EPAX 3D

DENTAL USER MANUAL

TABLE OF CONTENTS

DX SERIES SPECIFICATIONS

EPAX 3D

Model	DX1-4K Pro	DX10-8K Pro DX10-8KW Pro	DX Wash Pro	DX Cure Pro
Build Volume ***(L*W*H)***	143.43mm*89.66mm *120mm	221.4mm*129.6mm *120mm		
Printing Technology	Monochrome LCD	Monochrome LCD	Wash machine	UV Curing Box
Material	Resin	Resin	Resin Prints	Washed Resin Prints
Resolution	4098*2560 (4K)	7680*4320(8K)	N/A	N/A
Layer Thickness	0.02 ~ 0.1 mm	0.02 ~ 0.1 mm	N/A	N/A
Connection	USB Flash Drive, No Ethernet	USB Flash Drive, Ethernet and optional WiFi	N/A	N/A
Wi-Fi	No	Available for WiFi version	No	No
Build Platform	Soft Aluminum with Steel FBS	Soft Aluminum with Steel FBS	Plastic Box	Clear Acrylic Turntable
Resin Vat	Hard Aluminum	Hard Aluminum		
Heated Vat	Yes	Yes. WiFi version has heated chamber	No	No
Max Resin Volume	300mL (With Platform)	700mL (With Platform)		
Air Purifier	Yes	Yes	No	No
Light Source	Parallel Light LED Matrix	Parallel Light LED Matrix		Lensed UV LEDs
Film	nFEP Film	nFEP Film	No	No
Touch screen	4.3-inch Color TFT	4.3-inch Color TFT	Panel	No
File Type	.stl .ctb	.stl .ctb	N/A	N/A
Slicer	ChiTuBox	ChiTuBox	N/A	N/A
Product Size ***(W*D*H)***	9.5 x 9.5 x 14.5 inches	11.75 x 12.5 x 15.25 inches	11.61x 14.37 x 836 inches	11.75 x 11.75 x 8.5 inches
Product Weight	32lbs	44lbs	32lbs	12lbs

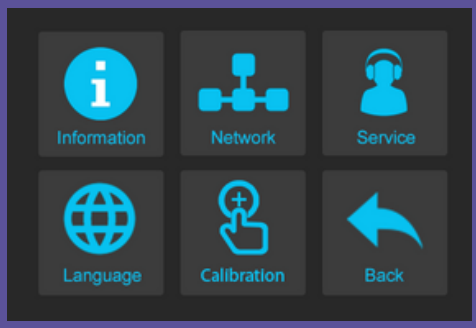
TOUCHSCREEN MENU FOR DX1 & DX10

TOOLS PAGE

The tool page contains manual Z-axis controls, exposure test, clean function, stop and Z=0 position (starting point for prints).

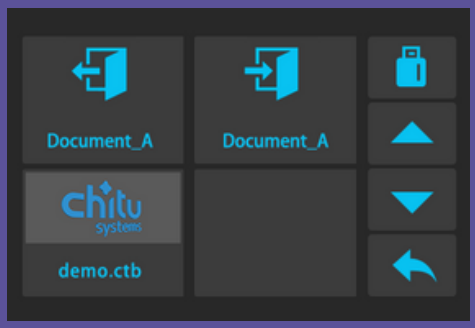
SYSTEM PAGE

The system page contains printer information, contact info, network info, and a touchscreen calibration function.



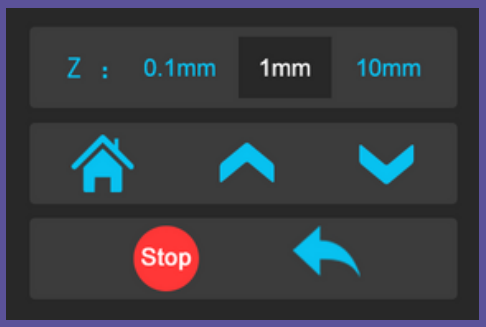
PRINT PAGE

The print page displays the print files located on your USB drive.



MANUAL PAGE

The Manual movement page allows you to manually move the build arm up and down the Z-axis, send build arm to home position, and emergency stop.



INFORMATION PAGE

The information page displays which firmware is running on the printer and the resolution of the LCD display.

NETWORK PAGE

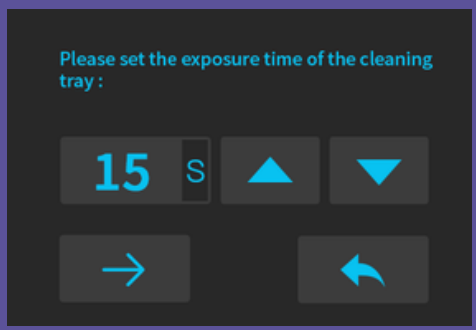
The network page shows the IP address if the printer is connected with ethernet cable and your router is DHCP enabled.

EXPOSURE TEST

On this page you can run an exposure test and adjust the amount of time you would like to run the test for.

