



T1 Wire Feeder

USER GUIDE

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Preface

Welcome to use Shenzhen Maxphotonics Co., Ltd. R & D and production of multifunctional automatic wire feeder products. If users have any comments and suggestions during the use of the process, please feel free to give us advice, in order to help us constantly revise and improve. Thank you again for using Maxphotonics products!

Before using this product, please read the Multifunctional Automatic wire Feeder User Manual provided by Maxphotonics carefully to be familiar with the operation and maintenance of this equipment.

This manual will be included as an accompanying attachment to provide our current or potential customers with important operational, safety and other information.

Please read the manual carefully to avoid unnecessary risks.

Company Profile

Found in 2004, Maxphotonics is one of the first fiber laser manufacturers in China. It is also the first in China to realize independent intellectual property rights and vertical integration in the core technologies of fiber lasers and optical devices. One of the national high-tech enterprises. Maxphotonics has developed into an internationally renowned laser manufacturer that develops, manufactures and sells fiber lasers and core optical components. It is the second largest domestic fiber laser manufacturer in the domestic market.

Maxphotonics specializes in the research, development, production and sales of fiber lasers, including pulsed fiber lasers, continuous fiber lasers and direct diode lasers. It also implements pump sources, combiners, fiber gratings, isolators, laser output heads, and stripping. Optical devices such as molds, acousto-optic modulators, and pattern matchers are produced autonomously. Products are widely used in marking, engraving, cutting, drilling, cladding, welding, surface treatment, rapid prototyping and additive manufacturing processes.

More informations, please visit our website :

<http://en.maxphotonics.com>

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Chapter 1

Overview

Thank you for choosing Maxphotonics Hand-held welding wire Feed System. This user manual provides you with important safety, operation, maintenance and other information. Therefore, please read this user manual carefully before using this product.

To ensure operational safety and product operation in optimal condition, please follow the following precautions and warnings, as well as other information in this manual.

This manual covers a general description of the basic installation, operation and maintenance of the welding wire feed product.

Maxphotonics Welding wire feeding system is a wire feeding system launched in 2022. The system covers the independent research and development of control system, and set back the function of filling. Maxphotonics multifunctional wire feeder products can be adapted to Maxphotonics hand-held laser welding products.

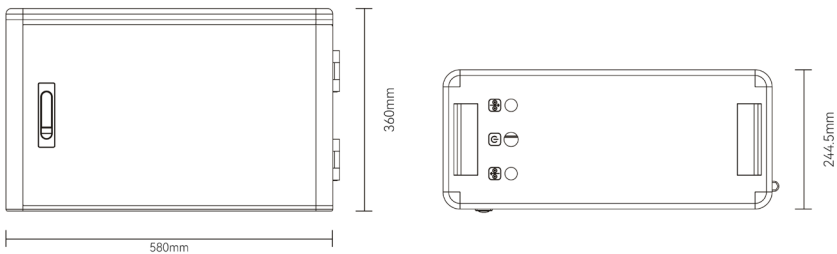
1. Operating environment and parameters

Supply voltage (V)	DC 24V
Setting environment	Smooth, no vibration, no impact
Operating ambient temperature (° C)	5 ~ 50
Ambient humidity (%RH)	< 90
Storage environment temperature (° C)	-15 to 85
Storage environment temperature (%RH)	< 90
Maximum support wire weight	25KG

2.Attention information

- (1) the wire feeding wheel matches the diameter of the wire and corresponds to the wire feeding tube;
- (2) Do not bend the wire pipe.

3.Size/characteristics of wire feeder



Size: 580mm×360mm×244.5mm

Features:

- (1) laser coupling, double driving force, closed circuit board design, cold rolled plate shell.
- (2) Wire feeding/drawing speed of 2~100mm/s, support continuous wire feeding and pulse wire feeding, can be welded fish scale.
- (3) Support automatic pumping and automatic filling function.

