



TRIPODMAKER BLACK EDITION USER MANUAL



THANK YOU

for your purchasing a Tripodmaker!

This is the user manual for your Tripodmaker Black Edition. In this manual, you will be guided through the printing process. Read this manual carefully and take the needed time to get familiar with your new product. This is a manufacturing device that requires thorough understanding. If for any reason something would be unclear or wrong, feel free to contact us at: info@tripodmaker.com

TABLE OF CONTENT

Specifications and box content

1. Specifications of the Tripodmaker.....	4
2. Box content.....	5
3. Terminology.....	6
4. Attentions and warnings.....	8

Unboxing

1. Preparations.....	10
2. Load filament.....	11
3. Calibration.....	12
4. Plexi covers.....	15

Menu

1. Info screen.....	16
2. Quicksettings.....	18
3. Print file.....	19
4. Extruder.....	20
5. SD card.....	21
6. Configuration.....	22

MAINTENANCE & TROUBLESHOOTING

1. General.....	24
2. Extruder drive cleaning.....	26
3. Cart alignment.....	28
4. Clogged nozzle- Coldpull.....	34
5. Troubleshooting and easy fixes.....	36

SPECIFICATIONS OF THE TRIPODMAKER

HARDWARE

technology	FDM (Fused Deposition modeling)
dimensions	42 cm x 53 cm x 101 cm
shipping dimensions	45 cm x 55 cm x 110 cm
weight	23 kg
shipping weight	25 kg
print area	Ø 30 cm x 45 cm
nozzle	Ø 0.4 mm; full metal - up to 295°C
heated bed	up to 95°C
power	88 - 264 V; 47 - 63 Hz; 5A
connectivity	Stand alone printing from SD card
casing	plexi cover (optional)

MATERIALS

diameter	1.75 mm
plastics	PLA; PETG; HIPS; ABS; Polycarbonate

SOFTWARE

software	PRISMA cloud platform
printable files	.STL
supported	Chrome - Safari - Firefox

PERFORMANCE

bed leveling	full automatic / manual screw assisted
layer thickness / resolution	75 micron - 300 micron
machine tolerance	0.1 mm

BOX CONTENT

Next to your Tripodmaker, which had the SD-card inserted, there are other components in the box. Here the list:



1X Filament spool
(can be in any color)



2X Spool holders



1X Blue tape



1X Power cable



1X USB cable



1X Test print



1X Power source



1X Filament guidance
tube



1X User manual

TERMINOLOGY



- | | |
|-----------------------------------|--------------------------------------|
| 1. Display | 7. Filament guide tube |
| 2. SD-card slot | 8. Print head cables |
| 3. Push and rotate button | 9. Filament driver |
| 4. USB Socket | 10. Rods |
| 5. Build plate | 11. Carts (wheels or linear sliders) |
| 6. Spool holder
mount location | 12. Vertical slides |

