ProJet™ 1200

Professional 3D Printer

User Guide

Original Instructions

CONTENTS

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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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.

CE

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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.

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 Green 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 Green 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 returned to their original packaging to store for later use.

VisiJet FTX Green 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 Green 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 Green 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 Green Material Usage

The VisiJet FTX Green 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.
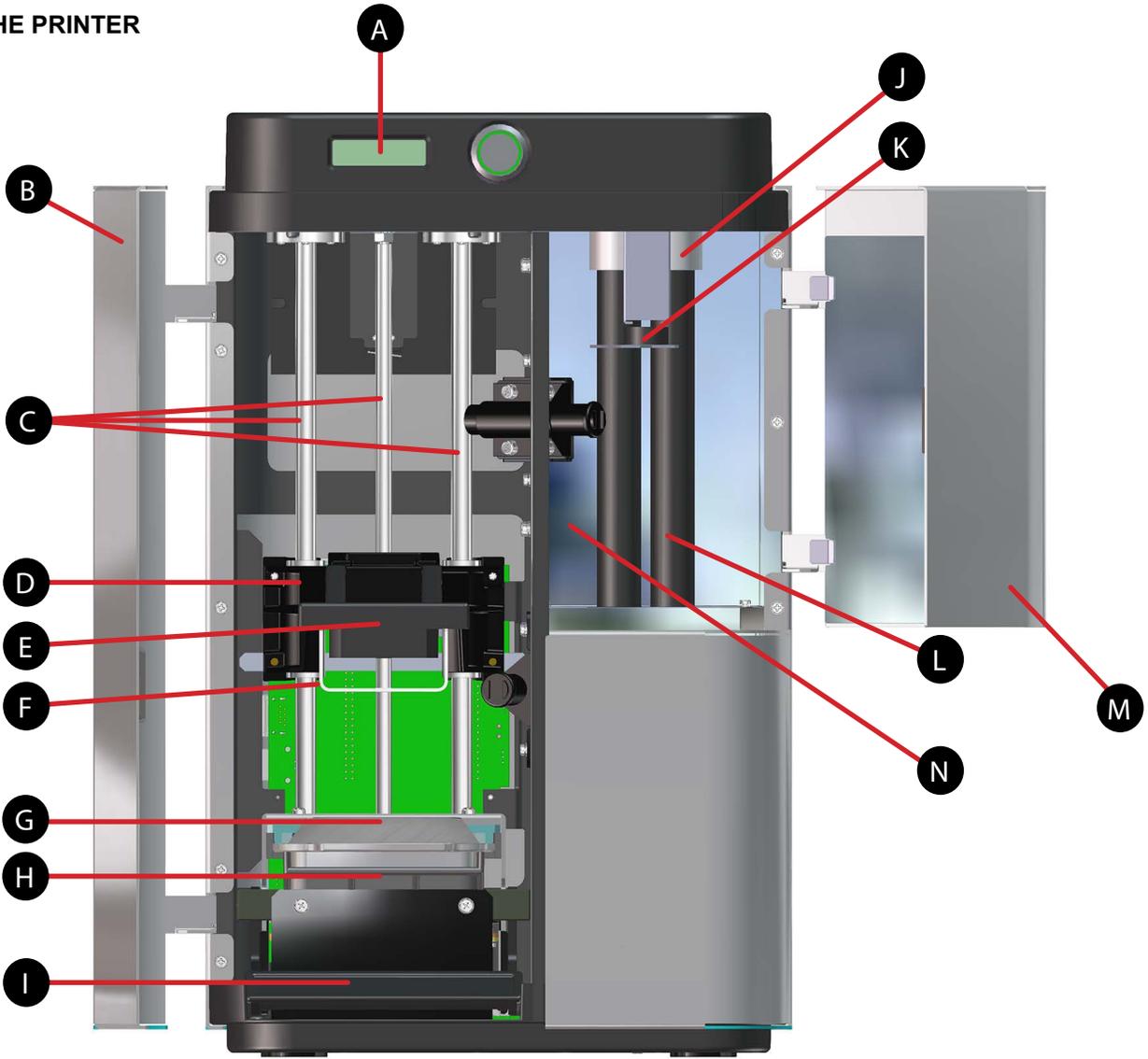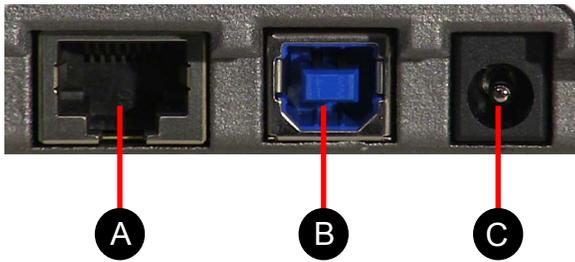
ABOUT THE PRINTER

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

CONNECTIONS

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
Native Resolution (xy)	56 micron (effective 585 dpi*)
Layer Thickness	0.03 mm (0.0012 in)
Vertical Build Speed	14 mm/hour (0.55 in/hour)
Material	VisiJet® FTX Green
Material Packaging	All-in-one cartridge with built-in print window
Post-processing	Built-in UV Curing Station
Software	-Easy Installer -Network Connection -Windows®-based OS -Built-in STL verification -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 Green

Properties	Condition	Value
Density@80° C (liquid)		1,02 g/cm^3
Color		Dark Green
Cartridge Quantity		30 g
Tensile Strength	ASTM D638	30 MPa
Tensile Modulus	ASTM D638	1700 MPa
Elongation at Break	ASTM D638	10%
Flexural Strength	ASTM D638	40 MPa
Ash Content		0.01 %
Description		Wax-up Castable

UNPACKING AND SETTING UP YOUR PROJET 1200

CONTENTS
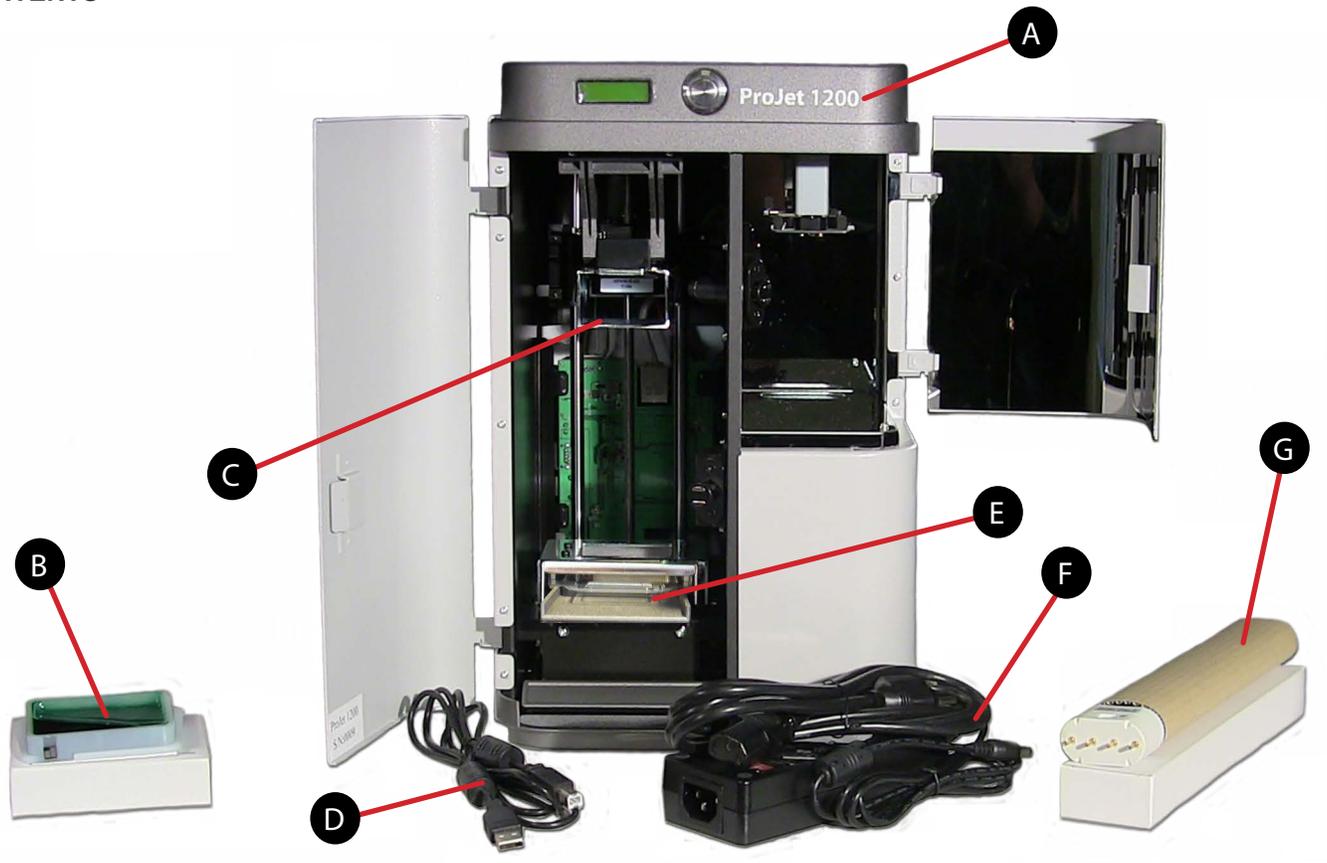
A	ProJet 1200		**E**	Plastic Insert
B	VisiJet® FTX Green Consumable Tray		**F**	Power Supply
C	Build Platform		**G**	UV Lamp
D	USB Cable			

