3DSYSTEMS®

# ProJet® 2500

### 3D Printer System

ProJet 2500

## User Guide

Original Instructions

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# 1 INTRODUCTION TO THE PROJET 2500

The ProJet 2500 3D printer system is a Multi-Jet Printer (MJP) printer. The solid imaging 3D printer produces plastic prototype parts from 3D solid Computer-Aided Design (CAD) models and through the 3D printer system client software. The parts are generated in a rapid prototype (RP) environment. The primary features of the printer are the user interface, build chamber including the print engine, material delivery module, and the material delivery drawer. The back of the printer houses the power switch, ethernet and the power cord connections.



# 2 IMPORTANT SAFETY INFORMATION

## SAFETY SYMBOLS AND DEFINITIONS

**UV RADIATION HAZARD: Invisible UV radiation is accessible in the vicinity of this sign or behind the panel. Radiation can cause eye injury or blindness, burn injury and/or fire. 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, as well as fires. 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 burn injury or fire. Allow surface to cool before touching. 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 the possibility of loss of data or damage to equipment.**

**WARNING: INDICATES THE POSSIBILITY OF INJURY OR DEATH TO PERSONNEL.**

**WEAR GLOVES: Wear the appropriate gloves when required. For example, when touching surfaces that may contain or have been exposed to materials, wear nitrile gloves. Heat gloves are necessary when touching surfaces that may be hot to ensure burns don't occur.**

**ULTRAVIOLET RADIATION INSIDE: Exposure may cause eye damage. Do not operate without covers. Wear UV eye protection.**

**NOTE: A note signifies important information but not information of a critical content.**

## SAFETY GUIDELINES

### General

The 3D printer system is designed with built in safety features, improper use can cause injury to personnel.

**Follow these safety guidelines when operating the printer:**

- Read and follow all 3D printer system instructions.
- Follow all safety rules and heed all cautions and warnings in this guide.
- Do not attempt to open chamber door while print in progress.
- Do not use any material without reviewing the Global Harmonized Standards/Safety Data Sheet (GHS/SDS).
- Dress power and communication cables behind printer to prevent tripping.
- Do not attempt to access, service, or adjust printer components. Do not attempt to perform any maintenance procedures unless specifically trained to do so.
- Certified service personnel are those who completed the 3D Systems service training package and are certified to perform service tasks. Certification may occur at different levels, and service providers should only perform tasks they are authorized and certified to complete.
- Do not ignore warning signs posted during 3D printer system service operations.
- If an error message appears on the 3D printer system's LCD refer to "Error Messages" within this guide before resuming operation.
- To prevent potential skin-irritation and sensitization due to contact with waste material, follow all guidelines within Part Material Safety.

### Electrical

**DANGER: Hazardous voltage exists inside the 3D printer system. Injury or death from electrical shock can result if you remove the 3D printer system's external panels. Panels should only be removed for service by trained and certified 3D Systems Customer Support Engineers or your certified service reseller.**

### Ultraviolet (UV) Light

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

**To prevent eye injury, ultraviolet (UV) light inside the chamber will not operate when chamber door is open. When closed, the chamber door keeps UV radiation from escaping. The chamber door remains locked if print job is paused.**

### PART MATERIAL SAFETY

When using the 3D printer system, you should be informed of potential hazards of part material prior to using the printer systems, or performing duties which may result in exposure to uncured part material, such as, removal of material waste bag and handling empty material cartridges.

**Always wear nitrile gloves when handling part material that is uncured and not totally solidified.**

## Disposal

- Disposal of fully cured parts are not subject to regulations of any known agency worldwide. VisiJet® support material cartridges may be disposed of in ordinary office trash.

- Uncured part material is classified as regulated, and in some areas hazardous; requiring special packaging, transportation, and disposal. The disposal of partially cured or uncured part material must comply with all local, state, and federal environmental safety regulations. Applicable part "waste" includes cartridges (empty or full) and waste pans. Any materials used to clean up uncured part material should be disposed of in the same manner as uncured part material.

- To find out facility disposal requirements, contact a local waste disposal provider. (Local environmental regulatory agency should have a list of qualified providers.)



- You will need to give disposal service provider a copy of the part material GHS/SDS, and possibly other forms included in the Appendix of your VisiJet® Material Handling Guide, such as Waste Profile Worksheet and SNUR (Significant New Use Regulation - U.S. only). A report will be provided, indicating disposal requirements, as well as a quotation for regularly scheduled pickups. If assistance is needed locating a waste disposal provider, or completing a waste disposal form, contact your local 3D Systems certified reseller or 3D Systems Technical Support.

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

## ⚠ HEALTH HAZARDS/IRRITANT

### Irritant

- Any chemical may exert harmful effects if it contacts or enters the body. Uncured material is a sensitizer, and can cause allergic reactions if it comes in contact with skin. Always wear nitrile gloves when handling material. Refer to personal protection equipment for more information. To avoid sensitization, do not allow uncured material to contact skin. Consult the GHS/SDS for specific information about the sensitization potential.

- If skin comes in contact with uncured material immediately wash with cold water and soap.

### Inhalation/Injestion

- Under normal operation, inhalation is not an expected route of entry.

- Ingestion  - Uncured part material is toxic if ingested.

- Because uncured material is toxic if ingested, it must not be present where food and drink are stored, prepared, or consumed. After handling materials, wash hands with soap and cold water before consuming or preparing food.

### Handling Finished Parts

- Finished (cured) parts can be handled or disposed of the same as standard household plastic products. VisiJet® parts are not recyclable. VisiJet® materials are not intended for and cannot be used for medical implant, food or drink handling applications.

- Exposure control - The 3D printer system has a variety of built-in engineering controls which are designed to prevent operator exposure. Do not try to change or disable these controls.

### Hygienic Practices
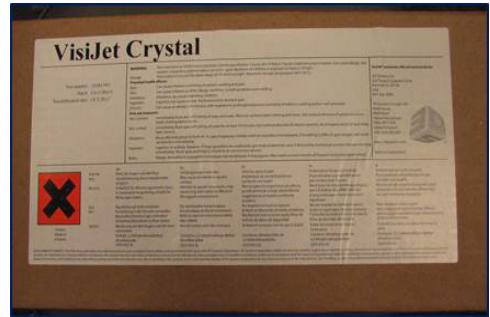
- Appropriate hygienic practices should be followed, including washing with soap and water before meals, breaks, smoking, applying cosmetics, using toilet facilities, and after work.

- Employees should be alerted of the need to clean and rinse off any contacted surface promptly in order to prevent further contamination. Ensure a convenient washroom location is provided with access to soap, water, and disposable paper towels.

## MATERIAL HANDLING

### Emergency (GHS/SDS)

Chemtrec USA (800) 424-9300; Europe +1-703-527-3887

### Packaging Inspection

The material cartridges are packaged in shipping cartons. Upon receipt of material shipments, inspect cardboard carton exterior for signs of damage and leakage. If leakage is observed, DO NOT open carton, and contact 3D Systems's Technical Support Hotline. If no leakage is observed, keep the material cartridges in their cartons and store until material is needed.



### Part Building

If uncured material is observed on the part or platform after build, this is an abnormal condition, and is an indication the 3D printer system requires servicing by 3D Systems or a certified servicing reseller. Assume any liquid or paste-like material is part material. Do not directly touch uncured part material without protective nitrile gloves. Discontinue use of the printer pending service by a 3D Systems Technical Support Representative.

### Flammability and Combustibility

Do not expose materials to heat at or above 230°F (110°C), flames, sparks, or any source of ignition. (Though the U.S. Department of Transportation does not consider VisiJet materials a "flammability hazard," they do classify them "combustible" based on flash points.) For more information on VisiJet material flash points and combustibility, see VisiJet® Material Handling and Post Processing Guide.

### Personal Protection Equipment

**Exposure to uncured part material may occur when removing and disposing of the waste bag. To prevent contact, wear chemically resistant protective nitrile gloves - Do not use Latex gloves.**

**In the event of a leak or spill of uncured part material, wear safety glasses with side shields to provide eye protection.**

**Because of the 3D printer system's built-in engineering controls, respiratory protection is not necessary during normal operation. A NIOSH-approved (or equivalent) dust mask is recommended when dry sanding cured material parts.**

### Regulatory Information

- Support material has no known regulatory requirements.
- In the U.S., uncured part material is subject to special EPA disposal regulations and record-keeping requirements. "Uncured VisiJet® material" includes any part material cartridge (empty or full), and waste bag which is partly uncured part material. For complete disposal regulation details, see the **Appendix** in your **Material Handling Guide.**
- In the U.S., you must keep the following disposal records for five years after the date of disposal:
  - The quantity of part material received (new or "virgin").
  - The name and address of the shipping location (the "responsible party" - generally your waste disposal service provider).
  - The quantity of part material shipped (disposed). For further information, see your **Material Handling Guide**.
  - For assistance, contact 3D Systems Technical Support.

**Spilled Material**

- Spills of material are HIGHLY UNLIKELY, and should NOT occur in normal operation of the 3D printer system. If a leak occurs, it is an indication of a serious 3D printer system malfunction.

- The first priority is to protect users from inadvertently touching material. Spills of support material can be cleaned without use of protective gear, and disposed of as office trash. Handling uncured part material requires use of nitrile gloves and other personal protective equipment to ensure no direct contact with uncured part material. If you don't know which material it is, assume it to be uncured part material, and handle accordingly - with the recommended personal protective equipment.

- Promptly remove spilled material, dispose of waste material, and clean up materials per local regulatory requirements. Discontinue use of the 3D printer system, and contact 3D Systems Technical Support for a service visit to determine and repair the source of the leak.

- Small spills of uncured liquid part material can be cleaned up using disposable towels, non-reusable rags, or absorbent materials such as sawdust, clay, diatomaceous earth, or activated charcoal. If spilled material is hot (liquid), wait until it cools before wiping up. After wiping up the spill, wipe surface with denatured or isopropyl alcohol and clean thoroughly with soap and water.

- Consider avoiding placement of the 3D printer system over carpeting, or consider use of barriers to avoid the possibility of carpet damage if spills were to occur.

- Advise service provider involved of the spilled material, and provide GHS/SDS and other material information prior to contact with the material. Advise them of disposal requirements for part material and clean-up products if part material (uncured) is the spilled material. Use of heat above 65°C (149°F) may prove helpful in removing spilled part material from carpet.

- Tools contaminated with part material should be cleaned prior to reuse. Solvents such as denatured alcohol or Isopropyl Alcohol (IPA), are normally required to clean equipment and tools. Wash with soap and water to remove any traces of excess part material or solvent. Contact solvent suppliers for information on proper handling of solvents if used for clean-up.

**Waste Removal**

⚠ **CAUTION: Uncured part material is a sensitizer. Skin or eye irritation could occur when exposed to the chemical composition of the material.**

- Wear protective gloves before removing any waste product from the 3D printer system. Be careful not to spill, drop, or expose others to these materials - particularly part material. Dispose of all waste material appropriately according to local regulatory requirements.

- Dispose of waste bag containing both support and uncured part material.

**Part Material Storage**

| Part Material | Support Material |
|---|---|
| Shelf life - VisiJet® Part Material - 1 Year | VisiJet® M2 SUP (Wax support material) - 5 Years |
| Climate - Cool, dry area with adequate ventilation | Climate - Cool, dry area with adequate ventilation |
| Temperature Range - 60°F (16°C) to 80°F (27°C) | Temperature Range- 60°F (16°C)to 80°F (27°C) |
| Maximum Storage Temp - 95°F (35°C) | Maximum Storage Temp - 95°F (35°C) |
| Environmental Conditions - No direct sunlight, heat, flames, or UV energy. | Environmental Conditions - No direct sunlight, heat, flames, or UV energy |

 **NOTE: For optimal results, keep stored cartons closed and sealed until material cartridges are ready for use.**

Always check material "Recertification Date" before use. Do not load material cartridges into 3D printer system if cartridge date has expired. When printer detects an expired cartridge, it aborts the build and rejects the cartridge. If a job is printing when the cartridge expires, it will try to continue to complete the job. If the next cartridge is expired, it won't use it.



Support (white) material must be loaded in the left side of material drawer. Part (black) material cartridges must be loaded in the right side of material drawer. Before loading cartridges into 3D printer system, inspect the cartridges for signs of damage or leakage. Do not load a damaged or leaking cartridge. Dispose of material cartridge according to local regulations.



## Storing a Partially Used Material Cartridge

It is important not to lay material cartridges that are partially used on their side. Doing so will cause material to seep through the vent cap and clog cap. This will cause damage to the material cartridge if used for a later print.

To store a partially used Material Cartridge, place it in a ProJet 2500 Cartridge Holder and tighten the vent cap.



## CHEMICAL SAFETY

 **Irritant! Always wear chemical-resistant gloves, goggles, and protective clothing when handling material. Avoid skin contact. Avoid breathing material fumes.**

- Always wear approved goggles, nitrile gloves and protective clothing when working near materials or with partially cured parts.
- Wearing contact lenses when working with materials is not recommended.
- Always wear chemical-resistant nitrile gloves whenever handling materials or partially cured parts. Recommended gloves are 100% Nitrile. Latex gloves are not chemical-resistant and are not recommended.
- Always work in a well ventilated area when using materials. Avoid breathing vapors.
- Always wash skin thoroughly with abrasive soap and COLD water after working with materials. DO NOT USE HOT WATER OR SOLVENTS to wash hands, as it will result in absorption through the skin.
- Use extreme care when handling solvents used to remove excess material from uncured parts. These solvents (e.g., denatured alcohol, isopropyl alcohol) are very flammable.
- Keep all materials away from heat, sparks and flame. Material containers may rupture when exposed to extreme heat.

 **Use National Fire Protection Association Class B extinguishers such as carbon dioxide, dry chemical, or foam.**

## Material Characteristics

The photopolymers used in stereolithography may be hazardous if handled improperly. Repeated skin contact with materials may cause sensitization. Consult the manufacturer's Global Harmonized Standards/Safety Data Sheet (GHS/SDS) for information on specific materials. For further information on this and related topics, consult the 3D Systems – Materials website at ***http://www.3dsystems.com/support/materials/msds***.

## Material Storage

Material should be stored in their original containers, according to the guidelines given in the GHS/SDS included with the material. Protect material from sunlight and ambient room light.

