

DANA F30 Series Laser Marking Machine User Manual



Content

1. Product Overview	2
1.1. Hardware Working Environment	2
1.2. System Technical Parameters	2
2. Hardware Introduction	3
2.1. Parts List	3
2.2. Equipment Diagram	4
2.3. Installation Flowchart	6
2.3.1. Install The Lifting Column	6
2.3.2. Install The Chassis Hanger	7
2.3.3. Install The Cross Arm	8
2.3.4. Install The Chassis	10
2.3.5. Install the optical path	11
2.3.6. Install the touchscreen bracket and the touchscreen	12
2.3.7. Install the encoder	13
2.3.8. Install The Photoelectric Sensor	16
2.3.9. Connect The Cable	17
2.4. The Boot Process	18
2.5. The Shutdown Process	18
3. Equipment Maintenance Instructions	18
3.1. The Galvanometer part	18
3.2. The Chassis Part	19
3.3. The Appearance Part	19
3.4. The Security Part	19
4. Equipment Warranty Card	20

1. Product Overview

This series of fiber laser marking machines mainly adopts Raycus laser, High-performance galvanometer scanning system and Dana self-developed control software. They feature high speed, stable performance, good laser mode, long service life, continuous operation up to 100,000 hours, high electro-optical conversion efficiency and low power consumption. The system is easy to operate and flexible to change. It has a full Chinese interface and is compatible with files output by various software such as AUTOCAD, CORELDRAW, PHOTOSHOP and CAXA. It can perform marking of barcodes, QR codes, graphics and text, and supports file formats such as PLT, PCX, DXF and BMP. It can directly use SHX and TTF font libraries. The system can automatically encode and mark serial numbers, batch numbers, dates, etc.

1.1. Hardware Working Environment

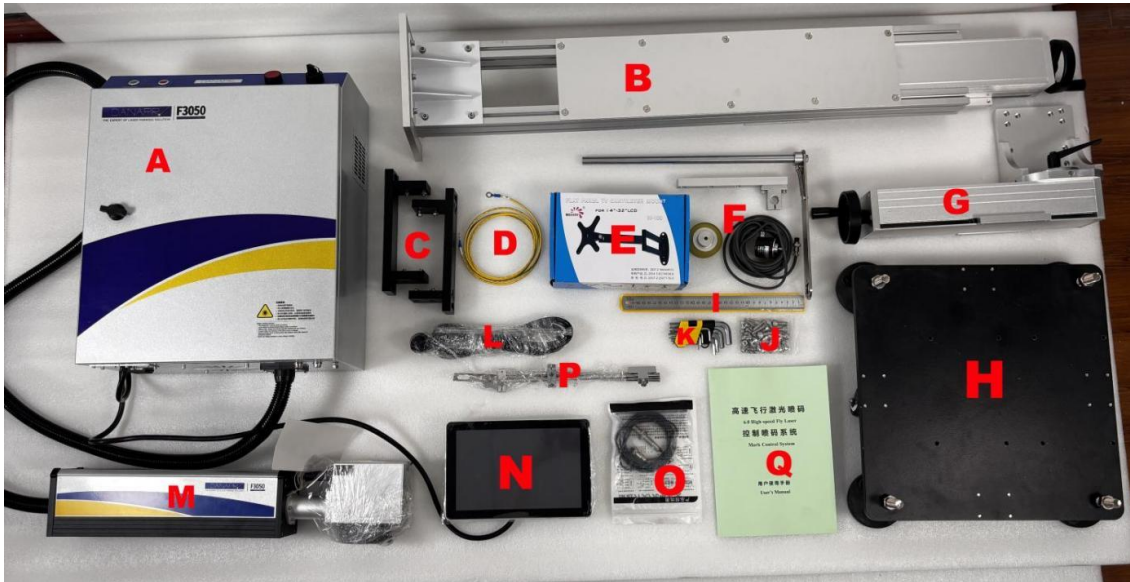
Working Environment	
Protection Degree	≥IP54
Cooling	Air Cooling
Operating Temperature	-5-45 degrees Celsius
Operating Humidity	80% RH, Non-Condensing.
Power Supply	220V, 0.6KVA

1.2. System Technical Parameters

Fiber Laser Marking Machine Specification	
Laser-type	Fiber Laser Wavelength:1064nm, 100000hrs continuous working time
Laser Power Class	20W/30W/50W/100W
Focal Length	177mm(Standard)
Maximum line marking speed	10000mm/S
Marking Parameters	
Marking Field	110mm*110mm; Max:500*500mm
Marking lines	Set any line numbers within the valid marking range
Minimum Line Width	0.02mm
Character Height	0.2-70mm
Typeface	Single line, Dot matrix, True Type
Marking Content	Text, Graphics, Barcode, Two-dimensional code, Dynamic serial number, real-time clock, TXT file, RS232 Communication data,etc..
Marking Angle	Any Angle, adjustable in 3 dimensions
Monitor	Industrial Touchscreen
Operating Language	Chinese, English and other Languages

