

## Repetier-Host Documentation for use with Kora Pro 3D PC

### Installation

#### Prerequisites

Before you start with the installation, you should check if your computer meets the requirements. Currently available computers including the system integrated inside your Kora Pro 3D PC Printer machine should have no problems at all. If you wish to run Repetier-Host on any older computer running Windows XP you may have difficulties. The Repetier-Host works on Windows XP and later and on Linux. If you have a Macintosh computer, check for the Repetier-Host Mac on this site. All you need is .NET framework 4.0 or a recent Mono installation, if you are running Linux. The only other requirement is a graphic card with OpenGL. For a good rendering performance OpenGL 1.5 or higher is needed. With lower versions, you may have speed issues with live preview.

#### Getting the software

Go to the Repetier-Host ([download page here](http://www.repetier.com/download-now/)) <http://www.repetier.com/download-now/> and download the latest version for your operating system.

Now, go to the Arduino ([download page here](http://arduino.cc/en/Main/Software)) <http://arduino.cc/en/Main/Software> and download the latest version for your operating system.

#### Windows installation

First, go to the folder you downloaded the Arduino file into and run the

**arduino-windows.exe** file (or latest version) by right clicking on it and choose the 'RUN AS ADMINISTRATOR' option – follow the on-screen instructions to install the program. This is important as the Arduino Program contains essential driver files for your Kora Pro 3D PC machine to function correctly

Next, The Repetier-Host windows file comes with an installer. Go to the folder you downloaded the Repetier-Host file into and run the **setupRepetierHost.exe** file (or latest file version) by right clicking on the file and choose the 'RUN AS ADMINISTRATOR' option – follow the on-screen instructions to install the program

The Repetier-Host installer already contains Model slicing software Cura and Slic3r.

## Configuration

### Configuring your printer

The next step is to configure the Repetier-Host software so your printer can connect to your computer. If you have installed the 'Arduino' program (see page 1), all the necessary machine driver files will be installed.

For in depth details, forums etc. for Repetier-Host please visit <http://www.repetier.com>



Go to the menu "Config"->"Printer Settings" or click the button **Printer Settings**. You will see a window like this:

Printer Settings

Printer: Default 

Connection | Printer | Extruder | Printer Shape | Scripts | Advanced

Connector: Serial Connection Help

**Notice: You have a Repetier-Server installation. We highly recommend using the Repetier-Server connector instead. Click "Help" for more informations.**

Port: Auto

Baud Rate: 250000

Transfer Protocol: Autodetect

Reset on Emergency: Send emergency command and reconnect

Receive Cache Size:

Communication Timeout:  [s]

Use Ping-Pong Communication (Send only after ok)

The printer settings always correspond to the selected printer at the top. They are stored with every OK or apply. To create a new printer, just enter a new printer name and press apply. The new printer starts with the last settings selected.

OK Apply Cancel

**First**, click on the top drop-down box named 'Printer:' by default, this will show 'Default' as the printer name. Type 'RSPro' in that box – NOW CLICK the APPLY button at the bottom of the window. 'Default' should have now changed to 'RSPro'.

**In the first tab named 'Connection'**, you set how to connect with your printer. In "Port" you select the port, where your printer is connected – normally 'Auto' will automatically find your machine. If not, at the opening of the window, all available ports were scanned and added to the list. Select the right one by clicking the Windows 'Start' button, right click 'Computer' on the right-hand list,

click 'Manage' then 'Device Manager'. Then expand the PORTS (com & lpt) – with your Kora Pro 3D PC connected to a USB port on your integrated computer, the com port number is shown as 'Arduino' or 'USB Serial Port' with the Com port number in brackets after it. Enter this number in the Port drop-down box. Then set all other boxes. NOW CLICK the APPLY button at the bottom of the window

**In the second tab named 'Printer'**, this defines important behaviour you want. Copy **EXACTLY** the settings shown below into the window. NOW CLICK the APPLY button at the bottom of the window

## Printer Settings

Printer: KoraPro 

Connection **Printer** Extruder Printer Shape Scripts Advanced

Travel Feed Rate:  [mm/min]  
Z-Axis Feed Rate:  [mm/min]  
Manual Extrusion Speed:   [mm/s]  
Manual Retraction Speed:  [mm/s]  
Default Extruder Temperature:  °C  
Default Heated Bed Temperature:  °C

- Check Extruder & Bed Temperature  
 Remove temperature requests from Log

Check every 3 seconds.

Park Position: X:  Y:  Z min:  [mm]

- Send ETA to printer display  Go to Park Position after Job/Kill  
 Disable Extruder after Job/Kill  Disable Heated Bed after Job/Kill  
 Disable Motors after Job/Kill  Printer has SD card

Add to comp. Printing Time  [%]

Invert Direction in Controls for  X-Axis  Y-Axis  Z-Axis  Flip X and Y

In the third tab named 'Extruder', this tab sets some important information about the Kora Pro 3D PC 'hot end' or 'extruder'. Copy **EXACTLY** the settings shown below into the window. NOW CLICK the APPLY button at the bottom of the window

## Printer Settings

Printer:

KoraPro



Connection

Printer

Extruder

Printer Shape

Scripts

Advanced

Number of Extruder:

1

Number of Fans:

1

Max. Extruder Temperature:

270

Max. Bed Temperature:

120

Max. Volume per second

12

[mm<sup>3</sup>/s]

Printer has a Mixing Extruder (one nozzle for all colors)

Extruder 1

Name:

0.4mm

Diameter:

0.4

[mm]

Temperature Offset:

0

[°C]

Color:



Offset X:

0

Offset Y:

0

[mm]

OK

Apply

Cancel

In the forth tab named 'Printer Shape', this tab sets some important information about the Kora Pro 3D PC print area sizes. Copy **EXACTLY** the settings shown below into the window. NOW CLICK the APPLY button at the bottom of the window