UNPACKING THE PROJET 1200

⚠️ **CAUTION: This procedure may require two persons. Ensure there are enough people to comfortably move the printer to its final location. Dropping the printer and parts may damage them.**

⚠️ **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 and void the manufacturer's warranty.**

1. Pull the grip handle tabs (A).
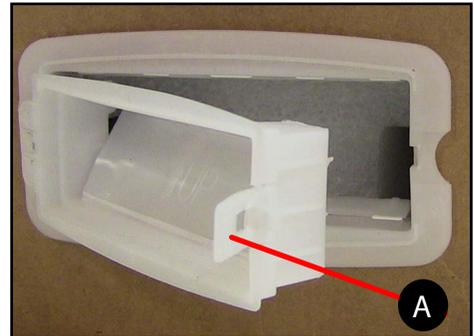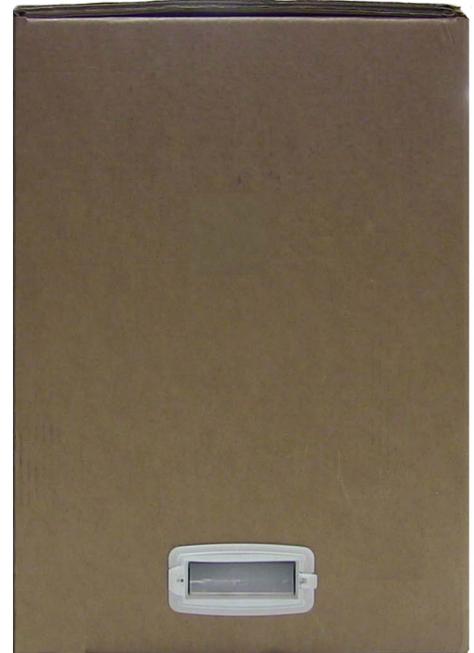
2. Remove the grip handles from the box.

3. Lift the outer box off the printer.

4. Remove the peripherals box (A) and the upper foam insert (B).
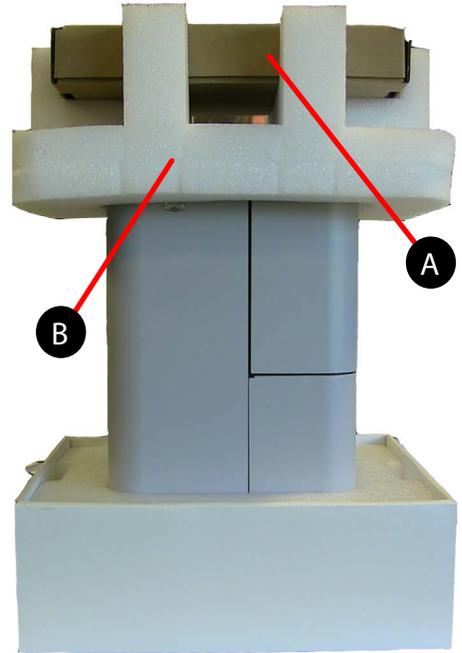
5. Carefully remove the printer from the lower boxed foam support and place it on a solid, level base where it will be used.

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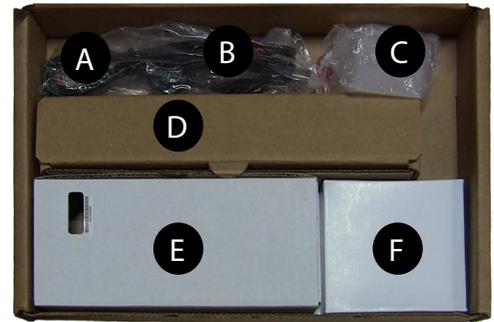
8. Open the print door and remove the plastic insert (A) from the material cartridge support.

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

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.
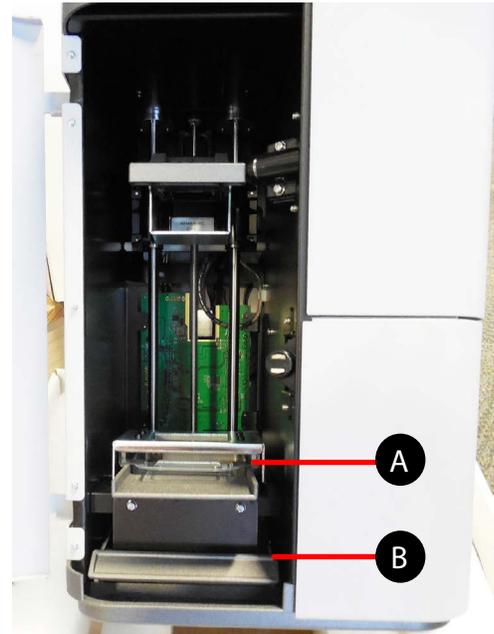
PRINTER SETUP

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. Loosen and remove the screw securing the bulb access panel to the bottom of the printer and remove the panel.
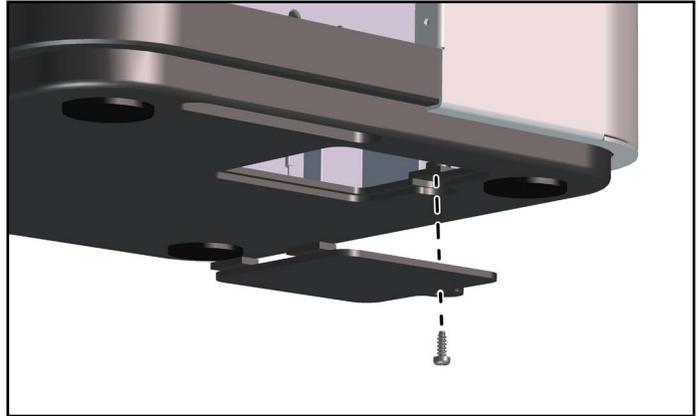
2. Remove the bulb (included) from its box but do not remove the cardboard protective sleeve from the bulb.

3. Insert the bulb end with the metal prongs through the channel in the bottom of the printer.
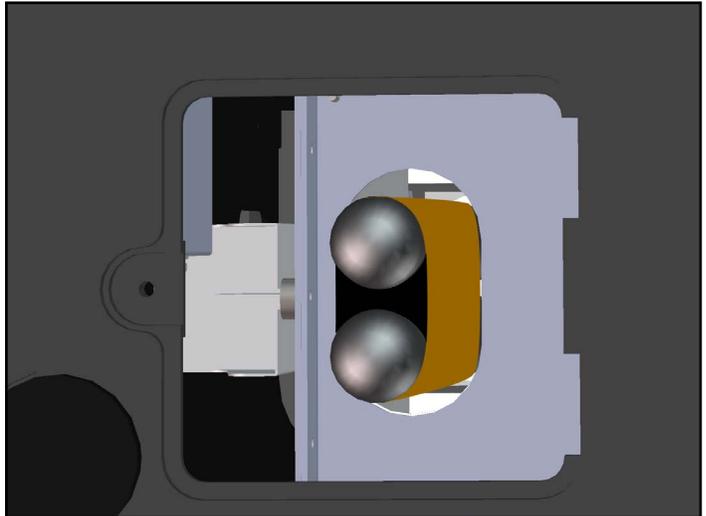
4. Carefully press the bulb base into the socket and ensure the connection is secure.
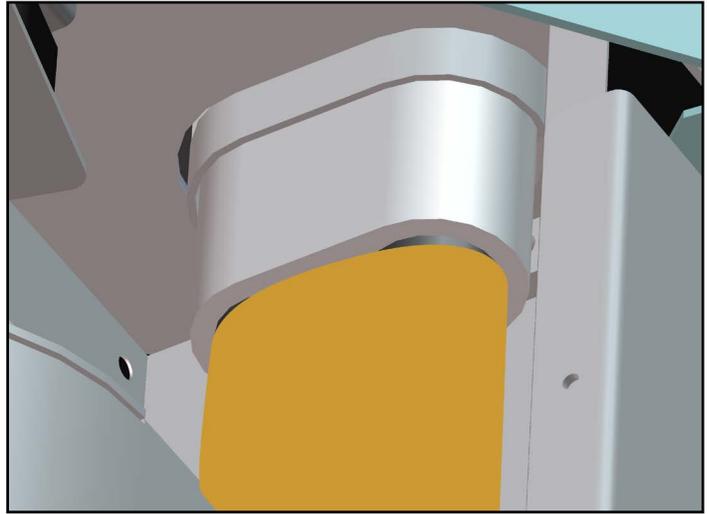
5. Remove the cardboard sleeve from the bottom.

