

User Guide



ProJet® MJP 3600

User Guide

Rev A

VisiJet® M3 Cast Post Processing Guide

This purpose of this guide is to discuss the various methods on how to post process VisiJet® M3 Cast. This part material will be only be available for use in the ProJet® 3600W and ProJet® 3600W Plus. Also included in this manual is safety information and material handling.

Small or Delicate Parts

Large or Bulky Parts

The below procedure is a general guideline to help the customer process their printed VisiJet® M3 Cast part in a large ultrasonic cleaner. Your results may vary slightly from the below procedure. Before proceeding with the procedure, confirm you have the following items in place. Also, make sure to perform this procedure in a well ventilated room or under a ventilation hood.

Items Needed:


- Hotplate
- (1) Large ultrasonic cleaner
- 99%> Isopropyl Alcohol (IPA)
- Safety goggles
- Respirator mask
- Nitrile gloves
- Heat resistant gloves

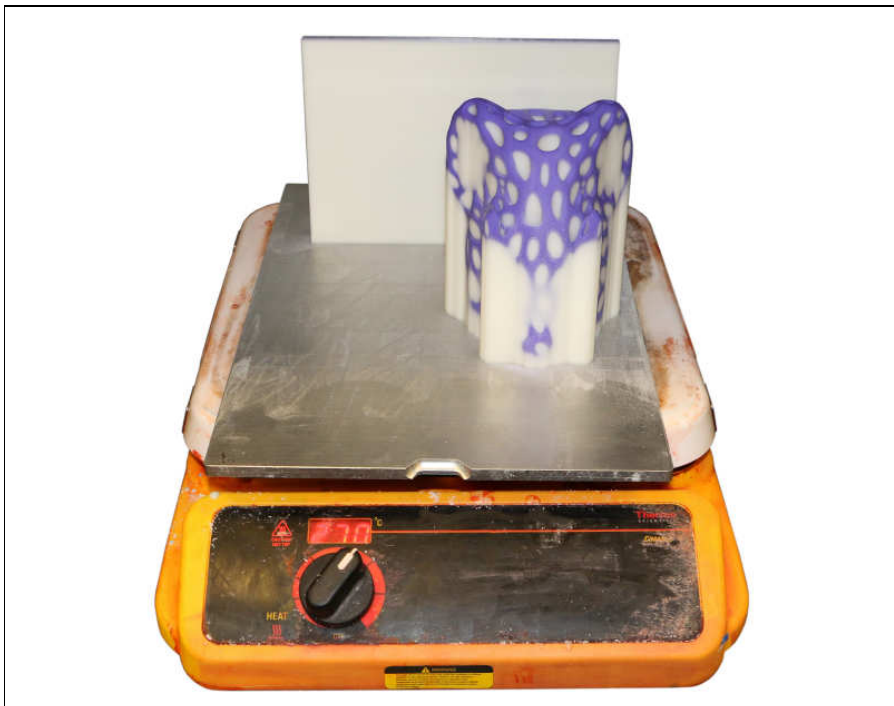
1. Put on safety goggles, an air respirator mask and a pair of Nitrile gloves while operating the Ultrasonic cleaner.

2. Fill the ultrasonic cleaner with 99% Isopropyl Alcohol(IPA) to the maximum fill limit for your cleaner.
3. Cover with lid and set temperature to 30° Celsius.



4. For large bulky parts, it is recommended to use the hot plate method to remove build parts off the build plate.
5. Place build plate with build part onto hotplate pad.
6. Turn on the hotplate between 200° to 275° Celsius.

 Caution: Hot plate is extremely hot and will cause build plate to become too hot to handle with Nitrile gloves. Use protective heat-resistant gloves when performing this step.




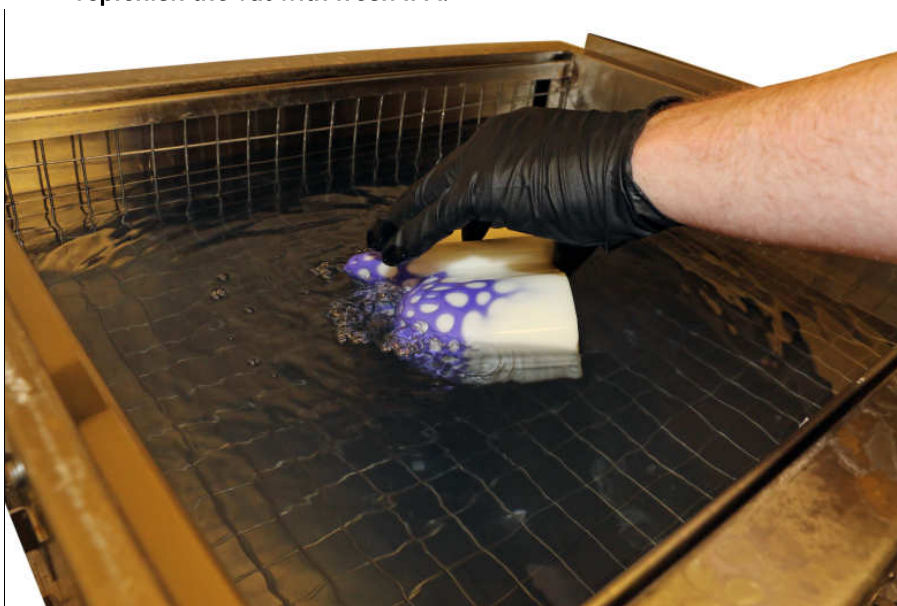
7. Within a few moments the support wax will begin to melt. Carefully touch each part(s) to see if it starts to slide across the build plate. Larger pieces will take a bit longer than smaller ones. Once all the part(s) have released, turn off the hotplate and remove each part(s) off the build plate and place

on a wax paper.




8. Before lowering the part into the ultrasonic cleaner, confirm the IPA is at the recommended 30° Celsius temperature using a thermometer. The ultrasonic cleaner will slightly rise in temperature during the cleaning process so monitoring the temperature throughout the cleaning process is highly recommended for optimal part processing.
9. Remove cover and place part(s) in Ultrasonic Cleaner.
10. Replace cover and turn on ultrasonic agitator.
11. Observe your part every minute (+/-) to see the progress of the support material dissolving.

 **NOTE:** As soon as the first part touches the IPA, you will start to create an IPA and Wax mixture. At some point this will become saturated depending on how many parts and how much support is on them. When it seems like the parts are taking too long to process, replenish the vat with fresh IPA.



12. The below part was removed from the Ultrasonic cleaner after 3 minutes. You can clearly see the support material dissolving away from the build material (M3 Cast).

 **Note:** Depending on geometry of part(s), saturation of wax in alcohol (cloudy appearance) and agitation, results will vary moderately on the amount of time the support wax is removed from the build part.



13. Once the part(s) look free of support material, turn off agitator and remove part from Cleaner and place on dry paper towels.
14. Place part(s) into a 2nd IPA bath (room temperature) to remove any residual support material off part. Swirl part around manually for no more than 10 seconds.
15. Remove part(s) from 2nd IPA bath and place on dry paper towels.
16. Finished processed parts below. As you can see there is white-ish residue left on the parts. This is evaporated IPA. This will have NO affect on casting.



Introduction

Thank you for purchasing the ProJet® MJP 3600 Professional Printer. Your printing system is a Multi-Jet Printer (MJP) printer that produces prototype parts from a 3D solid Computer-Aided Design (CAD) models and through the Client Manager software. The parts are generated in a rapid prototype (RP) environment. ProJet MJP 3600 3D printer system features 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.

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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: 2ADDGF-SKTKM1

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



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Important Safety Information

Safety Symbols



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



CAUTION: Indicates the possibility of loss of data or damage to equipment.



WARNING: INDICATES THE POSSIBILITY OF INJURY OR DEATH TO 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.



PINCH POINT: INDICATES A PINCH POINT HAZARD THAT COULD CAUSE PERSONAL INJURY.



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.



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.



HARMFUL IRRITANT WARNING: INDICATES THAT SKIN OR EYE IRRITATION COULD RESULT WHILE EXPOSED TO A CHEMICAL COMPOSITION



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.



EYE PROTECTION: INDICATES THE NEED FOR EYE PROTECTION.

Part Material Safety

Users of the printer should be informed of potential hazards of part material before working with a printer, or performing duties which may result in exposure to uncured part material, such as removal of material waste pan and empty material cartridges.





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Disposal

- Disposal of fully cured parts produced 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 waste 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 cleaning up uncured part material should be disposed of 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 MSDS / 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.
- Uncured VisiJet® part material is a sensitizer. Skin or eye irritation could occur when exposed to the chemical composition of the material.
- Any chemical may exert harmful affects if contacts or enters the body. VisiJet® part material is a sensitizer and irritant.

Skin Sensitization

- Uncured VisiJet® part material is a sensitizer. Skin or eye irritation could occur when exposed to the chemical composition of the material.
- Uncured material is a sensitizer, and can cause allergic reactions if contacts skin without protective gloves. Refer to personal protection equipment for more information. To avoid sensitization, do not allow uncured material to contact skin. Consult the MSDS for specific information about the sensitization potential.

Inhalation

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

Ingestion

- Uncured VisiJet® part material is toxic if ingested.
- Uncured material is toxic if ingested. Uncured material must not be present where food and drink are stored, prepared, or consumed and not ingested. After handling materials, wash hands with soap and 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, or food or drink handling applications.

Exposure control

- The printer 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 to the need to clean and rinse off any contacted surface promptly to prevent further contamination. Ensure a convenient washroom location is provided with access to soap, water, and disposable paper towels.



