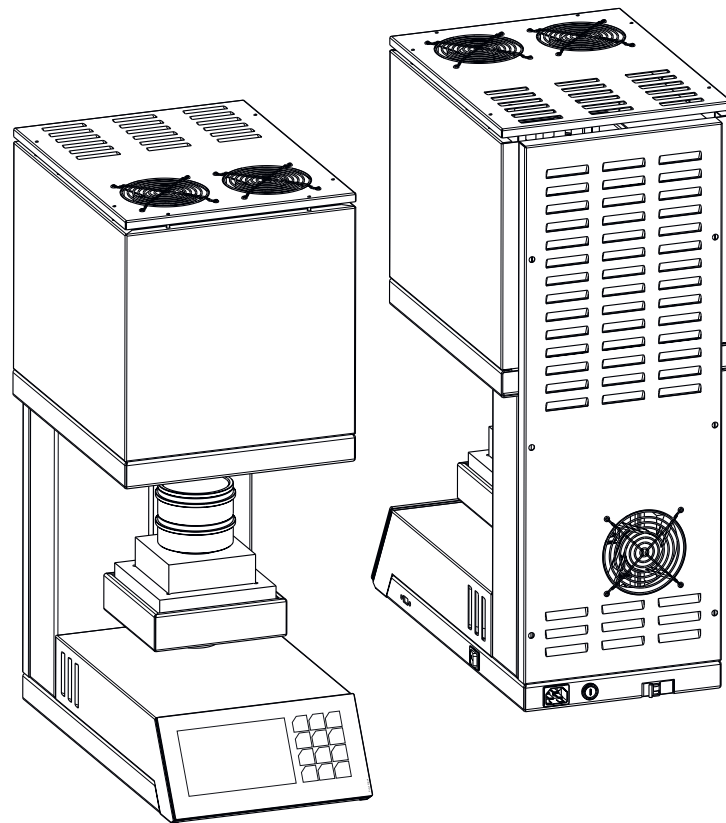


VARIO S 430

EN09-2022



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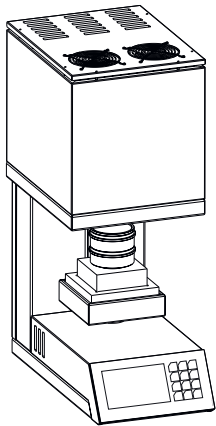
0. Introduction

Dear Sir or Madam,

we are pleased that you have decided in favor of a Zubler furnace VARIO S430 and wish you pleasant work with it. The constant further development of our

technology is based on the cooperation with experienced dental technicians. The focus is on the goal of building furnaces of the highest quality, flexibility and sus-

tainability. Performance and economy are basic requirements. To ensure trouble-free work, you must read the operating instructions carefully.



0.1 Declaration of conformity

We, Zubler Gerätebau GmbH

Buchbrunnenweg 26

89081 Ulm-Jungingen

www.zubler.de

declare that the product "VARIO S430" complies with the provisions of the following EC directives:

2006/42/EC Machinery Directive

2014/35/EU Low Voltage Directive

2014/30/EU EMC Directive

2011/65/EU RoHS.

If the product is modified without our agreement, this declaration loses its validity.

0.2 General

The correct processing of modern ceramic materials places increasing demands on dental technicians. We have taken this into account and combined the latest technology and future-oriented processes in the VARIO ovens. The software installed in the VARIO series allows you

to carry out individual pressing and firing for all dental ceramics available on the market. The use of the highest quality materials increases the service life of the furnace and offers you reproducible results at the highest level. It is now our desire that you use the VARIO furnaces to

produce top-quality dental ceramics for years to come. Therefore we will inform you about changes to the software or additions to the processing options. We are sure that you will have much success with the ceramic furnace and congratulate you on the choice you have made.

0.3 Intended use

- The VARIO series ovens are used exclusively for the firing and pressing of dental ceramics and is only intended for these applications.
- The user is liable for damage resulting from other use.
- When working frequently with temperatures above 1075°C, the service life of the heating chamber is reduced.
- The manufacturer's warranty provisions apply.
- Intended use also includes observing all the information in these operating instructions.
- Repairs may only be carried out by authorized service centers.
- Do not operate the control panel with wet or damp fingers.
- Please unpack the oven with care and transport with two people. Always lift by the base, never by the oven cavity or lift table.
- Do not operate the control panel with hard and/or pointed objects.
- Never operate the furnace without the firing insulation base or press insulation base.
- Do not put your hands between the oven table and the oven chamber during operation. There is a risk of crushing and burns.
- Never place items or hands under the lift table when in use. The oven table must not be obstructed during the opening process.
- The cooling slots must not be covered, otherwise air circulation may not be optimal and the device may overheat.
- No liquids or objects may get into the device or into the ventilation slots, as this could cause a short circuit.
- The oven table has an electric drive and must be operated with the opening and closing button. Do not open or close the oven table by hand.

0.4 Safety instructions

- Position the oven in the up-right position. A clearance of 200-300 mm must be maintained above and on all sides of the oven. Immediately adjoining walls surrounding the device must be made of non-flammable material. The area should be well ventilated.
- In accordance with fire codes, install an appropriate, recommended, multi-purpose, dry foam fire extinguisher near the oven and ensure your employees are trained in its proper use.
- Never wear loose or loose fitting clothing when operating the oven. Be careful when reaching for objects around the oven. Flammable material can ignite if it comes into contact with a hot surface of the device and cause serious burns to the user.
- Do not set up the furnace and vacuum pump in the immediate vicinity of heat sources (e.g. preheating furnaces, sintering furnaces).
- Furnace soldering reduces the service life of the thermocouple and heating muffle.
- Make sure the oven is professionally installed according to our instructions and the chosen electrical connection is properly grounded.
- For 230/240 V, use the grounded mains cable H05VV-F3G1.0 with a non-heating device socket and Schuko plug.
- For 100/120V use the grounded mains cable SJT3xAWG14 with a non-heating device socket.
- The electrical service must be carried out carefully and ensure that the oven is connected to the existing mains with sufficient voltage. Consult a qualified electrician to ensure the power rating is adequate and will not overload an existing circuit.
- Do not use an extension cord with the oven. Ask your electricity supplier about the electrical connection values that apply to your local network.
- In the event of undervoltage, the temperature rise may be slower.
- Hoses and fittings should be checked periodically for proper fit, wear and damage and replaced or re-tightened as necessary.
- All cables and hoses should be located away from walkways and passageways.
- During use, such as when opening the heating chamber, high temperatures may radiate outside the oven chamber.
- Do not touch the surface parts, the heating elements or the inner surface of the oven. The hot surfaces can cause serious burns.
- Immediately after the firing process, do not leave the firing chamber unattended, close it as soon as possible.
- If the furnace is left under vacuum for a long time when it is switched off, the lift plate O-ring may stick easily.
- Only clean the device with a dry or slightly damp cloth. Do not use solvents! Always disconnect the power plug from the outlet before doing this work.
- When the heating chamber heats up, the heating coil may oscillate.
- In the event of defects or damage that no longer ensures safe operation, the device must be secured against unintentional use.
- Before performing any recommended and authorized routine maintenance or service, turn the oven off and disconnect the power plug from the outlet, to avoid risk of electric shock, injury or death. Allow the oven to cool to room temperature.
- Do not attempt to open, repair, or replace any part of your oven until you have read the manual and the repair or replacement is specifically recommended therein. Any unauthorized attempt to repair, replace or open any part of your oven could pose a safety hazard and void your warranty. All service work, whether during or outside the warranty period, may only be carried out by our customer service.
- In the event of service, only original spare parts are to be used.
- Unauthorized modifications to the hardware or software can cause serious safety damage as well as void your right to warranty.
- Never leave children or visitors unattended near an operating oven. Children should never be allowed to stand on or climb up on a surface on which a oven is placed. Objects that could be of interest to children should never be placed near the oven. There is a serious risk of injury.
- Keep the original packaging materials for your VARIO oven and vacuum pump. Only use the original packaging to transport these parts. Improper transport will void the warranty.

1. Installation

1.1 Setting up the device

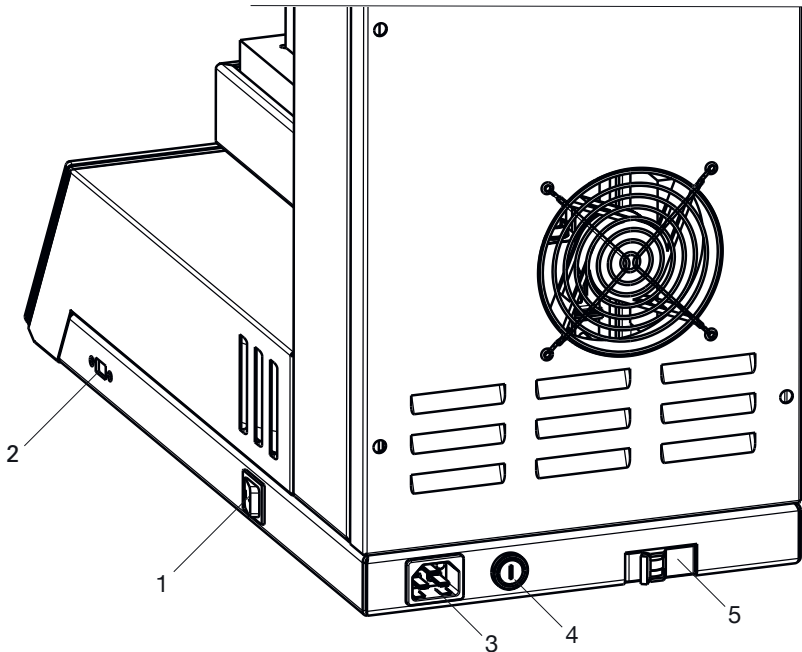
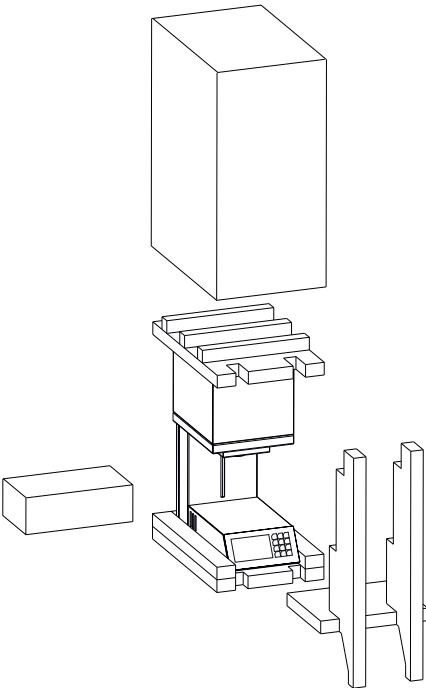
- Place the oven on a stable and level work station
- Keep the original box and packaging material for warranty claims and service
- Have the firing or pressing insulation base ready for the further procedure.
- Power connection:
 - The ceramic oven requires 230V/50Hz or 115V/60Hz.
 - Do not use extension cords
 - Connect oven to a dedicated electrical outlet.
 - The main switch should be in the "0" position.
 - Connect the oven to the power supply using the supplied power cord.
 - Switch on the furnace at the main switch.

