

# ARCBRO®

## Tube-S SERIES

### CNC PIPE Cutting Machine install Manual

#### **TUBE S**

SQUARE & ROUND PIPE PROFILE CUTTING MACHINE



## Operator Manual

ARCBRO | Revision 2 | English

Date of issue: August, 2020

## Technical Support

Thank you very much to choose **ARCBRO** product, our whole engineer department work for you since the day you receive machine. When you have any questions during assembling or operating, it is free to contact us by Call, Email, Online help 7x24 hours.

Wish you enjoy a wonderful CNC cutting travel.

ARCBRO CNC Technical Support & Solutions

7x24 Hours

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[www.arcbro.com/about-arcbro-cnc-cutting-solutions/](http://www.arcbro.com/about-arcbro-cnc-cutting-solutions/)



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### Contact

by arcbro / August 7, 2015

### Contact Us for CNC solutions



E-mail: [Please leave message to us by live chat](#) —

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Contact ARCBRO Portable CNC Cutting Machine

We will reply as soon as possible



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- ❖ This User's Manual is only available for **Tube-S** CNC PIPE Cutting Machine.
- ❖ Ensure that the operator has read and understood this User's Manual before any operation on **Tube-S** CNC PIPE Cutting Machine.
- ❖ There may be few differences between the pictures in this User's Manual and the machine you received.
- ❖ Never hesitate to contact us for on-line technical service when you have any questions or you need help, and it's our pleasure to be there for help.

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## Technical Parameters

Type	Tube-S	
Effective cutting range	φ 25-150/3000mm	φ 25-150/6000mm
Actual machine size	4900x500x1400	7900x500x1400
Input power supply	1 phase, 110V, 220V, 50Hz/60Hz	
Input capacity	1000W	
Cutting model	Plasma cutting	
Max travel speed	8000mm/min	
Drive motor	Server Driver motor	
CNC SYSTEM		
Display	10" color LCD screen	
CPU	Industrial ARM9 chip	
External format	TXT or NC format	
Language	English, Spanish, Russian, French, Japanese, Czech, Slovenia	
PLASMA CUTTING MODE		
Max cutting speed	8000mm/min	
Max cutting thickness	Depends on plasma power source	
Plasma power source	Support up to 125A ( not include in standard package )	
THC	Arc voltage Auto Torch Height Controller	
Accuracy	±0.3mm	

## Notes

**Note 1:** Nesting software standard Wizard is included in standard package.

**Note 2:** The machine must be grounded reliably when it is working. (Connect the plate and the earth).

**Note 3:** Clean dust regularly to keep the rail and rack clean for smooth movement.

**Note 4:** Avoid damage for the LED display screen of CNC system.

**Note 5:** Equipment use environment:

Ambient temperature:  $-10^{\circ}\text{C}$ — $+50^{\circ}\text{C}$

Environment humidity: 90 % RH below

Storage temperature:  $-20^{\circ}\text{C}$ — $+65^{\circ}\text{C}$

Sea level elevation: An altitude of 1000 m below

## Safety


### 1. Information for your safety

The operator must read and understand the contents of this user's manual before any operation on **Tube-S**

Never hesitate to contact us for assistance when you have any questions or you need help, and you can reduce the amount of time your troubles take and solve your problem efficiently.

**Note:** Each of the following descriptions must be verified before any operation on **Tube-S**.

- 1. The operator should wear face shield, welding gloves, caps, membrane filter dust mask and sound insulation earmuff. It is strictly forbidden to observe directly or approach to the plasma arc with exposed skin.



Precautions for safe use & machine working properly, Please must obey the following rules:  
(A) Do not move the equipment body during working;  
(B) Without permission, Do not open the equipment cover;  
(C) Read the directions carefully before using the equipment.



**CAUTION**



**ROLLING**  
Keep clear

-2. The operator can't load external program in internal storage of the machine in case of the virus. Only the special software recognized by ARCBRO can be applied.

-3. During cutting period, when the floating voltage is too high, the operator should check the ground connection, neutral



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connection and insulation of the torch handle. Then isolate the workbench from the ground, Or install no-load open-circuit relay in the electrical control system.

-4. The cutting operator and assistant must wear labor protection articles by regulation and take safety measures to prevent electric shock, high-altitude falling, gas poisoning, fire or any other accidents.

