

# ***PlastPress***

**POSITIVE PRESSURE<sup>⊕</sup>**



## **INSTRUCTION MANUAL**

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► **1 - INTRODUCTION**

PLASTPRESS BIO-ART is a multi-application equipment that, due to its ease of use and handling, has become indispensable in laboratories and dental offices. There are many applications and new techniques are being developed every day, expanding the range of uses.

This manual contains all the necessary information about its operation. Please read it carefully to ensure the correct use of the machine and best performance.

Considering that the operational process of the product is similar for all applications, we describe the thermoforming technique in chapter 8 and then present each application, highlighting its particularities in chapter 9.

Note that there are several types of plates of different materials and thicknesses, which entails different thermoforming and heating times. Therefore, the optimum thermoforming point is made by observation and this technique is described along with the operational process of the machine. The specification of the plate indicated for each application, as well as its ideal thermoforming point and finishing details are defined in the description of each application.

Finally, we recommend once again that you read this manual, as we would like you to make the most of your machine, taking advantage of all its advantages.

As the English say: "Make the most of it!".

► **2 - TECHNICAL SPECIFICATIONS**

**Electrical characteristics**

|   |  |
|---|--|
| Voltage.....                            | 127V 60 Hz ou 220V 50/60 Hz (+- 10%)                 |
| Heating resistance power.....           | 450 W  |
| Average energy consumption.....         | 1,6 kWh per month (Using 10 times a day for 22 days) |
| Protection against electric shocks..... | Class 1 equipment                                    |

**Pneumatic characteristics.**

|                                     |   |
|-------------------------------------|---|
| Minimum air pressure.....           | 3 bar (43,5 psi)  |
| Maximum air pressure.....           | 8 bar (116 psi)   |
| Connection type.....                | Quick coupling for Ø 6 mm hose  |
| Product dimensions (L x W x H)..... | Without packaging: 265 x 235 x 270 mm<br>With packaging: 310 x 270 x 310 mm |
| Weight.....                         | Without packaging: 7.5 kg<br>With packaging: 8.5 kg                         |

**Environment**

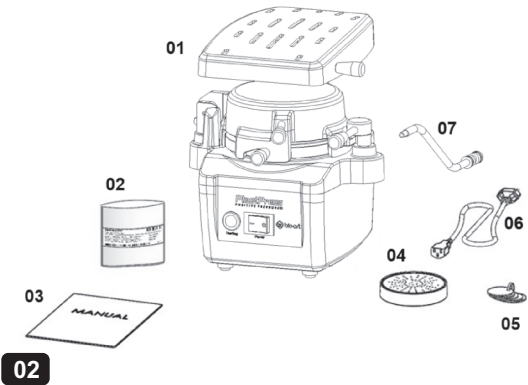
|                                 |   |
|---------------------------------|---|
| Place of use.....               | Exclusive use indoors   |
| Work temperature.....           | 5°C a 40°C  |
| Relative humidity.....          | 5% a 90% (non-condensing)                                       |
| Maximum operation altitude..... | 3500 m  |
| Pollution Degree.....           | 2   |
| Protection Degree.....          | IPX1 (splash protected)   |
| Maximum Noise Level.....        | 80 db (In the position of use, 30 cm in front of the equipment) |
| Product and parts life.....     | Undetermined  |

**Plate dimensions**

|                   |                                    |
|-------------------|------------------------------------|
| Thickness.....    | Up to 6 mm                         |
| Round plate.....  | From Ø 120 to Ø 134 mm             |
| Square plate..... | From 120mm x 120mm à 130mm x 130mm |

► **3 - PACKAGE CONTENTS**

- 01 - PlastPress 127V or 220V... 01 unit
- 02 - Glass grit..... 250g
- 03 - Instruction manual..... 01 unit
- 04 - Model holder..... 01 unit
- 05 - Plate display..... 01 unit
- 06 - Power cable..... 01 unit
- 07 - Hose extender..... 01 unit

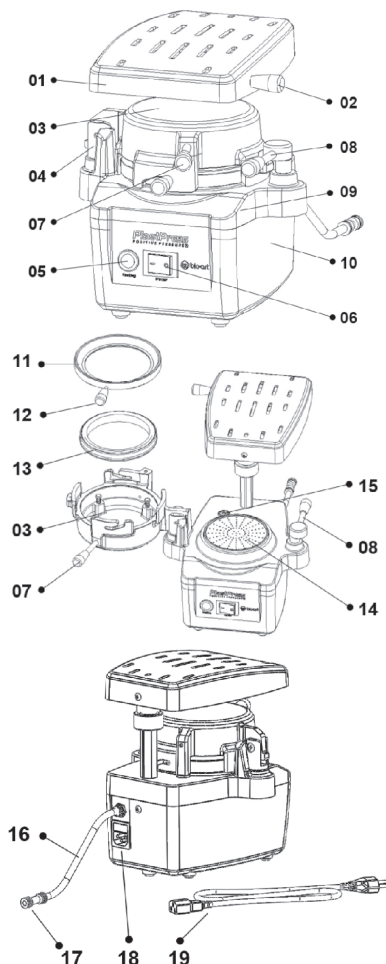


## ► 4 - SYMBOLS USED ON THE PRODUCT



## ► 5 - DESCRIPTION OF THE COMPONENTS

- 01 – Heating unit
- 02 – Heating unit knob
- 03 – Pressure chamber
- 04 – Pressure chamber rotary axis
- 05 – Resistance indicator LED
- 06 – Main switch
- 07 – Pressure chamber handle
- 08 – Pressure chamber lock knob
- 09 – Cabinet cover
- 10 – Cabinet base
- 11 – Locking ring
- 12 – Plate locking ring knob
- 13 – Compensation ring
- 14 – Model door with flat functions and bucket
- 15 – Air pin
- 16 – Hose extender with thermal protection
- 17 – Quick coupling for Ø6mm compressed air hose
- 18 – Power cable input connector with fuse holder
- 19 – Power cord



## ► 6 - IDENTIFICATION OF THE PRESSURE PLASTPRESS

### Product label

127v

Bio-Art Equipamentos Odontológicos Ltda.  
Rua Teotônio Vilela, 120 – Jardim Tangara  
13568-000 – São Carlos / SP – Brazil  
Fone: + 55 16 3371-6502  
E-mail: bioart@bioart.com.br

**PLASTIFICADORA PLASTPRESS**

Entrada: 127V~  
Freq.: 50 / 60Hz  
Potência: 450w  
Pressão Entrada: 5 bar

SN XXXXXX

220v

Bio-Art Equipamentos Odontológicos Ltda.  
Rua Teotônio Vilela, 120 – Jardim Tangara  
13568-000 – São Carlos / SP – Brazil  
Fone: + 55 16 3371-6502  
E-mail: bioart@bioart.com.br