1.2 Initial installation

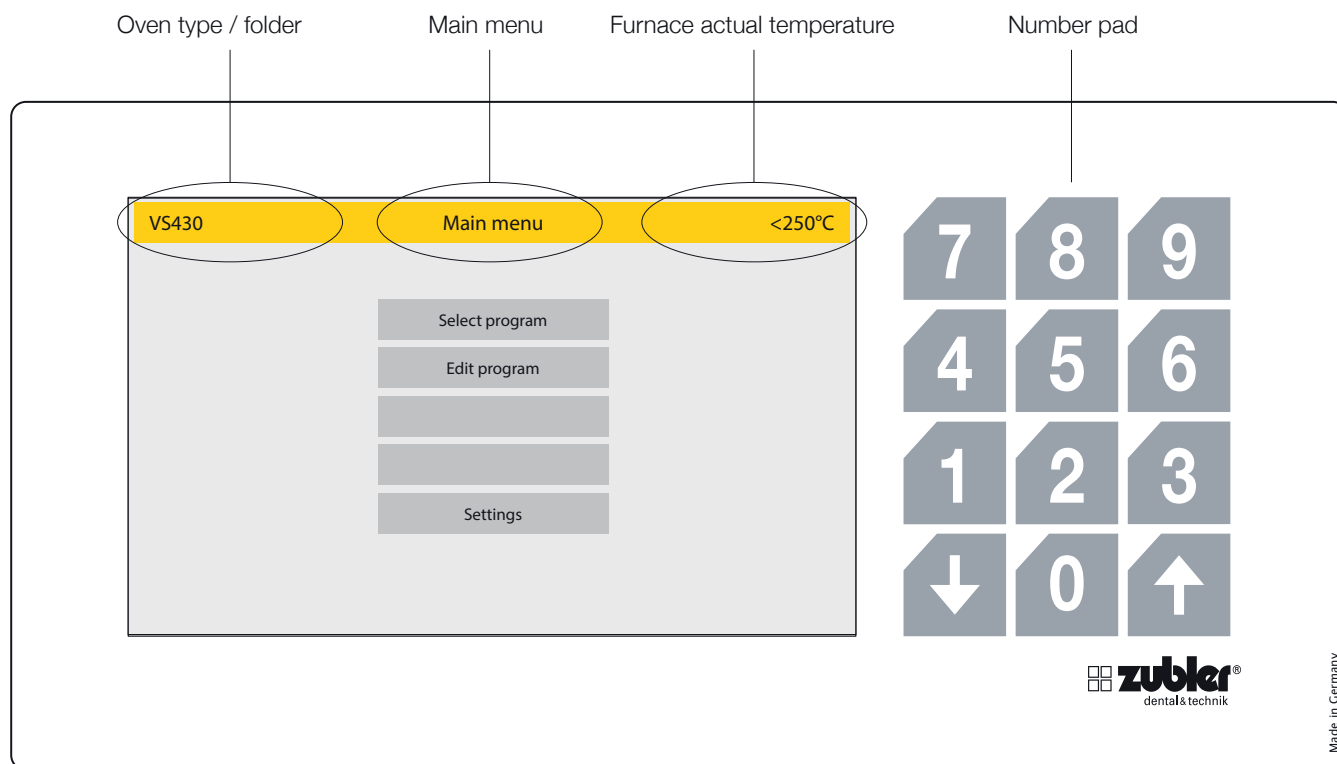
- After switching on for the first time, instructions for the first steps are shown on the display. After that, the initial installation cycle runs automatically. The oven is only ready for operation after a complete set-up (2.5.10).
Remove any remaining packaging

Initial installation steps

- Setting the language
- Base and centering socket (incl. centering ring) in the lift cage
- Brightness
- Volume
- Check circuit breaker
- Set date and time
- Setting the unit (°C / °F)
- Loading programs via USB
- Start burn-in program



1	Main switch
2	USB port
3	Power cord connection
4	Main fuse
5	Sicherungsautomat



1.3 Display

The display of the VARIO furnaces is a full-touch display including an additional number block

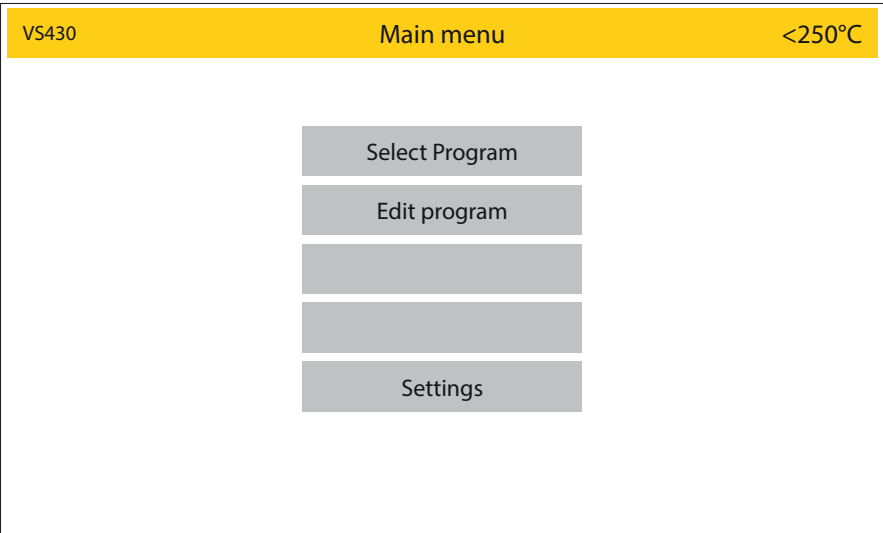
The number block is only active when numerical values can be entered.

The "UP" and "DOWN" arrows are active when they can be used. In the top position only the **down** arrow is active, in the lower plate position only the **up** arrow is active. In this way, the proper functioning of the lift and the end positions can be checked.

2. Operation

Selection of the menu parameters

After the furnace is switched on, the main menu with five options appears on the display. Selecting an option takes you directly to it.

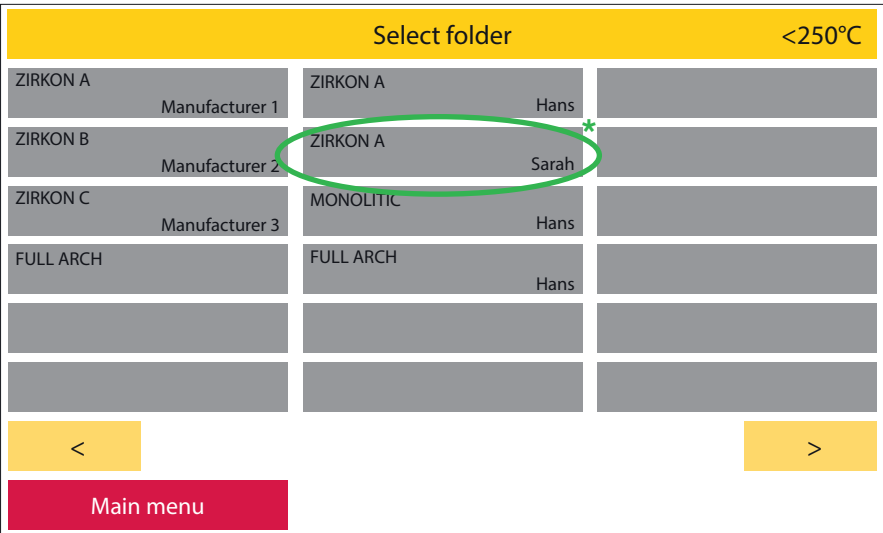


Display, Status: Main menu

Image 08.1

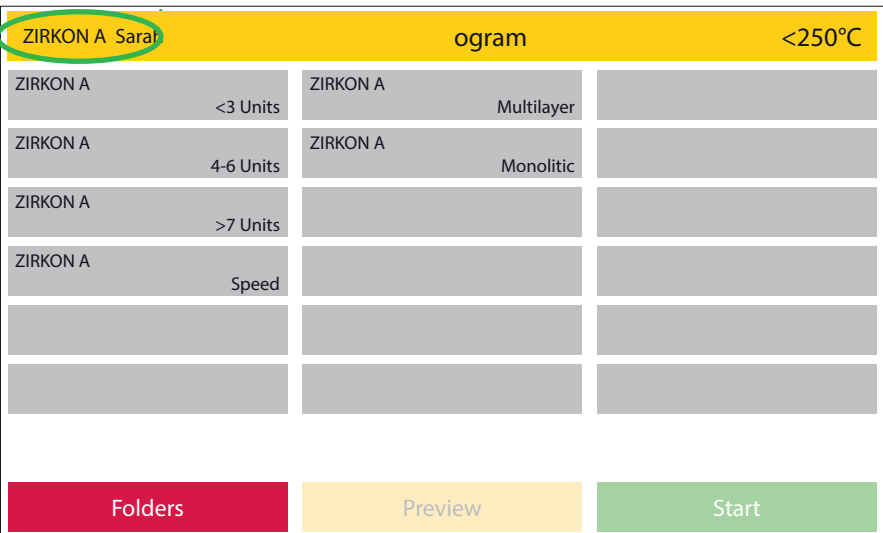
2.1 Program Selection

- The Folder Menu contains a list of customizable Program Folder buttons. This menu will be recognizable by the prompt at the top of the page "Select Folder". Each Program Folder button contains the programs for the listed specific porcelain, or process you desire. Folder Buttons are dark grey, while program buttons are light grey. Example: All DC 9.2 Programs will be in the DC 9.2 Folder. The red **Main menu** button takes you back to the main menu.
- Once a folder has been opened, the Program buttons in that folder are displayed. This menu will be recognizable by the prompt at the top of the page in yellow "Select Program". Press the desired program button. The press the **"Preview"** button to view/change parameters or press the **"Start"** button to start the selected program. The parameters can be changed individually for this one program sequence (see also point 2.1.1).



