LUNYEE

4040 Pro Max CNC Router

Assembly Instructions

710W

Catalog

1.Safety Guidelines

1.Mandatory safety requirements (failure to comply may result in equipment damage or personal injury).

2.Only individuals aged 18 or above are allowed to operate the machine. Minors must use it under the continuous supervision of an experienced adult familiar with the machine.

3.Protective gloves must be worn during installation, and safety goggles must be worn during operation to prevent injury caused by metal debris or laser radiation.

4.This machine is for indoor use only. It must be placed on a flat and stable work surface (load capacity ≥ 50 kg), and kept away from flammable and explosive materials.

5.The power supply must be set to 220VAC or 110VAC; it is strictly prohibited to modify the circuit with a non-specified voltage power supply.

6.It is recommended to connect the machine directly to a wall outlet. The use of extension cords or power strips is not recommended (high current may cause equipment failure). For confirmation, please consult the manufacturer.

7.The emergency stop button (E-stop) must always be placed in an easily accessible position. In case of emergency, press it immediately.

Prohibited Actions

1.During machine operation, do not touch the spindle or moving components. Keep hands away to avoid injury.

2.Do not disassemble or replace electrical components by yourself, as this may cause equipment failure.

3.Do not allow unauthorized personnel to operate the machine, especially those without experience (such as children).

4.Do not process unknown materials, especially those that may release harmful gases, to avoid damage to the equipment or personal injury.

2.Basic Product Information

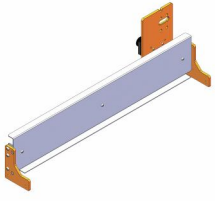
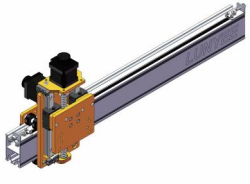
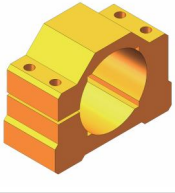
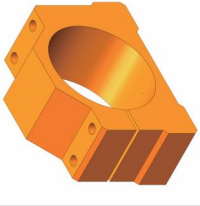
2.1 Core Specification Parameters

Item	Specification
Working Area	40*40*10cm
Transmission Method	X/Y Axis: Pulley + GT2 Timing Belt; Z Axis: HGH15SA Linear Guide + 1204 Ball Screw
Control Panel	LY-3Axis-v2.0-GRBL 1.1f
Motor Type	Open-loop Stepper Motor 42HS40
Spindle Parameters	710W Edge Trimmer6-speed, max 30000 RPM (no-load)
Power Supply	110V~220V Power Adapter
Engraving Speed	X/Y Axis: 5000 mm/min ±10%
	Z Axis: 2000mm/min±10%

Engraving Accuracy	≤0.05 mm (Actual measurement: X-axis 0.03mm, Y-axis 0.04 mm)
Limit Switch	Mechanical Jog Reset Switch
Emergency Stop Button	LB165M3
Laser Function	Supports 10W optical power,12/24V
Operating System	Windows XP/7/8/10,Linux
Machine Dimensions	726*625*385mm
Machine Weight	15kg

2.2 Packing List

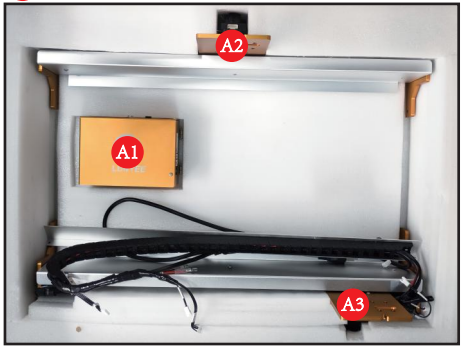
√ Check all components before installation; if any components are missing, please contact after-sales support.

C1.Platform Support Assembly (2 pcs) 	C7.Front/Rear Support Assembly (2 pcs) 	A2.Y-axis Module 1 	A3.Y-axis Module 2 
D1.MDF Board (2 pcs) 	B5.X-axis Module (1 pc) 	B4.Drag Chain 	A1.Electrical Control Box 
B2.52mm Spindle Clamp 	B1.65mm Spindle Clamp 	B3.Positioning Plate 	C2.Acrylic Baffle 

D2.Steel Ruler 	C5.Lubricating Oil 	C5.USB Flash Drive 	B4.ER11-1/8 Collet 
D2.Combined Tool Bit (Diameter 3.175) 	D2.USB Cable 	B3.Pressing Plate 	C5.Assembly Screws 
B4.Trimmer 	D2.Tool Setter 	C5.Wrench 	D2.3-inch Screwdriver 

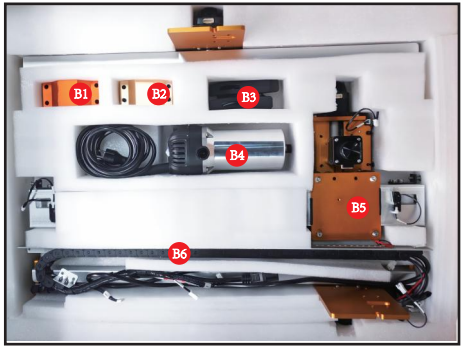
2.3 Packing List of Contents

A



- A1 Electrical Control Box
- A2 Y-axis Left Assembly
- A3 Y-axis Right Assembly

B

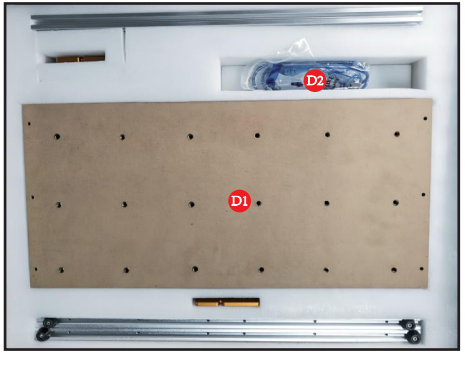


- B1 65mm Spindle Clamp
- B2 52mm Spindle Clamp
- B3 Auxiliary Tools
- B4 Trimmer
- B5 X-axis Assembly
- B6 Drag Chain Trough

C

- C1 Front/Rear Support Assembly
- C2 Acrylic Plate
- C3 Magnetic Baffle
- C4 Power Supply
- C5 Tool Box
- C6 Data Cable
- C7 Platform Support Assembly

D



- D1 MDF Sacrificial Board
- D2 USB Cable

3.Installation Preparation

3.1 Installation Environment Requirements

1. Space: The overall external dimension of the machine is approximately 726625385mm. A heat dissipation space of ≥100 mm shall be reserved around the machine (especially near the control box and spindle). Do not place the machine close to a wall or block the ventilation openings.