Regulatory Information

- Support material has no known regulatory requirements.
- In the U.S., uncured 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 pan which is partly uncured part material. For complete disposal regulation details, see 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 VisiJet® Material

- Spills of material are HIGHLY UNLIKELY, and should NOT occur in normal operation of the printer. If a leak occurs, it is an indication of a serious printer 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 gloves and other personnel 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 cleanup materials per local regulatory requirements. Discontinue use of the printer, and contact 3D Systems Technical Support for a service visit to determine and repair the source of leakage.
- Small spills of uncured liquid part material can be cleaned up using disposable towels, non-reusable rags, or absorbing materials such as sawdust, clay, diatomaceous earth, or activated charcoal. If spilled material is hot (liquid), wait until cools and gels 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 printer 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 MSDS 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 printer. Be careful not to spill, drop, or expose others to these materials - particularly part material or waste pan.
- Dispose of all waste material appropriately per local regulatory requirements.
- Dispose of waste pan (if it is not reusable) containing both support and uncured part material. Replace the waste pan every time or reuse pan if the pan is reusable.



HARMFUL IRRITANT WARNING: INDICATES THAT SKIN OR EYE IRRITATION COULD RESULT WHILE EXPOSED TO A CHEMICAL COMPOSITION.

Material Storage

Part Material

- Shelf life for VisiJet Materials - **2 yr**
- Shelf life for M3 - **2 yrs**
- VisiJet HiCast & ProWax - **5 yr**
- Climate - Cool, dry area with adequate ventilation
- Temperature Range - **60°F (16°C) to 80°F (27°C)**
- Maximum Storage Temp - **95°F (35°C)**
- Environmental Conditions - No direct sunlight, heat, flames, or UV energy.

Support Material

- Shelf life - **5 yr**
- Temperatures Range- **60°F (16°C) to 80°F (27°C)**
- Maximum Storage Temp - **95°F (35°C)**
- Climate - Cool, dry area with adequate ventilation

- 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**” (A) before use. Do not load material cartridges into printer if cartridge date has expired. When printer detects an expired cartridge, it aborts the build and rejects the cartridge.



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



Storing a Partially Used Material Cartridges

- 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 clogging cap. This will cause damage to the material cartridge if used for a later build.



- To store a partially used material cartridges, insert cartridge into a plastic bag with the vent cap up; place cartridge into its original shipping carton's sleeves and carton. Do not remove a partially used Support Bottle from the MDM if the MDM is NOT heating; the material will solidify and cause a breakage.



Material Handling

Emergency (MSDS)

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

VisiJet M3 Crystal		
Part Number: 202158/903 Batch: 123456789 Best used by: 12/18	 <p>WARNING Contains: epoxy resins</p> <p>For industrial use only Protect from UV light READ SDS before use</p>	Offered Exclusively by: 3D Systems Japan K.K. Esu Garden Place Tower 27F 4-20-3, Ebisu, Shibuya-ku, Tokyo 150-8027 Japan Phone: 03-6798-2500 Chemical Emergency: 03-4530-9637 - Chemtrec Web: www.3dsystems.com
<p>Hazard statements: H319 Causes serious eye irritation, H315 Causes skin irritation, H317 May cause an allergic skin reaction, H412 Harmful to aquatic life with long lasting effects.</p> <p>Precautionary statements: P280 Wear protective gloves, protective clothing, eye protection, P302+350 If on skin, wash with soap and water, P305+351+338 If in eyes, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing, P410+403 Protect from sunlight. Store in a well-ventilated place, P501 Dispose of contents/container in accordance with local/regional regulations.</p>		
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 <p>Manufacturer contact: 3D Systems SA Route de l'Anzienne Papeterie PO Box 219 CH 1723 Marly, Switzerland Phone: +41 26 438 96 00</p>		PPS 123456789-001 Rev. A

Packaging Inspection

The VisiJet® material cartridge 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' Technical Support Hotline. If no leakage is observed, keep the material cartridge in their cartons and store until material is used.

Part Building

If uncured material is observed on the part or platform after build, this is an abnormal condition, and is an indication the printer 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 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 pan. To prevent contact, wear chemically resistant protective gloves - nitrile or neoprene gloves are recommended. **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 printer'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.

VisiJet® S300 Specification Sheet



Technical Data Sheet

VisiJet S300 Support Material

(2.0kg bottle)



Product Information

About VisiJet Material from 3D Systems: The VisiJet line of plastic materials offers numerous capabilities to meet a variety of commercial applications. Using the MultiJet Printing (MJP) Technology, 3D Systems' ProJet 3600 3D Printers use VisiJet M3 Materials to build accurate, high-definition models and prototypes for proof of concept, functional testing, master patterns for mold making, direct investment casting, for transportation, energy, consumer products, recreation, healthcare, education and other vertical markets. Toughness, high temperature resistance, durability, stability, watertightness, biocompatibility, castability are a few of the key attributes you will find within the VisiJet materials line. Parts can be drilled, glued, painted, plated, etc. VisiJet S300 Support material offers easy, non hazardous post processing and preserves delicate features.

VisiJet S300 Support Material provides for hands-free, melt-away removal from even the most inaccessible geometry features and internal spaces with no damage to the most delicate part features.

PHYSICAL AND CHEMICAL PROPERTIES

Technical Data	Specifications
Appearance	Solid wax

Physical state	Solid
Colour	White to Pale Yellow
Odour	Mild
pH (20 °C)	
Melting point/range (°C)	55 – 65
Boiling point/range (°C)	
Flash point (°C)	
Ignition temperature (°C)	185
Vapour pressure (°C)	
Density (g/cm³)	0.85 – 0.91
Bulk density (kg/m³)	
Water solubility (20°C in g/l)	insoluble
Viscosity, dynamic (mPa s)	10.5 – 11.5

ProJet MJP 3600 Printer

Series Features

This section describes the various features for the ProJet MJP Professional Printers.

ProJet MJP 3600

ProJet® MJP 3600 - High Speed Entry Level Prototyping Printer

Build Mode	High Definition (HD)	Ultra High Definition (UHD)	Extreme High Definition (XHD)
Resolution (xyz)	378 X x 450 x 790 DPI	757 x 750 x 890 DPI	750 x 750 x 1600 DPI
Build speed (in/hr) in Z	0.2	0.14	0.07
Build volume (xyz)	11.75 x 7.2 x 8 inches (298 x 185 x 203 mm)	8 x 7 x 8 inches (203 x 178 x 203 mm)	8 x 7 x 8 inches (203 x 178 x 203 mm)
accuracy - per inch of part dimension typical	+/- 0.001-0.002 inches (0.025-0.05mm)		
Layer thickness	32 micron (0.0013 inches)	29 micron (0.0011 inches)	16 micron (0.0006 inches)

Build material	VisiJet M3 Black, VisiJet M3-X, M3 Crystal, M3 Procast, M3 Propplast, M3 Navy, M3 Techplast
Color	Black, Translucent, Opaque White, Deep Blue, Translucent White, Blue, Gray
Material	UV Curable Plastic
Material Delivery	2 kg total weight bottles; Maximum machine capacity - 2 Part & 2 Support Bottles
Support Material	VisiJet® S300 hands-free melt away wax
Part stacking	YES
Application	Versatile tri-mode system capable of creating best in industry patterns, models and molds for a variety of applications. Best in industry part quality and feature detail.

ProJet MJP 3600 Dental

ProJet® MJP 3600 Max - Versatile, Next Generation Professional Printer

Build Mode	Ultra High Definition (UHD)	High Definition Smooth (HDX)	High Definition Plaster (HDP)
Resolution (xyz)	750 x 750 x 890 DPI	375 x 375 x 790 DPI	375 x 375 x 790 DPI
Build volume (xyz)	11.75 x 7.2 x 8 inches (29 x 185 x 203 mm)		
Layer thickness	29 micron (0.0011 inches)	32 micron (0.0013 inches)	32 micron (0.0013 inches)

Build material	VisiJet M3 Dentcast , VisiJet M3 Stoneplast, M3 Pearlstone
Color	Green, Translucent White, Opaque White
Material	UV Curable Plastic
Material Delivery	2 kg total weight bottles; Maximum machine capacity - 2 Part & 2 Support Bottles
Support Material	VisiJet® S300 hands-free melt away wax
Part stacking	YES
Application	Versatile tri-mode system capable of creating best in industry patterns, models and molds for a variety of applications. Best in industry part quality and feature detail.

ProJet MJP 3600 Max

ProJet® MJP 3600 Max - Versatile, Next Generation Professional Printer

Build Mode	High Definition (HD)	Ultra High Definition (UHD)	Extreme High Definition (XHD)
Resolution (xyz)	378 X x 450 x 790 DPI	757 x 750 x 890 DPI	750 x 750 x 1600 DPI
Build speed (in/hr) in Z	0.2	0.14	0.07
Build volume (xyz)	11.75 x 7.2 x 8 inches (298 x 185 x 203 mm)		

accuracy - per inch of part dimension typical	0.001-0.002 inches (0.025-0.05mm)		
Layer thickness	32 micron (0.0013 inches)	29 micron (0.0011 inches)	16 micron (0.0006 inches)
Build material	VisiJet M3 Black, VisiJet M3-X, M3 Crystal, M3 Procast, M3 Proplast, M3 Navy, M3 Techplast		
Color	Black, Translucent, Opaque White, Deep Blue, Translucent White, Blue, Gray		
Material	UV Curable Plastic		
Material Delivery	2 kg total weight bottles; Maximum machine capacity - 2 Part & 2 Support Bottles		
Support Material	VisiJet® S300 hands-free melt away wax		
Part stacking	YES		
Application	Versatile tri-mode system capable of creating best in industry patterns, models and molds for a variety of applications. Best in industry part quality and feature detail. Added capability to print in full build volume in all three modes.		

