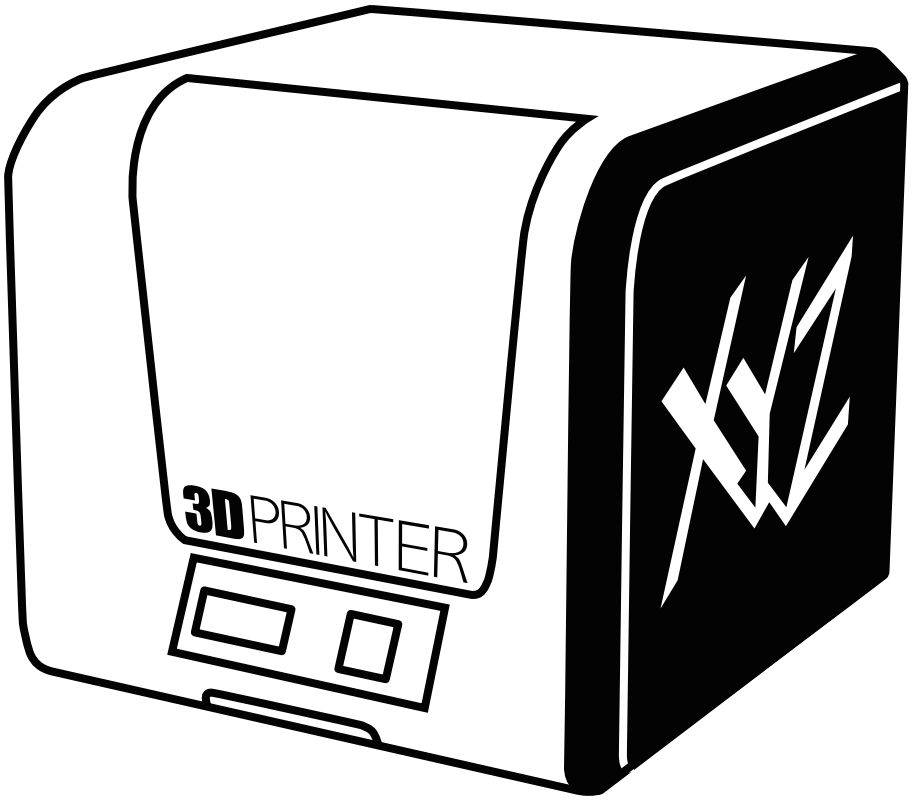

da Vinci Jr.1.0
User Manual

The purpose of this user manual is to help users understand and use the da Vinci Junior 1.0 3D printer correctly. It contains the operating instructions, maintenance information and application skills of the da Vinci Junior 1.0 3D printer. To learn more about the latest news of the da Vinci Junior 1.0 3D printer, please contact local dealers or visit the official website of XYZprinting: http://www.xyzprinting.com

Trademarks

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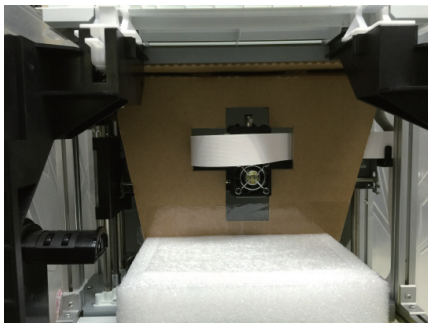
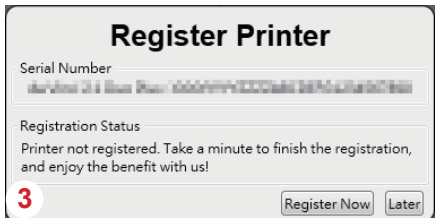
Print History

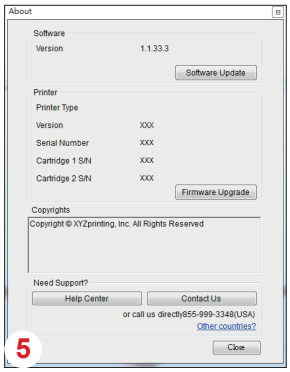
New editions of this manual incorporate new and changed material different from previous editions. Minor corrections and updates may be incorporated into reprints of the current edition without releasing additional announcements or documentation regarding the updated version. The User Manual is for user reference only. If you need to obtain the latest information, you are welcomed to visit the XYZprinting website: www.xyzprinting.com

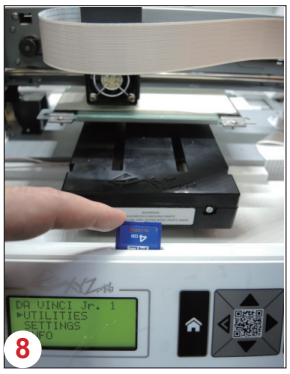


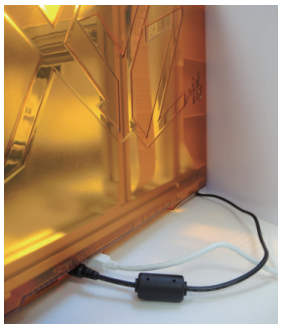
1 Before using this printer, please first remove the fixed materials from the printing module and printing bed. Switching on the printer's power without removing these fixed materials may damage the machine.