-5. The site should build rain-proof, damp-proof and sun-proof machine shed, and install corresponding fire equipment. The machine should keep away from flammable and combustible materials.

-6. As the operation and maintenance has potential dangerous, operator should be careful in case getting injured. It's forbidden to wear loosen cloths or cotton ropes in case being entangled by the machine.

-7. The high voltage of plasma CNC cutter is fatal, so operator should install the machine step by step as the manufacturer stipulate.

-8. Only trained personnel can be allowed to operate the equipment. Any maintenance should obey the user's manual and before that the power should be cut off. Only experience technician is allowed to change assemblies.



## 1. Tube-S Description

### 1.1. What is Tube-S ?

Tube S is an economic & practical automatic equipment specially designed for pipe cutting with the following specialties:

1. Easy assembling mechanical design.
2. Designed for cutting small round tubes.
3. Adjustable roller supporters.
4. Quick-react computer numerical control.
5. Advanced technology assures high precise & stable cutting performance.
6. High efficiency CNC system for both time and money.

With **Tube S**, various fast auto nesting, high accurate drawing, or efficient cutting tasks can be achieved in seconds with the help of our nesting software.

### 1.2. Application

**Tube-S** is an ideal CNC Plate Cutting Machine widely used in industry field, such as shipbuilding industry, metallurgic industry, petrochemical industry and water resources & electric power. It can cut various metal plates in seconds, for instance: carbon steel (flame cutting), stainless steel, copper and aluminum (plasma cutting).

### 1.3. Programming and Nesting

Using ARCBRO plate nesting software, you can edit and do the nesting process for your pattern designed by CAD, then generate a G-code cutting file in txt format. This txt cutting file can be recognized and carried out by our CNC system when you import it by a USB drive. Now, running **Tube-S**, you can achieve accurate profiling of this pattern automatically.

## 2. Packing List

### 2.1. Introduction

**Tube-S** is packed carefully in one wooden boxes. All equipment in the boxes are protected fully to avoid any damages during transportation.

The boxes have to be carried with care always and with the top cover up during handling and transportation.

### 2.2. Packing List

Open the top cover of the boxes. And remove all the screws fixing the cover to the box body.

The **Tube-S** transportation boxes contain:

- ▶ This accessory is standard configuration, if your machine is customized, the accessories are according to the order requirements.
- ▶ The bolts of the machine are fixed to the machine.

#### Standard configuration

#### Tube-S-6M Standard Package

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1. Tube-S machine-1Set



2. Manual-1Pcs



3. USB disk -1pcs



4. Nesting Software-1pcs



5. Locating ring-1Pcs



6. Plasma hold-1 Set



7. Chuck Spanner-1Pcs



8. Screws for Connection frame-4Pcs



9. Screws for Support leg-24Pcs



10. Screws for Mounting rail and rack -Some Pcs

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Make Work Simple

## 3. Installation

### 3.1 Mechanical Assemble Steps

This part describe how to install **Tube-S** CNC cutting machine step by step.

Please assemble according to below steps carefully. Any questions or help needed, please do not hesitate to contact ARCBRO after sale service engineer, we will provide help as soon as possible.



- ▶ The installer needs to prepare: electric drill, spirit level, forklift. Two installation mechanical engineers are needed for faster installation.
- ▶ In order to install the machine faster, please read the installation steps carefully before installation, it will save installation time.

### 3.2 Basic assemble steps:

- ◆ Step 1: Assemble the legs of the Frame.
  
- ◆ Step 2: Connect the two Pieces of Machine Body.
  
- ◆ Step 3: Install the cable connection case.
  
- ◆ Step 4: Adjust Machine Level.
  
- ◆ Step 5: Plasma cutting part assemble.

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## Step: Unpack the equipment box and remove all items

Remove all the screws which are fixed the box, check and confirm all the spare parts be inside and well, and then move all the parts out safely.



