

XTOOL

MetalFab Laser Welder 1200W

XTOOL



Quick Start Guide

Kurzanleitung | Guía de inicio rápido | Guide de démarrage rapide |
Guida rapida | Korte handleiding | Manual de referência rápida |
Skrócona instrukcja obsługi | クイックガイド | 빠른 시작 가이드 | 快速入門指南 |
快速使用指南

01

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다중 언어 버전 및 추가 정보

다중 언어로 된 사용 설명서와 추가 도움말을 찾으려면 support.xtool.com/article/1760 페이지를 방문하거나 QR 코드를 스캔하십시오.

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* The English version is the original instructions verified by the manufacturer.

support.xtool.com/article/1760



List of items

For the main unit:



① Main unit



② Key



③ USB flash drive



④ Tube (external diameter: 10 mm)



⑤ Power cable

The power cable varies according to the region in which the product is delivered.



⑥ Workpiece sensing cable



⑦ 304 stainless steel sheet (thickness: 2 mm)

For the welding head:



⑧ Components for welding head cradle



⑨ Cutting tip



⑩ Welding nozzle (for autogenous welding)



⑪ Cleaning nozzle

The factory-installed nozzle on the welding head is typically used for wire-filled welding.



⑫ Lens protector (spare part)

For the wire feeder:



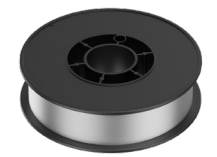
⑬ Wire feeder



⑭ Wire feeding tube



⑮ Wire feeder cable



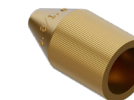
⑯ Stainless steel wire 1 mm



⑰ Drive roll 0.8 mm / 1.0 mm



⑱ Drive roll 1.2 mm / 1.6 mm



⑲ Wire feeding nozzle 1.2 / 1.6

The wire feeding tube is pre-installed with a 0.8 / 1.0 wire feeding nozzle.

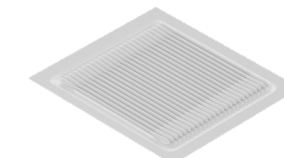
Tools:



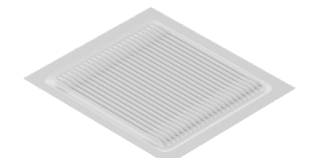
⑳ Hex key 2 mm



㉑ Hex key 2.5 mm



㉒ Round tip cotton swab



㉓ Pointed tip cotton swab

Personal protective equipment (PPE):



㉔ 1080 nm laser safety goggles



㉕ Heat-resistant gloves

Product documentation:



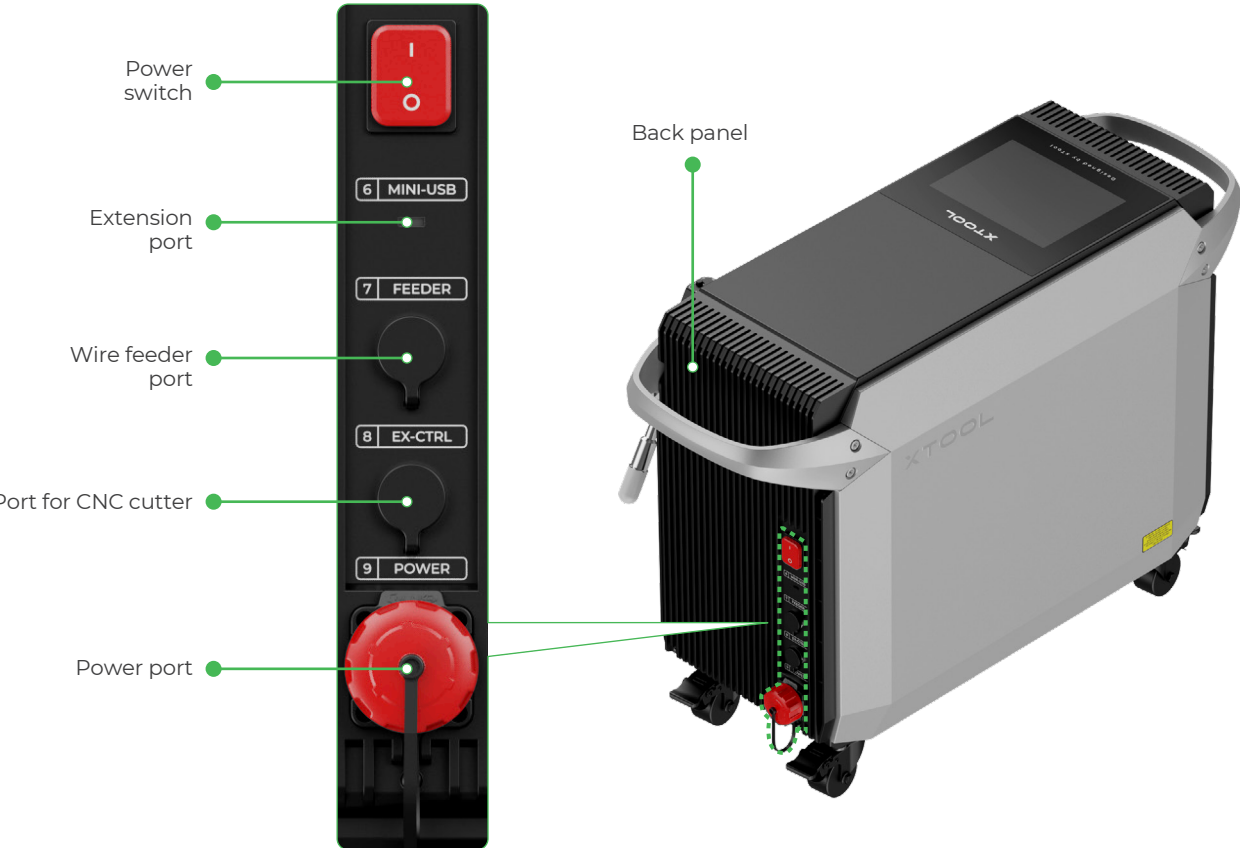
㉖ Safety Instructions



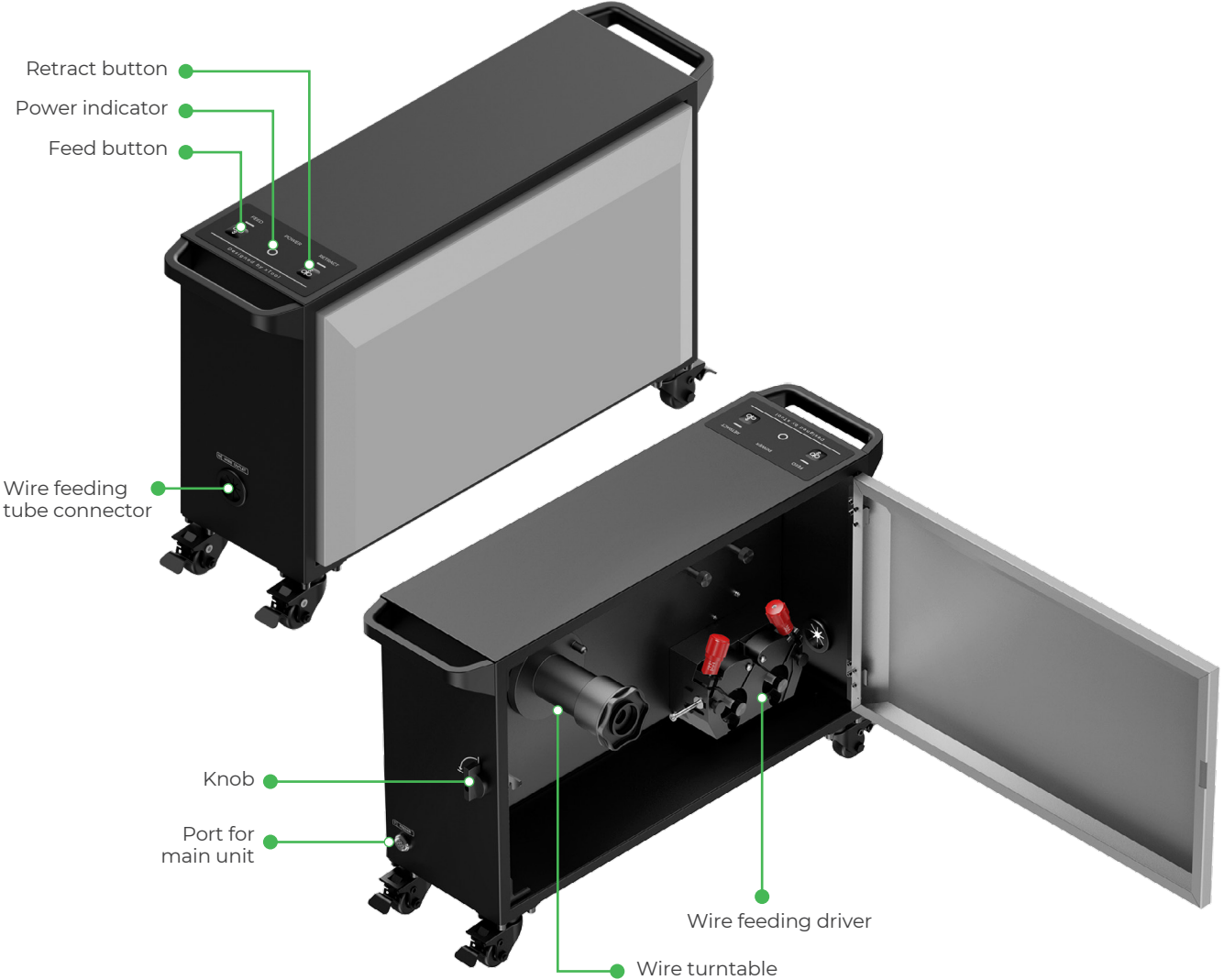
㉗ Quick Start Guide

Meet xTool MetalFab Laser Welder 1200W

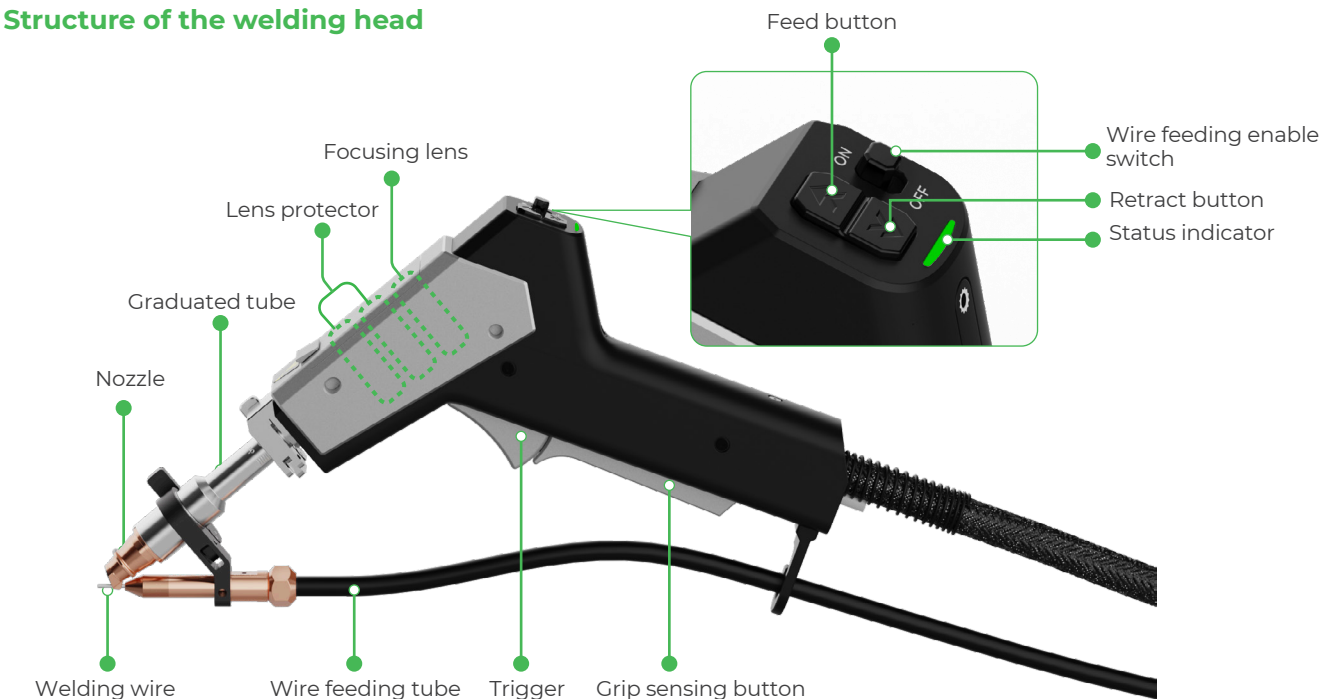
Structure of the main unit



Structure of the wire feeder



Structure of the welding head



Indicator and buzzer explained



Buzzer	Status indicators	Device status
/	Solid white	Powered on, but not ready for laser emission. To emit laser beams, the device must meet all of the following requirements: <ul style="list-style-type: none"> ■ Safety interlock loop closed ■ Lasering function enabled ■ Grip sensing button pressed
	Blinking green slowly	Ready for laser emission. You can press the trigger on the welding head to emit laser beams.
	Solid green	Emitting laser.
Three consecutive beeps	Solid red	Exceptions occur or device malfunctions.

✍ The indicators on the main unit and the welding head are synchronized and indicate the same status.

Specifications


Main unit	Model	MHJ-K001-240
	Dimensions (W × D × H)	327 mm × 728 mm × 512 mm
	Weight	38.2 kg
	Rated voltage	220 V to 240 V
	Full load current	23 A
	Full load power	5 kW
	Working temperature	-10°C to +40°C
	Storage temperature	-10°C to +60°C
	Ambient humidity	10% to 85%
	Cooling mode of the laser module	Forced air cooling
Laser	Working mode	Continuous wave (CW) / Modulated wave (MW)
	Laser wavelength	1080 ± 10 nm
	Output power	1200 W
	Length of the welding head cable	5 m
	Bend radius of the welding head cable	≥ 150 mm
Wire feeder	Dimensions (W × D × H)	232 mm × 664 mm × 417 mm
	Weight	13.2 kg
	Wire feeding speed	2 mm/s to 100 mm/s
	Working voltage	24 V DC
	Maximum wire spool weight supported	15 kg
	Maximum external diameter of wire spool supported	300 mm
	Maximum thickness of wire spool supported	105 mm
	Supported wire diameters	0.8 mm, 1.0 mm, 1.2 mm, 1.6 mm
	Length of the wire feeding tube	3 m

Prepare for installation

Power supply

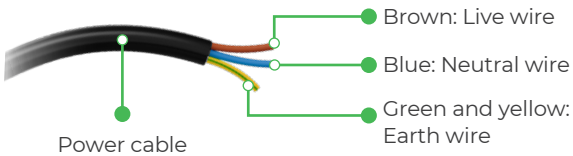
xTool MetalFab Laser Welder 1200W requires a 220 V – 240 V AC power supply, and works at a full load power of 5 kW. An individual branch circuit with a current-carrying capacity of 25 A or above is recommended. Requirements on electrical facilities vary with power cables. Please consult a qualified electrician before installing the device to ensure that the device is installed in accordance with local electrical codes.

US standard



■ Use a NEMA6-50R outlet

Other standards



Choose one of the following methods:

- Use a 32 A CEE industrial socket (blue, IP44 or higher)
- Use the hardwiring method

⚠ Do not connect the device to a 16 A domestic circuit, as it may cause overload tripping or cable overheating.

⚠

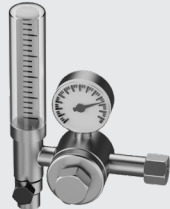
- Ensure that the current-carrying capacity of your circuit meets the requirements. Do not connect the product to a standard household circuit, as it may damage both the product and the circuit.
- Ensure that the welder is powered separately. Do not use it with other high power equipment on the same circuit.
- To ensure safety, it is recommended that you install a 25 A air circuit breaker between the power supply and xTool MetalFab Laser Welder 1200W.

Workroom
Ensure that the workroom is well ventilated.

Shielding gas
xTool MetalFab Laser Welder 1200W requires the use of shielding gas. Supported gas types include nitrogen and argon, and **the gas purity must be over 99.99%**. Please prepare gas cylinders or gas generators (not provided) that meet requirements. Laser welding, cleaning, and cutting have different requirements on the supply of shielding gas.


Laser welding	Flow rate: 15 L/min – 30 L/min
Laser cleaning	
Laser cutting	Gas pressure: 600 kPa – 800 kPa

✍ ■ To perform laser welding or cleaning, please prepare a gas flow meter in addition:



(For reference only)

■ To perform laser cutting, please prepare a gas pressure reducing valve in addition:

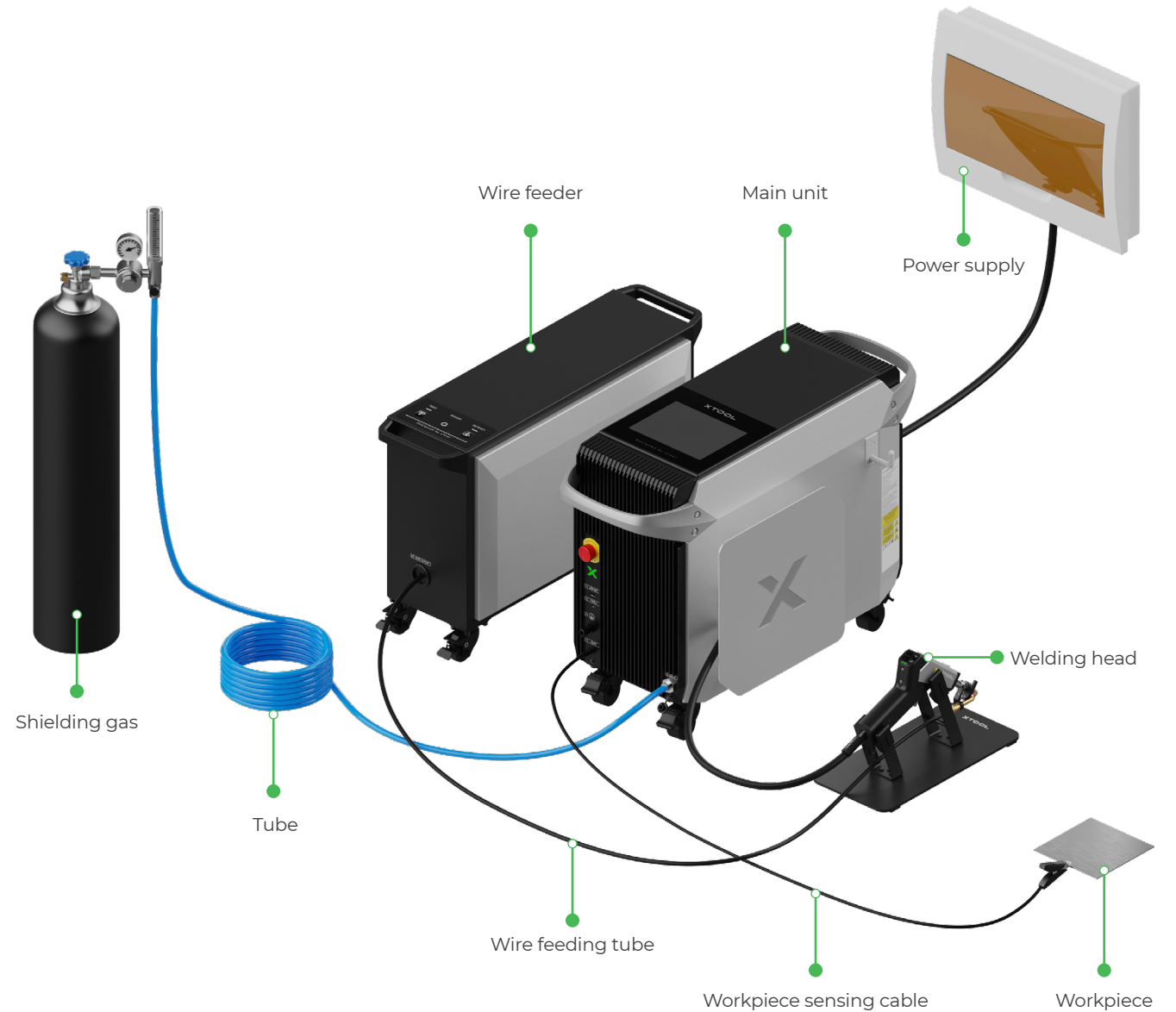


(For reference only)

Install xTool MetalFab Laser Welder 1200W

Cabling diagram

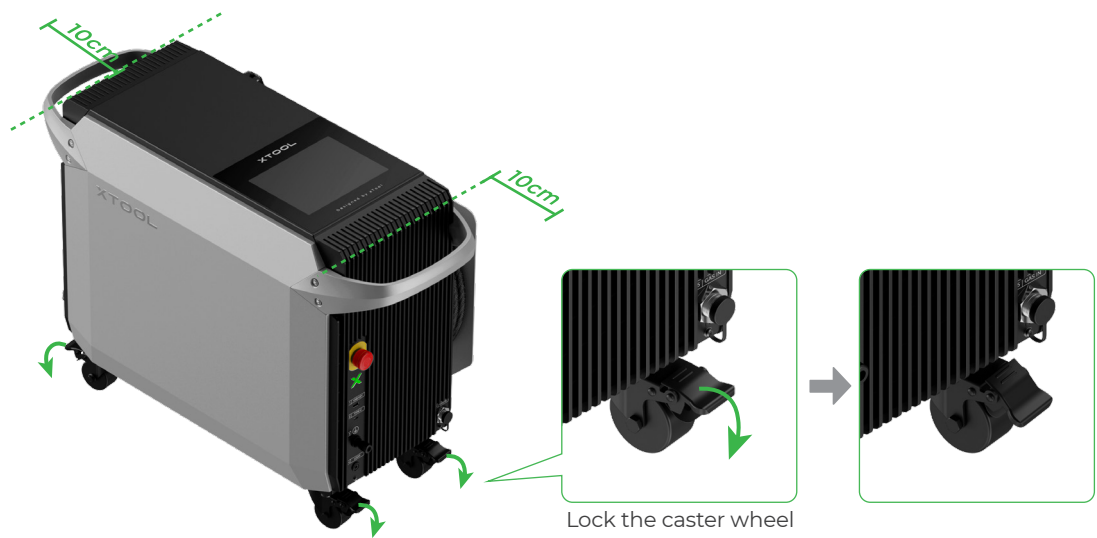
The following picture shows the cabling diagram of xTool MetalFab Laser Welder 1200W. Please follow the detailed step-by-step instructions to complete the installation.