2.Workbench: Select a stable workbench with a load-bearing capacity of ≥50 kg (such as a metal workbench or a solid wood table) to avoid vibration affecting engraving accuracy.

3.Power Supply: Ensure that the wall socket is reliably grounded, and the voltage is consistent with the machine power switch selection (220V or 110V).

4.Auxiliary Tools: Prepare a spirit level (for calibrating the level of the workbench) and a marker pen (for marking the component direction); optional wearing of gloves (to prevent scratches).

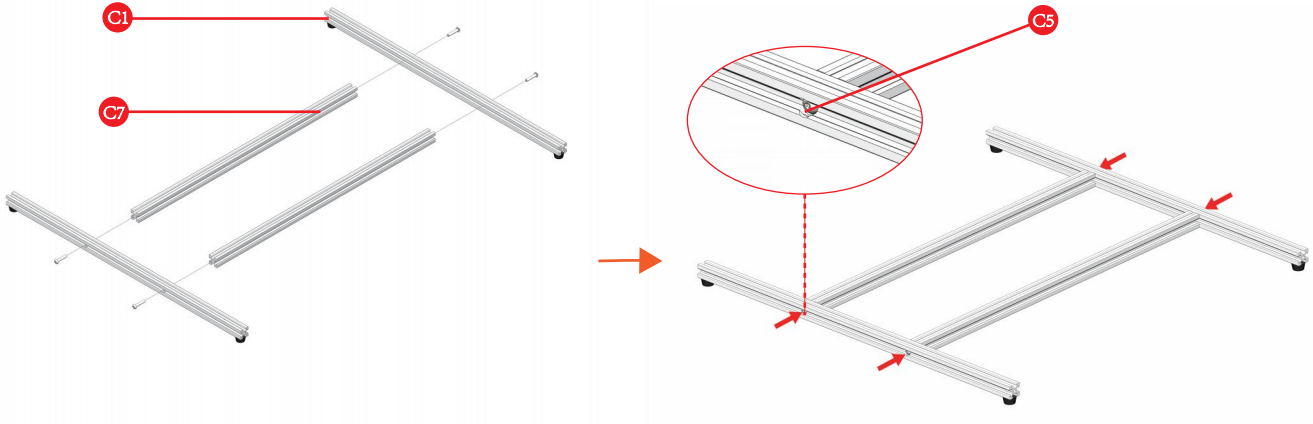
3.2 Simple Preparation Tools Before Assembly (To be prepared by user)

Name	Specification/Use	Remarks
Hex Key Set	Includes M3/M5/M6 sizes	No need to purchase; included in the kit
Level	Compact level (Accuracy: 0.02 mm)	Used for leveling the workbench and the machine
Marker Pen	Fine tip, black	Used for marking component directions to avoid incorrect installation
Cleaning Cloth	Lint-free/non-shedding fabric	Used for removing oil stains or dust from component surfaces

4. Step-by-Step Installation Tutorial

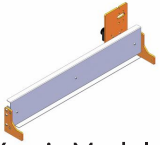
STEP 1 Install the Bottom Fixed Frame

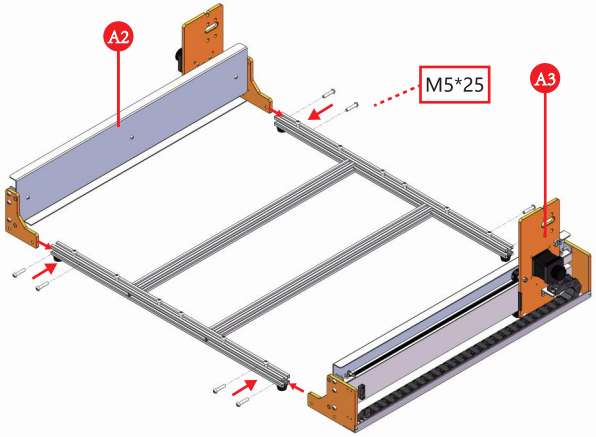
Parts Required				
	 C7.Base 2 pcs	 C1.Base 2 pcs	 C5.M5*25 Screw 4 pcs	 C5.M5 Hex Key 1 pc

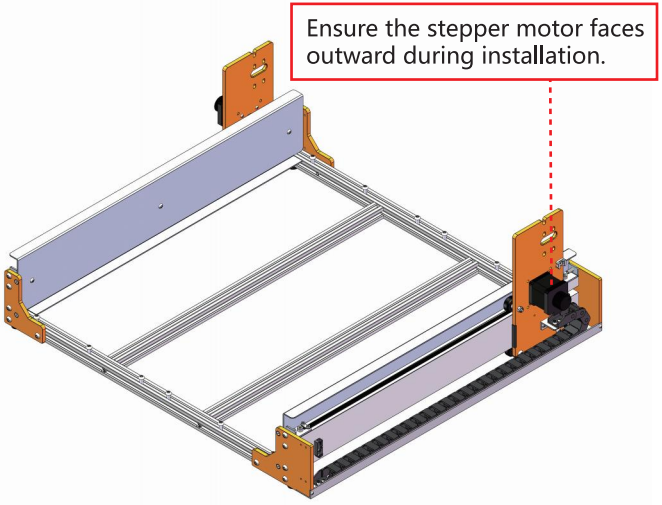


Tip: During installation, ensure that the profiles with countersunk screw holes face outward.