Display, Status: Select program / folder overview

Image 08.2



Display, Status: Select program / select a folder / program overview

Image 08.3

ZIRKON A Sarah			Select program	<250°C
ZIRKON A	<3 Units	ZIRKON A	Multilayer	
ZIRKON A	4-6 Units	ZIRKON A	Monolithic	
ZIRKON A	>7 Units			
ZIRKON A	Speed			
Folders		Preview		Start

Display, Status: Select program / select a folder / program selected

Image 09.1

2.1.1 Preview - change program

- When changing program parameters in the "Preview" mode, changes are temporarily saved for the next program run and return to the previous parameters upon completion. This is not saved permanently in the program. Parameters can only be changed and saved permanently via **Edit program** in the main menu.
- Select the desired parameter to change and enter the values using the number field that is now active.
- When changing parameters the green **"Start"** button changes to **"OK"**. Please confirm your input by activating this field. The original parameter is restored by pressing the **Abort** function field.
- If a value is entered that follows the correction of subsequent parameters, these are high-lighted in yellow (image 09.3).

Preview			<250°C
	ZIRKON A	Monolithic	Rampen 5 ↓
Heat rate 1	10°C/min	Heat rate 3	8°C/min
Final temp.. 1	900°C	Final temp.. 3	820 °C
Hold time 1	030 min	Hold time 3	120 min
Heat rate 2	3°C/min	Heat rate 4	5°C/min
Final temp. 2	1100°C	Final temp.. 4	900°C
Hold time 2	000 min	Hold time 4	000 min
Heat rate 5		45°C/min	
Final temp.. 5		450°C	
Hold time 5		000 min	
cool rate		10°C/min	
opening temperature		300°C	
Abort		Delete	

Display, Status: Select program / select a folder / select a program / Preview / final temp. selected

Image 09.2

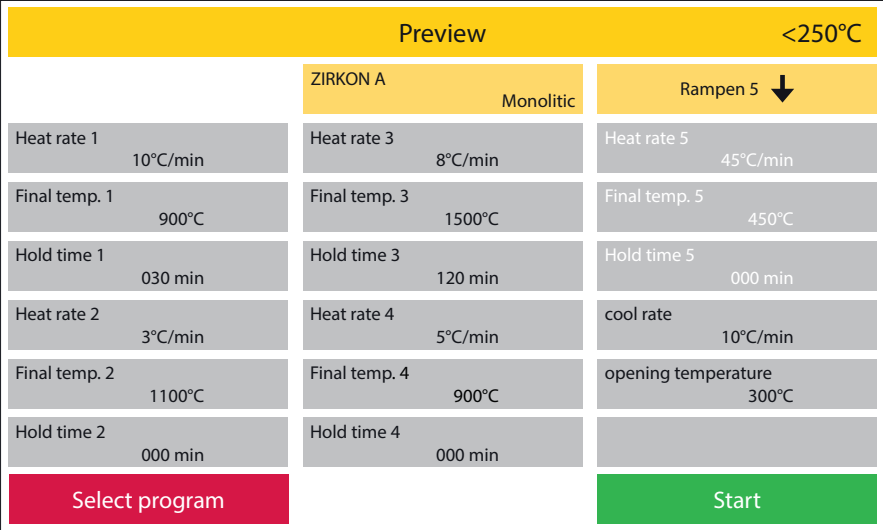
Preview			500°C
	ZIRKON A	Monolithic	Rampen 5 ↓
Heat rate 1	50°C/min	Heat rate 3	8°C/min
Final temp. 1	900°C	Final temp. 3	1500°C
Hold time 1	030 min	Hold time 3	120 min
Heat rate 2	3°C/min	Heat rate 4	5°C/min
Final temp. 2	1100°C	Final temp. 4	900°C
Hold time 2	000 min	Hold time 4	000 min
Heat rate 5		45°C/min	
Final temp. 5		450°C	
Hold time 5		000 min	
cool rate		10°C/min	
opening temperature		300°C	
Select program		Delete	

Display, Status: Select program / select a folder / select a program / Preview / final temp changed and confirmed

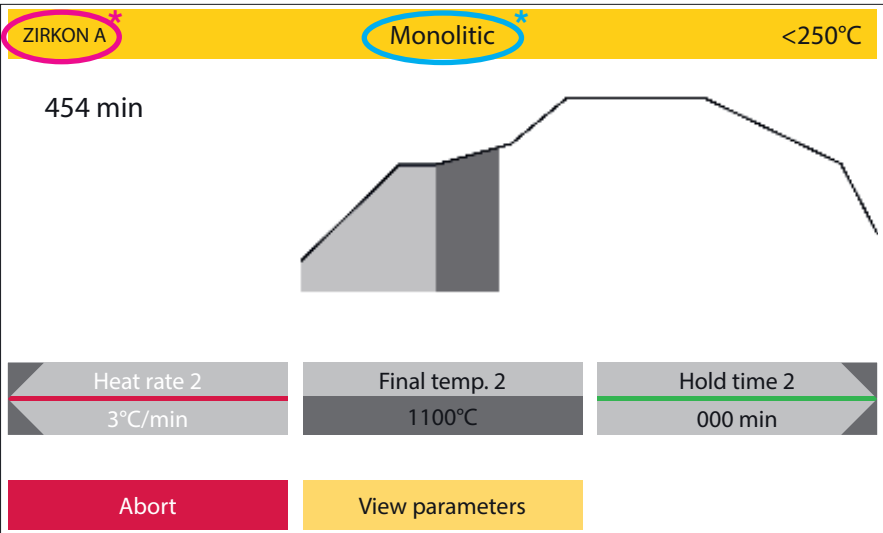
Image 09.3

2.1.2 Start program

■ As soon as a program is started using the green **Start** button, the program sequence is displayed once as a graph and as a list of parameters. The currently active parameter is highlighted in a darker shade of grey in the program slider, while parameters that have already been processed recede into the background (image 10.2). In the graph, the active parameter is also highlighted in a darker shade of grey. In this way, the program status can be seen at a glance, even from a greater distance from the device. The parameter slider provides more detailed information. As already described, the active parameter is highlighted in a darker shade of grey. If a subsequent parameter is controlled, the parameter bar scrolls accordingly. Subsequent parameters can be checked by dragging the process bar to the appropriate positions with a "swiping motion".



Display, Status: Select program / select a folder / select a program / Preview Image 10.1



Display, Status: A running firing program Image 10.2

2.1.3 Parameter overview

- The preview window can be called up again during a program run using the Parameter overview button. In this way, all parameters can be checked at a glance. Changes to parameters can no longer be made here.

ZIRKON A Edit program <250°C		
	ZIRKON A Monolithic	Rampen 5 ↓
Heat rate 1 10°C/min	Heat rate 3 8°C/min	Heat rate 5 45°C/min
Final temp. 1 900°C	Final temp. 3 1500°C	Final temp. 5 450°C
Hold time 1 030 min	Hold time 3 120 min	Hold time 5 000 min
Heat rate 2 3°C/min	Heat rate 4 5°C/min	cool rate 10°C/min
Final temp. 2 1100°C	Final temp. 4 900°C	opening temperature 300°C
Hold time 2 000 min	Hold time 4 000 min	
Abort	Delete	OK

Display, Status: Select program / select a folder / select a program / Start / Edit program Image 11.1

2.1.4 Program abort

- If you want to end a program prematurely or cancel it, you can do this by pressing the red **Abort** function field. In this case, the program abort must be confirmed again by a security prompt (image 11.2).

ZIRKON AMonolithic485°C

Abort

Should the program really be aborted?

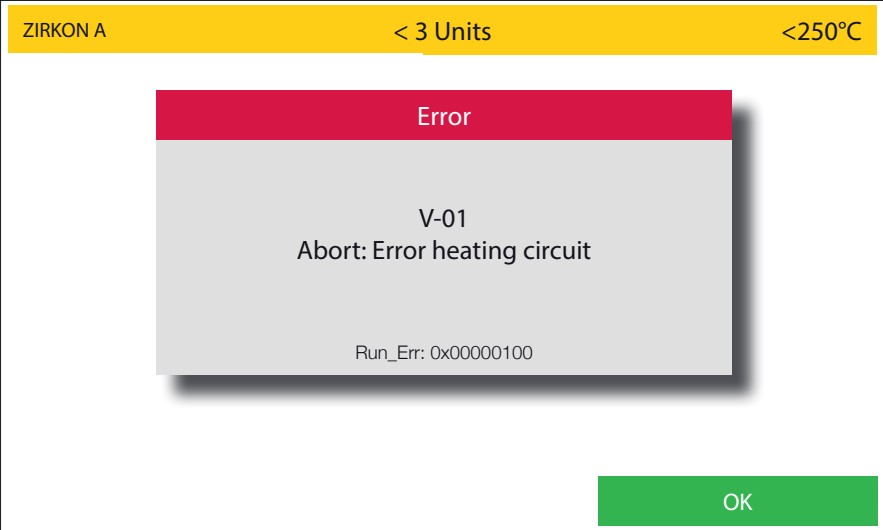
No

Yes

Display, Status: Program abort, abort confirmation Image 11.2

2.1.5 Functional error during program execution

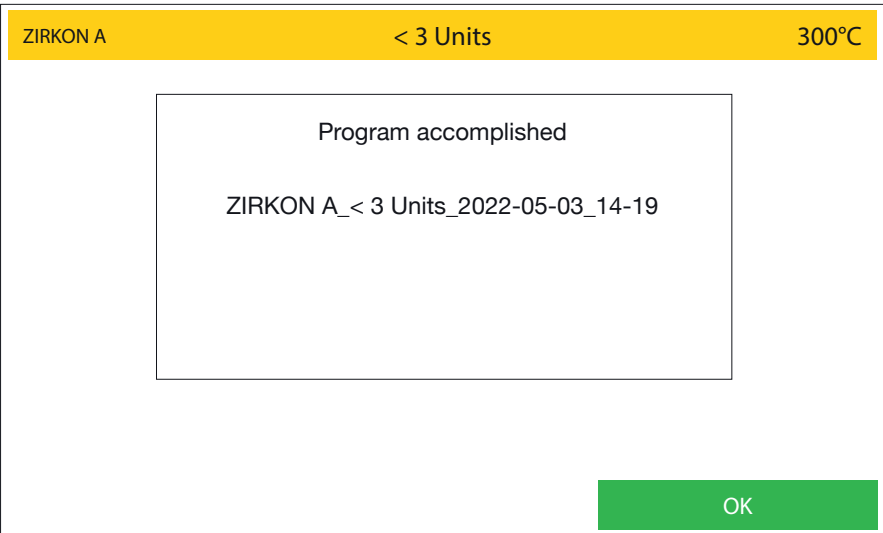
- In the event of a functional error, the oven interrupts the work process and displays a window with an error message in plain text and an error code.
- This error message and the program termination must be confirmed with the green **OK** button.
- The error message that was displayed last can be called up later under **Settings, Last error messages**.



