ShinewayTech®
Dependable Partner for Future Networks

OFS-120

Optical Fiber Fusion Splicer

User Manual

PLEASE READ THIS INSTRUCTION MANUAL CAREFULLY BEFORE OPERATING THE EQUIPMENT.

ADHERE TO ALL SAFETY INSTRUCTIONS AND WARNINGS CONTAINED IN THIS MANUAL.

KEEP THIS MANUAL IN A SAFE PLACE.

SHINEWAY TECHNOLOGIES, INC

CE FC

Preface

Thank you for purchasing ShinewayTech® product. Please read this manual carefully before using any of ShinewayTech® products. Always observe the warnings and cautions appearing throughout this manual.

This manual contains the necessary information for proper operation and maintenance of ShinewayTech® OFS-120 Optical Fiber Fusion Splicer, troubleshooting instructions, technical support and services.

ShinewayTech® OFS-120 Optical Fiber Fusion Splicer is carefully assembled and undergoes a rigorous mechanical, electrical, and optical inspection prior to shipment. For detailed packing information, please refer to the packing list.

Upon receiving the instrument, please check for any obvious signs of physical damage that may have occurred during shipment. Report any damage to the shipping agent or the representative of Shineway Technologies, Inc. immediately. Keep the original packing materials in case reshipment becomes necessary.

If necessary, please contact us via email: support@shinewaytech.com.

The splicer has been designed for splicing Silica-based optical fibers for telecommunications. Do not attempt to use this machine for other applications. ShinewayTech Inc. gives much consideration and regard to personal injury. Misuse of the machine may result in electric shock, fire and/or serious personal injury.

Follow all safety instructions

Read and understand all safety instructions and warnings.

Stop using it when it malfunctions

Ask our service centers for repair as soon as possible.

Instruction Manual

Read this instruction manual carefully before operating this machine.
Please keep this instruction manual in a safe place

Notices

Warranty

The material contained in this document is subject to change without notice. Shineway Technologies, Inc. makes no warranty of any kind with regard to this material, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. Shineway Technologies, Inc. shall not be liable for errors contained herein or for incidental or consequential damages in connection with furnishing, performance, or use of this material.
The battery is a consumable part and is not subject to the warranty.

ISO9001 Certification

The product exactly conforms to ISO9001 International Quality System Standard.

Safety Instructions

During each stage of operation of this instrument, please always follow safety instructions. Not taking any safety precautions or following the instructions will violate the safety standards of design, manufacturing and application of these instruments. In no case will Shineway Technologies bear the responsibilities for consequences incurred by violation of the following instructions.

General

This product is a Safety Class 3 instrument. The protective features of this product may be ineffective if it is used in a manner not specified in the operation instrument.

Environmental Conditions

It is designed to operate at a maximum relative humidity of 95% and at altitudes of up to 5000 meters. For more details, please refer to the specifications tables.

Before Connecting the Power

Verify that the product is set to match the available power supply voltage, the correct fuse is installed, and all safety precautions are taken.

Do Not Operate in an Explosive Atmosphere

Do not operate the instrument in the presence of flammable gases or fumes.

Do Not Remove the Instrument Cover

Operator must not remove instrument covers. Component replacement and internal adjustments must be made only by qualified service personnel.

Safety Terms Used in This Manual

WARNING!	The WARNING sign denotes a hazard. It calls attention to a procedure, practice or similar situations, if not correctly performed or adhered to, could result in personnel injury. Do not proceed beyond a WARNING sign until the indicated conditions are fully understood and met.
CAUTION!	The CAUTION sign denotes a hazard. It calls attention to a procedure, practice or similar situations, if not correctly performed or adhered to, could result in damage to or destruction of part or the entire product. Do not precede beyond a CAUTION sign until the indicated conditions are fully understood and met.
NOTE	The NOTE sign information that may be beneficial during the use and maintenance of the instrument。

WARNING!

OFS-120 has been designed for splicing Silica-based optical fibers for telecommunications. Do not attempt to use this machine for other applications. Shineway Technologies, Inc. gives much consideration and regard to personal injury. Misuse of the machine may result in electric shock, fire and/or serious personal injury, so please:

a) Follow all safety instructions.

b) Stop using it when it malfunctions and ask our service centers for repair as soon as possible.

c) Read this instruction manual carefully before operating this machine.

Disconnect the AC power cord immediately if user observes the following or if the splicer receives the following faults:

a) Fumes, bad smell, noise, or over-heat occurs.
b) Liquid or foreign matter falls into cabinet.
c) Splicer is damaged or broken.

If this occurs, ask our service center for repair. Leaving the splicer in a damaged state may cause equipment failure, electric shock or fire and may result in personal injury, death or fire.

Only use the AC adapter / battery charger designed for this splicer. Using an improper AC power source may cause fuming, electric shock or equipment damage and may result in personal injury, death or fire.

Do not disassemble or modify the splicer, AC adapter or battery. In particular, do not remove or bypass any electrical or mechanical device (e.g. a fuse or safety switch) incorporated into the design and manufacturing of this equipment. Modification could cause damage that may result in personal injury, death, electric shock or fire.

Never operate the splicer in an environment where flammable liquids or vapors exist. Risk of dangerous fire or explosion could result from the splicer's electrical ARC in such an environment.

Do not use compressed gas or canned air to clean the splicer. They may contain flammable materials that could ignite during the electrical discharge.

Do not touch the electrodes when the splicer is on and power is supplied to the unit. The high voltage and high temperatures generated by electrodes may cause a severe shock or burn.
NOTE: ARC discharge stops when wind protector is opened.

Turn the splicer off and disconnect the AC power cord before replacing electrodes.

Safety glasses should always be worn during fiber preparation and splicing operation. Fiber fragments can be extremely dangerous if it comes into contact

with the eye, skin, or is ingested.

Use only proper power source.

a) Check the AC power source before use: Proper AC power source is AC100-240V, 50-60Hz. Proper DC power source is DC10-12.6V. Improper AC or DC power source may cause fuming, electric shock or equipment damage and may result in personal injury, death or fire;

b) AC power generators normally produce abnormally high AC output voltage or irregular frequencies. Measure the output AC voltage with a tester before connecting the AC power cord. Such abnormally high voltage or frequency from a generator may cause fuming, electric shock or equipment damage and may result in personal injury, death or fire. Make sure the generator is regularly checked and serviced.

Do not modify, abuse, heat or excessively pull on the supplied AC cord. The use of a damaged cord may cause fuming, electric shock or equipment damage and may result in personal injury, death or fire.

OFS-120 uses a three-prong (core) AC cord that contains an earthed ground safety mechanism. The splicer MUST be grounded. Use only the supplied three-prong (core) AC power cord. NEVER use a two-prong (core) power cord, extension cable or plug.

Connect AC power cord properly to the splicer (inlet) and wall socket (outlet). When plug the AC plug, make sure there is no dust or dirt on the terminals. Engage by pressing the female plug into the splicer (inlet) and the male plug into the wall socket (outlet) until both plugs are fully seated. Incomplete engagement may cause fuming, electric shock or equipment damage and may result in personal injury, death or fire.

Do not short-circuit the terminals of AC adapter and battery. Excessive electrical current may cause personal injury due to fumes, electric shock and equipment damage.

Do not touch the splicer, AC power cord and AC plugs with wet hands. This may result in electric shock.

Do not operate splicer near hot objects, in hot temperature environments, in dusty/humid atmospheres or when water-condensation is present on the splicer. This may result in electric shock, splicer malfunction or poor splicing performance.

When using Li-ion battery, follow the instructions below. Failure to follow these may result in explosion or personal injury.

a) Do not charge battery with other methods than instructed.
b) Do not discard battery into an incinerator or fire.
c) Do not charge or discharge battery near a flame or under direct sunlight.
d) Do not subject the battery to severe vibration;
e) If battery leaks of liquid residue, be careful handling the battery so the liquid does not get in skin or eye contact. If it reaches contact, immediately wash skin or eyes thoroughly and see the doctor. Dispose of the battery and call the service center for replacement.
f) If charge did not complete in four hours or the "CHARGE" LED is constantly on, immediately stop charging and call the service center for repair.

CAUTION!

Do not store the splicer in any environment with excessive temperature and humidity, otherwise it may cause damage to the equipment.

Do not touch protection sleeve or tube-heater during heating or immediately after heating. Their surfaces are very hot and touching these may result in skin burn.

Do not place the splicer in an unstable or unbalanced position, otherwise the

splicer may move and lose balance and fall, causing personal injury and machine damage.

The splicer is precision adjusted and aligned. Do not allow the unit to receive a strong shock or impact. Possible equipment failure may result. Use supplied carrying case for transportation and storage. The carrying case protects the splicer from damage, moisture, vibration and shock during storage and transportation.

Follow the below listed instructions for handling electrodes.

a) Use only specified electrodes.
b) Correctly replace the electrode.
c) Replace the electrodes in pairs.

Failure to follow the above instructions will cause abnormal discharge, reducing splicing performance and even damage to the machine.

Do not use any chemical other than pure alcohol (99% or greater) to clean the objective lens, V-groove, mirror, LCD monitor, etc., of the splicer. Otherwise blurring, discoloration, damage or deterioration may result.

The splicer requires no lubrication. Oil or grease may degrade the splicing performance and damage the splicer.

The splicer must be repaired or adjusted by a qualified technician or engineer. Incorrect repair may cause fire or electric shock. Should any problems arise, please contact your nearest sales agency.

Content

Introduction

- **Manual Contents**

Thank you for choosing our products. Please read this manual carefully before using any machine, especially the warning and caution information, so as to avoid user injury or instrument damage due to incorrect use.

This manual contains necessary information for proper operation and maintenance of ShinewayTech® OFS-120 series optical fusion splicer, as well as troubleshooting guide and various information for obtaining technical support and service.

ShinewayTech® OFS-120 series optical fusion splicer is a product carefully developed and produced by our company, and has passed strict quality control procedures such as mechanical, electronic and optical inspection before leaving the factory. Along with the splicer packaging, it also includes a data cable, power adapter, and this user manual. See the packing list for details.

Upon receiving the instrument, please check for any obvious signs of physical damage that may have occurred during shipment. Report any damage to the shipping agent or the representative of Shineway Technologies, Inc. immediately. Keep the original packing materials in case reshipment becomes necessary.

- **Product unpacking inspection**

This product is packed in boxes in accordance with standard assembly and shipping procedures. After you receive the meter, please check it carefully according to the list in the box. If you find that the materials in the box are not complete, and the product has any signs of physical damage or is not working properly, please contact the company's agent in time to solve it.

When necessary, you can contact the company directly via email: supprt@shinewaytech.com

➢ Description of Products

ShinewayTech® OFS-120 Optical Fusion Splicer is for fiber fusion with low splice loss and ensures splice long-time stabilization. Splice loss depends on certain conditions like fiber preparation, splicing parameters, fiber condition, variation after splicing and etc.

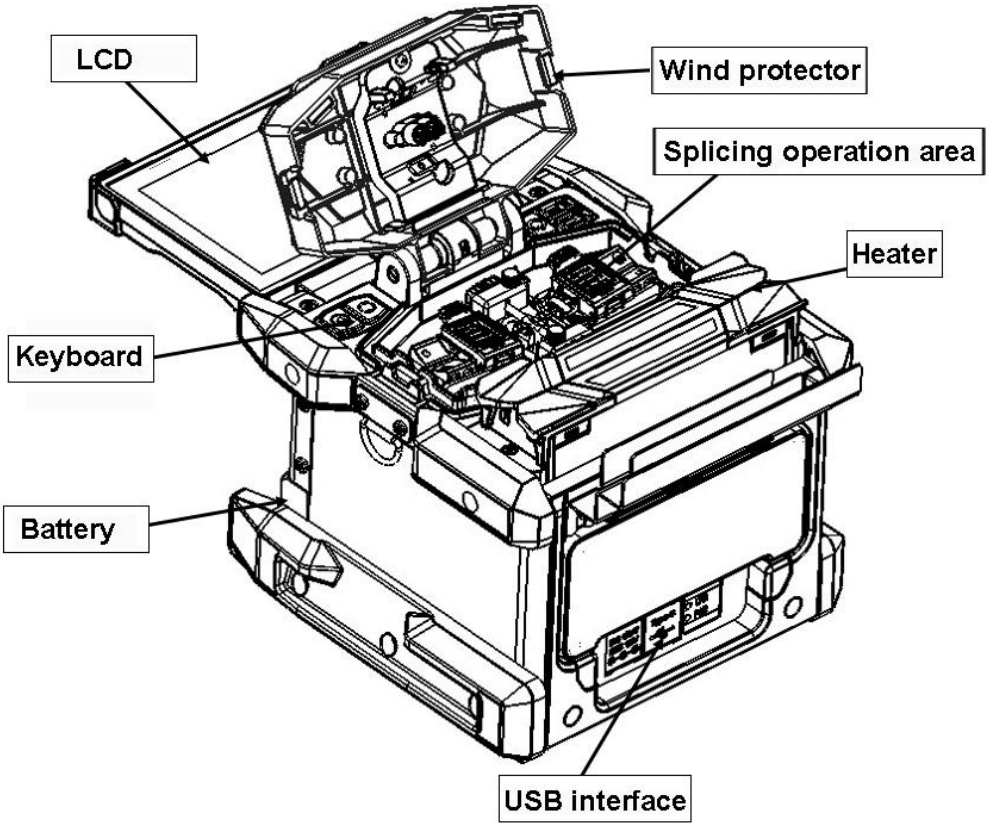
The standard principle of splicing is not complicated, firstly the splicer finds the fiber core and aligns it correctly, and then it splices the fiber with the ARC generated by the electrodes. There are two major technologies to ensure high-quality splice, LID (Local Injection and Detection) and CDS (Core Detection System), which is also widely known as PAS (Profile Alignment System).

OFS-120 with PAS technology is designed for splicing many types of optical fibers. It is small in size and light in weight, making it suitable for any operating environment. It is easy to operate and it splices fast while maintaining low splice loss.
In order to complete the splicing operation more accurately, please read this instruction manual carefully.

