



MA21 Belt 3D Printer

User Manual

V1.0

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I. Welcome

Thank you for purchasing the MA-21 Belt 3D Printer from MALYAN.

This MA-21 Belt 3D Printer User Manual is designed to aid MA-21 Belt users in the assembly and use of their new printer and to help them getting started with 3D Printing. Even if you are familiar with 3D printing technology, we still recommend you to read through this user manual, as there is a lot of important information about the MA-21 for you to get a better 3D printing experience.

Support:

- Documentation like this user manual, help guide etc. can be found on <http://ma21.mly.at>



- For technical support, please email us at support@malyansys.com.

II. Notice

1. Do not try to use the machine in any way that is not described in use, so as to avoid accidental personal injury and property loss;
2. Please keep the machine away from flammable, explosive, corrosive, or high heat sources. Please place the machine in a ventilated and cool environment.
3. Place the machine on a level and stable surface. Unnecessary vibration or shaking will affect print results.
4. This machine is compatible with 1.75mm Filaments such as PLA, PETG;
5. Only use the OEM Power supply cable. Use of aftermarket cables can be dangerous if they are not properly grounded.
6. Do not touch the nozzle or hot bed when the printer is working to prevent high temperature scalds and personal injury;
7. Be careful when the machine is operating as clothing, hair, fingers could easily get caught and cause injury;
8. It is recommended that you remove any debris and clean your printer nozzle after a print while the print head begins to cool.;
9. Perform maintenance: Regularly clean the machine body with dry cloth in case of power failure, and wipe off dust, adhesive printing materials and foreign matters on the guide rail;
10. For children under the age of 10, please do not use the machine without the supervision of personnel to avoid personal injury;
11. This machine is equipped with a safety protection mechanism. Please do not move the nozzle and printing platform manually when the machine is on, otherwise the machine will be automatically powered off for protection;
12. The user shall abide by the laws and regulations of the equipment printing products, the place where the equipment is located and the corresponding countries and regions, strictly abide by the professional ethics, and strictly prohibit the use of our products for printing Any product or object that violates the laws of the place where the equipment is located and the corresponding country or region.

III. Part List

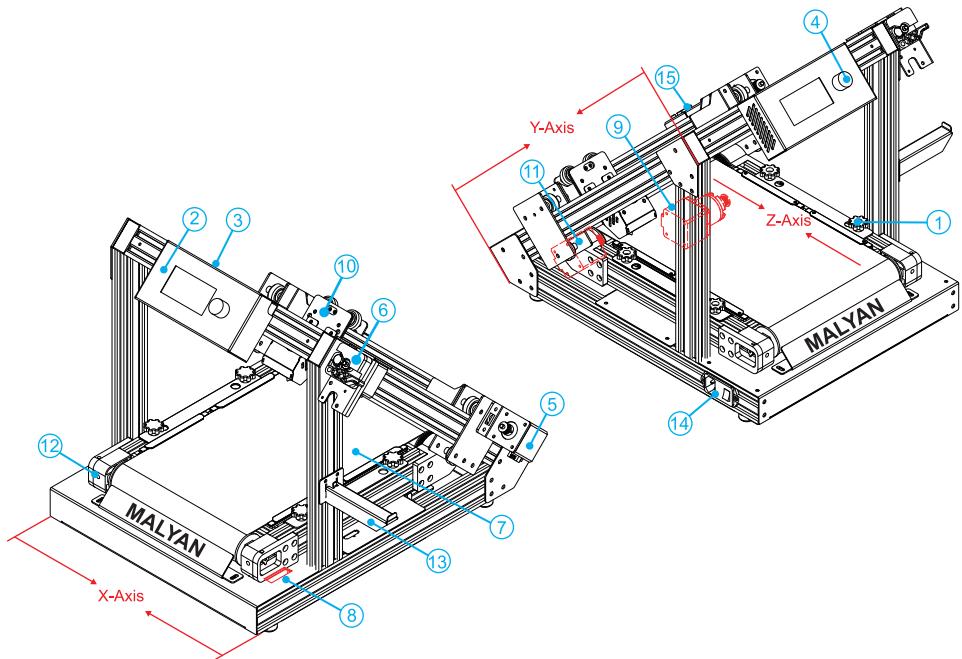
Before you begin, please check all your attachments:

| | | |
|---|---|------------------------------|
| | | |
| MALYAN MA21 Belt 3D printer User Manual v2 | 1x Power Cord | 1x TF Card and Reader |
| 1x Filament Spool Holder | 1x Scraper | 1x Air Pipe Connector PC4-M6 |
| 1x Wrenches Kit | 1x Through needle | 1x Feeler 0.1mm |
| 1x Diagonal pliers | 1x Quick connect claw 2x Snap ring (plastic) | 1x Type-c cable |



All pictures shown above are for illustration purpose only, actual product shall prevail.