Display, Status: Error message during a running program Image 12.1

2.1.6 End program

- The end of a program is indicated by an acoustic signal and visually by a text window. The name of the completed program, the time and the date at the end of the process are given in the text window (image 12.2).
- A code is generated (image 12.3) for documentation or quality assurance. This consists of the serial number of the furnace, the date YYMMDD - time (24-hour system). The complete program data can be called up under **Settings - Data transfer - Export protocol files** (image 12.2). The last 50 program sequences are saved here. Older program sequences are overwritten. The log data should therefore be backed up at regular intervals.



Display, Status: Accomplished firing program Image 12.2

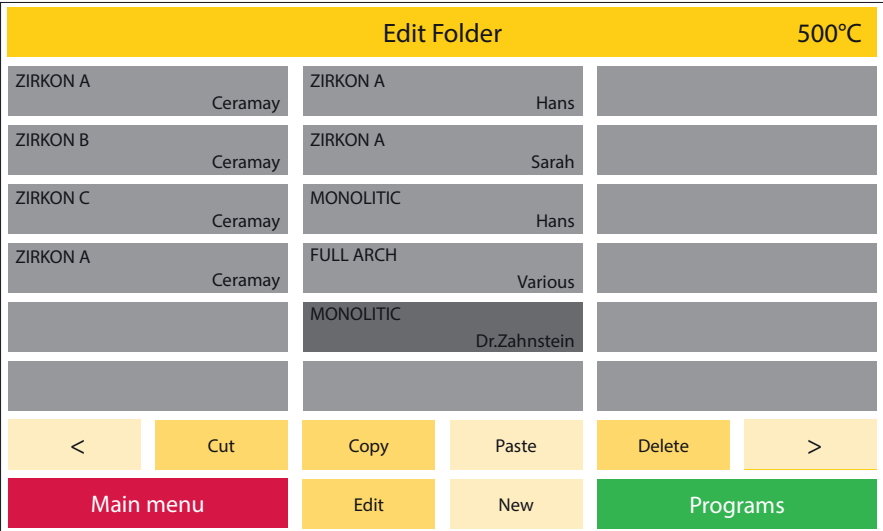
Image 12.3

2.1.7 Explanation of terms

Ramps	The number of desired program sections can be set here. A Program section (ramp) consists of: heating rate, end temperature, holding time. 2-6 such program sections can be programmed. Here, 5 ramps to gradual heating up and 1 ramp for cooling down.
Heating rate 1-5	temperature increase in °C / min (°F / min) to reach the final temperature in the respective program section. Heating rate 1 is limited to a maximum of 50°C / min. Heating rates 2-5 up to 100°C / min.
End temperature 1-5	the respective target temperature of the individual program sections. Adjustable Temperature range: 250°C - 1650°C.
Holding time 1-5	Duration of the respective program section at the end temperature. Maximum holding time that can be set for a single ramp: 300 minutes. Maximum holding times to be set across all ramps: 420 minutes.
Cooling rate	Cooling in °C / min (°F / min) to reach the opening temperature. Adjustable Cooling range: 1 - 50°C /min
Opening temperature	Indicates the temperature at which the oven opens. The one provided by the factory The setting range is 250°C - 400°C. Upon request, the limitation of maximum opening temperature to be set can be changed from 250°C - 1650°C. Please contact your service partner or us at Zubler Gerätebau GmbH.

2.2 Edit folder/program

- In the **Edit program** area, folders or programs can be created, edited, copied or deleted. A basic distinction is made between two "levels". The "folder level" and the "program level". For visual orientation, the "folder level" is kept in a darker shade of grey, the "program level" in a lighter shade of grey. These structures can be freely named by the customer. So the folder structure e.g. material or technician - are created related.
- If a folder function field is selected in **Edit program** mode, this is optically highlighted. The corresponding function fields are now active in the lower area of the display (image 15.1). If a free folder function field was selected, this can now be named using the **New** function field. If a folder function field that has already been described is selected, the field and its content can be copied, moved, edited or even deleted. Corresponding function fields are activated as soon as the function is available.
- If a described folder function field was selected, a green **Programs** and a red **Main menu** function field become active, among other things. By pressing the **Programs** field, you get to the program level, by pressing the **Main menu** field, you get back to the main menu.



Display, Status: Edit program / existing folder selected

Image 15.1



Display, Status: Edit program / folder selected / Edit or New

Image 15.2

1 **New**
The **New** function field is activated as soon as an empty program or folder function field has been selected. If the **New** field is now pressed, the oven opens two lines of text and a keyboard field for entering the desired name. Up to 12 characters or letters can be used per line of text. Letters can be represented in both upper and lower case (image 16.1).

2 **Cut**
Using the cut function, you can move individual programs or entire folders, including their contents. To do this, the desired program or folder is selected first. This field (program or folder function field) is now highlighted for checking purposes. Now the desired function field **Cut** is selected. The oven now hides all other function fields except for **Paste**. The target storage location must now be selected (in the case of programs, this can also be in a different folder). By clicking on the **Paste** field, the program or the folder and its contents are moved to the desired position.

3 **Copy**
Here the folder/program is copied to the clipboard. The folder remains unchanged in the same position. the procedure is the same as described under point 2 "**Cut**".

4 **Paste**
The folder / program from the clipboard is inserted at the activated position. Only free program fields can be activated.

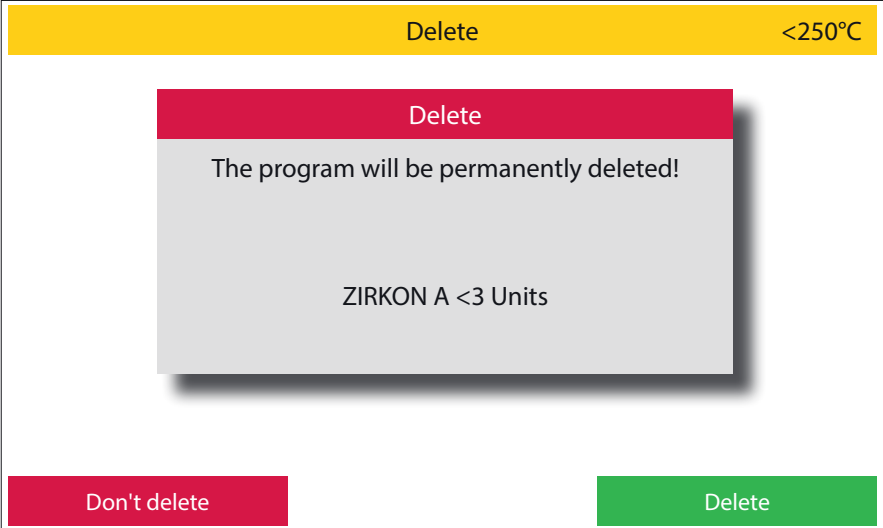
DC 9.2 Sarah		Edit program		<250°C	
ZIRKON A	<3 Units	ZIRKON A	Multilayer		
ZIRKON A	4-6 Units	ZIRKON A	Monolithic		
ZIRKON A	>7 Units	ZIRKON A	Speed		
<	Cut	Copy	Paste	Delete	>
Folders		Edit	New		

Display, Status: Edit program / folder selected / Programs / existing program selected Image 16.1

- 5

Delete

After pressing the **Delete** function field, a security query appears, which you must confirm with **Delete** or **Don't delete**.



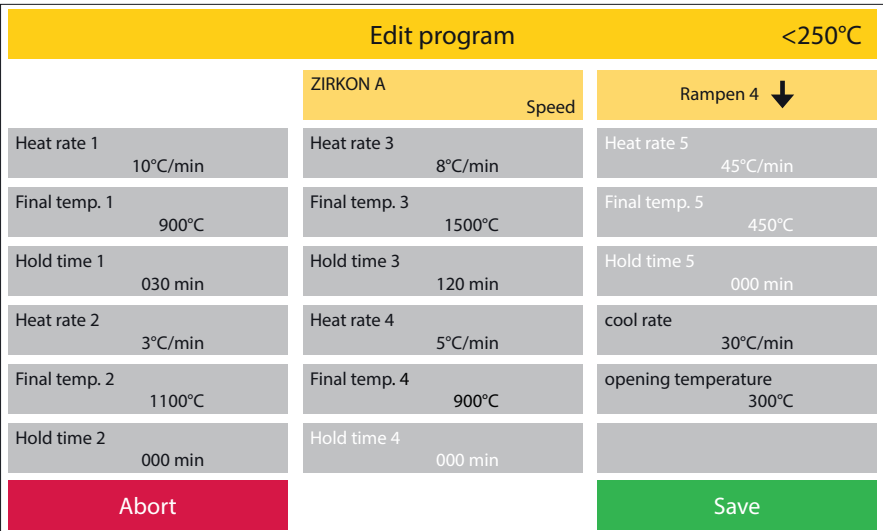
Display, Status: Edit program / folder selected / Programs / existing program selected / Delete

Image 17.1

- 6

Edit

The name can be changed for existing programs or folders. The number block is active. With programs, additional parameters can be changed and saved permanently. If parameters are changed that have a direct influence on the following parameters (e.g. the opening temperature when the final temperature is lowered), these parameters are adjusted accordingly after the **OK** field has been clicked and highlighted in yellow. These values are accepted and saved with **Save**, and the initial values are called up again with **Abort**.



Display, Status: Edit program / select a folder / Programs / existing program selected / Edit

Image 17.2

- 7

Next / Previous

With the forwards > and backwards < keys you can switch to the next page with further groups or programs. The buttons are only active if there is also another page.

8 Name programs / folders

If a new program or a new folder is to be created, a name must first be entered.

Two lines of text, each with a maximum of 12 characters or letters, are available for this purpose (image 18.1). When programs are created, the second step is to select the program type. To do this, as shown in the diagram on the right, activate the arrow in the program type. A list with all available program types opens. After the desired program type has been selected, the oven offers the parameters required for this type. These parameters can now be programmed at will. To do this, select the respective parameter and enter the desired value using the number field that is now active. A green **OK** field is now activated with which this value can be confirmed. The initial value is called up again by pressing the red **Abort** field. If all parameters are named accordingly, they can finally be saved with the green **Save** field.