ProJet MJP 3600W

ProJet® MJP 3600W - High Speed Micro-casting System

Build Mode	High Definition (HD)	Ultra High Definition (UHD)	Extreme High Definition (XHD)
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Resolution (xyz)	375 x 450 x 790 DPI	750 x 750 x 1300 DPI	750 x 750 x 1600 DPI
Build speed (in/hr) in Z	0.31	0.11	0.1
Build volume (xyz)	11.75 x 7.2 x 8 inches (298 x 185 x 203 mm)	5 x 7 x 8 inches (127 x 178 x 203 mm)	5 x 7 x 8 inches (127 x 178 x 203 mm)
accuracy - per inch of part dimension typical	0.001-0.002 inches (0.025-0.05mm) of part dimension		
Layer thickness	32 micron (0.0013 inches)	20 micron (0.0008 inches)	16 micron (0.0006 inches)
Build material	VisiJet M3 Hi-Cast, VisiJet M3 Cast		
Color	Deep Blue (VisiJet M3 Hi-Cast), Purple (VisiJet M3 Cast)		
Material	100% Wax		
Material Delivery	1.75 kg total weight bottles; Maximum machine capacity - 2 Part & 2 Support Bottles		
Support Material	VisiJet® S400 hands-free dissolvable wax		
Part stacking	YES		
Application	Versatile tri-mode system capable of creating best in industry patterns, models and molds for a variety of applications. Best in industry part quality and feature detail.		

ProJet MJP 3600W

Max

ProJet® MJP 3600W - High Speed Micro-casting System

Build Mode	High Definition (HD)	Ultra High Definition (UHD)	Extreme High Definition (XHD)
Resolution (xyz)	375 x 450 x 790 DPI	750 x 750 x 1300 DPI	750 x 750 x 1600 DPI
Build speed (in/hr) in Z	0.31	0.11	0.1
Build volume (xyz)	11.75 x 7.2 x 8 inches (298 x 185 x 203 mm)		
accuracy - per inch of part dimension typical	+/-0.001-0.002 inches (+/-0.025-0.05mm per 25.4 mm) of part dimension		
Layer thickness	32 micron (0.0012 inches)	20 micron (0.0008 inches)	16 micron (0.0006 inches)
Build material	VisiJet M3 Hi-Cast, VisiJet M3 Cast		
Color	Deep Blue (VisiJet M3 Hi-Cast), Purple (VisiJet M3 Cast)		
Material	100% Wax		
Material Delivery	1.75 kg total weight bottles; Maximum machine capacity - 2 Part & 2 Support Bottles		

Support Material	VisiJet® S400 hands-free dissolvable wax
Part stacking	YES
Application	Versatile tri-mode system capable of creating best in industry patterns, models and molds for a variety of applications. Best in industry part quality and feature detail. Added capability to print in full build volume in all three modes.


Specifications and Requirements

Computer Requirements (Minimum Recommendation)	Computer Requirements (Maximum Recommendation)
OS- Windows 7 (32-bit or 64-bit), Windows 8 (32-bit or 64-bit)	Multiple core processor
CPU – Intel® or AMD® processor with a minimum of 2.0 GHz	Multiple core processor; Hyper-threading and clock speeds above 3 GHz can be beneficial but should be paired with a good balance of cores
RAM – 4 GB	RAM - 8 GB or more, Virtual memory: in Win 7 & 8 it is recommended to use the default option, “Automatically manage paging file size for all drives”
Hard Disk -800MB of available disk space for installation; additional free space is required during installation. Temporary file cache requires about 3 GB free space for every 100 million points	SSD or 10,000 RPM HDD
GPU – OpenGL 2.1 and GLSL 1.20 enabled graphics card.	NVidia or AMD GPU with 1GB of RAM or more
Others: <ul style="list-style-type: none">• 3 button mouse with scroll• Keyboard• Internet connection and network card• Microsoft .NET Framework 4.0	

Electrical Requirements

- The AC voltage and current requirements for the ProJet® Production Printing System are:

- 100 VAC, 50/60Hz, 14.9A
- 115 VAC, 50/60Hz, 13A
- 220 VAC, 50/60Hz, 6.5A
- 230 VAC, 50/60 Hz, 6.3A
 - requires 3D Systems' external transformer kit, p/n 23418-90X-XX, provided separately in the printer country kit.

 **NOTE:**The installation of The ProJet® Production Printing System shall comply with the National Standards and/or Electrical Codes of the country in which it is placed.

System Weight

- 955 lbs. (433 kg) - [Crated](#)
- 659 lbs. (298 kg) - [Uncrated](#)

Network Interface

The ProJet® Professional Printing System requires an Ethernet network connection to transfer print jobs from workstation(s) to the printer.

Network Specifications,

Physical: The machine's internal controller provides an integrated, 10/100-megabit-per-second (Mbps) Ethernet network connection. This connection supports both the 10base-T and 100base-TX Ethernet standards. The controller's connector (an RJ45 socket located on the back panel) is designed for attaching an shielded twisted pair (UTP) Ethernet cable.

When a facility's internal network is not 10base-T or 100base-TX, a media converter, such as a Coax to 10base-T will be required.

Consult with your organization's network engineering or MIS staff to provide assistance with these requirements.

The printer works on networks running TCP/IP ONLY each printer MUST have a STATIC IP address on the network. Additionally, each

printer's subnet mask and default gateway must be known and available to 3D Systems' 3D Systems Field Service Engineer or authorized reseller at the time of its installation, and should also be known by personnel installing the client software. They will need access either to the appropriate subnet mask or the individual IP address of each printer to complete the workstation software installation, and to enable access to any printer on the network.

At A Glance

Your 3-D printing system is a Multi-Jet-Printer (MJP) that produces plastic prototype parts from 3D solid Computer-Aided Design (CAD) models and through the printer client software. The parts are then generated in a rapid prototyping (RP) environment. The primary features of the 3-D printer are the user touchscreen, build chamber, material delivery module, and the waste material drawer. The back of the printer houses the power switch, internet, USB and the power cord connections.



A	User Touchscreen
B	Build Chamber
C	Material Delivery Module (MDM)
D	Waste Drawer
E1	USB Connection
E2	Ehternet Connection
E3	VGA Connection

E4	Printer Power Switch
E5	Printer Power Outlet

The three dimensional solid parts consist of two materials (support material and part material). The support material is a wax based material providing adhesion to build platform, as well as, providing material used to produce supports required to build the your part.

The part material is an ultraviolet (UV) curable material. After a layer of material is deposited on the build plate, the part is exposed to a UV flash lamp. The UV energy is absorbed by the material converting a liquid part material to a solid polymer. When the build is complete the part (consisting of the two materials) is adhered to the printpad by means of the support material.

The material delivery module consist of four material cartridge holders; the two left side holders are for the support material (white) cartridges (F). The right side of the module are for two part material (black) cartridges (G). Once materials are heated, they are fed to the printhead. Material waste is generated by two processes; cleaning the printhead array plate and planarization. The cleaning process involves purging jets and wiping the printhead array plate. Gravity pulls

the waste material from the Head Maintenance Station (HMS) trough into the waste umbilical. The combined waste materials are then purged. The printhead cleaning process is invoked automatically prior to test build and parts build.

After the build is complete, the printpad and the part are then removed from the printer. A secondary operation, known as finishing, is required to provide a finished/cleaned part. Refer to your ProJet® Finisher's Guide for more information on part processing and finishing.



Touchscreen

Navigation

The top portion of the touchscreen displays the name, the printer type, the current date and time. Depending on the menu selected, the

midsection of the touchscreen will display various screens in relation to the selected menu. The menu buttons allows the you to perform various task and also, provides printing information during the printing process.

Printer Control Icons

Preview:

shows an image of what is currently printing.

Start: place the printer online/offline; resume a paused print.






Pause:


pauses the print

Stop: place the printer offline/abort print

Light: toggle the chamber light on and off

Printer Menu

<h2>Printer Menu</h2>	
<p>Status: displays job as it is being built, the mode, total printing time and alerts.</p>	
<p>Settings: select printer; Network Settings, User Interface, Alerts</p>	
<p>Printer Queue: shows the print jobs in the queue and the estimated print time.</p>	
<p>Materials: displays the status of Support and Part Materials and alerts you when to add more materials.</p>	
<p>Tools: Printer Diagnostics; printer Information; Printer Usage; Upgrades; Material Change-out Wizard; Printer Shutdown</p>	

<h2>Indication & Navigation Icons</h2>	
<p>Navigates to another table or screen.</p>	

Indication & Navigation Icons

Moves selected job in the printer's queue up one position.



Moves selected job in the printer's queue up to the top position.



Moves selected job in the printer's queue down one position.



Copy the selected job in the queue.



Delete selected job in the queue.



Printer State Icons

Unknown State-
Printer Off



Locked (On); Error
(Flashing)



Printing Paused
(Flashing)



Printing Paused
(Flashing)



Standby



Touchscreen Panels

Status Screen



- **Print Name:**
name of the current print job.
- **Print Mode:**
current print job mode
- **Print Sender:**
computer name of the client that sent the print job.
- **Est. Print Time:** time estimate in Hours, Minutes, seconds or how long the job will take to print
- **Print Start:**
Time stamp when the print started (below the print start, a sub line with show the elapsed print time)
- **Est. Print End:**
Time stamp when the print will end (below the print end, a sub line will show the remaining print time)
- **Progress Bar:**
serves multiple functions; printer's

progress when going through the warm-up stages. Main purpose is for print progress.

- **Message:** displays a printer's state status messages.

Settings Screen



- **Select Printer:**
name of the current print job. A different printer can be selected by clicking on the > and choosing from available printers.
- **Network:**
displays the network set up of the selected printer.
- **User Interface:**
displays the font size, language and the color screen of the touchscreen.
- **Alerts:** press “Alerts” to display e-mail alerts, machine e-mail and admin. e-mail.
 - **E-mail Alert:**
you can control e-mail alerts by sliding the “On” button to receive alerts or sliding to “Off” to stop alerts.
- **Machine E-mail:**
provides the e-mail server set up of the

printer that is currently being used.