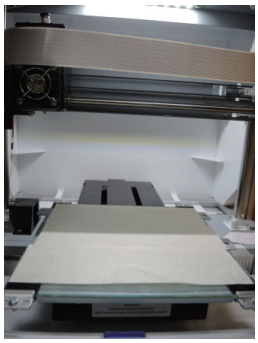
3 Registration via XYZware before your first print is strongly recommended. When registered with XYZprinting, you will receive latest technical supports and updates. To register, simply click "Register Now" to begin.

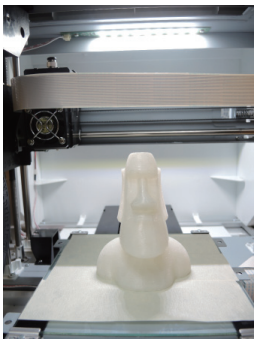






2 Before launching XYZscan/XYZware, connect the PC to with printer using the USB cable. For a better user experience, it is strongly advised to follow the proper procedure for using the product.





4 Before you start printing, please affix the bed tape on the print bed. The bed tape may be removed after printing is complete. (Bed tape can be reused.)

5 You may use XYZware to initiate manual updates to the printer firmware and software. When using the printer for the first time, we recommend connecting to the Internet and performing manual update once to obtain the latest resources.

6 The optimal room temperature for printing is 15-32 ˚C (60-90 ˚F). Printing quality may be affected if room temperature is higher or lower.

7 If you need more detailed technical support and program resources, visit the website: http://support.xyzprinting.com/global_en/Support

8 Before operating the printer, insert the SD card in the SD card port to make sure that the printing program is able to run properly.

Please peruse the product instruction manual before using this product.

Important Notice

Product Overview

A: Filament movement area

B: Feed module

C: Print head

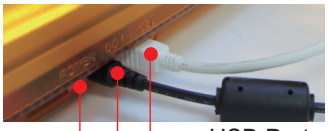
D: Filament

E: Print bed

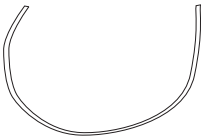
F: SD card port (Storage format: FAT32)

G: Control and display panel

H: Front cover



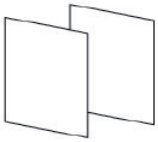
Accessory Checklist



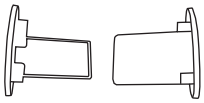
· Guide tube

· Cleaning Wire x 5

· USB Wire



· Bed Tape X 3pcs



· Filament spool axle ring

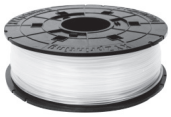
· Cleaning Brush

· Scraper

· SD Card

· Power Adapter

· Power Cord



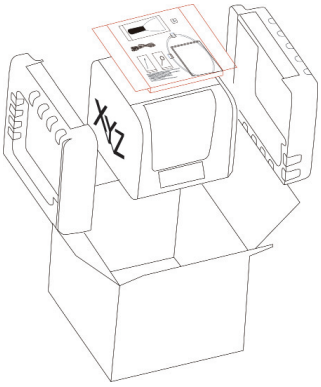
· Bundled filament

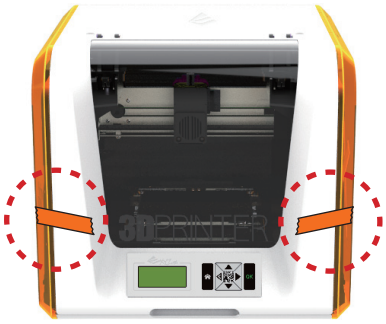
Important Safety Instruction for Use of Maintenance Tools

- The maintenance tools provided should be only handled by an adult. Please keep the tools away from children.
- Store the gear cleaning brush properly. This tool shall only be used to clean the specified parts of the machine and should not be used for the cleaning of other parts to prevent damaging the machine.
- The scraper is used to remove the object from the print bed when printing has finished and the print bed is cool.

Important Safety Instruction

- Do not place the printer in humid or dusty environment such as bathrooms and high traffic areas.
- Do not place the printer on a rickety surface and/or inclined position. Printer may fall down/or tumble and it may cause serious injury.
- Do not touch the interior of the printer while printing. As it may be hot and include moving parts. Please keep the front door closed during printing to avoid injury.