2. Hardware Introduction

2.1. Parts List



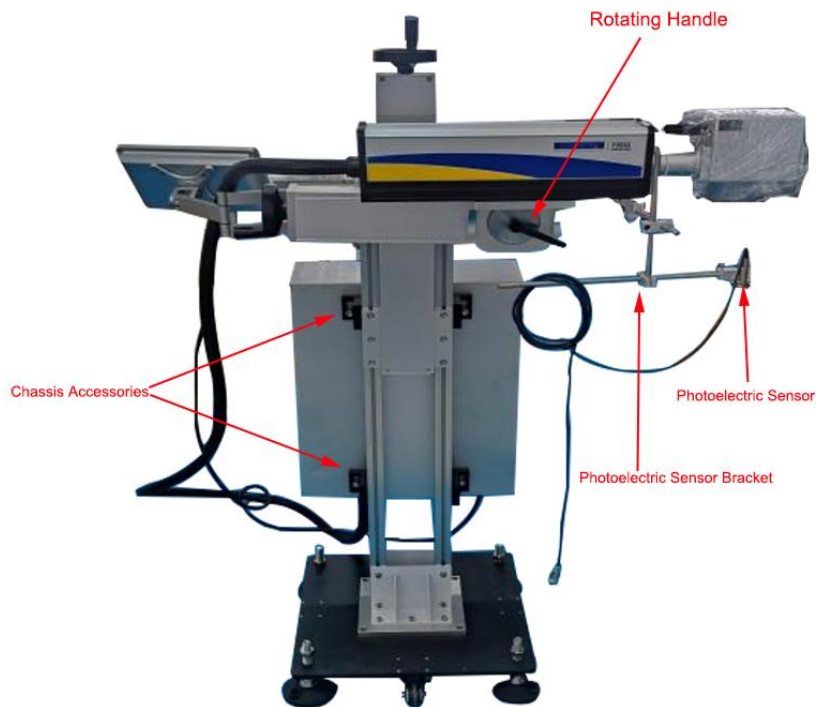
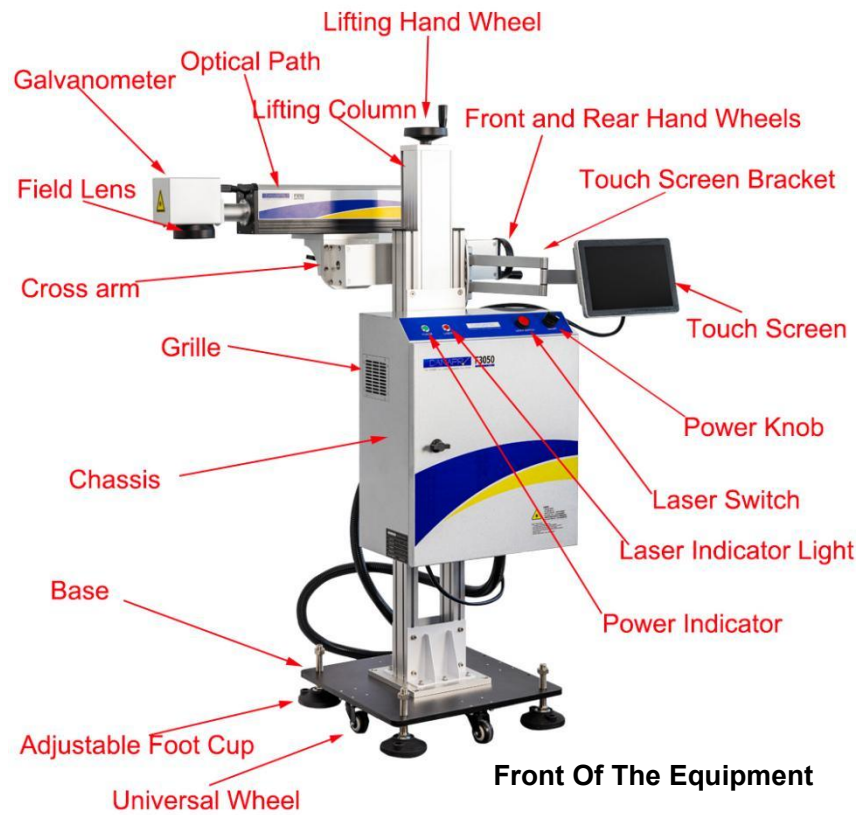
A: Chassis B: Lifting Column C: Chassis Hanger D: Earth Wire E: Screen Bracket

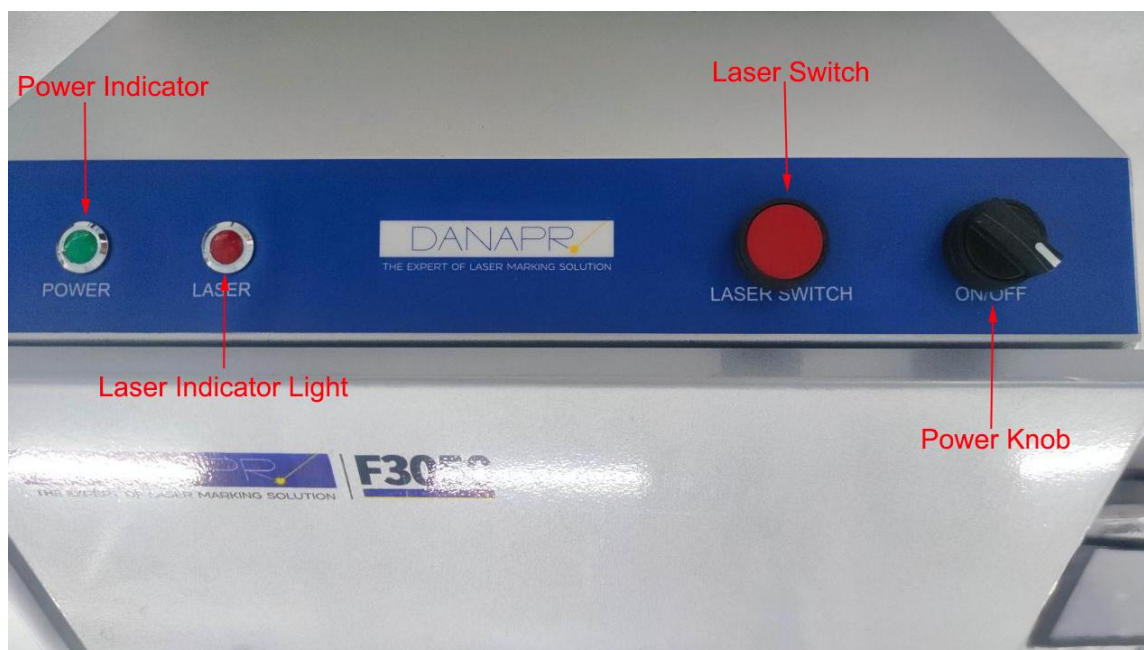
F: Encoder Assembly G: Cross Arm H: Base I: Ruler J: Screw Kit K: Hex Key Tool

