



da Vinci 2.0 Duo User Manual

This manual provides detail instructions for the safety use of da Vinci 2.0 Duo 3D Printer. From the instruction, it will show you how to use and maintain da Vinci 2.0 Duo 3D Printer properly. If you would like to get the latest information about da Vinci 2.0 Duo 3D Printer, please refer to XYZprinting online: <http://www.xyzprinting.com> or your sales representative.

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Chapter 1. Important Safety Instruction

Please read this manual carefully before operating the printer. The following warnings and attention notices are a best effort attempt to cover all scenarios; unfortunately it is not possible to do so. In the case of performing maintenance procedures that are not described in this manual the burden of safety falls to the customer side.

For basic safety and precautions adhere to the following:

Warning

- Do not let children operate this device without adult supervision. Electric shock hazard. Moving parts can cause serious injury.
- Do not place the printer on an unbalanced or unstable surface. Printer may fall or tumble causing harm and/or injury. Printer may fall or tumble causing harm and/or injury.
- Do not place any objects on top of the printer. Liquids and objects that fall into the printer can lead to printer damage or safety risks.
- Do not use flammable chemicals or alcohol wipes to clean this device.
- Do not disassemble or replace the printer cover with non XYZprinting covers.
- Do not touch heated surfaces during or after operation. Heated surfaces can cause severe burns.
- Insert and secure the power cord firmly for proper usage and to avoid potential electricity and fire dangers.
- Do not attempt to service the printer beyond the instructions specified in this document. In the case of irrecoverable problem, contact XYZprinting service center or your sales representative.

Attention

- Please place and use the printer in a well ventilated area. The process of heating the filament will produce a small amount of non-toxic odor. Having a well ventilated area will ensure a more comfortable environment.
- This printer is only to be used with filament specified by XYZprinting.
- Make sure to set the power switch to the off position and remove the power cord before transporting the device.
- Some components of the printer are moving during operation. Do not attempt to touch or change anything inside before power off the printer.

Chapter 2 Overview

This chapter describes the unpacking and set up of the printer. Before proceeding to this chapter, please make sure read the Chapter 1. Important Safety Instruction is acknowledged carefully.

Open the box



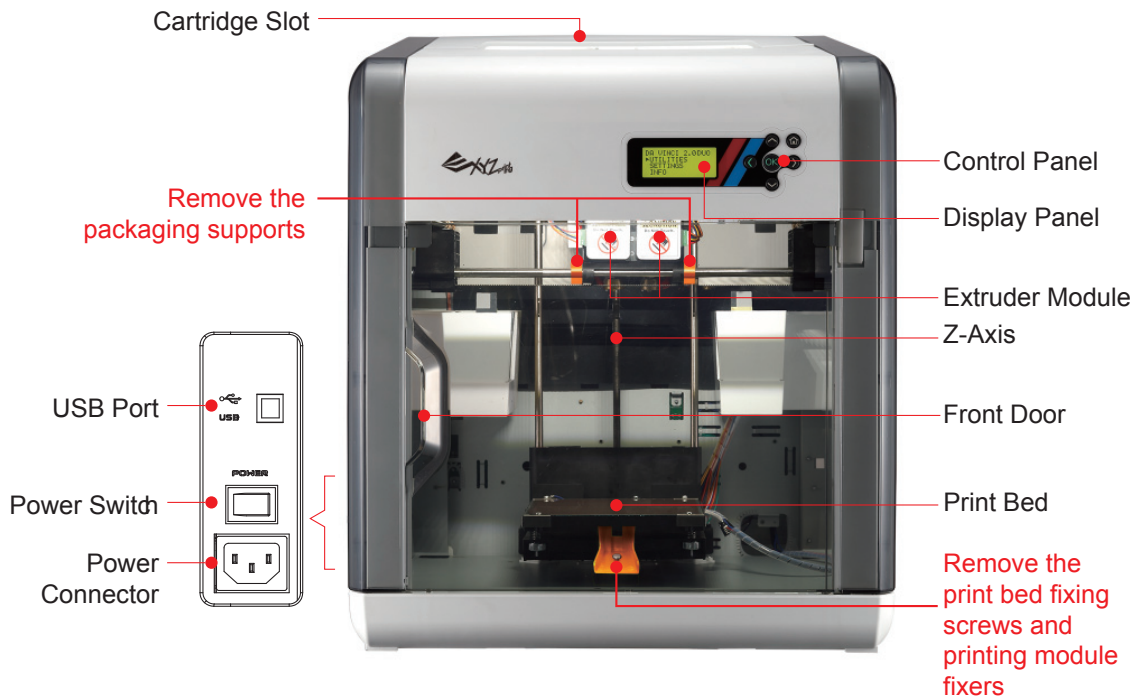
Note: Cable tie illustrated in step 4 in this section is used to fix the extruder during transportation. It should be removed before powering on the printer, or the printer may not function normally.

- 1 Open the box and remove the accessories and the cushion.
- 2 Take out the printer by holding the side handles.
- 3 Remove plastic bag and tapes.
- 4 Open the top cover, then remove packaging supports and tapes from inside.
- 5 Removing the print bed shipping tapes and foam cushioning pieces.
- 6 Remove the print bed packaging tape and shipping foam.
- 7 Remove the bottom screw and the plastic piece under print bed.
- 8 Remove the drip tray packaging tape.
- 9 Use the USB cable to connect the printer to PC. Connect the power cord to the printer then turn on the power switch.



Attention

- Retain the box and packing material. If the need arises It will be used to transport the unit.
- This device without packing material or box is wighted around 23Kg (50lb).



Display Panel: Information on printer status.

Extruder Module: a print module which heats the filament to molten state, and pull the melted filament out through nozzle for printing.

Z-Axis Rod: a rod which moves the print bed vertically during printing.

Front Door: a door enclosing the working space; should only be opened during operating or maintenance.

Print Bed: Provides a flat surface to lay the 3D model.

Cartridge Slot: a space for loading filament cartridge.

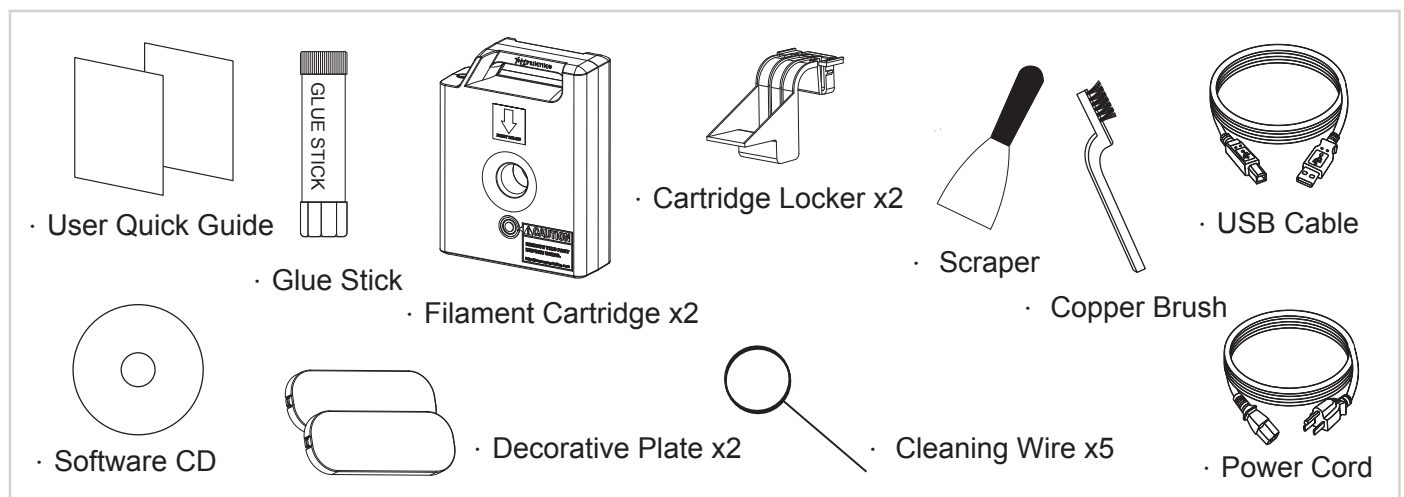
USB Port: a port for connecting USB cable.

