

# ProJet™ 1200

Professional 3D Printer



## User Guide

Original Instructions

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# 1 INTRODUCTION

Thank you for purchasing the ProJet® 1200 3D printer.

The ProJet 1200 professional 3D Printer produces small, detailed parts for casting, prototyping and end-use parts from 3-D solid Computer-Aided Design (CAD) models. It is intended to be used as a 3-dimensional output device to communicate design intent with durable, physical parts. Parts produced can be used in all phases of design, from a concept build to functional testing and assembly verification. For example, a part can be used as a tool to communicate design intent, to verify the fit of a new or existing component part or to create a rugged, plastic prototype of a new invention. Parts made on the ProJet 1200 are ideal for dental wax-ups, jewelry and other castings, and durable, stiff parts are also great for plastic prototypes.

These parts are generated in the rapid prototyping (RP) environment under the control of the printer operators. It does not require a special technical staff to supervise the system. All design and process considerations are compatible with an RP environment. The three-dimensional solid parts that are printed consist of an ultraviolet (UV) curable material. The resin transfer mechanism provides a controlled layer thickness of VisiJet® part material which is deposited and patterned using a proprietary imager technology which 3D Systems® has developed. When creating the pattern, the VisiJet® material undergoes a phase change. This phase change converts the liquid material into a solid polymer. When the print is complete, the part adheres to the print pad. This pad along with the part is removed from the print platform and the part is cleaned and cured to provide a finished part.

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VisiJet® is a registered trademark of 3D Systems.

## FCC NOTICE

This equipment has been tested and found to comply with the limits for a class "A" digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their expense.

## COMPLIANCE

This equipment conforms with International Electric Committee (IEC) 60950-1 and meets the requirements of the applicable EC directives.



## **WARRANTY**

3D Systems warrants that the ProJet 1200 3D Printer will be free from defects in materials and workmanship, during the applicable warranty period, when used under the normal conditions described in the documentation provided to you, including this User Guide. 3D Systems or its authorized service provider will promptly repair or replace the ProJet 1200 3D Printer, if required, to make it free of defects during the warranty period. This warranty excludes (i) normal consumable or expendable parts (such as Material Cartridges), (ii) repairs required during the warranty period because of abnormal use or conditions (such as riots, floods, misuse, neglect or improper service by anyone except 3D Systems or its authorized service provider), and (iii) repairs required during the warranty period because of the use of non-integrated, non-approved or non-licensed materials with the ProJet 1200 3D Printer. The warranty period for the ProJet 1200 3D printer is for one (1) year and starts at the earliest of (i) the date your ProJet 1200 3D printer is activated or (ii) "ninety (90) days after the ProJet 1200 3D Printer is shipped from 3D Systems to the end customer or to the reseller or retailer that sold the ProJet 1200 3D Printer to the end customer."

THIS WARRANTY IS THE ONLY WARRANTY PROVIDED FOR THE PROJET 1200 3D PRINTER. TO THE MAXIMUM EXTENT PERMITTED BY LAW, 3D SYSTEMS EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES FOR THE PROJET 1200 PRINTER AND EACH OF ITS COMPONENTS, WHETHER THOSE WARRANTIES ARE EXPRESS, IMPLIED OR STATUTORY, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR INTENDED OR PARTICULAR PURPOSES.

## **LIMITATION OF LIABILITY**

3D SYSTEMS WILL NOT BE RESPONSIBLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, EXEMPLARY OR INCIDENTAL DAMAGES (SUCH AS LOSS OF PROFIT OR EMPLOYEE'S TIME) REGARDLESS OF THE REASON. IN NO EVENT SHALL THE LIABILITY AND/OR OBLIGATIONS OF 3D SYSTEMS ARISING OUT OF THE PURCHASE, LEASE, LICENSE AND/OR USE OF THE EQUIPMENT BY YOU OR OTHERS EXCEED THE PURCHASE PRICE OF THE PROJET 1200 3D PRINTER.

## 2 IMPORTANT SAFETY INFORMATION

### SAFETY SYMBOLS AND DEFINITIONS

Symbols used in this guide and on the product itself are identified to ensure correct usage, to prevent danger to the user and others and also to prevent property damage. The meanings of these symbols are described below.



**NOTE:** It is important that you read these descriptions thoroughly and fully understand the contents.



**UV Radiation Hazard:** Invisible UV radiation is accessible in the vicinity of this sign or behind the panel. Radiation can cause eye injury. Access panels are for service only and should be opened only by certified service personnel.



**Electrical Shock Hazard:** High voltage electricity is accessible in the vicinity of this sign or behind the access panel. High voltage can cause severe burns or death. Access panels are for service only and should be opened only by certified service personnel or trained maintenance personnel.



**Hot Surface Hazard:** A hot surface is accessible in the vicinity of this sign or behind the access panel. Avoid contact. Hot surfaces can cause severe burns. Access panels are for service only and should be opened only by certified service personnel or trained maintenance personnel.



**Harmful Irritant Warning:** Indicates that skin or eye irritation could result while exposed to a chemical composition.



**Caution:** Indicates something may happen that could cause loss of data, damage to equipment, or personal injury.



**Pinch Point:** Indicates hands and/or fingers potentially could be pinched when interacting with the equipment.



**Wear Gloves:** Wear gloves when handling uncured VisiJet® build material.



**Ultraviolet Radiation Inside:** Exposure may cause eye damage. Do not operate without covers. Wear UV eye protection.

## SAFETY GUIDELINES



### General Safety Guidelines

To ensure personal safety, follow these general safety guidelines when operating the printing system.

- Follow all safety rules in this section and observe all cautions and warnings in this guide.
- Do not use print materials without first reviewing its Material Safety Data Sheet (MSDS & SDS) which can be found at <http://www.3dsystems.com/support/materials/msds>.
- To prevent tripping, ensure power and communication cables are located away from the walking path to the printing system.
- If performing maintenance to this system, ensure step by step instructions and safety precautions are followed during the procedure.
- Operators of the printer should be trained to perform necessary tasks when printing a part according to the guidelines that are set forth in this manual. This includes understanding and following the safety and regulatory guidelines.
- Do not modify any safety features or make modifications to the printing system. Doing so is prohibited and voids warranty and contractual agreements.
- Use of part materials, print pads or parts other than genuine 3D Systems® ProJet® 1200 components may void warranty and other contractual agreements.
- To prevent potential skin-irritation and sensitization due to contact with the print material, follow all guidelines in Material Safety Data Sheet (MSDS).
- In the unlikely event that you are exposed to ultraviolet rays from the unit, proper precautions must be taken. To ensure your safety, UV protective eye wear and nitrile gloves should be worn when operating this equipment.
- Hazardous voltage exists inside the electrical module. Injury or death from electrical shock can result if the system's electrical box covers are removed. When installing replacement modules, ensure the power is off before removing panels.

## HIGH VOLTAGE POTENTIAL & ELECTRICAL SAFETY



### High Voltage Potential

**If the electrical module is in need of repair, power down the printer and unplug the power supply. Do not remove covers, doing so will void warranty and contractual agreements.**



### Electrical Safety

**To operate the printer, the door must be closed.**

**This printer requires a grounded, 1-phase electrical power source with a service rating of 100 to 240 VAC~, 50/60 Hz, 5 A (max.).**

## ULTRAVIOLET (UV) SAFETY



### Ultraviolet (UV) Safety

- In normal operation, the ultraviolet (UV) light is completely confined, so users are not exposed to potentially harmful emitted radiation.
- UV light from the printer could cause personal injury. Use recommended protective eye wear which blocks the UV light. It is recommended to never purposely stare directly into the printer during operation.
- To prevent eye injury, do not open the door when the ultraviolet (UV) light is activated. When the door are closed, it keeps UV radiation from escaping.
- Pay attention and follow the warnings contained in this guide concerning operation and printer's maintenance procedures.
- If the door is opened during operation, use the recommended protective eye wear which blocks the UV light.
- Hazardous voltage exists inside the electrical module. Injury or death from electrical shock can result if the system's electrical box covers are removed. When installing replacement modules, ensure the power is off before removing panels.

## CONSUMABLE SAFETY GUIDELINES



**NOTE:** Follow all safety rules in this section and observe all cautions and warnings in this guide.

### VisiJet® FTX Material

There are 6 available VisiJet FTX Materials, FTX Green, FTX Gold, FTX Silver, FTX Cast, FTX Clear, FTX Gray. Pay close attention to the follow handling and disposal requirements.

### FTX Material Cartridge

Uncured material waste is classified as regulated, and in some areas hazardous, thereby requiring special packaging, transportation and disposal. Refer to your local environmental regulatory agency.

Applicable material “waste” includes cartridges (empty or full). Any cleaning supplies used to clean up uncured material should be disposed of in the same manner as the uncured material. To identify which disposal requirement applies, contact the local waste disposal service provider. (The local environmental regulatory agency should have a list of qualified providers in your area.) Give the disposal service provider a copy of the material’s MSDS and the SNUR (Significant New Use Regulation - U.S. only). The service will provide a report, indicating the disposal requirements that apply, as well as a quotation for regularly scheduled pickups.

3D Systems assumes no liability or responsibility for proper disposal of the uncured material. Proper disposal of the uncured material is the sole responsibility of the user.

### VisiJet FTX Cartridge Removal



Wear protective gloves when removing the material tray from the printer. Remove the tray and place it in a disposable bag. Be careful not to spill, drop or expose other materials to the waste.



**NOTE:** Partially used cartridges should be stored in a cool dark place, any light will cause the material to cure.

### VisiJet FTX Material Disposal

ProJet 1200 3-D printer operators should be informed about the potential hazards of part material prior to performing operations which may result in exposure to uncured material. This includes the removal and disposal of empty cartridges or unlikely spills that may occur during operation.

Leaks indicate a serious malfunction. The first priority is to protect users from inadvertently touching the material. Handling uncured material requires the use of gloves and other protective equipment to ensure there is no direct skin contact. If uncured spills occur, promptly remove the spilled material, and dispose of the waste material according to local environmental regulations.

If a problem with the printer occurs, discontinue use until the problem is diagnosed. Resolve the problem before continuing to operate the printer.

Small spills of uncured liquid can be cleaned up using disposable towels. After wiping the spill, wipe printer surfaces using a lint free cloth and clean with Isopropyl alcohol or window cleaner.

Cleaning spills on carpeting can be difficult. Avoid placing printer over carpeted areas or use a barrier to avoid the possibility of carpet damage. Advise any service provider involved (e.g. carpet cleaning service or disposal service) of the nature of the spilled material. Provide the MSDS and other material information prior to their contact to the material. Provide material disposal requirements and cleaning solutions if the material is uncured.

Tools that may be contaminated with the material should be cleaned prior to reuse. Recommended solvents such as IPA are normally required to clean tools. A final wash with soap and water will remove any excess of print material.

### VisiJet FTX Material Handling

Upon receipt of the part material shipment, inspect the carton for signs of physical damage and evidence of leakage on the exterior. If leakage is observed, do not open carton; immediately contact 3D Systems’ Customer Support Hotline. If leakage is not present, store materials in their material kits until they are ready to use. Materials should be kept indoors in a cool, dry area with adequate ventilation with temperatures between 16°C (60°F) and 27 °C (80°F). DO NOT EXCEED A MAXIMUM STORAGE TEMPERATURE OF 35°C (95°F).

Keep materials away from direct sunlight, heat, flames and other direct light or UV energy sources. For optimal results, keep stored cartons closed and sealed until the cartridge is ready for use. Authorized 3D Systems VisiJet FTX Green Material should only be used in the printer.

## VisiJet FTX Material Safety

**Training:** New users should be trained in the hazards and management of materials. Such training should be provided before they begin working with the printer or disposal of material waste.

Once the print material has completed its printing cycle, the print needs to be removed, cleaned and cured, rendering it safe to handle. When print material is uncured- meaning in a paste or wet form, do not touch uncured print material directly without protective gloves. If uncured material is observed, ensure the safe handling of uncured print material.

**Flammability and Combustibility:** Do not expose print material to heat (at or above 110°C/ 230°F), flames, sparks, or any source of ignition. (Though the U.S. Department of Transportation does not consider this material a “flammability hazard,” they do classify it as combustible based on their flash points.) For more information on VisiJet® Material flash points and combustibility, see the VisiJet® Material MSDS/SDS packaged with the material cartridge.

**Health Hazards:** Any chemical may exert harmful effects if it enters or contacts the body in sufficient quantities. Uncured material is a sensitizer, and can cause allergic reactions if it comes in contact with the skin. Always wear chemically resistant protective gloves, nitrile or neoprene gloves are recommended. DO NOT use latex gloves. Consult the MSDS for specific information about the sensitization potential.

Sensitization dermatitis is the result of an allergic reaction to a given substance. In some cases, direct skin contact is necessary to cause sensitization. It is possible for individuals to become sensitized to a substance even after a trouble-free period of exposure. Many factors affect a person's susceptibility including: existing skin conditions, personal habits, and individual sensitivity. Even slight exposure can sometimes trigger a severe outbreak of dermatitis. Since sensitization is permanent, a sensitized individual should avoid further contact with the sensitizing agent.

**Inhalation:** Under normal operation, inhalation is not an expected exposure method. To ensure personal safety, uncured print material should not be present where food and drink are stored, prepared or consumed. As a precaution, after handling material, wash hands with soap and water before handling food. Finished parts (cured) can be handled or disposed of in the same manner as standard household plastic products. These parts are not recyclable.

**Exposure Control:** The printer has a variety of built-in safety features that are designed to prevent operator exposure. Do not try to change or disable these features.

**Personal Protective Equipment and Skin Protection:** Exposure to uncured material may occur when removing and disposing spent print cartridges. To prevent contact, wear chemically resistant protective gloves - nitrile or neoprene gloves are recommended. Wear safety glasses with side shields to provide eye protection in the event of a leak or spill of uncured print material.

