

§ 1. Warnings and Cautions for Safe Operation

The WY-725 is used in different outdoor environment for fiber splicing “field splicing”. User must be aware that arc fusion splicing maybe brings some dangers. Therefore, are included in this instruction manual safety requirements.

- Read this manual carefully and completely before operating the splicer.
- Adhere to all safety instructions and warnings contained in this instruction manual.
- Retain this manual for future reference.

WARNING

1. Never operate the splicer in an environment where flammable liquids or vapors exist. Risk of dangerous fire or explosion may result from the electrical arc in such an environment.
2. DO not use the splicer near any hot equipment or in any place of high temperature. Possible equipment failure or fire may result.
3. Do not touch the splicer, AC power cord and AC plug if your hand is wet. Possible electric shock may occur.
4. Do not operate the splicer if water condensation is present on surface of splicer. Possible electric shock or equipment failure may result.
5. 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 carrying case to transport and store the splicer. The carrying case protects the splicer from damage, moisture, vibration and shock during storage and transportation.

6. Do not place the splicer in an unstable or unbalanced position. The splicer may shift and lose balance, causing the unit to fall. Possible personal injury or equipment damage may result.
7. Keep the splicer free from sand, dust, lubricants and other contaminants. The presence of such substances may degrade the splicing performance and cause equipment failure or damage.
8. Do not use any chemical other than alcohol to clean the objective lens, V-groove, mirror, LCD monitor, etc., of the splicer. Otherwise, blurring, discoloration, damage or deterioration may result.
9. The splicer requires no lubrication. Oil or grease may degrade the splicing performance and damage the splicer.
10. Do not use compressed gas or canned air to clean the splicer. They may contain flammable materials that may ignite during the electrical discharge.
11. Do not store the splicer in any area where temperature and humidity are extremely high. Possible equipment failure may result.
12. Before using the shoulder belt of carrying case, inspect the belt and hook for excessive wear or damage. Carrying the case with a damaged belt may cause it to fall and may result in personal injury or equipment damage.
13. Do not touch the electrodes when the splicer is on and power is supplied to the unit, the electrodes generate high voltage and high temperatures that may cause a severe shock or burn. Turn the splicer

off, and disconnect the AC power cord, or remove the battery pack when replacing the electrodes. (Note: Opening the wind protector stops arc discharge.)

14. Do not disassemble or modify the splicer, AC adapter, battery pack, or DC adapter. In particular, do not remove or bypass any electrical or mechanical safety device (e.g., fuse or safety switch) incorporated in this equipment. Modification could cause damage that may result in personal injury, death or electric shock or fire.
15. Use only the 85-264VAC, 47-63Hz/12VDC, 14Ah with WY-725.
.The proper supply voltage source is 85-264VAC, 47-63Hz, Check the AC Power source before use. Using an improper AC power source may cause fuming, electric shock or equipment damage and may result in personal injury, death or fire.
16. Use the supplied AC power cord. Do not place heavy objects on the AC power cord. Do not pull, heat up or modify the AC power cord. Use of an improper cord or a damaged cord may cause fuming, electric shock or equipment damage and may result in personal injury, death or fire.
17. Connect the AC power cord properly to the splicer and wall socket. When inserting the AC plug, make sure there is no dust or dirt on the terminals. Incomplete engagement may cause fuming, electric shock or equipment damage and may result in personal injury, death or fire.
18. The WY-725 uses a three-prong (core) AC cord that contains an earthed ground safety mechanism. The splicer MUST be Grounded/Earthed. Use only the supplied three-prong (core) AC power cord. NEVER use a two-prong (core) power cord, extension cable or plug.

19. Use only the approved battery pack with the WY-725. Only the WY-725-01 battery pack can be used as the approved battery pack.
20. Use the specified charger cord (WY-725-09) to recharge the battery pack (WY-725-01). Using other battery chargers and charger cords may cause fuming or equipment damage and result in personal injury, death or fire.
21. The splicer inlet is used to disconnect the power cord in the event of a fault. Be sure to position the splicer so that the power cord can be disconnected easily and quickly.
22. Disconnect the AC or DC power cord from the splicer inlet or the wall socket (outlet) immediately if the splicer or the external battery emits fumes or bad smell, or becomes noisy or hot. Leaving the abnormal condition unattended will cause equipment failure, electric shock or fire and may result in personal injury, death or fire.
23. Disconnect the AC or DC power cord from the splicer inlet or the wall socket (outlet) if the splicer becomes damaged (e.g., by dropping). Leaving the splicer in a damaged state may cause equipment failure, electric shock or fire and may result in personal injury, death or fire.
24. Disconnect the AC or DC power cord from the splicer inlet or the wall socket (outlet) immediately if liquid (e.g., water) or foreign matter (e.g., screw) enters the splicer. Leaving the splicer in a damaged state may cause equipment failure, electric shock or fire and may result in personal injury, death or fire.
25. Caution should be taken when removing the fiber protection sleeve from the tube heater after the heat shrink cycle is completed. The

tube heater and fiber protection sleeve are hot and should not be touched. Possible burn may result.