⚠️ **Never mix different materials.**

## Material Disposal

Do not dump used material down any drains. Follow disposal rules established by company, local, state, and federal authorities.

## Material Spill Containment

Your company has the responsibility to define what constitutes a major spill. Personnel who are involved in cleaning up major spills of material should wear NIOSH/MSHA approved respirators designed for use with organic chemical vapors. In addition, each person should wear protective goggles, rubber boots, and 100% nitrile gloves to minimize exposure to material, which can cause eye, skin, and respiratory irritation, as well as possible skin allergies and respiratory reactions.

Any spilled material should be absorbed on inert absorbent material and placed into containers for transfer to an approved waste disposal site. After cleaning up the spill, individuals should wash thoroughly with soap and COLD water. Dry-clean contaminated clothing. Discard contaminated shoes and leather products. Avoid exposure to sunlight until skin and clothing have been cleaned of material. Refer to the GHS/SDS before using any chemicals. Repeated or prolonged skin contact may cause sensitization. Vapor may be harmful.

## First Aid and Protective Equipment

The following paragraphs provide general first aid procedures and recommendations for protective equipment to minimize the risks from material exposure. If professional medical attention is necessary, take the Global Harmonized Standards/Safety Data Sheet (GHS/SDS) for the exact material involved to the attending physician.

### Skin Contact

Wear 100% nitrile gloves and lab coats to avoid skin contact. Should material come in contact with skin, wash thoroughly with soap and cold water and immediately remove contaminated clothing and shoes. If skin is irritated, seek medical attention. Dry-clean contaminated clothing. Discard contaminated shoes and leather products.

### Eye Contact

Safety goggles should be worn to prevent accidental splashes into the eyes. If material comes in contact with the eye, flush immediately with large amounts of water for 15 minutes, avoid sunlight, fluorescent light, and other ultraviolet light, and obtain immediate medical attention. Eye wash facilities and a first aid kit should be readily available and close to the 3D printer system.

### Contact Lenses

If material splashes into eyes when contact lenses are worn, flush eyes immediately with water. Verify that flushing has removed the contact lens from the eye(s). Protect eyes from light and obtain immediate medical attention. Discard contact lenses that come into contact with liquid material.

### Fume Inhalation

Remove the person to fresh air. Give artificial respiration or cardiopulmonary resuscitation (CPR) if required. If breathing is difficult, give oxygen. Obtain immediate medical attention.

## ENVIRONMENTAL CONDITIONS

### Temperature

To allow optimum systems operation and optimum part quality, the temperature of the ProJet 2500 3D printer system's room or other location should remain stable. The working range is 23°C +/- 9°C (73°F +/- 9°F). Any temperature fluctuation greater than 9°C (48.2°F) may adversely affect parts built on the printer.

The air conditioning system should maintain a temperature change of less than 1°C (33.8°F) per hour. The stereolithography room should have a minimum cooling capacity of 1.4 kW. We recommend an HVAC system that changes the air two to five times per hour. To avoid adversely affecting part quality, do not expose the ProJet 2500 3D printer system to direct air flow from the air conditioning system.

Beyond the temperature range that is optimum for part quality, the 3D printer system is capable of operating safely without creating a hazard between 5°C and 40°C (41°F and 104°F).

### Humidity and Altitude

The optimum humidity in the ProJet 2500  print chamber depends partly on the material selection, although humidity should always be non-condensing and should not vary outside the range of 30-70% for optimum part quality with most materials. The 3D printer system can operate at higher non-condensing humidity levels but may adversely affect part quality. Review your ProJet 2500 material information, GHS/SDS, product datasheet, and product labeling, for specific information on recommended humidity levels. The ProJet 2500 can operate correctly up to an altitude of 3000m above mean sea level.

### Sound Pressure

Overall sound pressure level for this equipment will not exceed <65 dBA.

## SAFETY INTERLOCKS

### Safety Interlock Switches

Safety interlock switches protect the user from possible LED UV radiation exposure when certain doors or panels are opened. Panels with safety warning labels include safety interlocks that will cause the system to power down if the panel is removed.

### Control Switches

The locations of control switches are described below. For information on the different areas of the printer see ***ProJet 2500 At a Glance***.

#### Door Interlocks

All doors have built-in interlock switches. When the printer is printing a part the top door will be locked to keep user safe from LED UV radiation and the danger of moving parts. When a door is opened if the 3D printer system is running it will automatically shut down and stop printing.

#### Keyed Bypass Switch

There is a keyed bypass switch located on the back of the 3D printer system. A technician can use this to run tests on the 3D printer system with the doors open allowing to bypass the built-in door interlocks.

# 3  PRODUCT FEATURES

## MATERIAL DELIVERY MODULE

The Material Delivery Module (MDM) in the device holds four material cartridges necessary for printing a part. Two support material and two part material cartridges are housed in the MDM.

A cartridge of material can be replaced in a matter of minutes with no tools required. This feature significantly reduces material load time. In addition, you can warm up the material in the MDM in less than an hour, greatly reducing print time.

The MDM contains a waste liner with a disposable bag that allows the waste to be emptied by removing the bag and replacing it with a new one. The maximum capacity of the waste bag is 1311cm$^3$.  Bags and liners can be ordered by using part number 311215-00. Each order will contain 30 bags and 1 liner.

**Nitrile gloves are required when changing material cartridges or changing the waste bag.**

### MDM Capacity

Each cartridge holds approximiately 1.5kg of material for a total of 3kg support and 3kg part material.

### Material Cartridge

The ProJet 2500 material cartridges incorporate smart cartridge technology that contain information about the material that is in the cartridge and the MDM. This information enables the ProJet 2500 to verify that the user does not use the wrong material, use material incorrectly, or use an empty or expired cartridges, ensuring the material is safe to use.

## PRINT APPLICATOR

The print applicator is the assembly of the ProJet 2500 that applies material to the part as the applicator moves across the material surface.

The print applicator utilizes a Xerox M Series printhead with four axes of motion: The y-axis moves the applicator from the front to the rear. Other motion systems are utilized to ensure the exact amount of material is deposited, resulting in the high part accuracy produced on the printer. The applicator system's liquid level sensor maps the material surface by moving around the material surface. The sensor calibrates the position of the applicator so that it moves perfectly parallel to the material surface, enabling the print to be accurate and precise. The applicator system uses the motion axes that are connected to the applicator, enabling the 3D printer system to self-calibrate and permitting a customized setting of the applicator gap, or distance from the applicator's bottom to the material surface, for different materials.

### Print Applicator Safety

**Radiation: If any of the interlocks are defeated radiation can cause eye injury or blindness, burn injury and/or fire. Interlocks are to be defeated only by trained personnel when needed during service procedures.**

## ADDITIONAL DOCUMENTATION

The following documents will help you to achieve maximum proficiency with your ProJet 2500 .

### ProJet 2500 Facility Requirements Guide

The Facility Requirements Guide details the requirements necessary to install the ProJet 2500 3D Printer. Details include the necessary facility dimensions, electrical and pneumatic resources, and any equipment that may be needed for installation. An electronic version of this document is available at *https://3dscentral.3dsystems.com*.

### ProJet 2500 Installation Guide

The Installation Guide details the procedures required to properly install and set up the ProJet 2500 3D Printer at the customer's site. Only a 3D Systems Certified Field Service Engineer or a Certified Reseller is allowed to install the 3D printer system. An electronic version of this document is available at *https://3dscentral.3dsystems.com*.

### ProJet 2500 Material and Post Processing Guide

The Material Guides detail the use of materials that have been certified for use in the ProJet 2500. Each material has its own Material Guide. Information specific to each material is included in these guides. An electronic version of this document is available at *https://3dscentral.3dsystems.com*.

### ProJet 2500 Quick Start Guide
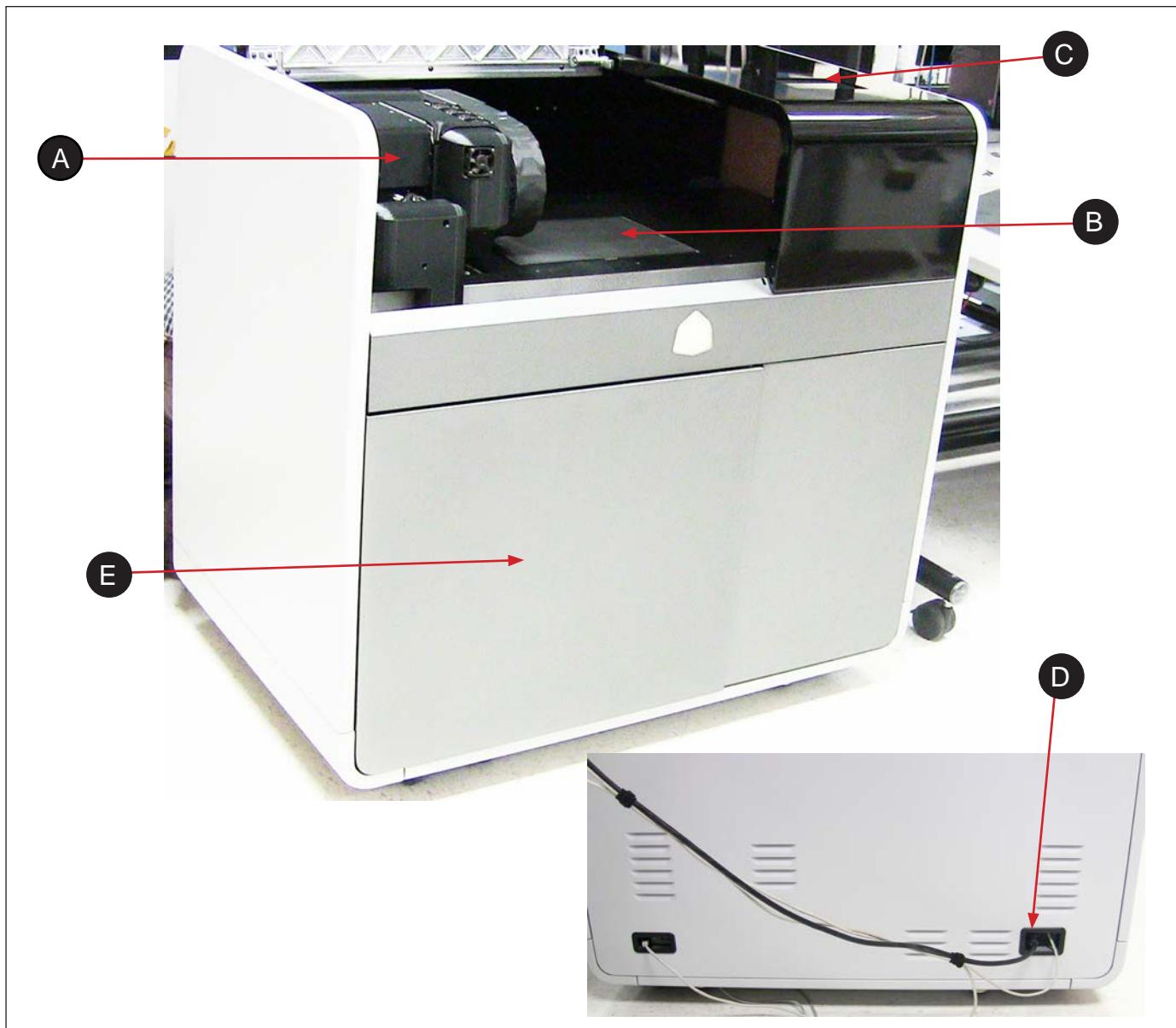
The Quick Start Guide gives the user a quick overview of the 3D printer system and the procedure for printing a part with the ProJet 2500. An electronic version of this document is available at *https://3dscentral.3dsystems.com*.

### ProJet 2500 Material Safety Data Sheets/Safety Data Sheets (MSDS/SDS)

Each material has its own MSDS/SDS. The user must be familiar with all information contained in these documents before handling the materials. Every material shipment includes a paper copy of its MSDS/SDS.

Electronic versions of the MSDS/SDSs are available on our website at *http://www.3dsystems.com/support/materials/msds*

**PROJET 2500 PRINTER SYSTEM**



**A**    **Print Engine :** The Print Engine contains major systems such as the Printhead, Planarizer, UV Lamp Assembly, Wave Amp and the IGUS Track.

**B**    **Print Zone:** Print Zone is the area where the print platform can be found. All print jobs are built on the print platform. For more information see **_Printing Area_** next page.

**C**    **User Interface (UI):** This is the built-in touchscreen which allows the user to interface with the printer. The touchscreen runs the Mycroft software that allows user to check printing status, material levels, as well as power printer on and off. For more information on what user can access through the UI go to the **_User Interface_** section of this manual.

**D**    **Electrical Cabinet (located in back of printer):** The electrical cabinet contains all the electrical equipment for the ProJet 2500. The cabinet can be accessed through the back of the printer.
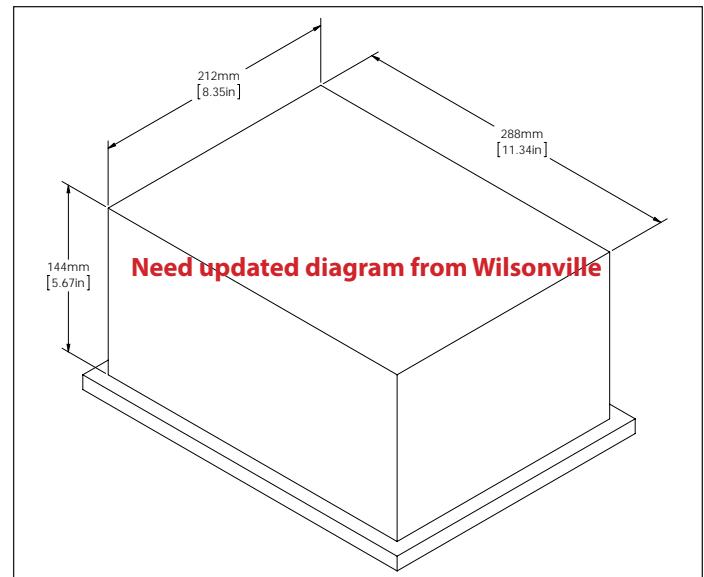
**E**    **Material Drawer Module (MDM):** The MDM drawer is a push/push type mechanism. To open the drawer push in, drawer should pop open allowing you to pull it open the rest of the way. The MDM contains the part and support materials and the waste bag.