**PLASTIFICADORA PLASTPRESS**

Entrada: 220V~  
Freq.: 50 / 60Hz  
Potência: 450w  
Pressão Entrada: 5 bar

SN XXXXXX

### Packaging label

Produto/Producto/Produit:  
127V ~ 50/60Hz 450W

Plastificadora de Pressão (Plastpress)  
Maquina de presión (Plastpress)  
Pressure forming machine (PlastPress)

XX / XX / XX

SN XXXXXX

REF APLT0813

Bio-Art Equipamentos Odontológicos Ltda.  
Rua Teotônio Vilela, 120 – Jardim Tangara  
13568-000 – São Carlos / SP – Brazil  
Fone: + 55 16 3371-6502  
E-mail: bioart@bioart.com.br

Conteúdo/Contenido/Contenites:

- 01 – Cabo alimente, elétrica / Cable aliment. Principal/ Main supply cord;
- 250g – Granalha de Vidro / Granulados de Vidro / Glass beads;
- 01 – Mostruário de Placas / Mostrador de Placas / Sheet display;
- 01 – Porta Modelos / Portamoldes / Double-sided Cast rack;
- 01 – Extensor da mangueira / Extensor de mangueira / Hose extender;
- 01 – Manual de Instruções / Manual de Instrucciones / Instruction manual;
- 01 – Plastpress 127V;

Produto/Producto/Produit:  
220V ~ 50/60Hz 450W

Plastificadora de Pressão (Plastpress)  
Maquina de presión (Plastpress)  
Pressure forming machine (PlastPress)

XX / XX / XX

SN XXXXXX

REF APLT0849

Bio-Art Equipamentos Odontológicos Ltda.  
Rua Teotônio Vilela, 120 – Jardim Tangara  
13568-000 – São Carlos / SP – Brazil  
Fone: + 55 16 3371-6502  
E-mail: bioart@bioart.com.br

Conteúdo/Contenido/Contenites:

- 01 – Cabo alimente, elétrica / Cable aliment. Principal/ Main supply cord;
- 250g – Granalha de Vidro / Granulados de Vidro / Glass beads;
- 01 – Mostruário de Placas / Mostrador de Placas / Sheet display;
- 01 – Porta Modelos / Portamoldes / Double-sided Cast rack;
- 01 – Extensor da mangueira / Extensor de mangueira / Hose extender;
- 01 – Manual de Instruções / Manual de Instrucciones / Instruction manual;
- 01 – Plastpress 220V;

## ► 7 - INSTALLATION

**7.1** - Carefully unpack the thermoforming machine (PlastPress) and check that it has not suffered any damage during transport.

**7.2** - The PlastPress must be installed in a ventilated place, free from humidity, excessive heat and supported on a flat and level rigid surface. Do not embed and do not place any material between the support base and the bottom of the machine, so that this area is free, allowing air circulation. Leave at least 20cm free between the entire perimeter of the PlastPress and another object, for its correct operation when its moving parts are extended/open.

**7.3** - Check the voltage of the local network before connecting the PlastPress to the outlet, remember that this machine does not have dual voltage, so check the supply voltage (127V or 220V) before turning it on. Variations in supply voltage of up to  $\pm 10\%$  of the rated voltage are allowed.

**7.4** - Connect the power cable (19) to the input connector (18) located on the back of the equipment. Connect the PlastPress power cable (19) to the electrical outlet with a properly installed grounding system.

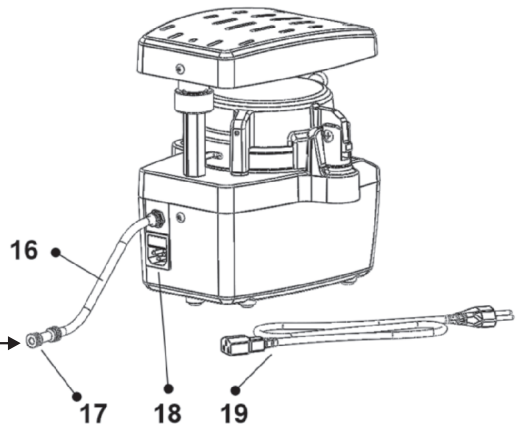
**7.5** - Connect the compressed air network, with a pressure between 3 and 8 bar (43.5 to 116 psi), to the quick coupling (17) of the air hose extender (16) of the PlastPress. Do not let the compressed air hose bend and form creases. This will interrupt or decrease the airflow, impairing its operation. The compressed air network must have a pressure regulator with an oil filter in order to avoid damage to the PlastPress.



### Attention:

The equipment must never be used without the hose extender (16).

**Quick coupling for connection  
of the compressed air hose (17)  
Hose: Ø6mm (External)  
Pressure Between 3 and 8 bar (43.5 to  
116 psi)**



#### Notes:

- The protective grounding for the PlastPress connection must comply with the NBR 5410 (Brazil) standard or the standard in force in the importing country.
- For protection against possible failures or short circuits, it is advisable to install a protection device (thermomagnetic bipolar circuit breaker) in the electrical network where the machine will be installed, to disconnect the two phases. Use a single-pole circuit breaker if the electrical network has only one phase.
- Do not use a tee connector or other similar type of plug to connect the PlastPress to the same outlet where another product is already installed.
- Do not obstruct the electrical outlet where the PlastPress is connected, thus allowing its quick disconnection if necessary.

## ► 8 - USE INSTRUCTIONS



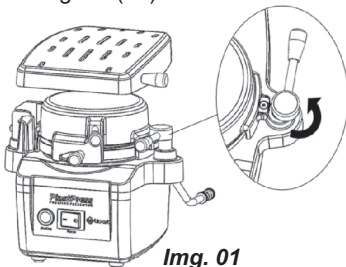
#### Attention:

If the machine is not used in accordance with the specifications described in this chapter, the protections and functions of the product may be impaired. For the operational process, follow the instructions below, orienting yourself by the numbers in the figures in chapter 5.

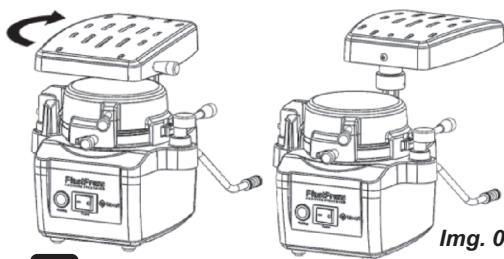
#### Positive pressure thermoforming process:

**8.1-** To start the thermoforming process, the machine must have the power cable (19) connected to it and to the electrical outlet with the correct voltage. It should also have a 6 mm diameter compressed air hose connected to the quick coupling (17) of the hose extender (16) of the PlastPress. The main switch (06) must be off.