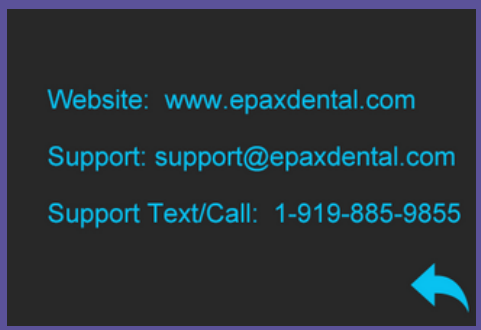
CLEAN FUNCTION

The cleaning function will cure a thin sheet of resin in the bottom of the vat which can capture debris. Make sure to remove the cured sheet before printing.



SERVICE PAGE

Email is the best way to reach us. You can also text us at 1-984-888-4988 or 1-919-885-9855. Please TEXT first so we are sure the message is from our customer.

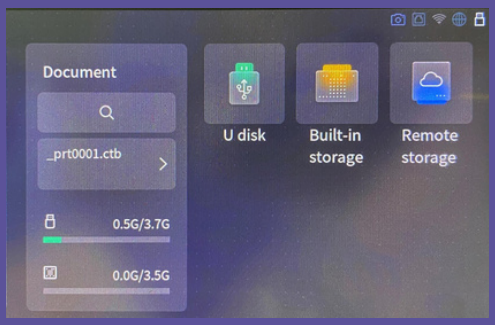


Section II.

TOUCHSCREEN MENU FOR DX10-8KW

DOCUMENT

The Document page allows access to the USB disk, Built-in storage and remote storage features.

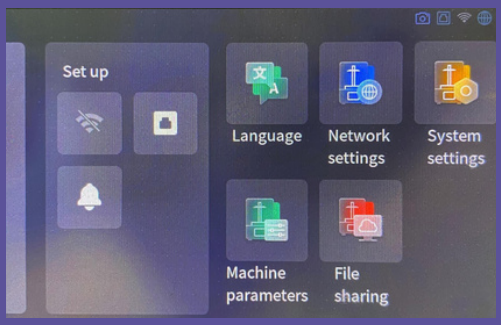


FEATURES

The Features page contains the Manual controls, Equipment test, and Exposure test functions.

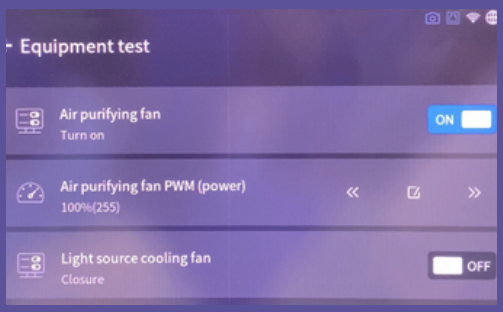
SET UP

The Set up page contains the language, Network, System, Machine parameters, and File sharing settings.



EQUIPMENT TEST

The Equipment Test page allows you to test the fan and the light source functions and adjust the PWM for each.

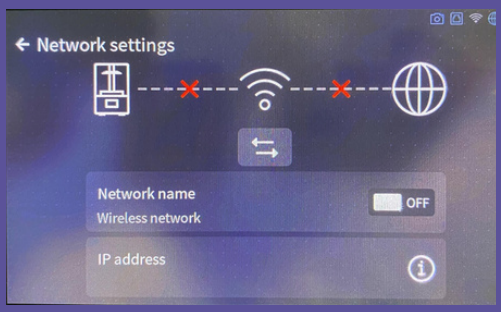


MANUAL CONTROL

The Manual Control page allows you to move the build plate using the slide bar or up and down arrows, and set the Z=0 position.

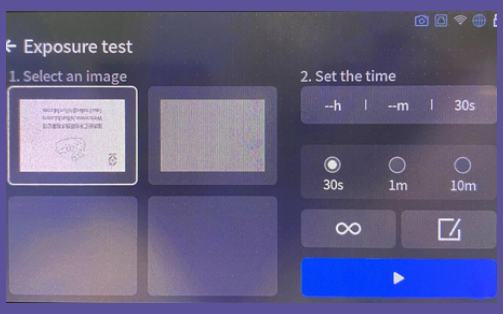
NETWORK SETTINGS

The Network Settings page contains Ethernet, wireless network settings and IP information.



EXPOSURE TEST

The Exposure test page allows you to test the screen for functionality or run the cleaning function which can help remove debris from the resin vat.

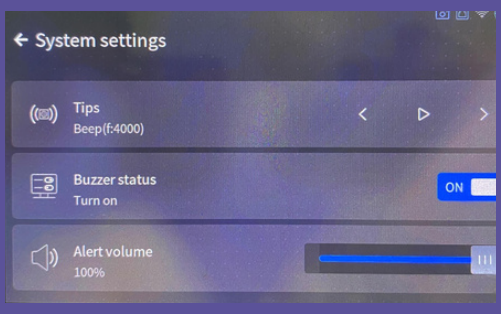


MACHINE PARAMETERS

The Machine Parameter page Allows you to make adjustments to the platform and Z motor settings.

