



B9 Core Series 530 & 550

USER MANUAL

B9Creations Core Operating Manual

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For reference, write the following information from the Product Information Label located on the back of your new printer here:

Model # _____ Serial # _____

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1 B9Creations Core Series General Information

B9Creations Core is a 3-D Printing device supplied by B9Creations, LLC, Rapid City, SD, USA.

These working instructions apply to:

Name of machine	Description	Available Models
B9Creations Core Series	D-DLP Printer for Photo Polymerization of Liquid Materials	Core 550 Core 530

B9Creations Core is an easily operated, high-precision, 3D printer to be used in accordance with manufacturer's instructions, utilizing only approved materials according to proper material settings.

B9Creations Core has an integrated controller installed inside printer casing. The software required for all the operations is pre-installed and ready for use.

The provided AC/DC power supply (either model #MeanWell GSM60A12-P1J or #MeanWell GSM90A12-P1M) has been tested and is considered part of the printing equipment.

1.1 Declaration of CE Conformity




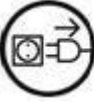




B9Creations Core Series is a 3-Dimensional Printer designed, manufactured and certified according to the following directives, regulations and standards:

- RoHS
- FCC

We, B9Creations, LLC, herewith declare that a.m. device fulfills the basic safety requirements of mentioned standards, regulations and directives. In any case of non-authorized modification, abnormal use or misuse of this device or document B9Creations, LLC is not liable for any injury that may occur.

2 Instructions for Safe Use

2.1 Explanation of Symbols

Symbol	Accompanying word(s)	Explanation
	CAUTION	This symbol indicates safety-relevant paragraphs and sections in these working instructions
	NOTE	This symbol indicates information within the working instructions that optimizes the use of the unit
	WARNING	This symbol warns of the dangers of electric voltage. Failure to comply with safety guidelines and procedures can result in electrical shock that may lead to injury or death.
	DISCONNECT FROM MAINS	This symbol indicates danger of electric shock when unit enclosure is opened. Unplug the unit before opening it.
	WEAR EYE PROTECTION	This symbol indicates that eye protection is needed. Failure to comply with safety guidelines and procedures can result in injury to eyes.
	READ/REFER TO USER MANUAL	This symbol directs the operator or service agent to read the User Manual for the equipment to find important information.
	DC POWER	This symbol indicates the equipment utilizes DC Power.
	DC JACK POLARIZED	This symbol indicates that the DC power input jack for the equipment is polarized. In particular, the DC power input jack's outer conductor is the "negative" conductor and the inner conductor is "positive" conductor.

2.2 Transport Damage

Upon receipt of the equipment, check the unit for transport damage. If damage is found to either the equipment or its shipping container, accept the unit with caution. Report the potential damages to the shipper and B9Creations, LLC (support@b9c.com) within 24 hours after receiving the unit.



CAUTION

Do not work with a damaged unit under any circumstances.

2.3 Operator's Obligations

In addition to complying with the statutory regulations specified by the manufacturer, the operator must ensure the statutory obligations are observed and implemented at the work place, i.e. the operator must train personnel and comply with industrial safety legislation and any other regulations or laws in force.

For working at and with the machine, the operator must draw up written instructions in an understandable form and give these to the employees in their own language. These instructions must be based on the **B9Creations Core Series User Manual** and shall be written considering the work to be performed.

2.4 Operations and Maintenance Log Book

B9Creations, LLC recommends the operator keeps a log book for the **B9Creations Core Series**. All tests on the equipment, necessary or suggested compliance testing, and essential works (e.g. repair work, modifications) should be documented in this book.

2.5 Safety Information

Safety concerning the protection of persons, the environment and the material to be processed mainly depends on the behavior of the persons operating the unit.



WARNING

No modifications of this equipment is allowed.



CAUTION

Prior to operation, read the B9Creations Core Series User Manual carefully. Adhere to the information provided to avoid errors, equipment damage, and injury to the operator.

In addition to the information in these work instructions, relevant national laws and guidelines must be observed for setting up and operating this unit (technical connection requirements of the electrical supply companies, etc.).



CAUTION

The connecting power supply cable and plug must be checked for damage prior to operation. If any damage exists, the unit must not be connected to the mains. A damaged mains power supply may only be replaced by a mains power supply of the same type.

Failure to comply increases risk of electrical shock and serious harm of operator or third parties.



WARNING

To avoid risk of electric shock, this equipment must only be connected to a supply mains with protective earth.



WARNING



DISCONNECT FROM MAINS

Maintenance and repair of the electrical equipment of the unit must only be performed by B9Creations, LLC in the “safe” condition (voltage cleared, and unit unplugged from mains). Service agents must observe the safety instructions when performing service to the electrical equipment. Removal of protective enclosure components for ANY purpose voids equipment warranty.



CAUTION

Proper function and safety of the unit are only guaranteed if the required tests, maintenance and repair work have been performed by B9Creations, LLC.



NOTE

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the User Manual, may cause harmful interference to radio communications. However, there is no guarantee that the interference will not occur in an individual installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that of the receiver.
- Consult the dealer or an experienced radio/TV technician for help.

If this equipment is receiving interference that affects the **B9Creations Core Series**, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the printer or emitting equipment.
- Increase the separation between the printer and emitting equipment.
- Connect the printer into an outlet on a circuit different from that of the emitting equipment.
- Isolate the printer and emitting equipment from each other, setting up in separate rooms if possible.

3 Intended Use and Proper Operation

3.1 Intended Use

The **B9Creations Core Series** printer utilizes light to create 3-d objects in a Photoinitiated liquid used in jewelry, model-making, art, prototyping and research.

The unit is not suitable nor intended for any purpose other than printing in these stated industries or recreations.

3.2 Proper Operation



CAUTION

The unit is suitable to be set up and operated clean environments. The unit has been designed for continuous operation.

- Only clean, approved material (“Resin”) specifically designed for the **B9Creations Core Series** shall be used. Use of third party or unapproved material will void the warranty of the DuraVat.
- Remove the printed item and cured resin from the printer when printing is completed.
- Do not attempt to remove printed item from Build Table while Build Table remains installed in the printer.
- Read and follow safety instructions of every liquid material in use. Wear personal protective items if requested and strictly follow instructions for handling, storage and disposal of material.
- Printing material must be kept from exposure of ambient light (e.g. tungsten light, direct sunlight) while not being used for printing. Printing material shall be stored in suitable storage containers that do not allow exposure to ambient light.
- It is mandatory to close the front door before starting the print. The unit operates only when the front door is completely closed.



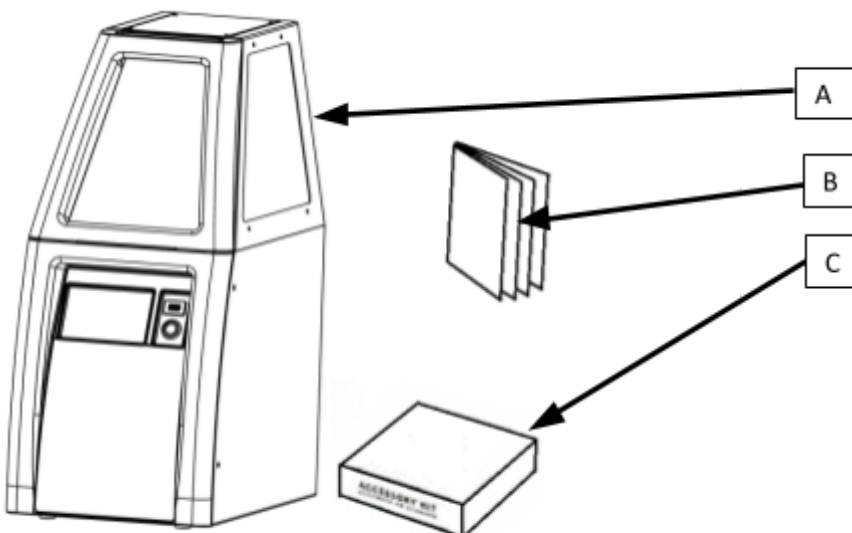
NOTE

- Do not install additional software if not authorized by B9Creations, LLC .