STEP 2 Install Y-axis Module

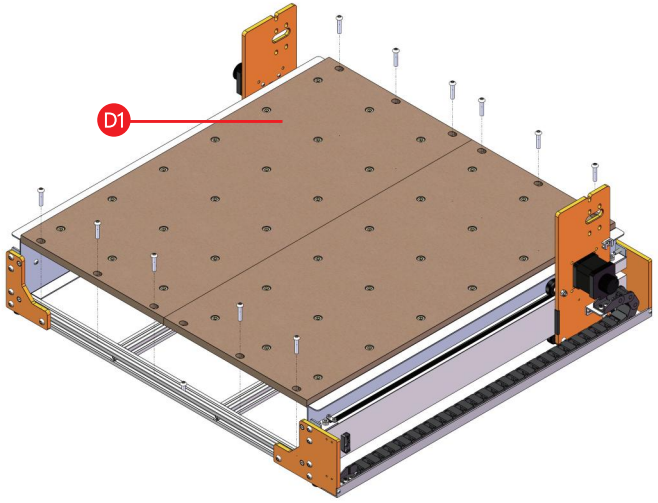
Parts Required				
	 A2.Y-axis Module 1 1 pc	 A3.Y-axis Module 2 1 pc	 C5.M5*25 Screws 8 pcs	 C5.M5 Hex Key 1 pc

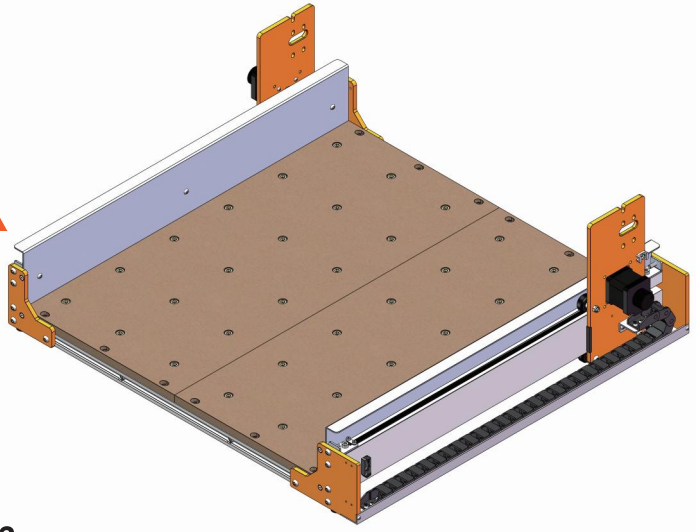




STEP 3 Install MDF Board

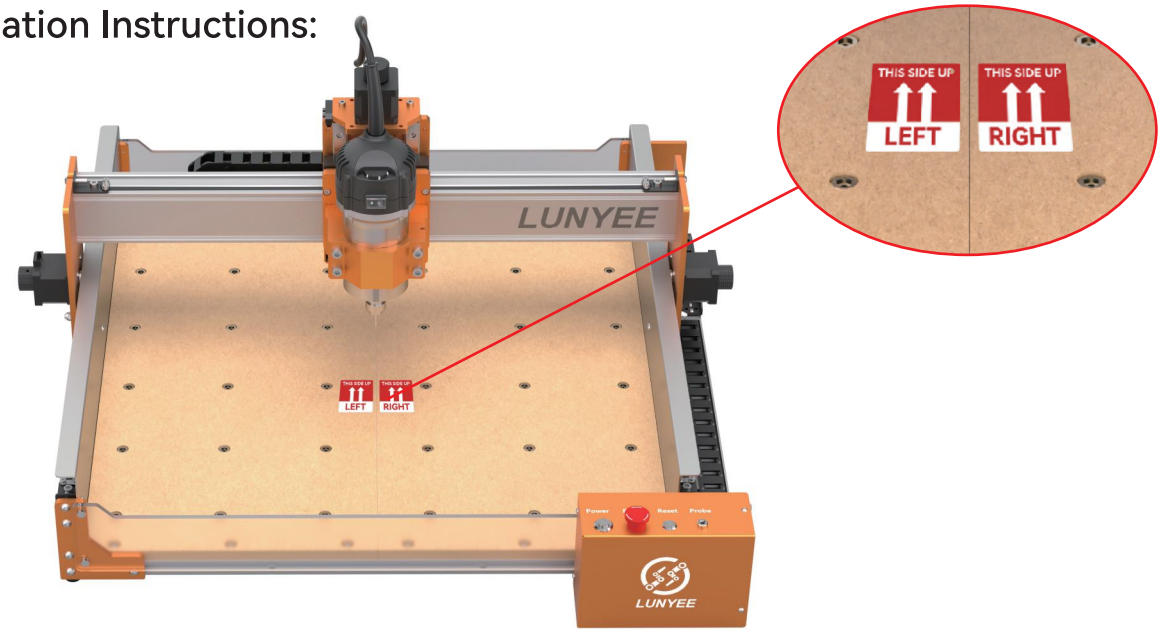
Parts Required			
	 D1.MDF Board 2 pcs	 C5.M5*25 Screws 12 pcs	 C5.M5 Hex Key 1 pc





STEP 4 Install MDF Worktops

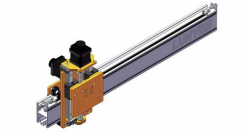
MDF Installation Instructions:

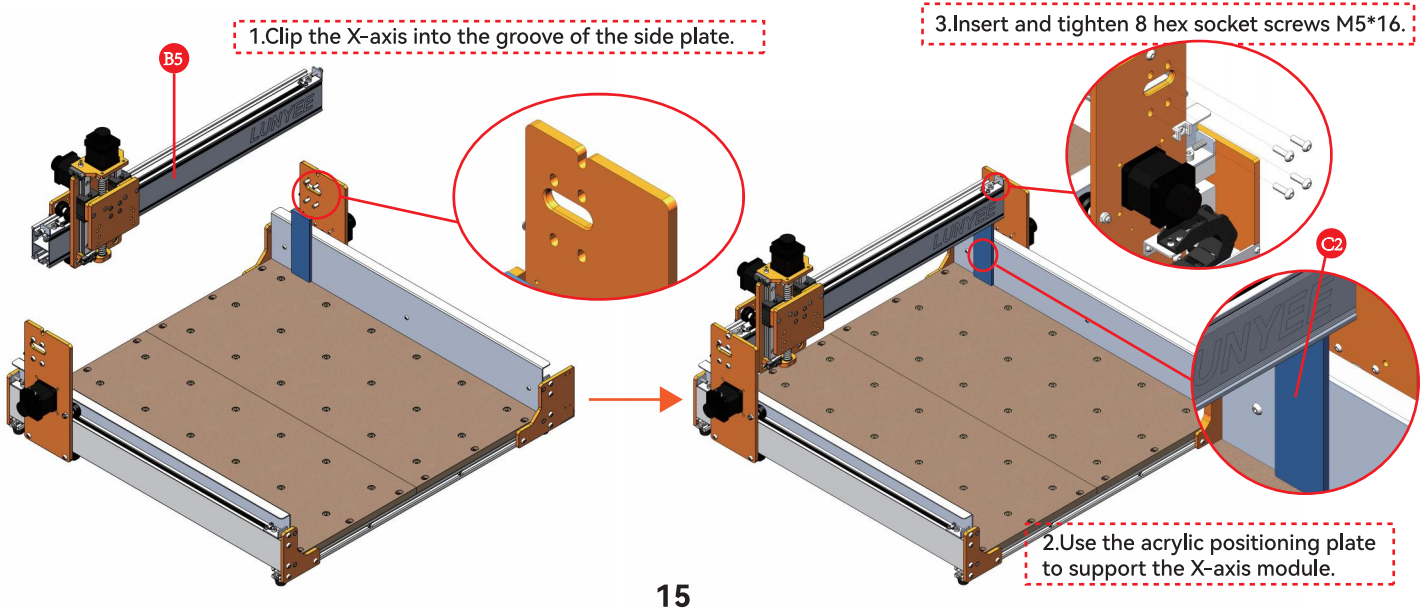


NOTE:

The label is located at the center of the plate, marked with "LEFT" and "RIGHT", along with a red "THIS SIDE Up" indicator and an upward arrow. When installing, ensure the labelfaces up and aligns with the machine's left and right sides to confirm correct orientation.

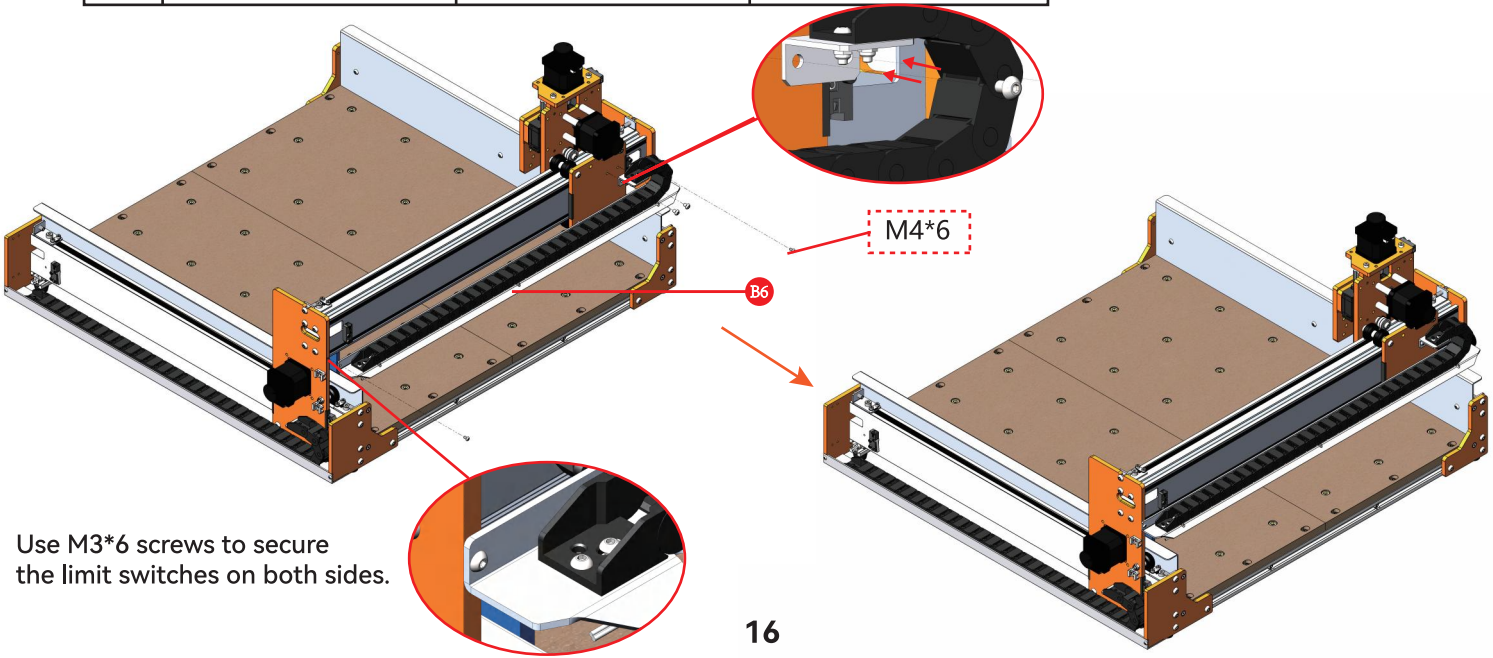
STEP 5 Install X-axis Module

Parts Required				
				
	B5.X-axis Module 1 pc	C5.M5*16 Screws 8 pcs	C2.Positioning Plate 1 pc	C5.M5 Hex Key 1 pc