## PRINTING AREA

The actual area that you can print a job consists of the length x width plus the maximum height of a job. This diagram illustrates exactly what the maximum build area is for the ProJet 2500.

## 3D PRINTER SYSTEM COMPONENTS

For 3D printer system requirements, consult the **Facility Requirements Guide**.



212mm
[8.35in]

288mm
[11.34in]

144mm
[5.67in]

**Need updated diagram from Wilsonville**
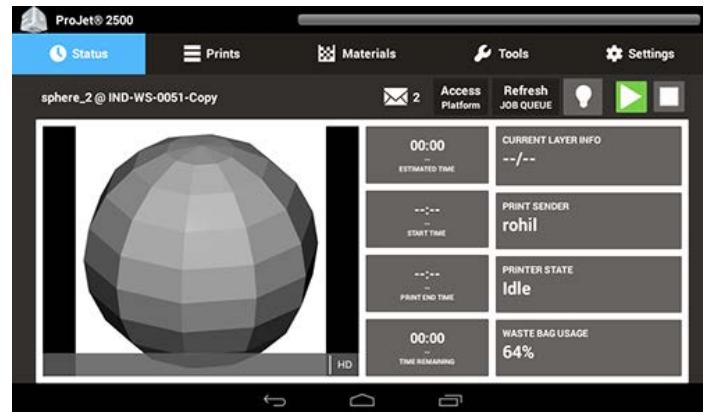
## User Interface

The User Interface consists of a tablet built into the top of the printer to the right. There are five main screens that contain sub menus that allow the user to do a variety of things through the tablet. These five screens and their menus are:



1. Status Screen

   - Current Layer Info
   - Print Sender
   - Printer State
   - Waste Bag Usage
   - Access Platform
   - Play
   - Refresh Job Queue
   - Email Notification

2. Prints Screen

   - Opens Print Queue for the Printer

3. Materials Screen

   - Material Status
   - Part Message
   - Support Message
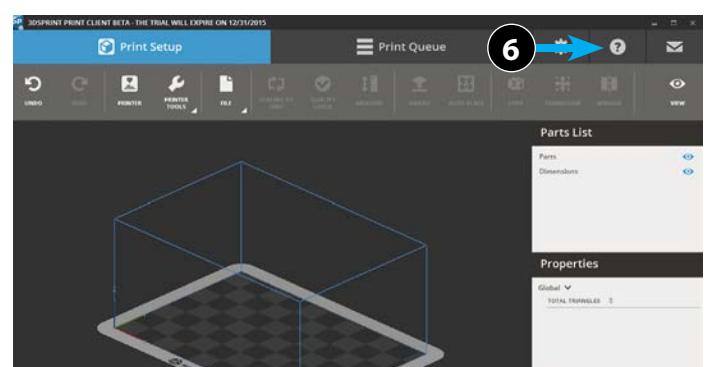
4. Tools Screen

   - Diagnostics
   - Material Change Wizard
   - Printer Info
   - Printer Usage
   - Printer Shutdown

5. Settings Screen

   - Admin Settings
   - Email Alerts
   - Alert Settings
   - Network Settings
   - Printer Connection

These are the only things that can be done through the UI. All other operations must be done through a computer/laptop using the 3D**SPRINT**™ software. For complete information on using 3D**SPRINT** the **Help** (6) file can be accessed through the icon in the software.
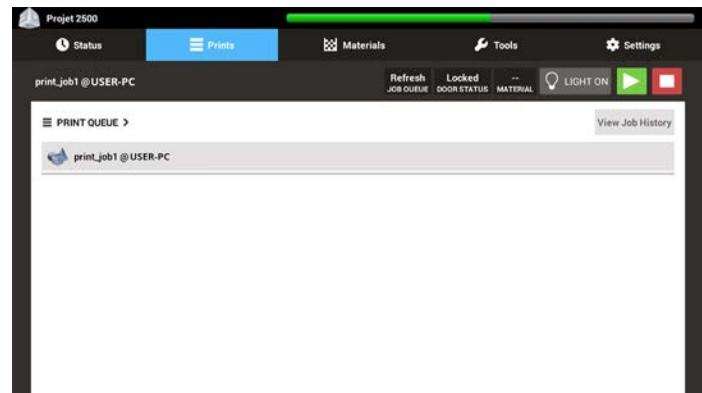
## Status Menu

**Status Screen** - This is where the user can Access the Platform, select Play to begin printing a job or Stop to stop a current job printing. The user can also check several things here such as, the Current Layer Info, Estimated Time, Start Time, Printing Time, Time Remaining, the Print Sender, Printer Status, Waste Bag Usage, and email notifications.



## Prints Menu

**Prints Menu** - The prints menu allows you to manage the print queue for the printer.
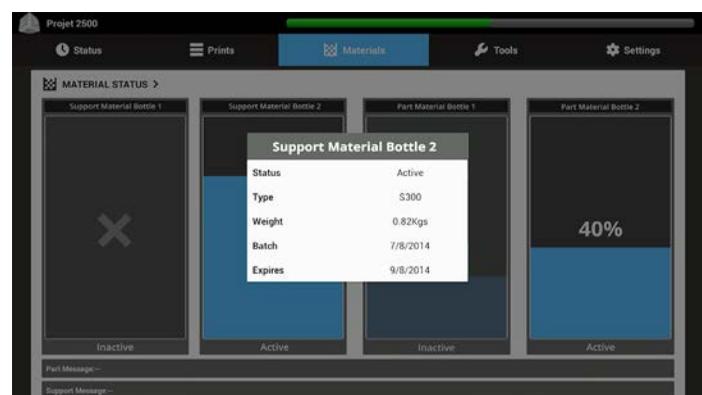


## Materials Menu

**Material Status** - Allows user to check the level of part and support material level in the MDM. Select **Materials** Tab at top. This menu also shows messages about the Part and Support material at the bottom. Select this area and message will pop up on the screen.
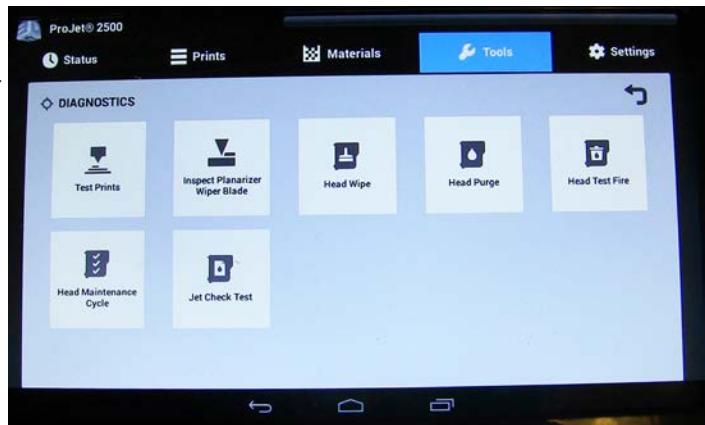


**Material Information** - Clicking on the material level in the material status screen will bring up an information box about that particular cartridge of material. Information listed here is:

- **Status** - Active or Non-Active
- **Type** - Type of material in cartridge
- **Weight** - Weight of material remaining in cartridge
- **Batch** - Date batch of material was made
- **Expires** - Date material expires on
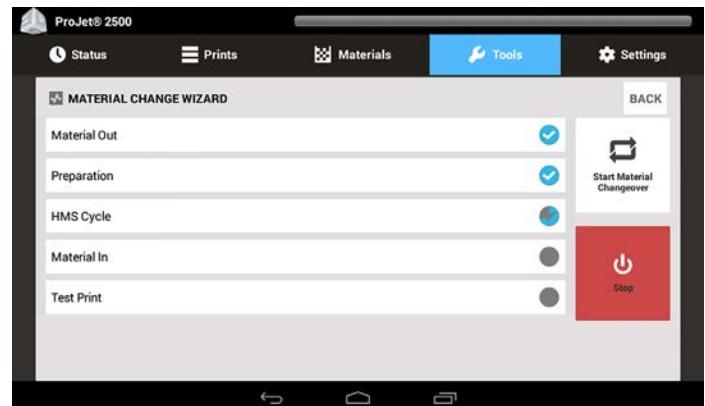
## Tools Menu

**Diagnostics Screen** -  The Diagnostic screen is where the User performs the following routines: Test Prints, Inspect Planarizer Wiper Blade, Head Wipe, Head Purge, Head Test Fire, Head Maintenance Cycle, and Jet Check Test. More information on these routines can be found later on in this manual.
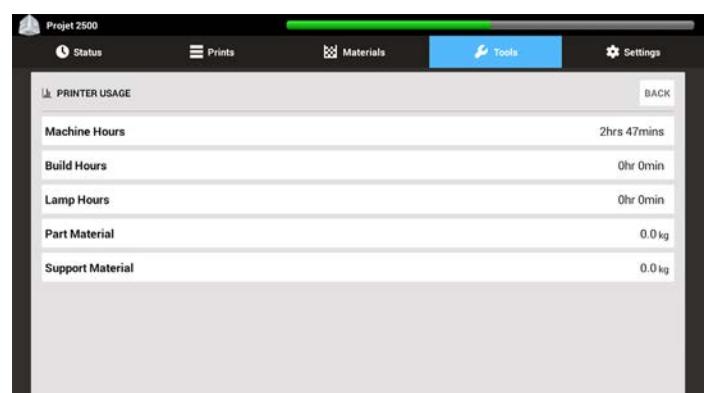


**Material Change Wizard** - This allows the user to change the Part Material type through the UI and run a Test Print or an HMS Cycle as well.
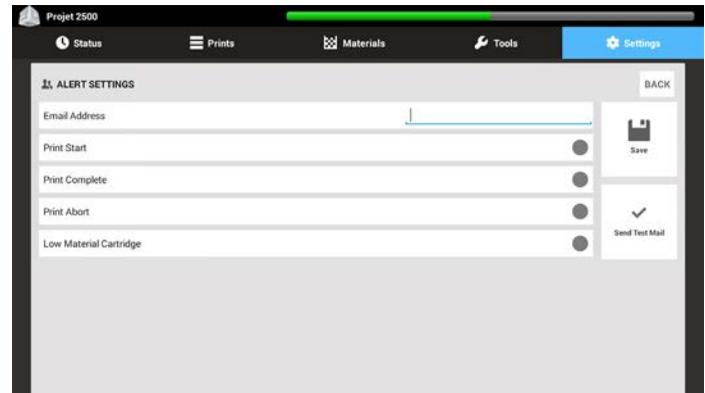


**Printer Info** - This screen displays information about the printer.
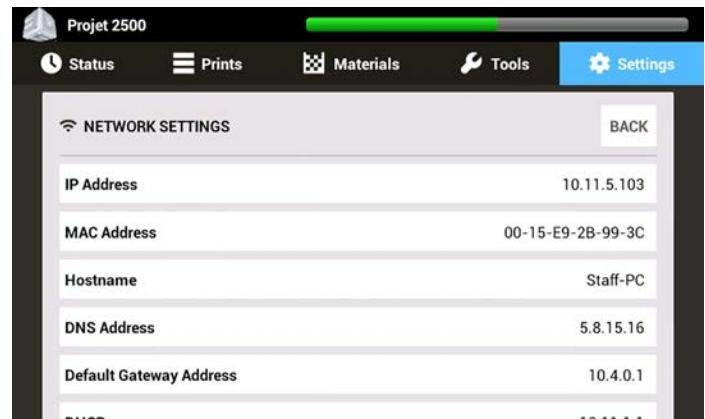


**Printer Usage** - This screen displays information about the printer usage, for example, how many hours the machine has been used, how many hours it was actually building, how many hours the lamp has been on, how much part material has been used and how much support material has been used.
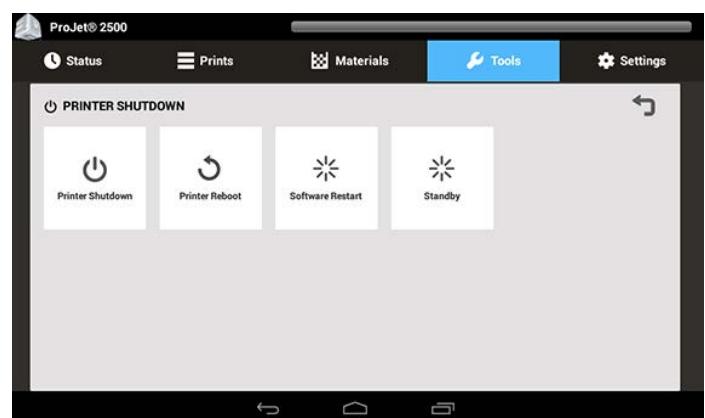
**Alert Settings** - This is where user would set up alerts such as an alert for Print Start, Print Complete, Print Abort or a Low Material Cartridge, you also input an email address you want the alert to be delivered to.