4 Scope of Delivery/Finishing Kit Components

Check that all components are in good condition upon delivery of the machine. If items are missing or damaged, contact your supplier.

4.1 Scope of Delivery



- A. **B9Creations Core Series** with external power supply, cord set, Build Table, and 2 DuraVats
- B. Installation Guide
- C. Finishing Kit

4.2 Finishing kit components

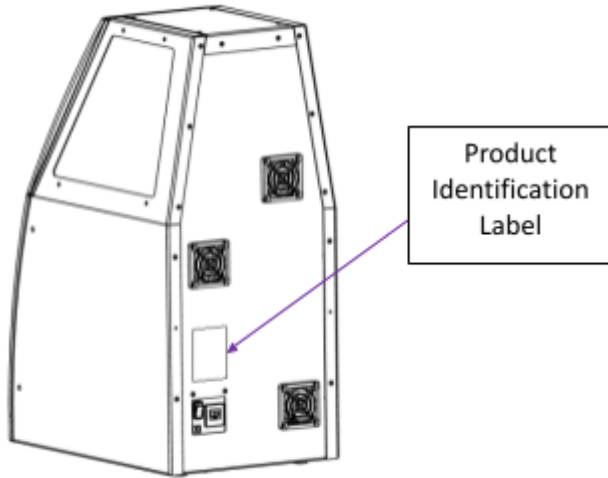


- A. **Print Scraper (1x)** – to remove print from Build Table
- B. **Microfiber Cloth (1x)** – to clean printer
- C. **Nitrile Gloves (2 pair)** – used when cleaning machine, handling parts or handling material
- D. **Plastic Blade (3x)** – to clean Build Table
- E. **Spatula (1x)** – to mix material and clean away extra material
- F. **Funnel (1x)** – to direct material back into holding bottle
- G. **Material Strainer (1x)** – to separate and remove cured pieces from material
- H. **Replacement Filters** – to replace clogged chamber filters
- I. **Isopropyl Material Filters (5x)** – to clean material out of Isopropyl Alcohol
- J. **Squeeze Bottle** – for Isopropyl Alcohol (Isopropyl Alcohol is not provided in this kit)
- K. **Tweezers (1x)** – to aid in cleaning part and removing cured pieces from material
- L. **Clippers (1x)** – to clean supports from print

5 Identification and Interface

5.1 Product Identification

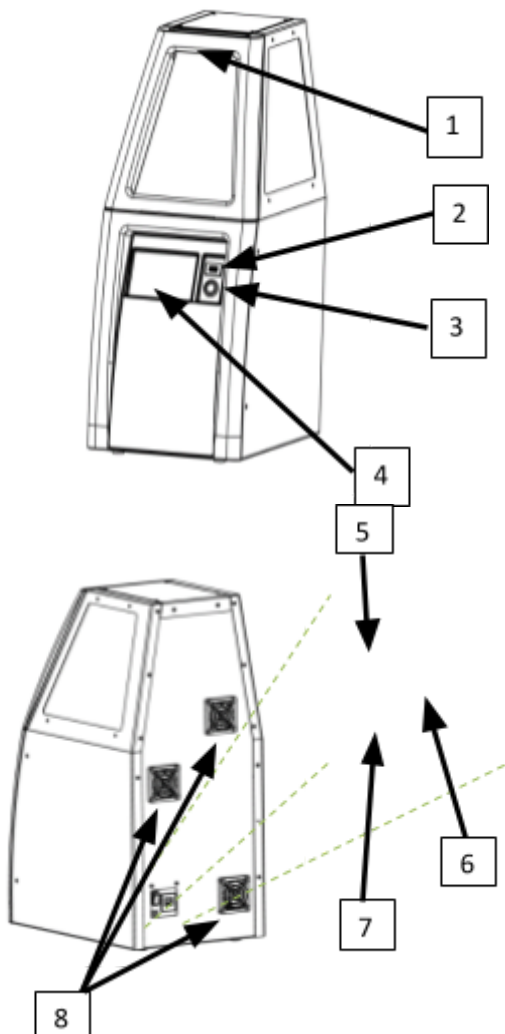
Manufacturer and electrical specification information (Product Identification Label) can be found on the printer rear panel. An example of this label is shown in section [12.4](#) of this User Manual.



NOTE

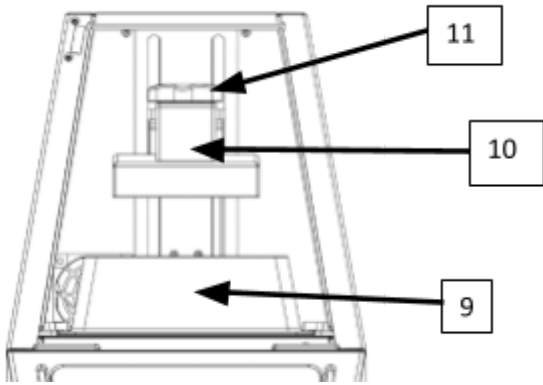
If requesting technical assistance, always take note concerning the model number and serial number of the device.

5.2 Interface Elements



1. Front Door (Place fingers in area indicated to pull door open)
2. USB Port (for Low Voltage Mass Storage device ONLY)
3. Function Button
4. Touch Screen Display

5. On/Off Switch
6. Ethernet Port (for Low Voltage Network connection ONLY)
7. DC Power Inlet (Barrel Jack)
8. Fan Protective Covers (secures fan filters in place)



Build Chamber Main Components (Front Door Open)

- 9. DuraVat
- 10. Build Table Assembly
- 11. Lock Knob

6 Transport and Installation

6.1 Transport

- Transport the unit oriented properly to prevent damage.
- Maximum stacking level of devices for shipment – 3 Levels.
- Do not stack additional items or shipments on top of devices.
- Protect from rain.
- Mechanical shock must be avoided.
- Storage and Transport temperature should not be less than 0 °C (32 °F) or more than 40 °C (104 °F) .
- Storage and Transport relative humidity maximum shall be less than 80%
- For dimensions and weight refer to Section 13.1



CAUTION

The B9Creations Core Series printer is a precision instrument. Care must be taken to handle the printer gently during unpacking and set-up.



NOTE

Keep the shipping packaging in case you need to ship the printer for technical assistance.

6.2 Hardware Setup

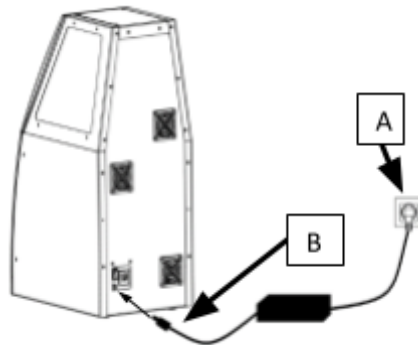
- The printer must be placed on a solid, rigid, level and skid-proof surface (laboratory desks, racks) so that a horizontal, safe, vibration-free position is ensured.
- The printer or DuraVat should not be placed directly in the sunlight or close to a bright light source.
- The printer shall be placed in a location that is dry. It shall not encounter liquids or fluid leaks.
- The printer shall be installed in a low dust environment. When not in use, the front door shall be closed, and the DuraVats shall be covered.
- The room temperature should not be less than 15 °C (59 °F) or more than 35 °C (97 °F). The humidity should be less than 80%.
- The support surface shall be stationary (no castors) and must have a load bearing capacity of at least 40 kg/88 lbs.



CAUTION

- Take care not to pinch your fingers when placing the printer on the table.
- Air inlet and outlet openings in the housing of the unit (rear surface) must not be covered or blocked. The rear of the unit must be at least 100 mm (4") away from any wall to avoid blocking air outlet of the built-in fan. A footprint area (w x d: **750 x 750 mm, or 30" x 30"**) is required.
- **The printer needs to be positioned on the support table in a manner that allows access to the mains socket for disconnection from mains if needed.**
- Do not turn the printer on prior to temperature and humidity acclimatization.

To properly set up the hardware, connect the **B9Creations Core Series** to an AC power socket (A) using **ONLY** the power supply (either model #MeanWell GSM60A12-P1J or #MeanWell GSM90A12-P1M) and cord provided with the **B9Creations Core Series** printer. **Mains: 100-240 VAC, 50/60 Hz with protective earth.** Connect to mains with protective earth in accordance with local power supply specifications.



