

craftbot
Plus PRO

USER GUIDE

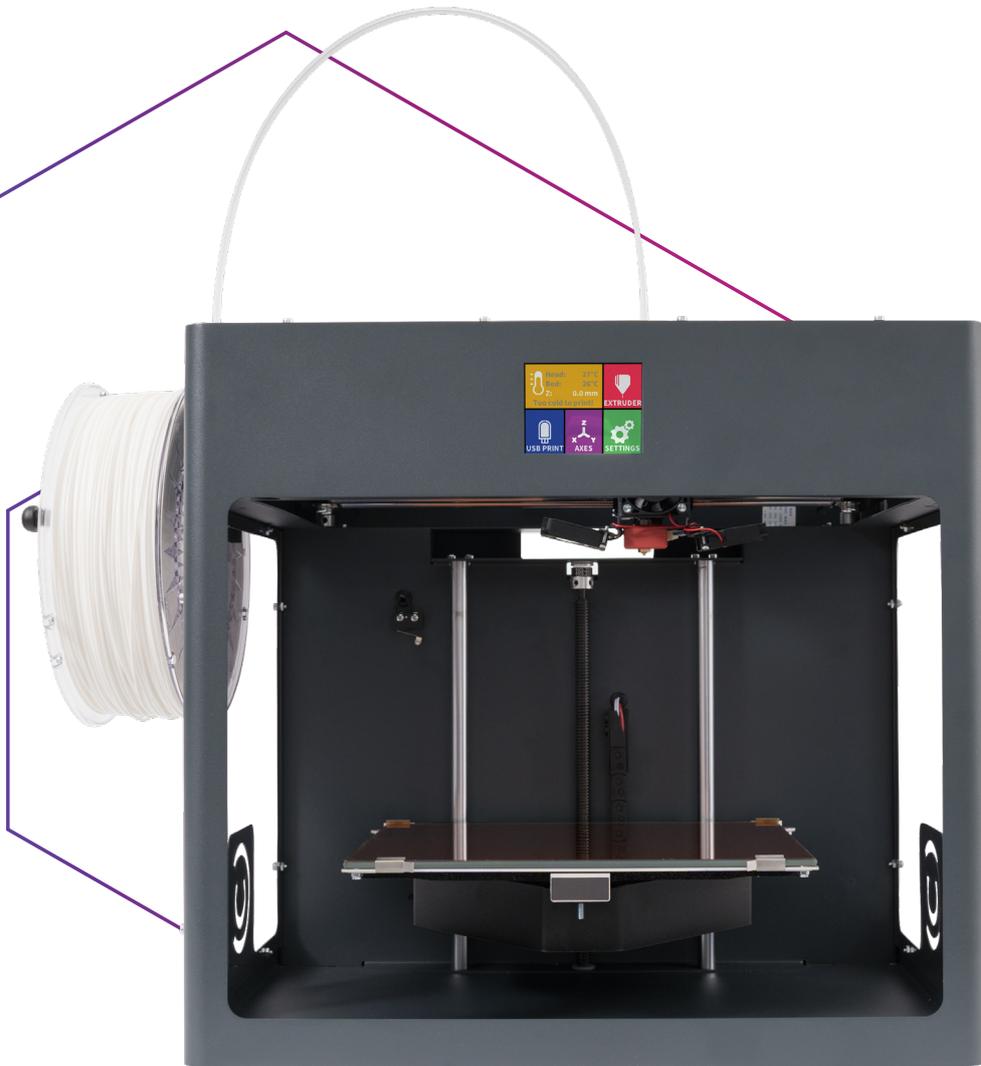


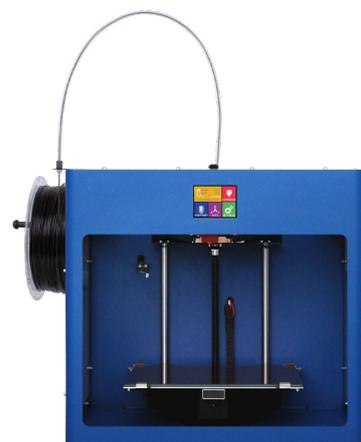
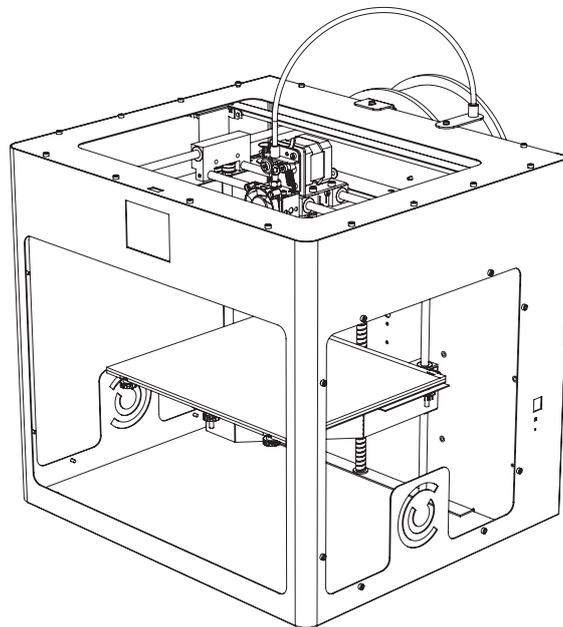
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1. INTRODUCTION

Congratulations on your purchase of the CraftBot 3D printer and welcome to the world of 3D crafting! At CraftUnique we believe that 3D printing opens a new window to enhance creativity. It offers outstanding crafting experience even without prior programming or 3D printing experience.

How does the printer work? The CraftBot 3D printer makes solid, three-dimensional objects out of melted plastic filament. First you will have to have your objects with the help of a 3D design program. Then you will need to use the CraftWare program (downloadable from www.craftunique.com/craftware) to transform your 3D design files into printing instructions for the CraftBot 3D printer. Transfer your files to Your CraftBot 3D printer via USB drive or USB cable. The CraftBot 3D printer will melt plastic filaments and squeeze it out onto the building plate in thin lines to print your object layer by layer.



1.1. Important!

Read this user manual carefully before you use the appliance, then save it for future reference. All information in this user manual is subject to change at any time without notice and is provided for convenience purposes only. CraftUnique, reserves the right to modify or revise this user manual in its sole discretion and at any time. By using the manual, you agree to be bound by any modification and/or revisions. For up-to-date information contact the CraftUnique Service Support team. (support.craftbot.com).

1.2. Warnings

- Check if the voltage indicated on the bottom of the appliance corresponds to the local mains voltage before you connect the appliance.
- Do not immerse cord, plug or main body in water or any other liquid. This may cause electrical shock.
- Do not use the appliance if the plug, the mains cord or the appliance itself is damaged or not operating properly.
- If the mains cord is damaged, you must have it replaced in order to avoid hazard.
- Only connect the appliance to grounded wall sockets.
- Keep the mains cord away from hot surfaces.
- Do not let the mains cord hang over the edge of the table or worktop on which the appliance stands.
- Keep the appliance and its cord out of the reach of children.
- This appliance can be used by children aged from 8 years and above; and by persons with reduced physical, sensory or mental capabilities or a lack of experience and knowledge. These persons should be under supervision and given adequate instruction concerning the use of the appliance in a safe way, understanding the hazards involved. Cleaning and user maintenance shall not be made by children.
- Children can receive great educational benefits from designing 3D objects, but the printing process should not be done by small children.
- Do not touch moving parts or heated elements, it can cause injuries.
- Never reach inside the machine when turned on. Different parts of the machine (mainly the extruder and heated build plate) operate at very high temperatures and can cause severe burns.
- Never leave the CraftBot 3D printer unattended while it is plugged in, and is in operation.
- Make sure that the power supply is off and that the power cord is disconnected before servicing. Allow at least 5 minutes for the device to cool down after unplugging it before reaching inside to service.
- Always turn off the printer and disconnect from the computer when it is not being used.

1.3. Caution!

- Make sure to level the build plate properly before use.
- Make sure not to force anything, whether it be during unpacking, setup, operation or service.
- Service and oil the suggested parts as often as recommended. Only use only substances recommended by CraftUnique.
- The CraftBot 3D printer melts plastic during printing. Plastic odors/gases are emitted during this operation. Make sure to set up the CraftBot 3D printer in a well-ventilated area.

1.4. Unpacking your CraftBot printer

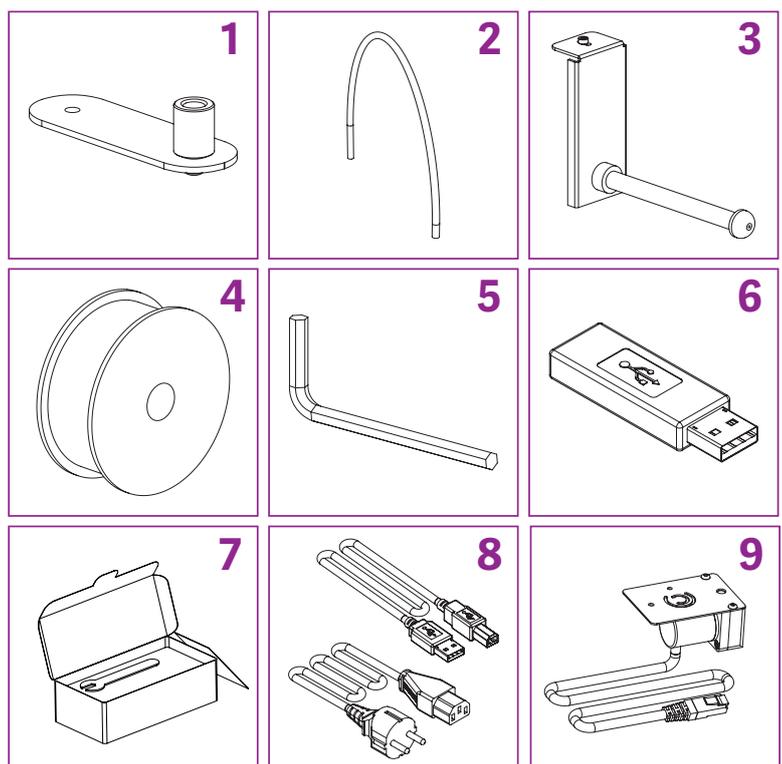
1. Place the CraftBot box on the ground on a level surface. Make sure that there is a lot of open space around you.
2. Open the box with care, not to damage the contents if using a blade.
3. Remove the protective foam insert. You will find the Quick Starter Guide located within the top protective foam insert.
4. There is a Box inserted, which contains the accessories (including a pendrive with a copy of the CraftBot user manual). Remove the Box with care as it supports the extruder during shipping.
5. Now you will find the CraftBot 3D printer itself completely enclosed in a protective plastic bag. Open the plastic covering.
6. Firmly grasp the frame of the CraftBot. Consider its weight. Request physical help if needed. Make sure not to touch the extruder or the electronic panel inside the appliance! Lifting points on the CraftBot are under the Front LCD Panel and the hand dole in the back panel.
7. Place the CraftBot 3D printer on a stable and level surface with sufficient space surrounding around it.



