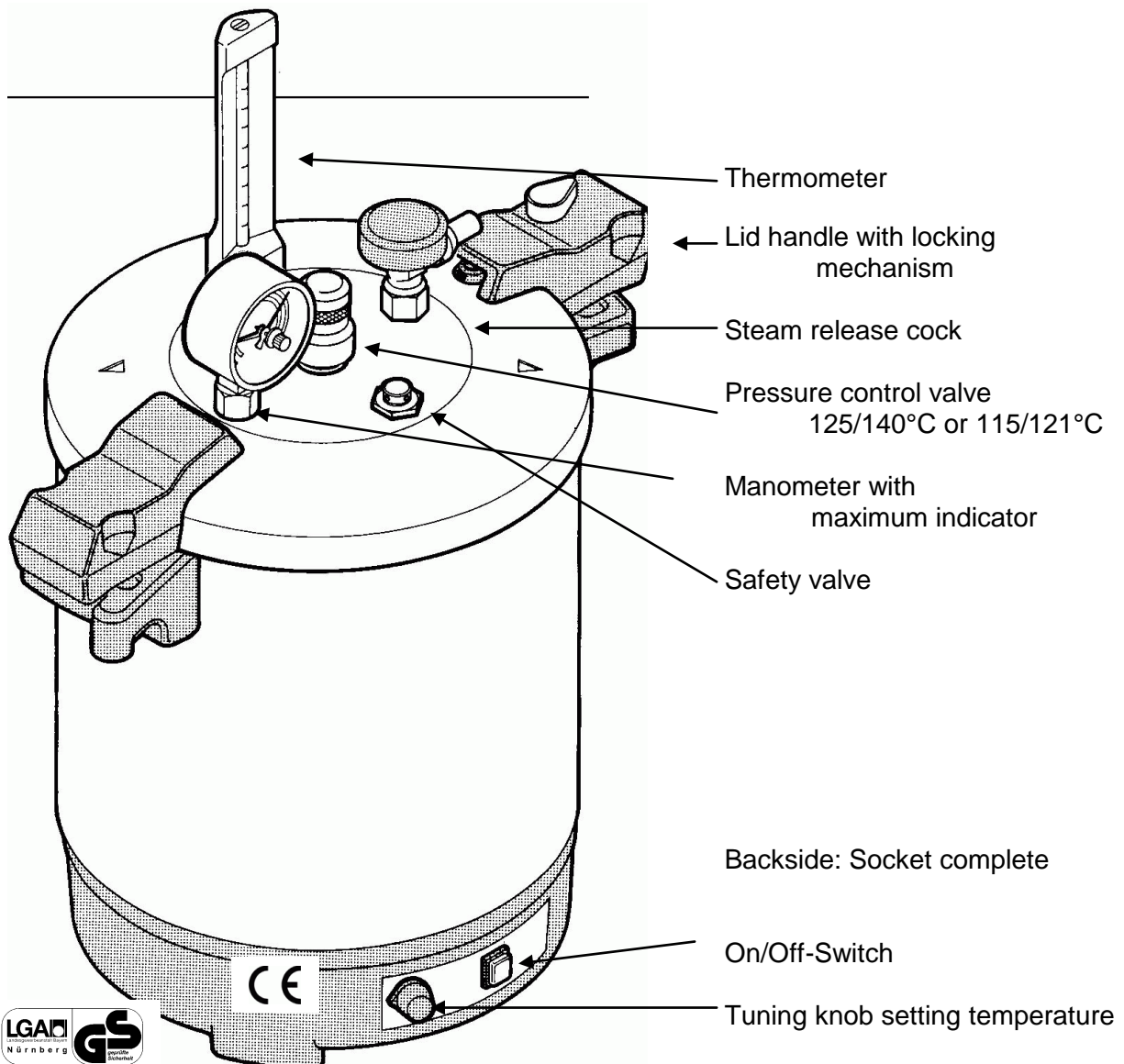


### High Pressure-LABORATORY AUTOCLAVE

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



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### LIST OF ITEMS

Following parts are delivered with the Autoclave, please check:

Autoclave CV-EL with lid  
Instrument tray Aluminium with water level indicator (SET version with wire basket)  
Manometer with gasket and nut, Thermometer with gasket  
Main cable

*In a poly bag:*

Instruction booklet and Warranty certificate (fix label with short manual on autoclave)

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

### Set up and electrical supply

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 put it with the gasket in the hole on the left side of the lid, counter with the nut from inside of lid.

