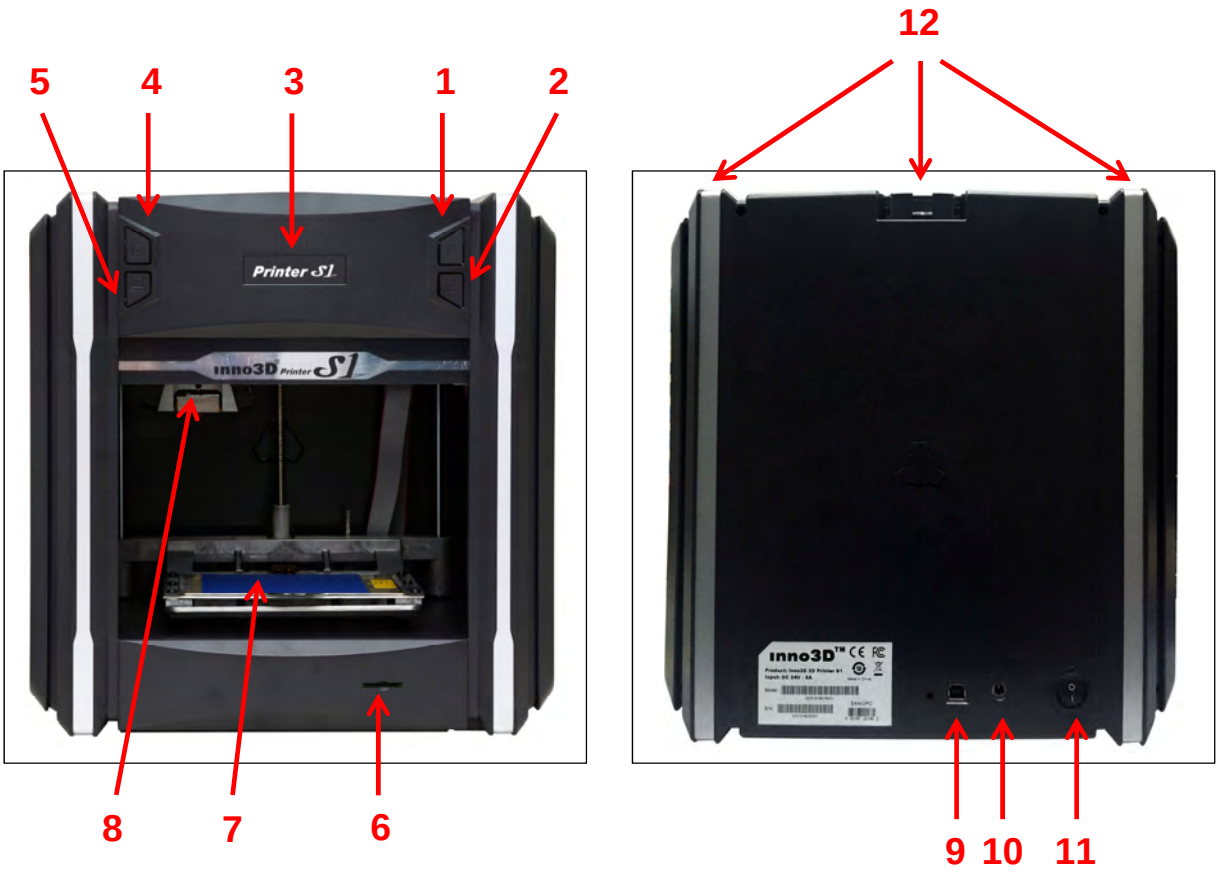
Inno3D 3D Printer S1 – Cubic Design Mini 3D Printer

User Manual



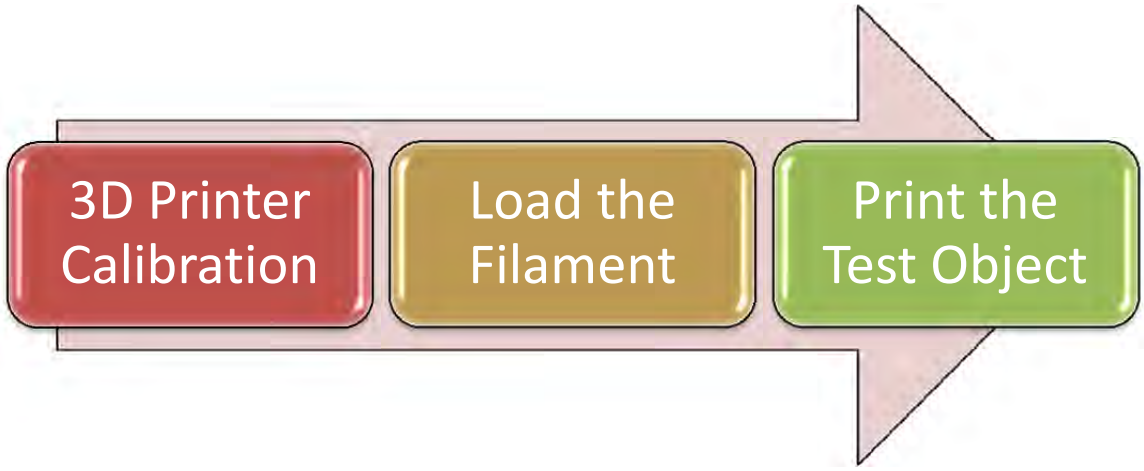
1. Print Button
2. Filament Change Button
3. Message / Status OLED display
4. SD-Card insertion indicator
5. PC Connection indicator
6. SD-Card Slot
7. Detachable Print Platform
8. Extruder
9. USB Cable connector
10. Power Cable connector
11. 3D Printer Main Power Switch
12. Filament Mount Holes