1.5. Contents of the box

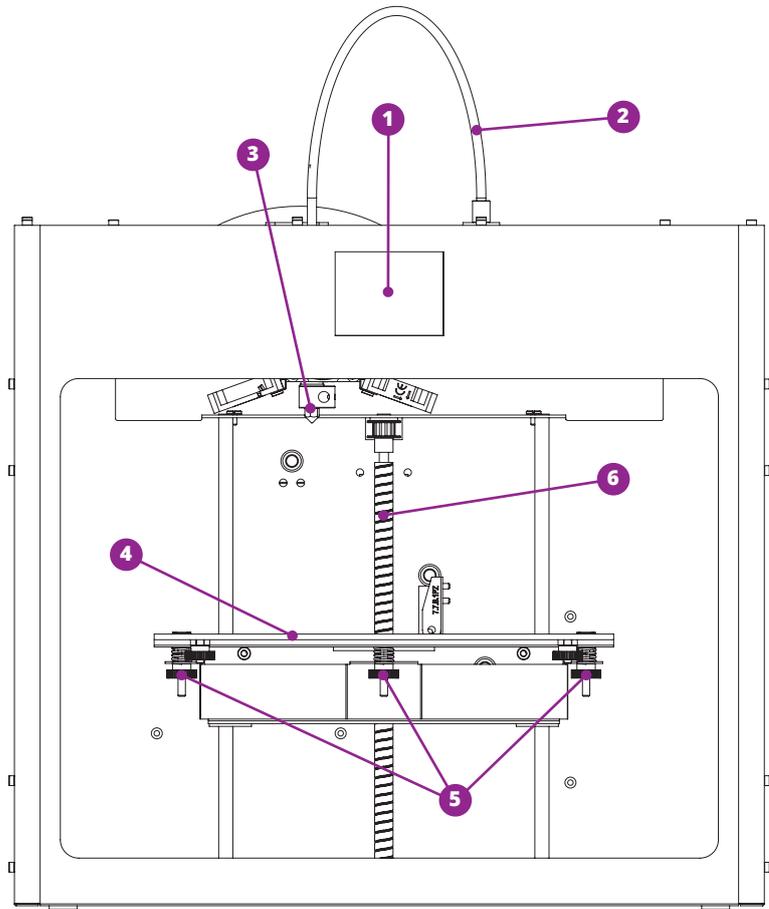
It's time to unpack additional parts. Below you can see contents of the box. First of all, check the list to make sure nothing is missing!

1. Filament guide tube holder
2. Filament guide tube
3. Filament spool holder
4. Filament spool
5. Hex wrenches (5x)
6. USB Flash storage
7. Nozzle kit which includes assortment of Nozzles, spacer card and nozzle spanner/wrench
8. USB A-B cable and AC power cable
9. Filament monitoring system (FMS)

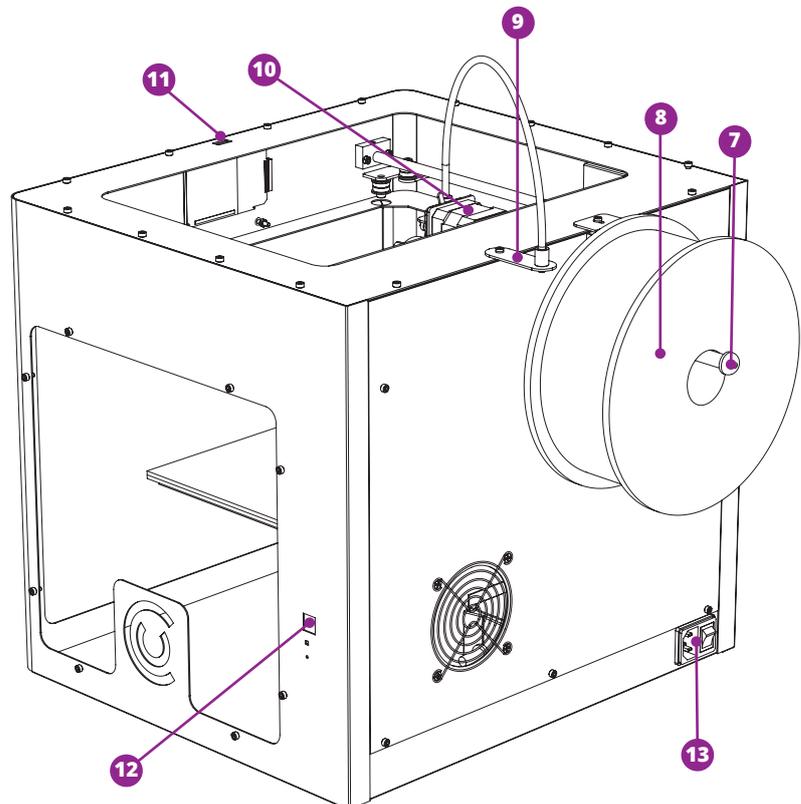


2. INTRODUCING THE CRAFTBOT 3D PRINTER

1. Touchscreen LCD display
2. Filament guide tube
3. Nozzle
4. Removable glass build plate
5. Leveling knobs
6. Z axis rod



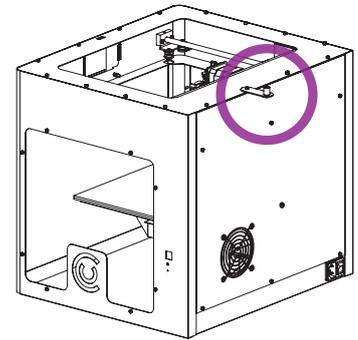
7. Filament spool holder
8. Filament spool
9. Filament guide tube holder
10. Extruder
11. USB-A for flash drive
12. USB-B socket
13. AC power socket and ON/OFF switch



3. ASSEMBLING THE CRAFTBOT PRINTER

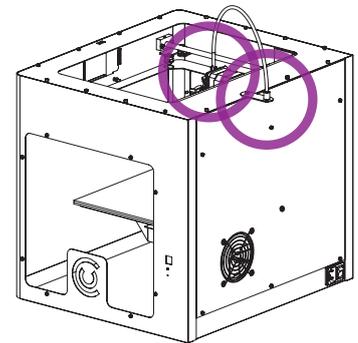
Installing the FMS (Optional)

- Select the desired position for the FMS along the top of the printer. Keep in mind that the spool holder must be installed directly next to it.
- Locate the FMS.
- Using a hex wrench, install FMS system onto the top of the CraftBot.
- Keep in mind that the spool holder must be installed directly next to it.
- Connect the FMS to the machine.



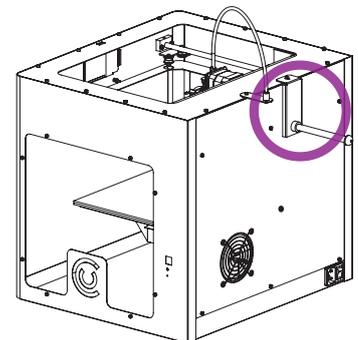
Installing the filament guide tube

- Locate the filament guide tube.
- Insert one end of the filament guide tube into the FMS on top of the CraftBot appliance.
- Push the other end into the hole on the top of the extruder.



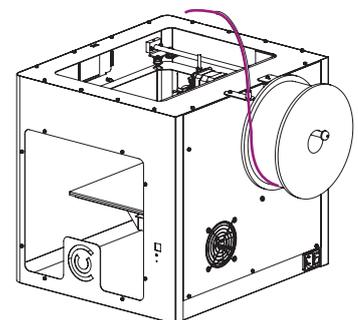
Installing the filament spool holder

- Locate the filament spool holder.
- Using a hex wrench, install the filament spool holder next to the filament guide tube holder.
- Keep in mind leave some space for FMS connector.



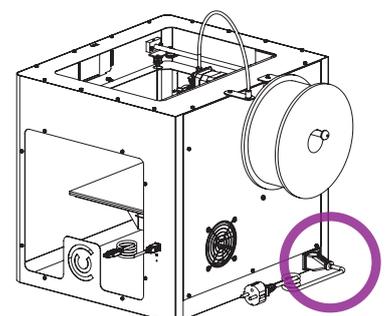
Mounting the filament spool

- Fit the filament spool onto the filament spool holder so that the lead end keeps its course when the filament is fed into the FMS system.



Attaching the powercord

- Ensure that the power switch on the CraftBot is set to the OFF position.
- Find and then insert the AC power cord into the power input on the back of the CraftBot.



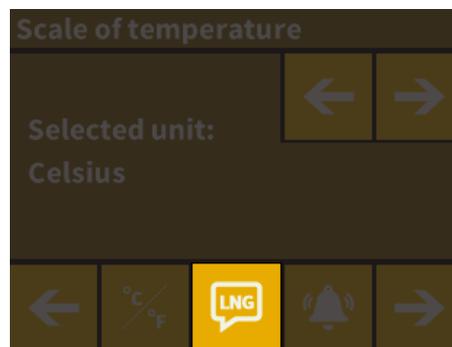
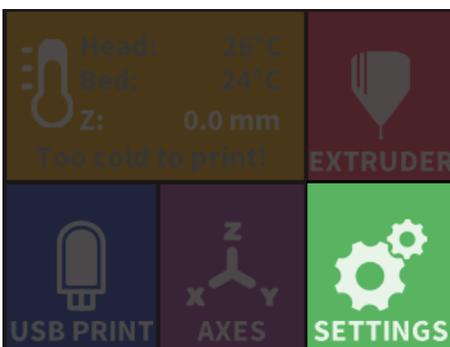
4. USING THE CRAFTBOT PRINTER

4.1. Switching the appliance

- Switch on CraftBot by the ON/OFF button located on the back part of the appliance.
- The LCD panel on the front will light up.

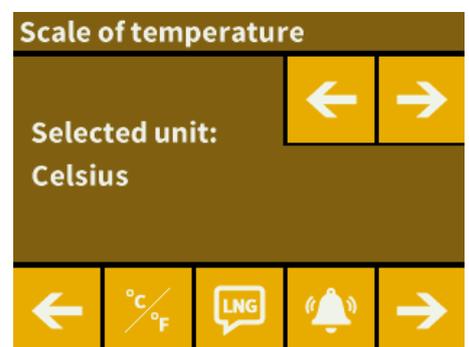
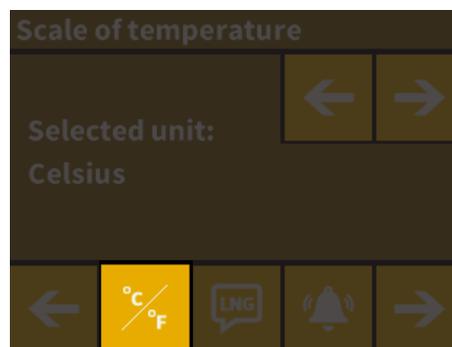
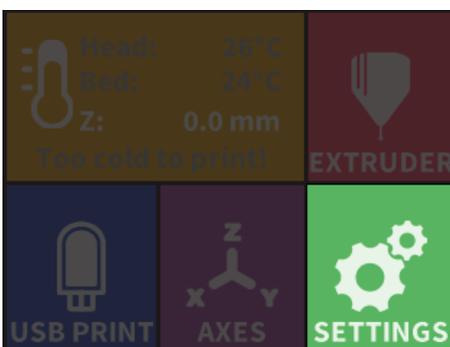


4.2. Setting the language



- Select the Settings menu  on the LCD screen and go to the page 2 with right arrow icon.
- Select the language icon .
- Select the desired language.
- Confirm selection.
- Use the left arrow to get back to the main menu.