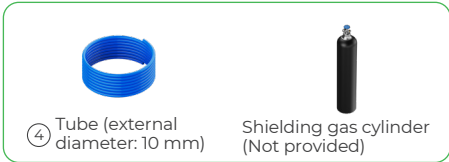
1 Place the main unit



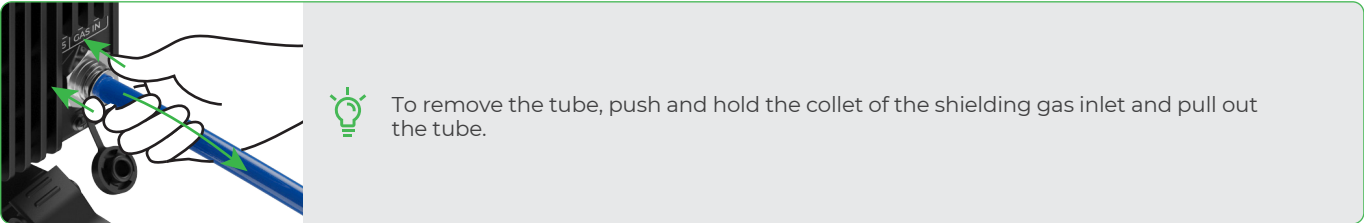
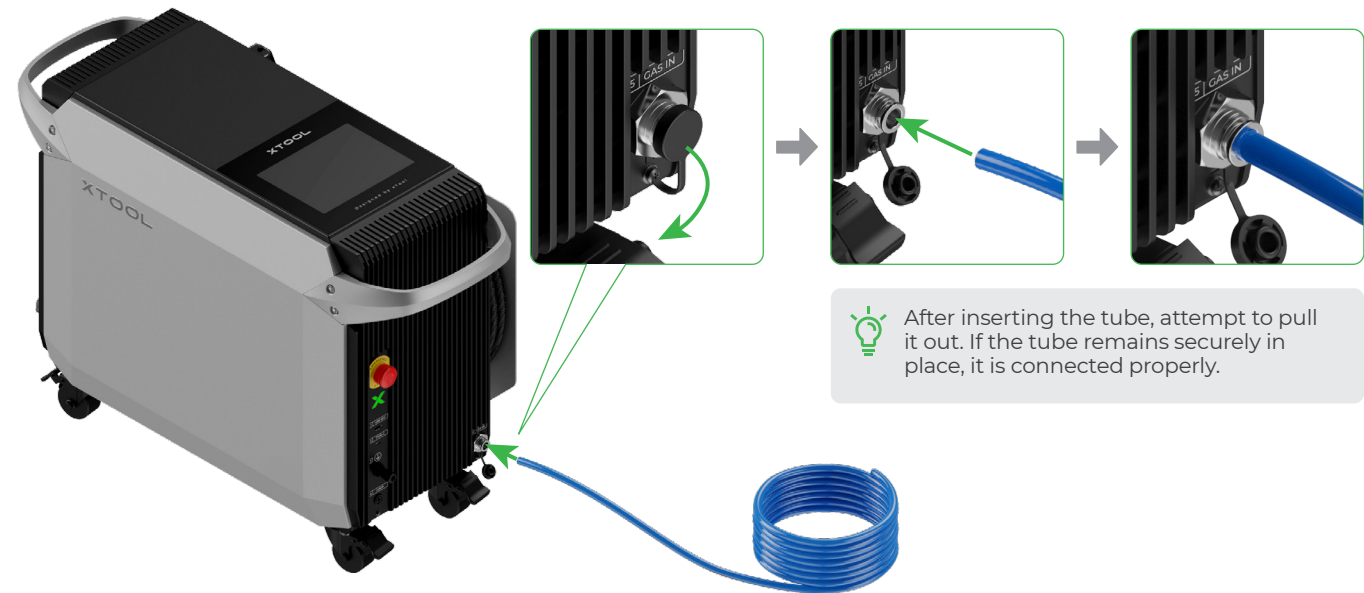
Place the main unit in a proper place, leaving a gap of not less than 10 cm at the front and back to ensure good ventilation and heat dissipation. Step on the pedals of the four caster wheels to lock the main unit in position.



2 Connect the shielding gas cylinder



(1) Insert one end of the tube into the shielding gas inlet on the main unit.



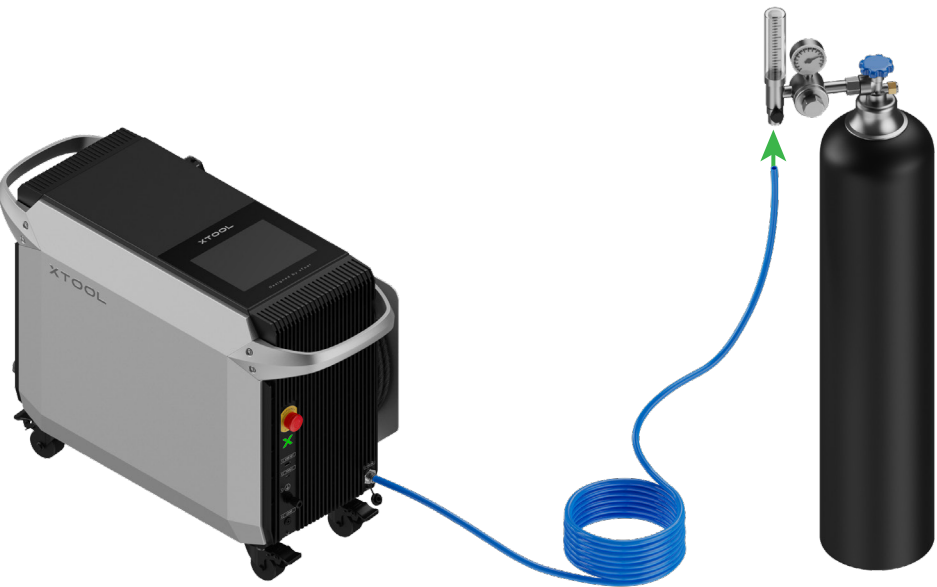
(2) Install a gas regulator on the shielding gas cylinder (or gas generator).

(Installing a gas flow meter on a cylinder is used as an example.)



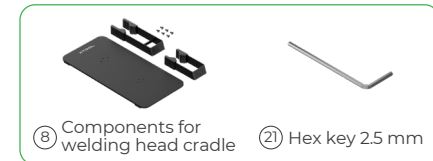
Tighten the nut to prevent gas leakage.

(3) Connect the other end of the tube to the cylinder (or gas generator).

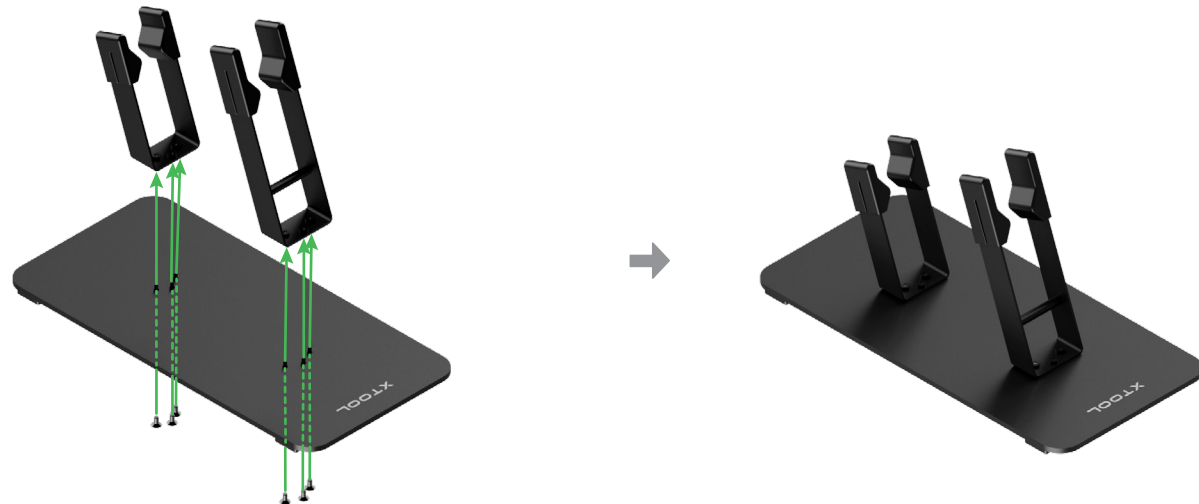


Do not open the gas cylinder valve yet. Open it only before laser processing.

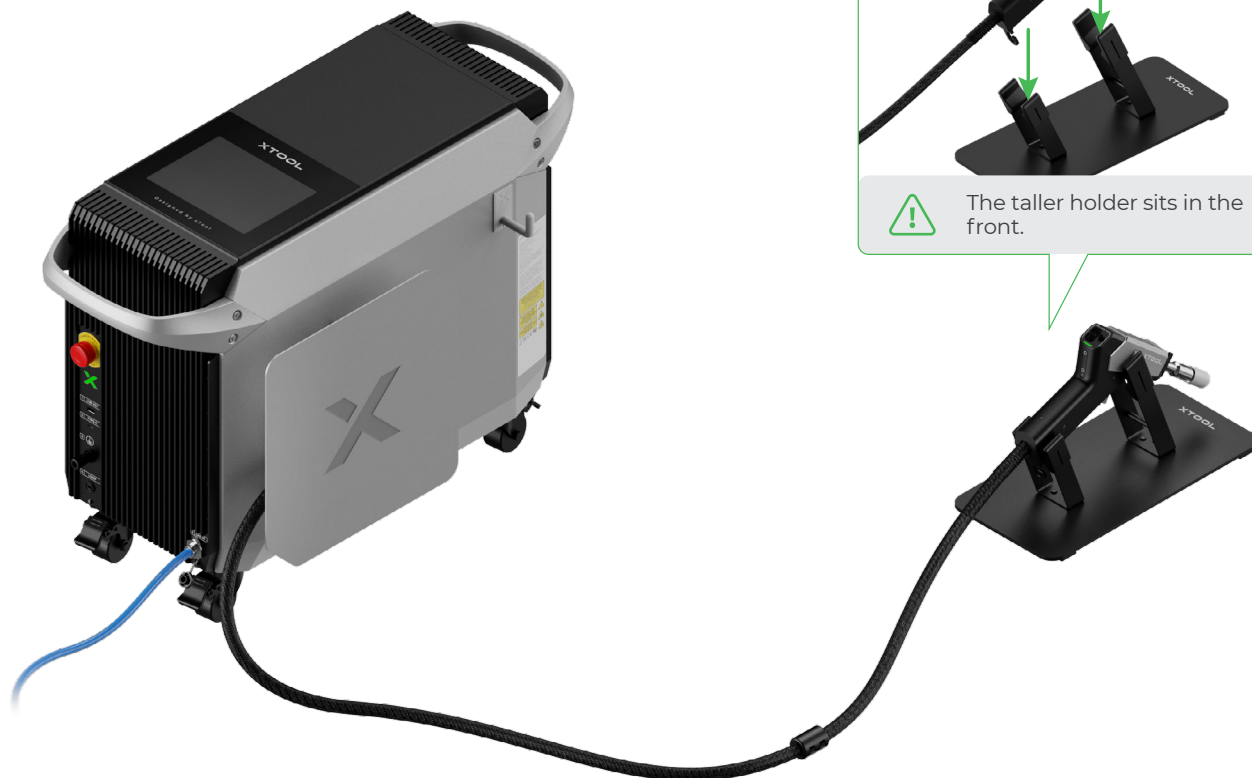
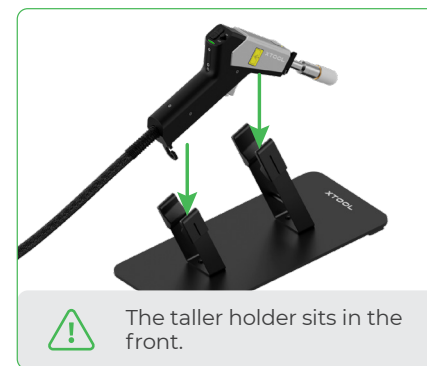
3 Place the welding head



Assemble the welding head cradle.



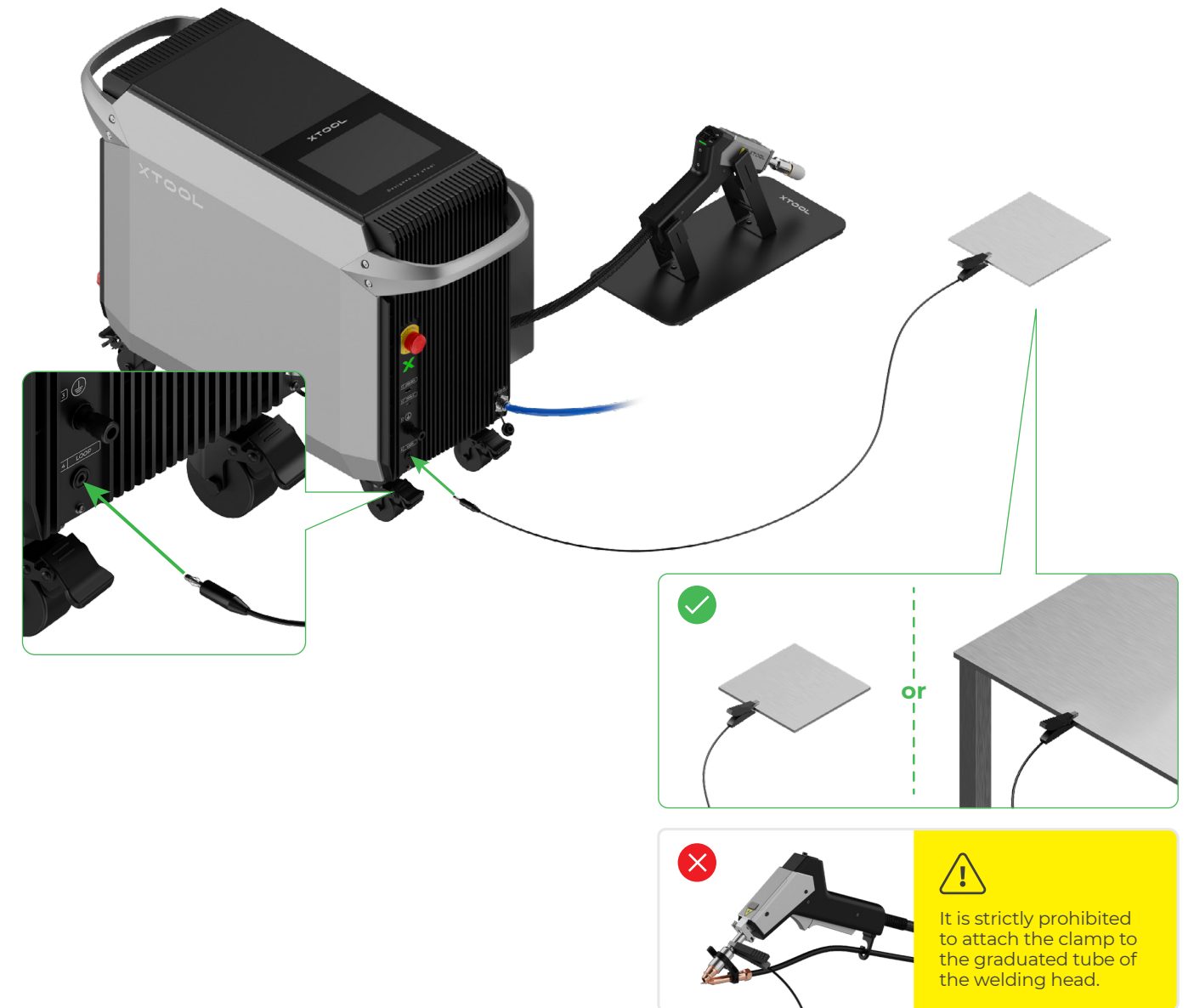
Place the welding head on the cradle.



4 Connect the workpiece sensing cable



Insert the connector end into the port for the workpiece sensing cable, and attach the clamp on the other end to the workpiece to be processed or a conductive worktable connected with the workpiece.



Safety interlock loop

A safety interlock loop exists between the welding head nozzle, the workpiece, and the main unit. Only when the welding head is in contact with the workpiece can the safety interlock loop be closed and allow the welding head to emit laser beams.