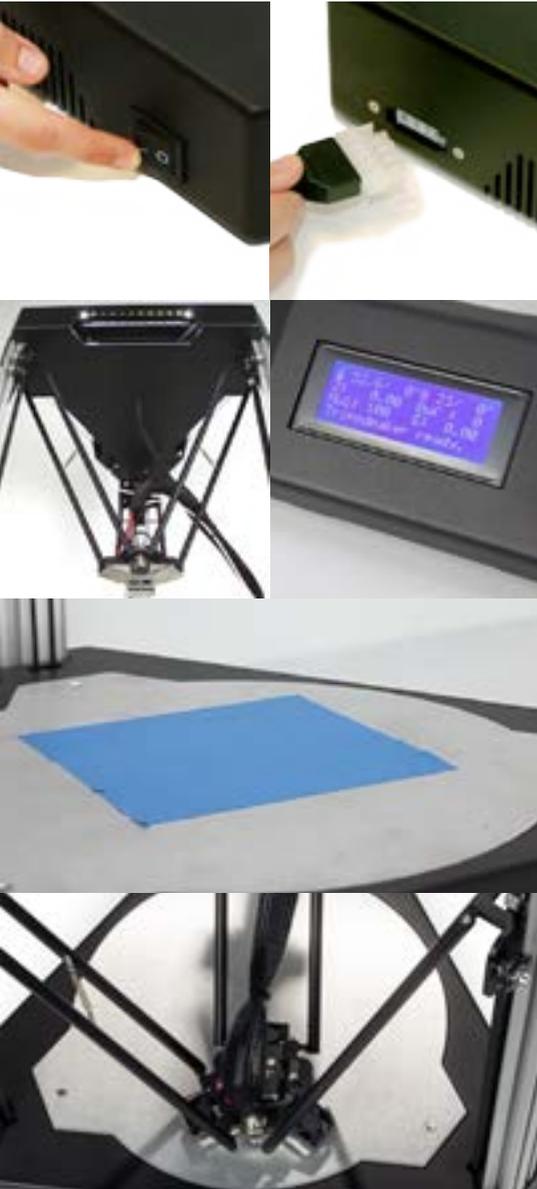
PRINT HEAD / HOT-END



- | |
|-----------------|
| 1. Nozzle |
| 2. Probe |
| 3. Cooling fans |

ATTENTIONS AND WARNINGS

Please read this attentions carefully and keep them in mind while unboxing and operating the device.



ATTENTION! Make sure your power switch is in the OFF [o] position before you attach or detach the power cable.

ATTENTION! Turning the
-Tripodmaker ON lights up the LCD screen and the LED lights.
-Switching OFF can be done at any time, however it is recommended to only turn it of when not in use.
-Turning the Tripodmaker OFF extinguishes the LCD screen.

ATTENTION! make sure your plate is free of objects.

ATTENTION! Using a glass or wooden sheet to cover the original aluminum build plate will make the nozzle crash. The sensor is unable to sense the aluminum through these sheets of glass or wood.

ATTENTION! During the printing process, the hot-end and print bed can get hot. Do not touch these until printing is done.

ATTENTION! When storing your spool, make sure your filament doesn't get tangled as this might block the unwinding of the spool in a next print



The TripodMaker is an electrical device and contains motors and hot elements. During operation of the printer, be always aware of possible hazards.

WARNING! Age Warning

User under the age of 18 are recommended adult supervision. The printer includes small parts that can lead to choking.

WARNING! Burn Hazard

The extruder nozzle or heated building platform might be hot during operation. Never touch these before they cooled down. This can take more than 20 minutes. Also the extruded plastic is hot and should not be touched.

WARNING! Electric Shock Hazard

When the printer powered, touching the electronics may result in an electric shock. Make sure you disconnected the power source and power supply when opening the electronics. Wait at least one minute before opening the box to allow the power supply to discharge.

WARNING! Fire Hazard

Keep flammable liquids and/or materials away from the printer when powered or in operation.

WARNING! Pinch Hazard

During operation, keep fingers, hair and loose clothing away from moving parts like belts, pulleys, gears or fans.

WARNING! Static Charge

Ground yourself before touching the printer electronics. Electrostatic charge can damage electronic components. Ground yourself by touching a grounded source.

UNBOXING

Go to prisma.tripodmaker.com and enter your device ID. The setup process will guide you with a series of instruction videos until your first test print. The steps are also covered in this manual.



STEP 1. PREPERATIONS

Place the Tripodmaker box on a stable surface with great access on all sides.

Open the top and take out all accessories (Spool/cables/etc)

Now tilt the box on its side and open the bottom

Tilt the box back in it's upright position.

Now you can lift the box while the printer remains on the floor.

Position your Tripodmaker on a sturdy table.

Now cut the zipties around the 3 belts so the cartridges can move freely.

Plug it in the electrical outlet and turn your device on.

Make sure the fan on the back of the printhead is on.

Put blue tape on the printbed.

Install the spoolholders. Note that some forces might be needed.

STEP 2. LOAD FILAMENT

Navigate to the change filament menu *quick settings/change filament*

Wait for the printer to heat up and stop retracting. An insert filament message will appear

Cut the filament to have a sharp tip

Push the filament through the small bowden tube

Place the spool on top of the printer like in the picture

Push down the extruder drive screw and insert the filament.

The filament should be visible in the bowden tube for 1 cm.