### Tube-S-6M Standard Package

No.	Name	No.	Name
1	Tube-S machine-1Set	2	Manual-1Pcs
3	USB disk -1pcs	4	Nesting Software-1pcs
5	Locating ring-1Pcs	6	Plasma hold-1 Set
7	Chuck Spanner-1Pcs	8	Screws for Connection frame-4Pcs
9	Screws for Support leg-24Pcs	10	Screws for Mounting rail and rack –Some Pcs

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## Step 1: Assemble the legs of the Frame

Note: Install the machine carefully step by step as the following instructions:

The frame assembly:



Legs

### Assemble Step:

1. Lift the body by Forklift.
2. Install the leg to the frame.

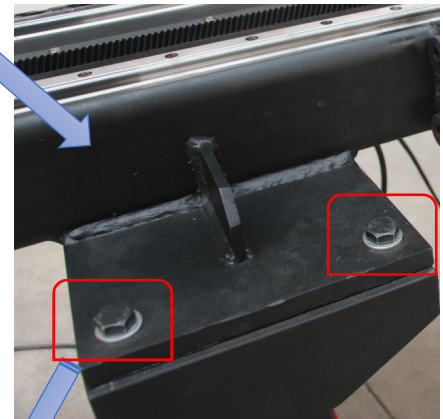
The support legs.

### Assemble Step:

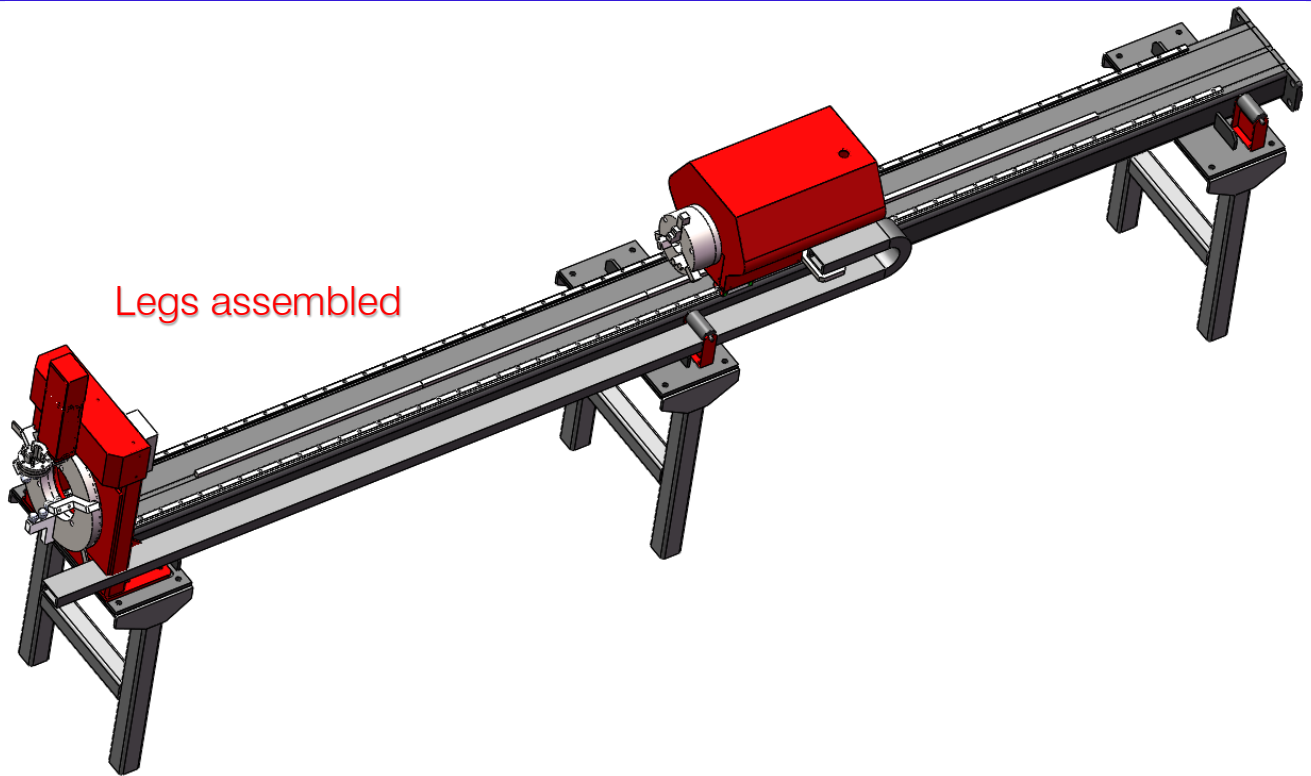
3. Connect and fix all legs onto the Frame by top screw—4screw/leg.

Note: Keep the machine stable.