26. Replace the electrodes properly.

- Use only specified electrodes.
- Set the new electrodes in the correct position.
- Replace the electrodes as a pair.

Disregard of the above instructions may cause abnormal arc discharge and result in equipment damage or degradation in splicing performance.

27. The equipment must be repaired or adjusted by a qualified technician or engineer. Incorrect repairs may cause fire or electric shock.

Should any problem arise, please contact your nearest sales agency.

§ 2. Description

§ 2. 1. Specification

1	Applicable Fiber	Single mode and multi mode silica based optical glass fiber • Cladding diameter : 100 - 150um • Coating diameter : 0.1-1.0mm
	Cleave Length	Standard spec : 16mm
2	Mean Splice Loss (Note 1)	• Single mode fiber : Typ.0.02dB • Dispersion shifted fiber : Typ.0.04dB • Multi mode fiber : Typ.0.01 dB
	Mean Splice Time (Note 2)	Typ. 8 seconds
	Fiber Protection Sleeve Shrinking Time (Note 3)	40mm / 60mm sleeve : Typ.40seconds
3	Dimensions	170mm(W) / 170mm (D) / 145mm(H)
	Weight	4.1 kg
4	Battery/Charger	WY-725-01 with battery charge function • Input power : 85~264 V (47~63HZ) • Output power: 9~3V, 10Ah
5	Proof Test Force	• Standard spec. : Approx.1.96N (200gf)

6	Program test	Atmospheric pressure (maximum altitude : 5000m)、temperature and humidity. Automatic calibration by observing distance of the GAP during arc discharge
	Wind Resistance	Maximum permissible wind velocity: 15m/s
7	Type of Splice Mode	AUTO, MANUAL
	Program of Splice Mode	SM、MM、DS、NZDS、EDF
	Storage of Splice Results	8000 splice results in internal memory


Note 1: Mean splice loss:

Data based on splicing same-type fibers having an average quality according to the ITU-T standard.


Note 2: Mean splicing time

- Length of time from the start of operation by pressing START till the end of loss estimation.

Note 3: fiber protection sleeve shrinking time

- Length of time from the start of heating by pressing < > till the end of cooling.

§ 2. 2. Components

No.	Name	Model	Fig.
(1)	Arc Fusion Splicer	WY-725	

(2)	Li-Battery	WY-725-01	
(3)	AC adaptor	WY-725-02	
(4)	AC Power Cord	WY-725-03	
(5)	Charger	WY-725-04	
(6)	Spare Electrodes	WY-725-05	
(7)	Instruction Manual	WY-725-06	
(8)	Carrying Case	WY-725-07	
(9)	Cooling salver	WY-725-08	
(10)	Charger cord	WY-725-09	
(11)★	DC adapter	WY-725-10	
(12)★	DC Power Cord	WY-725-11	
Notes: ★ optional			

§ 2. 3. Accessory for Operation

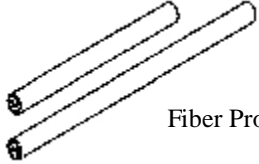
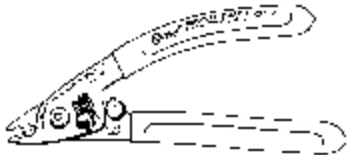

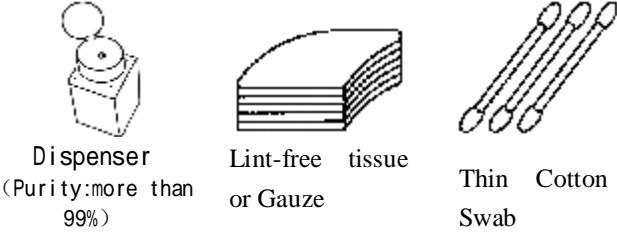
Fiber Protection Sleeve	 <p>Fiber Protection Sleeve</p>
Coat Stripper	 <p>Fiber/Pigtail Coat Stripper</p>
Fiber Cleaving Tool	 <p>WY-105 Cleave Length: $\phi 0.25:6-20\text{mm}$ $\phi 0.9:10-20\text{mm}$</p>
Fiber Cleaning Tool	 <p>Dispenser (Purity: more than 99%)</p> <p>Lint-free tissue or Gauze</p> <p>Thin Cotton Swab</p>