Section 1: Accessory list

1.	PLA Filament	X 1 Spool (0.5Kg)
2.	Filament guide tube	X 1
3.	Filament mount	X 1
4.	Filament guide tube stand	X 2
5.	Power Supply Unit	X 1
6.	A/C power cord	X 1
7.	SD-Card	X 1
8.	USB-A to USB-B cable	X 1 [1 meter]
9.	Quick Start Guide	X 1
10.	Removable print platform	X 1
11.	Print platform mask tape sheet	X 10 pieces

Section 2: Quick Start

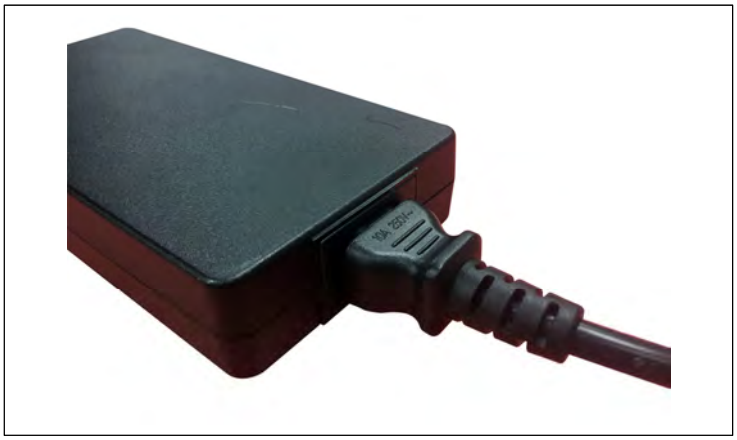
Quick Steps for printing the first model



Section 3: Power on the Inno3D 3D Printer S1

Important Notice: All Machine protection card boards and foams must be removed before powering on the 3D Printer.

1. Connect the power cable to the Power supply unit.

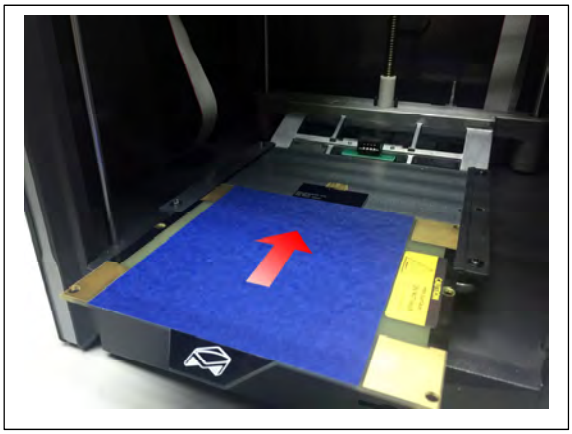


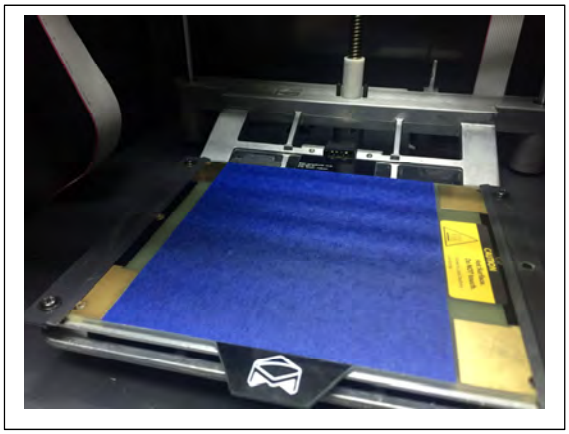
CAUTION: Power cable plug standard is various from different countries, please refer to your country main power standard – wall socket, before plugging in the power cable

2. Insert the power supply output plug (24V DC) to the 3D Printer power input socket

3. Make sure the Inno3D 3D Printer S1 Power switch is in "Power off" position

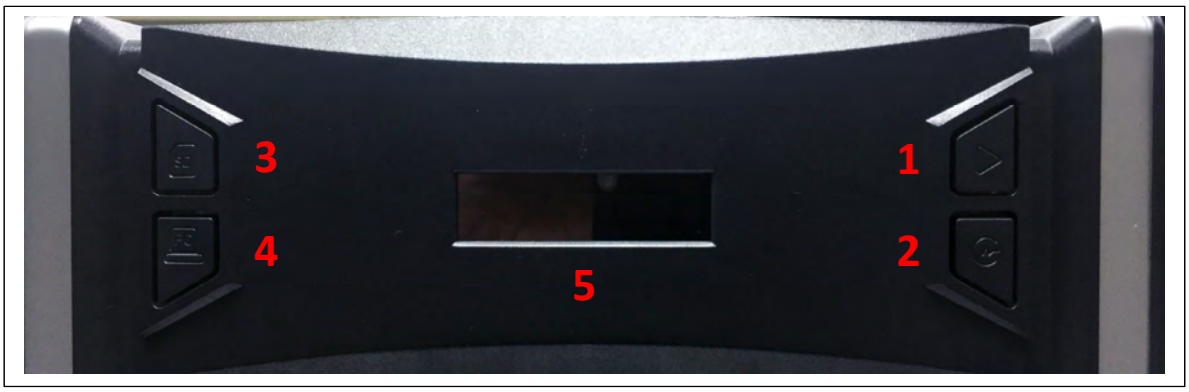
4. Connect the power cable to the wall socket (main AC power outlet)
5. Check all cables are connected with correct orientation, and all protection card boards and foam are removed from machine
6. Install the print platform in the direction as shown below, and tightly fit it to the platform slot in the 3D Printer