4. Install 6 legs, the same method.



Legs assembled



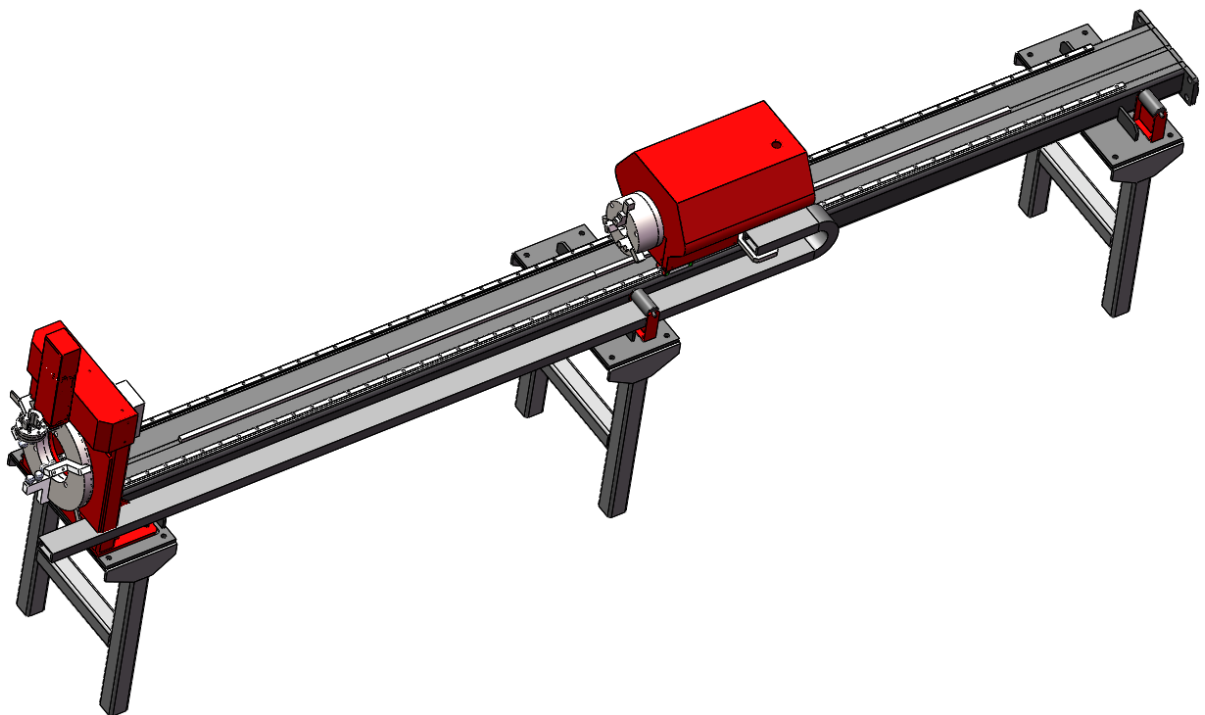
## Service Support Spirit

### Step 2: Connect the two Pieces of Machine Body:

Joint Connection:

Specification of Joint-two Pieces of the machine body:

Piece 1– Chuck & Table; Piece 2-the Extended Table

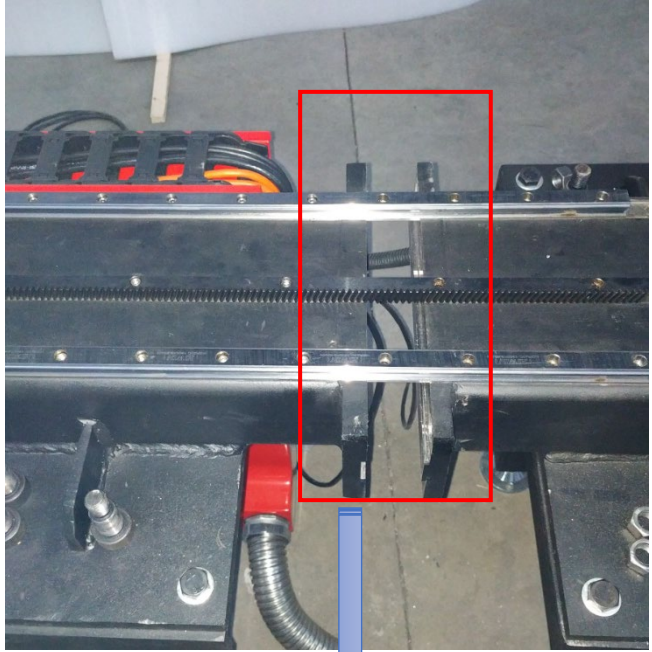




## Service Support Spirit

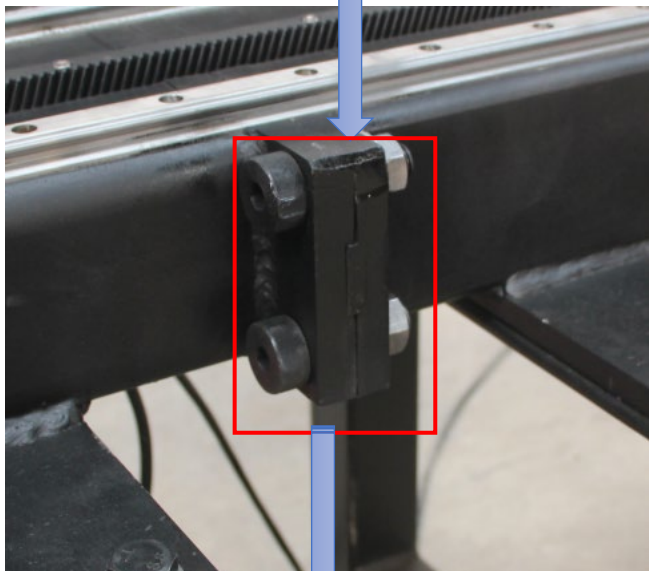
### Assemble Step:

-1. Position the two parts face to face in same level and same lane for each guide and rail, Push the two pieces together correspondingly. And make sure no obvious gap for each connection of rail, linear guide and rack.



### Assemble Step:

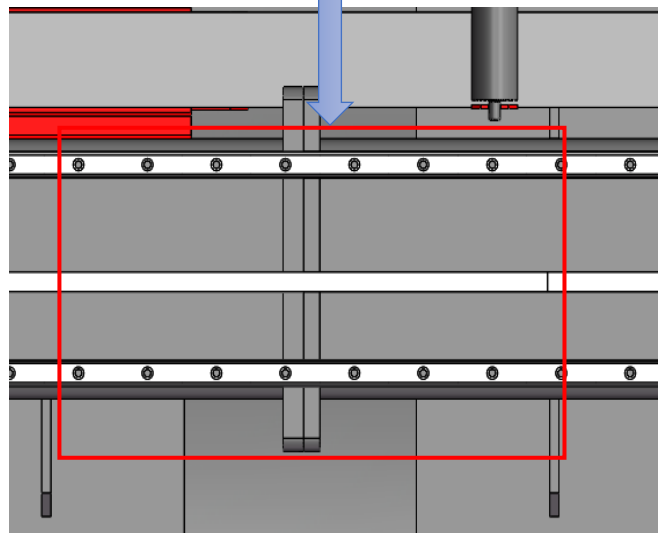
-2. Push the screws and locating pin into each hole with a hammer. Connectors of the table leg joints by 4 screws. Double fix the connectors by 4 bolts (show below).



### Assemble Step:

-3. Using a short piece of rack to bite the joint of the machine rack, make sure the teeth bite straight and properly, then fix onto the steel structure.

-4. Secure the rails, racks and linear guides to the steel structure with hexagon socket head bolts.