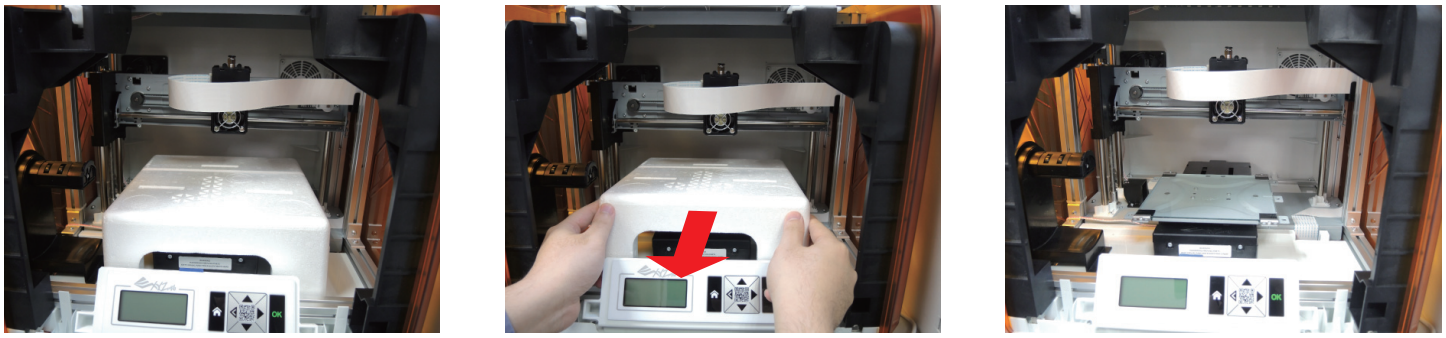


1 Open the box and remove the accessories and cushions.

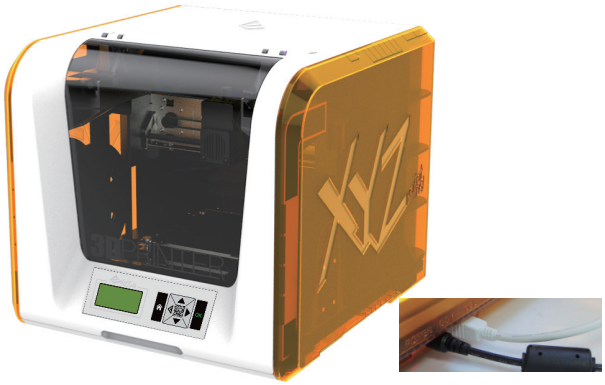
2 Remove the plastic bag and the tapes.

3 Raise the paper cardboard slightly upwards so that the paper cardboard is detached from the styrofoam slot at the bottom.

4 Remove the securing cardboard of the printing head and then remove the entire cardboard. You may push the print nozzle towards the back out of the cardboard and bend the securing cardboard downwards for an easy removal.



5 Remove the securing styrofoam next to the print bed.



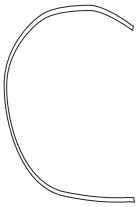
6 Insert the SD card that came with the printer into your computer or download the latest XYZware from the official Website and install it on the computer.

7 Use the USB cable to connect the printer to PC. Connect the power cord to the printer then turn on the power switch.

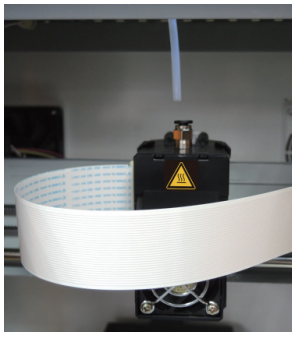
Note: please use the original power adapter and power cord along with the printer in order to prevent product damage or personal hazards caused by differences in voltage specifications.

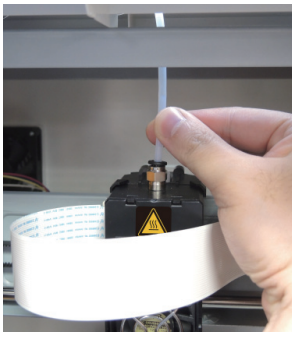
Unpacking the Product

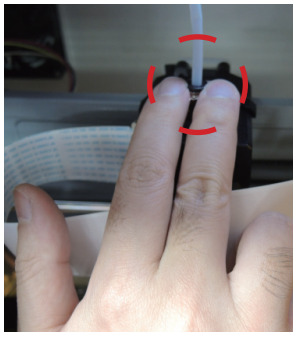
⚠ **Note: Please follow these steps and ensure that the guide tube is properly installed before starting the "LOAD FILAMENT" function. Failure to install the guide tube may disrupt filament feed.**