IV. Introduction to Your Belt 3D Printer



1. Bed leveling nut

2. LCD screen

3. TF card

4. Control knob

5. X-axis motor

6. Extruder

7. Belt platform

8. Voltage Selector

9. Y-axis motor

10. Nozzle Kit

11. Z-axis belt motor

12. Belt tensioning screw

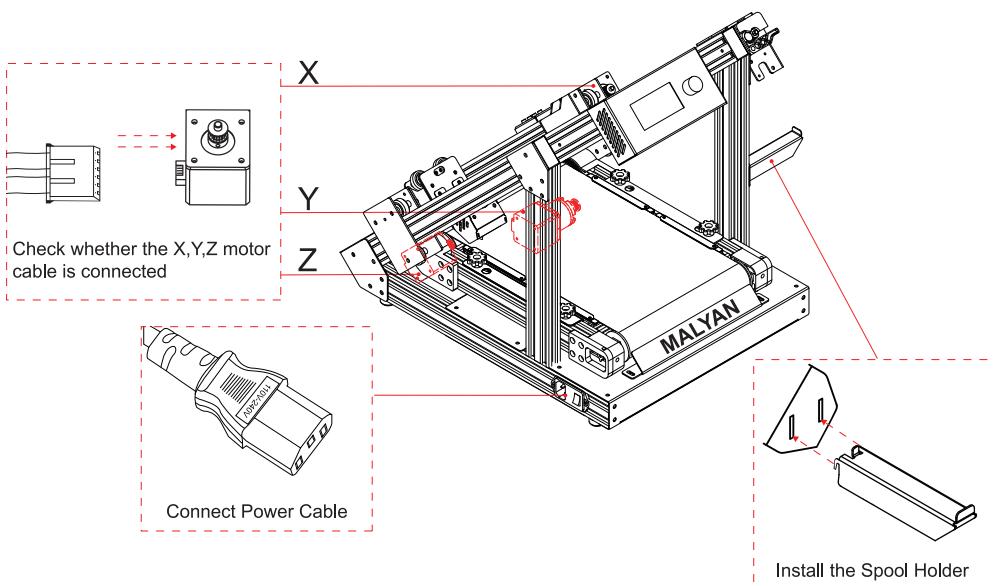
13. Filament Spool Holder

14. Power Switch and Socket 15. Y-axis limit adjustment component

V. Printer Parameters

| | |
|----------------------------|---|
| Model | MA-21 |
| Print size | 200 x 180 x ∞ mm |
| Molding technology | FDM |
| Number of nozzles | 1 |
| Layer height | 0.1-0.4mm |
| Nozzle diameter | 0.4mm |
| Printing accuracy | ±0.1mm |
| Materials | PLA/PETG |
| File types | STL / OBJ / AMF |
| Printing mode | SD card offline printing |
| Slicer | MALYAN Slicer |
| Max. heated bed temp | 100 °C |
| Max. extruder temp | 260 °C |
| Power off detection | Yes |
| Filament Sensor | Yes |
| Printing speed | < 180mm/s, normally 30-60mm/s |
| Language | English |
| Outer box size | 670*505*510mm |
| Power supply specification | Input: 100-120/220-240V 50/60HZ Output: 12V 350W |
| Operating system | Windows / Linux |

VI. Install Parts and Cable Connection



Navigate the Menu

| | |
|---------------|---|
| Info Screen | ↑ |
| Motion | + |
| Temperature | + |
| Configuration | + |
| Change Media | |

| | |
|------------------|---|
| Main | ↑ |
| Move Axis | + |
| Auto Home | |
| Eject platform | + |
| Disable Steppers | |

Homing Operation

| | |
|---------------|---|
| Info Screen | ↑ |
| Motion | + |
| Temperature | + |
| Configuration | + |
| Change Media | |

| | |
|------------------|---|
| Main | ↑ |
| Move Axis | + |
| Auto Home | |
| Eject platform | + |
| Disable Steppers | |

Control Of Each Axis

| | |
|---------------|---|
| Info Screen | ↑ |
| Motion | + |
| Temperature | + |
| Configuration | + |
| Change Media | |

| | |
|-------------|----|
| Main | ↑ |
| Nozzle: | 0 |
| Bed: | 0 |
| Fan Speed: | 0% |
| Preheat PLA | + |