2. Basic structure

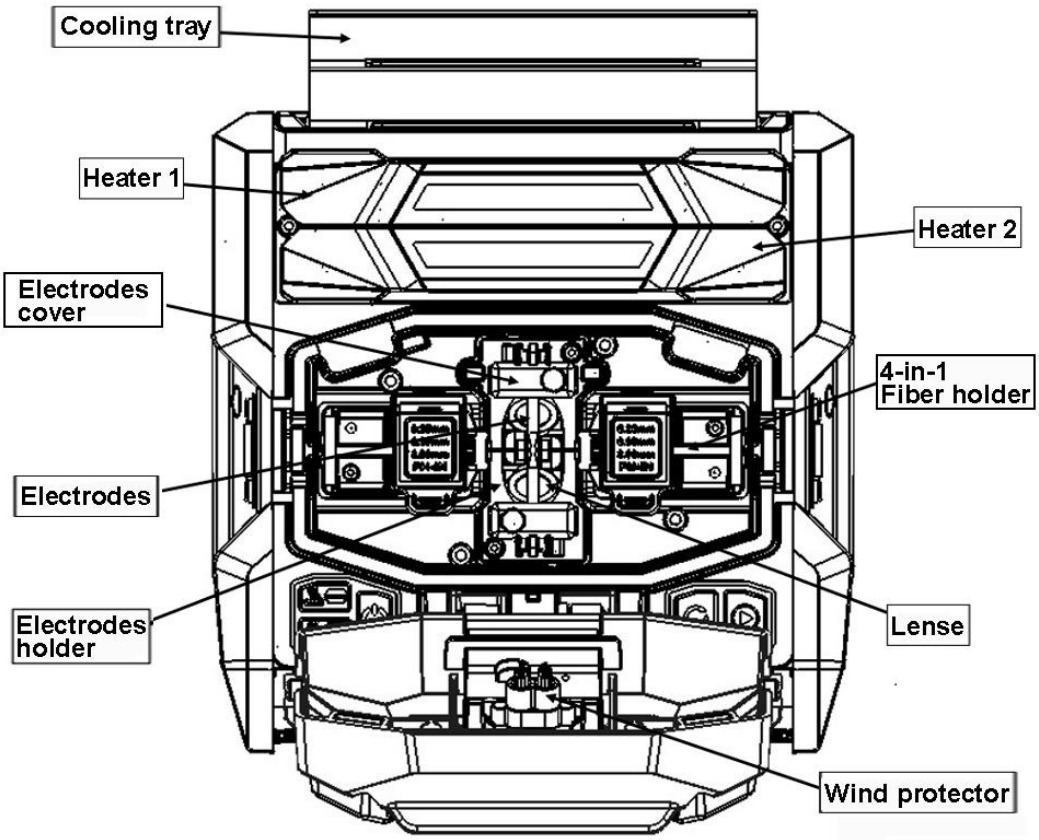
2.1 Outlook of Splicer

2.2 Description and Function of Splicer

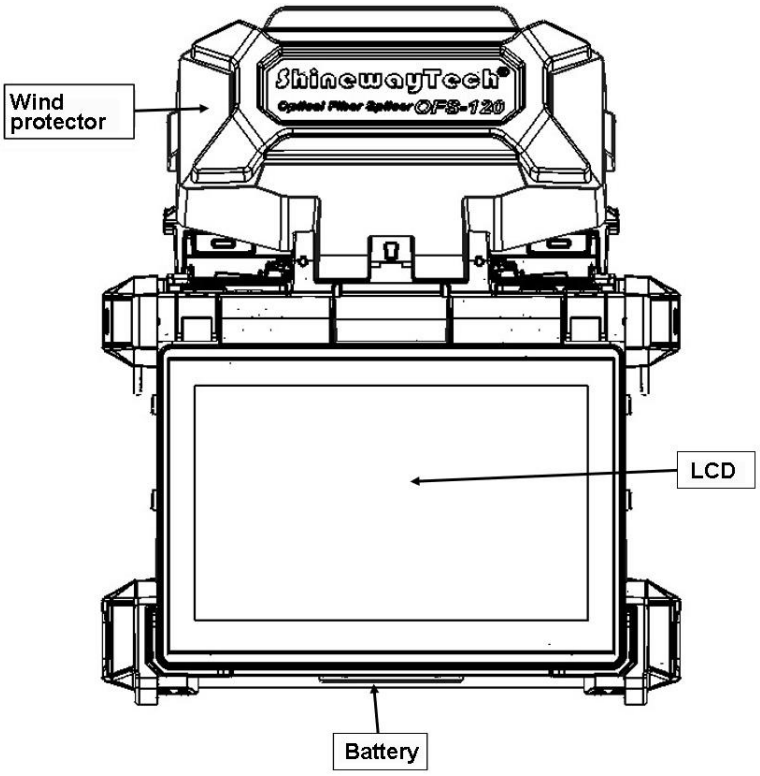


2.3 Components of OFS-120 Splicer

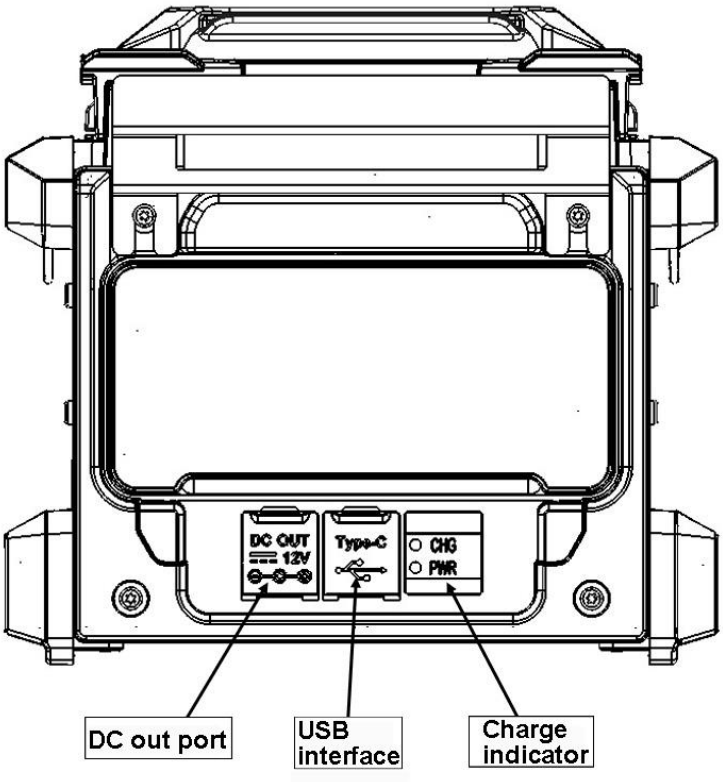
- **Top View**



➢ **Front View**

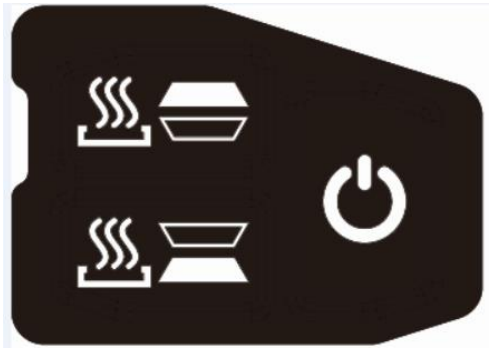


➢ **Back View**



➢ Keypad

Physical Keypad



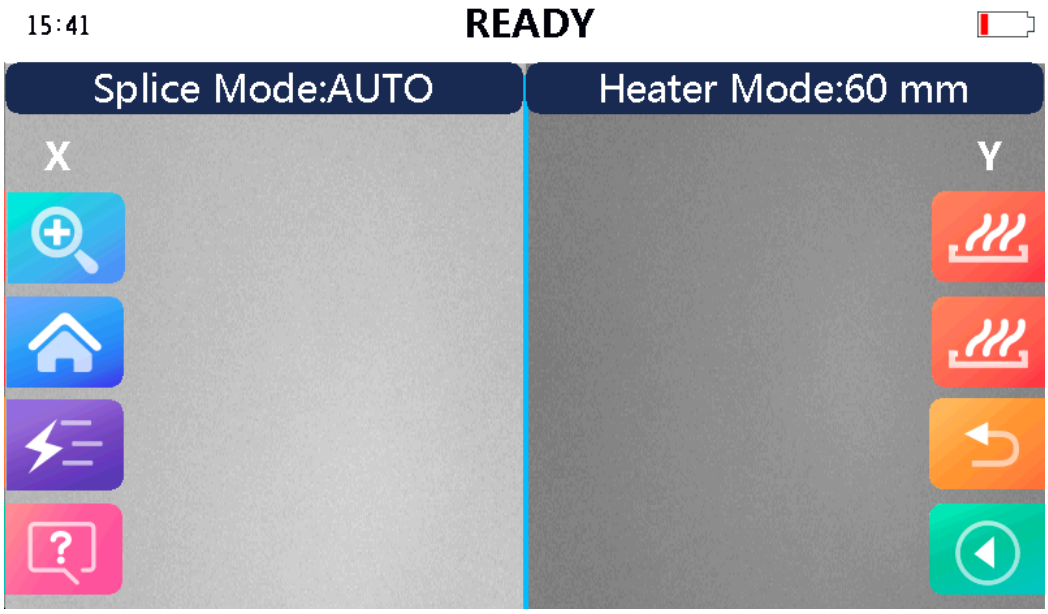
Left keypad

Right keypad

Functions of Physical Keypad

Left keypad		**Right Keypad**	
	Power On/Off (Press for 3 seconds)		Splice
	Heater 1		Reset
	Heater 2		

Touch Screen Keypad



screen

Functions of Touch Screen Keypad

	Zoom		Heat of Heater 1
	Main menu		Heat of Heater 2
	Discharge		Reset
	Help		Splice

3. Basic Operation

3.1 Preparation for splicing

3.1.1 Power connection

- **Inserting Power Supply into Splicer**

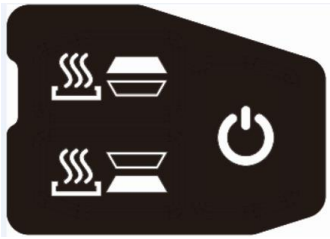
OFS-120 can be powered by external power adaptor or battery: One is to plug the external power adapter into the DC input port to provide power for the splicer; the other is when there is a battery installed, the battery provides power to the splicer and can charge the lithium battery when working.

a) Install battery: Insert battery into power unit dock until it clicks into place.
b) Detaching battery: Turn off the splicer, open the waterproof cover, and remove the battery.

- **Two ways to check remaining battery capacity：**

a) If battery is installed in the splicer, turn on the splicer. Power source of “Battery” is automatically identified and the remaining battery capacity is displayed on the "READY" screen.
b) Or press battery check button on the battery pack. The remaining battery capacity is indicated on the LED indicator.

3.1.2 Turn on fusion splicer

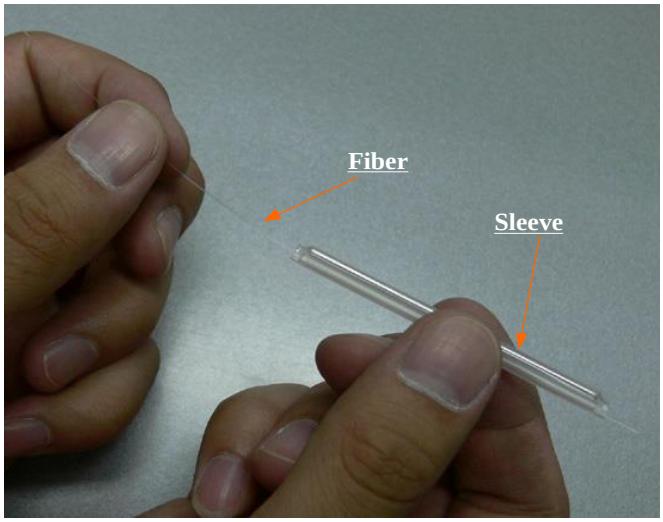


Press [] and hold it for 3 s till the screen is on. The “READY” screen is displayed after all the motors reset to their initial positions. The power source type is automatically identified. If the battery is used, the remaining battery capacity is displayed.

3.2 Fiber preparation

3.2.1 Placing protection sleeve over fiber

Clean optical fiber with lint-free tissue or cotton dipped in alcohol for approximately 100mm from the end. Place the protection sleeve over the fiber.

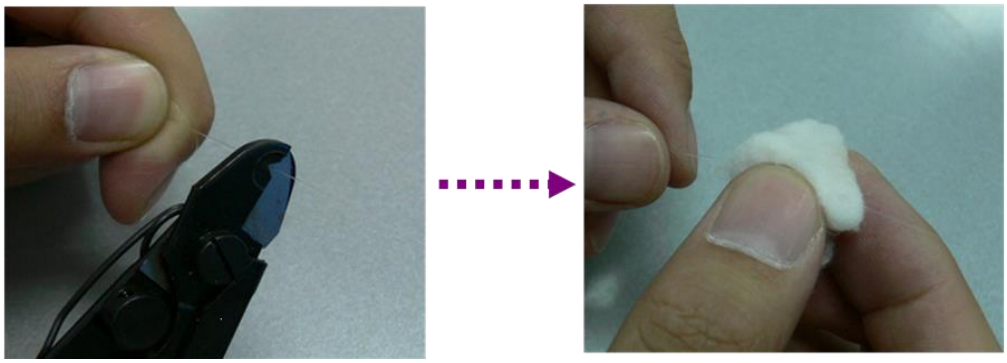


CAUTION!

- Clean optical fiber with lint-free tissue or cotton dipped in alcohol. Dust particulates can enter inside the protection sleeve and might result in a future fiber break or attenuation increase.
- Make sure fiber is passed into the protection sleeve.
- When protection sleeve core tube is longer than the length of outer sheath, the excess part should be cut off to avoid micro bend after heating.

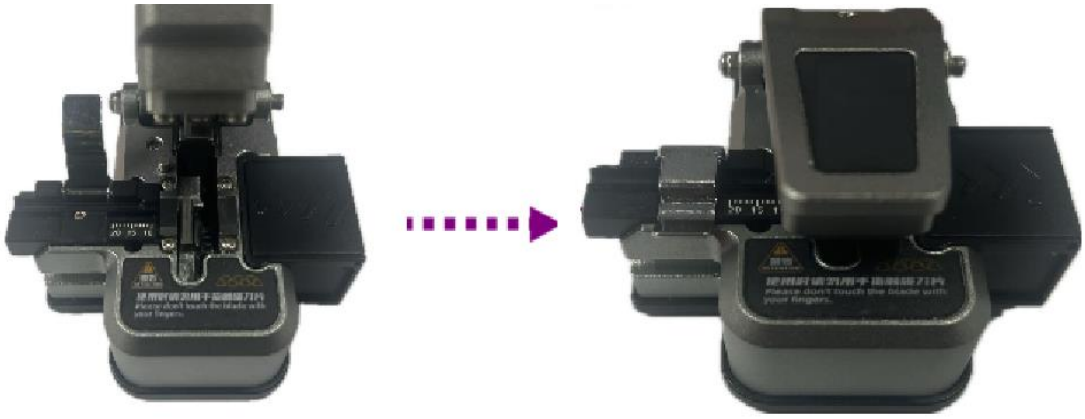
3.2.2 Stripping and cleaning fiber

Strip fiber's outer coating for 30 to 40 mm with a stripping tool. Clean the fiber with lint-free tissue or cotton dipped in alcohol (Purity ≥99%) thoroughly.



3.2.3 Fiber cleaving

When cutting the fiber, pay attention to the cutting length. The cutting length is 10-16mm. (The cutting length of the coating layer is greater than 250um is 16mm. After cutting, do not let the fiber end-face touch anything to avoid polluting the optical fiber.

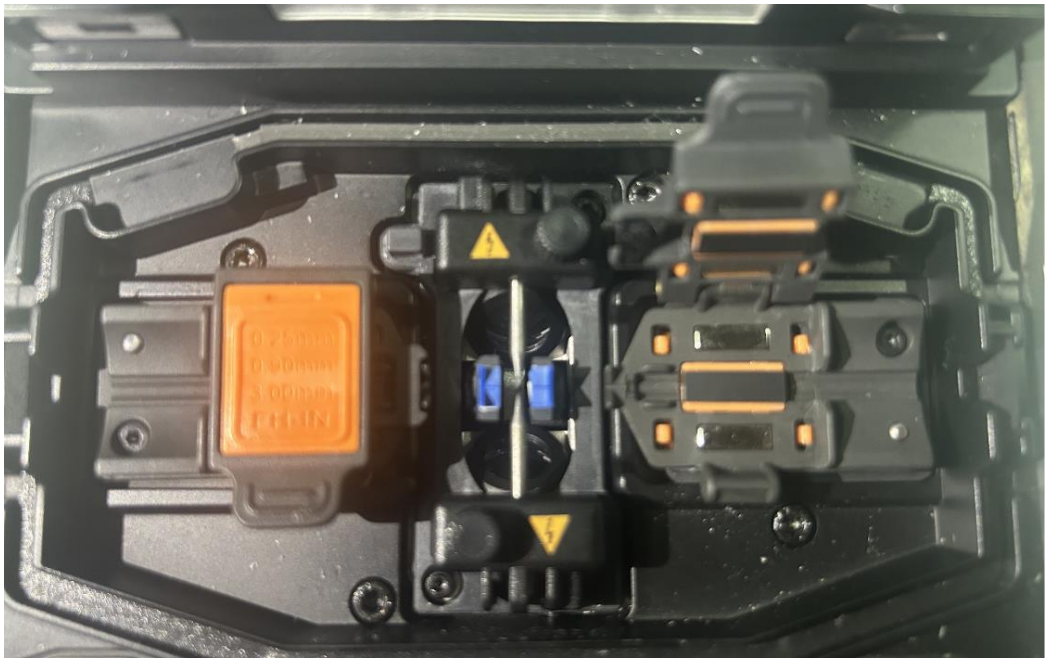


3.2.4 Loading fiber to splicer

a) Open wind protector and clamp of fiber holder.

b) Place prepared fiber onto v-groove so that the fiber end is located between the v-groove edge and tip of electrode.

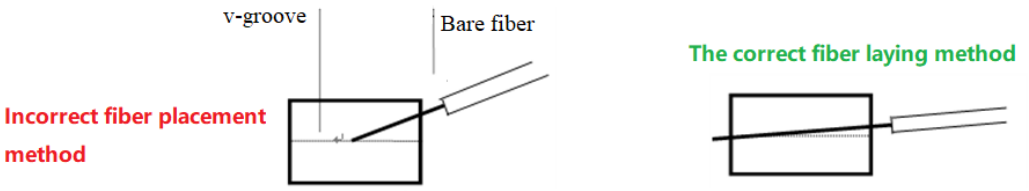
c) Hold fiber with fingers and close clamp of fiber holder so that the fiber does not move. Make sure the fiber is placed in the bottom of the v-grooves. If fiber is not placed properly, reload the fiber again.



d) Load another fiber in the same manner as above step.

e) Close wind protector.