4.3. Select the scale of temperature

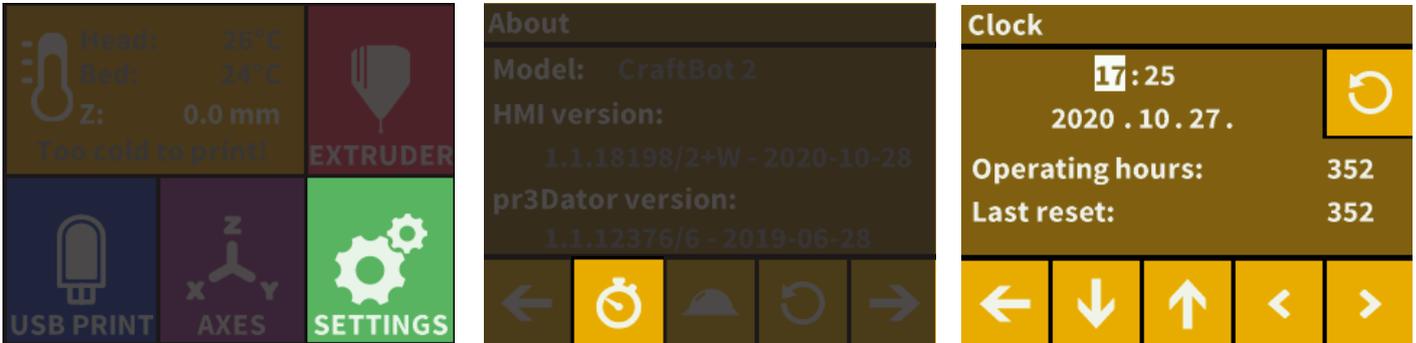


Temperature can be displayed in Celsius or Fahrenheit

- Select the Settings menu  on the LCD screen and go to the page 2 with right arrow icon.
- Select the temperature icon .
- The unit can be changed by pressing the right or left arrows.
- Use the left arrow to get back to the main menu.

4.4. Setting the clock

You can set the time and reset the operating hour counter. This function helps to track printing time between maintenance sessions.

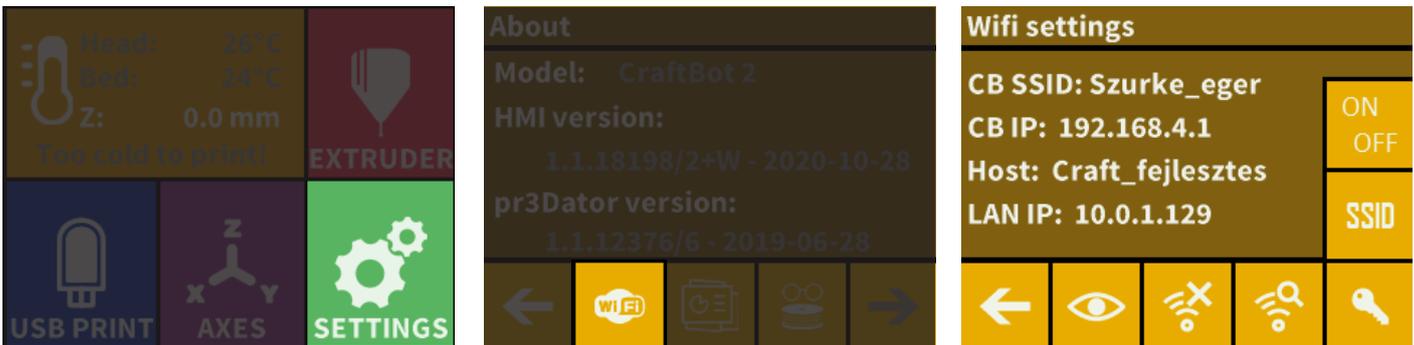


- Select the Settings menu  on the LCD screen and go to the page 3 with right arrow icon.
- Select the clock icon .
- Set the time by using the up and down arrows. Switch between minute and hour by pushing the right arrow

-  increases the selected value by one
-  decreases the selected value by one
-  left navigation
-  right navigation

Counter can be reset by reset  button, which helps tracking the elapsed time between the maintenance sessions.

4.5. Connecting the CraftBot printer to wireless network

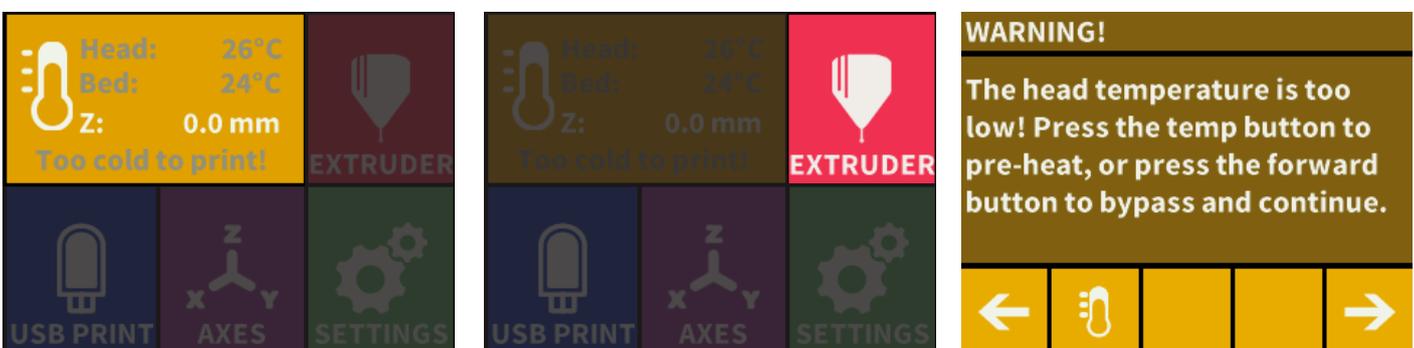


- Select the Settings menu  on the LCD screen and go to the page 4 with right arrow icon.
- Select the Wi-Fi icon .
- Select „search Wi-Fi network” icon  –in the bottom row..
- Use up-down arrows and select desired network with the tick mark .
- Enter password.
- Confirm password with the tick mark  in right bottom corner.
- The selected Wi-Fi network is displayed indicating host name and LAN IP.
- By pressing the “eye” icon you can toggle the wifi’s visibility.
- SSID: You can modify the printer’s unique identifier name.
- Key icon: The printer’s password can be set if the printer is the host.

5. PREPARING THE PRINTER

5.1. Heating up the printer

For printing or loading/unloading the filament, you will need to heat up the printer according to the type of the

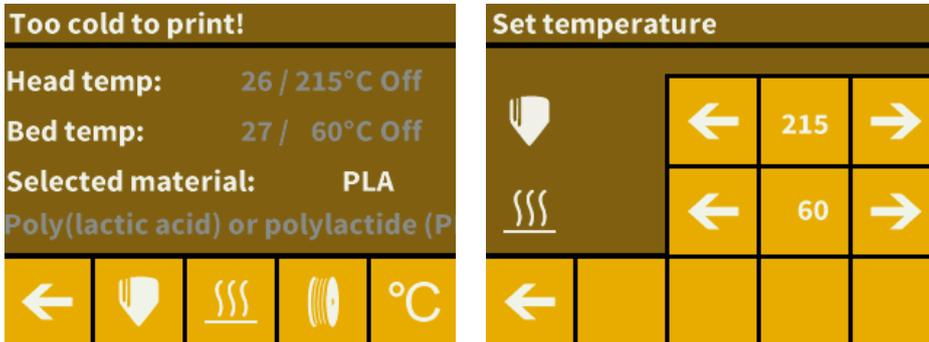


filament you are using.

- On the main menu press the thermometer button  or press the same icon inside the Extruder menu.
- To Scroll through the pre-installed heat setting for other Filaments like PLA, ABS, and PET. Just press the Filament spool  icon.

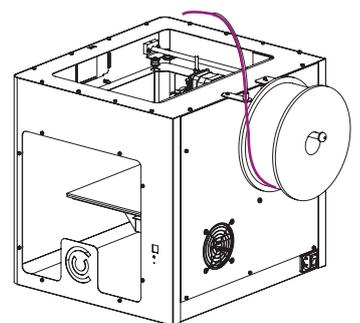
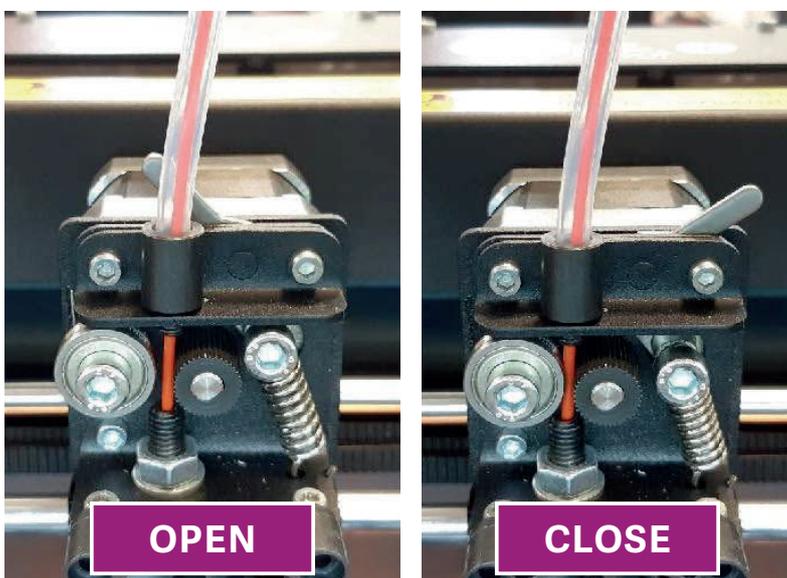
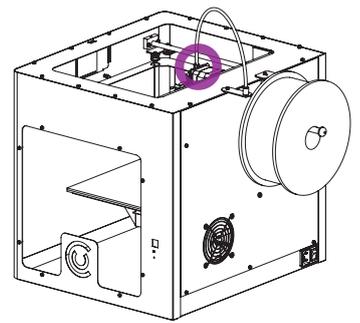
- You can then select the Extruder  icon, and the Bed  icon (line with 3 wavy lines above) to start the heating process.
- Once the extruder reaches the target temperature of your filament you can start printing.

If you want to print with material with other temperature properties, select USER1 or USER2, then click the icon  °C to adjust the temperature using the arrows.

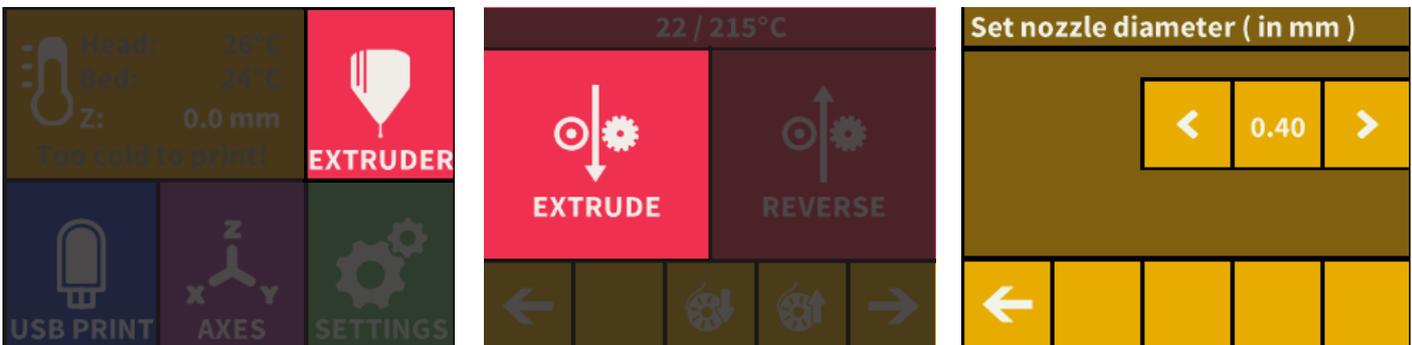


5.2. Loading the filament

- Heat up the printer.
- Take the end of the filament out of the securing hole on the Filament spool.
- Cut and the end of the filament so the filament is straight and has no damages bends kinks or melted parts.
- Remove the filament guide tube from the insert hole on the top of the extruder.
- Insert the end of the filament from the spool through the FMS into the filament guide tube. Until it comes out of the guide tube at the extruder.
- Set the switch on the top of the extruder to the left to the "open" position. Then push the filament into the top of extruder hole.
- When you see the nozzle printhead begin to eject the molten filament, reset the extruder switch to the right "closed" position.
- Now reinsert the end of the filament guide tube into the hole at the top of the extruder.