## Printer Settings

Printer: KoraPro 

Connection | Printer | Extruder | **Printer Shape** | Scripts | Advanced

Printer Type: Classic Printer

Home X: Min Home Y: Min Home Z: Min

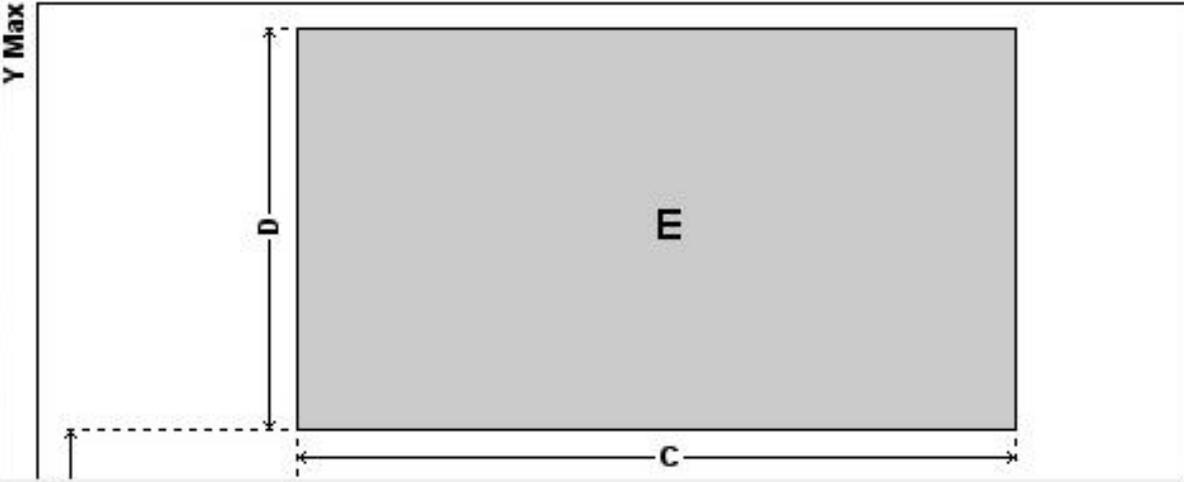
X Min	<input type="text" value="0"/>	X Max	<input type="text" value="230"/>	Bed Left:	<input type="text" value="-30"/>
Y Min	<input type="text" value="0"/>	Y Max	<input type="text" value="200"/>	Bed Front:	<input type="text" value="0"/>

Print Area Width:  mm

Print Area Depth:  mm

Print Area Height:  mm

The min and max values define the possible range of extruder coordinates. These coordinates can be negative and outside the print bed. Bed left/front define the coordinates where the printbed itself starts. By changing the min/max values you can even move the origin in the center of the print bed, if supported by firmware.



**In the fifth tab named 'Advanced'**, this tab is for advanced users and should be left as default. Check it is showing as the window below. NOW CLICK the APPLY button at the bottom of the window

## Printer Settings

Printer: KoraPro ▼ 

Connection | Printer | Extruder | Printer Shape | Scripts | **Advanced**

### Post Slice Filter

Filter Path and Parameter:

Run Filter after every Slice

You can run a filter program after each slicing action. The filter will be run on the G-Code produced by the slicer. Use #in and #out to insert the input and output filenames as parameter.

OK

Apply

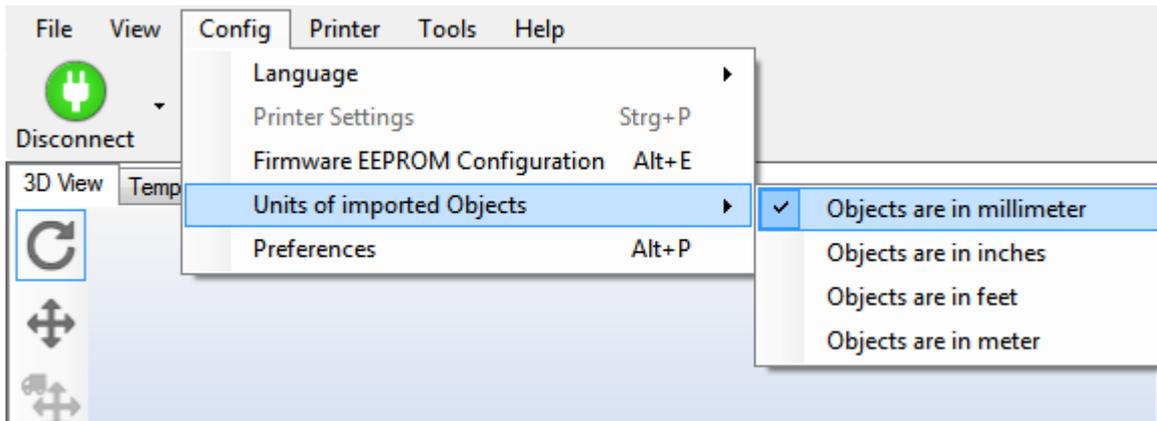
Cancel

**NOW CLICK the OK** button at the bottom of the window.

Your Kora Pro 3D PC 'Printer Settings' are now configured to function correctly with the Repetier-Host software. This information will be automatically saved and it is not necessary to repeat this process whenever the Kora Pro 3D PC is used via its integrated computer.

## Units Settings

From the 'Main Screen' on Repetier-Host, check the following settings are applied

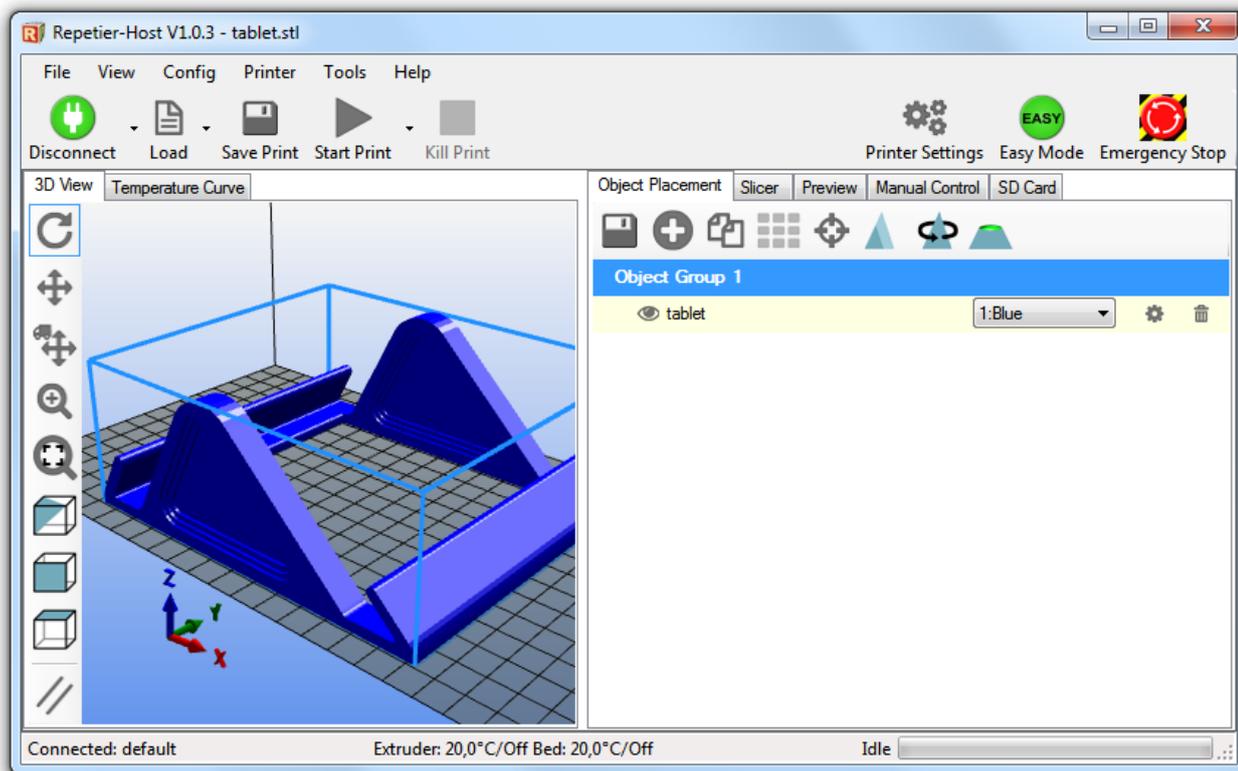


The Repetier-Host uses internally only millimetres. Unfortunately, STL and OBJ format do not contain a scaling hint. Therefore, you need to select the units used for the creation. That way the Repetier-Host will convert the units correctly into millimetres.