6. Reinstall the bulb access panel on the bottom of the printer using the original screw.
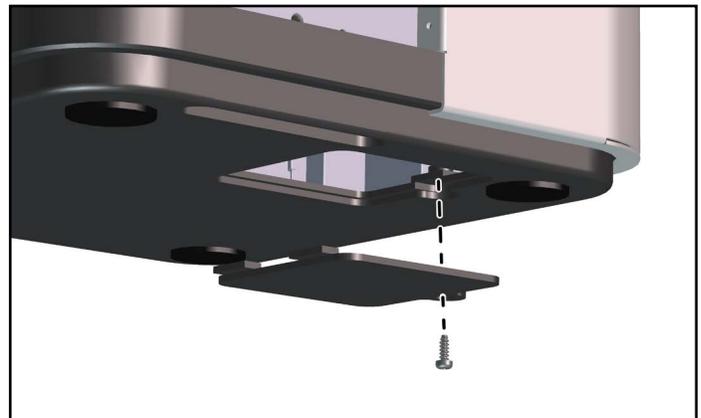
Installing the Material Cartridge

⚠️ **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. Rotate the material cartridge clamp lever (B) upward to raise the cartridge clamp (A).
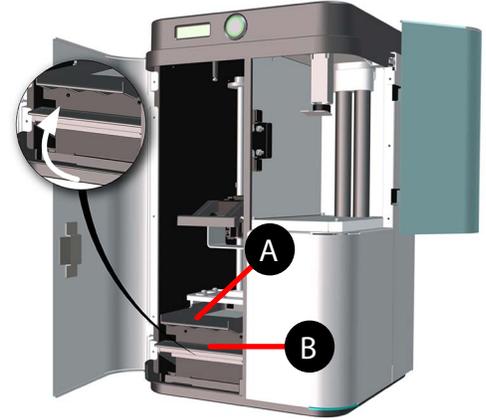
2. Fold over the material cartridge label.

3. 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: 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.**
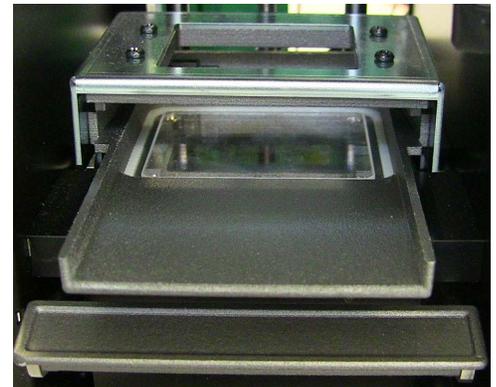
4. Rotate the material cartridge clamp lever (B) down to lower the cartridge clamp (A).

    ![note icon] **NOTE: Ensure the clamp is locked.**
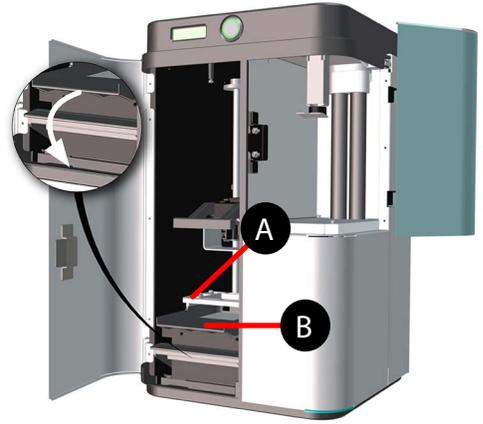
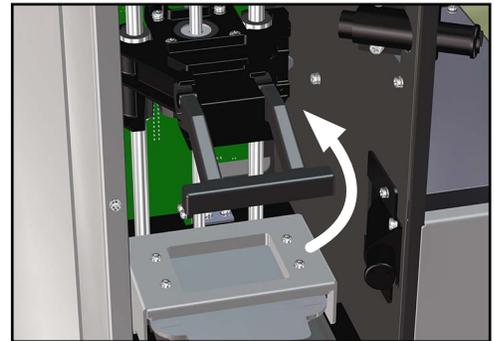5. Carefully pull the label cover off the cartridge.
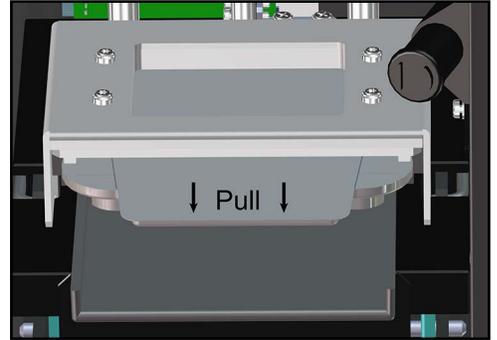
Installing the Print Platform
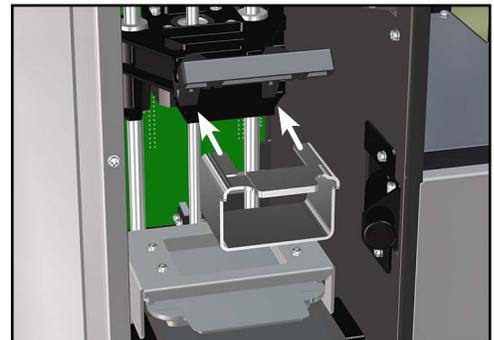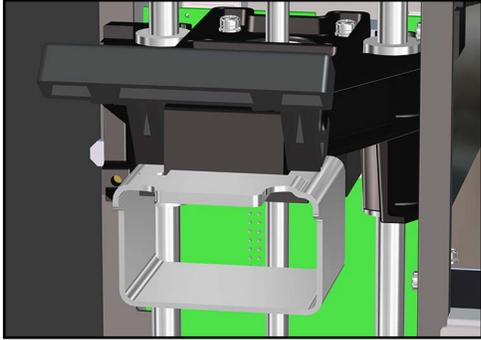
![gloves icon] Always wear protective gloves when handling the print platform.
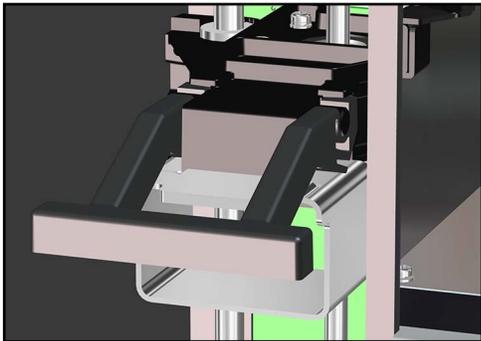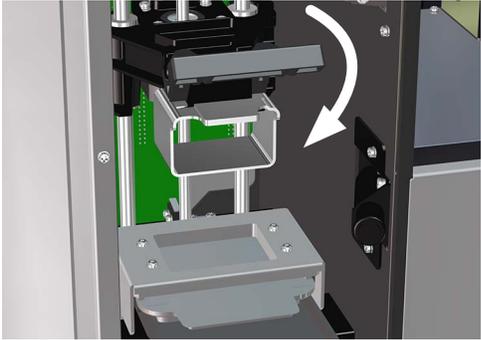
1. Rotate the print platform clamp lever upward.

2. Insert the print platform under the clamp lever until it is seated.

3. Rotate the print platform clamp lever down to lock the print platform.

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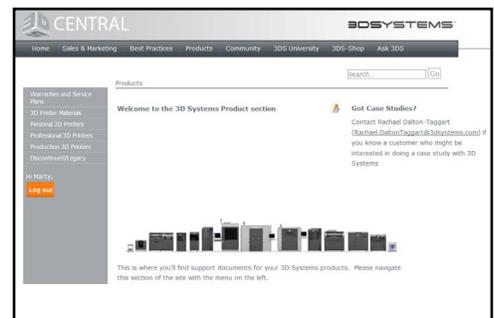
1. Go to **https://3dscentral.3dsystems.com** and enter your name and password.