7. Power on the Inno3D 3D Printer S1
8. “Printer Ready” message will be shown in LED display after Inno3D 3D Printer S1 Startup Logo

Section 4: Control and User Interface



1. Print Button

2. Change Filament Button

3. SD-Card insertion indicator

4. PC connection indicator

5. OLED display for print progress and system message display

Section 5: Automatic Print Platform Calibration

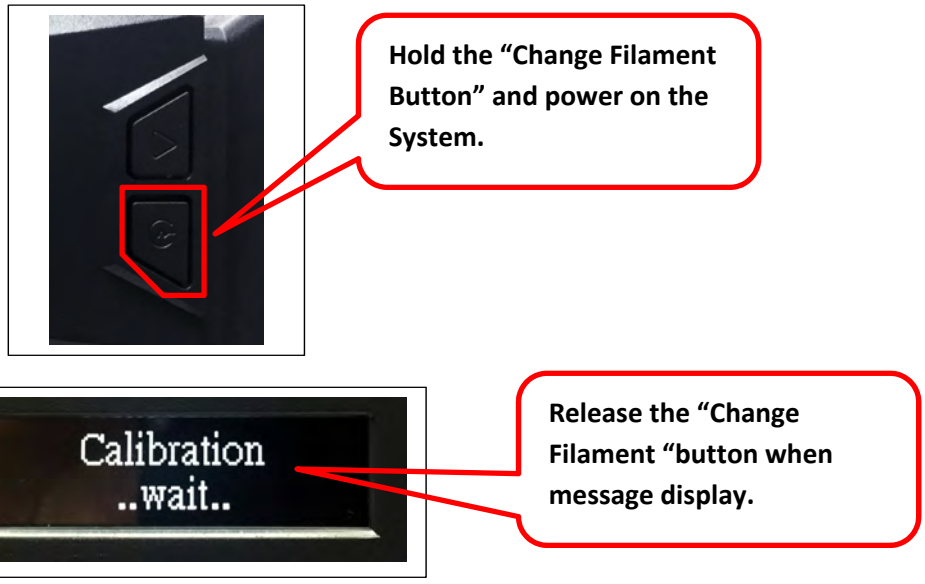
For the best print result, the 3D Printer should be kept in exact horizontal alignment (same horizontal level of left and right position). The following section explains the automatic print platform leveling feature in this Inno3D 3D Printer S1.

Notice: Print Platform Calibration is only required after

a. Installing your 3D Printer,
b. Changing the Extruder unit,
c. Cleaning the print Nozzle
d. Repairing the 3D Printer, or
e. Moving the 3D Printer to a new place

Print Platform Calibration procedures:

1. Press and keep holding the “Change Filament button” during system power on.



2. Release the button when you see “Calibration….. Wait……..” message

3. Print platform calibration process will be started and wait about 5 minutes for the calibration process complete

4. After message “Calibration completed” displaying, the 3D Printer will automatically adjust the print platform distance and “Print Ready” message will be shown.

Section 6: Loading / Change Filament

1. Install the Filament Mount kit to the 3D Printer

Filament Mount kit can be installed at the “right”, “left” or “back” side of the 3D Printer

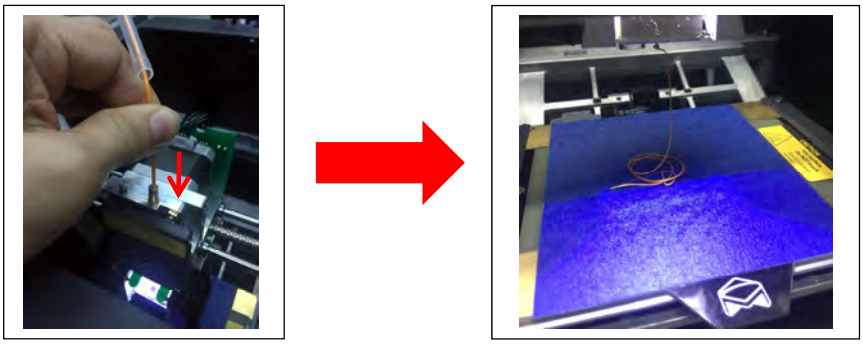
2. Insert the Filament to the Filament Guide Tube

Insert the Filament from spool to the Filament Guide Tube

3. Press the “Change Filament” button

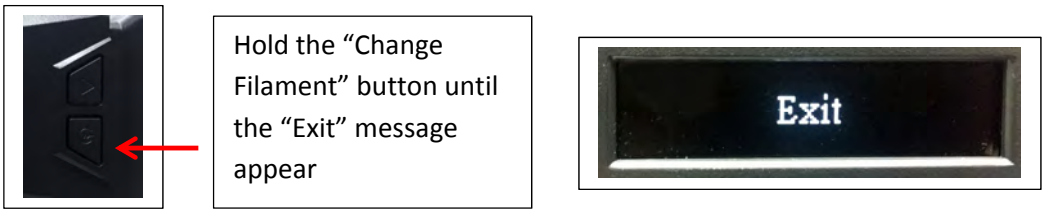
Change filament feature starts after pressing the button, and “Change Filament” message will be shown on the display. Wait for about 3-5 mins, message “Insert new filament and press button” will be shown

