mElephant 3D Printer User Guide V1.0



Makeblock mElephant 3D Printer

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What is mElephant?

Makeblock mElephent 3D Printer is the new generation of Makeblock 3D printer, which is a 3D printer based on an open source and aluminum frame.

Makeblock studied very hard on the 1st generation Constructor I 3D Printer, and made huge improvement. With the most steady and concise Prusa i3 structure, delicate brand new designed OLED screen, automatically print bed leveling module, and more powerful integrating control panel, mElephant is the most powerful 3D printer in Makeblock ever!



mElephant matching with Electronics (RAMPS1.4 shield, Mega2560 compatible board) and software (Crua,Printrun), you can get high-quality prints and extreme precision, XY Resolution: 0.1mm, Layer Resolution: 0.1-0.3mm. You can enjoy so much fun from your own 3D printer and even use it for prototyping, printing art craft, models, sculptures or toys.

mElephant also can be extensioned to a 4-in-1 machine (3D printing, Laser Engraving, Drawing, CNC) with additional parts.

No matter if you are students, office clerks, designers, engineers, educators or inventors, you can always bring your ideas to life by printing out objects such as prototypes, various models, homehold articles, phone cases, toys, and mechanical parts to build your robots.

Package Content

| 1 | | 1 × mElephant 3D Printer | |
|---|----------|-----------------------------------|-------|
| 2 | | 1 × Power 24V5A | |
| 3 | | 1 × Filament Support | ** |
| | | 1 × Micro SD Card | 8 |
| | | 1 × Cross & 2.5mm HEX Screwdriver | - |
| 4 | | 1 × Slotted Screwdriver | |
| | | $1 \times Wrench$ | 6103 |
| | Tool Boy | 1 × Tweezers | 1 |
| | 1001 Box | 2 × Hex Allen Key | < |
| | | $1 \times \text{Shovel}$ | |
| | | 1 × USB Cable | a for |
| | | 1 × Masking Tape | 0 |
| | | 1 × Spirit Level | 101 |

Specifications

| Frame | Anodized aluminum and Sheet metal |
|----------------------|--|
| Extruder | All metal, temperatures up to 230 degree Celcius |
| Physical Dimensions | $416mm \times 344mm \times 330mm$ |
| Print Materials | 1.75mm PLA |
| Build Volume (WxDxH) | $180mm \times 200mm \times 160mm$ |
| Weight | 6.7KG |
| XY Resolution | 0.1mm |
| Layer Resolution | 0.1-0.3mm |
| Print Bed | Not heated |
| Speed | Print speed general 50mm/s |
| Power | 110-240 VAC Power adapter,24V/5A |
| Software | Cura, Printrun |
| Firmware | Marlin |
| Display | OLED |
| Supports file type | STL |
| Connections | USB&Micro SD Card |
| Electronics | Compatible with RAMPS1.4 Mega2560 |
| Auto Bed Leveling | Yes |

Before Use

1. Make sure all screws have been tightened.



2. Make sure the timing belts of both X-axis and Y-axis are tensioned.



3. Stick a piece of paper tape on the platform, Place the paper tape carefully and make sure no spare part.





4. Plug in power, and press the knob to open the mElephant printer.

5. Rotate the knob clockwise, choose "Prepare", and then press the knob again to confirm.



6. Rotate the knob clockwise, choose "Preheat PLA" and press the knob to confirm preheating.



7. Rotate the knob clockwise, choose "Preheat PLA1" and press the knob

Prepare **†** Preheat PLA 1 Preheat PLA A11 Preheat PLA Bed

8. Go back to the main menu, and you will see the target temperature has



already changed to 180 ° and the temperature is going up continuously.

to confirm

9. When the temperature has already reached 179° , get ready to put the filament into the nozzle.



10. The filament will curve naturally, so make sure to straighten the front-end of the filament in order to insert the filament into the extrusion head smoothly.





11. Press the active block to compress the spring, meanwhile use the other hand to insert the filament perpendicularly into the hole till the end.



12. When you see filament coming out from the nozzle, it means the PLA

filament has been completely inserted to the nozzle.