## Service Support Spirit

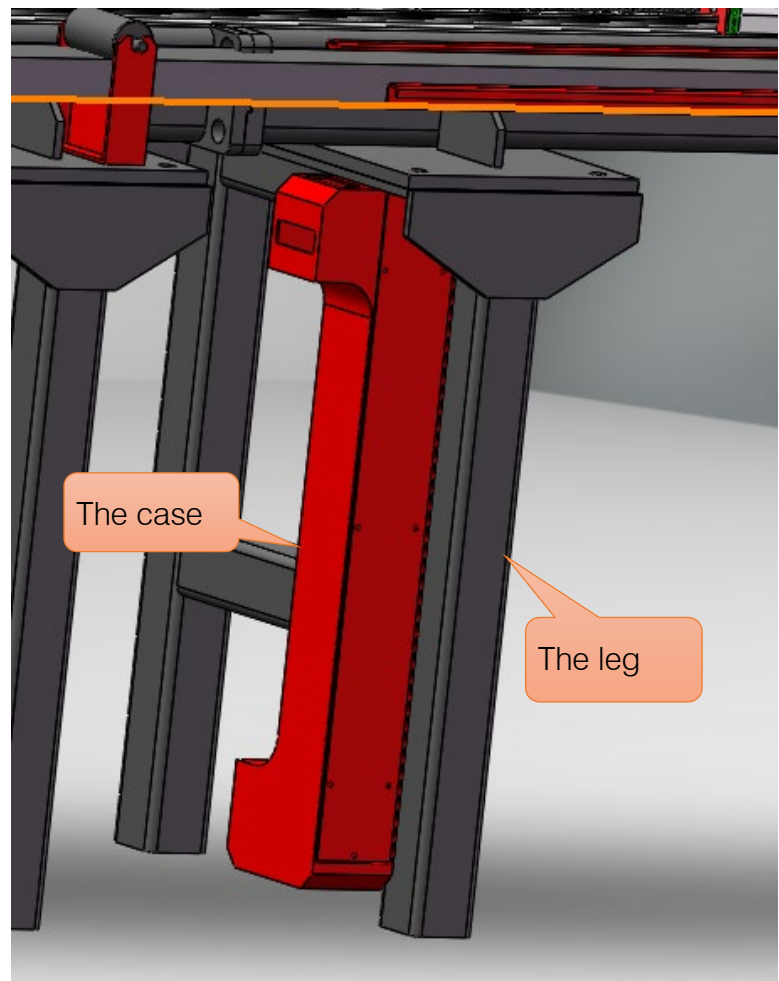


### Step 3: Install the cable connection case.

#### Assemble Step:

Install the case:

- 1: Open the cover of the case.
- 2: Fix the case to the leg with bolts.
- 3: Installing the cover.

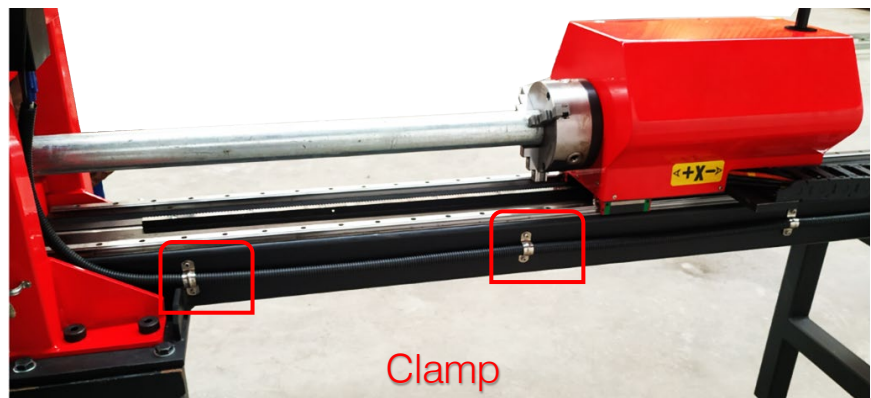
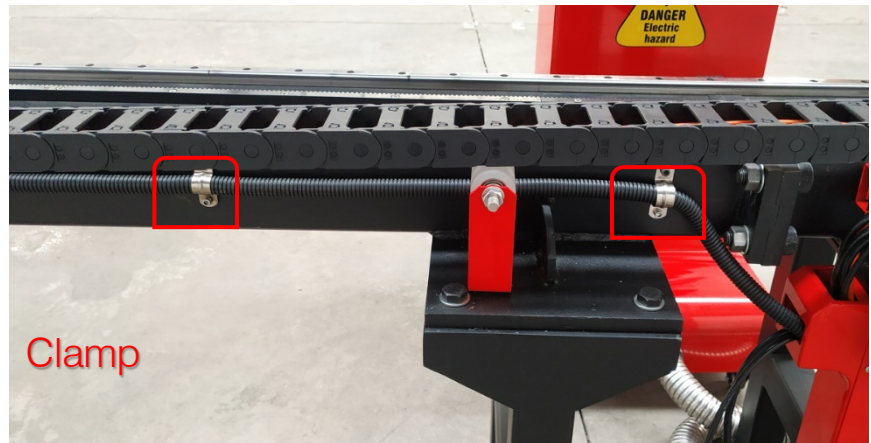


