WRX600 SIX MOTOR CORE ALIGNMENT FIBER OPTIC FUSION SPLICER

Please read this Operation Manual carefully before operating the equipment.
Comply with all safety procedures and warnings in this manual.
Keep this manual properly in a safe place.

Issued on 2022-9-30

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The Optical Fiber Fusion Splicer is designed for the optical quartz glass fiber used in the communications, except which it cannot be used to splice any other substances and for other applications.
Considering the user's personal safety, here we provide the user with a lot of safety cautions, because it is possible to result in electric shock, fire and personal injury if the user improperly uses the Optical Fiber Fusion Splicer.
Please read seriously, by all means, this Operation Manual before operating the equipment.
Comply with all safety requirements and warnings in this manual.
Keep this manual properly in a safe place.
In case of meeting a failure, please stop using the equipment, and contact us as soon as possible
Keep this manual properly in a safe place, so as to refer to it in the future.

WARNINGS AND CAUTIONS FOR SAFE OPERATION

It is necessary to immediately turn off the power switch of the Optical Fiber Fusion Splicer; pull the AC power cord out of the AC power outlet; and take out the storage battery from the Optical Fibre Fusion Splicer, in case of meeting the following failures: ● Smoke, peculiar smell, abnormal sound or heating abnormalities; ● Liquid or foreign objects into the equipment; ● The Optical Fiber Fusion Splicer has been damaged or broken. If the user has not timely adopted measures to solve failures of the Optical Fibre Fusion Splicer in case of meeting these failures, it may cause the equipment scrap, electric shock, fire or personal injury or even death.
The AC adapter and battery charger of the Optical Fiber Fusion Splicer can only use an AC power source (100V-240V AC, 50hz-60hz). If the user uses the improper AC power source, it may possibly lead to smoke, electric shock, equipment damage, and even cause the fire or personal injury or death. (Note: Usually, AC generators output abnormal high pressure and irregular frequency, so that it is necessary to measure generator's output voltage value with the ammeter before connecting the AC power cord. Abnormal high pressure or frequency can lead to smoke, electric shock, equipment damage, and can even cause fire or personal injury or death. Make sure the generator's regular check and maintenance.
Please use the specific AC adapter. If you use the inadequate AC adapter, it may possibly lead to smoke, electric shock, equipment damage, and cause fire or personal injury or even death.
Please use the specific batteries. Only the batteries supplied by the manufacturer are allowed to be used for the equipment. Please use the specific battery charger to charge the batteries. If you use other batteries or battery chargers, it may possibly lead to smoke, electric shock, equipment damage, and cause fire or personal injury or even death.
Do not disassemble or modify the Optical Fiber Fusion Splicer, the specific AC adapter, or the batteries, esp., any electronic and mechanical devices (fuses or safety switches) inside the equipment can not be removed or bridged. Any improper maintenance may possibly lead to the damage of the Optical Fiber Fusion Splicer, and even cause electric shock, the fire or personal injury or death
It is prohibited to use the Optical Fiber Fusion Splicer in the flammable liquid or gas environments, where the discharge of the Optical Fiber Fusion Splicer may cause the fire or explosion.
Do not use the compressed or canned air cleaner to clean the Optical Fiber Fusion Splicer. Otherwise the arcing generated by splicing will ignite the residual flammable matter.
Don't use the Optical Fiber Fusion Splicer in the environment of high temperature or nearby the high temperature object, and also in the place where there are too much dusts or higher humidity, otherwise it may possibly lead to equipment damage, cause the fire, get an electric shock, degrade the equipment performance, and cause the worse splicing loss.
Please don't use the wet hand to contact the Optical Fiber Fusion Splicer, the AC power cord and AC power plug, otherwise it may possibly cause the risk of getting an electric shock.
When the surface of the Optical Fiber Fusion Splicer is vapor-condensed, please don't operate the Optical Fiber Fusion Splicer, otherwise it may lead to electric shock or equipment damage.
When the Optical Fiber Fusion Splicer is operating, please don't touch the electrode, otherwise the high pressure and high temperature generated by electrode discharge may cause severe electric shocks and burns (Before changing the electrode, you must firstly turn off the power supply of the Optical Fibre Fusion Splicer, remove the batteries, and pull out the AC power cord.)
Do not let the DC input ports of the Optical Fiber Fusion Splicer be short-circuited. The excessive current may lead to personal injury, smoke, electric shock or equipment damage.

Do not use any chemical substances other than alcohol to clean such devices as the objective lens, the V-shaped groove, LCD screen, etc., of the Optical Fiber Fusion Splicer. Otherwise it will cause the imaging to be unclear, with stains, corrosion and damage.

The Optical Fiber Fusion Splicer does not need any lubricant, lubricating oil or grease, which will reduce the performance of the Optical Fibre Fusion Splicer and possibly damage the Optical Fiber Fusion Splicer.

For the Optical Fiber Fusion Splicer having passed through the accurate adjustment and calibration, don't subject it to strong shock or collision, otherwise this may possibly cause damage to the equipment. Please use the provided case to transport and store the Optical Fibre Fusion Splicer, so as to effectively protect it from strong vibration or collision.

Don't let the Optical Fiber Fusion Splicer be positioned at an unstable or uneven place, otherwise it may possibly move and lose its balance and fall over, causing equipment damage and personal injury.

The heat-shrinkable sleeve after heating will be hot and may possibly burn you, so please don't touch it.
When you need to bring the portable Optical Fibre Fusion Splicer with shoulder-strap carrying case, please check whether the shoulder strap and hook are intact to you or not. If you use a damaged shoulder strap, it may possibly cause the shoulder strap to rupture or escape from the hook, resulting in personal injury or equipment damage.

The Optical Fiber Fusion Splicer must be maintained and debugged by a professional technician or an engineer. The incorrect maintenance for it may possibly cause the fire and the electric shock. If the Optical Fiber Fusion Splicer fails, please contact a service center.

Please use the storage batteries strictly according to the Operation Manual. The wrong use may cause the battery explosion and the personal injury.

- Do not use certain methods other than those mentioned in the Operation Manual for battery charging;
- Do not dispose of batteries in a fire or incinerator.
- Do not charge and discharge the storage batteries close to any heat source, fire, or under direct sunlight.
- Do not let the batteries be subjected to the severe shock.
- If the battery leaks, you must handle it with caution, and pay attention to preventing the battery leaking liquid from touching your skin or eyes. In case that you have accidentally touched the battery leaking liquid, you must immediately and thoroughly clean the touched parts, and seek medical care immediately. At the same time, please properly handle the leaking battery and notify the maintenance service center for solving the related issues.
- When charging the battery, do not stack the battery on top of the AC adapter or charger.

Please correctly use the electrodes according to the Operation Manual.

- Use only the specific electrodes;
- Correctly replace the electrodes;
- The electrodes must be replaced in pairs;

If the above instructions are ignored, it may cause the abnormal discharge of the Optical Fibre Fusion Splicer, the splicing performance degradation or even damage to the equipment.

The manufacturer or Seller will not assume the responsibility for the Buyer's or user's personal injury and losses of the articles or equipment caused by that the user ignores the warning and uses or repairs the Optical Fibre Fusion Splicer incorrectly .

Recycling and Disposal

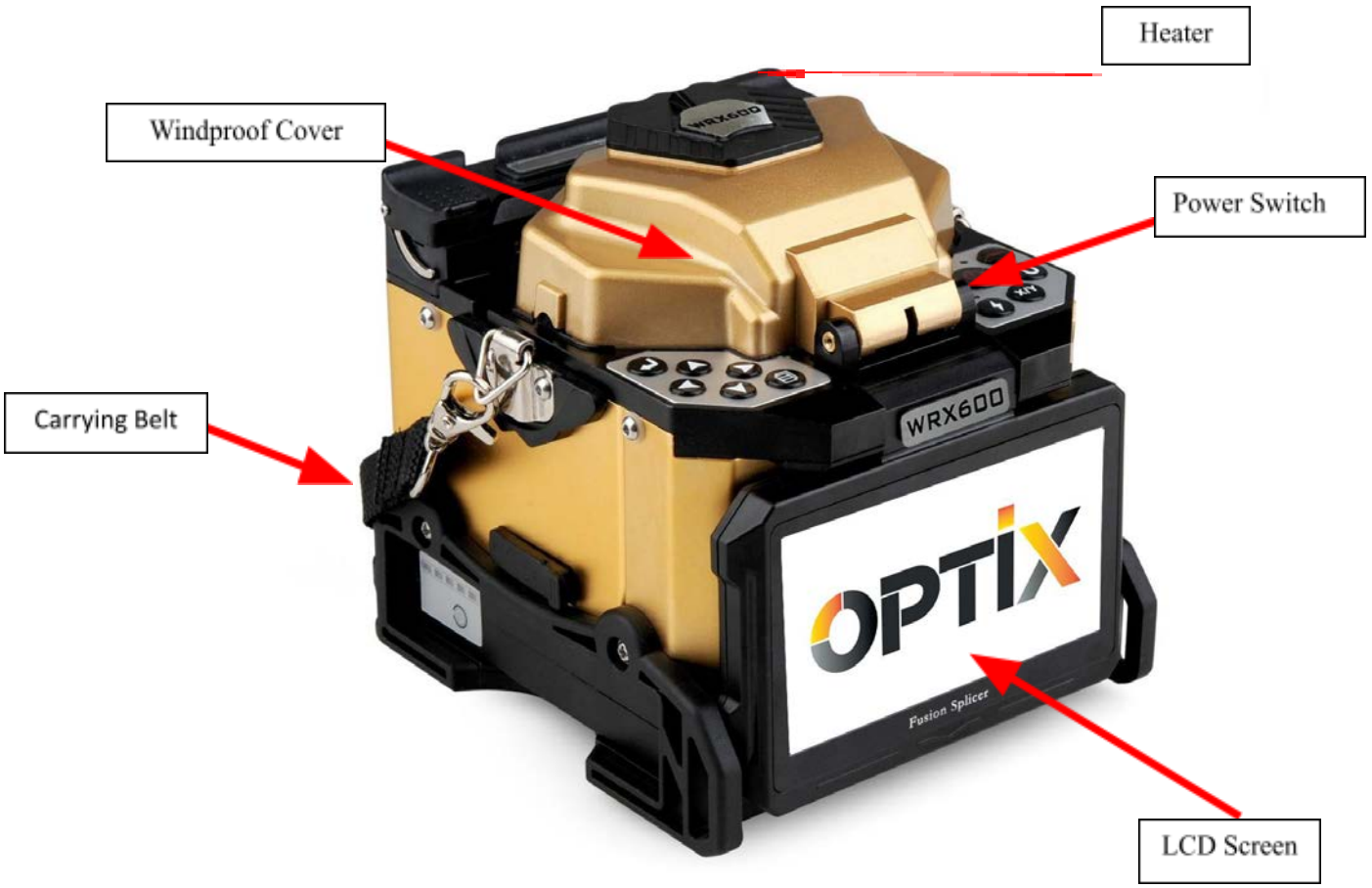
EU countries:
According to the EU's European Parliament's implementation standard:2002/96/EC, in order to use the new resources and make the number of buried waste to be minimized, the reusable and / or recycling electronic components and materials have been identified and recognized. If you are in the EU countries, please do not use this product as unsorted municipal living solid waste to be discarded. Please contact your local relevant agencies.

