MiiCraft125 series

125/100/80/50/100X
3D Printer

User Manual for Hardware

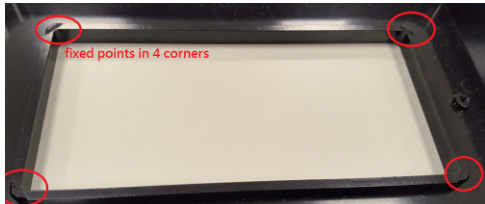**Version 1.5**

Content

1 Product Information

1.1 Instructions for Use

Please read through the following **Instructions** before you start using your printer.

(1) Ensure that the glass under tank is positioned flat at the corners point, for not damaging printer while printing.

(2) Ensure no residuals inside the tank and the glass is well setup before printing.

(3) Avoid print at center point with a single object or small parts repeatedly, it may damage the tank.

1.2 Regulatory Statements

FCC NOTICE

This equipment has been tested and found to comply with the limits for a class"A" digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their expense.

SAFETY CERTIFICATION

This equipment has been tested and compliance to safety requirement.

CE CB KC

1.3 Safety Precautions

Please read through the following Safety Precautions before you start using your printer.

(1) Use only the power adapter and accessories provided by the manufacturer.

(2) Before plugging the power adapter into an electrical outlet, verify the local power rating conforms with the specified voltage and frequency.

(3) This printer needs a grounded, 1-phase electrical power source.

(4) Make sure power and communication cables are well managed to prevent from tripping.

(5) Only use resins supplied by MiiCraft manufacturer. Use of other unauthorized resins may cause printing failure.

(6) Do not expose the resin tank to direct light source because the resin will solidify under UV light.

(7) Chemical substances like resin may cause skin irritation, please read the guidelines in Material Safety Data Sheet (MSDS) of the resin supplied by manufacturer. It is recommended to wear gloves when necessary.

(8) When moving the printer for a long distance, be sure to withdraw the remaining resin in reaction tank and clean the tank in advance to prevent from resin overflow.

(9) Keep doors closed during printing or curing to prevent UV leakage.

(10) UV light may cause injury of eyes, do not stare into the printer directly when it is in operation. It is recommended to wear UV protective glasses during operating the printer.

(11) Place the device on a level surface and keep the printer in an upright position at all times.

(12) Do not store the printer in extreme hot and cold temperatures.

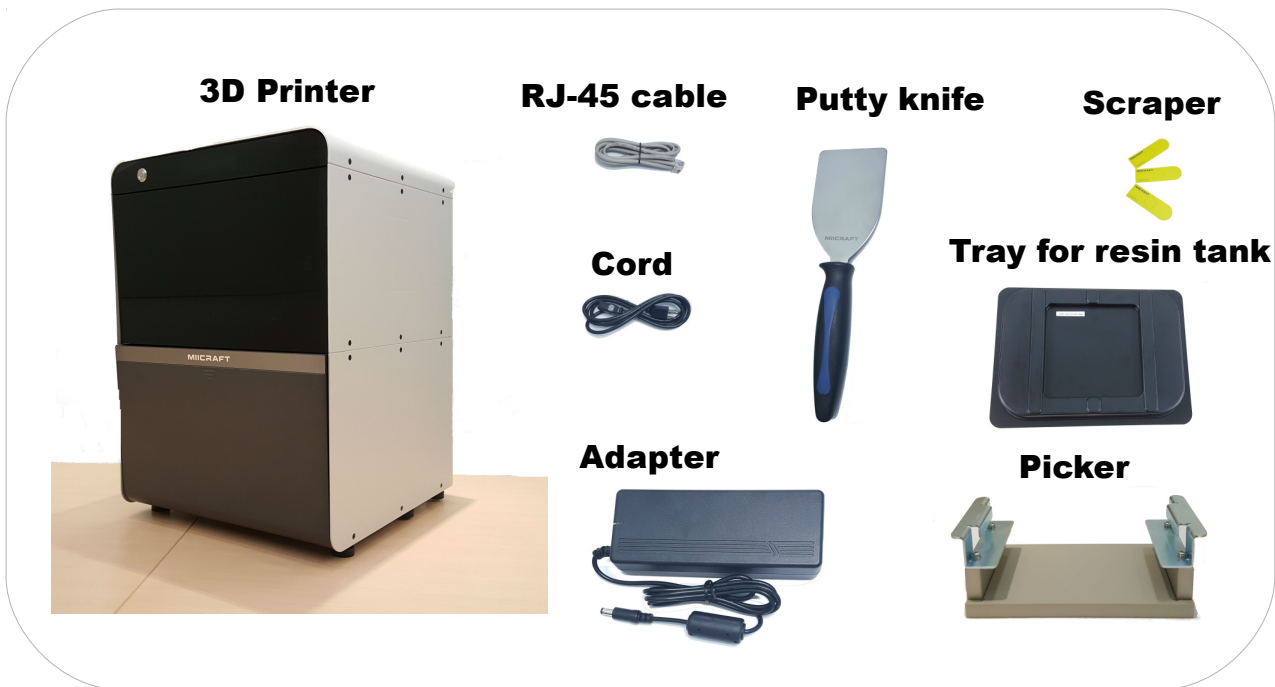(13) Do not disassemble or repair the device yourself. Doing so may cause device malfunction or danger.