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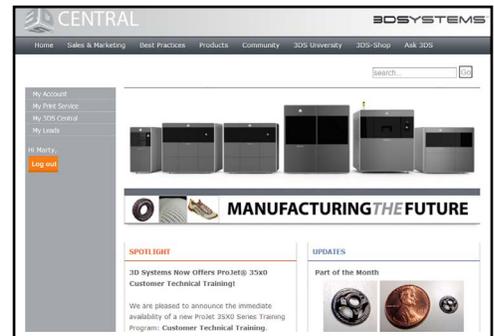
3. Select **Professional 3D Printers** from the left navigation bar.

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.
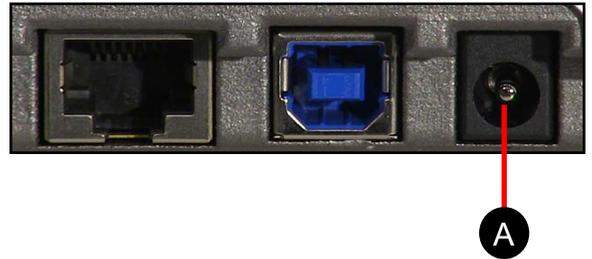

6. Double-click file that was just downloaded to begin installing software.
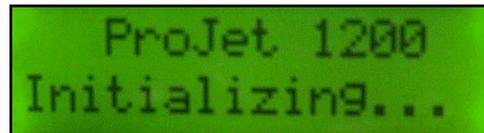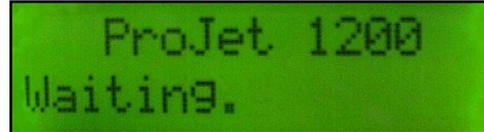
Connecting The Printer

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.
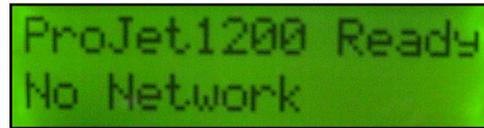
A

NOTE: After connecting the printer to utility power, a series of screens will appear as the printer boots up.
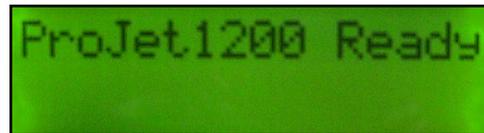
ProJet 1200
Waiting.

ProJet 1200
Initializing...

NOTE: This screen shows the firmware version number.

ProJet1200
v1.0.02.21
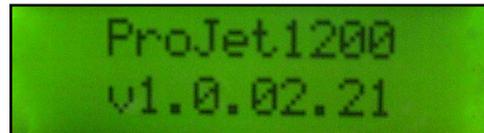
NOTE: This screen indicates that it is not connected to a network.
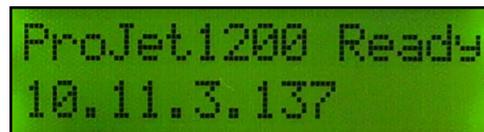
ProJet1200 Ready
No Network

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

ProJet1200 Ready

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.

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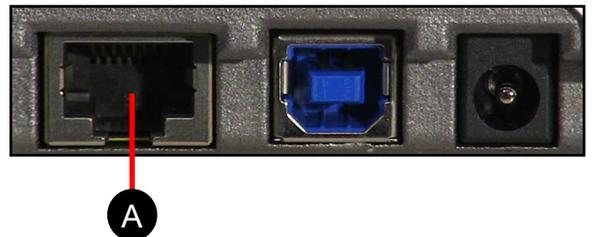
NOTE: Once the printer is connected to the network, the IP address will appear.

ProJet1200 Ready
10.11.3.137

## 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 IP address. Continue on with Step 3 at this point.

3.   Open the ProJet 1200 application. Double-click the **ProJet 1200** icon that was placed on your desktop during the software installation.
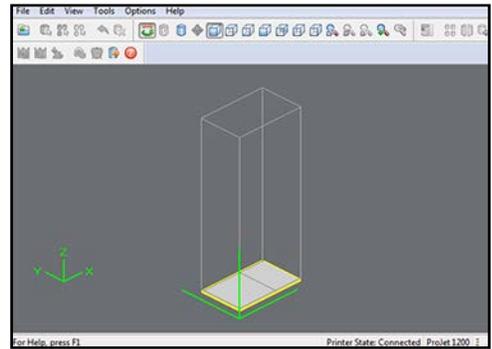
4.   Select **File > Connect to Printer**.
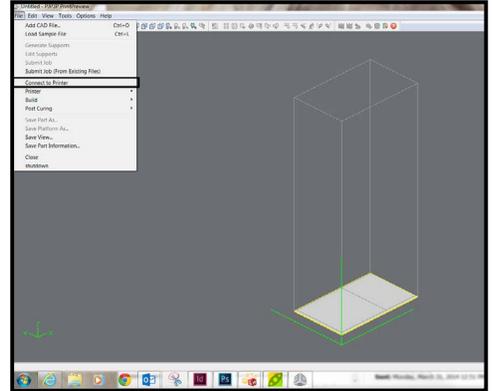
5.   Select the name of the printer next to the IP address of your printer. Select **OK**.
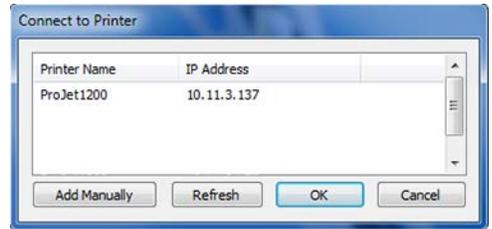
6.   Test the connection by selecting **File > Printer > Test Printer > Test Post Curing**.
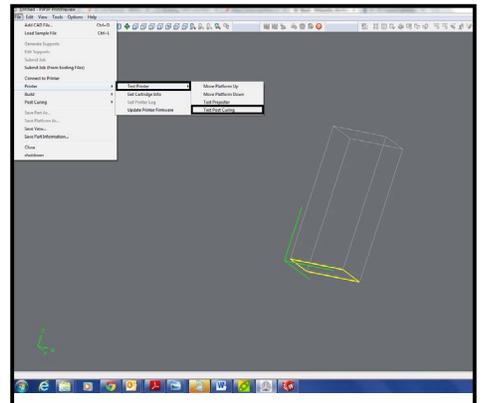
   ✎ **NOTE: The curing chamber carousel should rotate if the printer is connected.**

6 OPERATING THE PRINTER

The printer works in conjunction with the ProJet 1200 software (desktop client).

SOFTWARE OVERVIEW

A	File Menu	**E**	Tools Toolbar
B	Main Toolbar	**F**	Stage
C	View Toolbar	**G**	Orientation Compass
D	Edit Toolbar	**H**	Status Bar