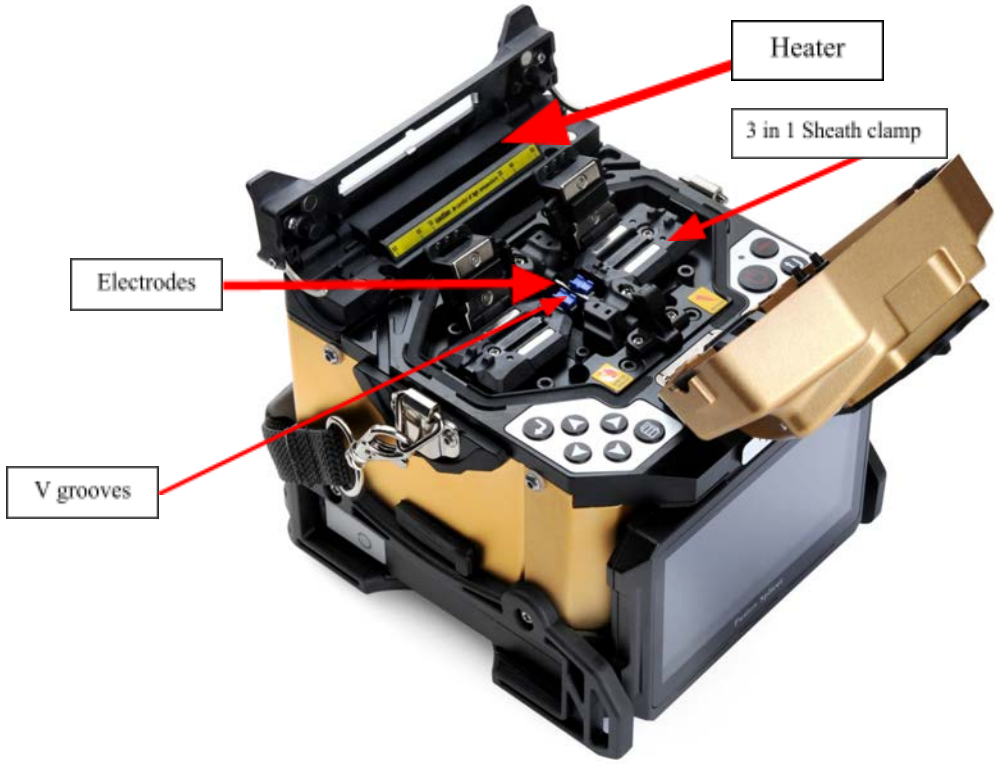
Other countries:
For recycling this product, please firstly disassemble it, and then classify each part according to different materials, and keep to the relevant local regulations related to the recycling.

1. STANDARD CONFIGURATION OF OPTICAL FIBER FUSION SPLICER

No.	Item
1	WRX600 Core Alignment Splicer
2	WRXCL10 Precision Cleaver with Bin
3	WRXTS6 Thermal Stripper
4	900um Fiber Holders (pr)
5	250um Fiber Holders (pr)
6	SOC Holder
7	Battery
8	Spare Electrodes
9	Cooling Tray
10	AC Adapter (Charger)
11	2mm/3mm Drop Cable Stripper
12	Tri Hole Cable Stripper
13	KS-1 Kevlar Scissors
14	Cleaning Fluid Bottle
15	Cleaning Kit (Mag/Light, Bristle brush, Sweeper brush)
16	900um Loose Tube Cable Clamp
17	60mm Splice Sleeves (100)
18	Lint Free 4x4” Wipes (100)
19	Screwdriver
20	User Manual
21	Hard Case with Strap

4. DESIGNATION OF COMPONENTS OF OPTICAL FIBER FUSION SPLICER




Heater
3 in 1 Sheath clamp
Electrodes
V grooves

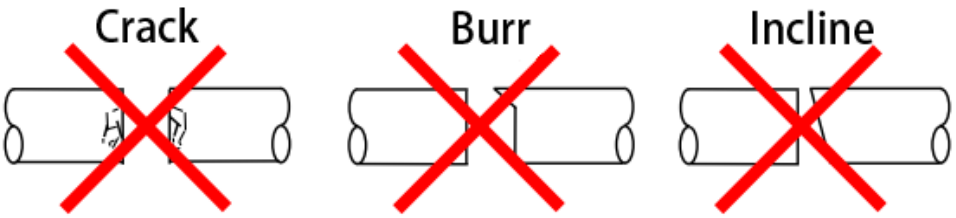
1. How to Get Small Splicing Loss

1-1. Necessary Regular Cleaning Jobs
● Clean V-Shaped Groove
● Clean Optical Fiber Pressure Head
● Clean Objective Lens
In case of cleaning Objective Lens, it is unnecessary to remove needle electrodes

1-2. Selection/Usage of Appropriate Splicing Modes
Please select the appropriate splicing modes according to different types of the Optical Fibers.

1-3 Equipment Clean-up before Each Fusion Splicing Operation
● Clean the blades of Optical Fiber Stripper.
● Clean the rubber pad and blades of the Optical Fiber Cleaver.

1-4. FUSION SPLICING PROCEDURES
● Make sure that the coating residue and other contaminants on the optical fiber will have been removed after stripping the optical fiber.
● Please use pure alcohol with a concentration of more than 99% .
● Do not let the well-cut end of the optical fiber touch any object or be contaminated.
● Please put the end of the optical fiber at the place between the edge of the V-shaped groove and the center of the electrode.
● Please put the optical fiber on the bottom of the V-shaped groove. Make sure the fiber is cleaved to the correct length. If the cut length is too short, the optical fiber's coating edge may possibly encounter the V-shaped groove, so the two optical fibers may not be close enough to each other in the discharge process resulting in undesirable loss of fusion splicing.
● Do not place optical fibers , in the discharge process, too close to each other which may, resulting in undesirable loss of fusion splicing.
● Please check the cutting angle and shape of the optical fiber's end face. The optical fiber's cutting angle will affect the fusion-splicing quality, and a large cutting angle will increase the loss of fusion splicing.



● It is possible to observe the discharge from the display screen. If the discharge image being observed has a "vibration" or "flickering light", the discharge may be unstable at this time and will result in adverse loss.
● In case of heating, the Optical Fiber heat-shrinkable sleeve shall be placed in the center of the heater, so as to avoid uneven heating and not cause the fiber to break..

2. Power Supply
Please only use the AC Adaptor provided by the manufacturer.
Please only use the Storage Battery and Battery Charger provided by the manufacturer.

2-1. Avoidance of Damage to AC Adapter
● The AC generators may possibly produce abnormal output of AC high voltage or irregular frequency.
● The abnormal high voltage and frequency output from the generator may possibly lead to smoke, electric shocks and damage to the equipment, and even cause fire, personal injury or death. So before connecting the AC power supply, you must use a multimeter to measure the generator output voltage.

2-2. Storage Battery

● Even if the storage battery is not used, its capacity will gradually decay over time, and if it is fully discharged, it may never be able to charge again. So if it will be stored for a long time, or it has been used, please charge it in time.

● If it is necessary to store batteries for a long time, and no matter how much it has been charged before, it should be charged to full capacity every six months.

● For operating/charging/longtime storing of the battery, please refer to the conditions as below:

Operating: -10 ℃ ~ **+50** ℃

Charging: 0 ℃ ~ **+40** ℃

Long Term Storage: +20 ℃ ~ **+30** ℃-

1. POWER CONNECTION

OPTICAL FIBER FUSION SPLICER provide two power-supply modes: ① Storage Battery; ② AC Adapter. Please make sure that OPTICAL FIBER FUSION SPLICER shall be turned off in case of operating it.

1-1. Insertion of the Storage Battery.

Insert the storage battery into the battery slot until it is properly in place.

1-2. Removal of the Storage Battery

Using one hand to press and hold the release button and also support the edge of OPTICAL FIBER FUSION SPLICER, and the other hand to push the storage battery out.

1-3. Connection of the AC Adapter

Put the plug into the socket on the back of the device.

1-4. Disconnection of the AC Adapter

Pull out the plug.

2. TURNING ON POWER OF THE OPTICAL FIBER FUSION SPLICER

Press power button  to switch the device ON/OFF.

3. LAYING OPTICAL FIBER

1) To open the wind-protector cover and the optical fiber clamp cover;
2) To get the ready optical fiber to be placed in the V-shaped groove, and make the end of optical fiber be placed at the position between the edge of the V-shaped groove and the electrode tip;
3) To use fingers to nip the optical fiber, then to close the optical fiber clamp cover so as to ensure that the optical fiber will not move, and make sure that the optical fiber will be placed at the bottom of the V-shaped groove. If the optical fiber is placed incorrectly, please place the optical fiber over again;
4) To place another optical fiber according to the above step;
5) To close the windproof cover.

4. SPLICING OPERATION

4-1. Optional Operation Modes: AUTO/MANUAL

AUTO: By pressing the  key, it is able to start the fusion splicing operation.
MANUAL: For the Manual operation, please refer to the details on P15.

4-2. Optional Types of Optical Fibers: Single Mode (SM) / Multi Mode (MM) /Non-Zero Dispersion-Shifted (NZDS) / Erbium-Doped (ED) Optical Fiber

4-3. Pause Functions: Open/Close

Open: After the completion of the core-to-core, press the  key to perform the fusion splicing.
Close: After the completion of the core-to-core, automatically perform the fusion splicing.

5. TAKING OUT OPTICAL FIBER AND HEATING SLEEVE

1) Open the heater lid;
2) Open the windproof cover;
3) Open the optical fiber clamp covers at the left and right
4) Take out the optical fiber and move heat-shrinkable sleeve to the splicing point
5) Place the heat-shrinkable sleeve in the center of the heater and cover the heater lid
6) Press the HEAT key to heat, the heat indicator will also light up
7) When the heat indicator goes out and a hint sound appears, the heating is completed
8) Turn on the heater lid, and take out the optical fiber to check and see if the optical fiber contains air bubbles or not.
9) After completing the checks, place the optical fiber in the cooling tray to allow it to cool.

MAINTENANCE OF FUSION SPLICING QUALITY

1. CLEANING AND CHECKING BEFORE FUSION SPLICING

The following describes the maintenance checks for the key cleaning points and the important parts.

1-1.Cleaning the V-Shaped Groove

If there is dust or contamination in the V-shaped groove, the Optical Fiber Pressure Head can not suppress the optical fiber correctly, resulting in high fusion splicing loss. So, in regular operation, it is necessary to regularly check and clean the V-shaped groove.

- Open the windproof cover.
- Clean the bottom of the V-shaped groove with a cotton swab just having had a dip in alcohol (above 99% alcohol), and remove the excess alcohol in the V-shaped groove with a dry cotton swab.
- If contaminations in the V-shaped groove can not be removed with a cotton swab just having had a dip in alcohol, you can use the well-cut end face of the optical fiber to clean the bottom of the V-shaped groove, and then repeat the previous step.
- In case of cleaning the V-shaped groove, be careful and don't exert an excessive force, so as to avoid damage to the V-shaped groove.
- Be careful and don't touch the tip of the needle electrode.

1-2. Cleaning the Optical Fiber Pressure Head

If there are contaminations on the Optical Fiber Pressure Head, the Optical Fiber Pressure Head can not suppress the Optical Fiber normally, resulting in degrading the quality of fusion splicing.

- To open the windproof cover.
- To clean the surface of the Optical Fiber Pressure Head with a cotton swab just having had a dip in alcohol (above 99% alcohol), and remove the excess alcohol on the surface of the Optical Fiber Pressure Head with a dry cotton swab.

1-3. Cleaning the Optical Fiber Cleaver

If there are contaminations on the blades of the Optical Fiber Cleaver. or the rubber pad, the cleaving quality will be degraded, and lead to dust on the surface of the optical Fiber, resulting in the increase of the loss of the fusion splicing. It is necessary to clean the blades of the Optical Fiber Cleaver. or the rubber pad with a cotton swab just having had a dip in alcohol (above 99% alcohol)

1-4. Discharge Tests

Atmospheric environment, such as temperature, humidity, air pressure, is constantly changing, so the discharge temperature is also changing. Due to the electrode wear, it is unable to automatically correct the discharge strength caused by the bonding of the optical Fiber debris. The center of the discharge sometimes will move to the left or to the right. At this time, it is necessary to make the discharge tests to solve these problems.

It is also necessary to do discharge tests in case of using the Optical Fiber Fusion Splicer under the following conditions: such as ultra-high temperature, ultra-low temperature, very dry, very wet, electrode degradation, fusion splicing of the heterogeneous optical Fibers, cleanness, after replacing the electrode, or in the case that above conditions exist simultaneously.

2. REGULAR CHECKING AND CLEANING

In order to ensure the better splicing quality, it is suggested to check and clean the Optical Fiber Fusion Splicer regularly.

2-1. Cleaning the Objective Lens

If there are contaminations on the surface of the objective lens, the normal location of the observed optical fiber core may be affected, resulting in the increase of the fusion splicing loss or poor fusing splicing, so, it is necessary to regularly clean two objective lenses, otherwise, the cumulative contaminations are difficult to remove.

- Before cleaning, please firstly turn off the power supply.
- Using a cotton swab just having had a dip in alcohol (above 99% alcohol), to gently wipe the surface of the objective lens, starting the wipe from the middle of the lens to do a circular movement until the edge of the lens, and repeating several times until there are no contaminations or stains or stripes. Finally, use a clean and dry cotton swab to wipe out the residual alcohol on the surface of the objective lens.
- Be careful and don't touch the electrode tip in case of cleaning.

● It is recommended to clean the lens before replacing the needle electrode.

2-2. Replacing the Electrode

The electrode will wear in use, and the electrode tip will be aggregated with silicon oxide, so regularly cleaning the oxide can effectively extend the life of the needle electrode. It is recommended to replace the electrode after the Optical Fiber Fusion Splicer has discharged 3000 times. If you continue to use the electrode, it may most probably lead to a very large fusion-splicing loss and reduce the strength of the fusion-splicing points.