# Object Placement

## Objective

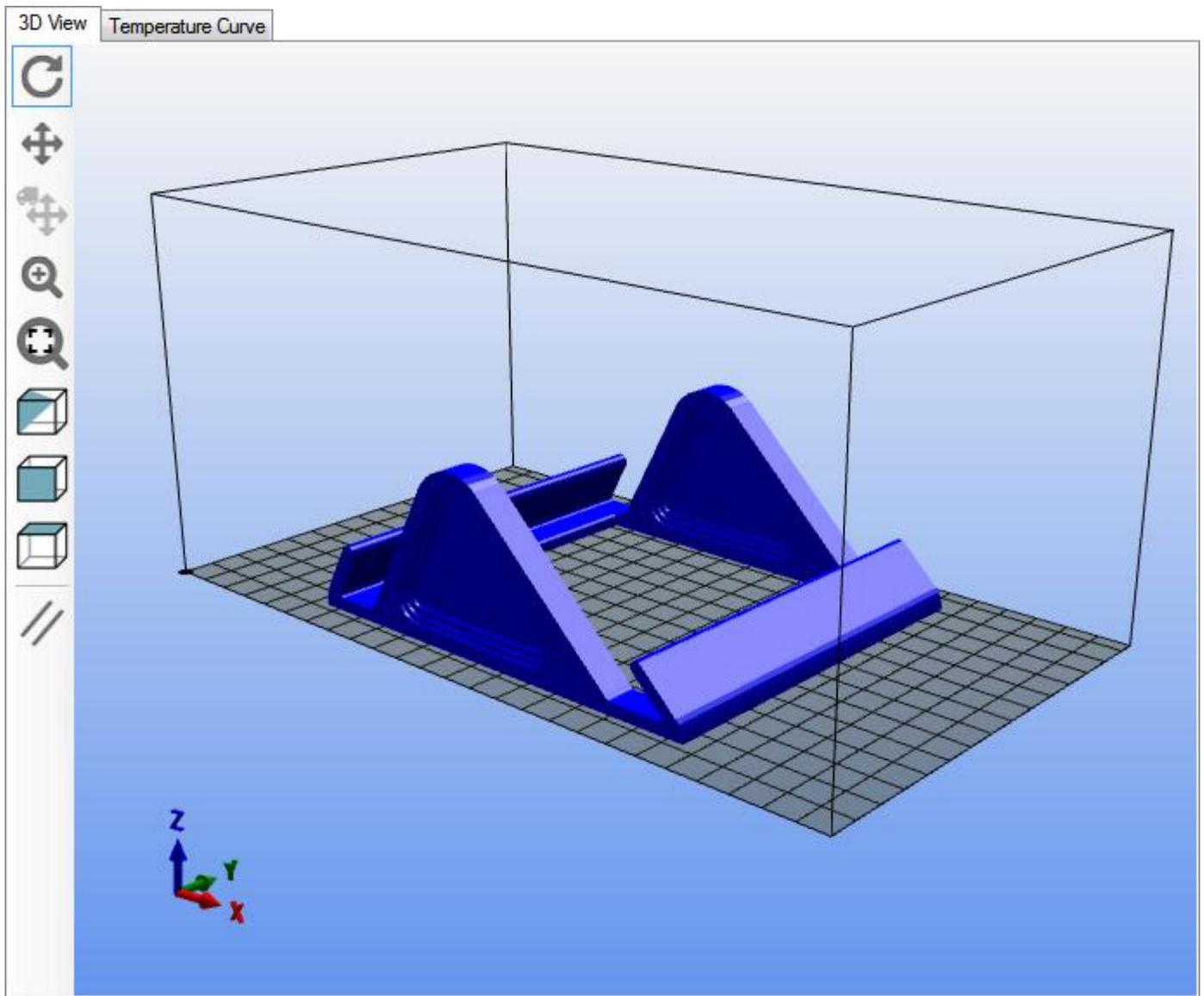
Prepare all objects you want to print, so your printer can print them. Learn how to arrange them on your print bed. Rotate and scale them to your preference.



## Workflow

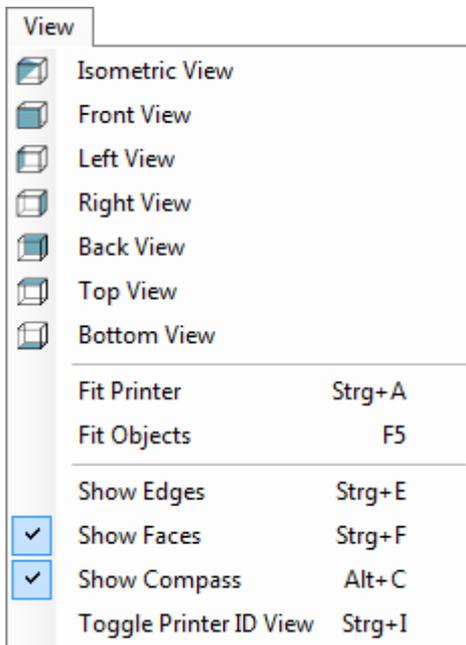
Open the “Object Placements” tab. You will see the print area on the left side. You start with importing all STL files using the “Add Object” button **+**. You can select multiple object files at once if you want. This must be in one of the following formats: STL, OBJ, 3DS. The Repetier-Host will always try to position the objects in a non-overlapping way onto your bed.

## Browsing 3D View



In this window, you see your 3D objects. At the left side, you find some navigation buttons:

The first 4 buttons change the behaviour of the left mouse button. Starting at the top, you get “Rotate” , “Move Viewpoint” , “Move Object”  and “Zoom” . All functions can be used with control keys, so that you don’t have to change all the time.



**Control:** Holding the control button, you can rotate the view with the left mouse button.

**Shift:** Holding shift button you can move the view point with the left mouse button.

**Right Mouse Button:** Move the object by holding the right mouse button.

**Mouse Wheel:** Zoom view

With this icon  the objects will be zoomed to fit exactly in the preview area.

