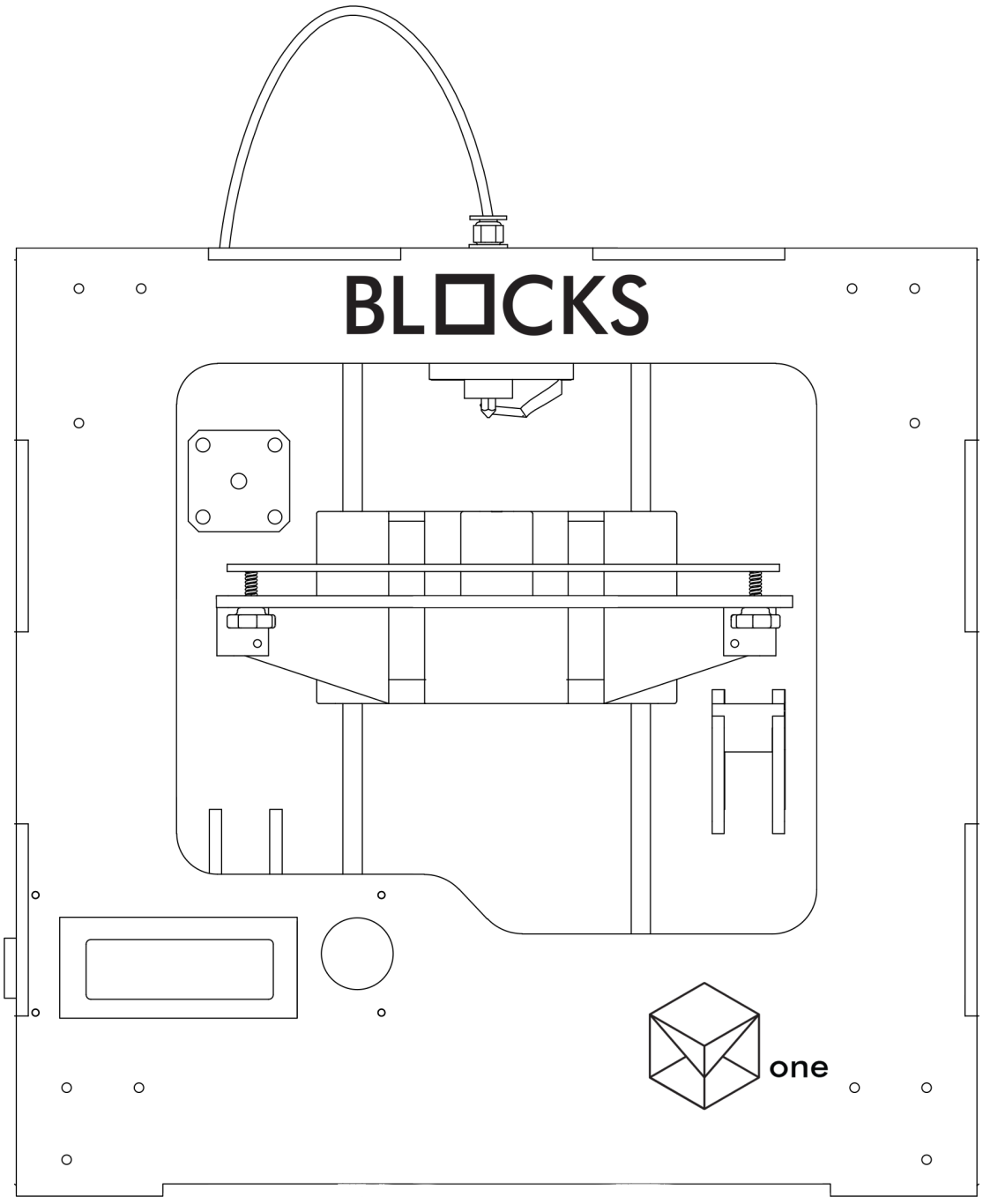
BLOCKS one

USER MANUAL



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BLOCKS
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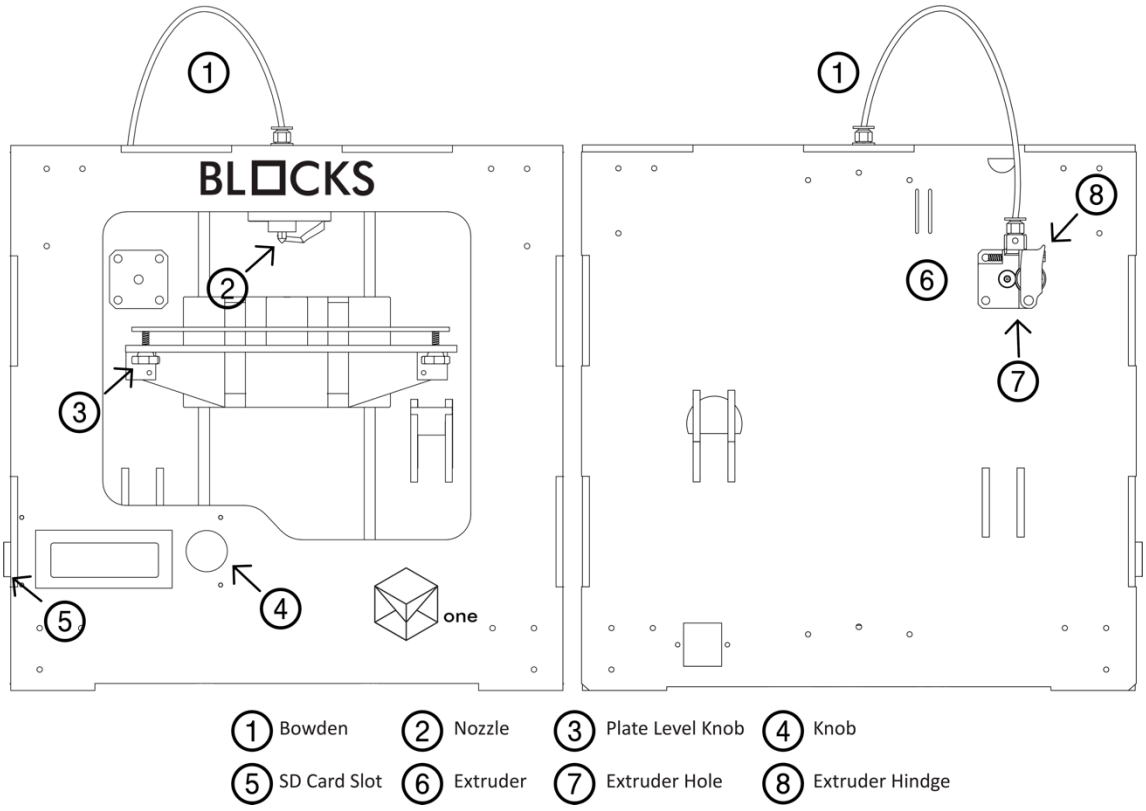
BOX CONTENTS

1. 1x Blocks one 3D printer
2. 1x Power cable
3. 1x Usb cable
4. 1x Printing Glass
5. 2x Spool holder
6. 4x Bulldog clips

BLOCKS ONE DIAGRAM

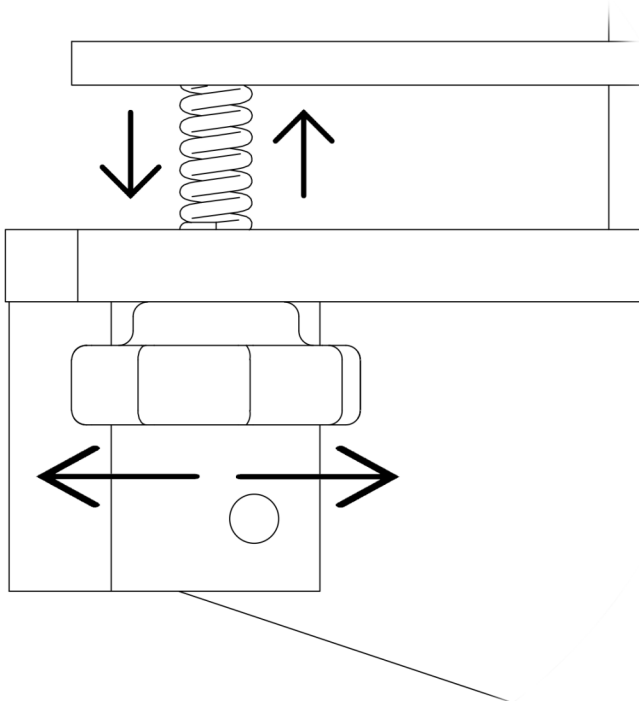


INSTALLATION GUIDE

1. Unpack your new Blocks one.
2. Connect the power cables to the electronics (if not pre-assembled in factory).
3. Plug in the power cord.