Fig.2-2 Other Necessary Items

§ 2. 4. Description and Function of Splicer

§ 2.4.1. Main Body of Splicer:

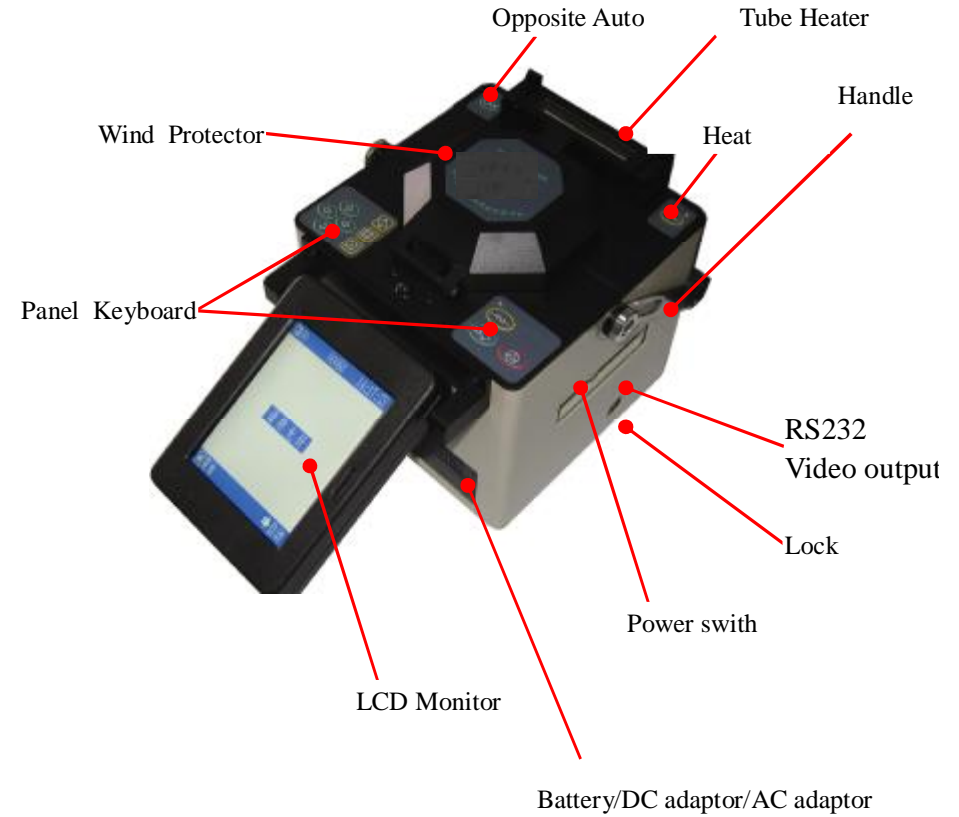


Fig.2-3 Splice Main Engine

§ 2.4.2. Panel Keyboard

(1) Right Keyboard



Fig.2-4 Right Keyboard











Key	Name	Function
	Heat	Start/stop tube heater
	Start	Start splice operation
	Reset	Splicer Reset






Fig 2-5 Left keyboard

Key	Name	Function
	Alternate	Manual: left/right,up/down
	Menu	1. Enter Main Menu 2. Confirm Menu
	Exit	Exit Menu
	Down	1. Menu: move cursor down 2. Manual: move fiber down
	Up	1. Menu: move cursor 2. Manual: move fiber up
	Right	1. Menu: modify parameter 2. Manual: move fiber right
	Left	1. Menu: modify parameter 2. Manual: move fiber left

§ 2.4.3. Power Supply Switch and Plugs



Fig.2-6 Power Supply Switch and Plugs

	Power ON/OFF
	Video output
	RS-232 interface


§ 3. Power of Splicing Operation

STEP 1: Connect the splicer

★ Three supply: AC power supply/internal battery/external battery.


(1) AC power supply for fusion splicer.

① Plug AC adapter (WY-725-02), plug one end of AC power cord (WY-725-03) into AC adapter, an other end into AC power supply.

Press  to turn on splicer;

(2) Internal battery for splicer


Plug internal battery (WY-725-01) into splicer.