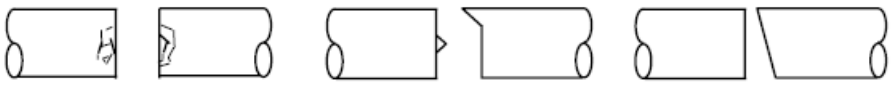
CAUTION!



3.3 Splicing operation

To assure a good splice, the optical fiber is observed with the image processing system equipped in the OFS-120. However, there are some cases when the image processing system cannot detect a faulty splice. Visual inspection with the monitor is often necessary for better splicing result. Procedure below describes standard operating procedure.

a) After fibers are loaded in the splicer, press  button and fibers move forward toward each other. The fiber forwarding motion stops at a certain position shortly after the cleaning ARC is performed. Next, the cleave angle and end-face quality are checked. If the measured cleave angle greater than its set threshold or fiber error is detected, the beep will sound and an error message warns the operator. The splicing procedure pauses. If no error message is displayed, the below stated end-face conditions are used for visual inspection. If any, remove the fiber from the splicer and repeat fiber preparation. These visual defects may cause a faulty splice.



Defect **glitch** **Bevel**

b) After fiber inspection, the fibers are aligned core-to-core or cladding-to-cladding. Cladding axis offset and core axis offset measurements can be displayed.

c) After completion of fiber alignment, ARC discharge is performed to splice the fibers.

d) Estimated splice loss is displayed upon completion of splicing. Splice loss is affected by certain factors stated in following page. These factors are taken into account to calculate or estimate splice loss. The calculation is based on certain dimensional parameters, such as MFD. If either the cleave angle measured or the estimated splice loss exceeds its set threshold, an error message is displayed. If the spliced fiber is

detected as abnormal, such as "Fat", "Thin" or "Bubble", an error message is displayed. If no error message is displayed but the splice looks poor by visual inspection through the monitor, it is strongly recommended to repeat the splice from the beginning.

NOTE

- Splice point sometimes looks a bit bigger than other parts. This is considered a normal splice, and does not affect splice loss.
- To change threshold for estimated splice loss or cleave angle, see [Splice Mode] for details.
- Splice loss may be improved in some cases by additional ARC discharges. Press  button for an additional ARC discharge (re-arc). Splice loss estimate and splice check are performed again. Splice loss may be worsened in some cases by additional ARC discharges (re-arcs). Additional ARC discharge can be set to "disabled", or limited to the number of additional ARCs.
- Splicing result is automatically saved in splicer memory

3.4 Heat protection sleeve

a) Transfer fiber with protection sleeve to tube heater. Protection sleeve is placed in the center of the heater.

b) Place fiber with protection sleeve in the middle of heater, close the heater lid, then press  button to start heating process.

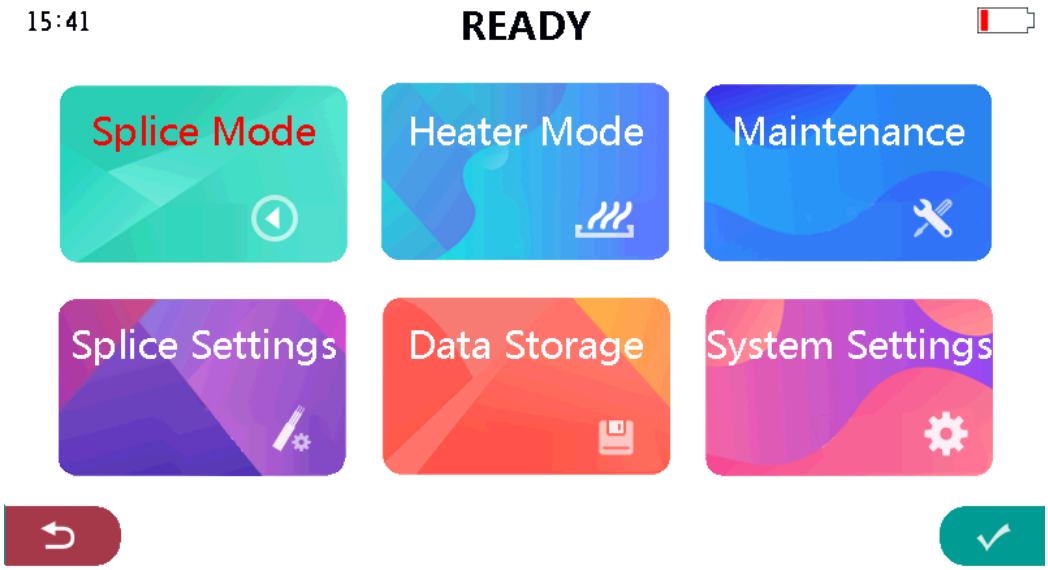
NOTE

- Make sure the splice point is located at the center of the protection sleeve.
- Make sure the strength member in the protection sleeve is placed downwards.

- Make sure no fiber twist.
- Press  button to start heating. The beep sounds and the HEAT LED turn off when heating is completed.
- Open the heater lid and remove protected fiber from the tube heater. Apply some tension to the fiber while removing it from the heater.
- Visually inspect the finished sleeve to verify no bubbles or debris/dust is present in the sleeve.
- During operation, avoid touching the high-temperature parts of the splicer to avoid burns.

4. Menu Operation

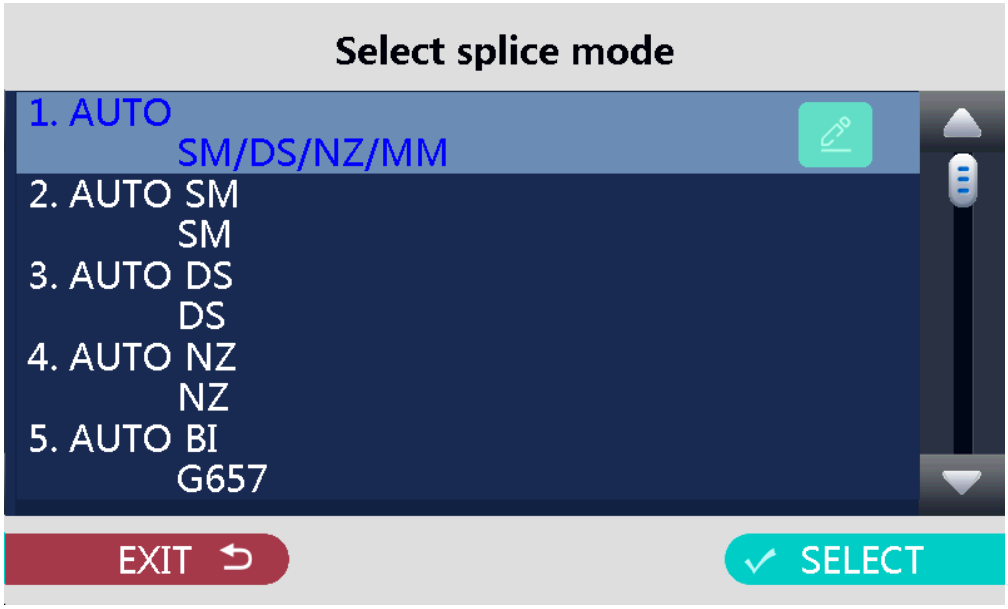
Press  button to enter splicer menu, there are six main menus: “Splice Mode”, “Heater Mode”, “ Maintenance”, “Splice Settings”“Data Storage”, and “System Settings” as shown below:



4.1 Splice Mode Menu

A. Splice Mode

In the main menu as shown above, press “Splice Mode” to enter as shown below:



Select a suitable splicing mode according to the type of fiber to be spliced.

Select the splice mode by  and click 

to confirm the selection.

It is recommended to select "1 AUTO SM / NZ / DS / MM" mode for normal operation. In this mode, the splicer automatically adjusts the splicing parameters according to the condition of the fiber to be spliced, which is easy to operate.

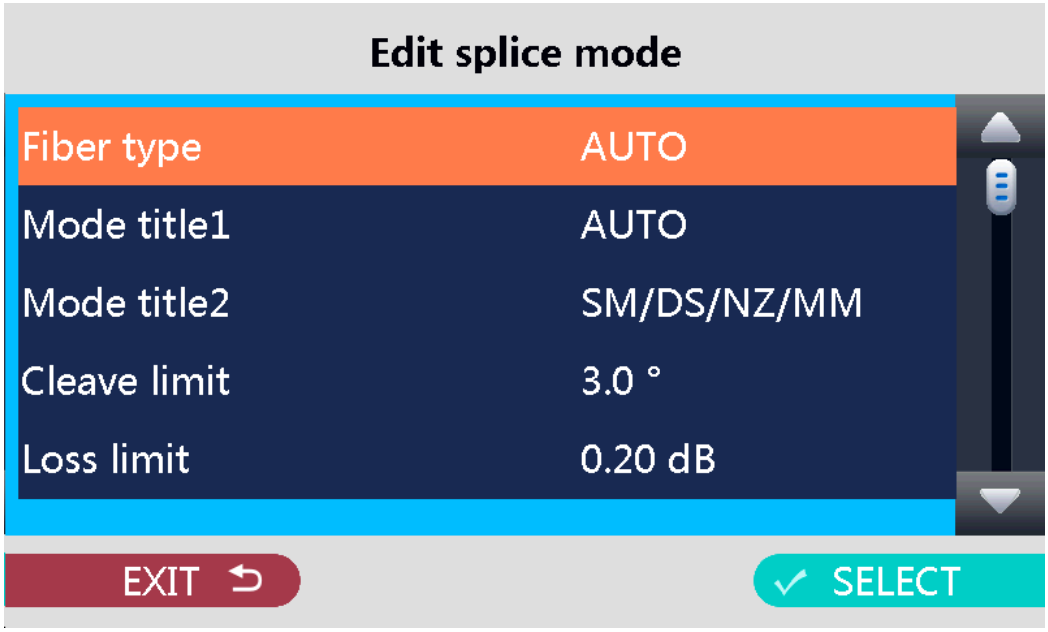
Splice mode description:

Mode No.	Splice Mode	Description
1	AUTO	The splicer will automatically adjust splice parameters according to fiber type in most cases. Automatic ARC calibration works in this splice mode.
2	8~240	Multiple splicing modes can be edited by the user.

B. Edit splice mode

Splicing parameters in each splice mode is editable.

In [Select splice mode] menu, press  button to enter "Edit splice mode" and modify splice mode as shown below:



Press  button to select the item to be edited, press  button to enter parameter setting.

Press  button to edit parameter, press  button to confirm.

In AUTO mode, certain parameters cannot be changed.

Edit splice mode parameters and meaning

Parameter	Description
Fiber type	List of fiber type and splice mode stored in database is displayed and selectable.
Mode Title1	Max. length of title1 for a splice mode is up to 10 characters.
Mode Title2	Max. length of title2 for a splice mode is up to 10 characters. Title2 is displayed in the [Select splice mode] menu.
Cleave limit	Set cleave limit. An error message is displayed if the cleave angle of either the left or right fiber ends exceeds the selected threshold.
Loss limit	An error message is displayed if the estimated splice loss exceeds the threshold .
ARC power	In SM/DS/MM/NZ/AUTO modes, the ARC Power is fixed at 10 bits.
ARC Time	ARC Time is fixed at 1800 ms for SM, 2000 ms for DS, NZ and MM mode. This is automatically set depending on the fiber type when AUTO mode is selected.
Cleaning ARC	A cleaning ARC burns out micro dust on the surface of the fiber with an ARC discharge for a short period of time. The duration of the cleaning ARC can be changed by this parameter.
Rearc Time	Splice loss may be improved by an additional “rearc” discharge in some cases. The duration of this additional ARC can be changed by this parameter.

4.2 Heater Mode

There are 30 user-programmable heater modes. Select one best suitable for the protection sleeve to be used before heating.

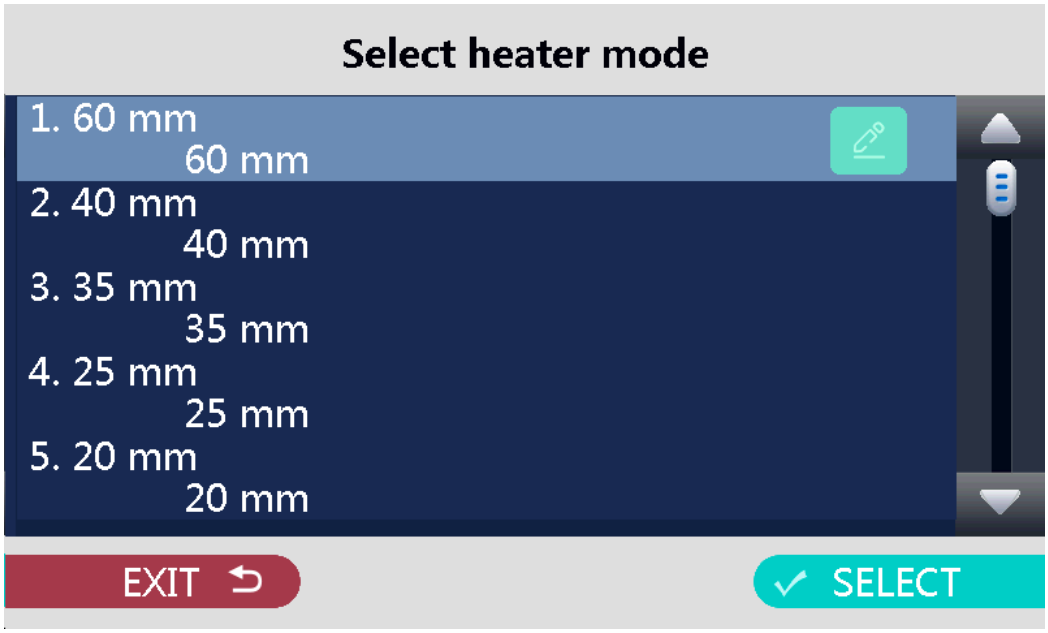
There is a most suitable heater mode can be selectable for each type of protection sleeve. These modes can be found in database area for reference. The appropriate heater mode can be selected and copied to the user-programmable area. The heater mode can then be edited in the editable field.

A. Select heater mode

In main menu, press 

button to enter “Select heater mode”.

Select the heater mode which most suits for the protection sleeve to be used.



Press  button to select a heater mode, press 

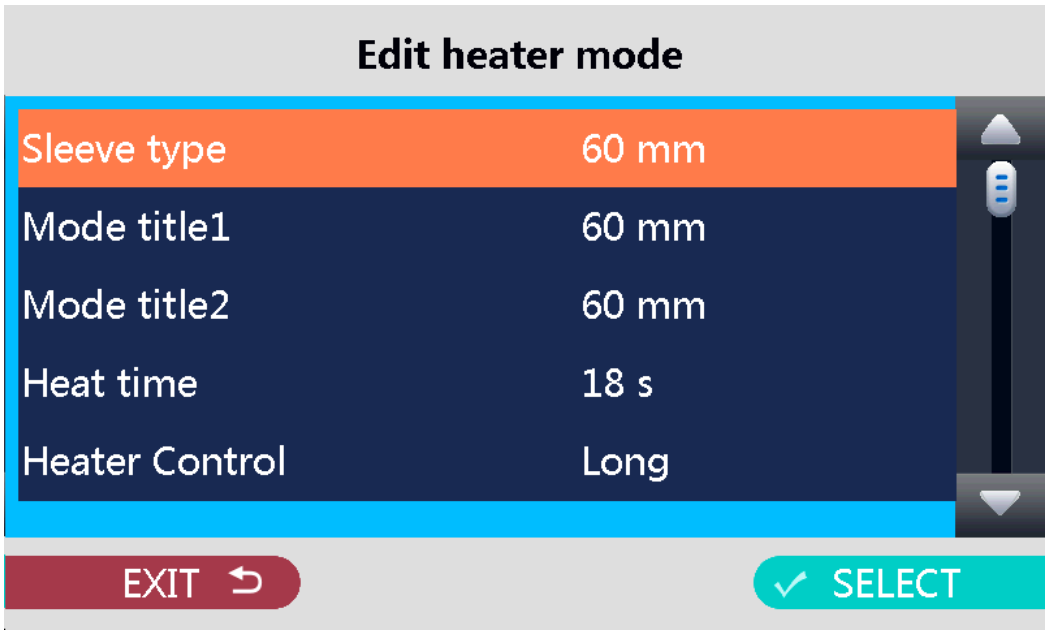
button to confirm.

B. Edit Heater Mode

The heating conditions stored in heater mode can be edited or changed.
Editable parameters include: Heat Time, Heat Temp (heat temperature) and etc. Heat Time will automatically adjust according to atmospheric conditions e.g: ambient temperature. The real heat time may vary from set heat time.
Set Heat Temperature. Fiber coating may melt if heat temperature is over 190℃.

