

Manual

Laboratory autoclave

Autoclave using steam for the treatment of material and laboratory processes e.g. sterilization, as an aid in research and development

CertoClav MultiControl 2 (Controller)

CertoControl (Touch Screen)

CertoClav MultiControl 2 (Autoclaving Chamber)

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Introduction

Thank you for choosing CertoClav! Since 50 years we stand for quality made in Austria. Should the product not fulfil your expectations please contact your retailer or CertoClav directly under support@certoclav.com.

Core of the MultiControl 2 product family is the programmable MultiControl 2 controller unit. It has several applications:

- Independent use in a regulating circle
- As part of the MultiControl 2 autoclave
- As an upgrade for CertoClav EL and MultiControl 1 autoclaves

Key functionalities are a freely programmable power regulator and a high quality temperature probe.

Standard user interface is the LCD display and the PC software (basic version). Available upgrades are:

- Professional version of the PC software (necessary to create advanced programs)
- An internet connected touch screen with CertoCloud access

Via the LCD display, programs can be called up and simple programs can be created. "Simple" means just one temperature and time setting. In order to program more complex curves of time and temperature, the PC software (professional version) is necessary.

The controller has a printer interface for the CertoClav printer, via which protocols can be printed.

In the following please find the usage instructions. Please mind the safety remarks.

Please register your unit via an email to support@certoclav.com in order to receive software updates. Please send name, contacts and serial number of the unit.

Your

CertoClav Team

MultiControl 2 (Controller)

Safety remarks

- ⚠ Use only in accordance with this manual. Store the manual in a space accessible to all users.
- ⚠ Must not be installed in a space that is subject to the danger of explosions
- ⚠ Use only with rated voltage
- ⚠ Only for use in laboratories. Operate only by trained personnel. Do not use in domestic settings.
- ⚠ This autoclave must only be maintained by CertoClav or authorised retailers. Always use original spare parts.
- ⚠ Disconnect from power supply before opening the enclosure.
- ⚠ Do not install close to high power electronics.
- ⚠ Install the controller only in a full regulating circle where the heat probe can gauge the activity of the heater attached.
- ⚠ Installation in a regulating cycle must only be done by competent personnel
- ⚠ Install only with heater that have an independent overheating protection
- ⚠ The probe must be reliable attached to the heating media. Make sure that there is sufficient heat transfer between medium and probe.
- ⚠ Do not install closer than 30cm to a CertoClav autoclave in order to protect the controller from heat.

Technical data

Overview




Protection	IP 20
Enclosure material	ABS
Power connection	230V 50/60Hz
Heater connection	230V 50/60Hz
Maximum output	2000W
Control algorithm	PID
Temperature sensor interface	PT100

Certificates

TÜV Certificate acc. to EN 61010-1:2010

Zertifikat		Certificate		 TÜVRheinland®	
Zertifikat Nr. Certificate No.	Blatt Page				
R 60102039	0001				
Ihr Zeichen Client Reference	Unser Zeichen Our Reference	Ausstellungsdatum	Date of Issue		
	0010-- 21230455 001	03.07.2015	(day/mo/yr)		
Genehmigungsinhaber License Holder		Fertigungsstätte Manufacturing Plant			
Certoclav Sterilizer GmbH		Certoclav Sterilizer GmbH			
Georg Grinninger-Str. 37		Georg Grinninger-Str. 37			
4050 Traun		4050 Traun			
Österreich		Österreich			
Prüfzeichen Test Mark		Geprüft nach Tested acc. to			
		EN 61010-1:2010			
Zertifiziertes Produkt (Geräteidentifikation)		Lizenzentgelte - Einheit			
Certified Product (Product Identification)		License Fee - Unit			
<u>Elektronische Steuerung für Labor Autoklaven</u>					
Typbezeichnungen / types:		CERTOCLAV Control MULTICONTROL		12	
		CERTOCLAV Control ESSENTIAL			
Nenneingangsspannung / rated input voltage:		230 V AC; 50Hz			
Nenneingangsstrom / rated input current:		10 A			
Nennausgangsspannung / rated output voltage:		230 V AC; 50Hz			
Nennausgangsleistung / rated output power:		2000 W			
Schutzklasse / class:		I			
Schutzart / degree of protection:		IPx0			
		12			
<p>Dem Zertifikat liegt unsere Prüf- und Zertifizierungsanbahnung zugrunde und es bestätigt die Konformität des Produktes mit den oben genannten Standards und Prüfgrundlagen. Zusätzliche Anforderungen in Ländern, in denen das Produkt in Verkehr gebracht werden soll, müssen zusätzlich betrachtet werden. Die Herstellung des zertifizierten Produktes wird überwacht.</p> <p>This certificate is based on our Testing and Certification Registration and states the conformity of the product with the standards and testing requirements as indicated above. Any additional requirements in countries where the product is going to be marketed have to be considered additionally. The manufacturing of the certified product is subject to surveillance.</p>					
TÜV Rheinland LGA Products GmbH, Tillystraße 2, 90431 Nürnberg		 Zertifizierungsstelle Bernd Pösl			
Tel.: +49 221 806-1371 e-mail: cert-validity@de.tuv.com					
Fax: +49 221 806-3935 http://www.tuv.com/safety					