**Respiratory Protection:** Because of the printer's built in controls, respiratory protection is not necessary during normal operation. The status screen in the client software will prompt the user to change the printer's air filters at prescribed times. Individual use may vary depending on the run time of the modeler. A NIOSH-approved (or equivalent) dust mask is recommended when dry sanding cured parts.

## VisiJet® FTX Material Usage

The VisiJet FTX Material batch number and date code is indicated on the material kit label. For best results, please use materials by the date indicated. Before removing cartridge from its protective poly bag, and before loading it in to the printer, inspect the cartridge for signs of leakage or physical damage. Do not load cartridge that is leaking or is damaged. Dispose of it according to your local regulations.

## ULTRAVIOLET (UV) SAFETY

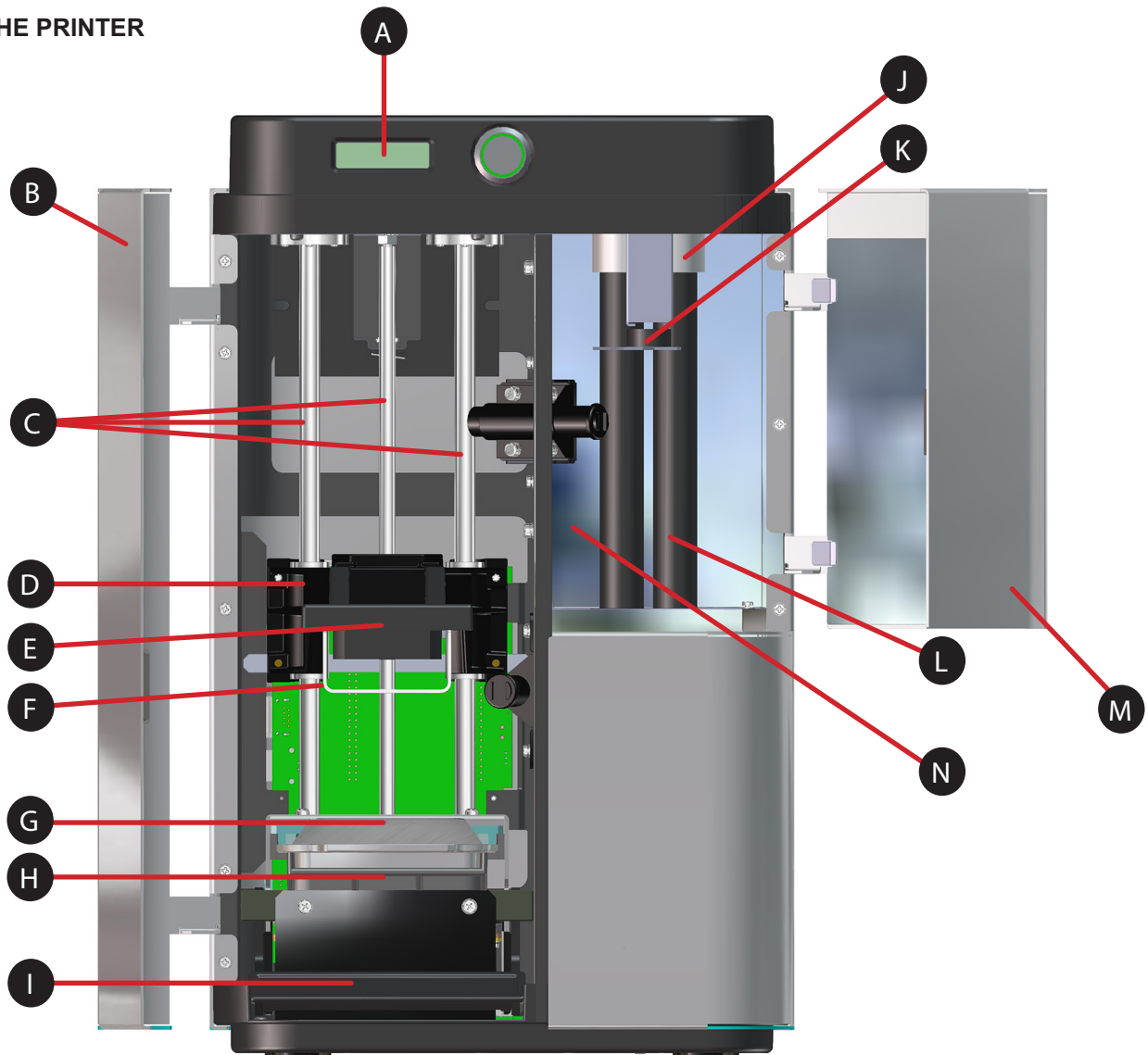


### CAUTION: Ultraviolet (UV) Safety

- In normal operation, the ultraviolet (UV) light is completely confined, so users are not exposed to potentially harmful emitted radiation.
- UV light from the printer could cause personal injury. Use recommended protective eye wear which blocks the UV light. It is recommended to never purposely stare directly into the printer during operation.
- To prevent eye injury, do not open the door when the ultraviolet (UV) light is activated. When the door are closed, it keeps UV radiation from escaping.
- Pay attention and follow the warnings contained in this guide concerning operation and printer's maintenance procedures.
- If the door is opened during operation, use the recommended protective eye wear which blocks the UV light.
- Hazardous voltage exists inside the electrical module. Injury or death from electrical shock can result if system's electrical box covers are removed. When installing replacement modules, ensure power is off before removing panels.

### 3 AT-A-GLANCE

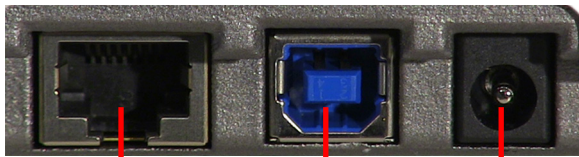
#### ABOUT THE PRINTER



- |                                     |   |
|-------------------------------------|---|
| <b>A</b> LCD Display                | <b>H</b> Print Cartridge Support        |
| <b>B</b> Print Door                 | <b>I</b> Material Cartridge Clamp Lever |
| <b>C</b> Elevator Guide Rods        | <b>J</b> UV Curing Bulb Socket          |
| <b>D</b> Elevator                   | <b>K</b> Curing Chamber Carousel        |
| <b>E</b> Print Platform Clamp Lever | <b>L</b> UV Curing Bulb                 |
| <b>F</b> Print Platform             | <b>M</b> Curing Chamber Door            |
| <b>G</b> Material Cartridge Clamp   | <b>N</b> Curing Chamber                 |



## CONNECTIONS



A

B

C

- A Ethernet
- B USB
- C Power Input

## 4 SPECIFICATIONS AND REQUIREMENTS

### SPECIFICATIONS

#### Printer

##### ProJet® 1200

Net Build Volume (xyz)	43 x 27 x 150 mm (1.69 x 1.06 x 7.086 in)
Native Resolution (xy)	56 micron (effective 585 dpi*)
Layer Thickness	0.03 mm (0.0012 in)
Vertical Build Speed up to	14 mm/hour (0.55 in/hour)
Material	VisiJet® FTX Green, Gray, Cast, Silver, Gold, Clear
Material Packaging	All-in-one cartridge with built-in print window
Post-processing	Built-in UV Curing Station
	-Easy Installer
	-Network Connection
Software	-Windows®-based OS
	-Automatic and optimized supports
File Input	STL
Electrical Requirements	100-220V 50/60 Hz
Network Ready	

\* Enhanced LED DLP technology provides an effective resolution of 585 DPI.

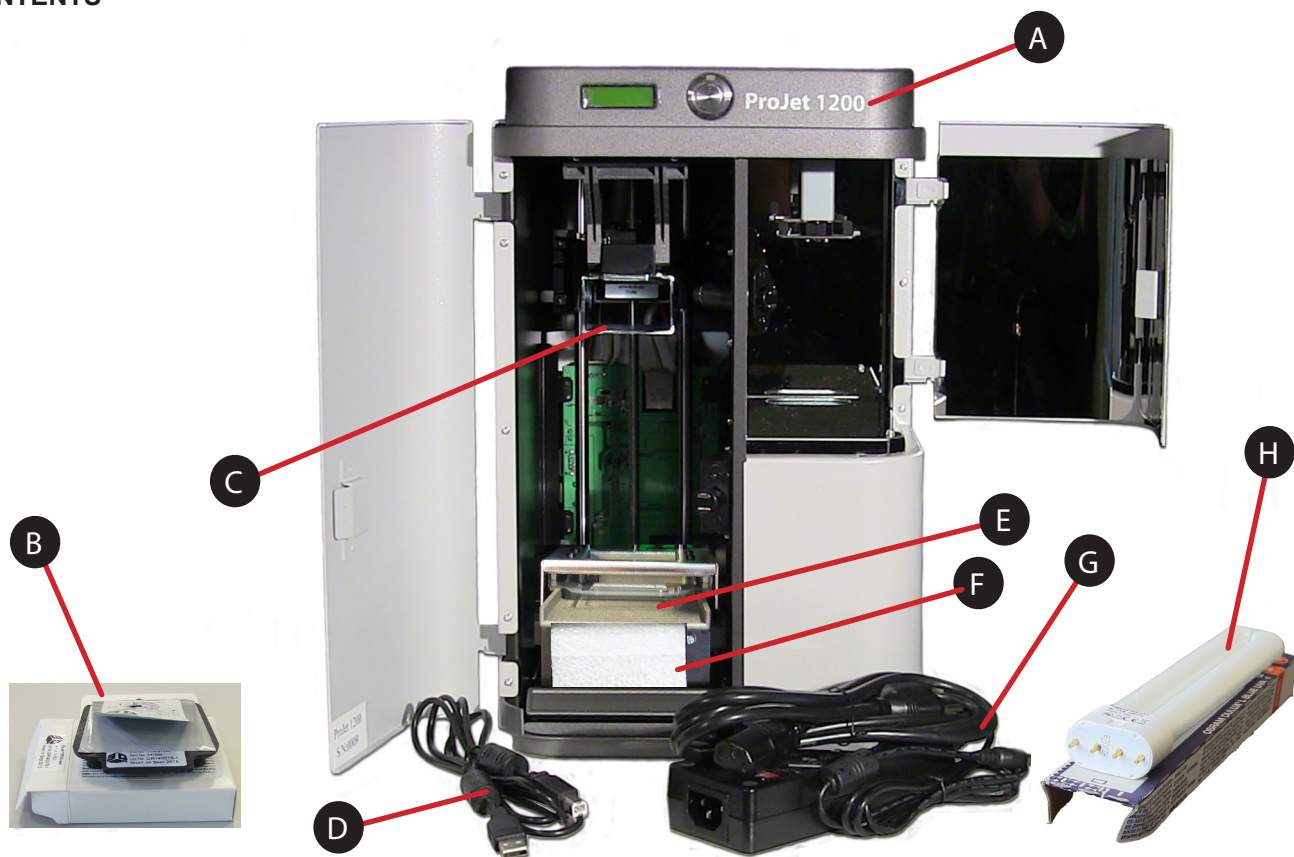
#### Material Cartridge

##### VisiJet FTX® Material

Properties	Condition	Values	Values	Values	Values	Values	Values
Name		VisiJet FTX® Green	VisiJet FTX® Cast	VisiJet FTX® Gray	VisiJet FTX® Clear	VisiJet FTX® Silver	VisiJet FTX® Gold
Composition		UV Curable Plastic	UV Curable Plastic with Wax	UV Curable Plastic	UV Curable Plastic	UV Curable Plastic with Metallic Flakes	UV Curable Plastic with Metallic Flakes
Color		Dark Green	Light Green	Gray	Clear	Metallic Silver	Metallic Gold
Cartridge Qty.		30g	30g	30g	30g	30g	30g
Density (liquid)		1.04 g/cm³	1.01 g/cm³	1.12 g/cm³	1.1 g/cm³	1.16 g/cm³	1.16 g/cm³
Tensile Strength, MPa	ASTM D638	22	2.2	28	24	16	16
Tensile Modulus, MPa	ASTM D638	845	154	1288	1075	701	866
Elongation at Break, %	ASTM D638	8.80%	2.20%	6.20%	13.50%	11.70%	5.70%
Flexural Strength, MPa	ASTM D638	36	3	38	31	22	18
Ash Content		0.01%	0.008%	N/A	N/A	N/A	N/A
Description		Wax-up castable	Easy to Cast	Primer Gray general purpose	Transparent Tough	Wearable Metallic	Wearable Metallic

## 5 UNPACKING AND SETTING UP YOUR PROJET 1200

### CONTENTS



A ProJet 1200

B VisiJet® FTX Green Consumable Cartridge

C Build Platform

D USB Cable

E Plastic Insert

F Foam Insert

G Power Supply

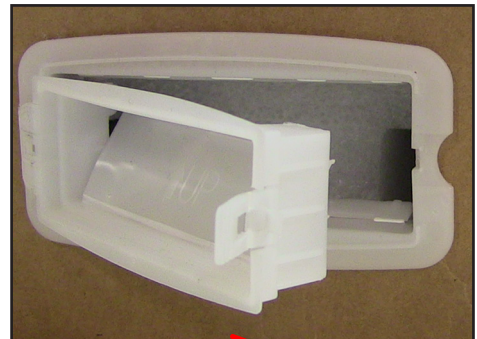
H Curing Bulb

## UNPACKING THE PROJET 1200



**CAUTION:** Ensure that you save all foam and packing material for the future repacking of your ProJet 1200. Shipping the printer without original packing materials may cause damage to the printer.

