INSTRUCTION, USE AND
MAINTENANCE HAND - BOOK

Machine: POLYMERIZING UNIT   Type: PL.06.00 – PL.12.00

I N D E X

The present instruction hand-book informs about the basic requirements for SAFETY AND HEALTH OF THE USERS. These requirements are stated by the MACHINE DIRECTION 2006/42 CE

(Issue No. 01 of July 18th, 2011)

SIDE I   WARNINGS, PRECAUTIONS AND GENERAL ADVICES

1.1.1 WARNINGS

Before connecting the plug of the POLYMERIZING UNIT OMEC TYPE PL.06.00 - PL.12.00 to the current intake check the feeding voltage. It must be the same as the voltage written on the machine plate.
I.G.: machine VOLT 230 - HZ 50 = feeding voltage VOLT 230-HZ 50.

1.1.2 PRECAUTIONS

a) The OMEC POLYMERIZING UNIT TYPE PL.06.00 - PL.12.00 must be used ONLY AND EXCLUSIVELY for the polymerization of the acrylic components of fixed and movable dental prosthesis and skeletal prosthesis.
b) It is compulsory to wear protection glasses and gloves during the use of the POLYMERIZING UNIT TYPE PL.06.00 - PL.12.00.
c) Before inspection and checking inside the unit, take out the plug connecting the machine to the current and disconnect it from the hydro net.
d) It is absolutely forbidden to use the POLYMERIZING UNIT TYPE PL.06.00 - PL.12.00 without water. Be sure your own electric plant complies with the 2006/95/EC - Low Voltage.

OMEC IS NOT GUILTY FOR A WRONG OR IMPROPER USE OF ITS POLYMERIZING UNIT TYPE PL.06.00 - PL.12.00

1.1.3 GENERAL ADVICE

a) On receiving the machine check the package integrity and then make sure that the machine is perfect and not damaged (due to bad carrying).
b) Follow carefully the instructions for installing the machine.
c) The OMEC POLYMERIZING UNIT TYPE PL.06.00 - PL.12.00 must be used only by a skilled worker, and therefore use the machine ONLY AFTER HAVING READ CAREFULLY and understood the instruction and maintenance hand-book.
d) The OMEC POLYMERIZING UNIT TYPE PL.06.00 - PL.12.00 is supplied complete with the following accessories:
e) No. 1 INSTRUCTION HAND-BOOK which must ALWAYS GO TOGETHER with the machine even if it sold as a second-hand machine
f) No. 1 WARRANTY CERTIFICATE
g) No. 1 CONFORMITY DECLARATION

SIDE II   PRODUCT DESCRIPTION

2.1.1 TECHNICAL DATA

The POLYMERIZING UNIT allows to program a cycle composed by two working phases (phase no 1 = preheating – phase no. 2 = boiling) thanks to free data input among the programming ranges and according to the operator's needs. Moreover the operator has the opportunity to choose between an immediate switching on and a postponed one (timer phase).

	Programmable Data	Programming Range
Timer	Clock (hrs.min.)	From 00.00 (hrs.min.) to 99 hrs. and 59 min.
Phases 1 (Preheating)	Temperature	From 0°C to 100°C
	Rising speed	From 0 to FULL (max speed)
	Holding time	From 00.00 (hrs.min.) to 20.59 (hrs.min)
Phase 2 (Boiling)	Temperature	From Phase 1 temperature to FULL (boiling temperature)
	Rising speed	From 0 to FULL (max speed)
	Holding time	From 00.00 (hrs.min.) to 20.59 (hrs.min.)

It is possible to program only the boiling phase by setting 0°C as preheating temperature (phase no. 1).
For boiling it is necessary to set FULL as boiling temperature (phase 2).

If the boiling temperature is set on FULL, the rising speed is automatically set on FULL.
The rising speed values do not correspond to °C/min but they refer to numbers of a scale where the max. value is FULL (heating element always working).

The set value is the time measured in seconds where the heating element works for a 20 second period time and these time periods repeat until the temperature set is reached.