Edit program<250°C

ZIRKON A

SPEED

QWERTZUIOPÜ

ASDFGHJKL

CtrlYXCVBNM.,-←→

Abort

OK

Display, Status: Edit program / select a folder / Programs / select a free program field / New

Image 18.1

Create program<250°C

ZIRKON A

Speed

Heat rate 110°C/min

Heat rate 38°C/min

Final temp. 1900°C

Final temp. 31500°C

Hold time 1030 min

Hold time 3120 min

Heat rate 23°C/min

Heat rate 45°C/min

Final temp. 21100°C

Final temp. 4900°C

Hold time 2000 min

Hold time 4000 min

Rampen 4↓

Rampen 2

Rampen 3

Rampen 4

Rampen 5

Rampen 6

Abort

Save

Display, Status: Edit program / select a folder / Programs / New (after the name is entered)

Image 18.2

Create program<250°C

ZIRKON A

Monolithic

Heat rate 110°C/min

Heat rate 38°C/min

Final temp. 1900°C

Final temp. 31500°C

Hold time 1030 min

Hold time 3120 min

Heat rate 23°C/min

Heat rate 450°C/min

Final temp. 21100°C

Final temp. 4900°C

Hold time 2000 min

Hold time 4000 min

Rampen 4↓

Heat rate 545°C/min

Final temp. 5450°C

Hold time 5000 min

cool rate10°C/min

opening temperature300°C

Abort

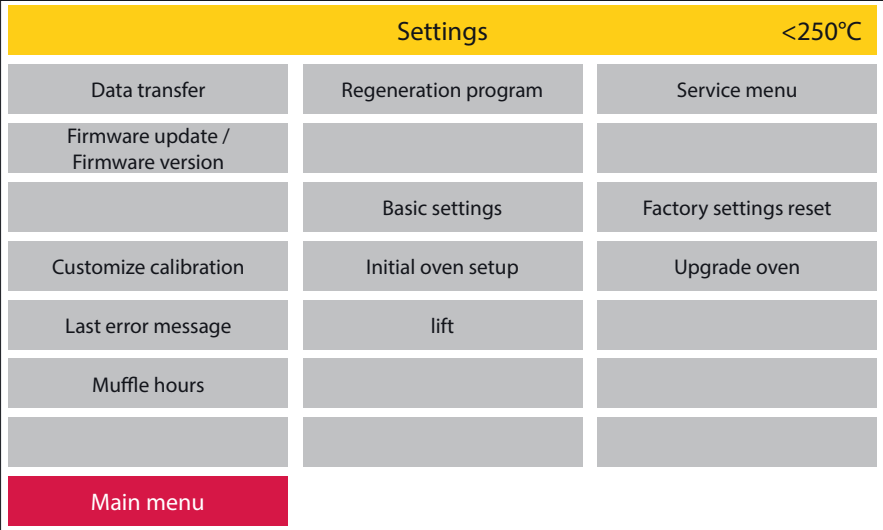
OK

Display, Status: Edit program / select a folder / Programs / New (after the name is entered)

Image 18.3

2.3 Settings

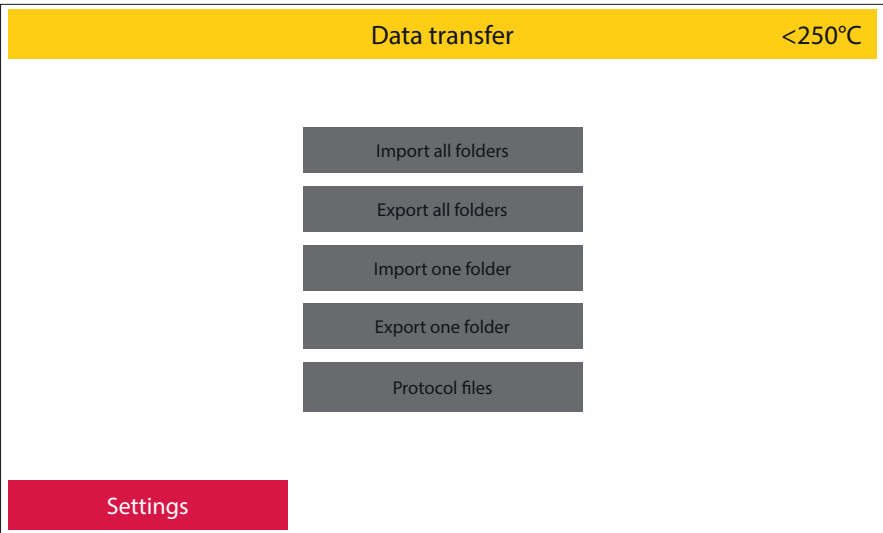
Settings take you to the "Service level" of the menu. Various basic settings can be adjusted here, service programs can be carried out and data can be transferred (software, program and log data). Pressing the red **Main menu** field takes you back to the Main Menu.



Display, Status: Settings Image 20.1

2.3.1 Data transfer

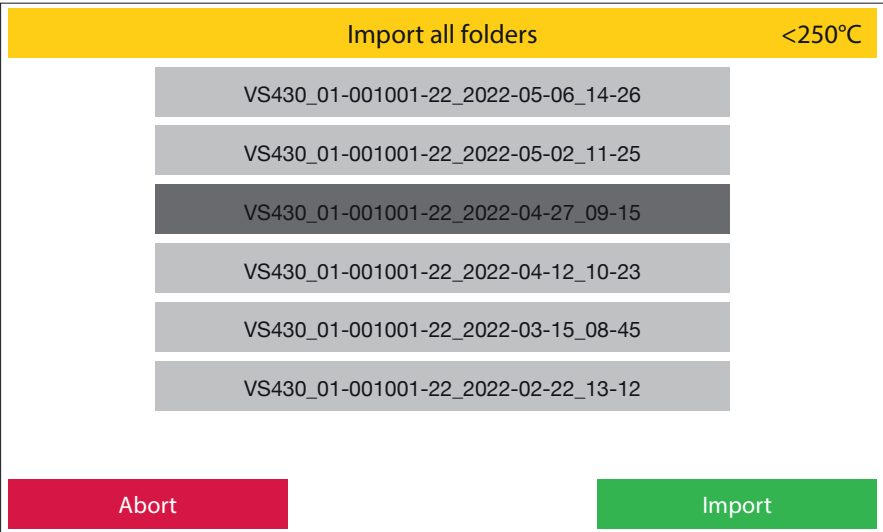
Included with your Zubler ceramic furnace a USB data stick (flash drive) is enclosed. With the help of this USB stick you can transfer program datas (from the oven to USB or from USB to oven) or log datas for quality assurance to save. When the oven detects the USB stick, all active function fields are highlighted (image 20.2). When using a third-party data medium, problems may arise during data transfer. If the USB stick is not recognized, all function fields remain inactive. Pressing the red **Settings** control panel takes you back to the settings area.



Display, Status: Settings / Data transfer Image 20.2

- 1 Import all folders
- If there is already a corresponding folder on the USB stick, this will be recognized by the oven and the **Import all folders** function field will be activated (dark grey background) (image 20.2).
 - If this field is now activated, the furnace opens a list with all the corresponding data. Select the desired data record, the green **Import** function field is activated. The required data record is loaded by pressing this button (image 20.3).

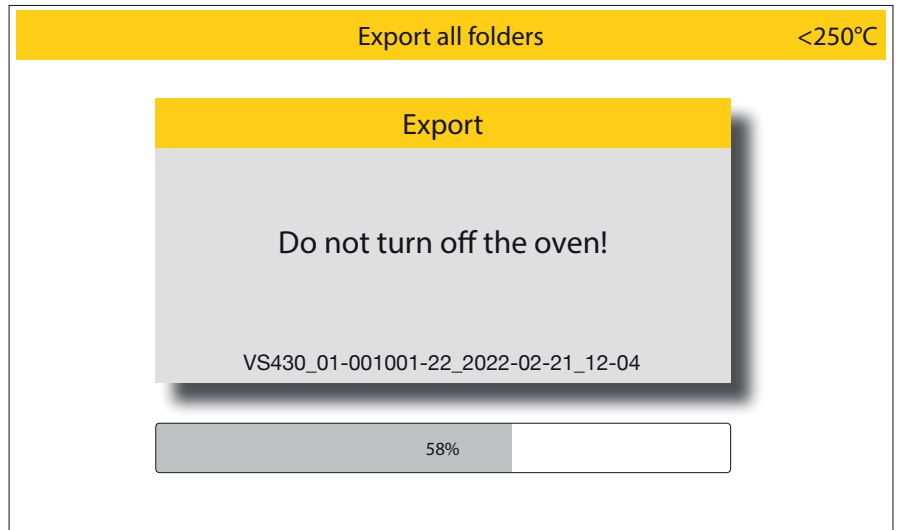
All folders and programs on the furnace will be overwritten!



Display, Status: Settings / Data transfer / Import all folders / one folder selected Image 20.3

2 Export all folders

- When the **Export all folders** function field is activated, all folders on the furnace are saved from the furnace to the USB memory and can be transferred to another furnace.
- The furnace creates the file name as model name of the furnace, serial number of the furnace, date and time (image 21.1).



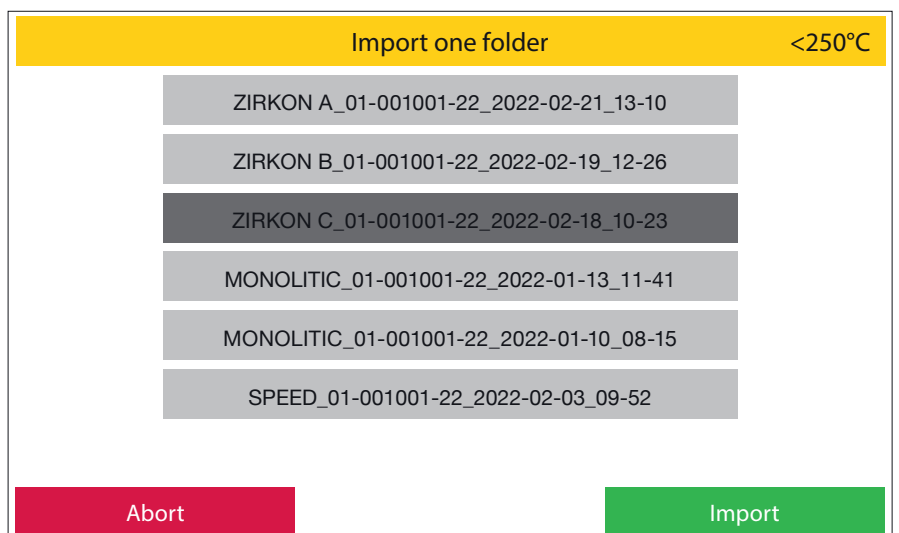
Display, Status: Settings / Data transfer / Export all folders

Image 21.1

3 Import one folder

Individual folders can be copied from the USB memory.