**Network Settings** - This is where the user can view all the Network settings. Various network settings include: IP Address, MAC Address, Hostname, DNS Address, Default Gateway Address, and DHCB.
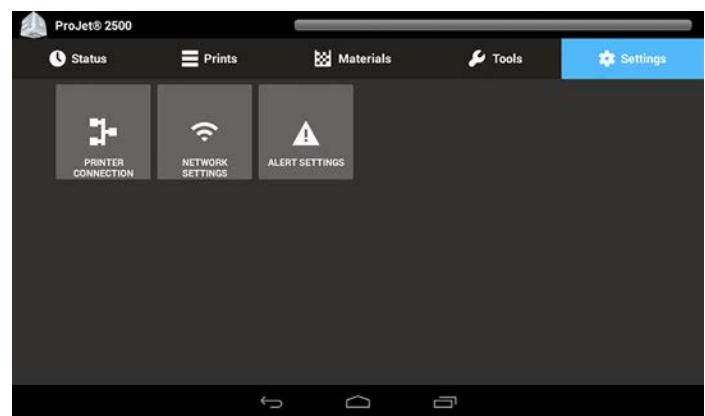
**Printer Shutdown** - The user uses this screen to shut down the printer, reboot the printer and do a software restart.
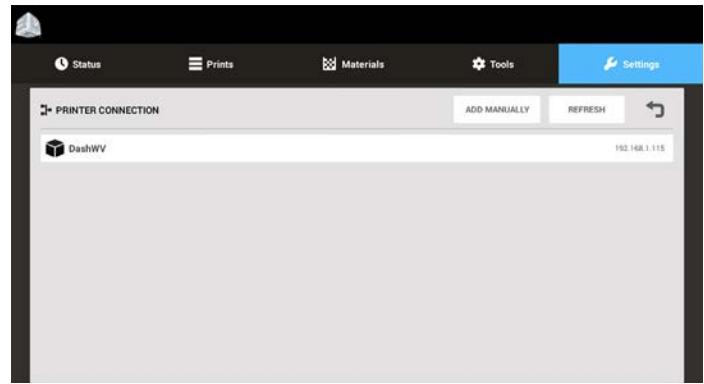
## Settings Menu
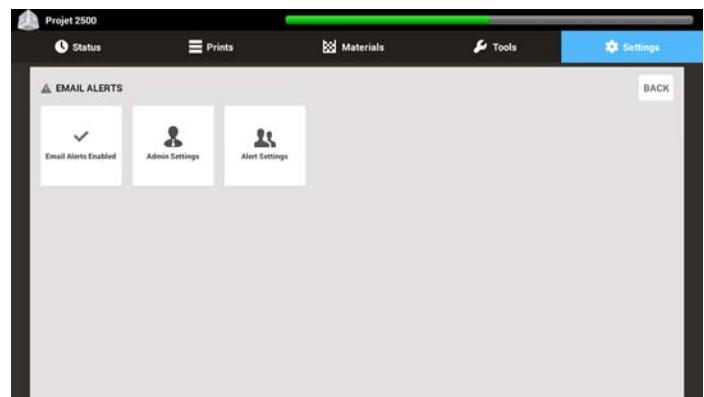
In the Settings tab is where you manage the Printer Connection, Network Settings, and Alert Settings.

**Printer Connection** - This is where user can add a printer, either manually or by searching through a list of available printers on the network.
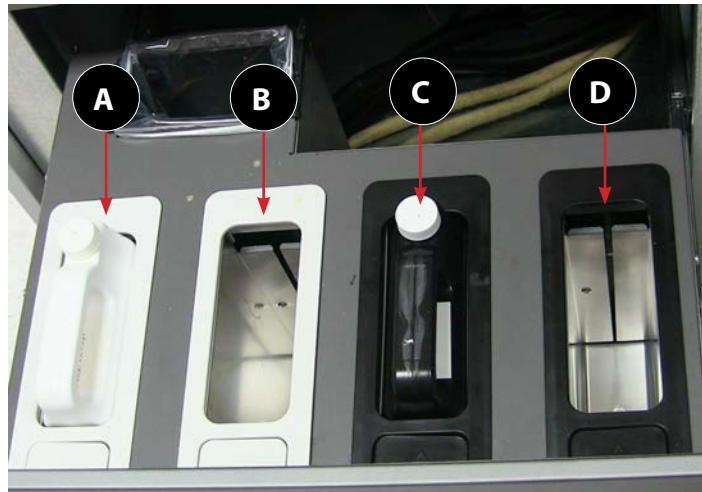


**Email Alerts** - User can sign up to enable email alerts here, edit and view admin settings, and alert settings.

## Material Delivery Module (MDM)

**Support Material Containers A and B:** These containers hold the VisiJet® M2 SUP support material that is used for the build. The support material is housed on the left side of the MDM. These containers also incorporate smart cartridge technology that contain the same type of information about the material that is contained in the cartridge and the MDM.

**Part Material Containers C and D:** These containers hold the cartridges of the VisiJet® part material, which are used to build parts on the 3D printer system. The part material is housed on the right side of the MDM. The refill containers incorporate smart cartridge technology that contain information about the material that is in the cartridge and the MDM. This information enables the ProJet 2500 to verify that the user does not use the wrong material, use material incorrectly, or use empty or expired containers, ensuring the material is safe to use.



## Electrical
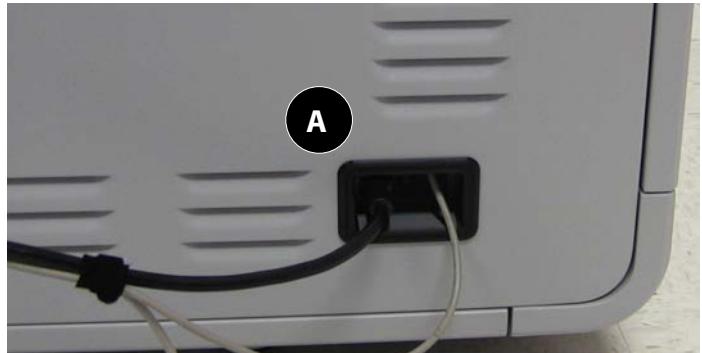
**Power Supply:** In the rear of the printer there is an outlet to plug in the power supply cord and a switch to turn the system on. This is the only way to power the printer on from a complete shutdown state. Do not use this switch to shutdown print. Printer should be shutdown through the UI and brought back up by toggling the power switch on the back. (A)

⚠️ **CAUTION: It is advised to never pull the plug or use the switch as a means to power down the printer, always power off through the Shutdown process on the UI.**

✎ **NOTE: Unless the printer will not be used for a substantial period of time, it is best to leave it powered on and in an Idle state.**

The software that will be used to create and send files to print a build job is called 3D**SPRINT**™. This section is designed to walk you through selecting your printer, selecting materials, and printing your first print. For detailed information on the features of 3D**SPRINT** you can access the full help document by clicking on the [?] icon inside the 3D**SPRINT** software.

## PRINTING A PART

To print your first part follow these instructions.

> ✎ NOTE: Ensure print platform is installed prior to printing a part. See <u>Print Platform Installation</u> for more information.

### Launch 3D**SPRINT**

Double click the 3D**SPRINT** icon on your computer/laptop or select it from your list of available programs loaded on your computer.

> ✎ NOTE: Before beginning click on the Settings Icon ⚙ to check the units of measure before you begin to ensure you have the correct units of measure selected.

### Selecting the Printer
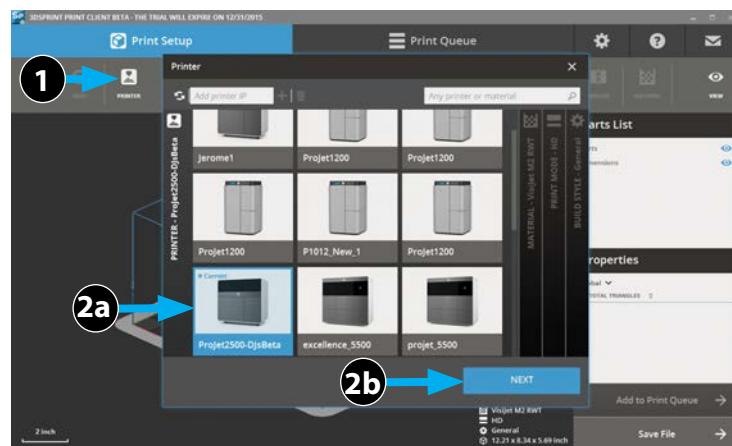
1. Select the printer you wish to print your part on. Click on the **Printer** (1) button at the top.

2. A list of available printers will come up. **Click on desired printer** (2a) on the printer you wish to use and select **Next** (2b).

> ✎ NOTE: If desired printer is not listed you can select refresh icon ⟳ or manually type the IP adress in the field next to refresh.
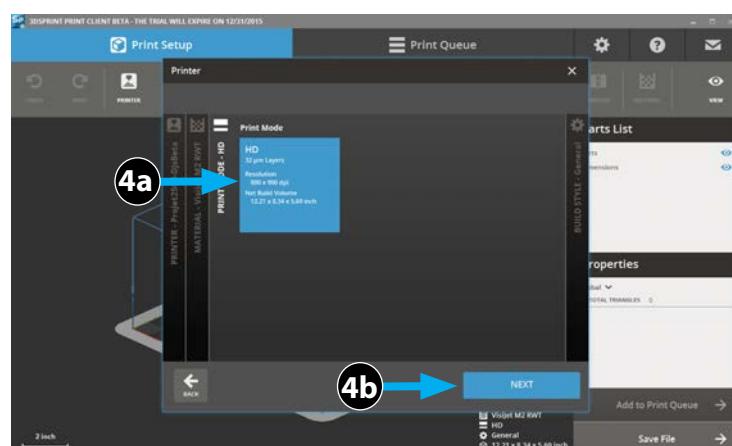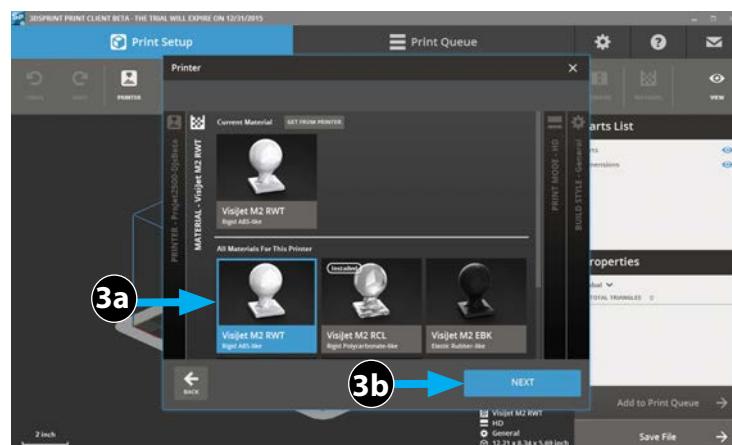
### Selecting Material

1. At this point you must select the desired material part will be printed with. **Double Click desired material** (3a) and select **Next** (3b).
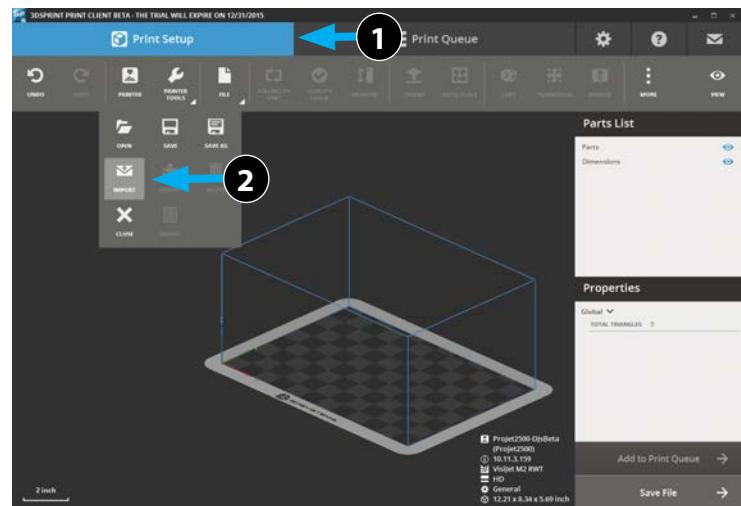
### Selecting Print Mode

1. The next option to select is the print mode. Available print modes will automatically populate after your select your material. Click on **desired mode** (4a) and select **Next** (4b).
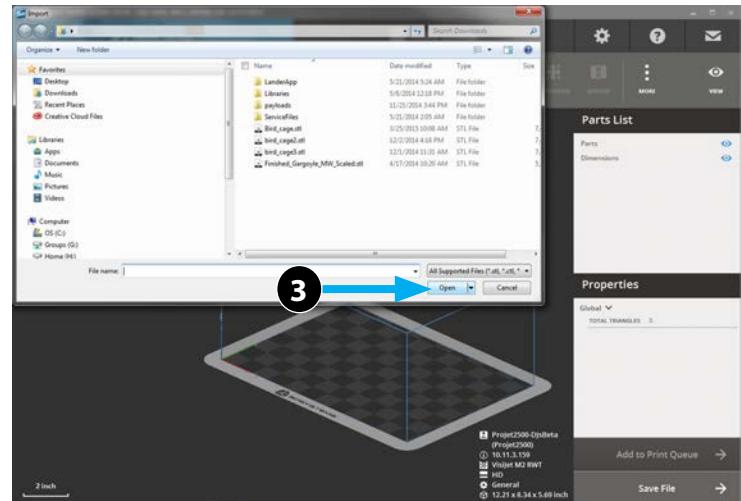
**Printing the File**
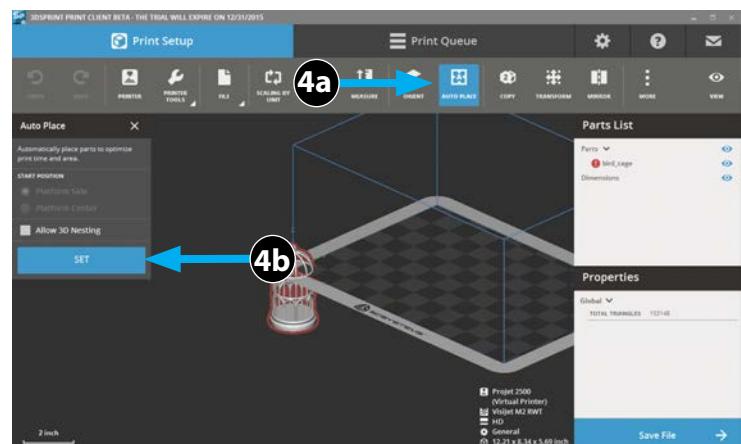
1. In the **Print Setup** (1) tab select **File > Import** (2)
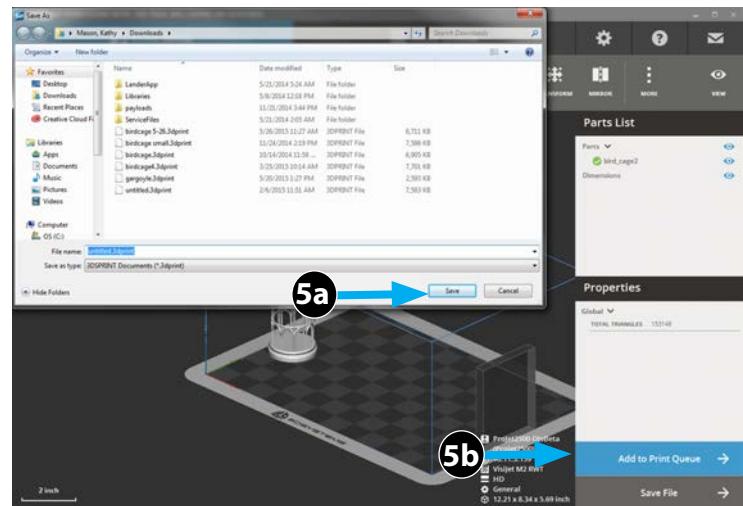