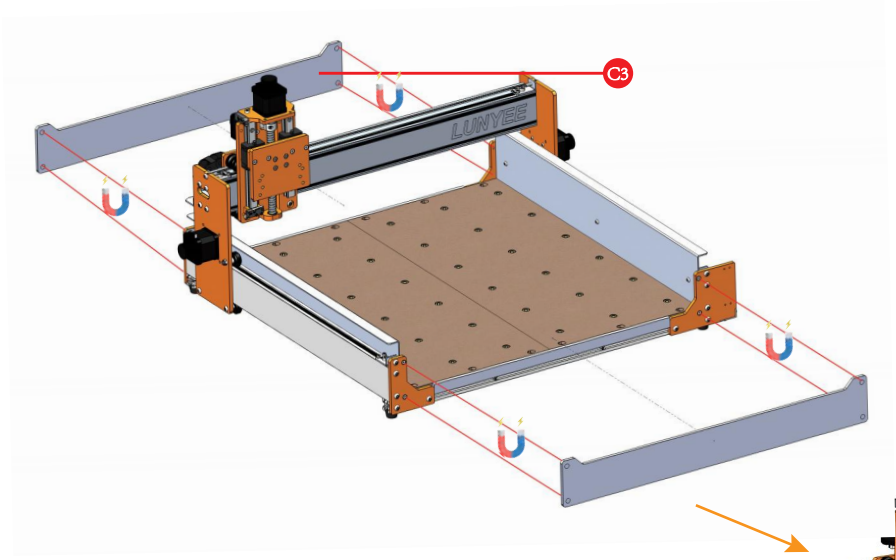
STEP 6 Install X-axis Drag Chain Module

Parts Required			
	 B4.Drag Chain	 C5.M3*6 Screws 2 pcs、M4*6 Screws 2 pcs	 C5.M3/M4 Hex Key 1 pc

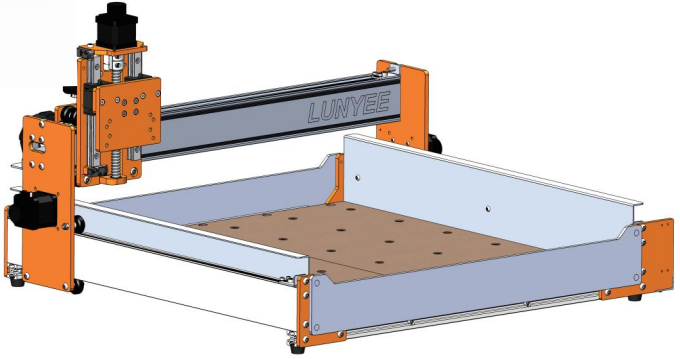


Use M3*6 screws to secure the limit switches on both sides.

STEP 7 Install Front and Rear Acrylic Baffles

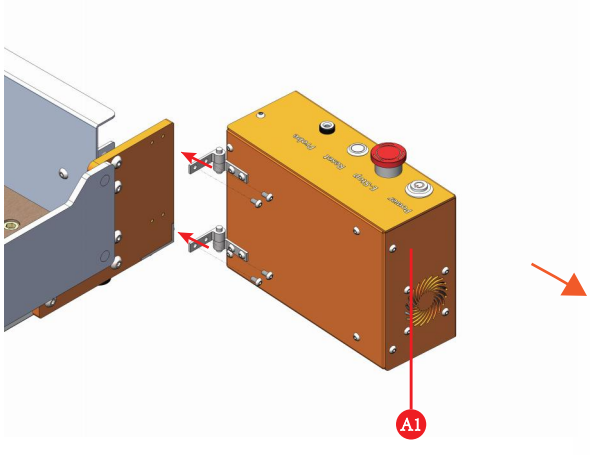


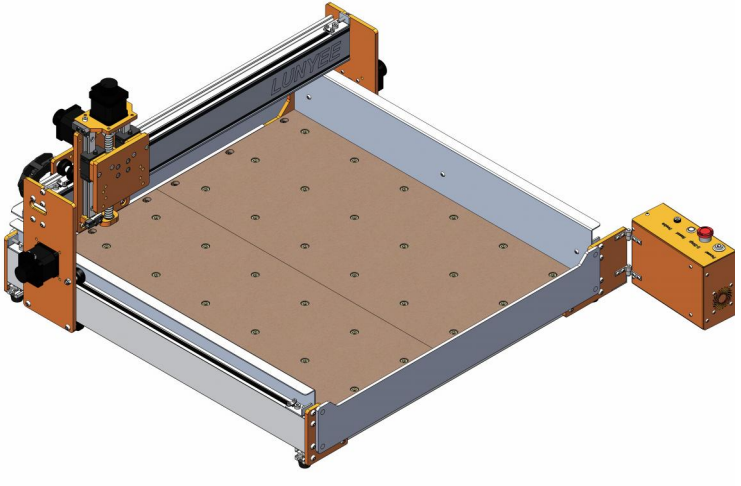
Parts Required	
	 C3.Acrylic Baffle



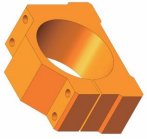
STEP 8 Install Control Box

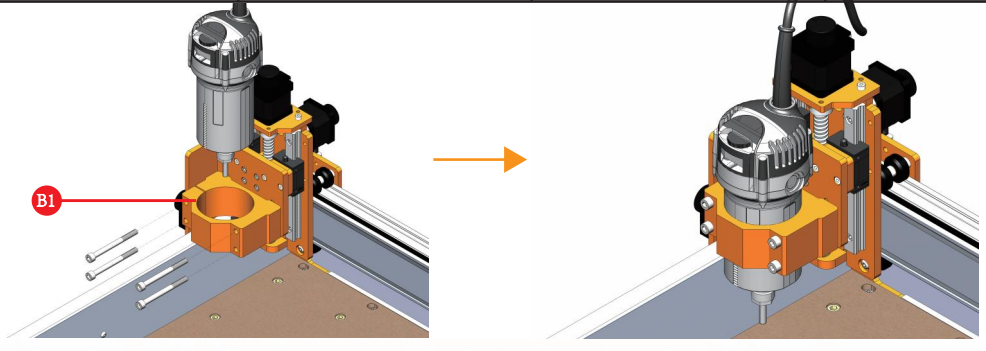
Parts Required			
	 A1.Control Box	 C5.M3×6 Screws 4 pcs	 C5.M3 Hex Key 1 pc