- To do this, select the desired folder and the folder menu will open (image 21.2). Please choose a free folder location here, this will be highlighted and the green **Import** function field will be activated. To complete the process, please press this button.

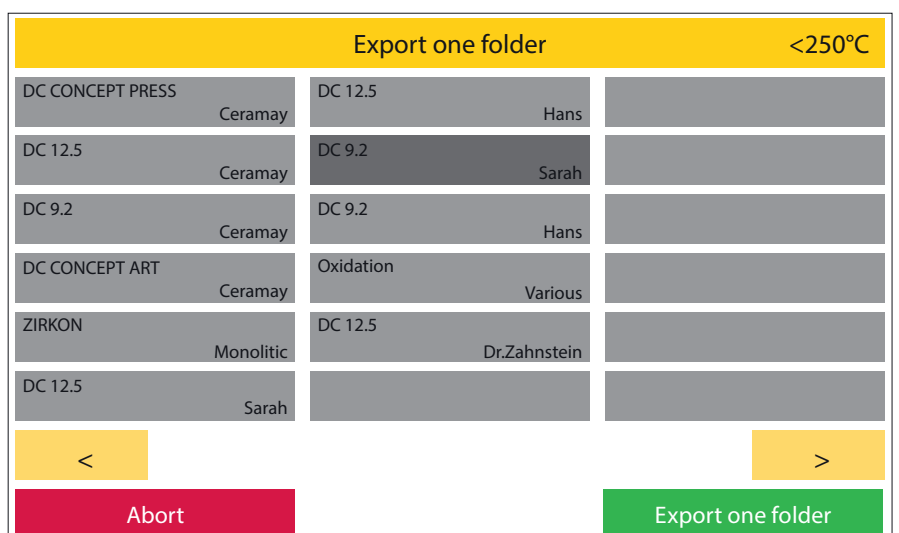


Display, Status: Settings / Data transfer / Import one folder

Image 21.2

4 Export one folder

- A single folder can be saved from the furnace to the USB memory here.
- If **Export one folder** is selected, the oven opens the folder menu. As soon as the folder to be backed up is selected, the green function field **Export** is activated. Please activate this field to save the folder and its contents.
- The furnace (Image 21.3) creates a folder file which it names with the folder name to be saved, serial number of the furnace, date and time.



Display, Status: Settings / Data transfer / Export one folder / DC 9.2 Sarah is chosen

Image 21.3

5 Export protocol files

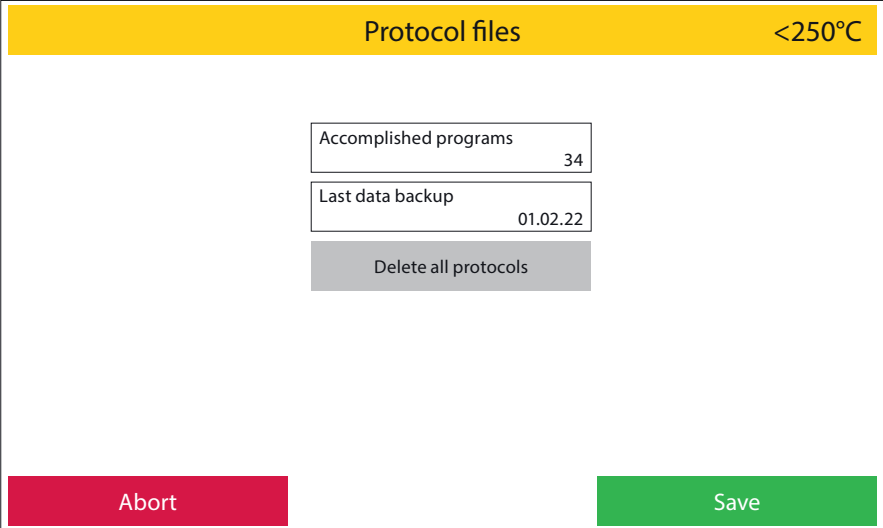
For documentation and quality assurance, the last 50 program runs and results can be downloaded with a csv file.

After 50 program sequences have been saved, the furnace overwrites the previous log data, starting with the oldest, in subsequent work processes.

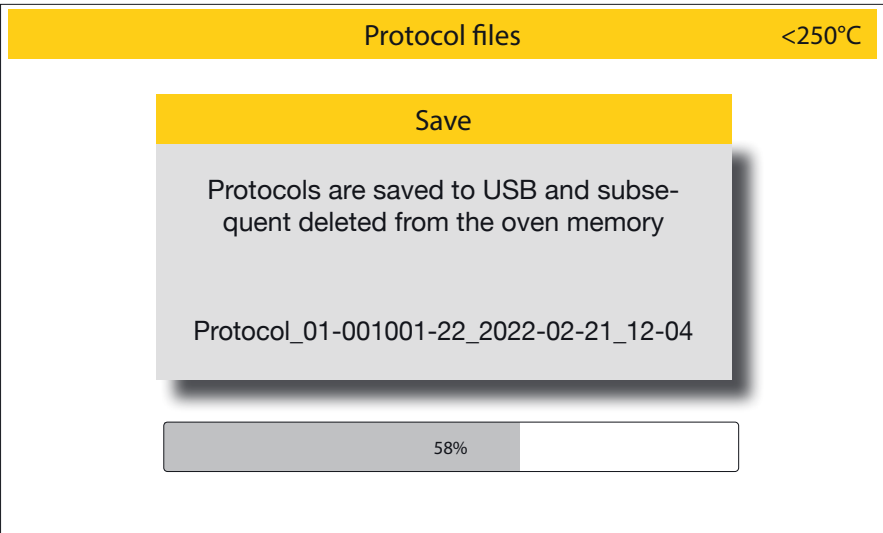
Log data that is exported is deleted from the oven memory in the process. Here, too, the furnace generates a file name composed of the word protocol, serial number of the furnace, date and time of the storage time (image 22.2).

Delete all protocol files

All protocol datas in the oven memory can be deleted here.

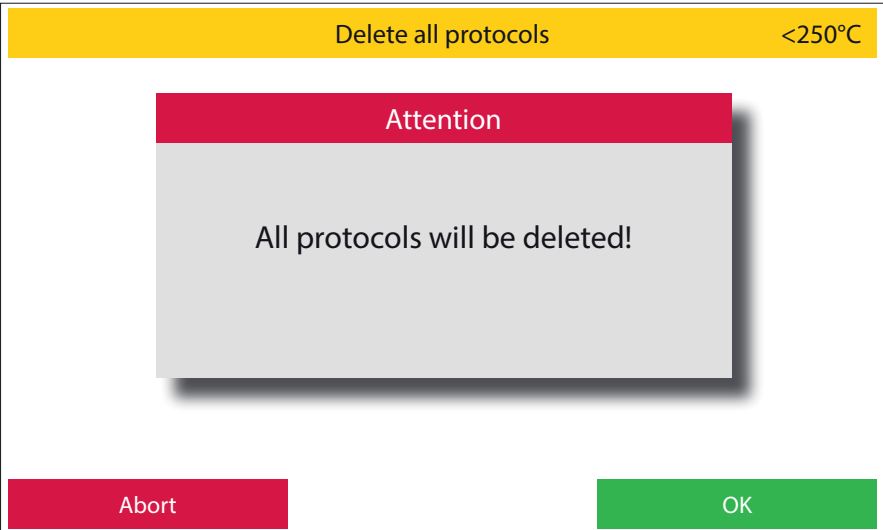


Display, Status: Settings / Data transfer / Protocol files Image 22.1



Display, Status: Settings / Data transfer / Protocol files / Delete all protocols Image 22.2

- After selecting **Delete all protocols**, a warning window appears. This process must then be confirmed by pressing the green **OK** field or revised with **Abort** (image 22.3).



Display, Status: Settings / Data transfer / Protocol files / Delete all protocols Image 22.3

2.3.2 Firmware update / Firmware version

1 Firmware version and Firmware update.

The firmware versions of the relative components are displayed here.

A firmware update can be installed on the furnace from the USB memory.

If the USB stick and the firmware stored on it are recognized by the oven, the green function field **Update firmware** is activated. If this is pressed, the furnace displays a list of all firmware versions stored on the USB stick.

■ If a **Firmware update / Firmware version** is now selected (image 23.1), the green **Import** function field is activated. Please press this to start the update (image 23.2).



It is important to ensure that the oven is not switched off or disconnected from power during the firmware update. Loss of power during the firmware update will result in the complete loss of the firmware on your oven.

A restoration can only be carried out by the manufacturer!

Firmwareupdate / Firmwareversion<250°C

Firmware Display Board00-00-24

Firmware Date2022-03-18 15:10

Firmware I/O Board00-00-27

Firmware Date2022-03-18 15:10

I/O Board number of series123456789-1234-1

Settings

Update firmware

Display, Status: Settings / Data transfer / Firmwareversion / FirmwareupdateImage 23.1

Update firmware<250°C

Firmware_00-00-26_00-00-28.imx

Firmware_00-00-25_00-00-27.imx

Firmware_00-00-25_00-00-26.imx

Firmware_00-00-24_00-00-26.imx

Firmware_00-00-24_00-00-25.imx

Firmware_00-00-23_00-00-24.imx

Abort

Import

Display, Status: Settings / Firmware update / Firmware version / Update firmwareImage 23.2

Update firmware<250°C

Installing firmware

Version No. :
Firmware-00-00-26-00-00-28.imx
Do not turn off the oven!