**8.2 -** Using the knob (08), release the pressure chamber by turning the lock 180° (Image 01) and turn the heating unit (01) 180° to the left until it is in the posterior position (Image 02).

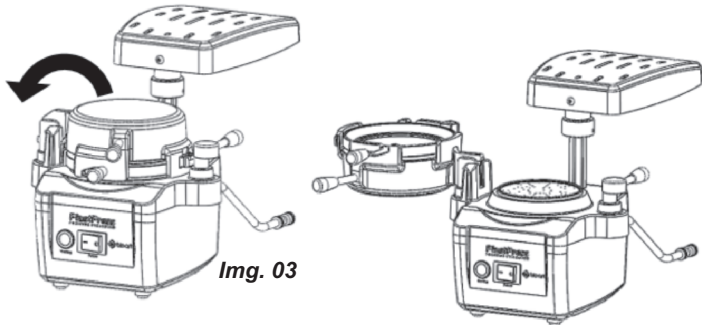


*Img. 01*



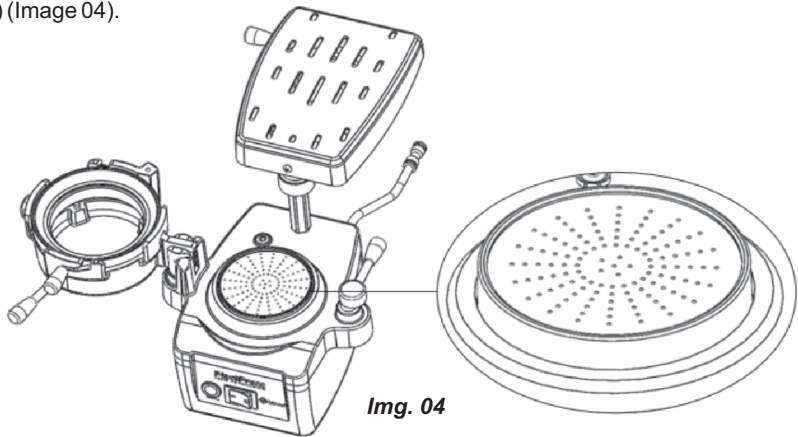
*Img. 02*

**8.3** - Open the pressure chamber (03), pulling it up and to the left, through its knob (07), until it is positioned with its opening fully facing up (Image 03).



*Img. 03*

**8.3** - Place the model on the model holder (14) and then place the assembly in the cavity on the cabinet cover (09) (Image 04).



*Img. 04*

The model holder can be positioned in two ways:

**8.3.1 – Tray for beads (Cup type position):**

It allows easier removal of the plates, especially when the model has retentions or when using rigid plates and/or with thicknesses equal to or greater than 1.0 mm.

To use the model holder in this position, place the model on the Cup Type side of the model holder (14) and fill with glass grit covering the retaining surface up to the height of the model holder. Then insert the assembly into the cavity on the cabinet cover (09) (Images 05 and 06).



*Img. 05*



*Img. 06*



**Attention:**

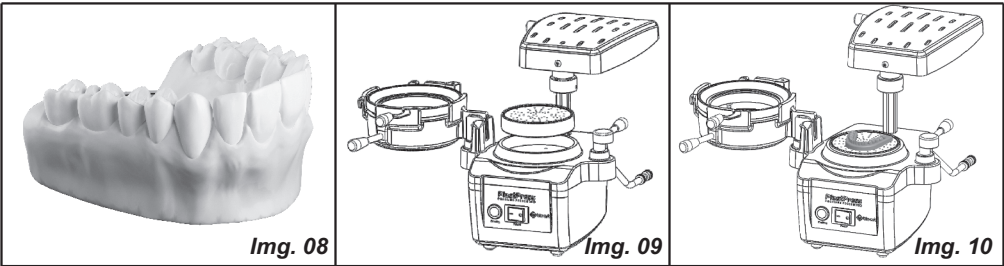
It is important that the entire area is filled with shot to prevent the model holder from being stuck to the plate after thermoforming.

**Note:** During this operation, it is natural for the shots to come off the plate and fall onto the bench. To prevent this from happening, we suggest handling it inside a container (tray).

**8.3.2 - Flat Position:**

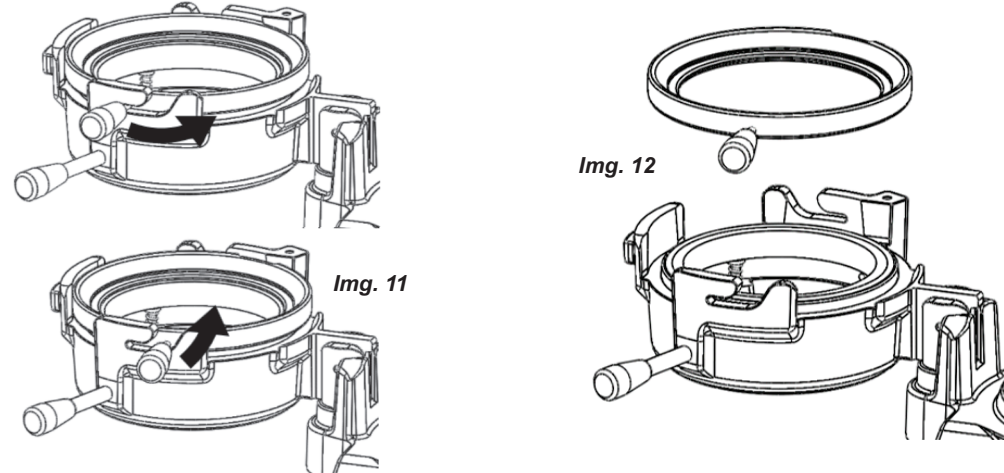
Allows a copy of the entire extent of the model. For a better result, cut out the model eliminating its retentions and obtaining a flat base. Do not use a very tall model in this process, in order to reduce plate distortion.

To use the flat side of the model holder (14), position the model holder in the cavity on the cabinet cover (09) of the machine with the mouth facing downwards. Then place the model on the model holder (Images 08, 09 and 10).

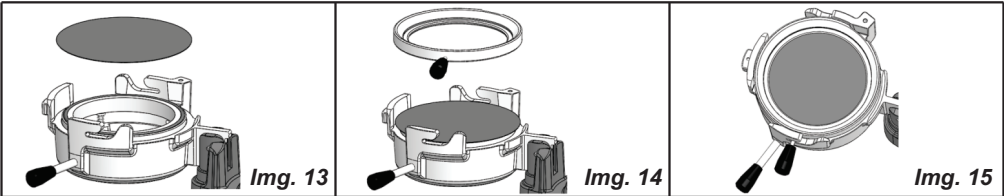


**Important:** Make sure that the cabinet cover (09) is clean and free of residues for the perfect accommodation of the model holder.