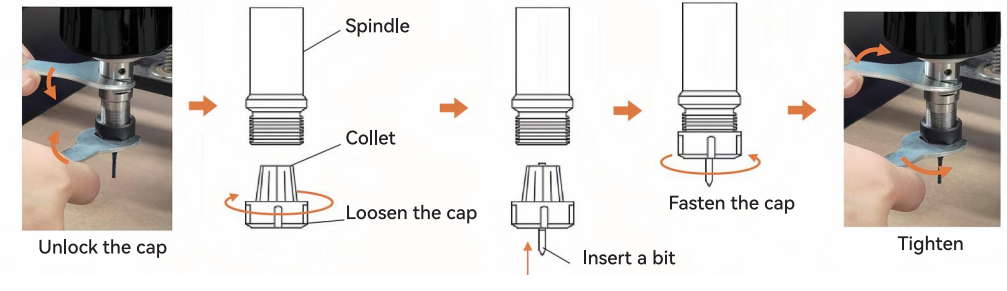




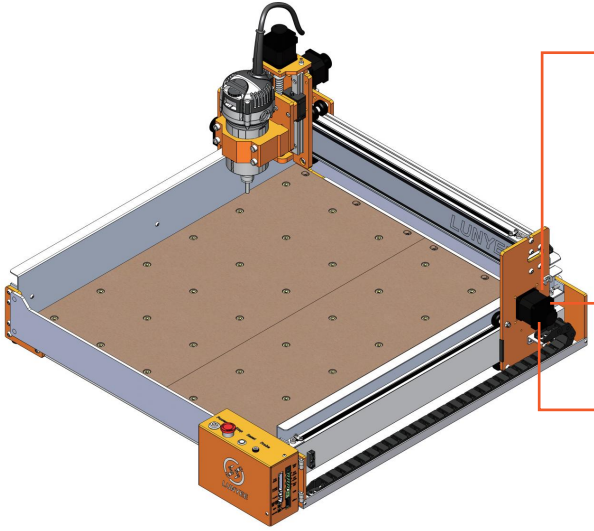
STEP 9 Install Clamp and Spindle

Parts Required				
	 B1.65mm Spindle Clamp	 C5.M6*60 Screws 4 pcs	 Open-end Wrench 1 pc	 C5.M6 Hex Key 1 pc



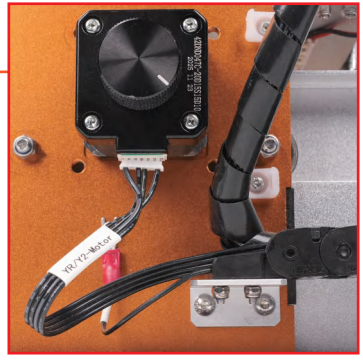


STEP 10 Wiring Tutorial



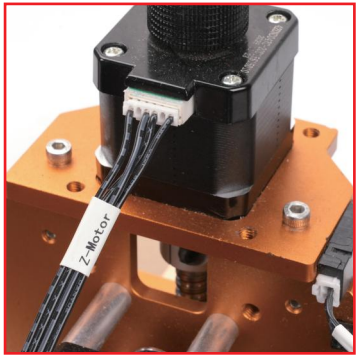
X-axis Limit Switch

Light Strip Connection

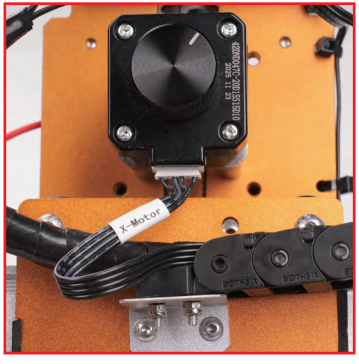


Y-axis Motor Wiring Diagram (Right Side)