With the next three icons  you can select between predefined view orientations. You find more view options at the top View menu:

**Fit Printer (Strg+A):** Zooms to fit the complete printer area into the window with maximum size.

**Fit Objects (F5):** Zooms to fit all objects into the window with maximum size.

**Show Edges (Strg+E):** Toggles display of triangulation edges.

**Show Faces (Strg+F):** Toggles display of triangulation faces.

**Show Compass (Alt+C):** Toggles display of coordinate compass at the left bottom.

**Toggle Printer ID Vies (Strg+I):** Toggles the display of the printer ID on top of the right tab. Use this to distinguish the printer when you have more than one Repetier-Host running.

“Use Parallel Projection”  toggles between parallel and perspective projection.

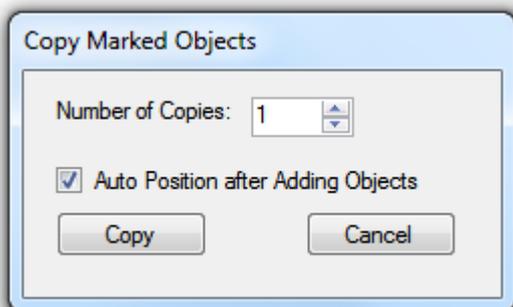
## Object Placement



 Here you can export all displayed objects at once. If you save them as .amf file, the object grouping and material assignments remain intact, if you save it as .stl or .obj file, everything gets combined into one object.

 Here you can add objects in .stl, .obj, .amf and .3ds format.

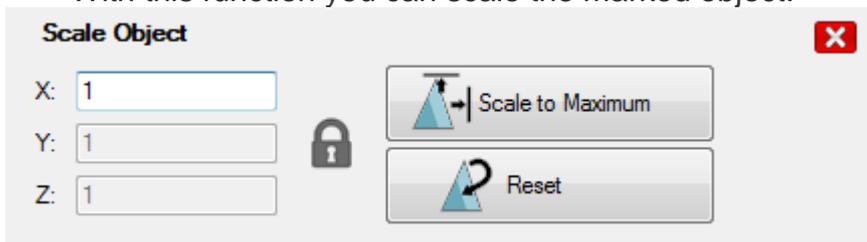
 Here you can duplicate the marked object(s) as many times as you want.



 Click here to place all objects so that they fit on the bed.

 This function centres the marked object in the centre of the bed.

 With this function you can scale the marked object.



If the lock is closed, all axes are changed simultaneously. If you click on the lock to unlock, you can adjust each axis separately and the object may be distorted. A click on “Scale to Maximum” enlarges the object so that it has the maximum printable size.



With this function you can rotate the marked object around each axis. Click on “Lay Flat” to place the object flat on the bed.

**Rotate Object** ✖  
X:   Reset Rotation  
Y:   Lay Flat  
Z:



This option is only used to control the object and has no influence on the print. With “Position” the height of cut position is defined, “Inclination” and “Azimuth” define rotation of the cutting plane.

**Cut Objects** ✖  
Position   
Inclination   
Azimuth

## Selecting and moving objects

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You can select one object by right clicking on it. If you press the ctrl-key while right clicking the selected object is added. ctrl-clicking a selected object removes it from the selection.

To move the selected objects, hold the alt-key down while left clicking and dragging the objects. When you select “Top View”  from the left toolbar, the movements will follow your mouse movements. If you don't, the direction of the move is not the same as the mouse movement.

Depending on your configuration, the object may start to pulse or change its colour, if it is not entirely on the print bed. This should help you to identify printing problems, even before you start slicing.

## Grouping Objects

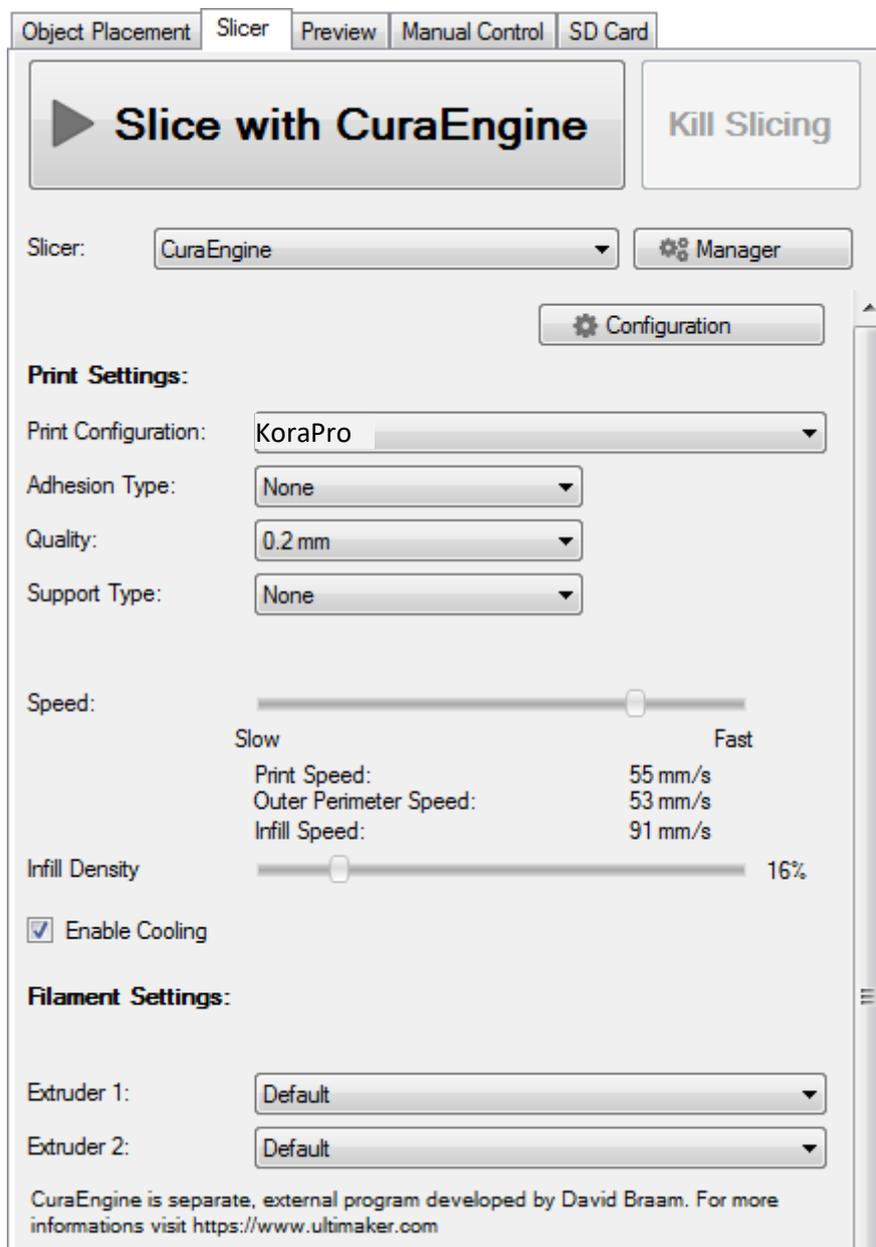
Object groups are used only for multi extruder prints. For multi extruder prints you normally get one .stl file for each colour. After you have loaded them, each has its own group, which normally causes wrong relative positioning. So you need to drag the second .stl onto the first .stl to merge them into one group. After merging you have to assign each file a separate extruder. Assigning the same extruder will normally cause problems during slicing.