4. Switch on your Blocks one.

LEVELLING THE PLATE

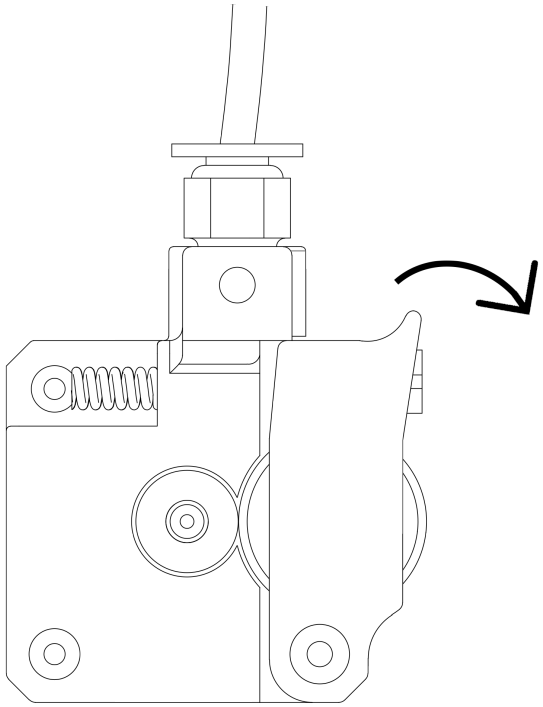
1. Make sure the nozzle is clean.
2. Get a sheet of regular printer paper and place it on the printing glass.
3. Press the Knob and go to Control →Level Plate→Start (If the nozzle is hot wait until it cools down).
4. Adjust the plate level knob closest to the nozzle until it touches the paper (you must feel some friction when you try to move the paper).
5. Press the Knob to continue to the next calibration point.
6. Repeat steps 4 and 5, until you complete the remaining 4 calibration points.
7. Press OK.