Insert the barrel connector of the provided power supply into the barrel jack in the **B9Creations Core Series** printer (B).



NOTE

As with most computer equipment, it is recommended that the operator supplies adequate surge protection and short-term power backup to allow slow system shut-down.



CAUTION

- Do not use any type of extension cord other than a surge protection cord.
- Do not directly connect the device to any type of emergency backup generator that is not connected to mains power.



NOTE

If additional hardware is installed, it could cause malfunctions to the system. Do not install any other additional hardware if not authorized by B9Creations, LLC .

6.3 Software Setup

- **B9Creations Core Series** printer does not require any software to be installed by the operator. The software is already installed and configured.
- **B9Creations Core Series B9Create** software must be loaded on a laptop or desktop computer to create print files. Software updates and instructions can be accessed at www.B9C.com.

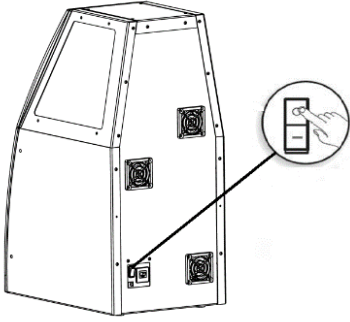


NOTE

Do not install additional software if not authorized by B9Creations, LLC.

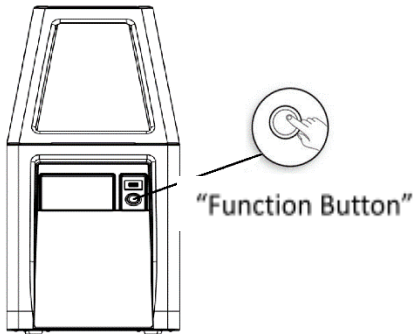
7 Operation

7.1 Turning the Printer "ON"



Turn “on” the rear mains On/Off switch. The Function Button on the front of the printer will illuminate and fade to “off” multiple times while the system boots up. Initial startup may take several minutes. For Button Illumination codes, see Section [7.5](#)

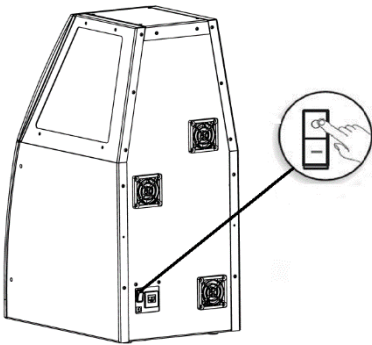
7.2 Waking the Printer from Stand-By Mode



Press the Function Button to bring the printer out of Stand-By Mode. When in Stand-By Mode, the LED ring on the Function Button ebbs on for 1-1/2 second, ebbs off for ½ second and repeats. For Button Illumination codes, see Section [7.5](#).

7.3 Turning Printer “OFF”

Turn “off” the rear mains On/Off switch.



7.4 Preparing the Printer for Extended Shut Down

If the printer is not to be operated for an extended length of time (> 8 hours):

- Turn off the rear On/Off switch
- Unplug the mains connecting cable
- Clean the print chamber (see section [10.1.1](#))
- Place the DuraVat cover on the DuraVat or completely clean the DuraVat free of material
- Close the front door of the printer

7.5 “Function Button” Functions and Corresponding LED Ring Illumination Codes

The Function Button:

- Activates the touchscreen display from Stand-by Mode when pressed - Light turns solid On.
- Returns printer into Stand-By Mode when pressed - Light ebbs On and Off in a slow cycle.
- Pauses printing when pressed once while printer is printing - Light blinks On and Off.
- Re-starts paused printing when pressed again - Light turns on for approximately 1 second, turns off ½ second, then repeats throughout duration of printing.
- Indicates printer is printing - Light turns on for approximately 1 second, turns off ½ second, then repeats throughout duration of printing.
- Indicates printer is finished printing - Light blinks ½ second On, ½ second Off, repeat.
- Indicates door open during printing - Light blinks ¼ second On, ¼ second Off, repeat.



NOTE

The Function Button will not reboot the printer.

7.6 Setup Troubleshooting

If an error is encountered, follow each “Possible Causes” and “Remedy” in order of listing in the table.

	Error description	Probable Causes	Remedy
1	The printer does not turn on after pressing the Function button.	Printer has not completed booting up	Check Function button to see if it is blinking. If it is slowly blinking, printer is booting up. Wait for printer to complete boot cycle.
		Printer requires a re-boot (toggle switch on back of printer)	Turn rear On/Off button “Off.” Wait 15 seconds. Turn rear On/Off button “On.”
		Main connecting cable disconnected from mains or printer.	Connect the main cable to mains and printer
		Rear On/Off switched Off	Turn On the rear On/Off switch
		No power to mains outlet	Inspect mains electrical fuses or breaker switch
		Defective power supply	Confirm LED lit in power supply
			If none of the above solves the problem, contact the B9Creations, LLC support
2	Touchscreen lights up but does not display B9Creations Core Series main page.	Printer requires a re-boot	Turn rear On/Off button “Off.” Wait 15 seconds. Turn rear On/Off button “On.”
			If none of the above solves the problem, contact the B9Creations, LLC support
3	Touchscreen displays the B9Creations Core Series main page, but touchscreen is not responsive.	Printer requires a re-boot	Wait 5 minutes. Turn rear On/Off button “Off.” Wait 15 seconds. Turn rear On/Off button “On.”

			If none of the above solves the problem, contact the B9Creations, LLC support
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7.7 Interface Misuse

USB connections on the printer are for file transfer purposes **ONLY**. Do not use USB 2.0 or 3.0 portable dongles for mobile Internet. Do not use the USB port to connect directly to a computer, laptop or device other than a USB storage device dedicated for file transfers between the **B9Creations Core Series** and a computer or laptop.

The Ethernet connection on the rear of the printer is for connection to a network for file transfer and additional remote control of the printer via B9Creations, LLC approved software installed on a connected PC or Laptop.



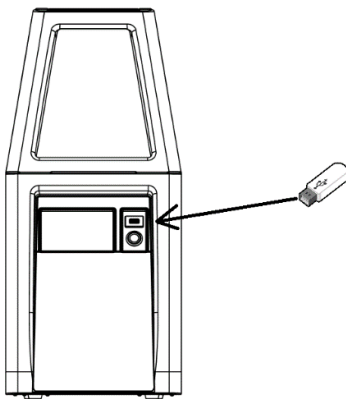
NOTE

Improper usage of the USB or Ethernet connector will cause damage to the printer. Damage caused by improper usage of the USB connection will nullify any warranty on the equipment.

7.8 Configurations of Operations

The **B9Creations Core Series** can be operated either as a stand-alone unit or networked with a computer operating the **B9Create** software. Print files and print material information can be uploaded to the **B9Creations Core Series** in two different manners.

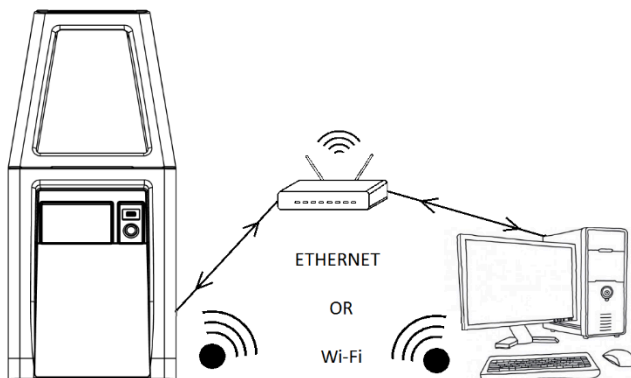
7.8.1 Stand-Alone Configuration



Print files must be loaded on the **B9Creations Core Series** via USB mass storage device. USB storage device shall be USB 2.0, FAT32 formatted. USB 3.0 drives are reverted to USB 2.0 and can be utilized.

7.8.2 Networked Configuration

The **B9Creations Core Series** can be networked with a computer or laptop through a common router.



8 Safety Features

8.1 Safety Features

- Safety switch on front door stops printer operation
- Design prohibits light engine from shining in operator’s eyes



As a precaution, Service Technicians should wear protective eyewear when servicing mains connected equipment.