Power Switch: a switch for turning on/off the power of the printer.

Power Connector: a connector for connecting the power cord.

Attention

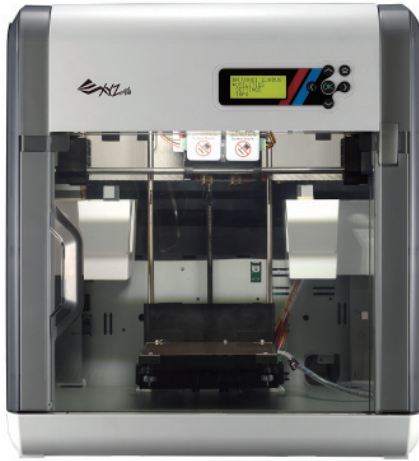
Once the 3D printer is turned off, wait at least 3 seconds before turning it on again.



Chapter 3 Install and Set Up

Parts name and Functions

Front View



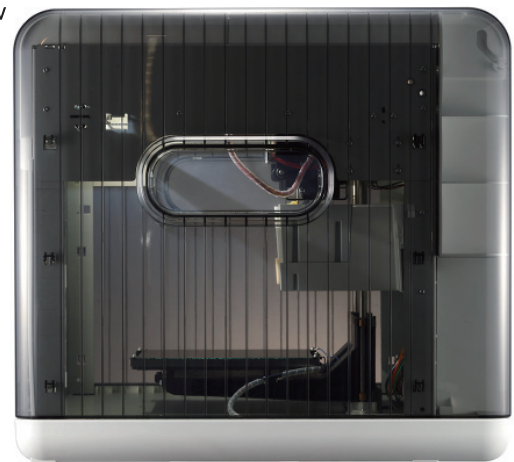
Left View



Top View



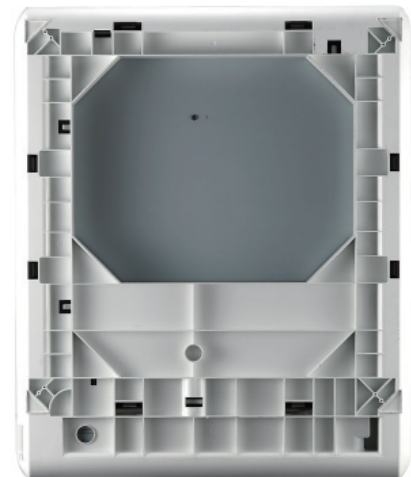
Right View



Rear View



Bottom View



Chapter 4 Connect the cable



<A. USB Port / B. Power Connector>

Warning

- Make sure to set the power switch to the “off” position before inserting the power cord.
- Make sure the power cord is properly connected. Incorrect use may cause damage to the printer.
- Make sure to remove the power cord from printer if you are storing or not using the printer for an extended period of time.
- Make sure to avoid power strips to power the printer . Use a wall outlet.

Connect USB cable and power cord

Connect the printer power cord and USB cable to the back of the printer.







Power On the printer

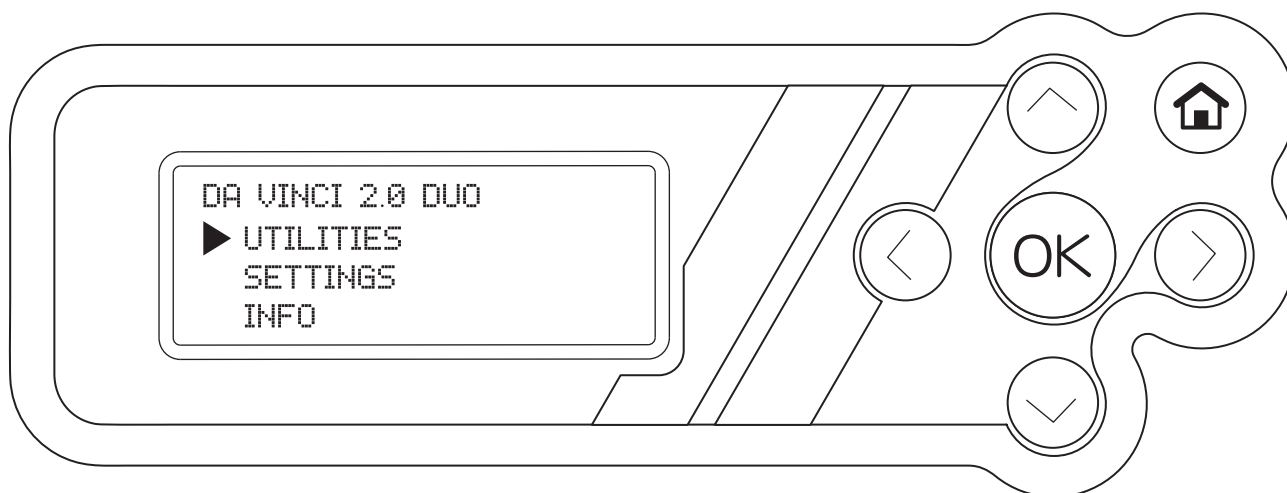
Please switch the power button to “I” icon. When information is shown on the display panel, the printer is powered on correctly.



Chapter 5 Printer Functions

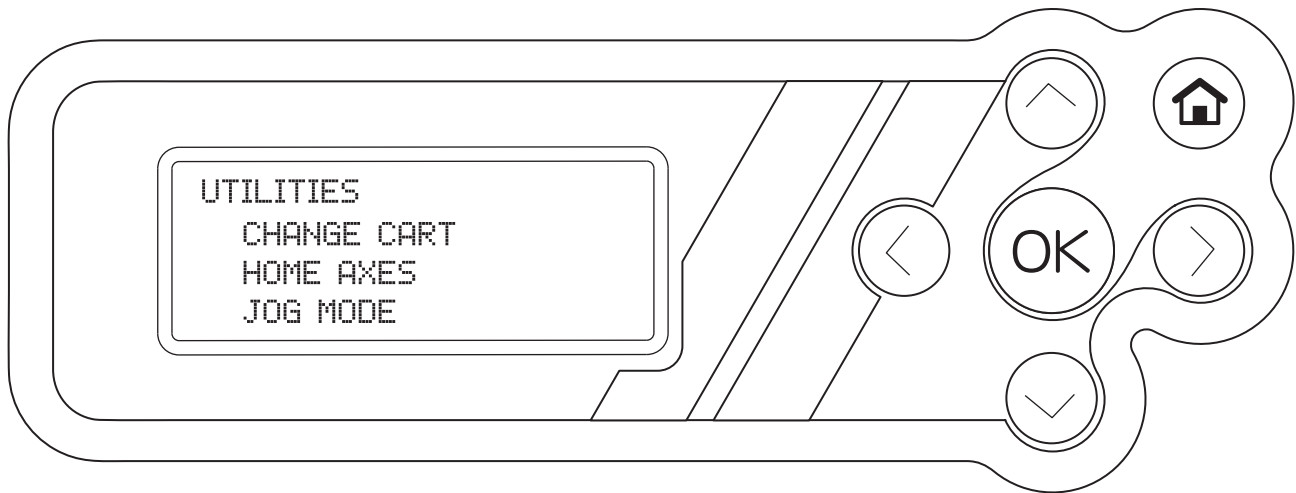
Functions of Control Panel Key on the printer:

Button	Functions
	Direction Up
	Direction Down
	Back to pervious menu
	Forward to submenu
	OK; confirm selection/settings
	Home Button , return to main menu



Function	Description
UTILITIES	Printer adjustment / Change cartridge / Sample printing
SETTINGS	Function settings
INFO	The firmware and printer statistical information
MONITOR MODE	Monitor of extruder and print bed working temperature and printing progress

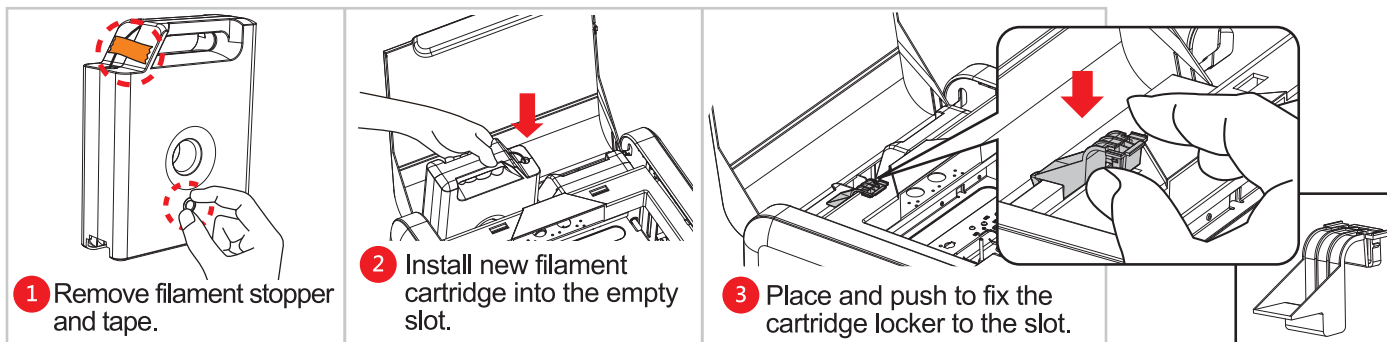
5-1 UTILITIES



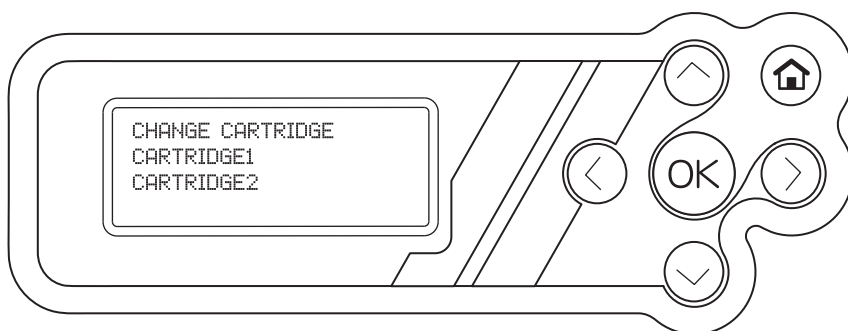
Function	Description
CHANGE CART	Loads/unloads filament
HOME AXES	Moves the extruders and print bed to default "home" location
JOG MODE	Manually adjusts the movement of X/Y/Z Axis for printer maintenance
BUILD SAMPLE	Prints sample build
CLEAN NOZZLE	Heat the extruder and move it to the center of the chamber for manual cleaning
CLEAN DRIPBOX	Move the extruder to the center for manual dripbox cleaning

5-1.1 CHANGE CART

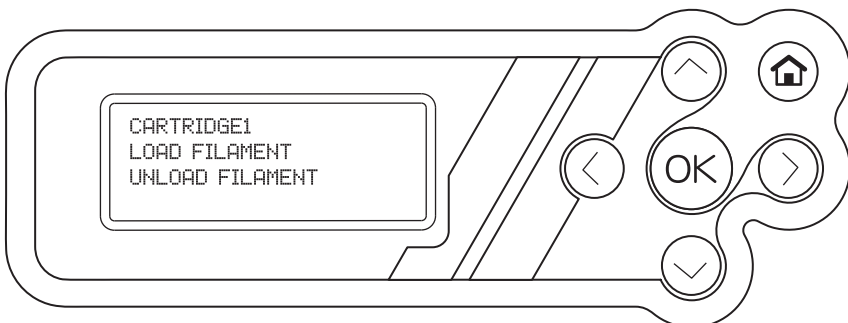
5-1.1.1 INSTALL CARTRIDGE



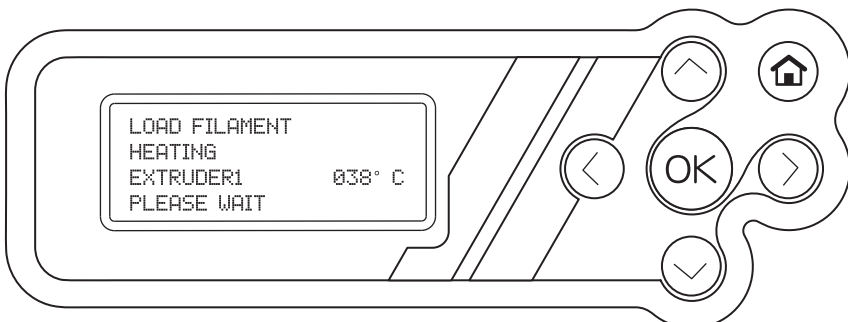
5-1.1.2 LOAD FILAMENT



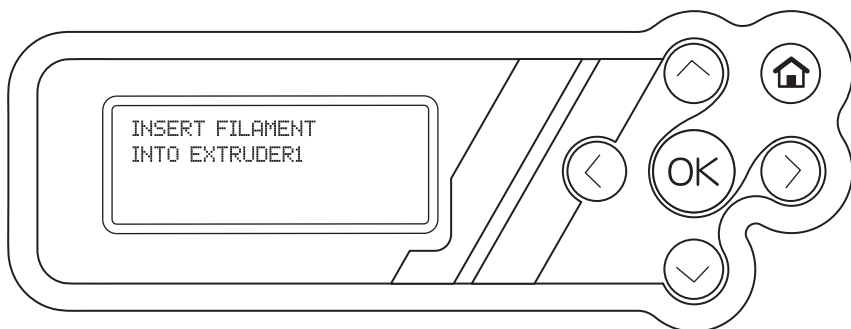
1. Select the cartridge to be loaded. For loading cartridge 1, please select "CARTRIDGE1".



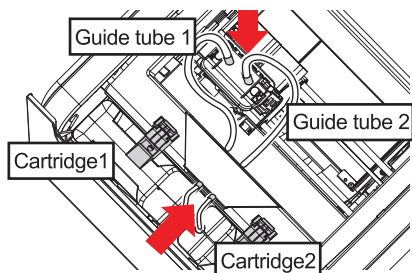
2. Select "LOAD FILAMENT".



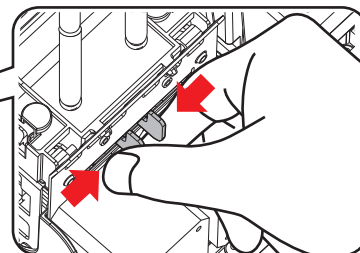
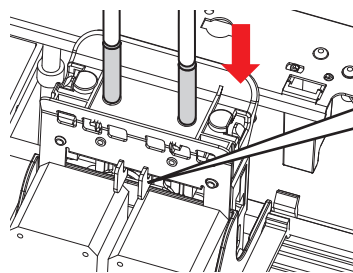
3. Extruder should be heated to working temperature. Please wait until further instructed.



