UP BOX

version：4.6.23

Table des Matières

Précautions

1. L'imprimante 3D UP BOX nécessite l'alimentation fournie par le fabricant.
Dans le cas contraire, la machine peut être endommagée voir même causer un incendie. Merci également de garder votre alimentation éloignée de toutes sources d'humidité ou de chaleur.

2. Pendant l'impression, la buse de l'imprimante atteindra 260°C et la plateforme d'impression peut atteindre 100°C. Veuillez ne pas toucher cette partie à main nue lorsqu'ils sont chauds, y compris avec les gants résistants à la chaleur fournis car cela peut endommager les gants mais aussi vos mains.

Etiquette d'avertissement de l'imprimante
Haute temperature, ne pas toucher!

4. Pendant l'impression la buse et la plateforme d'impression vont ce déplacer à haute vitesse. Veuillez ne pas toucher ces parties lorsqu'elles sont en mouvement.

Etiquette d'avertissement de l'imprimante
: Parties en mouvement, ne pas toucher!

5. Veuillez porter des lunettes lorsque vous retirez la matière support de vos modèles ou les détachez de la plaque perforée.

6. Lorsque vous imprimez de l'ABS ou du PLA une légère odeur sera produite, veillez à faire fonctionner votre imprimante dans un environnement bien ventilé. Nous vous suggérons également de positionner votre imprimante dans un environnement stable en terme de température, les courants d'airs ou autres variations pouvant créer des effets non désirés sur vos impressions.

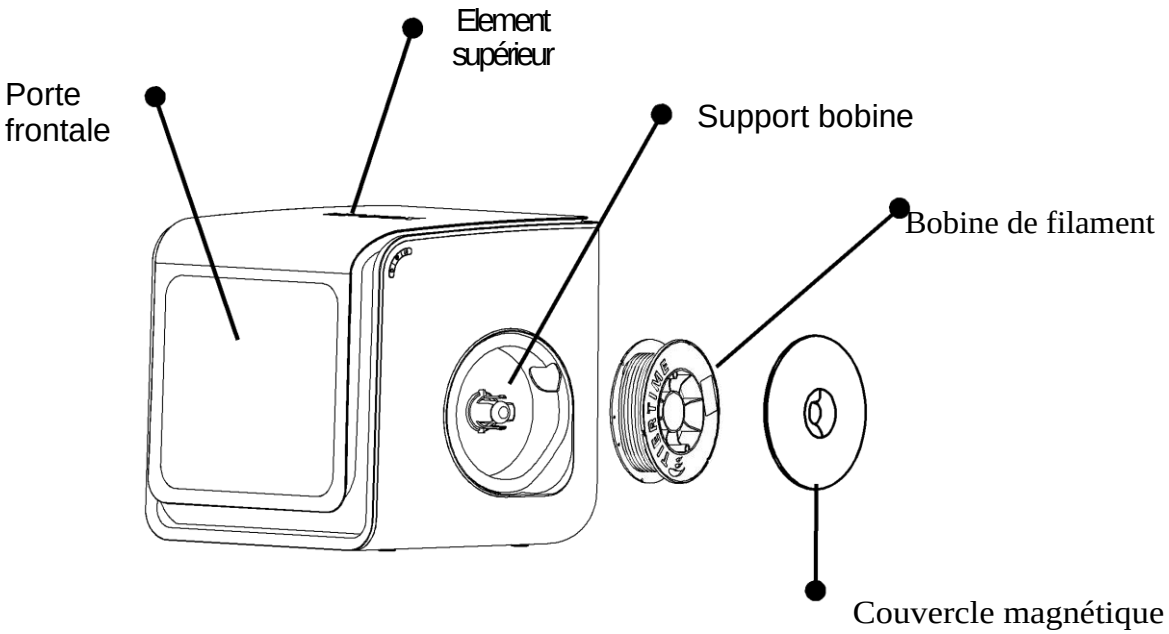
7. Lorsque le logiciel UP envoie des données à l'imprimante (lorsque le statut sur la barre du logiciel - en bas à droite affiche "sending layers"), ne débranchez pas le câble USB, en effet, cela résultera en une perturbation du transfert de données et un échec de l'impression. Le câble peut être débranché à la fin du transfert de données.

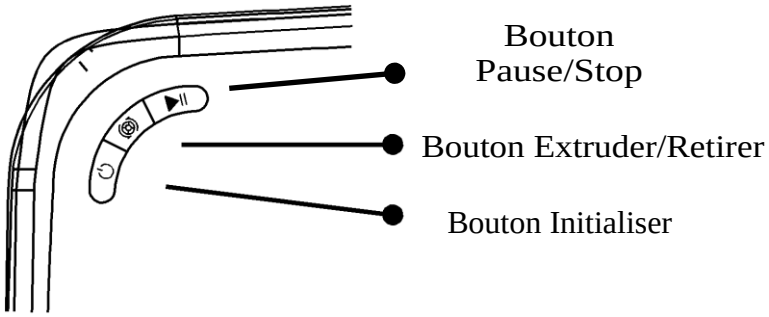
8. La température de l'environnement de fonctionnement de la UP BOX doit être compris entre 15oC et 30oC et l'humidité relative doit être comprise entre
20%-50%. Il est recommandé de décharger la charge statique du corps de l'utilisateur avant de toucher la machine pour prévenir d'une potentielle interruption de l'impression ou dommage de l'imrpimante.

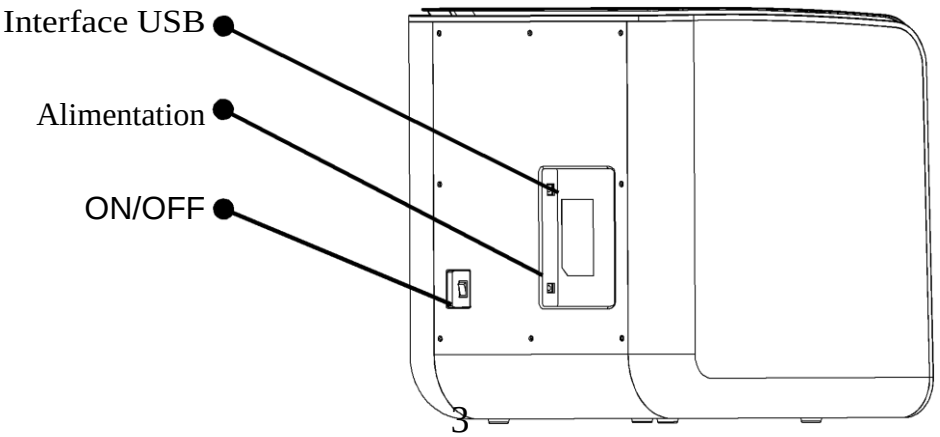
Specifications de la UP BOX

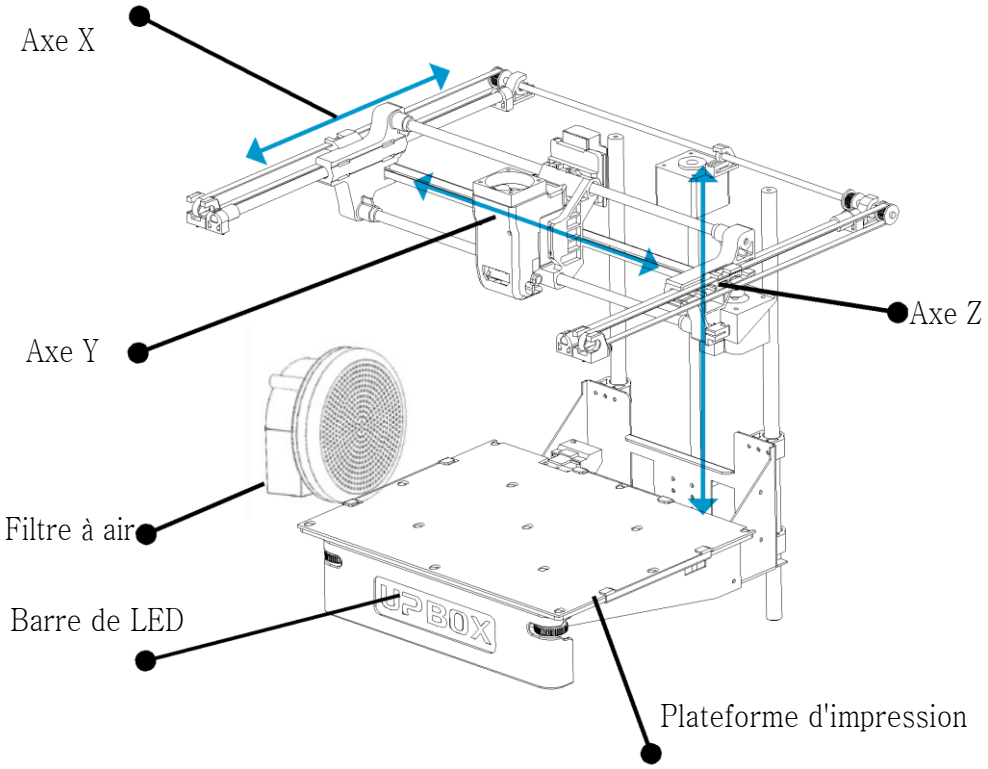
Technologie d'impression	MEM (Melted Extrusion Manufacturing)
Volume de construction	255 x 205 x 205mm (L x l x h) 10" x 8" x 8"
Tête d'extrusion	Simple, Modulaire pour un remplacement facile.
Resolution du Z	0.1/0.15/0.20 /0.25 /0.30 /0.35 /0.40 mm
Structure suport	Technologie de support intelligente générée automatiquement, facile à retirer, modifiable.
Nivellement de la plateforme	Nivellement completement automatisé avec sonde de nivellement intégrée.
Surface d'impression	Plateau chauffant avec surface ABS
Impression autonome	Oui
Bruit moyen en fonctionnement	51dB
Fonctions avancées	Capteur de porte Filtration d'air, barre de led "Full- Color"
Logiciel fournis	Logiciel UP
Formats de fichiers Compatibles	STL, UP3, UPP
Connectivité	USB
Système d'exploitation	WinXP/Vista/7/8, Mac OS
Alimentation	110-240VAC, 50-60Hz, 220W
Chassis	Boite plastique avec cadre métalique
Poids de l'imprimante	20KG/44LB
Dimensions de l'imprimante	489 x 495 x 520 mm(WxHxD) 19.5" x 19.5" x 20.5"
Poid avec Packaging	
Dimension avec packaging	(W x H x D) " x " x "