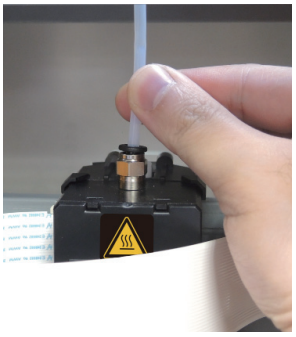


· Guide tude



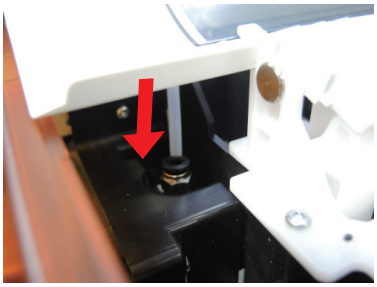


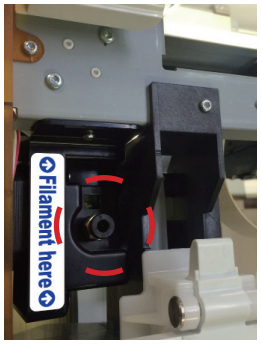




1 Take out the guide tube and plug in one end of the tube into the filament feed port on the printing module.

2 To ensure that the guide tube is well inserted into the filament feed port, you may gently press on the springs around the feed port to make the insertion an easier process.





3 Direct the guide tube from the tube movement area out of the machine and then insert the other end of the filament tube into the feed module tube port.

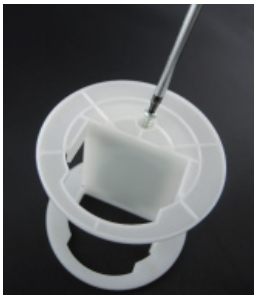
4 Ensure that the guide tube has been tightly inserted into the port to complete the guide tube installation process.

Reminder: If you are not too sure where the feed module tube port is, you may open the casing of the machine to see the indication label.

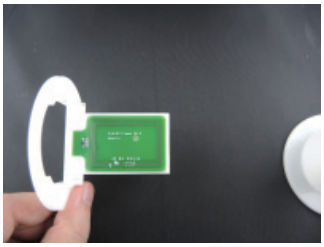
Installing the Accessories

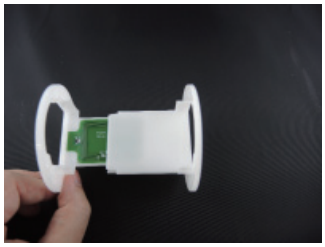
CHANGE SPOOL

1 First retrieve filament spool to install the filament spool axle ring.

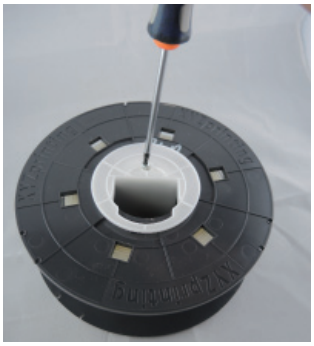


2 Take out and separate the filament spool axle ring into its two components.

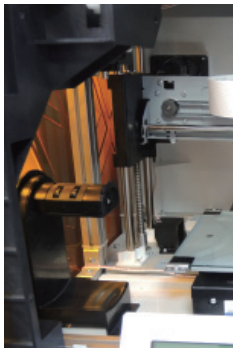


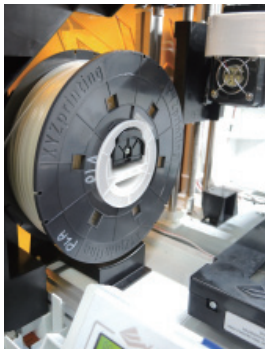


3 Install the sensor chip. Please pay special attention to position of the installation holes on the chip.

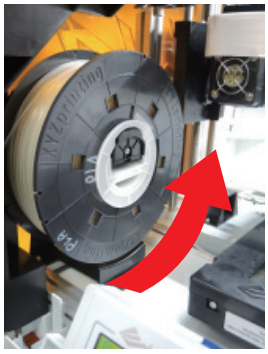


4 Insert the filament spool axle ring components to either side of the filament spool, and use a cruciform screwdriver to tighten and secure the rings to the axle to complete the installation of the filament spool axle rings.



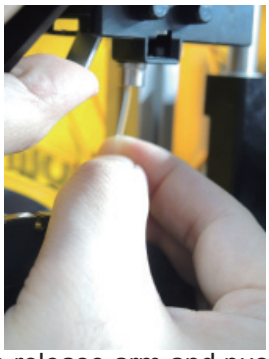


5 Place the assembled filament spool (with the spool axle rings) on the filament holder on the left side of the printer.



6 Pull out a section of the filament and insert it into the feed port.

Caution: Pay attention to the direction the filament is being pulled out and ensure that the filament spool axle is being rotated in the correct manner.



7 Open the release arm and push the filament all the way to the bottom so that the front end of the filament is completely inserted into the feed module.