File Dropdown Menu

| File | Edit | View | Tools | Options | Help |

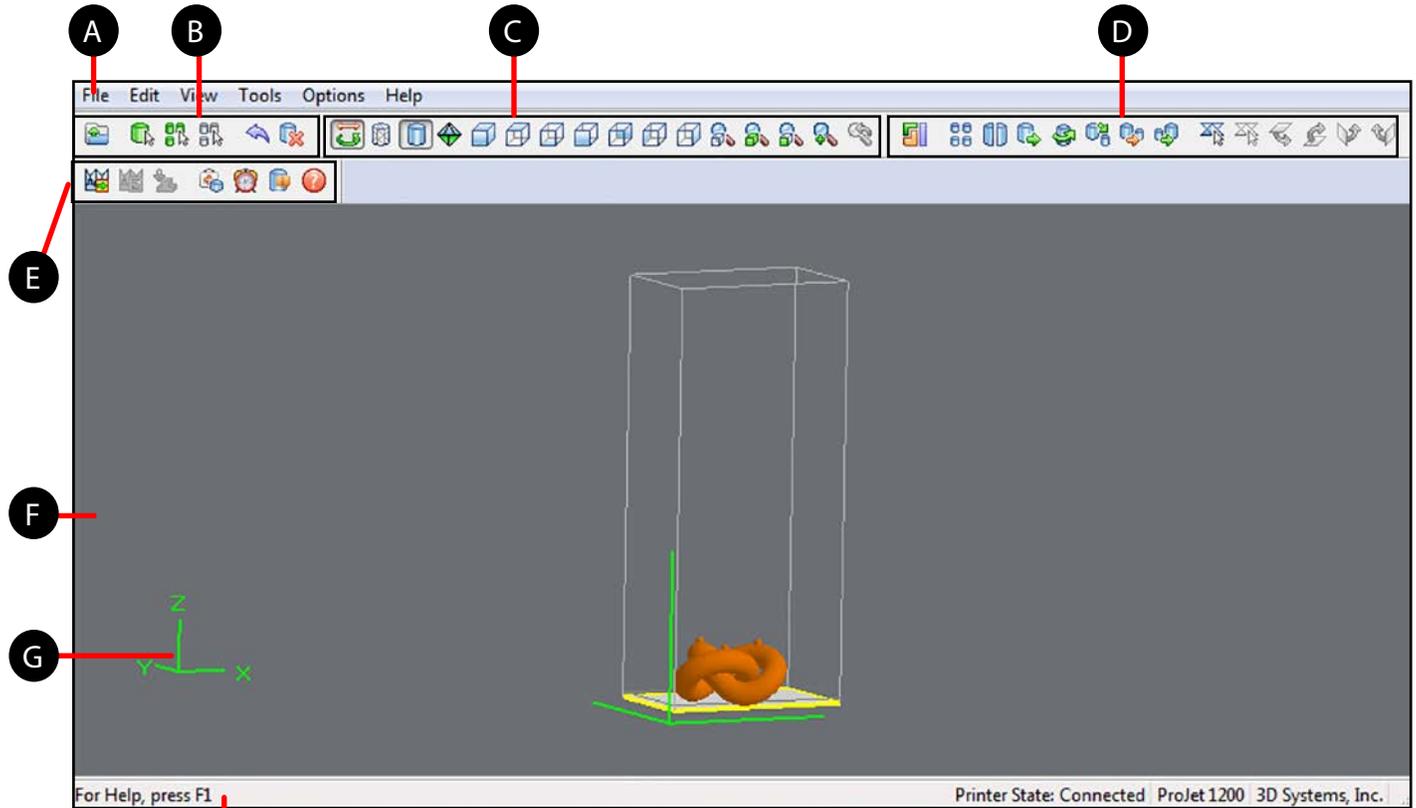|	
A	Add CAD File... Ctrl+O
B	Load Sample File Ctrl+L
C	Generate Supports
D	Edit Supports
E	Submit Job
F	Submit Job (From Existing Files)
G	Connect to Printer
H	Printer ▶
I	Build ▶
J	Post Curing ▶
K	Save Part As...
L	Save Platform As...
M	Save View...
N	Save Part Information...
O	Close
P	shutdown
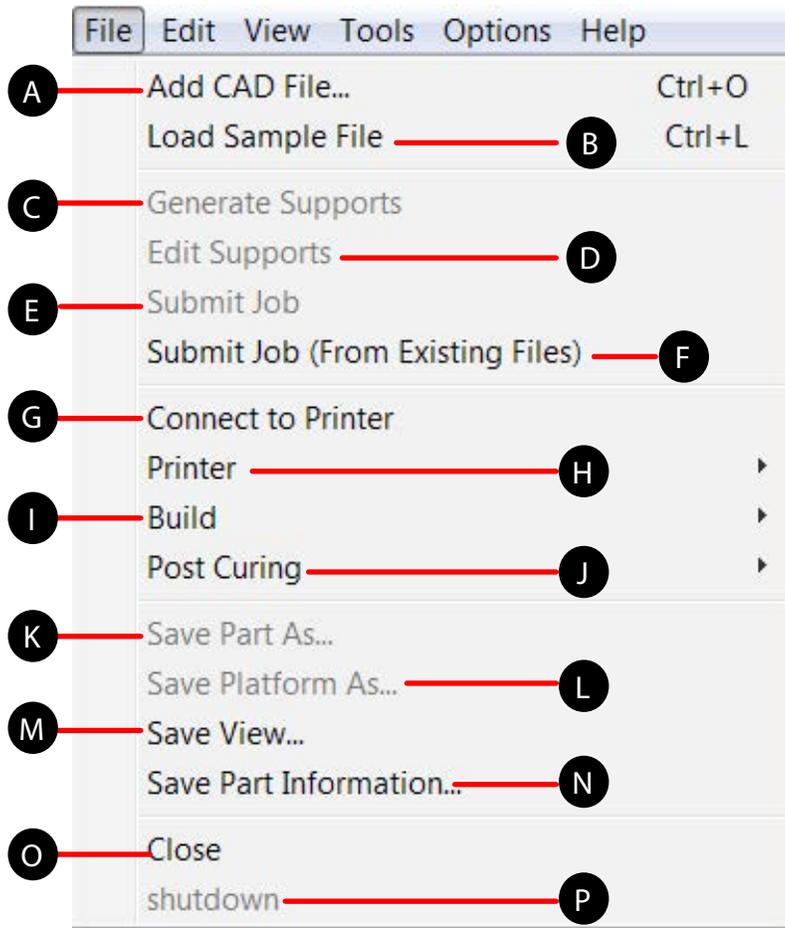
A   Add a CAD file to the project

B   Load a sample file to test the printer

C   Create supports for a model if necessary

D   Modify existing supports if necessary

E   Submit the job to process and print

F   Submit the job from existing files

G   Connect your computer to a network connected printer using the IP address

H   Test printer functions and obtain firmware and cartridge information

I   Check build status. Also pause, resume and abort a build

J   Tools for starting or stopping the curing process

K   Save the part as a specific file type

L   Save the platform as a compressed STL file

M   Save the model view

N   Save the platform as a compressed STL file
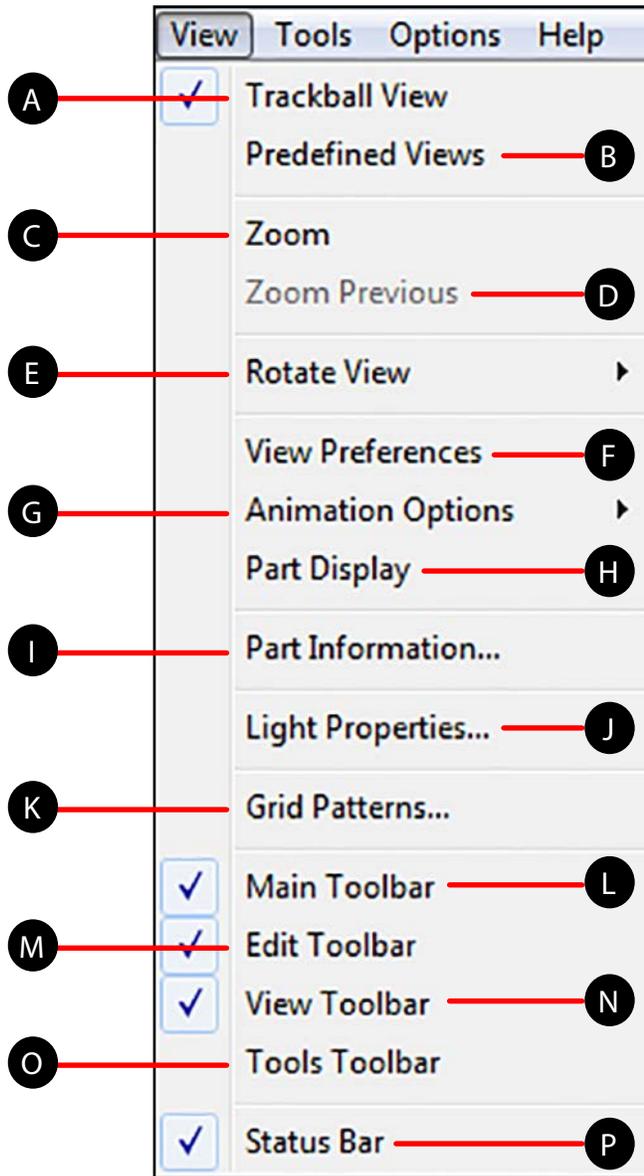
O   Closes PrintPreview

P   Not used for this printer

Edit Dropdown Menu

Menu Item		Description
A	Undo	Undo your last change
B	Delete	Delete the selected part
C	Copy...	Copy the selected parts
D	Mirror...	Mirror the selected parts
E	Translate...	Move the parts along the X and Y axis
F	Rotate...	Rotate the part by degrees
G	Scale...	Scale the part
H	Face Up	View the part facing up
I	Face Down	View the part face down
J	Face X-Z Plane	View the part on the X-Z plane
K	Face Y-Z Plane	View the part on the Y-Z plane
L	Scale Unit Conversion	Change the units of measurement type
M	Select / Transform	Select and move the part
N	Select All	Select all parts
O	De-select All	De-select all parts
P	Select Triangle	Select the triangle supports to modify
Q	De-select All Triangles	De-select all triangle supports
R	Settings	Enable/disable the editing of supports