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**Assemble Step:**

Connection the cable:

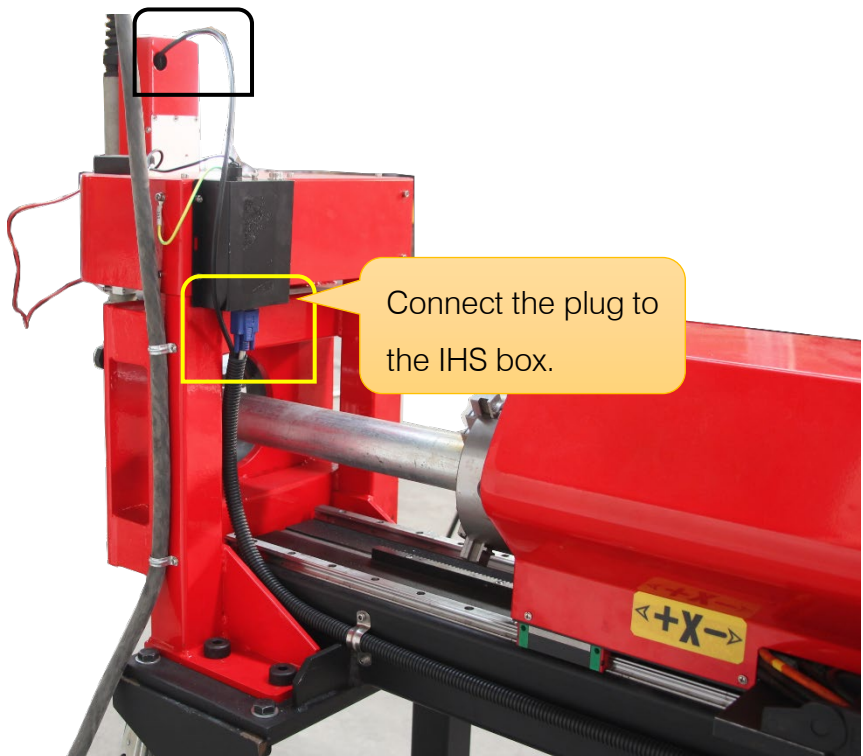
- 1: Fixed the cable to the frame with clamp.



**Assemble Step:**

Connection the cable:

- 2: Connect the plug to the IHS box.
- 3: Connect the motor plug to the lifting bod.( Open the cover of the Lifter)



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### Step 4: Adjust Machine Level

In order to ensure the smooth operation of the machine, the machine needs to be fixed to the ground.

-1: Adjust the [Level screws] according to measurement of Level Gauge, to make sure the 2 guide rails of the pipe supporters on same horizontal level. [The level precision request:  $\pm 1\text{mm}$ ];



-2: Fix the table feet level tightly by the lower screw.



The fixed to  
the ground.