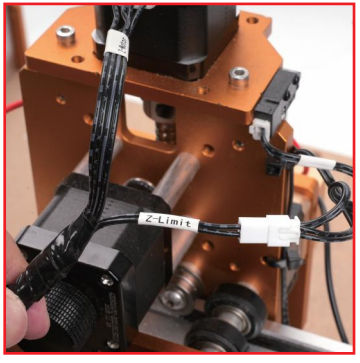
Y-axis Drag Chain Wiring Tutorial



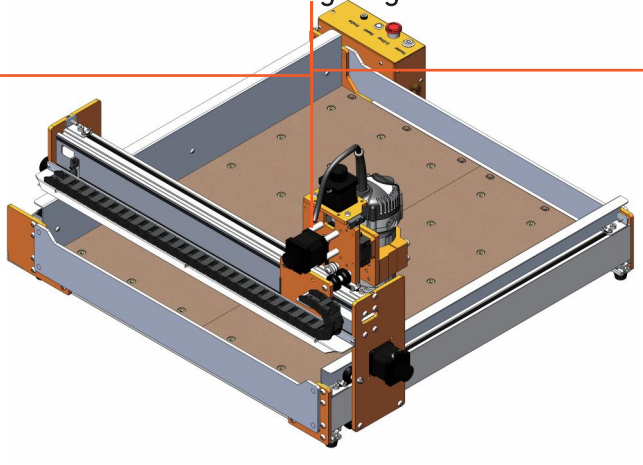
Z-axis Motor Wiring Diagram



X-axis Motor Wiring Diagram

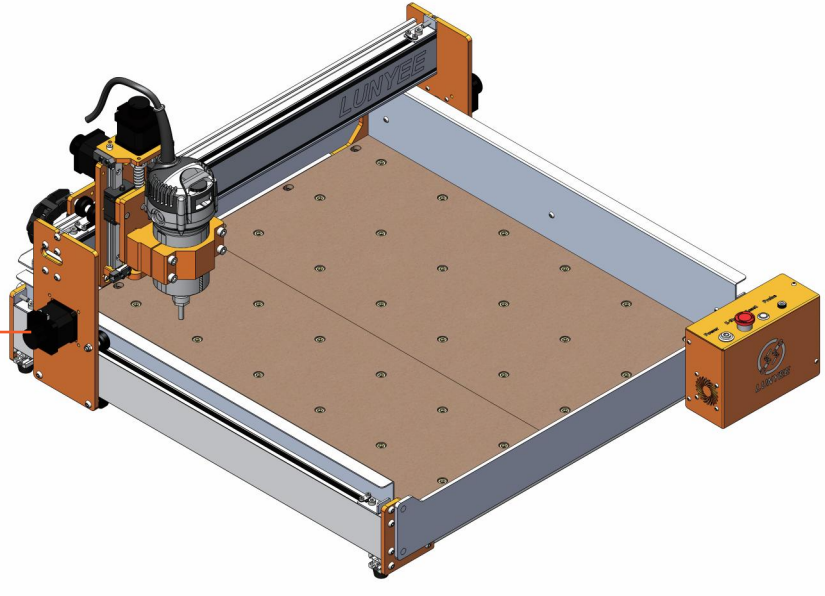


Z-axis Limit Switch Connection

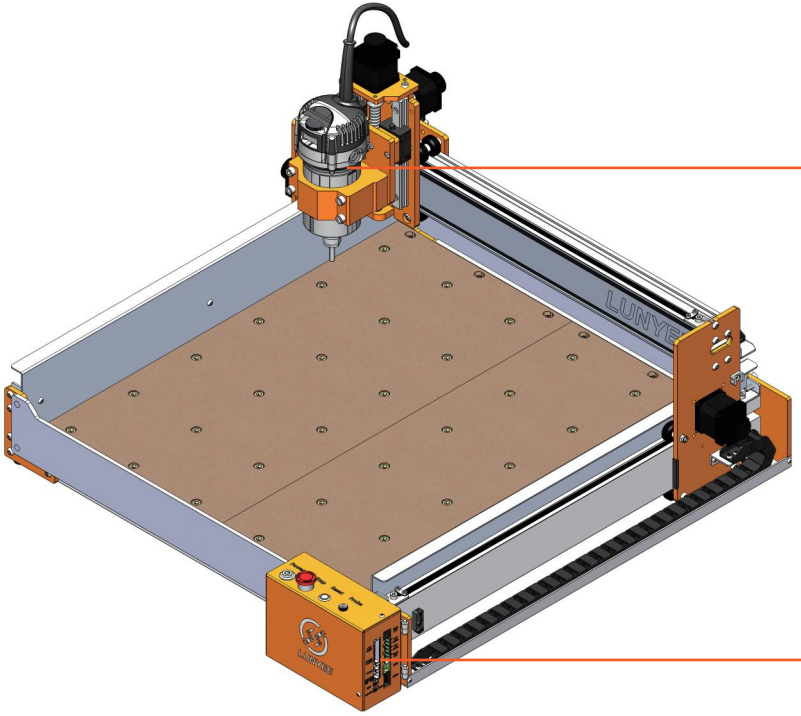


Left-side Motor Wiring

Y-axis Motor Wiring Diagram (Left Side)



Electrical Control Box and Spindle Wiring

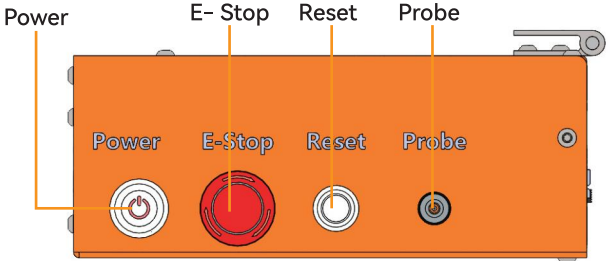


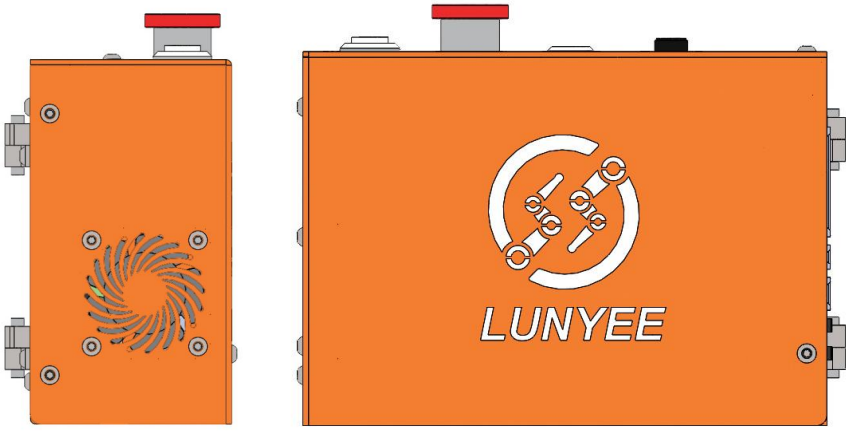
Trimmer Connection Diagram

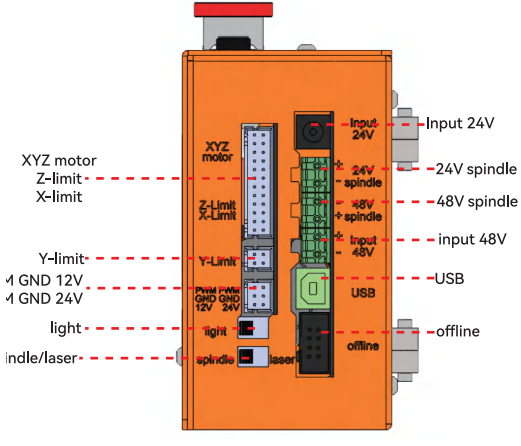
Electrical Control Box Connection Diagram

5. Electrical Control Box Description

Note: Before use, first check whether the emergency stop switch is reset. If it is not reset, rotate the emergency stop switch clockwise. The reset is successful after the switch pops up.







