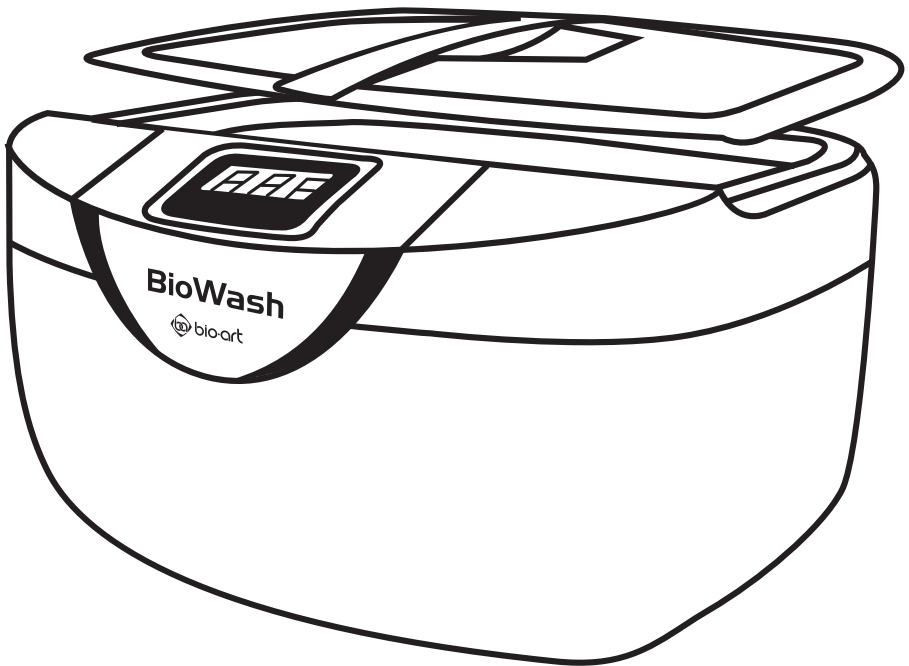


BioWash

Ultrasonic Washer - Mod. STD



USER'S MANUAL

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► 01 - INTRODUCTION ◀

In search of convenience and quality in the cleaning of instruments, especially those used in medical and dental care, we developed a device called “ultrasonic vat”.

The mode of action of BIOWASH (Bio-Art ultrasonic washer) is based on the conversion of electrical energy into mechanical, through a piezoelectric crystal (ultrasonic transducers) that generates high frequency waves (vibrations) in the stainless steel vat, which in turn should contain water or a crust removing cleaning solution (chemical detergents - optional). These waves exceed the capacity of the liquid to move with the same speed due to water mass inertia, causing the formation of microscopic air and water vapor bubbles. These bubbles propagate into the instruments acting like small brushes that work in all directions and attack the whole surface to be cleaned, entering areas of difficult access removing various types of organic and inorganic waste in a process called “ultrasonic cavitation”. BioWash is easy to use, however to get the most out of the purchased product, we recommend reading the User’s Manual before starting any cleaning operation.

► 02 - BENEFITS OF THE ULTRASONIC CLEANING ◀

The ultrasonic method is faster and more efficient than the manual method in the following aspects:

- Speed and optimization in the process of cleaning instruments used routinely in offices, clinics and laboratories, including the areas of difficult access;
- Removes organic and inorganic waste impregnated in the instruments, which interfere in the chemical reactions of the materials to be manipulated;
- Avoids grooves in the instruments caused by manual brushing methods thus preventing waste impregnation them;
- Avoids early wear of the cutting wire of the instrumental, caused by abrasion of manual methods;
- Security against cross-infection.

► 03 - APPLICATIONS ◀

- **Medical and Odontological Clinics:**
Cleaning of pieces and instruments in general, not for disinfection purposes.
- **Manufacturers of jewelry and precious stones stores:**
Cleaning during the finishing process of necklaces, rings, earrings, etc. With the heating device of the machine at 65 ° C, the polishing wax of the product surface will be removed.
- **Chemical Laboratory:**
Cleaning of test tubes and glassware in general.
- **Home:**
Efficient cleaning of baby bottles, pacifiers, children's toys, among others.
- **Restaurants:**
A quality cleaning can be achieved in cutlery, cleaning of coffee machine filters, among others.

- **Repair of Precision Machinery :**

A good cleaning and removal of dirt and grease can be achieved in the cleaning of pneumatic valves, control valves, power steering valves, flow nozzles, precision gears and bearings. It revives lubricating greases giving new life to the pieces.

- This washer performs the cleaning of instruments and does not perform the disinfection process and / or sterilization of instruments.