Print with Micro SD card

1. Copy the Gcode files to a Micro SD card

| ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ | - | | |
|--|-----------------|--------------------|----------|
| | 修改日期 | 类型 | 大小 |
| Elephant_Phone_Holder_Solid.gcode | 2015/7/11 18:08 | GCODE 文件 | 1,703 KB |
| squircle Vase gcode | 2015/7/11 18:09 | STL 文件 GCODE 文件 | 582 KB |
| ⊑ ⊡ squircle_Vase.stl | 2013/7/16 22:40 | STL 文件 | 197 KB |
| 计算机 → 可移动磁盘 (G:) 查看(V) 工具(T) 帮助(H) 氧 新建文件夹 | | | |
| ▲ <u>名称</u> | 修改日期 | 类型 | 大小 |
| 🖻 squircle Vase gcode | 2015/7/11 18:09 | GCODE 文件 | 582 KB |
| Elephant Phone Holder Solid gcode | | GCODE 文件 | 1 703 KB |

2. Insert the Micro SD card into the card slot of the 3D printer in correct direction.



3. Gently insert the card into the card slot, and Use a finger to press the card into the slot until you hear a clicking sound.



4. Operation Rotary Knob - Press the knob to turn on this 3D printer, rotate the knob clockwise, choose "Print from SD", and then press the

knob again to confirm.



5. Rotate the knob clockwise, choose the file you want to print, and press

the knob to confirm.



6. Go back to the main menu and wait for the temperature to reached the

210° 211° 211° 0° 0° 0° 100° 100° 00:01Heating...

target one.



7. Clear the filament in nozzle before start printing.

8. The first layer



9. Now waiting for the printing



10. Gently remove the model from the platform with a shovel.



11. The printing is finished, Now enjoy your 3D printing journey.



Install Arduino Driver

1. For Windows users, double click "CH341SER.EXE"



2. Click "Install"

| Select INF File : | CH341SER.INF |
|-------------------|------------------------------|
| INSTALL | WCH.CN I USB-SERIAL CH340 |
| UNINSTALL | 11/04/2011, 3.3.2011.11 |
| HELP | |

3. Click "OK"

| Device Driv | ver Install / Uninstall | |
|-------------|-------------------------|----------|
| Select INF | DriverSetup | <u> </u> |
| INST | | |
| UNINS | Driver install success! | 1.11 |
| HEL | 确定 | |

4. Connect the 3D printer to your PC via the USB cable and go to the "Device Management", then you will find a hardware named "CH340".Remember the serial port No.e. g. COM4.

| · · · · · · · · · · · · · · · · · · · | |
|---------------------------------------|---|
| 文件(F) 操作(A) 查看(V) 帮助(H) | |
| (= -) 🖬 📓 🖬 🕺 😫 🚱 | |
| ✓ → www-PC | |
| ▷ 😋 IDE ATA/ATAPI 控制器 | |
| 👂 坖 Western Digital NAS | |
| ▷ 🔤 便携设备 | |
| ▷ 🔲 处理器 | |
| ▷□□ 磁盘驱动器 | |
| ▲ 🦞 端口 (COM 和 LPT) | |
| USB-SERIAL CH340 (COM4) | |
| ↓ 「「「「」」 (IPT1) し | 5 |
| 通信端口 (COM1) | |
| ▷ 1 興 计算机 | |
| ▶ • ▶ 监视器 | |
| ▷· 键盘 | |
| ▷ 编 人体学输入设备 | |
| ▶ 章 声音、视频和游戏控制器 | |
| ▷ - 🖉 鼠标和其他指针设备 | |
| ▶ | |
| ▲ 🔮 网络适配器 | |
| Realtek PCIe GBE Family Controller | |
| 🔤 🙀 Teredo Tunneling Pseudo-Interface | |
| ▶ 1 ● 系统设备 | |
| ▷ 📲 显示适配器 | |
| | |
| | |

Install Cura, and print with USB

1. Double click " Cura_14.07.exe" to setup

| 🔰 🕨 mElephant 🕨 | | | |
|------------------------|-----------------|------|-----------|
| 辑(E) 查看(V) 工具(T) 帮助(H) | | | |
| □ 打开 共享 ▼ 新建文件夹 | | | |
| 名称 | 修改日期 | 类型 | 大小 |
| 길 3D model | 2015/7/14 18:01 | 文件夹 | |
| Arduine drivere | 2015/7/14 18:01 | 文件夹 | |
| C Cura_14.07.exe | 2014/7/5 18:15 | 应用程序 | 18,377 KB |
| 🙀 melephant_solid.ini | 2015/7/11 18:08 | 配置设置 | 11 KB |
| 🗿 mElephant_Vase.ini | 2015/7/11 17:06 | 配置设置 | 11 KB |