1.3 General Information

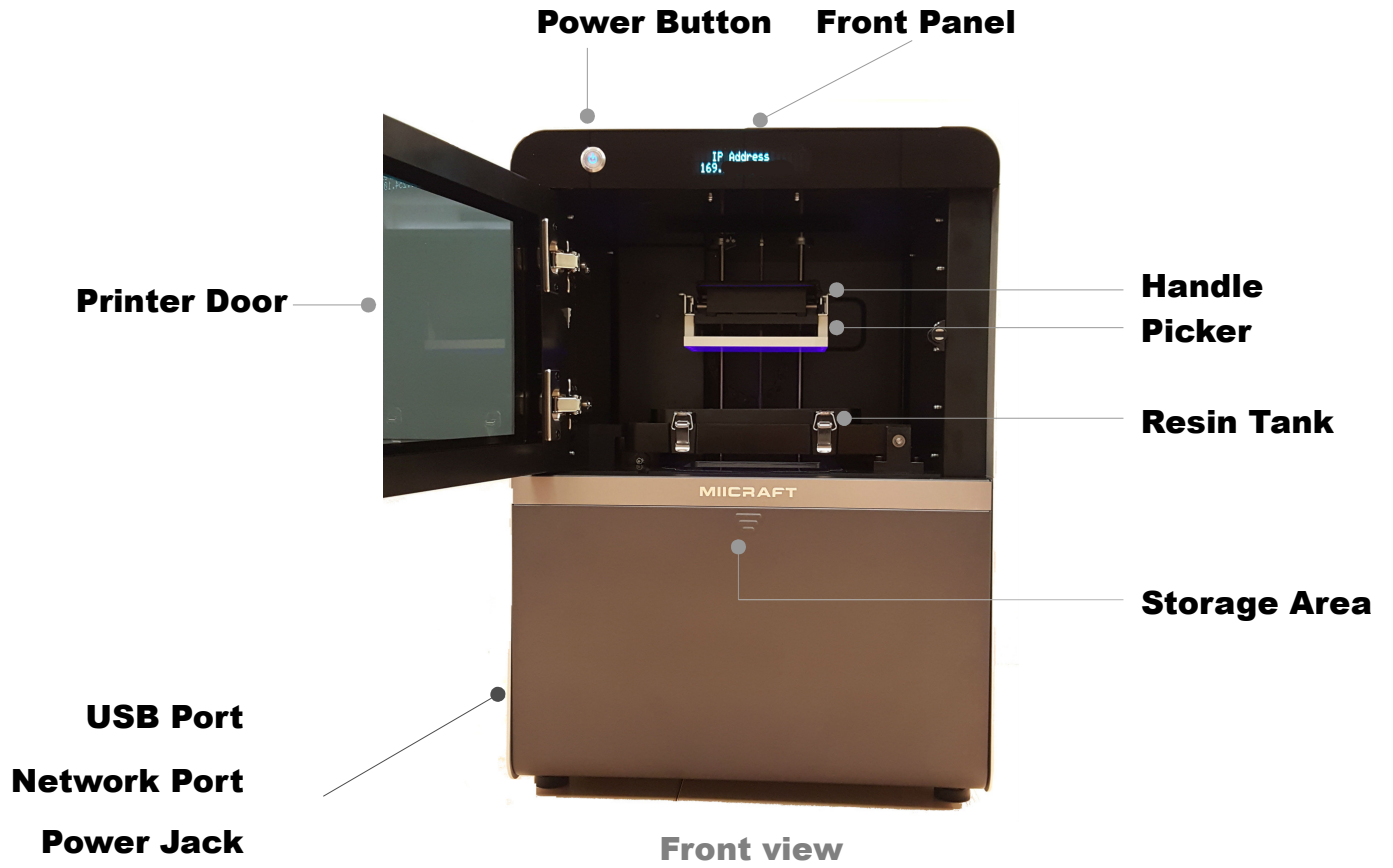| Product Name	MiiCraft 125/100/80/50/100X
Power Input	Printer : 24V DC, 3.75A With Adapter : 100~240V AC, 2A, 50/60Hz
Net Weight	37.5 kg
Package Size and Weight	80x80x94 cm / 58 kg (Including pallet)
Operating Temperature	10° to 30°
Humidity (RH)	40% to 60% Our printer should keep in dry conditions
Storage of Printing Material	Store the materials at ambient temperature from 15° to 28° And do not exposure to the light, otherwise resin may solidified