Set Finish Temp (Finish Temperature). When heater approaches this temperature the beep announces the sleeve is cooled down and is ready to be taken out of the heater.

In "Select heater mode", press  button to enter "Edit heater mode" menu as shown below:



Press  button to select the item to be modified, press  button to enter parameter setting.

Press  button to modify parameter, press  button to confirm.

Edit heater mode parameters and meaning

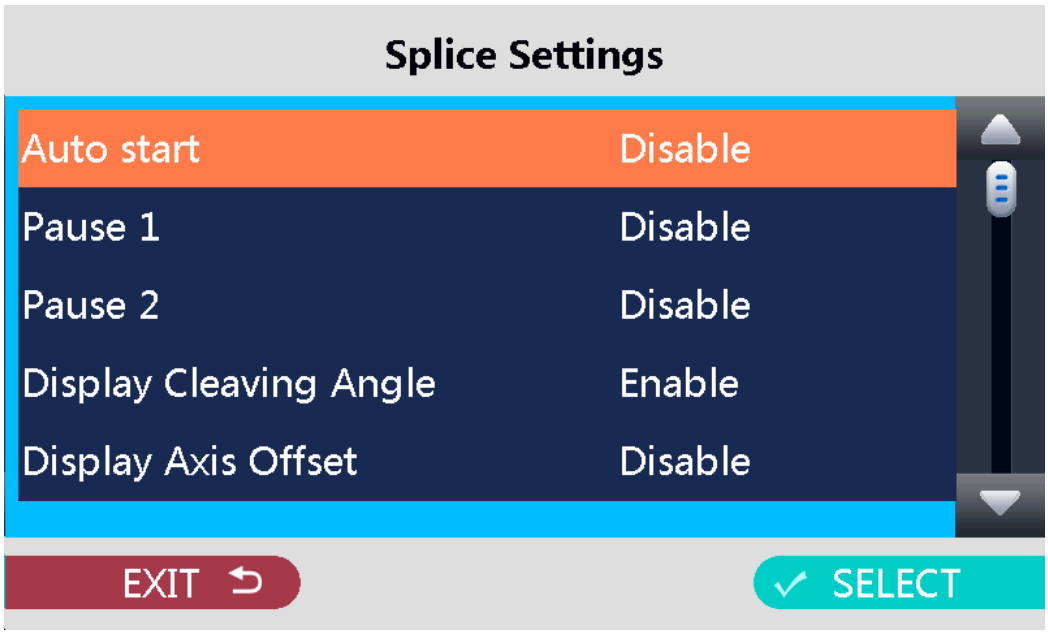
Parameter	Description
Sleeve type	20mm, 25mm, 35mm, 40mm, 60mm
Mode Title 1	Display information on Edit heater mode page
Mode Title 2	Display information on Edit heater mode page
Heat time	0-240s adjustable
Heater ontrol	Long tube, medium tube, micro tube
Center heat TEMP	100-230° adjustable
L-R heat TEMP	100-230° adjustable
Cool Time	0-100s adjustable
Heater mode	Center edge, Center

4.3 Splice Settings

Splice Settings include: Auto Start, Pause, Cleave Angle Display and etc.

In main menu, press 

button to enter "Splice Settings" as shown below.



Press  button to select the item to be modified, press 

button to enter parameter setting.

Press  button to modify the parameter and press 

button to confirm.

Splice settings parameters and meaning

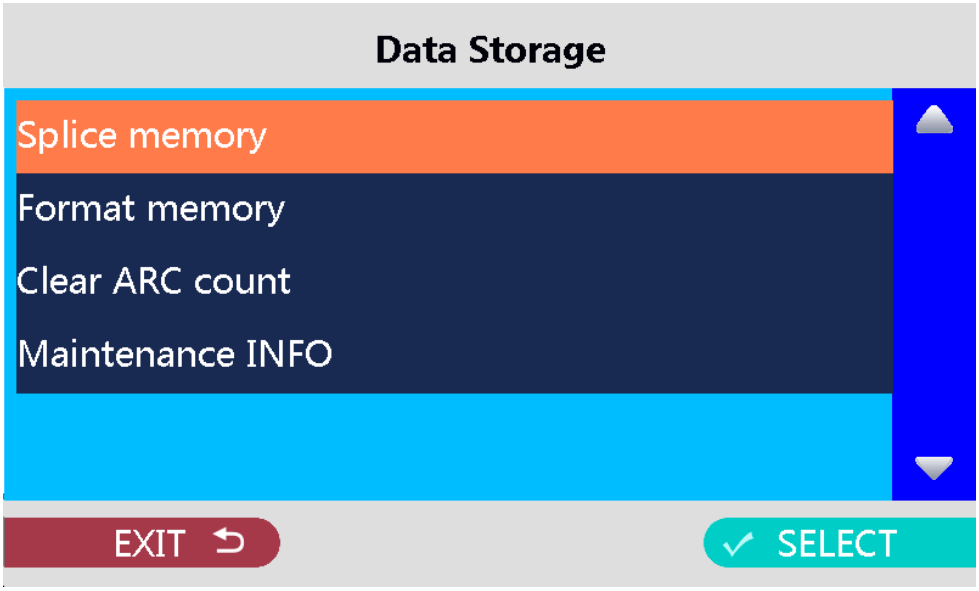
Parameter	Description
Auto start	Can automatically start the splicing process after closing the wind protector
Pause 1	This allows the splicer to stop after the fiber gap setting operation is completed so that the operator can view information such as the fiber end face and fiber image.
Pause 2	The splicer will stop after the fiber alignment is completed so that the operator can check and adjust the alignment of the fiber.
Display cleaving angle	The splicer can analyze and display the cut angle of the optical fiber end face, which is critical to ensure the quality of splicing.
Display axis offset	The splicer can detect and display the axial deviation of the fiber

	core during the splicing process, which is crucial to ensure the quality of the splicing.
Display loss	The splicer can provide an estimated loss value after splicing is completed.
Cleave limit	When the end face angle of the left and right optical fibers exceeds the limit value, the screen will display an error message.
Axis offset limit	During the splicing process, the axial offset of the clad and the core will be displayed, so that the operator can intuitively see the alignment of the optical fiber and make adjustments accordingly.
Auto fiber forward	During the splicing process, the optical fiber is automatically pushed to the appropriate position of the splicer and waits for the splicing operation.
Realign after pause 2	When the splicer detects that the fiber alignment is not good during the "Pause 2" stage, it automatically triggers the realignment process.
Max. number of rearcs	In the splicing completion interface, the user can perform additional ARC to obtain better splicing result if needed; the number of additional ARC can be set between 0 and 20 times.
Adjust ARC position	Can automatically adjust the arcing position, so the arcing can act accurately on the joint of two optical fibers to be spliced, thus achieving high-quality splicing.
Display fiber type	Can automatically identify various types of optical fibers and select the corresponding splicing program.
Self diagnose	Can automatically detect parameters such as motor, ARC, dust, ambient temperature, etc. to determine whether the splice is working fine.
Align	Can choose clad or core alignment
ECF	Mainly for optical fibers with large concentricity deviation, to obtain better splicing loss
ARC compensation	The splicer automatically adjusts the ARC parameters (current, time) according to different fiber types, environmental conditions, electrode status and other factors.
Auto fusion parameter	Can automatically select or adjust the best splicing parameters according to the type and characteristics of the optical fiber.

4.4 Data Save

In main menu, press 

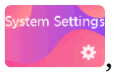
to enter “Data Storage” menu as shown below.



Data storage parameters and meaning

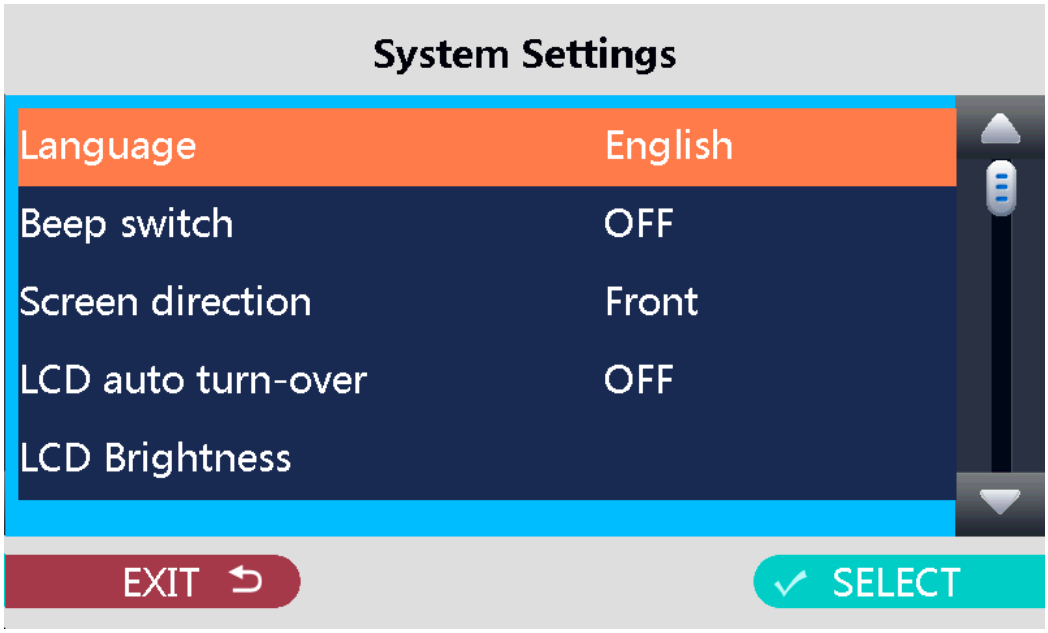
Parameter	Description
Splice memory	This splicer can store 20480 splicing results. In the options, you can view or delete the stored records as needed, and you can also export the splicing records.
Format memory	Formatting the memory can clear all the splicing data and records saved in the splicer, including splicing results, pictures, etc.
Clear ARC count	In this option, you can also view the fusion count. After replacing new electrodes, you can clear the records before.
Maintenance INFO	Displays total fusion count, software version, serial number, etc.

4.5 System Settings

In 

, press  button to select required item, and press 

button to enter and confirm the selected option.

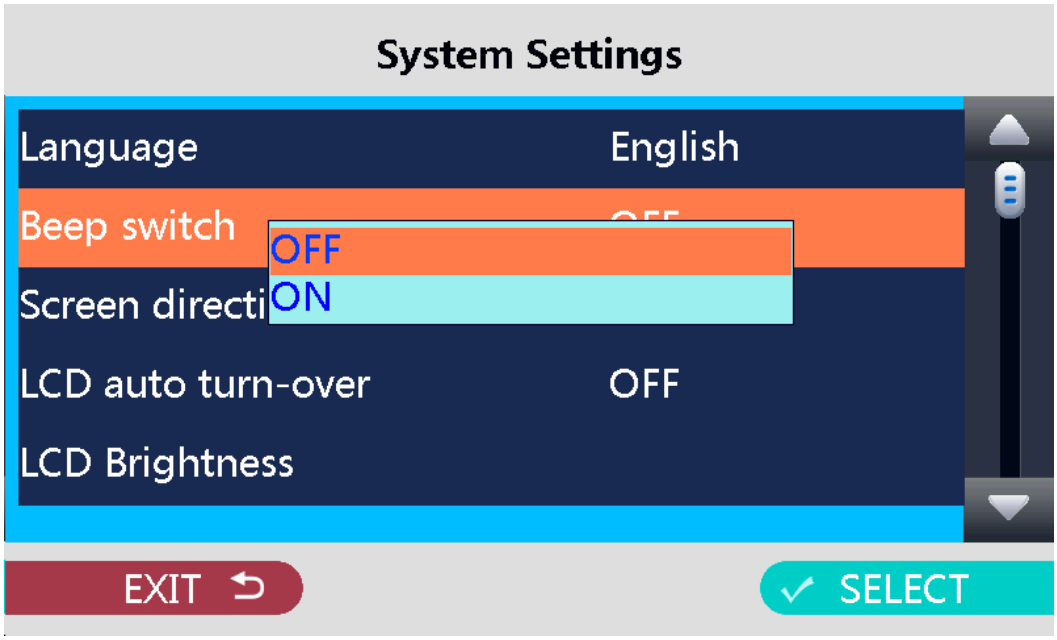


4.5.1 Language

Multiple languages are available in this splicer.

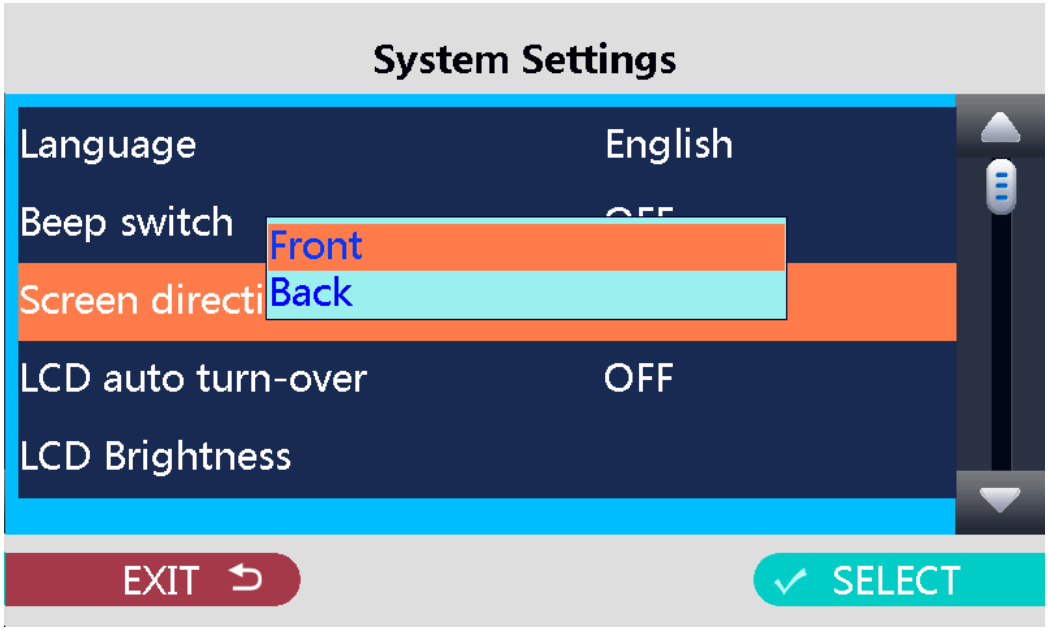
4.5.2 Beep switch

The beep serves as a reminder and alarm function.



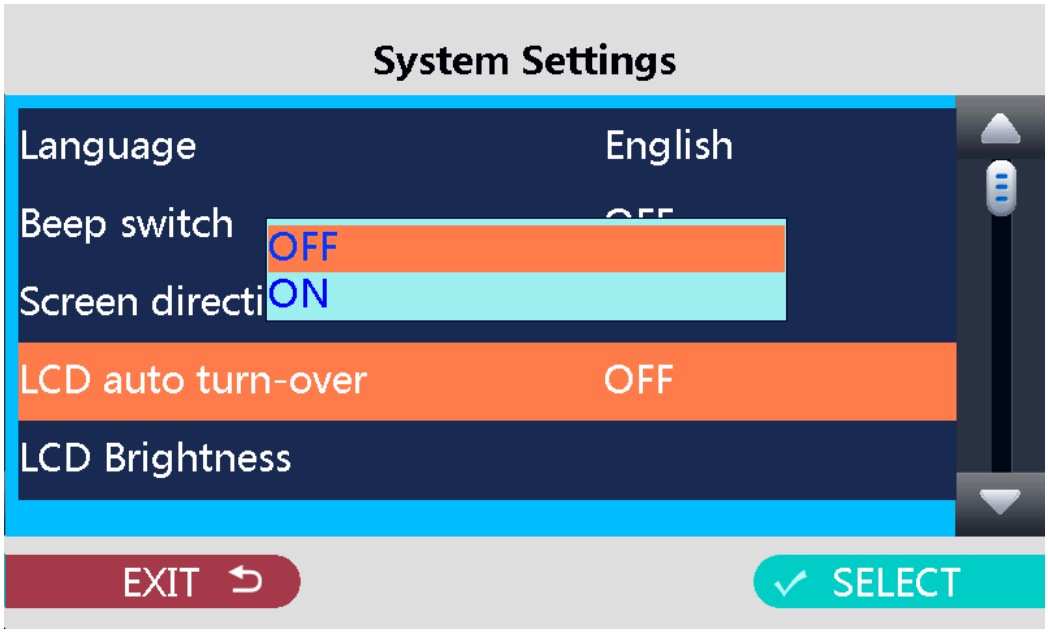
4.5.3 Screen direction

This allows the display interface to be rotated 180° to adapt to display requirements in different direction.