Stickers

	Directive 2002/96/EC (WEEE): The supplier will take the supplied commodity back on the expense of customer after use completion and ensure best available treatment, recovery and recycling according to the laws duly
	ATTENTION: Consult manual before use
	CE marked according to directives NSR 2014/35EU + EMC 2014/30/EU.

LIST OF ITEMS

The following parts are delivered with the autoclave. Please check them carefully. Should one of these parts be missing, please contact your dealer or call us directly.

1. CertoClav MultiControl 2 (Controller unit)
2. Mains cable
3. Connection cable to heater unit (or autoclave)
4. PC Software basic version is available for download on www.certoclav.com or please contact support@certoclav.com and we will send it to you via email

Additionally we offer the following accessories:

- Wire basket diam. 25, stainless steel. Art. Nr. 1300149
- PT 100 temperature probe in different design with fitting connection plug. In the autoclave the standard probe is an M8 threaded head Art. Nr. 13.001.88 (part of the autoclave)

- Protocol printer with connection cable. Art. Nr. 13.001.54



Protocol printer Art. Nr. 13.001.54

- PC Software professional version. For creating multi step programs Art. Nr. 85.002.11

For further information concerning our product range please visit: www.certoclav.com/shop

Connections



1. USB port for PC
2. Connection for CertoClav printer
3. Port for a PT 100 temperature probe
4. Port for a heater (220V)
5. Mains connections with switch

User interface



1. Down / minus button
2. OK / Enter button
3. Up / plus button

Installation

1. Connect the controller to a power socket using the mains cable (2).
2. Connect a heater to the controller using cable (3).
3. Connect a PT 100 probe. Keep the sensor cable and the power cable separate.
4. Connect a PC and/or the CertoClav Printer.
5. The controller can be mounted on the wall using the holes on the side of the enclosure.

Operation

Using the up/down buttons (1, 3) the desired point in the menu or a value is reached. Using the ok button (2) the menu point is opened or a value is accepted.

The structure of the menu is as follows:

Repeating items in the menu

- | | |
|---------|----------------------------------|
| • Start | Starts the selected program |
| • Stop | Stops the current program |
| • Back | Returns to the higher menu level |

Other items in the menu

- | | |
|-------------|------------------------------|
| 1. Programs | Shows all available programs |
|-------------|------------------------------|

2. Settings

2.1. Version	Version of the firmware
2.2. Reset	Reset to factory settings
2.3. Cycles	Cycle counter
2.4. Language	Selection of language

Status display while in operation:

1 Achieve 121 deg	Number of the current step and description
Time : 00:02:33	Time since start in [hh:mm:ss] or [dd:hh]
Temp : 119.9	Current temperature
> STOP	Menu item „Stop“

Error messages

Error 1: Program has been interrupted. The desired temperature curve has not been achieved.