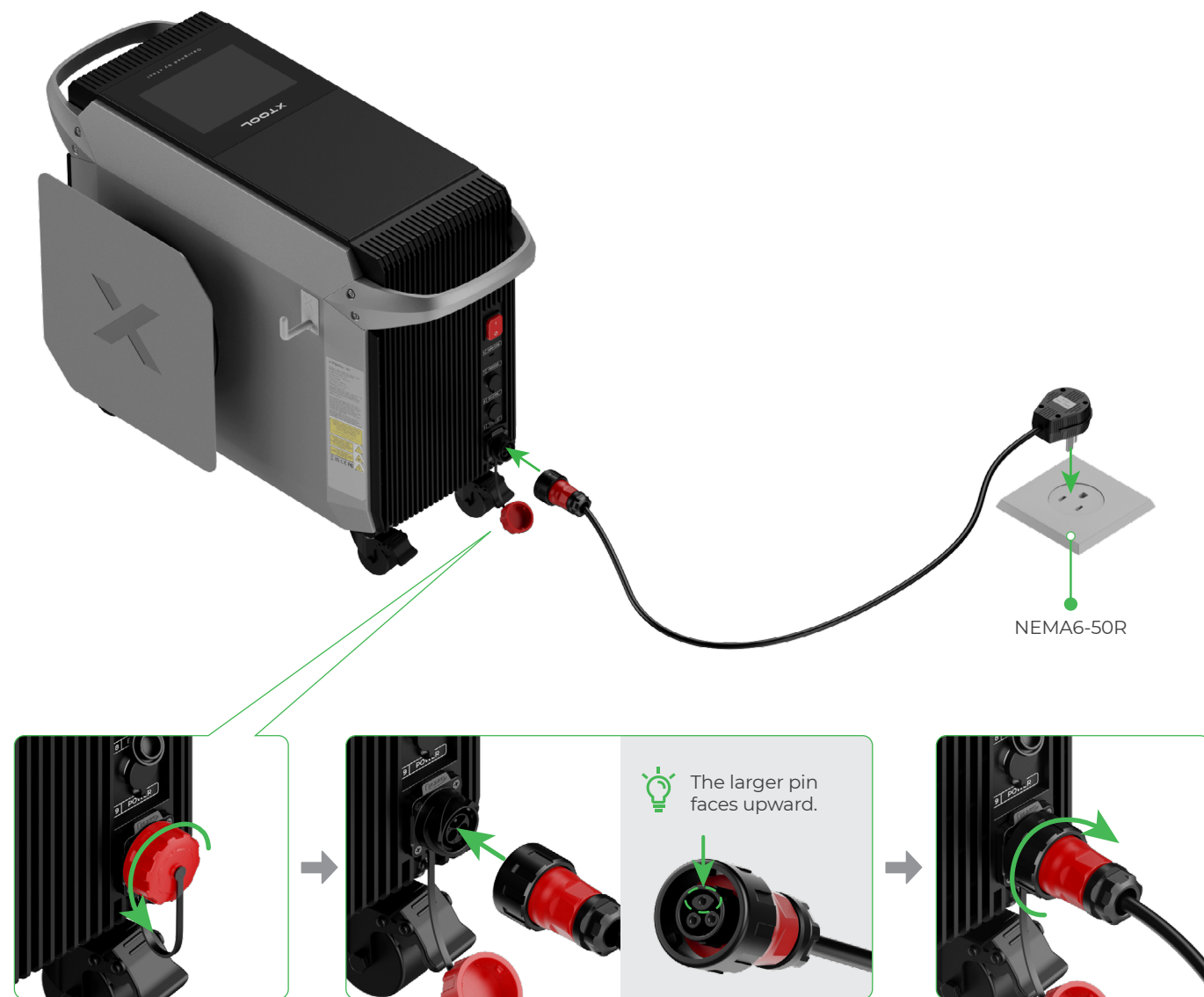
5 Connect to a power supply



The connection of power cables varies with their standards. The following instructions are for US standard power cable only. Power cable of other standards should be connected by a professional electrician in accordance with local electrical codes.

- Ensure that the current-carrying capacity of your circuit meets the requirements. Do not connect the product to a standard household circuit, as it may damage both the product and the circuit.
- To ensure safety, it is recommended that you install a 25 A air circuit breaker between the power supply and xTool MetalFab Laser Welder 1200W.

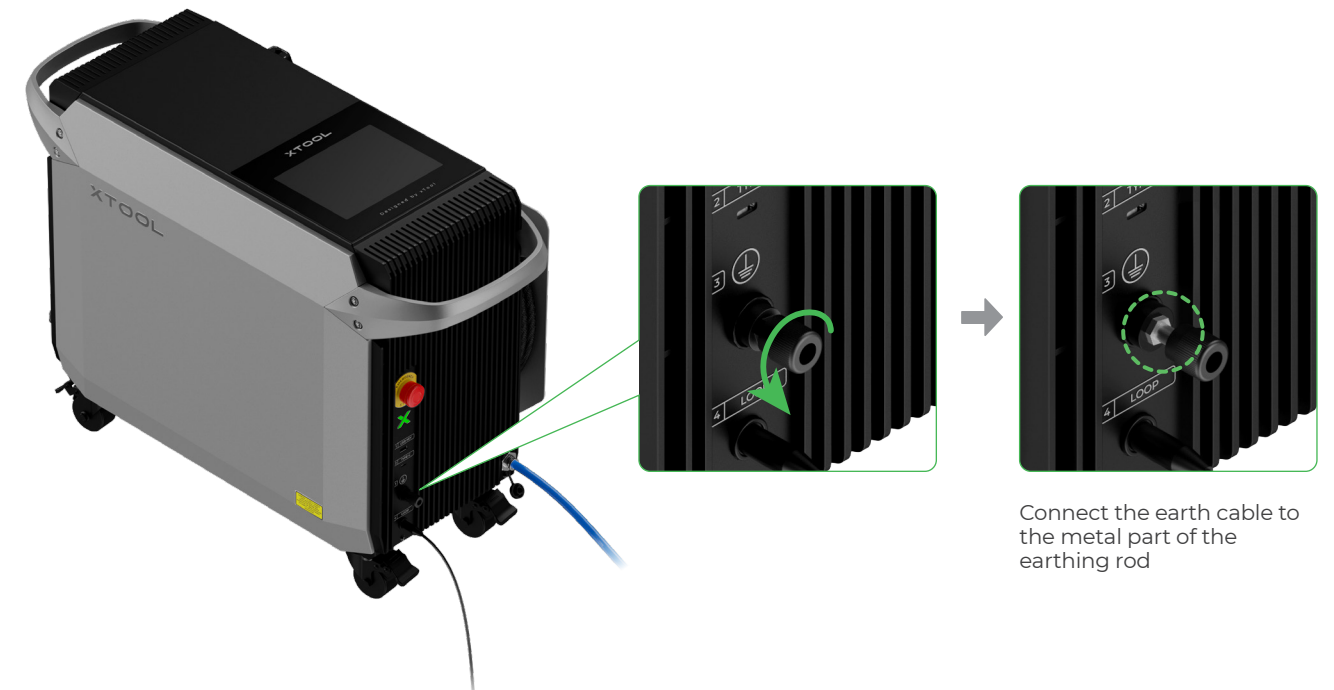
Attach the round connector of the power cable to the main unit, and the other end to the power supply.



If the power cable you receive has a PUSH button at the connector, directly push the connector into the power port. To remove the connector, press and hold the PUSH button and pull the connector out.

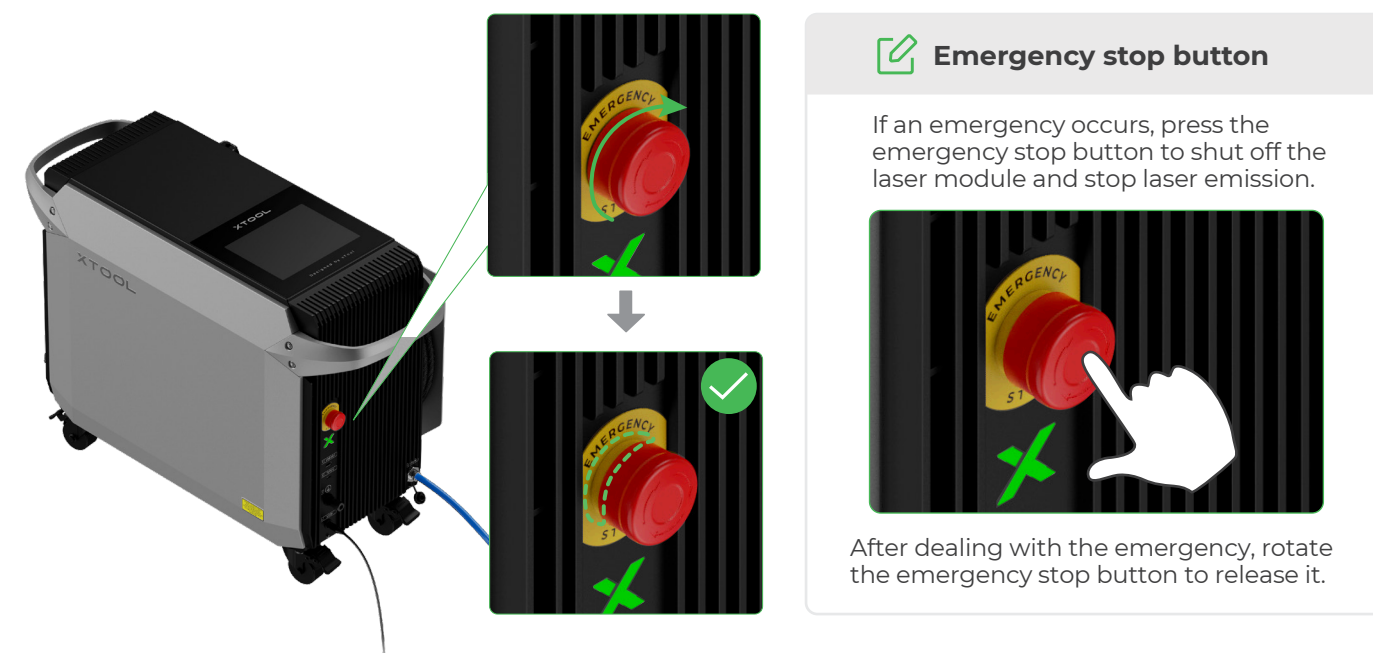


Ensure that the device is grounded. If the power supply is not grounded, please use an earth cable (not provided) to connect the device to a grounded object.



6 Check the emergency stop button

Ensure that the emergency stop button is released. If it is pressed, rotate to release it.



7 Insert the key

Insert the key into its designated port.



You can use the key either as an access-control key or a remote interlock connector.

■ Access-control key

Removing the key can disable the machine's processing and related functions.

■ Remote interlock connector

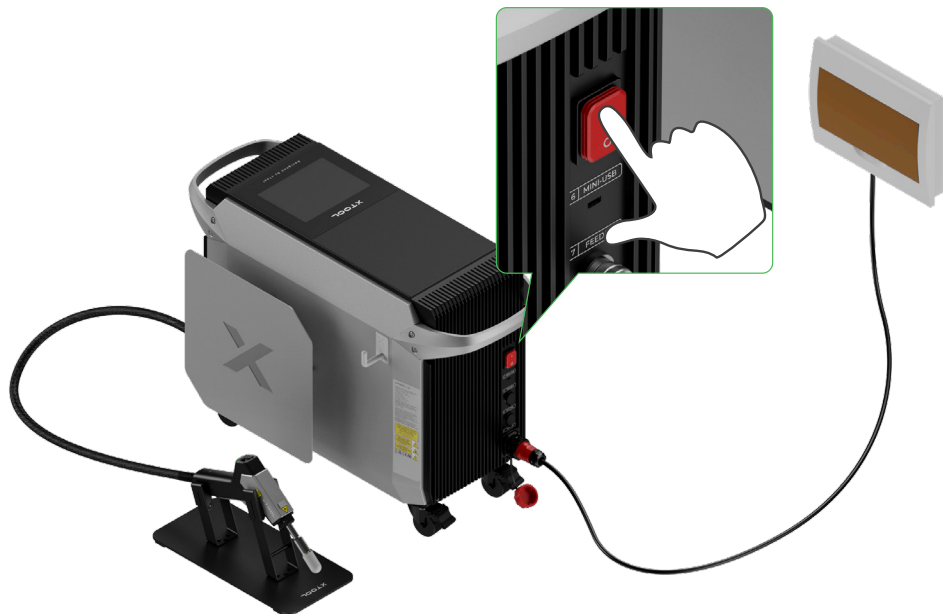
For detailed instructions, scan the QR code or visit the link.



support.xtool.com/article/1367

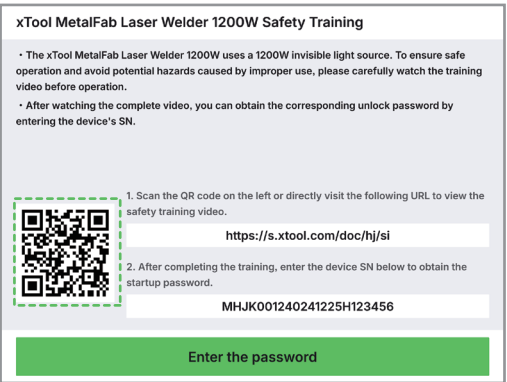
8 Power on

On the back panel of the main unit, turn on the power switch to power on the device.

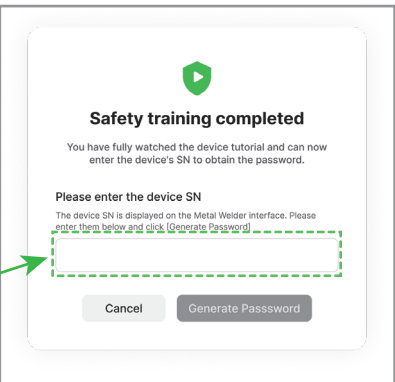
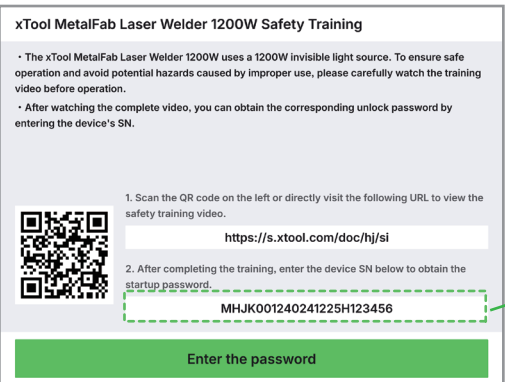


9 Unlock the device

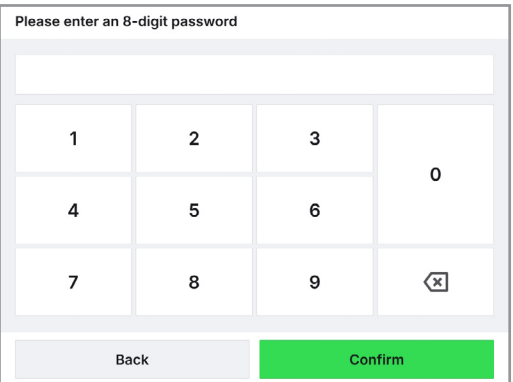
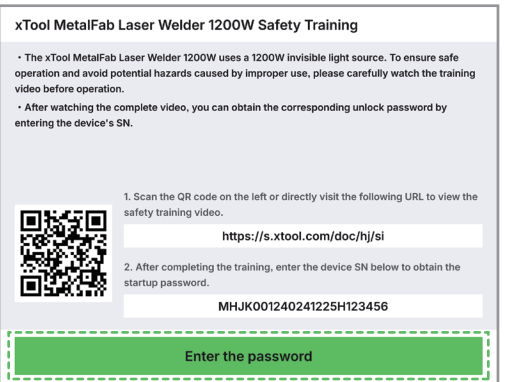
(1) The first time you turn on the device, you will see a QR code displayed on the touchscreen. Scan the QR code or visit s.xtool.com/doc/hj/si to watch the safety training videos.



(2) After watching the video, input the serial number (SN) shown on the touchscreen to the web to generate an unlock password for your device.



(3) On the touchscreen of your device, tap **Enter the password**. Then, enter the password generated to unlock your device.



Ensure that all users watch the safety training videos before using the device. You can access the videos by scanning the QR code or visiting the link.



s.xtool.com/doc/hj/si

10 Calibrate the focus for the welding head

(1) On the home page of the touchscreen, tap System settings and check whether the Focus scale reference is the same as the actual value on the graduated tube. If the values are the same, no calibration is needed; if they are not, go to step (2).

1

System settings

Machine information		Machine settings
Standard mode	Device name	xTool MetalFab Laser Welder 1200W
Advanced mode	Machine serial number	MHJK001240241225H123456
	Laser module serial number	LX2BDJB02972
Technique library	Machine firmware version	V40.70.001.2425.01
Machine status	Screen firmware version	40.70.001.2540.01.B01
	Laser control firmware version	40.70.001.2622.01.B01
	Welding head firmware version	40.70.001.2722.01.B06
Wire feeder	Wire feeder firmware version	40.211.001.5022.01.B07
Safety interlock loop	Focus scale reference	-1

2

Keep at the same value

Diagram showing the welding head with a callout to the graduated tube. A green dashed box highlights the fastener and the graduated tube. A green arrow points to the fastener with the label "Open the fastener". Another green arrow points to the graduated tube with the label "Adjust to the reference value".

(2) Open the fastener, push or pull the graduated tube to adjust it to the reference value shown on the touchscreen.

Diagram showing the fastener being opened and the graduated tube being adjusted. A green arrow points to the fastener with the label "Open the fastener". Another green arrow points to the graduated tube with the label "Adjust to the reference value".

Connect the wire feeder

The wire feeder is used to feed wire in laser welding, and it is not needed in metal cleaning or cutting.

1 Place the wire feeder

13

Wire feeder

Place and fix the wire feeder in a proper place. To facilitate subsequent operations, it is recommended that you place the wire feeder on the left side of the main unit.

On the same side

Lock the caster wheel

Diagram showing the wire feeder being placed on the left side of the main unit. A green arrow points to the wire feeder with the label "13 Wire feeder". Another green arrow points to the main unit with the label "On the same side". A third green arrow points to the caster wheel with the label "Lock the caster wheel".

2 Connect to the main unit

15

Wire feeder cable

On the back of the wire feeder and main unit, insert the wire feeder cable to connect them.

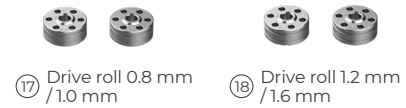
The wire feeder cable has identical connectors on both ends. You do not need to distinguish between them.

Back panel

Insert the connectors with the small protrusions on the inner wall facing upwards.

Diagram showing the wire feeder cable being connected to the back panel of the main unit and the wire feeder. A green arrow points to the back panel with the label "Back panel". Another green arrow points to the wire feeder cable with the label "15 Wire feeder cable". A third green arrow points to the connector with the label "Insert the connectors with the small protrusions on the inner wall facing upwards".

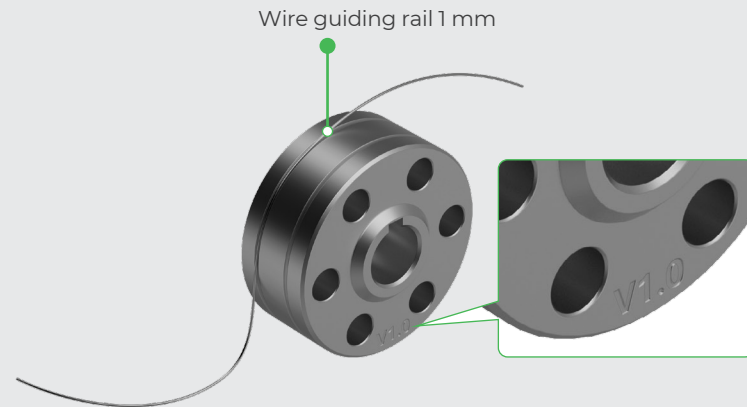
3 Install the drive rolls



This guide exemplifies installing 1 mm welding wire (provided) on the 1 mm guiding rail.