1. Pull the grip handle tabs (A).

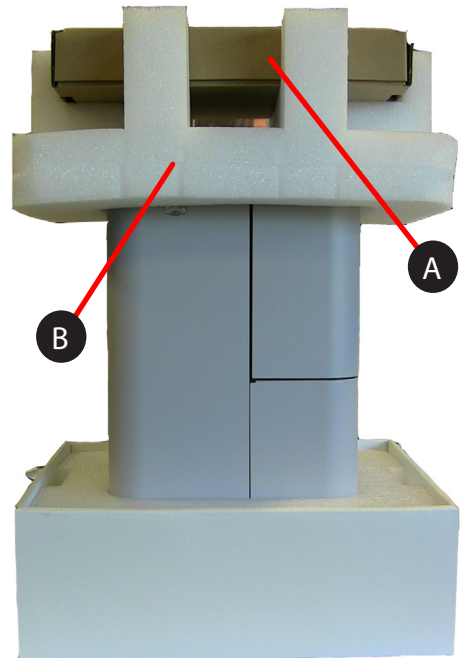


2. Remove the grip handles from the box.



3. Lift the outer box off the printer.

4. Remove the peripherals box (A) and the upper foam insert (B).



5. Carefully remove the printer from the lower boxed foam support and place it on a solid, level base where it will be used.



**CAUTION:** Do not install the printer near direct sunlight. If the material cartridge is exposed to direct sunlight, the resin will begin to cure.



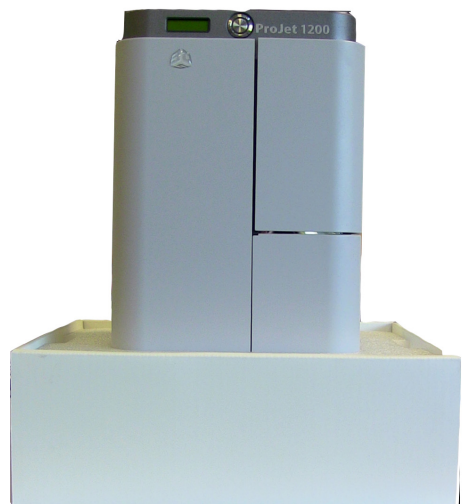
**NOTE:** There should be a utility power outlet and an active network port nearby.



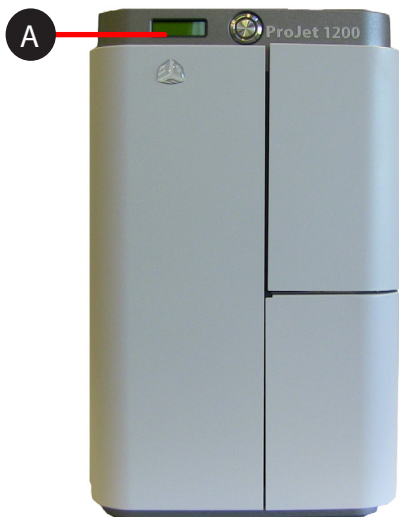
**NOTE:** There should be a minimum of 6"/152 mm air space between the back of the printer and any other object.



**NOTE:** There should be at least 10"/254 mm air space on either side of the printer.



6. Remove the protective film (A) covering the display.



7. Open the peripherals box and remove the USB cable (A), country specific power cord (B), print platform (C), curing bulb (D), power supply (E) and material cartridge (F).



**NOTE: Keep the material cartridge away from direct light. UV light will begin to cure the print resin in the cartridge and render it useless.**



8. Open the print door and remove the plastic insert (A) from the material cartridge support.

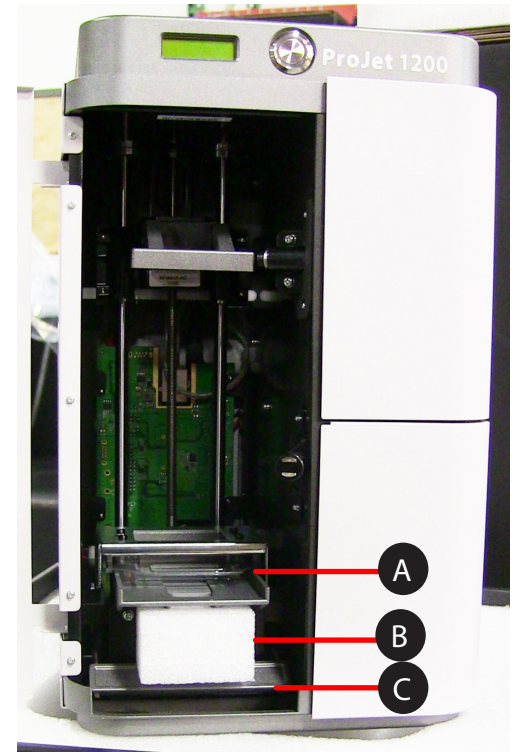


**NOTE: If necessary, lift the print material cartridge clamp lever (C) to gain more clearance.**

9. Remove the foam insert (B) from inbetween the material cartridge support and the clamp lever (C).



**NOTE: When installing the UV curing bulb, ensure the plastic insert is reinserted in the material cartridge clamp. The plastic insert is designed to protect the glass pane in the material cartridge support.**





## PRINTER SETUP

### Installing the Curing Bulb

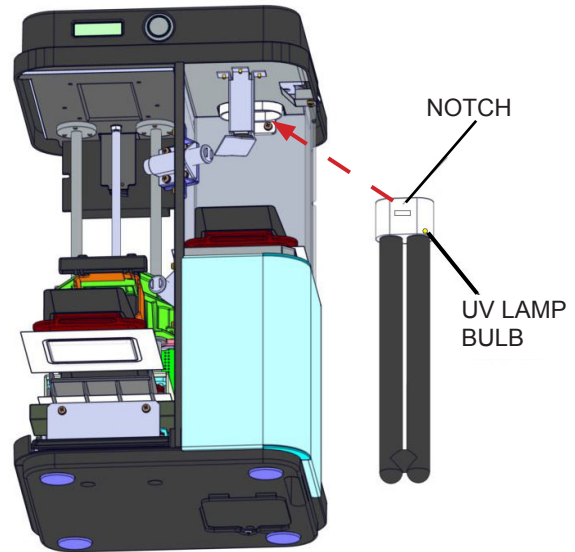


**CAUTION:** Do not touch the curing bulb. Keep the protective sleeve on the bulb until after the bulb has been installed.

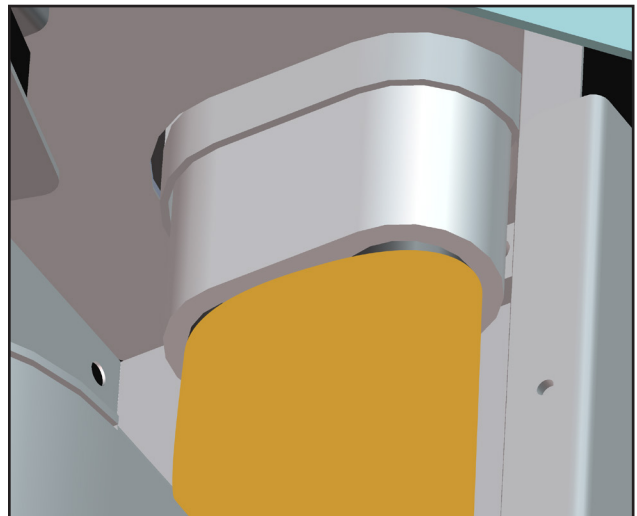


**CAUTION:** Exercise caution when installing the bulb. If the printer is rotated to its side or upside down, the glass plane under the material cartridge support assembly may dislodge or become damaged. It is strongly recommended that the packing foam is inserted into the material cartridge support and then the cartridge clamp secured with the material cartridge clamp lever.

1. Open the curing door.
2. Hold the Curing Bulb with tissue paper or paper towel, with notch facing up.
3. Insert end of bulb down in hole and bulb base up into socket ensuring it locks into place.



4. Carefully press the bulb base into the socket and ensure the connection is secure.



## Installing the Material Cartridge



**CAUTION:** For best results, do not expose the material cartridge to excessive light. Light will begin to cure the material causing it to harden prior to printing.

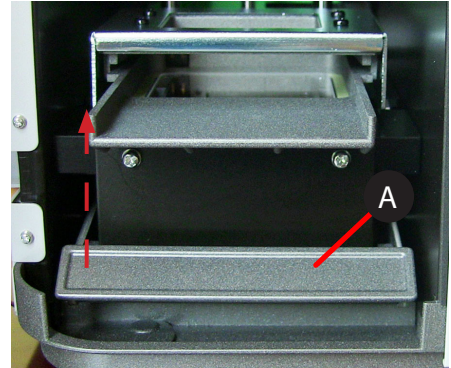


Always wear protective gloves when installing or replacing a material cartridge.

1. Lift the material cartridge clamp lever (A) up to raise the cartridge clamp.



**NOTE:** When removing cartridge from foil bag look in bag to ensure there is no resin inside bag. If resin is present do not insert cartridge in the machine. Contact your reseller for a cartridge exchange.



2. Before inserting a new cartridge into machine, be sure to take the alcohol wipe supplied with the new cartridge and completely wipe off the entire cartridge holder as shown.



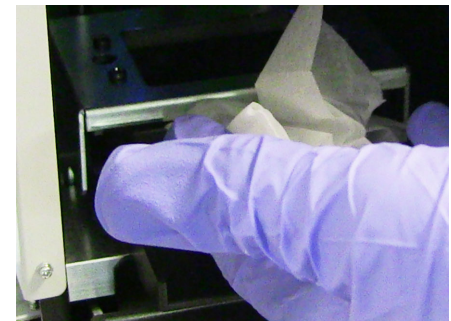
**CAUTION:** Failing to wipe away any residual material from the cartridge holder can contaminate any future builds and glass surface.



**NOTE:** Always wear nitrile gloves when wiping off cartridge holder to ensure no material gets on skin.



**NOTE:** Before opening FTX Gray, Silver, and Gold cartridges, hold the cartridge securely and shake firmly but carefully for about 30 seconds to mix the contents.



3. Check material cartridge to ensure tab is folded over and facing the front of machine, if not, fold over now.
4. Insert the material cartridge into the material cartridge support and then under the material cartridge clamp.



**NOTE:** The material cartridge will set into a pocket on top of the glass pane.



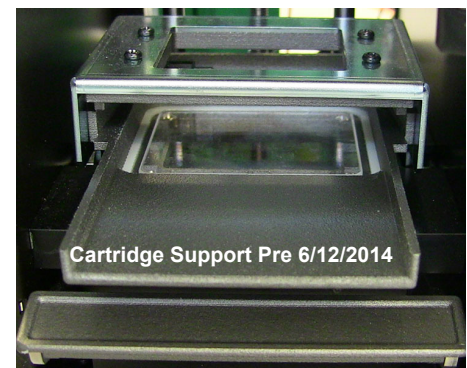
**CAUTION:** If a leak/spill occurs do not run the machine. UV curing will harden it on the window glass and that will make it very hard to remove. A long cleaning swab and isopropyl alcohol will help clean up any spilled resin.



**CAUTION:** It is very important that the cartridge be seated correctly in the pocket or else a leak can be created in the cartridge which may damage the system.



**NOTE:** For machines that were manufactured before 6/12/14 Glass Frame Assembly will look like photo at right.







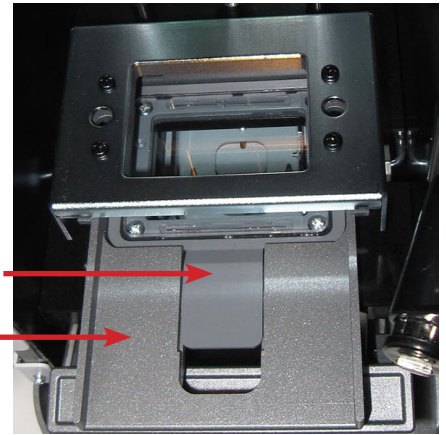
**NOTE:** For machines that were manufactured after 6/12/14 Glass Frame Assembly will look like photo at right.



**NOTE:** To remove this new Glass Frame Assembly from the Cartridge Support insert finger in hole of support and pull the glass frame assembly out.

Glass Frame Assembly Post 6/12/2014

Cartridge Support Post 6/12/2014



5. Rotate the material cartridge clamp lever (B) down to lower the cartridge clamp (A).



**NOTE:** Ensure the clamp is locked. If the clamp requires a lot of pressure to lock, check that the cartridge is seated properly in the pocket.



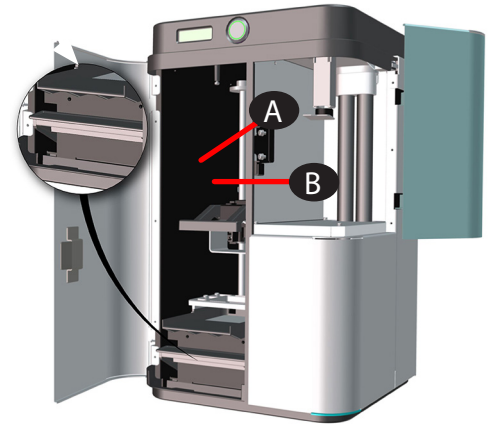
**NOTE:** For FTX Gray, Silver, and Gold, while cartridge is in use regularly check to see if the material has separated. If the color of the parts starts to change or the material begins to separate, put on nitrile gloves, lift the cartridge clamp and gently lift and slide the cartridge out to rest on the ledge of the cartridge support. While holding the cartridge tab with one hand, gently stir the material with a gloved finger, be careful not to scratch or dent the cartridge film or spill material onto the sides or top of the cartridge. When material appears homogeneous, carefully remove the stirring finger to avoid dripping material and slide the cartridge back into the cartridge support. Make sure the cartridge sets securely into the pocket and push down the clamp to lock in place.



**NOTE:** It is advised to only put a cartridge in the machine and clamp it once. Repeating clamping can break the seal between the film and the cartridge. Use special care when replacing cartridge after stirring procedure to ensure the seal remains intact.