Load Filament

LOAD FILAMENT

Then load filament using the control panel on the printer…

```
DA VINCI    Jr. 1
▶UTILITIES
  SETTINGS
  INFO
```

```
UTILITIES
▶CHANGE SPOOL
  HOME AXES
  JOG MODE
```

```
CHANGE SPOOL
▶LOAD FILAMENT
  UNLOAD FILAMENT
```

1 Select "UTILITIES" > "CHANGE SPOOL" > "LOAD FILAMENT".

```
LOAD FILAMENT
EXTRUDER HEATING
TEMPERATURE 190 C
PLEASE WAIT
```

```
LOADING


PLEASE WAIT
```

```
CHECK FILAMENT
OUT FROM NOZZLE
[ < ] TO RETRY     ?
[ OK ] TO RETURN
```

2 Wait for the extruder to heat up and load filament.

3 Check if the nozzle outputs filament and press "OK" to go back to main menu.

UNLOAD FILAMENT

First unload filament using the control panel on the printer…

```
DA VINCI    Jr. 1
▶BUILD FROM CARD
  UTILITIES
  SETTINGS
```

```
UTILITIES
▶CHANGE SPOOL
  HOME AXES
  JOG MODE
```

```
CHANGE SPOOL
  LOAD FILAMENT
▶UNLOAD FILAMENT
```

1 Select "UTILITIES" > "CHANGE SPOOL" > "UNLOAD FILAMENT".

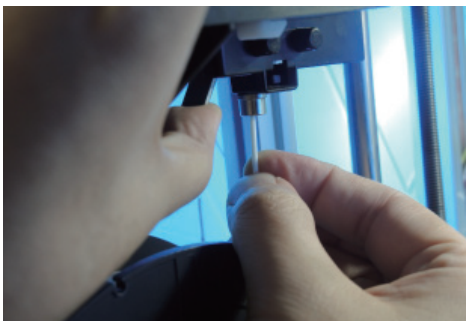
```
LOAD FILAMENT
EXTRUDER HEATING
TEMPERATURE 190 C
PLEASE WAIT
```

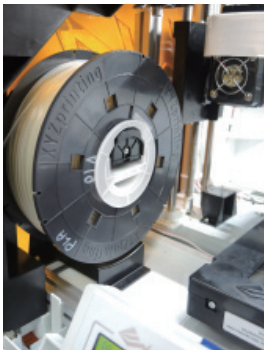
```
UNLOADING
PLEASE WAIT

[ OK ] TO RETURN
```

2 Wait for the extruder to heat up and unload filament. Press "OK" to pullout filament.

When finishing "UNLOAD FILAMENT"





First open the release arm and then pull out the filament with spool axle rings. Arrange it properly for later use.

Note: Always implement the "UNLOAD FILAMENT" function when replacing the cartridge in order to ensure proper removal of the filament. Do not cut the filament at the printer head to prevent residual filament from blocking it and causing subsequent damages to the printer.

Unload Filament

The troubleshooting instruction may guide you to fix the problem. If any error persists, please contact customer service center for support. When an error occurs, please refer to the service code shown on the printer and/or in the software, and check the suggestion below for troubleshooting.

Technical Support
Website: http://support.xyzprinting.com
Email: US - supportus@xyzprinting.com
EU - supporteu@xyzprinting.com
Other regions - support@xyzprinting.com

Service Code	Symptom	Action
0 0 0 7	Cartridge 1 chip error	Reinstall the cartridge or change a new cartridge.
0 0 0 8	Cartridge 1 chip error	Reinstall the cartridge or change a new cartridge.
0 0 1 1	Extruder 1 heating problem	Check connections, reboot the printer.
0 0 1 4	Extruder 1 heating problem	Check connections, reboot the printer.
0 0 2 8	Cartridge 1 not installed	Install/reinstall cartridge.
0 0 2 9	Cartridge 1 empty	Replace cartridge 1 before printing.
0 0 3 0	X-axis movement abnormalities	Check motor/sensor connections. Check sensor position.
0 0 3 1	Y-axis movement abnormalities	Check motor/sensor connections. Check sensor position.
0 0 3 2	Z-axis movement abnormalities	Check motor/sensor connections. Check sensor position.
0 0 5 0	Memory error	Reboot the printer.
0 0 6 0	Cartridge empty	Reboot the printer.

Error message	Action
The printer is handling other task	Try again after all tasks are completed. Also check the information shown on printer display.
Unable to update printer firmware	Check Internet connectivity / Update firmware again later.
Filament 1 jammed	Unload and reload cartridge 1 and clean the nozzle.
Filament 1 loading problem	Unload and reload cartridge 1.
Filament 1 installation problem	Reinstall the cartridge 1 or change a new cartridge.
Top cover open	Close the top cover.
Filament 1 level low: 30m left	Replace cartridge 1 when necessary.
Filament 1 level low: 5m left	Replace cartridge 1 immediately.

