

Wanhao Duplicator i3 mini

Alternative names: MonoPrice i3 mini, Cocoon Create Model Maker, PowerSpec Duplicator i3 Mini

Printer properties: No heated bed 0.4mm extruder 1.75mm PLA filament Build size 120 x 135 x 100 mm (w/d/h) Bed size 165 x 240mm (w/d) Print speed 10-70mm/s Travel speed 10-70mm/s

Tips: Use cura as slicer (win/mac/linux) <https://ultimaker.com/software/ultimaker-cura> - Install Cura autorotation and octoprint plugins

<https://marketplace.ultimaker.com/app/cura/plugins/fieldofview/OctoPrintPlugin> Use glue stick for bed adhesion or better glass bed 150x230mm Borosilicate Glass

<https://www.amazon.co.uk/230mm-Borosilicate-Printers-Perfectly-Polished/dp/B07SVF71P9/> Set to 220C-225C print temp if filament doesn't stick to bed properly. Otherwise leave at 210C Manually level before each couple of prints with plain paper feel slight resistance Use zigzag infill to save material Use raft only for models with small bed footprint or where support material is required

Support settings: You want to change the following settings in Cura under 'Support': Support Density - 5-10% Support Pattern - Lines Support Placement - Touching Build plate Use flat nose / tweezer nose pliers (serrated) and flush cutter to remove supports. A deburring tool can be useful as well.

The best thing you can do is reduce the amount of supports in the first place. I like to use Custom Supports in Cura, especially the Cylindrical Custom Supports which you can find in the plugins.

<https://marketplace.ultimaker.com/app/cura/plugins/lokster/CustomSupports>

<https://marketplace.ultimaker.com/app/cura/plugins/5axes/CustomSupportCylinder>

One of the best ways to avoid printing with supports is using the best part orientation, so there aren't as many 45 degree or sharper angles that your designs or objects have.

<https://3dprinterly.com/how-to-make-3d-printing-supports-easier-to-remove/>

Possible mods: Heated bed Network via octoprint server <https://octoprint.org/>

<https://www.blackcj.com/blog/2018/12/02/3d-printer-bed-leveling-duplicator-i3-mini/>

https://www.reddit.com/r/wanhaoi3/comments/96okg0/wanhao_i3_mini/

Octoprint setup

<https://community.octoprint.org/t/setting-up-octoprint-on-a-raspberry-pi-running-raspbian-or-raspberryp-y-pi-os/2337>

```
cd ~
sudo apt update
sudo apt install python3-pip python3-dev python3-setuptools python3-venv git
libyaml-dev build-essential
mkdir OctoPrint && cd OctoPrint
python3 -m venv venv
```

```
source venv/bin/activate
```

In the virtual environment do:

```
pip install pip --upgrade
pip install octoprint
```

Add user to tty and dialout group to allow access to serial port:

```
sudo usermod -a -G tty $USER
sudo usermod -a -G dialout $USER

#reboot required for the new group to take effect. For temporary access:
sudo chown $USER /dev/ttyUSB0
sudo chmod a+rw /dev/ttyUSB0
```

Start service:

```
~/OctoPrint/venv/bin/octoprint serve
```

Access it via <http://localhost:5000>

Autostart service:

```
wget
https://github.com/OctoPrint/OctoPrint/raw/master/scripts/octoprint.service
sudo mv octoprint.service /etc/systemd/system/octoprint.service
sudo sed -i 's/pi/"$USER"/g' /etc/systemd/system/octoprint.service
sudo systemctl enable octoprint.service
```

Update:

```
cd ~/OctoPrint
python3 -m venv venv
source venv/bin/activate
pip install pip --upgrade
pip install setuptools --upgrade
pip install octoprint --upgrade
```

Tuya Smart Plug

<https://pypi.org/project/tinytuya/> <https://plugins.octoprint.org/plugins/tuyasmartplug/>