L: Power Cord M: Optical Path N: Industrial Touch Screen O: Photoelectric Sensor

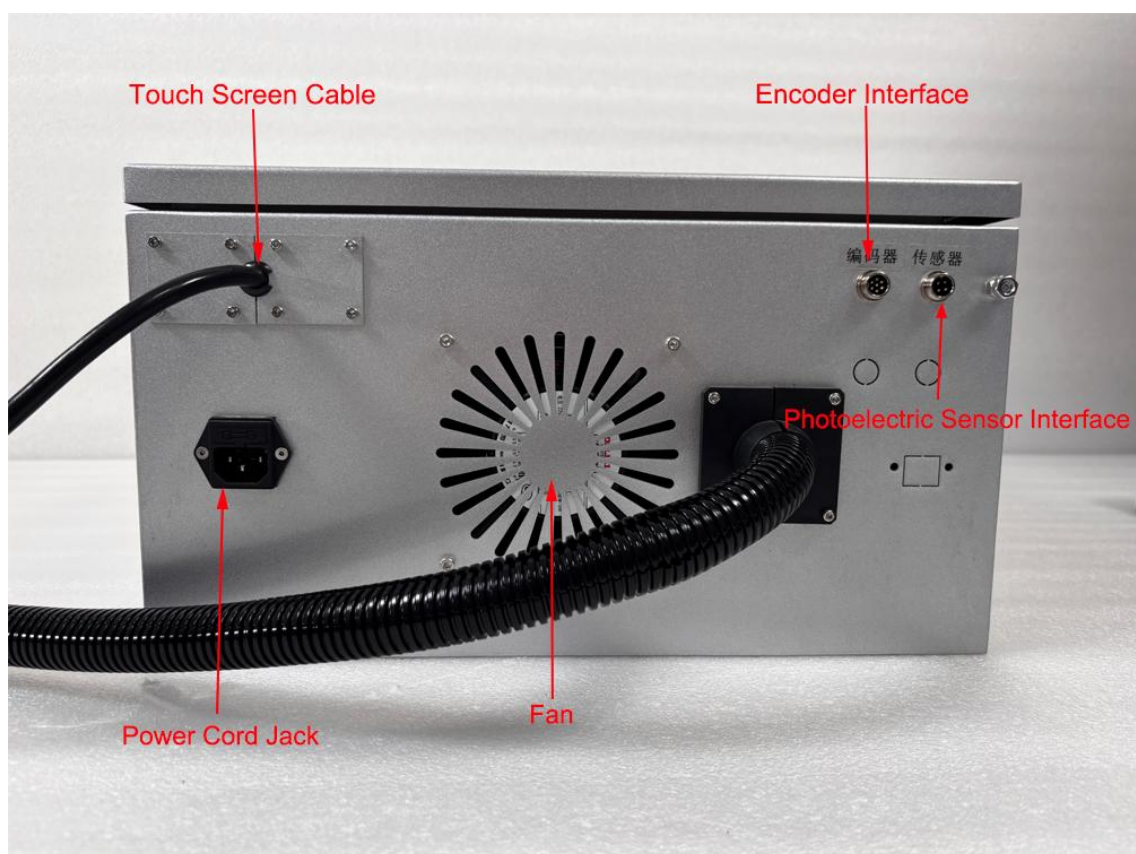
P: Photoelectric Bracket Q: Operation Instruction

2.2. Equipment Diagram





Chassis



Bottom Of The Chassis

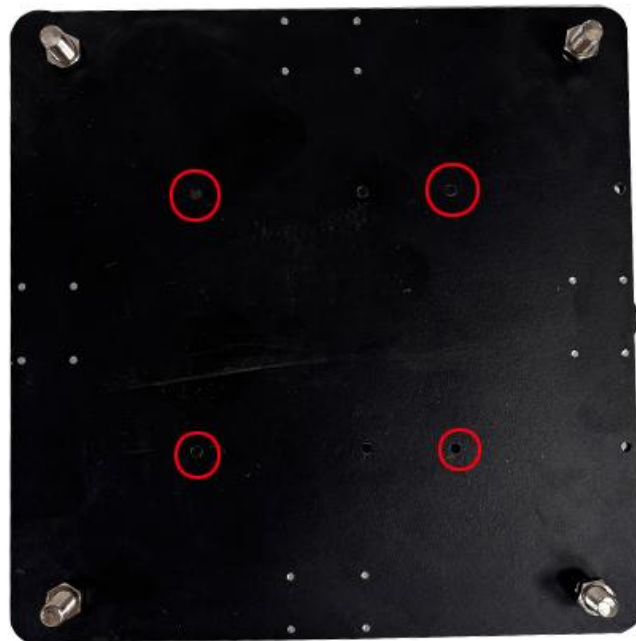
2.3. Installation Flowchart

2.3.1. Install The Lifting Column

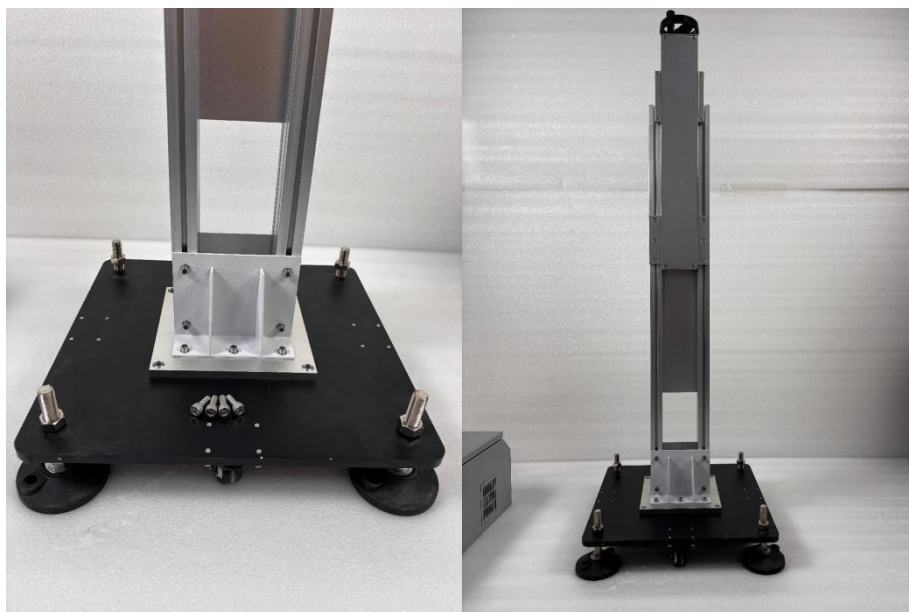
Fetch the base plate and the lifting column, find the corresponding four screws, align the four holes on the lifting column base plate with the four holes on the base, and tighten the screws, as shown in the following figure:



Lifting Column



Base



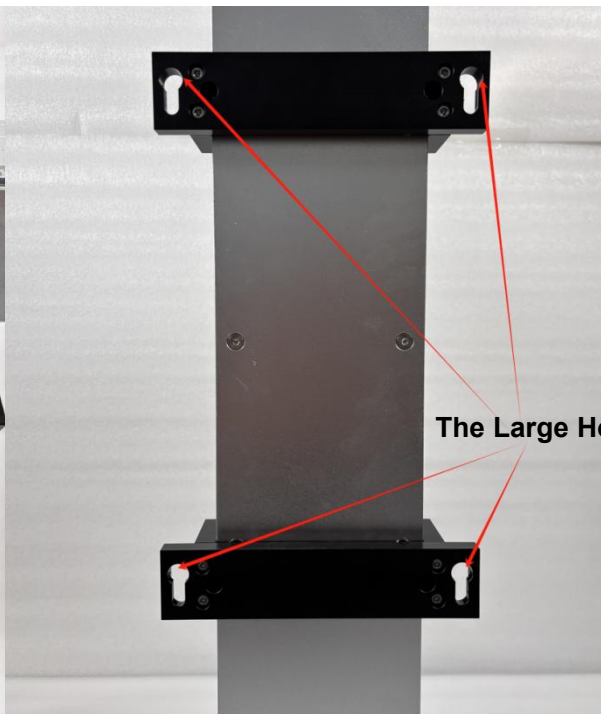
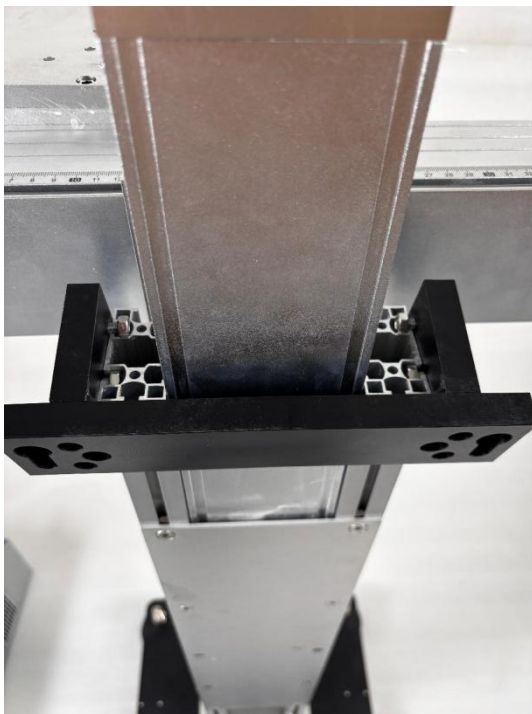
The Lifting Columns Have Been Installed