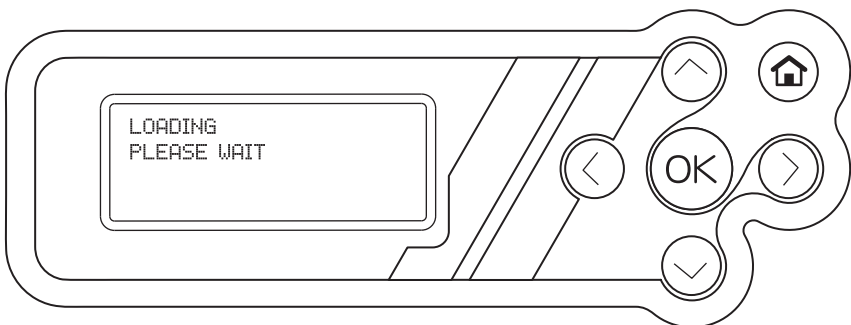
3. Insert filament to the extruder via guide tube when instructed.



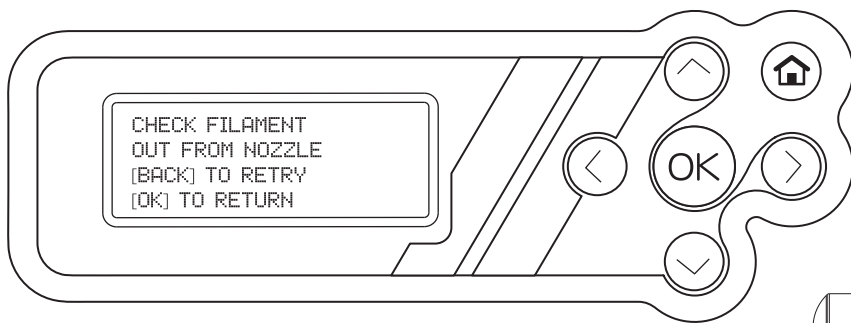
Push the filament through the filament guide tube to the hole of the extruder.



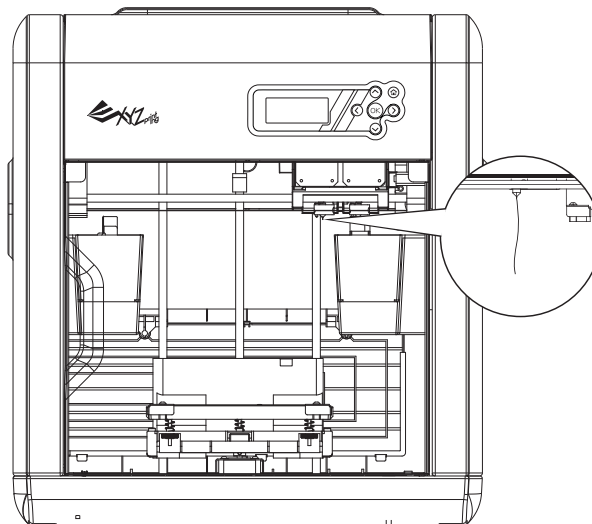
Tip: Grasping the release arms while the installation, it will be easier to push filament into the extruder.



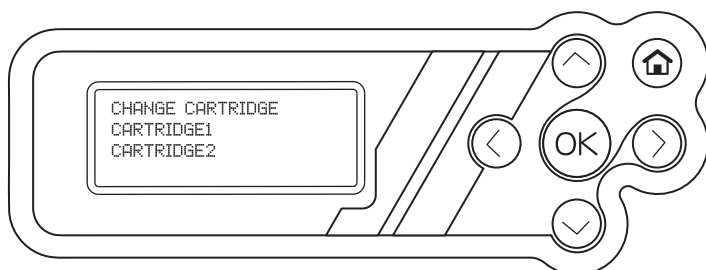
4. Push the filament through the filament guide tube to the hole of the extruder.



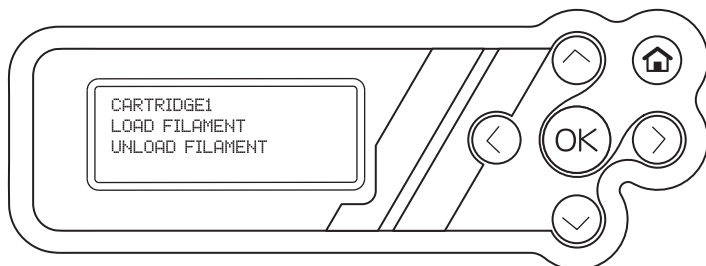
5. Please follow instructions on the panel and press "OK" to finish this process; it is normal that the filament color that first comes out is different from the filament color is that you are loading. This is due from left over filament from the previous printing.



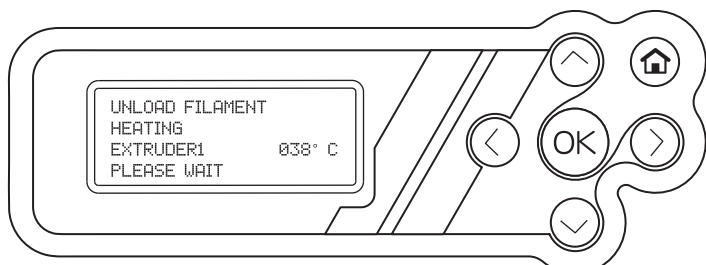
5-1.1.3 UNLOAD FILAMENT



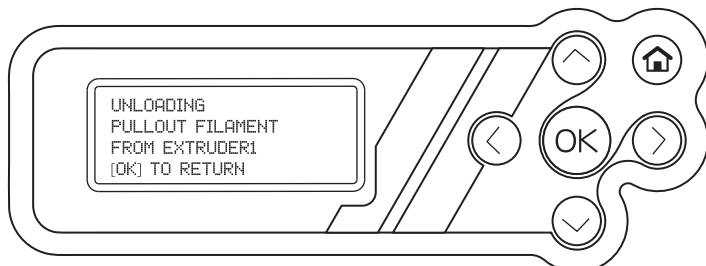
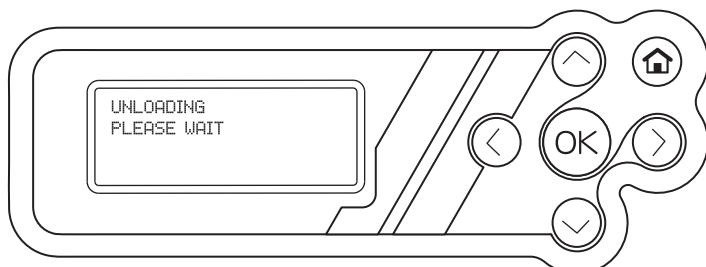
1. Select the cartridge to be unloaded. For loading cartridge 1, please select "CARTRIDGE1".