(Figure 2 – Levelling Knob Detail)

LOAD FILAMENT

1. Press the Knob and go to Control →Filament→Load.
2. Wait until the hotend reaches the appropriate temperature.
3. Pull the extruder hindge while inserting the filament (aproximately 2,5 cm) in the extruder hole . (Figure 3)
4. Select insert and press, check if the filament being pulled.
5. Wait until the extruder stops (it may take a minute).
6. Remove the extruded filament.



(Figure 3 – Extruder Hindge Detail)

FIRST PRINT

1. Install slicer software. We reccomend cura software but any slicer will do (go to www.ultimaker.com/en/products/cura-software/list and download version 15.02.1 of cura).
2. Import our print profiles into cura software (go to http://www.blockstec.com/downloads/print_profiles.zip and download our optimized settings).
3. Import a 3D model (go to www.thingiverse.com and download anything you wish).
4. Choose the profile suitable for the desired quality.
5. Save to SD card. Once saved remove it safely and then insert it into the Blocks one card slot.
6. Press the Knob and go to Print from SD and select your file.
7. The Blocks one will home its axis and then heat up. When the nozzle is at the desired temperature, the print will start.
8. After the print finishes remove the bulldog clips and the glass with the printed part.
9. Let the glass cooldown naturally and then detach the part (If the part gets stuck to the glass, use a spatula to detach it).

RECOMMENDED SOFTWARE

CAD SOFTWARE

- Onshape - opensource complete modelling software (https://www.onshape.com/)
- Solidworks - paid complete modelling software (http://www.solidworks.com/)
- Others – capable of exporting as .stl/.obj files.

3D MODEL DATABASE

- Thingiverse (http://www.thingiverse.com/)
- Grabcad (https://grabcad.com/)
- 3D warehouse (https://3dwarehouse.sketchup.com/)
- Yeggi (http://www.yeggi.com/)

SLICER SOFTWARE

- Cura – opensource (https://ultimaker.com/en/products/cura-software)
- Slic3r – opensource (http://slic3r.org/)
- Repetier – opensource (http://www.repetier.com/)
- Simplify3D – paid software (https://www.simplify3d.com/)

CARE AND MAINTENANCE

CLEANING AND LUBRIFICATION

1. Depending on your use of Blocks one 3D printer its advisable to clean the rods using a soft fabric cloth at least once every two months.
2. After cleaning the rods apply a small drop of sewing machine oil.

CLEANING THE NOZZLE

1. Press the Knob and go to Control →Temperature→Nozzle.
2. Rotate the Knob to select 220ºC, wait until it reaches the temperature.
3. Remove the plastic from the nozzle using a pair of tweezers.
4. Repeat Step 1 and select 0ºC.

UPDATING THE FIRMWARE

We are constantly updating the firmware, adding new features and correcting bugs. It's advisable to keep up with our updates subscribing to our newsletter and our facebook..

1. Download latest firmaware (http://www.blockstec.com/one.html).
2. Install arduino IDE (www.arduino.cc/en/main/software).
3. Open the latest firmware using arduino IDE.
4. Connect usb cable.
5. Press upload on arduino IDE.
6. When the process is complete disconnect the usb cable.
7. You have just updated your Blocks one firmware.

SAFETY PRECAUTIONS

Blocks one 3D printer is an educational product all responsibility belongs to the user.

1. Don't use damaged power cables, sockets or any switches.
2. A 3D printer machine has moving parts that could be harmful if touched while operating.
3. The nozzle on a 3D printer operates at high temperature so if touched while it is operating, during the process of heating up or cooling down it may cause damage to the operator.
4. Don't access the electronics bay while the power socket is plugged in.
5. Don't use the printer in explosive environments or near any chemicals.
6. Don't let any liquids near the printer.
7. Always supervise the printing process.

TECHNICAL SPECIFICATIONS

- Print volume:
  - 200x200x200mm.
- Print speed:
  - Up to 150mm/s.
- Travel speed:
  - 200mm/s.
- Maximum layer resolution:
  - 40 µm
- Extrusion:
  - Bowden
- Print materials:
  - Open filament 1,75mm abs, pla, hips, ecopla flex, nylon
- Firmware:
  - Marlin firmware (blocks one version).
- Hardware:
  - Heated bed, 0.4 mm hotend, lcd, acrylic frame.
- Software:
  - Cura, slic3r and other slicer softwares.
- Compability:
  - Windows, mac, linux
- Connectivity:
  - Usb and SD card