I.E. if 12 it the value is, the heating element works cycling for 12 seconds and it stays OFF for 8 seconds until the temperature set is reached.
The rising speed parameter has also to be set considering the water contained in the polymerization tank (the bigger is the quantity of water the highest will has to be the value set9:

SIDE III   INSTALLATION AND USE INSTRUCTIONS

INTRODUCTION

Before starting-up the machine, follow precisely the following instructions.

Make sure that your electric equipment has a good earth and that it is in conformity with the 2006/95/EC - Low Voltage.

3.1.1 INSTALLATION

- Verify the apparatus has not stood any evident damage during transportation.
- Place the apparatus on a stable horizontal non flammable surface away from any water sprayings and from flammable materials. The polymerizing unit has to be placed on a sufficiently wide surface to allow proper ventilation.
- Fit the muffles in the tank and put water in the tank with a container till the muffles are covered up.
- The machine has not to be used without water. The heating element has to be always covered by the water (the minimal water level is up to the holed grille). Do not place the polymerizing unit under a spout of water for any reason.
- Before installation make sure the supply mains are in conformity with tag data (230 Vac – 50/60 Hz) and that the power line is protected by a differential thermo magnet switch. Also check electrical inputs and powers installed. If you are not sure of what kind of power you have, please contact the Electric Power Company. In particular, verify if the grounding system is efficient.
- Make sure the general switch is on OFF position (0), then connect the electric cable plug to an electrical inlet.

3.2.1 PICTURE NO.1
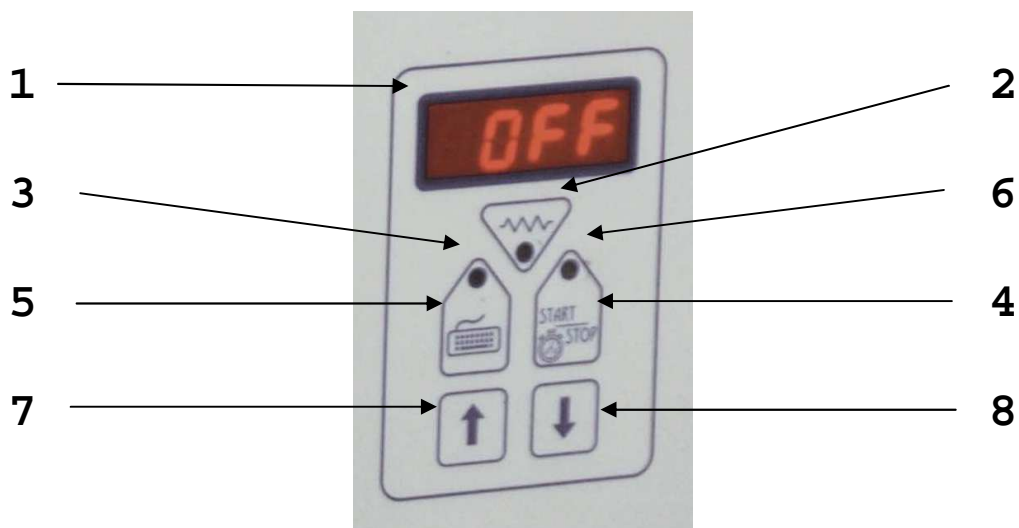
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1     Data display
2     Orange led – Activated heating element
3     Cycle programming key
4     Cycle start up programming key / In progress cycle stop key
5     Flashing red led = in progress program
6     Still red led = in progress deferred start up timer
      Orange led = rising to programmed temperature
      Green led = in progress holding time
7     Value increasing key
8     Value decreasing key
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3.2.1 PICTURE N0.2
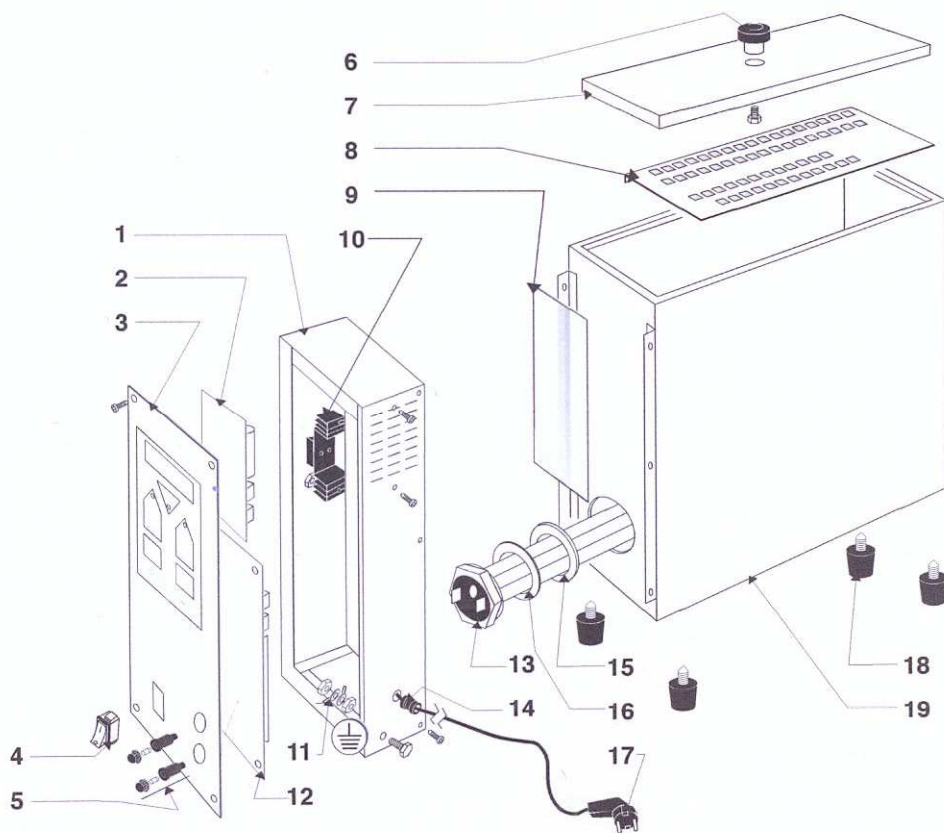
3.3.1 PROGRAMMING OF CYCLE