2. Click "Next" to continue

| Cura 14.07 Setup | |
|---|--|
| Choose Install Location | |
| Choose the folder in which to install Cura 14.07. | |
| Setup will install Cura 14.07 in the following folder. To in and select another folder. Click Next to continue. | istall in a different folder, click Browse |
| | |
| Destination Folder | |
| C:\Program Files (x86)\Cura_14.07 | Browse |
| Space required: 86.2MB | |
| Space available: 17.7GB | |
| Jullsoft Install System v2.46 | |
| | Nexty> Cancel |

3. Click "Install"

| Choose Components Choose which features of Cura | a 14.07 you want to install. |
|---|--|
| Check the components you wa install. Click Install to start the | nt to install and uncheck the components you don't want to installation. |
| Select components to install: | ✓ Cura 14.07 ✓ Install Arduino Drivers ✓ Open STL files with Cura Open OBJ files with Cura Open AMF files with Cura Uninstall other Cura versions |
| Space required: 86.2MB | |
| ullsoft Install System v2.46 | |

4. Click "Next"

| Device Driver Installation Wi | zard |
|-------------------------------|--|
| | Welcome to the Device Driver Installation Wizard! This wizard helps you install the software drivers that some computers devices need in order to work. |
| | To continue, click Next. |
| | (上一歩の) (明道) |

5. Click "Finish"



6. Click "Next"

| Installation Complete | | | |
|---------------------------|----------|--|--|
| Setup was completed succe | ssfully. | | |
| Completed | | | |
| Show details | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

7. Click "Finish"



8. Click "Next"

| | Fire | st time | run wiza | rd | |
|---------------------|--------------------|-----------------|--------------|----|--|
| Welcome and th | anks for trying (| | | | |
| This wizard will he | elo vou in settino | a up Cura for v | our machine. | | |
| | | | | | |
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| - | | | | | |

9. Click "Other" to select your machine, and then "Next"

| 5 | Select your | machine | e | |
|---|---|--|---------------------------------------|-------------------|
| What kind of machine do yo Ultimaker2 Ultimaker Original Printrbot Other (Ex: RepRap, Make | u have: rBot) | | | |
| The collection of anonymous This does NOT submit your I Submit anonymous usage int For full details see: http://wi | s usage information h models online nor gatl formation: | elps with the cont hers any privacy re stats | inued improveme elated information | nt of Cura. I. |
| - | | < Back | Next > N | Cancel |

10. Choose "Custom", and then "Next"



11. Fill in the parameters accordingly, and then "Finish".

| RepRap machines can be vastly different, so here you can set your own settings. le sure to review the default profile before running it on your machine. f you like a default profile for your machine added, hen make an issue on github. You will have to manually install Marlin or Sprinter firmware. Aachine name mElephant Aachine width (mm) 180 Aachine height (mm) 160 Nozzle size (mm) 0.4 Heated bed Image: Caliform (Construction) | Cus | tom RepRa | ap inforn | nation | |
|--|--|--|---------------------------------------|-----------------------------|--|
| f you like a default profile for your machine added, hen make an issue on github. /ou will have to manually install Marlin or Sprinter firmware. Aachine name mElephant Aachine width (mm) 180 Aachine depth (mm) 200 Aachine height (mm) 160 Nozzle size (mm) 0.4 Aeated bed Cate and C | RepRap machines can be v Be sure to review the defi | vastly different, so he ault profile before run | e you can set yo ning it on your m | ur own settings. achine. | |
| You will have to manually install Marlin or Sprinter firmware. Machine name mElephant Machine width (mm) 180 Machine depth (mm) 200 Machine height (mm) 160 Nozzle size (mm) 0.4 Macher is 0,0,0 (RoStock) Image: Constraint of the state of | f you like a default profile hen make an issue on gitl: | for your machine add hub. | ed, | | |
| Machine name mElephant Machine width (mm) 180 Machine depth (mm) 200 Machine height (mm) 160 Maczle size (mm) 0.4 Mache te bed 1 Macher te s 0,0,0 (RoStock) 1 | You will have to manually i | in <mark>stall Marlin or Sprint</mark> e | r firmware. | | |
| Machine width (mm) 180 Machine depth (mm) 200 Machine height (mm) 160 Mozzle size (mm) 0.4 Machine height (mm) 0.4 Machine height (mm) 0.4 | Machine name | mElephant | 1 | | |
| Machine depth (mm) 200 Machine height (mm) 160 Nozzle size (mm) 0.4 Heated bed Image: Compare the second sec | Machine width (mm) | 180 | | | |
| Machine height (mm) 160 lozzle size (mm) 0.4 Heated bed Image: Compare the second seco | Machine depth (mm) | 200 | | | |
| lozzle size (mm) 0.4 Heated bed Ded center is 0,0,0 (RoStock) | 1achine height (mm) | 160 | | | |
| leated bed 🔄 | Vozzle <mark>size (</mark> mm) | 0.4 | | | |
| ed center is 0,0,0 (RoStock) 📃 | leated bed | | | | |
| | Bed center is 0,0,0 (RoSto | ock) 🔳 | | | |
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| | | | | | |