Error 2: Program interrupted due to power loss. The desired temperature curve has not been achieved.

Error 3: Sensor defect. Please send the unit for maintenance.

Programming

In order to program the controller please connect it to a Windows PC and download the software for monitoring and programming.

Protocol printing

If a CertoClav Printer is connected (Art. Nr. 13.001.54), the following protocol is printed:

Header

- 10 Type of autoclave
- 15 Programm name
- 30 Cycle number
- Control message. Sterilization
- 40 successful?

Program steps

- SxxA Heat up
- SxxH Hold

SxxC Drying
SxxE End



```
10 CERTOCLAV MULTICONTROL
-----
15 Program: 14 Tage 121 Grad
30 CycleNo: 88
-----
Step   Time[d:h:m:s]  T[deg C]
S01A  00:00:00:00   89.5
S02H  00:00:04:42   120.1
S03H  00:00:04:44   120.1
S04H  00:00:04:46   120.2
S05H  00:00:04:48   120.2
S06H  00:00:04:50   120.2
S07H  00:00:04:52   120.3
S08H  00:00:04:54   120.4
S09E  00:00:04:56   120.5
40 14 Tage 121 Grad finished
    successfully
```

Sample printout

Cleaning, maintenance and, software update

Cleaning

Wipe with a dry, soft cloth

Maintenance:

No regular maintenance necessary. Should be sent for factory check every two years.

Warranty

The unit has been checked from our quality control by 100 %. We give guarantee for 2 years on all parts which are not consumables from the date of purchase.

An extension of the warranty period to 5 years is available for purchase. Please contact us under support@certoclav.com

CertoControl (Touch Screen)

Setup for OFFLINE usage:

- 1) Make sure to unplug the USB cable to enter bluetooth mode
- 2) Check the serial number written on the sticker on the right side of the controller box (format: MC2.xxxx). Alternatively you can find the serial number in the settings menu of the controller by the entry "Serial"
- 3) After powering the tablet you will automatically enter the connection manager. Select the controller you want to use with the name specification as "CertoClav-SERIALNUMBER".
- 4) You should be forwarded to the log-in page. Create a new user by pressing the plus sign in the top right corner. Note, that you will create a **local program** and its not connected to the internet at all.
- 5) Log in with your email and password
- 6) You are ready to use the application!

The LCD screen remains unchanged. When the touch screen controller is connected we recommend using only the tablet. Yet it is still possible to use the LCD interface directly.

When USB is re-connected, the connection the touch screen controller is automatically disconnected.

Additional setup for CLOUD usage:

- 1) Create a personal CertoCloud at www.certocloud.com. To connect a local account on the tablet with this Cloud please use the **same email and password** as you did for the local program. Your local account is now connected to the Cloud, but no devices yet.
- 2) You need to add all devices you want to use in the cloud manually to ensure only you can access the data. You need to enter the device Key (a unique safety key for every device) to the Cloud browser panel (www.CertoCloud.com after log-in) under "Devices" -> "Register new device". You can find the device key in the tablets "Setting" menu after you connected to the controller via Bluetooth. Go to "Setting" -> "Device" -> "Device key".
- 3) Congratulations, your device is connected to the cloud!

Usage of the touch screen controller and certocloud

We believe the touch screen controller and certocloud are intuitive. Should you encounter any questions please contact us under support@certoclav.com and we will give you a call back as soon as possible to support you in the usage.

CertoClav MultiControl 2 (Autoclaving chamber)