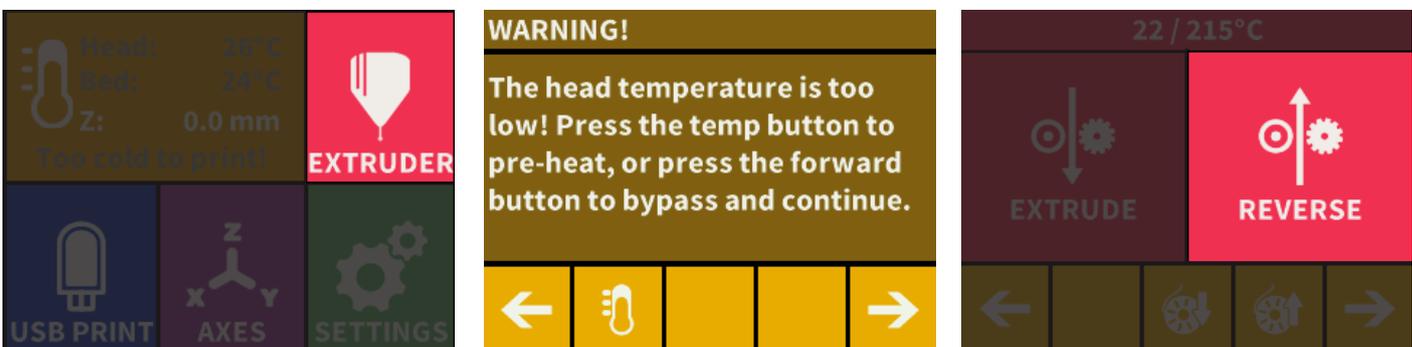
5.3. Extruding



- Enter into the extruder  menu.
- You can also use the “extrude”  menu to extrude the filament. This will only rotate the gear wheel every time you press the icon and will give you more control over the filament movement.
- Push the filament into the extruder hole, against the drive gear and press the extrude or load filament button  on the screen. The load button will extrude 15 cm of filament automatically, this can be interrupted by pressing the back button.

5.4. Removing the filament from the extruder

Never remove the filament from the extruder if the extruder is cold! Always preheat the extruder before removing or changing filaments. Removing the filament from a cold extruder might damage it! You don't have to remove the filament between prints.

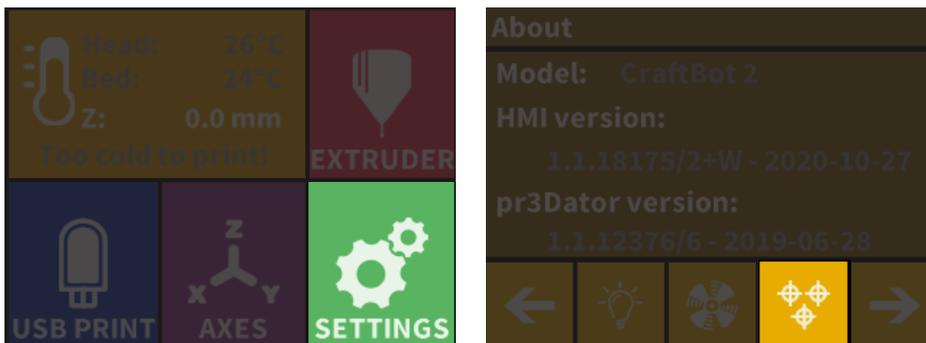


- Heat the extruder as described above
- When the extruder reaches the temperature required for the filament (note that different filaments, such as PLA, ABS, and PET filaments have different temperature characteristics), press the reverse button , and hold down or press the filament reverse button , which automatically performs the operations.
- When the gears start to retract the filament, you can safely pull out the rest of the filament from the guide tube and connect the end of the filament to the spool for safe keeping. Now you are ready to load a new filament.

5.5. Leveling the build plate

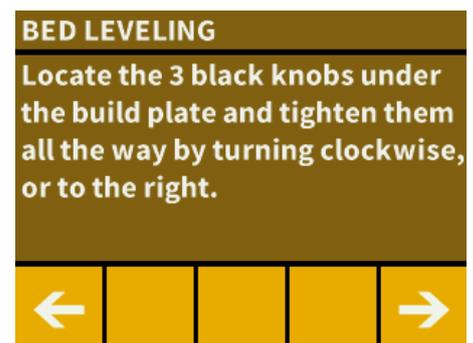
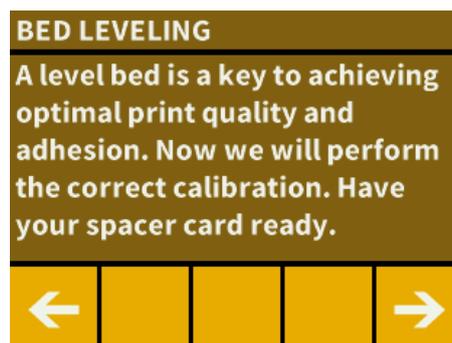
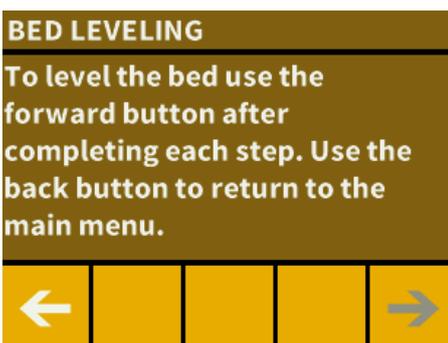
CraftBot has a leveling procedure which ensures that the extruder and the heated build plate are at optimal distance (0.3mm) and they must be leveled evenly. Smaller gap or uneven levelling may lead to the damaging of the Kapton cover of the build plate or the extruder and can give bad printing problems.

- Heat up the extruder and remove the filament. This is to stop any leaking filament from destroying the spacer card and giving you a bad bed leveling height.
- Select the Settings menu  on the LCD screen and on the page. Select the Leveling icon (three crossed circles which represent the three knobs and screw) .

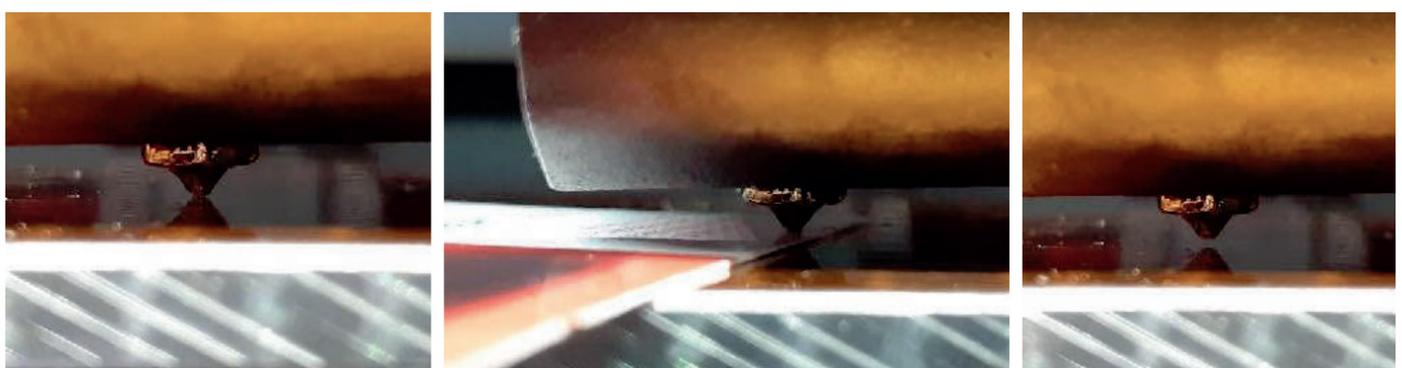


Follow the step-by-step instructions on the LCD screen:

- Turn all three black knobs holding the build plate all the way to the right until the springs in between have been compressed fully and the knobs begin to feel tight this will mean the build plate is at its lowest point. (There is one knob at the front in the middle and two in the back left and right corners of the build plate). Do not over tighten them.
- Have the 0.3mm spacer card ready from the box of accessory's provided with this printer. This card will ensure the optimal distance between the build plate and the extruder. Please keep this card for future use.
- If the extruder has not been warmed up before the calibration, starting the calibration will automatically start warming up the extruder for you



- The pre-programmed leveling process will first set the front center point. Place the spacer card above the front center black knob on the build plate, then press the right arrow on the screen. To move the extruder to this point. Adjust the front center knob if needed based on the instruction on the screen.



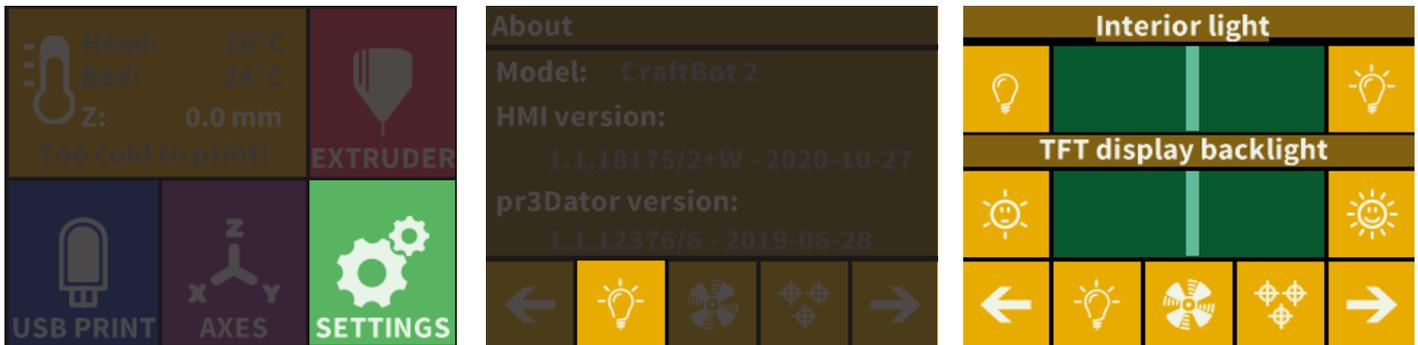
- Repeat the process with the two back knobs. First the right back, then the left back knob these will need to be adjusted.
- Before switching from knob to knob, please remove and replace the leveling card as necessary.
- Process is repeated twice to make sure that all 3 knobs are in the correct position.
- As a result, the building plate should be evenly calibrated.



- You can return to the main menu by pressing the right arrow.
- It is not necessary to calibrate before each print because it is preserves and set in the settings.

