

## **USER'S GUIDE**

**Fusion Splicer** 

#### Warning

Any undefined change or modification of this manual will deprive you of the right to operate the equipment.

To reduce the risk of fire or electric shock, do not expose the equipment to rain or humidity.

To prevent electric shock, please do not open the shell, and it must be repaired by qualified personnel.

This product is designed for splicing the glass fiber of optical communications and cannot be used to splice other materials.

To reduce the risk of fire or electric shock, do not allow liquid such as water or metallic substances to enter the machine.

It is forbidden to use the fusion splicer in the flammable and explosive environment, otherwise it will lead to fire or explosion.

When the fusion splicer is working, do nottouch the electrode, avoid the hurt caused by the discharge of the electrode. When replacing the electrode, you must turn off the power and disconnect the power cord.

Please follow the operation manual strictly to use the battery:

\*Please do not charge the battery by using methods other than in the manual;

\*Don't throw the battery into the fire;

\*Don't reverse positive and negative poles;

\*Do not charge or discharge under high temperature, fire or direct sunlight;

\*Do not throw or impact the battery;

\*If the battery electrolyte leaks out, please handle it carefully. If you contact the skin or eyes accidentally, please must clean it thoroughly and seek medical advice immediately. Please also inform the maintenance center of handling the battery.

#### Cautions

Do not use and store the fusion splicer in a high temperature and humidity environment. Otherwise, it may cause damage to the equipment.

Do not touch the heat-shrinkable tube during the heating or just ending, because the heat shrink is hot and may cause burns.

Do not touch the fusion splicer, AC power cord and AC plug when wet hand, otherwise it may cause electric shock.

Do not use any chemicals other than alcohol to clean microscope lenses, V-grooves, LCD screen, etc., otherwise it may cause blurred images, stains, etc., and may even cause equipment's corrosion and damage.

In the dusty environment, dust-proof measures must be taken to prevent dust from entering the machine and causing trouble.

Do not allow the fusion splicer to be subjected to strong vibration and shocks, otherwise the machine will be damaged. Please use adedicated carrier to transport or store the fusion splicer.

Using the battery:

The equipment can use a disposable alkaline battery or rechargeable battery, and can not be mixed with different types or different capacity batteries. Only rechargeable batteries can be charged.

Avoiding condensation:

Sudden changes in temperature should be avoided. Do not use the device immediately after moving the device from the cold area to the hot area, or when the room suddenly heats up, because the device may have condensation phenomenon. If the temperature changes abruptly, stop using it and take out the battery, and the power can be switched on after at least an hour.

Storage:

When the device is not used for a long time, please take out the battery to avoid the damage caused by battery leakage .

%All is subjected to the physical products, the manual here is just only for reference.

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#### Standard Package



# Host



1	Electrode
2	Objective lens
3	Clamp slot
4	V-groove
5	Cooling tray
6	Multi-functional clamp
7	Heater V-groove
8	Heat shrinker cover
9	Electrode cover
10	USB connector
11	Power supply socket
12	Windshield cover
13	Optical fiber presser
14	LED
15	Battery
16	Anti-collision batten

#### How to Use Keyboard



Switch X/Y images

### **Splicing Operation**



### Main Menu



key again to enterinto the sub-menu.



#### Splice Mode

Press 🔺 / 🔻 key to choose the line, and use ┥ / 🕨 key to set the detailed configuration.



Splice Mode				
	Fiber type	SM	•	SM, MM, DS, NZDS
▶	Splice operate mode	Manual Enter	•	– - Manual, Auto, Half-auto
	Splice program No.	SM-1	•	<ul> <li>- Set current splicing program number</li> </ul>
	Edit splice program	Enter	•	<ul> <li>- Edit splicing parameters under current program No.</li> </ul>
	Clean arc time	120ms	•	Clean tiny dust on fiber end by a short arc discharging
;	Surface angle threshold	3.0°	•	- Set the limit value of fiber end surface angle
(	08:20 01.07.2017 Ente	r 🔛 Back	80%	
	Cutting angle threshold	1.0°	•	<ul> <li>-Set fiber alignment limitation</li> </ul>
	Align offset threshold	0.4um	•	<ul> <li>- Set fiber alignment offset threshold</li> </ul>
	Loss threshold	0.10dB	•	<ul> <li>- Set splicing loss limit value</li> </ul>
Ì	Compensation arc time	1.0s	•	<ul> <li>- Set compensation arc time</li> </ul>
	Fiber alignment mode	Core align	•	<ul> <li>- Fine align, Cladding align, Core align</li> </ul>
	Fast splice mode	Off	•	– - On or Off
*-	Forced splice mode	Off	•	– - On or Off

### Heating Mode



### **Function Setting**



## System Setting



### **History Record**



▼

80%

80%

08:20

01.07.2017

Enter

Back

#### Maintain



#### Maintain-Clean Electrodes



Note: To get the best splicing result, please don't touch the electrode tip with hard objects while cleaning.