Safety remarks

- ⚠ Use the autoclave chamber only with the MultiControl 2 Controller. Do not plug in directly to a power supply. The chamber will heat in an uncontrolled way.
- ⚠ Surfaces are hot while in operation (metal and plastic parts). During operation touch only the dials for time and temperature on the base of the units. Wear protective gloves if touching anything else.
- ⚠ Use only in accordance with this manual. Store the manual in a space accessible to all users.
- ⚠ Must not be installed in a space that is subject to the danger of explosions
- ⚠ Use only with rated voltage
- ⚠ Only for use in laboratories. Operate only by trained personnel. Do not use in domestic settings.
- ⚠ This autoclave must only be maintained by CertoClav or authorised retailers. Always use original spare parts.
- ⚠ Disconnect from electricity supply before opening the base.
- ⚠ Never operate without water. Target water amount: 1 litre (min. 0,7, max 2,5)
- ⚠ Do not autoclave tightly sealed containers (especially glass bottles) since there is no pressure compensation.
- ⚠ Do not transport when filled. Do not open with force.
- ⚠ Do not release steam in the direction of a person – danger of burning. Connect a hose (inner diameter 10mm) to release hot steam into a suitable container or sink.
- ⚠ When loading contains glass containers let the unit cool down to 80°C before opening, with liquids the temperature should be at least 70°C, danger of boiling over of fluid or explosions of glass bottles.

Technical data




Overview

Technical data			
Material	Stainless steel	Certificates	CE
Dimensions			
Volume	18 litre	Height	60 cm
Chamber diameter	26cm	Width	44 cm
Chamber height	35cm	Depth	40 cm
Useable height chamber	30 cm	Weight	10 kg
Working data			
Max. working temp	140°C	Current	230V, 50/60 Hz
Max. working pressure	2,7 Bar	Power	1300 Watt
Rated pressure	4,1 Bar		

CE certified according to:

Low voltage directive 2006/95/EC EN 61010-1:2001. EN 61010-2-40:2005 (IEC 1010-1:2001. IEC 1010-2-040:2005) ZEK 01.4-08/11.11

Stickers

	Directive 2002/96/EC (WEEE): The supplier will take the supplied commodity back on the expense of customer after use completion and ensure best available treatment, recovery and recycling according to the laws duly.
	ATTENTION: Consult manual before use
	ATTENTION: Hot surface

LIST OF ITEMS

The following parts are delivered with the autoclave, please check:

- Autoclave Chamber Classic with lid
- Instrument tray with water level indicator
- Manometer with gasket and nut, steam release valve with gasket
- Connection cable to MultiControl 2 Controller

Should one of these parts be missing, please contact your dealer or call us directly.

Additionally we recommend the following accessories:

- Wire basket diam. 25, stainless steel. Art. Nr. 13.001.49

For further information about our product range please visit: www.certoclav.com/shop

Setup

- Set up is easy. Either put the autoclave on a table or the floor, so that you get a convenient work height.
- Unpack the manometer and the steam release valve. Mount them according to the instructions packed with the items. These appliances have been packed separately to avoid damage in transportation.
- Mount a tube/hose on the steam release valve, inner diameter 10 mm.
- Plug in the connection cable to the socket on the back side. Connect the other end to the MultiControl 2 controller.
- Connect the heat probe cable to the MultiControl 2 Controller. The heat probe cable is fixed the chamber and cannot be removed.
- The units is switched on via the MultiControl 2 controller.

Operation

 READ INSTRUCTIONS BEFORE FIRST USE!

 The first run should be without load; only with water.

Loading the autoclave

- Fill in 1.0 – 1.5 litres of distilled water. ATTENTION: Not demineralised water, not from an ion exchanger, it causes corrosion: If only this is available add approx. 1/3 tape water!
- Put in instrument tray and basket and place loading. It is important that steam can circulate freely.

Close and Locking

- Take the lid and make sure that the red knob is turned to open.
- Open the steam release cock (turn black knob anticlockwise).
- Connect tube to avoid burning from hot steam.
- Lid is put on 30° turned counter clockwise. Then turn the lid clockwise until the handles are in line with each other.
- Turn the red knob to closed = locked.
- Do NOT open the small screw on the regulating valve.

Autoclaving

Autoclaving is done by following the instructions for the controller.

- ⚠ ATTENTION: Connect tube to avoid burning from hot steam!
- ⚠ ATTENTION: Avoid cooking dry and overheating (could damage the autoclave),
- ⚠ SAFETY HINT: If loading contains glass bottles wait until chamber temperature is below 80°C, for liquids wait until temperature has reached 70°C = approx. 40 min. Danger of boiling over of fluids.