Note:
Please retain all original packaging material and please ship your product with the original packaging for warranty purpose. Shipping without original packaging materials may cause product damaged during the shipment and may cause chargeable service fees.

Support Details

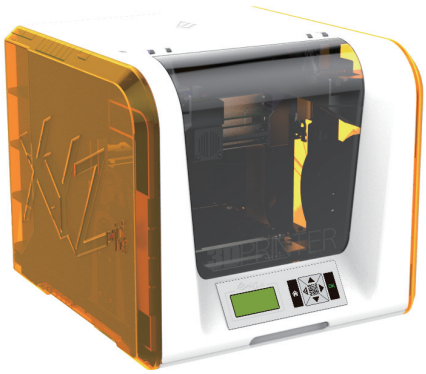
da Vinci Jr.1.0 3D **Printer**

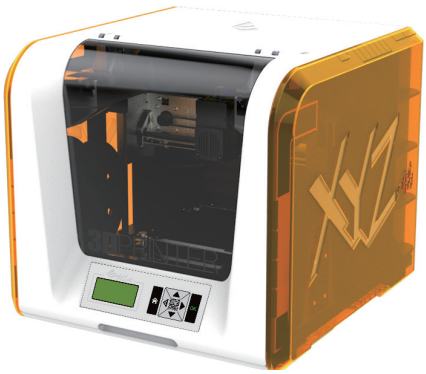
Dimensions	16.54 x 14.96 x 16.93 inches (420 x 430 x 380 mm)
Weight	26.46 lbs (12kg)
Display	2.6” FSTN LCM
Language	English / Japanese
Connection method	USB Wire / SD Card
Print Technology	FFF (Fused Filament Fabrication)
Build Volume	5.9 x 5.9 x 5.9 inches (15 x15x15cm)
Print resolution	100 - 400 microns
Print module	Single Nozzle
Nozzle diameter	0.4 mm
Filament diameter	1.75 mm
Files supported	.stl , XYZ Format(.3w)
Operating system	Windows 7 - 8 above (for PC) Mac OSX 10.8 64-bit above (for Mac)
Hardware requirement	X86 32/64-bit compatible PCs with 2GB+ DRAM (for PC) X86 64-bit compatible Macs with 2GB+ DRAM (for Mac)

Environmentally friendly materials-PLA

PLA filaments are made using polymerized lactic acid, which is extracted from corn, sugarcane or other sugar-containing crops, and is regarded as the most environmentally friendly 3D printing material. Unwanted PLA printed objects can be simply discarded in the soil where it will naturally decompose.

PLA materials printed at low temperatures are not only suitable for family settings, its bright texture also makes it a favorite amongst our clients. You may observe the characteristics of PLA during printing.





- Despite their harmlessness, PLA placed in an environment or water bath exceeding 50 °C (122 °F) will soften and deform.
- Hence, overly humid areas are not suitable storage environments for PLA. We recommend properly sealing and stashing away unused PLA filaments.
- A sugary smell is often generated when printing with PLA filaments, giving yet another attractive feature.

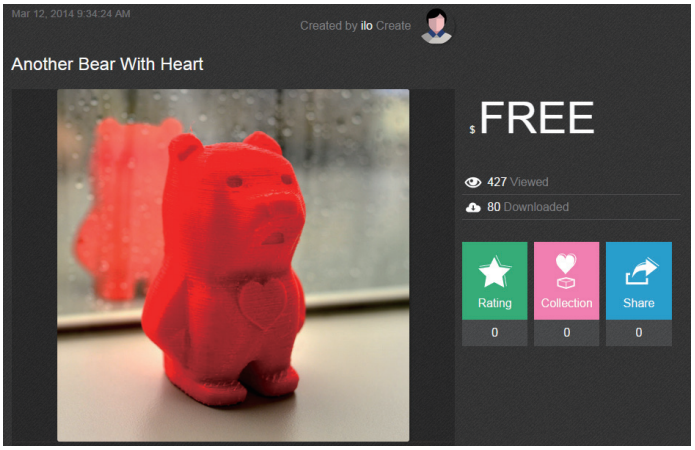
Specifications

About the da Vinci junior series 3D printer

The da Vinci junior series 3D printer (da Vinci Jr.) is a brand new product from XYZprinting that is dedicated to the 3D printer market. Its intricate and colorful exterior as well as its high resolution printing specifications are set to make it the new favorite for families and home hobbyists, whether you're creating an enjoyable learning playground to inspire your children's creativity or unleashing your innovative ideas and quickly generate prototypes for your products.

Present creativity

To learn more about presenting your creativity, please visit the Gallery section of XYZprinting's official website.