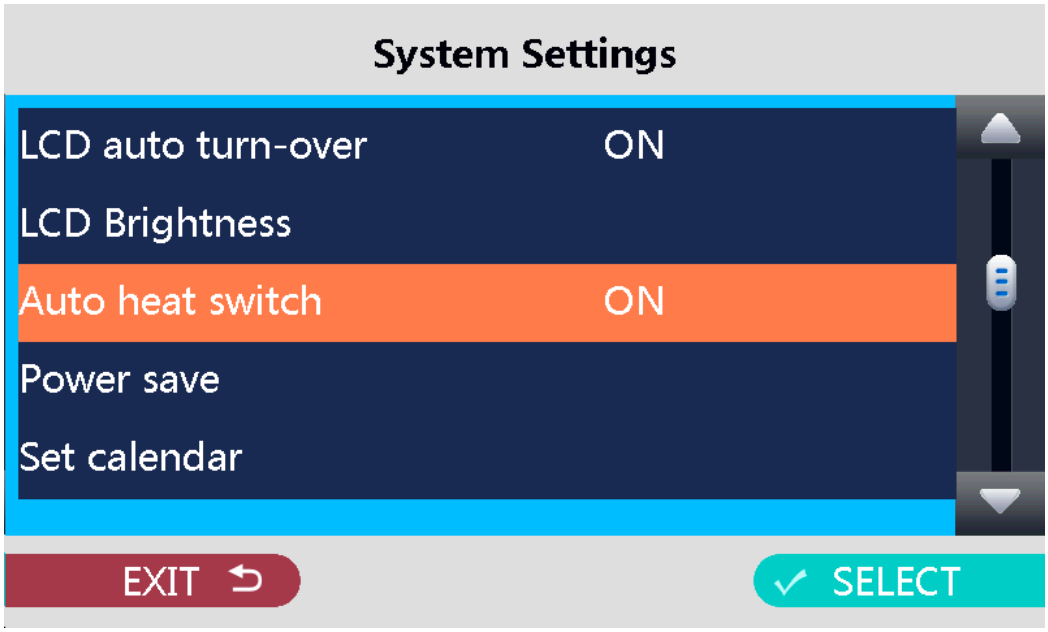
4.5.4 LCD auto turn-over switch

After turning on this function, the screen will automatically flip the display interface 180° to adapt to the display direction changing.



4.5.5 Auto heat switch

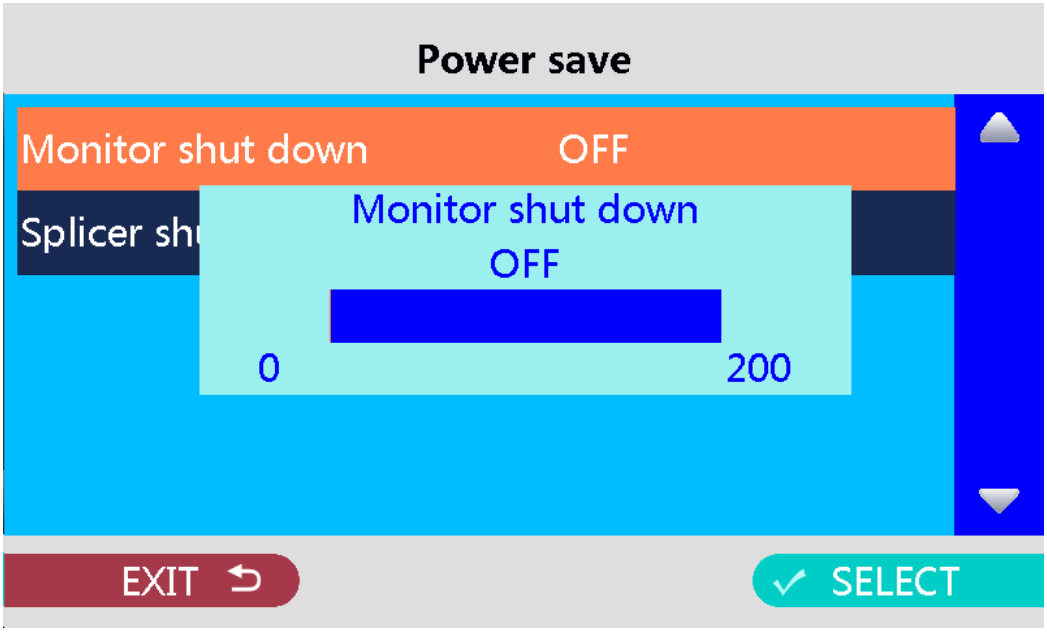
If "On" is selected, the heater will automatically perform the heating procedure when the optical fiber is placed in the heater.



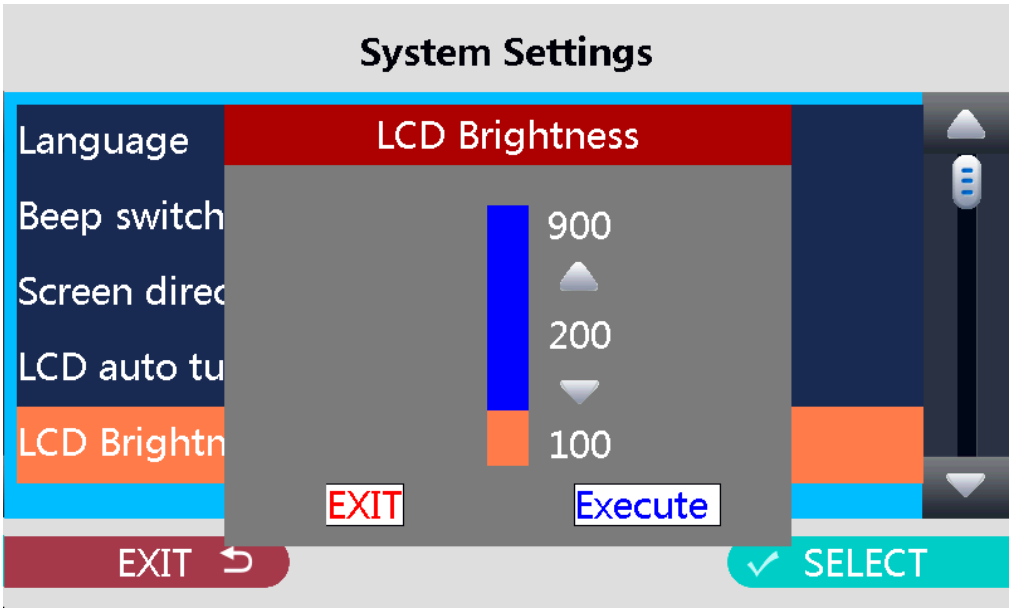
4.5.6 Power save

Power save is important for energy conservation which turns off the power supply to the LCD monitor or splicer if no operation after a certain period of time (0 – 200 minutes adjustable).

Press any key to wake up the LCD monitor.

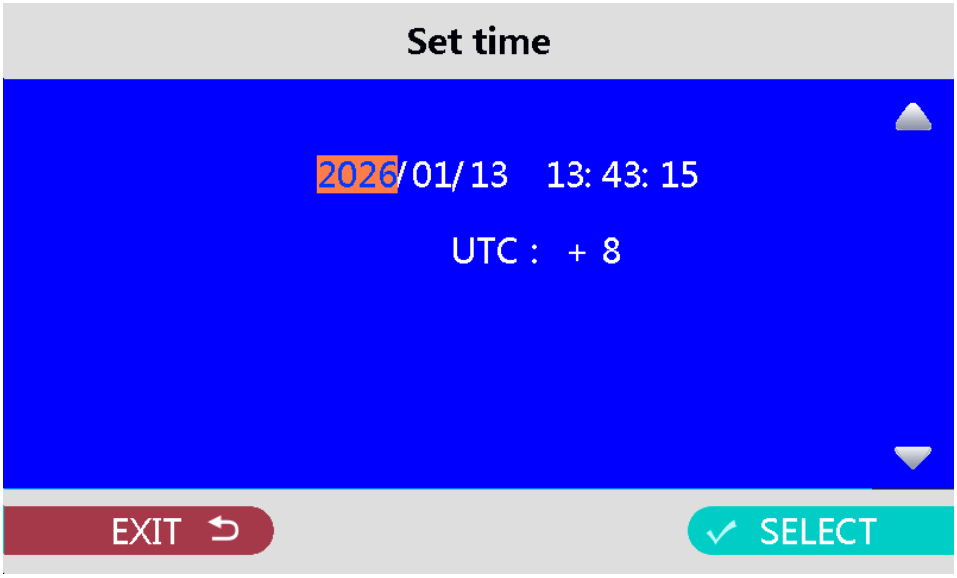


4.5.7 LCD brightness adjustment



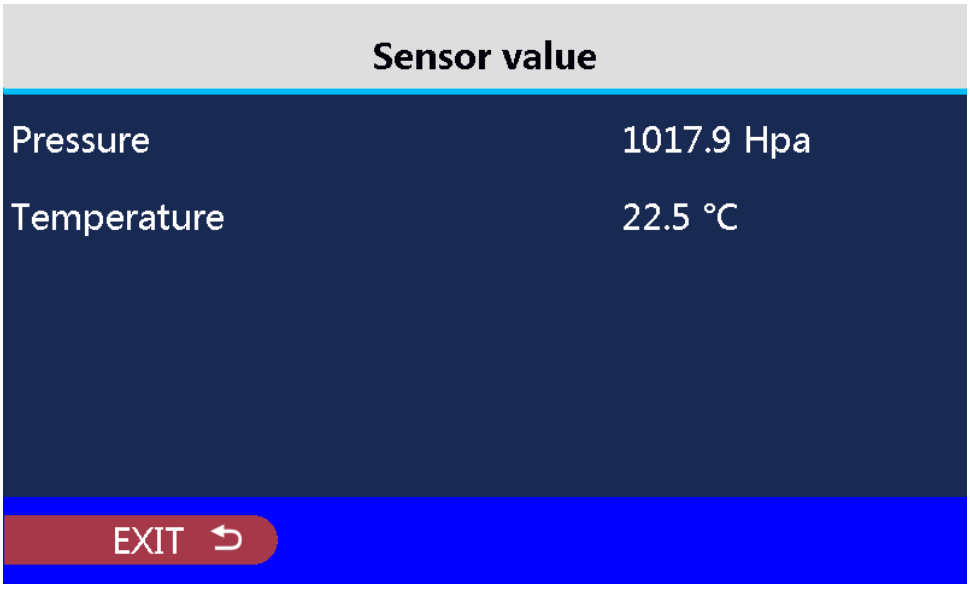
4.5.8 Set time

The accuracy of system time is very important for other functions of the fusion splicer, such as data storage and historical records.



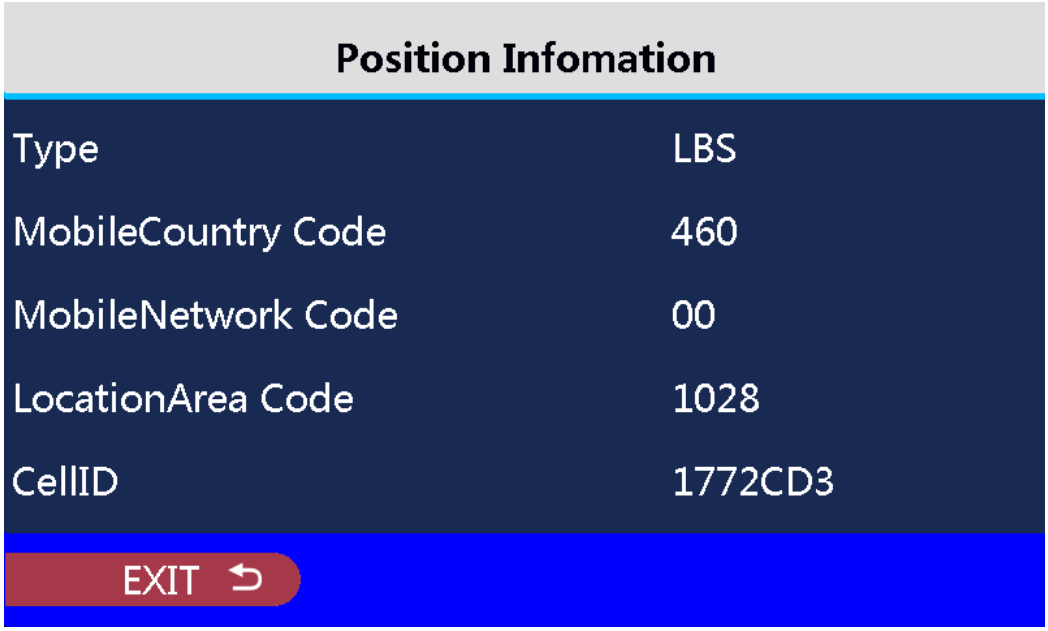
4.5.9 Sensor value

The splice has built-in air pressure sensor and temperature sensor, which can accurately obtain the air pressure and temperature data of the environment. These sensors help the splicer to automatically correct the ARC parameters to adapt to changes in the external environment.



4.5.10 Position information

The GPS function of the splicer can be used to track the location of the device, which is very useful for device management, especially in outdoor working environments, where the specific location of the device can be quickly located.



4.5.11 Load default

Solve parameter error: During the splicing process, if there are splicing problems (such as high splicing loss) due to improper operation or incorrect parameter modification, loading the default settings can quickly restore the parameters to the initial values, helping users to restart normal splicing operations quickly.

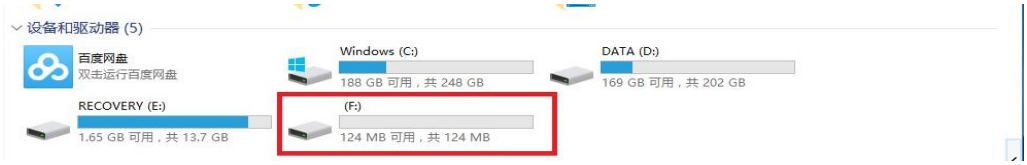
Initialize the device: When the splicer is used in a new application scenario or a new user starts to use the device, loading the default settings can ensure that the device operates with a standard configuration, which is convenient for users to make personalized adjustments according to actual needs.

Troubleshooting aids: When the device has some unexplained failures, loading the default settings can be used as a preliminary troubleshooting method.

4.5.12 Software Upgrade

This function is for users to upgrade the software by downloading the latest software version released. Upgrade steps show as below:

- Connect the computer in the standby interface of the splicer. The screen of the splicer displays the USB connection, and the computer displays the new removable disk.

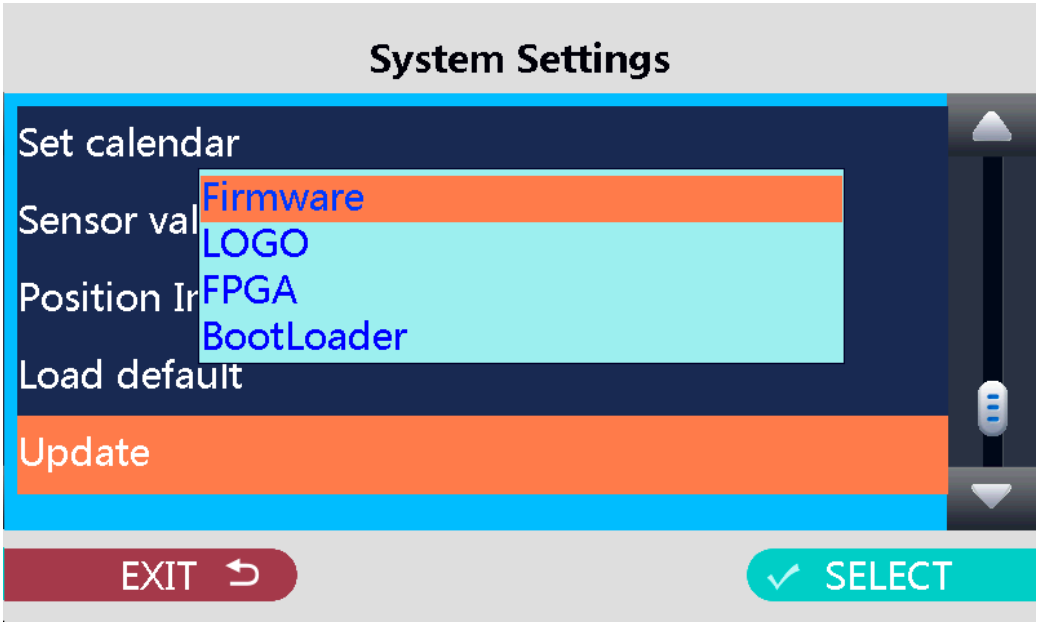


- Copy the upgrade software (.bin file) to the folder “update” under the new removable disk, and then unplug the USB.