**NOTE:** When the cartridge is successfully installed, the LCD screen will display the material type contained in the cartridge. This will eliminate the need to select Check Cartridge.

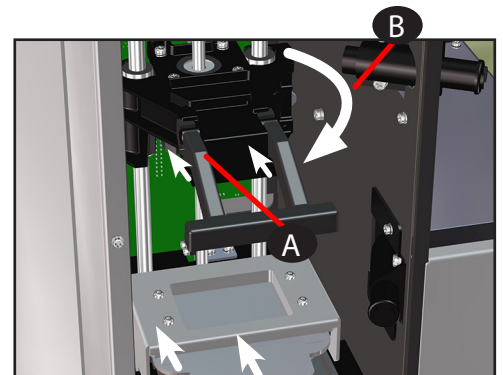


## Installing the Print Platform

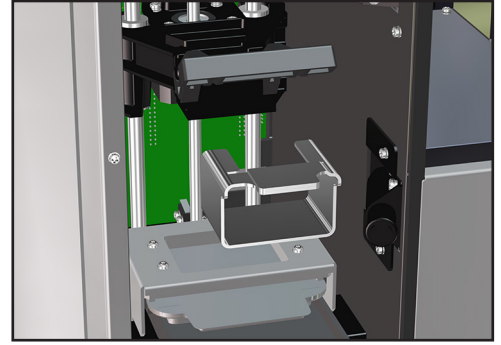


Always wear protective gloves when handling the print platform.

1. Rotate the print platform clamp lever upward.



2. Insert the print platform under the clamp lever until it is seated (A).
3. Rotate the print platform clamp lever down to lock the print platform (B).



## 6 SYSTEM REQUIREMENTS

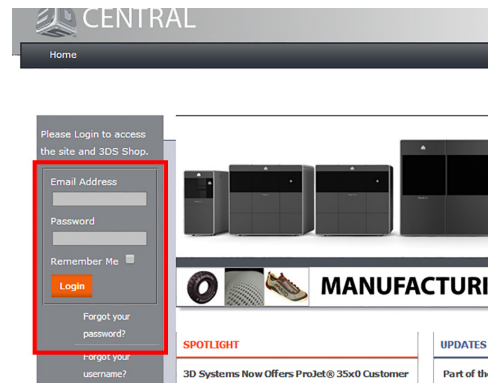
	Minimum	Recommended
OS	<ul style="list-style-type: none"> <li>- Windows 7 (32-bit or 64-bit)</li> <li>- Windows 8 (32-bit or 64-bit)</li> </ul>	
CPU	<ul style="list-style-type: none"> <li>- Intel® or AMD® processor with a minimum of 2.0GHz</li> </ul>	<ul style="list-style-type: none"> <li>- Multiple core processor.</li> <li>- Hyper-threading and clock speeds above 3GHz can be beneficial but should be paired with a good balance of cores.</li> </ul>
RAM	<ul style="list-style-type: none"> <li>- 4 GB</li> </ul>	<ul style="list-style-type: none"> <li>- 8 GB or more</li> <li>- Virtual Memory in Win 7 and Win 8 it is recommended to use the default option; "Automatically manage paging file size for all drives"</li> </ul>
HARD DISK	<ul style="list-style-type: none"> <li>-400MB of available hard-disk space for installation; additional free space is required during installation.</li> <li>- Temporary file cache requires about 3 GB free disk space for every 100 million points</li> </ul>	<ul style="list-style-type: none"> <li>-SSD or 10,000RPM HDD</li> </ul>
GPU		-Nvidia or AMD GPU with 1GB of RAM or more.
OTHER	<ul style="list-style-type: none"> <li>- 3 button mouse with scroll</li> <li>- Keyboard</li> <li>- Internet connection and network card</li> <li>- Microsoft .NET Framework 4.0</li> </ul>	

## POLYGON MESH

File Extension	File Format	Features
.stl	binary STL	Import, Export parts
.ctl	CTL	Import, Export parts

## Create Account

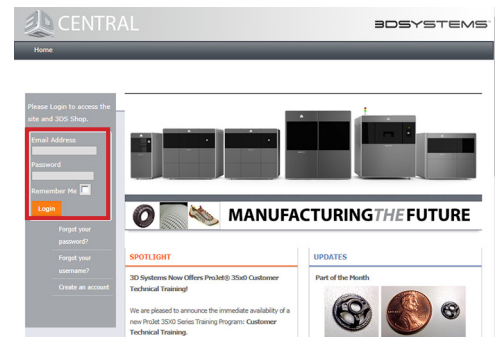
Type <https://3dscentral.3dsystems.com> in your browser. You will need to create an account (your email will be used as the User ID) and choose an easy to remember password. Your printers serial number appears on the backside of the machine. After registration an email will be sent to you with a link to the 3D Systems 3DS Central login page.



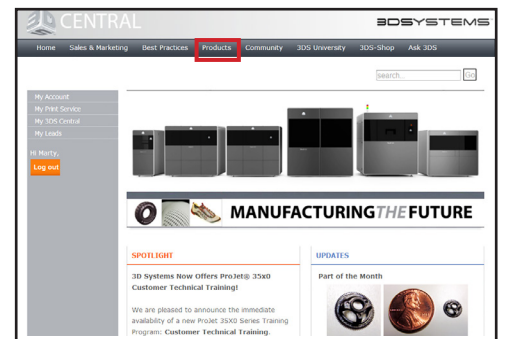
## Installing the ProJet 1200 Software

3DS Central is the location where you can access user manuals, installation guides, service procedures, software and firmware information. You must create an account to gain access to these resources.

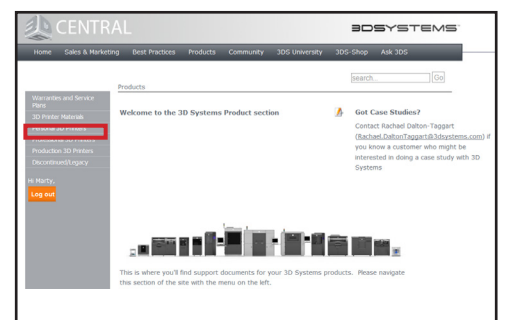
1. Go to <https://3dscentral.3dsystems.com> and enter your name and password.



2. Select **Products**.



3. Select **Professional 3D Printers** from the left navigation bar.



4. Select **ProJet 1200** from the dropdown menu.



5. Download the application software by selecting the filename under the software header.



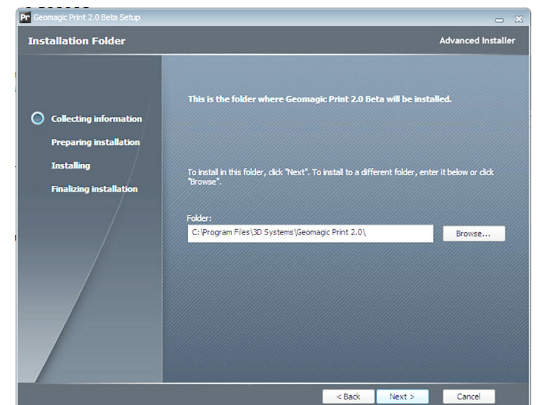
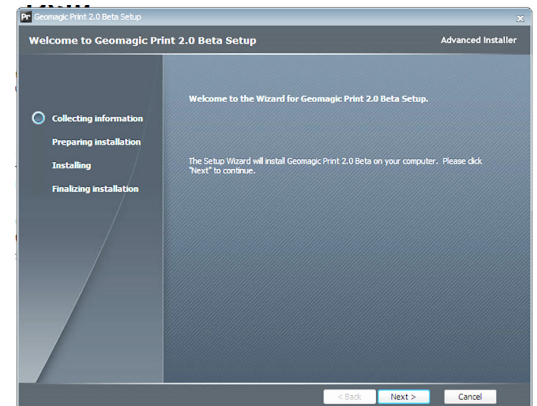
**NOTE:** A window may open asking if you want to open or save the zipped file. Select your preferred option.



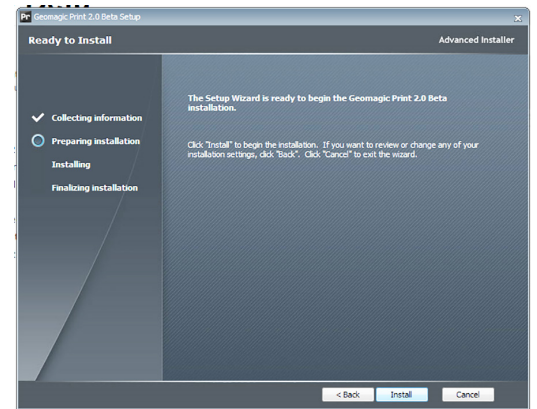
6. Double-click file that was just downloaded to begin installing software.

## Install Application

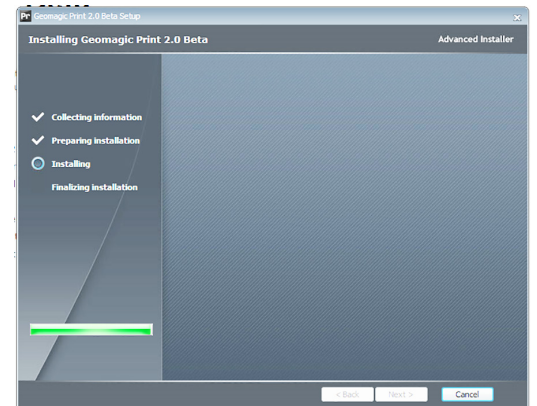
1. Open the downloaded installer.
2. The first screen to appear in the download process is **Calculating Information** screen.
3. Select **Next**
4. This screen will allow user to select the path for the information to be stored.
  - a. If the default path is sufficient, select **Next**.
  - b. If user wishes to select somewhere else, select **Browse** and navigate to the selected path, select **Next**.



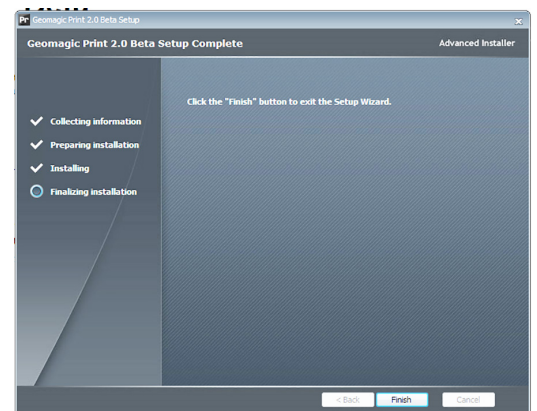
5. The **Preparing Installation** screen is next. Select **Install** when this screen appears.



6. The Installation screen appears with a status bar at the bottom of the left pane displaying the status of the installation. When bar is completing green, the next screen will appear.



7. The last step in the process is when the **Finalizing Installation** screen appears, at this point select **Finish**.
8. Installation is now complete.



## Help Tab

The Check for Updates command is found under the Help Tab. This command checks for updates for both Geomagic Print and current printer's firmware.



**NOTE:** This command must be run using an Administrator account.

## How to Use

### Checking for Updates

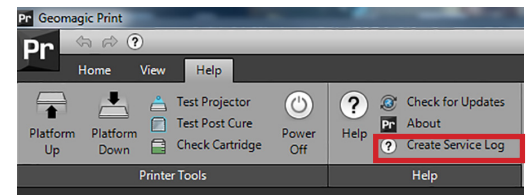
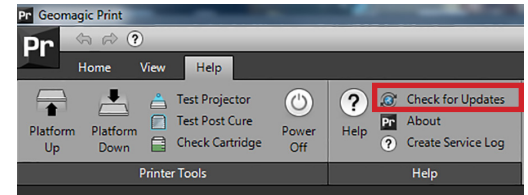
1. On the Help tab, in the Help Group, click Check for Updates.
2. A dialog will appear showing available updates.
3. Choose available updates to install and click Update.



**NOTE:** It is recommended to keep printer firmware updated to avoid compatibility issues.

### Create Service Log

1. On the Help tab, in the Help Group, click Create Service Log.
2. Use this function when submitting a service request to your reseller. It will capture key information needed to troubleshoot problems.





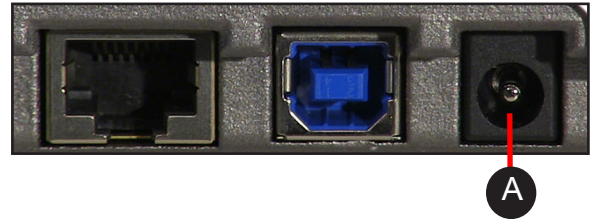
## Connecting The Printer

The printer is network-ready and easily connected.

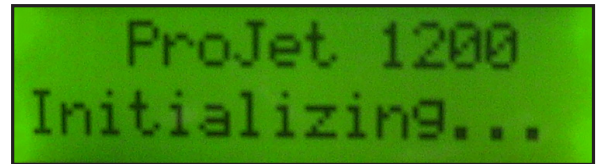
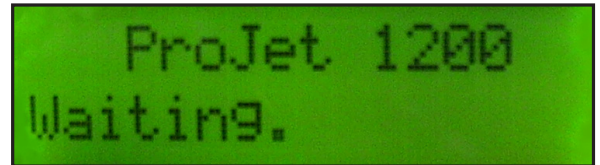
1. Connect the A/C power cord to utility power and then connect the power supply to the power inlet (A) on the printer.