・Liability: In case you do not follow the operating manual we cannot be held responsible for damages of the machine or injuries on the operator.

・Repair can only be carried out by authorized person of MiiCraft.

1.4 Package Contents

There is a printer and an accessory box inside the package. As soon as you receive our products, please verify its content and check if there's any exterior damage due to transportation.

3D Printer **RJ-45 cable** **Putty knife** **Scraper**

Cord **Tray for resin tank**

Adapter **Picker**

1.6 Product Overview

Power Button · Front Panel · Printer Door · Handle · Picker · Resin Tank · Storage Area · USB Port · Network Port · Power Jack

Front view

2 Setting up your 3D printer - Hardware

2.1 Unpack

| (1) Remove the top cardboard	(2) Remove the EPE surround the inner box	(3) Remove the side cardboard	(4) Remove the inner box

WARNING Printer net weighs 37.5kg. Please be careful, and use proper lifting techniques to avoid injury.

2.2 Connecting to the Power adapter and Cable

(1) Connect the power cord and adapter to your device, and then plug it into an electrical outlet

(2) Connect your printer with laptop

    -Basic : Connect printer and laptop by RJ-45 cable (Graph1.)　　　[Initiating time 1 minute]

    -LAN : Connect both printer and laptop to local area network　　[Initiating time a few seconds]