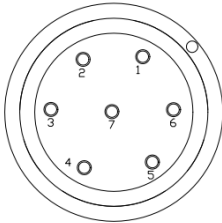
The wire feeding machine is mainly used in the scenario where the wire feeding welding is required or the weld is large

Diameter of welding wire: 0.8/1.0/1.2/1.6mm

Chapter 2

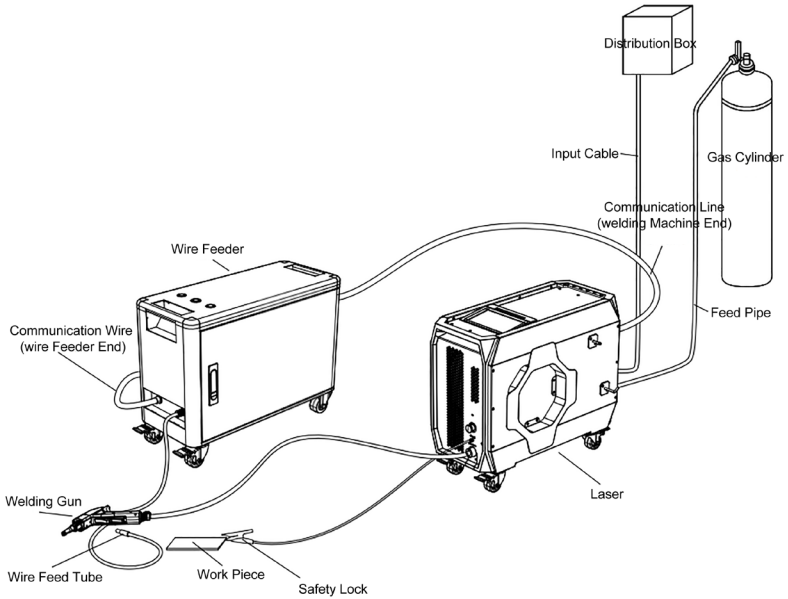
Install

1. General definition of circuit connection

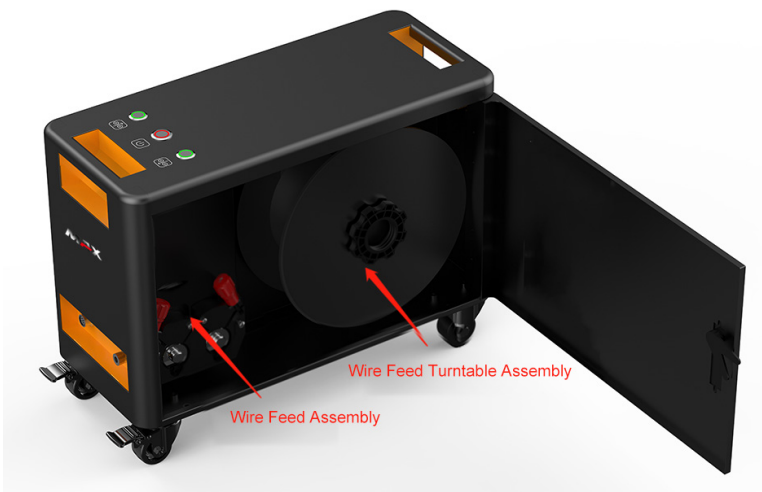


Connection Definition	
1, 2 pins	Connect to power +24V
3 pins	Signal input/low level is active
4 pins	Connect to the power GND
5 pins	Shell PE
6 pins	Enter RX for the serial port
7 pins	Serial port output TX

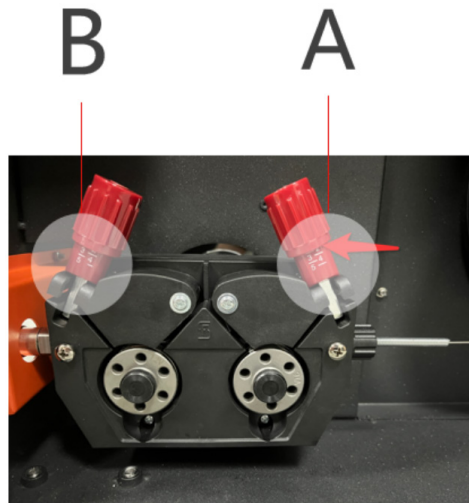
2. External wiring method of wire feeder



3. Installation of welding disc/wire feed wheel



1. As shown in the figure above, remove the fixing nut of the rotary wire feeding table, place the welding wire tray on the rotary wire feeding table and lock the fixing nut of the rotary wire feeding table.
2. As shown in the assembly of the wire feeding wheel in the figure above, lay down the two red handles, remove the fixing screws of the two wire feeding wheels, take out the wire feeding wheel to be replaced, and assemble the wire feeding wheel with the side corresponding to the size of the welding wire facing outward. Tighten the screws again, lay down the gland, and push up the handle to fix;
3. Selection of pressing wheel: according to the diameter of welding wire used, select the corresponding wire feeding gear. V-shaped gear is selected for stainless steel welding wire and U-shaped gear is selected for aluminum welding wire.