NOTE: The oxidation of metals can not be removed. To improve the process, we recommend the use of chemicals.

WHAT CANNOT BE CLEANED:

| | |
|--|---|
| Jewelry (tortoiseshell, pearl, emerald, ivory, coral, agate ...) | may suffer loss of color and brightness due to friction. |
| Precious metals (welding metals, electro plating, alloys ...) | weld or alloy spots may break. Electroplating breaks may suffer enlargement after cleaning. |
| Watches (except waterproof below 50m deep or more) | water can penetrate the watch, even if it's waterproof. |
| Other (wood, glass, contact lenses, camera color filters) | apparent cracks apparent in wood, ceramic objects or laminated lenses, may suffer enlargement (this will not happen if the object is in perfect condition). |

► **04 – PACKAGE CONTENTS** ◀

- 01 ASTD BioWash washer with lid
- 01 Electrical Cable
- 01 Instrument basket-holder
- 01 User's manual

► **05 - INSTALLATION AND CARE** ◀

- The site for installation shall be ventilated, spacious, flat and away from heat sources, water and other machines, to avoid possible damages to the product.
- Check that the voltage of your device is compatible with the local power grid.
- Do not put flammable liquids or solvents in the vat. Use only products suitable for this type of procedure.
- Do not put your hand inside the vat while the machine is running.
- Never disassemble the Ultrasound. The internal high voltage may cause accidents.
- Never actuate the washing machine without water. This will lead to a loss of warranty, since this may damage or shorten the life of the equipment.
- Keep the unit unplugged from the power supply while filling with water. Do not exceed the maximum level of filling ("MAX" in the vat).
- To avoid electrical shock, never touch the power cord or plug with wet hands.



CAUTION!

If the equipment is not used as specified in this manual, the protection provided by the equipment may be impaired.

► 06 - DIRECT AND INDIRECT USAGE METHODS ◀

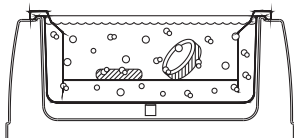
DIRECT METHOD:

The solution is placed in the vat and the materials in the tray or hanging pierced basket, picture 1. It provides efficiency in cleaning and ease operation, but you can only use one cleaning solution at a time, and all removed dirt stays in the vat, which may suffer corrosion if highly caustic or acid solutions are used.

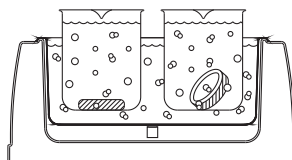
INDIRECT METHOD:

The crust removing solution and instrumentals are placed in becker-type containers (not included), picture 2.

The vat is filled with water and cleaning solution to improve the cavitation, and the dirt stays in the containers (becker) that can be filled with different crust removing solutions. Another advantage of the indirect method is that the containers (becker) can be autoclaved to avoid cross-contamination of prosthetic parts, appliances and other devices that may later be used by patients.

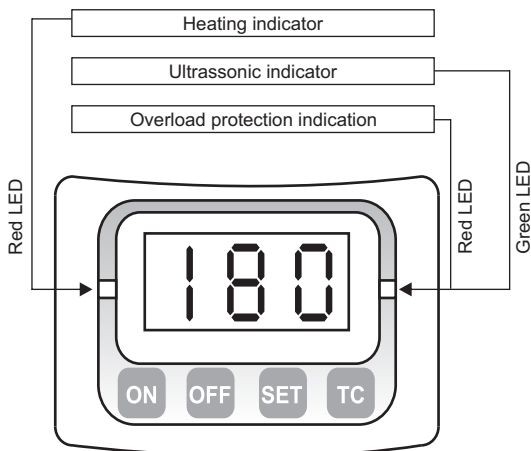


PICTURE 1



PICTURE 2

► 07 - INSTRUCTIONS FOR USE ◀



STD Model

- Select and position the support basket as needed (direct or indirect method);
- Place the instruments to be cleaned in the basket and cover;



Note: Do not put large number of instruments (overlaid), as this may compromise the efficiency of the cleaning process, cause friction between them, leading to loss of brightness of these instruments.

- Fill the vat with water until the indicated level and, if desired, add crust removing solution in the proportion specified by the manufacturer;
- Before connecting the Washer power cord in the outlet, check that the voltage of the device is according to the local power supply. After connecting the cable, the board will light up automatically;
- Through the key “SET” determine the washing cycle time shown on the display of the washer board. Each touch on this key changes the cycle time respectively: 180, 280, 380, 480 or 90 seconds;
- Press the “ON” key to start the washing cycle;
- To pause or finalize the washing cycle, press the “OFF” key;
- To reschedule a new cycle press the “SET” key; or to continue the process where it last stopped, simply press the “ON” key;
- At any moment during the operation, the washing cycle time can be changed by pressing the “SET” key until the new desired time is obtained.
- At the end of each cycle, the display will shows the numbers “000” indicating the end of the cycle.