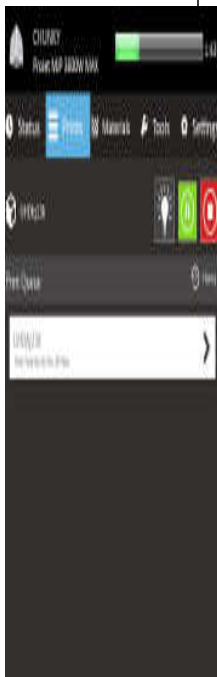
- **Admin Email:**

admin of the network , can control email alerts by sliding the "On/Off" button to avoid notification of various printer state.

- **Send a Test**

Email: after network and email setup is completed, a test email can be sent to your email to ensure that the machine email and the admin email are communicating.

Main Print Screen







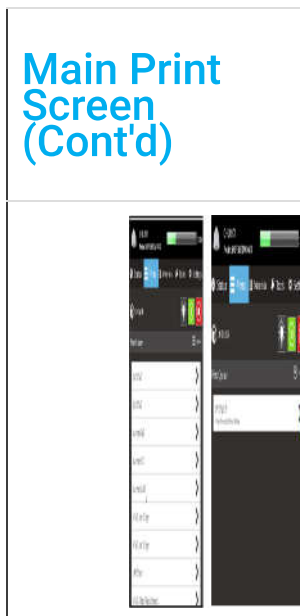
The main print window displays all the print files by name and mode in the build queue along with allowing the user to change the printing order, delete the print and display specific details about the print.

Queue-Edit Mode: after the job has been selected in the print queue, the control icons below the queue will become accessible to move, copy, and delete jobs in the print queue.

Delete: select a job in the queue, and click on button to delete job from the queue.

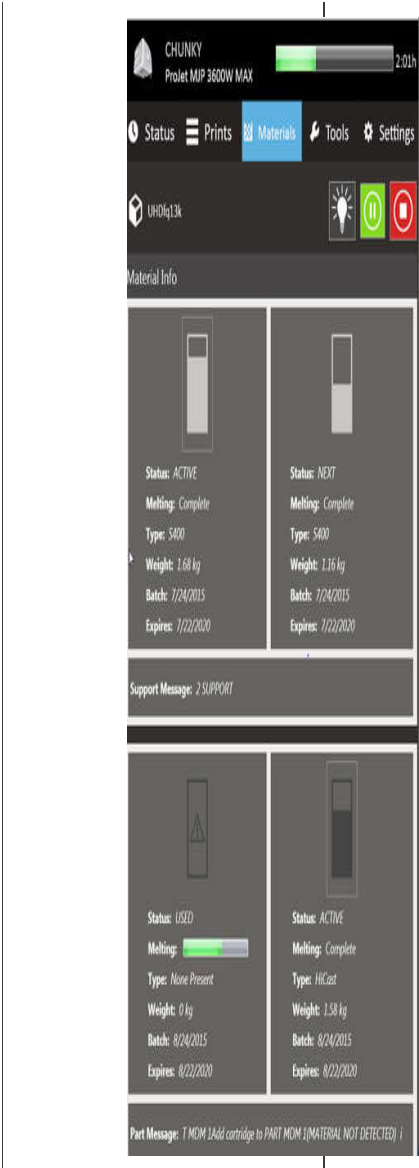


Copy: select a job in the queue, and click on button to duplicate the job. The job will appear in the queue.	
Move select a job in the queue, and click on button to move job to the top of the queue.	
Move select a job in the queue, and click on button to move job up one in the queue	
Move select a job in the queue, and click on button to move job down one in the queue	



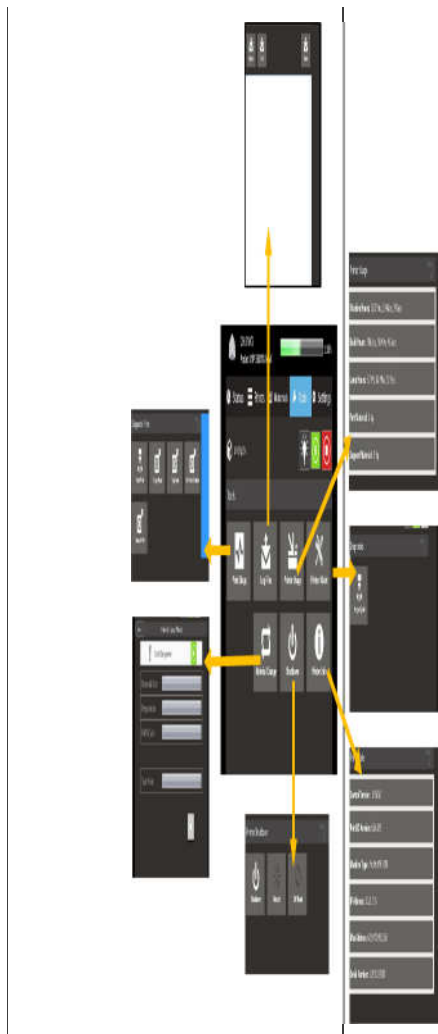
- **History:** View print history from previous prints. Access this window by selecting the **History** button on the bottom of the screen.
- **Queue:** Select the Queue button to view what is in the printer's queue. When selecting the arrow beside the print name, a window will open displaying print name, print mode, estimated/actual print time, estimated/actual part material use, estimated/actual support material use. If the file has been printed, this window will also display the print start and completed/aborted time.

**Materials
Screen**



- Emulates the four material delivery modules (MDM) positioned in the material drawer. The display shows if it is a support or part MDM; If material is installed; image of the bottle will display along with the material type, the amount of material in the bottle and an information icon.
- When selecting the cartridge, an outline and the selected cartridge information will display in the Support material or Part material message boxes.

Tools Screen



The **Tool Screen** provides Print Diagnostics, Printer Info, Material Change Wizard and Printer Shutdown.

- **Print Diagnostics:**
click on the arrow and select the type of diagnostics that you would like to perform.
 - **Test Print-** Default print file that test basic print parameters.
 - **Drop Mass-** Calibration print to ensure print jets are producing enough materials.
 - **Tag Test-** Test to ensure the print has no overhangs on the back side.
 - **Verification-** Prints a verification strips to check if any print jets are missing.
 - **Demo Print-** Default print file for printing.
 - **Head Maintenance Cycle-** Run this to clean the print without running a print.
- **Printer Info.:** click on the arrow to view.
 - **Control Version-** Identifies the version of the latest firmware installed.
 - **3DSPRINT-**

Identifies the version of the latest software installed.

- **Machine Type-**

Identifies the model of your printer.

- **Mac / PC**

Address- Identifies your network IP Address.

- **Printer Usage:**

Provides information printer usage.

- **Machine Hours-**

Provides the amount of time the printer is running.

- **Build Hours-**

Provides the amount of time that printer was building.

- **Lamp Hours:**

Identifies the amount of time the lamp was in use.

- **Part Material-**

Amount of part material used.

- **Support Material-**

Amount of support material used.

- **Material Change**

Wizard: Purges the printing system of current materials in the system to prepare it for a different material that you want to use.

- **Printer Shutdown:**

Provides options to

shutdown
or reboot printer or
software restart.

Printer

Set-

up

CAUTION:

Verify
printer's
rear panel
power
switch is
OFF.
Connecting
power with
switch on
can
damage
printer and
cause
bodily
injury or
death due
to sudden,
unexpected
mechanical
motion..

WARNING:

READ AND
FOLLOW
SAFETY
GUIDELINES
IN
ELECTRICAL
SAFETY.
IGNORING
THESE
GUIDELINES
COULD
RESULT IN
DEATH,
BODILY
INJURY, OR
PRINTER
DAMAGE
DUE TO
ELECTRICAL
SHOCK OR
FIRE

Power- on Printer

1. Plug
printer
power
cord
into
printer's
rear
panel
socket
(A)
and
into
the
facility's
grounded
power
outlet.

NOTE: If
200-240
VAC
required,
connect
power cord
to external
transformer
and then
plug
transformer
power cord
into a
grounded
power
outlet.

2. Place
switch
located
at
the
rear
of
printer
to
the
ON
position
(B).

3. Wait
4
hours

for
printer
to
warm
up
before
bringing
printer
online.

**NOTE: A
shielded
Ethernet
cable is
required
when
connecting
from the
printer to
the your
computer.**

Material

Cartridges

Installation

**NOTE:
Before
handling the
part
material
cartridge,
read the
Material
Safety Data
Sheet
(MSDS/SDS)**

After powering on the printer, there is a 15 minute warm-up period before the material cartridges can be installed. The user touchscreen will direct you when the printer is warm enough to install material cartridges.

The printer's material delivery module houses two **support** material cartridge holders and two **part** material cartridge holders.

- The **support material cartridges** are installed into the two holders located

in
the
left
side
of
drawer
(D).

- The
[part](#)
[material](#)
[cartridges](#)
are
installed
into
the
two
holders
located
in
the
right
side
of
drawer
(E).

CAUTION:

Do not
remove a
cold
material
cartridge
from the
printer
that has
started
the
warming
stage.

Doing so
could
cause
damage to
the
material
cartridge
and the
MDM.

Wait the
required
15
minutes if
it is
necessary
to remove
cartridges.

CAUTION:

When fully melted hot material cartridges are removed from the MDM, do not lay the cartridges on the side; the material will solidify in the vent cap cause the vent to clog. Do not reuse the cartridge in the MDM without turning the clogged vent cap, 1 1/2 turns. Doing so will cause the cartridge to collapse and may cause damage to the MDM.