**8.4 -** To position the plate, move the knob (12) of the locking ring (11) to the right, counterclockwise, allowing the plate to be inserted. (Images 11 and 12).

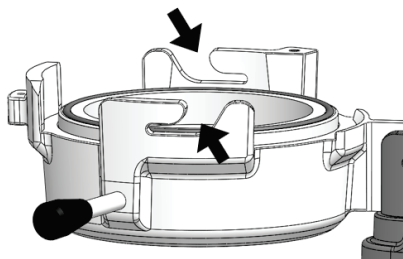


**8.5 -** Position the plate to be molded in the opening of the pressure chamber (03) on the compensation ring (13), so that it is well centered in the compensation ring (13) (Images 13, 14 and 15).

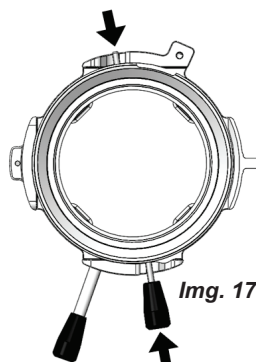




**8.6** - Position the plate's locking ring (11) in the pressure chamber opening (03), observing that its knob (12) and diametrically opposite pin match the pressure chamber slots (Images 16 and 17).

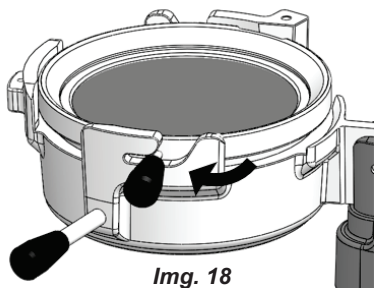


*Img. 16*



*Img. 17*

**8.7** - Press the locking ring (11) against the pressure chamber (03) using its handle and pin as a guide and turn it to the left clockwise, locking the plate. (Image 18).



*Img. 18*



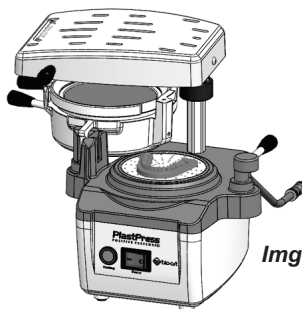
**Attention:**

It is important to hold with one hand, through the knob (07), the pressure chamber (03), in order to keep the set firm when the plate is locked.

**8.8** - Move the pressure chamber (03) backwards until it reaches its end of course and partially return the heating unit (01) aligning it on the pressure chamber (03). In this position it will be possible to feel a "click" (Images 19 and 20).



*Img. 19*



*Img. 20*

**8.9** - Turn on the main switch (06), thus starting the hob heating process. The blue light of the main switch (06) and the red light of the resistance indicator LED (05) will light up indicating that the equipment and the resistance will be on.



**Attention:**

If the pressure chamber (03) is not in the correct position for heating and its lock (08) is not in the unlocked position, the resistance indicator LED (05) will not light up and the hob will not be heated.

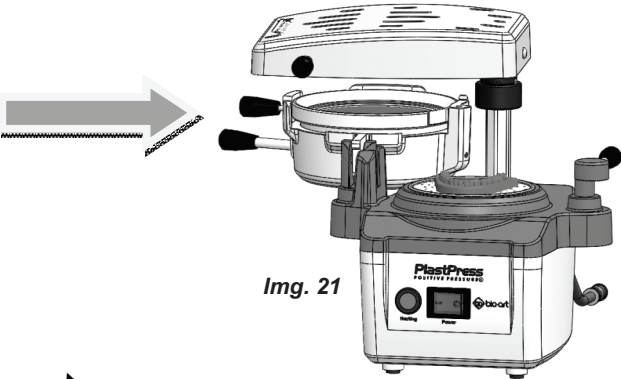
8.10 - Ideal lamination point:

Due to the existence of various types of plates (different materials and thicknesses), the ideal plasticization point is identified by changes in the plate and not by time. Therefore, it is the responsibility of each plate manufacturer to prescribe the most correct form of the ideal lamination point.

In general, the ideal point is observed by the color change (brightness) for more opaque plates, i.e., the plate will be shiny and transparent (e.g., milky plates) or by the plate flowing by 10 to 12mm, as indicated in the drawing below (e.g., crystal and soft plates).

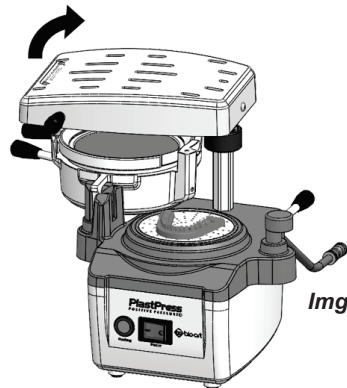


Observe the plate heating process described above through the gap between the heating unit (1) and the pressure chamber (03) (Image 21). In the first uses, if there is any doubt, move the heating unit (01) back slightly and, if there is a need for more heating, return it to the one above the pressure chamber (03) (Image 21).

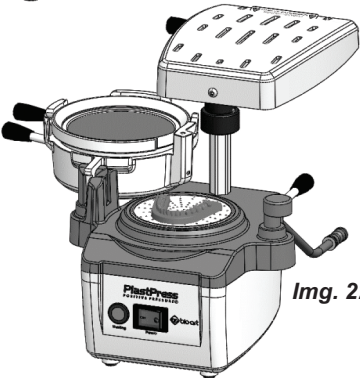


Img. 21

When reaching the ideal lamination point, move the heating unit (01) back to the posterior position (Images 22 and 22a). In the first uses, if in doubt, move the heating unit (01) slightly backwards and then back to the position above the pressure chamber (03), to facilitate the visualization of the heating level of the plate.



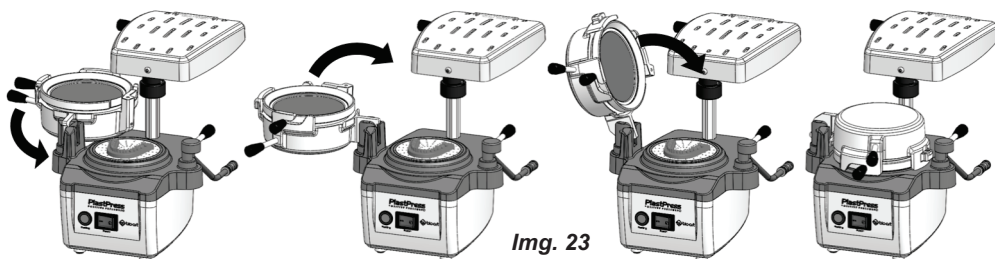
Img. 22



Img. 22a

**Caution:** Do not allow the plate to be heated beyond the time indicated by its manufacturer, avoiding its overheating, making it unusable and being necessary to clean the melted material inside the pressure chamber.