12. Click "No"



13. Choose to "Open Profiles"

Makeblock mElephant 3D Printer

| Jools Machine Expert | Help | | | | | |
|--|--------|----------|-----------|---|--|----|
| Load model file | CTRL+L | | | | | |
| Save model | CTRL+S | | YM | | | 15 |
| Reload platform | F5 | 44 mi | nutes | | | - |
| Clear platform | | 0.48 met | er 4 gram | | | |
| Print | CTRL+P | | | | | |
| Save GCode | | | | | | |
| Show slice engine log | | | | | | |
| Open Profile | | | | | | |
| Save Profile | | | | 5 | | |
| Load Profile from GCode | | | | | | |
| Reset Profile to default | | | | | | |
| Preferences | CTRL+, | | | | | |
| Machine settings | | | | | | |
| Recent Model Files | · · · | • | | | | |
| Recent Profile Files | + | | | | | |
| Quit | | | | | | |
| and the second | 0 | | | | | |

14. Find the corresponding configuration file, and open it.

| 📔 🕨 mElephant 🕨 | | | - | - ↓ | 搜索 mElephant | |) |
|--------------------------------------|-----------------|------|-------|------------|-------------------------------------|----|---|
| 新建文件夹 | | | | | :== :== | • | ? |
| 名称 | 修改日期 | 类型 | 大小 | | | | |
| \mu 3D model | 2015/7/14 18:01 | 文件夹 | | | | | |
| 🌗 Arduino drivers | 2015/7/14 18:01 | 文件夹 | | | | | |
| 👔 mElephant_Solid.ini | 2015/7/11 18:08 | 配置设置 | 11 KB | | | | |
| 🐲 mElephant_Vase.ini | 2015/7/11 17:06 | 配置设置 | 11 KB | | | | |
| 文件名(<u>N</u>): mElephant_Solid.ini | | | | • | ini files (*.ini) 打开(<u>O</u>) | 取消 | • |

15. Enter Machine Setting



16. Select correct serial port (this port No. refers to the one you get from the "Device Management" of your PC after installing the Arduino driver.Please refer to "Install Arduino Driver" Section)



17. Enter advanced setting (Preferences)



18. Choose "Pronterface UI", and uncheck the "Check for Updates".

Makeblock mElephant 3D Printer

| Print window | Filament settings | | |
|---------------------------------------|---|---------|--|
| Printing window type Pronterface UI 👻 | Density (kg/m3) | 1240 | |
| Colours | Cost (price/kg) | 0 | |
| Model colour | Cost (price/m) | 0 | |
| | Cura settings | | |
| | Auto detect SD card Check for updates Send usage statistics | drive 🔽 | |

19. Click "Print with USB"

| 🔲 Cura - 14.07 | | a a | | |
|---------------------------|-----------------|-------------------|----|--|
| File Tools Machine Exp | ert Help | | | |
| Basic Advanced Plugins S | start/End-GCode | Philip Willingsb | | |
| Quality | | | | |
| Layer height (mm) | 0.2 | 2 minutes | | |
| Shell thickness (mm) | 0.8 | 0.96 meter 3 gram | | |
| Enable retraction | \checkmark | | | |
| Fill | | | | |
| Bottom/Top thickness (mm) | 0.6 | | 00 | |
| Fill Density (%) | 15 | | | |
| Speed and Temperature | | | | |
| Print speed (mm/s) | 45 | | | |
| Printing temperature (C) | 205 | | | |
| Support | | | | |
| Support type | None 👻 | HP-1 | | |
| Platform adhesion type | None 👻 | | | |
| Filament | | | | |
| Diameter (mm) | 1.75 | | | |
| Flow (%) | 80 | | | |
| | | | | |
| | | | | |

20. Click "Print", and then the printing will start, now waiting for

completed.

| Operational, Temperature: 26 | The second se | | x |
|------------------------------|---|--------|---|
| Connect | Print | Cancel | |
| | | | |
| 250 200 150 | Temperature | | |
| 100 50 | Bed temp | | + |

3D Prints Show