58%

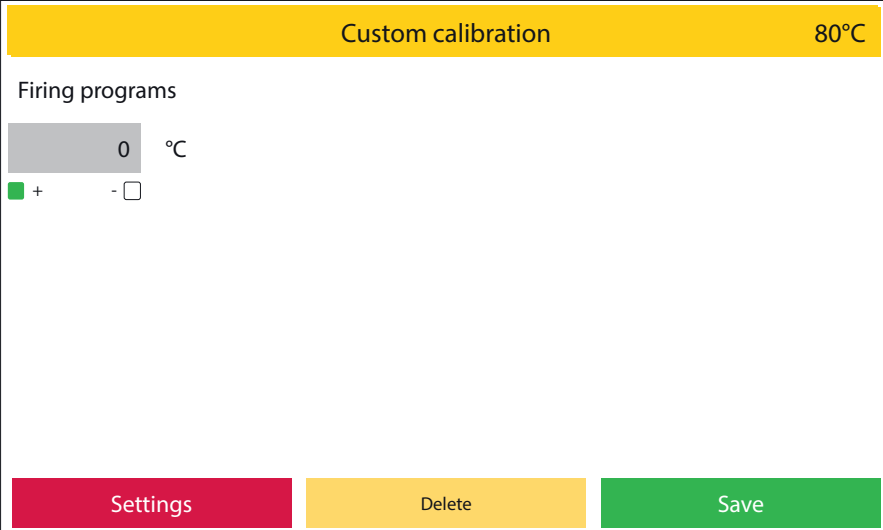
Display, Status: Settings / Firmware update / Firmware version / Update firmware / software has been choosen / Image 23.3

2.3.3 Custom calibration

With the customize calibration, the basic temperature calibration of the oven can be carried out in the range:

- Firing programs

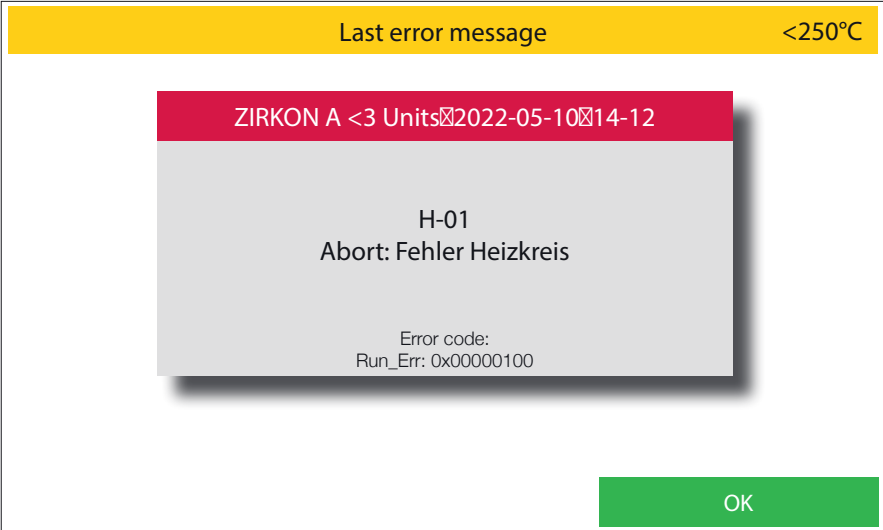
be readjusted. Using a numeric keypad value can be entered. If (+) is activated, the temperature in the program by the entered value elevated. If (-) is activated, the temperature in the program will be lowered by the entered value. By selecting the field to be changed, the stored value can be removed by pressing the **Delete** button. The values are saved with the **Save** button.



Display, Status: Settings / Idle / Standby temperature Image 24.1

2.3.4 Last error message

The last error message displayed by the oven can be called up again here. This is retained until the oven displays an error message again and is then updated in the process (image 25.1).



2.3.5 Muffle hours

The operating hours in the individual temperature ranges can be viewed here. The information relates to the amount of time in the respective temperature range in hours (image 25.2).

2.3.6 regeneration program

This program is for regeneration of the heating elements of the VS430. We recommend this program only when necessary apply. The ones installed in the VS430 MoSi2 heating element have superficial a protective oxide which is in a gray shiny appearance. his interface can Sintering damage what is going through white or black dots on the elements or by a progressive matting becomes noticeable. these defects are regenerable. Both please Sinter bowls empty (no zirconia, no sinter granules or sinter beads). place the lift table and the regeneration program start.

Furthermore, this program serves as a "Relaxation burn" after replacement of heating elements.

Muffle hours			<250°C
under 299°C	35	800°C - 899°C	16
300°C - 399°C	16	900°C - 999°C	28
400°C - 499°C	16	1000°C - 1099°C	18
500°C - 599°C	16	1100°C - 1199°C	18
600°C - 699°C	16	1200°C - 1299°C	18
700°C - 799°C	16	1300°C - 1399°C	18
		1400°C - 1499°C	32
		1500°C - 1599°C	28
		1600°C - 1699°C	3
		über 1700°C	0
		Total hours	294

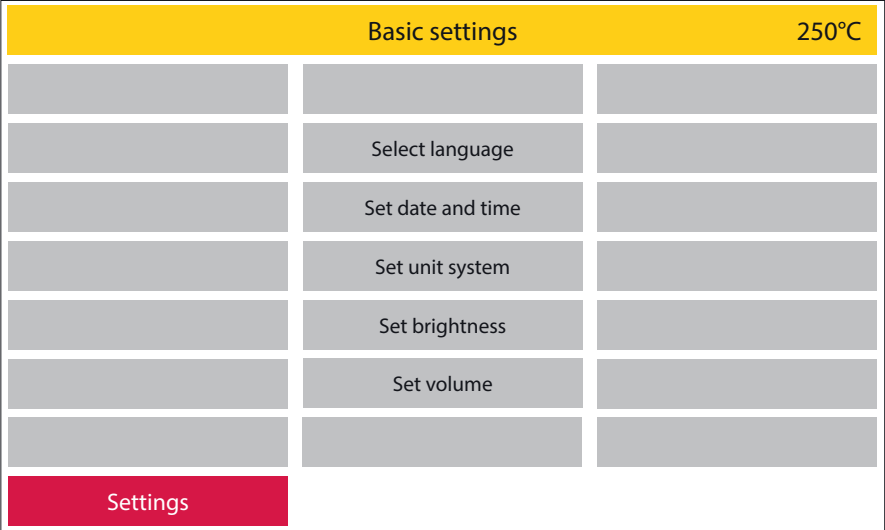
Settings

Display, Status: Settings / Customize calibration Image 24.2

2.3.7 Basic settings

In this area, specific display settings can be made.

These are:

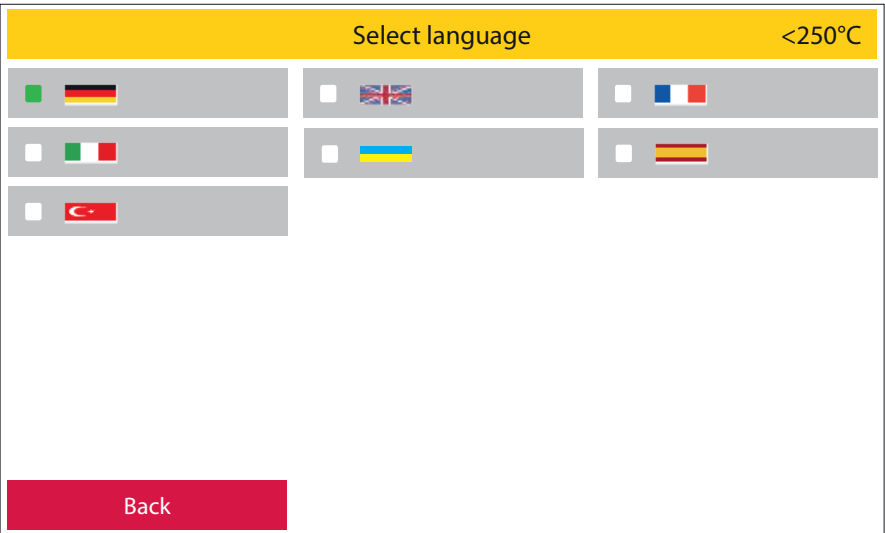


Display, Status: Settings / Basic settings

Image 26.1

1 Select language

Selection of the menu language. To do this, select the desired national language by activating the red **Back** button you'll get back to the **Basic settings**. (image 26.2).



Display, Status: Settings / Basic settings / Select language

Image 26.2

2 Set date and time

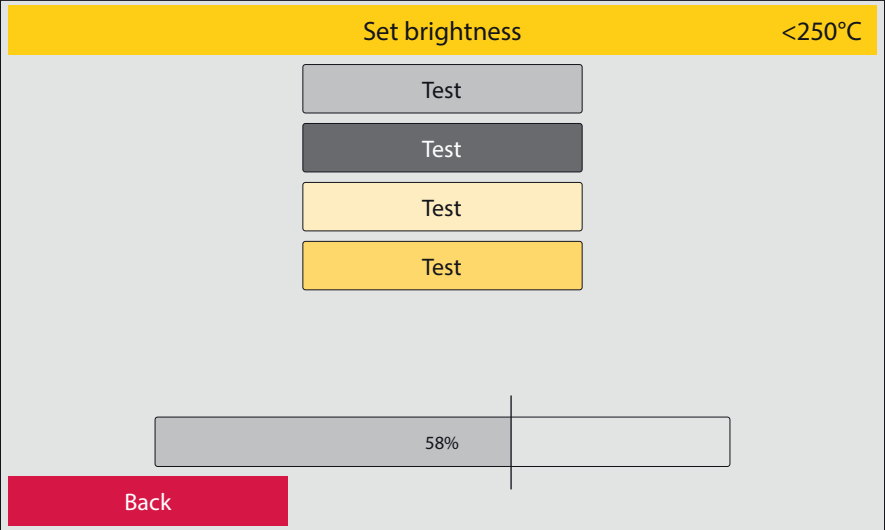
Date and time can be set here. Select with the arrow keys, activate the green **Save** function field to save. Return to the basic settings menu using the red **Back** function field.

3 Set unit system

Choice between metric (°C) and imperial system (°F). Select the desired system and confirm the selection with the green **Save** button or exit the area without making any changes with the red **Abort** button.

4 Set brightness

Setting the display brightness using the slider. 4 test color patches are used for orientation. Activate the slider until the display shows the desired values. With the red **Back** function field you'll return to the **Basic settings** level (image 27.1).