2. Navigate to the file you wish to print, click **Open**.
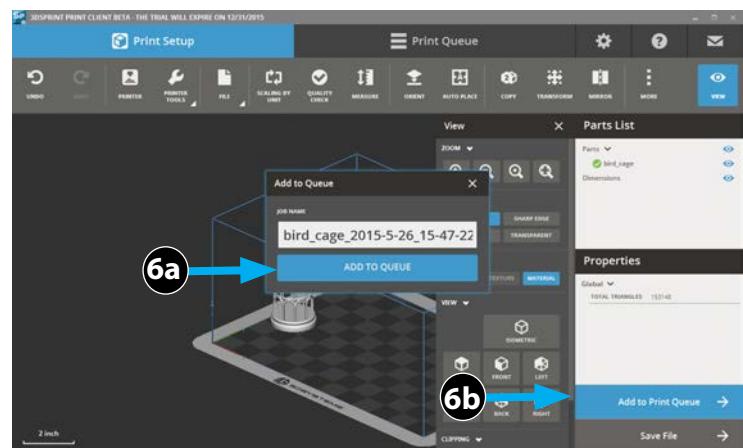


3. Select **Auto Place** (4a) **> Set** (4b).
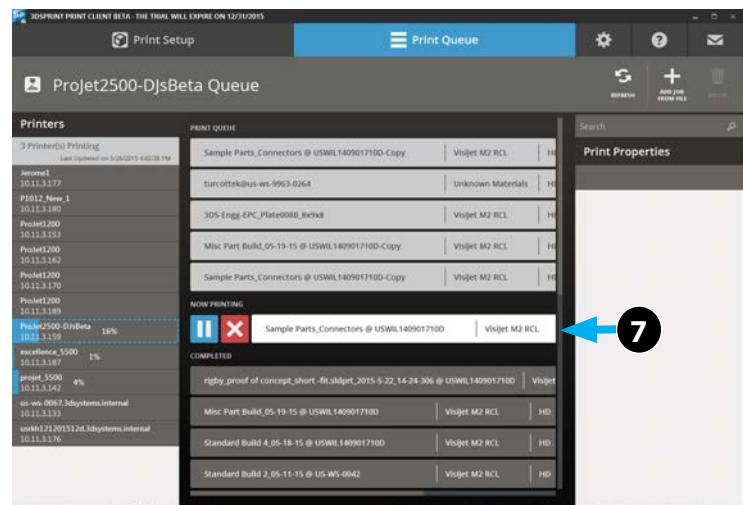
4. Click **Save File** (5a).

5. Navigate to where you want the file saved and click **Save** (5b).



6. Select **Add to Print Queue**. (6a)

7. A verification box will come up. Check the file name and when you are sure it is the correct file, select **Add to Queue** (6b).



8. Print Queue will display current parts being printed (7) and where your job is in the queue.
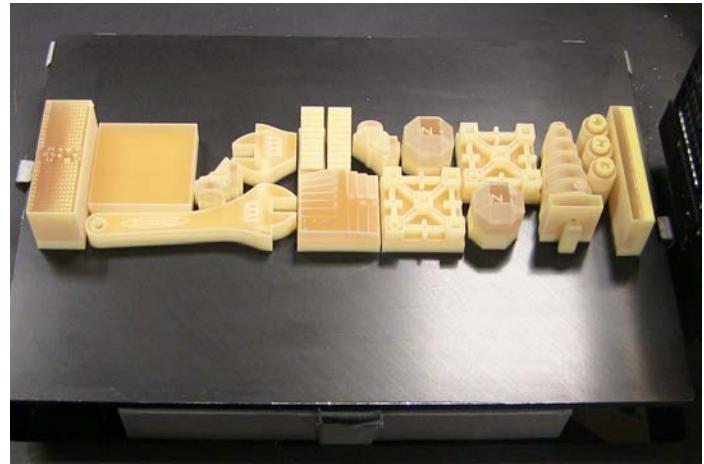
## 6  POST PROCESSING PROCEDURES

After a part is printed, there are steps that must be followed before it can be considered finished. Following these steps to successfully process parts.

### STEPS FOR POST PROCESSING A PART

1.  When a part is finished printing the platform will raise and the platform clamps will release. Lift the entire platform off of the printer.

    ✎ **NOTE: Make sure you are wearing nitrile gloves when handling build platforms and parts to keep hands free of material.**



2.  Place the platform in a freezer for approximately 30 minutes. This will cool the parts and enable them to separate easily from the platform.

    ✎ **NOTE: Placing print platform on a metal surface as shown here speeds up the cooling time.**



3.  After parts are cooled sufficiently, wearing nitrile gloves, place parts in a metal basket.

    ✎ **NOTE: Nitrile gloves must be worn when handling all parts that have not been processed.**

4. Place the entire basket in a 70°C (158°F) oven for 30 minutes or until the wax support material has melted off.

✎ **NOTE: Ensure you set the basket on top of a drip tray to allow support material to drip off into the tray.**



5. Remove parts from oven and wipe off any remaining support material with a lint free paper towel.



6. Place parts in a clean warm mineral bath (approx. 65°C (149°F) ) for 30 minutes.

7. After 30 minutes wipe parts dry and they are ready to use.
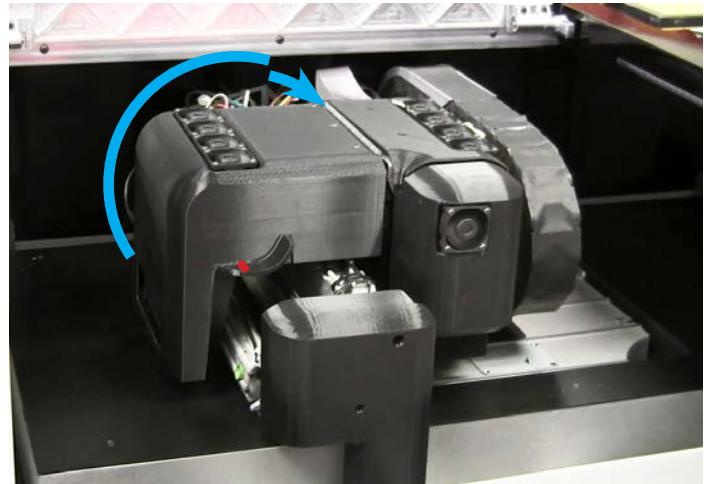
## INSPECT PLANARIZER PROCEDURE

The planarizer requires no adjustments once it is installed on the printer.The planarizer does require cleaning as part of a preventive maintenance cycle.

### Cleaning the Planarizer Blade

1. Move print engine to the **Ready** state by selecting **Inspect Planarizer** under **Tools > Diagnostics** in the UI. This will place the printer over build plate area and will tilt the blade.

2. Lift the cover to expose the planarizer blade.
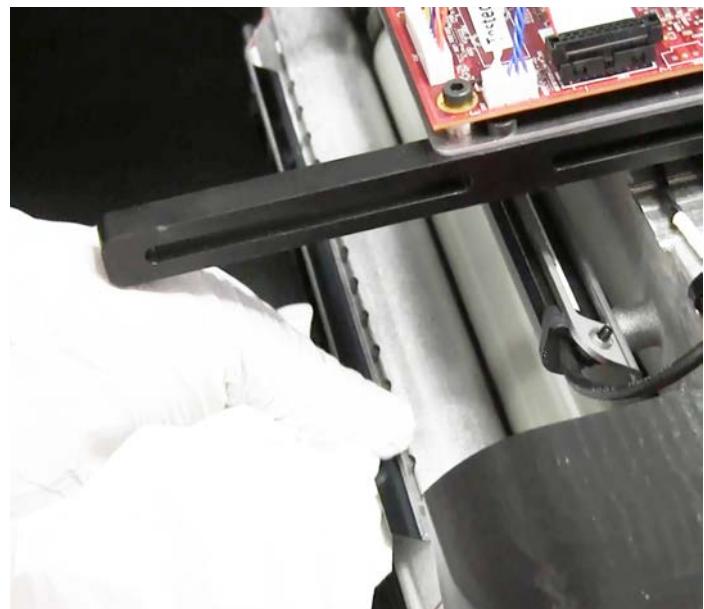


3. While wearing nitrile gloves, wipe excess material from the blade using a lint-free cloth, if necessary apply some isopropyl alcohol to the cloth before wiping.

⚠️ **CAUTION: Blade is sharp, be careful not to cut yourself when wiping blade.**

✎ **NOTE: If buildup cannot be cleaned off, or if there are signs of damage to the blade, it may be necessary to replace it. See** *Replacing Planarizer Blade* **for instructions.**
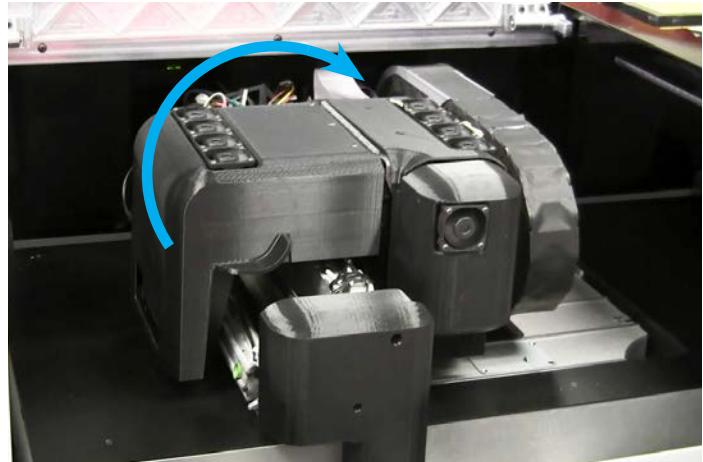
## Inspect Planarizer Blade Routine

If any of these signs are visible on the Planarizer Blade it will need to be replaced:
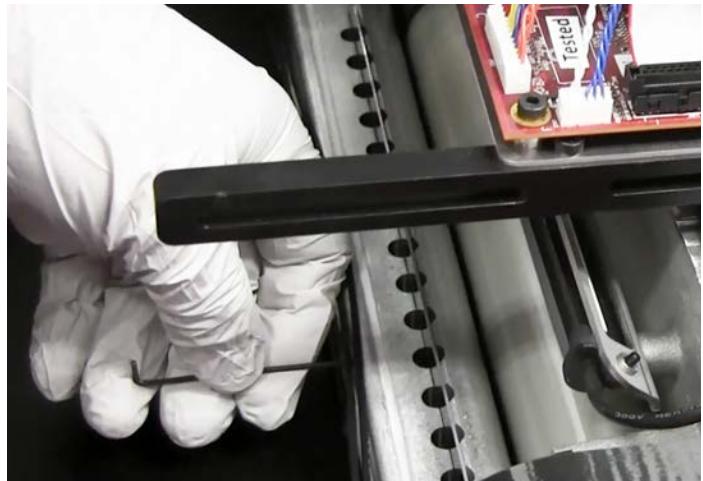
- Excess buildup that cannot be cleaned off
- Blade is warped
- Blade is damaged (bent or kinked)

To change planarizer blade:

1. Move print engine to the **Ready** state. This will place the printer over build plate area and will tilt the blade.
2. Lift the cover to expose the planarizer blade.



3. Loosen 2x5 cap screw holding planarizer blade in place with a 1.5mm Allen wrench.



4. Carefully pull blade out of aluminum housing.

⚠️ **CAUTION: Blade is sharp, be careful not to cut yourself when removing blade.**
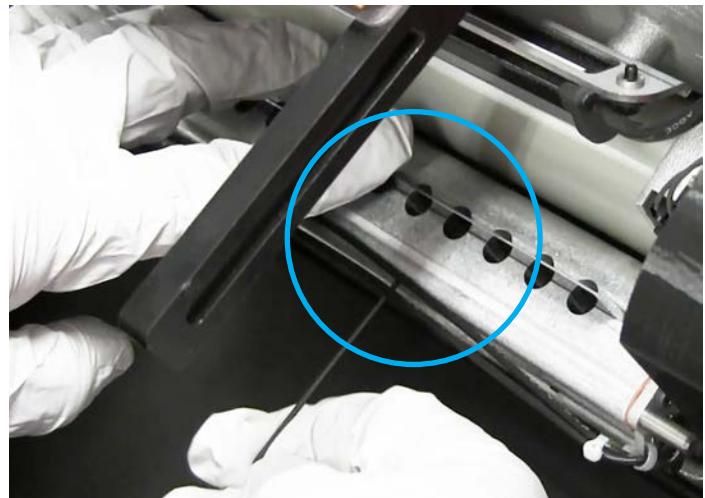
5.  Wipe blade off with isopropyl alcohol and inspect for damage.

    📝 **NOTE: If blade shows signs of damage replace with a new one, if blade can be cleaned and no damage is visible you can replace with existing blade.**

    

6.  Place blade with notch facing towards the inside and resting behind the metal bar. Start at the left end and insert until you can feel the blade drop into the notch.

    

7.  Replace 2x5 cap screw, and tighten with a 1.5mm Allen wrench while holding blade in place with other hand, as shown.

8.  Return planarizer to the **Home** position. Printer is now ready to use.
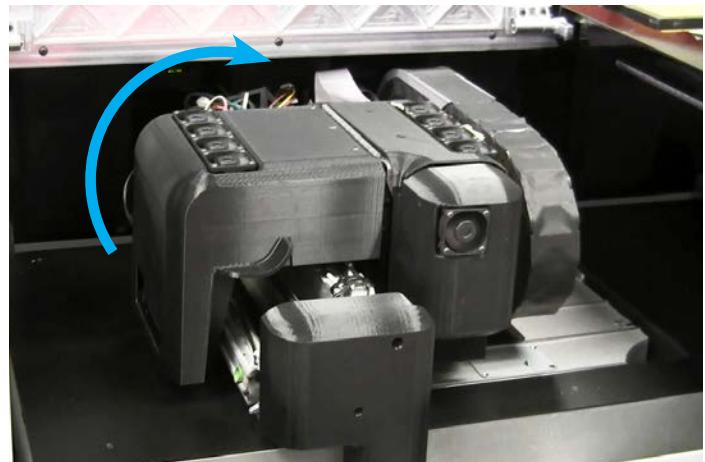
## Inspect and Clean Planarizer Housing

Material can get trapped and built-up in the housing of the planarizer. It is important to periodically inspect and clean these areas. Follow these steps to inspect and clean the planarizer housing.