#### Maintain-Replace Electrodes



Remove the electrode cover



Place the electrode cover



Loosen screws

Tighten screws

Remove the old electrode



Install the electrode cover

#### Maintain-Detect System Parameters

To get better splicing result, we suggest you detect system parameter under following situations:

- 1.System upgrade;
- 2.Replace or move electrodes;
- 3.Long-distance transportation and strong vibration;
- 4. Continuous splicing failure or high loss;
- 5. Continuous overshoot during alignment.

Detect system parameters



#### **Fusion Splicer Cleaning**

#### V-groove



**Fiber Presser** 



- When cleaning, keep the device Off
- Use cotton swab moistened with purity alcohol

#### **Objective Lens**



The Heater



- Do not touch the electrode tips
- Use dry swab to clean the excess alcohol

#### **Battery Information**

In lower right of the interface is the battery state and battery indicator. The battery will display different colors and shapes in various states. Here are some examples of icons. Battery information can also be viewed in the system menu.





Remain 100%



less than 10% shows red icon



Charging



Fully charging

# Warning Information

Warning(English hints)	Reason	Treatment method	
	Fiber cutting length is too short		
Left / right / left and right	The fiber placed in the V-groove has been broken	Cut the fiber again and ensure the cutting length	
fiber placement error	Fiber is not placed in the middle of the V-groove	Replace the fiber	
	Propulsion motor connection problem	Please detect system parameters	
Left / right / left and right	Dust on the fiber's surface	Use alcohol to clean fiber again	
(LFNQ / RFNQ / LRFNQ)	Poor quality of cutting, core defect, cladding damage	Remake the fusion fiber	
Left / right / left and right fiber's end face disqua- lification (LFEANQ / RFEANQ / LRFEANQ)	Optical fiber end angle exceeds preset limit value	Cut the fiber again, if the quality is poor, please replace the fiber cleaver	
Optical fiber angle disqualification(FANQ)	The angle error in both horizontal and vertical direction is greater than the set threshold value	Replace the fiber on both sides	
Large loss	Splicing loss exceeds the set upper limit or choose an unmatched optical fiber type fusion program.	Please clean the V-groove, redo the discharge correction, and splice again	
Lack of electricity	Current battery power is less than 2%	Please insert the adapter to charge	
Replace electrodes	The Arc count exceeds the upper limit	Replace electrode and detect system parameters	
Record overrun	The splicing record exceeds the upper limit	Please use the USB derive the original splicing record, then delete them	
	Fiber end face has dust or quality is poor	Please cut and clean the fiber again and make the	
Alignment abnormal	The windshield cover is too tight and the brightness of LED lights is not suitable	alignment. If it doesn't work, please detect syste parameters or restart the machine	

# Warning Information

Warning	Reason	Treatment method	
Timeout abnormal	Long time during align splicing	Restart align splicing	
Field chaermal	Improper installation position of electrode	Detect system parameters first, if continue to prompt abnormal, please re-install the electrode	
Field abhormai	The mechanical structure was destroyed		
Data abnormal	The fusion splicer is working in the abnormal state	Continue to align splicing, and it have no affect	
Light course choormal	Improper setting of luminance of LED		
Light source abnormal	Improper installation position of windshield cover	Please detect system parameters	
Detection abnormal	Failures in detecting system parameters	Please check if the fiber is properly placed and the connection is in good condition	
Heat Shrink abnormal	Heat shrinkable heater do not work properly	Restart the fusion splicer	
Storage abnormal	Data can't be saved	Please contact the after-sales service	
Storage abnormal	Communication anomaly, data has a packet loss	Restart the fusion splicer	
Image abnormal	The camera may have been damaged or connector interface is loose	Restart the fusion splicer	
Sense abnormal	The abnormal working of the sensor built-in the fusion splicer	This abnormal does not affect the normal working	
Electrode abnormal	Abnormal installation of electrode on both sides	Please ensure that electrodes of both sides are aligned when installed, also ensure that both sides are in the center of the V-groove	

## Specifications

Applicable fibers	SM, MM, DS, NZDS, EDF		
Average splice loss	0.02dB(SM), 0.01dB(MM), 0.04dB(NZDS), 0.04dB(EDF)		
Fiber aligning method	Core alignment		
Splicing time	Typical 8s with standard SM fiber		
Heating time	24s		
Electrode life	2500		
Battery capacity	Typical 200 cycles (splicing and heating)		
Monitor	5.0 inches colorful LCD display		
Storage of splice result	10000 results		
Tension test	2.0N (Standard)		
Splicing mode	Auto & Manual & Half Auto		
Protection sleeve length	40mm, 60mm or others		
Environmental conditions	-10~+50 $^\circ C$ (operation temperature), 0~95% RH(humidity), 0~5000m(altitude)		
Power supply	Li-ion battery or AC/DC input: 13.5V		
Size(H*W*D)	164mm * 141mm * 138mm		
Weight	1.83kg		