4. Insert the Filament to Extruder and Press “Change Filament” button simultaneously (Hold the filament tight, and push it towards the Extruder filament inlet, you can feel that the filament is moving down to the Extruder)



After inserting the filament, you can see the filament is extruded from the nozzle

5. Hold the “Change Filament” button to complete the process, until the “Exit” message display

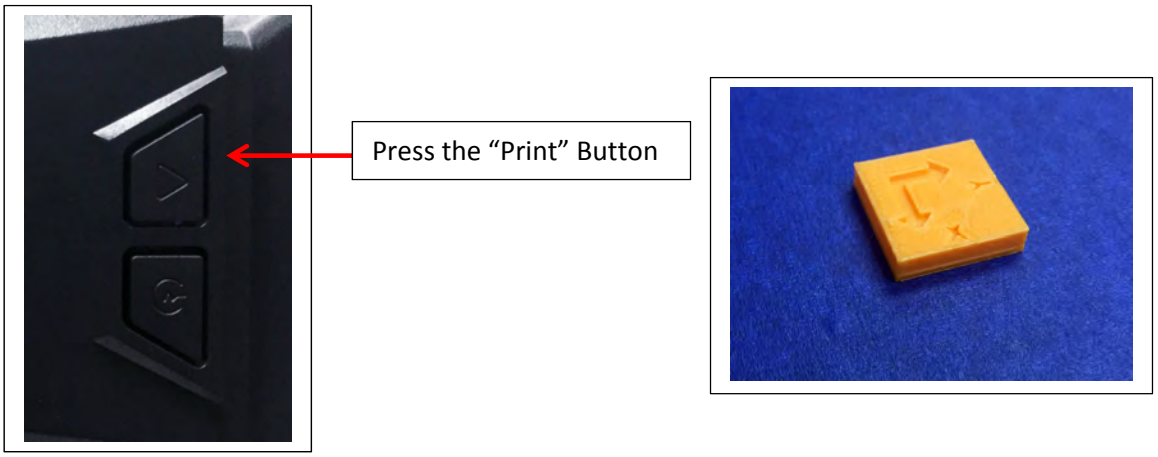


Section 7: The First Print

After installing the Inno3D 3D Printer S1 and load the filament, now you can do the first print.

Notice: A test print object is stored inside the 3D Printer. You can test your printer functionality by printing that test object.

1. In the “Printer Ready” state, just simply press the “Print” button. The test object will be printed in about 6-7 minutes

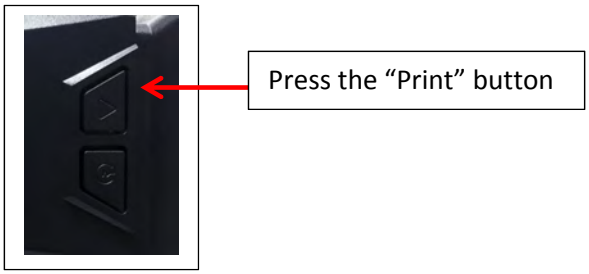


Section 8: How to Print

Print from SD-Card

Important Notice: Only file named "print.gcode" in the SD-Card will be printed from the Inno3D 3D Printer S1. All other gcode files with different file name will not be printed. You should rename the gcode file to "print.gcode" before printing it from SD-Card.

1. Ensure your gcode file is stored in SD-Card, and the file name is named as "print.gcode"
2. Insert the SD-Card in the SD-Card slot of the 3D Printer
3. The SD-Card insertion indicator will be light up with blue color
4. Check the filament is loaded and "Printer Ready" is shown on Inno3D 3D Printer S1 display
5. Simple press the "Print" button to print your 3D Model



Print by connecting to Person Computer

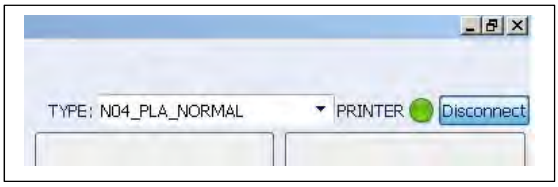
Notice:

- **To print the object with PC connection, the Personal Computer must be connected during the printing operation.**
- **When the 3D Printer is connected to your Personal Computer, the Personal Computer will take control of the 3D Printer and all buttons in 3D Printers will be no response until the PC is disconnected.**

1. Connect the Inno3D 3D Printer S1 and your Personal Computer with the USB cable

2. Execute the Inno3D 3D Printer S1 application program*

3. Select the correct print profile and build the gcode file
4. Connect the Inno3D 3D Printer S1 with the application by clicking the “connect” icon in application



