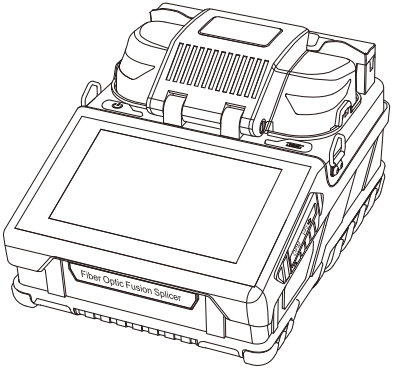
68mm

98mm

USER'S MANUAL



In case of deviation in the picture,
The actual product shall prevail

CONTENTS

Preface 1
Warnings and precautions 1
Technical Parameters 3
Standard configuration 4
Machine introduction 5
Main interface 6
Status bar/Information display area 7
Splicing interface 8
Splice functional area key 9
Detailed icon 10
How to complete a splicing 11
Prepare fiber 11
Place the fiber 13
Protect the splicing point-heating the - thermoplastic tube..... 15
Splice setting 16
Function config 19
User maintenance 21
Brightness correction/Electrode correction 22
Motor calibration/Camera dust test 23
Replace electrode rod 24
System setting 25
splice record 30
VFL function 31
VFL Control panel 31
OPM 32
OPM Control panel 32
OPM calibration mode 33
High splicing loss causes and solutions 34
Error message table 35
Daily maintenance..... 37

Preface

Thank you for purchasing fiber fusion splicing machine produced by our company!
This user manual explains how to install and use the fiber fusion splicing machine to help you as much as possible familiar with the splicing machine operation.

Important!
It is recommended that all users read this manual before using the optical fiber fusion splicing machine

Warnings and precautions

Optical fiber fusion splicing machine (hereinafter referred to as "splicing machine") is designed for fusing silica glass fiber, do not use this equipment for other uses. splicing machine is a very delicate instrument, it should be very careful when carrying. Therefore, you must always observe the following safety regulations and general regulations when using and carrying. Failure to follow the warnings and precautions described anywhere in this manual will violate the safety standards for the design, manufacture and use of the fusion splicing machine. We do not assume any responsibility for the consequences caused by users violating these requirements!

◆Operational safety warning

1. It is forbidden to use the splicing machine in a flammable and explosive environment.
2. Do not touch the electrode rods when the fusion splicing machine is turned on.
3. Except for the parts that are allowed to be replaced by users as stated in this manual, please do not disassemble or assemble any parts of the fusion splicing machine without authorization. Replacement of parts and internal adjustments can only be carried out by authorized maintenance personnel.
4. When connecting the power cable, be careful to remove the cable from the wall socket, do not pull the cable, but hold the plug. It is necessary to ensure that the cables are in good condition to prevent the danger of fire or electric shock.

5. Do not expose the splicing machine fire, electric shock, and rain or humid environment.
6. Use only dedicated charger, use of other adapters may cause damage to the splicing machine.
7. When the fusion splicing machine encounters the following conditions, please immediately turn off the fusion splicing machine, disconnect the charger and remove the battery.
Smoke, odor, abnormal sound or abnormal heating;
Liquid and foreign matter enter the inside of the fusion splicing machine;
Damage or broken;
If you encounter these failures, please contact the repair center immediately. Failure to take measures in time and leave it in a faulty state may cause the machine to be completely scrapped and even cause fire, personal injury or death.

◆Lithium battery inside the fusion splicing machine

The battery in the fusion splicing machine is a special lithium-ion battery. Using other batteries may damage the fusion splicing machine and endanger the personal safety of the user.
1. It is forbidden to disassemble the lithium battery to prevent short circuit;
2. It is forbidden to violently hit the battery, bring the battery close to or throw it into a fire source and strong heat to prevent the lithium battery from exploding.

◆Splicing machine touch screen

1. It is forbidden to click on the touch screen with sharp objects, and do not use force to impact the touch screen.
2. It is forbidden to drip organic solvents or pollutants on the touch screen, such as acetone, engine oil, antifreeze, ointment, etc., otherwise it may cause the LCD screen to work abnormally.
3. Wipe and clean the LCD screen with silk cloth or soft fabric.
4. Depending on the viewing angle of the viewing screen, the brightness of the display will be different.And there may be some black, red, blue or green dots on the screen.These are not the fault LCD display, it is a natural phenomenon.

Warnings and precautions

◆Optical fiber fusion splicing machine transportation and storage

1. When the splicing machine is transferred from a low-temperature environment to a high-temperature environment, try to use a gradual heating method to transfer, otherwise condensation will occur inside the instrument, which will have an adverse effect on the instrument.
2. keep clean and dry splicing machine.
3. When the splicing machine is not working, please place it in a dry environment, avoid direct sunlight or place it in an overheated, dusty, or humid environment.
4. The splicing machine has been precisely adjusted and calibrated. Please try to avoid strong vibration and impact. A special carrying case should be used for storage. For long-distance transportation, a suitable buffer packing box should be added to the outside of the carrying case.