Temperature Setting

| | |
|---------------|---|
| Info Screen | ↑ |
| Motion | + |
| Temperature | + |
| Configuration | + |
| Change Media | |

| | |
|-------------|----|
| Main | ↑ |
| Nozzle: | 0 |
| Bed: | 0 |
| Fan Speed: | 0% |
| Preheat PLA | + |

Quick Preheating

| | |
|---------------|---|
| Info Screen | ↑ |
| Motion | + |
| Temperature | + |
| Configuration | + |
| Change Media | |

| | |
|-------------------|----|
| Main | ↑ |
| Advanced Settings | + |
| LCD Contrast: | 50 |
| Preheat PLA Conf | + |
| Preheat ABS Conf | + |

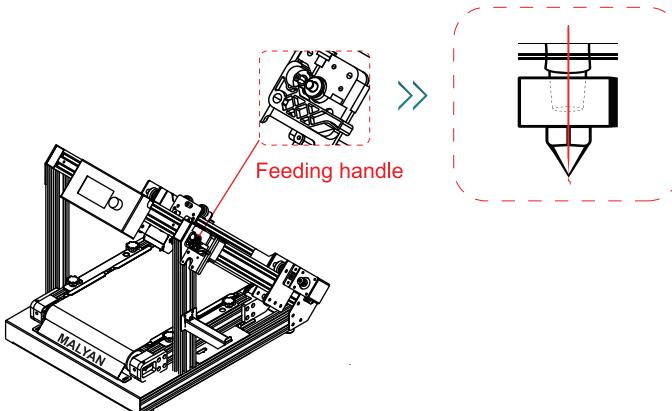
LCD Contrast Setting

| | |
|---------------|---|
| Info Screen | ↑ |
| Motion | + |
| Temperature | + |
| Configuration | + |
| Change Media | |

| | |
|------------------|---|
| Preheat PLA Conf | + |
| Preheat ABS Conf | + |
| Store Settings | |
| Load Settings | |
| Restore Defaults | |

Restore And Save Settings

VII. Load Filament



Step 1. Navigate to **PREHEAT** in the Menu and set your nozzle temperature and bed temp to the appropriate settings for your filament.

Step 2. Place your spool onto the filament holder

Step 3. Insert the filament into the filament detector sensor

Step 4. Press down on the stepper motor filament lever to insert the filament passed the sensor and into the bowden tube.

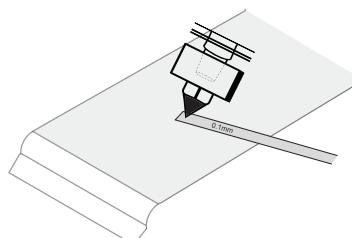
Step 5. Feed filament through until you see some plastic begin to extrude from the nozzle.

VIII. Leveling Related Operations

1. Check the height of nozzle from hot bed:

Before printing, please perform Homing first, check and confirm that the distance between the nozzle and the hot bed is 0-0.1mm, which can be assisted by a feeler gauge.

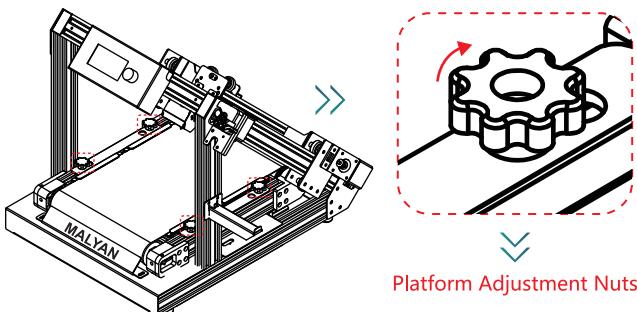
| | |
|------------------|---|
| Main | ↑ |
| Move Axis | + |
| <hr/> | |
| Auto Home | |
| Eject platform | + |
| Disable Steppers | |



2. Adjust belt height:

If the distance between the nozzle and the hot bed too far, exceeding the height of the feeler gauge by 0.1mm, and there is no friction when measuring with the feeler gauge, please rotate the platform adjusting nut counterclockwise.

If the distance between the nozzle and the hot bed too close, resulting in the feeler gauge 0.1mm high and cannot be inserted into the middle of the nozzle and the hot bed, please rotate the platform adjusting nut clockwise.



Counter Clockwise to “RAISE” the platform
Clockwise to “LOWER” the platform

If the nozzle is still too far or too close to the platform, please carefully read and repeat steps 1-2 for adjustment until satisfactory extrusion results are obtained.