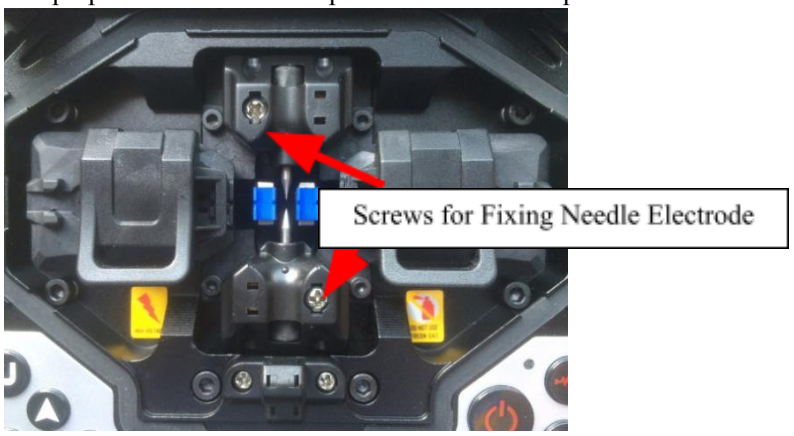
Steps of replacement of the needle electrode:

● Turn off the power supply of the Optical Fiber Fusion Splicer.

● Screw out fixing screws, and remove the old needle electrode suffered from electric shock.

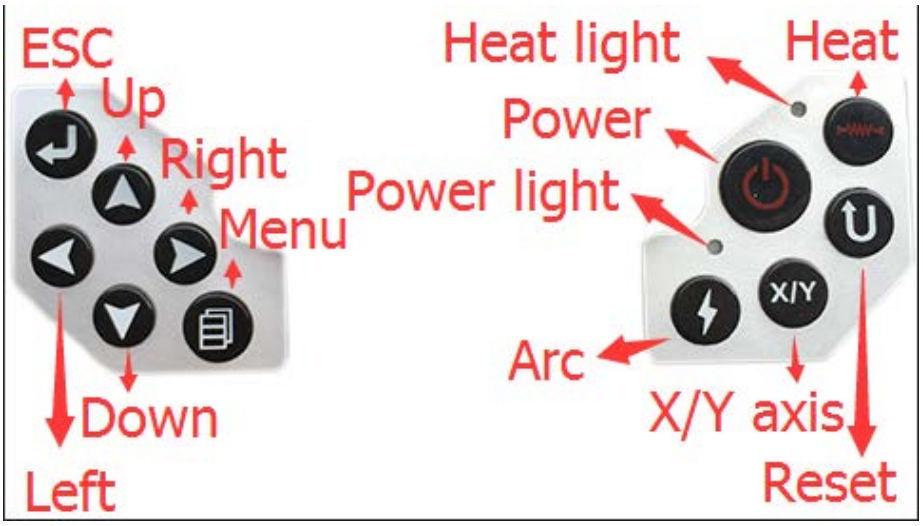
● Use a wipe with alcohol to clean the new needle electrode, and then correctly install the needle electrode on the Optical Fiber Fusion Splicer and tighten the fixing screws.

● To turn on the power, and put the prepared fiber into the Optical Fiber Fusion Splicer to do the discharge tests.

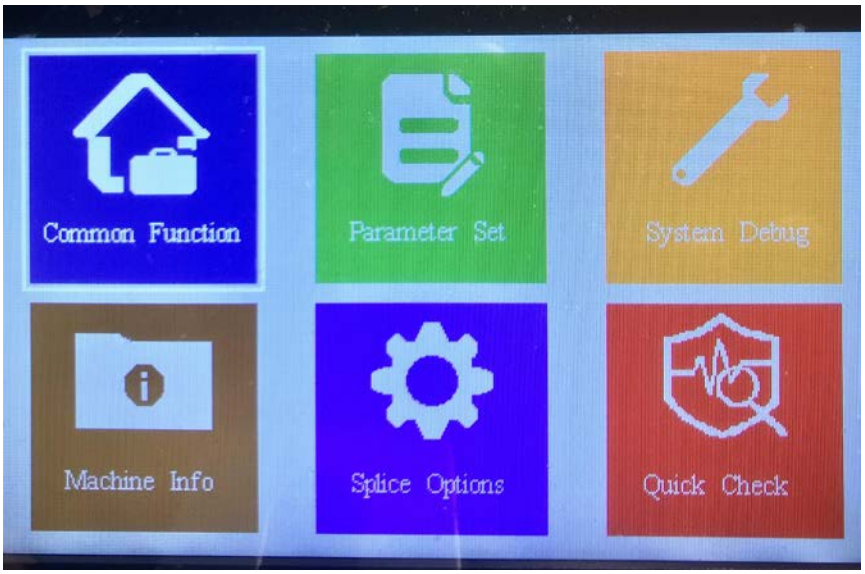


How to Enter and Select Menu

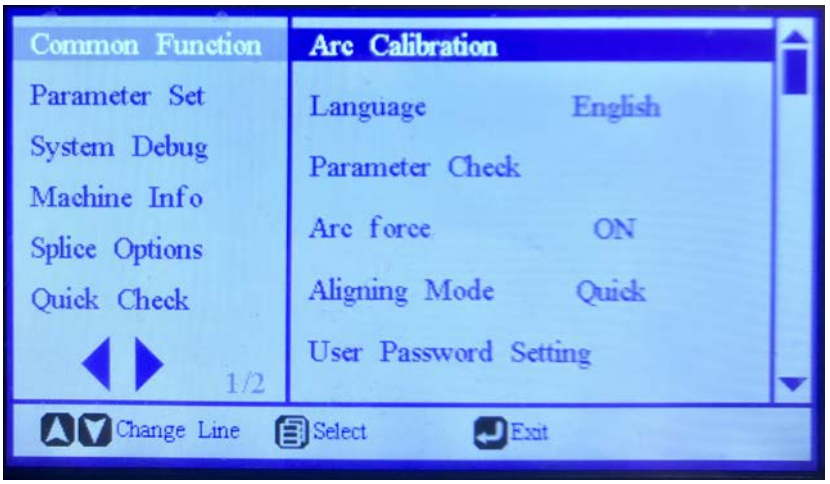
Once the system is “ready”, press“ENTER”to enter the menu, and press the cursor controls to select Menu

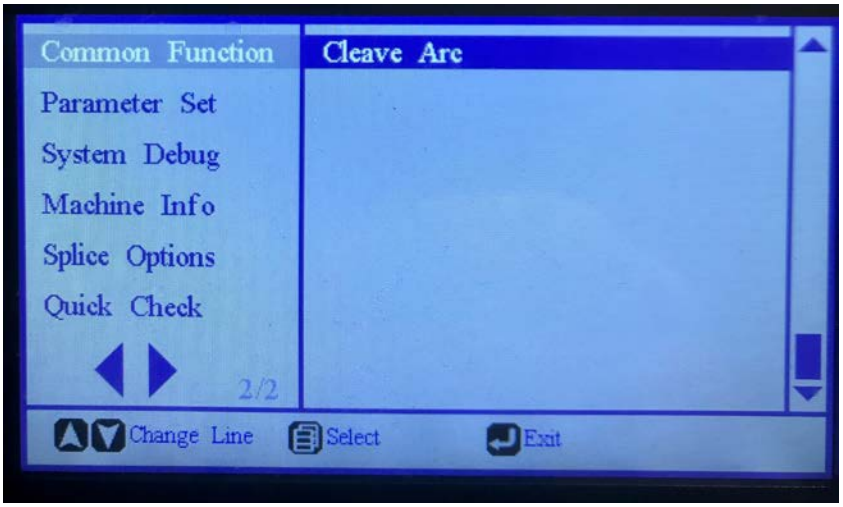


Main Menu includes the following six applications: **Common Function, Parameter Set, System Debug Machine Info, Splice Options, Quick Check**



1. Menu: Common Function

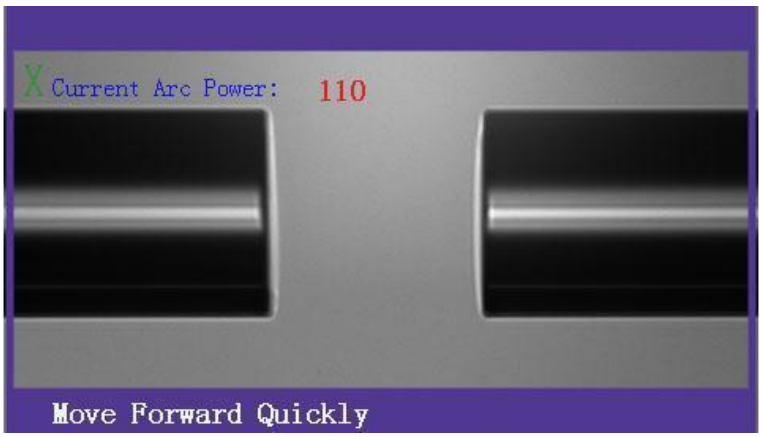




1-1. Arc Calibration

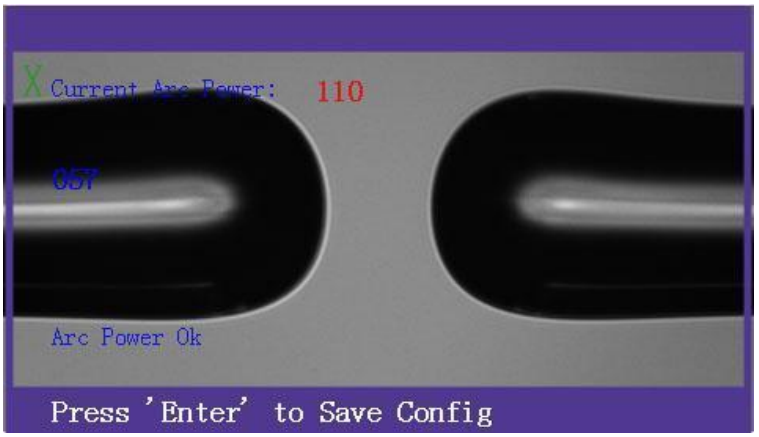
In order to ensure the stable fusion-splicing quality, the user should operate regularly. It is necessary to do arc test when using the Optical Fiber Fusion Splicer under the following conditions: ultra-high temperature, ultra-low temperature, very dry, very wet, electrodes degradation, fusion splicing of the heterogeneous optical fibers, cleanness, or after replacing the electrode.

The arc test needs to use two optical fibers ready to be fusion-spliced; according to the general method of fusion splicing, these optical fibers should be stripped, cleaved, and placed on the fixture. Press  to enter an arc calibration When seeing “Place fiber and press Enter”, place the fiber well and press the 



After arc, a numeric value will be displayed on the screen. If the value is within the range of 45-65, it means that the arc power is OK. If the value is less than 45, it means that the arc power is weak, if more than 65, arc power is too strong

After arc, if shown weak or strong, please press , store the record , and then do an arc test again until shown the proper arc power value.

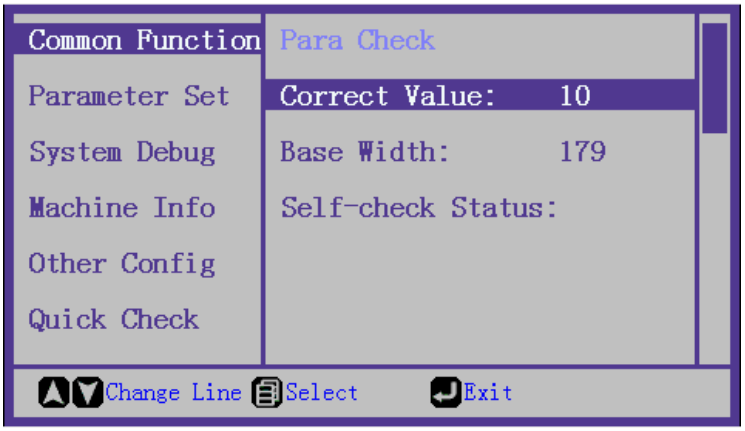


1-2. Language

Set the Language (default English).