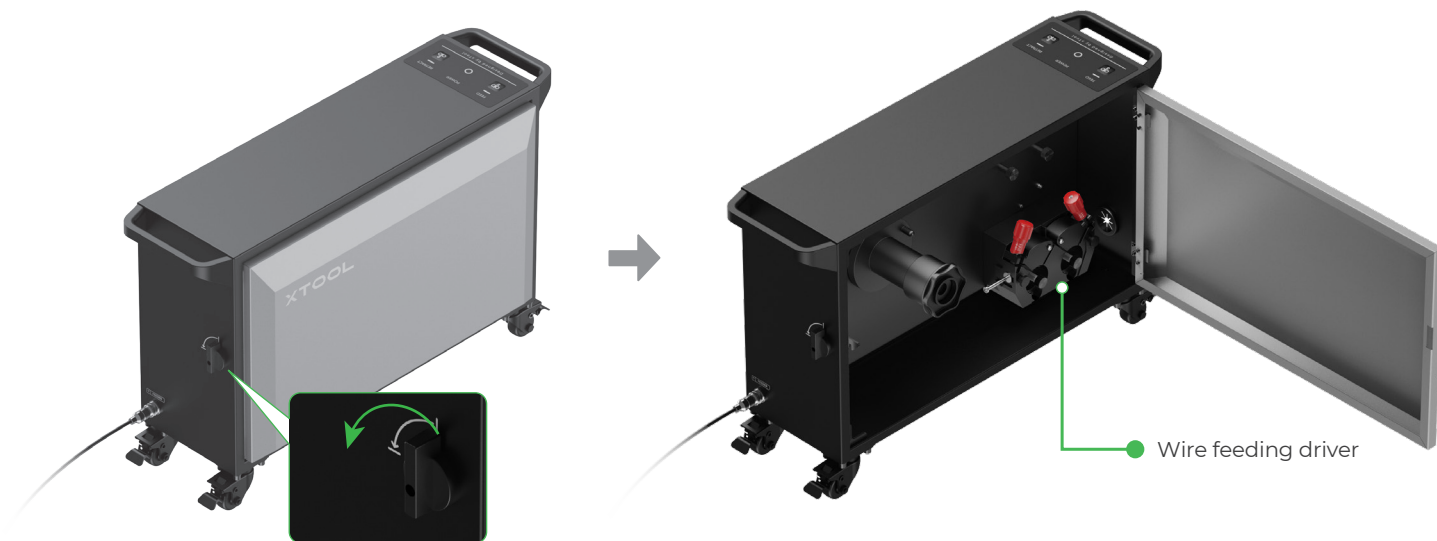
How to check the specifications of the drive roll

Each drive roll has two rails, and the size of each rail is marked on the cross-section that is not adjacent to the rail. When the drive roll is installed on the wire feeding driver, its inner rail is used to guide wire, while its outer side shows the rail size.

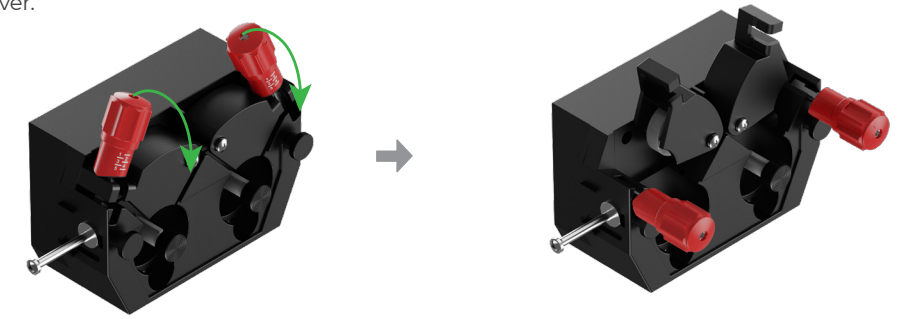


Determine the specifications of drive rolls based on the diameter of the welding wire to be used.

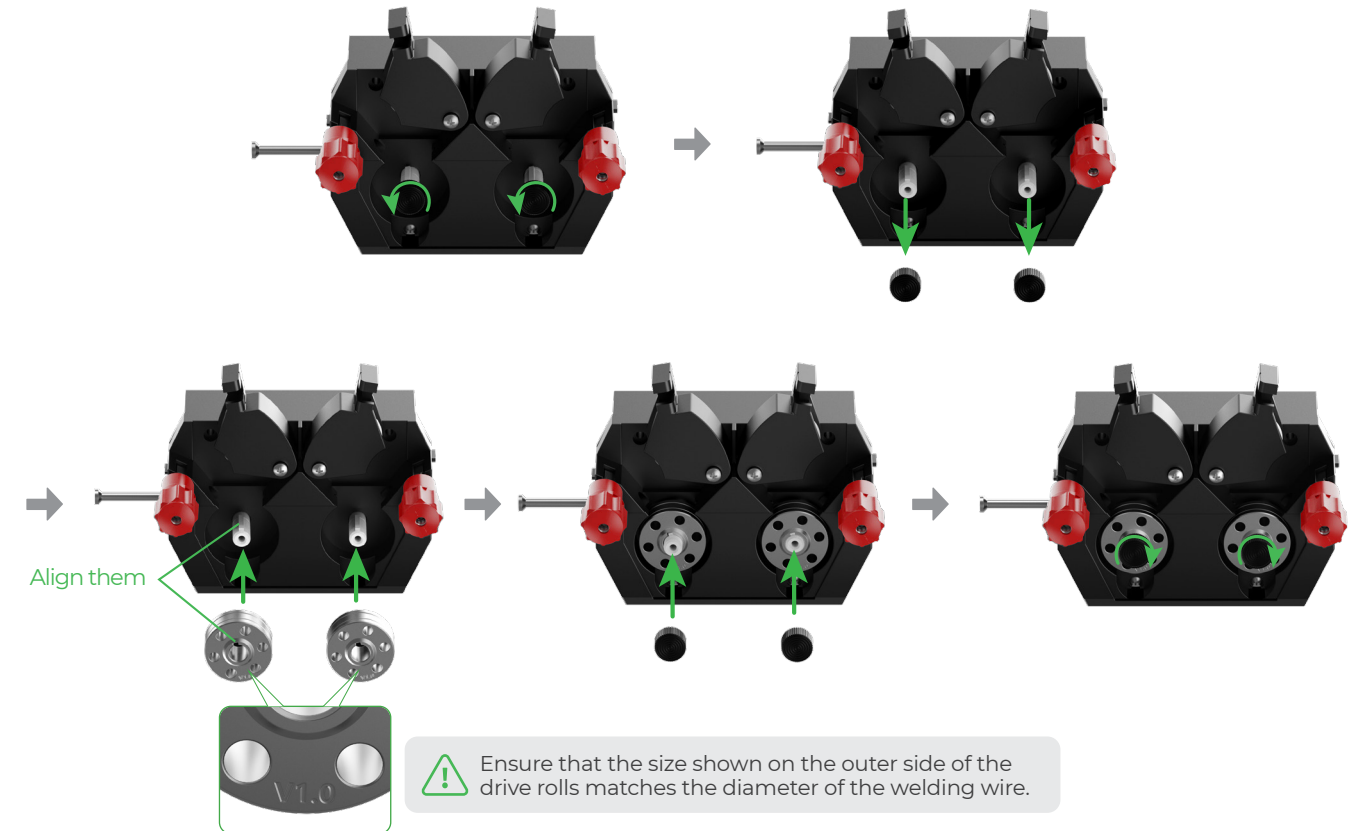
(1) Open the wire feeder.



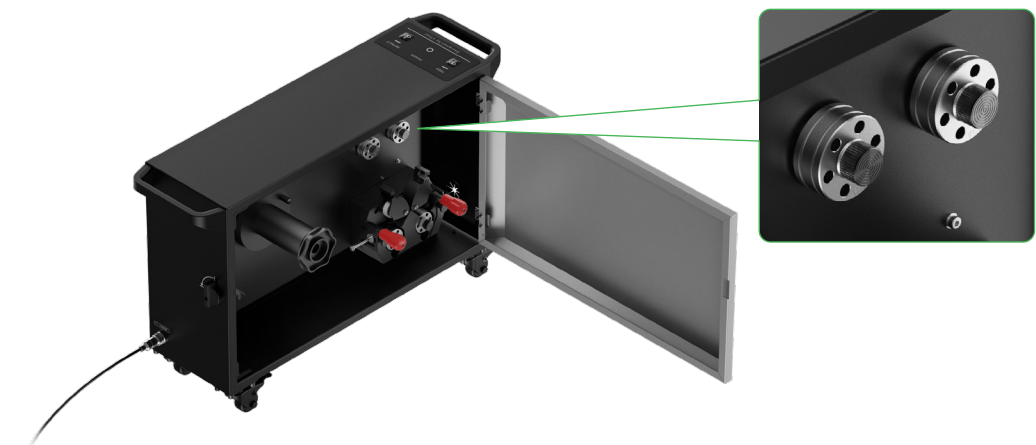
(2) Open the wire feeding driver.



(3) Install the drive rolls.



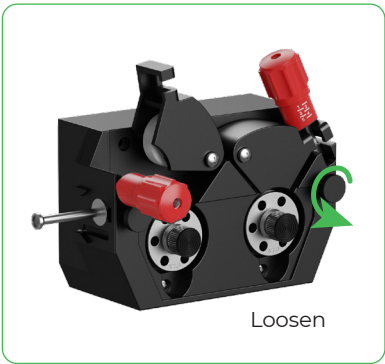
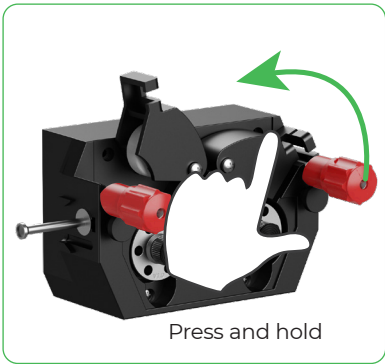
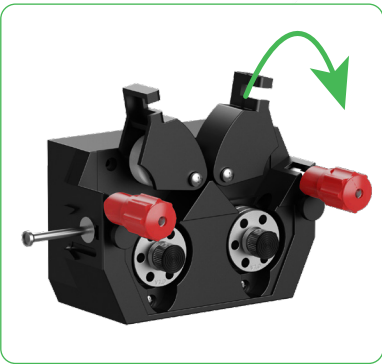
The other pair of drive rolls supplied with this product can be stored in the wire feeder for replacement.



4 Install the wire feeding tube

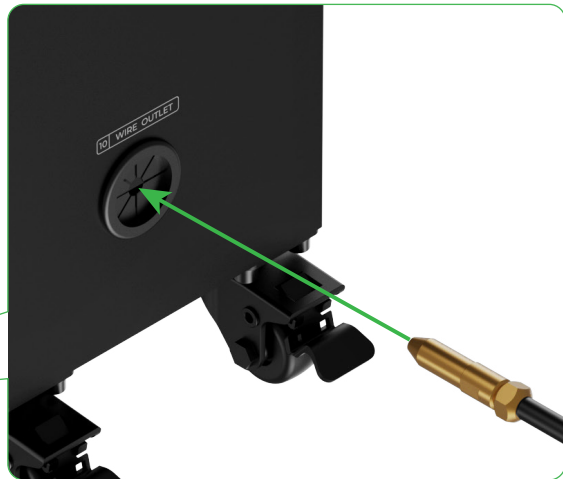
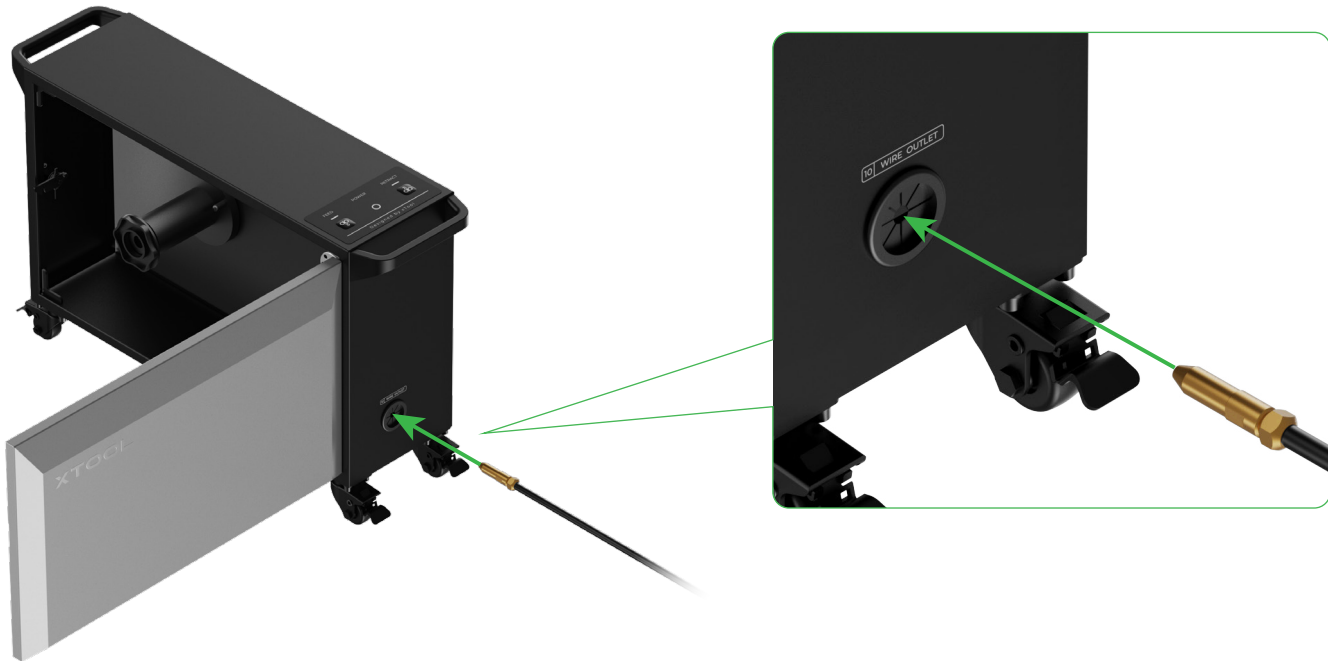


(1) Loosen the screw on the right side of the wire feeding driver.

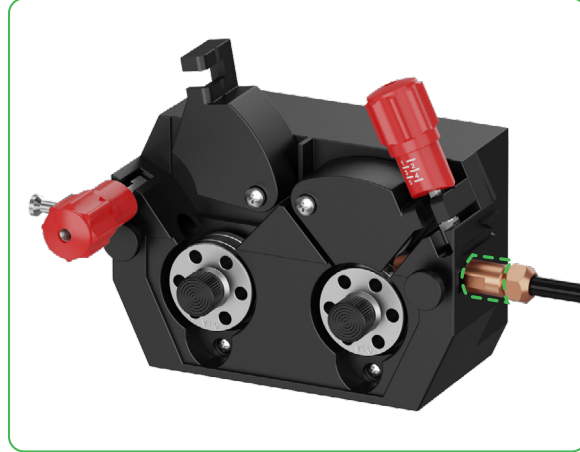
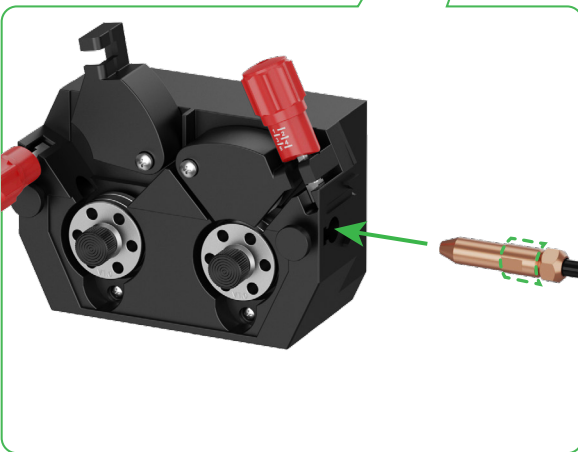


⚠ Close the right tensioner to avoid affecting the movement of the screw.

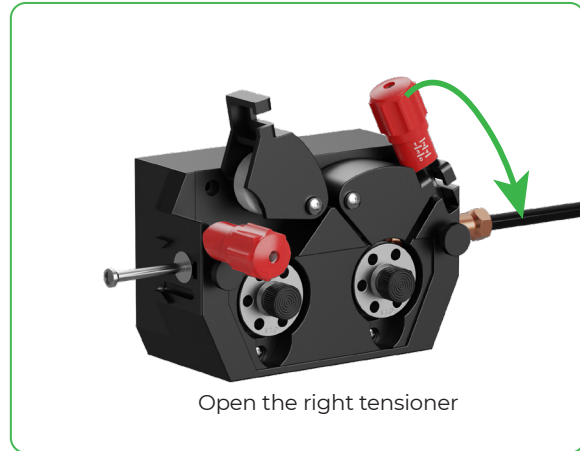
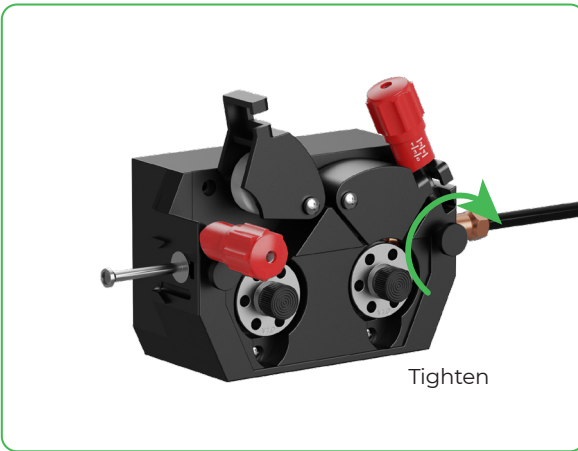
(2) Insert the end of the wire feeding tube without a fastener to the wire feeder.



(3) Lead the nozzle in until its stem presses against the right panel of the wire feeding driver.



(4) Tighten the screw to fix the nozzle.



5 Load the welding wire

Select a proper wire

Refer to the following table to select a proper wire based on the material type of the workpiece to be welded.