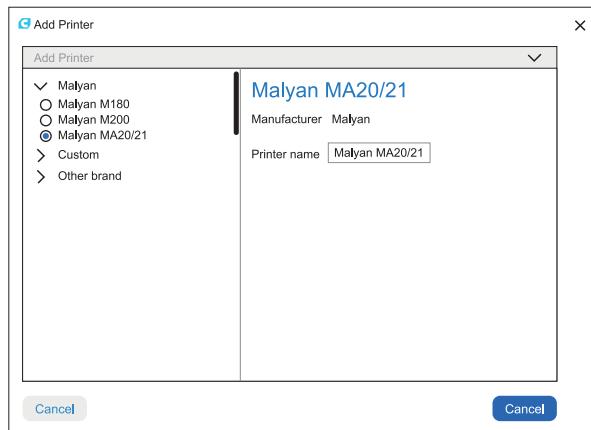
Sketch Map

| | | | |
|--|---|---|---|
|  | The nozzle is too far away from the platform, so the consumables can not adhere to the platform |  | The nozzle just lean to the printing platform, the consumables are extruded fully and evenly, and the consumables can be well adhered to the platform |
|  | The even filament adheres right on the platform. | | |

IX. Printing Your Own Models

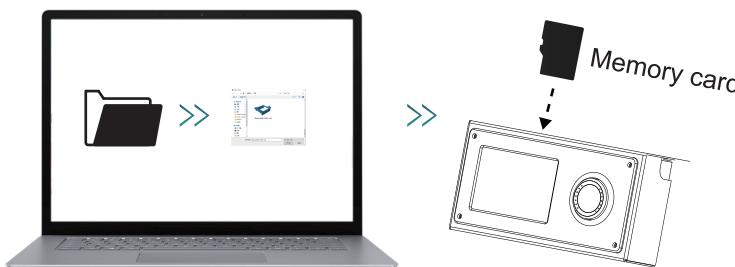
1. Installing Software

- ① Check your accessories box for the included SD Card.
- ② Install the Malyan Belt 3D Printer Slicer Software.
- ③ Start the wizard and select the product model of Malyan MA21 to use.



2. Print from SD Card

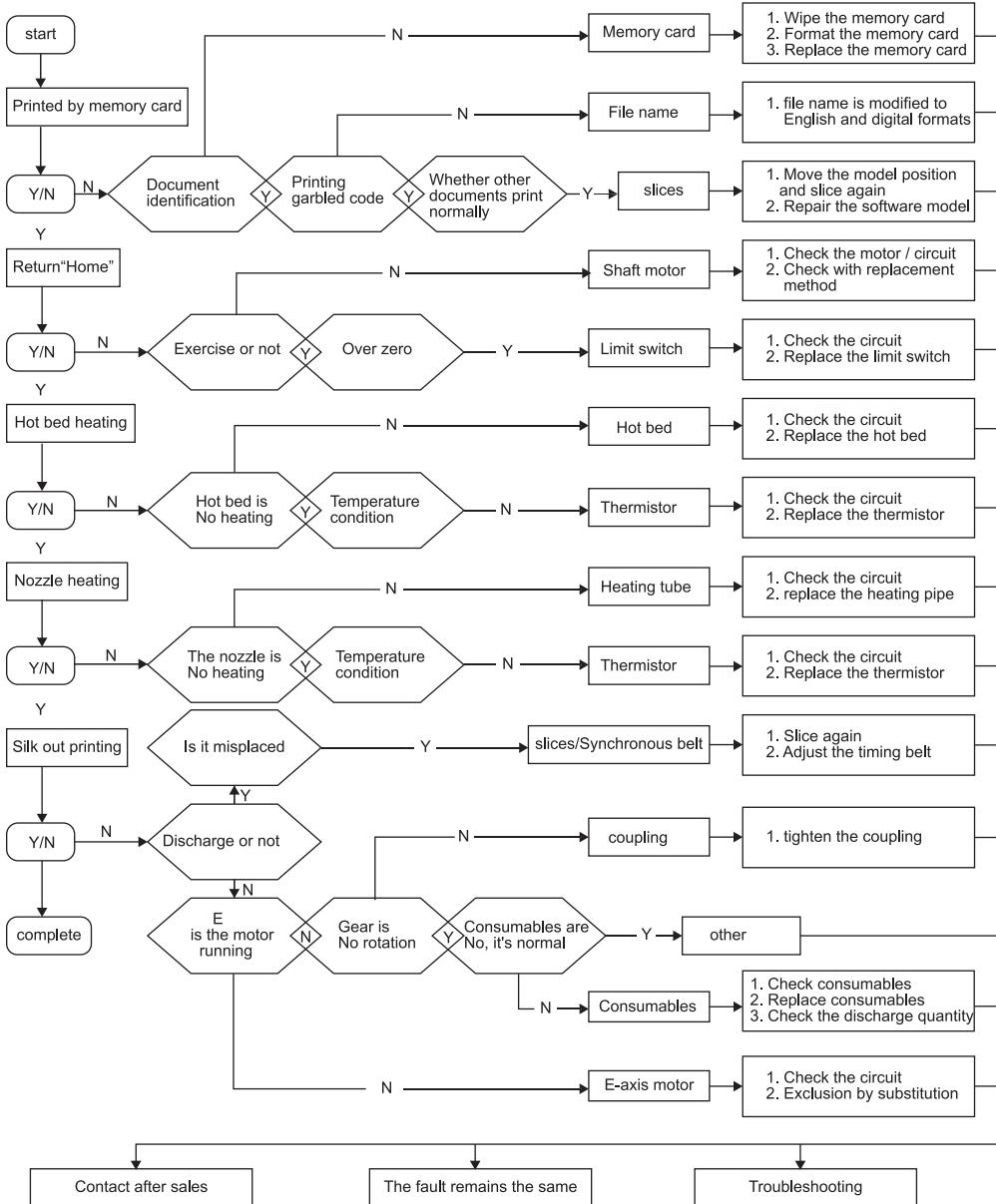
- ① Copy the gcode file generated to memory card.
- ② Insert the Included SD Card into the Micro SD Card slot near the top of the Controller Display Unit at the top of your 3D Printer.
- ③ The 3D Printer will begin preheating and printing your file as soon as it is ready to begin.