To program a cycle follow correctly and as in the indicated order the instructions below:

Turn-on machine

The polymerizing unit is started up by turning the general switch to ON position (I).
The inside green light will light up.
The word OFF will appear on display. All led will be off.
In case numbers appear on display, press START/STOP key to put the polymerizing unit on state of
IDLE-OFF.

PROGRAMMING OF PREHEATING (PHASE NO. 1)

Press 🔲 key to program.
The words "Ph.1", "°C" and the last programmed preheating temperature value will appear in sequence on the display.

The red led of 🔲 key will start flashing intermittently during all preheating programming.

The change f this parameter (programming range 0/100°C) is done by using ⬆ key (to increase value) and ⬇ key (to decrease value).

By keeping pushed one of the two keys (⬆ or ⬇) for a time shorter than 2 seconds, the change of parameter will be by one step corresponding to 1 °C a press.

For a rapid change the operator has to keep one of the two keys (⬆ or ⬇) pushed for a time longer than 2 seconds. In this case the change of parameter will be by 10 steps correspondent to a 10 °C a second until the release of the key.

In case a value equal to 0 is set this phase is by-passed (no parameters are considered for this phase) and cycle starts from phase 2 directly.
Press 🔲 key to confirm entry.

The word "rAtE" and the last programmed speed rising value will appear in sequence on the display.
The modification of this parameter (programming range 0/FULL=max. speed) is done by using ⬆ key (to increase value) and ⬇ key (to decrease value).

By keeping pushed one of the two keys (⬆ or ⬇) for a time shorter than 2 seconds, the change of parameter will be by one step corresponding to 1 °C a press.

For a rapid change the operator has to keep one of the two keys (⬆ or ⬇) pushed for a time longer than 2 seconds. In this case the change of parameter will be by 10 steps correspondent to a 10 units per second until the release of the key.

It is advisable never to set a value lower then 13 otherwise the heating will be too slow (while setting this value always consider the quantity of water inside the tank: the more water there is in the tank the slower will be the heating up).

In case the operator wants to heat the water as fast as possible, the rising speed to be set on FULL (heating element always active).

Press 🔲 key to confirm entry.

The word "Hr.Mn" followed by the last programmed holding time will appear on display.

Four numbers separated by a dot will appear on the display.