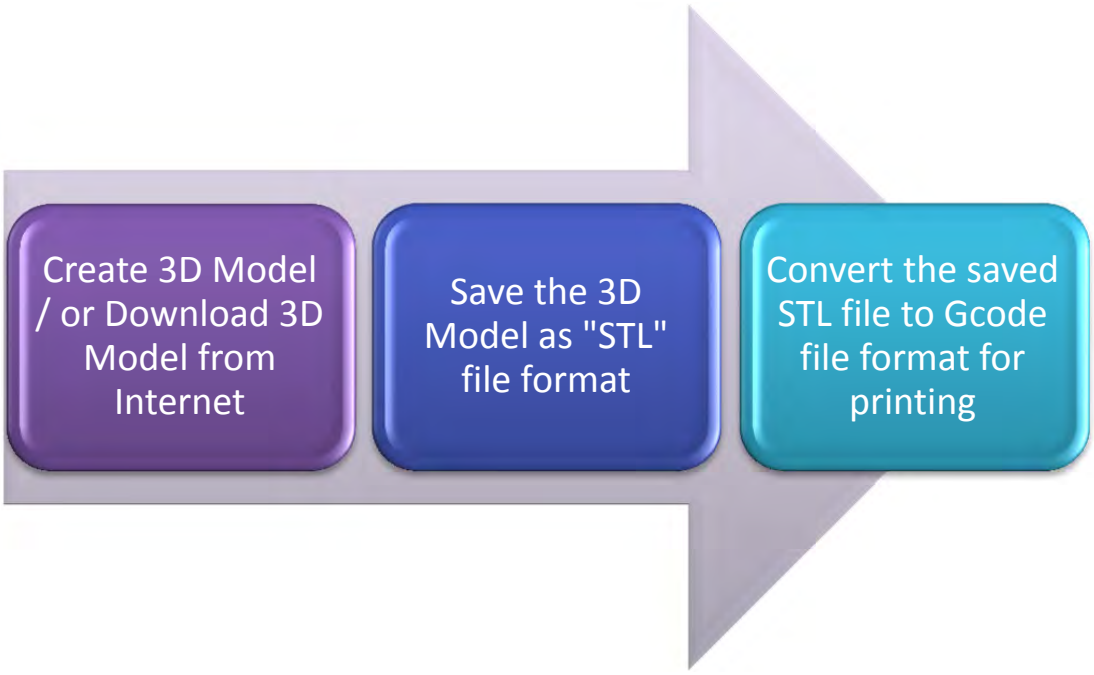
5. Check the filament is loaded and “PC Connected” message is shown on 3D Printer
6. Click the “Print” icon in application to print the 3D model

***Note: Refer to Section 9, for the basic operation and control instruction of the Inno3D 3D Printer S1 application**

Congratulations!!! Your Inno3D 3D Printer S1 is ready to use. Now you can create your own 3D objects and enjoy 3D Printing.

Section 9: Using Inno3D Printer S1 Application Software

Before starting the application:



Application Software installation:

Minimum System requirement :

- Microsoft® Windows® 7 / 8 with 8GB system memory
- Intel® or AMD® system with Dual-core processor or above
- Minimum 20GB free space is available

The application software and USB driver for your Inno3D 3D Printer S1 can be found in the bundled SD-Card "Application" folder, or it can be downloaded from Inno3D website.

Important Notice: USB device driver must be installed before installing the application software, otherwise the 3D Printer cannot be connected to your PC System.

Driver and Software installation:

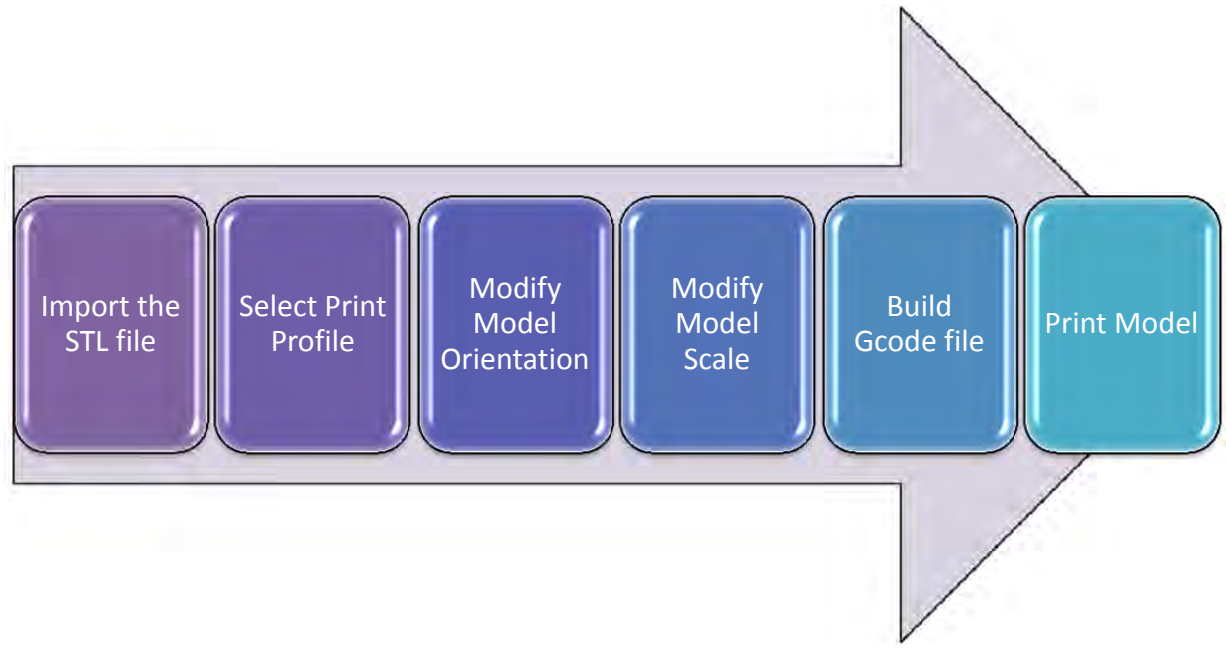
1. Install the USB device driver for your Inno3D 3D Printer S1
    a. Double click the file "CDM v2.08.30 WHQL Certified.exe", follow the on screen instruction by pressing "next". The USB driver for Inno3D 3D Printer S1 will be installed to your system automatically.