8.2 Operational Safety Features

- After completion of printing an object or after an “aborted” print, printer cannot print another object until the door has been opened and closed. **It is the responsibility of the operator to remove the printed object from the Build Table and clean the Build Table prior to starting another print job.**



NOTE

Failure to remove a printed object prior to beginning another print will damage DuraVat.

- If mains power is interrupted while the printer is printing, the print automatically aborts, and the printer assumes a “Safe” condition once power is restored. The “Safe” condition is defined as:
 - o Build Table and printed object will automatically raise away from the Duravat,
 - o Touchscreen will display the **Print Completed Successfully** screen as shown in Section [9.12.4](#).
 - o Printer will not print again until door has been opened and shut.

9 Core Series On-Board Application

9.1 Introduction

The **B9Creations Core Series** printer is designed for high precision 3D prints of items including jewelry, art and hobby items. It comes loaded with On-Board software for printing and print management.

9.2 Icon Definition



Sort in Ascending Order



Sort in Descending Order



Return to Previous Menu



Return to Home Menu



Continue to next Menu



File Information



Discard File



File



USB File Transfer



Print History

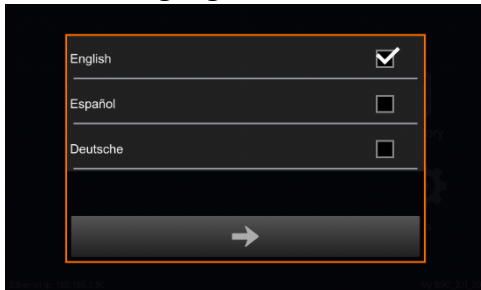



Settings



Network Information (Secure/Unsecure and Network Signal Strength)

9.3 Language Selection – Initial



The first time the printer is turned on, the touchscreen will display the **Language Selection** screen. Select the desired language by touching the box to the right of the language. Once the language is selected, press .

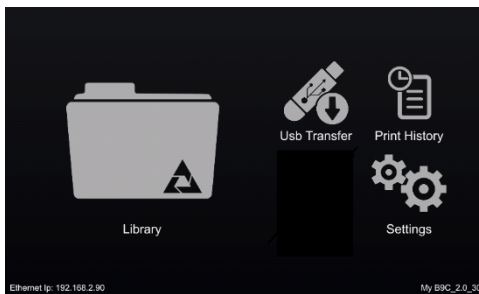
The **Primary Menu** will be displayed.



NOTE

This menu can later be accessed using Tools menu on the Primary Menu.

9.4 Primary Menu



This page is the main starting point for all actions and inputs for the operator. From here, the pages for starting a print, transferring files, changing the settings, and viewing the printer's history can all be accessed.

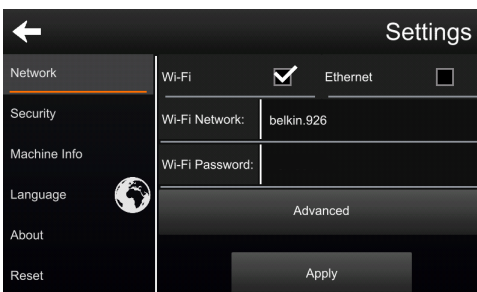
9.5 Connecting to a Network




NOTE

If utilizing the B9Creations Core Series as a Stand-Alone printer as shown in [7.8.1](#), skip to Section 9.6.

9.5.1 Wi-Fi/Ethernet Selection

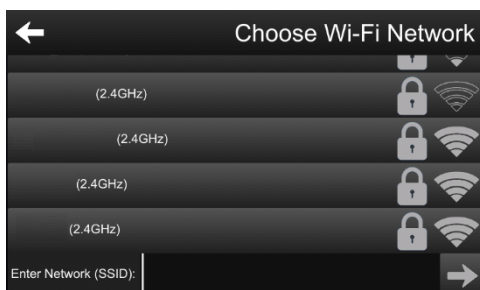


Press the **Settings**  icon on the **Primary Menu** page.

The touchscreen will display the **Settings** menu.

Select either “Wi-Fi” or “Ethernet” by touching the box to the right of whichever network connection type is desired. Initializing the printer for the selected network connection type may take a few moments.

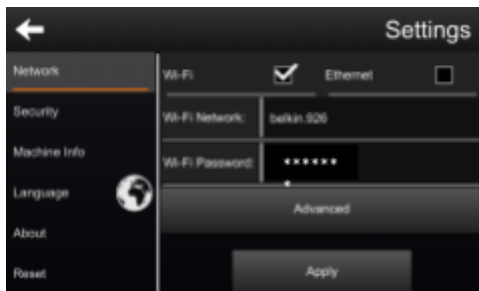
The operator must select a valid Wi-Fi Network name in the **Wi-Fi Network** field. A list of active Wi-Fi networks will be displayed if the operator presses the field to the right of **Wi-Fi Network** on the **Settings** page.



Once the desired Wi-Fi Network is found on the list, the operator can select it by touching the name on the touchscreen. If the network name is not displayed scroll to the bottom of the screen and manually enter the Network (SSID).

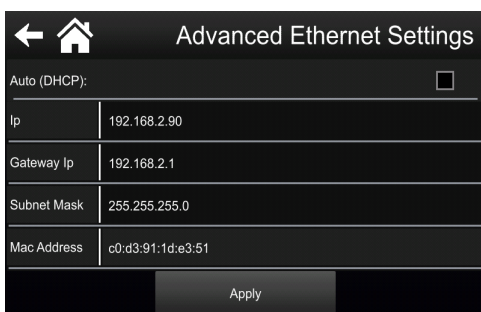


NOTE: The Wi-Fi signal strength should be two bars minimum.



The selected Wi-Fi Network will be displayed in the field to the right of **Wi-Fi Network** on the **Settings** page. If the network selected is a secure network, a password must be provided. To enter a password, press **Wi-Fi Password** field and enter the password. If a Wi-Fi Network is selected, the **Wi-Fi Network** and **Wi-Fi Password** fields will be displayed on the **Settings** page

9.5.2 Advanced Ethernet Network Connection



Once the network connection type has been initialized, the operator may press the **Advanced** field on the touchscreen to display additional information about the network connection type. Pressing the **Advanced** field after selecting the **Ethernet** box will display the **Advanced Ethernet Settings** page. Ethernet settings are displayed. The operator can select each setting field if desired and change them if needed. Once the proper settings are displayed, press **Apply**.



NOTE

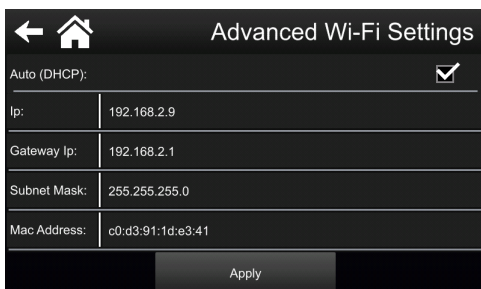
It is often best to press the box to the right of “Auto (DHCP)” and “Apply” to allow the network to establish the IP address.



NOTE

For Ethernet to work properly, an Ethernet cord must connect the 3-D printer to the network on which the B9Create desktop software is running.

9.5.3 Advanced Wi-Fi Network Connection



By selecting **Advanced** on the **Settings** page, the **Advanced Wi-Fi Settings** page will be displayed. On this page, the operator may manually enter the IP address, the Gateway IP address and the Subnet Mask.



NOTE

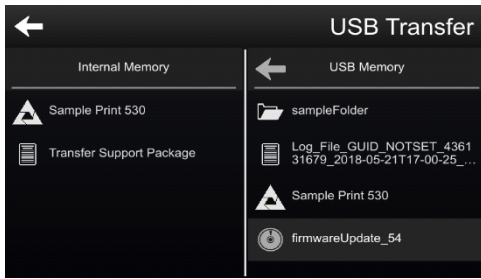
Instead of manually entering the addresses and information in the setting fields, it is often best to press the box to the right of “Auto (DHCP)” and “Apply” to allow the network to establish the IP addresses.




NOTE

For Wi-Fi to work properly, there must be a wireless network to which the printer can connect. Additionally, the desktop software must be running on a computer that is connected to the same network.