SYSTEM SETTINGS

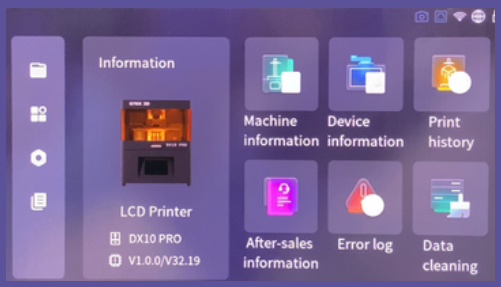
The System settings page will allow you to rename the machine, enable/disable the Buzzer status, and adjust the volume.



TOUCHSCREEN MENU FOR DX10-8KW CONTINUED

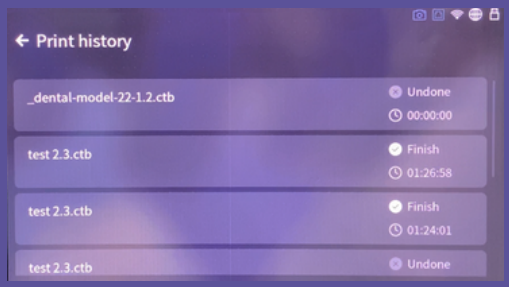
INFORMATION

The Information page contains machine information, device information, print history, after-sales information, error log, data cleaning, and shows the current firmware version.



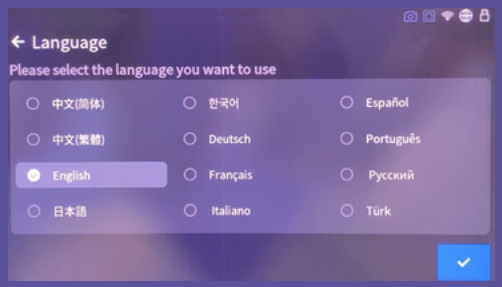
PRINT HISTORY

The Print history page shows information on all prints that have run on the machine including the total print times.



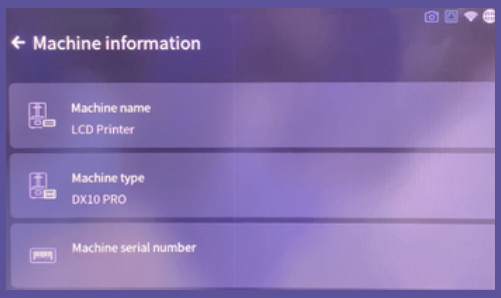
LANGUAGE SETTING

The Language Setting page allows you to change the system language.



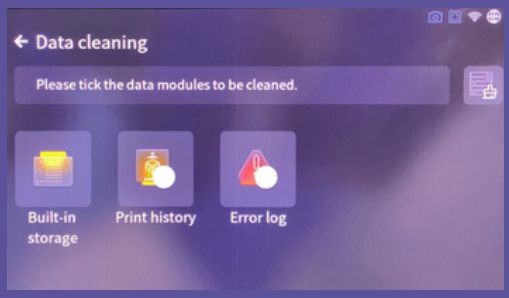
MACHINE INFORMATION

The Machine information page shows the printer name, printer type, and serial number.



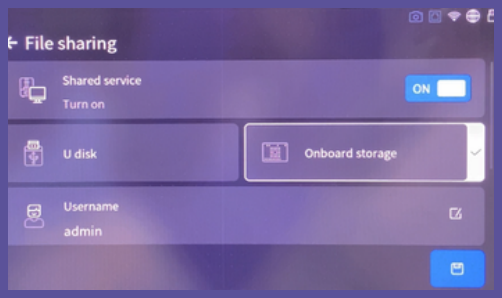
DATA CLEANING

The Data cleaning page allows you to erase the built in storage, print history and error log.



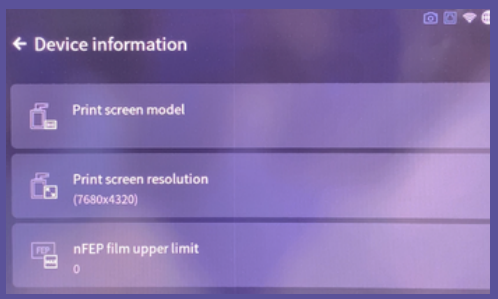
FILE SHARING PAGE

The File sharing page allows you to set up file sharing between the printer and a PC on the same network.



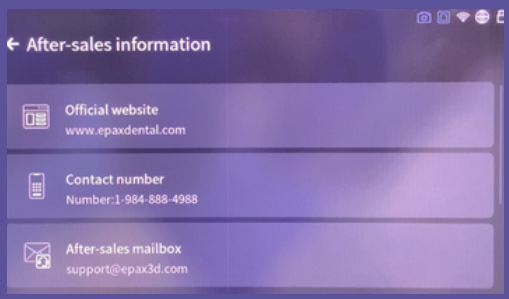
DEVICE INFORMATION

The Device information page shows the screen resolution, screen model, and other printer information.