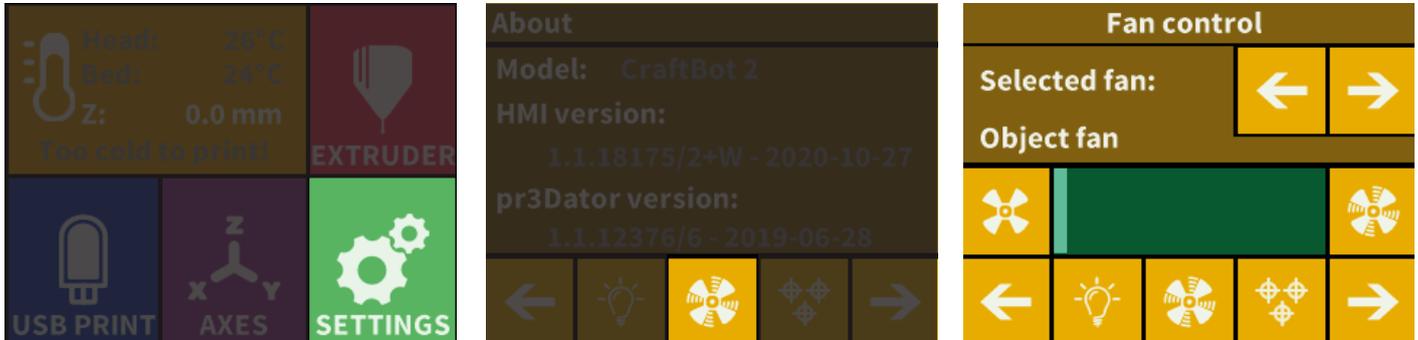
6. OTHER MENU SETTINGS

6.1. Adjusting the lighting



- Select the Settings menu  on the LCD screen and on page 1. Select the Lighting settings  icon.
- You will see a variance pop up on the screen: two different touchscreen sliders.
- Adjusting the lighting: Move the line from the left to the right to vary the brightness of either the interior LED lighting of the CraftBot or the LCD display backlighting.

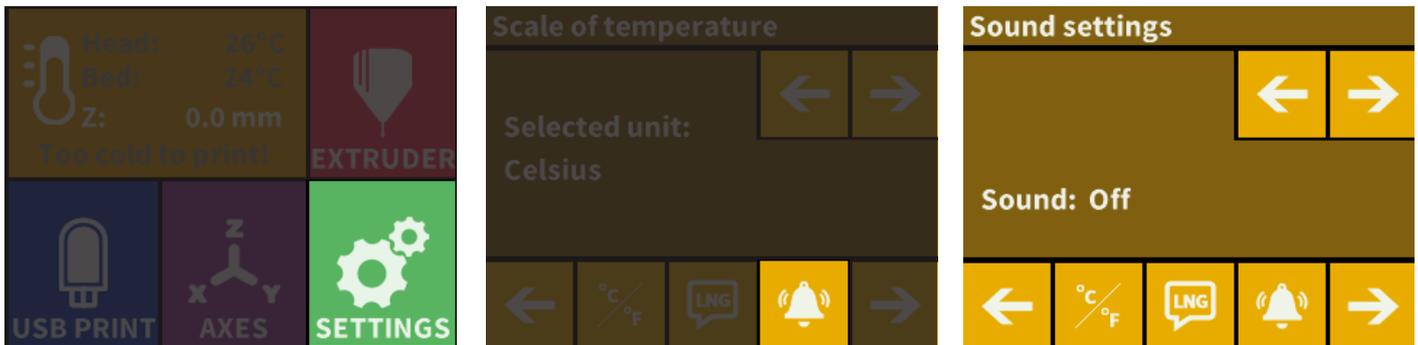
6.2. Activating the fans



- Select the Settings menu  on the LCD screen and on page 1. Select the Fan control  icon.
- Switch between 3 fans (object, extruder, case) by pressing arrows. The name of the fan to be controlled is displayed at the top of the screen.

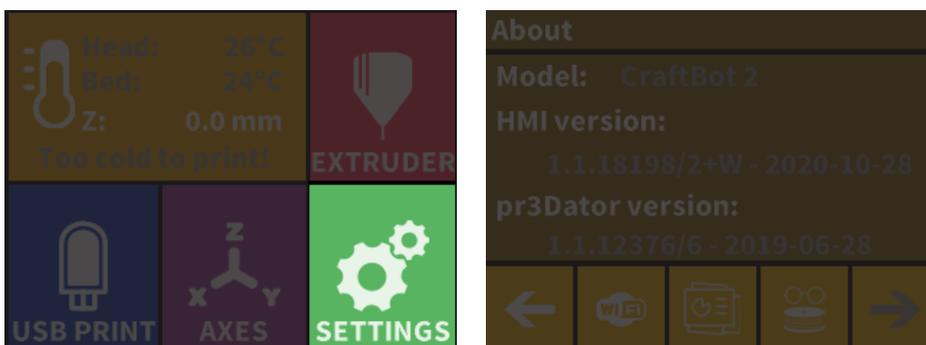
The fan Control: Activate and deactivate the fans before or during printing to match your preferences. Extruder and case fan settings automatically reset to default after 60 seconds.

6.3. Sound settings



- Select the Settings menu  on the LCD screen and go to the page 2.
- Select the Bell icon 
- Use the arrows in the top right corner you can choose between 3 options:
 - Sound On
 - Sound Off
 - Warnings Only

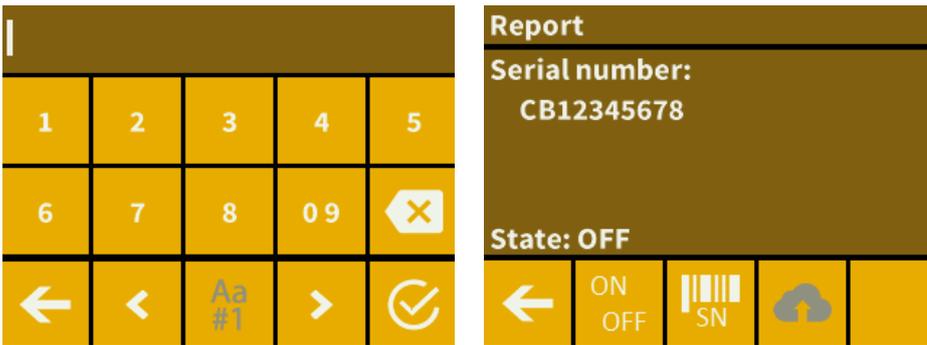
6.4. Report function



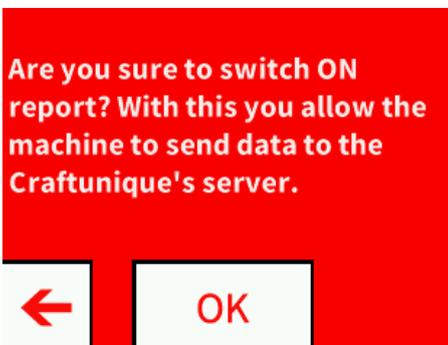
Registered users on the Craftbot.com website can register their printer using its serial number on the website. After registration, and assuming both the function is switched on and that the printer is connected to Wi-Fi then the printer every day at midnight or at the very first power on of that day will automatically send the actual hours of operation, plus the filament usage of the printer to the users account.

On the website with help of time filtering users can check their printer’s usage (how many hours they printed in a day) and how much filament used.

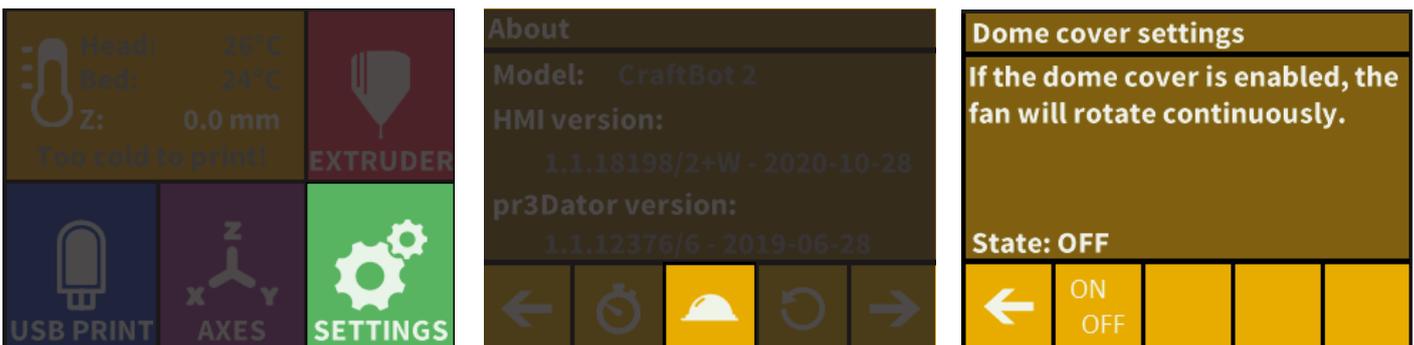
- Activate the Wi-Fi on your printer.
- Select the Setup menu  on the LCD screen and use the arrow to move to page 4.
- Select the Report button .
- Before setting up this feature, connect to the Wi-Fi network as described above.
- Select the second button  in the bottom.
- To activate, you will need the serial number of the printer, which is located on a sticker behind the display (or at the back of the printer). Enter this 8-digit line in the new interface and accept it with the check mark in the right corner.



- You can check if the code is correct with the cloud  icon. If you have entered an incorrect number, you will receive a warning message, a correctly entered number will receive a confirmation message.
- Turn on the report function with the ^{ON}/_{OFF} button. After the confirmation message, the function will be live.
- Use the left arrow to return to the main menu.



6.5. Dome menu

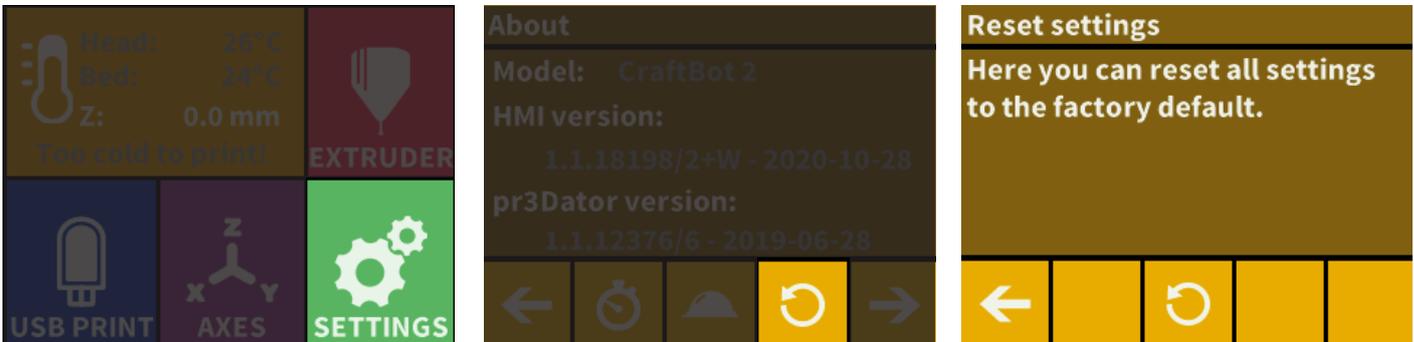


The plexi dome is optional, not included in the basic set.

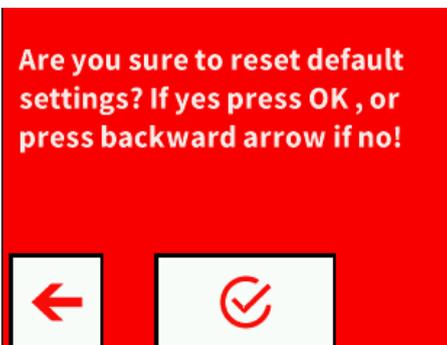
- Connect the cover's cable to the printer.
- Select the Settings menu  on the LCD screen and go to page 4.
- Select the dome .
- If the dome is mounted you can turn on the dome's fan here. If the dome is turned on then the dome fan will work during printing.
- For Some older printers you may have to connect the dome and the case fan connector together. Working together on the case fan setting.
- Use the left arrow to return to the main menu.