2.3.2. Install The Chassis Hanger

Fetch the chassis hangers and fix them to the lifting column. Install the two hangers on the lifting column from the top of the bracket respectively. Adjust their positions to fit the size of the chassis. At this time, they do not need to be tightened. As shown in the following figure:



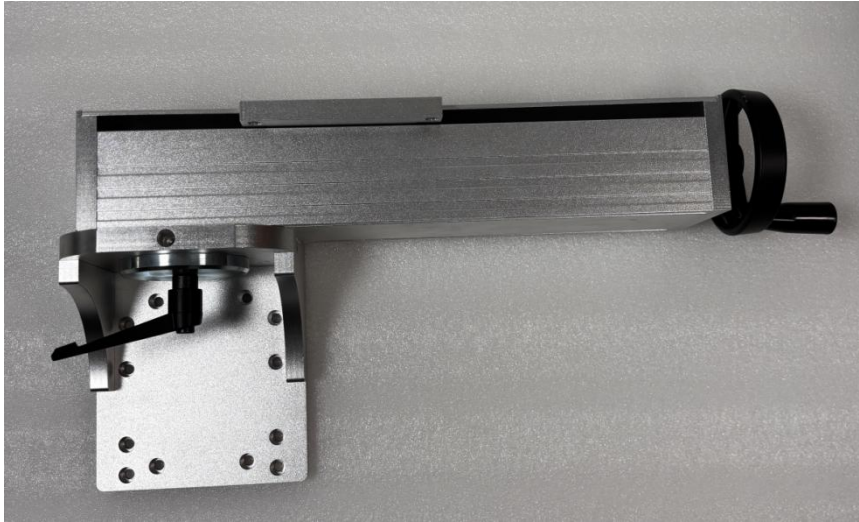
Chassis Hanger



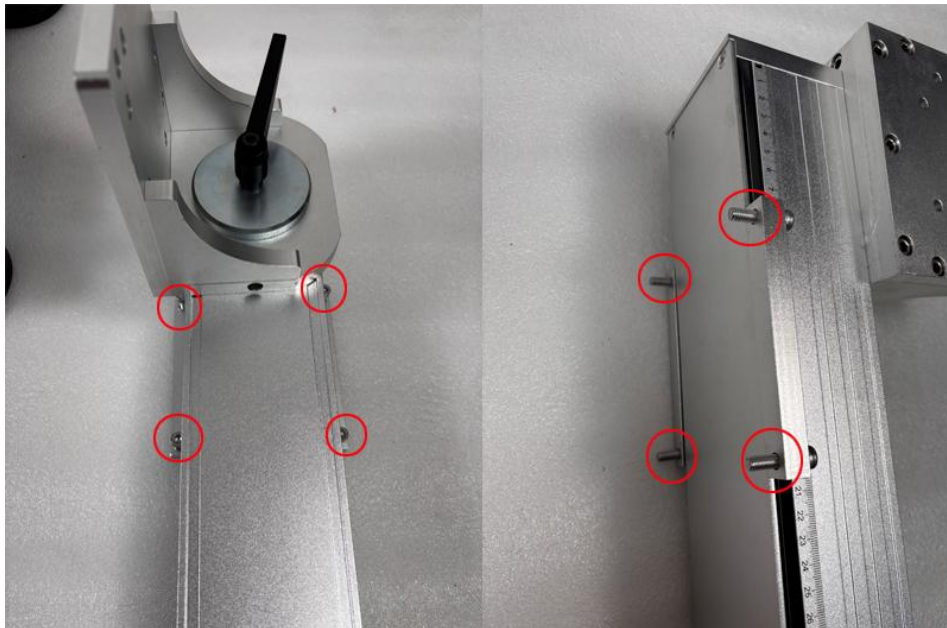
The Installation Of The Case Hanger Is Complete

2.3.3. Install The Cross Arm

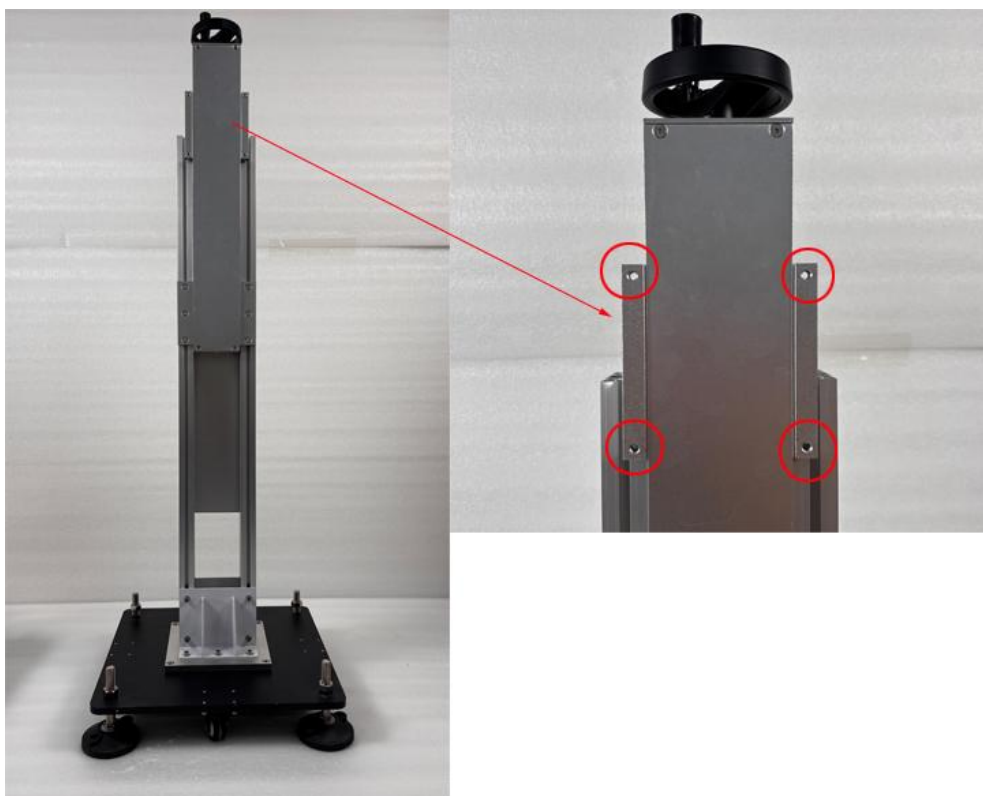
(The Cross Arm and the Chassis Hanger are respectively installed on both sides of the lifting column)
Fix the cross arm to the lifting column. Fetch the corresponding four screws, pass them through the fixing position of the cross arm, and fix the cross arm to the lifting column, as shown in the following figure:



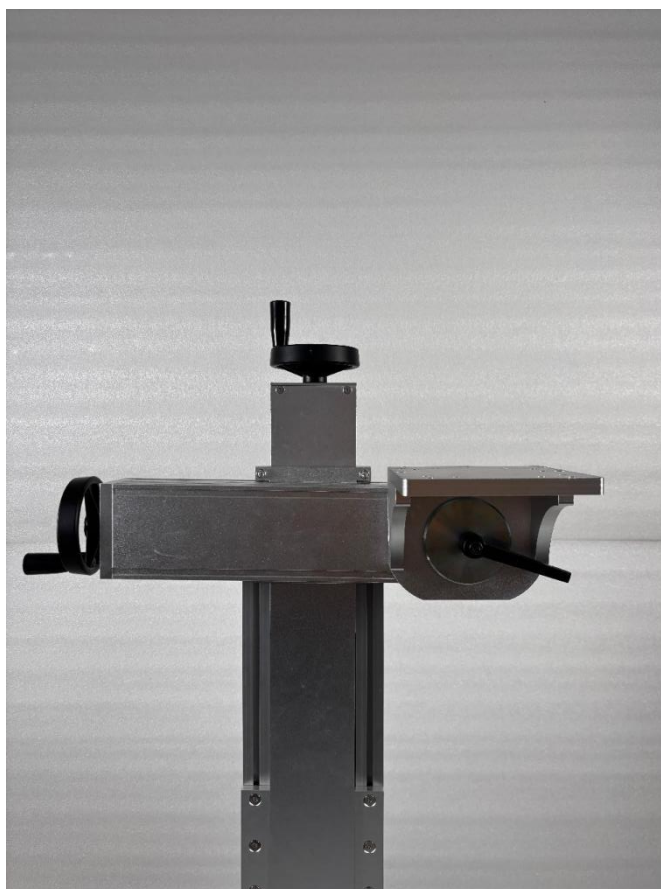
Cross Arm



Screw Fixing Position Of The Cross-Arm



The Installation Position Of The Screws For Fixing The Cross Arm On The Lifting Column



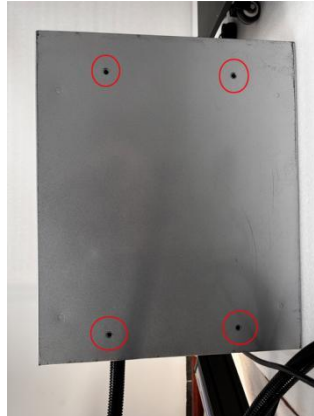
Install The Cross Arm On The Lifting Column

2.3.4. Install The Chassis

Fix the chassis to the lifting column through the chassis hanger. First, fix the screws on the back of the chassis, then install chassis onto the chassis hanger. Adjust the position of the chassis and the chassis hanger appropriately. After adjusting to the right position, tighten the screws of the chassis and the chassis hanger. As shown in the following figure:



Front Of The Chassis



Back Of The Chassis



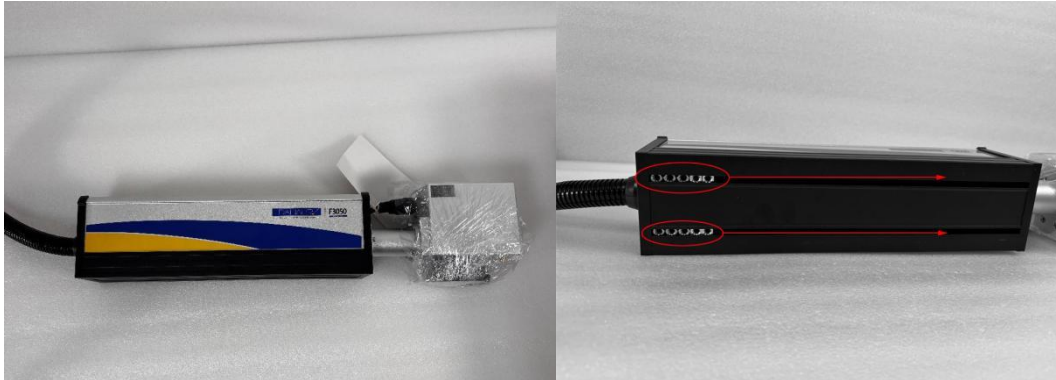
Chassis Hanger



The Chassis Installation Is Complete

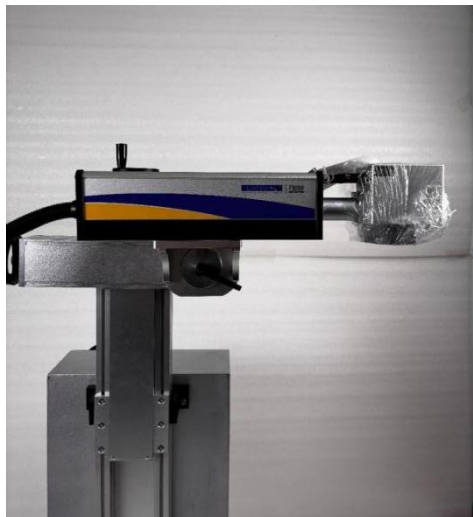
2.3.5. Install the optical path

Fix the optical path to the cross arm. Move all the nuts at the bottom of optical path towards the galvanometer side. Place the optical path on the cross arm, slide the four nuts to the corresponding holes, and tighten to fix.