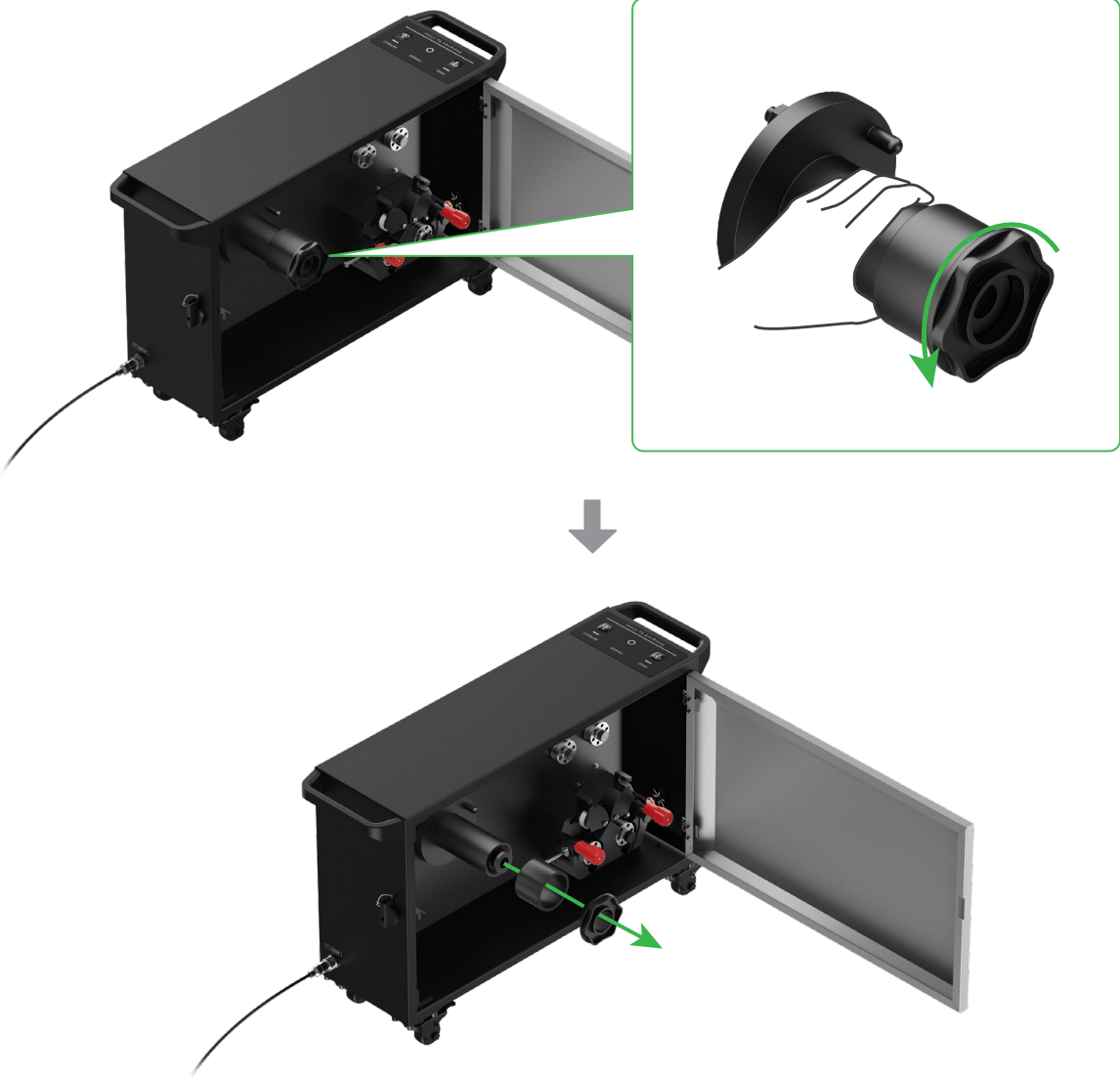
Workpiece material type	Recommended welding wire
Stainless steel	Stainless steel wire
Carbon steel	Solid iron wire
Galvanized steel	Solid iron wire
Brass	Tin brass wire
Aluminum	Aluminum wire

A roll of 1 mm stainless steel wire is included with this product. Use it as needed.

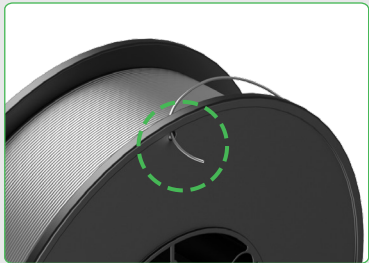


⑯ Stainless steel wire 1 mm

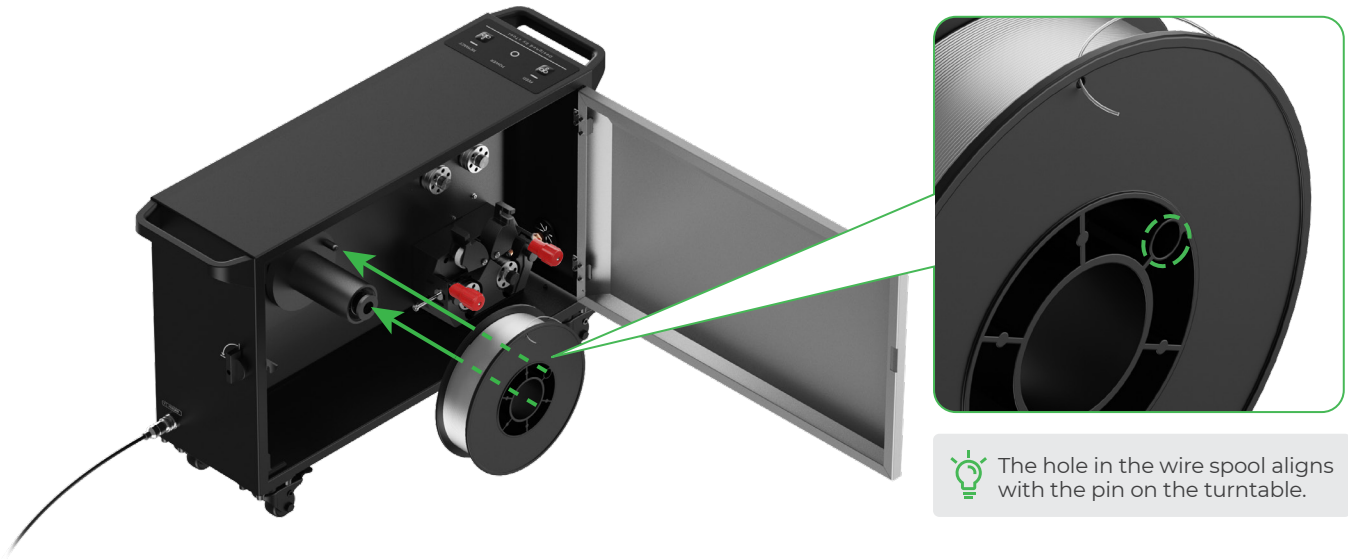
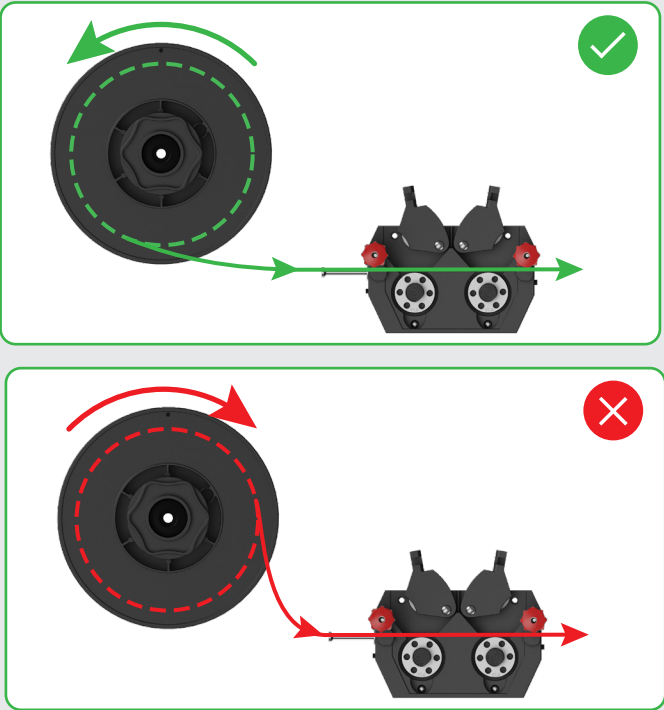
(1) Install the wire spool to the turntable.



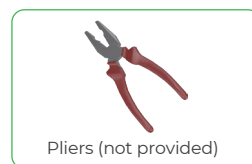
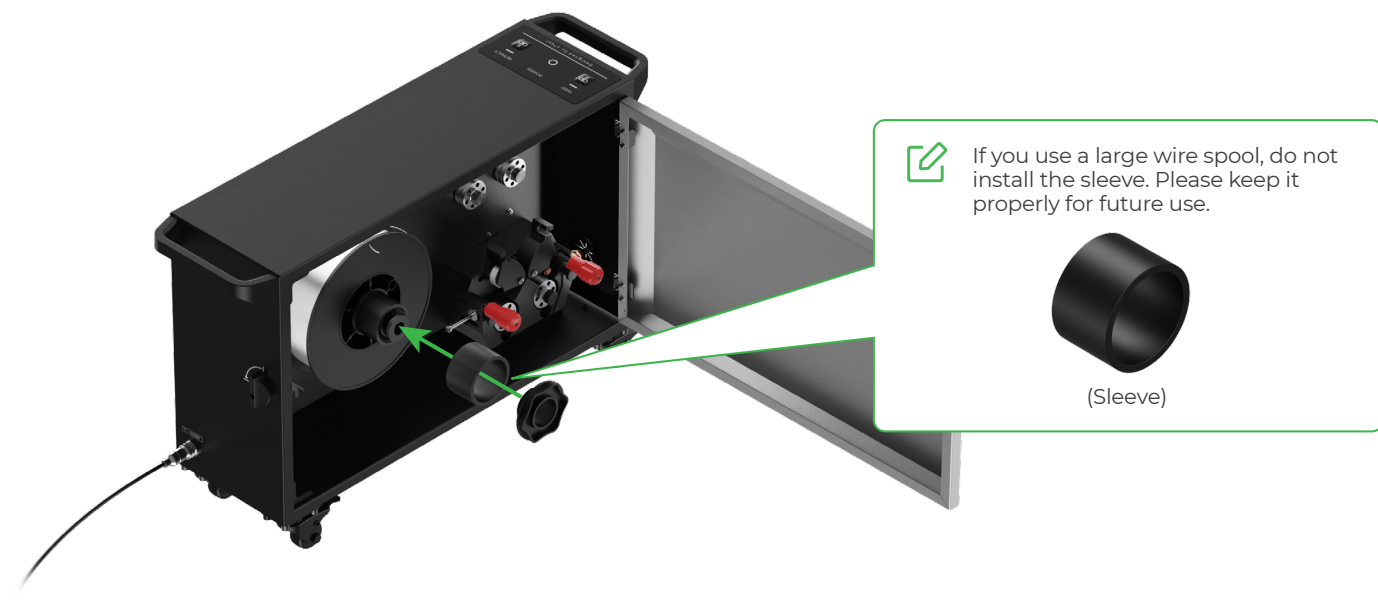
■ When installing the wire spool, keep the end of the wire fixed. Do not release the wire yet, as it may unravel and become unusable.



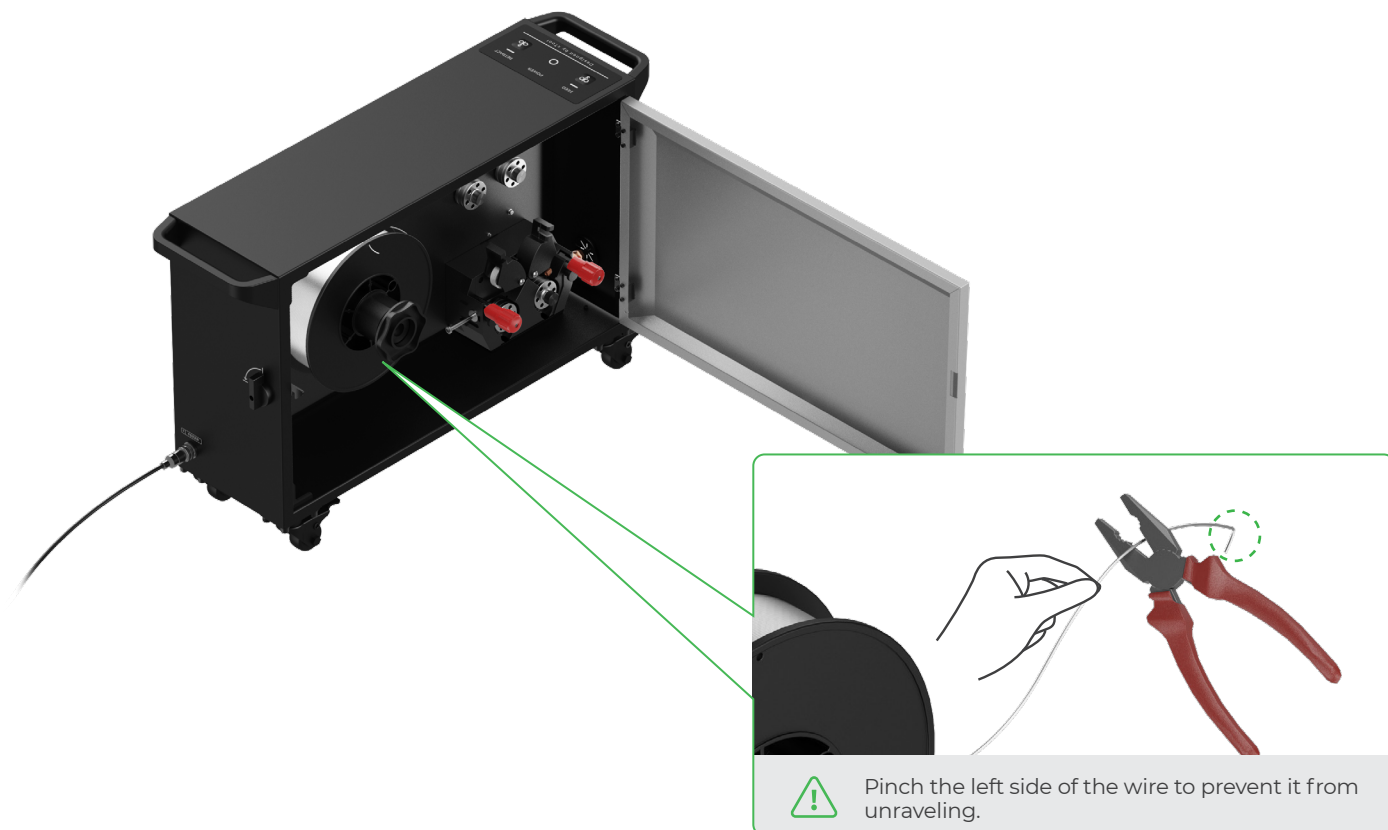
■ Ensure that the wire spool is installed in the correct direction. After released, the wire comes out from the bottom of the wire spool to enter the wire feeding driver. During wire feeding, the wire spool rotates counterclockwise.



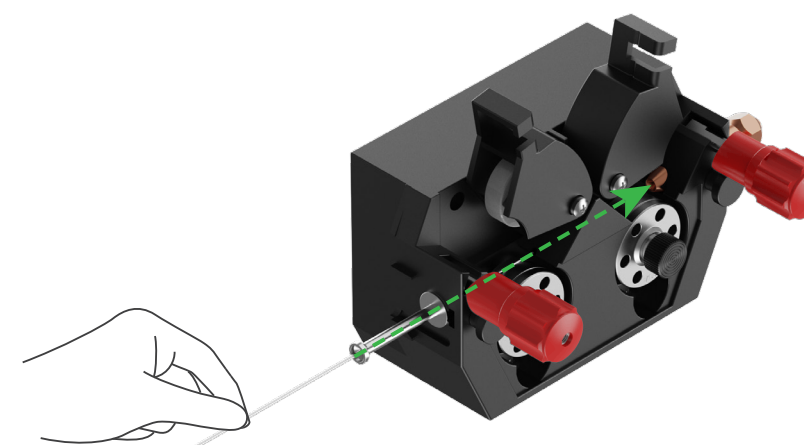
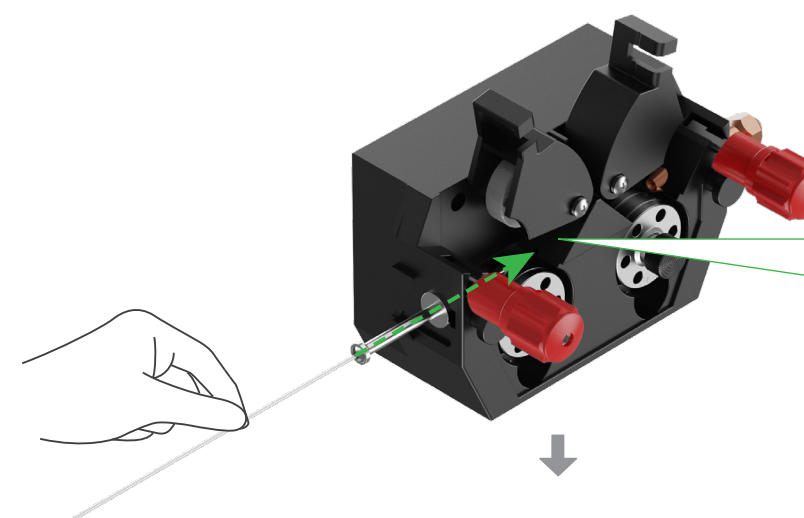
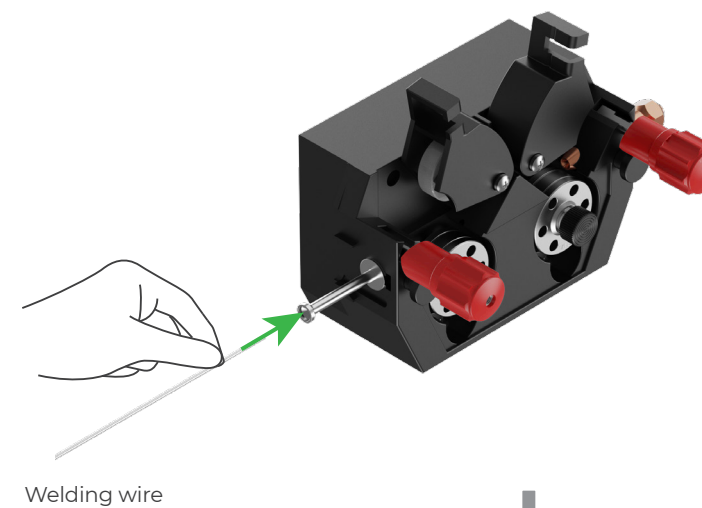
💡 The hole in the wire spool aligns with the pin on the turntable.




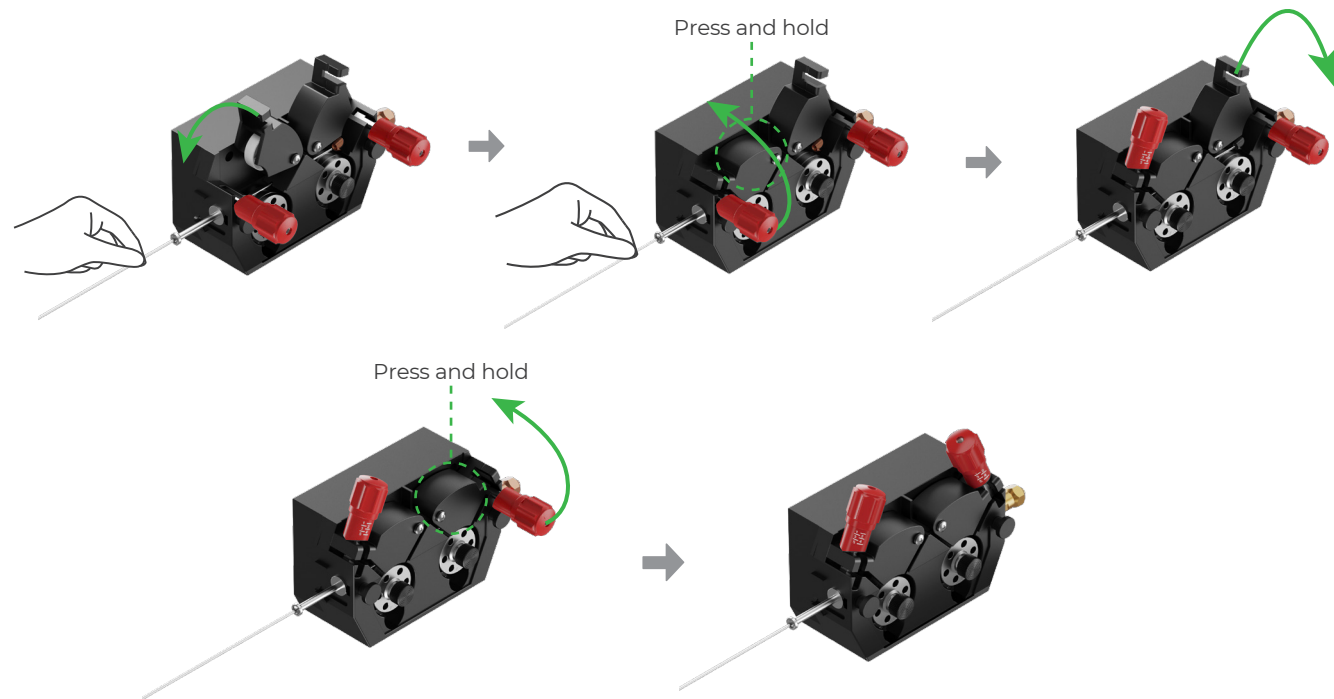
(2) Cut off the bent end of the wire and thread the wire into the wire feeding driver.