Technical Parameters

Applicable fiber: SMF (G.652), MMF (G.651), DSF (G.653), NZDSF (G.655)
Fiber diameter : Cladding: 80-150μm; Coating: 0.1-3mm
Splice loss: 0.02dB(SMF), 0.01dB(MMF), 0.04dB(DSF/NZDSF) are measured by ITU-I shear method
Alignment method: Core, cladding
Focus mode: Six-motor auto focus
Splicing method: Auto / Manual
Splicing time: 6s (SMF typical value)
Pull test: 1.96-2.25N
Image display: Capacitive 5 inch touch LCD screen
Magnification: 300 (X/Y), 150 (X/Y synchronization)
Splicing records: 10000 groups (2000 pictures)
Typical heating time: 16s(Optional)

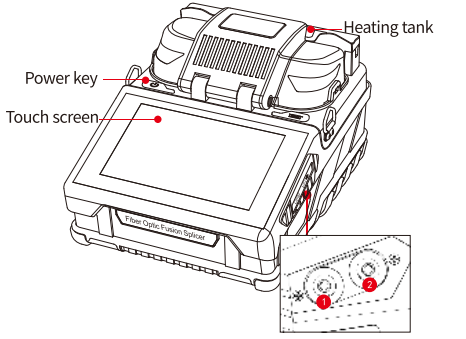
Technical Parameters

Heating time: 0-60s
Heat shrinkable : 20mm、30mm、40mm、50mm、60mm
OPM Range (dBm): -70~+6/Wavelength: 850nm-1625nm/Uncertainty: +/-5%
VFL: ⩾10mW
Operation interface: GUI graphical user operation interface
System upgrade: USB upgrade
Electrode life: 3000 times
Lighting method: Auto / Manual
Battery capacity(option): 5200mAh (Typical value of splicing and heating cycle ⩾180 times) or 7800mAh (Typical value of splicing and heating cycle 240 times)
Charging time: Charging time: ⩽3.5h
Input voltage: DC 11.1V
USB port output: 5V/500mA
Charger : Input: AC 100-240V, 50/60Hz, Output: DC13.5V/4A
Working environment Temperature: -15 °C ~ + 50 °C / Humidity: ⩽95% RH (non-condensing) / Elevation: 0~5000m / wind speed: ⩽15m/ s
Storage conditions Temperature: -40°C~+80°C / Humidity: 0~95% / Battery: -20°C~+30°C
Splicing machine size: L201mm*W148mm*T119mm
Splicing machine weight: 1.81Kg
The data is for reference only. the actual product shall prevail.

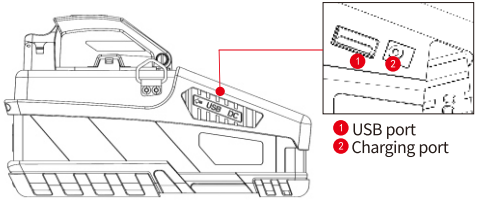
Standard configuration

Standard Configuration: Fusion splicer; shoulder strap (2 types); AC adapter; user manual; certificate of qualification; warranty card.
Optional Accessories: Toolbox; bag; fiber cleaver; electrode; heat shrink tube; fiber stripper; Miller clamp; cleaning brush; calibration fiber; alcohol bottle; spare electrode.

Machine introduction



1 Optical power meter
2 VFL interface



1 USB port
2 Charging port

Main interface



①：Information area ②：Splice Setting ③：User maintenance

④：Status bar ⑤：VFL ⑥：Splice Main key

⑦：Function config ⑧：Splicing record ⑨：System setting

⑩：OPM

Status bar



Status bar

a/Function icon:

- A — Automatic splice mode
- S — Semi-auto
- M — Manual splice mode
- Auto power off function is on
- OPM — OPM open
- VFL — VFL open
- VFL timing function is on
- Bluetooth

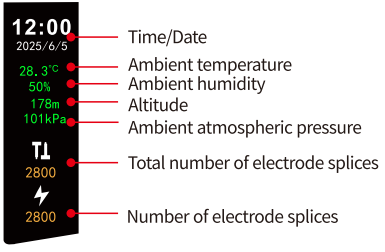
b/Battery status

- Normal state
- Charging status
- Low battery reminder

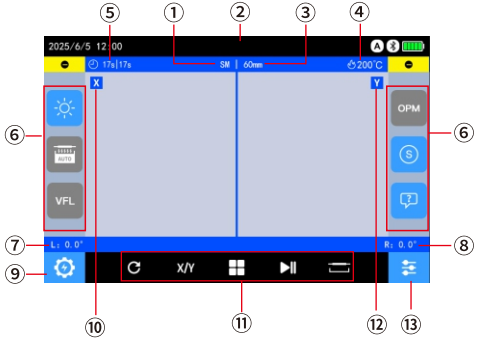
C/ Power supply mode:

- No battery

Information display area



splicinginterface



①: Splice mode ②: Information prompt area

③: Thermoplastic tube type ④: Heat temperature

⑤: Heating time ⑥: Quick control area ⑦: X screen left side Angle

⑧: X screen right side Angle ⑨: Splice settings ⑩: X screen display

⑪: Splice functional area ⑫: Y screen display ⑬: Function config

Note: During the splicing process, the local OPM value is not refreshed, and the function buttons, splice setting, and function configuration in the shortcut control area are all locked and cannot be operated.

splice functional area key

Reset key

The splice interface, press the reset button to reset the motor to the origin.The status bar displays the reset process and results.

XY switch key

X/Y

The splice interface, switchable dual / single screen.

HOME key

In the main screen, pressing the icon can be spliced directly to the interface; in other function interface, pressing the HOME key return directly to the main interface.

Start & Pause key

In the splicing operation mode-manual,press the continue button to start splicing; when the pause is turned on, press the continue button to continue execution. During the splicing process, press the key to pause the current operation.