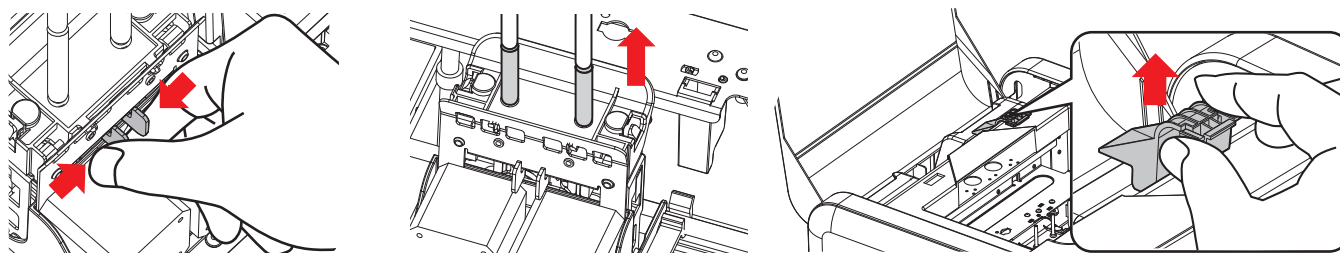
2. Select "UNLOAD FILAMENT" and "OK".



3. Extruder should be heated to working temperature. Please wait until further instructed.

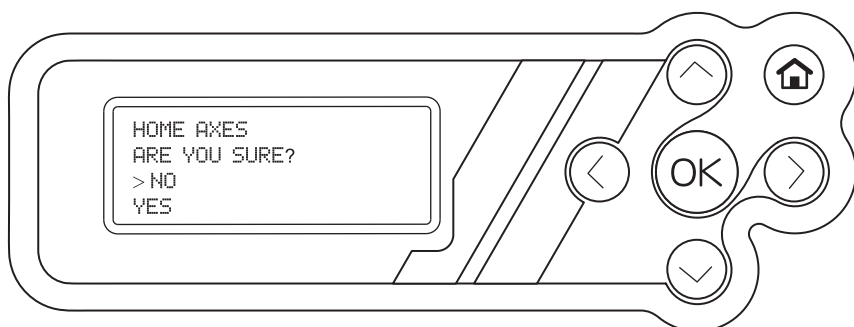


4. Pull the filament out from the extruder as instructed and press "OK".

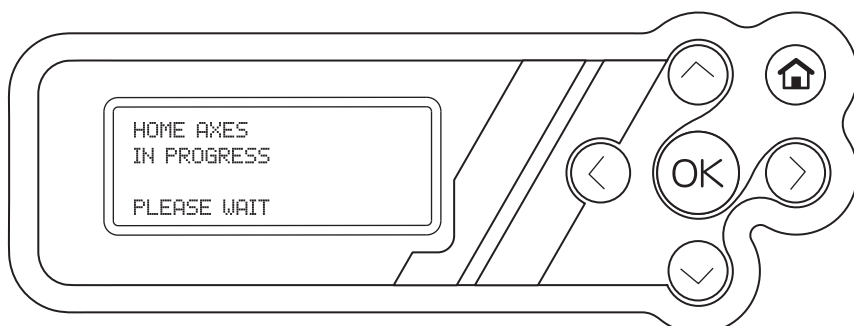


Remove filament when printer has reached working temperature as instructed. Then remove cartridge locker and the cartridge unloaded.

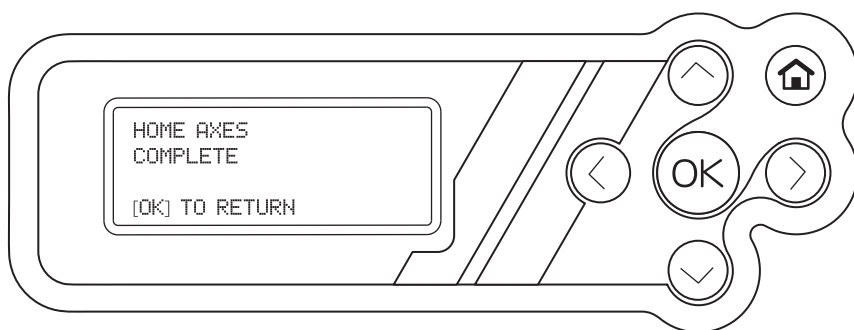
5-1.2 HOME AXES



1. Choose the HOME AXES function and select "Yes", extruders and print bed will be moved to default "home" positions.



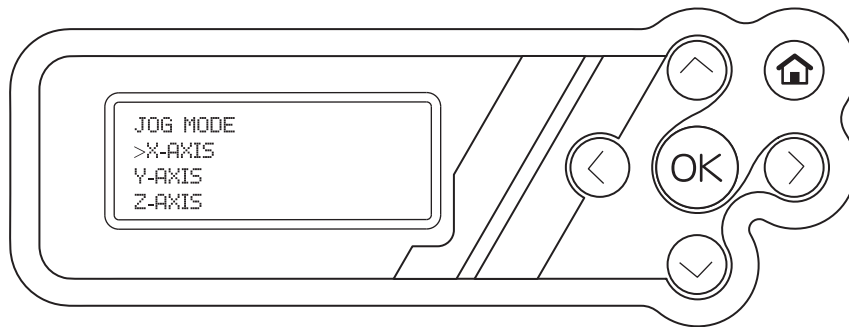
2. Wait until extruders and print bed stop moving.



3. When the process is finished as instructed on the display panel, press "OK" to return to main menu.



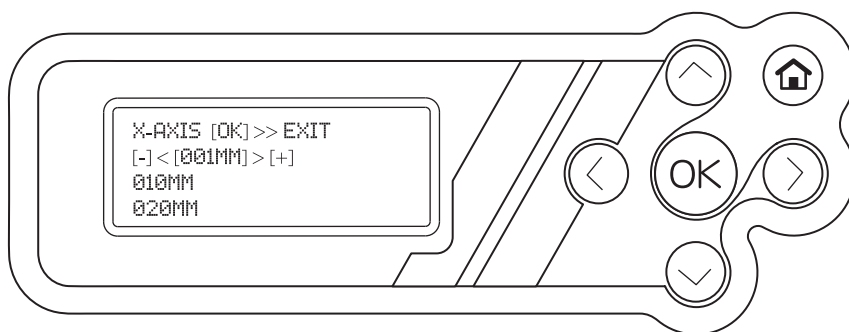
5-1.3 JOG MODE



1. Select a axis to be adjusted, then press "OK".

Options:

X-AXIS/Y-AXIS/Z-AXIS



2. Set a desired scale of the adjustment.

- Use Upper / Down button to adjust the scale of movement.

- Use Left / Right Button to apply a default scale.

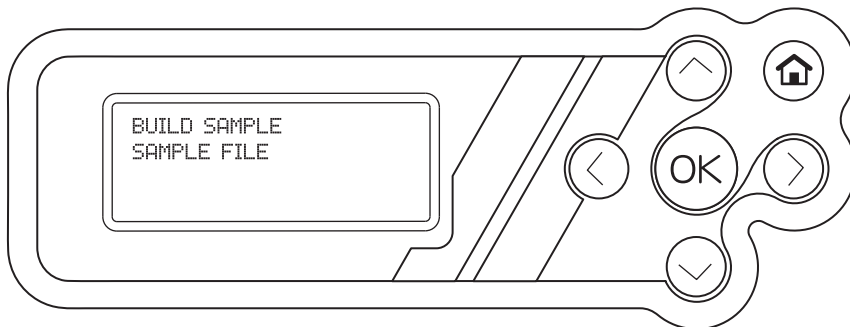
3. Press "OK" to complete the adjustment.