- Press “  ” – “System Settings” menu on splicer, go into the “Update” menu by pressing 

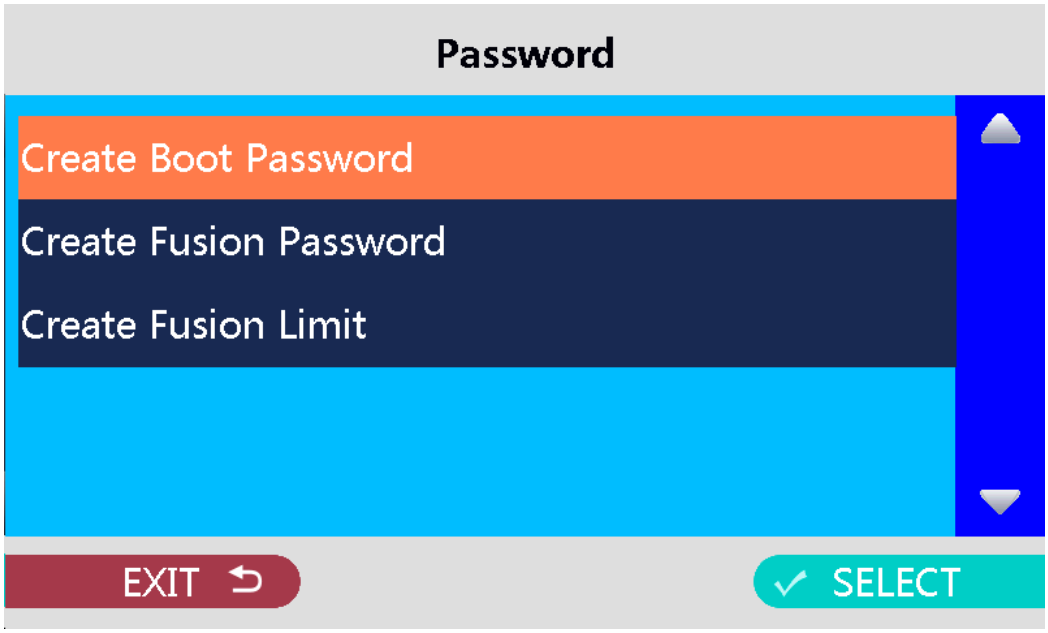
, select “Firmware” menu and select the firmware file to be upgraded, and start the upgrade by pressing 

. After the upgrade is completed, it will automatically shut down and restart to use normally.



4.5.13 Password

Set a password can prevent data from being maliciously tampered with or illegally obtained, ensuring data integrity and confidentiality.

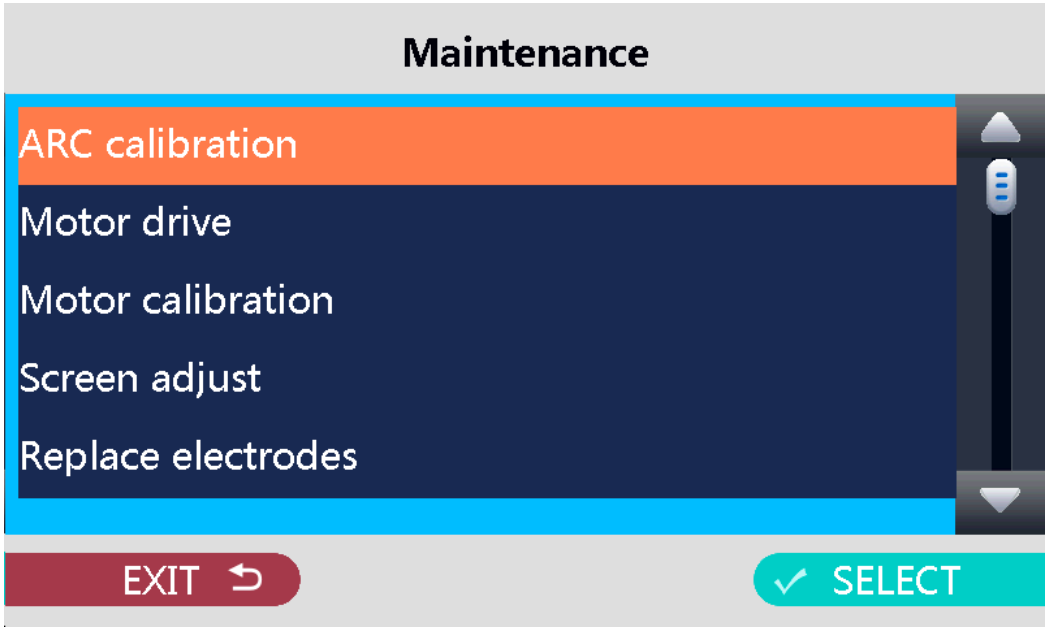


4.6 Maintenance Menu

In main menu, press 

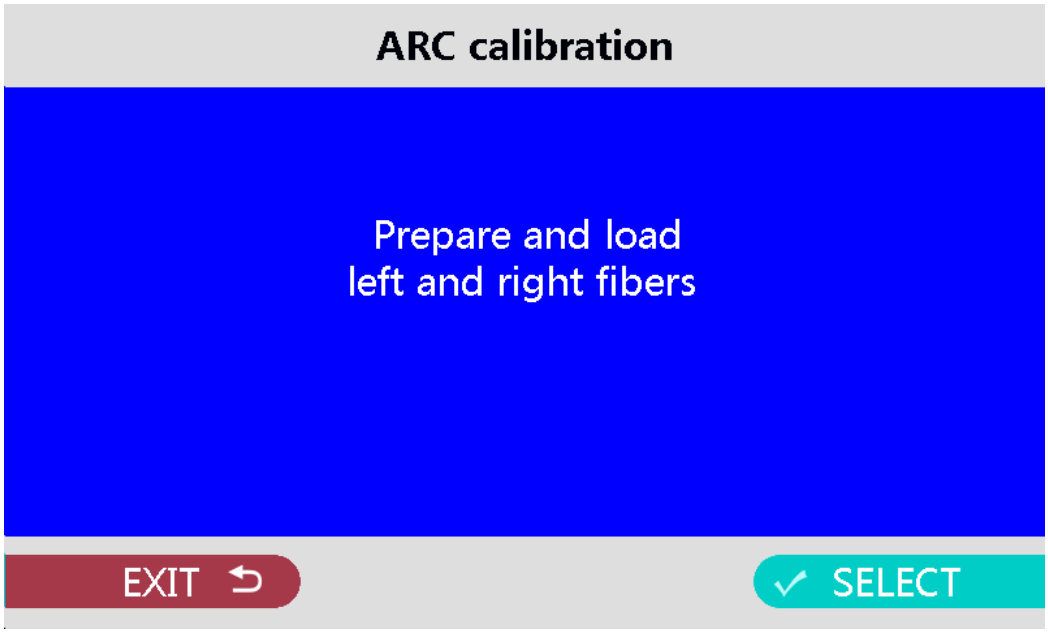
to enter “Maintenance” menu as shown below. This menu includes ARC calibration, Motor drive, Motor calibration, Screen adjust, replace electrodes, Stabilize electrodes etc. Press  button to select required item, and press 

button to enter and confirm the selected option.



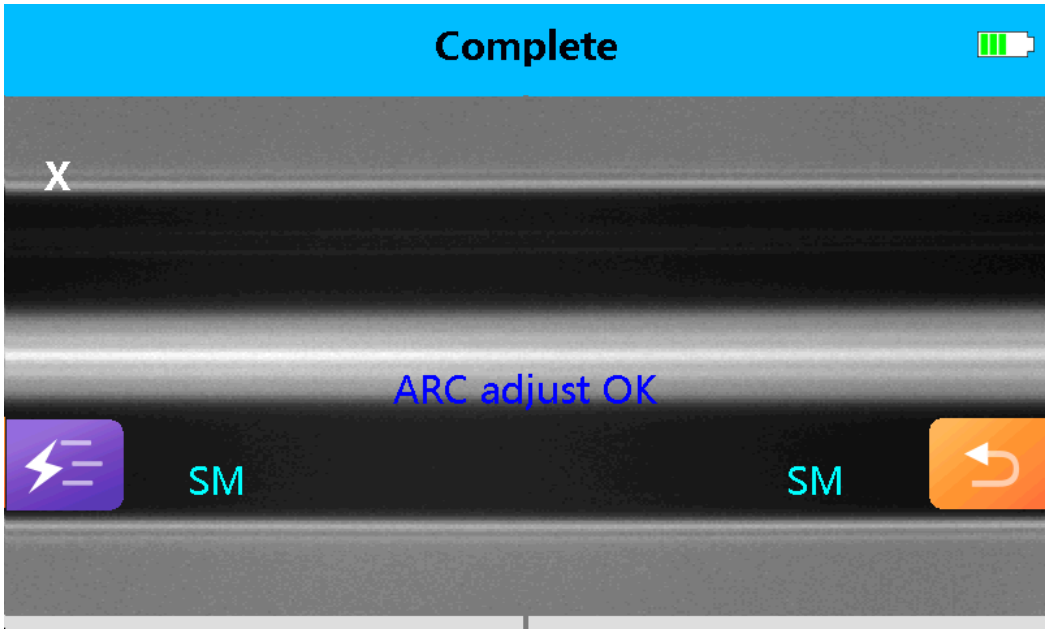
4.6.1 ARC calibration

This function is mainly to automatically adjust the discharge coefficient according to the user's current environment.



Prepare the fibers and load in the splicer, press 

button to start the ARC calibration and will autocomplete.



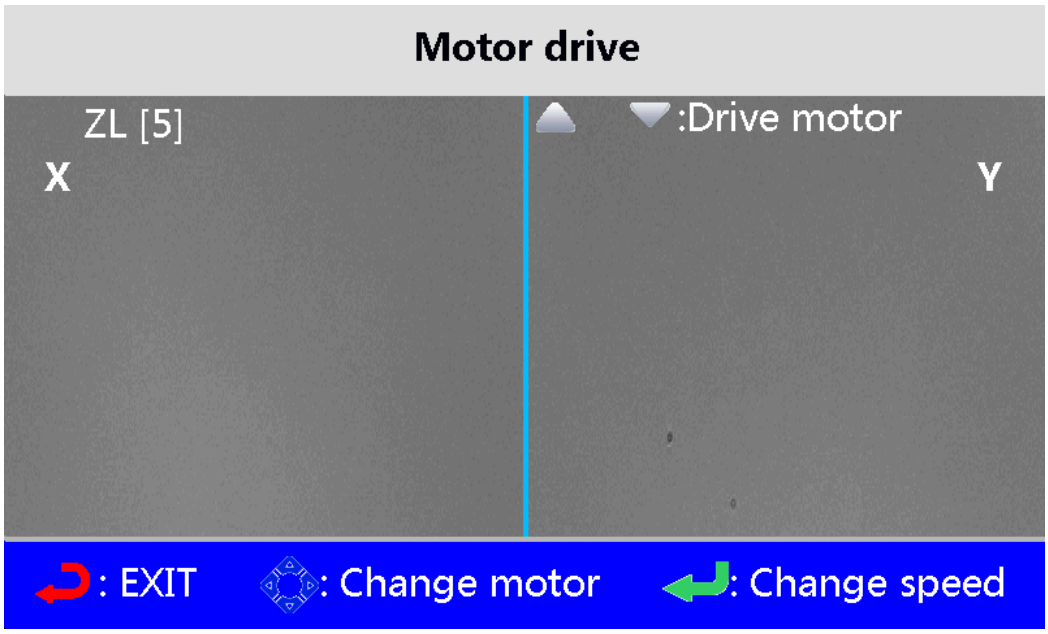
Through "ARC calibration", the discharge parameters can be adjusted in real time to achieve the best splicing results.

4.6.2 Motor driven

This function is mainly to manually drive the motor and check whether the motor works fine.

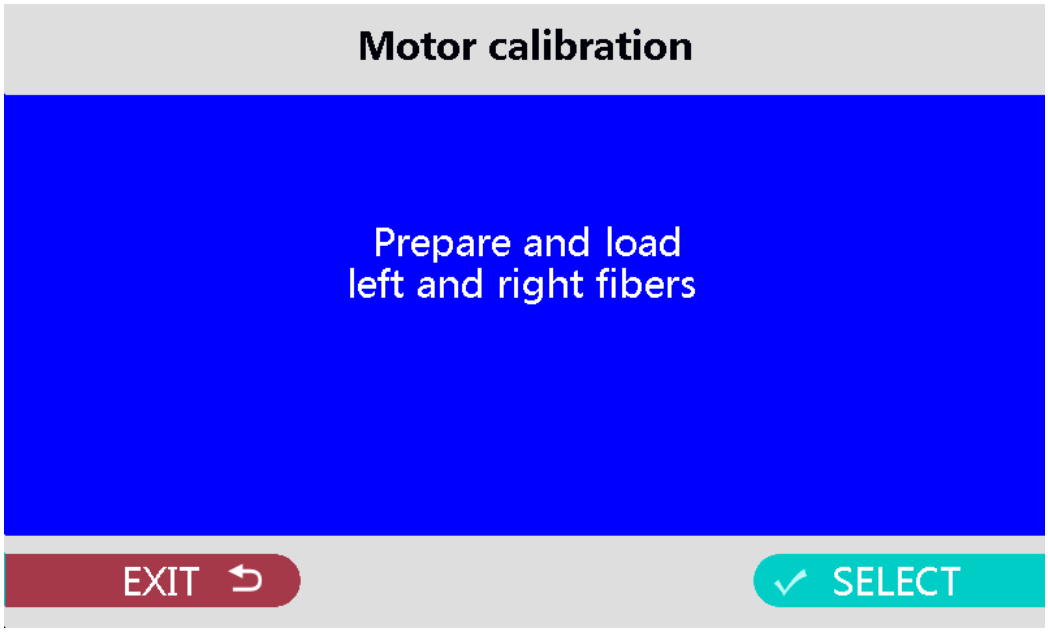
Select the motor to be driven by  : ZL(left advance), ZR(right advance), X axis, Y axis, Button focus and Top focus. Change the motor driving speed by  , where the value shown in [xx] represents the number of driving steps.

Drive the motor through  to verify the normality of the motor.



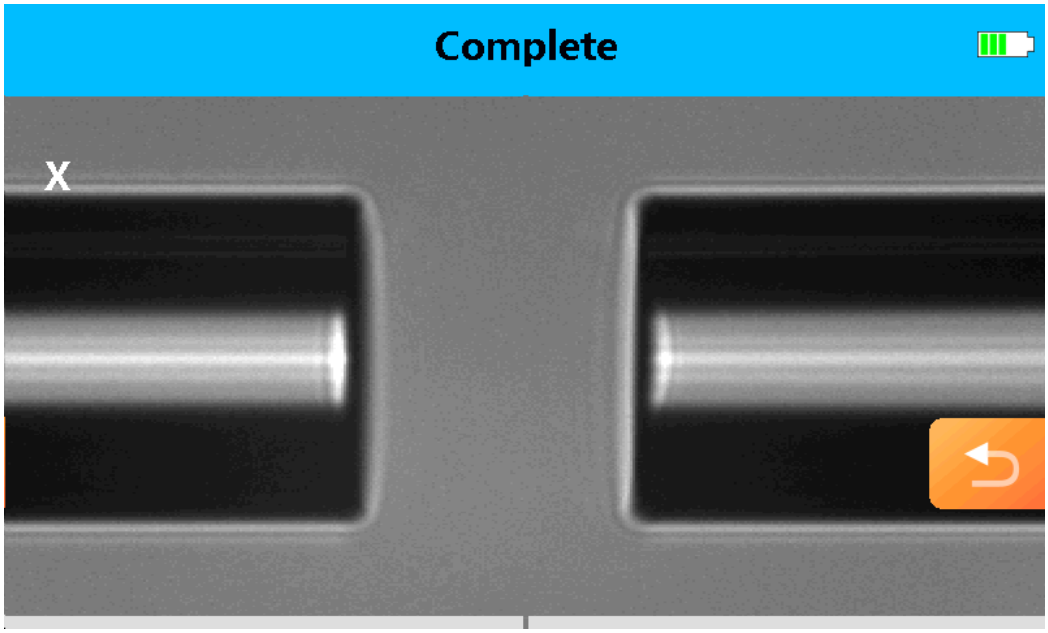
4.6.3 Motor Calibration

This function is mainly to automatically adjust the motors to achieve the best working position.