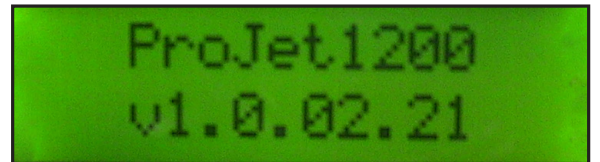
**WARNING: DO NOT PLUG IN USB CABLE AT THIS TIME. ONLY PLUG IN USB CABLE AFTER DRIVERS ARE LOADED AND MACHINE IS BOOTED, SEE USB INSTRUCTIONS IN FOLLOWING SECTION.**



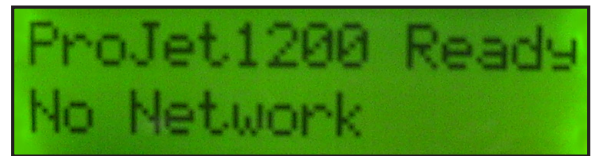
**NOTE:** After connecting the printer to utility power, a series of screens will appear as the printer boots up.



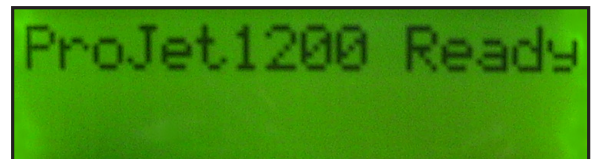
**NOTE:** This screen shows the firmware version number.



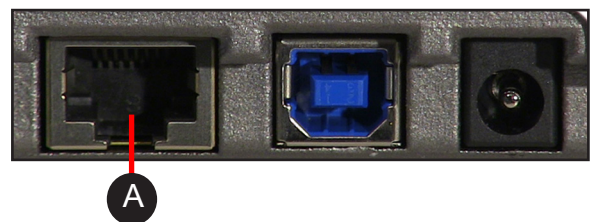
**NOTE:** This screen indicates that it is not connected to a network.



**NOTE:** This screen shows that the printer has completed the boot process and is ready to connect to a network.



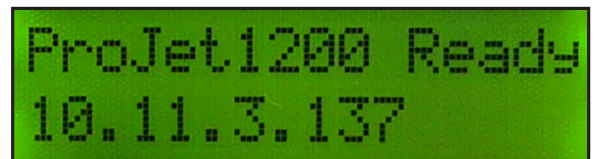
2. If connecting to a network, connect the printer Ethernet port (A) to the network with an Ethernet cable. If connecting printer via USB connection see [CONNECTING PRINTER USING USB CONNECTION](#) below.



**NOTE:** Once the printer is connected to the network, the IP address will appear.



**NOTE:** If no IP address displays this could be because your company is on a sub net. Contact your IT Administrator for the IP Address.

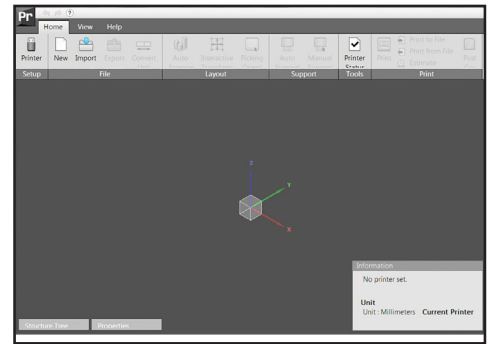



## Connecting Printer Using a USB Connection

Follow Step 1 above, when LCD display shows **ProJet 1200 Ready** connect machine via USB cable and wait while machine installs all the necessary drivers for that particular printer on your computer. (This will take a couple of minutes).

Once updates are complete, and printer is connected, display will show the **Printer Ready No Network**.

1. Open the ProJet 1200 application. Double-click the **ProJet 1200** icon that was placed on your desktop during the software installation.



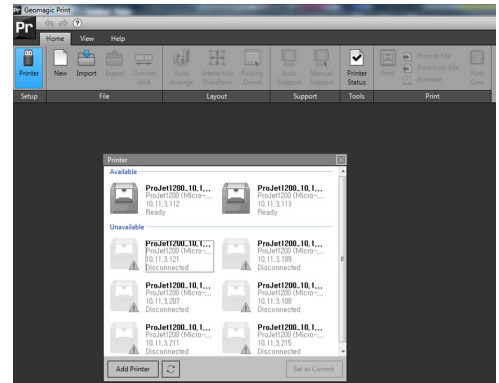
2. Select Printer icon  from Home Tab.
3. A list of available printers will pop up. Select the printer you wish to connect to and click **Next**.



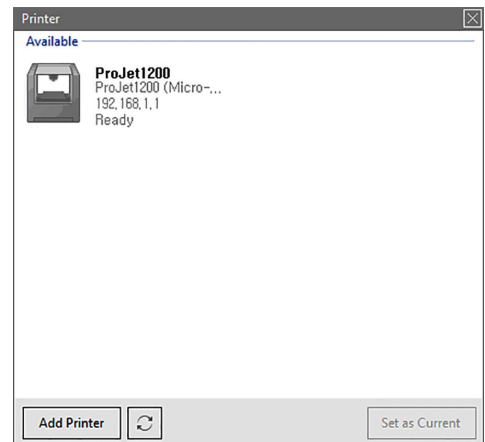
**NOTE:** If desired printer is not on the list, you can type the IP address in the **Enter IP address directly** area and select **Validate**.



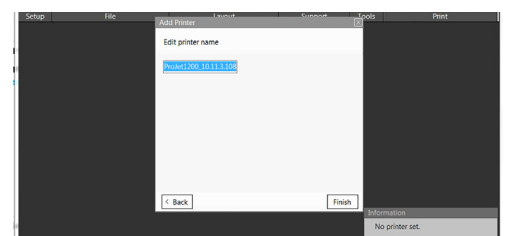
**NOTE:** Your company might be on a sub net. If this is the case, contact your IT Administrator to find the IP address.



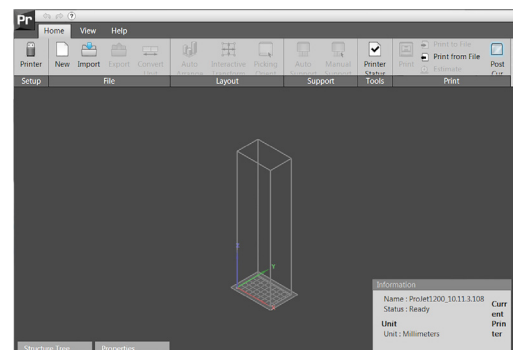
4. Select the name of the printer from the list and select **Set as Current**.



5. A screen will pop up that will allow you to change the printer name. This is useful if you have multiple printers and you want something to identify them, such as **printer\_room202** might be the name you choose. If you don't want to change the name leave it alone and select **Finish**. If you wish to change it, type in the new name and select **Finish**.



6. When printer has been connected there should be an **Information** window showing the basic printer information.





- Test the connection by selecting **Test Post Cure** from the **Help** Tab..



**NOTE: The curing chamber carousel should rotate if the printer is connected. The curing door must be shut to perform this operation.**

## Activating Printer

Printer must first be activated before you can add it. You will know if the printer needs to be activated if you go to add it and a dialog box pops up. (1)

- Fill in all the fields and select **Next**.



**NOTE: An internet connection is required to activate the printer.**

- The printer will now be activated through the 3DSSystems activation server.
- Enter a name for the printer. Click **Next**.
- Choose the printer and click **Set As Current** (this will set the printer as current).
- The printer is now ready to use.

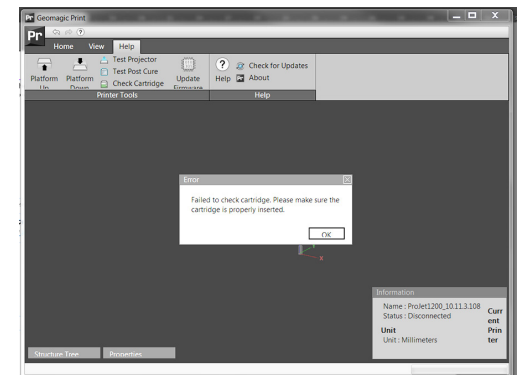
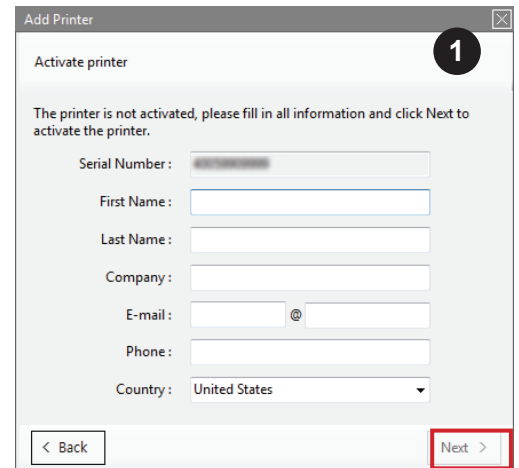
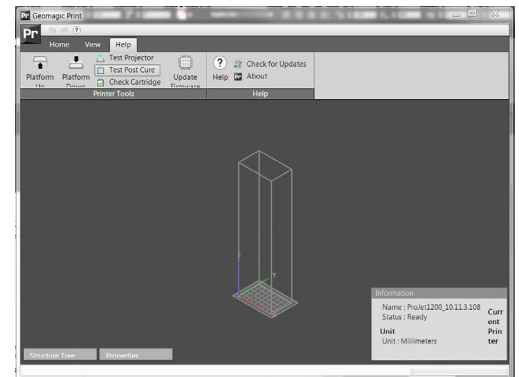
## Test Material Cartridge

Before removing label from material cartridge, test to ensure cartridge is inserted properly.

- Select Check Cartridge from the Help tab.
- If cartridge is not inserted properly an error will occur.
- If cartridge is okay, a window will pop up letting user know how much material is left in cartridge. When new it will say 100%.
- Once cartridge is determined to be okay, you can carefully pull back the label.



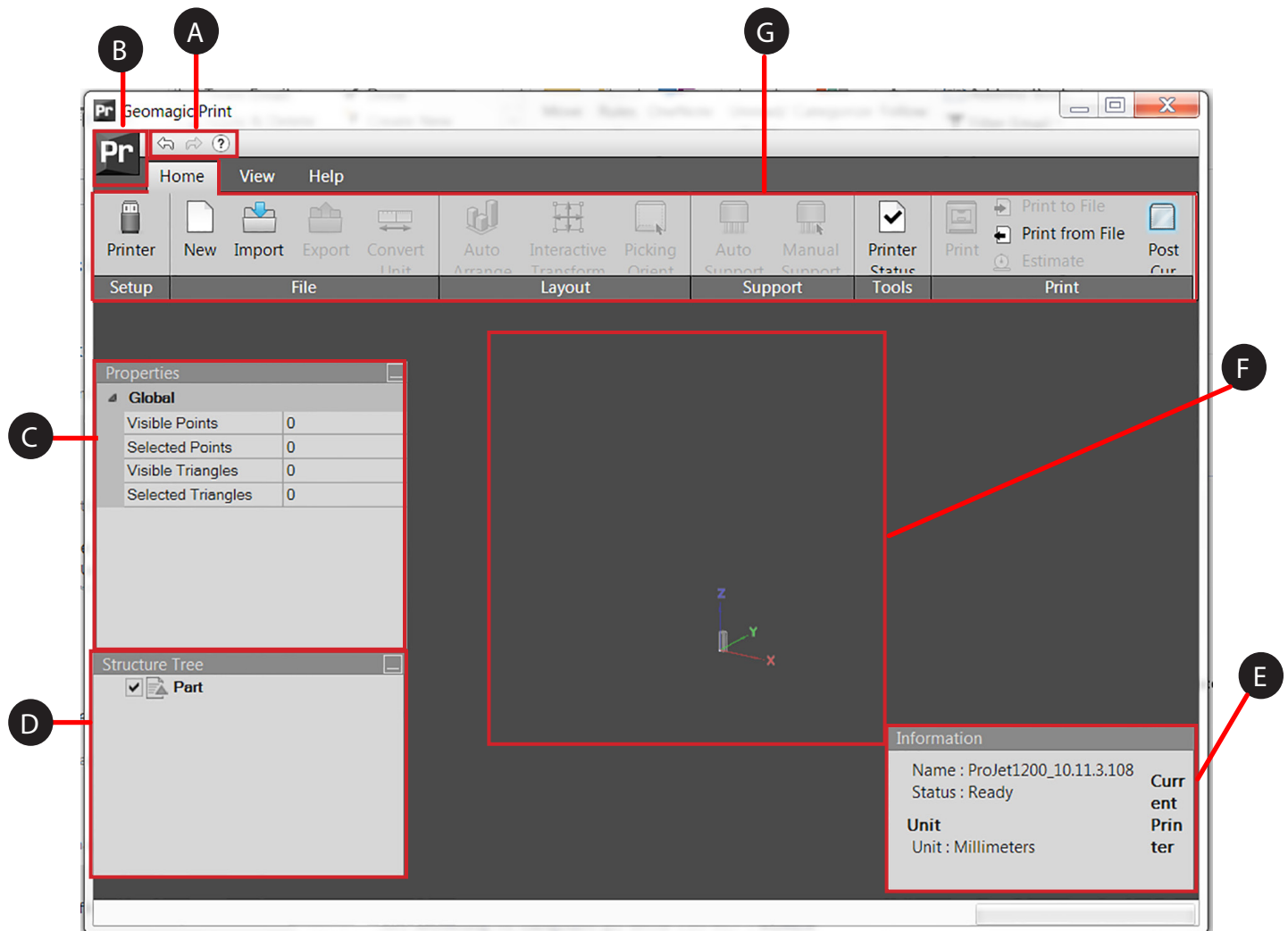
**NOTE: Do not move the machine with the cartridge inside once it is opened.**



## 7 OPERATING THE PRINTER

Application overview.