Press , turn on splicer;

(3) External battery for fusion splicer.

① Plug DC adapter into splicer.

② Plug one end of DC adapter (WY-725-12) into DC adapter, an other end into external battery

③ Press , Turn on splicer;

STEP 2: Fiber stripping

(1) Clean the fiber outer coating approx. 100mm in length from the fiber end with alcohol-impregnated lint-free tissue or gauze.

(2) Pass the fiber through the fiber protection sleeve. (Fig.3-1)

(3) Remove the fiber coating 30-40mm with a stripping tool.

] Check: After this operation, handle the fiber so as not to damage its bare glass

(4) Clean the bare part With another alcohol tissue.

] Check: After this operation,handle the fiber so as not to damage its bare glass.

] Check: Use a high-quality alcohol,greater than 99% pure.

] Check: Change lint-free tissue or gauze each time

Full operation refer right Fig.3-2

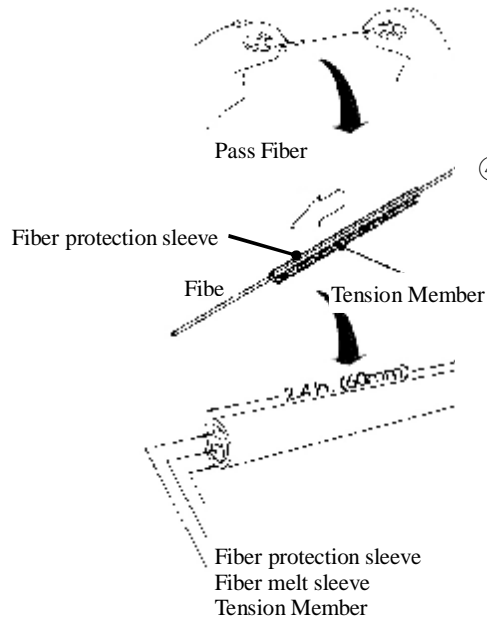
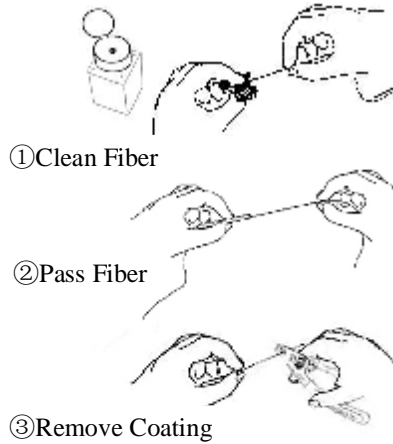


Fig.3-1 Pass Fiber

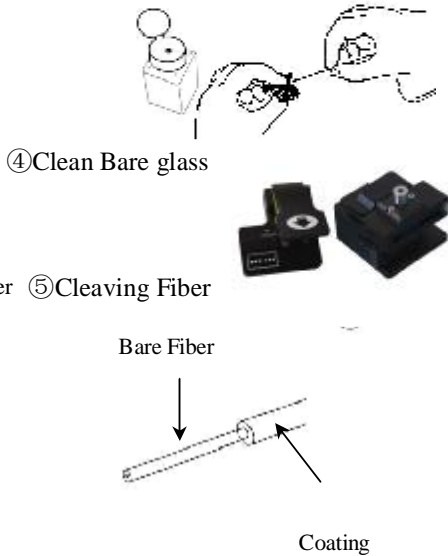


Fig.3-2 Fiber Stripping

(5) Cleave the fiber with a fiber cleaver,Refer to page21 § 4.4.4

] Note: Cleave length: 16mm.

] Note: Do not clean the fiber after cleaving.

STEP3: Set the fiber in the splicer.


(1) Gently set the stripped fiber in the V-groove.

] Check: Set the fiber end-face between the V-groove tip and electrode center line.

(2) Gently close the sheath clamp.

(3) Close the wind protector.

STEP4: Select Suited Splicer Mode

Press <  > into the setup program menu, “Select Program” be selected suited splicer program of 3 column .Refer page 50 § 6.4 Select Program

STEP5: Splicing operation

Press <  > to start splicing. Refer to page 26 § 4.6


Splicing operation

STEP6: Fiber removal

(1) Open the wind protector

(2) Open the left and right sheath clamp , Remove the fiber.

STEP7: Reinforce the splice.