AFTER SALES INFORMATION

The After sales information page shows EPAX contact information. Email is the best way to reach us initially and we can set up video or phone calls from there.



THERMOSTATE CONTROLS

You can set the proper chamber temp by pressing the up and down button.

EPAX Dental Wash Pro Quick Guide

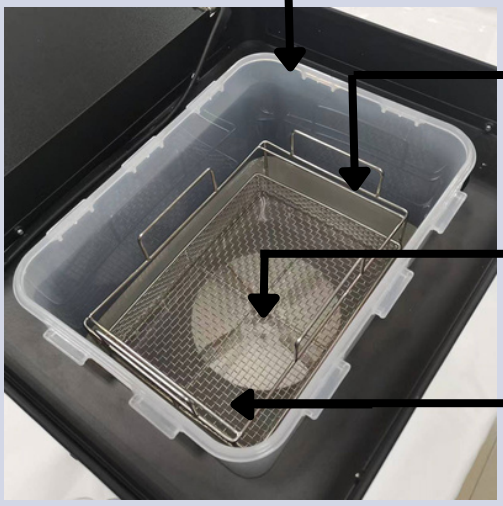
Wash speed button

Wash time display panel

Power ON/OFF button

Wash Start/Stop button

Wash time set button



Wash container

Build platform holder

Wash spinner

Dental print basket

Washing your dental prints while they are still attached to the build plate

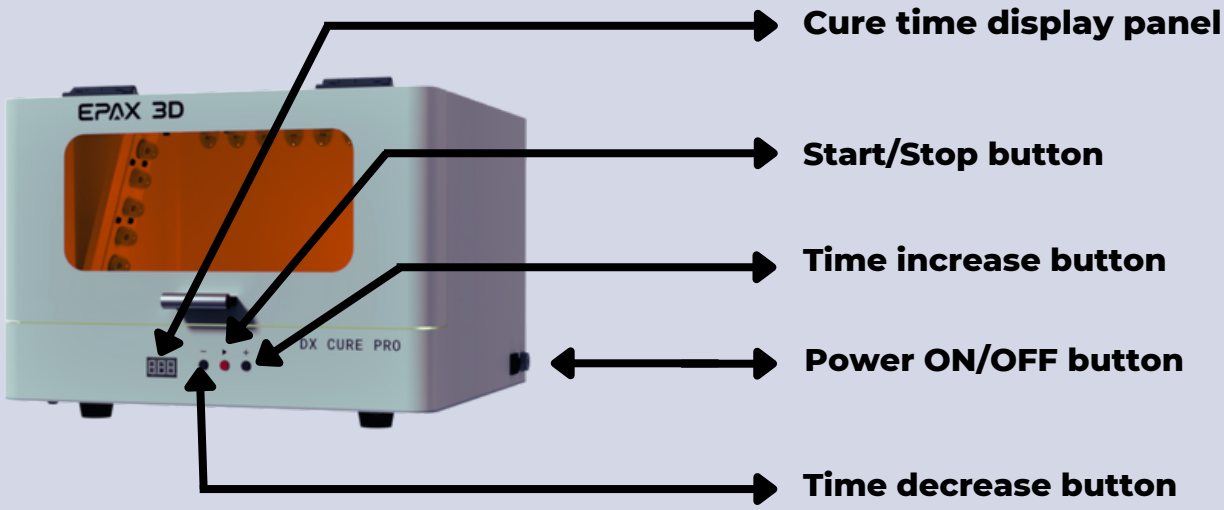
- After the models have finished printing, remove the build plate from the printer.
- Place the build plate with models on top of the wash machine platform holder.
- The build plate and models should be submerged in the wash liquid.
- Press the time button to adjust the wash time if needed.
- Press the speed button to switch the wash speed between high or low speed if needed.
- Press the Start/Stop button to start or pause the print washing process.

Wash your dental models without the build plate

- After the models finish printing remove them from the build platform using the metal spatula.
- Place the dental prints into the wash machine's print basket.
- Press the time button to adjust the wash time if needed.
- Press the speed button to switch the wash speed between high or low speed if needed.
- Press the Start/Stop button to start or pause the print washing process.

Warning: Please STOP the wash cycle before attempting to remove prints or print basket

EPAX Dental Cure Pro Quick Guide



Curing Dental Models

- Open the EPAX Cure Pro lid.
- Place the dental models on top of the clear disc and close the lid.
- Press the time increase/decrease button to set the cure time.
- Press the Start/Stop button to start/stop the dental model cure process.

Warning: Please STOP the curing process before attempting to open the door of the Cure Pro

DENTAL RESIN LIST

We have tested and validated a wide range of dental resins for you to utilize with the DX series of printers and have more coming as we grow.