Présentation de l'imprimante

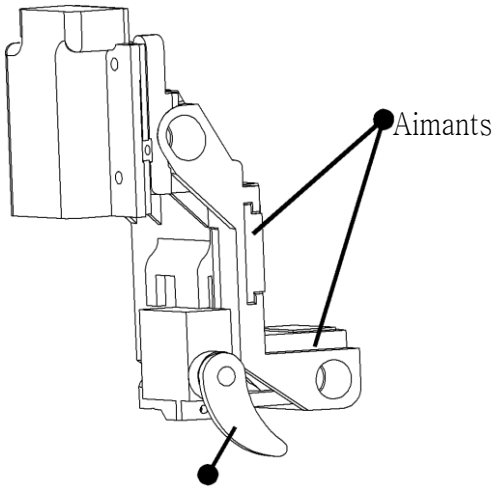




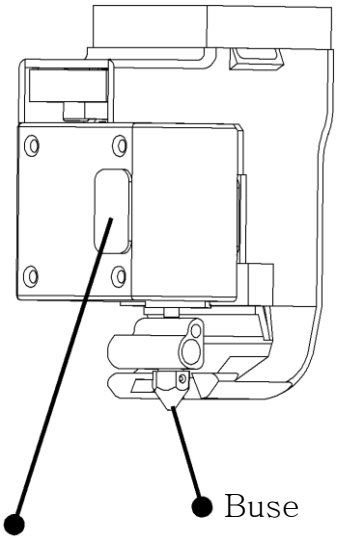




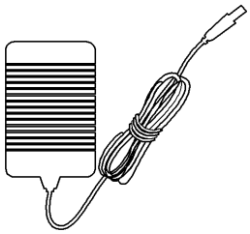
Réceptacle de tête d'impression



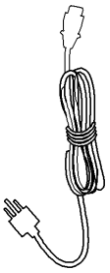
Tête d 'impression



Accessories

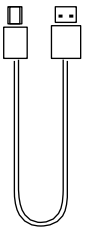


Alimentation

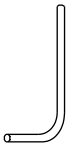


Cordon d'alimentation

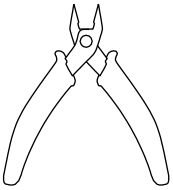
Spatule



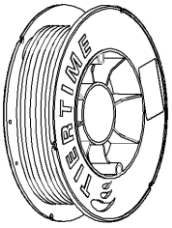
Cable USB



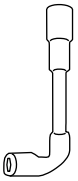
clé hexagonale 2.5mm



Pince

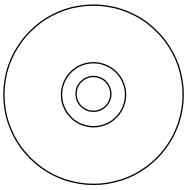


Filament ABS

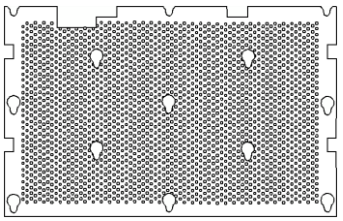


Clé pour buse

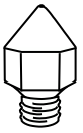
CD-ROM



Plaque perforée

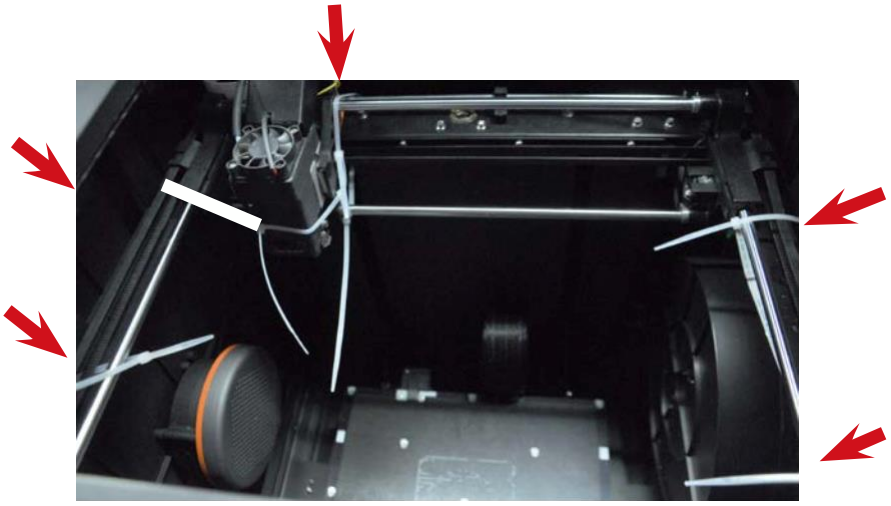


Buse



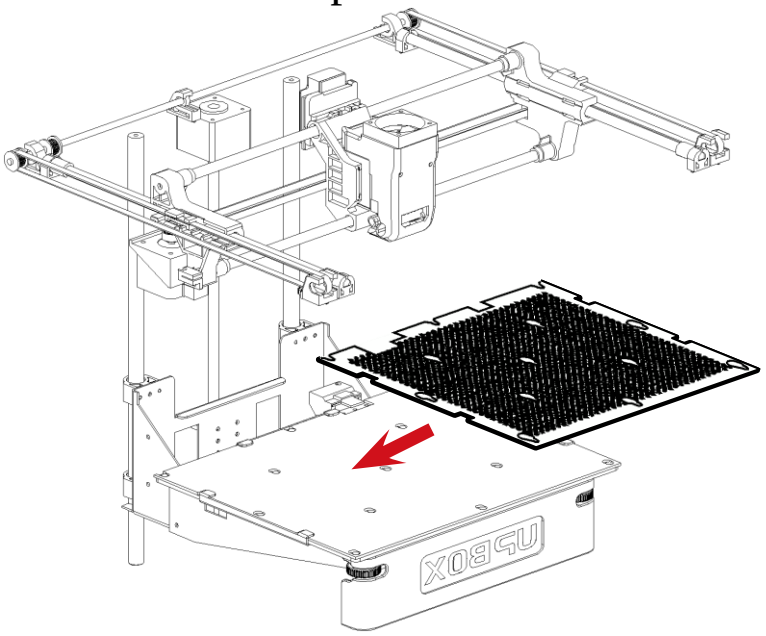
*If anything is missing please contact your local distributor or *support@pp3dp.com*

Retirer les colliers de serrage

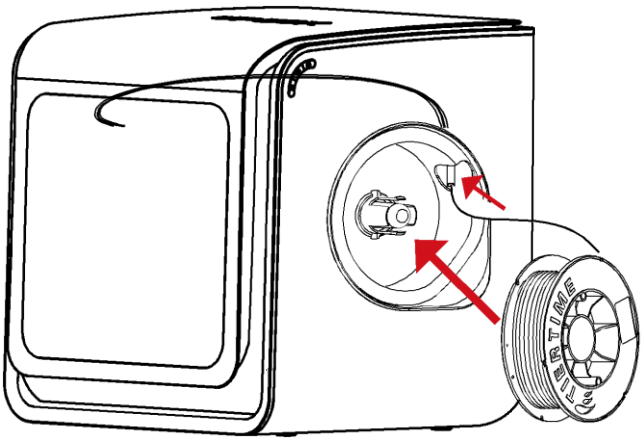


Retirer les colliers de serrage en nylon des tiges lisses horizontales.

Installer la plaque perforée



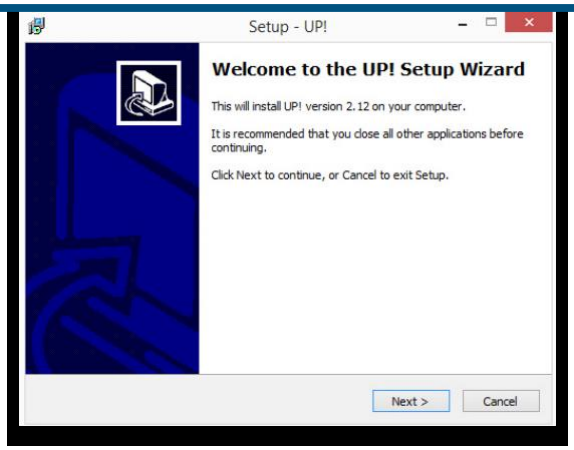
Installer le Filament



Pour installer la bobine de filament, ouvrez le couvercle magnétique et insérez le filament dans le tube de guidage du support bobine.

Poussez le filament dans le tube de guidage jusqu'à ce qu'il sorte de l'autre côté, positionnez la bobine sur la tige et couvrez la bobine avec le couvercle magnétique.

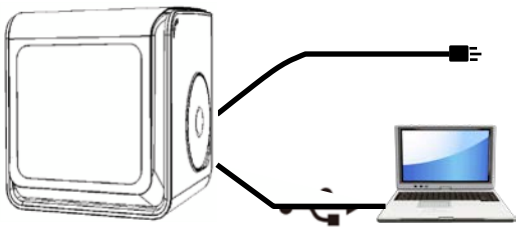
Installer le logiciel UP



1.Rendez-vous sur la section support du site www.pp3dp.com pour télécharger la dernière version du logiciel UP.
2.Double clickez sur UP! Setup.exe pour installer le logiciel (répertoire d'installation par défaut *C:\ Program files\UP*) Une fenêtre pop up va aparaitre, sélectionnez "installer" et suivez les instructions pour finaliser l'installation. Les drivers de votre imprimante sont désormais installés..

Après l'installation, vous trouverez dans le dossier UP:
Le dossier Driver contient les drivers de l'imprimante.
Le dossier Exemple contient les fichiers STL pièces détachées de l'imprimante et fichiers exemples
.

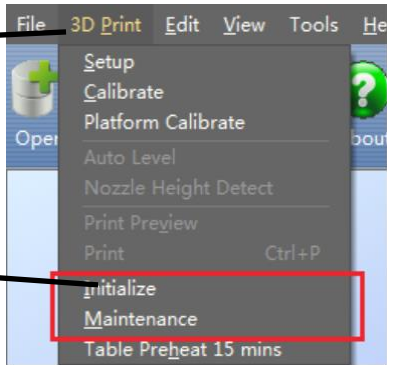
Tester l'imprimante et installer les driver



Tout d'abord assurez vous que votre imprimante est allumée et connectée d'une part à l'alimentation électrique et d'autre part à l'ordinateur par le câble USB.
.La Barre de LED "UP BOX" doit désormais être allumée en Jaune.

Dans le menu principal du logiciel, cliquez sur "impression 3D"

Si les options "Initialiser" et "Maintenance" sont allumées et disponibles à la sélection, cela indique que l'installation de votre imprimante a été effectuée avec succès.

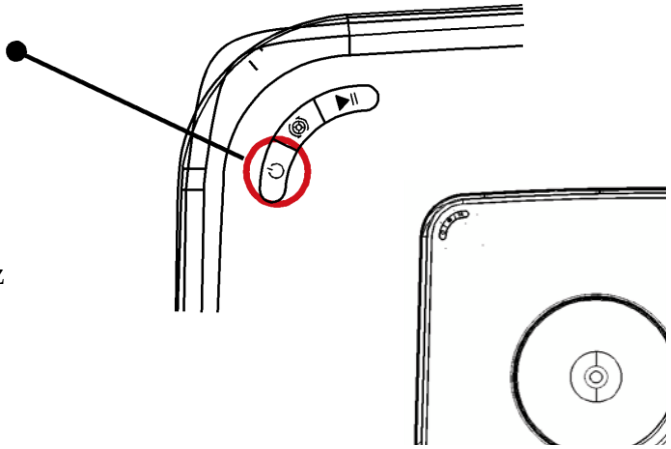


Initilisation de l'imprimante

A chaque fois que vous allumez votre machine, l'initialisation est requise. Pendant l'initialisation, la tête et la plateforme d'impression vont se déplacer lentement jusqu'à toucher vos endstop sur les axes X Y et Z. Cette étape of XYZ axes. This is essential as the printer need to find the endpoints of each axis. Only after initialization, the other software options will light up and become available for use.

Il y a deux méthodes d'initialisation:
1. La UP BOX peut être initialisée en cliquant sur le bouton initialiser présenté ci-dessous.
2. Lorsque l'imprimante est au repos, presser longuement sur le bouton "initialiser" déclenchera également une initialisation

Bouton initialiser



Autre fonctions du bouton initialiser :

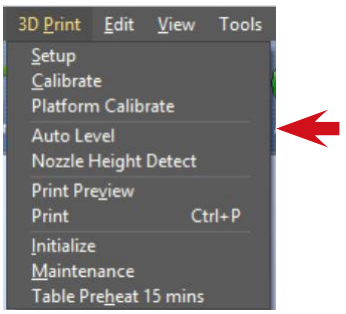
1. Arrêter l'impression en cours : durant l'impression pressez le bouton et maintenez le durant quelques secondes.