Heating key

By heating key to start heating the heating tank, the upper left corner splice interface starts counting down the heating time.



Detailed icon

Pre-heating: After opening, automatically start the heater after each successful splicing or opening the wind proof cover.

Tensile test: After opening, Tensile test after each successful splice.

Save images and data: After opening, when the splicing is complete, save the image and data of this splicing.

Save data: After this function is enabled, only the data of this splicing is saved after the splicing is complete.

The end face detection: After opening, the fiber end face does not meet quality requirements, splicing pause, and error prompt.(Set in "splice Mode-Upper Limit of Cutting Angle")

Light - Normally on mode: After opening, the lighting in the V-shaped slot is normally on.

Light - Smart mode: After it is turned on, the light in the V-slot will automatically turn on from 18:00 to 6pm system time.

Angle detection: After opening, if the angle of the fiber end face is greater than the set upper limit, the splicing will be suspended and an error message will be reported.(Set in"splice Mode-Upper Limit of Cutting Angle")

OPM: After opening, the local OPM is opened.(The wavelength can be set in the OPM control panel)

VFL:After turning on, the red light turns on.(Flashing and timing functions can be set on the VFL control panel)

AF: When turned on, automatically adjusting the focal length of the camera to the target value set when splicing.

Loss estimation: After opening, after completion of splicing, the connection loss is calculated based on the light image point, has some deviation from the true value. For reference only, not as the basis for project acceptance.

splicing mode: "A" automatic mode, "S" semi-automatic mode, "M" manual mode.

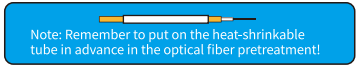
splicing reminder: After the splicing process is turned on, the message prompt area of the status bar will prompt text, and the error pop-up box will prompt.

How to complete a spliceing

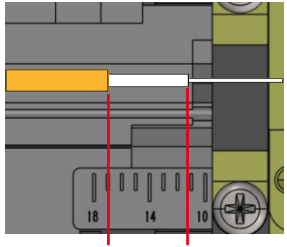
1/Prepare fiber

Operation steps:

①Use a stripper to peel off the sheath to leave at least 30mm bare fiber, and use Miller pliers to remove the coating.
②Clean the optical fiber with tissue paper dipped in alcohol.
③Use a high-precision cutting tool to cut the optical fiber. The cutting length is described as follows:



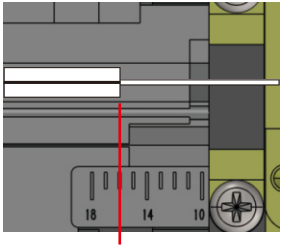




Between rail scale 16-18 Between rail scale 10-12

Leather wire

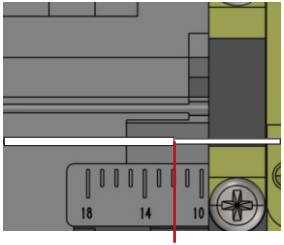




Between rail scale 16-18

Bare fiber





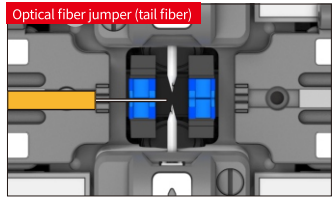
Between rail scale 10-12

2/Place the fiber

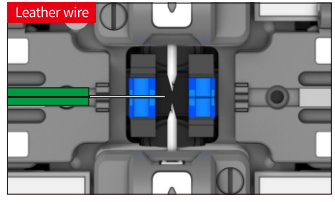
Operation steps:

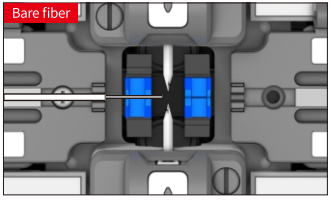
①Open protection cover from optical fiber lid
②Put the prepared fiber into the V-groove, and make sure that the end of the fiber is between the edge of the V-groove and the tip of the electrode (as shown in the figure below).
③After placing it, press the fiber with the fiber cover.
④Place the other end in the same way, close the protection cover from and start splicing.
[splicing operation mode] is [Auto], after closing the protection cover, the splicing starts automatically.
[splice operation mode] is [SemiAuto], after closing the windshield, press the key ▶|| to operate the splicing according to the prompt.

Optical fiber jumper (tail fiber)

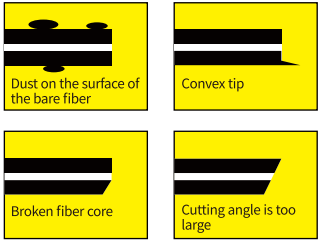


Leather wire





When [End Face Detection] is turned on, the splice will automatically check the fiber for damage and dust particles; If the following conditions are detected in the fiber, please take out the fiber and prepare it again.



Note:

When put fiber, pay attention to putting the fiber into the blue V-shaped groove, and the top of the fiber is close to the center point of the electrode rod. If it is too far away or exceeds the center point of the electrode rod, an error will be displayed.

3/Protect the splicingpoint-heating the thermoplastic tube

Operation steps:

①Open the protection cover, and then open the heating cover of the heating tank.