EPAX

- Dental Model Resin
- Water Washable Dental Model Resin
- Bio-Based Soy Resin
- Dental Castable Resin

Dentona Optiprint

- Clara
- Gingiva
- Guide 385
- Guide 405
- IBT
- Laviva
- Lumina
- Model
- Model Align
- Tray 385
- Mack4D Audio Mold
- Mack4D Easy Rip
- Mack4D TIKO-G
- Mack4D TIKO-T

Keystone

- KeyDenture Try-In
- KeyOrtho IBT
- KeyCast
- KeyGuide
- KeyMask
- KeyModel Ultra
- KeySplint Hard
- KeySplint Soft
- KeyTray

Whipmix

- VeriCast
- VeriGuide
- VeriModel
- VeriSplint

NextDent

- C&B MFH
- Cast
- Denture 3D+
- Gingiva Mask
- Model 2.0
- Ortho Flex
- Ortho IBT
- Ortho Ridge
- SG (Surgical Guide)
- Tray
- Try-In

If you are using a resin that is not listed, we recommend talking to the resin manufacturer about settings or reaching out to support@epaxdental.com to see if we have the needed settings. Many dental resins can differ greatly despite being for the same purpose, so while we may be able to give general guidance, we may not have concrete settings if the resin has not been validated on EPAX printers.

For assistance at any time please visit our ever-growing Facebook Dental group. Many of our users are very active and give advice on the page, including slicer settings for specific resins that we may not have tested yet. Request to join at the link below:

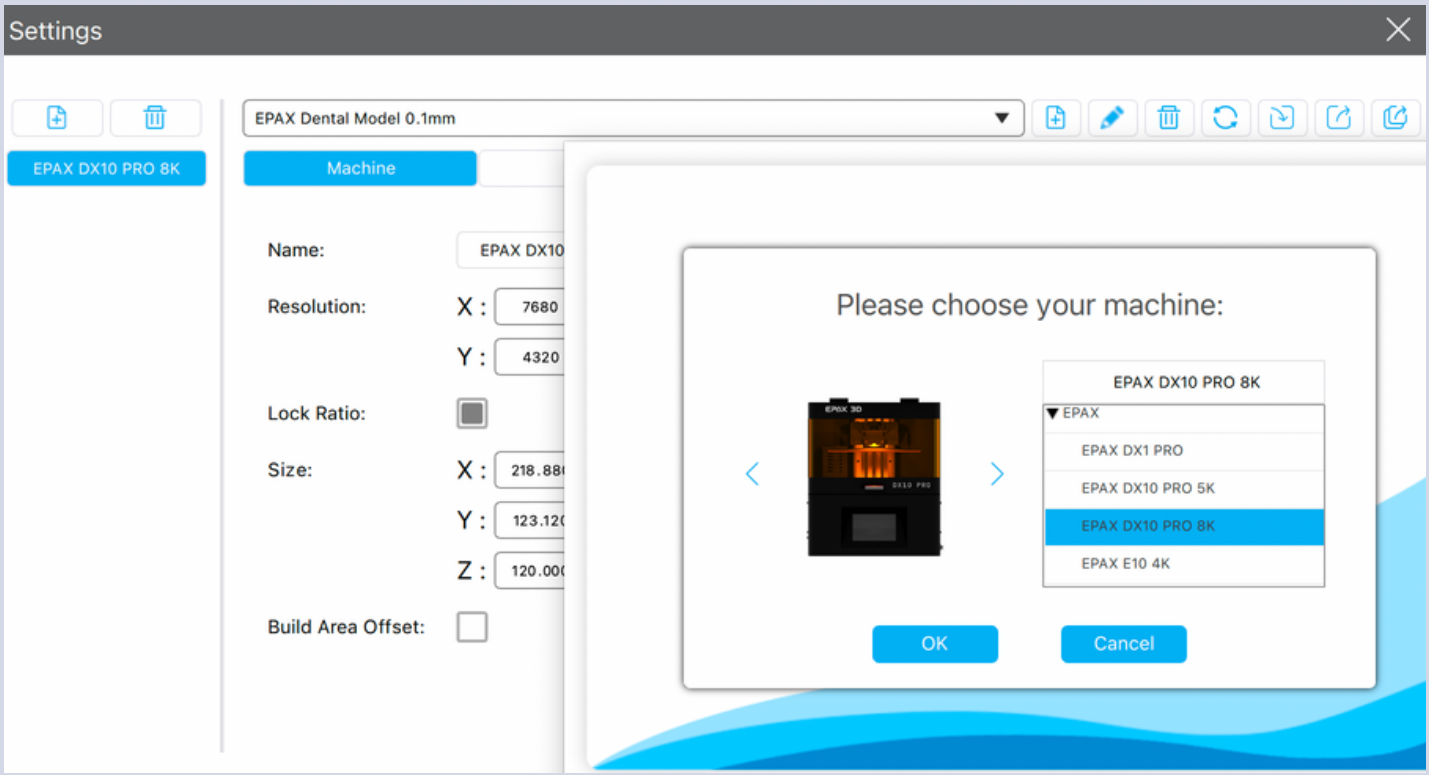
http://www.facebook.com/groups/epaxdental

Download website

For the latest slicer download, please visit:
https://www.chitubox.com/en/index

Slicer Settings

The latest version of ChiTuBox has settings preloaded for most dental resins. Make sure you add your printer to the slicing software before selecting the resin.