Prepare the fibers and load in the splicer, press 

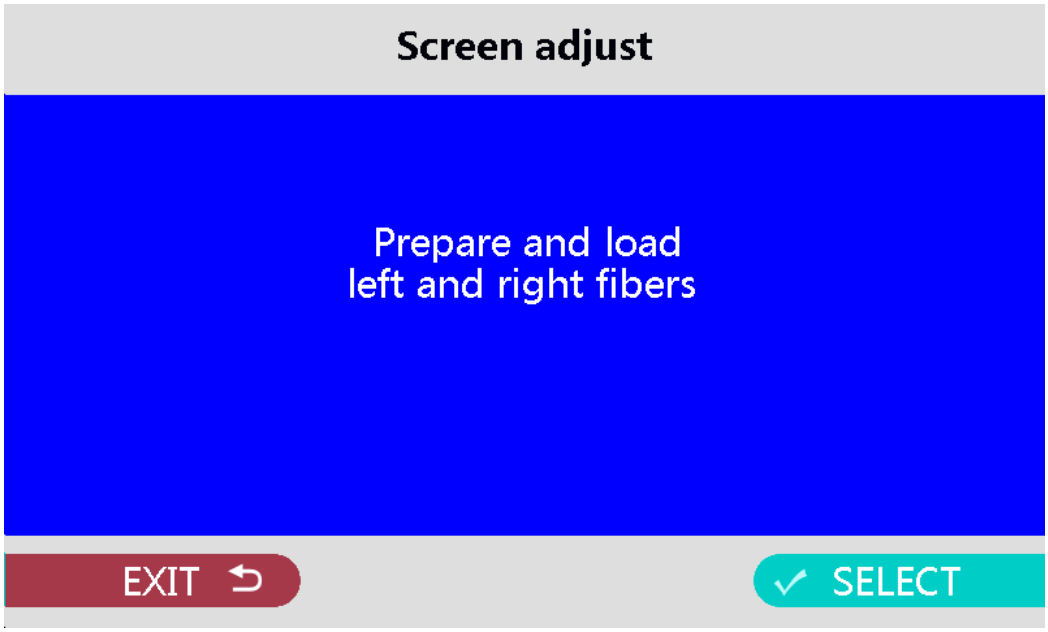
button to start the Motor calibration and will autocomplete.



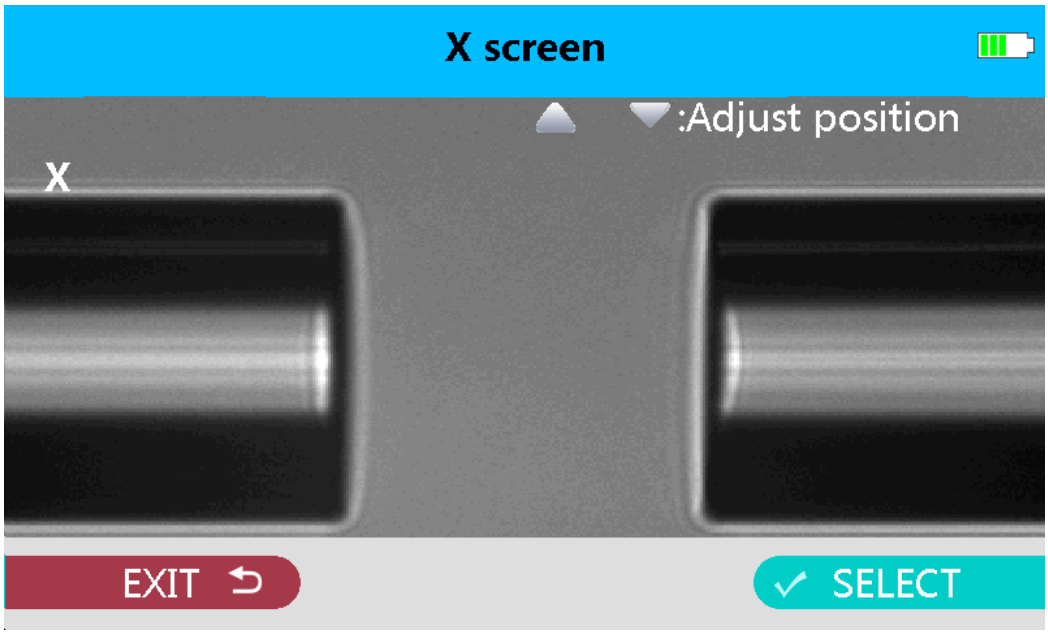
After “Motor calibration”, the motor position will be adjusted automatically, and some “Motor failure” errors will be resolved to resume normal work.

4.6.4 Display adjustment

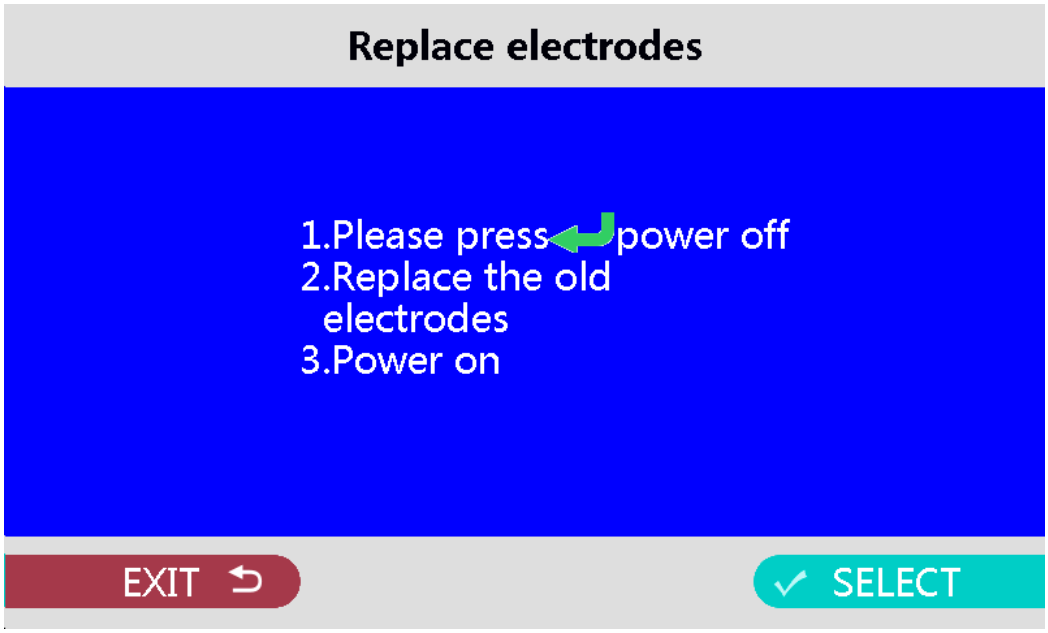
Change the image display position with display adjustment.



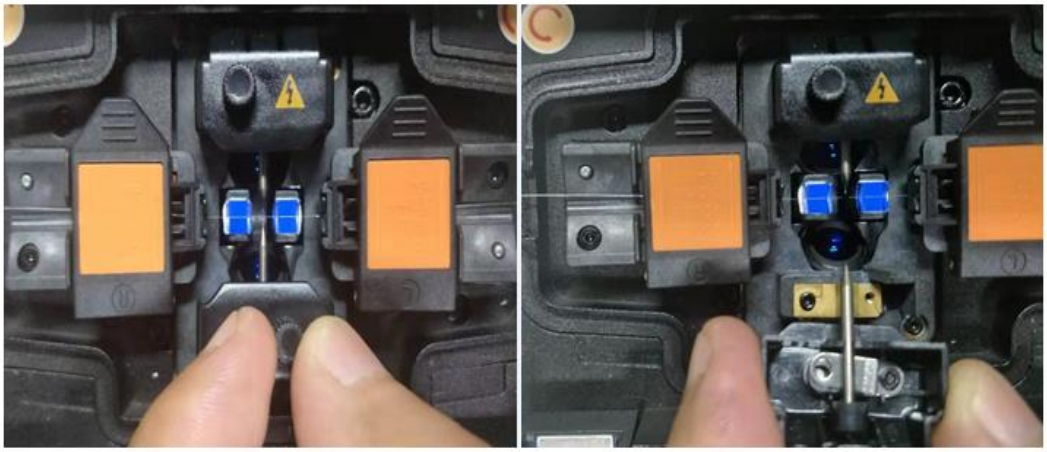
Prepare the fibers and load in the splicer, press SELECT button to start the Motor calibration and adjust the position by pressing .



4.6.5 Replace electrodes

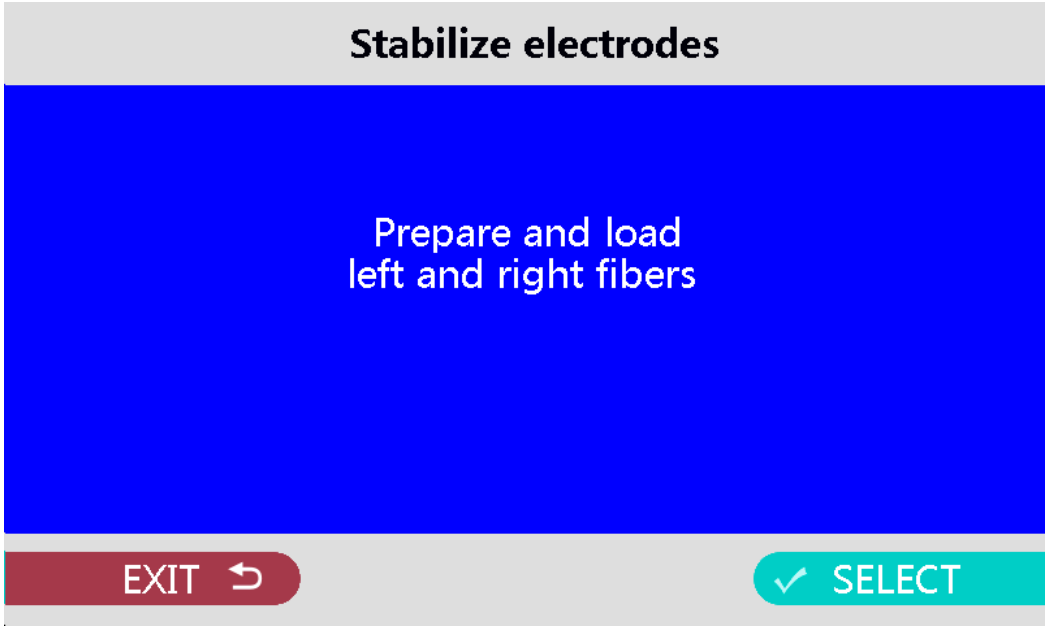


Follow the instructions of the splicer and follow the steps to replace the electrodes.



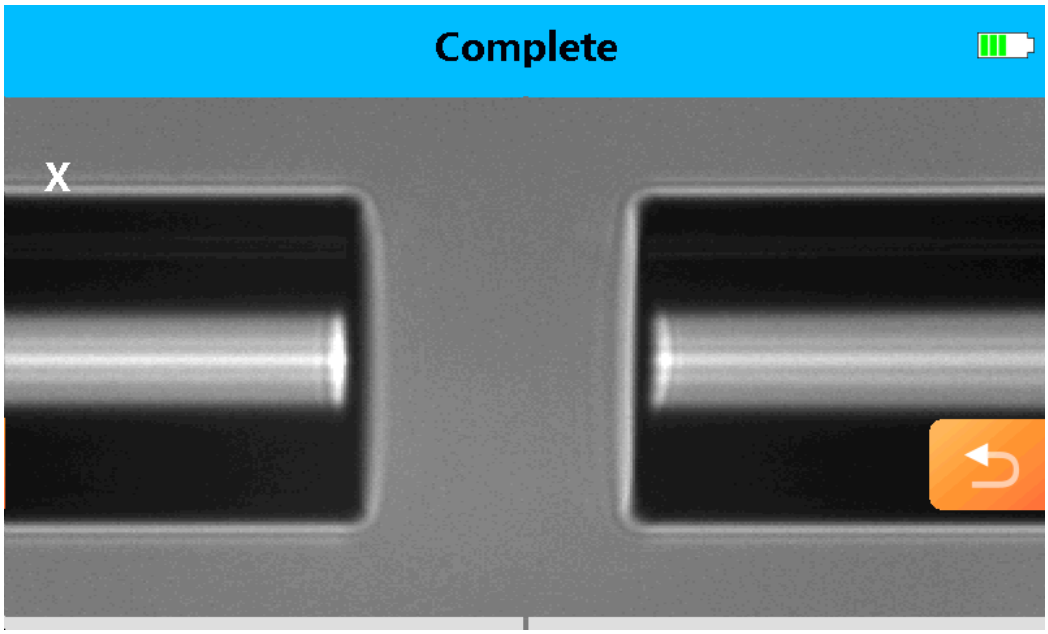
4.6.6 Stabilizing electrodes

According to the working performance curve of the electrodes needle, the discharge phenomenon of the first few times is unstable, and the "Stabilizing electrodes" operation can be performed to make the electrodes needle in a stable working state. During stabilizing electrodes process, discharge correction is performed continuously until the process is completed.



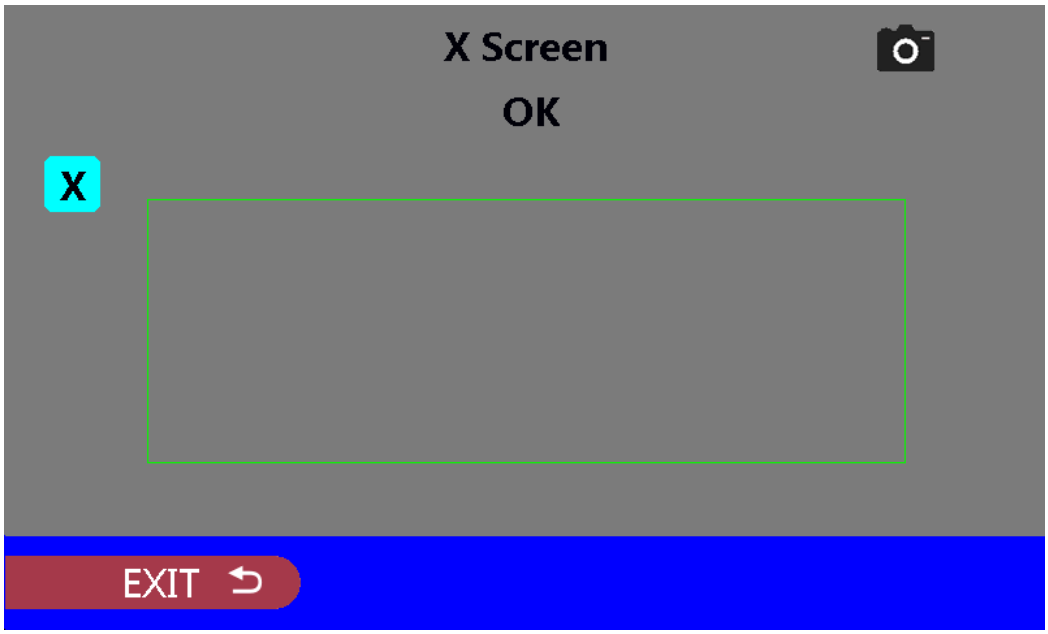
Prepare the fibers and load in the splicer, press 

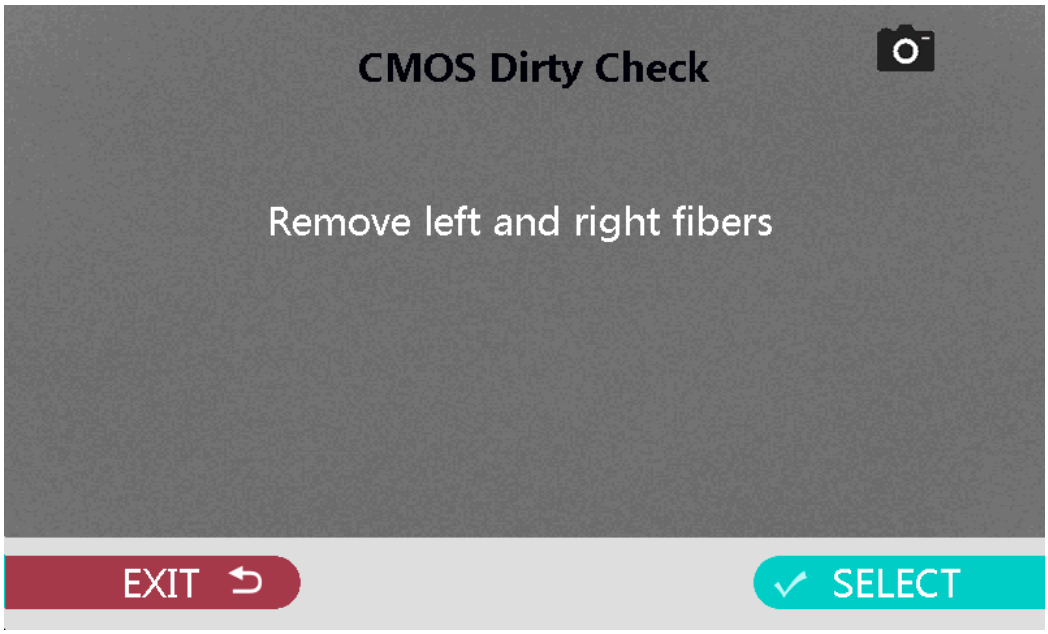
button to start the stabilizing electrodes, until the process is completed.