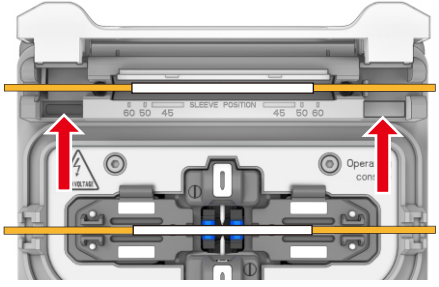
②Open the two optical fiber glands, hold the heat-shrinkable tube, take out the optical fiber, keep it tight, and move the heat-shrinkable tube to the fusion point.

③Move the optical fiber with the heat shrinkable tube into the heating tank.

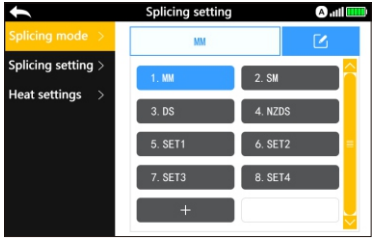
④The upper left corner of the splicing interface, the heating time begins to count down, and the prompt "heating completed" is displayed after completion.

——When [Heating Mode] is [Auto], after closing the heating cover, heating will start automatically.

——When [Heating Mode] is [SemiAuto], after closing the protection cover, press the key to start heating.



Splice Setting



splice mode:

It offers 200 fusion splicing modes, with the option to select four preset modes (MM, SM, DS, NZDS). Additionally, four custom modes (SET1, SET2, SET3, SET4) are provided for custom settings

Numerical modification: The corresponding splicing mode parameters can be modified.

Note: The splicing process can be divided into two main steps: pre-splicingand splicing. We can change the discharge power during splicing by changing the relevant steps. Some parameters are fixed.

The general splicing parameters are described in the following table:

Discharge center: The position of the splicing node where the arc is located during discharge

splice voltage: Used to set the intensity of arc discharge

splice time: The position of the splicing node where the arc is located during discharge

Pre- voltage: Set the discharge voltage from the start of the discharge to the advancement of the fiber

Pre-splice time: Set the discharge time from the start of the discharge to the advancement of the fiber

Clean voltage: It is used to clean the voltage required when the tiny dust on the optical fiber is attached

Clean time: It is used to clean the discharge time required when the tiny dust on the optical fiber is attached

splice overlap: Pre-discharge interference of two optical fibers when setting splicing

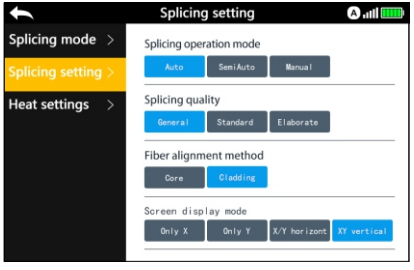
Angle limit: When the cut end angle of either the left or right fiber exceeds the set threshold, an error will be prompted

Target value: Pre-discharge interference of two optical fibers when setting splicing

Loss limit: Set estimate splice loss threshold, and a failure will be prompted when the threshold is exceeded

Reinforce vol: Set the voltage when re-discharge reinforcement is required after the splicing is completed

Reinforce time: Set the discharge time when re-discharge reinforcement is required after the splicing is completed



splice operation mode

Automatic: As long as the protection cover is closed, it will automatically start splicing. The optical fiber should be prepared in advance and put into the fusion splice machine. When enabled, the status bar is displayed A.

SemiAuto:: After the protection cover is covered, press ▶II to start the fiber alignment. After the fiber alignment is completed, the operation is at this time, press ▶II to continue to the next step to complete the splicing.

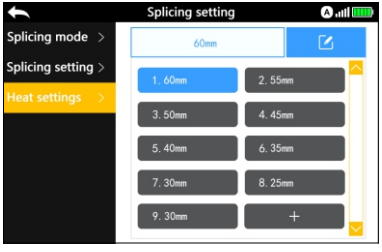
When turned on, the status bar shows. When enabled, the status bar is displayed .

Splicing quality: Set the requirements for fiber end face inspection.

Of fiber mode: Core: Fiber fusion splicing is based on the alignment of the fiber core.

Cladding: Fiber fusion splicing is based on the alignment of the fiber cladding.

Screen display mode: Set the display mode of the optical fiber on the screen during splicing.



Heating mode: Set automatic/manual mode.

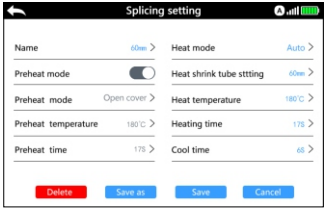
Six different thermoplastic tubes are preset in the fusion splice machine for users to choose; each type can be customized to modify the temperature. Select the best match for the heat-shrinkable used.

Heat temperature: Set the heating temperature (130-230°C).

Heat time: Set the time from the start of heating to the end of heating. Heating time is adjusted according to the ambient temperature independent, lengthen or shorten the heating time(0-60S).

Cool time: After the splicing is completed, the heating tank will not perform heating action within the set time regardless of manual or automatic heating. When it is set to 0, no cooling will be performed(0-60S).

Splicing Setting



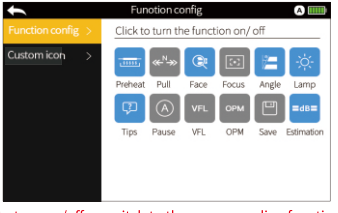
Preheat mode: When it is turned on, after each successful splicing, the heater will automatically start for from the moment the protection cover is opened.

Preheat mode: set after opening the cover/after splicing.

Preheat temperature: Set the preheating temperature between 130-230°C.