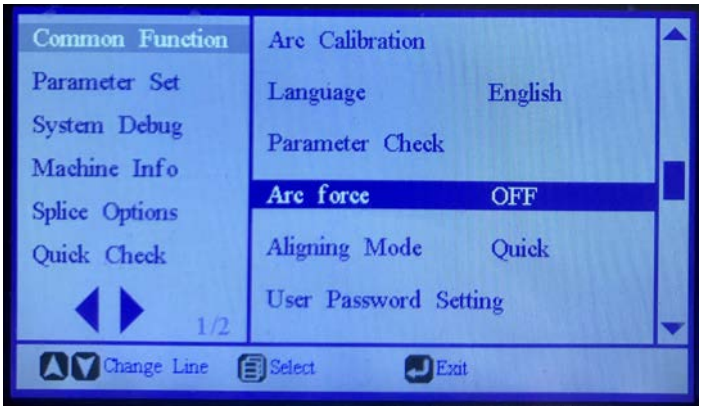
1-3. Parameter Check

This is an Automatic calibrated program, no need to modify manually

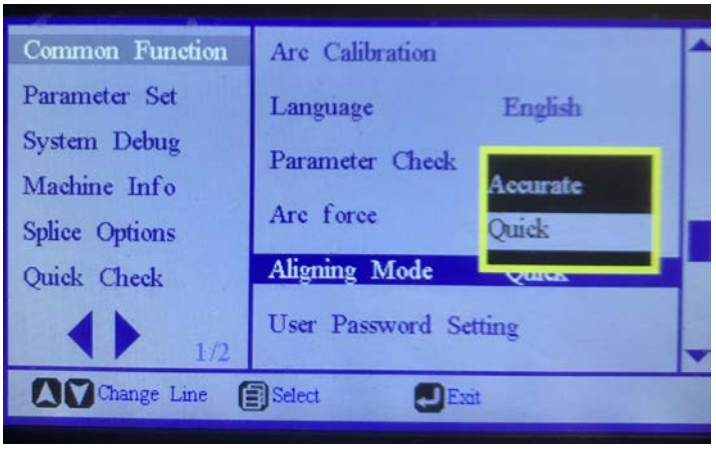


1-4. Arc Force

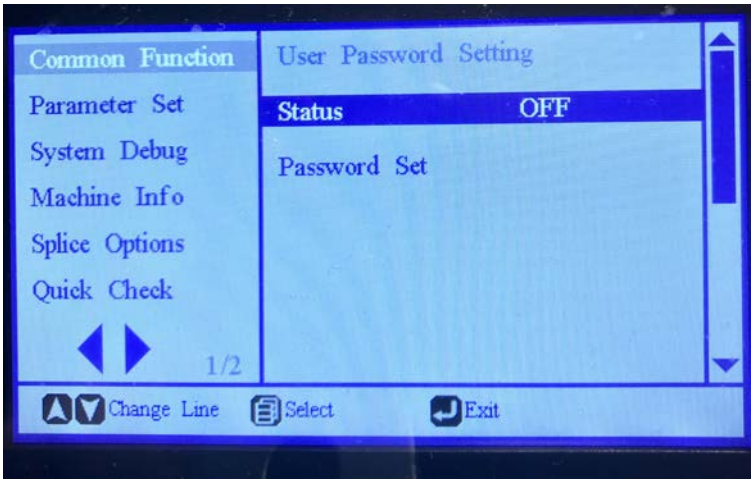
It is off when splicing normally. When turned on, the fusion splicer will splice fiber even if it is not proper to splice.



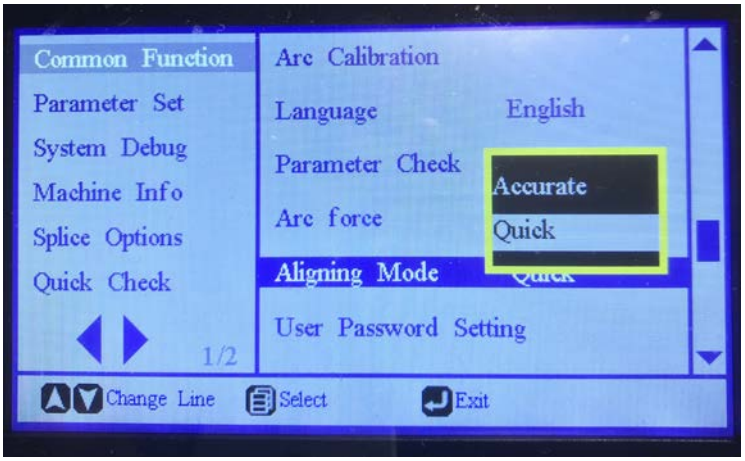
1-5. Aligning Mode - Accurate or Quick



1-6. User Password Setting - To set a user password.

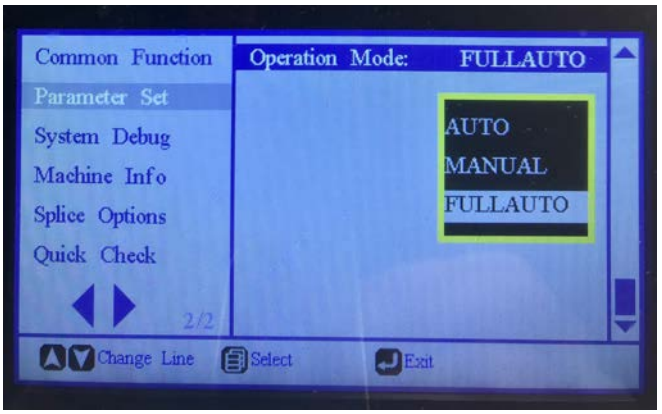


1-7. Aligning Mode - Accurate or Quick

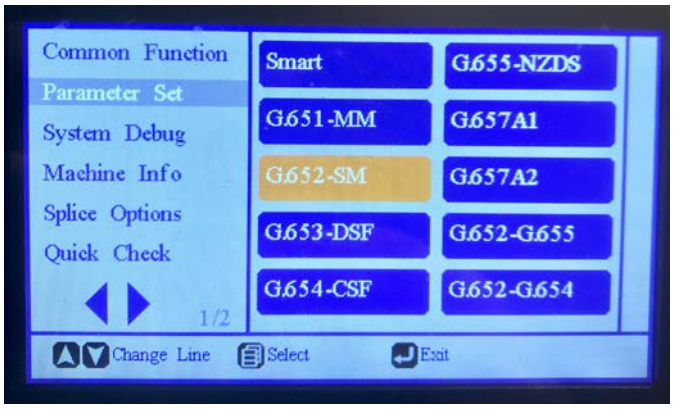


1-8. Cleave Arc - Over Splices the fiber with strong arc

2. Menu: Parameter Set



2-1. Splice Program - Select splice program according to type of fiber or Smart to allow fusion splicer to auto detect fiber type

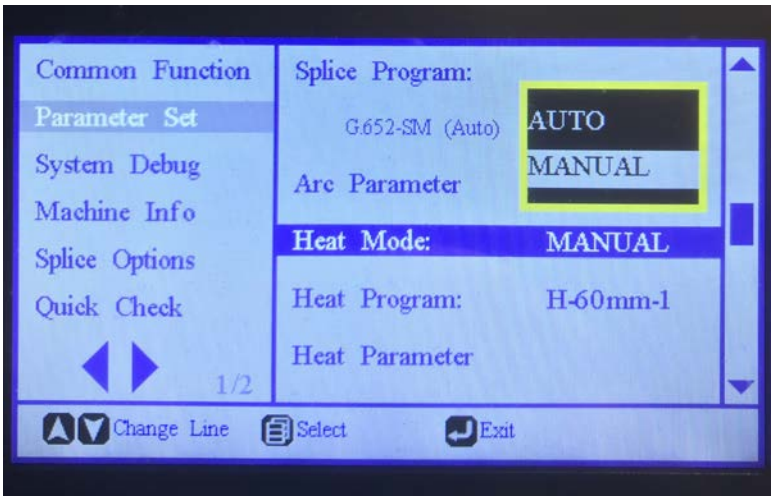


2-2. Arc Parameter - Press to change the detailed Parameters (DEFAULT is Factory settings, cannot be changed). Not recommended except by authorized staff.

Function Items	Function Instructions	Range
PreArc time	PreArc time	0-1.0
PreArc Power	PreArc Power	0-250
Arc Time	Splice Arc time	0-10.0
Arc Power	Splice Arc Power	0-250
Forward	The forward distance of the motor when splicing	0-60
Forward Speed	The forward speed of the motor when splicing	0-60
Cleave angle	The angle of cleaving the fiber	0-15

Gap	The gad when the left and right fiber finished alignment	0-50

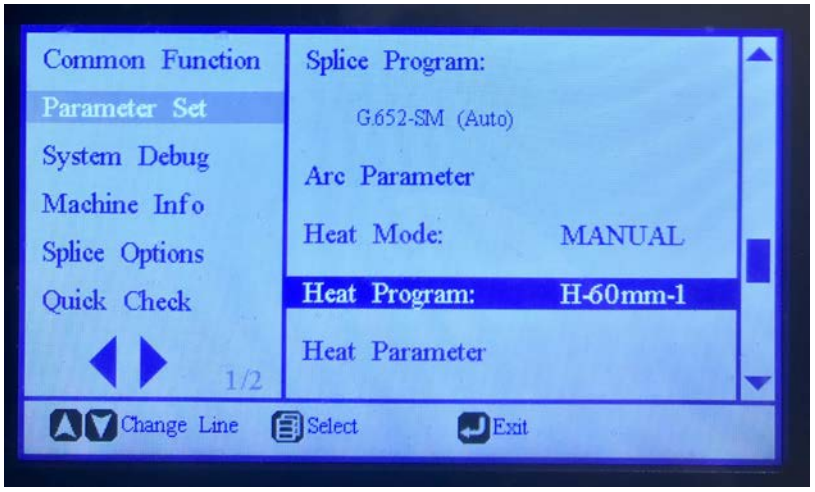
2-3. Heat Mode - Auto or Manual



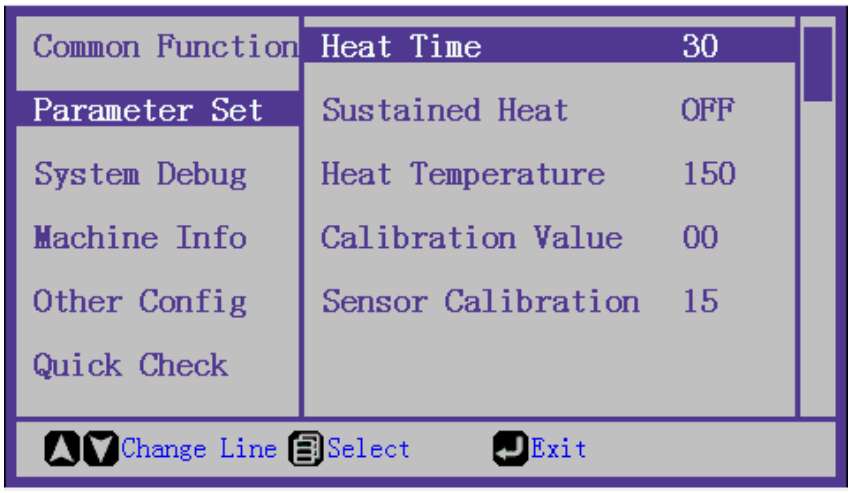
AUTO mode - Place the fiber protective sleeve in the heating box, close the heating box cover and it will heat automatically

MANUAL mode - Place the fiber protective sleeve in the heating box, close the heating box cover, press to start heating

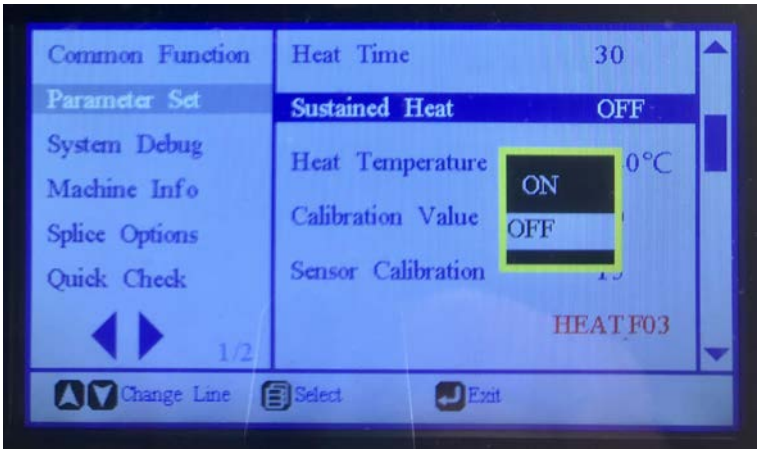
2-4 HEAT PROGRAM - Choose the heat program based on size and type of heat shrink sleeve



2-6 HEAT PARAMETER - Adjust heat time and heat temperature for each Heat program, and utilize "Sustained Heat" function