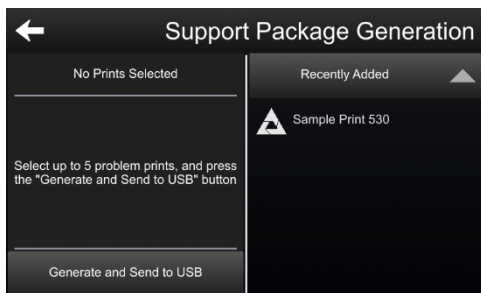
9.6 Adding a Print Object Via USB Device



Only properly created print objects can be added to the print library. These print objects are created on desktop software such as B9Creation CAM software. Once created, print objects can be added to the **B9Creations Core Series** printer via USB Device whether the printer is being used in either the “Stand Alone” or “Networked” Configuration. Insert a USB Device in the USB port on the front of the **B9Creations Core Series** printer. Press the **USB**

Transfer  icon on the **Primary Menu** page. The touchscreen will display the **USB Transfer** menu. Files that are located on the USB drive will display under **USB Memory**. Select the file to transfer. A pop-up menu will ask if you want to transfer the selected file. Select “Yes.”

9.7 Support Package Generation

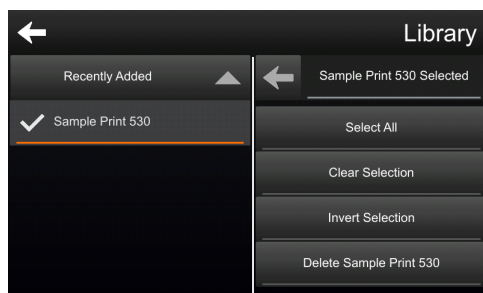


If requested by B9Creations Support, select up to five problem prints and press the “Generate and Send to USB” button. The prints and the printer log file will be transferred to the USB.

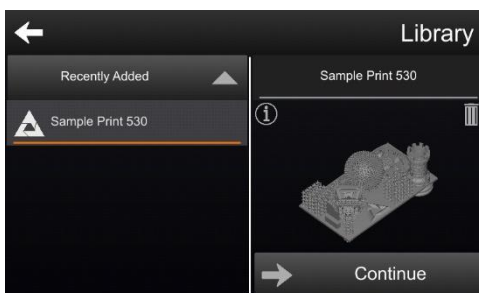
Files can then be sent to B9Creations Support for troubleshooting purposes.

9.8 Deleting Prints


9.8.1 Pressing on the file name for two seconds will display a menu icon to delete one or more print objects.

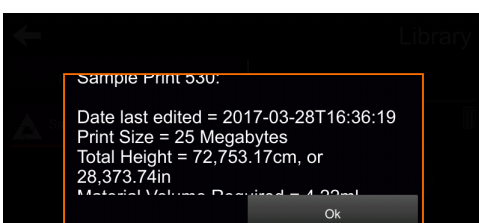


9.8.2 Pressing on the print picture in the right pane will display delete menu icons.



Pressing **Delete**  will delete the print job.

Pressing **Information**  will direct the operator to a window detailing valuable information about the print object. See the example - “Sample Print 530” information window.

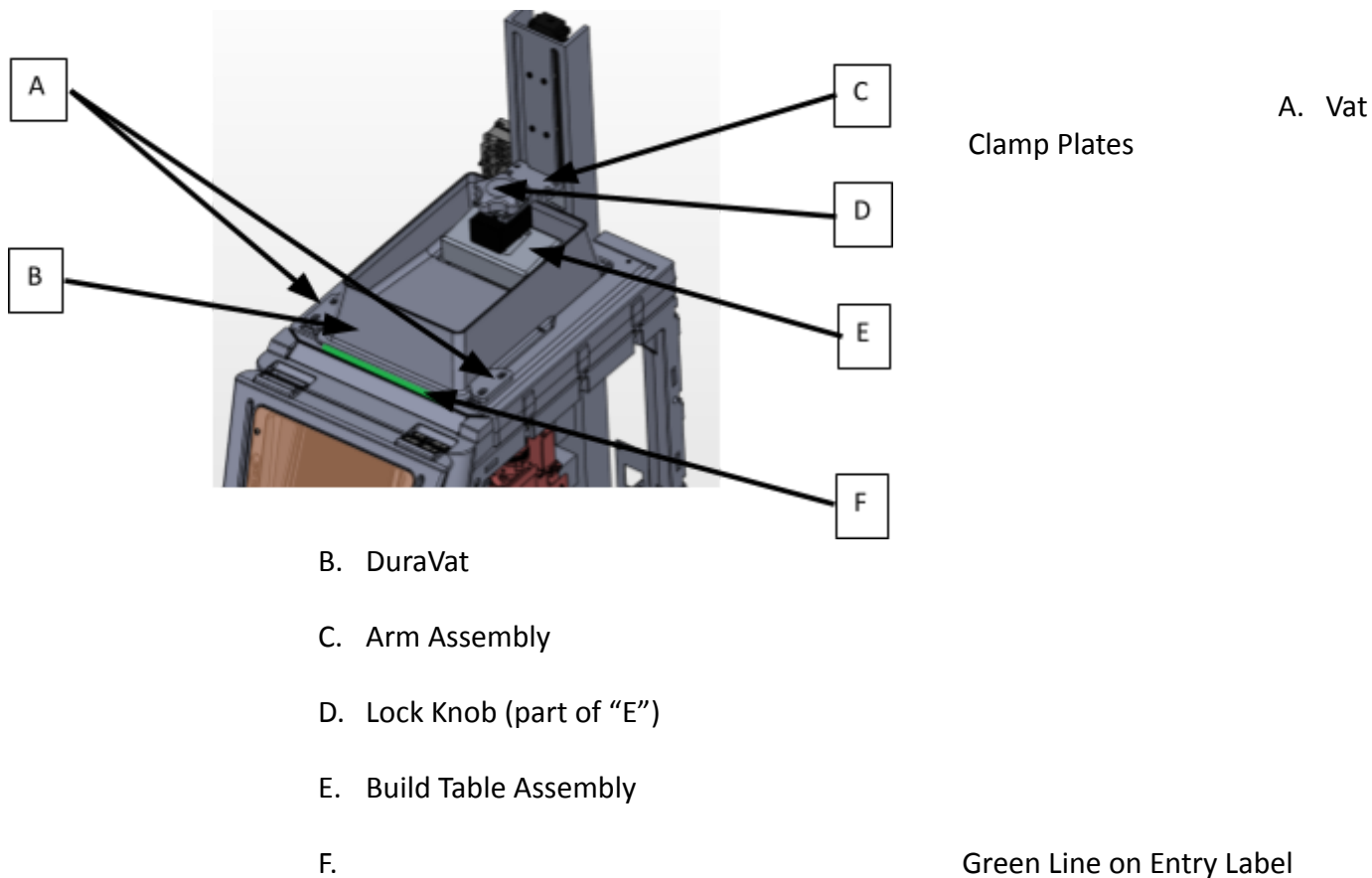


Pressing anywhere else in the right pane field of the **Library** page

will hide the **Delete**  and **Information**  menu icons.

9.9 Build Chamber Components

Shown in Printing Position without chamber frame and windows for clarity.



9.10 Inserting and Positioning DuraVat



NOTE

Inspect material and DuraVat for contaminants prior to use. **DO NOT USE MATERIAL THAT CONTAINS CURED PARTICLES, CURED PIECES, PARTS OR CONTAMINANTS.** Material can be filtered by the operator using components provided in the Finishing Kit.

Use a fresh, clean, re-charged DuraVat to begin each print. See "Vat Recharging Process" in section [10.1.4](#). Fill the DuraVat with only clean, approved material. Pour clean material to the "Max Fill" line indicated in the DuraVat reservoir.

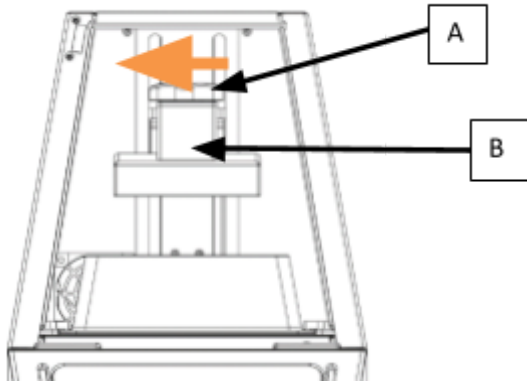


NOTE

Do not overfill DuraVat. Overfill of the DuraVat will cause material spillage in the build chamber.