Unpack the thermometer and screw it carefully with the gasket in the lid. Please see attached Information "Mounting instructions"

Mount a tube/hose on the steam release cock, inner diameter 10 mm.

Plug in the mains cable to the socket on the back side. The Switch On/Off is on the front side.

### WORKING WITH THE CERTOCLAV CV-EL

READ INSTRUCTIONS BEFORE FIRST USE!

The first run should be without loading only with water.

### Loading the autoclave

Fill in 1,0 – 1,5 litre of **distilled** water. ATTENTION: Not demineralised water, not from an ion exchanger, it causes corrosion: If only this is available add approx. 1/3 tap water!



Put in instrument tray and basket and place loading. It is important that steam can circulate freely.

ATTENTION: Avoid direct contact of any stainless steel parts with chamber – it would cause corrosion!

SAFETY HINT:

Never sterilize tight sealed bottles – no pressure compensation.

### Close and Locking

- Take the lid and make sure that the orange 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 the way, that the arrow marking on the lid is pointing to the mid of the handle on the chamber. Then press lid to the chamber and turn clockwise until the handles are in line with each other.
- Turn the orange knob to  (closed) = locked.
- Turn the maximum indicator of the manometer (pressure gauge) to "0".
- Pressure control valves with two temperatures have to be set to the desired temperature by rotating cup until it comes to a stop. Anticlockwise to 125°C / 115°C – and clockwise to 140°C / 121°C.  
Do NOT open the small screw.
- Set the thermostat knob to the same temperature as valve.
- Switch on green mains switch.

### AUTOCLAVING

#### Heating up

6 to 8 minutes after switched on steam starts to escape through the steam release cock.  
Allow 3 minutes venting to assure air removal then close the cock (turn black knob clockwise).  
ATTENTION: Connect tube to avoid burning from hot steam!

The rise in pressure (approx. 3 minutes) brings the unit up to working temperature.  
Pressure regulation is done by the pressure control valve, steam escapes in regular intervals.  
On CV-EL Autoclaves energy is controlled by the thermostat. Therefore always set the same temperature on valve and knob for thermostat on the base, they work together.

#### Sterilization / Holding time


The first escape of steam at the pressure control valve indicates that adjusted temperature has been reached and sterilization time starts. The indicator on the manometer should stay within the specified limits (red or blue marking). We recommend use of a timer.

After the end of sterilization time **switch off the green mains switch**.  
ATTENTION: Avoid cooking dry and overheating (could damage the autoclave),

#### Cooling down

Check that the manometer is reading Zero. Check temperature at thermometer.  
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.  
Check the temperature indicator label at chamber.

#### Opening

Open the steam release cock (turn anticlockwise). **Turn orange 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.

#### SAFETY HINTS GENERAL

Use the CertoClav in accordance with the instructions only and keep instructions with the CertoClav.

The CertoClav is made of Aluminium Alloy. **Aggressive media** will cause **Corrosion**, saline solution also. Pitting is caused by use of pure **demineralised** water (to avoid add tape water!) or **contact of a stainless steel part** with the **Aluminium** chamber **due to a chemical process!**

**Never** operate the unit **without water**. Avoid cooking dry and overheating. Components could be damaged. Water charge: on CV-EL 12L max. 1,5L, on CV-EL 18 L - 2,0 L.

Never sterilize tight sealed bottles (especially glass) as there is no pressure equilibration.

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.

The casing of appliance can reach temperature above 80°C even when operated acc. instructions. Check the **temperature indicator** on the chamber. Do not touch hot surfaces. Use the handles, if necessary put on gloves.

Never transport the CertoClav when filled. Do not open with force.

**Never allow steam to escape** in direction of persons. Use a hose (inner diameter 10mm) to release steam from the steam release cock directly into a sink or container. Because danger of burning.

Do not operate the CertoClav in areas where the danger of explosion is given.