8.12 - Return the pressure chamber (03) to its closed position (turning it forward counterclockwise and then clockwise to the right). At this time. The resistance indicator LED (05) should go off (Figure 23).



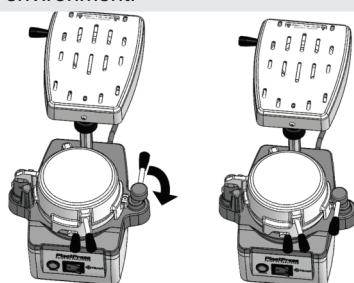
Img. 23

**8.13** - Lock the pressure chamber (03) in its position by turning its lock knob (08) fully to the left, clockwise. If locking is difficult, it is because the plate locking ring (11) and/or the pressure chamber (03) are out of their correct position (Image 24).



**Attention:**

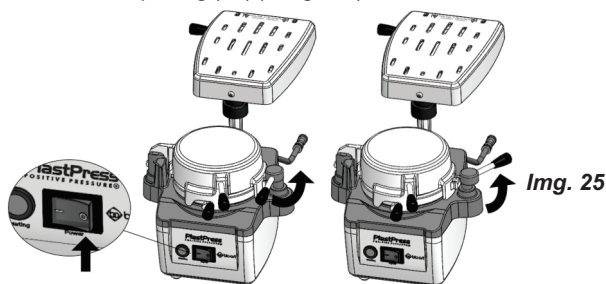
Only activate the pressure chamber lock knob (08) when the pressure chamber (03) is correctly positioned in the closed position, thus avoiding the escape of compressed air directly into the environment.



Img. 24

**8.15** - Simultaneously with the locking of the pressure chamber (03), the activation of the air valve will occur (with its characteristic click) and the pressurization of the preheated plate. During the pressurization time, the characteristic sound of compressed air being released into the pressure chamber will be heard.

**8.16** - After approximately 15 to 20 seconds, depending on the thickness of the plate used, turn off the main switch (06) to depressurize the pressure chamber (03). At this moment the air valve will be closed (with its characteristic click) and the flow of compressed air will be interrupted. After complete depressurization, turn the pressure chamber lock knob (08) fully to the right, counterclockwise, to release the pressure chamber opening (03) (Image 25).



Img. 25

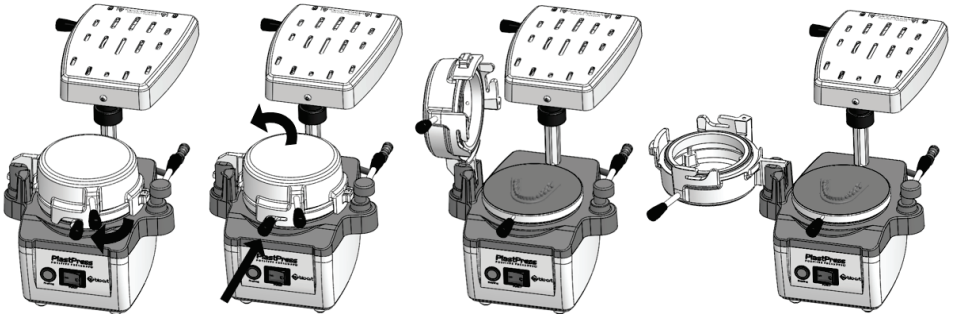


**Attention:**

Never force the pressure chamber lock knob (08) to try to open the pressure chamber (03) before interrupting the flow of compressed air, by turning off the main switch (06). Failure to follow this safety procedure could result in accidents causing injury to users and damage to the product.

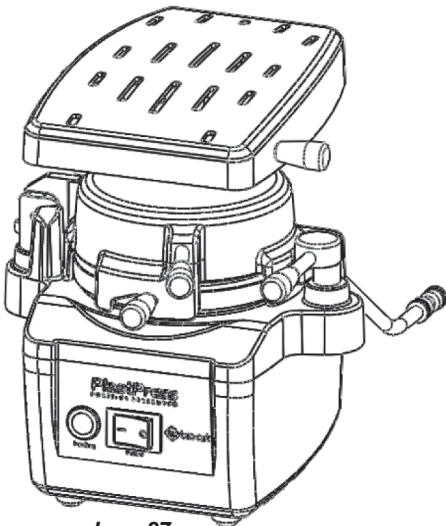
**8.17** - Move the handle of the plate locking ring (12) to the left, clockwise, to release it and open the pressure chamber (03). To do this, hold the pressure chamber handle (07) with the other hand in order to be firm in the movement and keep the PlastPress in position. Then, keeping the locking ring of the plate (12) in a horizontal position, carefully open the pressure chamber (03) with the other hand, pulling it up and to the left, through its handle (07), until it is positioned with its opening completely facing upwards (Image 26). Remove the plate with model holder (14).

**Note:** If you are using the model holder in the bucket function, at this moment of opening the pressure chamber, eventually the shots that were stuck in the plate may come loose.



*Img. 26*

**8.18** - After removing the plate already with the plasticized model, replace the locking ring (11) in the pressure chamber (03), returning it to the initial position, that is, closed. Also return the heating unit (01) to the front position, reducing the space occupied by the PlastPress during its storage (Image 27).



*Img. 27*

**8.19** - Let the model cool down for about 30 seconds before working on it.

**8.20** - If the PlastPress is not used frequently, we recommend removing the power cord from the electrical outlet and disconnecting it from the compressed air hose.

**Attention:**

To remove the template and finish the plate, cut out the excess material with scissors, a stylus, steel, or carbide disc, depending on the stiffness and thickness of the plate. For rigid plates or plates over 1.0mm thick, we strongly recommend using the Bucket Holder for the lamination process, as mentioned above.

The final finishing of the edges can be done with mounted stones, Scotch-Brite brushes or rubber discs.