### SOFTWARE OVERVIEW



A Quick Access Toolbar

B Main Menu

C Properties

D Structure Tree

E Printer and Unit Information

F Print Area

G Ribbon

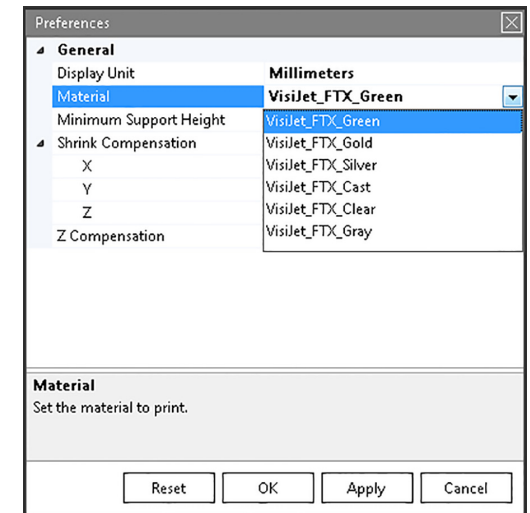
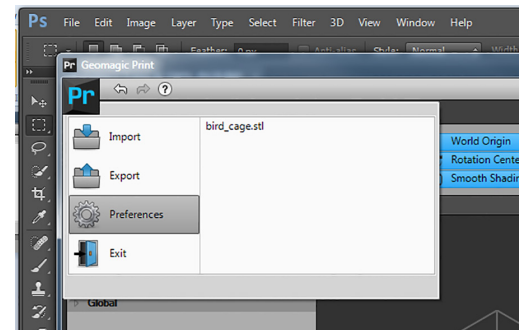
The ProJet 1200 can import .stl and .cti file formats.

1. Click 
2. Select **Preferences**

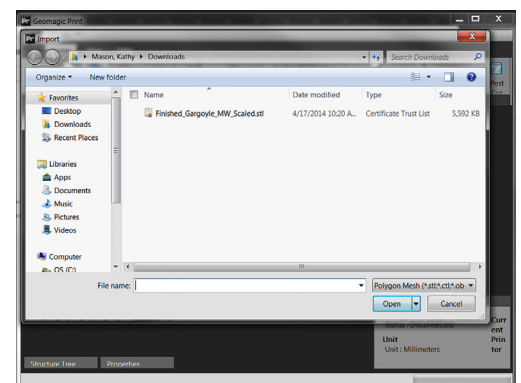
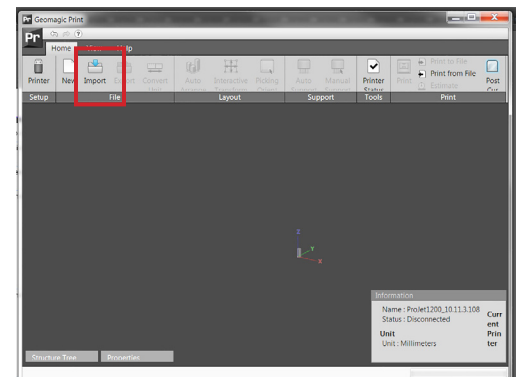
3. Select desired material from drop down menu.
4. Click **Apply**.



**NOTE:** For assistance in selecting which material works best for your application see the [FTX Material](#) chart under [Section 4 Specifications and Requirements](#).



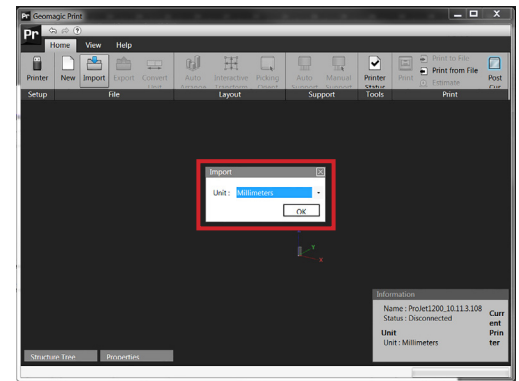
1. Click **Import**, on the Home tab.
2. Select the file you want to import.



3. Select the units of CAD file when opening the part.



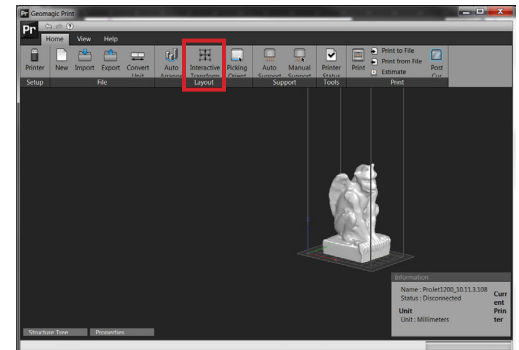
**NOTE:** When the file opens up, it may appear larger or smaller than expected. This can be because of incorrect unit assigned to it. Use the Convert Unit command to quickly convert from inch to mm or mm to inch.



## Transform Parts

Parts may be scaled manually by:

1. Select **Interactive Transform**  from the **Home** Tab.
2. Select the part.



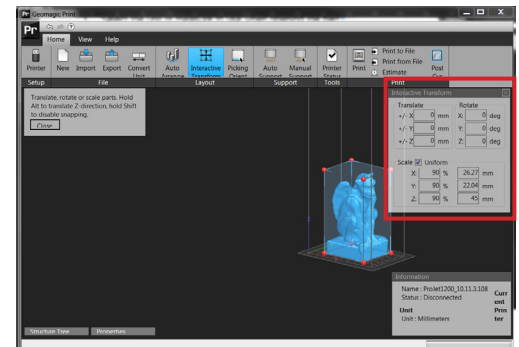
3. In the **Interactive Transform** panel, enter **90%** in the X field in the Scale group. Make sure the Uniform option is checked, press **return**.



**NOTE:** A part can also be scaled using the red handles on the boundary of the part in the view. It will snap to each 10 percent increase or decrease, hold Shift to disable snapping.



**NOTE:** If the Uniform option is unchecked the part can be scaled in each direction separately, scaling this way can distort the part model.



## Arrange Parts

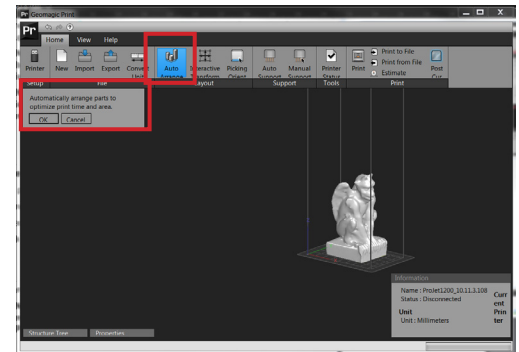
Arrange parts on the printing platform by:

### Auto Arrange


1. Select **Auto Arrange**  from the Home tab.
2. Click **OK**.

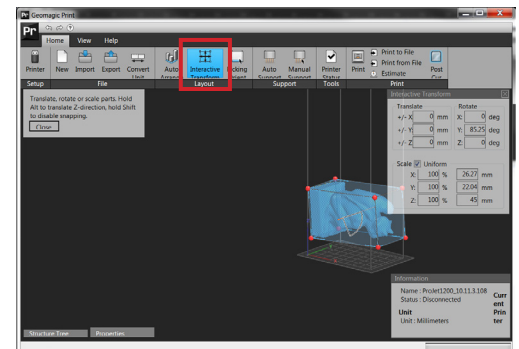


**NOTE:** The part will be placed in the center of the printing platform, the part will also be placed in the vertical offset specified in the Preferences. This offset is applied in order to fit support between the part and the printing platform.



### Manual Arrange


1. Select **Interactive Transform**  from the **Home** tab.
2. Select the part
3. Hover the mouse over top of the boundaries so that a vertical rotation axis appears.
4. Rotate the part so it aligns with the X-axis.



## Generating and Editing Supports

All builds need to have supports generated and edited.


### Generate Supports

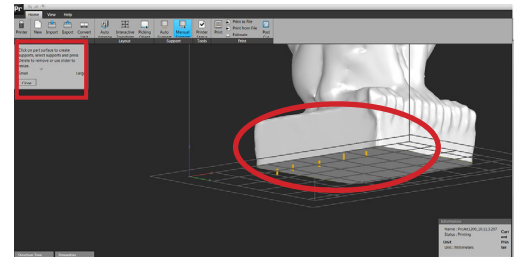
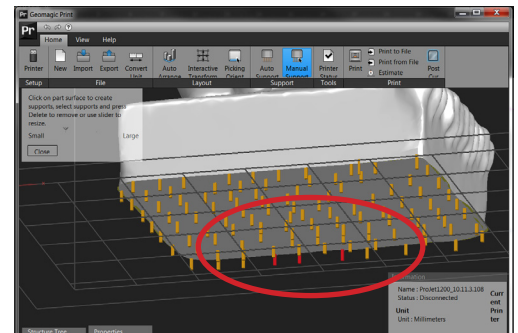
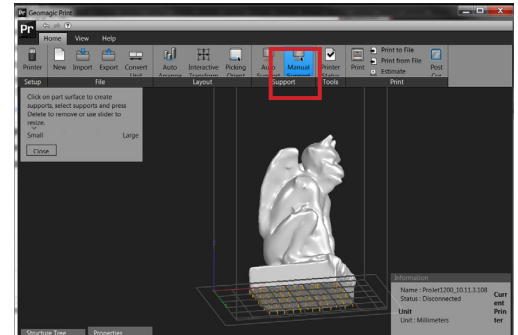
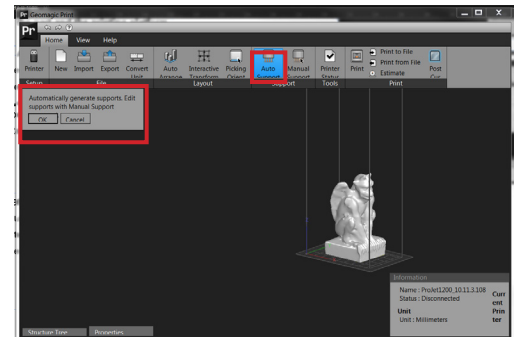
1. Select **Auto Support**  from the **Home** tab.
2. Click **OK**.
3. Status window will pop up indicating supports are being added.



**NOTE: Support can also be created manually using the Manual Support command.**


### Edit Supports

1. Select **Manual Support**  from the **Home** Tab
2. Rotate the view below the platform using **Right-Click+Drag**.
3. Select misplaced supports at the edge and press **Delete** to remove them.
4. Create supports manually by selecting **Manual Support** from Home tab.
5. Selecting size for support and clicking on the solid surface that support is needed.
6. Close the command by clicking on **Manual Support**.



## Sending the Job to Print

If all steps are taken and the file is set up as desired, it is ready to send to the printer.

1. Click **Print**  on the **Home** tab.
2. Select **Printer** from the drop-down menu.
3. Select **Print**.



**NOTE:** If you want to rebuild a print that was sent directly to the printer you can find the build file under \My Documents\3D Systems\Geomagic Print.

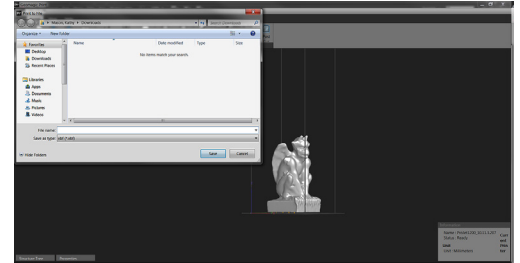
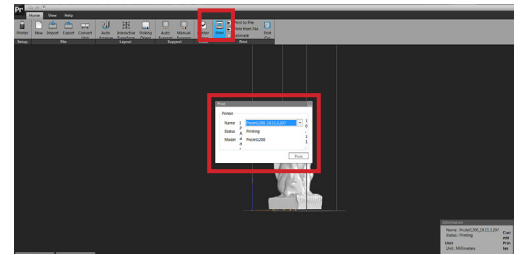
## Print to File

The print can also be saved as a file.

1. Click **Print to File** on the **Home** tab.
2. Select location and file name and click **Save**.




**NOTE:** Before you print a part ensure the proper material type has been selected from the preferences section. If you try to submit a print job and the material does not match, an error will be shown. You will be asked to change the material type in the preferences section, or you will be asked to change the material in the machine.



## 8 FEATURES OF GEOMAGIC PRINT

### PART MANIPULATION

#### Scale Part

1. On the **Home** tab, click **Interactive Transform** .
2. Select the part.
3. In the **Interactive Transform** panel, enter desired percentage in the X field in the **Scale** group, ensure the **Uniform** option is checked.



**NOTE:** You may want to start at **90%** and work from there until part is at the desired scale.




**NOTE:** A part can also be scaled using the red handles on the boundary of the part in the view. It will snap to each 10 percent increase or decrease, hold **Shift** to disable snapping.

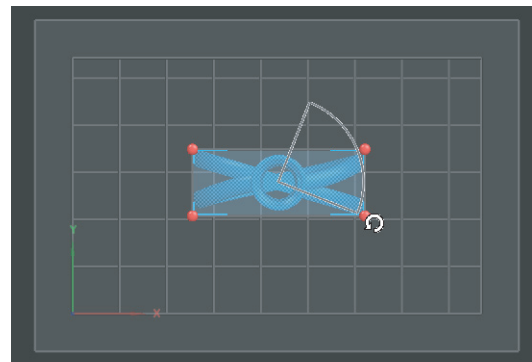
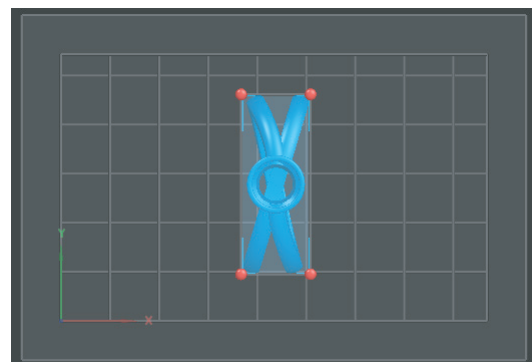


**NOTE:** If the **Uniform** option is unchecked the part can be scaled in each direction separately, in that way distort the part model.