6.6. Reset settings

You can reset all settings.



- Select the Settings menu  on the LCD screen and go to the page 6. Select the Reset circle arrow icon .
- Select the circle arrow  again, and press OK.



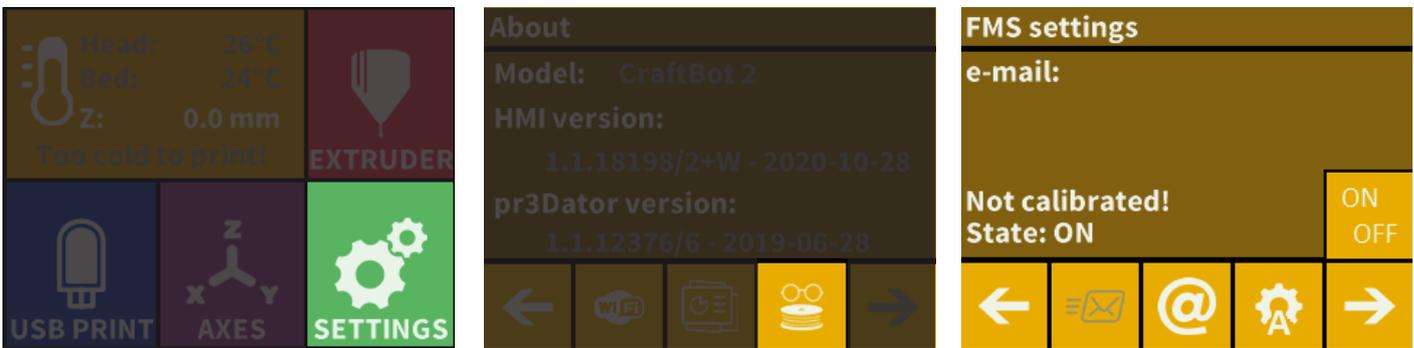
6.7. FMS system (optional feature)

The filament monitoring system observes the filament flow during printing. If the printer detects a jam during the printing process, it will try to resolve it on its own. If it is unable to resolve the jam, then an error message will appear on the LCD display and the printer will also send an email message. For this please make sure the Wi-Fi and e-mail address in the settings are setup correctly.

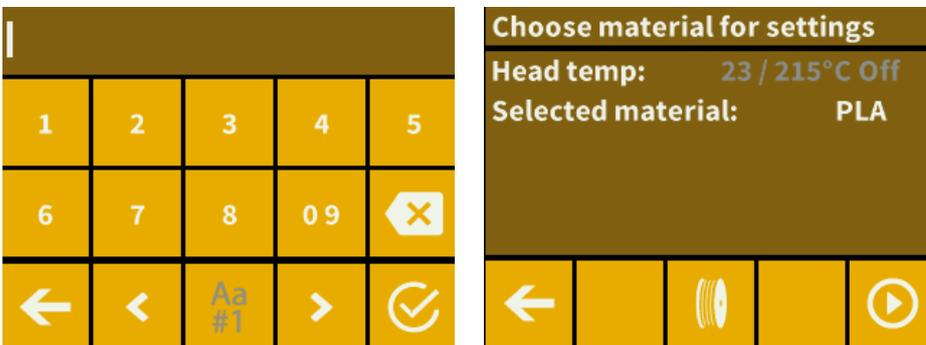


- Connect the FMS to the machine on the back side.
- Select the Settings menu  on the LCD screen and go to the page 4. Select the FMS settings icon .
- Here you can view the status and see whether the function is turned on or off. You can change this with the  button.

- You can provide your email address with the  icon, where the printer will send a message if it was unable to resolve a jam. Please check or set your e-mail address with the @ icon.



- Calibration can be initiated by touching the icon . You can set the head temperature here. You can calibrate the appropriate FMS with the help of the first two icons.



- A test message can be sent after calibration so the user can check whether the e-mail function is working correctly. In addition to the e-mail, a message will also appear in the application and on the FMS reporting.

Automatic error correction process:

- The printer enters paused status, the head goes to the pause position
- It then retracts and extrude the filament
- Point two will be attempted three times
- It will attempt to extrude 6cm of filament to determine whether extrusion will cause clogging again
- If not, then printing will resume automatically. If it is clogged, an error message will be sent (if the sensor is aktiv)
- If the user has resolved the error, you can press resume printing to continue printing immediately.

7. NAVIGATE THE BUILD PLATE AND THE EXTRUDERS

Select the AXES on the menu.



- The left arrow button will return you to the main menu.
- The small house icon  indicates the "home" position of the extruder which is location in the front left corner of the build plate. You can reset the extruder and the build plate to the "home" or "zero" position.
- You can either set each axis one at a time (,  or ) , or do all three of them at once by touching the appropriate button . If the individual house icons are white, then this means that the motors of each highlighted icon are engaged (working).
- To disengage the motors, click on the icon in the far-right bottom corner  , and you will see all of the house icons turn grey. The motors have now been disengaged (not working) and you can freely move the extruder by hand if you wish to do so.
- The directional button to the right of the "home" button can be used to move along the X, Y or Z axis using the motors. After clicking on this button, you will be redirected to another display in which you will see six different arrow buttons.
 -  the head moves left on the x-axis
 -  the head moves right on the x-axis
 -  the head backwards on the y-axis
 -  the head forwards on the y-axis
 -  the bed moves up the z-axis
 -  the bed moves down the z-axis

Note that this option can only be used if all of the motors are already activated and the house icons are all white. If the house icons are grey, then nothing will happen. In this case, after clicking on the direction button, you will see all of the arrows in the grey. To activate the motors, return to the "home" icon and home in; the house icons will now turn white and you can go on to the direction display and move the extruder and bed as you see fit.

8. USING THE PRINTER

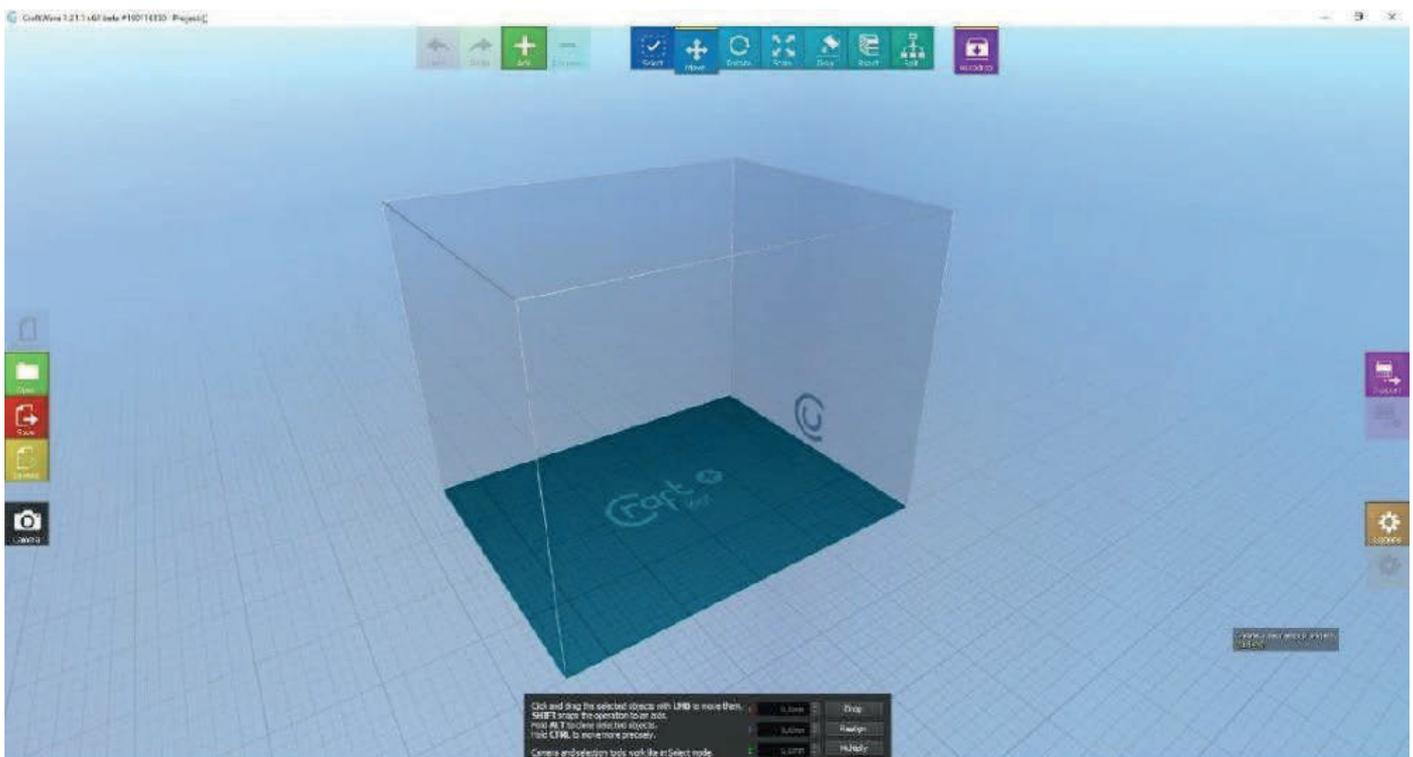
8.1. Installing CraftWare

To print a 3D object, The CraftBot needs toolpath information generated from 3D object CAD files like .obj or .stl. Toolpath information is simply called "gcode". CraftWare software converts 3D design files into printing commands for the CraftBot 3D printer. CraftWare has been developed by CraftUnique with the aim of easing and perfecting the printing process.

- Download the CraftWare slicer software
- Open a new browser session on the computer where you'd like to install CraftWare.
- Go to www.craftunique.com/craftware.
- Scroll down the page.
- Select the Windows or MAC/OSX or linux version, according to your operation system.
- To select the latest version of CraftWare click the CraftWare Button below.
- For older versions click the Please click her for all versions.
- Download the installer.
- Open the installer and follow the directions to install the software.

8.2. Using CraftWare

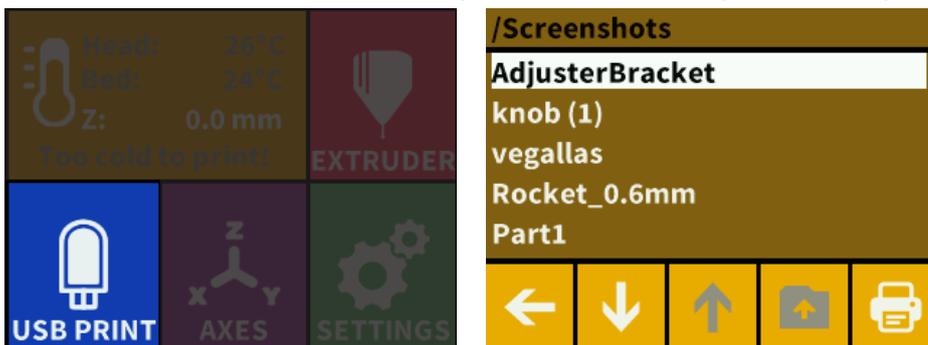
Once CraftWare has been opened up, you will see a virtual build platform. This will represent your CraftBot's real build plate. Please click on the Options button, and select your CraftBot printer type in the "Printer" page. You can add objects, .stl, .obj files onto this virtual build plate and get an impression of what the real life print will look like.