BRIEF EXPLANATION OF STANDARD PRINT SETTINGS

THE CORRECT PRINT SETTINGS ARE CRITICAL FOR SUCCESSFUL AND ACCURATE PRINTS, BUT THERE IS AN ACCEPTABLE RANGE FOR MOST TYPES OF RESIN. SOME RESINS ARE ALSO IMPACTED BY THE TEMPERATURE IN THE PRINTING ENVIRONMENT, AND YOU WILL NEED TO ADJUST YOUR SETTINGS ACCORDINGLY. GENERALLY, RESINS PREFER WARM TEMPERATURES, AND MANY DO WELL BETWEEN 80°F AND 90°F.

- Layer Height: 0.05mm and .1mm are recommended. The thicker the layer height, the longer the exposure time per layer needed, but the shorter the print time. Models may be less accurate with thicker layer height.
- Exposure Time: The amount of time it takes to cure each layer of the print and varies depending on the resin used.
- Bottom Exposure Time: The amount of time it takes to cure the bottom layers of the model to adhere the model to the build plate. The longer the bottom exposure time, the better the bottom layer will stick to the build plate. Don't go too long, or you'll end up needing to chisel the print off.
- Bottom Layer Count: More bottom layers will allow for stronger adhesion. We recommend sticking with 4 bottom layers.
- Rest Time/Light off Delay: For resins requiring exposure times higher than 4s, we recommend adding rest time or light off delay to allow heat to disperse between layers. This will increase print times, but the print will better retain its intended properties and accuracy.
- Lift Distance/Bottom Lift Distance: How much the platform lifts between layers.
- Lifting Speed/Bottom Lift Speed: How fast the platform lifts after finishing layers.
- Retract Speed: How fast the platform lowers to the next layer.

BRIEF EXPLANATION OF STANDARD PRINT SETTINGS (CONT.)

NOTES ON SPEEDS AND DISTANCES

- Lifting Speed - Increasing this will speed up how fast the build plate lifts the print off of the film. *WARNING*: Going too fast could result in failed prints or torn film meaning wasted resin and potential damage to the screen/machine. Do not increase too much.
- Retract Speed - Increasing this will speed up the build plate lowering back down after lifting. *WARNING*: Going too fast could result in prints lowering before fresh resin has a chance to flow back in under the model for the next layer. This will result in missing layers and potentially broken or failed prints.
- Lifting Distance/ Bottom Lift Distance: The preset values we have on our website, and in ChiTuBox can be decreased depending on the print job and layer height to save some print time. *WARNING*: Lowering too far can result in the print not fully peeling off the film. Can result in missing layers, failed prints, and broken nFEP in worst cases.

SUPPORTS

Models that cannot sit flat on the platform (Guides, Splint, etc.) will need additional supports while printing. (All supports will need to connect with the foundation or stable part of the print for success. You can always remove them from your final product.)

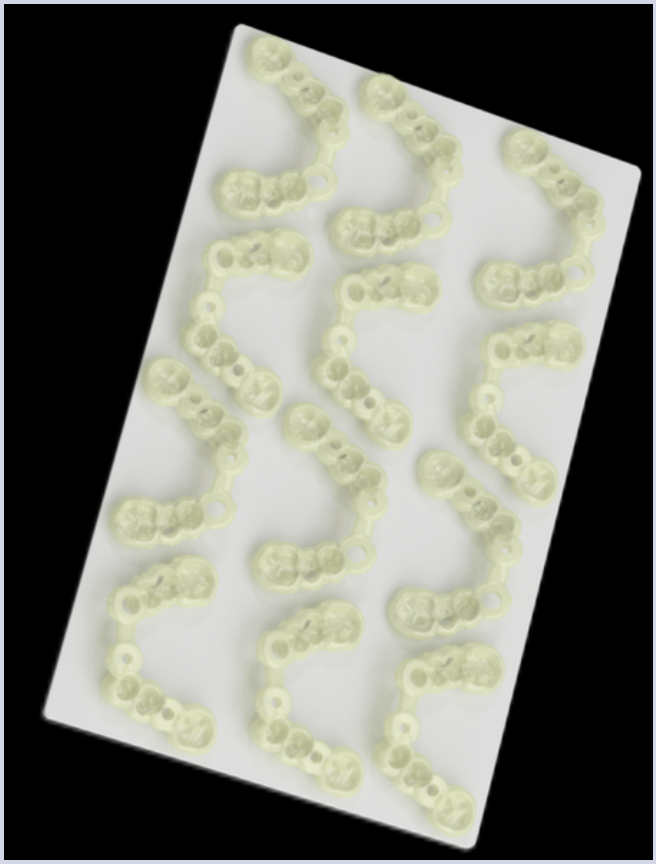
There are 3 default support options:

- Light: Small Contact area. Best for small prints and in detailed areas.
- Medium: Larger contact area, and stronger than light supports.
- Heavy: Largest contact area and are the strongest support settings.