Wire Diameter	A-Rod (adjust scale)	B-Rod (adjust scale)	Remarks
Stainless steel/carbon steel/Aluminum wire 0.8mm	2.5	2	
Stainless Steel/carbon steel/Aluminum wire 1.0mm	2.5	2	
Stainless steel/carbon steel/Aluminum wire 1.2mm	3	2.5	
Stainless steel/carbon steel/Aluminum wire 1.6mm	3.5	3	

Note: Customers can adjust the reference value of the scale by referring to the pressure rod for different diameters of welding wire, and fine-tune the pressure rod according to the actual situation.

Chapter 3

Wire Feeding Tube Installation

1. End of wire feeder



1. Connect the communication wire of the wire feeder (left) according to the above figure (the red point of the wire plug corresponds to the upward direction of the parent), and connect the other end to the wire feeding interface of the laser;
2. Connect the wire feed pipeline (right) to the right interface according to the figure above, and connect the other end to the gun head;
3. At present, there are mainly graphite tubes and stainless steel tubes.

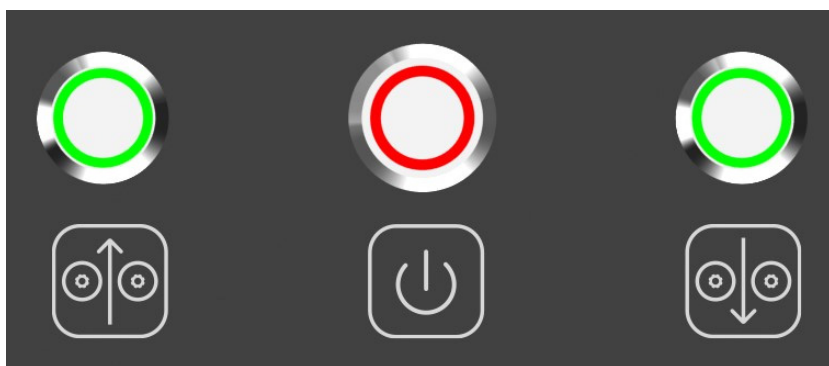
2. Tip



1. As shown in the figure above, assemble the wire feeding assembly at the gun end of the wire feeding tube onto the gun end, and fasten the screws at the arrow position using a hexagon screwdriver;
2. Connect the wire feeding tube to the wire feeding component.

Chapter 4

Key Operation



1. Power button: It represents the power button of the wire feeder. When powered on, the button will light up the red light.



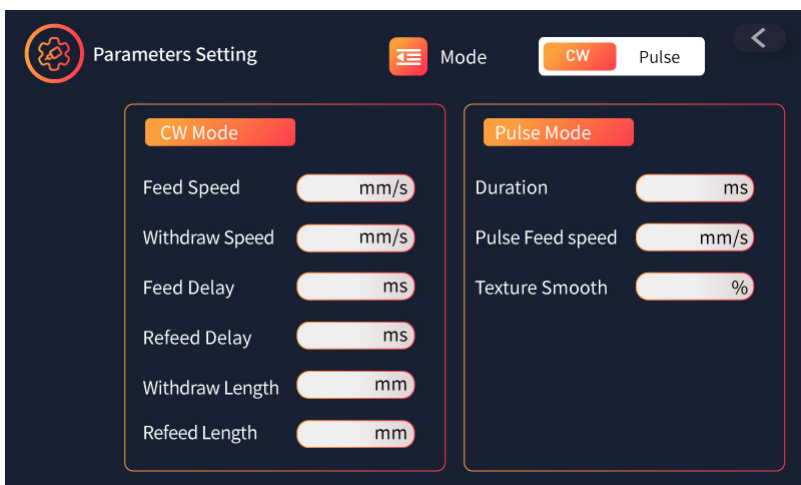
2. Manual wire feeding button: It represents manual wire feeding button, which is usually used for daily debugging. When the button is pressed, the green light will be on, which means wire feeding is underway.




3. Manual pull-back button: It represents the manual drawing button, which is usually used for daily debugging. When the button is pressed, the green light will be lit, indicating that the button is being pull-back.

Chapter 5

Software Operation



Continuous mode:

 Pulse When the continuous mode is selected, the button will display orange, while the unselected mode will display gray. Click the button to switch modes, so as to distinguish the current continuous/pulse mode.