#### Manual Orient


1. On the **Home** tab, click **Interactive Transform** .
2. Select the part.

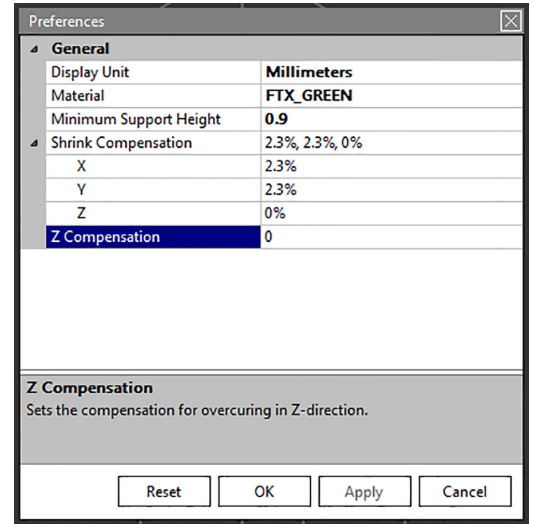
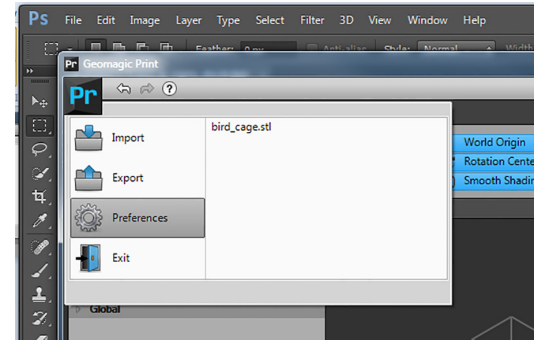
3. Hover the mouse over the top boundaries so that a vertical rotation axis appears.
  4. Rotate the part so that it aligns with the X-axis.
- Now the part is properly arranged in the printing platform.



## Changing Z Compensation

“Z-compensation is a function that reduces error in the z-dimension of 3D-printed parts. All default z-compensation values for the ProJet1200 materials are set to 0. With 0 z-compensation, builds for all materials are acceptable per 3D Systems requirements. To turn on z-compensation, enter a number in the range suggested in the table below for each material. If z-compensation is too high, the parts may have holes and fine features may disappear. Find the z-compensation value that works best for your application by gradually increasing the value from 0 in one build at a time until your parts are within your required tolerance in the z-dimension. This may take a few test builds to get just right.

1. Click 
2. Select **Preferences**
3. Highlight **Z Compensation** and Change Value.
4. Select **Apply**.



Use this chart to help in determining amount of Z-compensation you will need to use when building parts.

### Z-Compensation Chart

Material	Number of Layers to use for Z-compensation (to obtain distance, multiply by 0.030mm)	Value in mm to insert into the Preferences window
Green	9	Range: 0 to 0.27mm
Cast	10	Range: 0 to 0.30mm
Gray	8	Range: 0 to 0.24mm
Clear	8	Range: 0 to 0.24mm
Silver	8	Range: 0 to 0.24mm
Gold	6	Range: 0 to 0.18mm



## REMOVE THE PART FROM THE PRINTER

After the part has been printed, it must be processed. Refer to the following steps to complete post processing of the part. You will need a towel to catch resin that may drip from the part as well as two containers of 70% alcohol large enough to completely submerge the part. It is important to limit the exposure of the material cartridge to light.



Always wear protective gloves during post process.

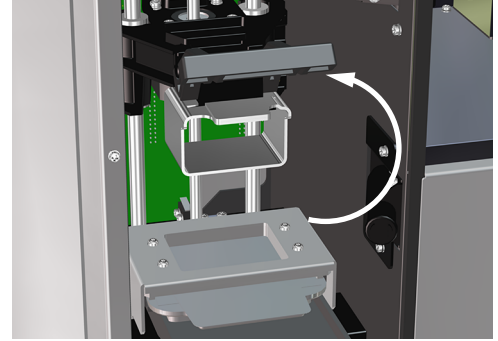


**CAUTION:** Always follow the precautions noted on the MSDS sheets for any chemical being used.

1. Place a towel under the part. Rotate the print platform clamp lever up enough to unlock the print platform.



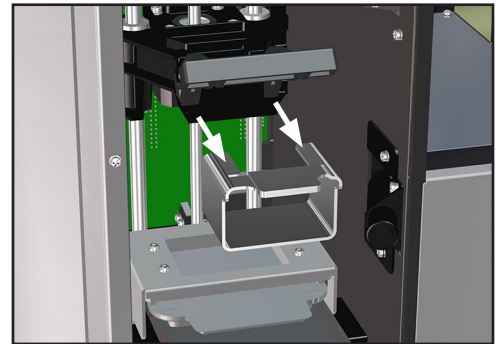
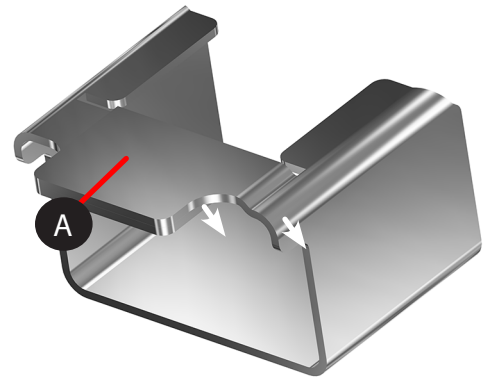
**NOTE:** Resin may drip from the part. The towel is used to collect dripping resin so that printer parts are not exposed to resin.



2. Pull the print platform handle (A) out from under the clamp.



**NOTE:** The part will hang down under the print platform.



## 9 POST PROCESSING PARTS

### CLEANING PARTS

The following equipment is needed for cleaning parts produced by the ProJet 1200.

Glass containers with lids

- 16 oz,
- 3.5 inch diameter opening (minimum)
- This size will hold parts that are “ring height”.

Digital timer

99% isopropyl alcohol (IPA), optionally you may use 70% IPA

Ultrasonic cleaner (Optional)

- Digital timer
- Volume: 28 liter (0.75 gal)
- Stainless steel Tank: 9 x 5 x 4 inch



**WARNING: 99% AND 70% ISOPROPYL ALCOHOL. FLAMMABLE LIQUID AND VAPOR. KEEP AWAY FROM HEAT, SPARK AND OPEN FLAMES. USE WITH ADEQUATE VENTILATION. STORE AT 68-86°F. DO NOT TAKE INTERNALLY. AVOID PROLONGED OR REPEATED BREATHING OF MIST OR VAPOR. CAUSES IRRITATION TO EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM. MAY BE HARMFUL IF ABSORBED THROUGH SKIN. MAY CAUSE IRRITATION TO SKIN.**



**Wear Gloves:** Always wear gloves when cleaning parts.

### Cleaning Parts by Manually Dipping

1. Mark glass containers as “Container 1” and “Container 2”
2. Place print platform into Container 1.
3. Add 99% IPA to Container 1. Use enough IPA to completely submerge the parts.
4. Using the print platform handle, continuously dip and remove the part into Container 1 for 60 seconds.
5. Remove parts from Container 1. Allow excess alcohol to drip from the parts for 30 seconds.
6. Place print platform into Container 2.
7. Add 99% IPA to Container 2. Use enough IPA to completely submerge the parts.
8. Using the print platform handle, continuously dip and remove the parts into Container 2 for 90 seconds.
9. Remove parts from Container 2. Allow excess alcohol to drip from the parts for 30 seconds.
10. Use clean compressed air (not over 30 psi), to dry the part.
11. Inspect the part closely to make certain no liquid resin remains. Pay particular attention to shiny areas. The part may appear shiny even if there is no liquid resin remaining. If you are unsure if liquid resin remains, it is best to repeat steps 8 through 10.

Make certain you replace the lids on Containers 1 and 2 when they are not in use.

Containers 1 and 2 can be used to clean 12 platforms before discarding and replacing the IPA.

## Cleaning Parts using an Ultrasonic Cleaner

1. Mark glass containers as "Container 1" and "Container 2"
2. Place print platform into Container 1.
3. Add 99% IPA to Container 1. Use enough IPA to completely submerge the parts.
4. Replace the lid onto Container 1.
5. With the ultrasonic cleaner switched off, place Container 1 into the ultrasonic cleaner.
6. Add water to the ultrasonic cleaner until the water level is approximately 6mm (1/4 inch) above the alcohol level in Container 1.
7. Switch the ultrasonic cleaner on for 60 seconds.
8. Switch ultrasonic cleaner off and remove Container 1 from the ultrasonic cleaner.
9. Remove parts from Container 1. Allow excess alcohol to drip from the parts for 30 seconds.
10. Place print platform into Container 2.
11. Add 99% IPA to Container 2. Use enough IPA to completely submerge the parts.
12. Replace the lid onto Container 2.
13. Place Container 2 into the ultrasonic cleaner. Make certain the water level is approximately 6mm (1/4 inch) above the alcohol level in Container 2.
14. Switch the ultrasonic cleaner on for 90 seconds.
15. Switch ultrasonic cleaner off and remove Container 2 from the ultrasonic cleaner.
16. Remove parts from Container 2. Allow excess alcohol to drip from the parts for 30 seconds.
17. Use clean compressed air (not over 30 psi), to dry the parts.
18. Inspect the part closely to make certain no liquid resin remains. Pay particular attention to shiny areas. The part may appear shiny even if there is no liquid resin remaining. If you are unsure if liquid resin remains, it is best to repeat steps 10 through 17.

Make certain you replace the lids on Containers 1 and 2 when they are not in use.

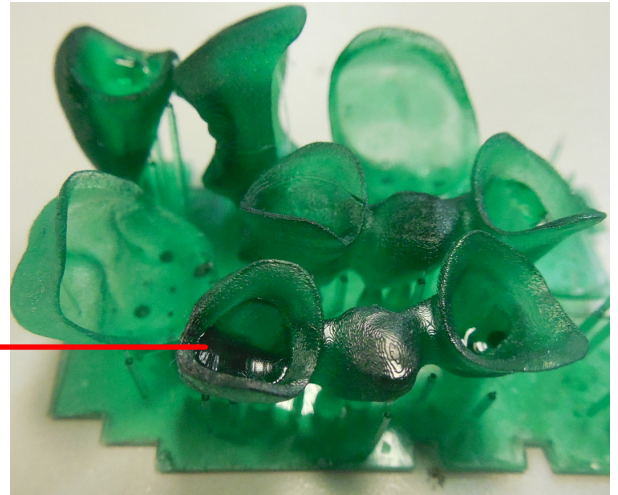
Containers 1 and 2 can be used to clean 12 platforms before discarding and replacing the IPA.



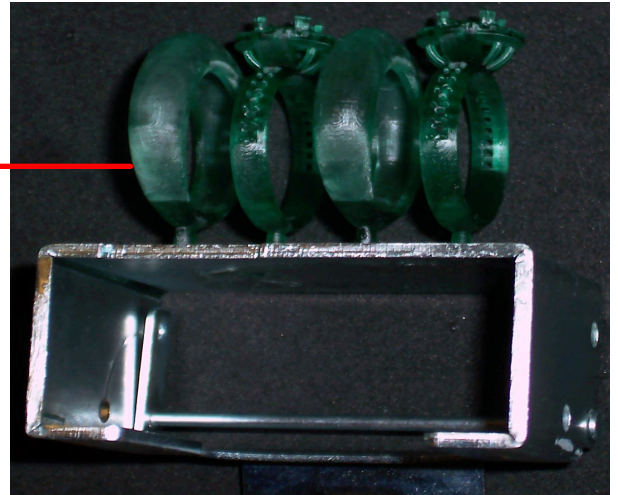
## Special Consideration when Cleaning Parts

When performing the cleaning procedures provided above, you may find that it is more difficult to remove the resin from certain parts or particular areas of a part. The geometry of the part or the orientation of the part on the platform may result in the following:

- The part may hold a large amount of liquid resin in a cavity



- An air bubble may be trapped preventing the isopropyl alcohol from contacting the part.



In these cases, change the orientation of the parts when cleaning. Rotate the print platform 90 or 180 degrees to release trapped air bubbles. This will also expose areas of the part which are saturated with liquid resin, allowing better exposure to the isopropyl alcohol.

## Changing the Isopropyl Alcohol in Containers 1 and 2

The isopropyl alcohol in Container 1 and Container 2 must be replaced after cleaning 12 platforms. The discarded alcohol is contaminated with uncured resin and is considered hazardous waste. The discarded alcohol must be stored and disposed of in accordance with all local, state and federal regulations.

## Cleaning Parts with 70% Isopropyl Alcohol

You may use 70% (as opposed to 99%) isopropyl alcohol to clean parts. Using 70% IPA requires the following minor modifications to the cleaning procedures:

- The cleaning times increase: 2 minutes in Container 1 and 90 seconds in Container 2.
- It is advised to dry parts gently using compressed air. (This will be quicker and more efficient than letting parts dry on their own.)



**NOTE: Be sure to wear nitrile gloves, lab coat, and safety glasses when drying parts with compressed air.**

- The isopropyl alcohol in Container 1 and Container 2 must be replaced after cleaning 6 platforms (or as frequently as required, this will vary depending on size of parts being cleaned).

The discarded alcohol is contaminated with uncured resin and is considered hazardous waste. The discarded alcohol must be stored and disposed of in accordance with all local, state and federal regulations.