Rafts are recommended for prints that aren't touching the platform i.e. the print is suspended. Supports can be edited for stronger adhesion to the build platform.

DX PRINTER AND CURE PRO SETUP

Our Quick Start guide goes through the setup of the printer as well. We'll go over the cure pro and the printer setup here so you can reference either.



DX CURE PRO

The DX cure pro is a very simple setup. Most of the machine is already put together, the only part you'll need to put on is the acrylic turntable. The acrylic turntable slots right into the middle post. Please ensure that you remove any protective paper on the acrylic turntable before installation to provide best performance when post-curing. Before post-curing a print, make sure it is fully dry from its wash so it doesn't come out tacky after the post-cure. Go ahead and test the machine by pressing the play button to make sure the turntable is rotating, and the UV lights are coming on.

DX* PRO PRINTER QUICK SETUP

All the accessories are packed inside the printer. Be careful when you remove the foams. Remove each foam layer starting from the top. You should find:
Metal vat and build plate, metal and plastic spatulas, 2.5 and 3mm Allen Keys, USB stick, Power Supply, Vat Knobs, and Build Platform Knob Screw.

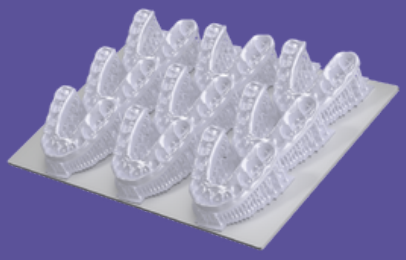
Check the Light Source and LCD Functionality
After turning on the printer, you should check the light source and LCD by running an exposure test. The test will turn on the UV light and a rectangle shape will be displayed that will match the image displayed on the touchscreen.

Check the Z-axis Movement
Test the Z-axis movement by going to the manual movement menu and using the up and down buttons to raise and lower the build arm. Hitting the home button will move the build platform arm to the Home position. Do not try to move the Z axis down below the home position.

Install Build Platform
Move the platform arm a bit higher than the printer's Home position. Go to the manual movement menu and hit up a few times so that you can move the Z-axis a bit above the home position. Then slide the build platform on the build arm and secure it with the build plate screw.

Install Resin Vat
Move Z-axis up so that you have room to put the vat on. Make sure there is no paper or plastic wrap between the screen and the vat. On the earlier DX series printers, the back of the vat will have a wire coming out for the vat heating feature. The vat slots on the two screws on each side and you can use the knob screws to secure it in place (Does not apply to DX10-8KW). Once this step is complete, we can move on to the first print.

THE PRINTING PROCESS: DENTAL MODEL



MAKE SURE YOUR MACHINE IS PLACED ON A STABLE, FLAT SURFACE. BY THIS POINT YOU SHOULD HAVE CHITUBOX INSTALLED, AND THE PRINTER'S CONFIG LOADED ONTO THE SETTINGS (REF: SECTION IV)

1: SLICE YOUR PRINT

Open up Chitubox and start with a basic dental arch model and place it flat on the platform. If your dental model doesn't have a flat base, you can lower its z-height a couple of mm using the move tool on the left-hand side of the slicer to give it a flat surface. Dental models are best printed flat to the plate, but you can use supports if needed. Once the dental model is set up, use the slice button to prepare the model for saving. After the software has finished slicing you may save the file directly to the USB.

If your printer is connected to a network, you can opt to send the print via the Network Send button instead. When doing this, make sure the USB is plugged into the printer. You can select your printer from the Network Send Dropdown menu on Chitubox. Once sent, you'll be prompted if you want to go ahead and start the print as well. If you choose to do so later, you can start the print manually from the printer as the print is now saved on the USB.

2: LOAD RESIN

Each resin vat has a maximum capacity with and without the build plate. There are tick marks indicating fill lines. It's recommended to only fill to the first tick mark when starting a print. Unless you are utilizing the full build volume, you will rarely ever need to fill the vat to max capacity. Please make sure for whichever resin you are using, you shake the bottle well, or swirl if the manufacturer says otherwise because resin can settle and may need a bit of mixing before usage.

!EXTREME CAUTION! Always wear gloves, goggles, and a mask for your protection when handling liquid resin. If liquid resin gets on your skin, immediately wash the afflicted area with soap and hot water.

THE PRINTING PROCESS: DENTAL MODEL

3: STARTING YOUR FIRST PRINT

Insert the USB into the printer and tap the print button on the main menu. Find your file, tap it, and hit the play button to start the print.

For the first print, it is a good idea to check on the print after around 30 minutes to confirm that the first layers are stuck to the build platform. If the print does not stick to the build platform, then either the bottom exposure time is too low, or the platform is not leveled properly. In this case, contact support@epax3d.com to provide you with guidance.