9.9. PRINTING OBJECTS FROM USB FLASH DRIVE

9.1. Printing menu

- Save the printing command gcode file created by the CraftWare slicer program onto USB flash drive. Alternatively, Craftbots do have Wi-Fi connection and offer the option to upload gcode file using the Craftprint app mobile craftapp application. The pendrive provided with CraftBot has design samples saved on it. 3D designs must be converted into a printing command file with the help of the CraftWare slicer software.
- Insert the USB drive into the USB port located on the top front of the printer (above the LCD screen).



- Select the USB option from the main menu. 
- Scroll down with the arrow to select the object's file name.
- Push the printer icon in the bottom right corner to start the printing. 
- The appliance will heat up the extruder and the build plate to the desired heat setting.
- Printing will start when the required operational temperature is reached – until then you will see the in-print screen, with the status message: "Heating"
- During printing the status of the print is displayed on the LCD screen, indicating progress, based upon a percentage of the job completed.
- Please make sure that you have enough filament for the selected project. The quantity is precalculated by CraftWare.
- After the object has been printed, remove the build plate. Printed object can be removed by gently pushing it aside with one hand while holding onto the printing plate with the other hand.

During printing CraftBot displays the following information:

- Name of the file/object to be printed
- Head and bed temperature
- Z position information
- Filament remaining/total
- Time elapsed/total



There are three options available from this menu: Tweak  Pause next layer , Pause .

9.2. Tweak menu

Tweak function enables to change temperature, print speed, extrusion ratio, lighting, object fan control and encoder settings. The in-print tweaks overrule the settings in the g-code.

Temperature modification: Heads and bed temperature can be changed, with heads object fans. Set the speed of the object fan. By default, it is unlocked. If locked g-code can't overwrite setting information.

Flow modification: Print speed and extrusion volume can be modified in percentage ratio to the original. Use the reset button to change back the values of the g-code.

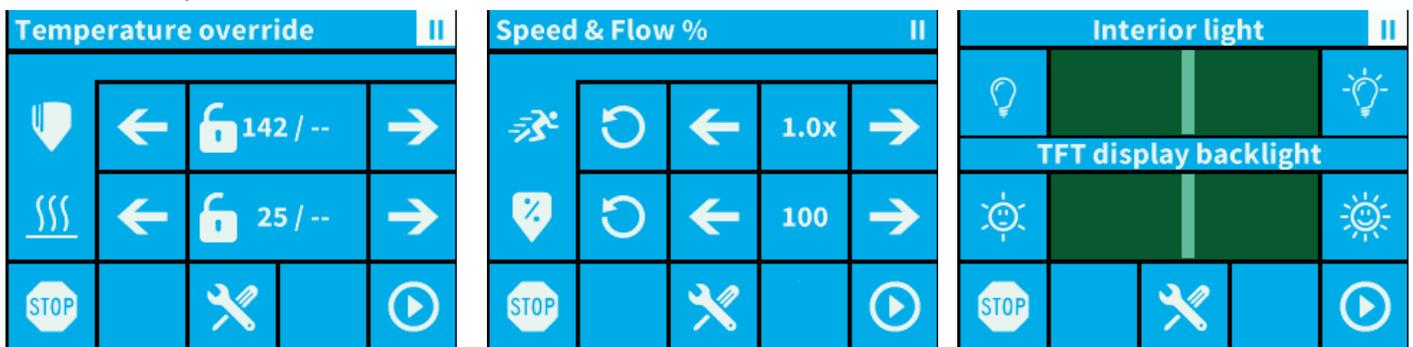
Light settings: Lighting within the appliance and the display backlighting can be changed .

9.3. Pause Next Layer menu

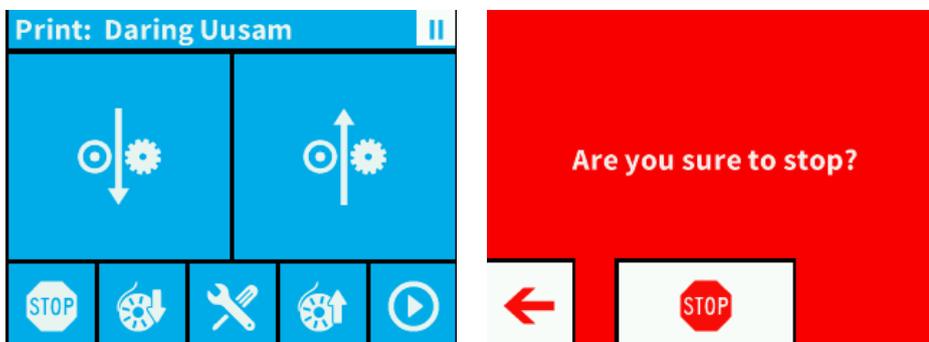
Pause next layer function will stop printing at the end of the current layer. Once the layer is finished, the CraftBot will switch to Pause menu. This is a toggle button – when the icon is crossed out, it means that Pause Next Layer function is active. If pushed before layer is finished it will continue printing uninterrupted.

9.4. Pause menu

In Pause the menu users can change filament, continue printing or terminate the printing project. Pushing the play button will continue the printing. For filament change use the Extrude/Reverse functions or the preprogrammed Load/Unload options.



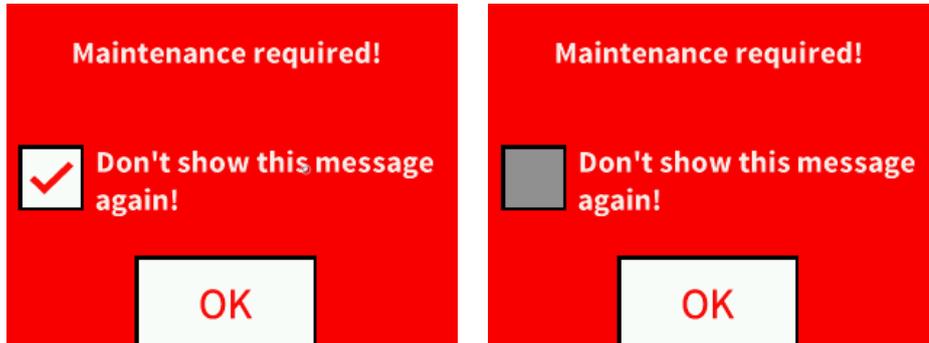
For terminating the printing select "STOP"  . The CraftBot will ask for a confirmation again before stopping. If you pressed the stop button accidentally, you can press the back button to continue the printing process.



10. CLEANING AND MAINTENANCE

IMPORTANT!

Cleaning and lubrication should only be conducted while the extruder and build plate are cold. Please allow the CraftBot 3D printer to cool down at least 30 minutes before starting any cleaning or maintenance. It is necessary to both clean and change the used and worn parts on the printer after every 1000 hours. The printer will warn the user.



10.1. CLEANING

Clean the metal housing of the CraftBot by wiping with a damp cloth.

To clean the build plate; you need to start by removing it by unscrewing the 2 white screws located in the front of the plate. We then recommend cleaning the plate with window cleaner. Once completed, wipe clean with a dry cloth or paper towel.

10.2. Lubricating

The CraftBot printer should be lubricated at least once after every 50 hours of use or every 6 months.

Tools needed for lubrication:

- PTFE based spray lubricant or grease
 - 2 separate lint-free rags or thicker stronger paper towels
 - personal protection such as gloves and safety glasses/goggles
 - lighting to see the interior of the CraftBot correctly (lamp)
1. Move the build plate and the extruder to the „Home“ position.
 2. Once the extruder and bed are in the home position, turn the CraftBot printer off and unplug it from the electrical outlet.
 3. If you look beneath the build plate you will see three rods that run vertically in which the build platform moves up and down on. The two outside rods are smooth and the center rod is threaded. These three rods are known as the “Z-axis rods”.
 4. Place a folded paper towel or a lint-free rag behind the center rod. This rag is used to protect other areas of the printer from any overspray that may occur.
 5. LUBRICATE ONLY THE PARTS RECOMMENDED IN THIS MANUAL!
 6. Spray the threaded Z-axis rod at a relatively close distance to reduce overspray. Make sure the lubricant reaches the inside of every thread (if using grease, spread with hand wearing gloves).
 7. Make sure not to overlubricate, spray only the minimum required amount!
 8. Do not spray the other two rods directly! Spray the towels and wipe it onto the rods.
 9. Remove the rag from the CraftBot interior.
 10. Plug in and power up the CraftBot and move the build plate to the lowest point (“Axes” menu, home position and then go to the directional menu and press the Z down arrow until the bed reaches the lowest point).
 11. Turn the CraftBot printer off and unplug it from the electrical outlet.
 12. Place a second clean rag on top of the heated build plate to protect the components and Kapton from any overspray.
 13. Repeat the process for the top side of the Z-axis rods the same as you performed on the bottom side: protective rag behind threaded rod, spray, wipe excess lubricant on other two outside rods.
 14. Power up the CraftBot once again and raise the build plate back up to the highest position (set the X, Y and Z to the home position).
 15. Turn the CraftBot printer off and unplug it from the electrical outlet.
 16. Wipe any excess lubricant off from the bottom side of the Z-axis rods.
 17. Power up your CraftBot once again and move the build plate back to the lowest point.
 18. Turn the CraftBot printer off and unplug it from the electrical outlet.
 19. Wipe any excess lubricant off from the top side of the Z-axis rods.
 20. Power up the CraftBot once again and raise the build plate back up to the highest position.
 21. Turn the CraftBot printer off and unplug it from the electrical outlet. The motors will now disengage so that you can move the extruder freely by hand.
 22. Use an oiled rag to lubricate the X and Y linear rails. Do not spray from above! Move the extruders back and forth by hand to both extremes of the axes. When the extruders move absolutely smoothly you are finished.

11. TROUBLESHOOTING

11.1. Preventing/Fixing a clogged extruder

The number one inconvenience that you will come across when 3D printing is clogging of the extruder. But we have good news for you! This problem can be easily avoided by following a few simple rules of “3D printing etiquette”.

- First, always wait until the extruder and heated build plate are fully heated to their maximum intended print value before inserting the filament. Inserting the filament at a lower temperature is just asking for a clog.
- When unloading or changing the filament: always heat up the extruder all the way first. Then “Extrude” for 5 seconds and then immediately press “Reverse” aiding the filament retrieval by pulling a little bit on the filament end coming out of the extruder with your fingers.
- If the extruder is clogged clean out the passageway of the extruder. You can use one of the small hex wrenches that came with the craftbot. To do so. Heat up the extruder to 250 °C While the extruder is empty push down any excess filament out by plunging the hex wrench down into the passageway: Make sure to do adequately but not in a violent way which would damage the machine and always take precautions because the extruder is very hot!
- It is especially important to clean out as much old filament leftover between using different filaments, as the different characteristics of the filaments’ properties (even printing the same material in a different color) can cause clogs from inconsistencies. For example: you must heat up to 250°C to clear out any extra ABS before using PLA.

Clogging is the most common problem in every 3D printer and cannot be prevented 100%, but if you follow these simple steps you will prevent 95% of occurrences. If you still cannot clear the passage with just this method, you may want to move onto the next method by following these next steps to actually remove the nozzle itself...

11.2. Removing nozzle

To clean out the extruder properly by removing the nozzle you will need to remove the nozzle while heated up to 250°C using both a 7mm and 11mm wrench for the two nuts located on the nozzle itself and the channel end to the top side of the extruder. Make sure to use an oven mitt (for example) to protect yourself from burns. You will also need to disconnect the fan assembly and remove the entire piece by loosening the two bolts connecting it to the front of the extruder assembly.

Most importantly, make sure to hold the red rubber part stationary at all times so that you do not damage the wires running into it, you can use a wrench to do so. Please make sure that none of the wires are disconnected! The removed nozzle can be unclogged with a pin or replaced with a new one.