NOTE: This machine is equipped with a protection circuit against overheating. When the temperature limit is reached, the LED indicator Overload protection (LED located right panel) will be red, interrupting the cleaning cycle. At this point the cleaning process will not work, even by pressing the “ON” key. The equipment will stop for about 15 minutes to cool down. After this period, by pressing the “ON” key the ultrasound functioning indicator (LED located at the right of the board) will light green and the machine will again function normally.



ATTENTION!

Never use the appliance without water. This will shorten the life of the equipment causing the total loss of the equipment (loss of warranty).

USE OF HEATING:

- To actuate the heating system, press the “TC” key;. The red light located on the left of the board will light, indicating that the heating system is ON. When the water temperature reaches about 65 °C the luminous indicator turns off indicating that the heating system was turned off;
- To turn off the heating system before the end of its cycle, press the key “TC” key. At this moment the red light located on the left side of the panel will go out indicating that the heating system was turned off.

► 08 - THREE DIFFERENT FORMS OF CLEANING

a) **“LIGHT” DIRT:**

To remove “light” dirt (dust, saliva, etc.) it is not necessary to use detergents or chemicals, nor the heating system, only water is enough.

b) **“MEDIUM” DIRT:**

To remove “medium” dirt (fat, blood, etc.) it is recommended to use of the heating system for better process efficiency.

Note: If you want to reduce the time to heat water, you can add a little warm water, but never put boiling water since it will cause thermal shock and damage to the crystals.

c) **“HEAVY” DIRT:**

To remove “heavy” dirt (very oily parts) it is recommended the use of heating system with a crust removing cleaning solution (household detergents, enzymatic, crust removing, etc.).



NOTE: During cleaning, the dirt appears as resembling “smoke”, while the water gets dirty. When the aspect of “smoke” does not appear, the item is clean and does not need a longer time. If the water is dirty, replace the water and start a new cycle.

► 09 - MAINTENANCE AND SUGGESTIONS

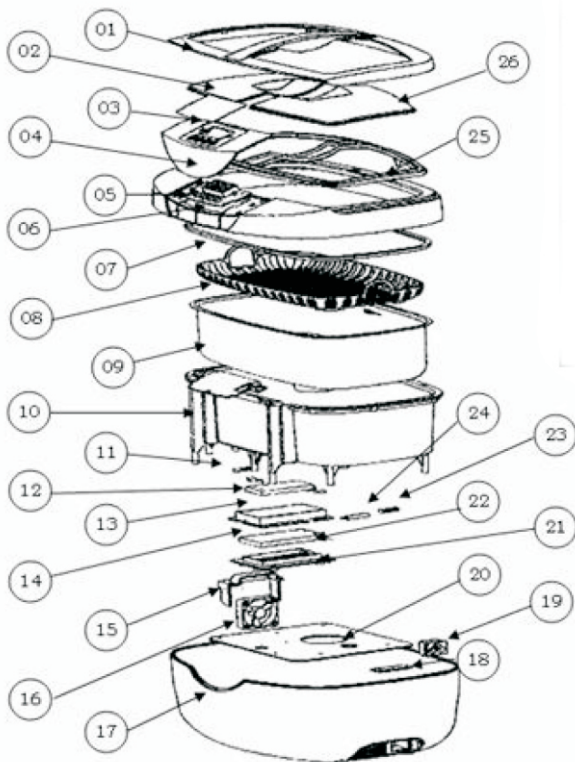
- Clean the vat regularly and frequently replace the cleaning solution to increase the efficiency, it is recommended the use of an enzymatic crust removing solution for better efficiency. Each exchange of fluid should be done at one cycle of 180 seconds (without instruments) in order to eliminate possible air bubbles (degassing process) that may compromise the effectiveness in the first wash;
- The use of liquids with high concentration acid and / or temperature above 65 ° C is not advisable;
- Always use accessories as basket or beaker, so that the material does not remain on the bottom of the vat;
- Maintain the machine off when replenishing with liquids and especially when it is not in operation;
- Avoid dirt to settle on the bottom of the vat over an extended period of time. This dirt may decrease the ultrasonic cavitation effect. Do not use the Ultrasound vat in places with much dust. The accumulation of dust can interfere with the normal operation of the equipment;
- Avoid the equipment to remain with water for long periods when it is not in use;
- Do not restrict ventilation. It should be appropriate in order to avoid overheating;
- The ultrasonic cleaning is very effective for hard materials, but less effective for soft and porous materials. The harder the surface, the greater the efficiency of the ultrasonic cleaning.