Push the short bowden tube in the frame.

A correct installed filament spool looks like this



Initiate the filament loading by rotating the button.

After the filament stops loading, rotate the button until filaments starts oozing out of the nozzle.

Click when done.



STEP 3. CALIBRATION

This will make sure the printer is completely level after transport.

Before proceeding remove any remaining filament from the nozzle

Navigate to the Set probe offset menu item and initiate it:

Configuration/Set probe offset



Turn the knob to move the nozzle towards the printbed until it touches the blue tape.

Now click to save and start the calibration. Wait for the calibration to complete.

You are now ready to print



STEP 4. (OPTIONAL) MANUAL CALIBRATION

In case there are still difficulties with your print adhesion in some areas you can perform a manual calibration.

First perform the Home all step to make sure the printer is homed correctly.

NOTE: make sure the printbed is covered with blue tape except for the 3 screws

Now perform the set Nozzle Height step from the menu.

Similar to the first step in auto calibration you have to bring the nozzle down to the buildplate until it touches the blue tape.

Click to save

NOTE: This will erase the auto calibration results

Now execute the Front left tower command. The print head will move to the front left tower.





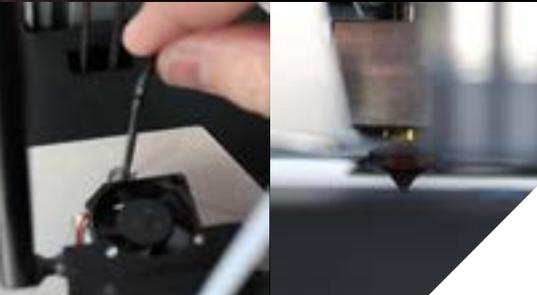
Adjust the screw with a size 3 allen wrench until the nozzle touches the blue tape on the printbed.



Continue by performing this same procedure on the front right tower.



Continue by performing this same procedure on the back tower.



You are now ready to print

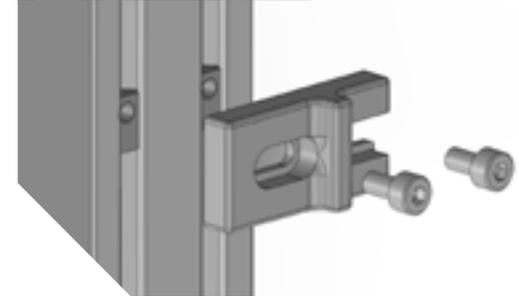
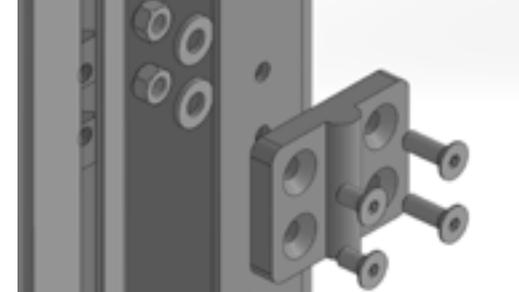
STEP 5. (OPTIONAL) INSTALL PLEXI COVERS

If you got your Tripodmaker Black Edition with plexi covers follow the diagram to install the covers.

Connect bolts as in the picture

Repeat this for each door.

Install the lock on the left side when facing the front of the printer.





MENU

The menu on your Tripodmaker Black Edition can be navigated through the push and rotate button next to the display. After turning your Tripodmaker on the info screen will appear. You can scroll through 4 sections by rotating the button.

>section 1: Temperature nozzle /
B= Temperature bed
Z= Current print height
Buf: Buffer value
Mul: Speed multiplier 100% by default
E= Extruded length
NOTE: values will change during print

>section 2: XYZ coordinates
NOTE: values will change during print

>section 3: Extruder and bed
temperature
NOTE: values will change during print

>section 4: Printing time and
filament printed in meters.

Access the main menu by pushing
the button





Navigate by rotating the button.

Click to access

> Quick settings

> Quick settings >Home all

This will home the printhead to the top of the printer.

> Quick settings >Z babystep:

Adjust the z height of the print-head. Do not perform this setting unless you suffer from bad bed adhesion.