Preheat time: Set the warm-up time between 5-30s

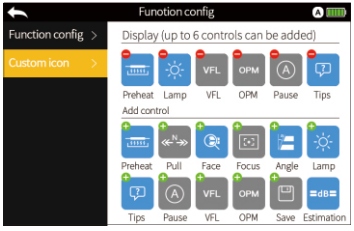
Function configuration



Click to turn on/off or switch to the corresponding function

Color icon: the corresponding function is on.

Gray icon: the corresponding function is closed.



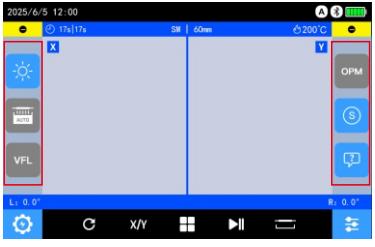
Custom icon

According to the needs of the user, the shortcut control icon of the required function can be displayed in the shortcut control column area at the bottom of the splicing interface by setting here, which is convenient for the user to use.

Click the icon in the display bar to delete the corresponding icon;

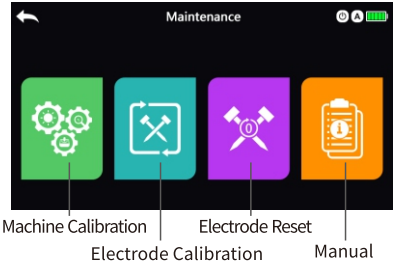
Click the icon in the add bar to add it to the display bar.

The order of icons can be set by deleting and adding.



The icons in the display bar are simultaneously displayed in the shortcut control area under the splicing interface.

User maintenance



Machine Calibration: Brightness calibration; Camera contamination detection; Motor calibration etc.

Brightness calibration: Automatically calibrate the discharge intensity factor and fiber splicing position.

Camera dust test: The splice machine automatically scans the camera image in rows and columns to detect dust and dirt that affect the observation results and may cause poor splicing results.

Motor calibration: Self-calibration motor speed.

Reset electrode count: When the electrode is used 3000 times, it needs to be replaced with a new electrode. After replacement, the count of the old electrode should be cleared and counted again. If the count is not cleared after replacing the electrode, it will prompt "The electrode has reached its limit of use, please update it as soon as possible" every time it is turned on.

Factory mode: You can manually advance the fiber, align the core, focus, splicing, etc., and debug the splice machine.(Only for use by maintenance technicians!)

Brightness correction

Operation steps:

①Select the [User Maintenance] [Machine Calibration].
②Put in the stripped and cut optical fiber according to the prompt, and press the ▶|| key to continue.
③Start the automatic calibration is complete, the prompt "brightness correction success!" Automatic camera dust detection and motor calibration, operate according to prompts.

Electrode correction

When the external environment changes suddenly, the discharge intensity sometimes becomes unstable, resulting in increased splicing loss. Especially when the fusion splice machine moves from a low altitude area to a high altitude, it takes a certain amount of time to stabilize the discharge intensity. Therefore, it is necessary to match the most suitable discharge firepower according to environmental factors such as altitude, temperature, and appropriateness of the place where it is used. In addition, the position of the discharge center sometimes moves to the left or right, causing the fiber splicing position to shift relative to the discharge center. In this case, the splice machine can speed up the process of stabilizing the discharge intensity by correcting the electrode rod to achieve the best splicing effect.

Operation steps:

①Select [Electrode correction] in [User Maintenance].
②It prompts that the electrode rod discharge is stable. If you don't need to press the ▶|| key, ignore it and proceed to the next step. If it takes 5 seconds, it will automatically enter the generator rod discharge stabilization. After completion, proceed to the next step.
③Put in the stripped and cut optical fiber according to the prompt, and press the ▶|| key to continue.
④Calibration is performed automatically. There will be several flickers and slight discharge burns on the display of the fusion splice machine, and the fiber head is burnt into a spherical shape. If it fails after completion, please cut and place the fiber again and repeat the above steps until the calibration is successful. If the prompt is successful, the calibration is complete and close the prompt box to exit.

Note:

①Keep the optical fiber clean, otherwise it will affect the calibration result.
②If the calibration process prompts that the end face of the optical fiber exceeds the limit, you can ignore and continue the operation, but the calibration result will be affected.
③When the electrode discharge is stable, if the optical fiber is placed in the fusion splice machine, the optical fiber must be taken out. After power on, if the electrode stabilization has been performed once, the electrode stabilization will be skipped automatically when the electrode is calibrated again.

Motor calibration

In the later use, the motor speed may be changed due to various reasons. The motor calibration can automatically calibrate the motor speed.

Operation steps:

①Select [Motor Calibration] in [User Maintenance].
②Put in the stripped and cut optical fiber according to the prompt, and press the ▶|| key to continue.
③The speed of all motors will be calibrated automatically. After completion, it will prompt "Motor calibration successful!" Close the prompt box and exit.

Note: The calibration process prompts that the end face of the fiber is out of limit, you can ignore the operation, but it will affect the calibration result.

Camera dust test

Operation steps:

①Select [Camera dust test] in [User Maintenance].
②After entering [Camera dust test], it will automatically detect.
③If an interference point is found during the detection, the corresponding area will display a red dot. After cleaning, perform [Camera dust test]

again until it prompts "no interference point affecting image recognition" is displayed, close the prompt box and exit.

Note: If an optical fiber is placed in the fusion splice machine, the optical fiber must be taken out.