1. Wire feeding speed:

Control wire feeding speed during welding. Range 2-100mm/s, you can click "number" by the number keyboard directly input.

Note: All parameters in this page can be directly clicked by the value, the same below.

2. Pumping speed:

Control after the completion of welding to pull back excess wire, to help realize automatic wire breaking function. Range 2-100mm/s.

3. Wire feeding delay:

Control the delay start time of wire feeder after pressing the trigger of welding gun. The value ranges from 0 to 2000ms. The value is usually set to 0. For example, if the start delay is set to 1000ms, press the trigger of the torch and wait for 1s to start wire feeding.

4. Thread delay:

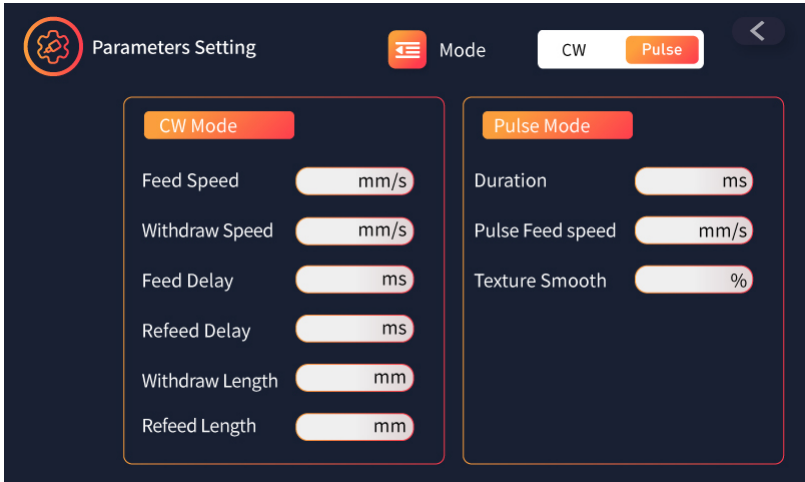
Control the length of the interval between the wire feeder and the compensation wire feeder when the wire is broken, which is used to prevent the welding wire from adhering to the weld for the second time due to the premature compensation wire feeder, so as to improve the wire breaking effect. The value ranges from 0 to 2000ms. This is usually set to 0.

5. Extraction length:

Control the length of the broken wire when the wire feeding machine is pumped back to help the broken wire; The value ranges from 0 to 100mm, and is usually set to 15mm. The value can be increased according to the thickness of the welding wire and the length of the wire feeding tube.

6. Length of tinning:

The length of wire feeding machine is compensated after drawing back when the wire is broken, which is used to compensate the influence of "drawing length" and maintain the consistency of the joint when welding next time. The value ranges from 0 to 100mm. It is usually set to 14mm.



Pulse mode:

cw
 Pulse

When the pulse mode is selected, the button will display orange, while the unselected mode will display gray. Click the button to switch modes, so as to distinguish the current continuous/pulse mode. In the pulse mode, the pulse period, pulse feed speed and pulse smoothness are adjusted to realize the fish scale welding.

1. Pulse cycle:

Control the size of individual fish scales, and the larger the period, the larger the individual fish scales. The value ranges from 50 ms to 1000ms. The value is usually set to 140ms

2. Pulse wire feeding speed:

Average speed in pulse mode to control wire feeding speed during welding. Range 2-100mm/s, you can click "number" directly input by numeric keypad, usually set to 10mm/s.

3. Smoothness:

The smaller the value is, the more obvious the overall effect is. The value ranges from 10 to 80. It is usually set to 20.

4. To sum up, "pulse mode" mainly serves for fishscale welding. The above parameters are reference values. Other keys and parameters are consistent with those in continuous mode. (In pulse mode, automatic pull-back speed, pull-back length, automatic filling speed, filling length, feed delay and filling delay are common with parameters in continuous mode.)

Chapter 6

Maintenance

1. Check regularly:

Check whether the following points are damaged before the wire feeder is put into use:

- (1) Control line and control line plug
- (2) Power supply and wire sending button function
- (3) switch lock buckle

2. Routine maintenance:

(1) Inspection of wire feeding wheel and pressing wheel:

Check the groove part of the wire feeding wheel and the wear condition of the pressing wheel, and there are no impurities in the groove. If the wear is serious, it needs to be replaced in time.