View Dropdown Menu

View	Tools	Options	Help

- ✓ **Trackball View** — A
- **Predefined Views** — B
- **Zoom** — C
- **Zoom Previous** — D
- **Rotate View** ▶ — E
- **View Preferences** — F
- **Animation Options** ▶ — G
- **Part Display** — H
- **Part Information...** — I
- **Light Properties...** — J
- **Grid Patterns...** — K
- ✓ **Main Toolbar** — L
- ✓ **Edit Toolbar** — M
- ✓ **View Toolbar** — N
- **Tools Toolbar** — O
- ✓ **Status Bar** — P

A Enable/disable the trackball view

B View the part at predetermined views

C Zoom into the part

D

E Rotate the part left/right or in/out

F Select/deselect the preferences you wish to view

G Select either shaded or points animation options

H View the part either wireframe or shaded

I View the part properties

J Edit the light properties

K Set or hide the X-Y plane, X-Z plane and Y-Z plane grids

L View or hide the Main Toolbar

M View or hide the Edit Toolbar

N View or hide the View Toolbar

O View or hide the Tools Toolbar

P View or hide the Status Toolbar

Tools Dropdown Menu

Tools	Options	Help

- **Verify STL** — A
- **Auto Part Placement** — B
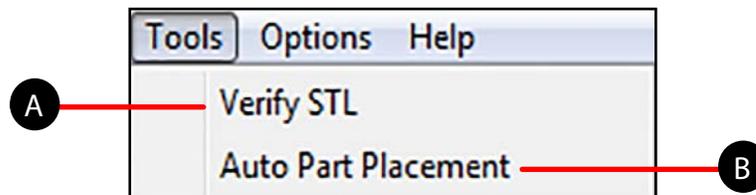
A Verifies the part is complete

B Automatically places the part in a predetermined position.

Options Dropdown Menu

A — Default Unit When Loading ▶

B — Disable GeoCalibration
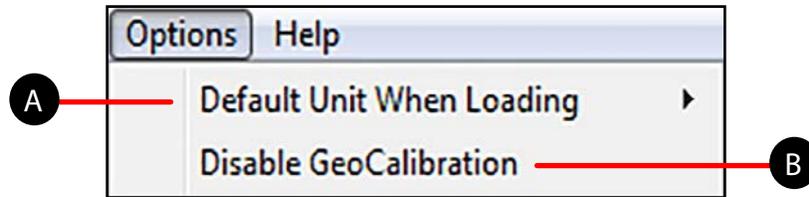
A   Specify the units of measurement as inches or millimeters

B   Not used for this printer

Help Dropdown Menu

A — PJP3P Client Help

B — About PJP3P Client
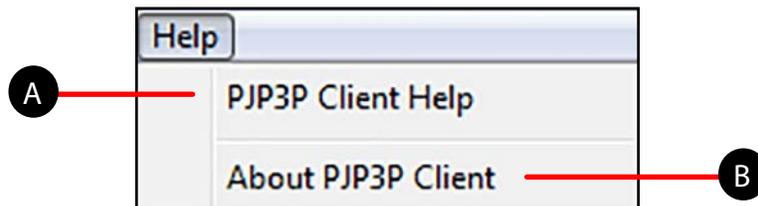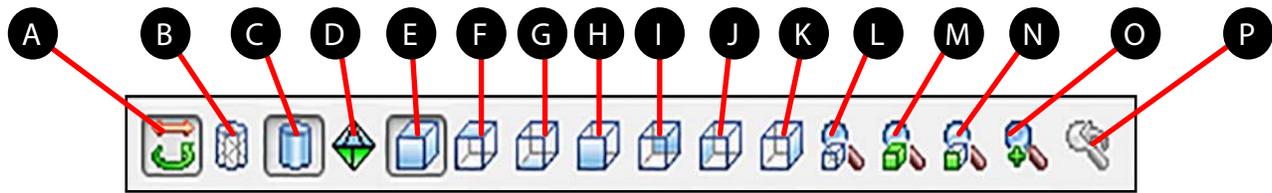
A   Links to help documentatin on 3dscentral

B   Revision information for PJP3P

Main Toolbar
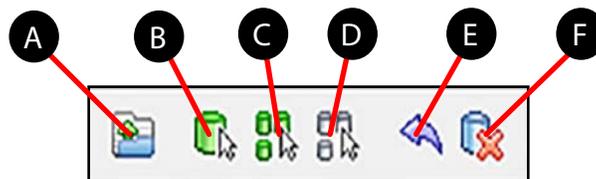
A   Add a part to the stage

B   Select a part

C   Select all parts

D   De-select all parts

E   Undo the last action

F   Delete the selection

View Toolbar

A   B   C   D   E   F   G   H   I   J   K   L   M   N   O   P

A — Trackball View - Left-click and drag to rotate the model	I — Back View
B — Wireframe Display - View the model as a wireframe	J — Left View
C — Shaded Display - View the model as shaded	K — Right View
D — Display Support Creation Surface - View the area where supports may be added	L — View the platform and parts
E — Isometric view	M — View all parts
F — Top View	N — View selected parts
G — Bottom View	O — Zoom
H — Front View	P — Undo zoom

Edit Toolbar

A   B   C   D   E   F   G   H   I   J   K   L   M   N
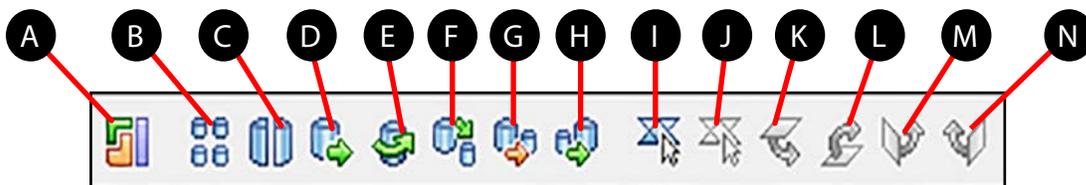
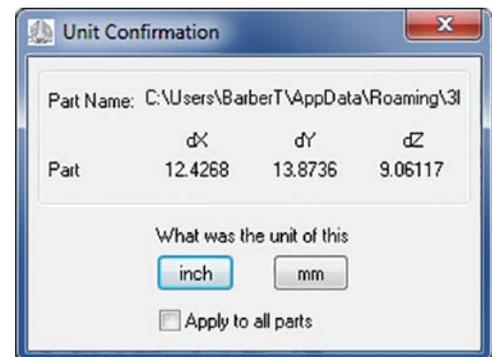|	
A — Auto Part Placement - The software places the part in its optimized position	H — Scale inch to millimeter
B — Copy - Copy the selection	I — Triangle selection
C — Mirror - Mirror the selection	J — De-select all triangles
D — Translate - Move the part along the X and Y axis	K — Align down-facing plane
E — Rotate - Rotate the part	L — Align up-facing plane
F — Scale - Scale the part	M — Align facing X-Z plane
G — Scale millimeter to inch	N — Align facing Y-Z plane

Tools Toolbar

A	B	C	D	E	F	G
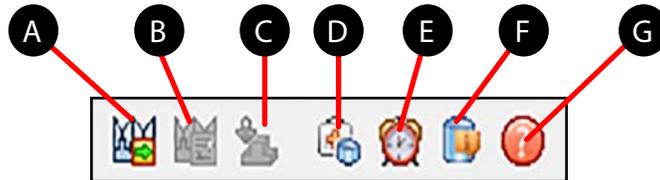
(A) Generate and preview supports   (E) Estimate build time

(B) Edit supports   (F) Selected part information

(C) Create a job and return to Web browser   (G) Help topics
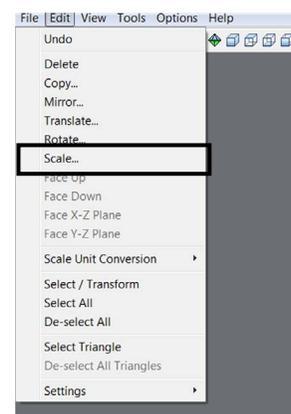
(D) Verify

PRINTING A PART

The ProJet 1200 software can open .stl files. Files must be converted to .vbf using the Print Preview software application. Double-click the **PrintPreview** icon on the desktop. Ensure the material cartridge and the print platform have been installed.
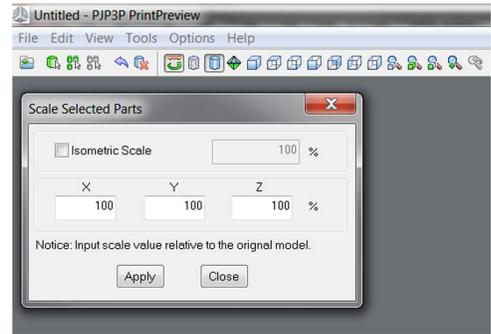
1. Select **File > Add CAD File,** browse to the model and select **Open**.