Replace electrode rod

The electrode wears out due to use, so it must be removed regularly according to the degree of oxide accumulation. It is recommended to replace the electrode after 3000 discharges. When the number of electrode discharges reaches 3000 times, the fusion splice machine will prompt "replace electrode".Long-term use without replacing the electrode will cause greater splicing loss and reduce the strength after splicing.

Operation steps



①Loosen the screws fixed on the electrode cover and take out the electrode cover.



②Remove the old electrode rod, install the new electrode rod, and then install the electrode cover back to the original. In the same way, replace the other electrode.

Note:

①To replace the electrode rod, be sure to turn off the fusion splice machine, and replace it only after the fusion splice machine is completely shut down.

②The two electrode caps are different, the one with the LED light is the electrode cap that is in the direction of the screen.

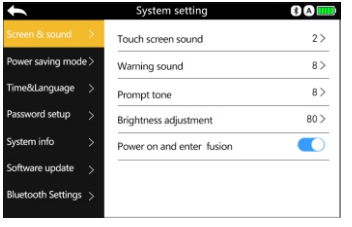
③ When tightening the screws, do not exceed the power of the finger can reach.

④After replacing the electrode, execute [Clear Electrode Count] to clear the splicing times of the old electrode, otherwise the device will give a warning.

⑤After rese ting the electrode rod count to zero, perform electrode rod calibration, otherwise the splicing quality will be affected.-Electrode correction, see page 22-[Electrode correction]

⑥Be sure to use the standard electrode rods of this fusion splice machine. If the equipment is damaged due to the use of electrodes other than the standard fusion splice machine, the warranty service will not be provided.

System setting



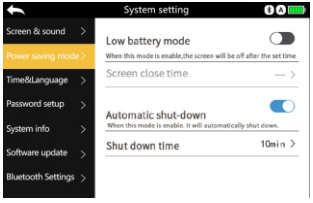
Touch sound: When you tap the screen or press a key.

Warning tone: Error warning tone.

Prompt tone: When a task is started or completed.

Brightness adjustment: Click to adjust the touch display screen brightness.

Power on and enter fusion: When turned on, ignore the startup screen and jump directly to the welding interface.



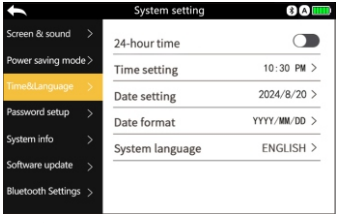
Low power mode: After opening, temporarily close the screen when there is no operation within the set time, click the screen or press any key to wake up.

Automatic shutdown: After opening, the splicing machine will automatically shut down without any operation within the set time to prevent a large loss of battery power, and will prompt a countdown of 60S before shutdown.

Screen off time/Shutdown time:

Screen shutdown time, default 5min, increase or decrease to 1min/ time;

Shutdown time, the default is 20min, increased or reduced to 5min/ time;



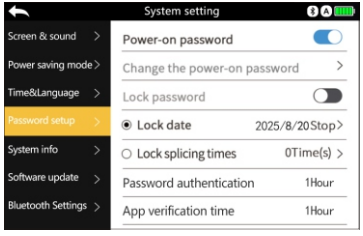
Set system time/date:

Time display mode; modify the system time and date.

System language: Set the language displayed on the screen, and select a

language for display.

Note: If the lock password is turned on, the time setting and period setting will be grayed out and cannot be modified. You must turn off the lock password before you can modify it.



Power-on password:

After turning on, you need to enter the power-on password to operate the splice machine after turning on the system.

Lock password:

After it is turned on, the password that needs to be entered to boot into the system is changed from the original power-on password to the lock password; When the lock condition (lock date/lock splice times) is reached, the system will prompt that it is locked and the splice machine cannot perform splicing operations.(Convenient manager or owner of the period of use of splicing machines or splicing times a means of effective management, application scenarios such as: hire conduct business)

Lock date:

After the lock date is set, the lock password is turned on; the splice machine will automatically lock the splicing interface at the set date (the system time shall prevail).After the lock password is turned on, it cannot be modified. You must turn off the lock password before you can reset it.

Lock splicing times:

After setting the number of lock splices, the lock password is turned on;

the splice interface is automatically locked after the number of splices is reached. After the lock password is turned on, it cannot be modified. You must turn off the lock password before you can reset it.

Power-on password setting steps:

①Turn on the power-on password, after entering the password for the first time, it will automatically jump to the next step;

② Repeat the second password confirmation, if the password is the same, the setting is successful, and if it is inconsistent, repeat the previous step.

Lock password setting steps:

① Lock date:

Click [Lock date], the prompt will appear [Date Setting (1/12)] select the date to be locked and click '✓ '. If you need to set the date multiple times, select it one by one (after setting more than 12 times, directly jump to [Set lease Password (1/12)], if less than 12 times, click 'X' to set the password. After the setting is complete, if the system displays "The system is locked" on the day of the lock, the setting is successful.

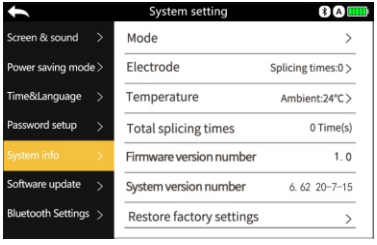
② lock the number of splices:

Click [Lock splicing number], and the prompt [Lock splicing number (1/12)] will appear. Enter the frequency information in the dialog box and click OK (After setting 12 times or more, directly jump to [Set lease password (1/12)]. If less than 12 times, click OK again to set the password.)