## ► 9 - MAIN APPLICATIONS

### 9.1 - FIXATION OF BRACKETS

|                           |   |
|---------------------------|---|
| Indicated plates          | Soft Plate 1.0 mm<br>Crystal Plate 0.3 mm   |
| Ideal thermoforming point | Sheet run-off   |
| Finishing                 | Use model bucket holder.<br>Cut out the plate with a utility knife or scissors.   |
| Considerations            | <p>The brackets must be positioned on the study model before lamination with glue that is not very adherent so that they can be easily removed together with the plate after lamination.</p> <p>Next, the patient's teeth are properly prepared and the plate is placed with the brackets, thus fixing all the brackets at once. Carefully remove the plaque with a knife or scalpel.</p> |

### 9.2 - CAPS

|                           |  |
|---------------------------|--|
| Indicated plates          | Crystal Plate 0.3 mm   |
| Ideal thermoforming point | Sheet run-off  |
| Finishing                 | Use a flat model door.<br>Cut out the plate with a knife, scissors or scalpel.   |
| Considerations            | <p>For better use of the plate, several dies can be placed on the model holder, as long as there is enough space between them for thermoforming.</p> <p>The dies can be placed on the model holder on a mold or children's colored clay.</p> |

### 9.3 - DIE FOR COMPOSITE RESIN

|                           |   |
|---------------------------|---|
| Indicated plates          | Milky Plate 0.6 mm<br>Soft 2.0 mm.  |
| Ideal thermoforming point | Sheet transparency.   |
| Finishing                 | Use a flat model door.<br>Cut out the plate with a knife, scissors or scalpel.  |
| Considerations            | Dental reconstruction is performed on the study model with material that withstands the heating temperature (plaster, resin, mold, teeth, artificial teeth...). If using wax, a duplicate of the plaster model must be made, as the wax melts with the heat of the machine. Use only the indicated material (Milk or Soft plate), as other types of material may chemically react with the resin. |

### 9.4 - PROVISIONAL BRIDGE

|                           |  |
|---------------------------|--|
| Indicated plates          | Milky Plate 0.6 mm<br>Soft 2.0 mm.   |
| Ideal thermoforming point | Sheet transparency.  |
| Finishing                 | Use a flat model door.<br>Cut out the plate with a knife, scissors or scalpel. |

|                |  |
|----------------|--|
| Considerations | <p>Dental reconstruction is performed on the study model with material that withstands the heating temperature (plaster, resin, mold, teeth, artificial teeth...). If using wax, a duplicate of the plaster model must be made, as the wax melts with the heat of the machine. The new (rehabilitated) model is laminated.</p> <p>Note: Use only the indicated material (Milk or Soft plate), as another type of material adheres to the resin. After thermoforming, carefully remove the plate from the model and fill the plate space where the temporary bridge will be built with self-curing resin, then take it to the dental preparation. For use in the mouth, the tray should be adapted to protect the limit of 1 or 2 teeth on each side of the area and provide approximately 3 mm around the gingival margin.</p> <p>During preparation, the tray can be inserted into the mouth and used as a reference for the preparation contour. It will provide an anatomy similar to natural teeth and convenient occlusion with the antagonist arch. The correct relationship is established in the mouth and can be observed if all edges are well demarcated and flawless. When the resin starts to heat up, the resin/tray assembly can be detached and resealed so that it does not polymerize on the preparations.</p> <p>When the acrylic is fully polymerized, the tray must be removed by bending or stripping it. The acrylic obtained will be practically polished.</p> |
|----------------|--|

## 9.5 - MOUTH GUARD

|                           |  |
|---------------------------|--|
| Indicated plates          | 3.0 / 4.0mm Soft Plates.   |
| Ideal thermoforming point | Sheet run-off.   |
| Finishing                 | Use model bucket holder. Trim the excess with scissors or a scalpel. |

## 9.6 - BITE PLATE (MYORELAXANT/BRUXISM)

|                           |  |
|---------------------------|--|
| Indicated plates          | Crystal Plate 1.0 / 1.5 / 2.0 / 3mm.   |
| Ideal thermoforming point | Sheet run-off.   |
| Finishing                 | Use model bucket holder.<br>Cut off the excess with a steel or carbide disc.<br>Smoothing edges with mounted stones.   |
| Considerations            | Occlusal adjustment should be made in a semi-adjustable BIO-ART articulator using adhering material (self-curing acrylic resin) and wearing down the plate if necessary. |

## 9.7 - BASE PLATE

|                           |  |
|---------------------------|--|
| Indicated plates          | Crystal Plate 1.0 / 1.5 / 2.0 / 3.0mm.   |
| Ideal thermoforming point | Sheet run-off.   |
| Finishing                 | Use model bucket holder.<br>Cut off the excess with a steel or carbide disc.<br>Smoothing edges with mounted stones. |

### 9.8 - INDIVIDUAL MOLDS

|                           |   |
|---------------------------|---|
| Indicated plates          | Crystal Plate 1.0 / 1.5 / 2.0 / 3.0mm.  |
| Ideal thermoforming point | Sheet run-off.  |
| Finishing                 | Use model bucket holder.<br>Cut off the excess with a steel or carbide disc.<br>Smoothing edges with mounted stones.                          |
| Considerations            | The preparation of the handle can be done by adding a small amount of self-curing acrylic resin in the form of a stick on the finished plate. |

### 9.9 - TRAYS FOR HOME WHITENING

|                           |  |
|---------------------------|--|
| Indicated plates          | Crystal Plate 0.3 mm<br>Soft Plate 1.0 mm  |
| Ideal thermoforming point | Sheet run-off.   |
| Finishing                 | Use model bucket holder.<br>Trim the excess with scissors or a scalpel.  |
| Considerations            | There is no need for relief, however, if desired, relief can be done by brushing (painting) with nail polish the dental surface of the model where the whitening gel should be placed. |

### 9.10 - STUDY MODEL PACKAGING (FILE)

|                           |   |
|---------------------------|---|
| Indicated plates          | Crystal Plate 0.3 mm  |
| Ideal thermoforming point | Sheet run-off.  |
| Finishing                 | Use model bucket holder.<br>Trim the excess with scissors or a scalpel. |

### 9.11 - SURGICAL GUIDE

|                           |   |
|---------------------------|---|
| Indicated plates          | Crystal Plate 1.0 / 1.5 / 2.0 mm.   |
| Ideal thermoforming point | Sheet run-off.  |
| Finishing                 | Use model bucket holder.<br>Trim the excess with scissors or a scalpel.<br>Smoothing edges with mounted stones.   |
| Considerations            | After making the plate, the points of surgical interest must be marked on it, based on the study model, consequently the plate is drilled at the demarcated points. |

### 9.12 - TRAY FOR FLUORIDATION

|                           |  |
|---------------------------|--|
| Indicated plates          | Crystal Plate 0.3 mm<br>1.0 mm soft  |
| Ideal thermoforming point | Sheet run-off.   |
| Finishing                 | Use model bucket holder.<br>Trim the excess with scissors or a scalpel.  |
| Considerations            | <b>Model relief can be done in two ways:</b><br><b>A-)</b> Brushing (painting) with nail polish the dental surface of the model where the fluoride gel should be placed.<br><b>B-)</b> Placing a foam of approximately 2 mm on the dental surface of the model and thermoform this set (tray + foam). The foam will adhere to the plate after thermoforming. |

### 9.13 - ORTHODONTIC APPLIANCE (ALIGNER)

|                           |   |
|---------------------------|---|
| Indicated plates          | Crystal Plate 0.75 / 1.0 mm.  |
| Ideal thermoforming point | Sheet run-off.  |
| Finishing                 | Use model bucket holder.<br>Cut off the excess with a steel or carbide disc.<br>Smoothing edges with mounted stones.                        |
| Considerations            | The modeling of the plate for tooth movement must be done with the specific toolkit of the recommended technique (pliers, blowtorch, etc.). |

## ► 10 - FUSE REPLACEMENT

10.1 - Disconnect the power cable (19) from the socket and the input connector (18) before replacing the fuse.