Product features

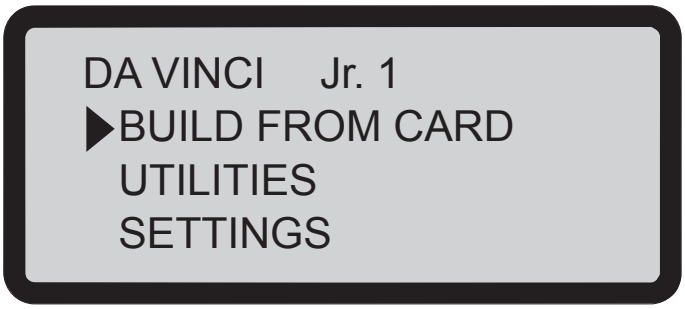
- Environmentally friendly 3D printer that satisfies the WEEE recycling requirements, and utilizes the environmentally friendly PLA filaments for printing.
- Satisfies electrical appliance safety specifications of the EU and many other countries, making it the best home-based 3D printer for the entire family.
- Detachable SD card that allows you to store 3D model files that you have created and edited for easy printing. (Please export .stl files into .3w format via XYZware before printing.)
- A gallery of 3D objects is available for download after free registration.
- Amazing power saving design with a maximum power consumption of 75W, offering low power usage even for extended use.
- Weighs only 12 kg, and can be easily integrated in any household and family settings.
- Smart temperature control designs. Cooling fans within the machine is able to adjust and optimize printing temperature to improve product quality.

Button instructions

After switching on the printer's power, the user may use the display panel at the front of the printer to understand its status and usage data. The functional buttons on the right allow the user to perform the relevant operations.

Button	Functions
Up	Direction Up
Down	Direction Down
Left	Back to previous menu / Reduce the adjustment value
Right	Forward to submenu / Increase the adjustment value
OK	OK; confirm selection/settings
HOME	Home Button, return to main menu

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



Functions

Home Menu	Top Menu	Sub Menu	Page
UTILITIES	CHANGE SPOOL		P6
		LOAD FILAMENT	P7
		UNLOAD FILAMENT	P7
	HOME AXES		P13
	JOG MODE		P13
	BUILD FROM CARD		P13
	CLEAN NOZZLE		P14
	Z OFFSET		P14
SETTINGS	BUZZER		P15
	LANGUAGE		P15
	ENERGY SAVE		P15
	RESTORE DEFAULT		P15
INFO	STATISTICS		P16
	SYSTEM VERSION		P16
	SPOOL STATS		P16
	HELP		P16
MONITOR MODE			P16

The map above shows the functions your may access with the control panel on the printer. For detailed description of each function, refer to the respective page.

Maps of Functions

HOME AXES

“HOME AXES” moves the extruder to the right back corner, and the print bed to the top.

To home axes:

```
home axes
are you sure?
  NO
▶ YES
```

Select “YES” to proceed.

JOG MODE

“JOG MODE” is used to manually move the extruder and the print bed.

To move the extruder:

```
jog mode
  x-axis
  y-axis
▶ z-axis
```

1.Select “X-AXIS” (to move right and left) or “Y-AXIS” (to move backwards and forwards).

```
x-axis [ok]≫exit
[−]◀[■ 001mM]▶[+]
        010mm
        020mm
```

2.Select desired increment of travel with ⌃ and ⌄ buttons, and press (or hold) ❮ or ❯ button for desired direction to move the extruder.

To move the print bed, select “Z-AXIS” to proceed.

BUILD FROM CARD

3 sample models are built-in the printer. You may begin your first 3D prints with the samples.

To print a sample:

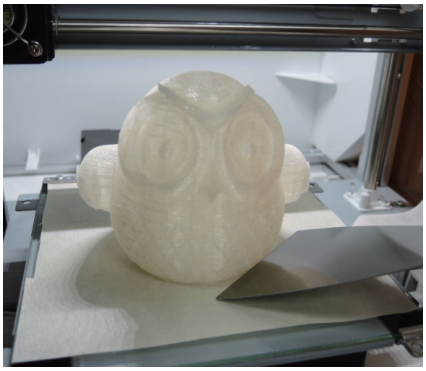
```
build FROM CARD
▶ demo
```

1.Select a sample to print

2.Put the bed tape on the print bed.

```
DEMO
start building
  no
▶ yes
```

3.Select "YES" to start printing



4.Remove the printed object and bed tape when the printing has finished and the print bed has descended.

UTILITIES

CLEAN NOZZLE

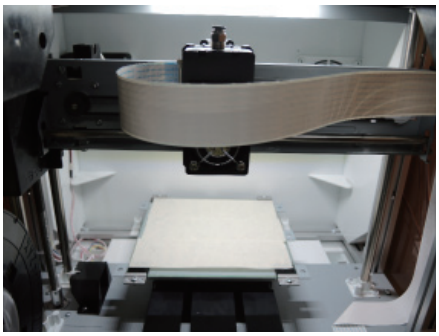
Over time, carbon deposits or filament dust buildup in the nozzle may decrease its performance. It is advised to clean the nozzle after every 25-hour of printing.