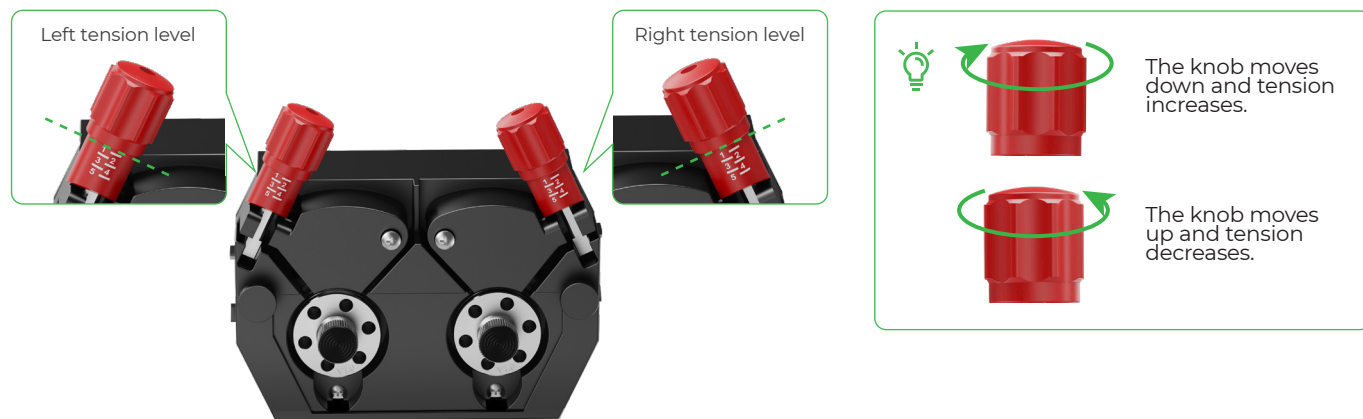
⚠ When inserting the wire, pinch the wire to prevent it from moving backward and unraveling.



 Pinch the wire until you close a tensioner.




(3) Rotate the tensioners' knobs to adjust the wire feed tension. The number reached by the knob indicates the tension level. A larger number indicates a higher tension.



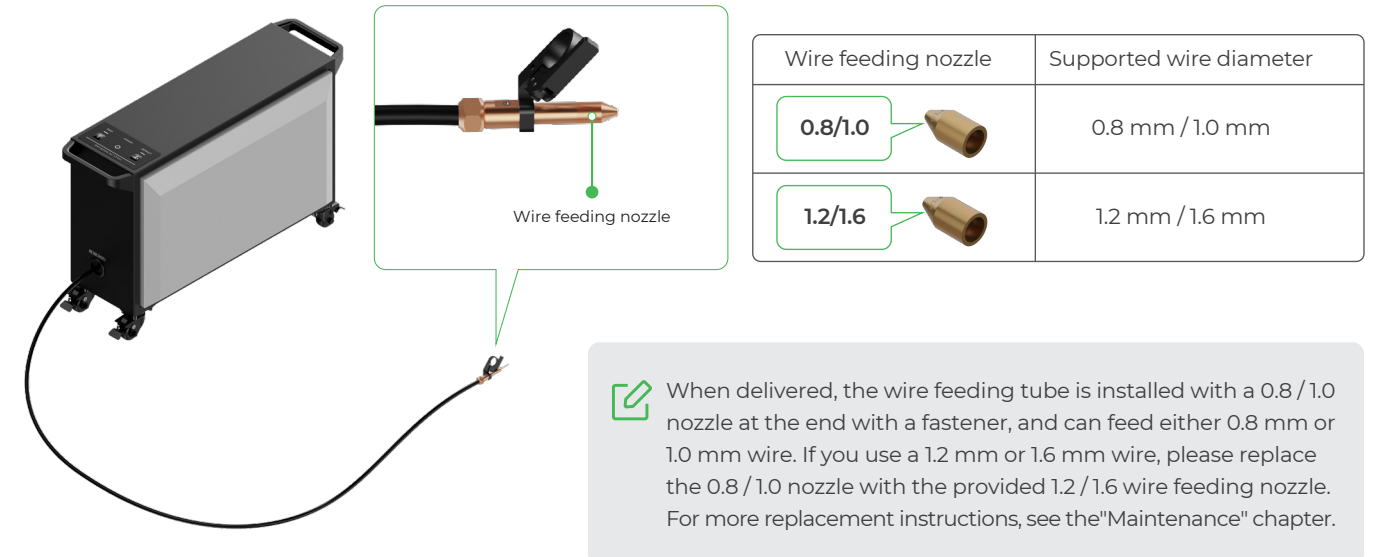
Adjust the roller tensioners based on the wire diameter by referring to the table below. Then, fine-tune the tension according to the actual situation.

Welding wire diameter (mm)	Left tension level	Right tension level
0.8	2.5	2
1	2.5	2
1.2	2	1.5
1.6	2.5	2

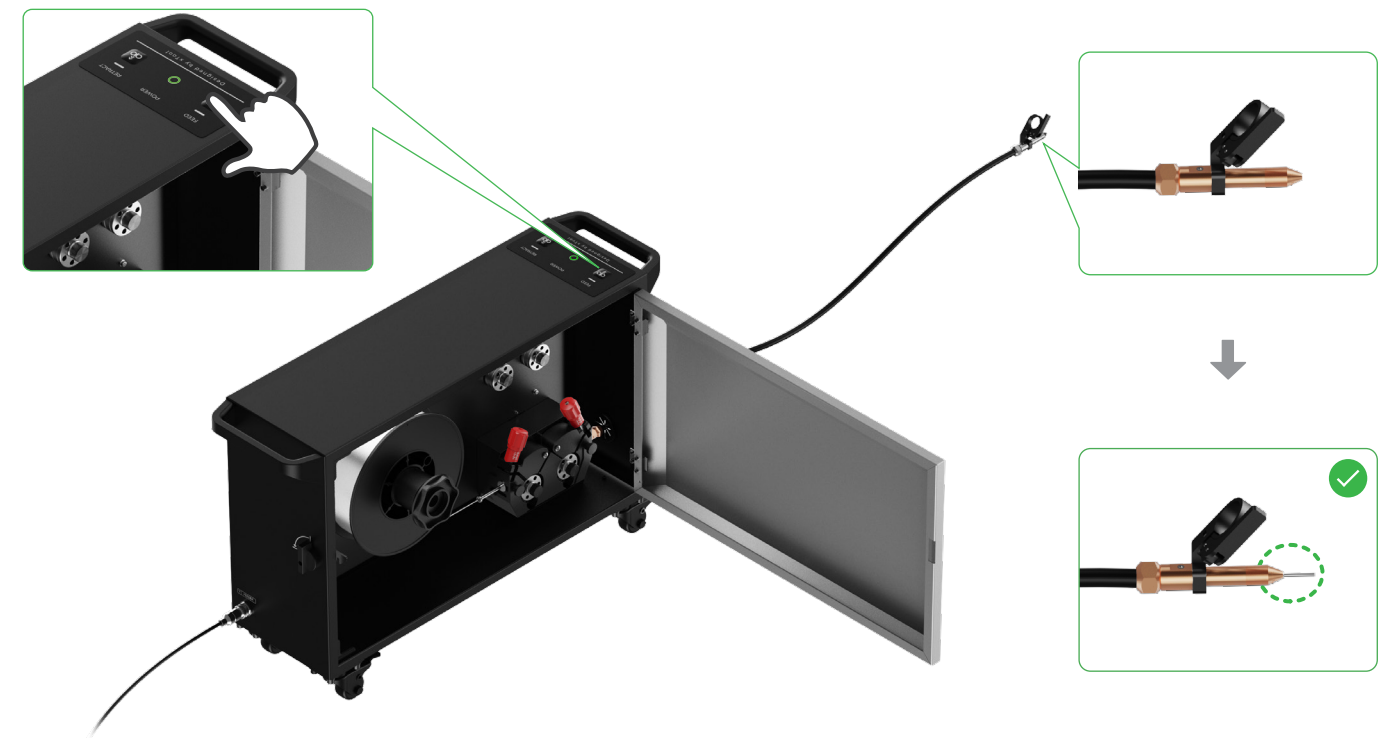
6 Feed the welding wire


 The wire feeder is powered by the main unit. To feed wire electrically, ensure that the main unit is turned on and properly connected to the wire feeder.

(1) Based on the table below, check if the wire feeding nozzle is of the right size to feed the wire you use.

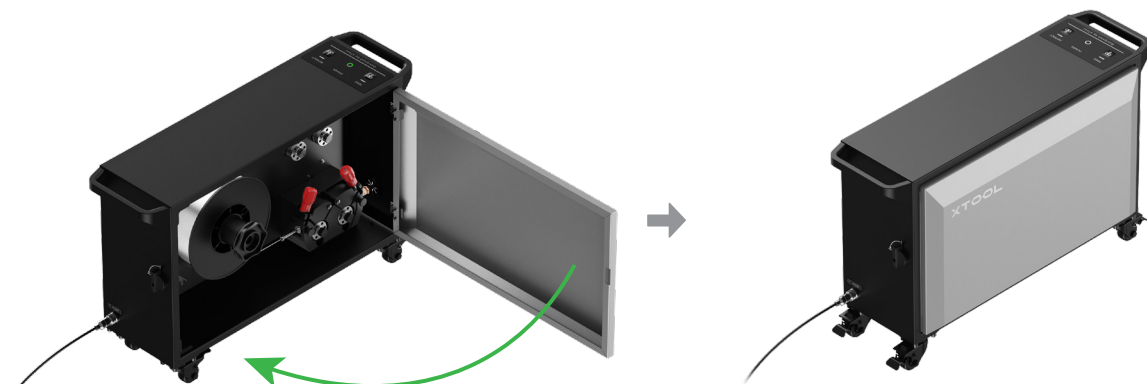


(2) Press and hold the feed button on the wire feeder until the wire extends out of the nozzle.



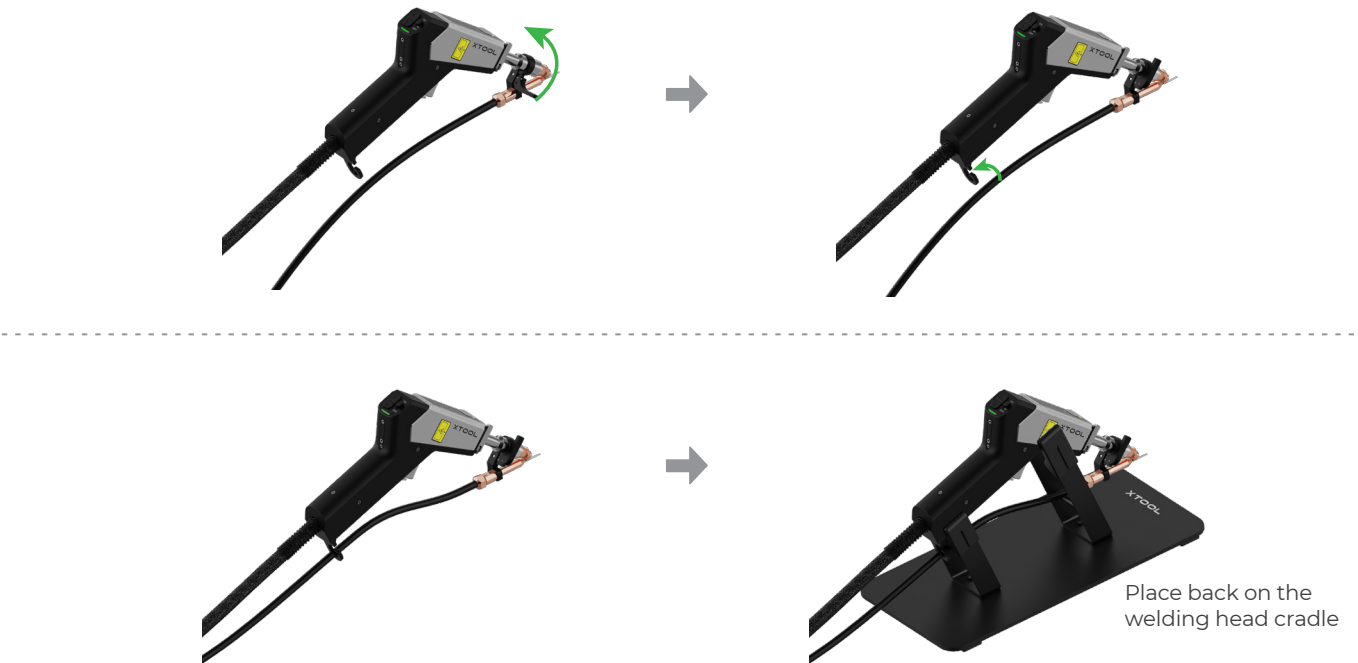
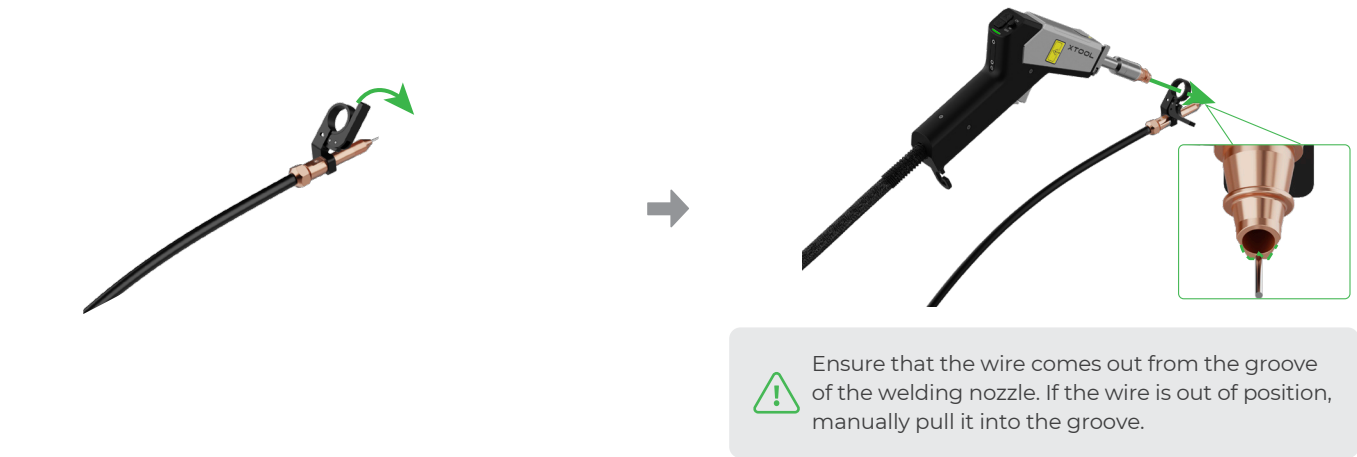
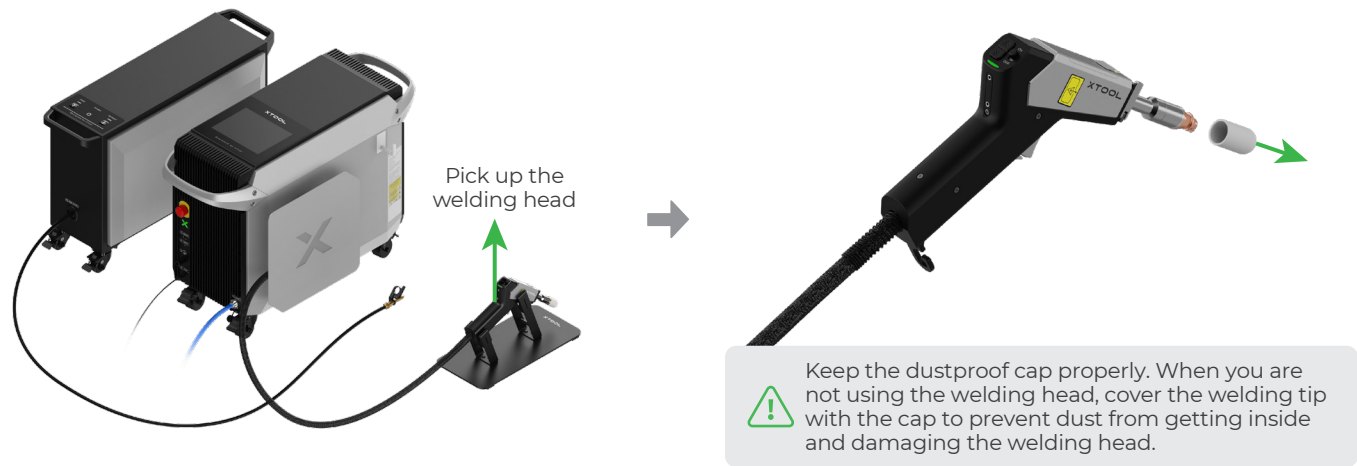
 When feeding the wire, observe the inside of the wire feeder. If the wire spool rotates counterclockwise at a constant speed, the wire feeder is working properly.

(3) Close the door of the wire feeder.



7 Install the wire feeding tube on the welding head

Install the wire feeding tube on the welding head.



For more information on how to use the wire feeder, scan the QR code or visit the link.



support.xtool.com/product/56

Use xTool MetalFab Laser Welder 1200W



Before operating the device, please follow the Safety Instructions to put on PPE and take proper safety precautions. Necessary PPE includes: laser safety goggles, welding helmets, dust mask, laser and heat resistant gloves, clothing, and aprons.



Safety instructions

Each time you turn on the device (except for the first time you unlock it), the touchscreen will display the safety instructions. Please read and familiarize yourself with all the safety instructions, and then tap **Confirm having read and understood the safety instructions** to enter the operation interface.

Safety instructions

- Only personnel professionally trained in welding and laser safety are authorized to operate this device within laser-controlled areas.
- Before laser activation, ensure wearing compliant protective eyewear, masks, and clothing.
- Do not clamp the safety circuit frame to any part of the welding gun or wire feeder.
- Do not touch workpieces or parts immediately after welding to avoid burns.
- Gas cylinders must be kept away from heat sources and avoid exposure to laser beams or direct sunlight.
- The welding area must be well ventilated, or equipped with exhaust and purification systems.
- Flammable materials, explosives, or volatile solvents must not be placed within 10 meters of the equipment.
- Ensure the device is properly grounded before turning it on. Never omit the ground connection, as this may pose safety risks including electric shock, fire, or equipment damage.

Confirm having read and understood the safety instructions

Operation interface

Standard mode

Advanced mode

Technique library

Machine status

System settings

Wire feeder

Safety interlock loop

Weld

Clean

Cut

Material type

Stainless steel

Carbon steel

Galvanized steel

Aluminium

Brass

Material thickness

0.5mm

1mm

2mm

3mm

4mm

5mm

Wire diameter

0.8mm

1mm

1.2mm

1.6mm

Switch to advanced mode with current settings>

Enable wire feeding

Enable lasering

Standard mode:

Allows you to switch between welding, cleaning, and cutting modes, set basic processing parameters, and quickly start processing.

Advanced mode:

Offers more welding modes, and allows you to adjust more processing parameters and save the parameter settings to the technique library.

Technique library:

Stores parameter settings categorized by processing modes and processing scenarios. You can quickly apply these settings to processing.