The two still numbers on the left side of the dot show the hours, while the flashing numbers on the right side of the dot show the minutes.
The first parameter to change are the hours.

The modification of this parameter (programming range 00/20 hours) is done by using ⬆ key (to increase value) and ⬇ key (to decrease value).

By keeping pushed one of the two keys (⬆ or ⬇) for a time shorter than 2 seconds, the change of parameter will be by one step corresponding to 1 hour a press.

For a rapid change the operator has to keep one of the two keys (⬆ or ⬇) pushed for a time longer than 2 seconds. In this case the change of parameter will be by 10 steps correspondent to a 10 hours a second until the release of the key.

Press 🔲 key to confirm entry and to go to programming of minutes.

On display now you will see the two numbers on the right side of the dot (showing minutes) still, while the two numbers on the left side of the dot (showing hours) flashing.

The modification of this parameter (range of programming 00/59 minutes) is done by using ⬆ key (to increase value) and ⬇ key (to decrease value).

By keeping pushed one of the two keys (⬆ or ⬇) for a time shorter than 2 seconds, the change of parameter will be by one step corresponding to 1 minute a press.

For a rapid change the operator has to keep one of the two keys (↑ or ↓) pushed for a time longer than 2 seconds. In this case the change of parameter will be by 10 steps correspondent to a 10 minutes a second until the release of the key.

In the case a value equal to 00.00 is set, the time of preheating is not included and the polymerizing unit will pass directly to phase no. 2 after having reached the temperature.

Press key 🖶 to confirm data entry and pass to programming of phase no. 2.

PROGRAMMING OF BOILING (PHASE NO. 2)

The words "Ph.2", "°C" and the last programmed boiling temperature value will appear in sequence on the display.
The red led of 🖶 key will start flashing intermittently during all boiling program.

The change of this parameter (programming range Phase no. 1 temperature / FULL=boiling temperature) is done by using ↑ key (to increase value) and ↓ key (to decrease value).

By keeping pushed one of the two keys (↑ or ↓) for a time shorter than 2 seconds, the change of parameter will be by one step corresponding to 1 °C a press.

For a rapid change the operator has to keep one of the two keys (↑ or ↓) pushed for a time longer than 2 seconds. In this case the change of parameter will be by 10 steps correspondent to a 10 °C a second until the release of the key.

To make boiling, set the temperature on FULL.

Press 🖶 key to confirm entry.

If the operator has set a temperature lower or equal to 99°C then the word "rAtE" and the last programmed speed increase value will appear on display in sequence.

If the operator has set FULL as temperature value (=boiling temperature) then the words FULL (=max. speed) will appear on display. In this case the speed increase is automatically set at FULL (max value).

In case the temperature of phase no. 2 is set on FULL (=boiling temperature) the speed increase is automatically set on FULL which means the max. programmable speed (heating element always on).
It is possible to set an increase speed different from FULL only if the set value of the temperature set during phase no. 2 is lower or equal to 99 °C.

The modification of this parameter (programming range 0/FULL=max speed) is done by using ↑ key (to increase value) and ↓ key (to decrease value.

By keeping pushed one of the two keys (↑ or ↓) for a time shorter than 2 seconds, the change of parameter will be by one step corresponding to 1 unit a press.

For a rapid change the operator has to keep one of the two keys (↑ or ↓) pushed for a time longer than 2 seconds. In this case the change of parameter will be by 10 steps correspondent to a 10 units a second until the release of the key.

It is advisable never to set the speed increase on a value inferior to 17 otherwise the heating will be too slow.

Press 🖶 key to confirm entry.

The word "Hr.Mn" followed by the last programmed holding time will appear on display.

Four numbers separated by a dot will appear on display.
The two still numbers on the left side of the dot show the hours, while the flashing numbers on the right side of the dot show the minutes.

The first parameter to change are the hours.

The modification of this parameter (programming range 00/20 hours) is done by using ↑ key (to increase value) and ↓ (to decrease value) key.

By keeping pushed one of the two keys (⬆ or ⬇) for a time shorter than 2 seconds, the change of parameter will be by one step corresponding to 1 hour a press.

For a rapid change the operator has to keep one of the two keys (⬆ or ⬇) pushed for a time longer than 2 seconds. In this case the change of parameter will be by 10 steps correspondent to 10 hours a second until the release of the key.