Also, when you find the result of print bed calibration shows “ERR” or any residue on your prints, you may try to clean the nozzle.

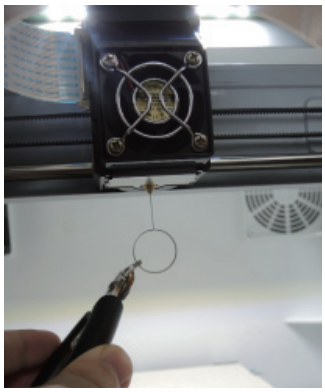
To clean the nozzle:

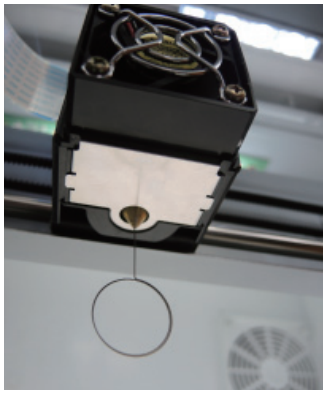
```
clean nozzle
are you sure?
  NO
▶ YES
```

1.Select "YES" to begin.



2.Wait until the extruder heats up and moves to the front, and the screen shows “READY FOR CLEAN”





3.Hold the cleaning wire with the pliers, and carefully pass the wire through the nozzle openning.

```
clean nozzle
ready for clean

[ ok ] to return
```

4.Select "OK" to return.

Z OFFSET (adjust the printer module)

The user may use the Z OFFSET function to adjust the gap between the printing nozzle and the printing bed.
Caution: This printer has already been tested and adjusted to the optimal gap between the printing nozzle and printing bed before shipping. We recommend recording the original settings before carrying out any adjustments.

Z OFFSET settings adjustment

1. First record the original Z OFFSET setting value
2. Increase / reduce the Z OFFSET 0.1 mm at a time and print out a sample for testing to evaluate whether further adjustments are required.

BUZZER

When the buzzer is turned on, the printer will output an audible signal when a button is pressed, print job is finished, or issue is detected.

Buzzer is turned on by default. To switch off the buzzer:

```
buzzer        [ on ]
▶off
 on
```

Select “OFF” and press “OK” to change the setting.

LANGUAGE

You may switch the display language on the printer between English and Japanese.

The default lanague is English. To switch to Japanese:

```
language      [en ]
 english
▶ニホンゴ
```

Select “ ニホンゴ "and press “OK” to change the setting.

ENERGY SAVE

LED luminaires are installed in the printing chamber. To save energy consumed, the lighting will go off after idling for 3 minutes (shown as 03M on the display) by default.

To select a longer time interval:

```
energy save [off]
▶off
 03m
 06m
```

Select “06M” (for auto off after 6 minutes) or “OFF” (for never turn off the LED) and press “OK” to change the setting.

RESTORE DEFAULT

All settings can be reset to factory default with a few clicks.

To reset all settings at once:

```
restore default
are you sure?
 no
▶yes
```

Simply select “YES” and press “OK” to reset.

STATISTICS

In “STATISTICS”, you can check the accumulated print time and last print time.

```
statistics
lifetime   00006h
last time  00h34m
[ok] to return
```

SYSTEM VERSION

Firmware version is shown here. For stable printing performance, it is advised to keep the firmware up to date. To check for firmware updates, please go to XYZscan/XYZware.

```
system version
1.1.j

[ok] to return
```

SPOOL STATS

“SPOOL STATISTICS” provides the information on cartridge level (see REMAINING), and the capacity, color and material of the filament. Press to read the second page.

```
SPOOL   stats
remaining      059m
CAPaCiTY       240m
[DOWN]>NEXT   PAGE
```

```
color black
moterial abs

[ok] to return
```

HELP

The URL to XYZprinting website can be found here. You may go to the website for the latest information, product documents, tutorial video and more.

```
HELP
WWW.XYZPRINTING.COM

[OK] TO RETURN
```

MONITOR MODE

"MONITOR MODE" shows the temperature of the extruder and the print bed (see “PLATFORM”). The extruder and the platform will be heat up for printing and calibrating of the print bed. See below for the working temperature for the parts in different modes.

```
MONITOR  MODE
EXTRUDER       046°C
[OK] TO  RETURN
```

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 form 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.

Federal Communications Commission (FCC) Statement

You are cautioned that changes or modifications not expressly approved by the part responsible for compliance could void the user's authority to operate the equipment.

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 instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular 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 to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

XYZprinting is not responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment and it also complies with Part 15 of the FCC RF Rules. This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provided with antenna installation instructions and consider removing the no-collocation statement.

Term of Service

Warning

- Do not let children operate this device without adult supervision. Electric shock hazard. Moving pars 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 none XYZprinter 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.