# INSTRUCTIONS

## CertoClav EL


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.

For **DISINFECTION** of 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.

**Never manipulate** on safety devices. Operate only lid and chamber of the same series (CV-EL or MultiControl) do not mix.

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.**

### SAFETY DEVICES – CertoSecure for 4-fold pressure security:

**Secure Locking mechanism (1)** and **Steam release valve** within the lid handle are providing safety against opening under pressure and will avoid a pressure build up, if the unit is not closed the correct way. By turning the orange knob to  (open) steam will be released. As long as the unit is not securely locked, the steam release valve remains open and so prevents any build up of pressure.

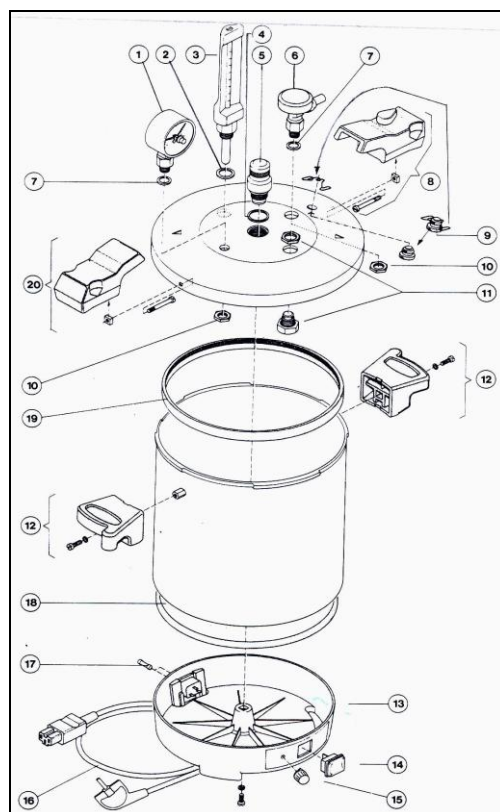
The **Pressure control valve (2)** will open, when pressure/temperature is exceeded by about 10%, steam is released through a safety mechanism. The temperature sinks.

At 3,6 to 4 bar a **Safety valve (3)** opens in the event the pressure control valve fails. This safety valve closes automatically after pressure dropped. **In any case the pressure control valve has to be changed, as it is defect!**

Should all safety devices are blocked at an excess pressure at around 4.7 bar the **lid gasket** would be squeezed through a **Overpressure safety recess (4)** at the rim of the chamber with a **loud noise**. If this occurs do not operate the unit anymore and return it to the dealer or the manufacturer for examination and check. It is dangerous to work with such a unit.

### Spare parts

1	1250334	Manometer with maximum indicator, catégorie 1.6 (EN837-1)
2	1250437	Gasket for Thermometer
3	1250332	Thermometer
4	1250433	Gasket for pressure control valve
5a	1250304	Pressure control valve 125°/140°C; 280°F/257°F
5b	1250302	Pressure control valve 115°/121°C
6	1250348	Steam release cock
7	1250451	Gasket for Manometer and Steam release cock
8	1250235	Lid handle with locking complete with screw and nut
9	1250242	Steam release valve
10	1250194	Nut for Manometer and Steam release cock
11	1250310	Safety valve with O-Ring, bore 16,2 mm
12	1250237	Handle for chamber with screw
13	1250324	Base with socket for mains cable
14	1250347	Green rocker switch with cover
15	1250329	Adjustment knob thermostat
-	1250338	Thermostat for temperature regulator
16	1250337	Cable with mains plug acc. VDE/IEC, 3 m
17	1250363	Fuse T10 AH, 250V ~only till July 2002
17a	1250362	Fuse holder 10 Amps. only till July 2002
	1240325	Hot Coupler socket complete
-	1250335	Bi-metal fuse
18	1250408	Gasket for black base/chamber
19	1260404	Lid gasket packed 24 cm Silicon white
20	1250236	Lid handle with screw and nut
-	1250357	Set of cables complete for CV-EL, new w'out fuses