X. Troubleshooting

Fault diagnosis

Cause of failure



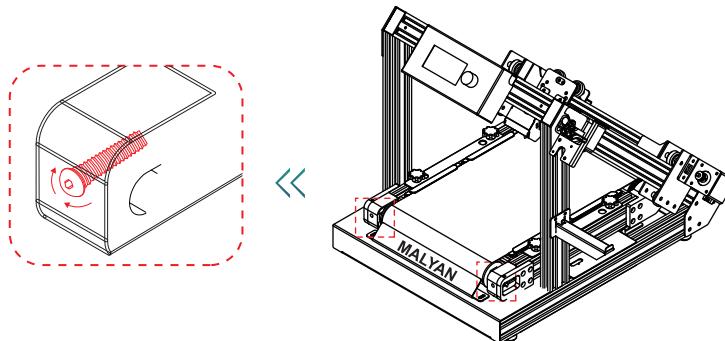
XI. Calibration

Calibration maybe needed when machine was dissembled.

1. Adjusting the scale screw:

Press the belt by hand, if the belt is loose, tighten the belt tensioning screws on both sides clockwise to increase the belt tension. You can observe the scales on both sides to make sure that the left and right adjustments are the same.

Note: if the belt is too tight, it will cause the hot bed to be pulled by the belt when rotating the adjusting nut of the platform and will not be lifted up.

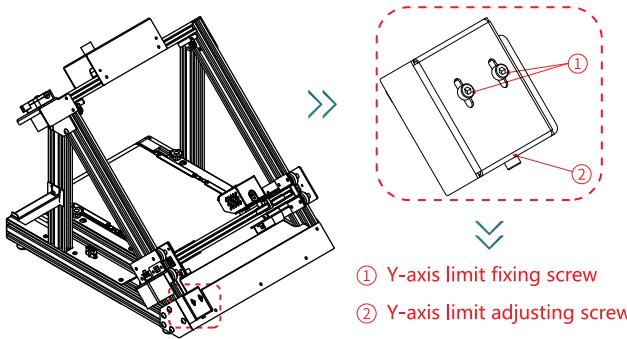


2. Adjust the Y-axis limit switch:

Loosen the Y-axis limit fixing screw, and rotate the Y-axis limit adjusting screw clockwise to reduce the distance between the nozzle and the hot bed.

Loosen the Y-axis limit fixing screw, and rotate the Y-axis limit adjusting screw counterclockwise to increase the distance between the nozzle and the hot bed.

Note: after each rotation of the Y-axis limit adjusting screw, the original point operation must be performed. After the distance between the nozzle and the platform is adjusted to 0.1mm, lock the Y-axis limit fixing screw.



① Y-axis limit fixing screw

② Y-axis limit adjusting screw



Please check below link for updated informations:



<http://ma21.mly.at>

If you need any assistance, please contact us via:

Email: support@malyansys.com

www.malyansys.com

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