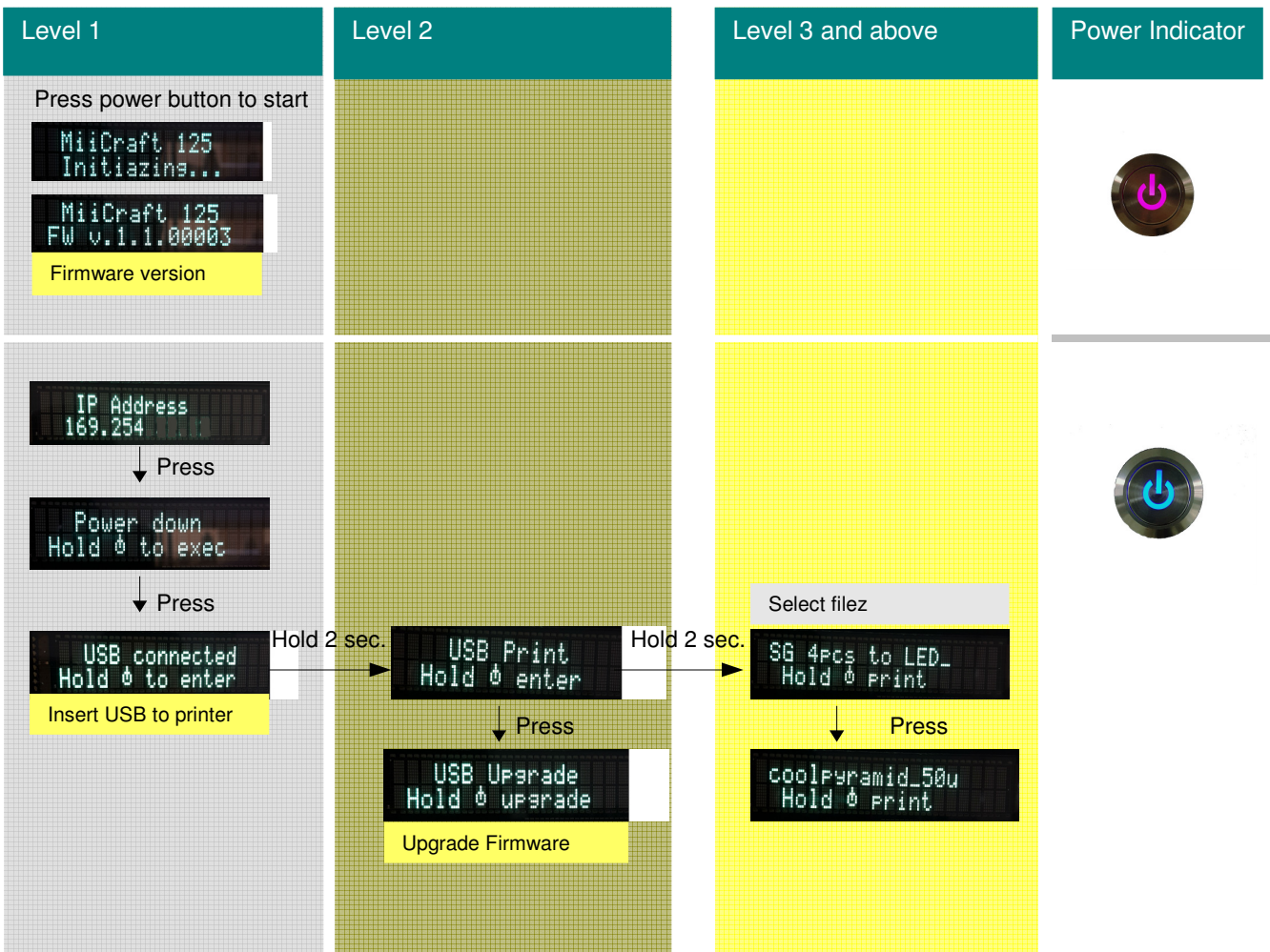   -IP sharer : Connect both printer and laptop to IP sharer　　　　[Initiating time a few seconds]

Graph1.
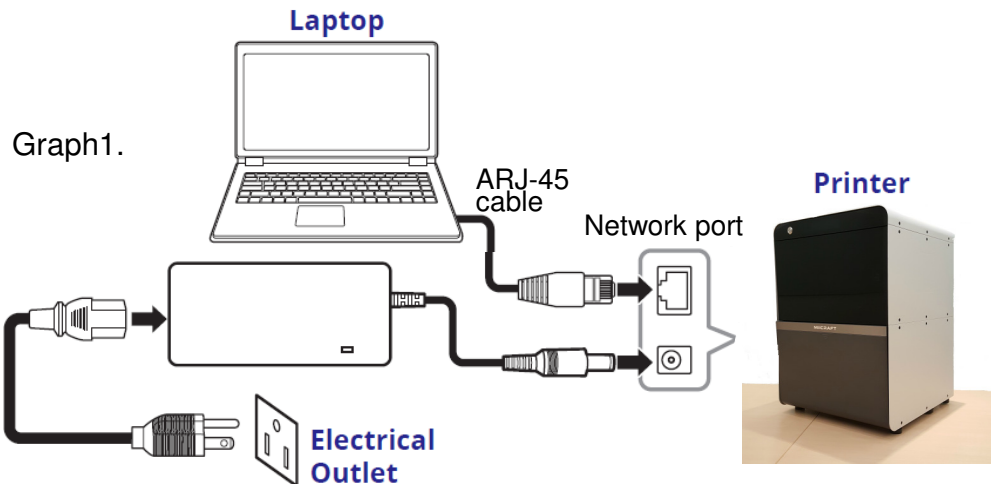
2.3 Power Button Control

Purple		Blinking	System warms up
Blue		Solid	Standby mode
		Blinking	Printing in progress
Red		Solid	Error

Besides Power on and off, you can use Power button to select file in USB to print. Or download the latest firmware from our website, and execute firmware upgrade by USB.