Cura installation

Use cura as slicer (win/mac/linux) <https://ultimaker.com/software/ultimaker-cura> - Install Cura autorotation and octoprint plugins

<https://marketplace.ultimaker.com/app/cura/plugins/fieldofview/OctoPrintPlugin>

Plugins: CustomSupports, CustomSupportCylinder, OctoPrintPlugin, Auto-Orientation

[Cura Icon.png](#)

```
sudo mkdir /opt/cura
sudo chown $USER:users /opt/cura
sudo chmod 775 /opt/cura
mv ~/Downloads/UltiMaker*.AppImage /opt/cura
chmod 775 /opt/cura/UltiMaker*.AppImage

#download and copy cura icon to /opt/cura
cat >>> .local/share/applications/ultimaker-cura.desktop << EOF
[Desktop Entry]
Name=Ultimaker Cura
Exec=/opt/cura/UltiMaker-Cura-5.3.0-linux-modern.AppImage
Comment=
Terminal=false
Icon=/opt/cura/cura-icon-6.png
Type=Application
EOF
```

Webcam

see [mjpeg-server-from-webcam](#)

Printer Mods

Print Bed stabiliser prevents the print bed screws from moving around inside the holes, stabilising it and avoiding layer shifts.

Tower cover improves the look and protects the filament mechanism from dust and pet hair.

Print Bed Stabiliser	https://www.thingiverse.com/thing:3056318	Print at 105%
Print Bed Stabiliser v4	https://www.thingiverse.com/thing:3971793	
Tower Cover for Wanhao i3 mini	https://www.thingiverse.com/thing:4767664	
Tower Cover for Wanhao i3 mini	https://www.thingiverse.com/thing:3143915	
Thumb wheels	https://www.thingiverse.com/thing:1595794	
Thumb wheels	https://www.thingiverse.com/thing:874155/makes	

Thumb screw with numbers	https://www.thingiverse.com/thing:2692587	
Bed Adjustment Nut	https://www.thingiverse.com/thing:2768366	
Control Wheel	https://www.thingiverse.com/thing:4425414	
Control Wheel Button Wrap	https://www.thingiverse.com/thing:1825073	
Control Wheel Knob	https://www.thingiverse.com/thing:2784217	
LED Lights	https://www.thingiverse.com/thing:4414651	
Filament Sensor Box	https://www.thingiverse.com/thing:4842897	
Auto Bed Levelling	https://www.thingiverse.com/thing:4736440	

Glass Bed for smooth first print layer and better adhesion Glass bed 150x230mm Borosilicate Glass
<https://www.amazon.co.uk/230mm-Borosilicate-Printers-Perfectly-Polished/dp/B07SVF71P9/>

Glass Bed corners	https://www.thingiverse.com/thing:3053300
i3 Glass bed corner clamps	https://www.thingiverse.com/thing:2303045
i3 mini Glass bed corner clamps	https://www.thingiverse.com/thing:4639855
Glass Bed corners	https://www.thingiverse.com/thing:2336468
Corner Bracket	https://www.thingiverse.com/thing:2218972
Corner Holder	https://www.thingiverse.com/thing:1902898
Glass Clamp	https://www.thingiverse.com/thing:3207594
Glass Bed Light	https://www.thingiverse.com/thing:4845956

Adjust Z-Axis Limit Switch after Glass Bed installation:

https://www.diyelectronics.co.za/wiki/3DPrinters/Wanhao/How_to_adjust_the_height_of_your_Z-Axis_Limit_Switch.pdf [how_to_adjust_the_height_of_your_z-axis_limit_switch.pdf](https://www.diyelectronics.co.za/wiki/3DPrinters/Wanhao/How_to_adjust_the_height_of_your_z-axis_limit_switch.pdf)

Spool Adapters:

https://www.thingiverse.com/thing:537084
https://www.thingiverse.com/thing:4639892
https://www.thingiverse.com/thing:735213
https://www.thingiverse.com/thing:3387464

Filament guide:

Corner Filament Guide	https://www.thingiverse.com/thing:2163508/
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Spool holder:

Round Top Spool Holder	https://www.thingiverse.com/thing:2024695/
Useless Spinner	https://www.thingiverse.com/thing:2299324

Level label reminder:

Reminder	https://cdn.thingiverse.com/assets/49/00/79/b7/9c/image.jpg
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Cura USB Printing

You can disable the USB Printing part of Cura and it will no longer touch your USB ports, causing issues with Octoprint on the same system.