► 10 - TECHNICAL SPECIFICATIONS ◀

| | | |
|-----------------------------|--------------------------------|-------------------------------------|
| Description | Ultrasonic Washer BioWash STD | |
| Model | BioWash STD | |
| Voltage and Frequency | AC 220 ~ 240V ~ 50/60 Hz | |
| | AC 100 ~ 127V ~ 50/60 Hz | |
| Power Consumption | AC 220 ~ 240V ~ 170 W | |
| | AC 100 ~ 127 ~ 160 W | |
| Ultrasonic Frequency | 42,000 Hz | |
| Vat Material | Stainless Steel S U S 304 | |
| Plastic material of cabinet | ABS 757 | |
| Vat Size LXAXP | 264 X 164 X 80 mm | |
| | 10.40 X 6.46 X 3.15 inches | |
| Vat Capacity | 2600 ml | (MAX-) 2200 ml (MIN-) 700 ml |
| Pre-programmed timer | 180s à 280s à 380s à 480 à 90s | |
| Box size | 340 X 255 X 225 mm | |
| Net weight | 2.5 Kg | |
| Gross weight | 3.0 Kg | |
| Heating Temperature | ~65° C | |
| Cleaning Force (power) | 160 W | |

► 11 - PART LIST

| Ítem | Descrição |
|------|----------------------------|
| 01 | Cover |
| 02 | Left-handed cover viewer |
| 03 | Command board viewer |
| 04 | Command board cover |
| 05 | Shell cover |
| 06 | Electronic command board |
| 07 | Sealing ring |
| 08 | Instrument holder basket |
| 09 | Stainless steel vat |
| 10 | Vat bracket |
| 11 | Lead fixer 1 |
| 12 | Lead fixer 2 |
| 13 | Heater |
| 14 | Heater cover guide |
| 15 | Fan fastener |
| 16 | Fan |
| 17 | Shell |
| 18 | Power supply circuit board |
| 19 | Lead connector |
| 20 | Ultrasound circuit board |
| 21 | Heater cover |
| 22 | Thermal blanket |
| 23 | Lead fixer 3 |
| 24 | Thermostat |
| 25 | Cover viewer fastener |
| 26 | Right-handed cover viewer |



► 12 - WARRANTY

BIO-ART Dental Equipment Ltda., GRANTS a 12-month warranty for this product from the date of its purchase. This warranty covers any and all manufacturing defect, and will be provided through the repair of the equipment conditioned to the following requirements:

- a) That the product has been used correctly, according to the instructions provided. Remember that the BioWash Standard must be handled, transported and stored with care. Drops or blows will mean misuse, resulting in loss of warranty.
- b) That the complaint is followed by the purchasing invoice (Nota Fiscal).
- c) That the serial number of the product has not been removed or changed.

To take advantage of this warranty, the consumer should return the product for its costs (freight paid the owner) to the nearest Bio-Art Service Center or to the following address:

Rua Teotônio Vilela, 120 - Jardim Tangará
CEP 13568-000 - São Carlos - SP - Brasil
Tel. +55 (16) 3371-6502 - Fax +55 (16) 3372-5953
CNPJ 58.538.372/0001-56 - I.E. 637.034.447.113
Home Page: www.bioart.com.br - E-mail: bioart@bioart.com.br

This manual contains all the necessary information about the operation of BioWash Standard and its uses. BIO-ART does not guarantee the equipment for failures caused by misuse, so we emphasize that this manual be read very carefully.

Technical Services can only be performed by qualified and approved personnel. Any improper change in the equipment will void the warranty.

In case of shipping the equipment to the Service Center, make sure that it is properly packaged to avoid damage during transportation.

The information contained herein is subject to change that could be implemented without prior notice.

Exempted from this warranty any defects resulting from natural wear of the product, damage caused during shipment (both to and from the destination), damage caused by natural disasters (e.g.: atmospheric discharges) and damage caused by power surges (improper voltage application).

BIO-ART will not be held responsible for damage to persons or properties resulting from the misuse of this product, the User must take the required actions to avoid such from happening.

► 13 - AUTHORIZED SERVICES

For your safety, the technical assistance of this product should be performed by authorized personnel/companies. For authorized services go to www.bioart.com.br on our site.



Rua Teotônio Vilela, 120 - Jd. Tangará - CEP 13568-000 - São Carlos - SP - Brasil

Tel. +55 (16) 3371-6502 - Fax +55 (16) 3372-5953

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