Now it's time to slice your objects. Open the slicer tab and continue there. More on this subject in the next chapter '**Slicing**'.

# Slicing

## Setup your slicer

We recommend you use the Cura Slice Engine to slice your models prior to printing. Select **Slicer:** 'CuraEngine' from the drop-down menu below



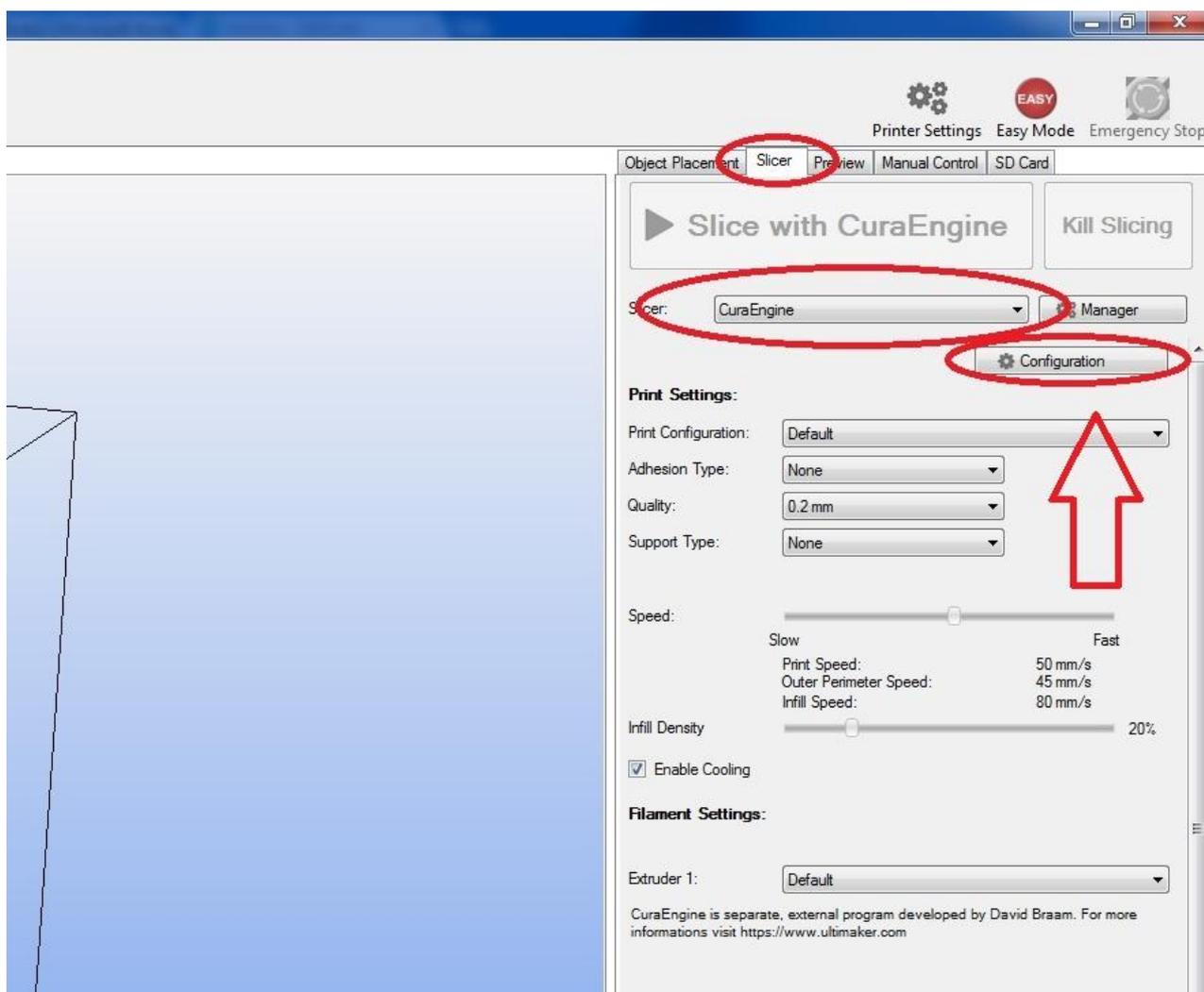
The screenshot shows the 'Slicer' tab in the Repetier-Host interface. At the top, there are navigation tabs: 'Object Placement', 'Slicer', 'Preview', 'Manual Control', and 'SD Card'. Below these, there are two main buttons: 'Slice with CuraEngine' (with a play icon) and 'Kill Slicing'. Underneath, the 'Slicer:' dropdown menu is set to 'CuraEngine', with a 'Manager' button to its right. A 'Configuration' button is also present. The 'Print Settings:' section includes: 'Print Configuration:' set to 'KoraPro', 'Adhesion Type:' set to 'None', 'Quality:' set to '0.2 mm', and 'Support Type:' set to 'None'. The 'Speed:' section features a slider between 'Slow' and 'Fast', with a table of values: Print Speed: 55 mm/s, Outer Perimeter Speed: 53 mm/s, and Infill Speed: 91 mm/s. Below this, 'Infill Density' is set to 16% with a slider. There is a checked checkbox for 'Enable Cooling'. The 'Filament Settings:' section shows 'Extruder 1:' and 'Extruder 2:' both set to 'Default'. At the bottom, a note states: 'CuraEngine is separate, external program developed by David Braam. For more informations visit <https://www.ultimaker.com>'.

CuraEngine is external slicer software which is bundled with the Repetier-Host. Here you select your printing configurations to use plus some additional important settings. To define the parameters behind your configuration, click the "Configuration" button to enter the setup.

RS Pro pre-configured settings for the Cura Engine on the USB stick drive supplied with your machine, inside the sub-folder named 'RS'

These pre-configured settings are a 'starting place' for your Kora Pro 3D PC Cura slicing settings. As you become more familiar with the 3D Printing environment, you will from time to time change these settings to 'fine tune' individual prints and when printing with new filament materials etc.