12. FIRMWARE UPDATE

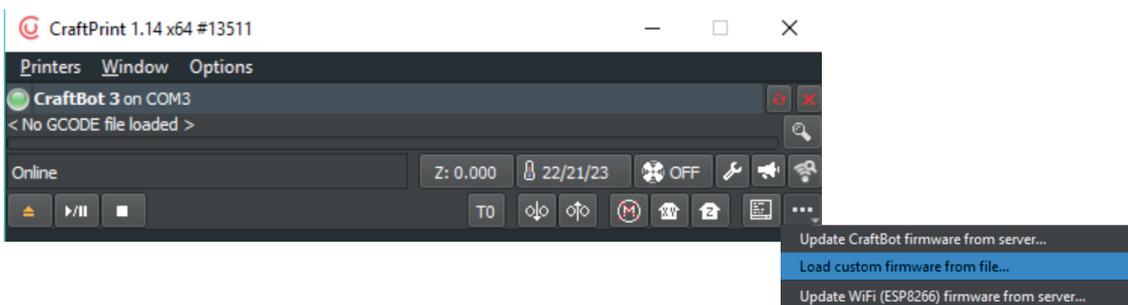
12.1. Firmware update with new software

Updating the firmware adds new function(s) and improves performance. CAUTION: NEVER turn OFF the computer or disconnect USB cable while updating the firmware.

1. Download CraftPrint® software from Craftunique® website: <https://craftbot.com/craftware/>

GET CRAFTWARE

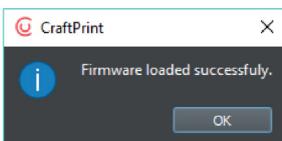
2. Install the CraftPrint® application on your computer.
3. Download the pr3Dator® firmware file from Craftunique website and extract the ZIP file on your computer. Please read the attached Release Notes. <https://www.craftunique.com/firmware>
4. Connect the printer to your computer with USB cable.
5. Open the CraftPrint program.
6. Select the "Load custom firmware from file" from „..." menu.



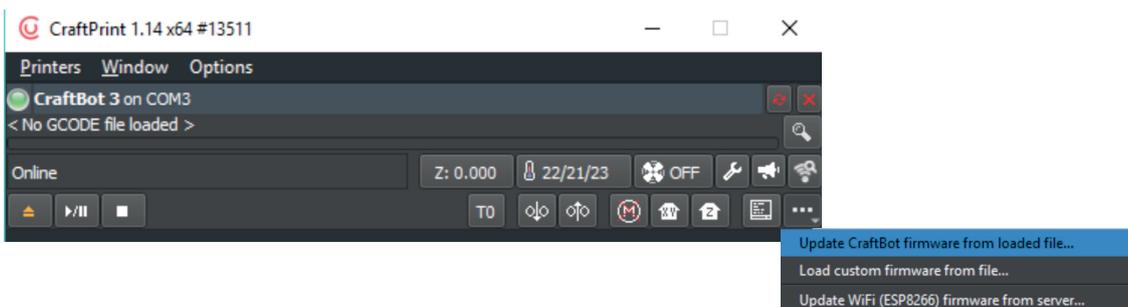
7. Select and open the *.firmware file



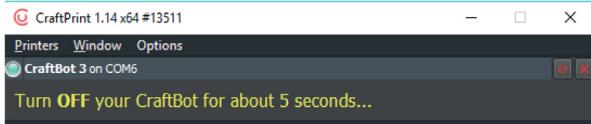
8. On successful load you got message, click OK!



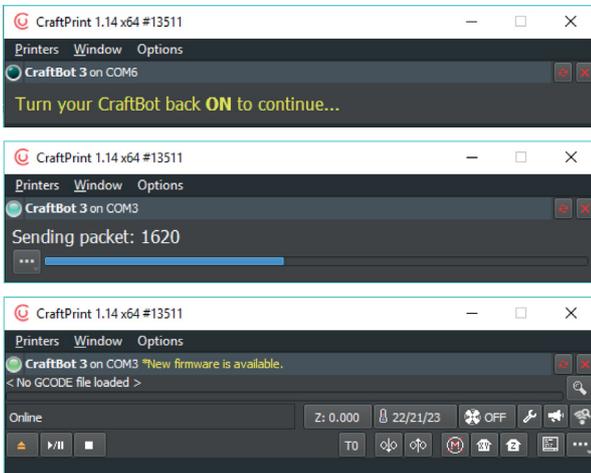
9. Open again the "..." menu and select Update CraftBot firmware from loaded file...



10. When asked please turn off the printer at least 5 seconds.



11. Turn the printer back on and wait until the update is finished



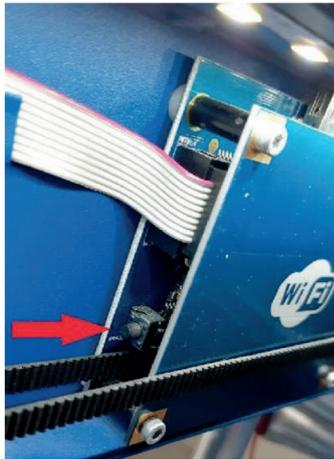
12. When the update is finished, power cycle the printer once again. Check the pr3Dator firmware version on printer.
13. Update is done.

12.2. Firmware update on older printers

If you have an older printer and have not updated the firmware in a long time, you will first need to re-start your printer.

From time-to-time you may encounter a traffic jam scenario when attempting to upload this new firmware; in some cases your CraftBot's screen will go completely blank and even seem to be "non-functional" but do not worry! This situation can be easily remedied by following these easy steps to fix your machine.

- Erase the LCD display
 - Take a look at your LCD display located at the middle top front of the CraftBot 3D printer. You will need to get around to the back of the LCD to erase. The "erase" button is located at the bottom left corner of the LCD looking from the inside.
 - Switch off your machine.
 - Wait 10 seconds.
 - Press and hold the "erase" button on the LCD. Then powering up your printer.
 - Wait 5 seconds, then switch off your printer again.



- Erase the PCB panel
 - For the main controller PCB erase button, while your printer is still switched off, use a piece of filament to insert into the "erase" hole which is located on the side of the printer, under the USB / Encoder connectors.
 - Press and hold the button with the filament, (you should hear and feel a smack click) then powering up your printer again.
 - Wait 5 seconds, then switch off your printer again.

Now both controller boards are erased. At this point the screen should still be blank and your CraftBot should still be unresponsive. From this point proceed to the firmware update mentioned previously and after uploading you should have a 100% operational CraftBot printer!

13. APPLYING A NEW LAYER OF PROTECTIVE KAPTON SHEET TO YOUR BUILD PLATE

Build plate Kapton sheets get worn out in time or can be damaged by the nozzle due to incorrect levelling or removing the printed models. Reapplying a new Kapton sheet is essential to maximize print qualities if the old one has issues/ damages. To reapply a new Kapton sheet, take the build plate out of the machine and remove the old sheet by stripping it off of the glass plate. Clean the surface of the glass plate with acetone.

Remove the protective plastic backing sheet (keep this safe for use later) from the new Kapton sheet in order to get to the sticky side. Apply some window cleaning liquid onto the plate and the sticky side of the sheet to help you to correctly the position the sheet on the build plate. Align the Kapton to the front side of the plate (the edge closest to the screws) on the corner. Once the positioning is correct, squeeze out the access liquid from between the plate and the sheet with a thin but solid object, like a used credit card. Place the protective sheet (which was removed in the beginning) on top the new Kapton to prevent scratches and damages during this process.

Start from the center of the plate and move horizontally and vertically. Once all the liquid has been squeezed out and the sheet is applied properly, put the plate somewhere to dry. Allow the sticky part to rest for a day before using.

14. GUARANTEE

For special conditions relating to the product guarantee, see the "Guarantee Statement" on a separate sheet, which is also delivered with the product as well.

15. LIMITATION OF LIABILITY

With the exceptions included in the regulations concerning the guarantee and to the greatest extent permitted by the relating act, CRAFTUNIQUE Ltd. is not responsible for any direct, indirect, specific, stochastic or consecutive damage claims which are stem from the breaching of the terms of guarantee, respectively any other legal theory, included, but not limited to:

- the loss of usability
- the loss of income, the loss of actual or expected profit (including the profit from contract), the loss of expected saving, loss of business, loss of opportunity,
- the loss of a fair name and injury to a fair name,
- the loss, injury or perishing of data,
- any indirectly or consecutively caused damage or loss, including the damage caused by the changing of equipment/installation or property, respectively
- the cost of the restoration or reproduction of data stored or used on the Product

The restriction above does not refer to CRAFTUNIQUE Ltd.'s legal liability for intentional, serious negligence and/or default. Certain jurisdictions don't allow the exclusion or limitation of accidental or consecutive damage, therefore if such jurisdiction regulates the guarantee, the restrictions above does not refer to You.

TECHNICAL SPECIFICATIONS

PRINTING

Printing technology:	Fused Filament Fabrication (FFF)
Build volume:	25 x 20 x 20 cm / 10 x 8 x 8 inch
Layer resolution:	50 micron (with 0.25 mm nozzle)
Position precision:	X,Y: 4 micron; Z: 2 micron
Filament diameter:	1.75 mm
Nozzle diameter:	0.4 mm
Print speed:	50 - 200 mm/s
Filament types:	PLA, ABS, HIPS, PET, nylon, etc.
Noise level:	~ 48 - 49 decibels
Power consumption:	cca. 110 W

TEMPERATURE

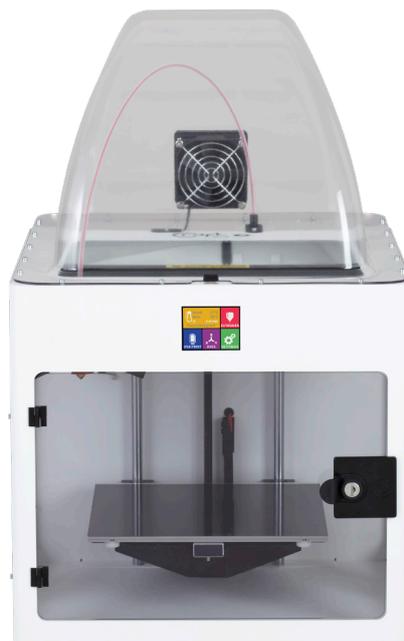
Ambient temperature:	15 - 32 °C
Storage temperature:	0 - 32 °C
Operating nozzle temperature:	180 - 260 °C
Operating heated build plate temperature:	50 - 110 °C

PHYSICAL DIMENSIONS

	X: 40.6 cm / 16 inch
Frame dimensions:	Y: 35 cm / 14 inch
	Z: 38.5 cm / 15.2 inch
With all parts attached:	X: 41 cm / 16.1 inch
	Y: 46 cm / 18.1 inch
	Z: 46 cm / 18.1 inch
Shipping box:	X: 50 cm / 19.7 inch
	Y: 45 cm / 17.7 inch
	Z: 49.5 cm / 19.5 inch
Weight:	14.45 kg
Shipping weight:	18.1 kg

SOFTWARE

Software package:	CraftWare
File types:	OBJ / STL / CWPRJ
Supports:	Windows 7 and above, OS X and Linux



Cooperation between 3D printer and people has never been easier.

Get in touch!

CONTACT:

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Salgótarjáni str. 12-14.

Budapest 1087, Hungary

Phone: +36 30 338 5056

Web: www.craftbot.com • www.craftbotusa.com

Craftbot is made in the EU.

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craftbot