2. Select the unit of measure to use when opening the part.

   Unit Confirmation

   Part Name: C:\Users\BarberT\AppData\Roaming\3I

	dX	dY	dZ
Part	12.4268	13.8736	9.06117

   What was the unit of this

   [inch]   [mm]

   ☐ Apply to all parts

3. Under **Edit > Scale**

   File | Edit | View Tools Options Help
   Undo
   Delete
   Copy...
   Mirror...
   Translate...
   Rotate...
   Scale...
   Face Up
   Face Down
   Face X-Z Plane
   Face Y-Z Plane
   Scale Unit Conversion   ▶
   Select / Transform
   Select All
   De-select All
   Select Triangle
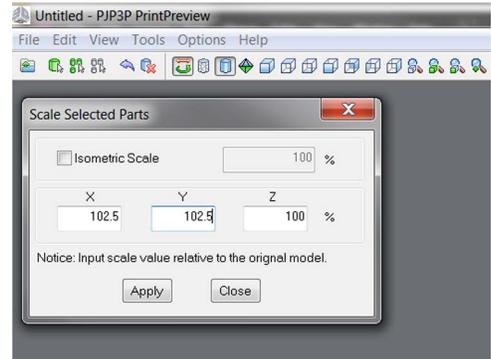   De-select All Triangles
   Settings   ▶
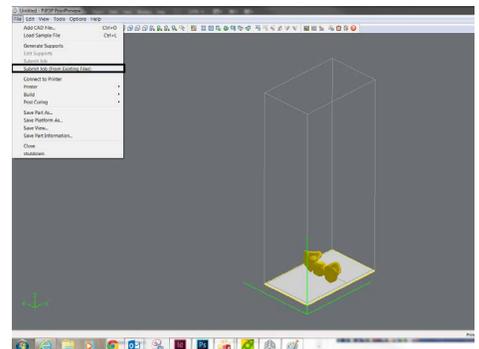
4. Uncheck **Isometric Scale**

5. Change the X and Y fields to 102.5% leave Z unchange

> **NOTE: A window may appear saying "Automatic Part Placement may take a while. Do you wish to continue?" Automatic Part Placement is recommended, Select Yes.**
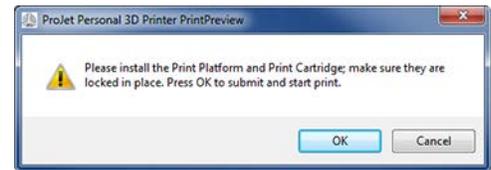

> **NOTE: If the part has already been converted to a .vbf file type, select File > Submit Job from Existing File >**
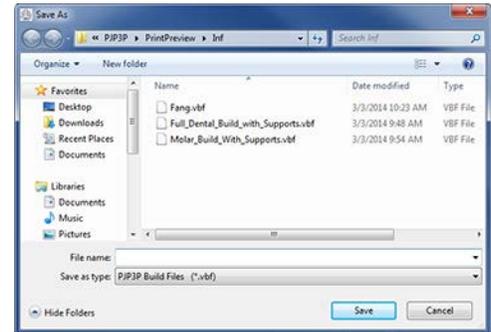
6. Select **File > Submit Job**.

> NOTE: A dialogue box will appear instructing you to install the print platform and print cartridge. Once ready, select **OK**. You will be prompted to save the file.
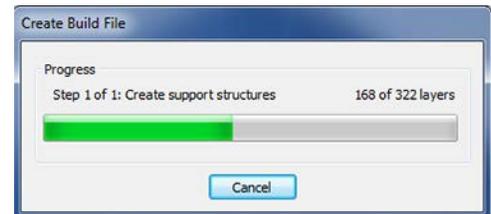
7. Browse to the location where you intend to save the file and select **Save**.

> NOTE: Enter the file name in the file name field and ensure **PJP3P Build Files (*.vbf)** as the **Save as type** is selected
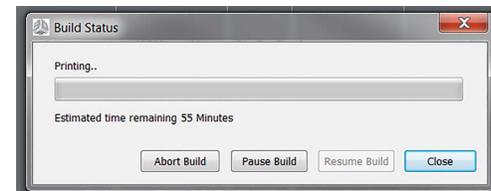

> NOTE: A progress indicator will appear as the part is processed.

> NOTE: Once the part has been processed, it will begin printing.

> NOTE: The printer LCD will display how much time remains before the print has been completed. You may also go to **File > Build Status** to determine the estimated print time.

8. Once printing has finished, the printer display will indicate that printing has completed.

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.
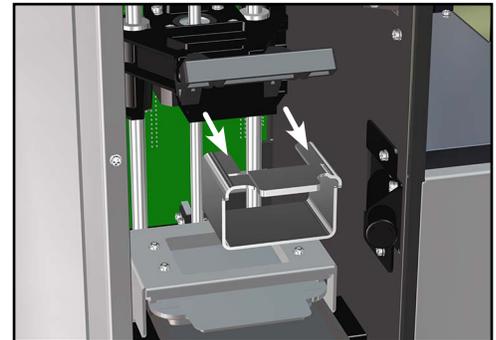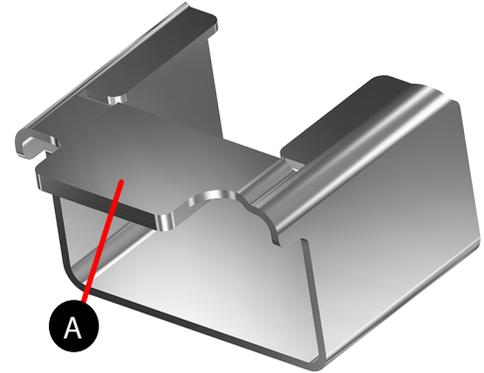

> NOTE: Resin may drip from the part. The towel is used to collect dripping resin so that printer parts are not exposed to resin.
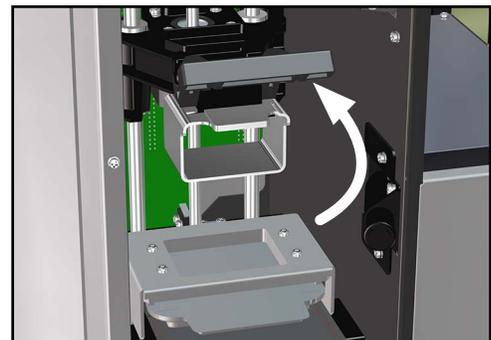
2. Pull the print platform handle (A) out from under the clamp.

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

A

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 submerse 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 submerse 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 submerse 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 submerse 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 geomety of the part or the orientation of the part on the platform may result in the following:

- The part may hold a large amout of liquid resin in a cavity
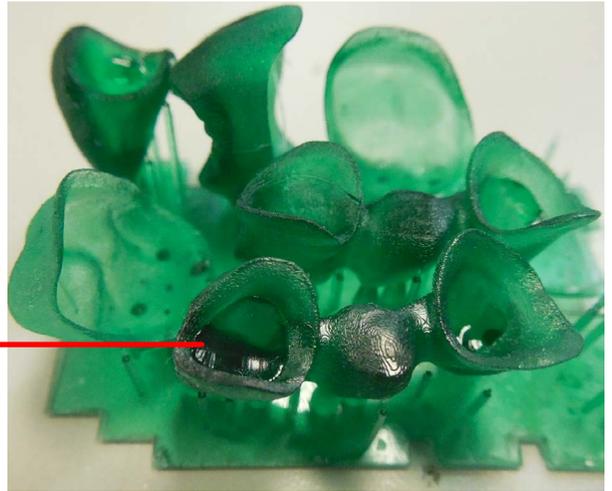
- An air bubble may be trapped preventing the isopropyl alcohol from contacting the part.
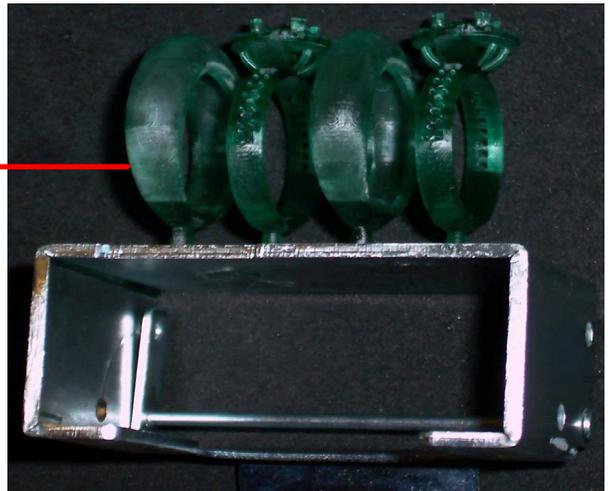
In these cases, change the orientation of the parts when cleaning. Rotate the print platform 90 or 180 degrees to release trapped air bubbles. This will also expose areas of the part which are saturated with liquid resin, allowing better exposure to the isopropyl alcohol.