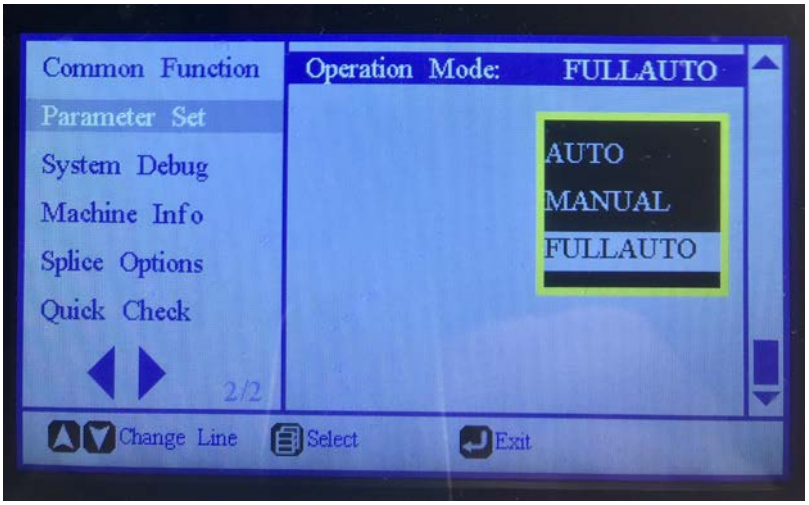


Sustained Heat - Oven will stay on for four minutes in order to heat faster



Function	Function Instructions	Range
Heat time	Heating box working time	10-90
Sustained heat (4 mins)	Sustained heat (4 mins)	Turn off/turn off
Heat Temperature	Heat Temperature	100-250
Calibration value	Sensor Calibration value	0
Sensor Calibration	Using to correct the temperature sensor deviation	15

2-7. Operation Mode - Manual, Auto, Full Auto

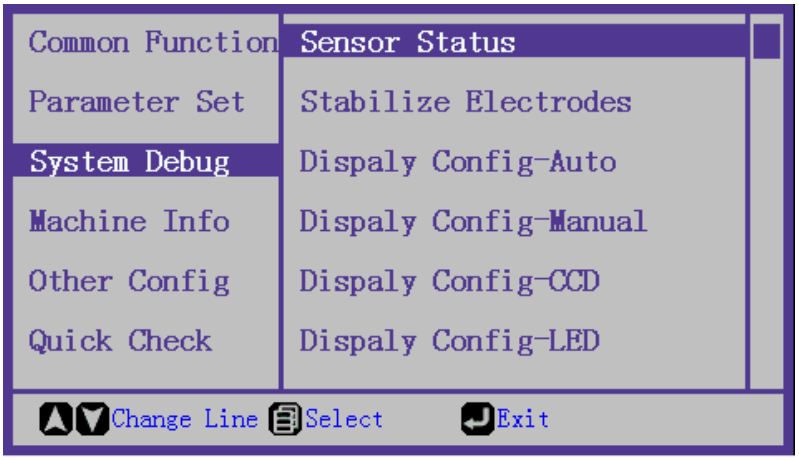


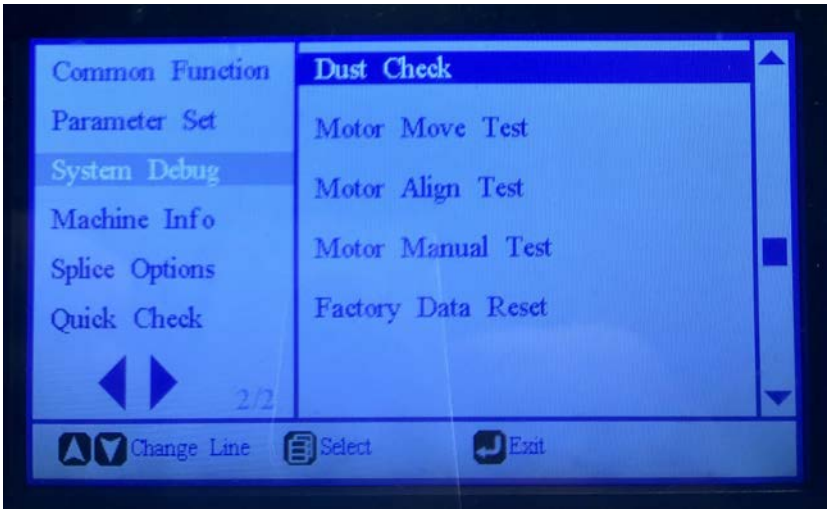
Select one of the three operation modes, “FULL AUTO” mode, “AUTO” mode or “MANUAL” mode.

“MANUAL” Operation Mode - each step of the optical fiber alignment, the arc and the fusion splicing is controlled by the operator via the keypad.
“FULL AUTO” Operation Mode - After place the fibers, cover the windproof cover then do splicing automatically
“AUTO” Operation Mode - After place the fibers, press “ ”, then the program for fusion splicing will automatically execute.

Keypad Functions in the “MANUAL” Operation Mode are as below:
“ ” as a “Select” key：It is able to select the operation modes of such four motors as the Left, Right, X, and Y motors.
“ ” as a “Shift” key: It is able to move the cursor up or down, so as to select the operation commands.
“ ” as an “Optical Fiber Forward” key: It is able to get the Optical Fiber to advance.
“◂”and ”▸”separately as the “Forward” key and “Backward” key of the left and right motors: Being able to separately control the left and right motors to go forward or to back off”.
“▲”and ”▼”separately as the “Upward” key and “Downward” key for tuning the cores of the X and Y motors: Being able to separately control the X and Y motors to go upward or downward.

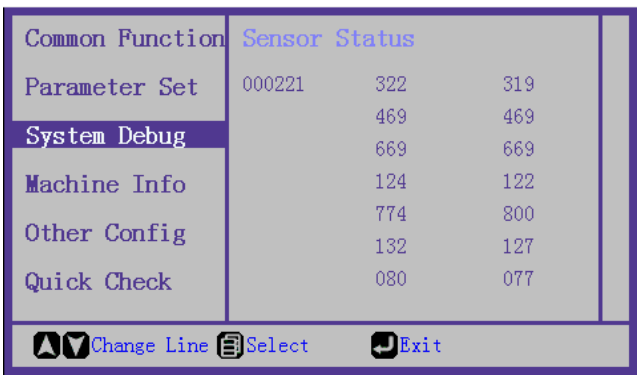
3. Menu “System Debug”





3-1. Sensor Status

Check the status of each Sensor.



3-2. Stabilize Electrodes

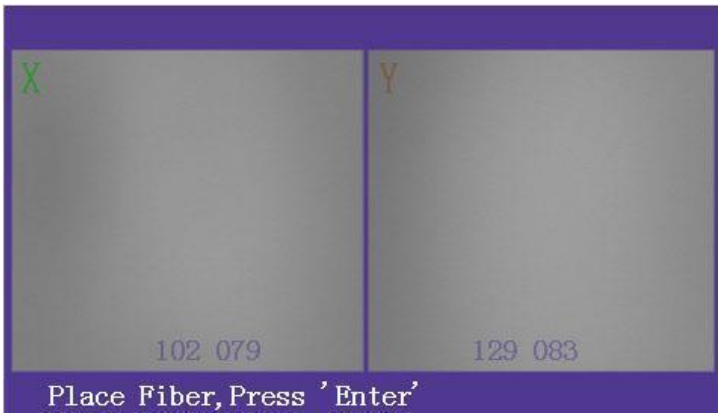
Sometimes when the outside environment changes, the Arc power will be unstable. That leads to a big splicing loss. Especially when the fusion splicer is located in a low altitude area to high altitude area, so it needs some time to stabilize Arc power. On this occasion, it needs to do several Arc tests to stabilize electrodes, which will speed up Arc power stabilization.

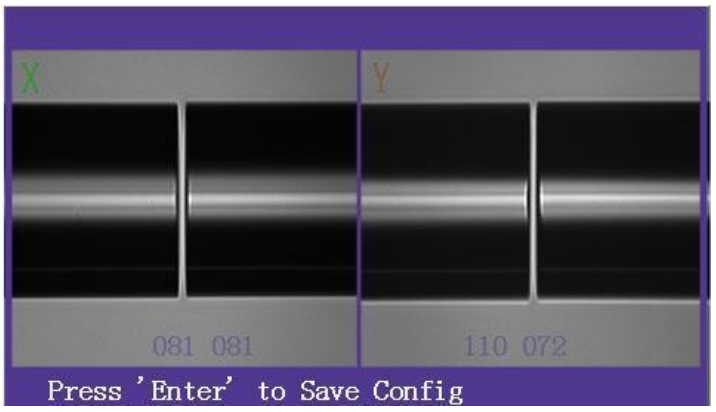
3-3. Display Config-Auto

Display Config-Auto is to adjust the display range of optical fiber, and make the optical fiber show in the center of the screen.

According to general splicing steps to strip, cut and place optical fiber. Press  to enter the "Display Config-Auto".

The screen will show the following: Place fiber and press "Enter". Press  after placing the optical fiber.

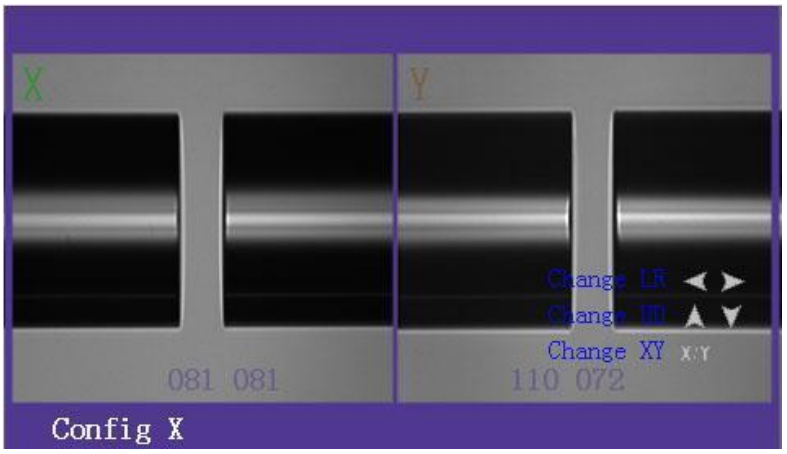




3-4. Display Config-Manual

According to general splicing steps to strip, cut and place optical fiber.

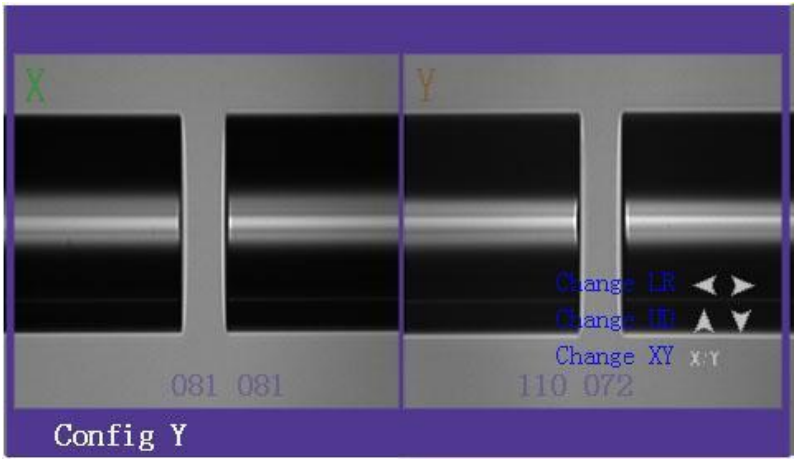
The screen will show the following: Place fiber and press Enter. Press  after placing the optical fiber.



"◂"and"▸"are movements about the left and right position of optical fiber.

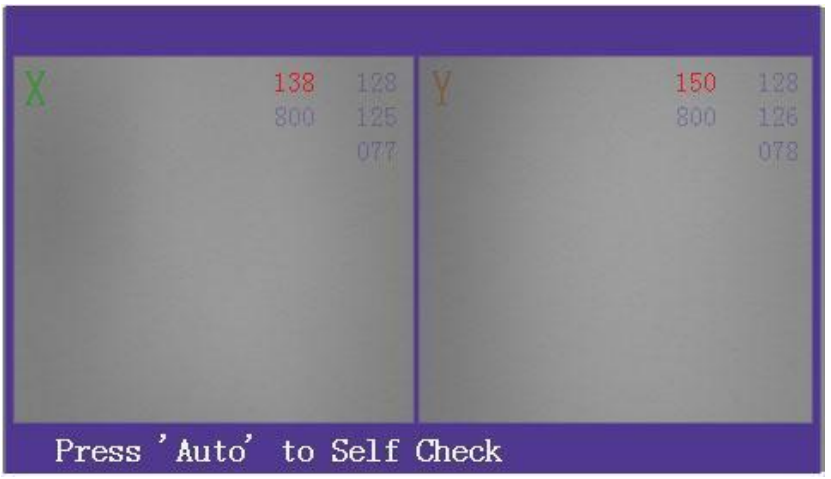
"▲"and"▼"are movements about the up and down position of optical fiber.