- (1) Slide the fiber protection sleeve to the center of the splice and move it to the tube heater.
-] Check: Make sure the splice point and fiber protection sleeve are in the center of the tube heater.
-] Check: Make sure the reinforcing material is placed dow.
-] Check: Make sure the fiber is not twisted.
- (2) While applying tension to the fiber, lower the fiber into the tube heater, the left tube heater clamp will close automatically.
- (3) With tension still applied to fiber, close the right tube heater clamp with your left hand.
- (4) Press  to start tube-heating cycle.

§ 4. Detail of Splicing Operation

§ 4. 1. Preparations before Splicing Operation

Prepare necessary items, referring to page 7 § 2.3 Other Necessary Items for Splice Operation

§ 4. 2. Power Supply

Three supplying power to the WY-725: AC Power supply, internal battery, external battery.

a Warning: Follow safety instructions, refer to the page 1 to 5 § 1 Warnings and Cautions for Safe Operation

§ 4. 2. 1. Using AC Power supply


To operate the splicer from an AC power supply 176~264VAC, 47~63Hz

(1) Confirmation before operation

a Check: Make sure the power source is 176~264VAC, 47~63Hz. When connecting to an AC generator, always check the output voltage of the generator with a circuit tester before connecting the AC power cord.

a Check: Make sure the AC power cord is free from damage, etc.

(2) Plug AC adapter into splicer.

(3) Plug the AC power cord (WY-725-03) into the AC adapter inlet , Make sure plug is fully seated and in the correct position.

(4) Plug the AC power cord into the wall socket. Make sure plug is fully seated and in the correct position.

(5) Press , turn on splice.

§ 4. 2. 2. Using internal battery pack.

Power supply with internal battery (WY-725—01) .

(1) Plug internal battery (WY-725-01) into splicer.


a Check: Check the battery if all right, Connect if preciseness.

(2) Press<>, turn on splicer.

§ 4. 2. 3. Using external battery.

① Plug DC adapter into splicer.


② Plug DC Cord(one end) into DC adapter ,an other end into external battery

③ Press<>, turn on splicer;

§ 4. 3. Turning On Splicer Power

a Check: To obtain a good splicing quality, perform the cleaning and checking procedures before beginning splicing operation. Refer to page 35.

§ 4. 3. 1. Power-On

Pressing<> turns on the power and displays Power-On Menu

§ 4. 3. 2 . Ready Screen

① Currently selected mode

◇ AUTO:[Working Mode]

Optional mode:

AUTO
MANUAL

◇ SM :[Fiber Type]

Optional mode:

SM
MM
DS
NZDS
EDF
EXF

◇ 16:14:04 :[TIME]

② information

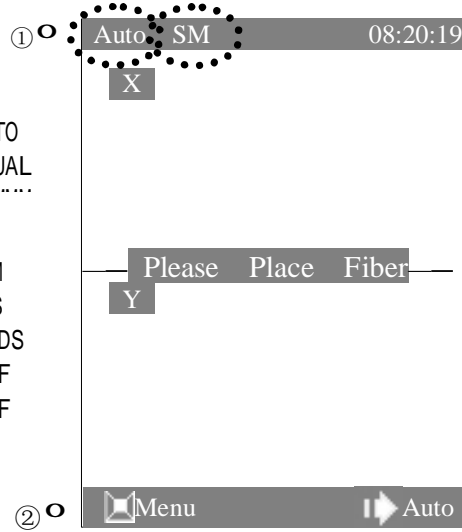


Fig.4-1 READY Screen

a Note: If change working mode or fiber type, Press <  > setup menu.

§ 4. 4. Fiber Stripping Operation

§ 4. 4. 1. Cleaning the Outer Coating

Clean the fiber outer coating approx.100mm in length from the fiber end with alcohol-impregnated gauze or lint-free tissue. If dust or other impurities on the outer coating enter the fiber protection sleeve, burnout or breaking of fiber may result after completion of installation.

§ 4. 4. 2. Passing through Fiber Protection Sleeve

Pass one fiber through the fiber protection sleeve. Refer to Fig.4-2

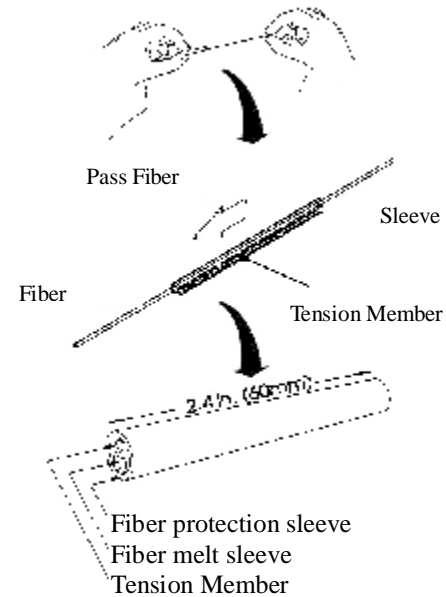


Fig.4-2 Setting Fiber Protection Sleeve

§ 4. 4. 3. Stripping and Cleaning

(1) Remove the fiber coating 30-40mm with a stripping tool.

a Check: After this operation, handle the fiber so as not to damage its bare glass.