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 will take longer to dry the parts with compressed air.
- The isopropyl alcohol in Container 1 and Container 2 must be replaced after cleaning 6 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.

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 **File > Post Curing > Start**.

5. Curing the part will take approximately 10 minutes. Do not open the curing chamber door until the curing process has been completed.

6. Once the part has been cured, remove the print platform from the curing chamber carousel.

7. Using a blade, carefully scrape the part off the print platform.

8. Use your fingers, remove the base from the part.

9. Use fine grit sandpaper to sand down the unwanted protrusions from the bottom of the part.

10. Apply Isopropyl alcohol to a soft cloth and gently clean the part.
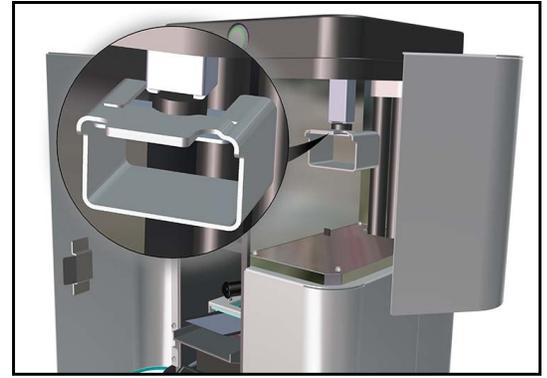
The following procedure are maintenance procedures that can be performed by the user. When performing the following procedures, the user must follow all safety precautions as described in the Safety section of this manual.

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 original packing material on the material cartridge support and lower the clamp lever (B) to secure it.
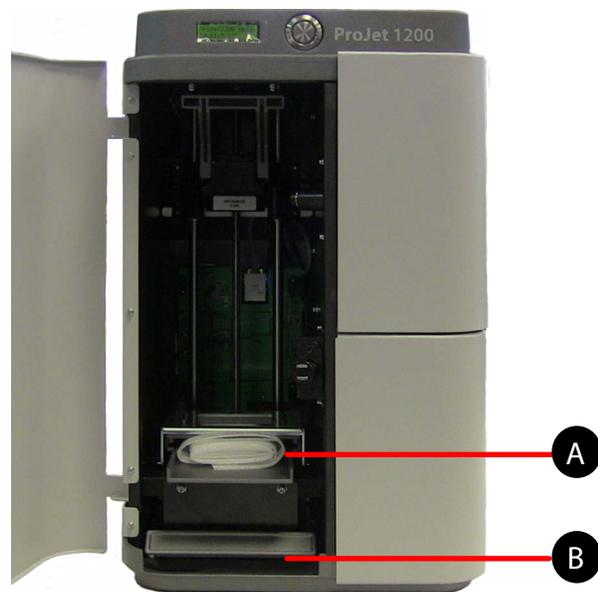

3. Loosen and remove the screw securing the bulb access panel to the bottom of the printer and remove the panel.
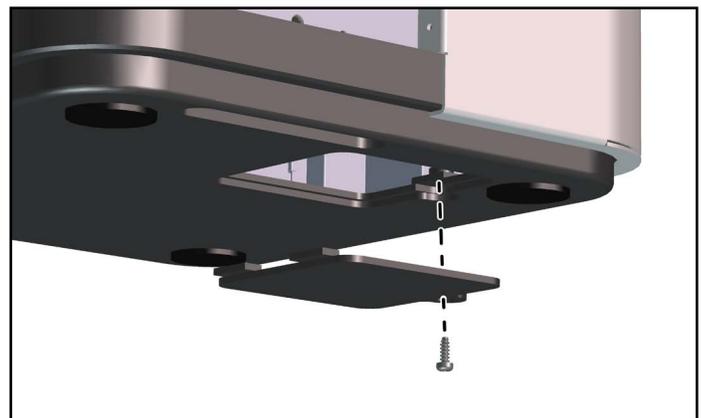
4. Reach up into the bulb housing area and hold the bulb between your fingers. Pull down on the bulb and carefully rock the bulb left-right to dislodge the buld from the socket.

5. To replace the bulb, following 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.

Glass

Print Cartridge
Support
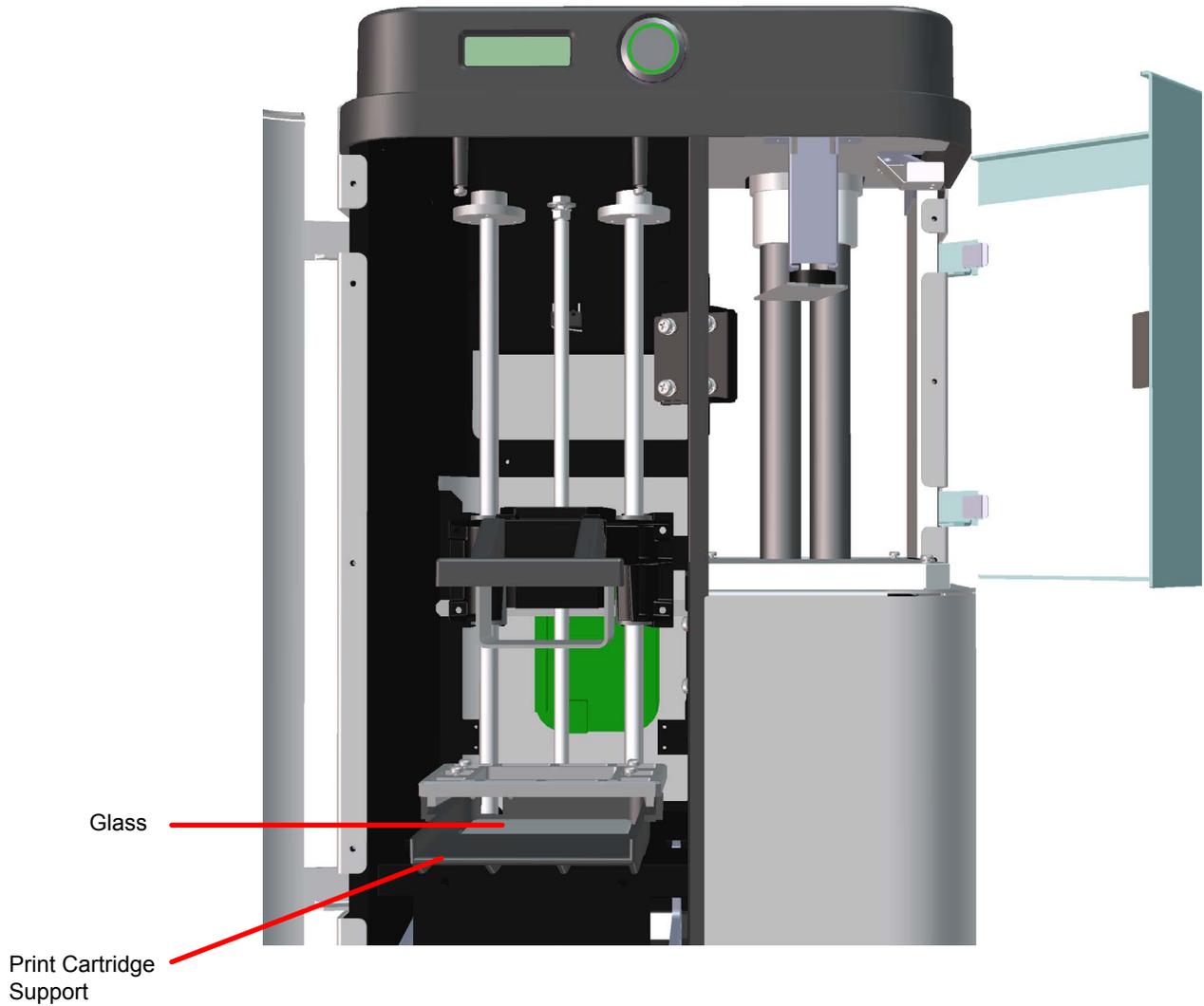
8 SERVICE AND SUPPORT

Should additional questions arise, contact 3D Systems:

Service Contact

Hotline	Every workday: 8:00 - 17:00 EST/EDT 1.800.793.3669
E-Mail	moreinfo@3dsystems.com
Service Address U.S.A	3D Systems Inc. 333 Three D Systems Circle Rock Hill, SC 29730
Service Address Japan	3D Systems, Japan K.K. 4-6-8 Tsurumaki Setagaya-Ku, Tokyo 154-0016
ServiceAddress Europe	3D Systems Europe Ltd. Mark House, Mark Road Hemel Hempstead Herts HP2 7UA United Kingdom

3D Systems, Inc.

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www.3dsystems.com