### SPARE PARTS AND SERVICE

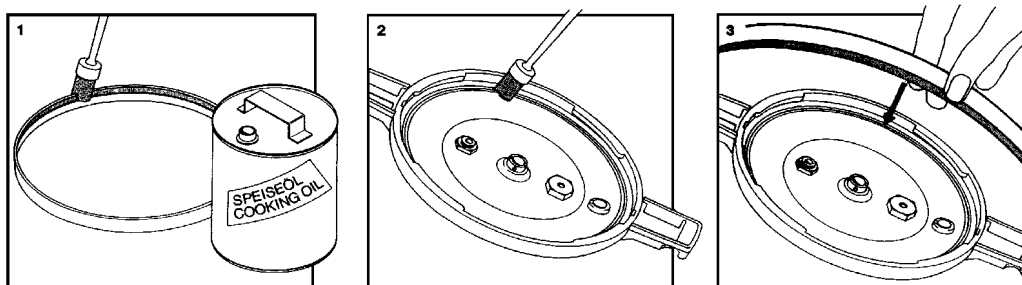
Check all valves and gaskets on damages or wear and tear.

**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 tape 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.

If the gasket leaks and steam escapes between lid and chamber the gasket is either incorrectly fitted or needs replacement.

#### Replacement of lid gasket - Follow the diagrams below.

Oil the groove and the gasket with cooking oil then press the gasket with the ripped side towards the inside piece for piece in the groove. Do not stretch the gasket when inserting, as it will get too long. Rather try to squeeze it a little bit, it will seal better.



WE RECOMMEND THE CERTOCLAV SERVICE SET **ART. No.: 1250499**. It contains all spares which are under wear and tear and have to be replaced. (Lid gasket 1260404, Gasket for Manometer + Steam release cock 1250451, Gasket for valve 1250433, Steam release valve 1250242)

Use original CertoClav spare parts only for repairs!

It is recommended to send the unit for inspection to your dealer or the manufacturer at an interval of 2 – 3 years.

### LABELS:

**S2 30min**

SHORT TIME OPERATION 30 minutes



#### 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.



HINT: See instructions



HINT: „HOT SURFACE“



THE CE-MARK CONFIRMS THE CONFORMITY OF THIS APPLIANCE WITH LOW VOLTAGE DIRECTIVE 2006/95/EC + EMC 2004/108/EC.

		<b>CV-EL 12 L GS</b>	<b>CV-EL 18 L GS</b>
<b>Chamber</b>	Capacity	12 litres	18 litres
	Dimensions	Ø 24 cm, height 26 cm	Ø 24 cm, height 40 cm
	Diagonal length	35 cm	46,5 cm
	Material:	Aluminium EN AW3103	
<b>Unit complete</b>	Weight	7,00 kg	8,20 kg
<b>Temperature and pressure max.</b>		140°C (280°F)	2,7 bar (39 psi)
		125°C (257°F)	1,4 bar (20 psi)
Special valve for		121°C (250°F)	1,2 bar (18 psi)
Special valve for		115°C (239°F)	0,7 bar (10 psi)
<b>Test pressure</b>		4,1 bar	
<b>Electrical Data</b>	Nominal voltage	AC 230 V~	
	Frequency	50-60 Hz	
	Power	1900 W	
	Pressure equipment constructed acc.:	Low voltage directive 2006/95/EC	
Approval according standards:		EN 61010-1:2001. EN 61010-2-40:2005 (IEC 1010-1:2001. IEC 1010-2-040:2005)	
Approval mark	No. <b>58 41 010</b>	GS-Mark „Approved Safety“ LGA Nürnberg	

### A complete operation cycle consists of:

Heating time:	depends on loading and capacity of unit	<b>6 - 8 minutes</b>
Venting time:	minimum	<b>3 minutes</b>
Pressure built up:	approx.	<b>3 minutes</b>

Sterilization/Holding time and temperature:	depend on application and loading.	
	Note specification of manufacturer, e.g. 140°C – 5 min, 125°C – 15 min, 121°C – min.	<b>15–20 minutes</b>

Cool down and drying:	Solid instruments – can be taken out after pressure suppression	
	Glass at 80°C after approx.	<b>30 minutes,</b>
	Liquids at 70°C after approx.	<b>40 minutes</b>
	Check the temperature indicator label on the chamber.	

### 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.

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