-Press power button : change mode in the same level

-Pressed and Hold power button : hold down the power button for up to 2 seconds to enter the next level

Level 1	Level 2	Level 3 and above	Power Indicator
Press power button to start			

Level 1:

Press power button to start

```
MiiCraft 125
Initiazing...
```
```
MiiCraft 125
FW v.1.1.00003
```
Firmware version

```
IP Address
169.254
```
↓ Press
```
Power down
Hold ⏻ to exec
```
↓ Press
```
USB connected
Hold ⏻ to enter
```
Insert USB to printer

Hold 2 sec. →

Level 2:
```
USB Print
Hold ⏻ enter
```
↓ Press
```
USB Upgrade
Hold ⏻ upgrade
```
Upgrade Firmware

Hold 2 sec. →

Level 3 and above:

Select filez
```
SG 4Pcs to LED_
Hold ⏻ Print
```
↓ Press
```
coolpyramid_50u
Hold ⏻ Print
```

※ Download the latest firmware from http://www.miicraft.com/support/ to your USB first.

Save as .ZIP file, and select it for upgrade

2.4 Install Picker

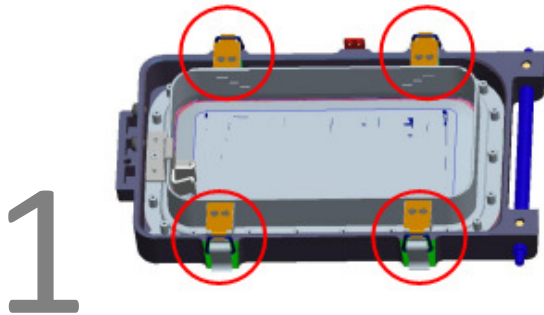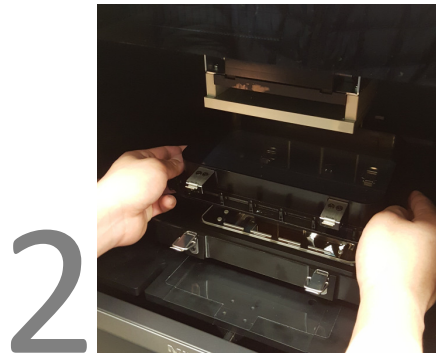| Carry both end of picker and install it onto the machine	Put down the handle to lock the Picker
1	2　Handle
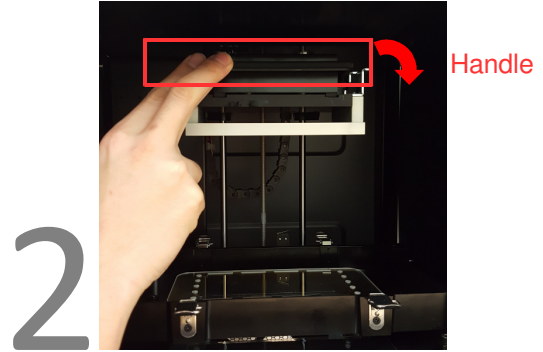
※ Remove the Picker: Lift the handle→Carry both end of picker→Remove the Picker

2.5 Fill resin tank

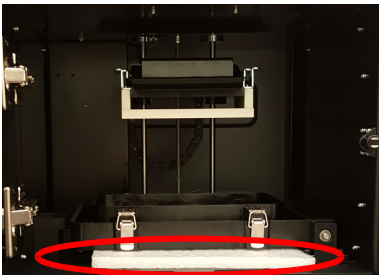| Unlock the Resin tank from four corners	Pick up the resin tank	Pour resin
1	2	3

※ Remember to lock four corners of resin tank after install it.

※ EPE has to be removed before First printing

3 Operate your 3D printer –Software

Please refer to MiiUtility User Manual, all-in-one software for MiiCraft printers.

4 After Print

4.1 Remove Model
Lift the handle→Remove the Picker and printed model→Use air gun and ethanol to clean the printed model →Post curing (Additional post curing unit is required)→Carefully remove the printed model from the picker. → Use putty knife to help separate the printed model and picker

* Do not expose the resin tank to direct light source because the resin will solidify under UV light. Use tray to cover the resin tank to prevent solidify.

4.2 Clean Picker
Use putty knife or similar object to scrape away the excess printed model on the picker. If any greasy residue persists, use a soft cloth dipped in alcohol to rub the surface until the grease is removed.

