

envisionTEC

Technical Guide

PWA 2000

The Parts Washing Apparatus (PWA 2000) is a convenient tool to assist in removing uncured material from 3D printed models. The removable washing compartment allows for ease of use when adding or removing models from the PWA 2000. The PWA 2000 offers a selection between three washing programs, so that the user can accurately clean the most delicate models and larger, more complex models effectively and efficiently. These selections can be made directly on the easy-to-use touch screen.

Applicable Printers: All cDLM and DLP printer series

Primary Supplies

- 99% isopropyl alcohol (IPA) or Nitrile gloves
- Diluted PC1 cleaning agent Absorbent paper towels
- Order from Envisiontec or Air compressor
- authorized distributor: Makeup or paint brush
- SAP part # ACC-99-1000
- Dilute - 2 parts water / 1 part PC1**

Technical Specs

- External dimensions:** 12.6 x 13 x 9.68 in / 320 x 330 x 246 mm
- Washing tank dimensions:** 5.7 x 5.7 x 4.13 in / 145 x 145 x 105 mm
- Washing system:** Contactless agitator
- Washing Mode:** Basket or platform
- Liquid capacity:** 118.35 oz / 3.5 lt
- Compatibility:** Universal adapter (optional)
- Programs:** Strong - Medium - Delicate
- Management:** 16 bit IDM processor
- Interface:** 3.2 in TFT touch screen
- Controls:** Auto off
- Connectivity:** 2.4 Ghz WIFI
- Power supply:** External
- Power supply voltage:** 100 - 230V 0.3A

Fig. 2 PWA 2000 REMOVEABLE WASHING COMPARTMENT

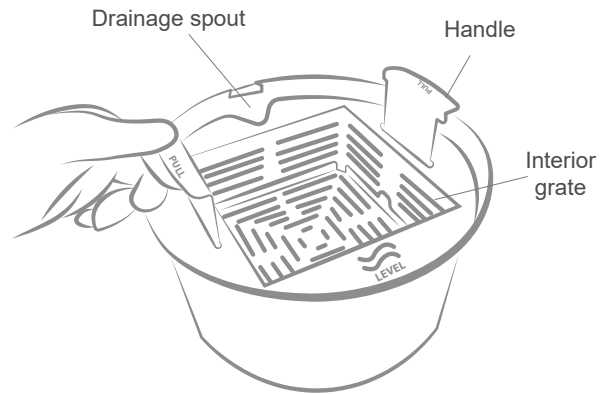
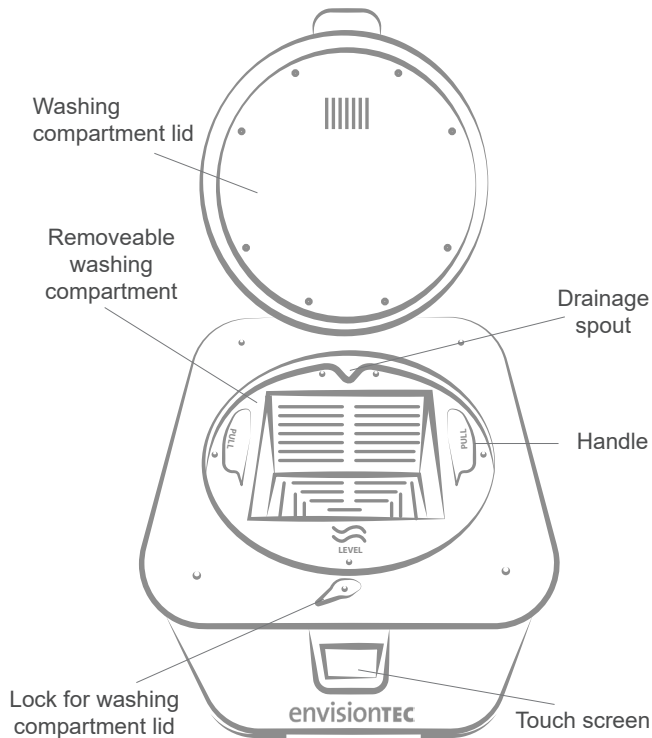


Fig. 1 PWA 2000 FRONT VIEW



Recommended Washing Times

Below is a list of recommended washing times for EnvisionTEC materials in the PWA 2000 washing apparatus. Washing times are subject to change.