To inspect and clean planarizer housing:
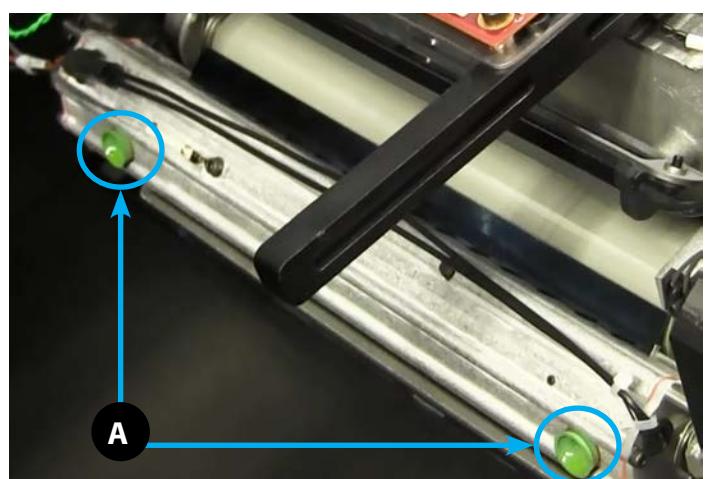
1.  Move print engine to the **Ready** state. This will place the printer over build plate area and will tilt the blade.

2.  Lift the cover to expose the planarizer blade.



3.  Visually inspect the planarizer. It may be necessary to clean excess material from the holes in the housing. This can be done using a cotton swab and isopropyl alcohol.

4.  Using a cotton swab, gently wipe out excess material from holes. For stubborn areas, use a bit of isopropyl alcohol on the cotton swab before wiping.

5.  Continue this process for everywhere you see buildup.



6.  Rotate planarizer so the two planarizer ducts (A) can be easily accessed as shown.

7. Inspect around ducts for excess material buildup. Gently wipe around ducts with lint-free cloth wearing nitrile gloves. Wipe up any excess material.

8. When all excess material has been cleaned up, planarizer can be returned to **Home** position and printer is ready to use.

## Replacing the Particulate Carbon Filter

The particulate carbon filter is designed to remove particulates, odors, and gasses from the build area.

The particulate carbon filter will need be checked every 3 months and replaced if necessary. Access to this filter is from the front of the machine on the right hand side. Loosen the thumb screw on the door containing the filter, remove the filter, insert new filter, close door, tighten thumb screw.

> **NOTE: This is a customer replaceable part. Particulate Filter with Handle - P/N 310259-00.**

Photo at right illustrates a filter that needs to be changed.

Photo at right illustrates a filter that is clean and new.

## SHRINK COMPENSATION FOR PROJET VISIJET® MATERIALS

Material shrinkage occurs in thermosets as they transition from liquid state to solid state during the curing process.

The ProJet Accelerator Client Software has features that allow the user to compensate for the natural shrinkage of the material in order to fine tune the accuracy of a part.
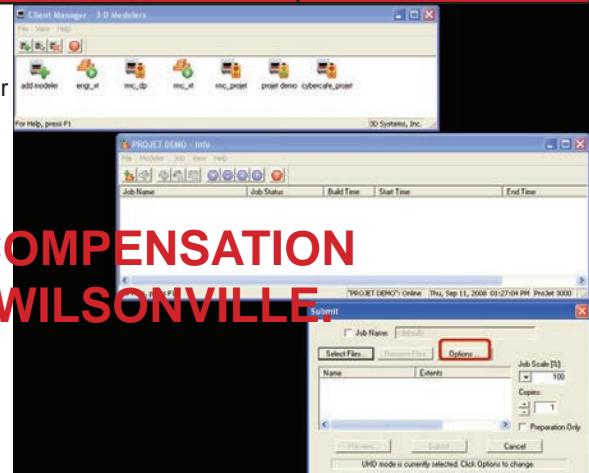
These shrink compensation values serve as general guidelines to setting shrink compensation. Part building and cleaning in a controlled process will best determine the optimal shrink compensation values for a particular geometry.

| Material | X Value | Y Value | Z Value |
|---|---|---|---|
| VisiJet® M2 RWT (Rigid White) | 1.01% | 1.01% | 0.00% |
| VisiJet® M2 RCL (Rigid Clear) | 1.01% | 1.01% | 0.00% |
| VisiJet® M2 RBK (Rigid Black) | 0.55% | 0.25% | 0.00% |
| VisiJet® M2 EBK (Elastomeric Black) | | | |
| VisiJet® M2 ENT (Elastomeric Natural) | | | |
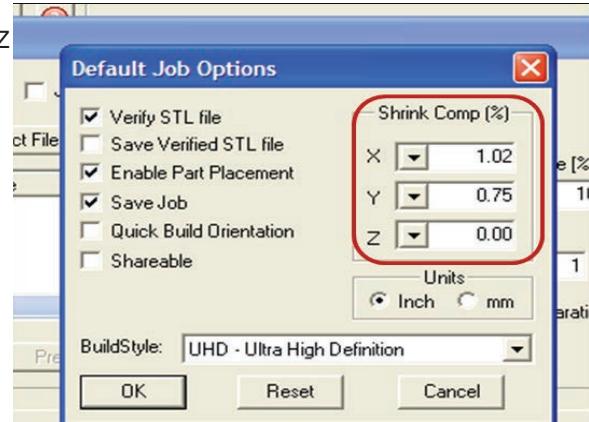
Enter Standard Shrink Compensation Values for the material.

1. Open **ProJet Accelerator** Client software and select the desired 3D printer

2. Select the part to build.

3. Select the **Options** Button

## WAITING ON SHRINK COMPENSATION INFORMATION FROM WILSONVILLE.

4. Within the **Options** panel, enter shrink compensation values for X, Y, and Z chart on previous page for values).

Identify the exact X and Y dimensions of the part using a CAD program.

- Most CAD programs and simple .stl file viewers will provide a way to view a part with its dimensions.
- Make note of the actual X and Y dimensions as XCAD and YCAD.

Build and clean the part and take measurements of the finished part.

- It is recommended to measure along the critical dimensions of the geometry, take measurements in multiple areas and take an average of the values.
- Measurements can be made using calipers or more advanced metrology methods.
- Make note of the X and Y dimensions of the printed part and mark them as XPART and YPART.

> ✎ **NOTE: If the measurement of the finished part is different from the measurements of the CAD model, fine tune the accuracy using scaling factors.**

Determine Scaling Factor to use for the next build.

- Use the following formula calculate the scaling percentage to be used on the fine tuning build:

X Scaling Factor = (XCAD - XPART) / XCAD* 100 (answer will be as a percentage)

Y Scaling Factor = (YCAD - YPART) / YCAD* 100 (answer will be as a percentage)

**EXAMPLE:**

<span style="color:red">**WAITING ON SHRINK COMPENSATION INFORMATION FROM WILSONVILLE.**</span>

X measurement of CAD model = 3.000"

Y measurement of CAD model = 5.000"

X measurement of printed part = 2.998"

Y measurement of printed part = 4.989"

X Scaling Factor = (3.000 - 2.998) / 3.000*100 = 0.067%
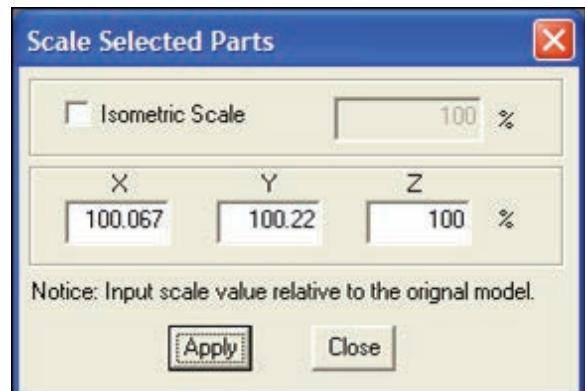
Y Scaling Factor = (5.000 - 4.989) / 5.000*100 = 0.22%

Enter Scaling Factor for adjustment build

1. Open **ProJet Accelerator Client** software and select the desired 3D printer system.
2. Select the part to print.
3. Open **Print Preview** to view the part. Select the part (color should be yellow)
4. Select the **Scale** Icon and enter the dialog box to enter the above scaling factors.
5. Uncheck the **Isometric Scale** button. This allows user to make individual X and Y adjustments.
6. In the example above the X scaling factor should be 100% + 0.067% = 100.067%
7. The Y scaling factor should be 100% + 0.22% = 100.22%
8. Enter these two numbers in the corresponding scaling boxes for X and Y.



Build Part with Scaling Factors and measure

Additional iterations of adjusting scaling factors and taking measurements may be necessary with certain geometries.

## PRINT PLATFORM REMOVAL AND INSTALLATION

1. Ensure the printer is turned on and the Printer State is in **Idle** or **Standby** mode.

   *NOTE: This is the normal state you should find the printer in when you open the door.*

   *NOTE: Make sure you are wearing nitrile gloves before performing this procedure. Always protect yourself from possible exposure to materials.*
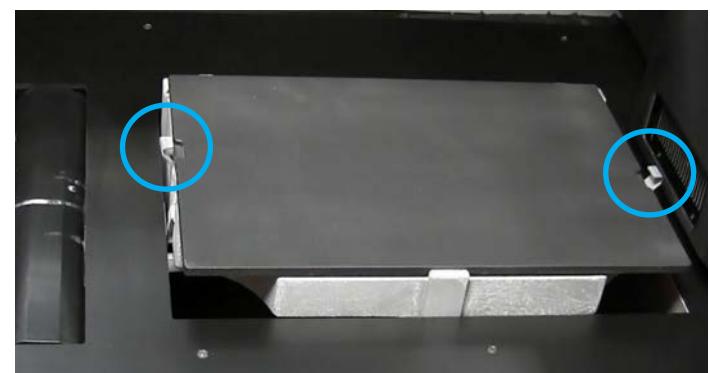


2. Select the **Access Platform** button on the printer touchscreen.

   *NOTE: The Access Platform will not be available to select if the printer is not ready for the user to access the print platform.*
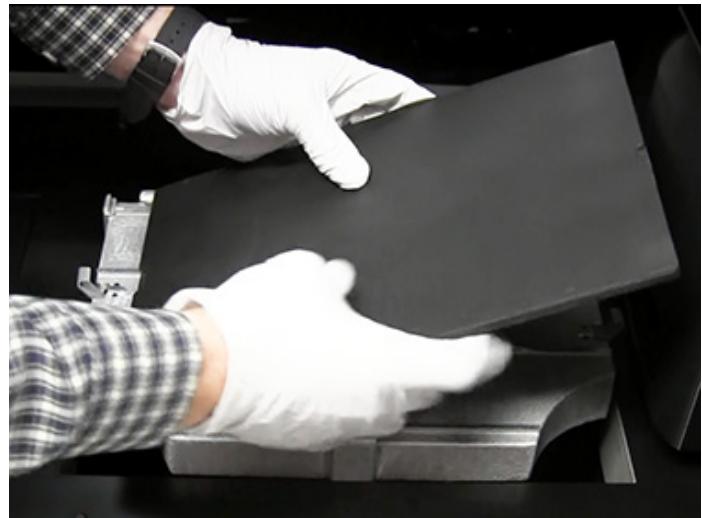


3. The printer will move the plate into place in order to allow access to the build platform. When prompted, open the door to access the print platform.
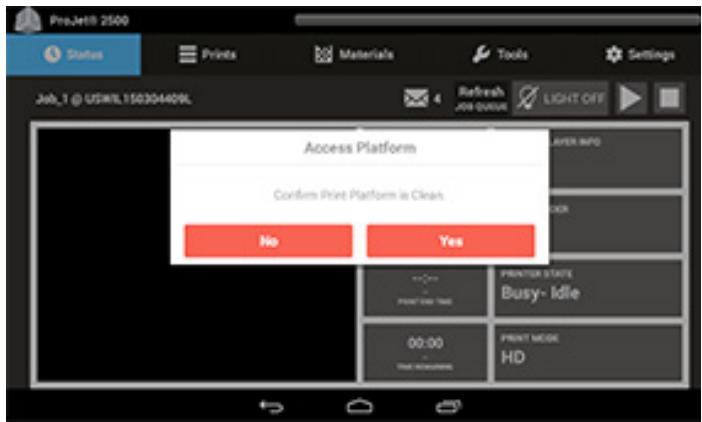


4. Wearing nitrile gloves, lift platform off of plate.

5. Place new, cleaned print platform on plate. Close top door. The plate will automatically lower and clamp the print platform in place.



6. Before a print will run a message will display asking user to confirm that the platform is clean, verify the platform is clean.

## MATERIAL CARTRIDGE REMOVAL AND INSTALLATION

When a material cartridge is empty and needs to be replaced, or if a partially filled container needs to be replaced with a full container, perform the following procedure.