4.3 Clean Resin Tank
Pour resin out of tank→ Pour ethanol into tank and soak in a while→ Use tissue or lens tissue softly wipe the bottom of tank→ Finished cleaning. Or let the projector help cleaning Tank, please refer to MiiUtility user manual, the cleaning Tank Process on Page 19 form
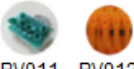
Notifications:
- Do not shut down the power during curing
- Do not interrupt the firmware upgrade process. Any interruptions during the firmware upgrade process may cause your printer to malfunction.
- Update the firmware frequently for better user experience, please refer to page8, page14 for upgrade
- Before printing, please check the surface of picker and tank is clean, no residual, or may affect printing quality.
- Tank and Picker are consumables, suggest replace for a period, or may affect printing quality.
- Tank has lifespan around 1,000 hours. Evenly arrange the printing model can protect the tank, do not print on one single point repeatedly.
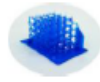
Appendix 1. Specifications

Category	Item	MiiCraft 125*	MiiCraft 100*	MiiCraft 80*	MiiCraft 50*
Printing Area	Max. Building Size (mm)	125x70x120	102x57.5x120	80x45x120	57x32x120
	XY Resolution	65 μm	53 μm	41.5 μm	30 μm
	Z-axis Layer Thickness	5~ 200 μm			
Lighting	Wavelength	*=Space for 405nm / *=X for 365nm / *=Y for 385nm LED			

Category	Item	Specification
Operating Environment	Temperature	10°C to 30°C
	Humidity (RH)	40% to 60%
Software	Operating System	Windows7 , Windows8, Windows10
	Network Browser	Google Chrome
	File Input	.SLC, .ZIP(PNG), .CWS, .WRK, .MII
	File Input limitation	MiiController file input limitation from PC: 130MB MiiController file input limitation from USB: 1GB
System Properties	Printer Size (LxWxH)	43x 43x 59 cm
	Weight	37.5 kg
	Interface	Ethernet Connection、USB (Direct Printing)
	Power Input	Printer : 24V DC, 3.75A With Adapter :100~240V AC, 2A, 50/60Hz
	Packaged size and weight	80x80x94 cm / 58 KG (Including pallet)
Printing Material	Model Printing	 BV001 BV002 BV004 BV005
	Castable	 BV011 BV012
	Research	 BV003 BV007 Cyan/Yellow/Magenta/Black/White *5 Colors of Nano-colorants are Available with BV003

**All Specifications & Designs subject to change without notice.

Appendix 2. Resin curing time

BRAND	TYPE	LAYER	MiiCraft NVP+ 405nm	MiiCraft 125 405nm	PROPORTIES	IMAGE
Miicraft	BV001 (Cream)	100um 50um 30um	7.00 4.50	1.30~1.50	Standard resin and most cost effective Application for all model	
	BV002 (Dark blue)	100um 50um 30um	7.00 4.50	1.30~1.50	Standard resin and most cost effective Application for all model	
	BV003 (Clear)	100um 50um 30um	6.50 4.50	1.05~1.25	Transparent resin and fine performance Application for all model	
	BV004 (Pink)	100um 50um 30um	7.00 4.50	1.30~1.50	High stability resin and most cost effective Application for dental model	
	BV005 (Ivory)	100um 50um 30um	7.00 4.50	1.30~1.50	High stability resin and most cost effective Application for dental model	
	BV007 (Clear)	100um 50um 30um	8.50 4.50	1.40~1.60	Low viscosity resin and smallest microchannels Application for 3D microfluidic devices	
	BV011 (Palegreen)	100um 50um 30um	7.00 5.00	1.30~1.50	Dental castable resin Application for fast investment casting	
	BV012 (Orange)	100um 50um 30um	6.00 3.50	2.10~2.50	Jewelry castable resin Application for direct investment casting	

Material List **NO.2016.06.04**
More material test will be completed and added into this list in the near future since the experiments.
Please follow our newest result and keep the list NO. up to date.

Appendix 3. Printing Parameter

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Printed Model	Resin type	Thickness (um)	Curing time(s)	Speed	Gap Adj (mm)	Base Layers	Base Curing(s)	Buffer Layers
	BV-012	50u	3.2	Slow	0	1	15	4
	BV-005	50u	1.5	Slow	0	1	12	4
	BV-005	50u	1.3	Normal	0	1	12	4
	BV-005	50u	1.3	Normal	0	1	12	4
	BV-002	50u	1.4	Normal	0.3	1	14	3

For more information, click http://wwwmiicraft.com/support/printing-parameter/