4: POST-PROCESSING

When the printing is done, wait until no more residual resin drips from the platform or use the plastic spatula to squeegee the excess resin off the build platform. Make sure to wear gloves when post-processing your prints.

Wash the print in the DX wash machine in at least 91% IPA (Isopropyl alcohol) or water if you are using a water-washable resin for about 5-10 minutes. For some dental resins, you may need to wash them for longer so that the residual liquid resin can be cleaned off.

After your model is clean, put it in a cool, dry, well-ventilated area until it dries, or dry it with an air blower or microfiber rag. Please make sure to still be wearing gloves during this time. To cure it, you can insert the model into our DX Cure Pro machine. Set the timer for 120s, and at the end, the print should be good to use and handle without gloves. The print should feel like plastic. If it still feels tacky, or not dry you may not have let the print dry for long enough, or the environment may be too humid to dry properly. In this case, consider utilizing a fan to blow on the print to help the drying process.

If you use 3rd party resins, such as KeyStone KeyPrint resins, it is recommended to contact the resin manufacturers to obtain the appropriate curing time and procedure for your prints.

TROUBLESHOOTING

IF YOU ARE HAVING ISSUES:

Email us directly at *support@epaxdental.com*.
Message us at www.epaxdental.com

We provide technical support Monday-Friday 9am to 5pm EST. In most cases, we may recommend video conferences to provide solutions or direct troubleshooting.

Any questions related to your order may be directed to our sales team at *sales@epaxdental.com*.

FOR URGENT SUPPORT:

Dental Support Mobile Phone: 1-984-888-4988
Hours: Monday-Friday 9am to 7pm EST

Due to too many spam calls these days, we prefer you to text to this number first so that we can be sure the communication is from our dental customers.

WARNINGS

IT IS STRONGLY RECOMMENDED THAT YOU WATCH OUR TUTORIAL VIDEOS BEFORE OPERATING YOUR PRINTER FOR THE FIRST TIME.

For printer instructions, videos, firmware updates, parts, supplies, resins, and more please visit https://www.epaxdental.com

Unboxing/Set-up video and other videos:
https://www.youtube.com/@epaxdental/videos

Customer Support Email: support@epaxdental.com

PLEASE READ:

- When you find that a print has failed or there is solid residue in the resin vat, you must filter the resin in order to protect the LCD screen. Clean the resin in the resin vat by filtering out the solid residue using one of the provided filters or a paint filter which can be found online or at your local hardware store. If ignored, when the build plate dips into the vat at the start of the next print, the force of the build plate may crush the cured resin or debris into the film on the bottom of the vat causing a puncture or causing damage to the LCD screen.
- Any resin that drips onto the machine or LCD screen can be cleaned with IPA placed on a paper towel or soft cloth.
- Always wear gloves and protective goggles when handling liquid resin or a print before the post-processing. Only touch the print without gloves after it's been fully cleaned and cured!
- Print in a well-ventilated area. It is strongly recommended to use a vent fan drawing air around the printer to outside the building. Resin fumes and IPA fumes can cause lung irritation so if you do not have good ventilation it is recommended you wear a respirator.

WARRARNTY AND RETURNS

WARRANTY INFOMATION

- New printers have a 1-year USA warranty that begins from the date you receive your printer. Our refurbished printers are backed by a 3-month warranty that begins from the date you receive your printer.
- Please note: The LCD screen, film, precut tape, filters and resin are consumable technology which are NOT covered by this warranty. The warranty is also NOT valid for international (non-USA) orders due to high shipping costs. If you are outside USA, please consider purchasing from our distributors with warranty.
- All other components of the printer are covered by the warranty. In the event of defect, we will ship you replacement parts free of charge. It does not void the warranty for you to open your printer and perform maintenance. Our printers were designed to be user-friendly both inside and out.
- Warranty does not cover willful damages, tears and damages due to accident, normal wear and tear, improper care and misuse.
- If you wish to have us repair or perform maintenance on your printer for you, we are happy to do so. We will provide parts and labor, but you must cover the round-trip shipping costs from your location to our office in North Carolina, USA. You must also cover any parts not under warranty. You may use your preferred carrier.

RETURNS AND REFUNDS

- If for some reason you decide our printer is not for you, simply contact us within 30 days from the date of your purchase. Return shipping must be covered by the customer. We can print a label for you, however the cost of the label will be deducted from the refund.

- For unopened products, a 5% processing fee will be deducted from your refund to help cover a portion of our transaction and shipping costs.
- For opened/used products there is a 15% restocking/processing fee and if any parts/accessories are missing, the cost for those items will be deducted as well. Customer is responsible for ensuring a clean product is shipped back to us. Products that are shipped in poor condition (e.g. resin on a printer or still on the vat/platform) will have an additional 5% deducted from their refund.
- You may opt to receive your refund in the form of store credit. In the case of unopened products, the 5% processing fee will not be applied. In the case of opened products, the 15% restocking/processing fee will still be applied. Refunds are only given out once one of our technicians finishes inspection on the product.