2. Relancer la dernière impression: Double clickez sur le bouton

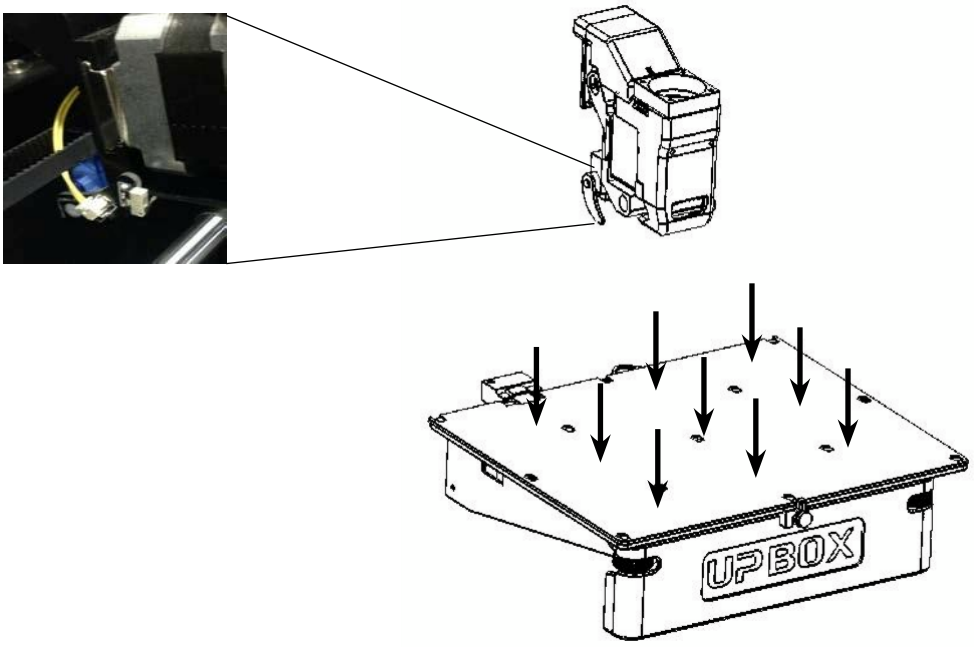
Calibration automatique de la Plateforme

La calibration de la plateforme est l'étape la plus importante pour réaliser vos impressions avec succès, cela assure la bonne adhésion de votre première couche. Idéalement, la distance entre la buse et la plateforme doit être constante. En réalité, cette distance varie celon sa position en raison de plusieurs facteurs (ex : plateforme légèrement inclinée) et cela peut causer un décollement de vos impressions (warping) ou même un échec complet..

La UP BOX possède une fonction de calibration automatique de la plateforme ainsi qu'une détection automatique de la hauteur de buse. En utilisant ces deux fonctions, le processus de calibration sera achevé rapidement et simplement.

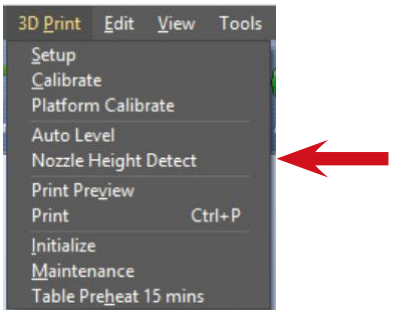


Dans le menu "Impression 3D", sélectionnez "Auto Level" pour lancer le nivellement automatique. La sonde de nivellement va alors s'abaisser et commencer à sonder 9 positions sur la plateforme. Les données de nivellement seront ensuite mises à jour et enregistrées dans votre machine. La sonde se relève ensuite automatiquement.

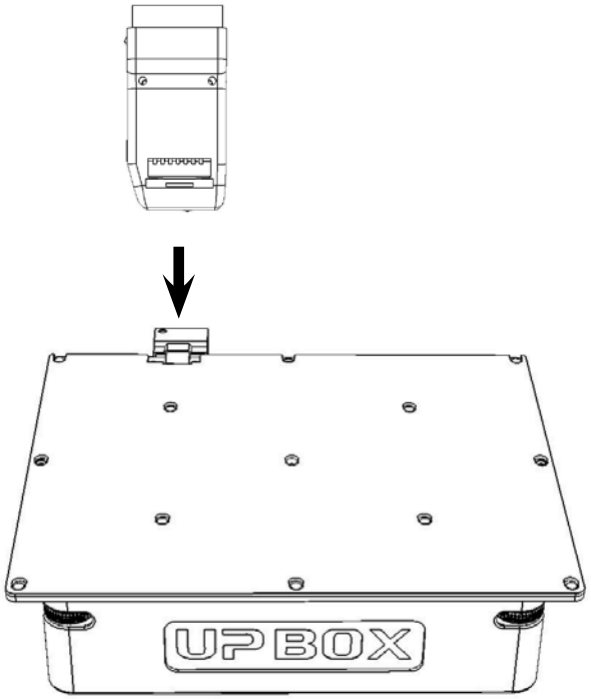


Astuces de Calibration :
1. Effectuez la calibration lorsque la buse n'est pas chauffée.
2.Retirez les plastiques résiduels de la buse avant la calibration
3..La plaque perforée doit être insérée dans la plateforme lors de la calibration.

Détection automatique de la hauteur de buse



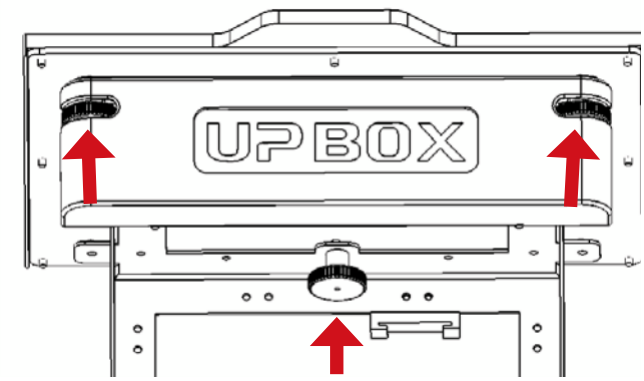
Sélectionnez "Nozzle Height Detect" dans le menu "impression 3D". La tête d'impression va alors se déplacer vers le module de détection de hauteur de buse. Elle va alors toucher et presser la partie métallique sur le module pour effectuer sa mesure.
La valeur de hauteur de buse détectée sera alors enregistrée dans votre machine.



Si les décollements (warping) persistent après l'auto-levelling, cela peut être du a un réglage incorrect de la plateforme excédant la capacité de la fonction auto leveling. Dans ce cas, l'utilisateur doit effectuer un nivellement manuel avant l'auto levelling (voir page suivante).

Vous pouvez également niveller la plateforme sans utiliser le module d'auto levelling et de détection de la hauteur de buse. Rendez-vous en P.30 pour plus de details.

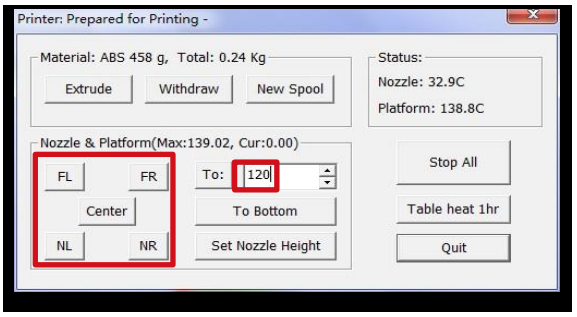
Nivellement manuel de la plateforme



Vous n'avez normalement pas besoin d'effectuer cette opération. Celle ci n'est uniquement nécessaire si la calibration automatique n'a pas nivellé correctement votre plateforme.

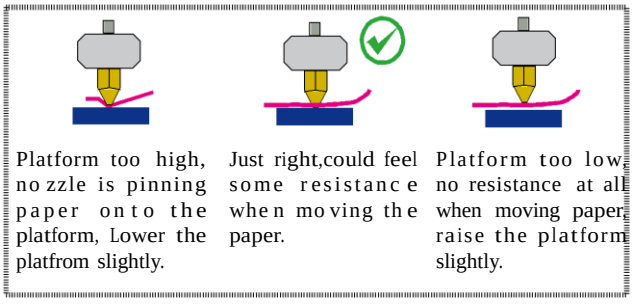
Il y a trois vis sous la plateforme de votre UP BOX. Deux vis à l'avant et une troisième sous la plateforme à l'arrière. Ces vis peuvent être serrées et desserrées pour ajuster votre plateforme.

Dans la fenêtre "Impression 3D"-"Maintenance", vous pouvez déplacer la tête d'extrusion dans cinq positions différentes sur la plateforme. Vous pouvez également utiliser le bouton "Aller à" pour déplacer la plateforme à une hauteur choisie.



Tout d'abord, déplacez la tête au centre de la plateforme et déplacez la plateforme de telle sorte à ce qu'elle touche presque la buse. Munisez vous d'une feuille de papier pour déterminer la hauteur correcte de votre plateforme.

Essayez de déplacer la feuille de papier pour sentir la résistance. Lorsque vous sentez la résistance de la buse, , base on the right side diagram. Make sure you can feel similar drags at all 5 positions by moving the print and adjusting the screws while the platform height is fixed.



Platform too high, nozzle is pinning paper onto the platform, Lower the platfrom slightly.

Just right,could feel some resistance when moving the paper.

Platform too low no resistance at all when moving paper, raise the platform slightly.

Other Options of the Maintenance Menu:

Withdraw: *the printer heat up and withdraw filament from the print head.*

New Spool: *to tell the software what is the current filament type, the filament that used must match here.*

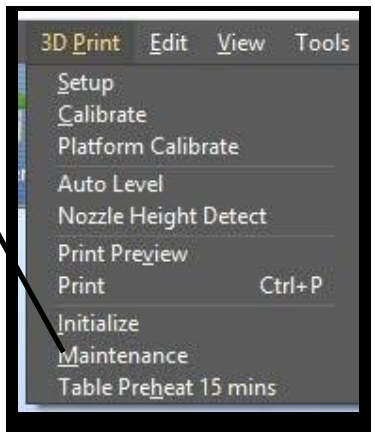
Heat Table 1 hr: *preheat table for 1 hour.*

To Bottom: *move the platform to the bottom.*

Set Nozzle Height: *set the current platform height as nozzle height.*

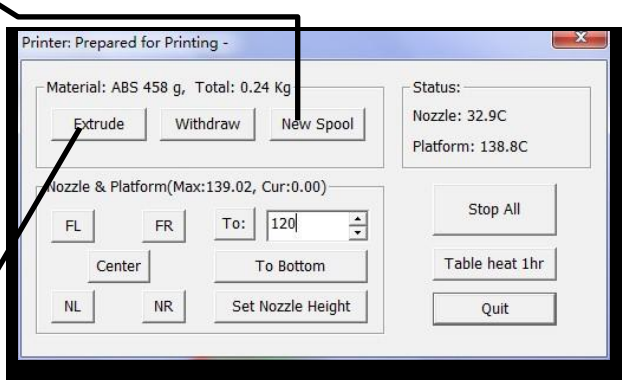
Prepare for Printing

1. Make sure printer switched on and connec ted to computer. Select Main Menu - 3D Print - Maintainance.

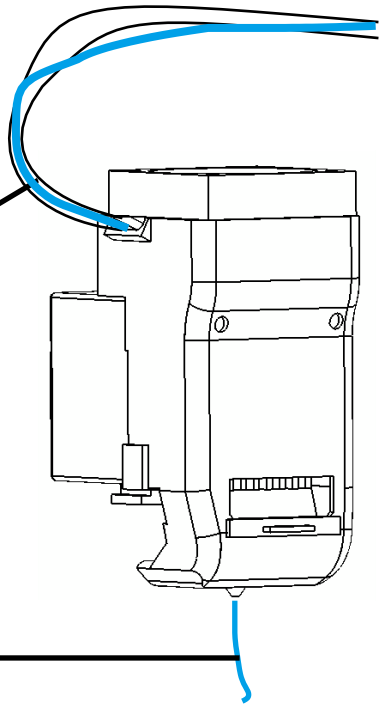


2. Click New Spool and choose ABS and input filament weight.

3. Click "Extrude" button, the print head will start to heat up, within 5 minutes its temperature will reach 260°C, then printer will buzz and the print head start to extrude.