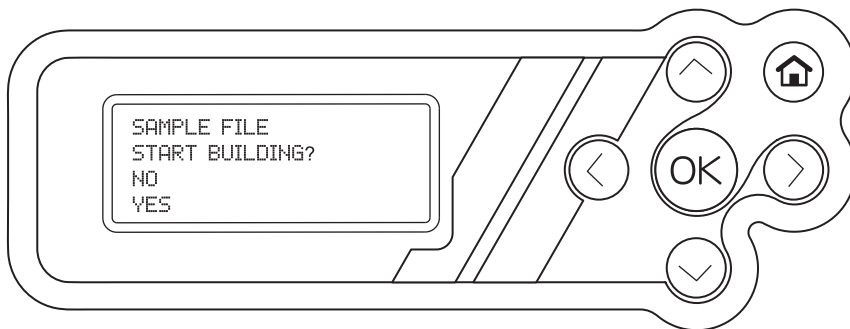
5-1.4 BUILD SAMPLE



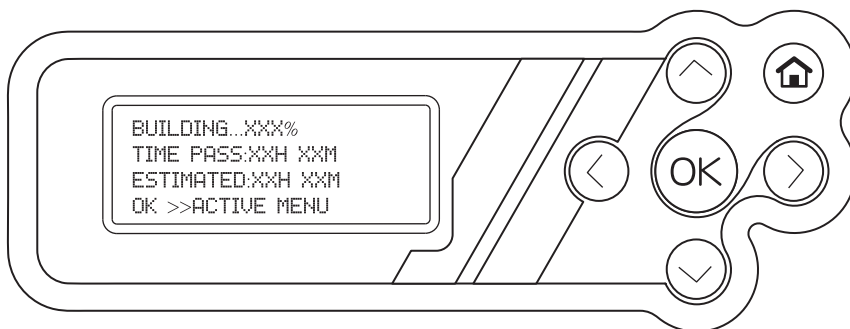
Apply glue to the print bed before printing. The area for where the glue needs to be applied is determined by where the object is to be printed.



1. Select a sample to be printed.



2. Select "YES" and the printer will start to print.



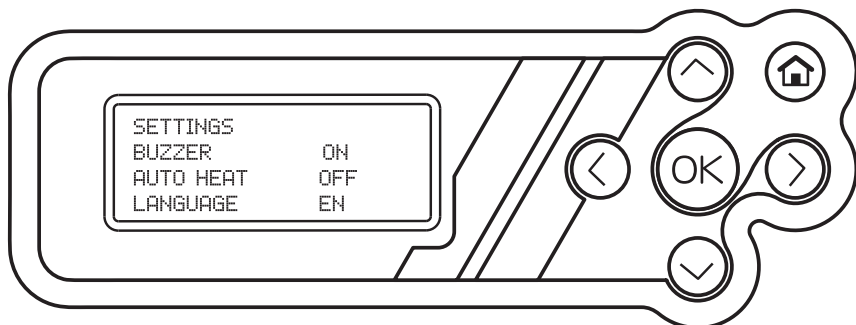
3. Printing progress provides the following information.

- BUILDING : finished percentage.
- TIME PASS : elapsed build time
- ESTIMENTD : estimation of build time.



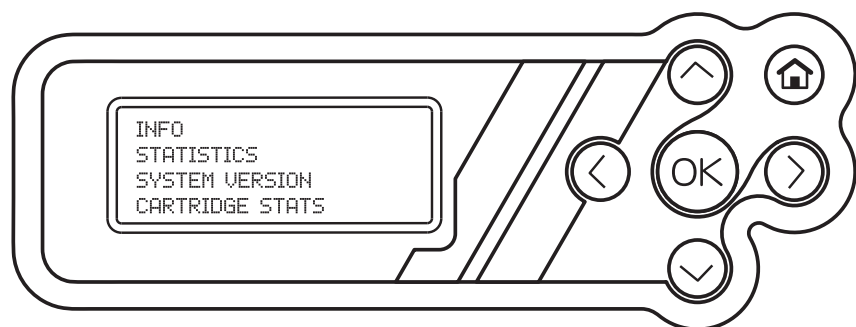
Remove the printed object when the print bed has descended. Cover a damp cloth on the print bed (while cold) for 2~3 minutes. Then wipe the moistened glue from the print bed with the damp cloth gently.

5-2 SETTINGS



Function	Directions	Default
BUZZER	Buzzer for alerting	On
AUTO HEAT	Automatically heat the extruders and printer when powered on	Off
LANGUAGE	Set the language displayed on the panel. Available options: English & Japanese	English
RESTORE DEFAULT	Apply default settings	

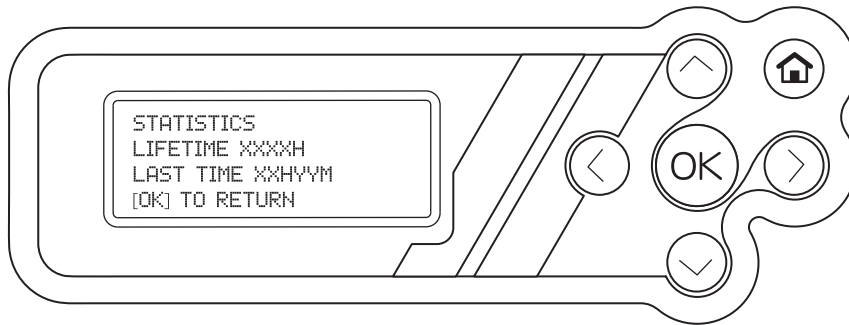
5-3 INFO



Function	Directions
STATISTICS	Printer's accumulated working hours and the duration of last printing
SYSTEM VERSION	Firmware version
CARTRIDGE STATS	Capacity and remaining level of filament

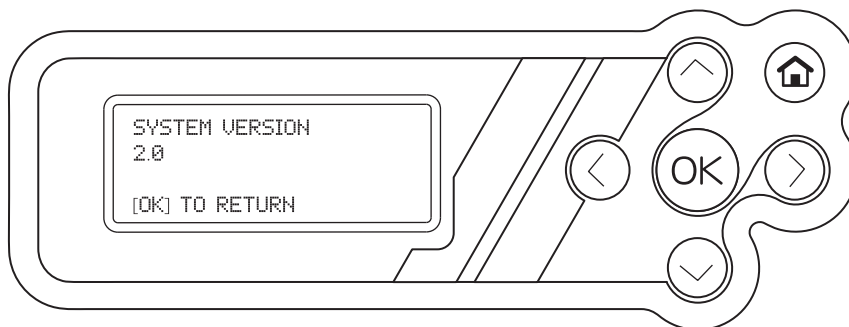
5-3.1 STATISTICS

- LIFETIME : Accumulated working hours of the printer.
- LAST TIME : Duration of last printing job of the printer.



5-3.2 SYSTEM VERSION

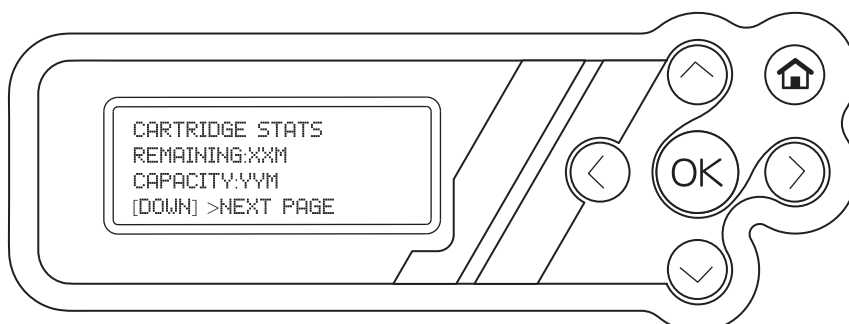
Firmware version can be found in this section.