(2) Inspection of wire feeding pipe:

Check whether the connectors at both ends of the wire feed pipe are loose and whether the stainless steel pipe (graphite pipe) is blocked. Use compressed air to clean up the blockage of a small amount of metal chips. If the blockage is serious, replace the wire feed pipe.

(3) Motor check: whether the motor has abnormal sound.

(4) The equipment should be purged and cleaned at least once a month.

Chapter 7

Fault And Treatment

Fault Phenomenon	Cause of Failure	Solution
The welding wire slipped	1. The wire feeding wheel is not pressed tightly 2. The diameter of welding wire and wire feeding wheel groove does not match The welding wire is too bent and is not placed in the wire feeder	1, adjust the screw pressing force to the appropriate strength 2. Replace the appropriate wire feeding wheel 3. Cut off the bent part of the welding wire and place the welding wire correctly in the wire feeding groove
Solder wire indentation is too deep	The welding wire is pressed too hard	Adjust the screw pressing force to the appropriate strength
Plug the welding wire	1. The pressing force of welding wire is too large 2. The resistance of the wire feeding tube is too large or the bending is too large	1, adjust the screw pressing force to the appropriate strength 2, check whether the wire pipe is blocked, there is a blockage can be cleaned with dry compressed air 3. The bending part of the wire feeding tube should be straightened
Bearing rotation is not flexible	1. The welding wire is not pressed 2. Bearing damage	1, adjust the screw compression force 2. Replace the bearing

Abnormal motor operation	1. The carbon brush is loose 2, carbon brush wear serious 3, the motor internal carbon accumulation is too much	Contact after sale processing
Abnormal steering of wire feed wheel	The power cable of the motor is incorrectly connected	Contact after sale processing
On the power supply, there is wire feeding and wire feeding parameters can not be changed	System software error	Contact after sale processing

Chapter 8

Service And Maintenance

1-Maintenance Notes

CAUTION :

- ⦿ No operator serviceable parts inside. Refer all servicing to qualified Maxphotronics personnel.
- ⦿ For ensuring that the repairs or replacement within the warranty scope can be carried out, and perfectly maintaining your interests, please submit application to the Maxphotronics or the local representative after finding the faults. Upon receiving our authorization, you need to pack the product in a suitable package and return it.
- ⦿ You should keep the proof when finding any damage after receiving the product, so as to claim the rights to shippers.

IMPORTANT :

- ⦿ Do not send any product to Maxphotronics without RMA.
- ⦿ If the product is beyond the warranty period or the warranty scope, customers shall be responsible for the repairing cost.

CHANGE :

- ⦿ We have the rights to change any design or structure of our product, and the information is subject to change without notice.

2-Service Statements

More problems regarding the safety, set-up, operation or maintenance please reading this "User Guide" carefully and following the operation steps strictly. Please call the Customer Service Department for other questions.

Please call the Customer Service Department for other questions: 400-900-9588.

Your problems will be follow-up by our technical support group after verified. If the problems cannot be solved , you may need to return the product to Maxphotonics for further troubleshooting.

Chapter 9

Warranty Statements

1-General Items

Maxphotonics Co.,Ltd. carries out warranty for any defect of the product caused by its material and production technology within the warranty period agreed in contract, and ensures that its product meet the relevant quality and specification requirements specified in the document under normal use condition.

Maxphotonics Co.,Ltd. rationally determines to repair or replace the products with faults caused by its material or production technology within the warranty period, and repairs or replacement of all the products within the warranty scope are carried out according to the rest of the warranty period of primary products.

2-Warranty Limitations

Under the following circumstances, the products, parts (including the fiber connectors) or equipment are not within the warranty scope:

- (1) Tampered, opened, detached or reconstructed by personnel outside Maxphotonics;
- (2) Damaged from misuse, neglect or accident;
- (3) Used beyond the specification and technical requirements of the product;
- (4) Indirectly damaged from users' software or interfaces;
- (5) Improper installation or maintenance, or operating under conditions not

included in this manual;

(6) The fittings and the fiber connectors are not included in the warranty scope.

Customers are obligated to understand the information above and operate according to the User Guide and specification, or the faults arising therefrom are not included in the warranty scope.

IMPORTANT :

- ◎ Within the warranty scope, purchasers must feedback within 31 days after finding the product defect.
- ◎ Maxphotonics does not grant any Third Party rights to repair or replace the parts, the equipment or other Maxphotonics products.