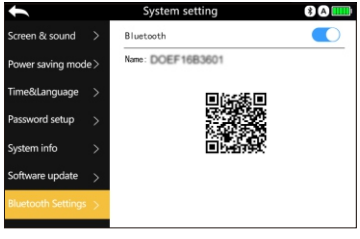
(Note: To turn on the lock password, you must first turn on the power-on password. When the lock password is turned off, enter the power-on password to turn off, and the system will be unlocked after it is turned off.)

Password verification time: Secondary verification time
APP verification time(option): APP secondary verification time

System setting

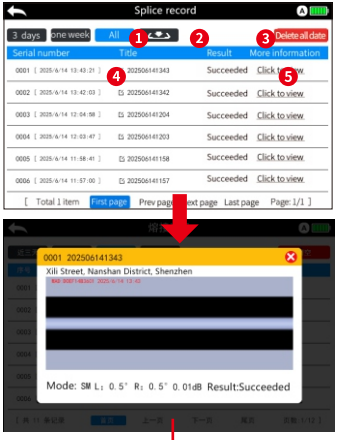


Model: Display information such as the model and manufacturer of the fusion splice machine.
Electrode rod Information: It displays the number of splicing times and the date of replacement of the electrode.
Temperature information: Display the internal temperature and ambient temperature information of the fusion splice machine.



Bluetooth settings(option): Scan the QR code to download the app and connect it to Bluetooth. The instructions can be viewed for app details.

splice record



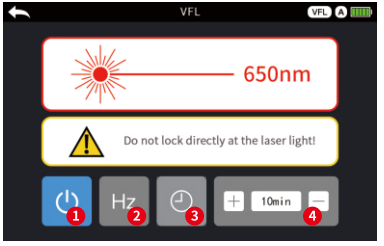
The splice image is shown here

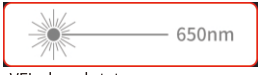
When the save image is turned on, the system automatically saves the splice record and image of each splice. The system can store 10000 splicing records and1000 or 2000 images (option).

①Tap Filter correspond spliced recording period.
②Download the saved splice record
③Clear button: to clear all the splicing data.
④Click here to modify the name of the current splice data.
⑤Click to view: Click to view the saved image and angle information of the splicing.

VFL function (Optional)

VFL control panel





VFL closed state



VFL on state



Close button

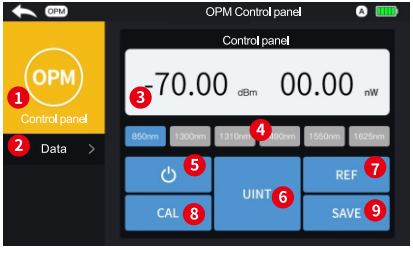


Open button

1. VFL switch button: turn on/off the red light function; (when turned on, the VFL is displayed on the status bar.)
2. Flashing button: Turn on/off the flashing function of VFL; (When turned on, VFL flashes on the status bar.)
3. Timing switch button: Turn on/off the timing function of the VFL; (When it is turned on, 4 the setting panel takes effect and can be set, and the icon on the status bar changes to VFL .)
4. Timing setting panel: Set the length of time that the VFL is automatically closed; (The default is 10minutes, and the VFL is automatically closed after the set time is reached.)

OPM(Optional)

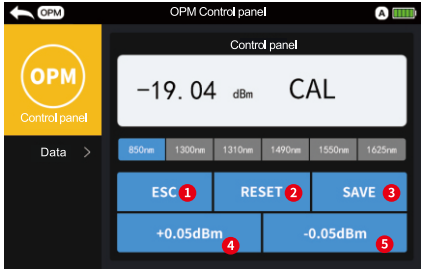
OPM control panel



1. OPM Control Panel: Operationally set table OPM.
2. Data: View deleted saved test data.
3. Numerical display area: Display of current measurement data and related information.
4. Wavelength selection button: Click to select the corresponding wavelength.
5. Switch button: Turn on/off OPM (When opened, OPM is displayed on the status bar).
6. UNIT: Change data display units, Selectable in dBm\dB\uW units in turn, Measurement data will be displayed in the corresponding results, mW, dBm conversion relationship:10log(mW=0(dBm).
7. REF: Set the current test result or locate the reference value, perform relative power measurement, and the display area will display the corresponding dB value.
8. CAL: OPM calibration mode, Calibrate OPM and restore factory settings.
9. SAVE: Save the current measurement data in the data, Display area tips when saving"SAVEDATE".

OPM (Optional)

OPM calibration mode



1. ESC: Exit the calibration mode.
2. RESET: initializes the OPM.
3. SAVE: Confirm to save the calibration value.
4. +0.05dBm: Calibration value +0.05dBm.
5. -0.05dBm: Calibration value -0.05dBm.

Calibration steps:

① After connecting the light source (optical fiber line with known light power or light emitting device), switch to the corresponding wavelength.(Assuming that the optical power of the actual fiber is -19.00dBm, and the measured value of the device is -21.00dBm).

②Through the two keys "+0.05dBm" or "-0.05dBm", adjust -21.00 on the value display area to a value similar to -19.00.

③After the adjustment is completed, press the "SAVE" button to save the currently adjusted value to complete the calibration.