6.Machine Maintenance and Adjustment

6.1 Safety Reminders

1.Be sure to disconnect the equipment power supply before maintenance and adjustment.

2.After adjustment, run a low-speed test first, then resume normal processing.

3.If abnormal heating, noise or obvious sparks are found, stop the machine immediately for inspection.

6.2 Daily Maintenance

1.After each processing is completed, timely clean the wood chips, dust and residual debris on the workbench, profile surface, near the belt and the outer surface of the electrical control box, to avoid dust accumulation affecting heat dissipation or entering the transmission structure.

2.Regularly check whether each connecting screw, synchronous pulley, coupling and drag chain fixing point are loose; if looseness is found, tighten it in time when the power is off.

3.Before long-term shutdown, clean the whole machine thoroughly, and store it in a dry, ventilated environment free of corrosive gas.

6.3 Belt Tension Adjustment

This machine adopts a belt drive structure. After the equipment runs for a period of time, the belt may become loose. Too loose belt will cause operation jitter, inaccurate positioning and processing misalignment; too tight belt will increase motor load and component wear.

6.3.1Adjustment Steps

1.Turn off the equipment power supply and confirm that the machine has completely stopped running.

2.Move the corresponding moving parts to a position convenient for observation and operation.

3.Check the tension in the middle section of the belt. Under normal conditions, the belt should maintain proper tension, without obvious sag, shaking or deviation from the pulley groove.

4.Loosen the tensioning mechanism or relevant fixing screws, and slowly adjust the tensioning components to restore the belt to proper tension.

5.Retighten the fixing screws after adjustment, and check whether the tension on the left and right sides is as consistent as possible.

6.Manually push and pull the slide to confirm smooth operation without jamming; after power-on, run a low-speed test first, then resume normal use.

6.3.2 Judgment Criteria

Too loose: Prone to jitter during acceleration/deceleration, virtual trajectory, reduced corner accuracy, and possible misalignment in severe cases.

Proper: No obvious sag of the belt, smooth movement of the slide, no abnormal noise and positioning deviation during test run.

Too tight: Increased running resistance, rising noise, increased motor load and belt wear.

6.4 Rubber Roller / Eccentric Nut Adjustment

This machine adopts a V-wheel guide structure. If the slide shakes, excessive clearance, unstable movement or poor fit occur during operation, check the tightness of the rubber rollers and eccentric nuts.

6.4.1Adjustment Steps

1.Turn off the equipment power supply, gently push or shake the corresponding moving parts by hand to check for obvious looseness or clearance.

2.If the roller is found to be too loose, loosen the corresponding fixing screws, and slowly rotate the eccentric nut or adjustment structure with a tool.

3.Adjust until the roller is tightly fitted with the guide surface, the slide has no obvious shaking, but it is still smooth when pushed.

4.After retightening the fixing screws, manually push the slide to confirm no jamming and no obvious uneven resistance.

5.Power on and run a low-speed test, confirm no abnormal noise, no shaking, no deviation, then resume normal processing.

6.3.2 Judgment Criteria

Correct State: The roller fits the guide surface, the slide has no obvious shaking, the movement is stable, and the roller is not the tighter the better.

Incorrect State: Too tight will cause accelerated roller wear and increased running resistance; too loose will affect the machine stability and processing accuracy.

6.5 Guide, Transmission and Fastener Inspection

1.Check whether the movement of each axis is smooth; if jamming, abnormal noise, deviation or shaking is found, first check the status of the belt, roller, fixing screws and drag chain.

2.Check whether the synchronous pulley, coupling, drag chain and cable fixing points are loose; if wear, cracks or abnormal partial wear are found, replace them in time.

3.If the equipment has linear rails, lead screws or other structures that require lubrication, clean them regularly and maintain them in accordance with the machine type requirements. It is not recommended to add lubricants at will without confirming material compatibility.

7. Edge Trimmer Operation

7.1 Usage Method

1. Check that the cutting tool is securely installed and the collet is locked before powering on.
2. Confirm the power supply is connected correctly and the tool is not in contact with the workpiece.
3. After starting the edge trimmer, let it run idle for 5~10 seconds to confirm no abnormalities before starting processing.
4. Use layered cutting during processing to avoid excessive cutting depth in a single pass.
5. Maintain a stable feed rate during use to avoid jamming or impact.

7.2 Notes

1.Regularly inspect the entire product for damaged, missing, or loose parts such as screws, nuts, bolts, and caps. Tighten all fasteners and caps. Do not operate the product before replacing any missing or damaged parts.

2.Regularly inspect the cables.

3. Do not start the equipment without installing the tool or without locking the collet.
4. Do not insert the tool all the way to the bottom during installation; leave a gap of approximately 2~3mm.
5. Avoid long-term full-load operation to prevent motor overheating.
6. Avoid long-term full-load operation to prevent motor overheating.

6.3 Carbon Brush Replacement

1. Disconnect the power supply and ensure the equipment has completely stopped.
2. Locate and unscrew the carbon brush covers on both sides of the edge trimmer.
3. Remove the old carbon brushes and inspect their wear condition.
4. Insert the new carbon brushes and install them in place.
5. Replace the carbon brushes on both sides simultaneously.
6. After replacement, run the unit idle for 1~2 minutes for break-in.
7. Replace the carbon brushes promptly when their length is worn down to 1/3 of the original length.

6.4 Common Faults and Troubleshooting

Q: The tool bit cannot be inserted

A: The tool bit size is incorrect. Select a tool bit with a shank size matching the collet specification.

Q: The workpiece surface is not smooth after cutting

A: The tool bit is dull or the speed setting is incorrect. Replace with a new tool bit or select the appropriate speed through test operation.

Welcome to the CNC Community!

Save Contact

support@lunyeecnc.com

Installation Video Tutorial

Official Website: lunyeecnc.com
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