Optical Path

Bottom Of Optical Path



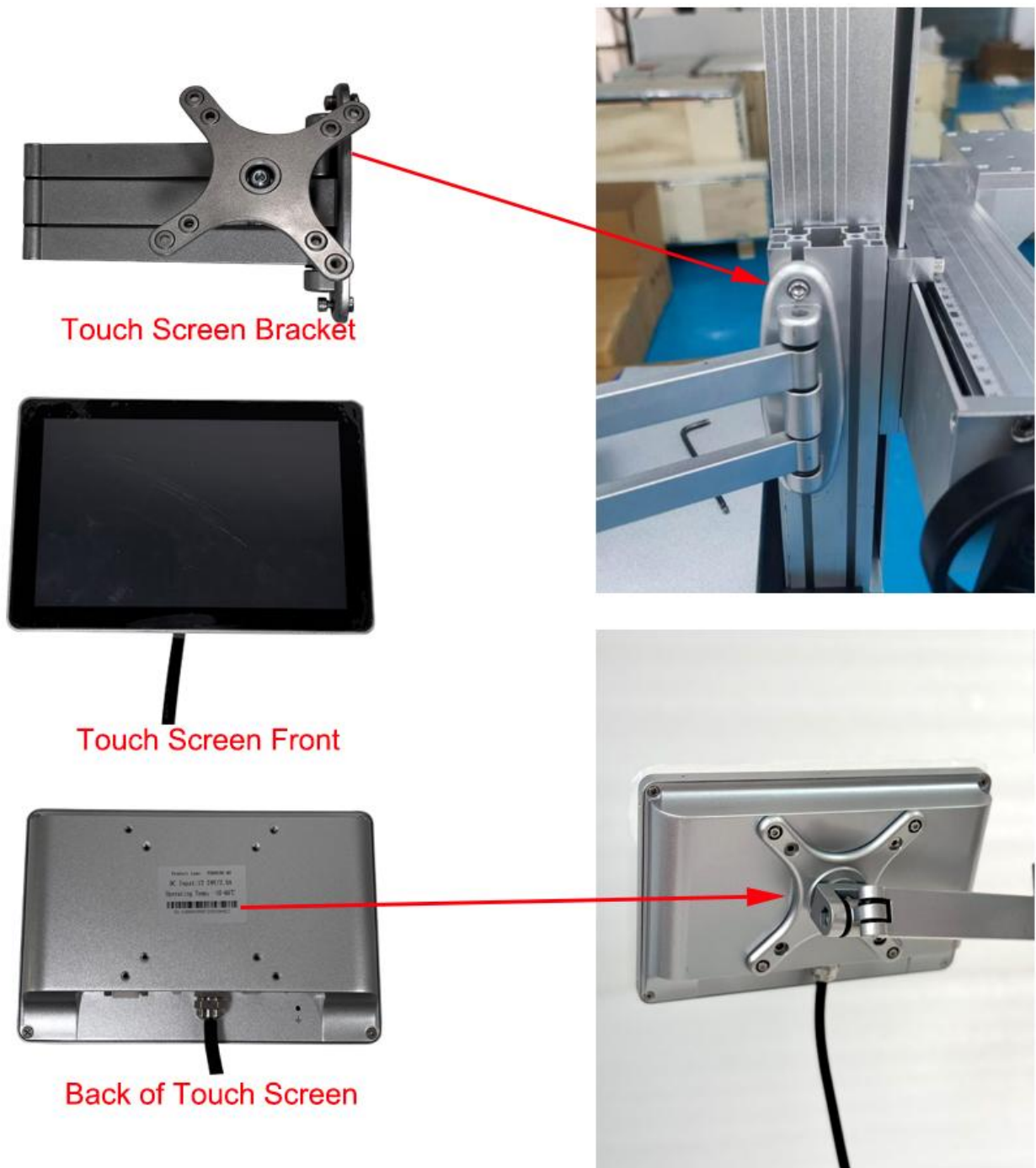
The Optical Path Installation Is Completed



Bottom Installation Of Optical Path

2.3.6. Install the touchscreen bracket and the touchscreen

Fetch the touchscreen bracket, insert it into the slot on the left top of the lifting column, slide it to the appropriate position and then tighten the screws to fix it on the lifting column. Then take out the four corresponding screws to fix the touchscreen on touchscreen bracket. As shown in the following figure:



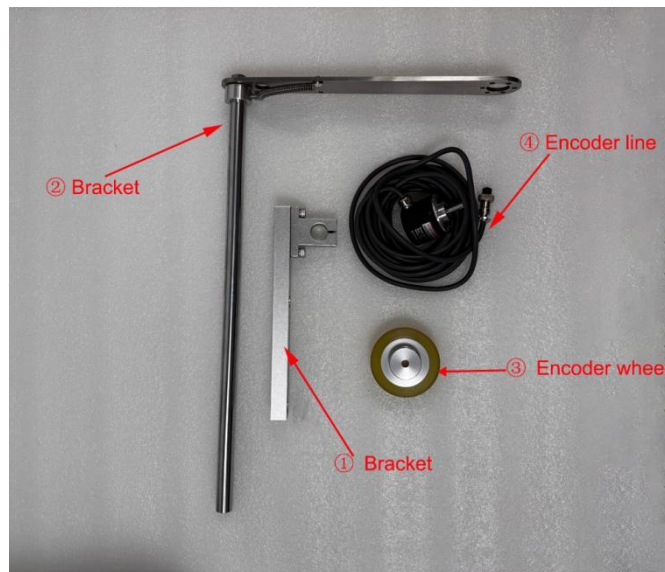
The Touchscreen Stand And Touchscreen Installation Are Completed

2.3.7. Install the encoder

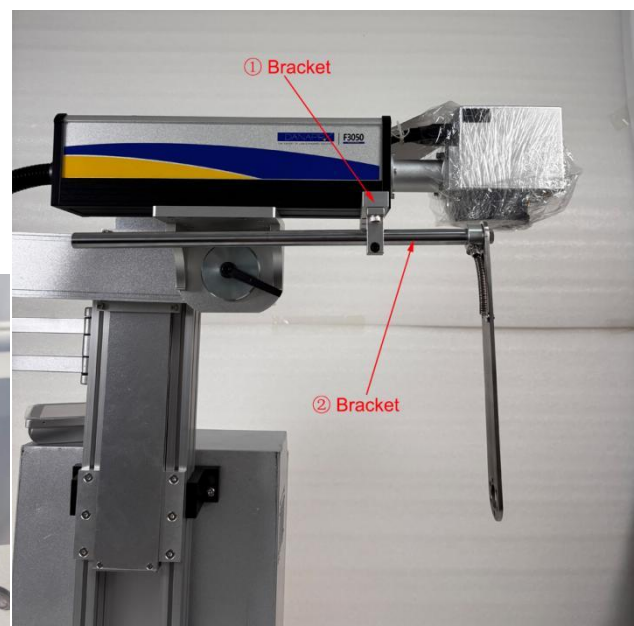
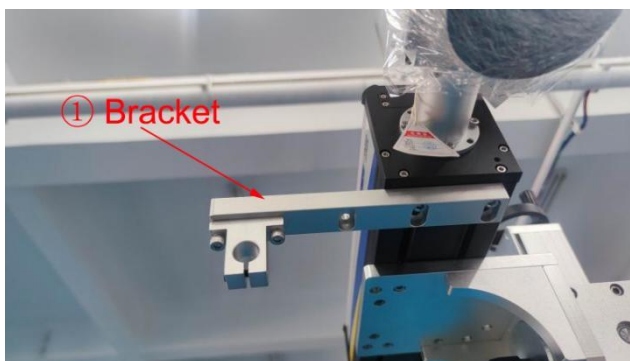
(There are two types of encoder brackets, and different installation methods should be adopted according to the actual situation)As shown in the following figure:

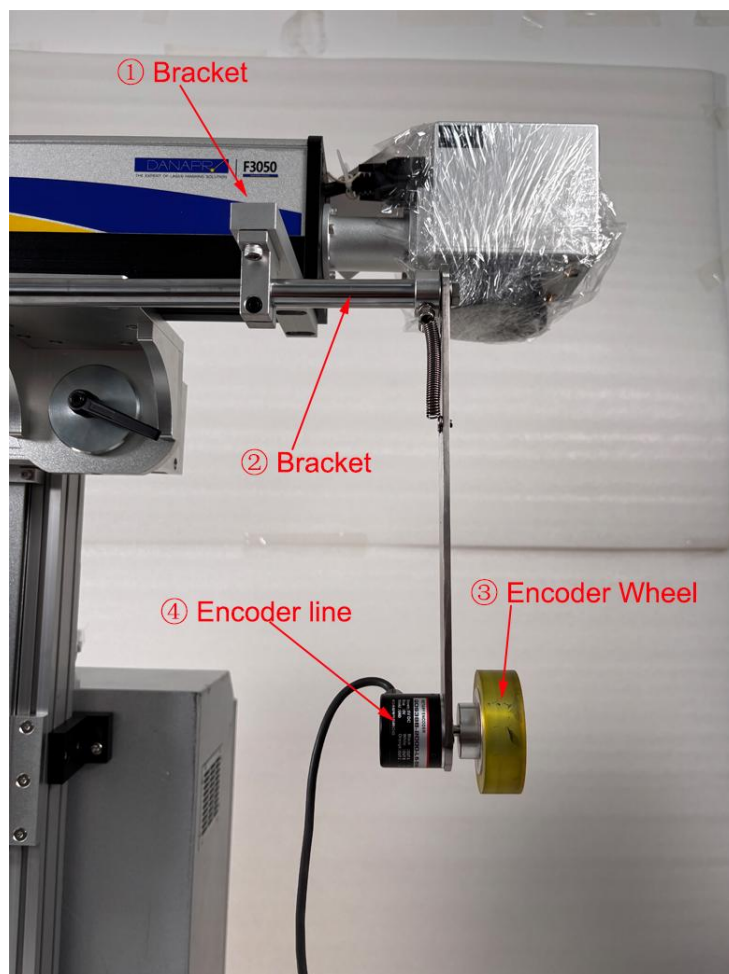
Method One: Installation of Large Bracket

First, fix bracket ① at the bottom of the optical path. Then, pass bracket ② through bracket ① and tighten to fix it. Insert the encoder wire ④ into the small hole at the bottom of bracket ② and fix it with three screws. After the fixation, install encoder wheel ③ and tighten the two top screws on the upper part of encoder wheel ③ to complete the fixation.



Big Bracket And Encoder





The Large Bracket And The Encoder Have Been Installed

Method Two: Small Bracket Installation

Fix the bracket on the production line, then insert the encoder wire into the small hole of the bracket ① and fix it with three screws. After it is fixed, install the encoder wheel and tighten the two top screws on the encoder wheel to fix it. As shown in the following figure:



Small Bracket And Encoder



Fixing Top Screws Of Encoder Wheel



Install Directly On The Production Line

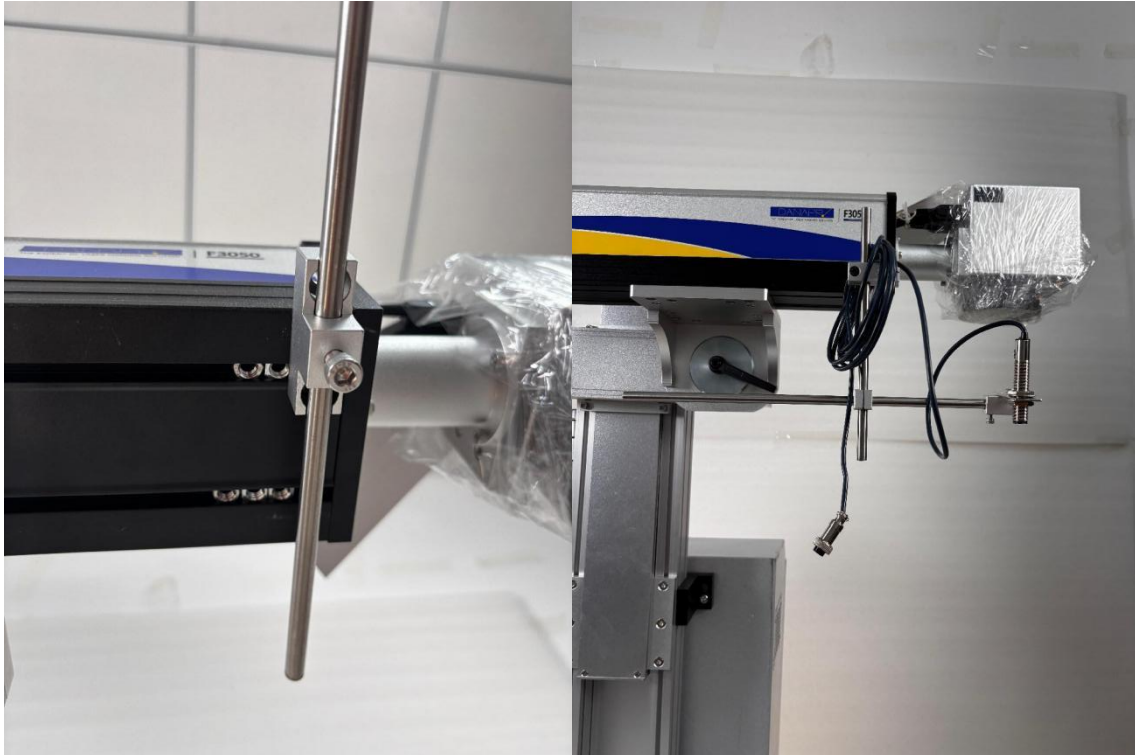
2.3.8. Install The Photoelectric Sensor

(Along the direction of the production line, the product is sensed first and then marked)

First, fix the short bracket at the bottom of the optical path. Then, pass the long bracket through the short bracket, adjust the long bracket's position and fix it. Loosen the screw below the photoelectric sensor and fix the photoelectric sensor on the long bracket. Adjustments can also be made as needed based on the actual situation. As shown in the following figure:



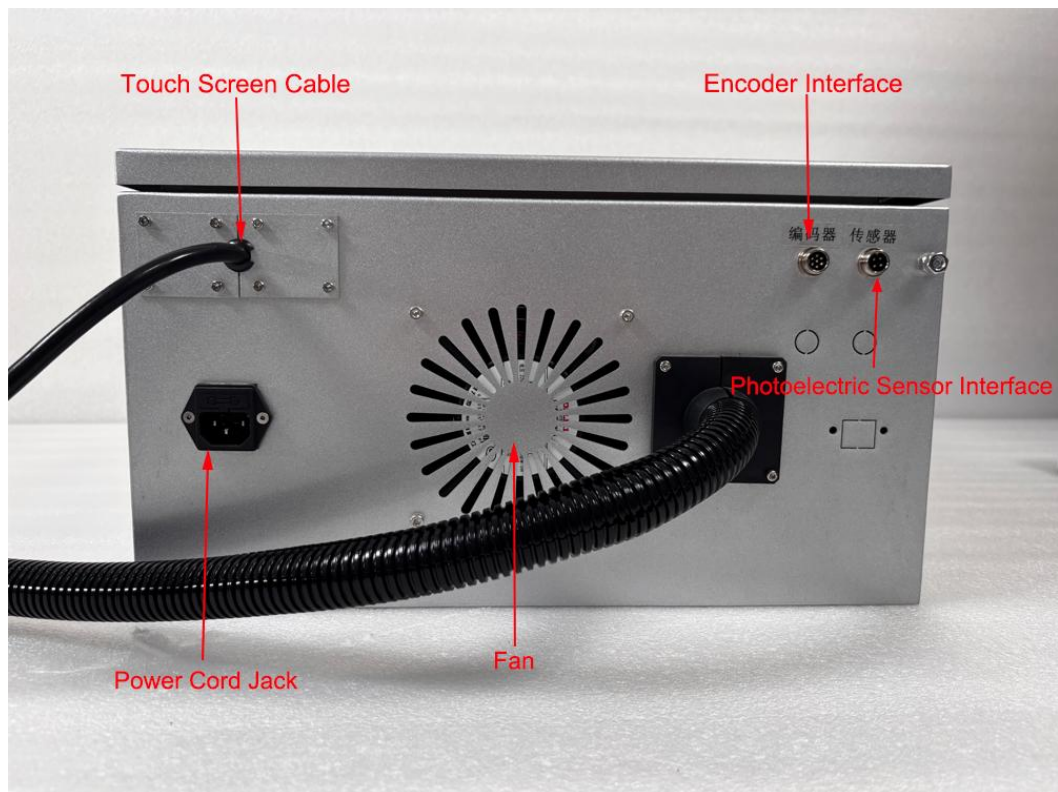
Photoelectric Sensor And Bracket



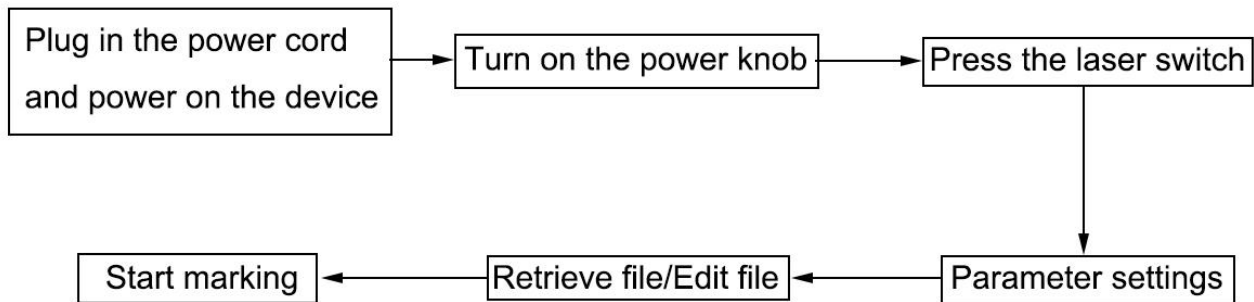
Photoelectric Sensor And Bracket

2.3.9. Connect The Cable

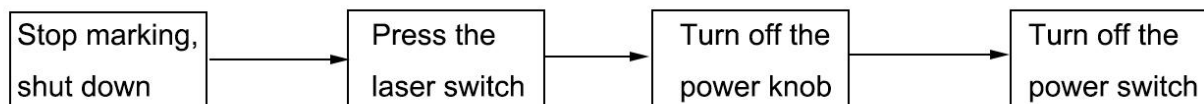
Connect the power cord, the photoelectric sensor, and the encoder. Power on. Installation is complete.



2.4. The Boot Process



2.5. The Shutdown Process



Note: Please strictly follow the above process. The focal length is adjusted by controlling the lifting hand wheel of the lifting column. Move the handle on the optical path to adjust the handle on the cross arm. The lifting hand wheel rises clockwise and descends counterclockwise. The front and rear hand wheel moves forward clockwise and backward counterclockwise.

3. Equipment Maintenance Instructions

3.1. The Galvanometer part

1. The field lens should be wiped every two days (depending on the on-site environment. If too much dust accumulates on the field lens, it will lead to poor marking effect) with a cotton ball or cotton swab dipped in alcohol. When wiping, do it in one direction, either clockwise or counterclockwise.
2. The galvanometer structure is made of aluminum alloy for better heat dissipation. The temperature of the galvanometer will rise when the equipment works for a long time. To ensure heat dissipation, keep the surface of the galvanometer clean as much as possible.

3.2. The Chassis Part

Principle: There is a cooling fan at the bottom of the chassis and an air intake grille on the side. Air enters through the intake holes, passes through the cooling fan, and is then discharged outside the chassis. Dust in the air will be carried into the chassis along with the air. Dust usually has corrosive properties and can corrode the circuit system. Therefore, it is necessary to clean the interior of the chassis regularly.

Method: It is generally recommended to clean it approximately every three months (depending on the on-site environment). Remove the cover plate of the chassis and use high-pressure air or a high-power blower to thoroughly blow and clean the interior of the chassis when the equipment is powered off. Pay attention to cleaning the intake holes and ensure that the blown air does not contain water.

3.3. The Appearance Part

When the power is off, the exterior of the equipment can be wiped with a damp cloth. After wiping, it must be dried completely before being powered on and operated.

Note: When the equipment is running, avoid directly pouring water onto the chassis.

3.4. The Security Part

Avoid direct contact of laser with skin, eyes, etc.

Regularly check if the ground wire is in good contact.

Do not disassemble or assemble the machine while it is powered on.

4. Equipment Warranty Card

Product model		Date of Manufacture	
Machine Model		Laser Model	
Control Board Number		Galvanometer Number	
User Name			
User Address			
Contact Number		Postal Code	
Purchase Date			
Maintenance Record	Maintenance Date	Maintenance Record	Maintenance Personnel