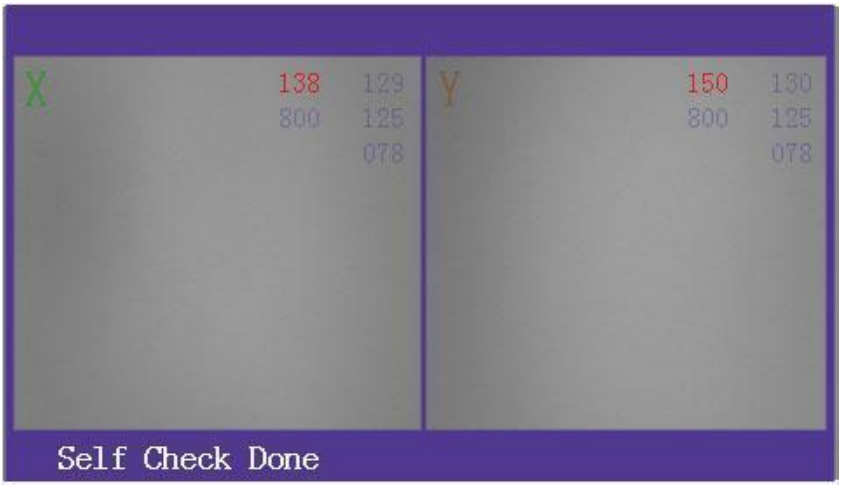
"  "it changes the X axis and Y axis display.



3-5. Display Config-CCD

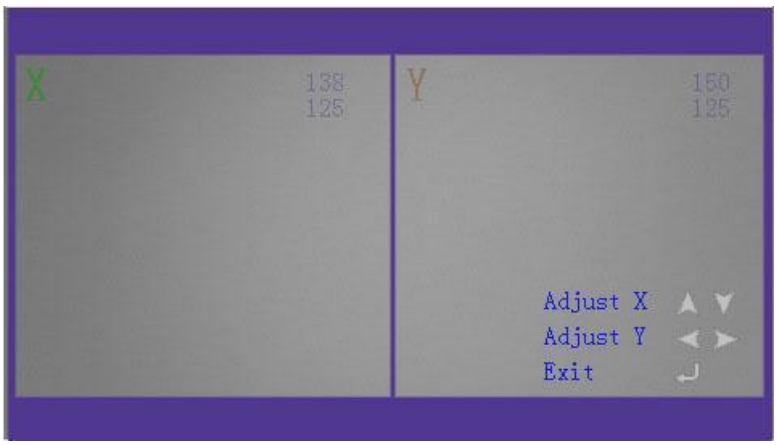
This is a camera focus calibration. Press , and enter in the menu of "Display Config-CCD"
The display will show: Press "Auto" to Self Check.
After place the optical fiber and press the button .





3-6. Display Config – LED

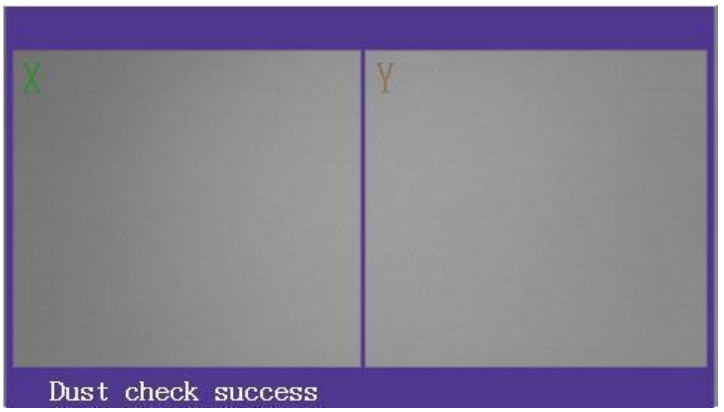
Press , select "Display Config -LED", press and to adjust lightness of X-axis, and to adjust the lightness of the Y-axis.



3-7. Display Setting – Dust Check

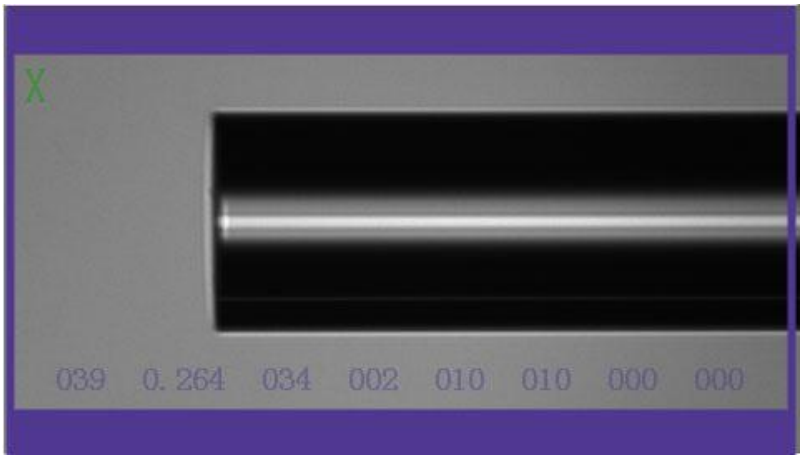
Check whether there is dust in the display system

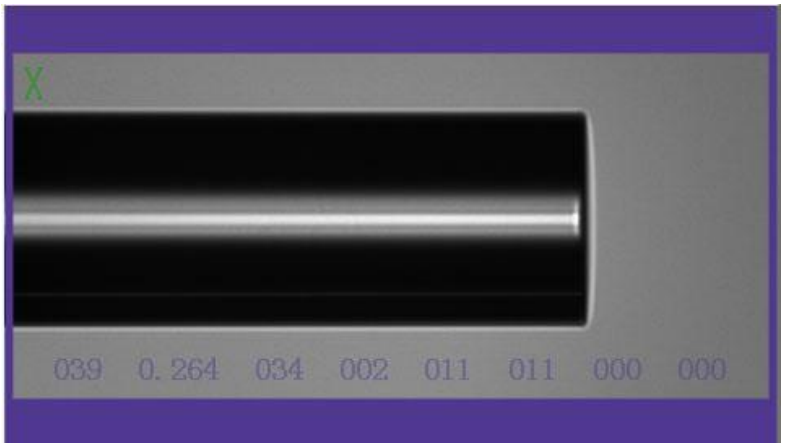
Press [menu], enter Display Config – Dust Check Menu, check whether the screen shows Dust Check Success.



3-8. Motor Move Test or “Push” Test

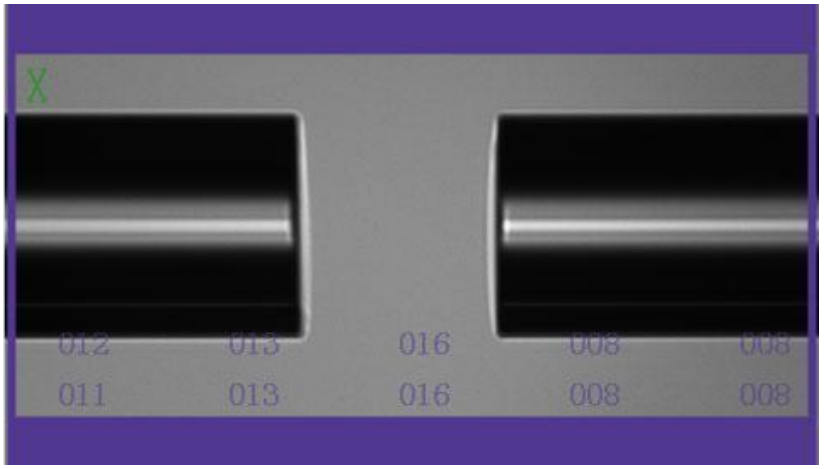
Press [menu], enter “Motor Forward Test”, screen will show“ UP to test right motor, Down to test left motor”

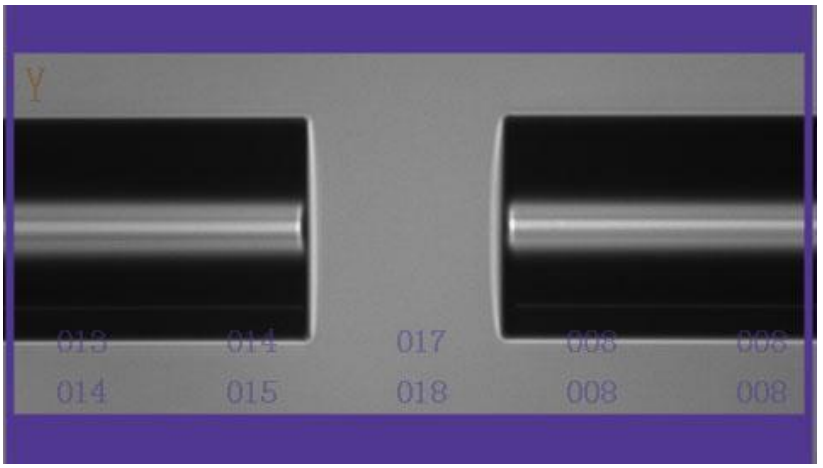




3-9. Motor Alignment Test

Press , enter Motor Alignment Test, screen will show “UP to test X-axis motor, Down to test Y-axis motor”





3-10. Motor Manual Test

Prees , enter Motor Manual Test, press to select the motor

Left Moto Manual Trigger

Press , select L Moto Manual Trigger, fix a cleaved fiber on the left fixture, make the fiber view in the screen, press and hold or to move the fiber.

Right Moto Manual Trigger

Press , select R Moto Manual Trigger, fix a cleaved fiber on the right fixture, make the fiber view in the screen, press and hold or to move the fiber.

X-axis Moto Manual Trigger

Press , select X Moto Manual Trigger, fix a cleaved fiber on the left fixture, make the fiber view in the screen, press and hold or to move the fiber.

Y-axis Moto Manual Trigger

Press , select Y Moto Manual Trigger, fix a cleaved fiber on the right fixture, make the fiber view in the screen, press and hold or to move the fiber.

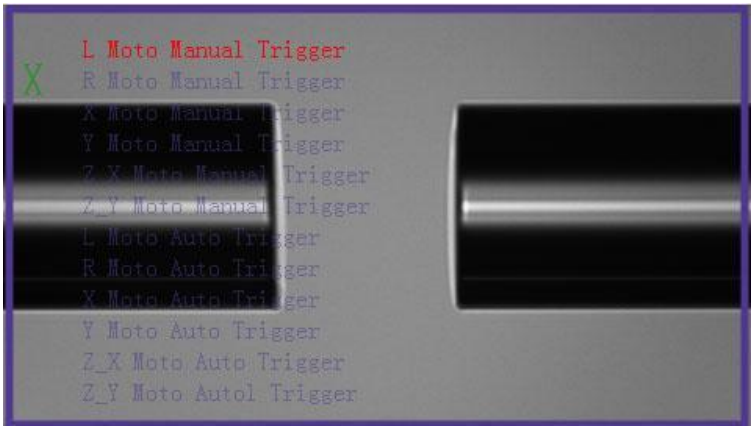
Left Moto Auto Trigger

Press , select L Moto Auto Trigger, fix a cleaved fiber on the left fixture, make the fiber view in the screen, press or to move the fiber automatically, press again to stop moving.

Right Moto Auto Trigger

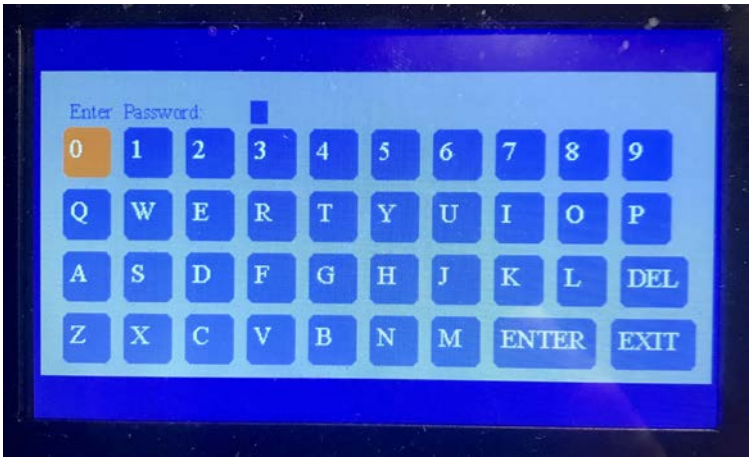
Press , select R Moto Auto Trigger, fix a cleaved fiber on the right fixture, make the fiber view in the screen,

press ◀ or ▶ to move the fiber automatically, press again to stop moving,
X-axis Moto Auto Trigger
Press ϟ, select X Moto Auto Trigger, fix a cleaved fiber on the left fixture, make the fiber view in the screen, press ▲ or ▼ to move the fiber automatically, press again to stop moving.
Y-axis Moto Auto Trigger
Press ϟ, select Y Moto Auto Trigger, fix a cleaved fiber on the right fixture, make the fiber view in the screen, press ▲ or ▼ to move the fiber automatically, press again to stop moving.