✍ **NOTE: It is important to verify the type of material currently in the MDM before proceeding with these steps.**
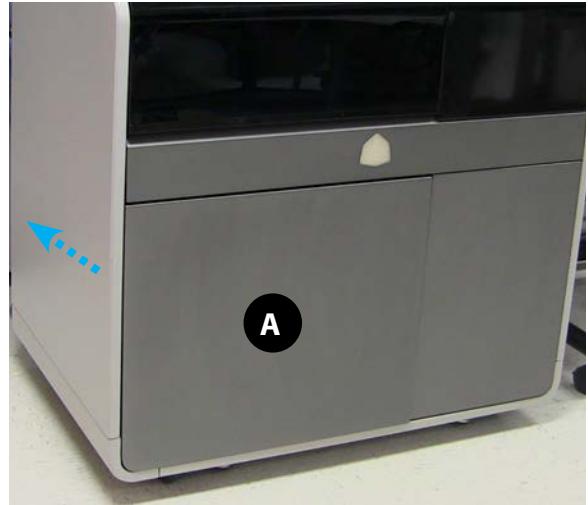
⚠ **IRRITANT! Wear protective clothing, disposable nitrile gloves, and goggles, while performing the following steps:**

### Removing Material Cartridge
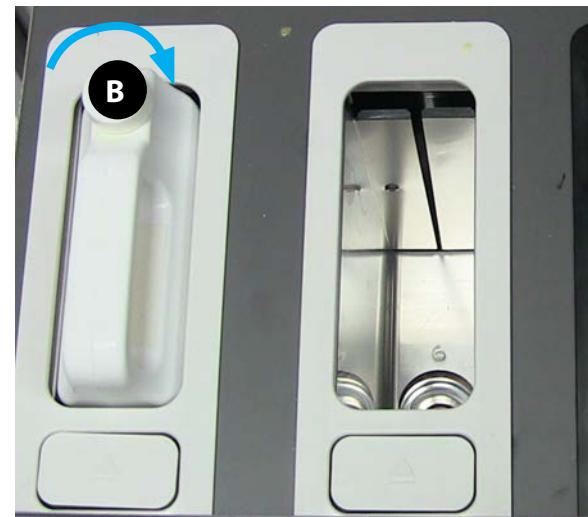
✍ **NOTE: Cartridges cannot be removed from a cold printer. The printer must be warm before drawer will open and cartridges can be removed.**

1. The MDM drawer (A) is a push/push mechanism. Push to open drawer, push to lock drawer.
2. Open the MDM drawer by pushing the drawer panel in so it opens.



3. Pull the MDM drawer open.
4. Turn the material cap (B) a 1/2 turn to clockwise to tighten the vent cap.



5. Press the release button (C) on the front. You will hear the cartridge release. Pull the cartridge out of the slot.
6. Dispose of the empty cartridge according to local regulations.



7. Wearing nitrile gloves, use a disposable paper towel and wipe all material from the container seal assembly, if necessary you can use some isopropyl alcohol on the paper towel to wipe up the excess material.
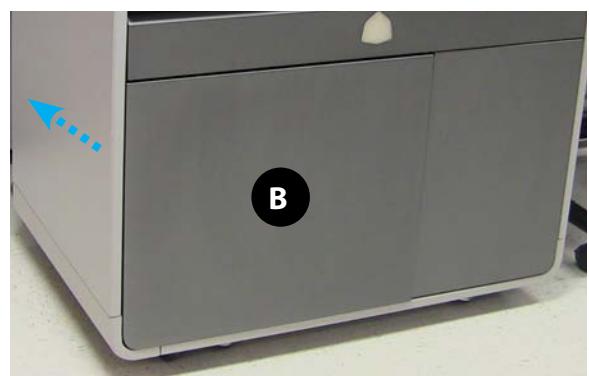
## Installing New Material Cartridge

✎ **NOTE: Cartridges cannot be installed into a cold printer. The printer must be warm before drawer will open and cartridges can be installed.**

To place a material cartridge into the MDM, perform the following steps:

1. Obtain a new material cartridge ensuring that it is the same material as currently installed in the MDM.

2. If drawer is not already open, push to unlock drawer.

3. Pull open the MDM drawer.

✎ **NOTE: The steps to install a support cartridge are the same as installing a material cartridge.**



✎ **NOTE: To install cartridges into the MDM drawer properly ensure that the small cap be installed away from the user.**
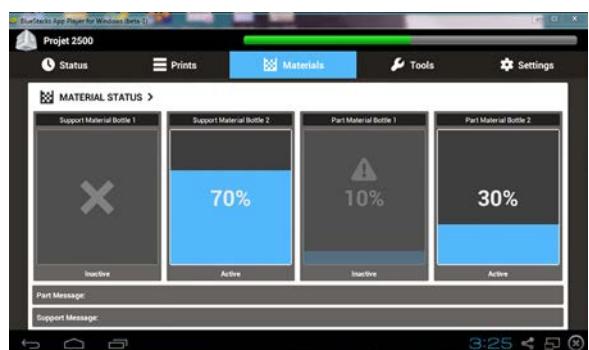
4. Place cartridge in slot and push down until you hear it click in place.

5. Vent each cartridge by loosening the material cap (A) by a 1/2 turn counterclockwise.



6. Close the MDM drawer (B), until it's latched securely.



7. Check the material level under the **Materials** tab on the UI to ensure cartridge is ceded properly into MDM and ready to print.
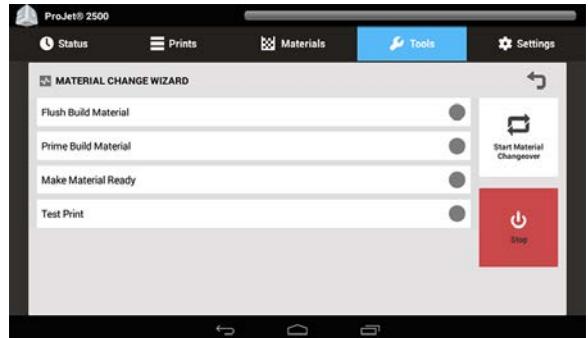
## MATERIAL CHANGE OVER PROCEDURE (MCO)

When changing from one print material to a new print material you must follow this procedure to ensure successful prints.
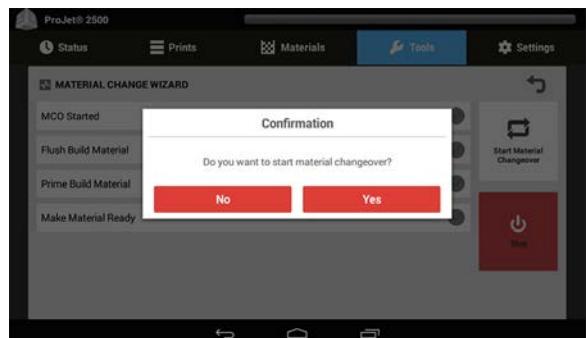
> **NOTE: If you are changing from a pigment to a clear this will be a two-material process. When changing from one pigment to another you must first go from pigmant 1 to clear to pigment 2. This is the only way to ensure that all of the first pigment is sufficiently flushed out of the system before you introduce a new pigment. Doing so will ensure successful prints and keep the two pigments from mixing and causing clogs in the system.**

1. From the Machine UI, select **Tools > Material Change Wizard.**



The first thing that will appear is a confirmation box asking if you want to start a material changeover.
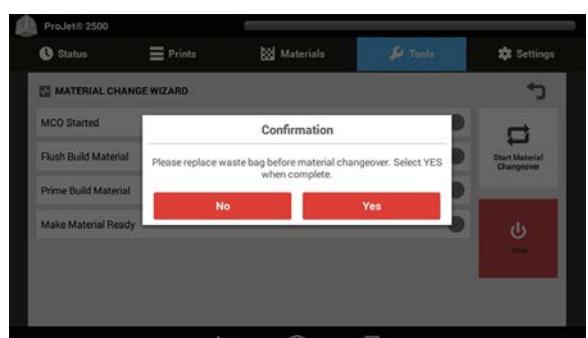
2. Select **Yes**.
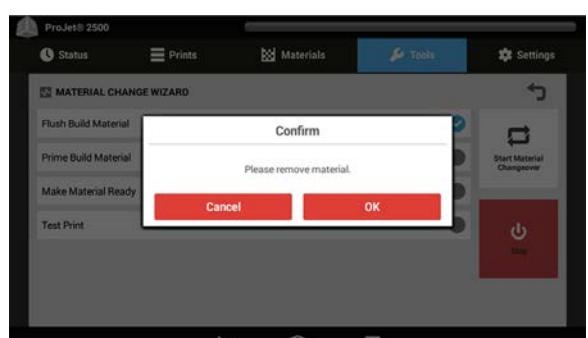


The UI will then ask you to replace the waste bag before starting a material changeover.

3. Open the MDM Drawer and check the waste bag. If it is at least half empty, leave bag in place and select **Yes**, otherwise change the waste bag and select **Yes**.
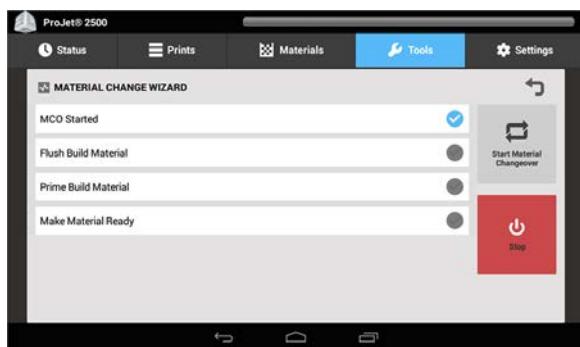
4. Close material drawer and continue.



5. The next thing you will be asked is to remove the part material. Remove both cartridges of part material and select **OK**.
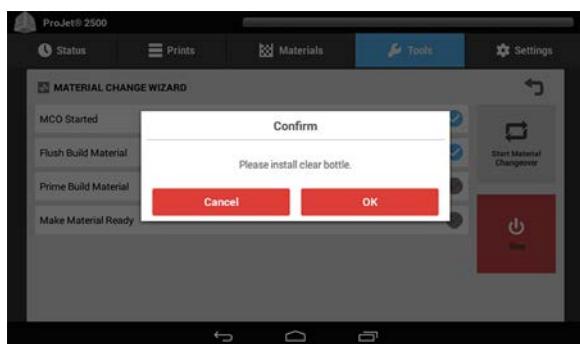
This will start the MCO process in the printer.
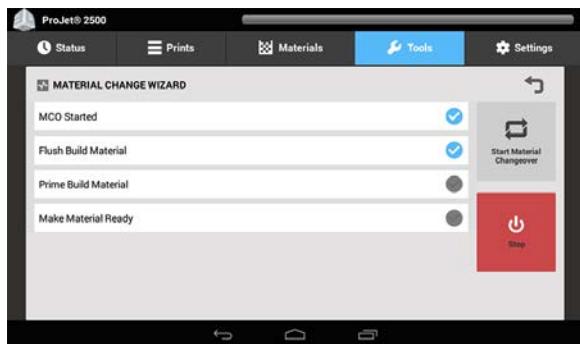
To flush the entire system at this time you must install two cartridges of clear part material in the MDM to allow both reservoirs to sufficiently flush out all the previous material from the printer.
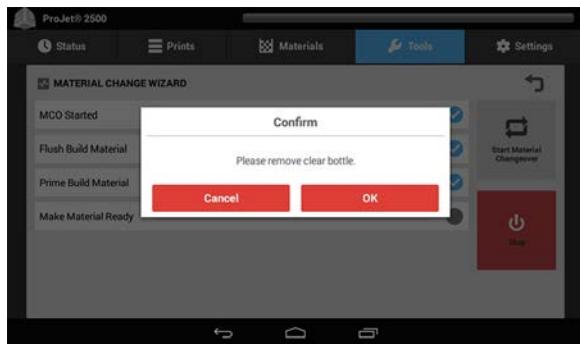
6.  Install two cartridges of clear material and select **OK**.
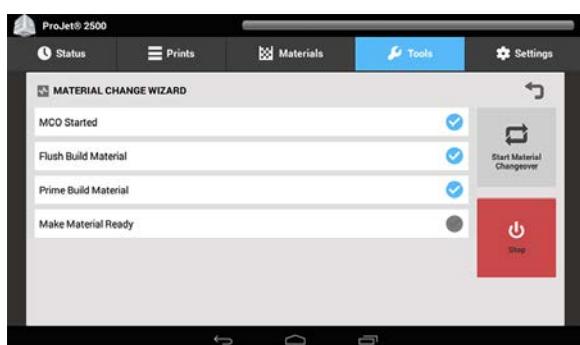
While the previous part material is being flushed out of the printer this screen will appear.
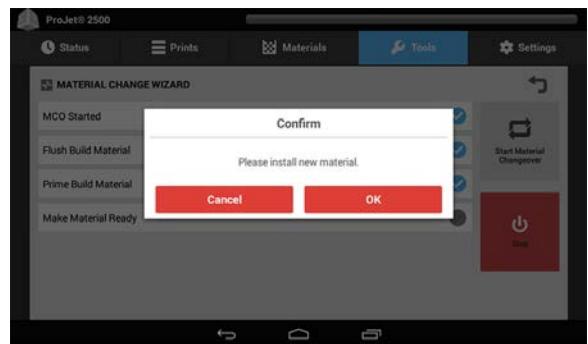
7.  Next you will be asked to remove the clear part material cartridges. Remove both cartridges and select **OK**.
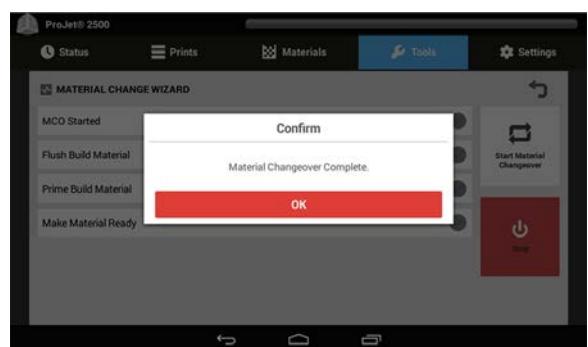
The next screen that appears is this one with the Prime Build Material checked as shown.
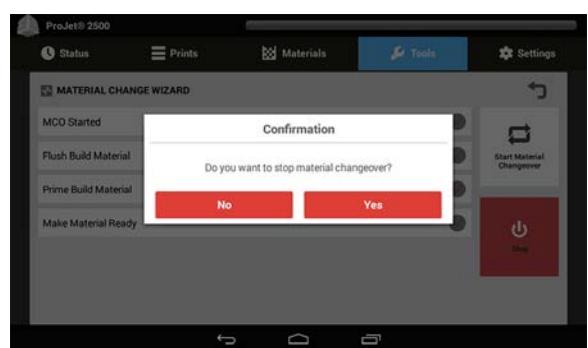
8. You will now be asked to insert the new part material cartridges into the printer. Install the new part material cartridges and select **OK**.

9. If the MCO completed to satisfaction you will get a popup that states Material Changeover Complete. Select **OK**.

When would this screen appear? If there was an error?

## MDM MAINTENANCE

The following general maintenance procedures provided must be accomplished to help maintain high part yield and to reduce the printer down time.

