

MAKERA Z1.

Safety Guidelines

Model:Z1&Z1Pro

MAKERA
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Disclaimer

Please read this manual carefully before using the Makera Z1& Makera Z1 Pro. Failure to read the manual may lead to personal injury, inferior results, or damage to the Makera Z1& Makera Z1 Pro machine. This manual is provided for reference purposes only. We reserve the right to modify or revise this manual, users can download the most up-to-date version of this manual on our website. You should always monitor machines when in use. Milling cutters revolving in high-speed, unstable components or laser module in operation are dangerous to people without protection. Please carefully read the safety instructions below to avoid unnecessary harm.

Intended Use

Makera Z1& Makera Z1 Pro Desktop CNC Machine is designed to be used in strict accordance with the guidelines specified in the Guides. When using Makera Z1& Makera Z1 Pro Desktop CNC Machine to produce objects, users shall bear full responsibility for verifying and confirming the suitability of the produced objects for their intended use scenarios. This responsibility shall be particularly emphasized for application scenarios in highly regulated fields, including but not limited to medical devices and aeronautics industries.

Safety Instructions

1. Always wear safety goggles when operating the machine, especially when the protective cover is open.
2. Always wear laser protection goggles when using the laser module.
3. Please wear hearing protection when Makera Z1& Makera Z1 Pro is machining on the hard materials.
4. Do not leave your machine unattended while it is machining.
5. Please be aware of the sharpness of the milling bits during installation, dust collection, and other operations.
6. Milling will generate heat. Inappropriate parameters will cause fire hazards. Make sure an extinguisher is in your vicinity.
7. Some materials are harmful to people when machining, such as carbon fiber. Please wear a face mask and connect a vacuum for dust collection.
8. Do not expose this machine to rain or wet conditions.
9. Keep children and bystanders away while operating this machine. It requires supervision and the assistance of an adult when children use this machine.

Desktop CNC Safety

- If an emergency occurred in machining, such as the workpiece being loose from holding, components damaging, unusual light or sound coming from the machine, etc. Press the main button or E-Stop button, all ongoing procedures will stop immediately, or cut off the power to shut it down.

- Makera Z1& Makera Z1 Pro has a safety option that allows the machine to automatically stop working when opening the cover, which is useful for schools or work environments where children may reach.

- The use of materials not supplied or specified for Makera's desktop CNC equipment may require additional protective and safety measures. Always review the Safety Data Sheet (SDS) provided by the material supplier for detailed safety instructions before use.

Compliance

FCC Compliance

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio / TV technician for help.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

ISED Compliance

This device complies with Innovation, Science and Economic Development Canada License exempt RSS standard(s). Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil nedit pas produire de brouillage, et(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

The device is compliance with RF exposure guidelines, users can obtain Canadian information on RF exposure nd compliance. The minimum distance from body to use the device is 20cm. Le présent appareil est conforme Après examen de ce matériel aux conformité ou aux limites d'intensité de champ RF, les utilisateurs peuvent sur l'exposition aux radiofréquences et compliance d'acquérir les informations correspondantes. La distance minimale du corps à utiliser le dispositif est de 20cm.

Safety Labels



Keep hands clear of moving parts: machine axis, spindle, etc.



Wear safety goggles when operating the CNC function or laser goggles when



Caution sharp cutters when installing milling bits and doing dust collection.



Laser radiation - Class 4 laser product, avoid eyes or skin exposure to direct or scattered radiation.



Laser aperture - Laser radiation is emitted from this aperture.



Laser radiation of the complete machine: Class 1

Specifications

Basic info	
Workarea (3axis)	20cm(x)*20cm(y)*10cm(z)/7.9in*7.9in*3.95in
Workarea (4axis)	8cm(Diameter) *15cm (Length)/3.15in*5.9in
Footprint	35cm(Width) * 48cm(Depth) * 45cm(Height) /13.8in * 18.9in * 17.7in
Gantry clearance	12cm (Not contain MDF board, thickness 6mm) / 4.7in
Max height(Lidopen)	84cm / 33in
Weigh	20kg/44lbs (approx)
Power supply	100-240VAC @ 50/60Hz.
Spindle	
Power	150W
Collet	Custom collet with 1/8in integrated (optional: 1/4in, 6mm, 4mm).
Speed	0 – 13000 RPM with closed-loop control.
Precision	
Spindle runout	< 0.02mm / 0.0003in
Motor resolution	0.01mm / 0.0004in
Optional Engraving Module	
Power	5W
Power	445nm semiconductor diode laser
Materials	
Wood	Hardwoods, softwoods, MDF, plywoods, etc.
Plastic	Foam, PVC, ABS, Acrylic, PC, HDPE, etc.
Composite materials	Carbon fiber, FR4, etc.
Non-Ferrous metals	Aluminum, brass, copper, etc.
Laser engrave materials	Wood, plastic, fabric, leather, cardboard, etc.
Software	
Controller	Dedicated software supports CARVERA functions
Controller OS	iOS, Andriod, Mac OS, Windows, Linux, etc.
Controller connectivity	USB/Wifi
Dedicated CAM software	Makera CAM
Compatible CAD /CAM software	Fusion360, SolidWorks, AutoCad, VCarve Pro, Aspire, Illustrator, etc.
WiFi	
Frequency Range	2412 MHz ~2472MHz(CE)/ 2412 MHz ~ 2462 MHz (FCC/IC)/ 2400 MHz ~ 2483.5MHz (SRRC)
RF-Output Power	17.07dBm (Only for CE)
Type	802.11b/g/n
Antenna gain	1.63dBi

BLE	
Frequency Range	2402-2480MHz(BLE 1M)
Maximum EIRP	6.61dBm (Only for CE)