10.2 - Insert a small screwdriver into the slot on the bottom of the fuse holder cover, located above the input connector pins (18), forcing it out until the assembly is released.

10.3 - Pull the fuse holder assembly out to the end and observe the existence of two fuses fitted in the holder.

10.4 - The fuse that is visible is the one with the problem and must be replaced. The other, inside a plastic housing, is the spare fuse that should be used to replace the faulty fuse.

10.5 - Insert the assembly back into the compartment and press it until it is completely seated. Remember to buy another fuse of the same specification and fit it in the spare position, so that, if necessary, it can be used on another occasion.

10.6 - Turn on the machine to check if the operation is correct. If the fuse fails again, send the equipment to the Authorized Technical Assistance to check the possible cause of the problem and solve it.



#### Attention:

Only replace blown fuses with the same type as specified in the table below:

| Rated Voltage | Operating Voltage         | Fuse (Type)               | Fuse (Value) |
|---------------|---------------------------|---------------------------|--------------|
| 127Vac        | 127 Vac (114Vac - 139Vac) | Ø5 x 20mm<br>quick action | 5A / 250Vac  |
| 220Vac        | 220 Vac (198Vac - 242Vac) |                           | 3A / 250Vac  |

## ► 11 - REPLACEMENT OF THE POWER SUPPLY CORD

If there is any damage to the power cable (19), stop using the PlastPress immediately and replace it only with another of the same type.



#### Attention:

Only replace the power cable with others with the following specification: PP cable, 2P + T Plug at 180°, C13 connector, 10A/250V, 3x1.00 mm<sup>2</sup>, 1.50m.



## ► 12 - SAFETY PRECAUTIONS

**12.1** - Leave the model as low as possible to avoid large deformations of the plate.

**12.2** - When working with the flat part of the Model Holder (14), leave the base of the plaster model flat to prevent the plate from penetrating between the plaster model and the Model Holder (14).

**13.3** - Due to the diversity of plates and jobs that can be performed, we suggest a careful analysis of the process before starting each job.

**13.4** - Handle the heating unit (01) only through its knob (02), avoiding touching it directly, as its surface and underside heat up a lot during the lamination process, which can cause burns.

**13.5** - Do not allow children or untrained people to operate the PlastPress.

**13.6** - Do not attempt to operate the PlastPress if any damage is identified in any of its parts.

**13.7** - Do not attempt to operate the PlastPress in any position other than its five supports correctly positioned on a firm, flat surface.

**13.8** - Do not leave the PlastPress turned on without supervision.

**13.9** - Do not leave the PlastPress turned on in heating mode longer than the time necessary for the plates to soften correctly.

**13.10** - If any abnormal noise or smell is observed during the operation of the PlastPress, turn it off immediately.

**13.11** - Do not use the PlastPress near solvents or other flammable materials.

**13.12** - During installation and operation of the PlastPress, check if there are no air leaks.

**13.13** - Do not connect the PlastPress to compressed air lines with pressures greater than 8 bar (116 psi).

**13.14** - Do not disconnect the air hose extender (16) that is connected to the PlastPress. It has a silicone tube to protect against heating the resistor and a quick "sacrificial" connection (after many connections and disconnections, it may be necessary to replace it with a new one, without the need to disassemble the PlastPress). This connection can also be changed to adapt the PlastPress to other compressed air network standards, e.g. 8 or 10 mm.

**13.15** - Do not activate the pressure chamber lock (08) with the pressure chamber (03) open, out of position for the correct pressurization of the plates.

**13.16** - Never try to force the pressure chamber lock knob (08) to open the pressure chamber (03) without depressurizing it first, through the main switch (06).

**13.17** - Confirm that the locking ring (11) of the plates is correctly positioned before starting the heating and pressurization phase.

**13.18** - Never bring your face close to the air pin (15), as compressed air can unexpectedly be released through it and cause damage to your eyes.

**13.19** - Do not use the PlastPress for any purpose other than that intended by the manufacturer.

## ► 13 - MAINTENANCE AND CLEANING

**13.1** - Keep the PlastPress always clean and protected from moisture, especially the resistance located in the heating unit.

**13.2** - To clean the cabinet, use only a cloth dampened with water and neutral detergent. Do not use abrasive materials, alcohol or flammable liquids.

**13.3** - Resistance is a component that requires some care, under no circumstances can it receive moisture while it is heated and it should not be touched with tools, metal objects or hands.

**13.4** - If there is a need to replace the resistance, this should preferably be done by an Authorized Technical Assistance.

**13.5** - If the power cable is damaged, it must be replaced by another that has the same characteristics and certifications.

**13.6** - If the compensation ring (13) is not moving freely, its o'ring must be lubricated (Attention: only use lubricants suitable for use with rubber).

## ► 14 - SPECIAL STORAGE CONDITIONS

If the machine needs to be left unused for a long period, we recommend after cleaning it as described in chapter 13, and storing it in its original packaging in a dry, ventilated place, free from vibrations and protected from sunlight.