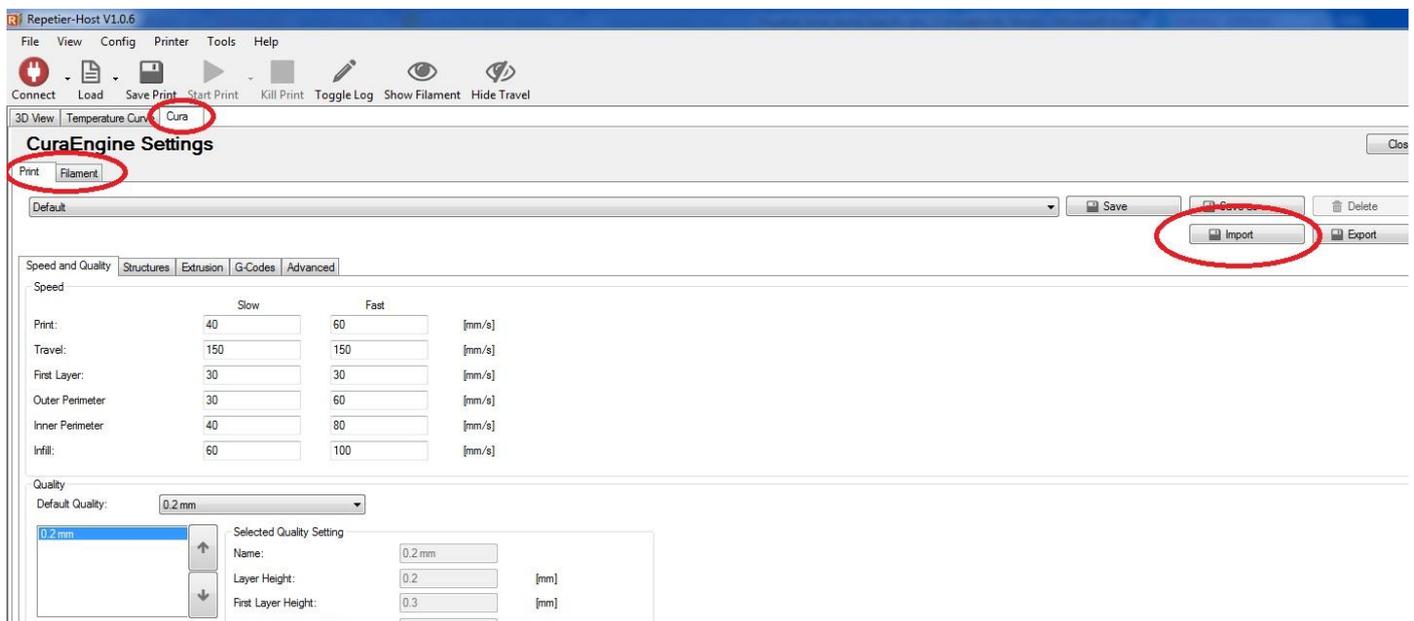
To load the pre-configured settings select the 'configuration' button on the main Repetier-Host screen (see below – check the circled items are also selected as shown before proceeding)



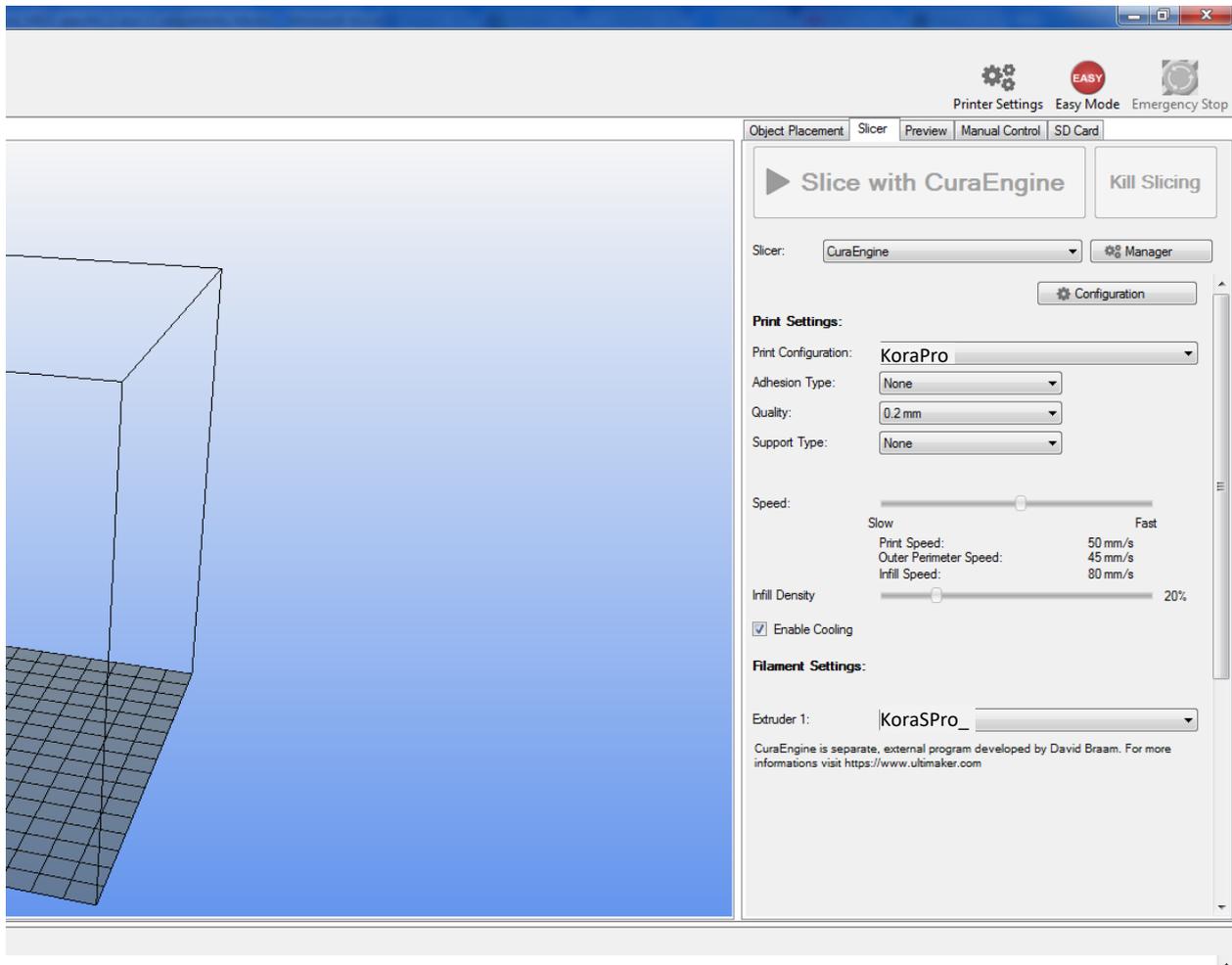
Then select the '**Printer tab**' at the top left of the window (see below). Then click the '**import**' button. The file menu will appear, navigate to your USB stick sub-folder named 'RS', then open the sub-folder named 'Configuration' and select the file '**KoraPro.rcp**'