Press 🖮 key to confirm entry and pass to programming of minutes.

On display now you will see the two numbers on the right side of the dot (showing minutes) still while the two numbers on the left side of the dot (showing the hours) flashing.

The modification of this parameter (range of programming 00/59 minutes) is done by using ⬆ key (to increase value) and ⬇ key(to decrease value).

By keeping pushed one of the two keys (⬆ or ⬇) for a time shorter than 2 seconds, the change of parameter will be by one step corresponding to 1 minute a press.

For a rapid change the operator has to keep one of the two keys (⬆ or ⬇) pushed for a time longer than 2 seconds. In this case the change of parameter will be by 10 steps correspondent to a 10 minutes a second until the release of the key.

In case a value equal to 00.00 is set, the time of boiling is not included.

Press 🖮 key to confirm data entry. The word OFF appears on the display.

3.4.1 START UP PROGRAMMING

After having programmed the cycle there are two options for the operator:

- immediate switching on
- deferred switching on

During programming of start-up the red leg of 🖮 key flashes intermittently.

- Immediate switching on

Polymerizing unit on OFF: press the START/STOP key.

Four zeroes separated by a dot will appear on display.

Press the START/STOP key twice (2 times) and the cycle is activated immediately.

- Deferred switching on

Polymerizing unit on OFF: press the START/STOP key.

Four zeroes separated by a dot will appear on display.

The two still zeroes on the left side of the dot indicate the hours while the two flashing zeroes on the right side of the dot indicate the minutes.

The first parameter to change are the hours.

The modification of this parameter (programming range 00/99 hours) is done by using ⬆ key (to increase value) and ⬇ key (to decrease value).

By keeping pushed one of the two keys (⬆ or ⬇) for a time shorter than 2 seconds, the change of parameter will be by one step corresponding to 1 hour a press.

For a rapid change the operator has to keep one of the two keys (⬆ or ⬇) pushed for a time longer than 2 seconds. In this case the change of parameter will be by 10 steps correspondent to a 10 hours a second until the release of the key.

Press the START/STOP key to confirm entry and to go to programming of minutes.

On display now you will see two still numbers on the right side of the dot (indicating the minutes) while the two numbers on the left side of the dot (indicating the hours) are flashing.

The modification of this parameter (programming range 00/59 minutes) is done by pressing the ⬆ key (to increase value) and ⬇ key (to decrease value).

By keeping pushed one of the two keys (⬆ or ⬇) for a time shorter than 2 seconds, the change of parameter will be by one step corresponding to 1 minute a press.

For a rapid change the operator has to keep one of the two keys (⬆ or ⬇) pushed for a time longer than 2 seconds. In this case the change of parameter will be by 10 steps correspondent to 10 minutes a second until the release of the key.

Press key START/STOP to confirm entry.

In this specific case, after having set hours and minutes, the time in hours and minutes corresponding to the time to go to the start of the cycle will appear on the display. This value is shown as countdown to start-up time.

For all duration of timig, the small dot among the four numbers flashes and the red led of START/STOP key stays on.

3.5.1 WORKING CYCLE

This cycle begins after having programmed the start-up (see chapter 6), thus, after having pressed the START/STOP key (immediate switching on) three consecutive times or after the programmed time is over (deferred switching on).

When the cycle is started up, a beep warns the operator of the switching on from the TIMER phase to working phase.

The programmed temperature followed by the true temperature of water in the polymerization tank will be shown on the display for few seconds.

The orange led of START/STOP key stays on until the temperature set is reached. The ⟋⟍⟋⟍ orange led of activated heating element lights up and indicates the power delivery to heating element.

When the temperature set on the display is reached the time holding value set for the running phase followed by the real temperature of the water inside the tank will be shown on the display just for a few seconds.

The green led of the START/STOP key will remain on for all duration of the time set; the ⟋⟍⟋⟍ orange led of activated heating element stays on and indicates the power delivery for keeping up temperature to the heating element.

A beep notifies the operator on each passage from one phase to another.

Now the polymerizing unit passes to phase no. 2.

The temperature set followed by the real temperature of the water inside the tank appear on the display for few seconds.