**NOTE: FTX Clear parts may remain slightly tacky after IPA cleaning, after parts are cured this tackiness should disappear.**



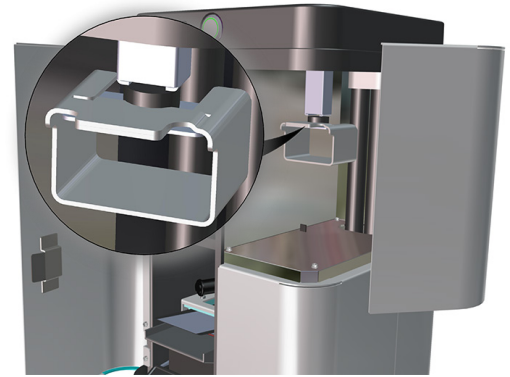
**NOTE: FTX Gray may need longer cleaning time in Container 1 (3-5 minutes) depending on the part size.**




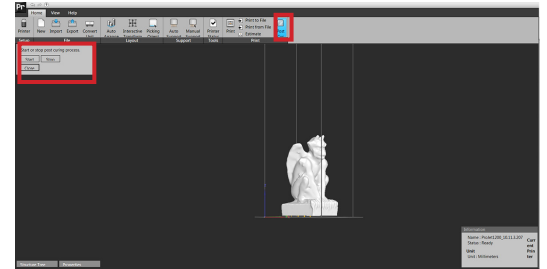
**CAUTION: Leaving parts in IPA for too long may cause warping or delamination (peeling) of the parts.**

## Cure and Post Process the Part

1. After the part is completely dry, insert the print platform onto the curing chamber carousel.
2. The curing chamber carousel has metal tabs on top that secure the print platform. Slide the print platform under the tabs.
3. Close and latch the curing chamber door.



4. Select **Post Cure**  from the **Home** tab.
5. A dialog box will pop up asking to **Stop** or **Start** the Post Cure process. Select **Start** and click **Close**.
6. Curing the part will take approximately 10 minutes. Do not open the curing chamber door until the curing process has been completed.



7. Once the part has been cured, remove the print platform from the curing chamber carousel.
8. Using a blade, carefully scrape the part off the print platform.
9. Use your fingers, remove the base from the part.
10. Use fine grit sandpaper to sand down the unwanted protrusions from the bottom of the part.
11. Apply Isopropyl alcohol to a soft cloth and gently clean the part.



**NOTE:** FTX Clear parts that remain tacky after curing may need to be cured for another cycle. Repeat curing cycle until parts are no longer tacky.



**NOTE:** For more intricate parts it may be necessary to remove part from platform and place part on bottom of curing chamber support side up and repeat curing cycle.



**NOTE:** FTX Cast parts may change colors during curing, this is normal and parts will gradually change back to original color after curing cycle is finished and parts are exposed to the air for a time.



**CAUTION:** Before building again or touching print platform with skin, cure the printing platforms to avoid contact with any uncured material from getting on skin or contaminating future builds.

## 10 USER MAINTENANCE

The following procedure are maintenance procedures that can be performed by the user. When performing the following procedures, the user must follow all safety precautions as described in the Safety section of this manual.

### REPLACING THE CURING BULB

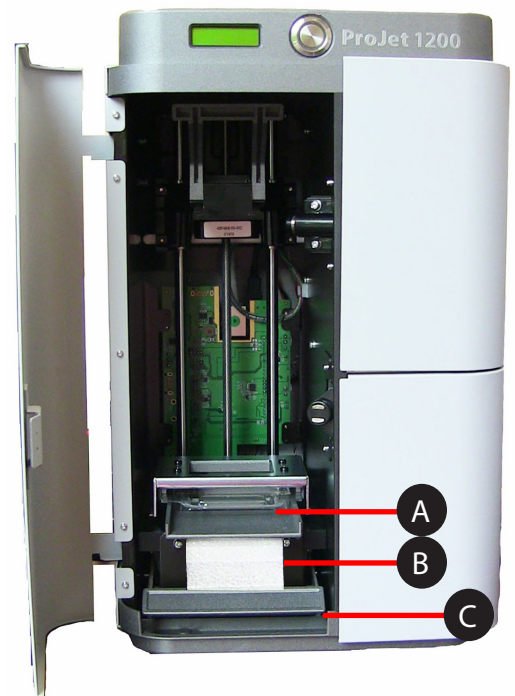


**CAUTION:** Do not touch the curing bulb. Keep the protective sleeve on the bulb until after the bulb has been installed.



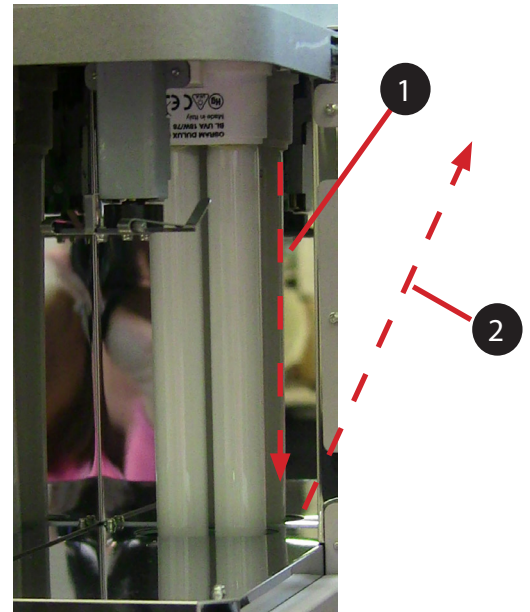
**CAUTION:** Exercise caution when installing the bulb. If the printer is rotated to its side or upside down, the glass plane under the material cartridge support assembly may dislodge or become damaged. It is strongly recommended that the packing foam is inserted into the material cartridge support and then the cartridge clamp secured with the material cartridge clamp lever.

1. Remove print platforms from the build chamber and curing chamber. Remove material cartridge from the printer.
2. Place the plastic insert (A) on the material cartridge support and place the foam insert (B) inbetween the cartridge support and clamp lever and lower the clamp lever (C) to secure it.



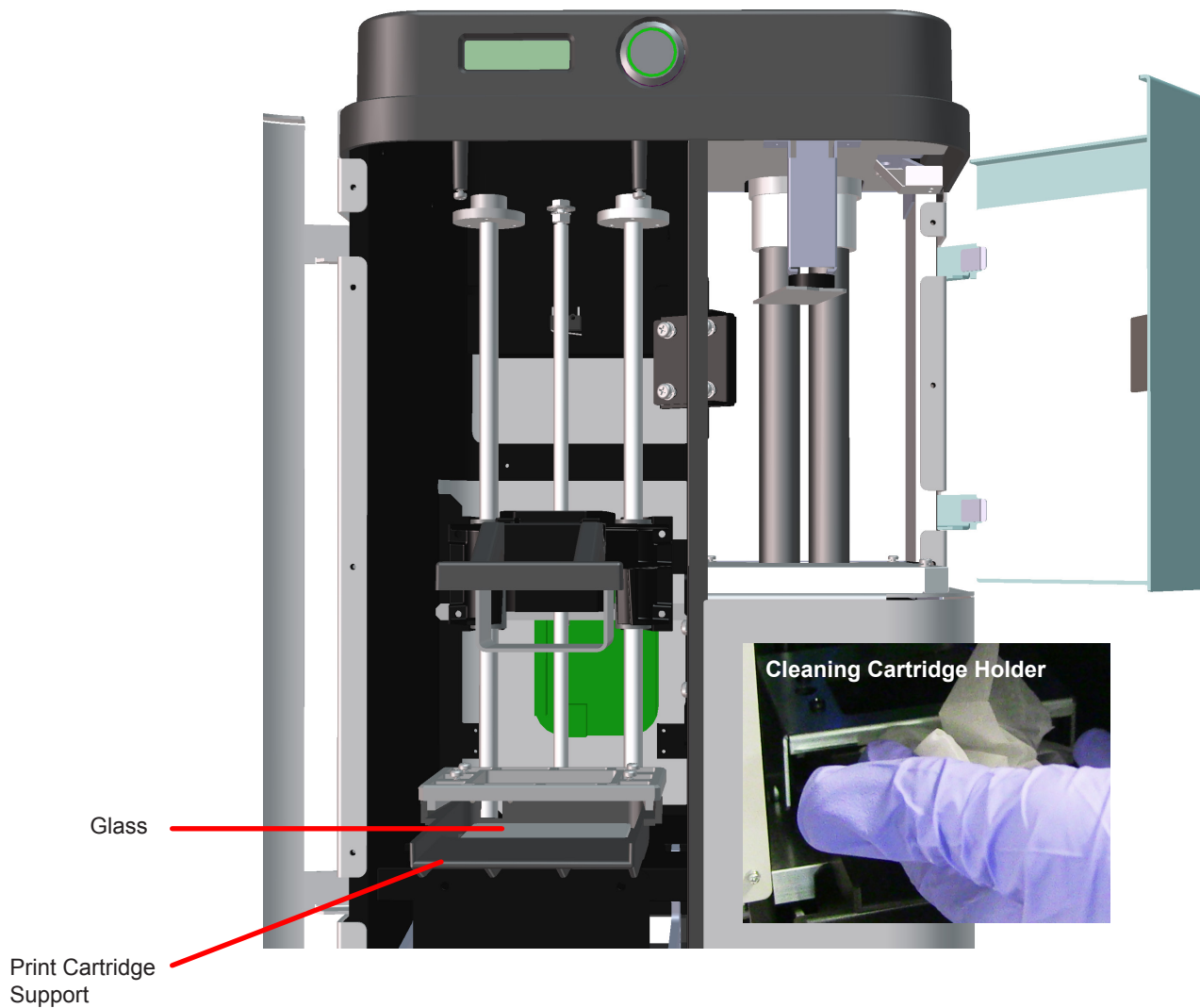


1. Holding on to the bulb with tissue or paper towel, gently pull bulb down out of socket (1).
2. After bulb is loose from socket, lift it out of the machine (2).
3. To replace the bulb, follow the procedure, **Installing the Curing Bulb** on page 14.



## CLEANING THE UNIT

The internal parts of the build and curing chamber can be wiped clean with 70% isopropyl alcohol and a soft, non-scratching cloth, (such as a microfiber). Make certain you inspect the glass that is a part of the print cartridge support. Remove the glass and clean any resin, fingerprints or any other debris which may have accumulated.





## 11 SERVICE AND SUPPORT

Should additional questions arise, contact your reseller either by phone or email:

## 12 REPACKING

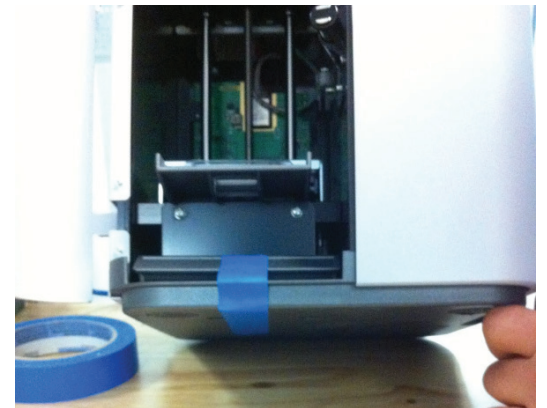
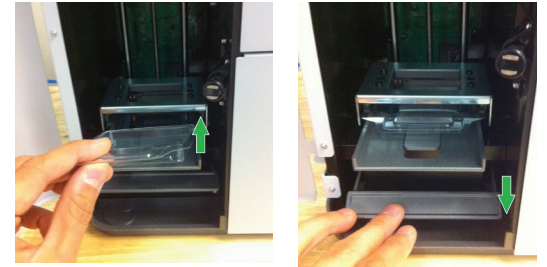
### REPACKING THE PROJET 1200

At some point the ProJet 1200 may need to be moved or sent back for servicing. It is important to keep all the original packaging to facilitate this process. Follow these steps to safely repack your ProJet 1200.

1. Disconnect all cords from the ProJet 1200.
2. Remove material cartridge as described on Page 15
3. If dummy cartridge was displaced during shipping, raise the cartridge lock lever to the up position (if not already up), slide the dummy cartridge in and place the cartridge lock lever to the down position.
4. Apply a ~6 inch piece of painter's tape (or any tape that does not leave a residue) starting from the cartridge lock lever to the bottom of the machine. Ensure the lever does not have any slack.



**NOTE:** Always wear nitrile gloves when installing or removing the material cartridge to ensure no material spills onto skin.



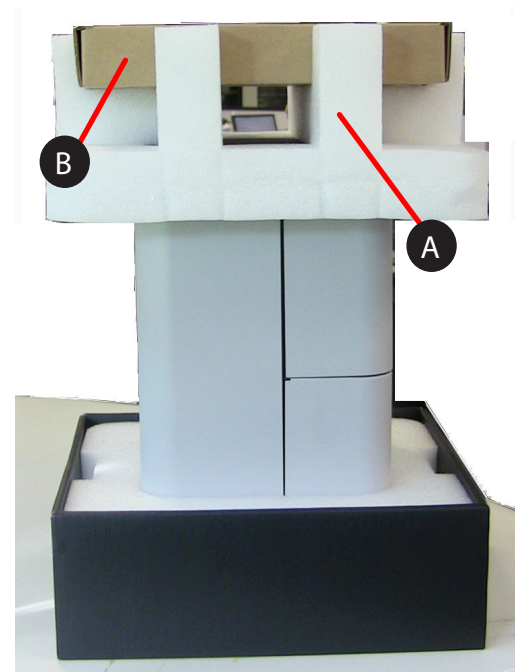
5. Place foam support piece that was taken out when machine was unpacked in place as shown.



6. Pack them back into the cardboard box that they came in.
7. Carefully place the printer in the lower boxed foam support.



8. Place the upper foam insert (A) on the top of the printer. Place the peripherals box (B) on top of the foam insert as shown.



9. Place original box over top of printer so it covers entire machine.
10. Insert plastic handles in holes on the sides of the box.



11. Press tabs (A) into side of plastic insert to secure handles to the box.





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