Opening

Open the steam release cock (turn anticlockwise). Turn red knob to open = unlock. Steam release valve will be opened. Steam escapes. Turn lid anticlockwise and remove.

To get better drying of the loading remove the basket from the chamber and let it cool down to room temperature before taking goods out.

- ⚠ SAFETY HINT: INCOMPLETE CYCLES
Should the cycle interrupted caused by switch off or electrical failure or other reason – the sterilization is not completed correct and has to be repeated. For opening please follow the safety hint for cooling down.

Cleaning and maintenance

For CLEANING the appliance wipe inside and outside with a damp cloth. Never immerse the lid and chamber of the unit in water. Before start of cleaning or disinfection plug off mains cable and make sure that appliance has cooled down.

Discolouration and stains occur when not using distilled water. These stains may block the pressure control valve. Therefore always use distilled water or demineralised water with tap water added. To remove discolouration add some citric acid to the aqua dest. and boil for about 10 minutes, do not close the CertoClav. Empty the chamber immediately.

The steam release valve should be cleaned regularly with a needle.

For DISINFECTION of metal surface disinfection liquids with following substances are suitable:

Ethanol, Propyl alcohol, Isopropyl alcohol, Glutaraldehyde, quaternary ammonium compounds.
Please follow the application notes of the manufacturer for the cleaning and disinfection detergents.

Plastic surfaces shall be cleaned with a dry cloth.

Never manipulate on safety devices. Operate only lid and chamber of the same series (Classic or MultiControl). Do not mix lids of different types of autoclaves.

Repairs on valves, safety features and electric must only be carried out by an appointed CertoClav partner or by the manufacturer. Use original CertoClav spare parts only.

Every two years the unit should be checked by an appointed retailer or CertoClav.

WE RECOMMEND THE CERTOCLAV SERVICE SET ART. No.: 1310186. It contains all spares which are under wear and tear and have to be replaced.

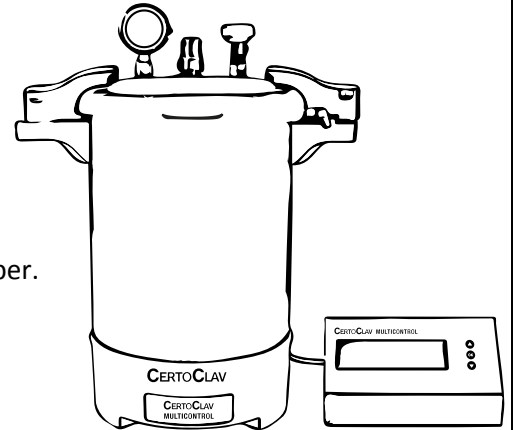
Warranty

The unit has been checked from our quality control by 100 %. We give guarantee for 2 years on all parts which are not consumables from the date of purchase.

An extension of the warranty period to 5 years is available for purchase.

No warranty will be given in case of inappropriate use e.g. corrosive loads.

Brief Operation Guide



Loading

1. Insert the CertoClav bottom plate into the sterilization chamber.
2. Fill the chamber with 1.5 liters of water.
3. Place the items to be sterilized on the bottom plate.

Sealing

1. Check if the white cap seal is inserted.
2. Press the red knob and turn it clockwise.
3. Place the lid on the sterilizing chamber and turn it clockwise.
4. Turn the red knob counterclockwise then to lock the lid.

Starting of Program

Select your desired sterilization program in the control unit and press Start.

Venting

If venting is activated, then the sterilization chamber is vented at 115°C for 10 minutes.

Removal of Charge

Please wait until the temperature of the Chamber is below 90°C and open the lid of autoclave. If the liquid has been sterilized, please wait until the chamber temperature drops below 70°C°. Otherwise there is the risk of burns from delayed boiling.

General Notes

If you want to choose a new program in the control unit, please consider the following sterilization time periods for different volume of liquid media.

Volume of loading liquid	Sterilization time until 121°C
3000 ml	30 Minutes
2000 ml	25 Minutes
1000 ml	20 Minutes
500 ml	15 Minutes