2. Install the Inno3D 3D Printer S1 Application
   a. Double click the “3DPrinterS1V10.exe” (note: V10 is the version number, which will be changed for the latest application release) file and follows the on screen instruction by pressing “next” –> “Agree.” -> “Install”. The Inno3D 3D Printer S1 application software will be installed in your system automatically.

   b. The Inno3D 3D Printer S1 data file is in “Gcode” file format, all 3D objects which are created in your CAD application software must be converted to “Gcode” file format before sending to print.

   c. Inno3D 3D Print S1 PC application is the software which can convert your 3D objects from “STL” file format to “Gcode” file format for printing.

Use the Inno3D 3D Printer S1 PC Application:

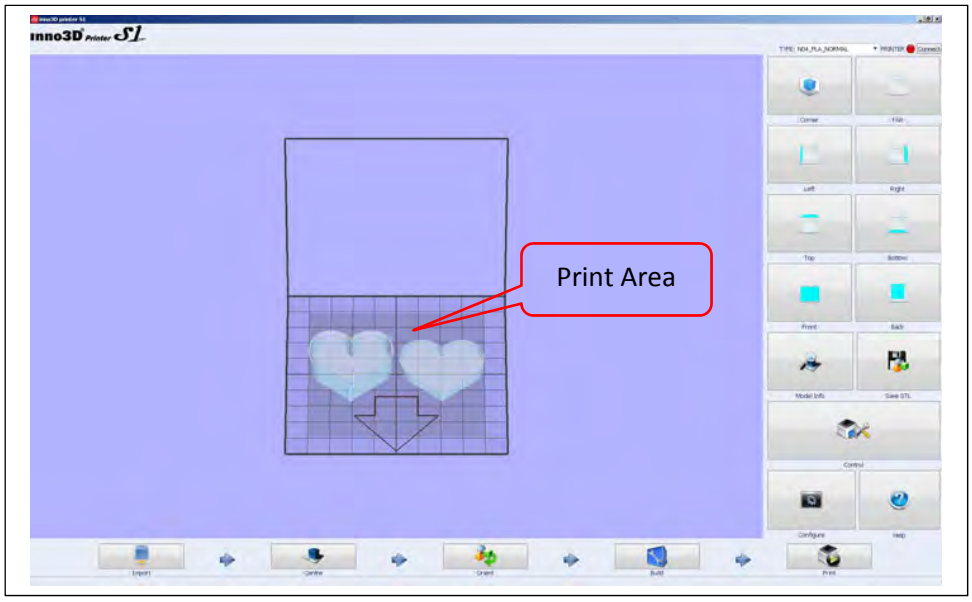


Import the STL File:

1. Double click the Inno3D 3D Printer S1 Application software icon, and wait the application start.

2. Click the “Import” icon to read your 3D Model in “STL” file format.

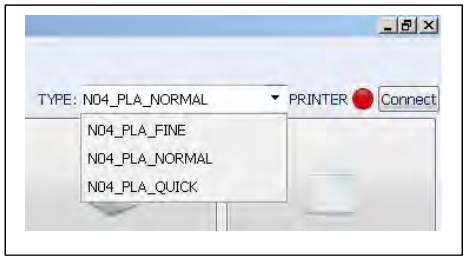
The 3D Model will be imported and show in the print area of the Application screen



Note: Imported model will be centered in the print area, and the X, Y, Z orientation are the same as your CAD data file

Select Print Profile:

1. Inno3D 3D Printer S1 Profile Types:



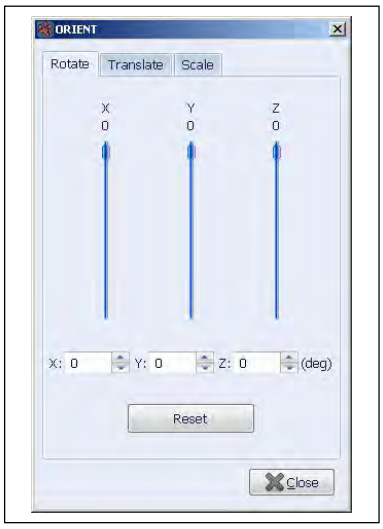
N04F = use 0.4mm nozzle to print
PLA = PLA filament

FINE = 0.13mm layer resolution
NORMAL = 0.2mm layer resolution
QUICK = 0.3mm layer resolution

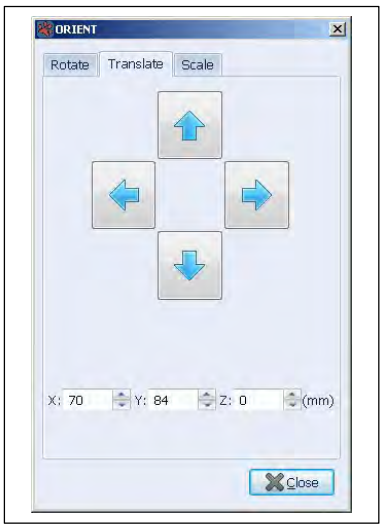
   a. Before you print the 3D Object, the print profile should be selected first.
   b. The print profile can be selected at the upper right drop down menu of the application software.
   c. The Inno3D 3D Printer S1 extruder is bundled with the "N04F" nozzle – This will be the default setting

Modify Model Orientation:

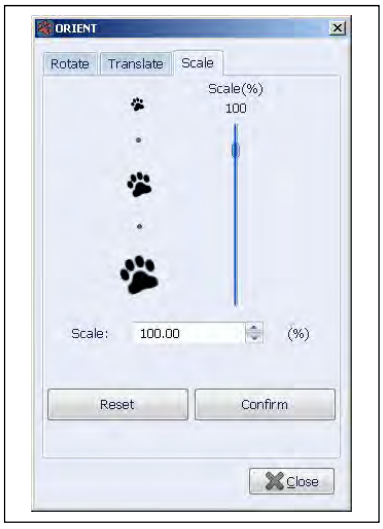
1. Orientation:



Rotate



Translate



Scale

   a. Rotate:
      i. Place your object in different direction by rotating it on X, Y, or Z axis.
   b. Translate:
      i. Move the object in any direction within the build platform, by pressing the "Up", "Down", "Left", "Right" arrow key.
   c. Scale:
      i. If the 3D Object is too big or too small for printing, you can use the "Scale" to adjust the 3D Model size, so that it can be fitted in the print platform.