The orange led of the START/STOP key stays on until the temperature set is reached, the ⟋⟍⟋⟍ orange led of activated heating element lights up and indicates the power delivery to the heating element.

When the temperature set is reached, a beep notifies the operator. At the same time the holding value set for the running phase followed by the real temperature of water in the tank or by the word "FULL" will be shown on the display just for a few seconds.

The green led of the START/STOP key remains on for all duration of the time set; the ⟋⟍⟋⟍ orange led of heating element stays on and indicates the power delivery for keeping up temperature to the heating element.

When the boiling time set is over, the heating element stops working and the word OFF appears on the display.

3.6.1 INSPECTIONS

IDLE OFF state

On the IDLE-OFF state the following inspections may be done by using the indicated key:
⬆ : by keeping this key pressed you can see the temperature inside the polymerization tank on the display.

Phases no. 1 and no. 2

During phases no. 1 and no. 2 the following inspections are possible by pressing the indicated key:

↑ : by keeping this key pressed you can see the temperature set for the running phase on the display.

≣ : by keeping this key pressed you can see the rising speed set for the running phase on the display.

↓ : by keeping this key pressed during the programmed temperature rising you can see the programmed holding time. During the holding time, by keeping this key pressed you can see the remaining time to go of the holding time during the running phase.

In all these cases when the key is released, the value present before pressing the key will appear after a few seconds.

3.7.1 POWER FAILURES

In case of power failures, the following situations present:

During the TIMER phase

When power returns, you will see the remaining time to go to start-up of oven in store when the failure happened on the display for few seconds. Afterwards the countdown starts again (but the time the power missed due to the failure is not considered).
The operator may decide to:
- let the timer finish its running
  - put the timer to zero by pressing the START/STOP key, turning the oven OFF and start the cycle with immediate effect by pressing the START/STOP key three times consecutively.

During rising in phases no. 1 and no. 2

When power returns, the cycle continues from the phase in which it was when the power failed and it regains the lost temperature.

During holding time in phases no. 1 and no. 2

When power returns two cases may present:
- If the power has failed for a short time and the water temperature has not decreased, the polymerizing unit will run again all the programmed holding time.

- If the temperature inside the chamber has decreased, the polymerizing unit will reach the temperature programmed and will run again the programmed holding time. In both cases when the power returns a beep will notify the operator of the problem occurred.

During programming

When power returns the polymerizing unit will be on IDLE OFF and the word OFF will appear on the display.

3.8.1 WARNINGS

- Before turning off the polymerizing unit with the general switch it is recommended to push the START/STOP key to put oven on IDLE-Off state which is shown with the word "OFF" on the display.
- When using the polymerizing unit the operator must wear gloves and safety outfits because both inside and outside temperatures reached by the polymerizing unit are very high.
- The muffles have to be fitted in and taken out only by proper instruments.
- Use only water to fill the polymerizing unit. Never use inflammable fluids or substances as they can generate dangers of explosion, implosion or emission of toxic gases.
- Emptying of the liquid must be made in accordance with all current rules. This operations must be done with the general switch on OFF (0) position, with the electrical cable disconnected and the operator must wear gloves and safety outfits.
- For cleaning operations use a dry cloth and a liquid detergent (do not use flammable liquids). Dry with a soft cloth. Do not place the polymerizing unit under a spout of water for any reason.

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Cleaning operations must be done with the general switch on OFF (0) position, with the electrical cable disconnected. Before using cleaning techniques different from the ones indicated by OMEC Snc, the operator must contact the manufacturing company. Do not place any objects over the electrical cable and do not put cable in places where it can be stepped over.
- In case of extended inactivity disconnect the electrical cable.
- Before any transportation, always empty the tank and use the original packaging.
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SIDE IV   STANDARDS

4.1.1 STANDARDS

The OMEC POLYMERIZING UNIT TYPE PL.06.00 - PL.12.00 is manufactured in accordance with Machine Directive:

- 2006/42/EC

with the following Standards:

- EC 88/642
- 2014/30/UE EMC (Electro-magnetic Compatibility)
- 2014/35/UE (Low Voltage)
- UNI EN 60204-1
- UNI EN 60204/1-A1