- Go to “Marketplace”
- Go to the “Installed” tab
- Scroll down to “USB Printing”
- Uncheck the checkbox in front of it
- Restart Cura

OctoLapse

Better TimeLapse, independent of the built in timelapse.

Auto config:

<https://github.com/FormerLurker/Octolapse/wiki/V0.4---Automatic-Slicer-Configuration#if-you-are-using-cura-follow-these-steps>

Go to Settings → Preferences and click Machine Settings of printer. Paste at top of Start G-code:

```
; Script based on an original created by tjjfvi (https://github.com/tjjfvi)
; An up-to-date version of the tjjfvi's original script can be found
; here: https://csi.t6.fyi/
; Note - This script will only work in Cura V4.2 and above!
; --- Global Settings
; layer_height = {layer_height}
; smooth_spiralized_contours = {smooth_spiralized_contours}
; magic_mesh_surface_mode = {magic_mesh_surface_mode}
; machine_extruder_count = {machine_extruder_count}
; --- Single Extruder Settings
; speed_z_hop = {speed_z_hop}
; retraction_amount = {retraction_amount}
; retraction_hop = {retraction_hop}
; retraction_hop_enabled = {retraction_hop_enabled}
; retraction_enable = {retraction_enable}
; retraction_speed = {retraction_speed}
; retraction_retract_speed = {retraction_retract_speed}
; retraction_prime_speed = {retraction_prime_speed}
; speed_travel = {speed_travel}
```

Taking photo before or at first layer: <https://github.com/FormerLurker/Octolapse/issues/677>

Add to the bottom of the very end of the Start G-code:

```
@OCTOLAPSE TAKE - SNAPSHOT
SNAP
```

or

G4 P1

Add to very end of End G-Code:

G28 Z0 ;move Z to min endstops

3D Designs

Dyson Vacuum Pick	https://www.thingiverse.com/thing:4818696
Metric screw gauge	https://www.thingiverse.com/thing:4807266
Angled LED strip holder	https://www.thingiverse.com/thing:4805470
SoDIMM storage box	https://www.thingiverse.com/thing:4824502
Headphone desk holder	https://www.thingiverse.com/thing:4825780
Retractable key case	https://www.thingiverse.com/thing:4809375
Filament spool holder	https://www.thingiverse.com/thing:4814049
Battery dispenser	https://www.thingiverse.com/thing:4808156/
Bike handle bar end cap	https://www.thingiverse.com/thing:131475
Bike grips 12 designs	https://www.thingiverse.com/thing:3057306
Handle bar plug	https://www.thingiverse.com/thing:940904
Handle bar plug	https://www.thingiverse.com/thing:315544
Key head	https://www.thingiverse.com/thing:2542174
Customizable Hole Plug	https://www.thingiverse.com/thing:5062324
31 Day Spiral Pill Box	https://www.thingiverse.com/thing:2533058 https://www.thingiverse.com/thing:4929496
HexHolder - Butterfly	https://www.thingiverse.com/thing:4929701
Snack Box	https://www.thingiverse.com/thing:5156763

3D Modelling

<https://www.autodesk.co.uk/products/fusion-360/personal>
<https://gist.github.com/probonopd/0fab254aa0b6fc371d8db641822bd530>

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Permanent link:
<http://wuff.dyndns.org/doku.php?id=3dprinter:wanhao-duplicator-i3-mini&rev=1682775256>

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