Slide DuraVat into printing position in the build chamber. DuraVat flanges should slide under vat clamp plates. Slide in DuraVat until it snaps into place, and **the green line on the Entry Label is visible.**

9.11 Inserting and Securing Build Table



Slide the Build Table (B) slot into position on the Arm Assembly inside the Build Chamber until the Build Table hits the end of travel on the Arm Assembly. Once seated on the Arm Assembly properly, secure the Build Table on the Arm Assembly by hand tightening the Lock Knob (A). Turn the Lock Knob clockwise to tighten until the Build Table does not wobble. Do not over-tighten Lock Knob.



NOTE

Do not attach the Build Table to the Arm Assembly at the screw threads beneath the lock knob or DuraVat damage will occur.

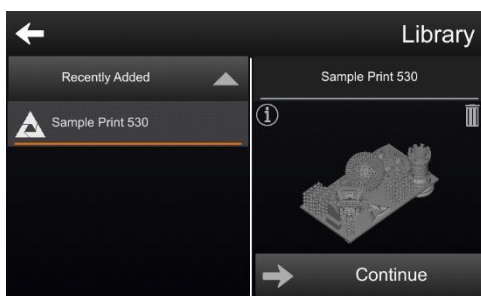


NOTE

Not pushing the build table to the end of travel or not tighten the lock knob may damage the DuraVat and/or lift mechanism when starting print process. This nullifies any warranty.

9.12 Printing an Object

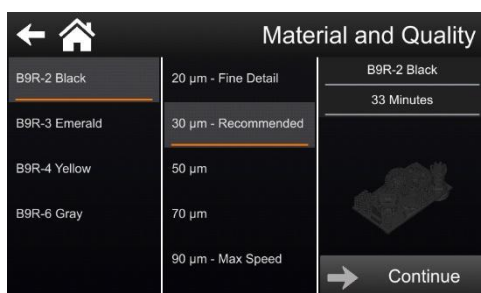
9.12.1 Print Library



Touching the **Library** File Folder icon on the **Primary Menu** touchscreen page will direct the operator to the **Print Library** page as shown. This page is the first step of the printing process. From here a print file can be selected for printing.

On the left is the list of print files that the operator has loaded and are available for printing. This page allows the operator to sort the order of the print files in the file list. Pressing the field above the list of print files (A) changes the sort criteria. Pressing the small arrow (B) located in the right of that field changes the print file order (either ascending or descending). The pane on the right of the screen provides a snapshot (C) of what the item to be printed should look like upon completion.

9.12.2 Material and Quality



By selecting **Continue** on the **Print Library** screen, the operator will be directed to the **Material and Quality** screen. On this screen, the operator can select the approved material with which the part will be printed and the height of the print cross-section.



NOTE

Use only clean B9Creations, LLC approved print material. A list of approved print material and their profiles can be found at www.B9C.com. Use of Third Party and unapproved print materials will void the warranty of the DuraVat.

9.12.3 Prepare for Printing

By selecting **Continue** on the **Material and Quality** screen, the operator will be directed to the **Prepare For**

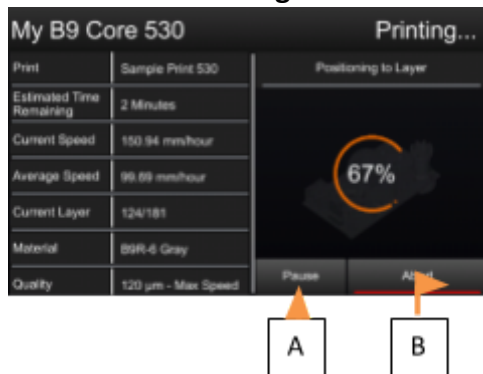
Printing screen. This page gives the operator an overview of the print parameters selected by the operator for the object to be printed.



NOTE

This screen may supply helpful reminders concerning the machine and material.

9.12.4 Printing



By pressing **Print** on the **Prepare For Printing** page, the operator will be directed to the **Printing** page. This page shows the status, speed and progress of the print process. The operator can **Pause** or **Abort** the print process. Pressing the **Pause** (A) area will momentarily halt the printing process. Printing can be continued when the operator is prepared to do so.

Opening the print chamber Door will also pause the print. Closing the door will automatically resume the printing process. Open the door only when necessary.



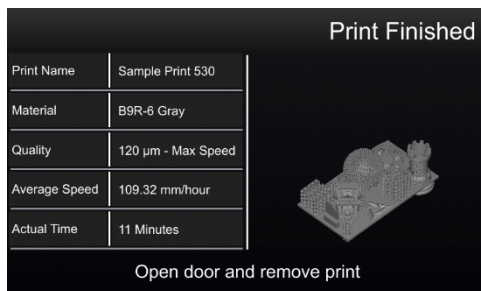
NOTE

Pausing a print can cause a deformity or undesirable feature in the printed object. Avoid pausing the print if a precise printed object is needed. Operator must determine if paused print has affected the quality of the printed object.



NOTE

Pressing the **Abort** (B) area will completely stop the printing process. The printer will stop printing, and the failed/aborted print part must be removed from the build table. **9.12.6 Print Finished**



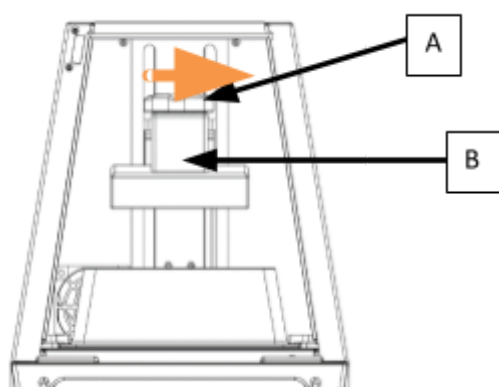
Upon completion of the print job or after selecting to Abort a print, the touchscreen will display the **Print Finished** page.



NOTE

For best printing results, allow the DuraVat to recharge per section 10.1.4 after each print.

9.13 Removing the Build Table and Printed Object from the Printer



Upon completion of a print or after an aborted print, the Build Table with attached printed object must be removed from the Build Chamber. Loosen Lock Knob (A) by turning it counterclockwise one turn. Slide Build Table (B) out the front of Build Chamber.

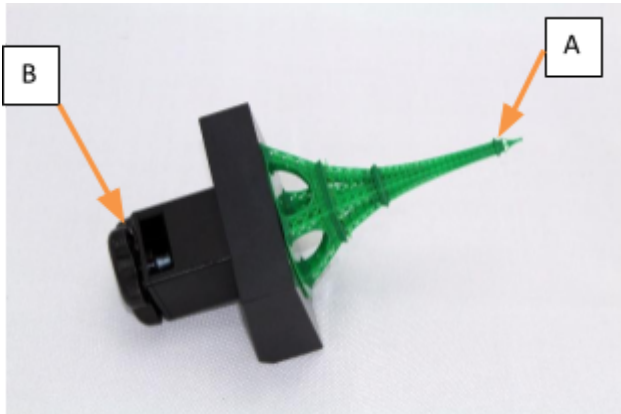


NOTE

Do not remove Lock Knob from Build Table Assembly.

9.14 Removing the Printed Object from the Build Table

Once the Build Table is removed from the Build Chamber, use a plastic Print Scraper or Plastic Blade to scrape or pry the printed object (A) from the Build Table (B).



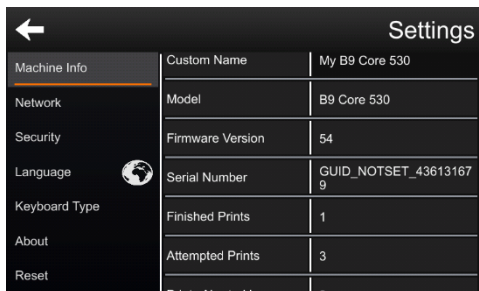
Remove all cured and uncured material from the Build Table. See Section [10.1.3](#) for cleaning instructions.