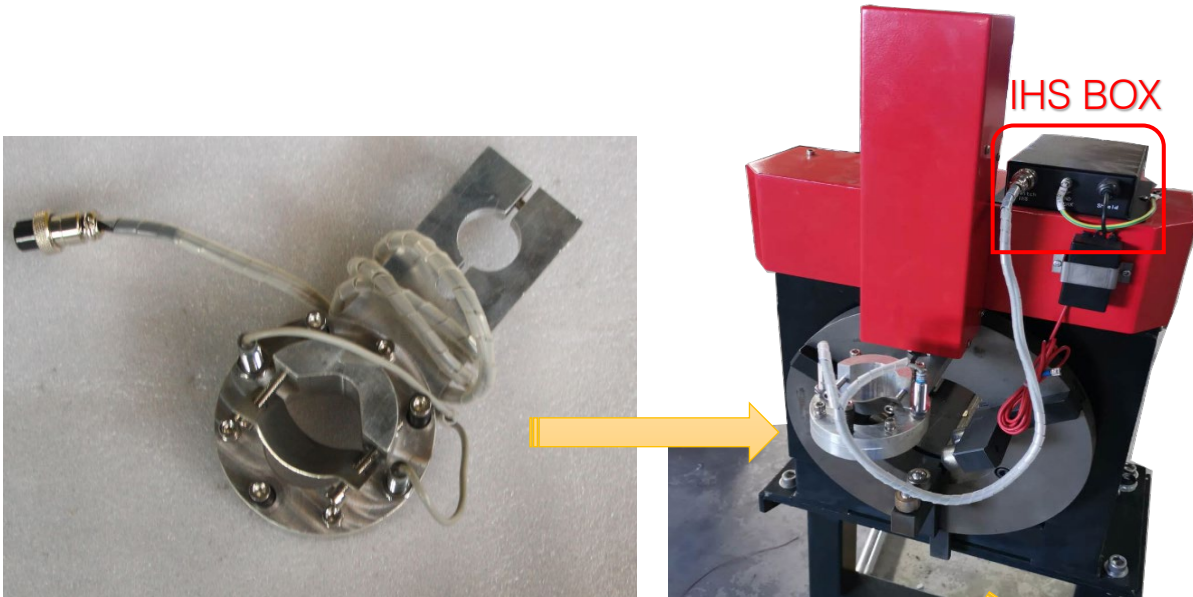
**Fix Bolt**



# Service Support Spirit

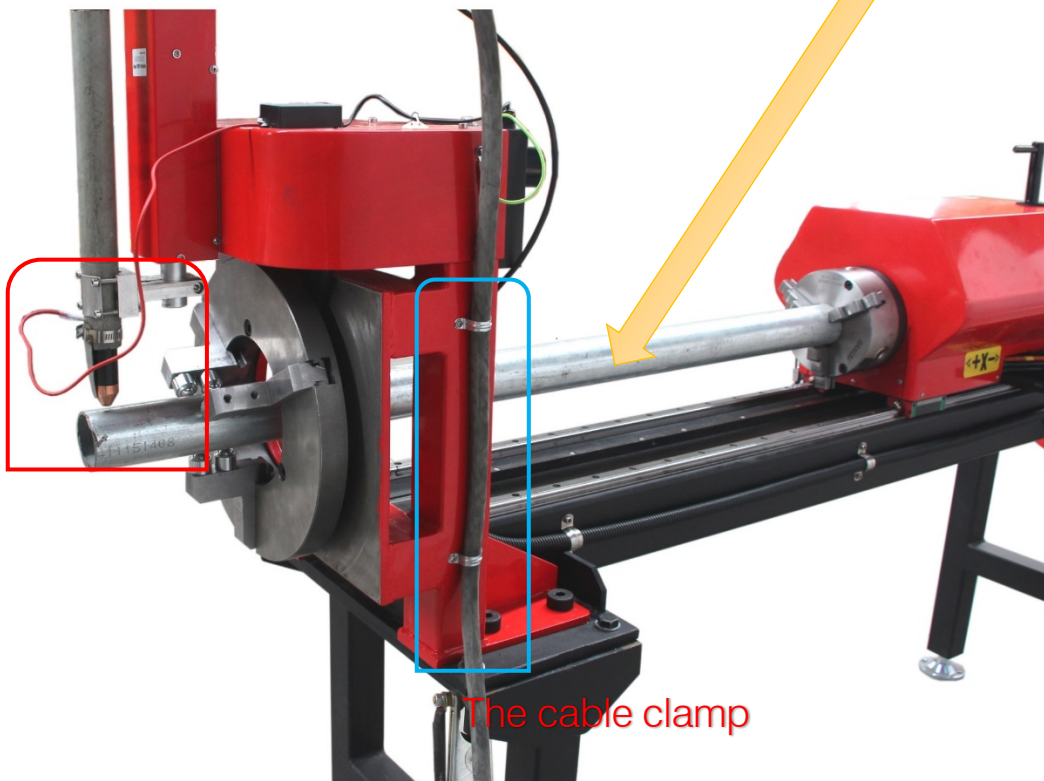
## Step 5: Plasma cutting part assemble.

1. Load the plasma torch to the holder.
2. Connected the plug to the IHS box.



### IHS wire Connection:

3. Connect the IHS wire to the shield of the plasma torch. The torch cable is fixed on the frame, the cable clamp we have reserved;



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### Wire connection:

Connect the all cables accordingly:

- Power Supply cable,
- Ground wire to cutting plate,
- ARC START cable to plug of the plasma power source,
- DIV ARC +/- cable to Original Arc Voltage ports inside of the plasma power source.

Note: Ref. your plasma power source handbook for recommended Torch Height for different thickness.

◀ For detailed wiring solution, please refer to [www.arcbro.com/troubleshooting](http://www.arcbro.com/troubleshooting)