For more information about the touchscreen and processing parameters, scan the QR code or visit the link.



support.xtool.com/product/56

Laser welding (in standard mode)

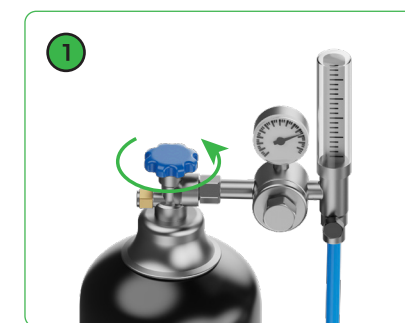
1 Supply the shielding gas and adjust the gas flow rate.



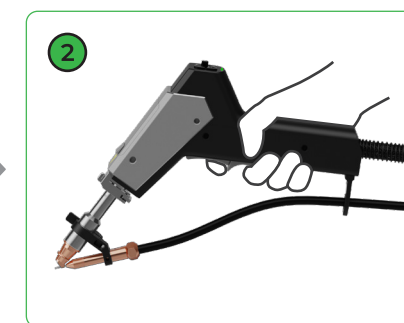
- Ensure that a gas flow meter is fitted to the gas cylinder (or gas generator) to control the gas flow rate for welding.
- The way of opening the valve may differ for different types of gas cylinders. The picture is for illustration only.



Ensure that Enable lasering is off when you adjust the gas flow rate.



(1) Open the gas cylinder valve

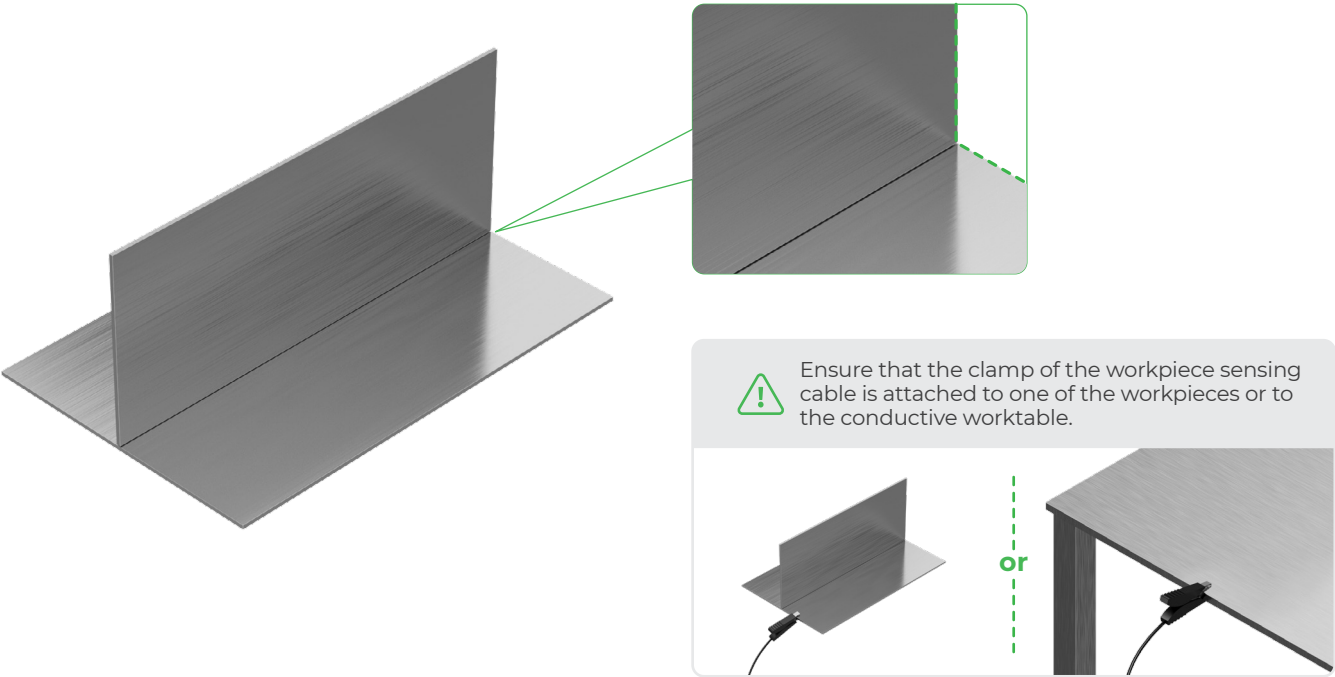


(2) Press and hold the grip sensing button and trigger to allow gas flow

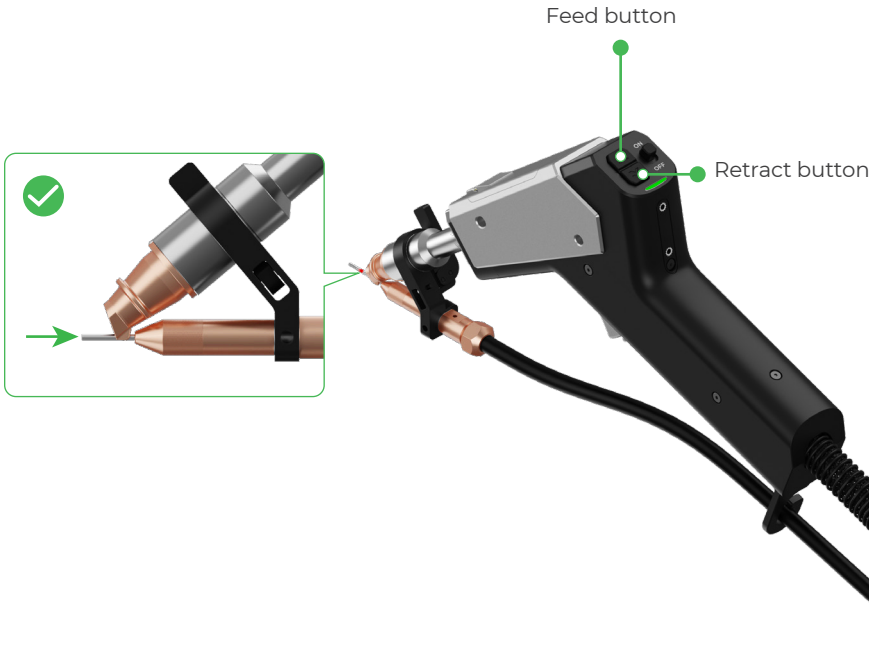


(3) Adjust the gas flow rate to 15 L/min - 30 L/min

2 Place the workpieces stably on the worktable, with the welding parts aligned to each other.



3 Press the feed and retract buttons on the welding head to adjust the wire until its tip coincides with the red spot.



⚠ Calibrate the welding head if the red spot falls at the left or right side of the extended wire or if the spot is not visible or blurred. Refer to the "Maintenance" chapter to calibrate the position of the red spot before welding.

4 Turn on the wire feeding enable switch to enable the auto feeding function.

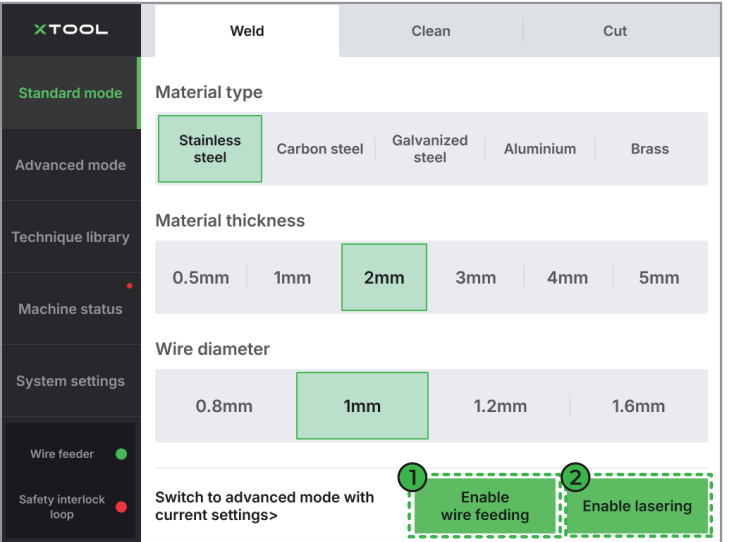


💡 Wire feeding enable switch: The welding head feeds wire automatically only after you turn on the wire feeding enable switch.

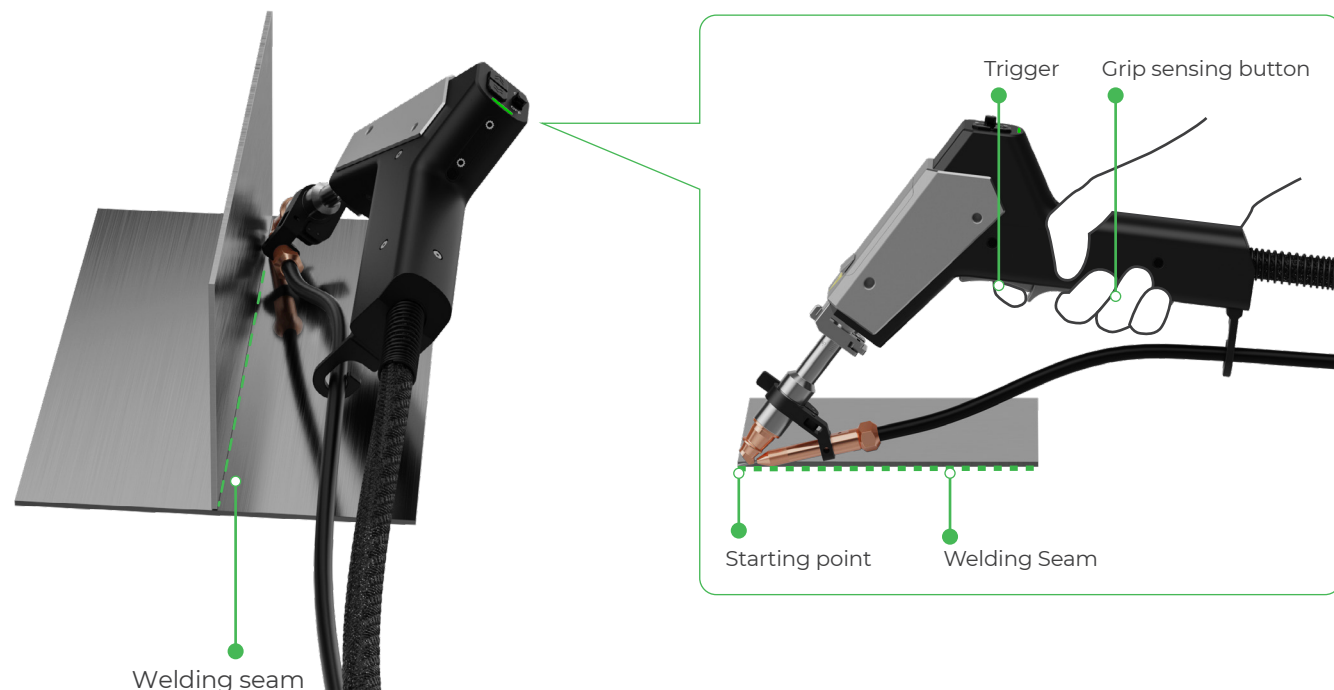
5 On the touchscreen, choose **Standard mode > Weld**. Select the material type, material thickness, and wire diameter according to the actual situation.



6 On the touchscreen, tap **Enable wire feeding** to allow wire feeding and **Enable lasering** to allow laser emission.



- 7 Aim the welding nozzle at the starting point, with the welding head parallel to the weld seam. Then, press and hold the grip sensing button and trigger to start welding.



- Ensure that the welding head tip contacts with the welding target, so that the safety interlock loop can be closed and the welding head can emit laser.
- As the welding head feeds the wire forward, a reaction force is generated from the welding point that pushes the welding head backward. Simply hold the welding head steady and guide the direction. To avoid wire sticking, do not press the welding head downward.
- After the welding is completed, the workpiece and parts of the welding head (such as the nozzle and the graduated tube) will remain hot for some time. Do not touch the hot areas without protection.



For more information about the processing modes and operating instructions, scan the QR code or visit the link.



support.xtool.com/product/56

Maintenance



Turn off the power before replacing accessories.

Replace the welding head nozzle

■ Replace with cutting nozzle

(1) On the touchscreen, tap **System settings** and take down the value of **Focus scale reference**.

Machine information		Machine settings
Standard mode	Device name	xTool MetalFab Laser Welder 1200W
Advanced mode	Machine serial number	WWWWW456SN123456SN13455
	Laser module serial number	LX2BDJB02972
Technique library	Machine firmware version	V40.70.001.2425.01
Machine status	Screen firmware version	V1
	Laser control firmware version	V1
System settings	Welding head firmware version	V1
	Wire feeder firmware version	V1
Wire feeder	Focus reference scale	-1
Safety interlock loop		

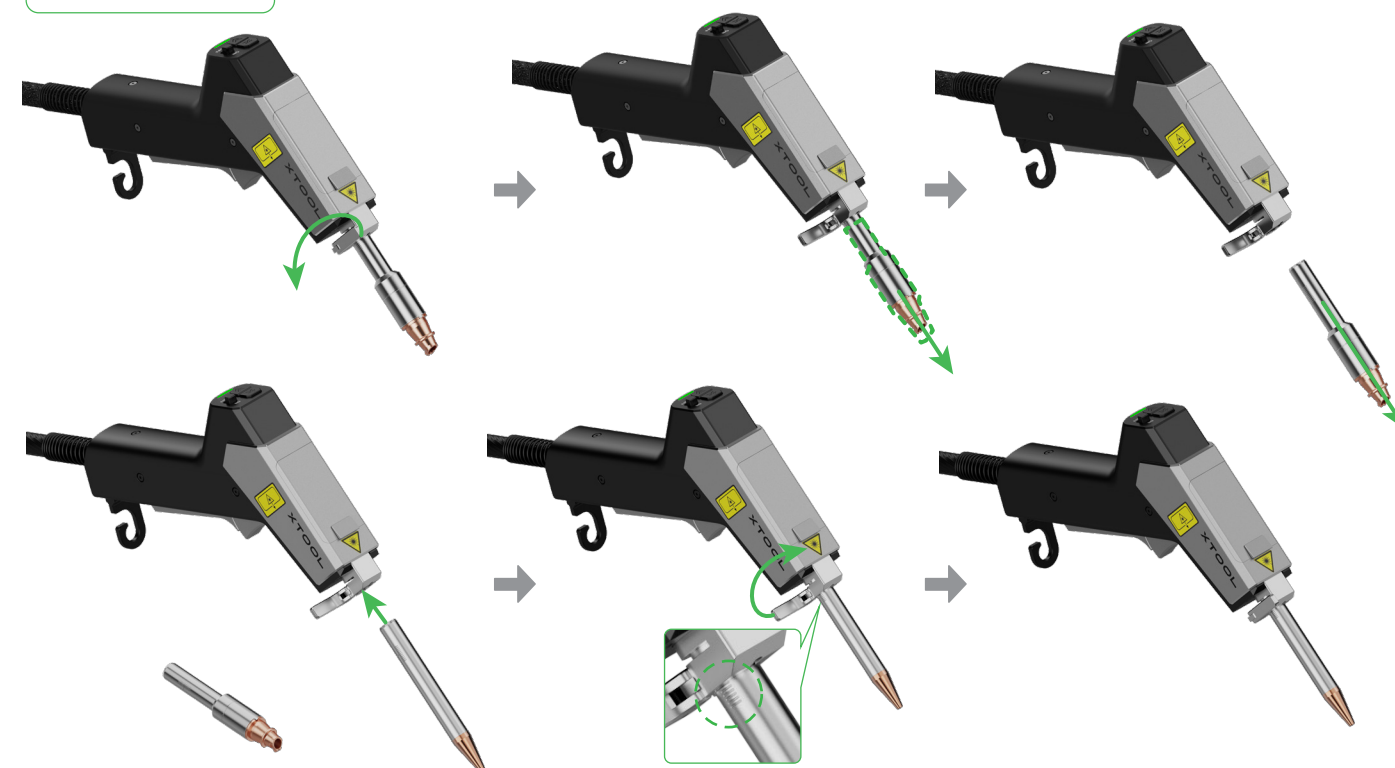
(2) Turn off the device.



(3) Replace the nozzle.



(9) Cutting tip



Keep consistent with **Focus scale reference**

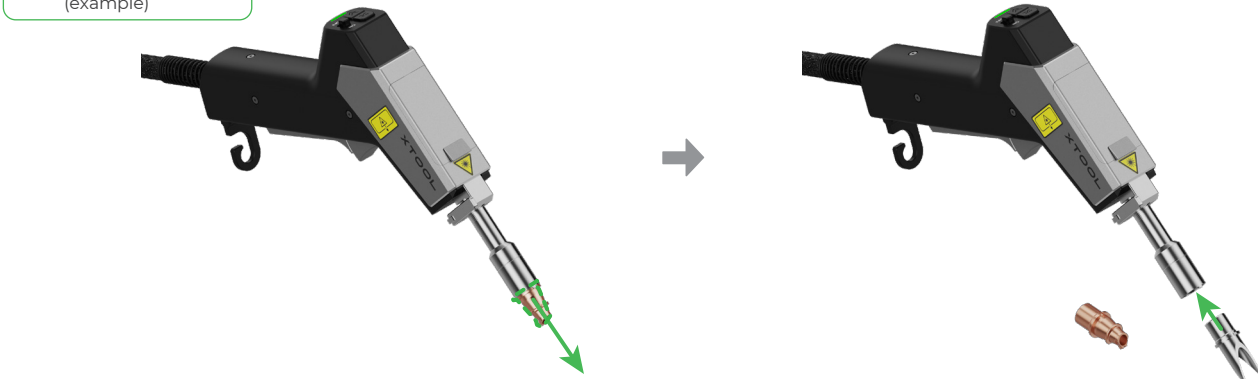


After installing the cutting tip, turn on the device and check if the welding head emits a clear and integral red spot. If not, please calibrate the red spot position, so as to avoid burning the nozzle during laser cutting.

■ Replace with welding or cleaning nozzle



The welding and cleaning nozzles can be replaced in the same way.

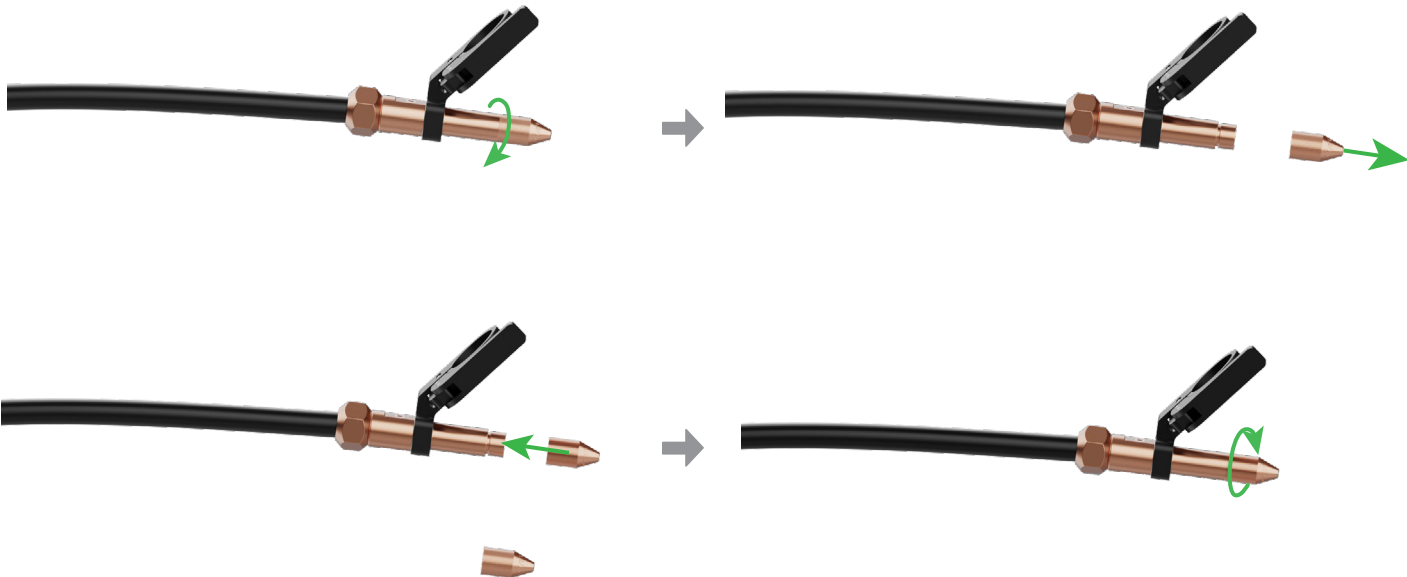


Replace the wire feeding nozzle



The wire feeding tube has an end with a fastener and a replaceable nozzle. You need to replace the nozzle based on the diameter of the welding wire.