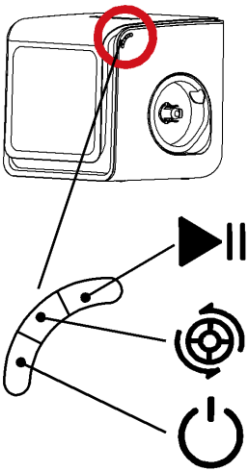


4. Gently insert the fliament into the small hole on the print head. The filament will be feed into the print head automatically when it reach the extruder gear inside the print head.



5. Check the nozzle for plastic extrusion. If plastic is coming out from the nozzle that means filament loading correctly and ready for printing.
(The extrusion will stop automatically.)

Printer Control Buttons



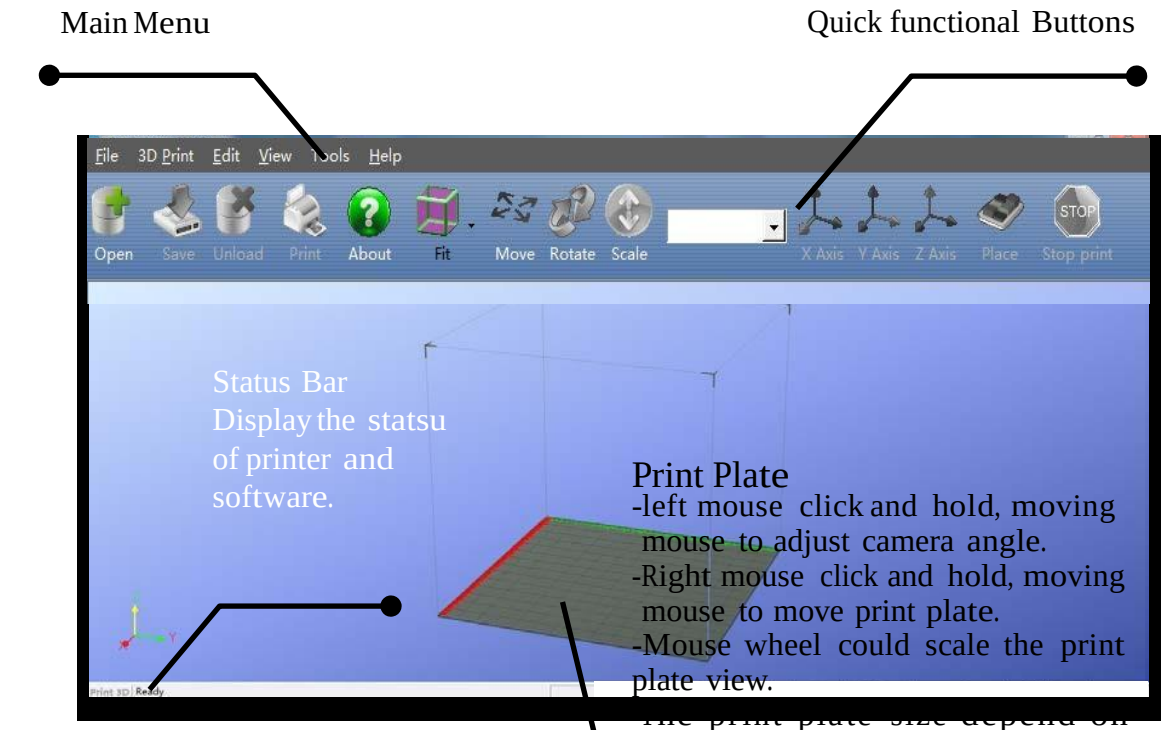
Long Press ●—	Double Click ●●	Single Click ●
Stop Printing	Pause/Resume Printing	Single click any button will switch on the internal lighting for 3 minutes
Extrude Filament	Withdraw Filament	
Initialize Printer	Reprint last job	

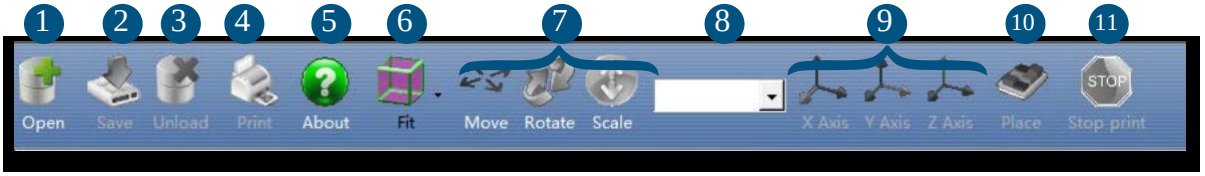
LED Light Bar

Different color and behavoiur of the "UP BOX" light bar indicate different status of printer.

UP BOX	Breathing: Printer switched on, uninitialized.
UP BOX	Breathing: Printer initialized, ready for printing.
UP BOX	Single Letter Rotation: Data transfer and printing in progress. Breathing: Paused.
UP BOX	Error. If a single letter is always on, it may represent following errors: U: Print Head Error P: Motion System Error B: Print Head Temp. Error O: Build Platform/Chamber Temp. Error X: SD Card Error

Software Interface

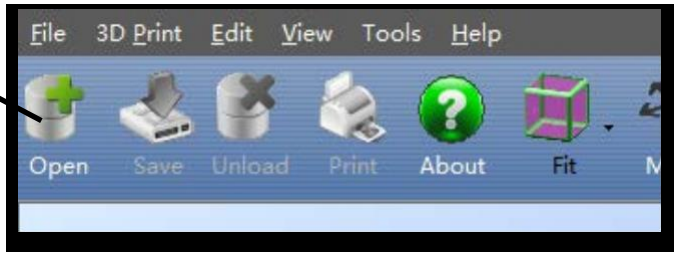




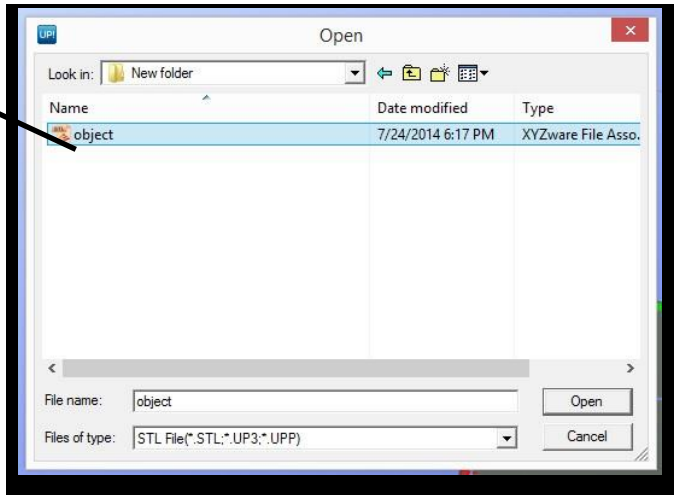
1. Open: Load a model.
2. Save: Save the model into .UP3, a propritory 3D file format for UP printers.
3. Unload: Unload the selected model.
4. Print: Print the current print plate.
5. About: Display software version, printer model, firmware version and etc.
6. View Perspective: A variety of pre-set of perspective.
7. Adjustments: Move, Rotate, Scale.
8. Set the value of adjustments.
9. Set the orientation of adjustments.
10. Place: Place the model to the center of the print plate. If more than one model exist software will optimize their positions and distances to each other.
11. Stop: If connected to printer, click this will stop the printing process. (cannot be resumed)

Loading a Model

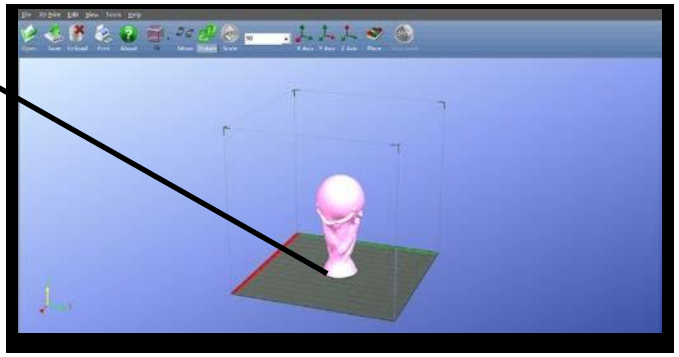
1 Click "Open"



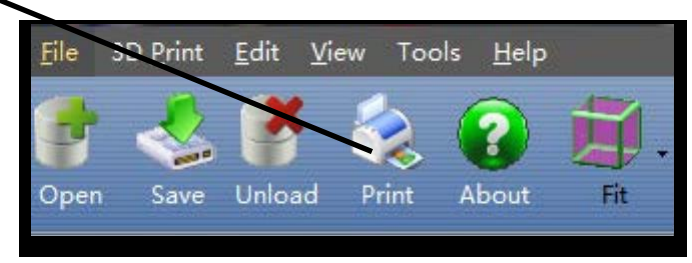
2 Choose your model.



3 Loaded model on the print plate.

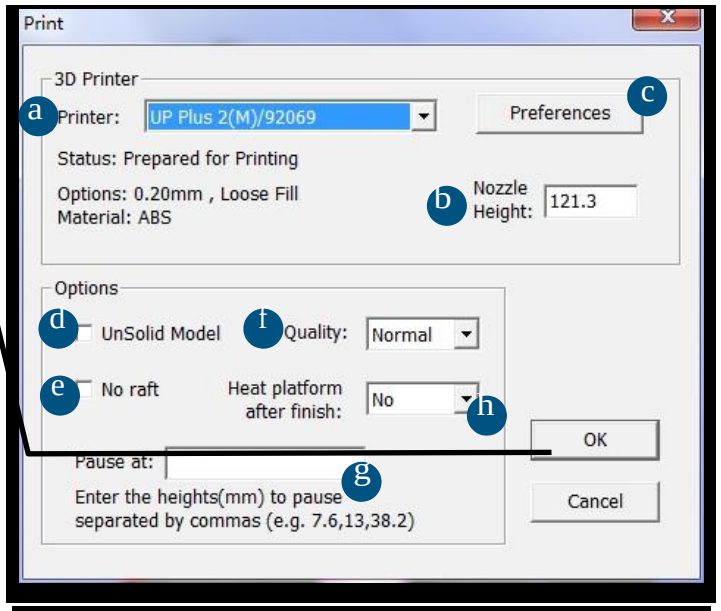


4 Click "Print" to open the print preview window.



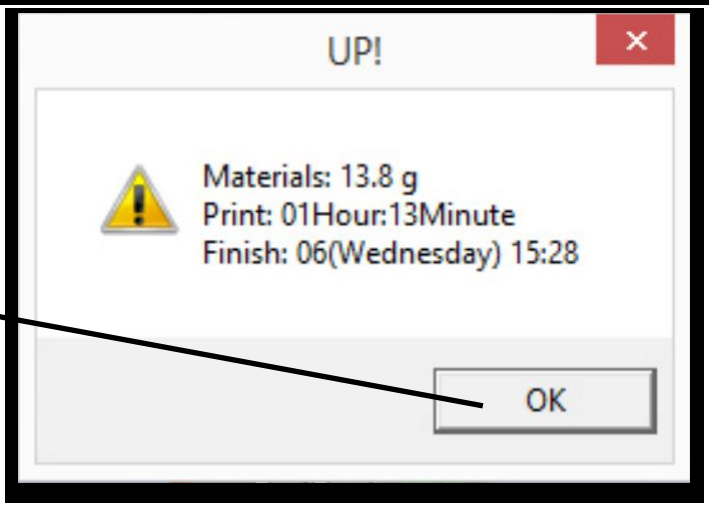
Click "OK" to start printing.
The program will process the model and then transfer the data to the printer.

5



After sending the data, the program will suggest the amount of material and time needed for the model in a pop up window.
At the same time, the nozzle will start to heat up. The print job will start automatically.