When changing material cartridges, material may be present in the MDM holder after the cartridge is removed. If a large pool of material is present (bottom is submerged and walls of the cartridge holder are reached), do not place a clean material cartridge into the holder. The holder will require cleaning before inserting a new cartridge.

⚠️ **CAUTION: The MDM cartridge receptacle and material will be warm; avoid touching the sides of the holder during the cleaning process. Wear heat resistant gloves and goggles.**

### Cleaning MDM Cartridge Receptacle

1. Insert a lint free cloth to absorb the material in the MDM receptacle.
2. Using a long tool, such as tongs; remove the saturated cloth from the receptacle and place in a waste bag. Continue to clean the receptacle until all material is removed.
3. After the receptacle is clean, ensure there is no debris or lint left inside of receptacle.
4. Dispose of waste material according to local rules and regulations.

### Cleaning the MDM Drawer

Using Isopropyl Alcohol and a lint free cloth, dampen cloth with the alcohol and clean around the cartridge holders' surfaces.

✎ **NOTE: Do not clean cartridge receptacles when the 3D printer system is warm. Allow cartridge receptacles to cool before cleaning the interior of receptacles.**

### Cleaning Metal Surfaces

1. Do not remove any outer panels when cleaning the printer. Panels must only be removed by qualified 3D Systems Technical Support Representatives.
2. Remove dust from outer surfaces of printer by wiping with a clean, dry, lint-free cloth.
3. Remove dirt and grease from printer outer surface by spraying all-purpose cleaner on a clean cloth and gently wiping it down.

⚠️ **CAUTION: Use only non-abrasive, alcohol-free cleaners to clean surfaces. Do not use all-purpose cleaners containing petroleum-based polishing agents such as liquid wax. Spray cleaner on cloth, not on surface. Do not use cleaning solvents on build chamber window, doing so can damage the protective UV coating.**

4. Gently wipe dirt and part material residue from operator control panel using an ammonia-based glass cleaner on a clean, lint-free cloth.
5. Remove print platform before cleaning the operator panel. This will prevent the printer from initiating any actions if controls are accidently pressed.

### Cleaning Polycarbonate Top Door

⚠️ **CAUTION: Do not use cleaners such has Windex and paper towels to clean polycarbonate surfaces. Use only a non-abrasive cleaner and a chem wipe or a lint free cloth. Using anything else will scratch the polycarbonate surface.**

### Cleaning the User Touchscreen

- Spray a water-based solvent such as Simple Green onto a lint-free soft cloth; do not wipe with a dry cloth or spray cleaner directly onto touchscreen.
- Gently wipe the touchscreen to remove debris.

**Do Not Use:**

- A dry cloth on the touchscreen*
- Any cleaning products that contain acetone, MEK or alcohol
- Any abrasive cleaning products
- Using these cleaning products can damage the touch screen.

✎ **NOTE: Before cleaning, the 3D printer system must be idle to avoid aborting a build.**

**Waste Bag Maintenance**

Behind the Support Material cartridges there is a waste bag receptacle area. In the receptacle a disposable bag and hard liner are contained. The waste bag and liner will need to be changed periodically. Follow the steps below for changing the waste bag:

**Changing Waste Bag**

1.  Verify that the printer is OFFLINE.

2.  Ensure printer is warm.

3.  Wearing protective nitrile gloves, open the MDM drawer.

4.  Remove waste bag.

    **NOTE: If the waste bag is stuck to the liner when you attempt to remove it, replace the entire liner and bag to prevent the bag from tearing and causing material to leak into the receptacle. Waste bags can be ordered using part number 311215-00. With each order you will receive 30 bags and 1 liner.**

5.  Dispose of bag according to local regulations.

6.  Inspect waste bin for any remaining waste. If necessary, wipe out any waste that exists with a lint free cloth and isopropyl alcohol.

7.  Replace bag and close MDM.

8.  Return printer ONLINE and it is ready to use.

## 8  TROUBLESHOOTING

**PROJET 2500 SHUTDOWN**

If you do not plan on operating the 3D printer system on a regular basis and want to shut it down for an extended period of time, power off the touchscreen by selecting **Shutdown** in the **Tools** menu in the UI.

✎ **NOTE: It takes a substantial amount of time for the 3D printer system to warm up after a full shutdown/power off.**

**Power Outage**

If you are present during a power outage, or discover the main power OFF, complete the following steps:

1. Switch power OFF on 3D printer system's rear panel so it does not automatically start when power is restored. This prevents damage to the system due to power flickers and surges.

2. When power is restored and stable, switch 3D printer system power ON from the rear panel.

3. If power outage occurs and is restored before anyone can take action, the printer will recover as follows:

4. The 3D printer system advances through warming stages until reaching the required print temperatures. If printer was not printing when power outage occurred, the top line on the LCD panel will display "Not Printing" and bottom line will display "Online/Menu?". The printer is ready to accept a print job.

5. If printer was printing when the power outage occurred, the message will display "Power Off Recovery" after power is restored and power has reached print temperatures. This safety feature prevents accessing an incomplete print until all print conditions are satisfied. Once occurred, the job will end, the message will display "Done Remove Print" and the print platform will raise, and can be removed; repeat print job if desired.

✎ **NOTE: If the 3D printer system is in Power Off Recovery, the print chamber will not be able to open until printer completes recovery.**

## 9  CUSTOMER SUPPORT

If you receive an unrecoverable error message, or if you need to contact us for another problem, you may contact our Customer Support Hotline. Before you call Customer Support with a problem or question, please make sure that you have the following information:

- The serial number of your ProJet 2500 (located on the rear panel).
- A brief description of the problem, including the exact error message.
- When the problem occurred; for example, when you submitted a job, during the beginning or the end of a print, or after power off recovery, etc.

**CUSTOMER SUPPORT HOTLINE**

Please contact your Customer Support Hotline at one of the following numbers:

- In North America, call 1-800-793-3669
- In Asia and the Pacific Rim, call +852 2923 5077
- In Germany, call +49-6151-357 357
- In the United Kingdom, call +44 1442 282665
- In France, call (+33) 01 60 87 88 77
- In Italy, call +49 (0) 6151 357 357
- In Switzerland, call +41-26-439 95 90
- In Japan, call (+81) 3 5451 1690

## GENERAL

ProJet 2500 service procedures must be performed only by a 3D Systems-certified service technician unless this guide explicitly states otherwise. If your 3D printer system needs service, contact 3D Systems Technical Support at the following numbers:

- In the United States or Canada, call 800-793-3669
- In Europe, call +49-6151-357357

You can also contact your local 3D Systems representative.

3D Systems' support portal is located at http://www.3dsystems.com/support

For material safety data sheet, go to http://www.3dsystems.com/support/materials/msds

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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 when the equipment is operated in a commercial environment. 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 his own expense.

Changes or modifications not expressly approved by 3D Systems could void your authority to operate this equipment.

## RADIO FREQUENCY TRANSMISSION

This product generates 13.56 MHz using an Inductive Loop System as a Radio Frequency Identification device (RFID). This RFID device complies with the requirements specified in FCC Part 15, Industry Canada RSS-210, European Council Directive 99/5/EC, and all applicable local laws and regulations.

Operation of this device is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The device referenced in this guide contains transmitter, FCC ID: 2ADGF-PJ2500   IC: 12666A-PJ2500

Access to the transmitter for service technicians is available through common enclosure access methods including use of common tools and removal of covers.

**NOTE: Changes or modifications to this equipment not specifically approved by 3D Systems may void the user's authority to operate this equipment.**

# 11 BASIC REGULATIONS

3D Systems has tested this printer to electromagnetic emission and immunity standards. These standards are designed to mitigate interference caused or received by this printer in a typical office environment.

## United States

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 when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy. If it is not installed and used in accordance with these instructions, it 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 his/her own expense.

Changes or modifications to this equipment not approved by 3D Systems can void the authority of the user to operate this equipment.

### Canada

Ce dispositif est conforme aÌ la norme CNR-210 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage preÌjudiciable, et (2) ce dispositif doit accepter tout brouillage rec?u, y compris un brouillage susceptible de provoquer un fonctionnement indeÌsirable.

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

### European Union

⚠️ **CAUTION: This is a Class A product. In a domestic environment, this product can cause radio interference in which case the user could be required to take adequate measures.**

In order to allow the equipment to operate in close proximity to Industrial, Scientific and Medical (ISM) equipment, the external radiation from the ISM equipment may have to be limited or special mitigation measures taken.

Changes or modifications to this equipment not approved by 3D Systems can void the authority of the user to operate this equipment.

# EC DECLARATION OF CONFORMITY
# LA DÉCLARATION DE CE DE CONFORMITÉ

We, 3D SYSTEMS, INC. herewith declare that the following described 3D printer system in our delivered version complies with the basic safety and health requirements of the EC Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006, based on its design and type, as brought into circulation by us. In case of alteration of the 3D printer system, not agreed upon by us, the declaration will lose its validity.

Nous, 3D SYSTEMES, INC. ci-joint déclarer que le suivre a décrit la 3D printer system dans notre version livrée se conforme à la sûreté fondamentaux et aux conditions de santé des Directive de CET 2006/42/EC du Parlement européen et du Conseil 17 Mai 2006, a basé au dessous sa conception et son type, comme amené dans la circulation par nous. En cas du changement de la 3D printer system, pas consenti sur par nous, la déclaration perdra sa validité.

Description of the 3D printer system:
La description de la 3D printer system:

| STEREOLITHOGRAPHY APPARATUS |
| --- |

| ProJet 2500 Production Modeling Systems |
| --- |

3D printer system type:
Usiner le type:

Year of Manufacture:
Année de Fabrication

Serial Number:
Numéro de série

Applicable EC Directives:
Les Directives applicables de CE:

DIRECTIVE 2006/42/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCILof 17 May 2006 on machinery, and amending     Directive 95/16/EC (recast), EMC Directive (2004/108EC)

Applicable Harmonized EC  Standards:
Les Normes de CET Harmonisé applicables:

EN/IEC61010-1, 3rd Edition; E, EN/IEC60825-1:2007, EN 61000-6-2:2005; EN6000-6-4:2007

Manufactured in USA for
Fabriqué dans l'USA pour
Company Name:

| Corporate Headquarters | 3D Systems Europe, Ltd. |
| --- | --- |
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| 333 ThreeD Systems Circle | Hemel Hempstead |
| Rock Hill, SC 29730 | Hert HP2  7UA |
| USA | United Kingdom |

Brian Alexander
Director, Manufacturing
Le directeur, les fabriquant

Date

Nom de compagnie:

3D**SPRINT -** The software used to create parts and send them to the printer.

**Build Platform -** This part is used by the 3D printer system to build parts. Support structures link the part to the build platform and must be removed from the 3D printer system once complete.

**Part Material -** Is a ultraviolet (UV) curable liquid.

**Chamber Door** - The chamber door prevents harmful UV radiation from escaping the build chamber during the build process. The chamber door must be closed prior to starting or resuming a build job and is locked when a buld is in progress.

**Debug Log -** Is a text file used for obtaining information for resolving potential problems that may occur with the 3D printer system.

**Head Maintenance Station (HMS) - Waiting for description from Ernest.**

**IGUS Track -** The main wiring harness that runs the ProJet 2500.

**Job Scale Percentage (Job Scale %) -** This is used to re-size parts during the build process.

**Material Delivery Module (MDM) -** Stores and feeds the materials to the 3D printer system during the build process. The MDM holds two support cartridges and two material cartridges.

**Material Quality Guarantee -** The 3D printer system reads an encrypted RFID tag on the cartridge to communicate parameters and ensure optimum build quality.

**Operator's Touch Screen -** This is used to display build job status, menu options, and command prompts for the 3D printer system.

**Planarizer - Waiting for description from Ernest.**

**Post Curing (Finishing) -** Is the final process to remove support material from parts and clean the parts to a smooth finish prior to surface finishing and coating.

**Print Applicator -** The print applicator is the assembly of the ProJet 2500 that applies material to the part as the applicator moves across the material surface.

**Print Engine -** The Print Engine contains major systems such as the Printhead, Planarizer, UV Lamp Assembly, Wave Amp and the IGUS Track

**Printing -** The 3D printer system uses part and support material to create three-dimensional plastic prototype parts.

**Print Zone -** The area designated for the part to be built in.

**Shrink Comparison Percentage (Shrink Comp %) -** Used to adjust for expected shrinkage during the build so actual part dimensions more closely match actual dimensions.

**Support Material -** Wax based material that provides adhesion to the build platform and support for down facing surfaces and open volumes within the parts.

**User Interface (UI) -** The User Interface consists of a tablet built into the top of the printer to the right. Various systems can be controlled and checked by the UI. You can check the status of a print job, materials in the printer, shutdown the printer as well as check on certain settings within the printer.

**UV Lamp Assembly -** The UV Lamps cure the part and support material as the printer is building a part.

**Waste Bag -** The area that holds a plastic bag designated to catch the waste material from the building process. The Waste Bag is located in the MDM behind the Support Material.

**Waste Material -** Any uncured support and/or part material generated during a build process.

**Wave Amp Assembly - Waiting on description from W'ville.**
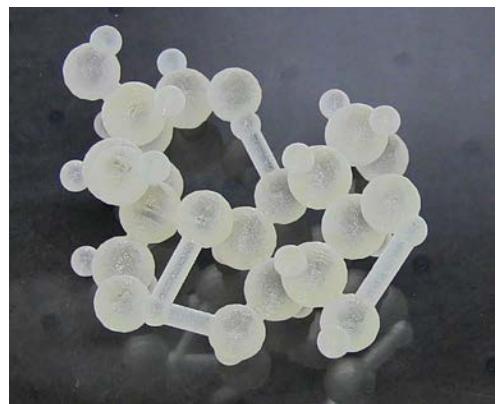
**X-Axis -** The orientation of the part from front to rear on the build platform.

**Y-Axis -** The orientation of the part from left to right on the build platform.

**Z-Axis -** The orientation of the part height on the build platform.

**.stl File -** The files thate are created using a three-dimensional solid Computer-aided design (CAD) software. These files are  used to produce parts.

**.3dprint File** - Files tht have been saved through the Prepare and Print Setup area of 3D**SPRINT** are saved in this file format. These files will also be added to the Files module.

P/N 311004-00 Rev. A