(2) Clean the bare part of the fiber with another alcohol-impregnated gauze or lint-free tissue.

a Check: After this operation, handle the fiber so as not to damage its bare glass.

a Check: Use a high quality alcohol, greater than 99% pure.

a Check: Change gauze or lint-free tissue each time.

§ 4. 4. 4. Fiber Cleaving

a Note: The cleave length is 16mm

Notes: detail steps ,Please refer to the fiber cleaver instruction

§ 4. 5. Setting Fiber in Splicer

(1) Open the wind protector.

(2) Open the left and right sheath clamps.

(3) Place fiber in the V-groove.

a Check: Make sure the fiber is not twisted when setting it into the splicer.

a Check: If the fiber coating has curl memory, or bend memory, Load the fiber in such a manner that the crown (curve) of the memory is turn upward.

a Check: Care should be taken to prevent damage or contamination of the fiber end-face. Fiber end-face contact on ANY item including V-groove bottom may result in poor quality splices.

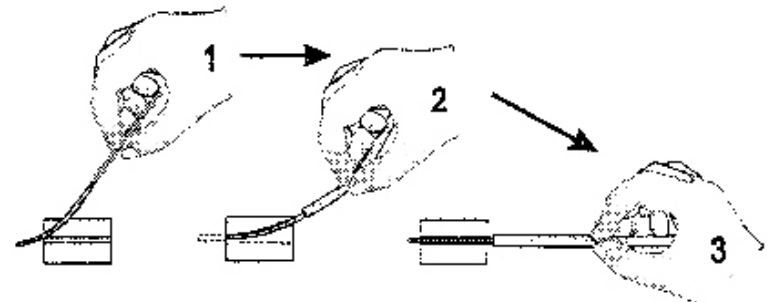


Fig.4-3 Setting Fibers I

(4) Gently close the sheath clamp while holding the fiber.

- a Check: Observe fiber setting in the V-groove. The fiber should rest in the bottom of the V-groove, Reload fiber if it does not rest properly.
- a Check: Fiber end-face should rest between the V-groove tip and electrode centerline. It is unnecessary that the fiber end-face be exactly at the midpoint.

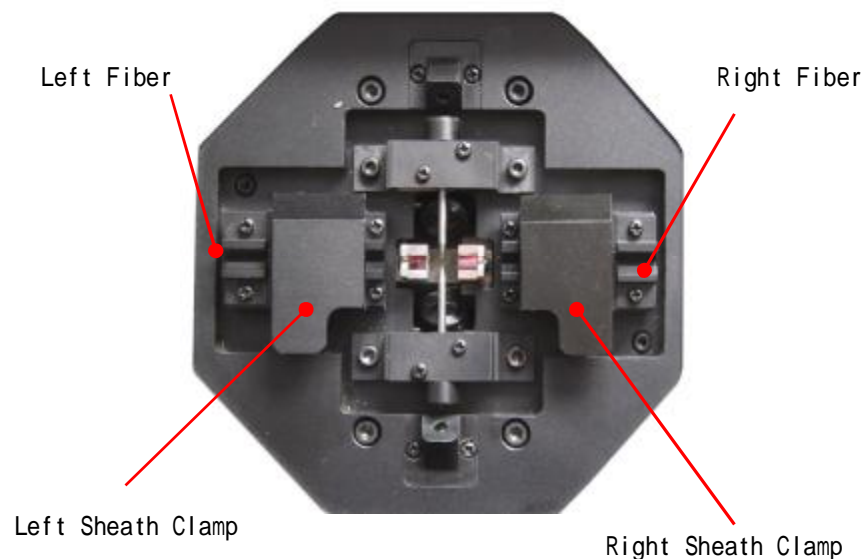



Fig.4-4 Setting Fibers II

- (5) Repeat steps (3) and (4) for second fiber.
- (6) Gently close the left and right fiber clamps.
- (7) Close the wind protector.