6

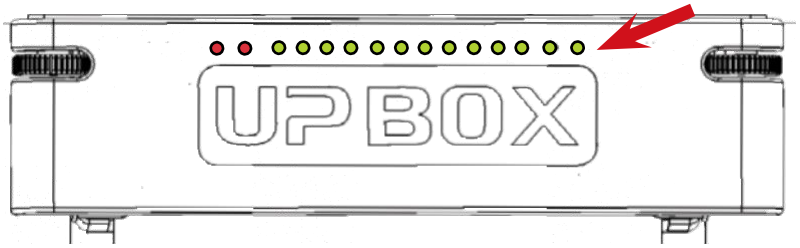


Annotation of Print Preview Interface:

a. Display the printer model.
b. Dispaly the noozle height.
c. Click to enter printer preference to set printing parameters.
d. If your model is not solid (defective), turn on this option.
e. No raft will be printed if this is turned on, print bed leveling will be disabled as well.
f. Print Quality: the better the print quality the slower the print speed.
g. Set the pause height, the printer will pause at indicated heightness for changing filaments.
h. Continuous heating of platform after printing, save heating time for consective printing and preventing breakage due to rapid cooling in cold weather.

When printer finished receiving the data, user could disconnect it from computer for untethered printing.

Printing Progress



Printing progress is shown in the LED progress bar on top of the UP BOX letters. The first two red LED represent printing of raft, the others represent the rest of the model.

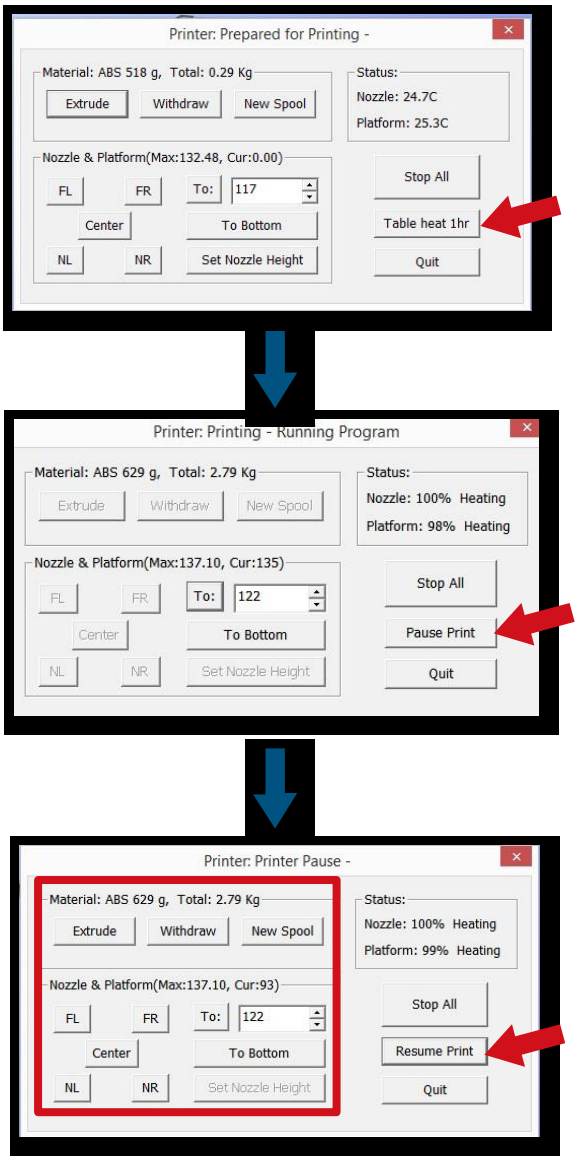
Pause of Print Job

During printing, the machine could be paused through maintainence interface.

When the printer is idle, there is a **"Table heat 1 hr"** button under "Stop All" button. Press this button will keep platform heated for one hour.

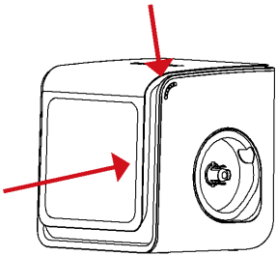
When the printer starts to print, "Table heat 1 hr" button will disappear. The button will reappear after the printing of **raft is finished** but the button becomes **"Pause Print"** which indicates pause function is now available. Press this button the printer will pause the print job and the button will become **"Resume Print"** for resuming the print job**.**

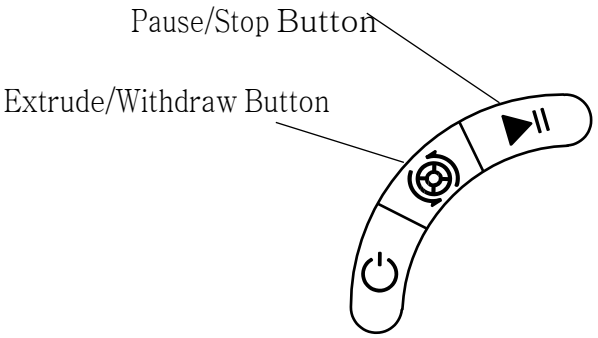
When the print job is paused, the other buttons on the maintence interface will become available. User could change filaments using "Withdraw" and "Extrude" buttons or move the print head and print platform with the location buttons and the "To" button. User should be aware not to crash the print into the print head.



Pause of Print Job without using Software

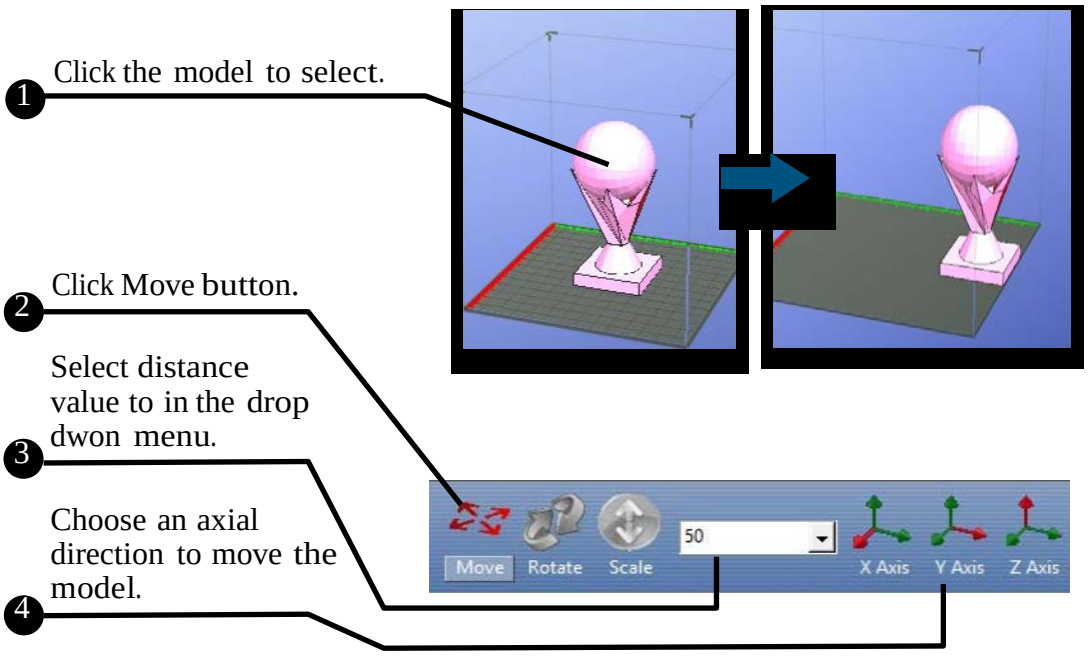
During printing when the front door is opened, printing will be paused automatically. After closing the front door the print job will not be resumed until the user double click the pause button.





Alternatively, during Printing, double click the Pause/Stop button, the print job will be paused. It is possible to use the Extrude/Withdraw button to change filament during pausing. Double click the pause/stop button again to resume the print job.

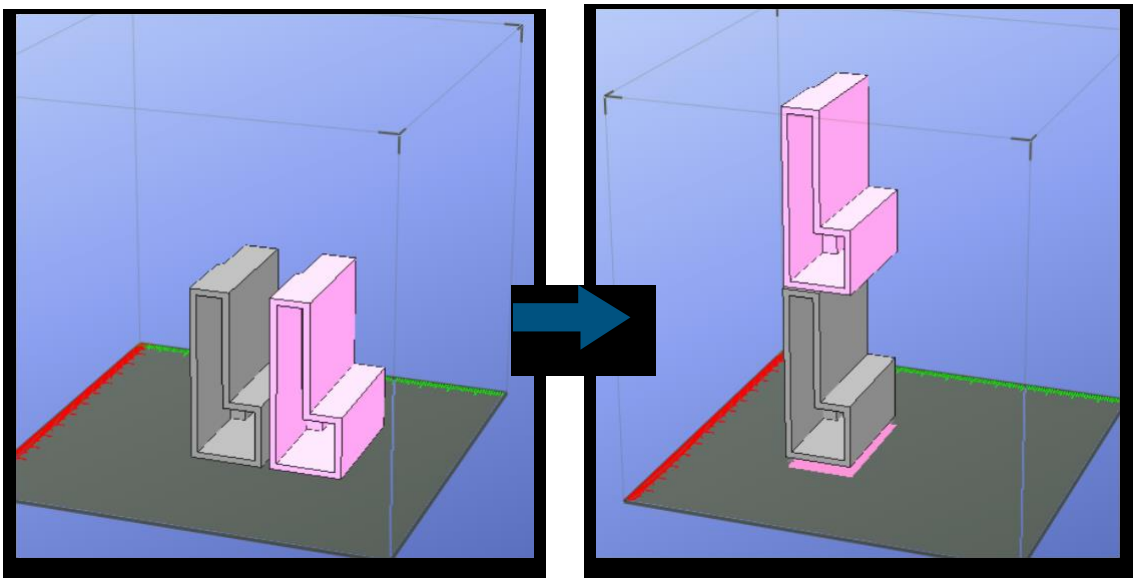
Moving Model



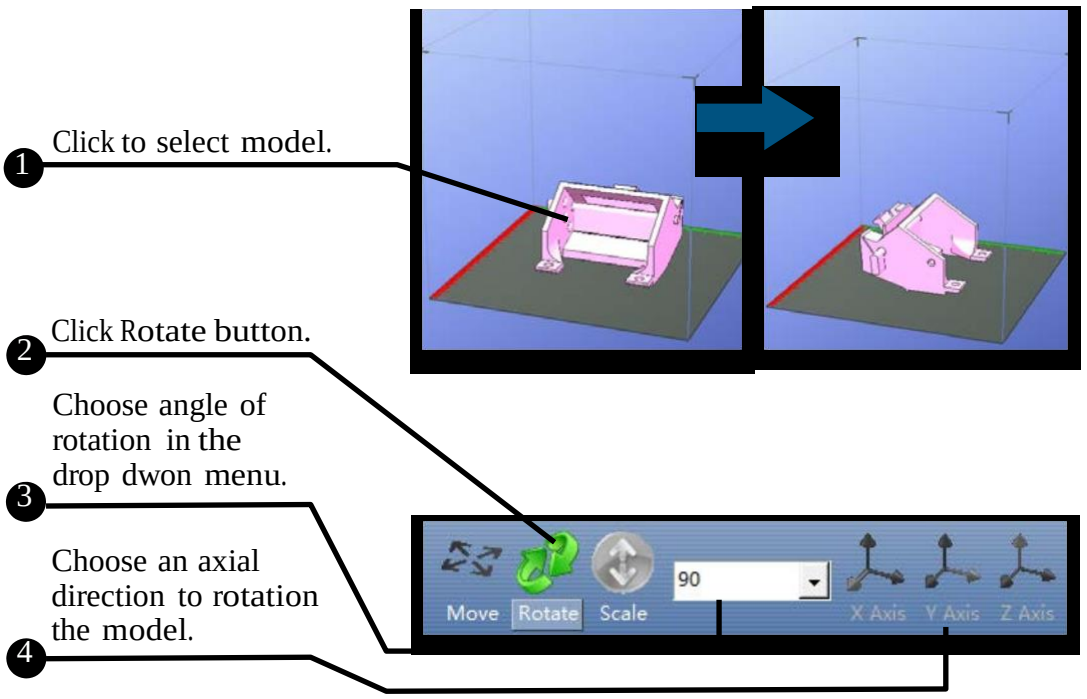
Drag model with mouse on XY-plane: ***Press and hold Ctrl key****, mouse* ***left click and hold*** *the target model, now the model could be dragged around on XY-plane.*