Then click the '**save**' button above and to the left of the '**import**' button

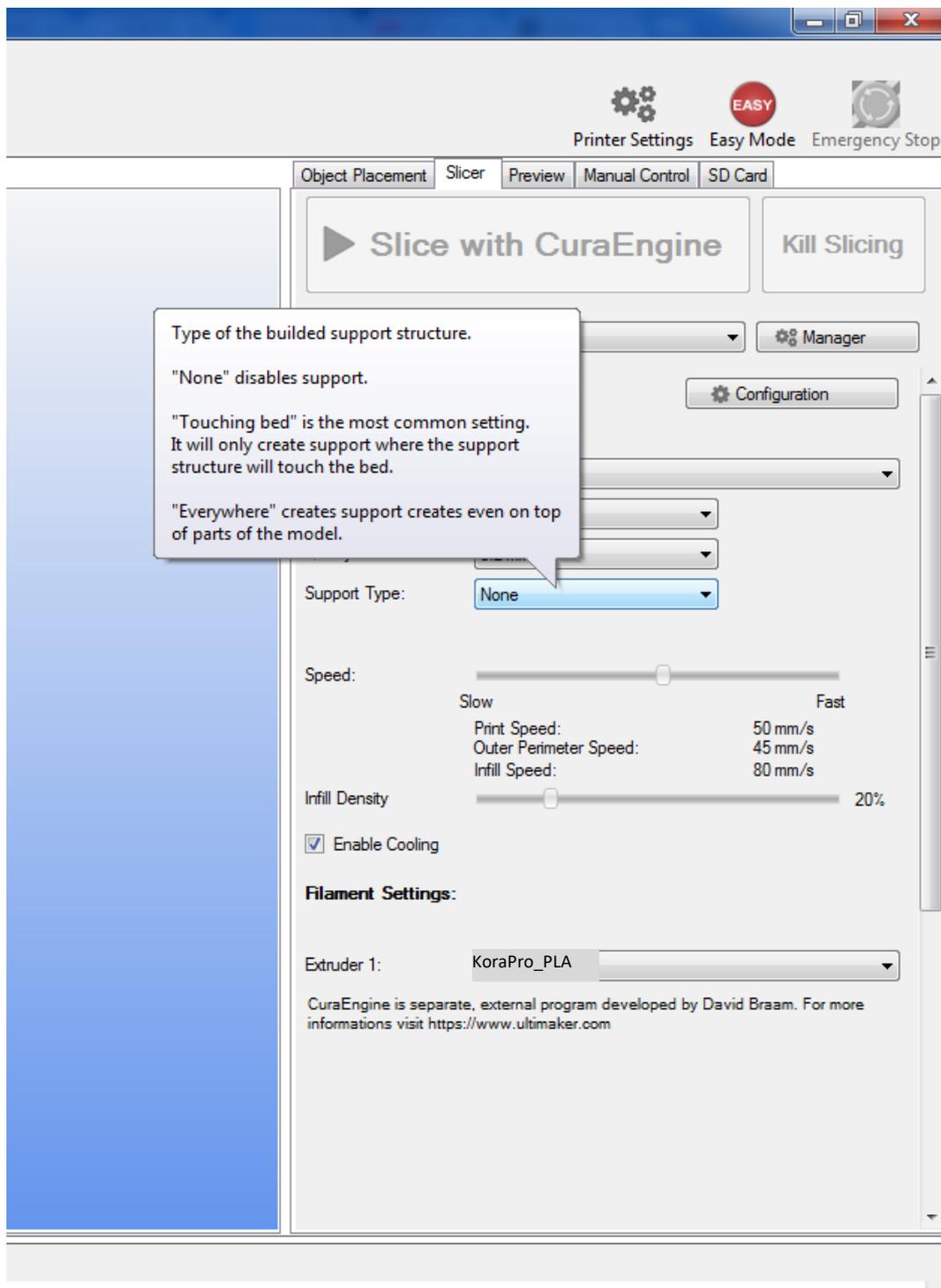
Now select the '**Filament tab**' at the top left of the window (see below). Then click the '**import**' button. The file menu will appear, navigate to your USB stick sub-folder named 'RS', then open the sub-folder named 'Configuration' and select the file '**KoraPro\_PLA.rcf**' This file is for use when printing with PLA Filament. If you print with any other type of Filament, you should follow the comprehensive instructions available via [www.repetier.com](http://www.repetier.com) to create appropriate '**Printer**' and '**Filament**' configurations



These files need only to be imported once. After that they will be automatically saved and available in the drop-down menu on the main Repetier-Host SLICER screen (see below) each time Repetier-Host is opened. Usually, select **Print Configuration:** as **KoraPro**. Always select the appropriate **Filament Settings:** as **KoraPro\_???** - ??? would represent each different filament type you are printing (eg. **KoraPro\_PLA** for PLA filament etc.) – this selects, amongst other features, the correct extruder temperature for correctly printing your chosen filament.