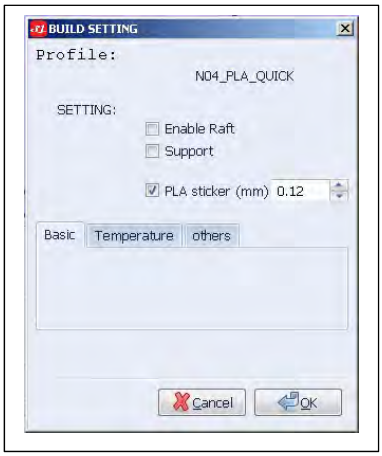
Build Gcode file:

1. **Build:**
   a. After modifying the 3D model in application, the 3D Model can be converted to Gcode file format by pressing the build icon. The file which you have imported will be converted to "Inno3D 3D Printer S1 GCode" file format automatically. The converted files will automatically be saved in the same folder of your STL file.

   b. Converted Gcode file will be saved as TWO files:
      i. Filename same as STL file with ".gcode" extension
      ii. Filename as "print.gcode"

   Important Note: If you print the 3D Model with SD-Card, the corresponding "print.gcode" file must be copied to the SD-Card for printing. (Inno3D 3D Printer S1 only can print the "print.gcode" file from the SD-Card!!

   c. Before building the Gcode file, dialog box will be opened for necessary print parameters setup.

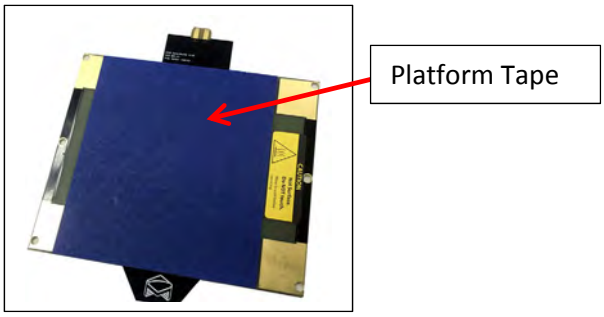


- **Enable Raft:** Raft is a technique used to prevent warping. Your 3D Model is printed on top of a "raft", a bottom layer – very thin layer of plastic instead of directly print on the build surface. The raft will be printed larger than the object and creates adhesion surface with the print platform.

- **Print with Support:** Enabling the support feature is very important for floating objects or objects with floating parts. The supporting material can be easily removed from the print out.

  Important Note: If "Support" setting is selected for printing, "Raft" MUST also be selected. The support construction must be printed on the Raft.

- **Enable Platform Tape:** The Platform Tape is a 103mm x 118mm blue color sticker which bundled with Inno3D 3D Printer S1. With Platform tape, your print object will not be deformed or bended during the print process.



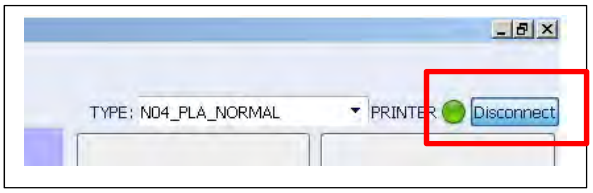
- Platform Tape is recommended for printing, the default blue color Platform Tape thickness is "0.12mm". If you find the print object cannot be adhered in the print platform very well, you can try to modify the thickness to a smaller value. (For example, set the thickness to 0.10mm)

Print Model:

Inno3D 3D Printer S1 can directly print the 3D model from PC to 3D Printer – online printing, or store the gcode file in SD-Card and print the file from SD-Card without PC Connected – offline printing.

1. **Direct Print from PC:**

a. Power off the Inno3D 3D Printer S1 and your PC
b. Connect the bundled USB cable from the PC USB port to the Inno3D 3D Printer USB port
c. Power-on the Inno3D 3D Printer S1 and your PC for connection
d. Execute the Inno3D 3D Printer application
e. Ensure that the "Connect" Icon in the application is clicked and the connect indicator icon turn to Green color



f. Ensure the Inno3D 3D Printer S1 is connected to your PC with "PC Connected" message shown in the display.

g. Press the “Print” icon to print the 3D Object directly to the Inno3D 3D Printer

2. Print from SD-Card:

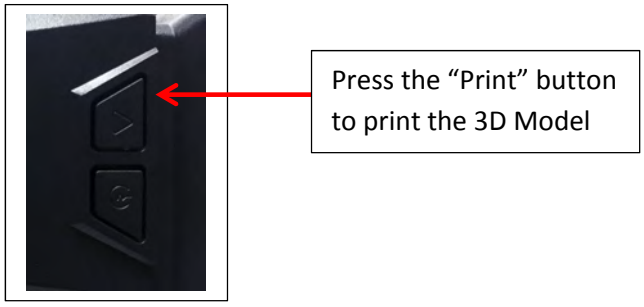
a. If you want to keep the Gcode print file in SD-Card and print it later, just simple browse the folder (.gcode file will be generated in the same folder of your STL object which you were imported for converting).

b. Copy the gcode with filename “print.gcode” in the folder to the root directory of the SD-Card (For example: convert the 3D Model file “circle.stl” in application, the application will create TWO gcode file, with filename “circle.gcode” and “print.gcode”. Please copy the print.gcode file to the SD-Card instead of the circle.gcode)

c. Insert the SD-Card to the Inno3D 3D Printer S1 SD-Card slot

d. Ensure the SD-Card insertion indicator is turned ON (Blue light)

e. Simply press the “Print” button for printing the 3D Model



f. Wait the Nozzle temperature and the print platform temperature reaches the default setting, and the model will start to print.