Drag model with mouse on Z-axis: ***Press and hold Shift key, mouse left click and hold the target model****, now the model could be dragged along the Z-axis.*

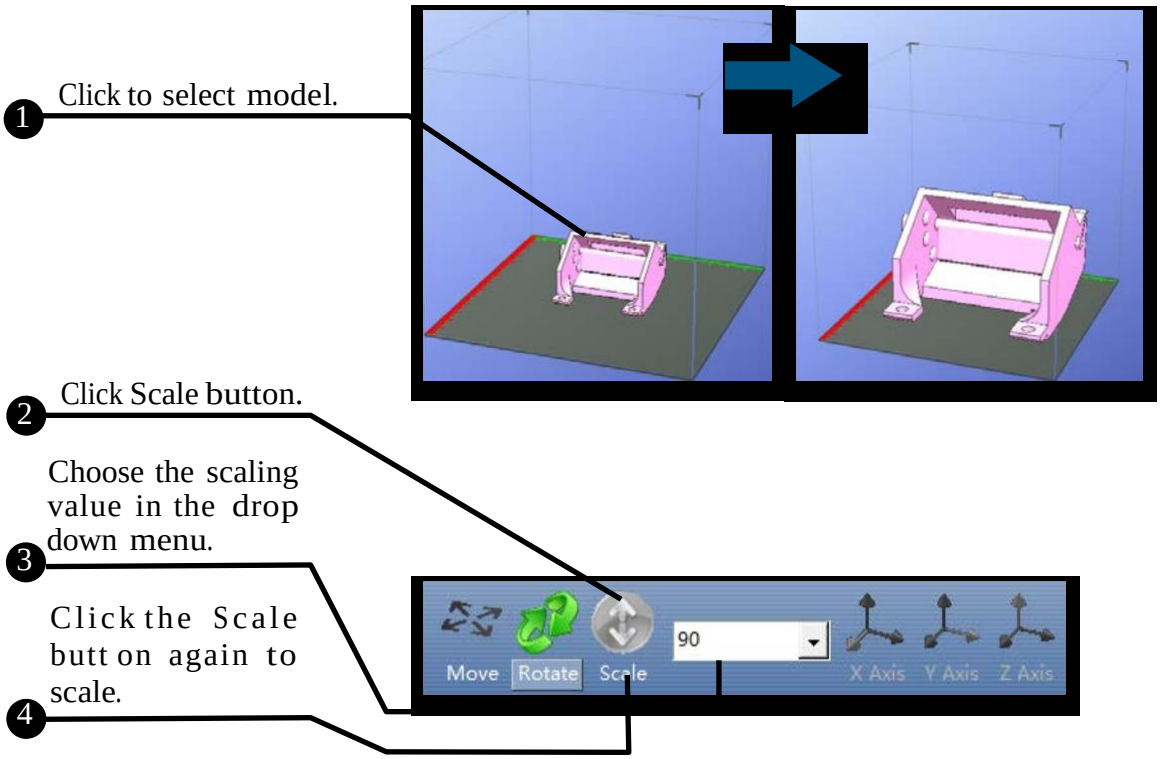
Multiple models could be ***stacked****. They can also be fused into single model by "Merge" function in the "Edit" Menu.*



Rotate Model

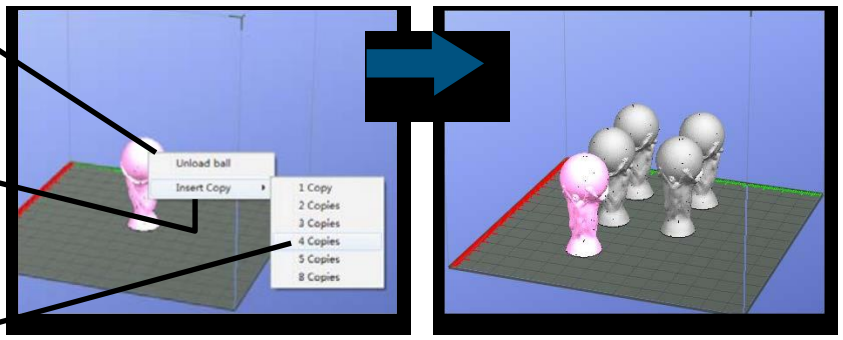


Scale Model

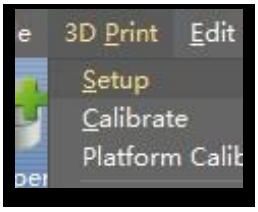


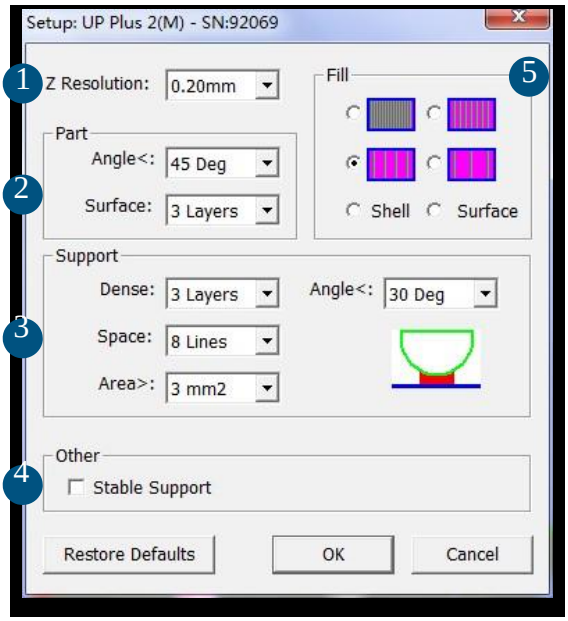
Duplicate Model

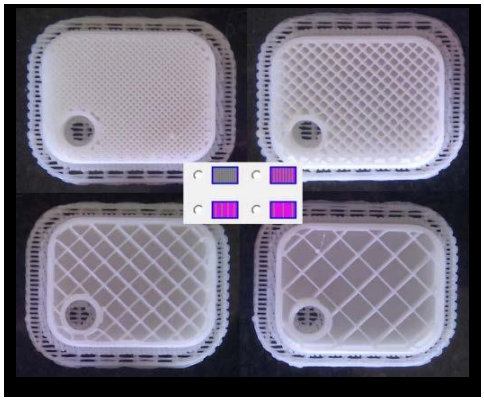
1. Click to select model.
2. After selection, right click to open menu
3. In the insert copy menu, select the number of copy for duplication.



Printing Parameters







1. Z-resolution: Thickness of each printed layer, the lower the value, the more details will be generated.
2. Part:
   Angle: Determine the range of dense support generation.
   Surface: Choose the how many layers will be made for bottom of the model.
3. Support:
   Dense: How many layers for dense support generations.
   Space: Set the density of of support structure, the larger the value the less dense of the supporting structure.
   Area: If the supporting area is less than this value, no support will be generated.(it is possible to turn off support by choosing Only Base.)
4. Stable Support: Generate more stable support but more difficult to remove.
5. Infill: The photo shows the effects of 4 different infill options.

Shell

UP

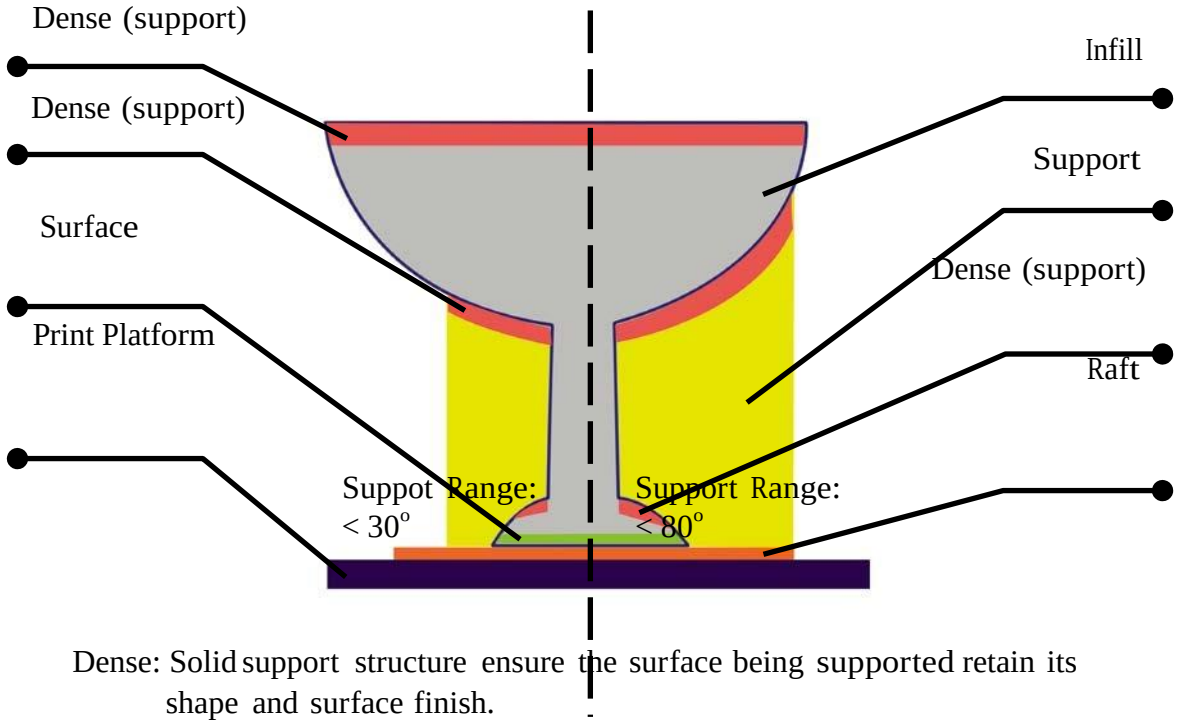
No infill in shell mode.

Surface

UP

The object will be printed without bottom layers and topl ayes. Only a surface with single layer thickness will be made.

Annotation for printing parameters



Dense: Solid support structure ensure the surface being supported retain its shape and surface finish.

Infill: The inner structure of the printed object, the density of infill could be adjusted.

Raft: The thick structure that asist the adhesion of object to the platform.

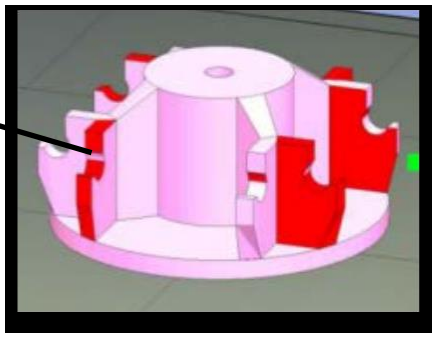
Surface: The buttom layers of the printed object.

Repair Model

UP software contains model repair function, could be used to fix simple defects.