> Quick settings >Lights:

Turn the led lights on or off

> Quick settings > Change filament:

Use this function to load or unload filament.

> Quick settings > Preheat PLA/ABS:

This setting will preheat the nozzle and buildplate to the right temperatures for PLA and ABS. Prints will start immediately with a pre-heated printer.

> Quick settings > Fan speed:

Here you can turn the fans on or off.

> Quick settings >Cooldown

This will boost all fans to cool the print head rapidly.

> Quick settings > Disable stepper

This will disable the stepper motors. Now you can move the carts and the print-head by hand.

> Print file

This will navigate to your SD card. Now you can select the file you want to print.





Navigate by rotating the button.

Click to access

> Extruder

> Extruder > Bed temp:

Click to access and rotate to adjust the bed temperature

> Extruder > Temp1:

Click to access and rotate to adjust the nozzle temperature

> Extruder > Tuen extr. 1 off:

This will turn the nozzle off

> Extruder > Extr. position

Access this menu to perform manual extrusion of the filament.

> Extruder > Extr. position

Rotate the button clockwise to push the filament through the nozzle. NOTE: the nozzle must be heated otherwise nothing will happen.

> Extruder > Set Origin

This menu has to be executed if instructed by our support team.

> SD card:

This menu gives access to your SD card. While printing this menu gives access to the pause and resume functions.

> SD card > Print file:

This will navigate to the files on your SD card.

Navigate by rotating the button.

Click to access

> Configuration

> Configuration > language:

Printer menu language is available in english only.

> Configuration > Manual Calibration:

This will enter the manual calibration menu. **See page 13 step 4**





> Configuration > Manual Calibration:

home all - printer needs to be homed before starting manual calibration

> Configuration > Manual Calibration:

Set nozzle height - sets nozzle height

Note: this will erase results from auto calibration

Right/left/back tower - nozzle moves to chosen tower

> Configuration > auto calibration:

This will initiate the calibration program. **See page 11 step 8**

> Configuration > Factory Reset

Please contact info@tripodmaker.com for further troubleshooting. If a factory reset is necessary our support team will provide the reset code.

> Configuration > Factory Reset

Proceed with instructions received by our support team.



YOU ARE ALL SET NOW!

Note that during the print the Tripodmaker shows the completions percentage of your print.

Menus that are accessible during print can be modified (ex. temperature/fans etc) Use these features on your own risk during a print.



MAINTENANCE & TROUBLESHOOTING

1. EXTRUDER DRIVE

Check the extruder on a regular base for accumulated filament dust. We recommend cleaning the extruder drive every 3 months or after periods of intensive usage. How to clean your extruder is explained from **page 16** onwards.

2. MOVING PARTS

Check your carts on wobble after a while. If the carts are loose on the track, you can tighten the eccentric nut in order to remove the cart wobble. The carts must run smooth. If you over tighten the eccentric nut, you will need to use a lot of force to move the cart and it will seem you have “hick-ups” during the sliding maneuver. How to tighten your carts is explained on **page 21 step 11**.

3. NOZZLE AND HOT-END

Make sure that the nozzle and hot-end are cleaned when covered with plastic residues. To clean of the nozzle, simply heat it until the plastic gets sticky, and use a printed cube to peel of the sticky plastic.

MAINTENANCE & TROUBLESHOOTING

1. EXTRUDER DRIVE CLEANING

Problem: Filament is slipping or extrusion problems.

Solution: Clean the extruder drive



We recommend cleaning the extruder drive every 3 months.



Remove the extruder drive tension screw



Remove circlips that clamps the tube holder



To remove the Nylon tube, push the movable piece in the direction of the white arrow. Once squeezed inward, the nylon tube can be retracted.

To remove the Nylon tube, push the movable piece in the direction of the white arrow. Once squeezed inward, the nylon tube can be retracted.

remove the two screws that hold the extruder drive motor

remove the extruder drive from the top frame through one of the openings. Compress the spring mechanism to squeeze it through. Unplug the motor cable.

remove the extruder drive gear with a small Allen wrench. In order to remove the extruder drive gear from the axle, squeeze the mechanism.