CAUTION:
Please keep
bottles clean
to avoid any
chemical or
particulate
contamination
of the bottle
surface or
bottle cap. Any
contamination
can be
transferred
from the bottle
to the MDM
and cause
problems. The
MDM must
also be kept
clean from
chemicals or
particulate
contamination.

1.
Unpack
[cartridges](#)
and
the
[MSDS/SDS](#)
Sheet
from
cartons.
Save
sleeves
and
material
carton
to
store
[partially](#)
[used](#)
material
cartridge.

2. Open material delivery module (MDM), **pull** lever up and push **material cartridges** down into the right side of module until they are fully seated. **Install** the **support materials** into the two left module holders.

NOTE: If cartridges are not fully seated in

holders, the drawer will not close.

Print

Platform

Installation

1. Clean
print
platform
using
Isopropyl
Alcohol
before
installing
into
printer.
2. Open
the
chamber
door.
3. Align
platform's
rear
notch
(B)
into
x-carriage's
locating

tab
at
the
back
of
carriage.

4. Pull

the
release
latch
retaining
screw (A)
(located
at
the
front
of
the
x-carriage)
out.

5. Press

latch
(C)
(located
at
the
front
of
x-carriage)
down
and
place
printpad's
front notch
into
the
locating

tab.

6. Release

latch

to

secure

print

platform.

7. Close

the

front

door

and

press

“Play”

on

touchscreen

to

bring

the

printer

ONLINE

(D).

8. To
remove
the
platform,
pull
retaining
screw
out
and
press latch
down, lift
print
platform from
x-carriage.

Start

a

Test

Print

or

a

Demo

Print

1. Ensure

that

a

clean

[print](#)

[platform](#) is

installed and

the

door

is

closed.

Click

on

the

[Online/Offline](#) (A)

to

bring

printer

Offline.

2. Click

on

the

[“Tools”](#)

icon

(B)

and

select

“**Print**

Diagnostics”

(C)

on

the

menu.

Select

“**Test**

Print”

or

“**Demo**

Print”

and

select

the

mode

that

you

want.

Click “**Yes**”

to

confirm

platform

installed

and

that

the printer

is

online.

The

printer

will

begin

printing.

If

printer

is

offline,

click

[“No”](#)

and

return

to

the

“Status

Screen”

to

take

printer

Offline.

Return

to

the

[“Test](#)

[Print”](#)

or

["Demo](#)

[Print”](#)

menu

(D)

to

start

your

print.

3. After

the

print

is

completed,

the

message

[“Remove](#)

Print”

will

display

in

the

“Messages”

dialog

box.

Open

the

printer

door,

and remove

the

print

platform as

described

“Print

Platform

Installation.”

To

remove

part and

post

processing

instructions,

refer

to

VisiJet®

Part

Processing

User

Guide

located

in

the

ProJet

MJP

3600

Library.

User and Printer E-Mail Account Setting

1. Click
the
“[Settings](#)”
icon
at
the
bottom
of

touchscreen

(A).

2. Click

on

“Alerts

>”

(B)

and

select

“Machine

Email

>”

(C). Click

in

each

field to

enter

the

SMTP

Server;

SMTP

Port; Primary

DNS;

User

Name;

User

Password;

Use

TLS

(see

“Suggested

Settings

for

Internal

&

External

SMTP

Settings”

below).

3. Return

to

“Alerts

>”

and

select

“Admin

Email

>

(D).”

Click

in e-mail

address

and

type

in

the

email

address

to

send “Printer

Alerts”

to

your

email.

Slide

the

alert

buttons

(E)

to

“On”

on

the

alerts

that
you
want
to
be
notified
by
email.

NOTE:

Set up
according
to your
preferred
providers
SMTP
settings
and local
DNS
settings.
The last
thing you
need to
do is set
your DNS
Server.
This can
be
accessed
and
changed
via the
Network
Setup
Menu.

NOTE: The best way to determine your DNS Server, open a command window on your local computer and type in the following:
ipconfig /all. Your local DNS Server will be displayed in the returned list. Enter that value as your DNS Server using the keypad.

Suggested Settings for Internal & External SMTP Settings:

IMPORTANT:
It is very important that you use the Send Test E-mail option when setting up your e-mail.
If you

are
not
receiving
e-mail
after
setup,
please
check
your
junk
mail
before
changing
your
settings
to
see
if
your
system
e-mail
is
getting
sent
to
that
location.

The
external
SMTP
settings
provided
here
are
suggestions
that
were
verified
as
working
at
the
time
of
this
software
release.
However,
these
are
subject
to
change
if
the
provider
makes
a
change.

Please verify the settings per your external SMTP provider if you are experiencing problems receiving e-mail.

Internal SMTP	SMTP Server: your internal server SMTP Port:* "00000" or your internal server's port User Name: your server's user name User Password: your server's password Admin E-mail address: your e-mail Use TLS: N
Google Mail (i.e. Gmail)*	SMTP Server: smtp.gmail.com or 74.125.45.109 SMTP Port: 00587 or 00465 User Name: your user name*Login Password: your pass-wordAdmin E-mail address: yourusername@gmail.com [1] Use TLS: Y User Password: your password Admin E-mail Address: yourusername@yahoo.com [2] Use TLS: Y

Hotmail Live	SMTP Server: smtp.live.com SMTP Port: 00587 or 00025 User Name: yourusername@live.com ^[3] (Must have “@ live.com” after your username) User Password: your password Admin E-mail Address: yourusername@live.com ^[3] Use TLS: Y
Yahoo! Mail	IMPORTANT: You must be a Yahoo mail plus ac-count subscriber to use their SMTP Server. SMTP Server: smtp.mail.yahoo.com SMTP Port: 00465 User Name: your user name

PRINT3D

APP

(OPTIONAL)

Print3D
is
an
optional
App.
that
provides
access
to
your
printer
remotely
from
your
iPad
and
iPhone.

If
you
are
using
an

iOS
system,
you
are
now
able
to
view
and
manipulate
your
ProJet
print
jobs
on
your
iPad
and
iPhone.

To
retrieve
the
software,
type
in

["https://itunes.apple.com
/us/app
/print3d
/id589420549?mt=8](https://itunes.apple.com/us/app/print3d/id589420549?mt=8)

[4]"

in
your
browser
to
download
Print3D
software.

Refer
to
"Print3DiOS
Quick
Start
Guide
for
iOS
Systems
in
ProJet
MJP
3600
Library.
This
guide
will
describe
how
to
connect

a
printer
to
your
iPad
or
iPhone.

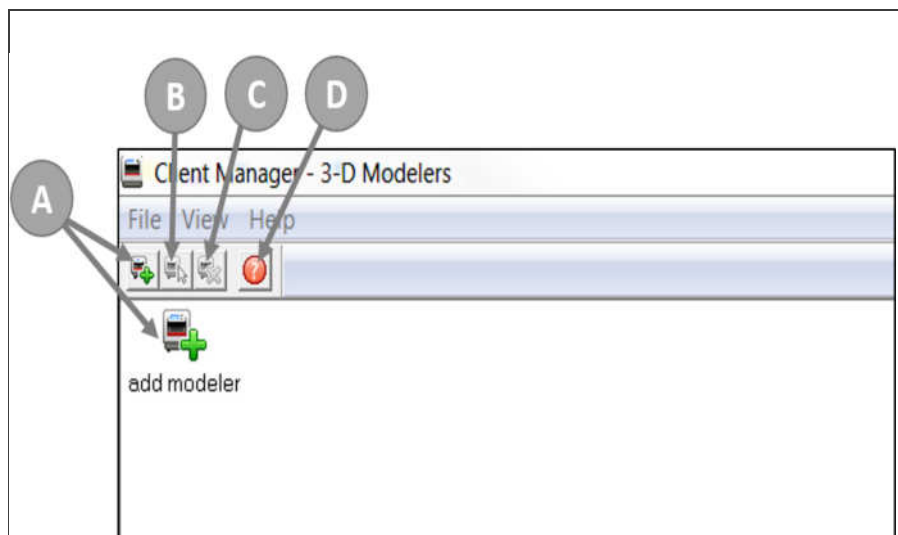
Client Manager Software

The Client Manager software was installed during installation of your printer. This section provides information about the software and its functions. Your software updates can be found at www.3dscentral.3dsystems.com [5].

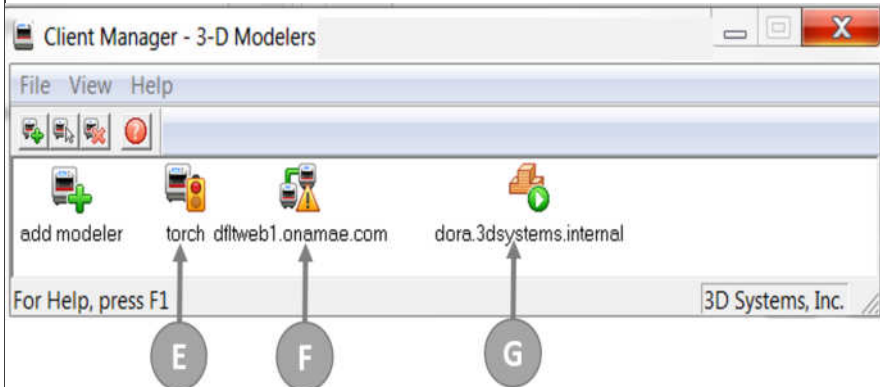
You will be able to submit jobs to your printer, preview your part on the platform to scale, rotate, and other features

that
will
give
you
the
optimum
results
when
printing
your
part.