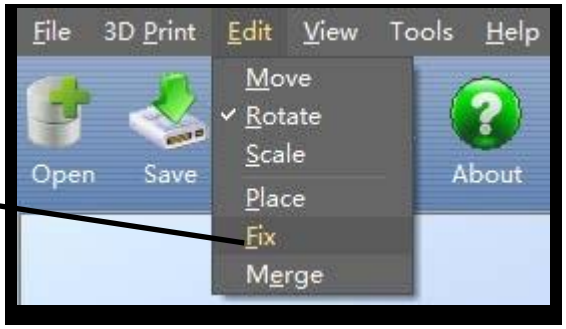
If the model contains defective surfaces. The sofware will highlight the part with red.

1



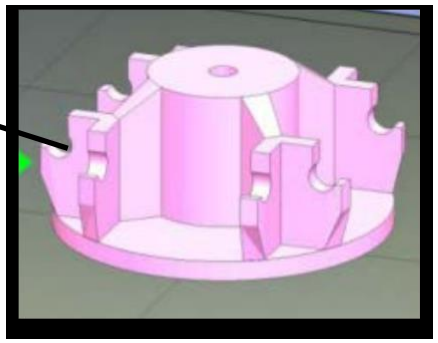
After selecting the model, choose Edit - Fix to repair the model.

2



Repaired

3

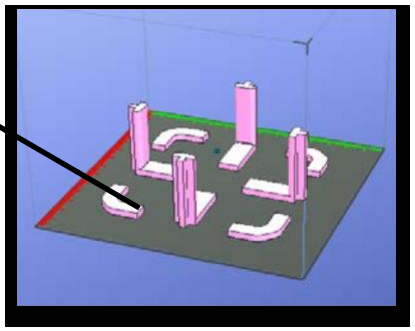


If the model cannot be repaired, please use other 3D modeling or mesh modifying tools.

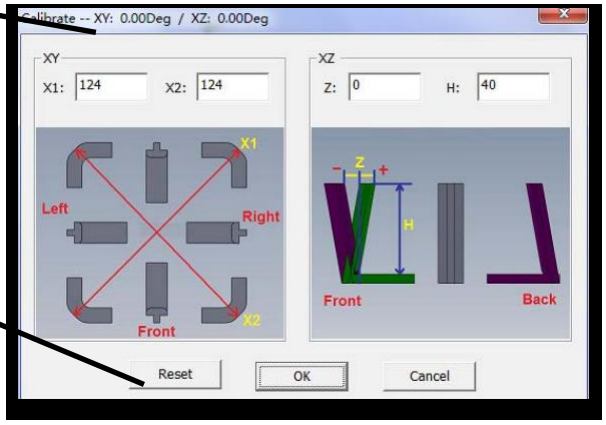
Calibration for the Correct Dimension

If prints are too big or too small or skewed, user could re-calibrate the printer to print in correct dimension. The method is to print a calibration model, measure its dimension and feedback to the software.

1. Load and print the calibration model: *C:\ProgramFiles\UP\Example\Calibrate96.UP3*

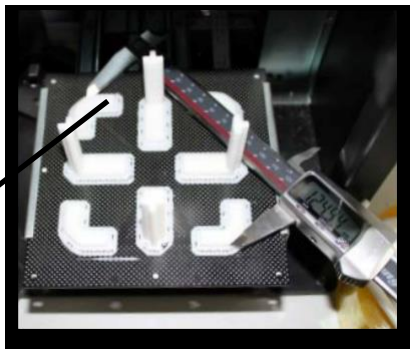


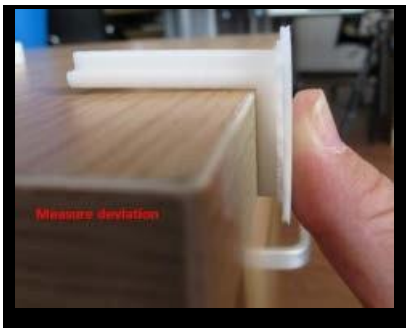
2. Open: 3D Print - Calibrate
This will open the calibration panel.



3. Hit "Reset" button to revert the value back to default, make sure the upper panel dispaly: XY:0.00 Deg/XZ:0.00 Deg

4. Measure the printed model accroding the calibration panel.
Input the measured values into the software and finish the calibration.





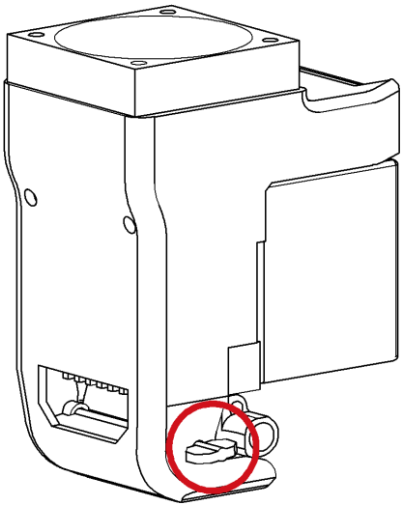
Printing Techniques

1. **Ensure accurate nozzle height.** Nozzle height value too low will cause warping, too high will crash nozzle to platform causing damage and clogging. It is possible to manually fine tune nozzle height value at "maintenance" and "print preview" panels. User could try to adjust the nozzle height value plus or minus 0.1 - 0.2mm base on previous results.

2. **Well calibrate the print platform.** Unleveled platform usually cause warping.

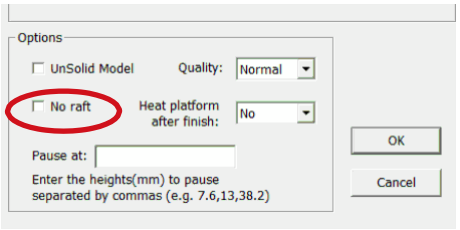
3. **Give enough time for sufficient pre-heating.** Please use the "3D Print" - "Preheat". A well preheated platform is essential for printing large objects without warping.

4. **The air flow direction of the fan on the print head is adjustable.** There is a small lever on the fan duct, when printing PLA turn the lever anti-clockwisely to direct air flow to nozzle, this will cool the PLA as soon as it is extruded and improve print quality. When printing large object using ABS, to minimize warping, turn the lever clockwisely to direct the air away from nozzle to slow down the cooling. For smaller ABS prints that warping is less likely to happen, user could direct the air to nozzle for better print quality.

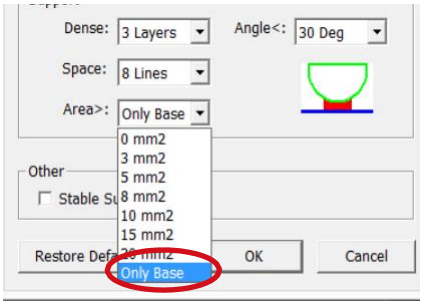


Air Flow Adjustment Knob

5. **No raft printing.** It is highly recommended to use raft for normal printing as it improves adhesion and is required for leveling compensation, therefore it is turned on by default. User could turn it off in the "Print Preview" panel.



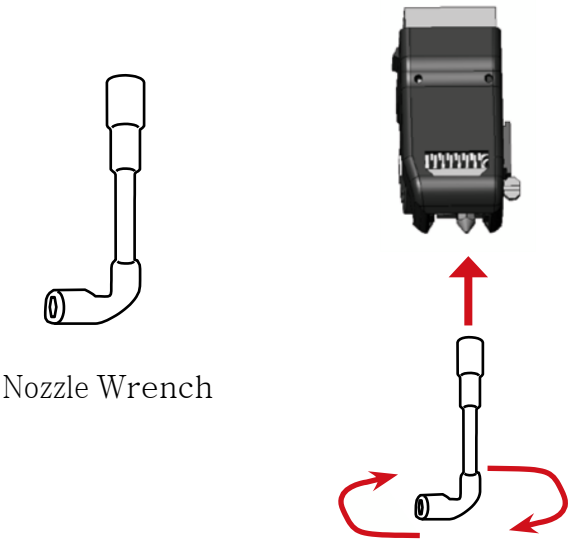
6. **No support printing.** It is possible to print without supporting structures, user can turn off support by choosing "Base Only" in Area drop down menu of printing preference panel.



Maintenance

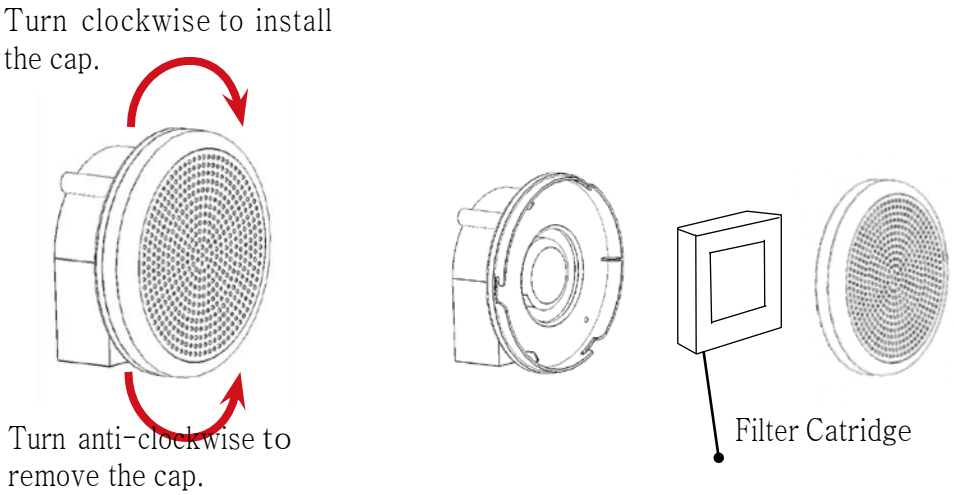
Remove the nozzle.

After a long time of printing, the nozzle could become very dirty or even clogged. We can replace it with a new one while the old one could be cleaned and reused.



1. Use "Withdraw" function in the maintenance panel, nozzle will heat up to printing temperature.
2. Wear heat resistance gloves provided.
3. Wipe the nozzle with tissue or cotton.
4. Unscrew the nozzle using the wrench provided.
5. Remove the clog: there are many method such as drill through the clog using a 0.4mm drill bit, submerge in acetone or using a heat gun to melt and blow away the clog.

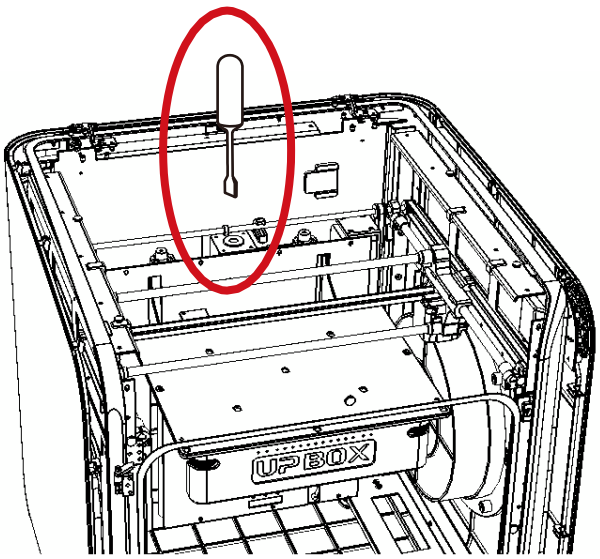
Replace the Air Filter

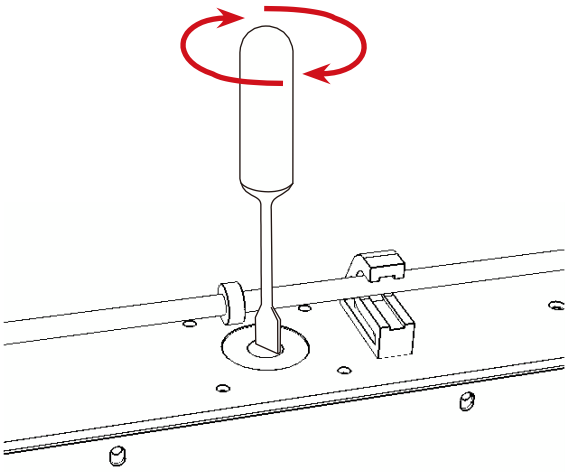


Moving the Platform Manually

Under certain circumstances, users may need to move the platform up and down manually. This could done by turning the Z-axis lead screw with a slot screw drive.