Material	Program	(H:MM:SS)	(H:MM:SS)
		Time: IPA - or -	Time: PC1
ABS Tough	High	00:03:00	00:06:00
EC-3000	High	00:01:00	00:06:00
E-Dent MFH	High	00:05:00	00:06:00
E-Denture	High	00:05:00	00:12:00
E-Guard	High	00:05:00	00:06:00
E-Guide Tint	High	00:03:00	00:06:00
E-Gum	High	00:05:00	00:06:00
E-IDB	High	00:05:00	00:06:00
E-Model	High	00:03:00	00:06:00
(Light, Beige, HS)			
E-OrthoShape	High	00:03:00	00:06:00
E-Partial	High	00:03:00	00:06:00
Epic	High	00:00:30	00:06:00
E-Rigid Form	High	00:05:00	00:06:00
(Amber, Charcoal)			
E-SepFree	High	00:01:00	00:06:00
HTM140	High	00:02:00	00:06:00
(V2, V3)			
PIC-100	High	00:00:30	00:06:00
Press-E-Cast	High	00:03:00	00:06:00
WIC-402	High	00:03:00	00:06:00

Environmental Conditions

Situate the PWA 2000 in a ventilated area away from sources that can generate fire or heat - see **Safety Instructions**. Keep the PWA 2000 at least 8 in / 20 cm from the wall. Keep the PWA 2000 in an environment with temperatures within 65° to 82° F / 18° to 28° C.

Do not expose models to alcohol for an extended period of time. For more specific post processing information on the material used, see the Cookbook for that material. Cookbooks are available for download in the E-Team, or by contacting technical support.

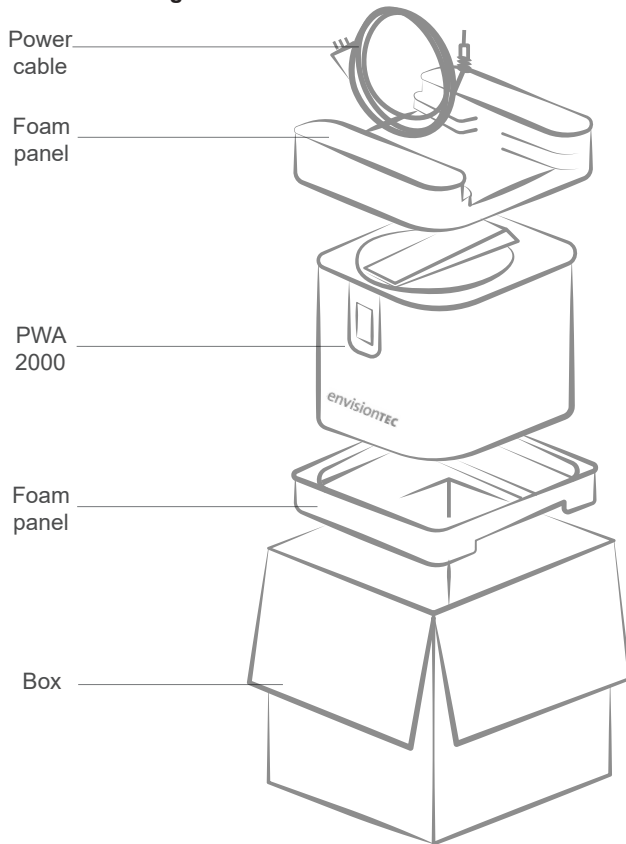
Product Setup

Complete the following steps in order to correctly unpack and assemble the PWA 2000 -

Unpacking the PWA 2000

- 1 Carefully open the packaging: Do not use blades that could damage the contents
- 2 The PWA 2000's power cable is packed on the top foam panel, *Fig. 3*. Remove the power cable from the box and set aside
- 3 Extract the PWA 2000 from the box by lifting upwards
- 4 Remove the foam panels from the top and bottom
- 5 Do not throw away the box and foam panels. Keep the packaging
- 6 Situate the PWA 2000 on a secure surface. Place the PWA 2000 at a distance of at least 8 inches (20 cm) from any other object, including the back wall

Fig. 3 PWA 2000 UNPACKING



- 7 Connect the power cable to the PWA 2000 and into a power socket US - 110V / EU - 220V with a grounding socket. A controlled switch socket is preferred as this would allow the operator to easily disconnect the power to the apparatus when not in use
- 8 Once power is connected, the PWA 2000 will display a brief start-up screen and will then go to stand-by mode. In this mode the PWA 2000 is ready to start the required program

Adding the cleaning agent

There are two recommended cleaning agents for the PWA 2000 -

- 1 **99% isopropyl alcohol (IPA)** - See the manufacturer for use and safety instructions
- 2 **PC1** - A non-carcinogenic, non-hazardous, non-flammable, eco-friendly alternative to IPA. **PC1 must be diluted with water** before using in the PWA 2000. Use a ratio of **2 parts water to 1 part PC1**

Do not store the cleaning agent in the PWA 2000 after use. Use the drainage spout, *Fig. 2*, to pour the cleaning agent into a separate storage container between uses.