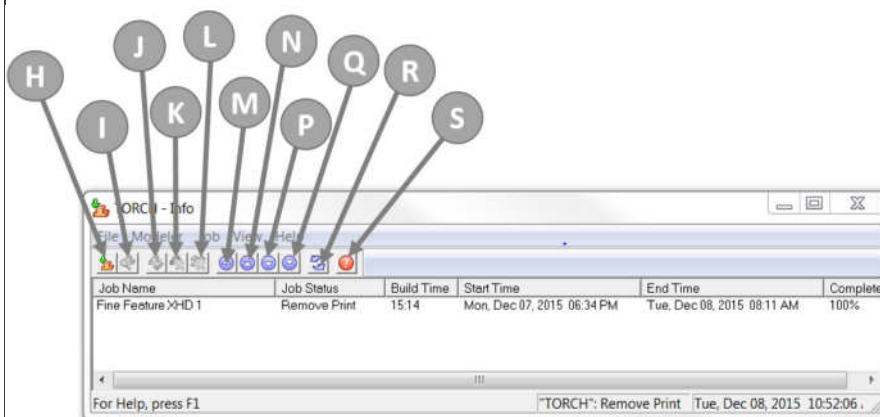
Client Manager Software Overview



- A** Add Modeler
- B** Open an Existing 3D Modeler
- C** Remove 3D Modeler
- D** List 3D Help Topics



- E** Printer is Offline
- F** Printer Not Found, Ensure Printer is Connected
- G** Printer Online, Ready Submit Job



- H** Submit Job
- I** Display Job in Preview
- J** Send Job to Modeler
- K** Delete Job
- L** Delete All Jobs from Modeler
- M** Move Job Up One Position in Pending Queue
- N** Move Job Up to Top in Pending Queue
- P** Move Job Down One Position in Pending Queue
- Q** Move Job Down to Bottom in Pending Queue

Submit

a

Job

Add a printer by clicking "add modeler"



and click on the available printer from the Client Manager.

Click on "Submit"



to add a job to the printer's queue. Click on "Select Files" and choose your .stl / .ctl file that you would like to print.

If you wish to delete the part, select "Remove Files," The part will be deleted from the queue.

If the part is oversize, you can choose to automatically scale you part to the "Build to Fit." Select "Yes" to build all parts in the platform at the scale factor specified. Click "No" to manually scale you part on the platform.

- Select your build style from the "BuildStyle" dropdown menu.
- Select the options to send email notifications on printer status.
- Select the unit of measure in "inch or "mm."

FOR HD MODE ONLY USING ACRYLATE MATERIALS

If large bulky parts are to be printed, you have the option to have a longer cooling pause to ensure that the parts is fully cured.

NOTE: This will increase the printing time of your part.



Client Manager's Printer Queue


If you want to display your part before sending to the printer, click on "Preview Print"



. Refer to "[Print Preview](#)" that will allow you to manipulate your part on the simulated platform.

To move your job in the printer's queue, click on the job to highlight the one to be moved. If you want to move your job up,

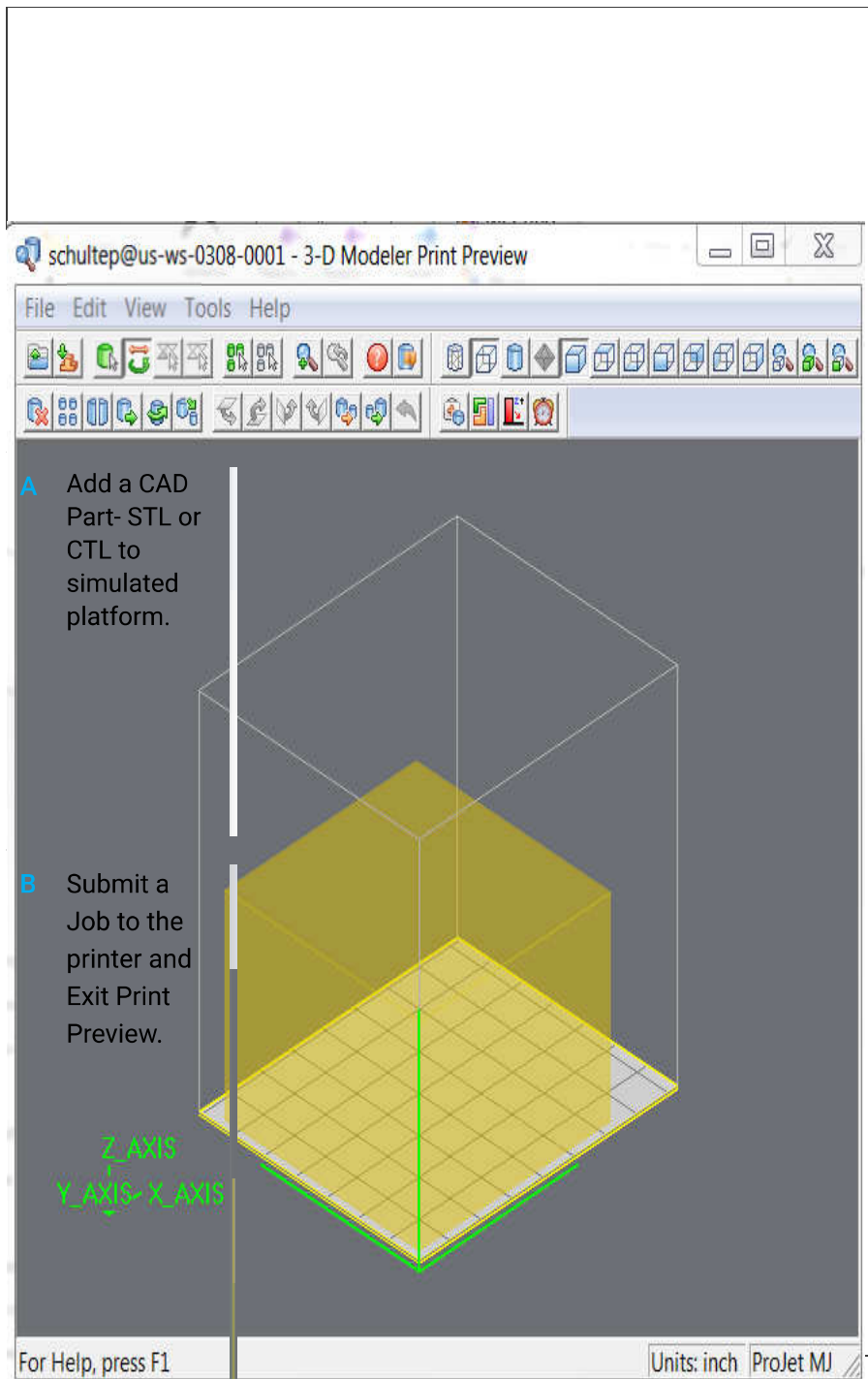
click  to move the print up one position in the printer's queue. Click on  to move the job to the top position in printer's queue. Click on  to move the print down one position. Click on  to move your job to the bottom position.

After you have your part to your specifications, click on confirm"  to send the part to the printer.

Print

Preview

Overview



- C Part Selection- click on the part to select.

D Trackball
View-
rotates the
platform in
the axis.

E Triangle
Selection-
selected
triangle
turns
purple.

F Deselect
Triangle-
selected
triangle
turns blue.

G Select All-
all parts
turn on
platform
gold.

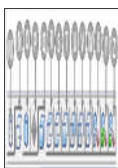
H Deselect
All- all
parts on
platform
turn blue.

I Zoom-
hold
mouse
button in
and
highlight
the area on
the part to
zoom in.

J Undo
Previous
Zoom

K Help Topic
that leads
you to 3DS
Central to
access
more
information
on your 3D
Printer.

L Select Part
Information
that
provides all
the
parameters
for your
job.



M Wire
Frame
Display-
view wire
frame
part

N Bounding
Box-
displays
part
bounding
box

O Shaded
Display-
displays
shaded
part

P Display
Support
Creation
Surface-
displays
the area
where
supports
will be
created

Q Isometric
View

R Top View

S Bottom
View

T Front
View

U Back
View

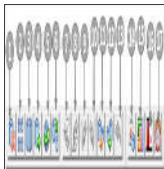
V Left Side
View

W Right
Side
View

X View
Platform
and
Parts

Y View all
Parts

Z View
Selected
Parts



1 Delete
Selected
Part-
highlighted
part will be
deleted from
the platform
once "Yes" is
selected.


2 Copy
Selected
Parts- select
part and
enter the
number of
copies desire
or add
percentages
in XYZ axis

3 Mirror
Selected Part

4 Translated
Selected
Part-

5 Rotate
Selected Part

6 Scale
Selected Part




7 Align Down-
Facing Plane



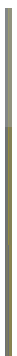
8 Align Up-
Facing Plane



9 Align Facing
X-Z Plane



10 Align Facing
Y-Z Plane



11 Scale mm to
inch

12 Scale inch to
mm

13 Undo Last
Action

14 Verify The
Selected Part
to ensure
that it fits on
the platform

15 Auto Parts
Placement-
automatically
places the
part on the
platform

16 Quick Build Orientation- automatically orients the part for a quick build.

17 Estimate Build Time- give an estimate of time to build the part in hour and minutes

Printer

Operation

The
print
job
submitted
will
be
built
when
printer
is
ready
unless:

- It
is
ONLINE
/ OFFLINE,
press
the
Play
button
(A)
on
the touchscreen.
- It
does
not
have
a
clean
buildpad
installed;
install
clean
one
and
press
ONLINE

/

OFFLINE

(A).

- The

"Preparation

Only"

option

in

the

"Submit" dialog

box

was

checked.

This

causes

the

printer

to

wait

until

the

print job

was

confirmed

before

printing. This

will

enable

you

to

change

the

job

in

the

Preview

window

again

before

confirming.

**NOTE: See
"Checking**

**Printer
Status" and
"Confirming
Build Jobs.**

When
the
Operator
panel
shows
PLATFORM
EMPTY?