We do not recommend pressing or lifting the platform with brute force, as the platform could be damaged or unleveled.

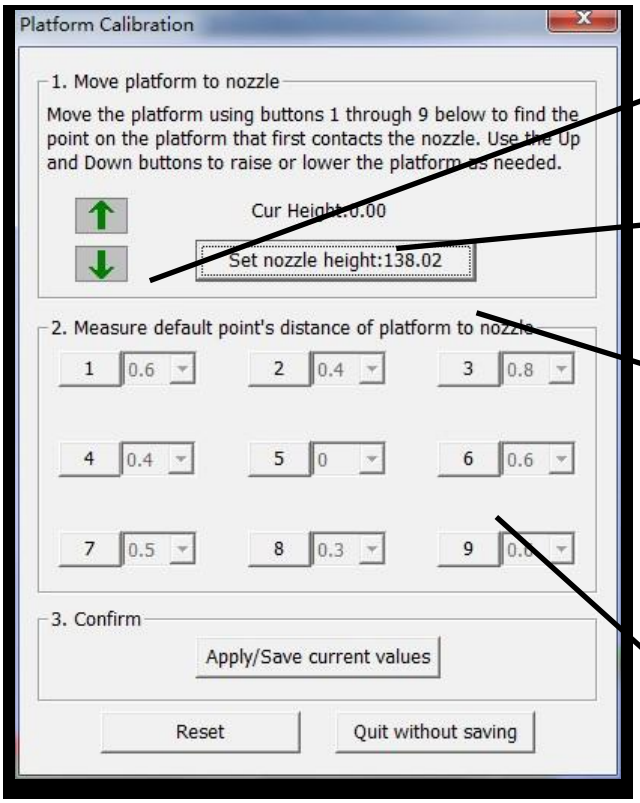




Fine Manual Calibration

1. Setting nozzle height.
2. Setting compensation values.

Open: Menu - 3D Print - Platform Calibrate



A. Moving Platform UP/DOWN: click/hold the button, platform will move accordingly.

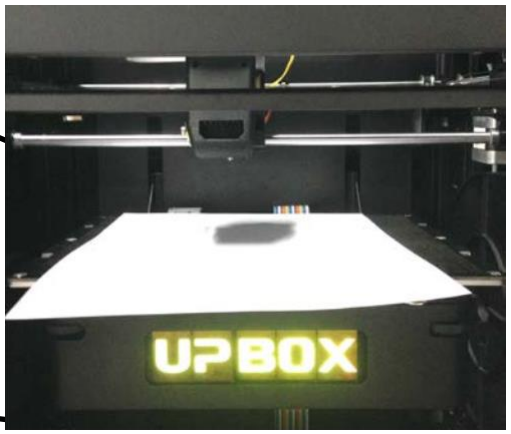
B. Display the current platform height.

C. Setting nozzle height: click this will set the current platform height as the nozzle height.

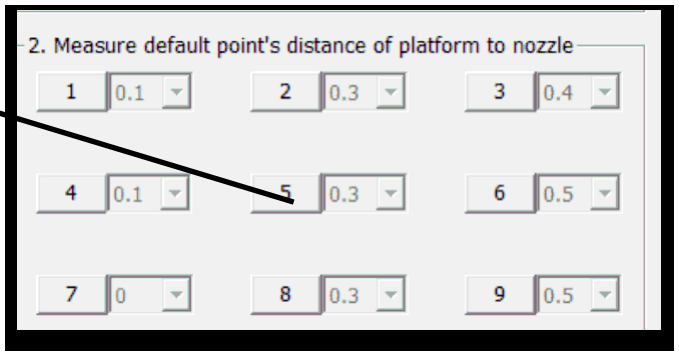
D. 9 calibration point buttons, represent 9 positions on platform, after clicking them the nozzle will move to the corresponding positions. The drop down menu beside the button is for setting leveling compensation values.

1. Protocol for setting nozzle height:

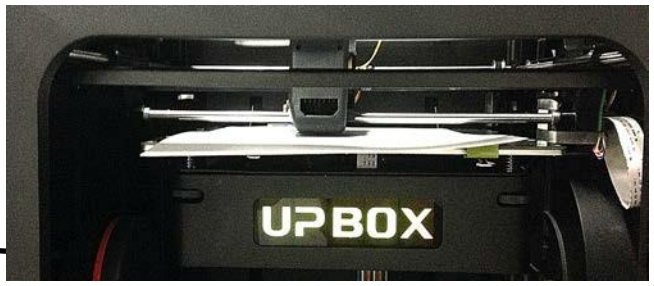
1. Initialize printer
2. Put a print paper on the platform.
3. Open the calibration interface and press the UP key, note the current height value, stop the platform at about 190.

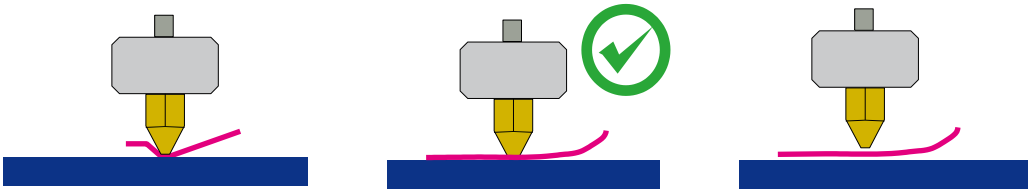


4 Hit the "5" button. Nozzle will go to the center of the platform.



5 Raise the platform until it is just touching the nozzle. Move the paper between the nozzle and platform and see if there is any resistance.





Platform too high, nozzle is pinning paper onto the platform, Lower the platfrom slightly.

Just right, could feel some resistance when moving the paper.

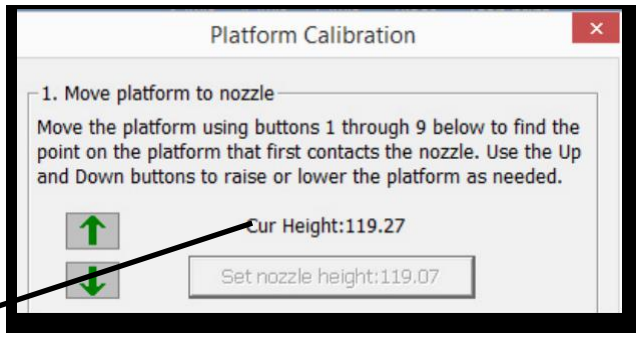
Platform too low, no resistance at all when moving paper, raise the platform slightly.

When obtained the right platform height, write down the value of "current height".

We will refer this as the **"Platform Height Value".**

Repeat step 1- 6 for all other 8 positions and obtain their platform height values.

6



When obtained the platform height value of all 9 positions. Find out the smallest value among the 9 calibration points.

As you can see in this case, the calibration point 1 has the smallest platform height value, it is actully the highest point on the platform. Therefore the platform does not need to rise as high as the other points to reach the nozzle

7

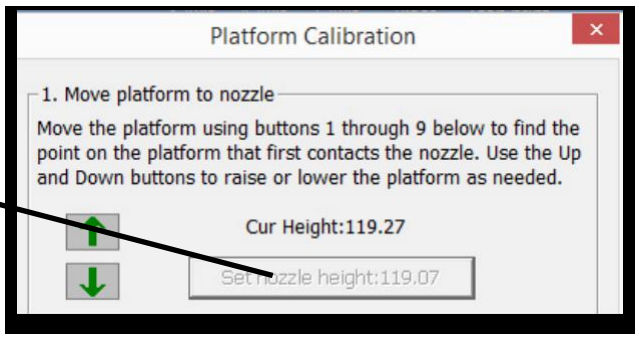
Platform Values at 9 calibration points (hypothetical):

1: 208	2: 208.5	3: 208.7
4: 208.6	5: 208.9	6: 209
7: 208.8	8: 208.9	9: 208.8

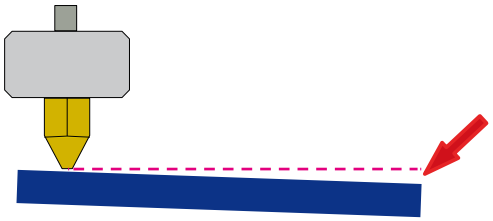
We set this mimimum platform height as "Nozzle Height" since it is where the nozzle first start to touch the platform. Now go to calibration point 1 and rise platform to 208.

Click the button" Set Nozzle Height" to finish.

8



2. Setting Compensation Values

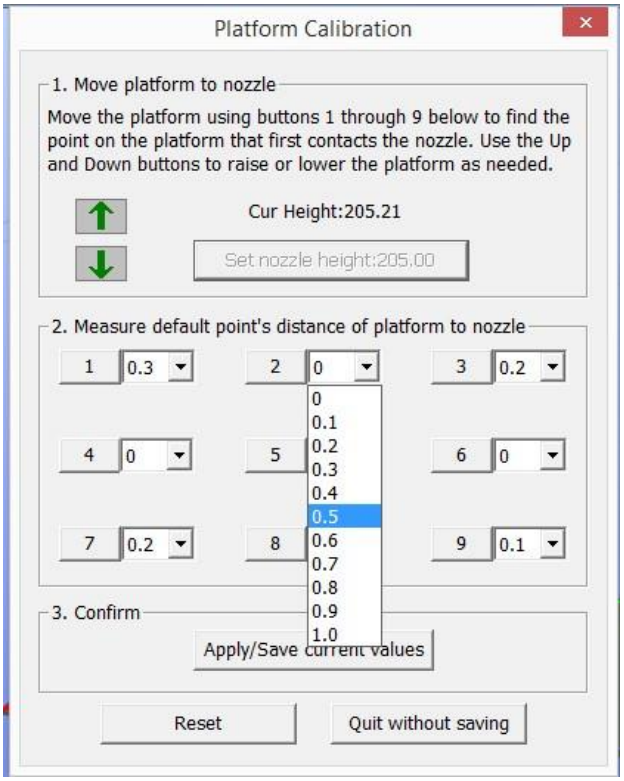


As shown in the left, when platform is at the "nozzle height", only part of the platform is close enough to the nozzle. Therefore we need to set compensation values for all other calibration points to inform the printer about the distance between nozzle and print surface throughout the XY plane.

Afte setting the nozzle height, the drop down menu next to the buttons will be available. A compensation value between 0 - 1.0 mm will be available for selection.

To calculate compensation value:

Platform height - Nozzle Height = Compensation Value



For example, setting the compensation value for calibration point No.3. Assume the "platform height" is 208.7 and the "nozzle height" is 208, the compensation value should be set to 0.7.

After setting 0.7 in the drop down menu, the nozzle will move to point No.3 and the platform will rise 0.7 mm. Now we can use the paper again to verify the compensation value.

After setting all calibration points click “Appy/Save Current Values ” to finish the calibration.

Troubleshooting

Problems	Solution
Printing or platform cannot reach target temp or over heat.	1.Initialize the printer.
	2.Heater catridge is broken, seek replacement.
	3. Cable is broken, replace the cable.
Cannot extrude plastic	1. Withdraw filament from print head, cut off the melted tip and reload it to the print head.
	2. Plastic clog the nozzle, replace new nozzle or remove the clog.
	3. The filament is too thick. Usually happens when using filament with poor quality. Please use UP Fila filament.
	4. For some model, if PLA consistently cause problem, switch to ABS.
Cannot detect the printer	1. Install the printer driver correctly.
	2. Check for defective USB cable.
	3. Restart printer and Computer
Others	Contact technical support: support@tiertime.net