Causes and solutions of high splice loss

Phenomenon	The Reason And Solution
 Axial deviation of fiber core	R: V-groove or fiber taper is dusty C: Clean V-groove or fiber taper
 Core angle error	R: V-groove or fiber taper is dusty C: Clean V-groove or fiber taper
	R: Poor quality of fiber end face C: Check whether the fiber cleaver is working well
 Core bending	R: Poor quality of fiber end face C: Check whether the fiber cleaver is working well
	R: Low pre-melting voltage or short pre-melting time C: Increase [pre-melting voltage] and/or [pre-melting time]
 Mode field diameter mismatch	R: The discharge intensity is too low C: Increase [splicing voltage] and/or [splicing time]
 Dust burning	R: Poor quality of fiber end face C: Check whether the fiber cleaver is working well
	R:The dust is not removed when cleaning the optical fiber or discharge cleaning C: Thoroughly clean the optical fiber or increase [dust removal time]
 Bubble	R: Poor quality of fiber end face C: Check whether the fiber cleaver is working well
	R: Low pre-melting voltage or short pre-melting time C: Increase [pre-melting voltage] and/or [pre-melting time]
 Fiber separation	R: The amount of fiber advancement is too small C: Carry out [Motor calibration]
	R: Strong pre-melting voltage or long pre-melting time C: Reduce [pre-melting voltage] and/or [pre-melting time]

Phenomenon	The Reason And Solution
 Too thicK	R: The amount of fiber advancement is too large C: Reduce [splicing stacking amount] and perform [Motor calibration]
 Too thicK	R: Inadequate discharge intensity C: Carry out [Electrode correction]
	R: Some discharge parameters are inappropriate C: Adjust [pre-melting voltage] [pre-melting time] or [splicing stacking amount]
 splice line	R: Some discharge parameters are inappropriate C: Adjust [pre-melting voltage] [pre-melting time] or [splicing stacking amount]

Note: When different optical fibers (different diameters) or multimode optical fibers are spliced, sometimes a vertical line will be generated at the splicing point. We call it a "splice line", which will does not affect the splicing quality (splicing loss and splicing strength).

Error message table

In the process of using the fusion splice machine, if an error message appears on the screen, please refer to the handling method in the following table. If the problem cannot be solved, the fusion splice machine may be malfunctioning, please contact your agent.

Error message	The reason	Solution
The current use environment temperature is too high/low, it may cause the equipment to be unable to use normally and automatically shut down, serious may cause damage!	Exceed the use temperature	Change the use environment

Error message	The reason	Solution
Camera failure	The camera chip is malfunctioning	Contact an agent
The internal temperature is too high!	The circuit board works abnormally	Shut down in time and contact the agent
System locked	Over lease conditions	Change rental conditions/turn off lock password
splicingfailure	Attenuation exceeds the system set threshold	Adjust the attenuation threshold or re-spliceing
It is detected that the camera has multiple interference points (marked by the red square), which will affect the recognition of the image and cause the splicing failure. Please deal with it in time!	The V-groove has fibers or the lens is dirty	Take out the optical fiber or use a special cotton swab to stick medical alcohol clockwise to clean the lens
Brightness correction failed!	The lens lighting is abnormal	Contact an agent
Please re-released fiber!	Both fiber end faces are out of standard/no fiber is detected/fiber is placed beyond the fusion splicing centerline	Decrease splicing quality/re-cut fiber/replace fiber
Left/right motor reset failed	Motor or motor sensor failure	Reset or contact the agent
Motor calibration failed!	Motor failure	Recalibrate or contact agent
Left/right fiber end face overrun	The fiber end face exceeds the standard	Reduce splicingquality or re-cut fiber
Please replay left/right fiber	The fiber position is too far away	Reposition the fiber after reset
AF failure	Zoom motor timeout	Re-splicing or contact agent
The current calibration failed, please re-calibrate the fiber	The environment has changed too much	Multiple calibration
Left/right fiber angle exceeds limit	Exceed the maximum angle value set by the system	Lower the angle threshold or re-cut fiber

Daily maintenance

The fiber positioning groove, electrode and objective lens must be kept clean, and the dust cover should be closed when not in operation.

1. Cleaning of V-groove

If there are contaminants in the V-shaped groove, the fiber cannot be placed correctly, which will increase the fiber alignment error or fail the fiber alignment, resulting in increased splicing loss or failure of splicing. Therefore, in normal work, you should always check the V-groove and clean the V-groove regularly.

Proceed as follows:

(1) Open the dust cover, first use a brush to remove most of the dust and debris.

(2) If the contaminant is relatively firm, use a cotton swab dipped in a small amount of alcohol to wipe it.

(3) Use a cut optical fiber or a thin blade to push the contaminants out of the V-shaped groove in one direction, and then brush it with a brush.

(4) Press the reset button once.

2. If the objective lens becomes dirty, the imaging of the optical fiber may be affected, which may cause errors in optical fiber identification, incorrect fiber alignment, failure to splice, or poor splicing. Therefore, the lenses of the two objective lenses should be cleaned regularly, otherwise the dust will accumulate and eventually cannot be removed.

Proceed as follows:

(1) Before cleaning the lens of the objective lens, turn off the power first.

(2) Gently wipe the lens of the objective lens with a fine cotton swab dipped in a small amount of alcohol. Use a cotton swab to wipe from the middle of the lens and make a circular movement until the edge of the lens is unscrewed. Then wipe off the remaining alcohol with a clean dry cotton swab.

(3) Turn on the power and make sure that no dust and stripes are visible on the LCD screen.

Manual version is subject to change without notice.

Version: V1.0