Wire feeding nozzle	Supported wire diameter
0.8/1.0	0.8 mm / 1.0 mm
1.2/1.6	1.2 mm / 1.6 mm

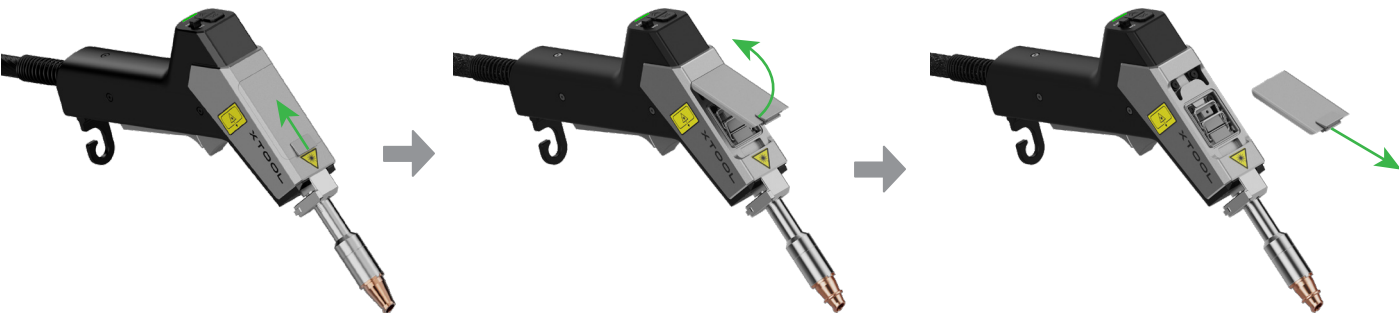


Clean or replace the lens protector in the welding head

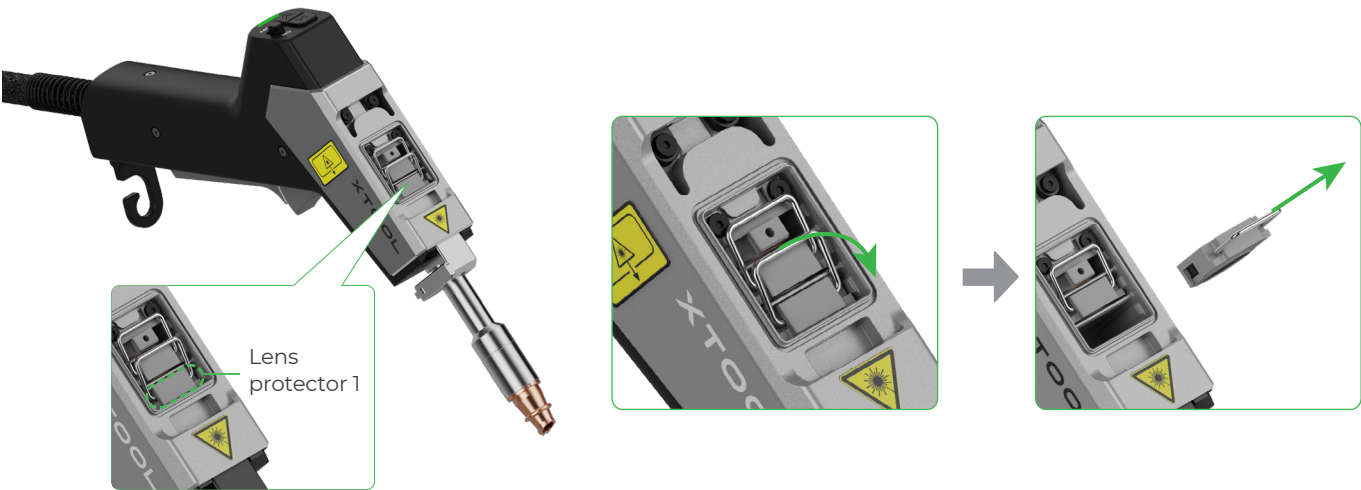
If the laser power decreases and the welding spark weakens, the welding head's lens protector may get dirty or damaged. Clean or replace it as needed.

Please clean or replace the lens protector in a dust-free or relatively clean environment. Before operations, clean the welding head with lint-free paper or lint-free cloth, and wash your hands or wear lint-free gloves (not provided).

(1) Remove the cover on the top of the welding head.



(2) Remove the lens protector 1.



After the lens protector is removed, it is recommended that you put the cover back to prevent dust from falling inside the welding head and causing damage.

(3) Check the lens protector.

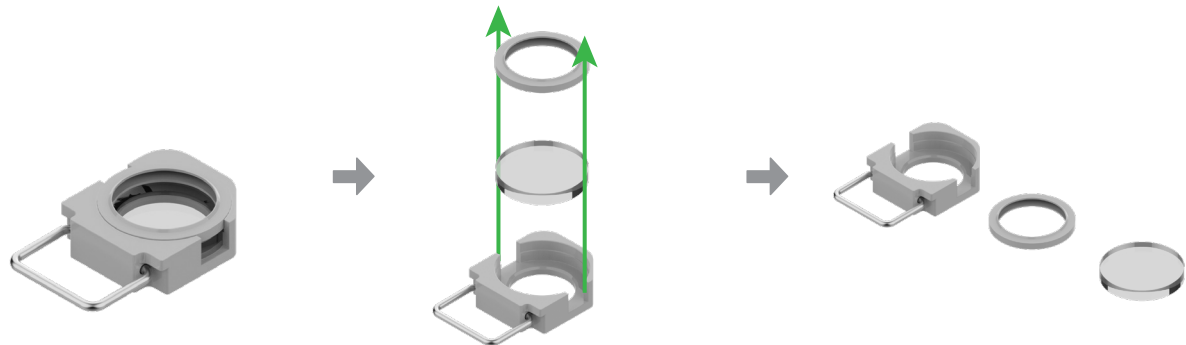


■ If the lens protector is dirty, use a cotton swab dipped with alcohol to clean it. Then, install it back to the welding head.



■ If the lens protector is burned or heavily dirty and uncleanable, it needs to be replaced.

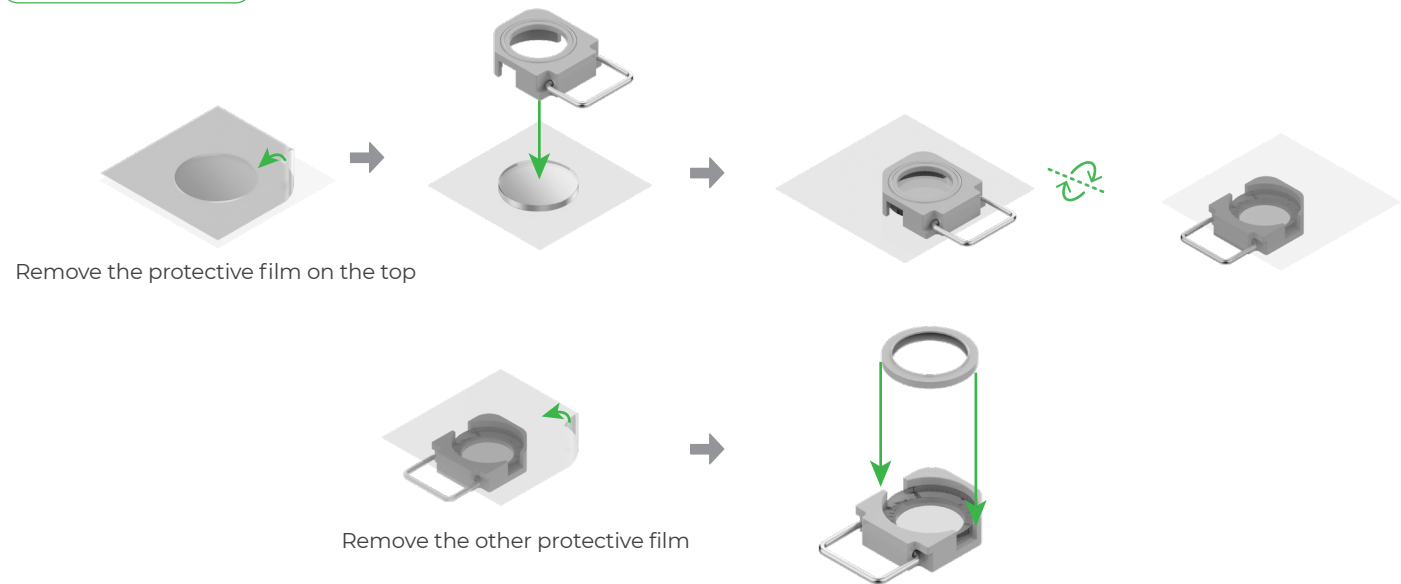
(4) Keep your hands clean or wear lint-free gloves to remove the gasket and lens protector.



(5) Install a new lens protector.



⚠ Do not touch the glass with your fingers or other tools during replacement as the glass may get dirty. If the glass accidentally gets dirty or dusty, use a cotton swab to clean it.



After replacing the glass, install the lens protector back to the welding head.

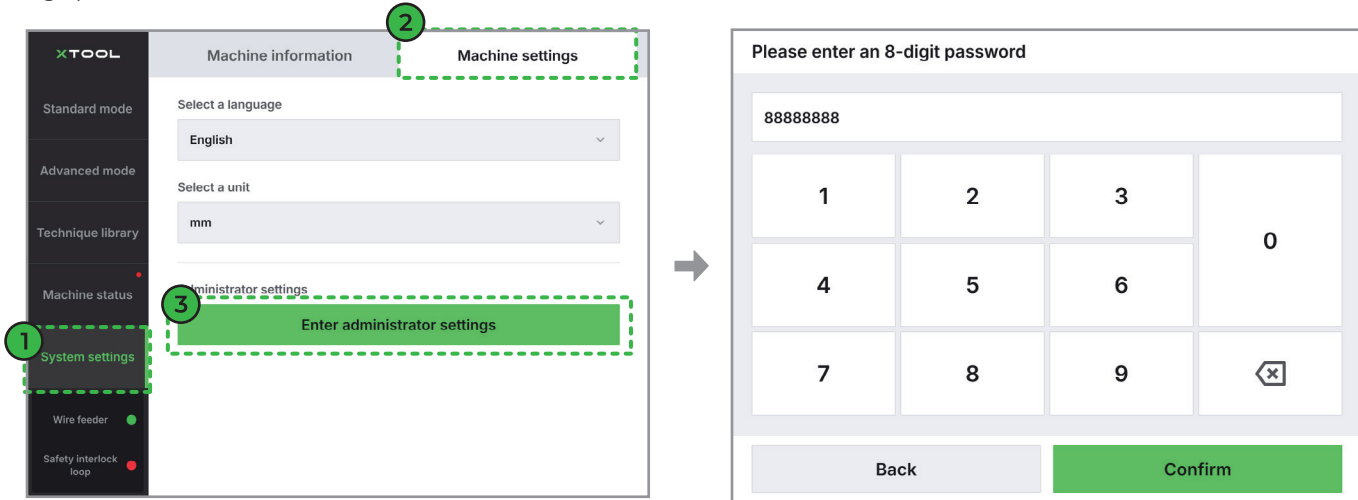
Calibrate the red spot position for the welding head

Red spot offset

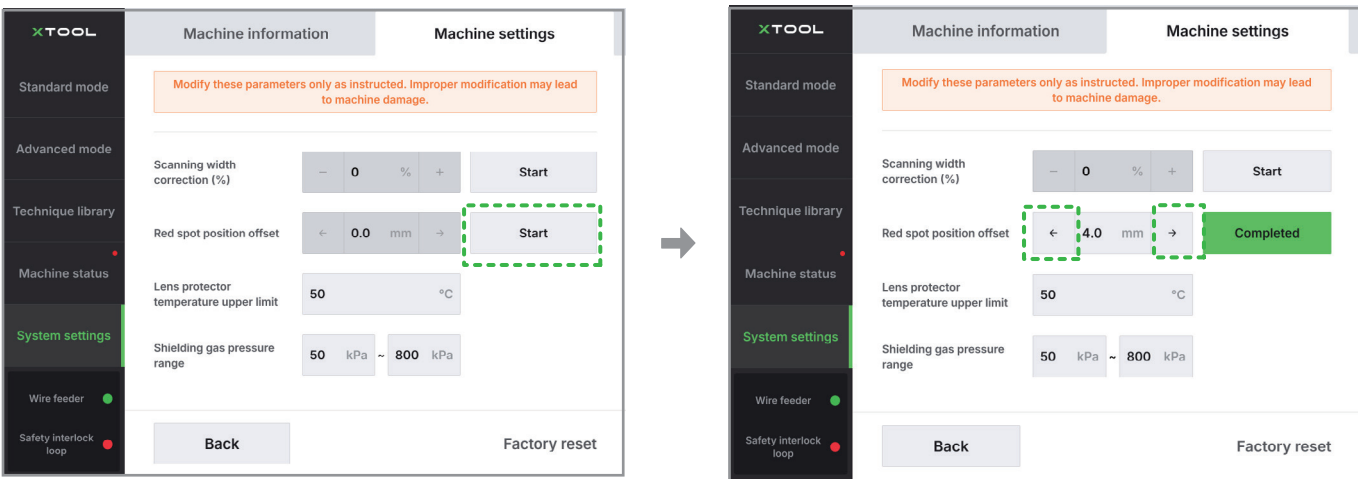
- Perform left/right offset calibration when the laser spot deviates left or right from the wire, despite proper nozzle installation.
- If the red spot is not visible or blurred, the light beam may deviate too much that it hits on the inner wall of the nozzle, getting blocked or reflected. Try calibrating the left/right offset. If the problem persists, reset the red spot position offset to zero and try calibrating the up/down offset.

Calibrate the left/right offset

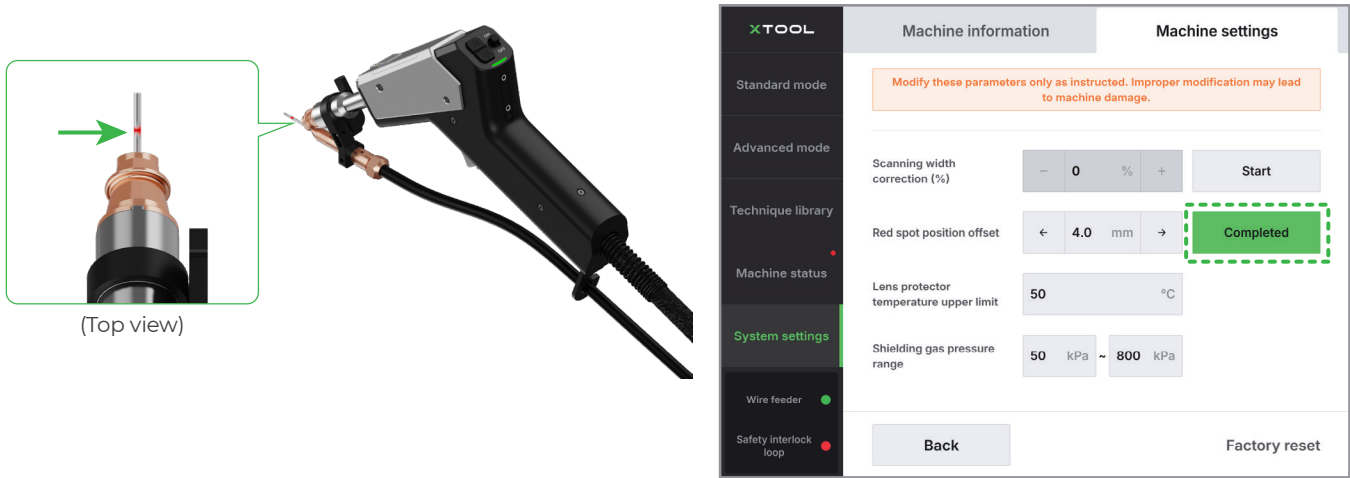
(1) On the touchscreen of the main unit, tap **System settings** > **Machine settings** > **Enter administrator settings**. Then, input the 8-digit password: 88888888.



(2) To the right of **Red spot position offset**, tap **Start**. Then, tap the left arrow to decrease the offset and move the red spot leftward; tap the right arrow to increase the offset and move the red spot rightward.



(3) When the center of the red spot falls at the welding wire, tap **Completed** to save the calibration result.

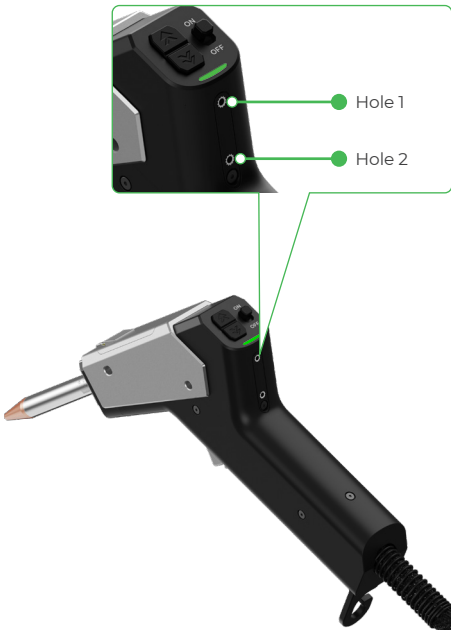


If the red spot remains invisible or blurred no matter how much you increase or decrease the offset, the red spot may deviate upward or downward. Reset the red spot position offset to zero and try calibrating the up/down offset.

Calibrate the up/down offset

When a cutting nozzle is used, the laser beam may strike the nozzle's inner wall, resulting in either blockage (no visible spot) or reflection (blurred spot). In such cases, perform up/down offset calibration. (Welding and cleaning nozzles have larger apertures and typically do not require such adjustment.)

On the back of the welding head, you can find two small holes. By rotating the screws inside the holes, you can move the red spot upward or downward.



Holes	Rotate direction	Red spot movement
Hole 1		
Hole 2		

Refer to the following steps to calibrate the up/down offset:



- (1) Insert the hex key into hole 1, and slowly turn the screw counterclockwise to loosen it while observing the light emitting from the nozzle.
- If a clear red spot appears, stop turning the screw and go to step (4).
 - If the screw cannot be loosened further but no clear red spot appears, go to step (2).



- (2) Retighten the screw in hole 1 clockwise.



(3) Insert the hex key into hole 2, and slowly turn the screw counterclockwise to loosen it while observing the light emitting from the nozzle. When a clear red spot appears, stop turning the screw.



(4) Turn the screws in holes 1 and 2 clockwise alternately to slowly tighten them, while keeping the red spot visible and clear.



Tighten only a little bit each time. Otherwise, the light beam may shift significantly and hit on the inner wall of the nozzle.