Clean the extruder drive gear with a knife. The small blade fits inside the slots of the extruder drive gear.





Remount the complete assembly. Pay attention that the extruder drive gear is positioned flush with the front of the black anodized components. The screw rests on the flat surface of the motor axle. Pay attention to the orientation of the extruder drive gear!



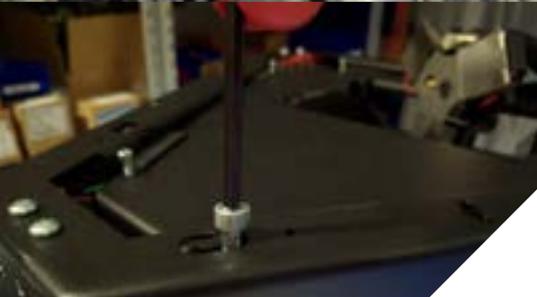
Plug the cable and squeeze the extruder drive back in its position. Make sure to plug the extruder drive cable so the colors match when the plug is plugged in!



Retighten the screws for positioning the extruder drive motor.



Insert the pneumatic coupling. Make sure it is hand tight, do not over tighten it!



Slide in the white tube and make sure it is deep enough. Push-pull-push-pull to be sure it is deep enough.

Insert the extruder drive tension screw and retighten it.

Done!

3. CLOGGED NOZZLE CLEANING

Problem: No filament is coming through the heated nozzle

Solution: Clean the nozzle with the cold-pull method



1. Remove the filament from the printer through the menu:
quick settings>change filament



2. Remove bowden tube from the print head by pushing the black clip downwards (with a screwdriver) and pulling the tube out.



3. Heat up the print head
Go to Menu > Extruder > Temp.1 (click)
Set temperature to 180 degrees C (click to confirm)



4. Insert (light preferably colored) filament in the print head by bypassing the bowden tube
Make sure filament oozes out of the nozzle

5. Cool down the hot end
Go to Menu > Extruder > Temp.1 (click)
Set temperature to 0 degrees C (click to confirm)



6. Wait until hot-end temperature is 110 degrees C and pull firmly the filament back. You should hear a "plopping" sound.



7. Check if black residue is stuck on the outer end of the filament you just pulled out of the hot-end



8. In case a lot of residue was found, go back to step 3 and repeat the operation.

Else, put back the bowden tube.

Make sure the bowden is inserted deep enough until the point it can't go any further.

TROUBLESHOOTING AND EASY FIXES

PRINT DOESN'T STICK TO THE PRINTER BED OR DETACHES ON CERTAIN SPOTS.

Cause:

- Build plate is not leveled properly.

Solution:

1. Try to use new tape
2. Try to level the build plate by re-calibrating the device

THE PRINT IS STUCK ON THE BUILD PLATE.

Cause:

This can happen with prints that have a large area touching the buildplate.

Solution:

Use a putty knife to get the pieces from the build plate. **WARNING! Make sure your other hand is not in the path of the knife as the print might come loose all of a sudden.**

CLOGGED NOZZLE

Solution:

Try manually feeding the nozzle while setting the temperature on 245 degrees.

See on page 32 how to manually feed the nozzle. Try different temperatures between 245 and 180 degrees. If no filament is getting through try the following:

1. Heat the extruder to 215 degrees. Take a short piece of clear/white PLA (1/2 meter) and push it in the nozzle from top like on page 32 of this manual. Push it inside until you can't get any further. Then pull it out. Cut the dirty tip off with pliers and re-insert. Keep doing this until the filament is clear and the clog is eventually gone.

2. To improve results with this process it might help to push a needle of <math><0.4</math> (specialised 3D printing needles or the classic needles from your local pharmacy) in the bottom of the nozzle and then pull it out again. Perform step 1 again. Alternate step 1 and 2 a few times until the clog is gone.

In case this doesn't solve the problem, contact support: info@tripodmaker.com.



THE FILAMENT IS STUCK IN THE TUBE

Cause:

Filament is stuck in the nylon tube due to a blob that is retracted in the tube.

Solution:

Remove the tube out of its couplings and remove the filament. The tube can be removed by pushing in the couplings in the opposite direction you want to pull out the tube.