4.6.7 CMOS Dirty check

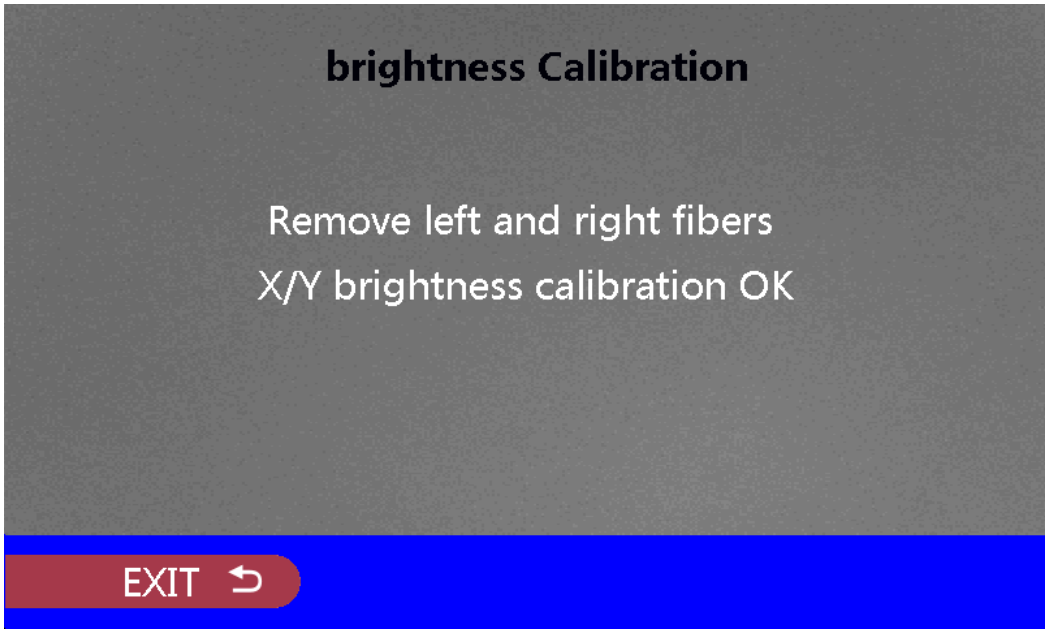
When the dust check function is activated, the optical system of the splicer automatically adjusts the focus and lighting conditions to obtain clear images of the internal area. These images are transmitted to the internal image processing unit, and after software analysis, the results of the dust check are displayed on the display. For example, the location and size of dust particles may be indicated by different color markings, or the degree of dust contamination may be directly given.



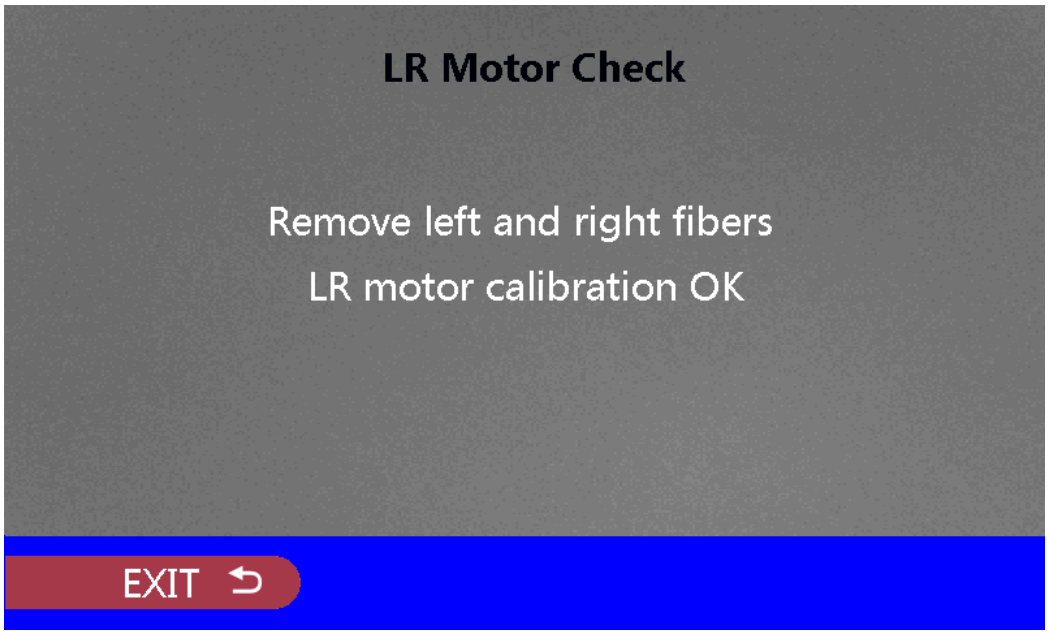


4.6.8 Brightness calibration

Brightness calibration of the splicer refers to the operation of adjusting and calibrating the brightness of the optical imaging system used to observe the fiber end face inside the splicer. This includes adjusting the brightness of the light source, the brightness of the image display, and ensuring that a clear and appropriately bright fiber end face image can be obtained under different ambient light conditions.



4.6.9 LR Motor check

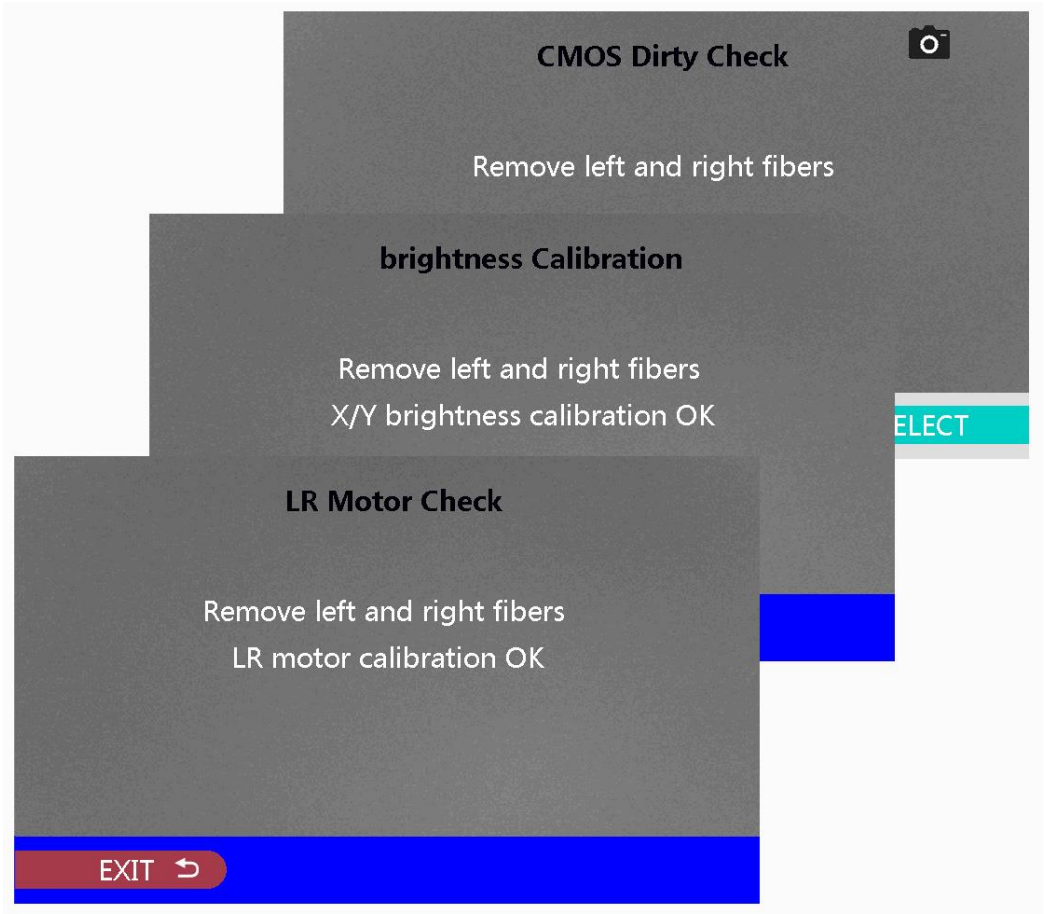


4.6.10 Self diagnose

When using the self-diagnosis function, do not need to use the single-item check function.

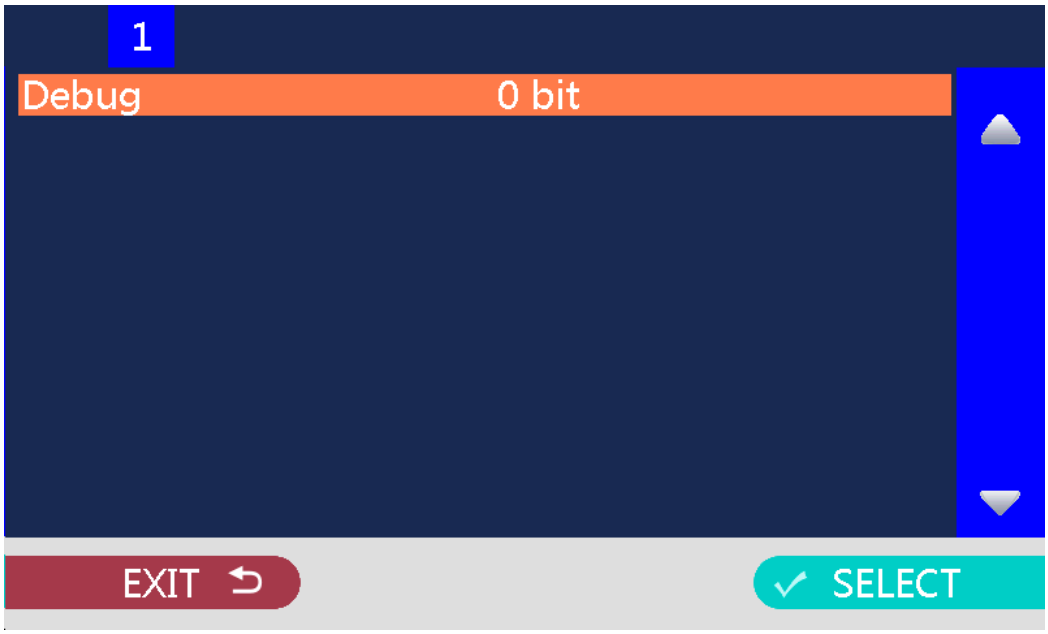
The self-diagnosis of the fusion splicer is a comprehensive and critical function, which aims to ensure that the equipment is always in the best working condition and guarantee the high quality and stability of fusion splicing. It covers many important aspects, among which CMOS dirty check, brightness calibration and motor check are particularly prominent.

Through the series of comprehensive self-diagnostic functions, the fusion splicer can promptly detect and solve potential problems, always maintain stable and efficient working performance in various complex working environments and splicing tasks, and provide solid and reliable technical support for the construction and maintenance of optical fiber communication networks.

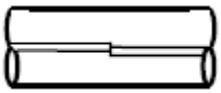
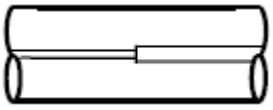
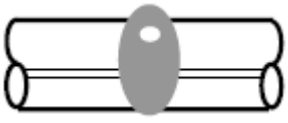


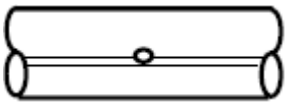
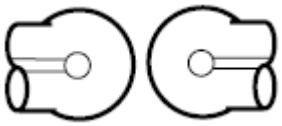
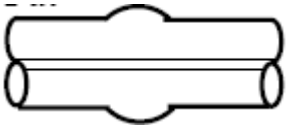
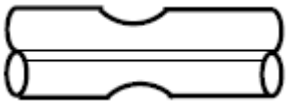
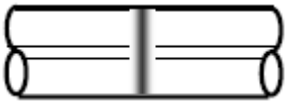
4.6.11 Hardware

Select debug mode and user mode. If you need to use it, please use it under the guidance of the factory technicians.



Common Problems and Troubleshooting

Phenomenon	Reason	Solution
Core axial misalignment 	Dust or dirt is on the V-groove or the clamp chip.	Cleaning V-groove and the clamp chip.
Wrong core angle 	Dust or dirt is on the V-groove or the clamp chip.	Cleaning V-groove and the clamp chip.
	Bad fiber end-face.	Check if the fiber cutter is working well.
Core steps 	Dust or dirt is on the V-groove or the clamp chip.	Cleaning V-groove and the clamp chip.
Core bending 	Bad fiber end-face.	Check if the fiber cutter is working well.
	Low pre-discharge intensity or short pre-discharge time.	Increase [Pre-discharge intensity] and / or increase [Pre-discharge time].
Mode field diameter mismatch 	The discharge intensity is too low.	Increase [discharge intensity] and / or increase [discharge time].
Dust burning 	Bad fiber end-face.	Check the working condition of the fiber cleaver
	Insufficient fiber cleaning.	Clean the fiber thoroughly or increase the [clean discharge time]

Bubble 	Bad fiber end-face.	Check the working condition of the fiber cleaver
	Inadequate ARC power or time.	Increase [Pre-discharge intensity] and / or increase [Pre-discharge time].
Fiber separation 	Fiber advance is too small.	Do [motor calibration] experiment
	Excessive ARC power or time.	Reduce [pre-discharge intensity] and / or reduce [pre-discharge time]
Too thick 	Fiber advance is too big.	Reduce [overlap amount] and do [motor calibration] experiment.
Too fine 	Discharge intensity is inappropriate.	Do [discharge correction]
	Inadequate ARC parameters in other splice modes.	Adjust [pre-discharge intensity], [pre-discharge time] or [fiber advance amount]
line 	Inadequate ARC parameters in other splice modes.	Adjust [pre-discharge intensity], [pre-discharge time] or [fiber advance amount]

NOTE

When different fibers (different diameters) or multimode fibers are spliced, sometimes a vertical line is generated at the splicing point, which does not affect the splicing results, such as splice loss and joint strength.

Warranty Information

1. Terms of Warranty

All ShinewayTech® products are warranted against defective material and workmanship for a period of one (1) year from the date of shipment to the original customer. Any product found to be defective within the warranty period would be repaired or replaced by Shineway Technologies Inc. free of charge.

In no case will Shineway Technologies, Inc. liabilities exceed the original purchase price of the product.

2. Exclusions

The warranty on your equipment shall not apply to defects resulting from the following:

- *Unauthorized repair or modification*
- *Misuse, negligence, or accident*
- *Consumptive parts (e.g electrodes)*

Shineway Technologies, Inc. reserves the right to make changes to any of its products at any time without having to replace or change previously purchased units.

3. Warranty Registration

A warranty registration card is included with the original shipment of equipment. Please take a few moments to fill out the card and mail or fax it to the local Customer Service Center of Shineway Technologies, Inc. to ensure proper initiation of your warranty term and scope of your warranty.

4. Returning Instruments

To return instrument for reasons of yearly calibration or other, please contact the local Customer Service Center of Shineway Technologies, Inc. to obtain additional information and a RMA# (Return Materials Authorization number). And describe briefly reasons for the return of the equipment, to allow us offer you more efficient service.

NOTE

To return the instrument in the case of repair, calibration or other maintenance, please note the following:

- Be sure to pack the instrument with soft cushion like Polyethylene, so as to protect the shell of the instrument.
- Please use the original hard packing box. If use other packing material, please ensure at least 3 cm soft material around the instrument.
- Be sure to correctly fill out and return the warranty registration card, which should include the following information: company name, postal address, contact, phone number, email address and problem description.
- Be sure to seal the packing box with adhesive tape.
- Be sure to ship to your representative or the agent of the Company in a reliable way.

5. Contacting Customer Service

Please check our web site **(www.shinewaytech.com)** for updates to this manual and additional application information. If you need technical or sales support, please contact local **Shineway Technologies** Customer Service.

Shineway Technologies (China), Inc.:

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Fax: +86-10-62958572
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