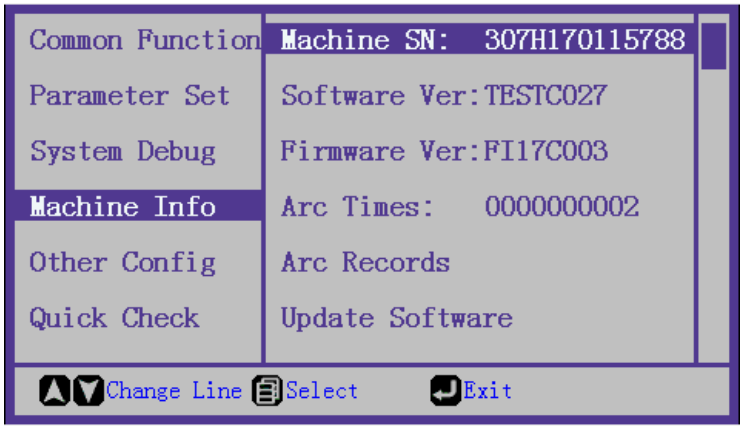
3-11. Factory Data Reset

Reset fusion splicer to factory settings. Contact sales@optixamerica for passcode



4. Menu: Machine Info

You can check the machine serial number, software version number, firmware version number and arc count from this menu.



4-1. Machine SN

Machine serial number

4-2. Software Version

Machine software version number

4-3. Firmware Version

Machine firmware version number

4-4. Arc Count

Machine splicing arc times

4-5. Arc Records - The machine can store up to 6000 splicing arc records. Functions include uploading records to a laptop.

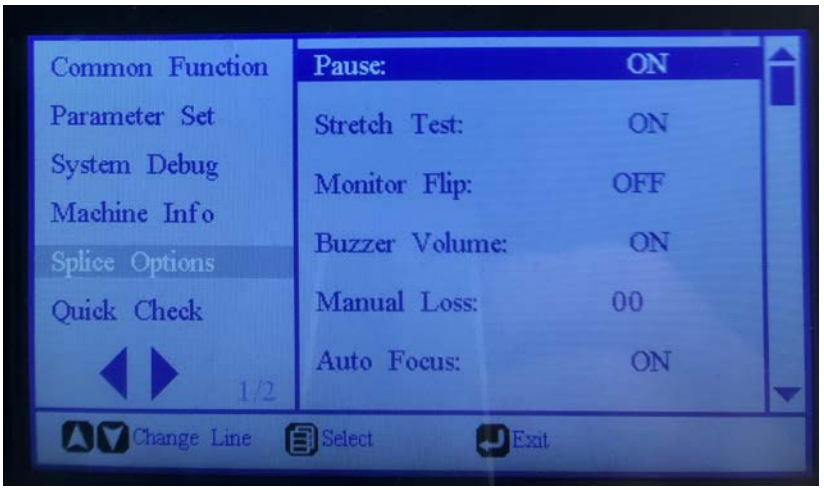
4-6. Update Software

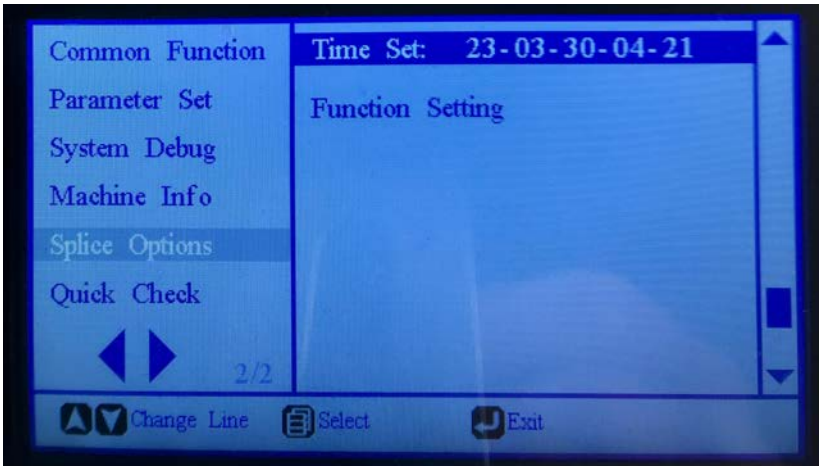
Update the machine software

4-7. Update Firmware

Update the machine firmware

5. Menu: Splice Options





5-1. Pause

Stop splice process after alignment creating an aligning pause. Splice will follow through on splice after manually pressing arc button 

5-2. Stretch Test or Pull Test

Turn Stretch Test ON/OFF. Test the fiber splice with 2.2N of force.

5-3. Monitor Flip

Reverse image monitor to work on machine from the back of the machine

5-4. Buzzer Volume

Buzzer Volume turn off or turn on.

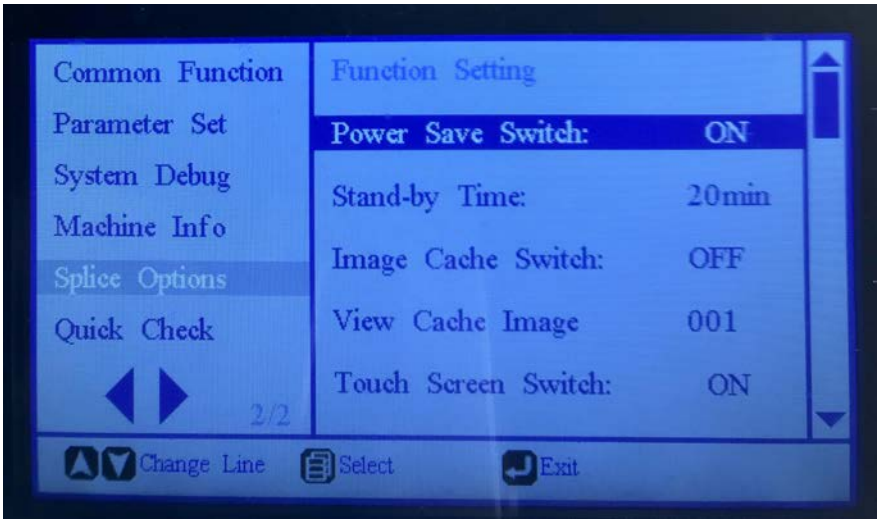
5-5. Manual Loss

Offset fibers to create more splicing loss Create

5-6. Auto Focus - Turn on for SMART DETECT and "accurate" aligning

5-7. Time Set

5-8 Function Setting



Power Save Switch - machine shuts down automatically after set time

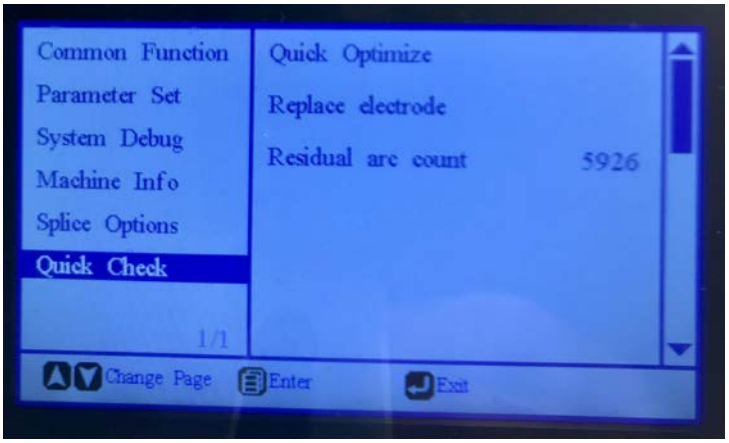
Stand-by Time - Set time for machine shut down

Image Cache Switch - ON/OFF to save splice images

View Cache Image - View splice images

Touch Screen Switch - Turn ON/OFF touch screen

6. Menu: Quick Check



6-1. Quick Optimize

Machine will test parameters including arc power, camera focus, motor alignment, and electrode stabilization .

6.2. Replace Electrode - renews arc count when replacing electrodes

6-3. Residual arc count - Counts the number of arcs for the electrodes.

1. TURNING ON POWER OF OPTICAL FIBER FUSION SPLICER AND POWER SUPPLY

● Turn ON the power switch, but the power supply does not respond.

Reason:

a. Power outlet is not plugged in.

b. The contact of the power switch is bad.

c. The storage battery is not properly inserted in.

Solution: Check to see if the power plug or the storage battery is plugged/inserted in well or not, and is connected to the optical fiber fusion splicer well or not. Then, check to see if the power switch is good or not.

● In the case of turning on the optical fiber fusion splicer and it does not turn on (The screen does not brighten.)

Reason:

a. The power supply fuse disconnects.

b. There is a short-circuit or the failure occurs inside the optical fiber fusion splicer .

c. The electricity capacity of the storage battery is not large enough or the polarity is connected in reverse direction.

d. The AC adapter is bad, the voltage output is not correct.

e. The display screen is bad.

Solution:

Check to see if the power supply fuse disconnects or not, and to see if the short-circuit or other failure occurs inside the optical fiber fusion splicer. Replace the power supply fuse on the main board. If there is a short-circuit or other failure inside the optical fiber fusion splicer, please contact your dealer to repair/maintain it or send it back to the factory for repair/maintenance.

Check to see if the electricity capacity of the storage battery is large enough or not. If it is not large enough, it is necessary to discharge the storage battery. Check to see if the battery polarity is connected in the correct direction or not. If it is connected in the reverse direction, it is necessary to correct it.

Check to see if the voltage output of the AC adaptor is normal or not.（The output voltage should be 12V.).If it is not normal, it is necessary to replace the former AC adapter with a new one. Please contact your dealer to replace the former AC adapter by the special AC adapter.

The brightness of the display screen has been well adjusted at the factory, if the display screen can not properly show, it indicates that the display screen is faulty, please contact your dealer to repair/maintain it or send it back to the factory for repair/maintenance.

● After turning on the optical fiber fusion splicer, it always shows "system reset" and the equipment is at all times in the “Reset” status.

Reason:

a. The photoelectric switch of the optical fiber fusion splicer is faulty.

b. The motor or the motor drive is faulty.

Solution: please contact your dealer to repair/maintain it or send it back to the factory for repair/maintenance.

2. FUSION SPLICING OPERATIONS

● After having placed the optical fiber, there appears a very dark image or a dim image on half of the display screen.

Reason:

a. The windproof cover is not correctly put in its position

b. The corresponding light does not shine.

c. The corresponding CCD signal control lines fall off or the CCD is faulty.

Solution: Check to see if the windproof cover is completely closed or not, with or without foreign body sticking from the windproof cover. Check to see if the corresponding light shines through or not. If it does not shine, please contact your dealer to repair/maintain it or send it back to the factory for repair/maintenance.

● Press the "  " key, but the optical fiber stops moving; press the "  " key, and it is able to normally reset the system, but the optical fiber still does not move.

Reason:

a. The optical fiber is broken off.

b. The press board of the optical fiber did not pin the optical fiber.

Solution: Produce the optical fiber again. Lay the optical fiber again. Shut the press board, and gently pull the optical fiber back by hand. If the optical fiber can be easily pulled to move, it indicates the press board did not pin the optical fiber. Check to see if the compaction bar of the optical fiber is able to bounce or not. If the compaction bar is not able to bounce, it needs to be repaired.

●Press the "  " key, and the optical fiber moves forward to a certain position, and then moves forward again,

and finally there will be shown " Lay Optical Fiber Again" .
Reason:
a. The length of the cleaved optical fiber is unable to meet the requirements.
b. There is an obstacle for the press board of the optical fiber to move forward.
Solution: The length of the cleaved optical fiber should be a minimum of 10mm. If it does not meet the requirements, it is necessary to produce the optical fiber again. In the advancing direction of the press board of the optical fiber, gently push by hand the press board of the optical fiber, and check to see if it has an obstacle or not. If it has an obstacle, it is necessary to find its location, and handle it.