5-3.3 CARTRIDGE STATS

Capacity and remaining level of the filament can be found in this section:

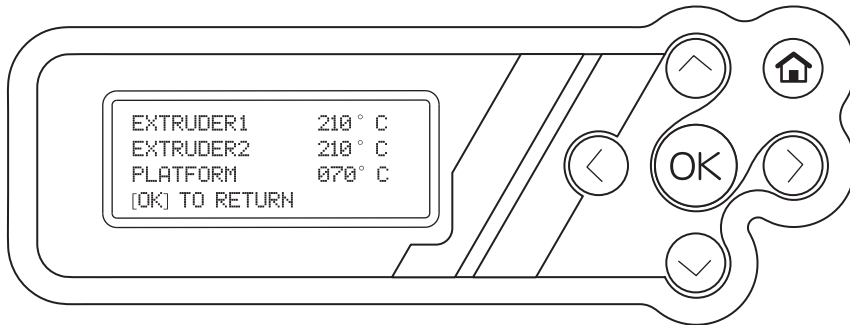
- REMAINING : remaining length of filament
- CAPACITY : original length of filament



5-4 MONITOR MODE

You can get the temperatures of information via Monitor mode function

- EXTRUDER1 & EXTRUDER2 :Proper working temperatures is 210 °C (410 °F)
- PLATFORM: Proper working temperatures is 70 °C (158°F)

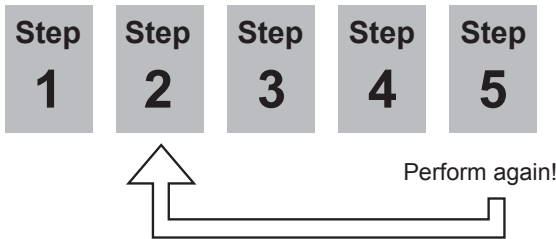


5-5 Print Bed Adjustment Instructions

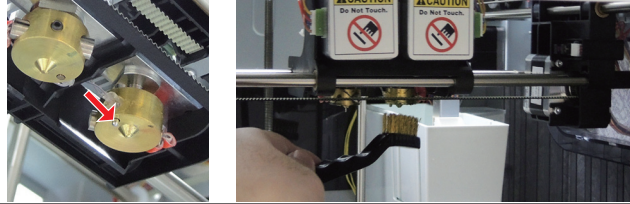


This print bed has been factory calibrated before shipping. Recalibration is necessary if there are print issues when starting to print or the nozzle gets too close to the print bed. When in doubt, it is recommended to contact service center for more information.

Print bed adjustment flow chart

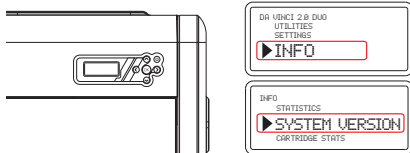


To clean the molted filament from nozzle thoroughly, it is recommended to activate CLEAN NOZZLE function to keep heating the extruders for better cleaning.

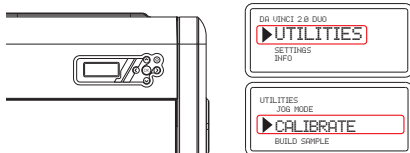


Print bed adjustment steps

1. Click INFO>SYSTEM VERSION using the function keys to make sure your firmware is the latest.

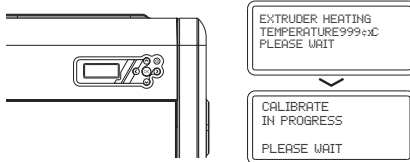


2. Click UTILITIES>CALIBRATE using the function keys and select Yes to perform print bed measurement.

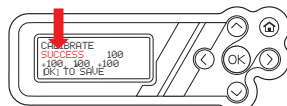


3. The printer starts automatic measurement. Wait for 2~3 minutes and verify the data shown.

Note: During the measurement process, the print bed and print module will be heated. Care should be taken during operation!



- I. If **SUCCESS** is shown.



→Adjustment to the print bed is unnecessary. Press **OK** to exit.

- II. If **FAIL** is shown.

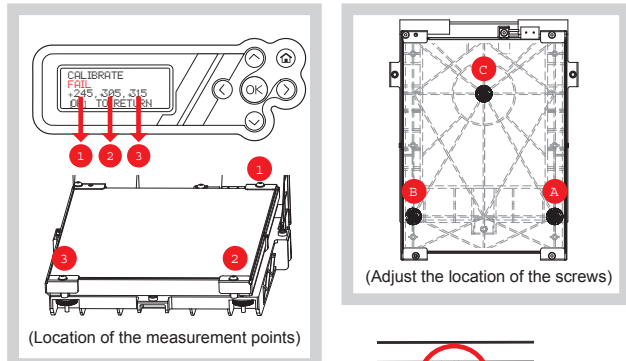


→If the 3 values are more than +/- 20 from each other, this will result in a "FAIL" calibration. Print bed leveling is necessary, refer to the values shown.

4. Refer to the values for adjustment:

Note: 3 values shown on screen indicate the distance between the detect pin by the nozzle and the edge of the print bed. If any value is out of the range of 90 to 110, please adjust the value by turning the screw(s) under the print bed.

Tip I. Value set and corresponding thumbscrew:

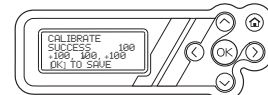


Tip II. View the printer from the front when making adjustment

Rotate the screw to the **left** to **raise the bed (value increases)**
Rotate the screw to the **right** to **lower the bed (value decreases)**

Use small dial turns to approximate the desired value

5. After adjusting the screw(s), please run "Calibrate" (see step 2). If the screen repeats "FAIL", please continue the steps for calibration. Until **SUCCESS** is shown on screen, press "OK" to complete the calibration.



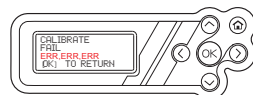
Reminder

If the value shown is always **ERR,ERR,ERR**, follow the steps below to clean.

- A. Clean the surface of the print head using the copper brush.

(Clean the contact point between the print head and print bed)

- B. Wipe and clean the measurement points as shown on the print bed in step 4
- C. Perform the calibration process again.



Chapter 6 Q&A

Q1. Are there any suitable applications or software for this printer?

A1. The packaged CD contains the XYZWare software. After installation it will use an available internet connection and look for the latest release to perform an automatic update.

Service Code	Display Panel Description
0010	Extruder or heated bed higher/lower than maximum/minimum temperature during printing
0011	Extruder cannot heat to the specified temperature
0013	Print bed heating error; critical temperature detected
0014	Extruder(1) heating error; critical temperature detected
0015	Extruder(2) heating error; critical temperature detected
0030	X axis motor failed results moving failed or X axis home sensor failed results home detect failed
0031	Y axis motor failed results moving failed or Y axis home sensor failed results home detect failed
0032	Z axis motor failed results moving failed or Z axis home sensor failed results home detect failed
0040	Memory storage cannot read/write
0050	Flashrom cannot read/write

Important Safety Instruction



The maintenance tools provided should only be handled by an adult. Please keep tools away from children. Incorrect handling or maintenance of the printer may cause damage to the product or personal injury.

Information and usage of the advanced maintenance tools



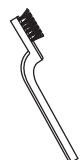
■ Scraper

Scraper is used to remove printed objects from print bed when printing is completed.
(Caution: do not remove the printed object while the print bed is hot.)



■ Cleaning Wire

Cleaning wire is used to remove the filament left in the path inside the clogged nozzle.
(Caution: Print bed may be hot during cleaning, please keep away from the platform to avoid personal injury.)
When cleaning the printer nozzle, gears or filament path please ensure to keep hands clear of the print bed which may be hot.



■ Copper Brush

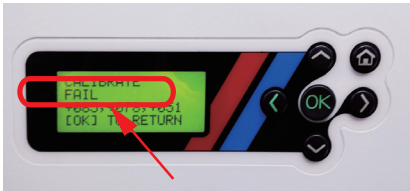

When the printer fails to calibrate consistently; clean and remove the filament from extruder(s) surface.