Y/N,
verify
platform
is
clean
and
free
of
debris.

If
required,
press
NO
and
remove
build
platform
from
the
printer
to
replace.

Close
chamber
door
and
press
Online
button
to
bring
the
printer
online.

A
dialog
box
will
display
asking
"PLATFORM

EMPTY?

Y/N,

select

YES.

Otherwise,

select

No

and

install

a

clean

buildpad.

If

the

display

shows

please

empty

waste

or

next

build

will

exceed

waste

capacity,

open

the

waste

drawer

and

then

close

drawer;

the

job

starts

automatically.

NOTE

If

the

message

shows

WAITING

FOR

JOB,

no

jobs

are

in

the

printer's

queue.

Please

return

the

beginning

of

"Submit

a
Print
Job”
to
the
queue.
Once
in
the
queue,
the
job
starts
automatically.

Printer Status

To
view
the
printer’s
status,
Click
in
“Status”
icon
and
observe
the
screen
for
print
name,
print
mode,
print
sender,
est.
print
time,
when
the
print
began
and
when
it
will
end.
A
percentage
bar
will
inform
you
what

percentage
of
the
print
is
completed.

Emptying

Waste

Drawer

CAUTION:

Before
removing
waste
materials
from the
waste
drawer,
adhere to
all
personal,
and safe
handling
of
materials
described
in
"Material
Safety."
Keep
disposal
records if
local law
requires.

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.

To remove waste pan:

- If
the
printer
is
idle,
open
the
waste
drawer.
- If
the
printer
is
operating,

press
"Pause"
on
the
Status
Screen
(A).
When
pause
is
completed,
open
waste
drawer.

- Remove
waste
pan
and
place
it
in
a
plastic
bag.
- Remove
waste
material
by
scraping
it out
of pan
and into
the
bag.
- Dispose
of
waste
material
according
to
your
local
law.
- Replace
the

- waste
- pan
- in
- the
- right
- side
- of
- drawer.
- Close
- drawer
- and
- press
- “Pause”
- again
- to
- resume
- build.
- The
- icon
- will
- return
- to
- Online/Offline
- button.

Removing

Part

From

Platform

Remove Platform

1. When
Status
screen
message
shows
<job_name>
remove
print; open
chamber
door (A).
2. Open
the
chamber
door.
3.
Loosen
retaining
screw
and
press
release
latch
down
and
platform.

Remove Part from Platform

- Place
warm
platform
of
parts
in
a
freezer
for
a
few
minutes.
As

the
parts
and
platform
cool,
they
contract
at
different
rates
and
separate.

- Alternatively,
the
parts
can
be
mechanically
separated
from
the
build
platform
by
force
using
a
tool
such
as
a
thin
blade.

Cleaning

and

Finishing

Your

Part

Post Processing

Refer
to
the
Post
Processing
Guide
for
instructions
on
how
to
get
the
best
ultimate
results
for
your part.

Material

Changeover

Wizard

If
another
type
of
print
material
is
required
for
your
next
print
job,
the
existing
material
that
was
last
used
in

he
printer
can
be
purged
using
the
Material
Change
Over
Wizard.
Press
“Tools”
(A)
on
the
status
screen
and select
“Material
Change
Over
Wizard”
(B)
on
the
menu
screen.

Click
on
the
“Start
Changeover,”
a
dialog
box
will
appear
asking
for
confirmation,
select
“Yes.”
The
printer
will
start
the
purge
process
that
will
take
approximately
two
hours.
After
the

cycle
is
completed,
a
test
print
will
begin
to
ensure
that
the
old
material
has
been
purged
and
the
test
print
is
printing
with
the
new
material.

NOTE:
Before
starting the
Material
Changeover
Wizard,
empty the
waste pan
to avoid
material
overflow.

CAUTION:

Before removing waste materials from the waste drawer, adhere to all personal, and safe handling of materials described in "Material

Safety."

Keep disposal records if local law requires.

**WEAR
GLOVES:
WEAR
NITRILE
GLOVES
WHEN
REMOVING
AND
DISPOSING
WASTE
MATERIAL.**

Maintenance

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

Cleaning

MDM

Cartridge

Holders

Caution:
The MDM
holder
and
molten
material
will be
hot; avoid
touching
the sides
of the
holder
during the
cleaning
process.
Wear heat
resistant
gloves
and
ensure
that your

Cleaning MDM Bottle Holder

- Insert
a
lint
free
cloth
to
absorb
the
material
in
the

MDM

holder.

- Using a long tool, such as tongs; remove the saturated cloth from the holder and place in a waste bag.
- Continue to clean the holder until all material is removed.
- After the holder is clean, ensure there is no debris or lint left

inside
of
holder.

- Dispose
of
waste
material
and
according
to
your
local
codes.

Next

[7]

Cleaning

the

MDM

Drawer

Caution:
Avoid touching the sides of the holder during the cleaning process. Wear heat resistant gloves and ensure that your skin does not contact any of the molten material, it may be

NOTE:
Do not clean cartridge holders when the printer is running. Allow cartridge holders to cool before cleaning the interior of holders.

- Using Isopropyl alcohol and lint free

cloth,
dampen
cloth
with
the
alcohol
and
clean
around
the
cartridge
holders'
surfaces.

Cleaning

Surfaces

Cleaning Surfaces

- Do
not
remove
any
outer
panels
when
cleaning
the
printer.
Panels
must
only
be
removed
by
qualified
3D
Systems
Technical
Support
Representatives.
- Remove

dust
from
outer
surfaces
of
printer
by
wiping
with
a
clean,
dry,
lint-
free
cloth.

- Remove
dirt
and
grease
from
printer's
outer
surface
by
spraying
all-
purpose
cleaner
on
a
clean
cloth
and
gently
wiping.

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.

- Gently wipe dirt and build material residue from operator control panel using a ammonia-based

glass
cleaner
on
a
clean,
lint-
free
cloth.

- Remove
print
platform
before
cleaning
the
operator
panel.
This
will
prevent
the
printer
from
initiating
any
actions
if
controls
are
accidentally
pressed.

[Previous](#)

[8]

[Next](#)

[9]

Cleaning

the

Touchscreen

Ensure
to
spray
the
cleaner
onto
a
soft
cloth;
do
not
use
a
dry
cloth
or
do
not
spray
cleaner
directly
onto
touch-
screen

- Gently
wipe
the
touchscreen
to
remove
debris
.
- The
touchscreen
can
be
clean
with

a
water
base
solvent
such
as
Simple
Green.

Do Not Use:

- Chemical
solutions
to
clean
touchscreen
.
- Any
cleaning
products
that
contains
acetone,
MEK
or
alcohol.
- Any
abrasive
cleaning
products
image
image
- Using
these
cleaning
products
can
damage
the
touchscreen.

Previous

[9]

Next

[10]

Cleaning the Waste Drawer

- Review
VisiJet
material
handling
and
disposal
safety
guidelines
in
Build
Material
Safety
section
of
this
guide
before
cleaning
the
waste

drawer.Clean
printer's
waste
drawer
as
follows:

- Verify
that
the
printer
is
OFFLINE.
- Wear
protective
gloves,
refer
to
Personal
Protection
Equipment.
- Open
waste
drawer
and
remove
waste
pan.
- Dispose
of
pan
if
required.
Refer
to
Disposal.
- Gently
scrape
any
material
stuck
onto
interior
surface
of
waste

drawer.

Use

a

flexible

plastic

scraper

to

avoid

damaging

the

paint.

- Vacuum inside waste drawer to remove scrapping.
- Wipe inside surfaces of waste drawer using a clean cloth and all-purpose spray cleaner.
- Replace waste pan.

Previous

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Next

[12]

Return Printer for Repair

Previous

[10]

Partner

/

Customer

Support

NOTE:

Whenever you have a problem or a question it is best to contact your reseller directly first. If the certified partner cannot help you then there is a Customer Support Hotline you can use. 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 is
printed
on
a
label
located
on the
back
of
printer or
by
accessing
the
UI
and
selecting
[Tools](#)
>
[Printer](#)
[Info.](#)
- 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 6151
357

245

- In
Switzerland,
call
+41-26-439
95
90

General

ProJet
3600
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](http://www.3dsystems.com/support)

[13]

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

[14]

Glossary

Client

Manager -

3D application software used to create parts and send to the printer.

Print

Platform

-

Removable platform on which parts are built. Support material adheres to the part to the print platform and is removed from the printer once the job is complete.

Part

Material

-

Is an ultraviolet (UV) curable material used to

build
the
parts.
Always
wear
nitrile
gloves,
lab
coat
and
safety
glasses
when
handling
any
uncured
part
material.

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
build
is
in

progress.

Log

-

A
log
file
is
a zip
file
of
logs
used
by
service
for
resolving
potential
problems
that
may
occur
with
the
3D
printer
system.

Head Maintenance Station (HMS)

-

Job Scale Percentage (Job Scale %)

-

This
is
used
to
re-
size
parts
during
the
build
process.

Material Change Wizard

-

A
process
used
to

switch
from
one
part
material
type
to
another.
The
existing
part
material
that
was
last
used
from
the
printer
must
be
removed,
and
the
material
cleaned
from
the
printer
before
adding
a
different
part
material
type.

Material Delivery Module (MDM)

-
Stores
and
feeds
the
materials
to
the
printer
during
the
build
process.
The
MDM
holds
two
support
cartridges

and
two
part
cartridges.

Post Processing (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 Engine

-
The
Print
Engine
contains
major
systems
such
as
the
Printhead,
Planarizer,
and UV
Lamp
Assembly.