●Press the " ϟ " key, and in the course of the core-to-core of the optical fibers, the image of the optical fiber at one side is moving up and down in the vertical direction, and the end-faces of the optical fiber at two sides are not core-to-core, so that it is unable to do the fusion splicing.
Reason:
a. There is the dust on the precision V-shaped groove, so that the position of the optical fiber at one side is somewhat higher, the data of which is greater than the max. position value of the optical fiber at the other side moving up and down.
b. There are the dust and dark spots on the objective lens' surface, the lights, the reflecting mirrors, and the CCD has dust or dark spots.
Solution: Clean the bottom of the V-shaped groove with a cotton swab just having had a dip in alcohol (above 99% alcohol), and remove the excess alcohol in the V-shaped groove with a dry cotton swab. If contaminations in the V-shaped groove can not be removed with a cotton swab just having had a dip in alcohol, you can use the well-cut end-face of the optical fiber to clean the bottom of the V-shaped groove, and then repeat the previous step. Also, clean the objective lens' surface and the lights with a cotton swab just having had a dip in alcohol (above 99% alcohol), and remove the excess alcohol on the objective lens' surface and the lights with a dry cotton swab. If it is still impossible to solve these issues, please contact your dealer to repair/maintain it or send it back to the factory for repair/maintenance.

●It often occurs that the fusion splicing is done despite optical fibers being not core-to-core, so that after completing the fusion splicing, there will be shown a large loss or a failure in the fusion splicing.
Reason:
a. An optical fiber is dirty, and its end-face is bad.
b There is the dust and the dark spots on the objective lens' surface and the lights.
Solution: Produce the qualified optical fiber again. Clean in the same way, the objective lens' surface and the lights with a cotton swab just having had a dip in alcohol (above 99% alcohol), and remove the excess alcohol on the objective lens' surface and the lights with a dry cotton swab. If it is still impossible to solve these issues, please contact your dealer to repair/maintain it or send it back to the factory for repair/maintenance.

●It always occurs that the end-face of the optical fiber at one side is not good.
Reason:
a. In the Menu, the value of "End-Face Setup " is somewhat small.
b. There are the dust and dark spots on the objective lens' surface, the lights, and the reflecting mirrors' lens.
c. The corresponding light does not shine.
d. There is the dust in the V-shaped groove, or the optical fiber had not properly been laid into the V-shaped groove.
Solution: Enter the Menu, and increase the value of "End-Face Setup ". Clean in the same way, the V-shaped groove, the objective lens' surface, and the lights with a cotton swab just having had a dip in alcohol (above 99% alcohol), and remove the excess alcohol on the V-shaped groove, the objective lens' surface and the lights with a dry cotton swab. Check to see if the corresponding lights are normal or not, and to see if the optical fiber had properly been laid into the V-shaped Groove or not. If it is still impossible to solve these issues, please contact your dealer to repair/maintain it or send it back to the factory for repair/maintenance.

● The electrode does not discharge in the course of the fusion splicing.
Reason:
a. The program without the set parameters had been selected or in the program the discharge strength is set to 0.
b. The high-voltage power supply is damaged or the electrode connecting cable falls off.
Solution: Check to see if the selected program is correct or not, or to see if the set discharge strength in the program is proper or not. If it is still impossible to discharge normally, please contact your dealer to repair/maintain it or send it back to the factory for repair/maintenance.

● The fusion splicing phenomenon is normal, but the loss of the fusion splicing has been somewhat large at all times or there occurs the failure in the fusion splicing.
Reason:

a. There is a failure in the detection system or there is dust on the objective lens.
b. In the parameters, the value of "End-Face Setup" of the optical fiber is set too high.
c. After the operations of the electrode discharge and the fusion splicing, the windproof cover is opened before the equipment has completed its detection.
Solution: Clean in the same way, the objective lens' surface and the lights with a cotton swab just having had a dip in alcohol (above 99% alcohol), and remove the excess alcohol on the objective lens' surface and the lights with a dry cotton swab. Check to see if the value of "End-Face Setup" of the optical fiber is set high in the parameters or not. Then operate the electrode discharge tests again, until the discharge current is moderate. If it is still impossible to solve these issues, please contact your dealer to repair/maintain it or send it back to the factory for repair/maintenance.

●Press the "  " key, and the gap setting and the core-to-core adjustment are normal, but it fails in completing the fusion splicing, resulting in rounded fibers.
Reason:
a. The fusion-splicing current is too large, and the environmental humidity is too high.
b. The advancing amount is small or is zero; the advancing speed value is somewhat large.
c. The optical fiber's press board did not pin the optical fiber.
d. The quality of the optical fiber itself is poor, being disengaged from its cladding.
Solution: Change the fusion-splicing environment to a dry one, to see if there is that issue. Confirm that for the fusion-spliced optical fiber, there is no phenomenon that it is disengaged from its cladding. Enter the "Applications Program" menu; check the parameter setting and set the correct parameters; and then do the electrode discharge tests again, until the discharge current is moderate. If it is still impossible to solve these issues, please contact your dealer to repair/maintain it or send it back to the factory for repair/maintenance.

●The multi-mode optical fiber is blistered, becoming thicker or thinner after its fusion splicing.
Reason:
a. The end-face of the optical fiber is unqualified or the surface of the optical fiber is dirty.
b. There is an issue about the parameter setting in the program.
Solution: Ensure that the end-face of the optical fiber is good, do the electrode discharge tests until the discharge current is moderate. If the optical fiber is still becoming thicker or is blistered, it is necessary to increase the values of the "Pre-Fusion Current" and "Pre-Fusion Time" in the program. In reverse, if the optical fiber is still becoming thinner or is blistered, it is necessary to decrease the values of the "Pre-Fusion Current" and "Pre-Fusion Time" in the program, and increase the quantity of the "Fusion-Splicing Boost". If it is still impossible to solve these issues, please contact your dealer to repair/maintain it or send it back to the factory for repair/maintenance.

●The fusion splicing loss index has been somewhat large at all times.
Reason:
a. There is the dust on the optical fiber, and in the V-shaped groove of the Fusion Splicer.
b. The discharge current is not moderate.
c. The optical fiber fusion splicing without having made the optical fibers being core-to-core.
d. The electrode is aging.
e. The parameters set in the program are not proper.
f. The end-face of the optical fiber is not good, and there is an issue about the optical fiber cleaver.
g. The operating environment is rather poor, such as high winds, rain, or very high humidity etc.
h. The optical fiber is specialized.
Solution: First of all, it is required that the test method should be correct, then do all kinds of cleaning (for the V-shaped groove, the objective lens, the lights, and the needle electrodes); select the appropriate procedures to do the discharge tests; adjust the optical fiber cleaver to ensure that the end-face of the optical fiber is well-cleaved . If the fusion splicing loss index is still somewhat large, you may do the parameter setting many times so as to find the better parameters for the fusion splicing, by way of increasing or decreasing the values of the "Pre-Fusion Time, Pre-Fusion Strength, Pre-Fusion Boost Quantity, and Pre-Fusion Boost Speed", or you may reset the parameters to be the default parameters set at the factory. If it is still impossible to solve these issues, please contact your dealer to repair/maintain it or send it back to the factory for repair/maintenance.

●It is sparking on the electrodes or the electrode is sparking to the metals nearby it.
Reasons:
a. The electrode connecting cable is loose.
b. The operating environment is humid.
Solution: Check to see if the electrode connecting cable is loose or not. Change the operating environment to be the dry one, to see if the said phenomenon is the cause or not. If it is still impossible to solve these issues, please

contact your dealer to repair/maintain it or send it back to the factory for repair/maintenance.

3. HEATING OPERATION

● The optical fiber heat-shrinkable sleeve has not completely shrinked.
Reason:
a. The set heating time is too short.
b. As the outside temperature is too low so that the heating has not been fully and completely done.
Solution: Adjust the program to extend the heating time.
● The optical fiber heat-shrinkable sleeve adheres in the heating tank.
Reason: Some optical fiber heat-shrinkable sleeves may cause adhesions.
Solution: Take out the optical fiber heat-shrinkable sleeve after it is completely cooled. Or use a cotton swab to lightly poke at its edges to break it away from the heating tank.
● The heating indicator light does not shine, but the normal heating can be done.
Reason:
a. The heater is faulty.
b. The heating indicator light is bad.
Solution: Please contact your dealer to repair/maintain it or send it back to the factory for repair/maintenance.
● The heating indicator light shines, but the heater does not heat. Or the heating indicator light does not shine, also the heater cannot heat.
Reason: The heater is faulty, or the heating control circuit is faulty.
Solution: Please contact your dealer to repair/maintain it or send it back to the factory for repair/maintenance.

1. GUARANTEE

1-1. Warranty Period and Conditions

If there occurs a failure in the optical fiber fusion splicer within three years starting from the date of goods delivery, we will provide a free repair/maintenance. However, we will not provide a free repair/maintenance within the Warranty Period, if there occur the following events:
(1) Failure or damage caused by natural disasters;
(2) Failure or damage caused by the wrong operation;
(3) Failure or damage caused by ignoring the operation instructions and procedures in this manual to make bold to operate;
(4)The parts being easy to wear off or to be consumable. (For example, needle electrodes);
(5) Failure or damage caused by the abnormal voltage power supply.

1-2. Before returning the Optical Fiber Fusion Splicer, you must have a Return Material Authorization (RMA). Please contact the sales@optixamerica.com in advance.

1-3. Information required for repair/maintenance

Along with the Optical Fiber Fusion Splicer, please attach the following information:
(1)Your full name, company, address, telephone number, email, and purchase order number from the distributor
(2) The model and the serial number of the Optical Fiber Fusion Splicer.
(3) Clear description and photos of problems with the Optical Fiber Fusion Splicer

1-4. Transportation of the Optical Fiber Fusion Splicer.

As the Optical Fiber Fusion Splicer is a high precision instrument, you should by all means use the original carrying case to transport and store it, so as to protect it against the moisture and shock. If you need to repair/maintain the Optical Fiber Fusion Splicer, please put the related fitting accessories in the carrying case before sending it.

1-5. Information recorded before the repair/maintenance

Please record in advance the stored info contents in the Optical Fiber Fusion Splicer, such as the fusion splicing results, fusion splicing modes, etc., because these information and data may be lost in case of the repair/maintenance.

2. CONTACT

Please contact the manufacturer if the user needs support or services at sales@optixamerica.com located in North Babylon, NY

Note: If the program has been updated and the structure has been changed, resulting in errors and the unconformity to the manual, please take the actual product as the reference standard.

Quick Reference Guide

The guide is for the basic operation. For the detailed information, please refer to the Instruction manual.

1、 Power Supply

Two ways of supplying power to the fusion splicer : 1.internal battery；2. AC power supply. Please make sure that your fusion splicer is turned off before power is supplied.

1-1、 Insert battery

Insert the battery into the battery house. Make sure it is properly fixed.

1-2、 **Remove battery**

Push the battery out by pressing the release button.

1-3、 **Using AC Adaptor**

Put the plug into the socket on the back of the device.

1-4、 **Screw off AC Adaptor**

Pull out the plug.

2、 Turning on Splicer Power

Press power button  to switch the device ON/OFF..

3、 Setting Fiber in Splicer

1） Open the wind protector;
2） Open the left and right sheath clamps;
3） Put the stripped fiber on the V-groove. And make sure that the cleaver length is set as per operators' intended length;
4） Hold the fiber and make sure that the fiber is put on the bottom of V-groove, then close the sheath clamps carefully. If the fiber is not properly set, please adjust it;
5） Repeat the steps for second fiber;
6） Close the wind protector.

4、 Splicing Operation

4-1、Mode：AUTO/Manual

AUTO: press  button.

Manual: please refer to the Instruction Manual.

4-2、Fiber type: SM/MM/NZDS/ED

4-3、Pause

Turn on: after aligning the fiber, press  button, the splicer began to fuse.

Turn off: after aligning the fiber, the splicer automatically began to fuse.

5、 Take out the fiber and heat the fiber

1） Open the cover;
2） Open the wind protector;
3） Open the right and left sheath clamps;
4） Take out the fiber and move the fiber protection sleeve to the splice point;
5） Make sure the splice point and fiber protection sleeve in the center of the tube heater, close the heater cover;
6） Press HEAT button, and indicator light is turned on;
7） When the indicator light is turned off , it means that the heating is finished;
8） Open the heater cover, check if there are air bubbles in protection sleeve;
9） Put the fiber on the cooling tray, waiting for it to cool down.