## ► 15 - TROUBLESHOOTING

| Problem   | Possible Cause  | Solution   |
|---|---|--|
| The PlastPress does not turn on when the main switch (06) is actuated/main switch does not light up | No power in the PlastPress  | Check if there is power in the electrical network, if the power cable (19) is well connected and if the input connector protection fuse (18) is intact |
| The main switch lights up, but the heating is inoperative   | Damaged heating element of the heating unit (01)                  | Change the resistor, seek an authorized technical assistance.  |
|   | Pressure chamber (03) out of position for plate heating           | Correctly position the pressure chamber (06) for heating the plate.  |
|   | Pressure chamber lock knob (08) rotated clockwise (locked)        | During plate heating, keep the pressure chamber lock knob (08) fully turned in the counterclockwise (unlocked) position.                               |
| Normal heating, but, pressurization does not occur  | Compressed air hose disconnected and/or out of air                | Connect hose and check if there is pressure in the system  |
|   | Pressure chamber (03) not in correct position for pressurization  | Position the pressure chamber (03) in the correct position for pressurization  |
|   | Pressure chamber lock handle (08) is not correctly positioned     | Turn the pressure chamber (08) lock knob fully clockwise   |
|   | Air leakage   | Check compressed air hose connections  |
|   | Lack of lubrication of the o'ring from the compensation ring (13) | If the compensation ring (13) is not moving freely, lubricate it   |

|   |  |  |
|---|--|--|
| The plate detaches from the pressure chamber (03) when the chamber is moved               | Plate locking ring (11) out of position  | Turn the plate lock ring (11) fully to the left (clockwise)  |
| Insufficient lamination or no defined contours  | Compressed air network pressure too low<br><br>Insufficient plate heating<br><br>Air leakage<br><br>Use of thick plates with low air network pressures   | Check the level of air pressure delivered by the compressor<br><br>Increase plate warm-up time<br><br>Check that the plate is correctly fixed and that there are no faults in the air connections<br><br>Increase the pressure of the compressed air network, without exceeding the max. PlastPress usage pressure   |
| Insufficient and/or non-uniform heating of the plates                                     | Short plate warm-up time<br>Heating unit out of position<br><br>Supply voltage too low.<br><br>PlastPress model 220V wrongly connected to a socket with a voltage of 127V<br><br>Plate not correctly centered on compensation ring (13)<br><br>Lack of lubrication of the o'ring from the compensation ring (13) | Increase plate warm-up time<br><br>Position heating unit correctly above the plate<br><br>Check the power supply voltage level of the socket<br><br>Connect the PlastPress to an outlet with voltage suitable for your model<br><br>Center the plate on the compensation ring (13)<br><br>If the compensation ring (13) is not moving freely, lubricate it |
| Excessive plate heating   | Long plate warm-up time<br><br>PlastPress model 127V wrongly connected to a socket with a voltage of 220V  | Decrease plate warm-up time<br><br>Connect the PlastPress to an outlet with voltage suitable for your model  |
| It takes time to heat the plate to the ideal point (more than 1 minute)                   | Supply voltage too low.<br><br>PlastPress model 220V wrongly connected to a socket with a voltage of 127V<br><br>Card storage temperature too low  | Check the power supply voltage level of the socket<br><br>Connect the PlastPress to an outlet with voltage suitable for your model<br><br>Leave the plate previously at room temperature before use.   |
| Difficulty locking round plates in the pressure chamber using the locking ring (11)       | Round plate wrongly centered in the pressure chamber before being locked by the locking ring   | Correctly center the round plate in the pressure chamber before locking it by the locking ring   |
| Difficulty turning the pressure chamber lock knob (08) to close the pressure chamber (03) | Pressure chamber (03) is misplaced in PlastPress cabinet cover (09)<br><br>Round plate wrongly centered in the pressure chamber (03) before being locked by the locking ring   | Center the pressure chamber (03) correctly and press it down to facilitate its locking.<br><br>Correctly center the round plate in the pressure chamber (03) before locking it by the locking ring   |
| Difficulty turning the pressure chamber (08) lock knob to open the pressure chamber       | The pressure chamber (03) is still pressurized   | Turn off the PlastPress using the main switch (06) to depressurize the pressure (03) chamber before opening it.  |

## ▶ 16 - WARRANTY AND TECHNICAL ASSISTANCE TERMS

BIO-ART Equipamentos Odontológicos Ltda., provides a 1-year warranty for PlastPress.

This warranty covers any and all manufacturing defects, being provided upon repair of the product and subject to the following requirements:

**A-)** That the product has been used correctly, in accordance with the instructions provided.

We remind you that the PlastPress must be handled, transported and stored with care. Dropping or hitting the device will characterize misuse, resulting in loss of warranty.

**B-)** That the complaint is accompanied by the Invoice of purchase of the product.

To take advantage of this guarantee, the consumer must send the product at its own expense (shipping on behalf of the owner) to the nearest Bio-Art Authorized Technical Assistance or to the following address:

Rua Teotônio Vilela, 120 - Jardim Tangará - CEP 13568-000 - São Carlos - SP - Brazil

Tel. +55 (16) 3371-6502 - (16) 3372-5953 - CNPJ 58.538.372/0001-56 - I.E. 637.034.447.113

Website: [www.bioart.com.br](http://www.bioart.com.br) - E-mail: [assistenciatecnica@bioart.com.br](mailto:assistenciatecnica@bioart.com.br)

We remind you that this machine does not have dual voltage, so check the voltage of your machine (127 or 220Volts) before turning it on. Warranty does not cover damage due to improper voltage connection.

Technical Assistance for the machine may only be carried out by specialized personnel. Any improper alteration to the machine will void the warranty. In case of sending the machine for service, make sure that the machine is properly packed to avoid damage caused by a possible fall of the machine during transport. Any defects resulting from the natural wear and tear of the product, as well as damage caused during transport, both on the way out and on the way back, are excluded from this warranty. The information contained in this manual is subject to change without prior notice.

## ▶ 17 - AUTHORIZED TECHNICAL ASSISTANCE

For your safety, this product should be serviced by authorized persons / companies. Consult Authorized Technical Assistance posts at our website [www.bioart.com.br](http://www.bioart.com.br)

## ▶ 18 - DECLARATION OF CONFORMITY

This machinery fulfills all the relevant provisions of the European Council Directive 2006/42/EC (Machinery); of the Directive 2014/30/EU of 26 February 2014 (Electromagnetic compatibility) and of the Directive 2014/35/EU of 26 February 2014 (Low voltage).

European Harmonized Standards to which Conformity is Declared:

- > ISO 12100:2010 - Safety of Machinery - General principles for design - Risk assessment and risk reduction;
- > IEC/CISPR 14-1 Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission;
- > IEC/CISPR 14-2 IEC/CISPR 14-2 Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 2: Immunity – Product standard;
- > EN 61000-4-2 Electrostatic discharge;
- > EN 61000-4-4 Electrical Fast transient and burst;
- > EN 61000-4-6 Conducted disturbance induced by RF fields;
- > EN 61000-4-5 Surges test;
- > EN 61000-4-11 Electromagnetic compatibility (EMC) Testing and measurement techniques;
- > IEC 61010-1:2010 Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements;
- > IEC 61010-2:2003 Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 2-010: Particular requirements for laboratory equipment for the heating of material.

## ▶ 19 - EUROPEAN AUTHORIZED REPRESENTATIVE

**OBELIS s.a**

Boulevard Général Wahis 53 - 1030 Brussels,

BELGIUM

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