§ 4. 6. Splicing Operation

The WY-725 uses image processing to identify abnormal conditions that sometimes occur during the splicing process. A small portion of these defects sometimes goes undetected and a poor quality splice occurs. Visually inspect the fiber image on the monitor to confirm acceptance or rejection during the various stage of the splicing process.


(1) Start of splicing

Pressing <  > moves the left and right fibers forward. After completion of cleaning arc discharge, the fibers stop at the predetermined position.

a Note: When the fiber are moving forward and they appear to hop up and down, contamination may be present in the V-grooves or the fiber surface, Clean the V-grooves and redo fiber preparation.

(2) Cleave angle measurement and alignment operation

Visually examine the condition of the fiber end-face while the splicer is in operation or at a pause.

a Check: Even if no cleave angle error is displayed, press <  > and redo fiber preparation if the following cases occur.

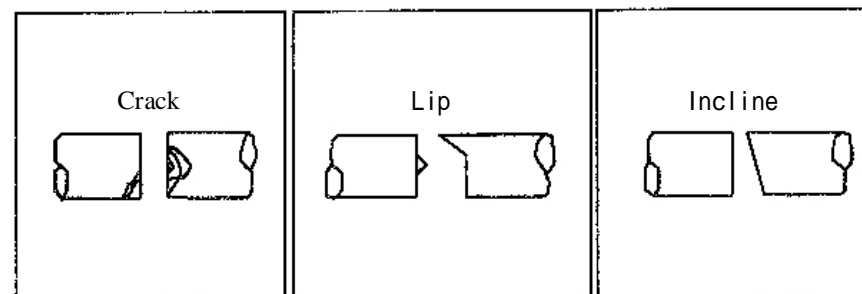
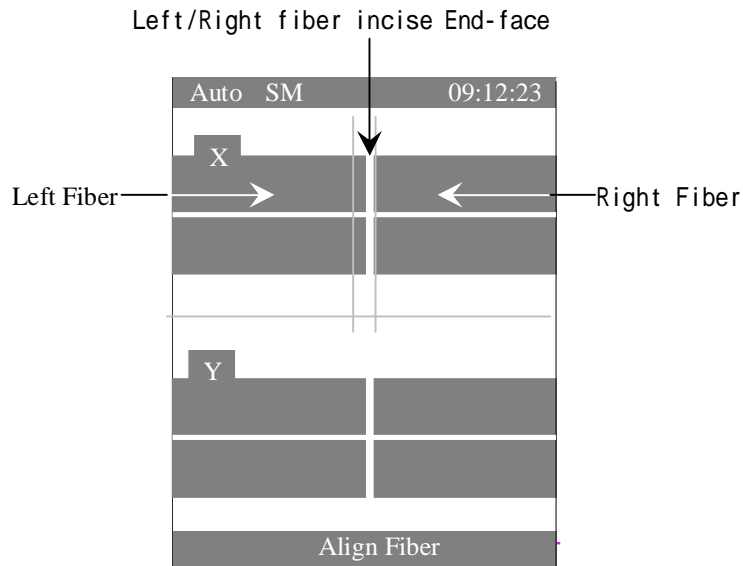


Fig.4-5 State of Fiber End-face

When the threshold of cleave angle error is exceeded an error message is displayed : “Left Fiber End-face badness ” or “Right Fiber End-face badness”, Then redo cleave fiber.



a Note: To change threshold of cleave angle error, refer to page 51 § 6. 5 perfect program

(3) Heating with arc discharge

After aligning the fibers, the splicer will produce a high voltage arc discharge to fuse the fibers together. During arc discharge, observe the fiber image on the monitor screen. If some part of the image exhibits an extremely bright glow (hot spot),which is

created by burning contaminants located on the surface or end-face of the glass, there is a possibility of the fiber core will be deformed. Although deformation can be detected by the loss estimation function, a re-splice is recommended.

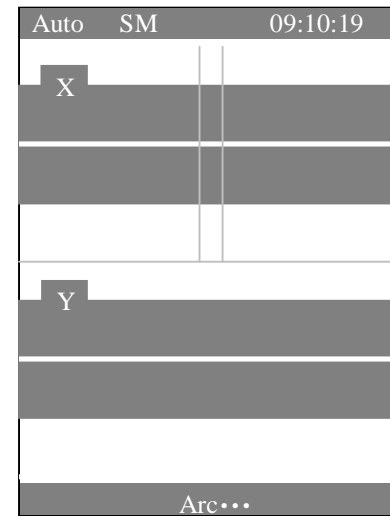


Fig.4-11 Fibers Being Spliced

(4) Splice Inspection

When the spliced state is abnormal, the splicer displays an error message “Splice Lost” .a re-splice is recommended.

a Note: Best to program test before splicing, select an appropriate state , Avoidance appear this phenomenon. A fresh splicer test if appear this phenomenon.