[CAUTION]: Don't touch the Extruder and Platform during Extruder and platform pre-heating and printing operation. Extremely high temperature on the Extruder and Platform surface.

Section 10: 3D Printer Control in Application

When the Inno3D 3D Printer S1 is connected to the Application program, all buttons of the 3D printer disabled. The 3D Printer can only be controlled by the Application Program.

To control the Inno3D 3D Printer S1:

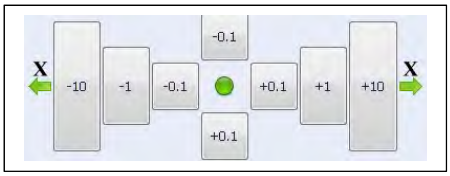
1. Click the "Control" icon

2. The 3D Printer Control Menu will be shown

3. X, Y, Z Axis Control

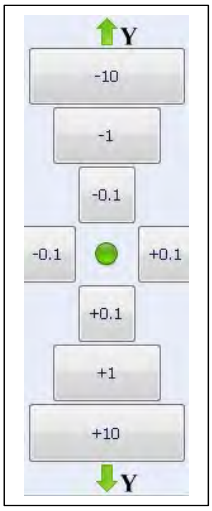
Move X, Y, Z or all three Axis to the Home Position

4. Move X-Axis (Left or Right)



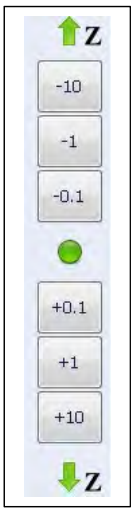
Move X-Axis in position of “0.1mm”, “1.0mm” or “10mm”

5. Move Y-Axis (front or Back)



Move Y-Axis in position of “0.1mm”, “1.0mm” or “10mm”

6. Move Z-Axis (Up or Down)



Move Z-Axis in position of “0.1mm”, “1.0mm” or “10mm”

Appendix I:

General Safety

CAUTION: The power supplies and internal circuitry in the Inno3D Printer system may produce high voltages and energy hazards, which can cause bodily harm. Only trained service technicians are authorized to remove the covers and access any of the components inside the 3D Printer.

CAUTION: The Inno3D Printer should be "Power Off" by pressing the power switch to "OFF" position before connecting or disconnecting the main power supply cables.

CAUTION: Plug the power cord in wrong socket /or location may damage your 3D Printer. Please ensure the power cord is inserted in correct orientation and socket before powering on your 3D Printer

WARNING: To prevent the spread of fire, keep candles or other open flames away from the 3D Printer at all times.

When operating your 3D Printer:

- Do not restrict airflow into the 3D Printer by blocking any vents or air intakes.
- Avoid placing loose papers underneath your 3D Printer
- Do not push any objects into the air vents or openings of your 3D Printer. Doing so can cause fire or electric shock by shorting out interior components
- Do not use your 3D Printer in a wet environment, for example, near a bath tub, sink, or swimming pool or in a wet basement.
- To help prevent electric shock, plug the 3D Printer power cables into properly grounded electrical outlets. This cable is equipped with three-prong plugs to help ensure proper grounding. Do not use adapter plugs or remove the grounding prong from a cable. If you must use an extension cable, use a 3-wire cable with properly grounded plugs.

- Position 3D Printer cable and power cables carefully. Route cables so that they cannot be stepped on or tripped over. Be sure that nothing rests on any cables.
- Do no modify power cables or plugs. Consult a licensed electrician or your power company for site modification. Always follow your local/national wiring rules.
- Before you clean your 3D Printer, disconnect power cable from the electrical outlet. Clean your 3D Printer with a soft cloth only. Do not use liquids or aerosol cleaners, which may contain flammable substances.
- Clean the air vents on sides of the 3D Printer with a clean, damp cloth. Lint, dust and other foreign materials can block the vents and restrict the airflow.
- The optimal operating temperature and humidity for the 3D printer is between 10C and 35C, and humidity of between 20% and 50% (Relative Humidity with Non-condensing environment); Operating outside these limits may result in low quality print models.

- Power off the 3D Printer and disconnect the power cable from the power outlet in any of the following cases:
    - If there is any smoke coming from the 3D printer
    - If the product is making an unusual noise not heard during normal operation
    - Any metal or a liquid touches the internal parts of the 3D Printer, and/or Extruder
    - During an electrical storm
    - During a power failure
- Always leave the print model on print platform until it is completely cool down

Appendix II:

RADIO AND TELEVISION INTERFERENCE

FCC Statement

1. 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.

2. Changes or modifications not expressly approved by the party 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 Federal Communications Commission (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 the receiver.
- Connect the equipment to 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.

You may also find helpful the following booklet, prepared by the FCC: "How to Identify and Resolve Radio-TV Interference Problems." This booklet is available from the U.S. Government Printing Office, Washington, DC 20402.

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