When ready to begin a cleaning cycle add the cleaning agent in the following manner -

- 1 Open the washing compartment lid, *Fig. 1*
- 2 Lift the handle to raise the interior grate to the highest position, *Fig. 2*
- 3 Pour the **99% IPA** or the **diluted PC1** into the washing compartment to just below the grate while it is in the lifted position. This ensures you will not have to reach into the cleaning agent when retrieving models after washing
- 4 Close the washing compartment lid and lock in place

Programs and Features

The PWA 2000 has a microprocessor-controlled touch screen interface and intuitive software that allows you to control every aspect of the washing process of your 3D printed models.

Set program

Once the PWA 2000 is powered on, it automatically switches to the **Set Program** menu. The three washing options are accessible from this screen - **High, Medium, and Low**

High Program

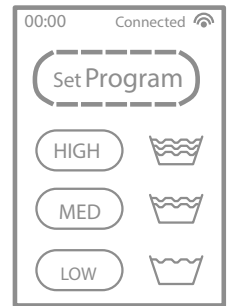
The High program is a strong washing program designed for sturdy models and materials

Medium Program

The Medium program is a standard washing program designed for standard models and materials

Low Program

The Low program is a slow washing program designed for very delicate models and materials



Setting a Program

- 1 Once the **High, Medium, or Low** program is selected, the **Set Timer** menu is displayed
- 2 Using the **Plus** and **Minus** symbols towards the bottom of the **Set Timer** menu, adjust the time to the desired setting. Each digit will need to be selected and adjusted individually
- 3 Open the washing compartment lid. Lift the handle to raise the interior grate to the highest position, *Fig. 2*. Place the model(s) on the grate and gently lower the handle to submerge the model(s) in the cleaning agent. Close the washing compartment lid and lock in place
- 4 When ready, select the **Start** button. The PWA 2000 will immediately beginning the set washing cycle
- 5 Open the washing compartment lid and lift the handle to raise the model(s) out of the cleaning agent. Inspect the model(s) and use a brush to gently clean cavities as needed. Remove the model(s) from the washing compartment
- 6 **If using PC1 - rinse models thoroughly in water for 30 seconds.** A tub of water or a sink can be used for this step. After rinsing, use compressed air to quickly dry the models
- 7 **If using IPA** - use compressed air to remove all IPA from the surface of the model as soon as possible



Do not expose models to IPA or PC1 for an extended period of time. For more specific post processing information on the material used, see the Cookbook for that material. Cookbooks are available for download in the E-Team, or by contacting technical support.

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Safety Instructions



Warning: The PWA 2000 removes uncured resin from the surface of 3D printed models using chemicals such as 99% isopropyl alcohol and PC1. The PWA 2000 is a professional product and must be used by qualified personnel, following safety instructions.



Warning: The PWA 2000 is powered at US - 110V / EU - 220V mains voltage. Avoid tampering with the equipment and all of its parts to avoid risk of electrocution. In case of malfunction of the device contact EnvisionTEC technical support or an authorized distributor.



Warning: It is recommended that the user carefully read the instructions for the cleaning product used for cleaning the 3D printed models before operating the PWA 2000 in conjunction with this product.



Warning: Always operate the PWA 2000 in well ventilated areas. Many cleaning products are flammable and highly volatile. After use place the cleaning products in their appropriate storage containers. Do not use the PWA 2000 near sources of heat or sparking.



Warning: After use, always empty the cleaning product from the washing compartment. Be careful when emptying the washing compartment.

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Manufacturer Warranty

This instruction manual must be read carefully before installing the product and putting it into operation. We assume no liability for damage and malfunctions resulting from failure to comply with the instruction manual. Furthermore, no warranty can be provided for faults that are due to subjecting the goods to improper use or application above average strain, nor can any warranty be provided for wearing parts. In case any material defects or errors occur despite correct usage, EnvisionTEC offers a warranty period limited to one year starting from the moment the customer is supplied with the goods for the 3D printing system and respective accessories. The obligation of EnvisionTEC is limited to repairing or replacing defective machine parts. Under no circumstances will EnvisionTEC assume liability for the consequences or side effects of a violation of warranty conditions, even if this has been agreed to or expected, and even in case of fault or negligence on the part of the company. EnvisionTEC expressly refrains from granting any other warranty claims in this respect. Neither representatives/dealers nor employees of the company are authorized to increase or alter the warranty claims. Contact EnvisionTEC for more information regarding Warranty Programs and for details about extended warranty options.