NOTE

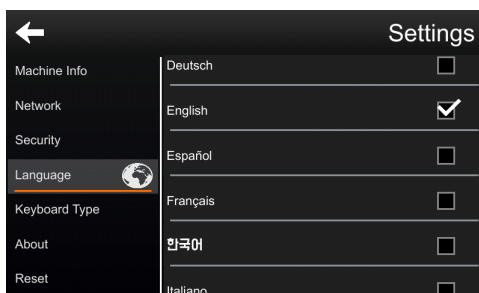
DO NOT use metal scrapers or tools to remove printed objects from the Build Table. Metal scrapers or tools will damage the Build Table and can cause print defects.


9.15 Changing Printer Name



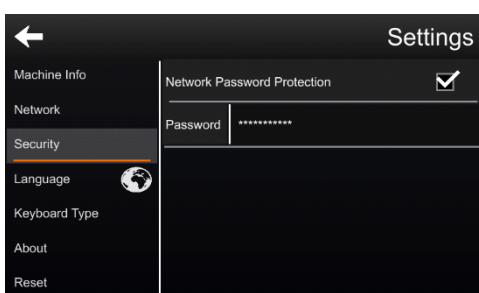
Select **Settings**  on the **Primary Menu**. Press **Machine Info**. Select **Custom Name** field. Type in desired printer name (“My B9 Core 530” in this example).


9.16 Changing Printer Language



Select **Settings**  on the **Primary Menu**. Press **Language**. Select the desired language from the available list.

9.17 Password Protecting the Printer



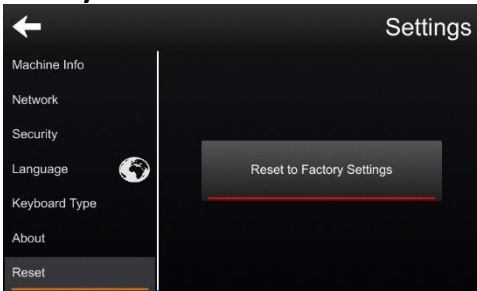
Select **Settings**  on the **Primary Menu**. Press **Security**. Select box next to **Network Password Protection** if you desire to password protect your printer. Select **Password**. Enter your desired password.

9.18 Factory Reset



NOTE

Only press "Reset" at the request of B9Creations. Saved files, customer material settings and print history will be deleted.



Select **Settings**  on the **Primary Menu**. Press **Reset** to return to Factory Settings.

10 Maintenance and Care

10.1 Cleaning

10.1.1 Cleaning the Printer

Clean the **B9Creations Core Series** using the provided microfiber cloth. Microfiber cloth can be used to clean accessible components and surfaces in the build chamber and on the exterior of the printer.



NOTE

Always use separate cloths for interior and exterior cleaning. A damp, solvent-free microfiber cloth shall be used.



NOTE

Do **NOT** use solvents to clean the B9Creations Core Series. The B9Creations Core Series and DuraVats need not be disinfected.



NOTE

For cleaning the touchscreen, always use a new, clean cloth. Contamination of the touchscreen with material may damage the device.



NOTE

Use cloth towels to clean up large spills inside the printer. The use of paper towels will introduce dust contaminants into the printer and may scratch critical glass surfaces.

10.1.2 General DuraVat Cleaning

The DuraVat should be kept clean and free of cured material suspended in the material. Material should be removed from the DuraVat immediately after a print has been completed. If material is present in the DuraVat, pour the material through the Material Strainer and Funnel into a clean bottle. Wipe excess material out of the DuraVat with a clean towel. **Do not wipe the top and bottom glass aperture of the DuraVat with disposable, paper towel.** A clean paper towel can be used to clean out the plastic portion of the DuraVat, but **DO NOT** contact the glass portion of the DuraVat with the paper towel. Clean the aperture, top and bottom, with a clean microfiber cloth dampened with isopropyl.



NOTE

Some residue may appear as a "ghost image" of the previous print on the film. Simply wipe off this residue with a microfiber cloth.

The DuraVat and material held in the DuraVat shall be inspected by the operator after every use. Cured material either attached to the aperture or suspended in the liquid material **MUST** be removed prior to beginning a print.



NOTE

Failure to remove cured material will cause damage to the DuraVat.

To remove cured material that is adhered to the DuraVat aperture, drain the resin material through the provided filter and funnel into a used resin bottle. Remove the excess resin material with a clean cloth. Surround the cured material with Isopropyl alcohol and let soak for at least ten minutes. Place the front edge of a Plastic Spatula Blade supplied in the accessory kit against the edge of the cured material that is adhered to the aperture. Slowly increase the pressure until the cured material begins to slide. If the cured material does not move, allow the Isopropyl alcohol to soak until the object begins to slide off the aperture window. **Use extreme caution and care when removing cured material from the aperture.**



NOTE

Do not scratch the DuraVat aperture surface. Never use paper towels to clean the window.



NOTE

Do not use any metal tools to remove cured material from the aperture.



CAUTION

Wear protective gloves when using Isopropyl alcohol

10.1.3 Build Table Cleaning



NOTE

Remove Build Table from Printer print chamber for cleaning.



CAUTION

Wear protective gloves when using Isopropyl alcohol

Build Table shall be cleaned after each print. Clean all cured and uncured material from the Build Table. Use of Isopropyl alcohol is acceptable to aid in cleaning Build Table. Use only plastic razor blades or plastic scrapers when cleaning Build Table.



NOTE

Do not use metal scrapers or metal tools to clean Build Table.

10.1.4 DuraVat Recharging Process

- Tip the DuraVat so that the entire aperture is free of resin and exposed to air.
- If residue appears as a “ghost image” from the previous print on the film, simply wipe off the residue with the microfiber cloth.
- Place the lid on the DuraVat.

- The DuraVat will be “recharged” after 45 to 60 minutes and is ready for printing.

10.2 Maintenance

10.2.1 Air Filters

Clean or replace air filters on the back of the **B9Creations Core Series** every 3 months. Clean the air filter by blowing it out with clean, oil-free compressed air away from the **B9Creations Core Series** in a well-ventilated area.



NOTE

Carefully remove filters so the captured dust is not disturbed.

10.2.2 Vat Replacement

Replace the DuraVat if/when:

- Aperture contacting the print material becomes damaged
- Seal around aperture leaks
- Flanges that align the DuraVat in its proper position in the print chamber become damaged or worn
- Vat material reservoir becomes damaged, causing leaks

10.3 Non-Repairable Items

There are no replaceable electronic parts or replaceable wear parts on the **B9Creations Core Series**. All parts are rated for long life. The **B9Creations Core Series** is designed for an estimated operation time of 20,000 hours of intended use. Items in need of replacement must be replaced by B9Creations, LLC service staff only.

11 Work Flow for Printing

PRINT CREATION
Section 11 of Manual

Import STL file

Orientate & Support

Slice (CPJ file)

Send to Printer

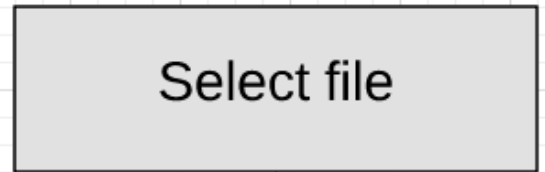
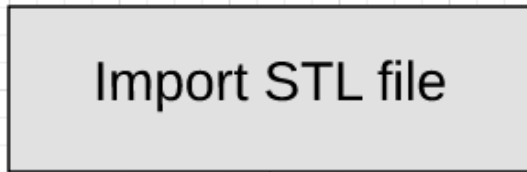
PRINT PROCESS
Section 9 of Manual

Select file

Select Material

Select Detail

Print



12 Technical Data

12.1 B9Creations Core Series technical specifications:

3D Printing Technology	DLP Structured Light
Light source	Industrial LED, peak wavelength 405 nm Light
Build Table Actuation	+ and - Vertical
3D printing area (W x D x H)	57.6 x 32.4 x 127mm - Core 530 96 x 54 x 127mm - Core 550
Accuracy Z-axis	Material Dependent
Input data format	.stl
Output data format	.cpj
Interface	USB 2.0, Wi-Fi, Ethernet
Size (W x H x D)	270 x 420 x 640 mm (10.7" x 16.5" x 25.25")
Weight	21 kg (50 lbs.)
Mains Input	100-240 VAC, 50/60 Hz, 1.4-0.7A
Rated power of Printer	12VDC, 5A
Required table area (W x D)	750 x 750 mm (30" x 30")
Package size (W x H x D)	405 x 560 x 710 mm (16" x 22" x 28")
Package weight	26 kg