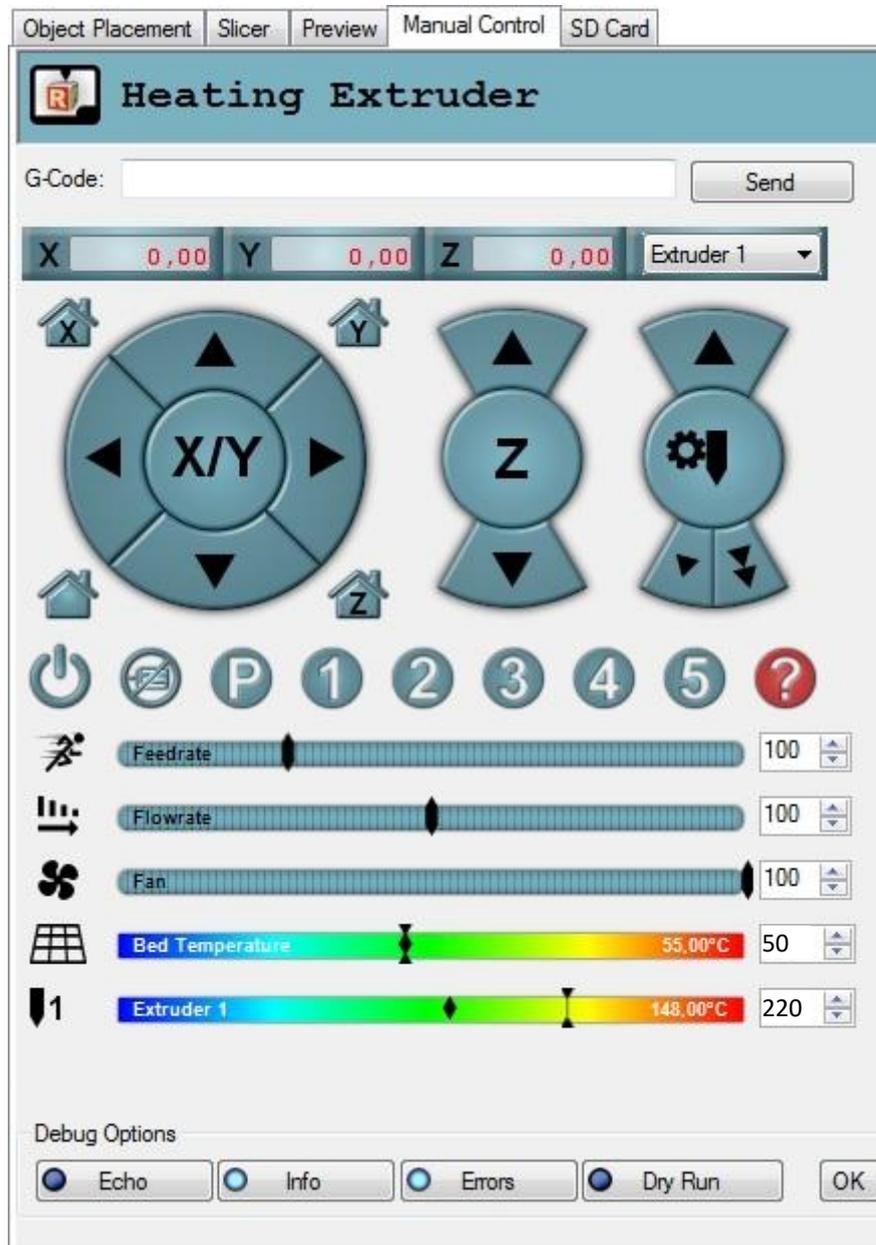
You can select any 'control option' in Repetier-Host, hover your mouse over that selected setting and an 'explanation bubble' will appear guiding you how to use this option (e.g. 'Adhesion Type' 'Support Type' etc. etc.) This feature is particularly useful as it refers specifically to the control button or bar you have selected. Many controls throughout Repetier-Host have this feature! (see page 21 below for an example)



With reference to the 'Quality' drop-down box, this controls the print resolution (or layer height). 0.2mm is deemed standard resolution, 0.4mm is course (sometimes referred to as 'draft' quality)

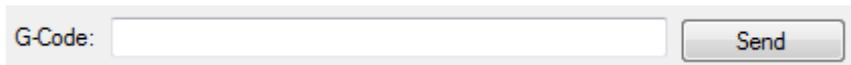
and 0.08mm is fine quality. The finer the quality the smoother the external print finishes, but the longer it takes to print. 0.2mm is usually a good compromise between quality and speed of print and will be selected in most cases.

## Manual Control

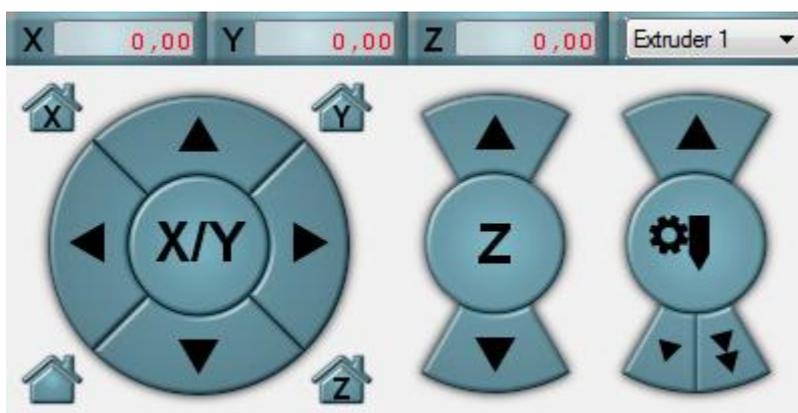


When you turn your printer on, you will often come to this tab. At the top you see the most important printer status, so you always know what is happening.

The next row allows it to send any g-code command you like. Enter it and press return or hit the send button. With the cursor up/down keys you can move through the history of manually sent commands. If the “Easy Mode” is enabled, this field is not displayed.



The next block controls the positioning of the extruder. With the arrow keys you move the extruder in any direction. When you hover over the arrow, you will see a distance appear in mm, telling you how large the move will be. At the top you see the current extruder position. After the connection, they are red. Red means the Repetier-Host has no idea where the extruder really is. Press the home button to move the extruder to its defined position. After that the colour turns black, telling you the position is known. From now on, the moves are only possible inside the printer cube defined in the printer settings. So if you are at x=130 and the cube is 158 mm wide, pressing 50 mm right will only move to 158 mm and not attempt to move to 208 mm (i.e. beyond the machines limit).



CAUTION: This protection works only for the arrow keys. Below the arrows you have the following buttons:



Power: This turns the power supply on. This is not supported on the Kora Pro 3D PC



Stop motor: Will disable the stepper motors.



Park: Moves the extruder head into parking position defined in printer settings.



Help bubbles: When you activate this, you will get help bubbles for all fields of the manual control.



Buttons 1 – 5 are for advanced users.

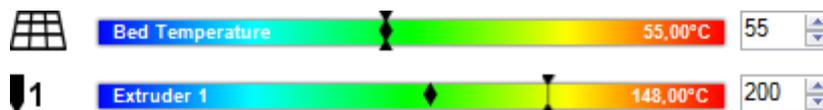
The “Speed multiply” slider allows it to change the printing/move speed in relation to the send feed rate. This function is compatible with the Kora Pro 3D PC. Be careful if you increase the speed. Very high speed can deteriorate print quality!



If the “Easy Mode” is disabled, you can change the flow rate, i.e. the amount of the extruded filament. A higher value gives a wider printed line.



The extruder and print bed blocks allow it to manually change the temperature during a print. The temperature can be set either on the right in the text field as well as by clicking on the temperature curve. If you change it in the text field, you need to press return or leave the field to set the value. By clicking the extruder or bed icon the extruder or the bed is deactivated or reactivated. In the right area of the temperature curve you see the last read temperature (you have enabled automatic temperature reading in printer settings?).



Here, you can change the PLA cooling fan speed and activate/deactivate it the same way as the temperatures.



In the last row you can set debug options for the printer if “Easy Mode” is disabled. Echo repeats the received lines, so you normally want it turned off. Info and error show messages at that debug level. These are interesting, so leave them on. The last one is something special, which works up

to now only with Repetier-Firmware. In dry run mode, the firmware will ignore all commands to set temperature or extrude. That way you can send a file without using any filament. The last button "OK" re-sends the start/send command to the printer and is not normally used.

*For in depth and the latest up-to-date details, forums etc. for Repetier-Host please visit <http://www.repetier.com> and follow the appropriate on-line links from the Home Page*