**Print
Process -**
Three
dimensional
solid
parts
printed
by
the
printer

consist
of
two
materials
(support
material
and
part
material).
The
support
material
is
a
wax
based
material
providing
adhesion
to
the
print
platform,
as
well
as,
providing
material
used
to
produce
supports
required
to
build
the
model.
The
part
material
used
to
build
the
parts
is
an
ultraviolet
(UV)
curable
material.
After
a
layer
of
material
is
deposited
on

the
build
chamber,
the
part
is
exposed
to
a
UV
flash
lamp.
The
UV
energy
is
absorbed
by
the
material
converting
a
liquid
part
material
to
a
solid
polymer.
When
the
build
is
complete
the
part
(consisting
of
the
two
materials)
is
adhered
to
the
print
platform
by
means
of
the
support
material.

**Build
Chamber**
-The
area
designated
for

the
part
to
be
built
in.

Sensitizer -

Uncured
part
material
is
a
sensitizer,
and
can
cause
allergic
reactions
if
it
contacts
skin
without
personal
protection.

Always
wear
nitrile
gloves,
lab
coat
and
safety
glasses
when
handling
any
uncured
part
or
waste
material.

Sensitization
can
build
up
over
time
and
what
originally
may
not
have caused
an
allergic
reaction
could
begin

to
cause
a
reaction
with
over-
exposure
to
part
material.

**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)

-

User
Interface
is
built
into
the
top
of
the
printer.
Various
features
can
be
controlled
and
checked
by
the
UI,
such
as
the
status
of
a
print
job,
materials
in
the
printer,
shutdown
the
printer
and
well
as
checking
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

-

Plastic
bag
designated
to
catch
the
waste
material
from
the
building
process.
The
waste
bag
is
located
in
the
MDM
behind
the
Support
Material.
Always
wear
nitrile
gloves,
lab
coat,
and
safety
glasses
when
handling
any
uncured
part
or
waste
material.

Waste

Material

-

Any uncured support and/or part material generated during a build process. Always wear nitrile gloves, lab coat, and safety glasses when handling any waste material.

X-Axis

-

The orientation of the part from left to right on the build platform.

Y-Axis

-

The orientation of the part from front to back on the build platform.

Z-Axis

-

The
orientation
of
the
part
height
on
the
build
platform.

.stl

/

.ctl

Files -

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

Printer

Shutdown

WARNING:
SWITCHING OFF
OR
DISCONNECTING
THE PRINTER'S
POWER
WITHOUT GOING
THROUGH THE
SHUTDOWN
PROCESS
PROPERLY CAN
SEVERELY
DAMAGE THE
PRINTER.
ALWAYS
PERFORM
SHUTDOWN
PROCEDURES
BEFORE
SWITCHING OFF
PRINTER'S
POWER OR
UNLESS POWER
MUST BE
DISCONNECTED
IMMEDIATELY
FOR SAFETY
REASONS.

NOTE: It is
recommended
to leave your
printer in
either standby
or conserve
mode instead
of shutting
down if the
printer is to
be used
within 7 to 10
days of last
build.

The
printer
can
take

several
hours
to
warm
up
after
being
shutdown
and
switched
off.
Before
shutdown
and
switching
off,
verify
that
the
need
to
build
parts
is
not
a
factor.

Printer Modes

Standby	15 Min
Conserve	25 Min
Initial Power Up	90 Min

After
printer
is
idle
for
2
hours
or
72
hours,
it
enters
Standby
or
Conserve

mode,
respectively.

In
these
energy-
saving
states,
the
printer's
heaters
are
partially
cooled
and
many
other
components
are
disabled.

The
heaters
are
cooler
in
Conserve
mode
more
than
Standby
mode.

It
takes
less
time
for
the
printer
to
warm
up
from
Standby
or
Conserve
mode
than
it
does
from
full
shutdown/power
off.

Warming
up
from
Conserve
mode
takes
more

time
than
from
Standby.

NOTE: To
increase
or
decrease
wait time
before
printer
enters
Standby
mode or
Conserve
mode,
contact
3D
Systems
Technical
Support.

Storing Printer for Extended Time Frame

When
the
ProJet
MJP
3600
is
going
to
be
stored
for
an
extended
period
of
time
you
will
need
to
call
a
certified

3D
Systems
representative to
set
up
a
service
call
for
a
Dry
Out
procedure
to
be
performed.
This
will
clear
out
any
residual
material
out
of
printer
lines
for
extended
storing.

ProJet MJP 3600 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,
follow
these
steps:

1. Verify

that
the
printer
is
not
building.

2. Select

[Tools](#)

from
the
top
tool
bar.

3. Select

[Shutdown](#)

on
the
[Tools](#)
menu
screen.
This
will
launch
the
shutdown
process.

4. Next,

select
[Printer](#)
[Shutdown](#)
and

click.

6. The

next

message

that

pops

up

is

asking

if

you

are

sure

you

want

to

shutdown

the

printer.

Select

OK.

7. The

Printer

Shutdown

screen

will

appear

next.

This

lets

the

user

know

that

the

printer
is
shutting
down
and
not
to
take
any
action.

8. A

message
will
then
come
up
that
states
it
is
now
safe
to
turn
the
power
switch
off.

NOTE:

Unless the printer will be idle for an excessively long time (more than a week) it is not necessary to shut it down.

Shutting

down the printer will cause longer wait times for warming, because it is warming from a cold state.

Tips

TIPS for Material Delivery System

We want you to have the very best possible experience with the material delivery system on your new ProJet® MJP 3600 system. These tips are important to ensure you understand the key points about the system.

Which material is which?

When looking into the

drawer
of
the
Material
Delivery
Module
(MDM),
the
layout
below
describes
what
material
goes
where
and
how
we
refer
to
each
cubby
via
the
User
Interface
(UI).

Use
the
cartridge
release
trigger

Do
not
remove
cartridges
without
activating
the
cartridge
release
trigger,
if
you
try
to
[uu
the
cartridge
out
without
releasing
the
trigger,
it could
damage
the
mechanism
on
the
cubby.

Please
make
sure
that
all
cartridges
are
properly
installed,
seated
and
locked
in
place.

Use
a
cartridge
until
depleted

3D Systems

encourages installing cartridges and running the printer until each cartridge is depleted before swapping cartridges. We do understand that under normal daily use, this may not be always manageable, and the printer does accommodate removing cartridges and replacing partially used cartridges. We simply encourage leaving cartridges installed until depletion to help reduce the possibility of contamination or spill.

How
much
material
do
I
have
in
the
bottles?

**Do
not
remove
hot
bottles
to
check
the
amount
remaining.** If
you
would
like
to
check
how
much
material
is
in
a
bottle,
on
the
touchscreen:

- Press
the
Materials
icon
at
the
bottom
of
touchscreen.
- Materials
window
opens
and
will
show
you
the
level

of
the
part
and
support
material
remaining
for
every
cartridge
that
is
installed
in
the
system.

- If
you
make
a
change
based
on
the
information
displayed
(perhaps
you
installed
a
new
bottle),
note
that
the
screen
will
not
auto-
update.
For
cartridge
changes
to
be

displayed,
you
must
first
exit
the
Materials
screen,
install
the
new
cartridge,
close
the
drawer
so
that
the
new
cartridge
is
recognized
by
the
printer
and
select Materials.

The
blue
arrows
in
the
pictures
shows
you
the
amount of
materials
that
are in the
bottles.

Cartridge
action
alerts
(User
Touchscreen)
The

Printer
will
alert
the
user
to
“Add
cartridge
to
Support
MDM
X;
Add
cartridge
to
Part
MDM
Y”
for
three
reasons:

- No
cartridge
is
installed
in
the
specified
MDM
- The
cartridge
installed
in
the
specified
MDM
is
empty
- The
cartridge
installed
in
the
specified
MDM
is
not
reading
properly...alert
3DSystems

- The Printer will alert the user to “Add cartridge to Support MDM X (Not Melted)” if the printer thinks the cartridge is melted and yet it was still unable to retrieve material from that cartridge. This can be due to a variety of issues; please contact

your
authorized
service
representative if
you
are experiencing this
problem.

- If
the
Printer
reports
that
a
cartridge
is
“Not
Melted”,
that
cartridge
will
NOT
get
reused
unless
it
is
removed
from
the
printer
so
that
the
printer
recognizes
that
the
cartridge
is
no
longer
present
(could
take
up

to
1-2
minutes),
cartridge
is inspected,
and
then
reinstalled
in
the
cubby.

If
the
Printer
reports
“Add
cartridge
to...”,
please
install a
new
cartridge
before
starting
your
next
print.

Links

[1]

<mailto:yourusername@gmail.com>

[2]

<mailto:yourusername@yahoo.com>

[3]

<mailto:yourusername@live.com>

[4]

<https://itunes.apple.com>[/us/app](#)[/print3d](#)[/id589420549?mt=8](#)

[5]

<http://www.3dscentral.3dsystems.com>

[6]

<http://projetmjp3600>[/user-](#)[guide/client-](#)[manager-](#)[software](#)[/print-](#)[preview-](#)[overview](#)

[7]

<http://infocenter.3dsystems.com>[/content](#)[/maintenance](#)[/aligning-](#)[printheads](#)

[8]

<http://infocenter.3dsystems.com>[/content](#)[/maintenance](#)[/cleaning-](#)[printer](#)

[9]

<http://infocenter.3dsystems.com>[/content](#)[/maintenance](#)[/perform-](#)[flow-](#)[test](#)

[10]

<http://infocenter.3dsystems.com>[/content](#)[/maintenance](#)[/reboot](#)

[11]

<http://infocenter.3dsystems.com>[/content](#)[/maintenance](#)[/servicing-](#)[feed-](#)[roller](#)

[12]

<http://infocenter.3dsystems.com>[/content](#)[/maintenance](#)[/updating-](#)

firmware

[13]

<http://www.3dsystems.com>

/support

[14]

<http://www.3dsystems.com>

/support

/materials/msds