12.2 Operating conditions

Use	only indoors
Temperature range	15 °C to 35 °C (59 °F to 97 °F)
Relative humidity	less than 80%
Installation altitude	up to 2000 m above sea level

12.3 Recommended System Requirements

OS	Windows 7 64-bit Professional or MAC OS
RAM	8GB
Video Card	1GB DirectX 11 NVIDIA GeForce
Available HDD Space	500GB
CPU	Intel Core i7 or Equivalent

Monitor Resolution	1920 x 1080 pixels
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12.4 Information on Manufacturer and Electrical Specification – Product Label



See Section 2.1 for Symbol Definition

13 Trouble Shooting Guide

If an error develops in the function or operability of the **B9Creations Core Series** or **B9Create** software, confirm that all possible remedies for the error have been performed prior to contacting B9Creations, LLC support. If an error is encountered, follow each “Possible Causes” and “Remedy” in order of listing in the table.

	Error description	Possible Causes	Remedy
1	The printer does not turn on when pressing the Function button.	Printer has not completed booting up	Check Function button to see if it is blinking. If it is slowly blinking, printer is booting up. Wait for printer to complete boot cycle.
		Printer requires a re-boot	Turn rear On/Off button “Off.” Wait 15 seconds. Turn rear On/Off button “On.”
		Main connecting cable disconnected from mains or printer.	Connect the main cable to mains and printer
		Rear On/Off switch off	Turn On the rear On/Off switch
		No power to mains outlet	Inspect in-house electrical fuses or breaker switch

		Defective power supply	Confirm LED lit on power supply
			If none of the above solves the problem, contact the B9Creations, LLC support
2	Touchscreen lights up but does not display B9Creations Core Series main page.	Printer requires a re-boot	Turn rear On/Off button "Off." Wait 15 seconds. Turn rear On/Off button "On."
			If none of the above solves the problem, contact the B9Creations, LLC support
3	Touchscreen displays the B9Creations Core Series main page, but touchscreen is not responsive.	Printer requires a re-boot	Wait 5 minutes. Turn rear On/Off button "Off." Wait 15 seconds. Turn rear On/Off button "On."
			If none of the above solves the problem, contact the B9Creations, LLC support
4	Indication Fails to start printing	Door Open	Close door to start printing
		Prior print or aborted file not removed from printer	See Sections 9.11 and 9.12. Clean Build Table. Install Build Table in printer. Close door. Start print job.
		Print workflow not followed correctly	Re-load model onto B9Creations Core Series , follow print procedure
		Print Model not loaded or is loaded incorrectly	Re-load model onto B9Creations Core Series , follow print procedure
			If none of the above solves the problem, contact the B9Creations, LLC support
5	Printer Operates, but Indication fails to print	Print model not created properly	Check model in B9Create , insure model is "snapped to floor"
		Error with Print model file	Load and print "Test" model. If test model prints accurately, .stl model is not correct. Remake .stl file and reprint.

		Print Model not loaded or is loaded incorrectly	Re-load model onto B9Creations Core Series , follow print procedure
		Improper material selected	Confirm material selected in the B9Creations Core Series is the same as the material in the DuraVat used for printing.
		Model not sufficiently supported or improperly positioned	Adjust supports and modify print position of model.
		Material is old	Replace material in DuraVat. Clean DuraVat. Refill DuraVat with proper material. Reprint model.
		Re-boot required	Turn rear On/Off button "Off." Wait 15 seconds. Turn rear On/Off button "On." Re-load model and re-print
			If none of the above solves the problem, contact the B9Creations, LLC support
6	Printer Operates, but Indication prints poorly	Print model not created properly	Check model in B9Create , insure model is "snapped to floor or foundation"
		Error with Print model file	Load and print "Sample Print" model. If test model prints accurately, .stl model is not correct. Remake .stl file and reprint.
		Improper material selected	Confirm material selected in the B9Creations Core Series is the same as the material in the DuraVat used for printing.
		Model not sufficiently supported or improperly positioned	Adjust supports and modify print position of model.
		Material is old	Replace material in DuraVat. Clean DuraVat. Refill DuraVat with proper material. Reprint model.
		Re-boot required	Turn rear On/Off button "Off." Wait 15 seconds. Turn rear On/Off button "On." Re-load model and re-print

			If none of the above solves the problem, contact the B9Creations, LLC support
7	Printer does not connect to computer	Printer and computer not on same network	Confirm printer and computer are on the same network
		Printer not connected to network	See Section 9.5. Confirm network Password is entered properly
		Computer not connected to network	Select proper network and enter Password properly on computer.
		Network router not functioning correctly	Turn off router. Wait 15 seconds. Restart router. Wait for router re-boot sequence. Check network status on computer.
		ETHERNET CONNECTED DEVICES ONLY – Ethernet cable(s) bad.	Replace Ethernet cables that connect the printer and computer to the router.
		Wi-Fi CONNECTED DEVICES ONLY – Printer out of range of router	Reposition printer closer to router or router closer to printer.
		Manually add the printer using the IP address found on the printer's home page	See Sections 9.5 and 10.2.2.
		Communication issue with printer, computer and router.	IT issue associated with the network. Contact your IT assistance.
			If none of the above solves the problem, contact the B9Creations, LLC support
8	USB Cpj files not transferring to the printer.	<ol style="list-style-type: none"> 1. Bad USB, try a different USB 2. Verify printer USB operation: <ol style="list-style-type: none"> a) inserting a USB into the printer. b) Selecting USB Transfer on the main screen. Wait until the right and left screens are populated. c) On the left screen scroll to the Sample Print d) Hold your finger on the "Sample Print until the message appears "Do you want to transfer the Sample print to the USB? Select "Yes". 	If the print does not appear, contact B9 Technical

		e) The "Sample Print should now be on the USB. Again Select "USB Transfer" on the main screen if operating correctly the Sample Print should then appear on the right side "USB Memory" screen.	
	USB devices formatted with exFAT are not compatible.	Use a different USB format.	

14 Codes

Codes should not be displayed unless an issue occurs. If a Code displays on the printer's touchscreen, the operator shall re-boot the printer. If the error is not remedied by re-booting the printer, contact the B9Creations, LLC support.

Code	Possible Cause	Remedy
25000	This error code will be displayed if the printer is rebooted during a print cycle.	Retry the print
25009 or 25011	Slicing Error	Slightly adjust the layout in Create Software, reslice, and reprint.
ERROR - MAX LED TEMP EXCEEDED, ABORTING PRINT or 25010	<ul style="list-style-type: none"> Printer environment too warm Air Filters are dirty Inadequate Printer airflow clearance 	Turn printer "Off" for 10 minutes, ensure printer is in an office temperature environment, air filters are clean and there is twelve inches of printer clearance.

15 Tips and Tricks

- Do not select "Factory Reset" unless necessary. Saved files, custom material specifications and print history will be deleted.
- In general, do not orient critical fit models vertically or horizontally in **B9Create Print Editor**. Orient as symmetrically as possible at an angle between 30 and 60 degrees.
- Orient models so the non-critical features face the build table.
- Attach supports to non-critical features when possible.
- Use the **B9Create Print Editor** "Help" tab for useful information.

16 Service

Internet connection is required for Remote Support. For information regarding support of your **B9Creations Core Series**, visit our website at www.B9C.com/Support.

We appreciate your comments, feedback and suggestions.

For Service Personnel, circuit diagrams, component part lists, descriptions, and calibration instructions are available. Contact B9Creations, LLC for details.

17 Document History

Edition	Date	Comments
A	2017-3-27	Initial release

A-1	2017-4-3	Added description for DuraVat cleaning and recharging procedure
A-2	2018-6-13	Update, new features
A-3	2020-4-21	Remove desktop application information from printer IFU