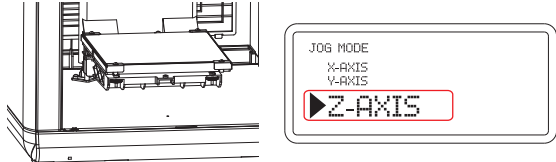
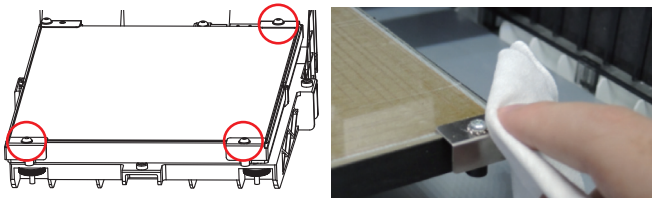
Specifications

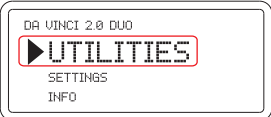
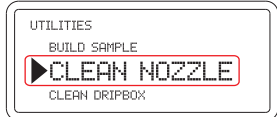
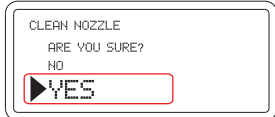
FEATURES	da Vinci 2.0 Duo 3D Printer	FEATURES	da Vinci 2.0 Duo 3D Printer
Print Technology	Fused Filament Fabrication(FFF)	Nozzle Diameter	0.4 mm
Printer Head	Dual Head	AC Input	100-240V, 50~60Hz
Build Volume(W x D x H)	15 x 20 x 20 cm	Connectivity	USB 2.0 x 1
Layer Resolution Settings	Standard 200 microns	Display	FSTN LCM (16 Characters x 4)
	Speed 300 microns	Control Method	Key x 6
	Ultra fast 400 microns	Indicator	Buzzer
	Custom 100-400microns	Lighting	LED
Filament Diameter	1.75 mm	Weight	27.5 Kg

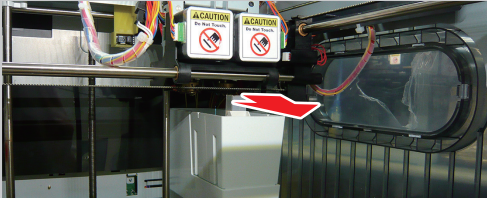
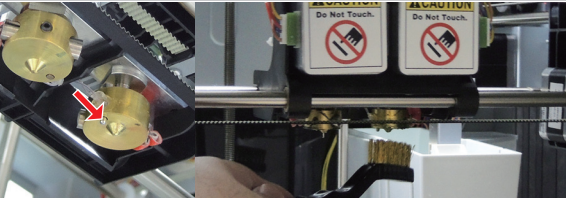
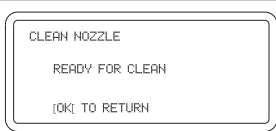
This section describes how to properly clean the printer under the following conditions:

A. Fail to calibrate or printed object is polluted by different color filament

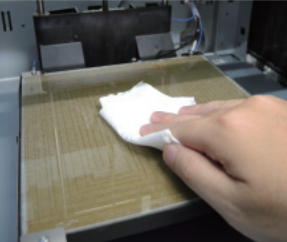
 <p>I. Printer calibration failed constantly</p>	 <p>II. Printed object is polluted by different color filament</p>
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 <p>1 Make sure the print bed has been moved to the appropriate location, or use JOG MODE feature to adjust Z-AXIS.</p>	 <p>2 Clean up the measurement points.</p>
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 <p>3 Choose "UTILITIES", and press "OK".</p>	 <p>4 Choose "CLEAN NOZZLE" and press "OK".</p>	 <p>5 Choose "YES" and press "OK".</p>
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 <p>6 Wait until the extruder heats up and moves to the front.</p>	 <p>7 Clean the surface of the nozzle using the copper brush.</p>	 <p>8 Press "OK" when finish cleaning.</p>
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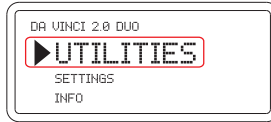
B. Clean the print bed after printing finish

	<ol style="list-style-type: none"> 1 Remove the printed object when the print bed has descended. Cover a damp cloth on the print bed (while cold) for 2~3 minutes. 2 Wipe the moistened glue from the print bed with the damp cloth gently. 3 After cleaning is completed, wipe again with a dry cloth to ensure the print bed is completely dry.
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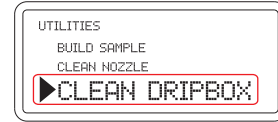
C. Empty the drip box



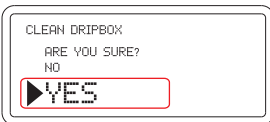
When drip box is full, use "JOG MODE", and choose "Y-AXIS" to move the extruder to the appropriate location.



1 Choose "UTILITIES", and press "OK".



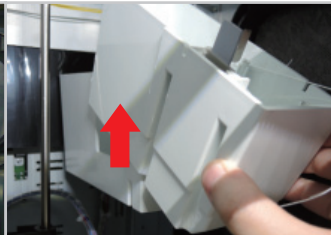
2 Choose "CLEAN DRIPBOX" and press "OK".



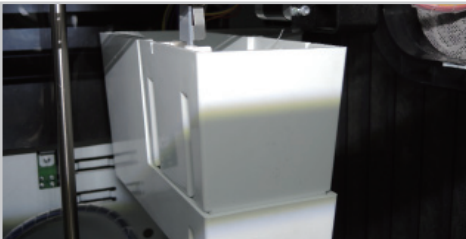
3 Choose "YES" and press "OK" to move the extruder from the dripbox



4 Wait until the extruder moves to the center of the chamber.



5 Take out the drip box and empty the box.



6 When the box is empty, reinstall the dripbox and press OK.

Chapter 7 Term of Service

1. This product is guaranteed for specific period from the purchase date against any breakdown within the scope of proper and reasonable usage of their product as defined by XYZ printing. Presentation of warranty card with the product will ensure free service and repair of inherent faults in the product within the warranty period. However, the following items are separate and dealt with under conditions of other related warranty services:
 - Printing modules / printing platforms / motor modules
 - Attached consumables (including housing, packing materials, power cords, USB cables, coil consumables, user manuals and software CD's): no warranty is given.
2. To protect your right and interests, please request that the dealer fill in the product information and purchase date on the product warranty card, and also make sure that they affix their official seal.
3. Please keep this warranty card in a safe place because if it is lost or destroyed a new one will not be issued. Make sure to present the card if you require any repairs, service or maintenance to the product during the warranty period.
4. XYZprinting may levy charges under any of the following circumstances:
 - Man-made damages: In the case of damage to the product caused by incorrect use, wrong installation, abnormal wear, physical damage or deformation caused by falls or blows, burnt circuits resulting from actions from the user, broken or bent interface or pins or any other physical damage to the product caused by misuse.
 - Incompatibility issues: anything unconnected with product malfunctions such as conflict with electronic equipment, expectation of use, noise of operation, speed, discomfort or heat.
 - Damage caused by force Majeure (such as lightning strike, fire, earthquake, floods, civil disturbance or war or any other event beyond human control).
 - Any request of warranty service after expiration of the warranty period.

If you need warranty service, please contact the original dealer or email us at supportus@xyzprinting.com. If you need more information about our warranty services, please log in to www.xyzprinting.com, select "support (product support)" where you will find complete details of all the warranty conditions.