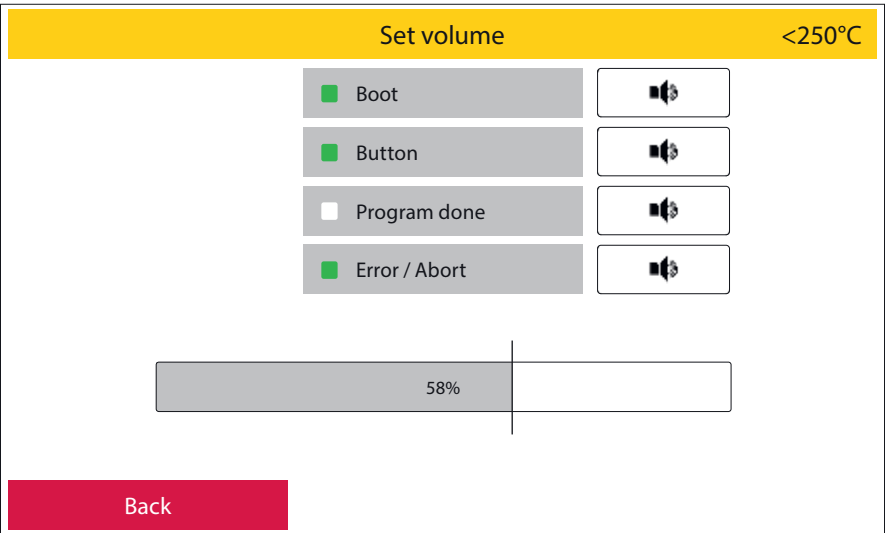


Display, Status: Settings / Basic settings / Set brightness

Image 27.1

5 Set volume

In this area, warning and action tones can be activated or deactivated and their volume can be adjusted. As with setting the display brightness, a slider is available for this purpose. The volume for each section can be checked by pressing the loudspeaker field. With the red **Back** function field, you'll return to the **Basic settings** level (image 27.2).



Display, Status: Settings / Basic settings / Set volume

Image 27.2

2.3.8 Initial setup

You will be guided through all the parameters that have to be set up during initial commissioning. In addition, the oven points out all the cables and hose connections that need to be set up. The function fields marked in green must be confirmed. When starting up the device for the first time, this process must be completed in order to access the main menu.

2.3.9 lift test

The function of the lift system can be checked during the lift test.

Three values are displayed for this:

Top limit switch: when the lift is completely closed, this position is named On. If the lift opens, the information changes to Off

Lower limit switch: when the lift is fully open, this position is described as On. If the lift is closed, the information changes to Off

Lift position: this is described with a code. When the lift is completely closed, the numerical value 100 is displayed; when the lift is completely open, the value is 0.

Corresponding intermediate values are displayed on closing.

Lift test500°C

Top limit switch

Off

Lower limit switch

On

Lift position

0

Back

Display, Status: Settings / Vacuum, lift / Lift testImage 29.1

2.3.10 Service menu


Password protected service area for customer support

2.3.11 Restore factory settings

All settings are reset to the factory settings here.

This area can be protected by assigning a password.


This cannot be undone.

 All programs on the oven will be deleted.

2.3.12 Oven Upgrade

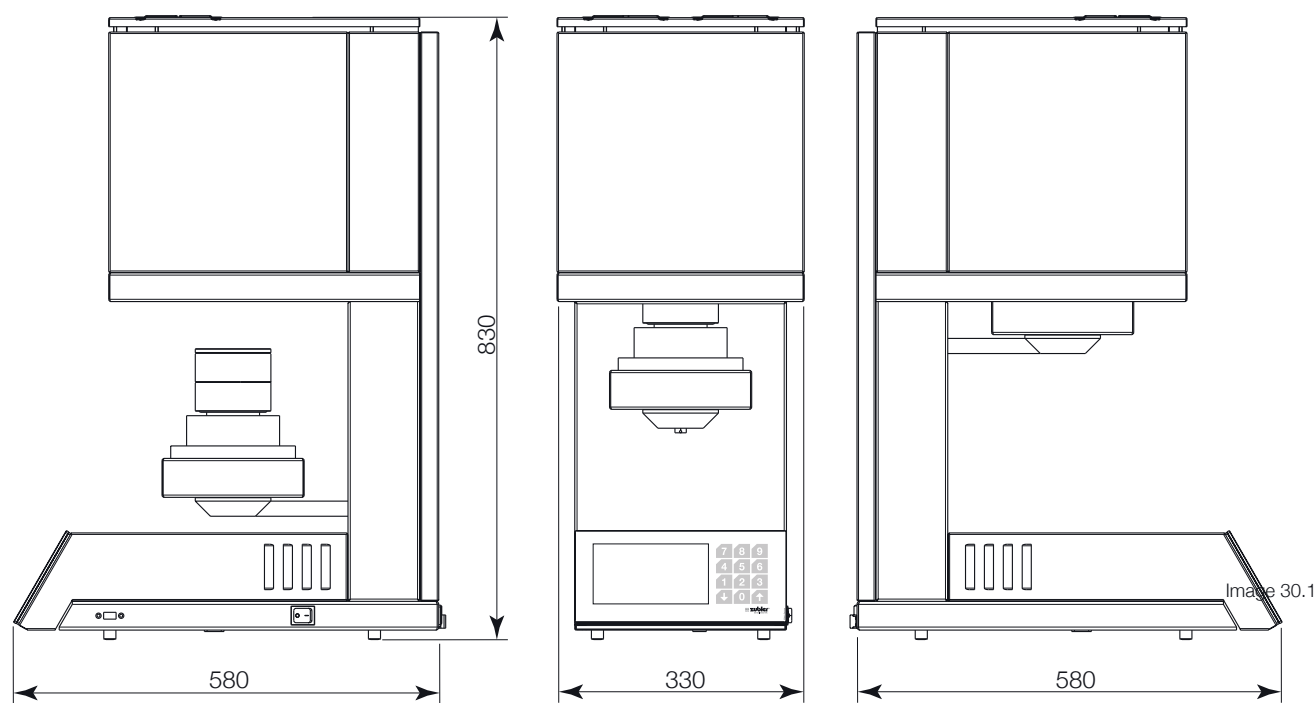
Your Zubler oven is available in various versions which differ in their functionality. If, after purchasing the device, you wish to switch to a different furnace version (if the device hardware allows this), this can be attained by activating it in the software.

To do this, you request a basic code under this menu item, which you send to your dealer or to us at Zubler Gerätebau GmbH. You will then receive an activation code which you can enter in this menu area. You confirm this code with the green **OK** button and the oven then switches to the desired device version.

 The activation code can only be used for one day at a time.

3. Data

3.1 Technical Data



Width	330mm
Height	830mm
Depth	570mm
Weight	52kg
Voltage	115V AC / 230V AC ±5%, 50-60Hz
Power consumption	1900VA
Temperature	250°C - 1650°C
Colour display	152 x 92mm
Touch	230 x 92mm
Programs	972
Heat rate	1°C/min - 100°C/min
Number of heating / cooling stages	5+1

3.2 Scope of delivery

1x Power Cord
1x sinter bowl tongs
2x sinter bowl
1x sinter lid
1x base socket
1x centering socket
1x centering ring
40 g sintered beads
40g sinter granulate
1x 16 amp fuse
1x USB stick with operating software, program data set, operating instructions
1x Quick Start Guide

3.3 Spare parts , accessories

Power cable "VS430"	012/00309
Sinter bowl tongs "VS430"	898/4138
Tweezers long	898/106
Sinter bowl set (2 bowls, 1 lid)	896/0418
Sinter bowl set (1 bowl with lid)	896/0419
Sinter bowl individually	896/0420
Sintered lid	896/0421
Base socket	896/0407
Centering socke	896/0408
Centering ring	896/0406
Sintered beads 40g	896/0409
Sintered beads 200g	896/0410
Sintered granulate 40g	896/0423
Sintered granulate 200g	896/0424
USB stick	896/0234
16 ampere fuse	028/0129

4. Status messages

Error indication	Cause	Remedy
H-01 Abort: Error heating circuit	The oven does not heat up or the oven cannot rise in temperature register.	- kontrollieren Sie bitte die Stellung des Sicherungsautomaten an der Rückwand des Ofens. Dieser Sollte auf On stehen. - Kontrollieren Sie die Brennkammer ob alle Heizelemente intakt sind.
H-02 Abort: maximum temperature exceeded	-das Thermoelement ist ausgefallen -Ofen heizt über die Temperaturregelbegrenzung hinaus	-schalten Sie den Ofen aus und kontaktieren Sie Ihren Servicepartner
L-01 Abort: Fan error	- one or more fans are failed	-Check which fan is inoperative (there are two fans above the combustion chamber and a fan on the back wall of the oven) and contact your service partner
Oven will not turn on, main switch on the stove does not light up.	the oven probably doesn't have one power supply	-check the room security of the area where the oven is -try the oven on another phase too operate
Oven will not turn on, main switch shines	16 amp fuse blown	-on the back wall of the oven, check the 16 ampere fuse and replace these off if necessary

5. Warranty

5.1 Cleaning the heating chamber

see point 2.5.7

6. Guarantee

If used properly, Zubler grants you a 12-month guarantee on all parts of the device. Exceptions to this are: Firing and press insulation bases, press centering plates, cracks or ruptures in the firing chamber insulation.

Zubler guarantees professional repairs with original spare parts. A guarantee period of 6 months is granted for every repair carried out by a specialist dealer or by Zubler, provided that all maintenance work required for the unrestricted function of the device has been commissioned.

Warranty claims cannot be asserted for:

- Improper use
- Use outside the prescribed operating conditions
- Disregard of operating and connection regulations
- Unrecognizable regular cleaning, maintenance and annually prescribed effectiveness test
- Repairs that were not carried out by a specialist dealer or by Zubler
- Use of spare parts from other manufacturers

7. Disposal instructions



7.1 Disposal of insulation materials (burning and press base)

All materials must be disposed of in accordance with country-specific regulations.

7.2 Disposal of the device

The device must be disposed of by a specialist company. The specialist company must be informed of any hazardous residues in the device.

7.2.1 Disposal instructions for EU countries

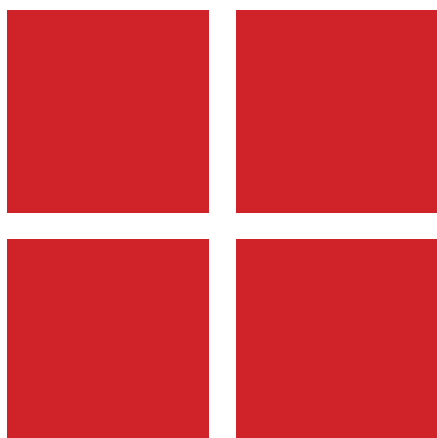
In order to preserve and protect the environment, prevent environmental pollution and improve the recycling of raw materials, the European Commission issued a directive according to which manufacturers can take back electrical and electronic devices so that they can be properly disposed of or disposed of to be recycled.

Devices marked with this symbol must therefore not be disposed of with unsorted municipal waste within the European Union.

Please check with your local authorities for proper disposal.

7.2.2 Special information for customers in Germany

Zubler electrical devices are devices for commercial use. These devices may not be handed in at municipal collection points for electrical devices, but will be taken back directly by Zubler. For information about the current return options, please go to: www.zubler.de



technical changes without notice! 36.2022.en



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