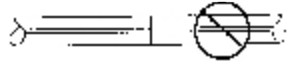
Bubble



Flange



Thick Black line



Shadow

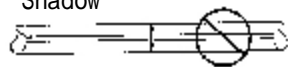
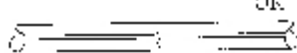
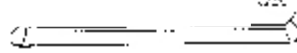


Fig.4-8 Examples of bad Splicing

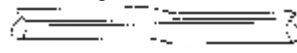
White Line



Faintness filament



Cladding off



Core off



Dust

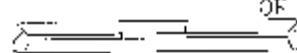


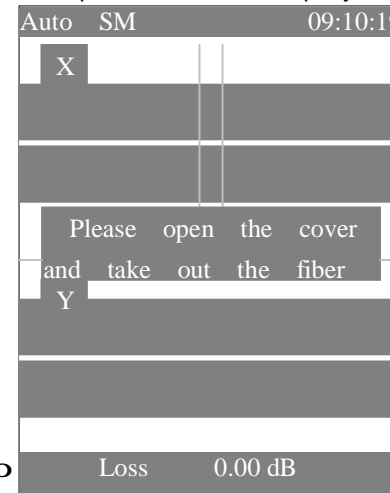
Fig.4-9 Examples of good Splicing

a Note: A slightly fat splice is normal. There is no problem with the splice loss and reliability.

a Note: White line or black line will appear on fiber's joint with fluorine and titanium, Because of optics, There's no effect to joint.

(5) Splice loss estimating

The estimated splice loss is displayed on the screen.




Estimating value

Fig.4-14 Result of Fiber Splicing

In some cases the splice loss can be improved with the re-arc feature. Press the < [RE-ARC] >. After re-arc discharge, Not displayed of splice loss.

a Note: There are cases when the splice loss will deteriorate after re-arc discharge.

(6) Storing splice result Press  or open the wind protector and the splicer will automatically perform the proof test and stores the splicing result. In the memory CMOS chip of the splice result. WY-725 can storage 4000 item splice result, Refer page 54 § 6. 7. 4 Splice register if transfer the splice result.

§ 4. 7. Fiber Removal

- (1) Open the wind protector
 - a Check: Heater clamps should be open, ready to receive fiber and splice protector sleeve.
- (2) Open the left sheath clamp, holding the left fiber in your hand.
- (3) Open the right sheath clamp, holding the right fiber in your hand.
- (4) Remove the fiber from the splicer.

§ 4. 8. Reinforcing the Splice

- (1) Slide the fiber protection sleeve to the center of the splice and move it to the tube heater.
 - a Check: Make sure the splice point and fiber protection sleeve are in the center of the tube heater.
 - a Check: Make sure the reinforcing material is placed downward.
 - a Check: Make sure the fiber is not twisted.
- (2) While applying tension to the fiber, lower the fiber into the tube heater. The left heater clamp will close automatically.
- (3) Tension fiber, close the right heater clamp with your left hand.

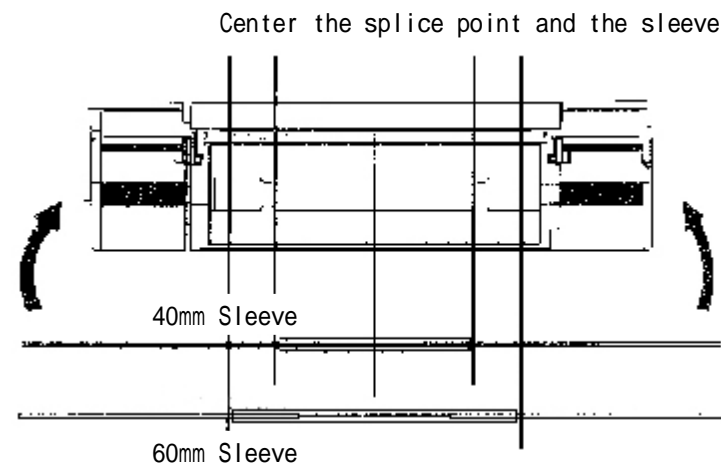




Fig.4-11 Setting in Tube Heater

- a Check: Check again to see that the splice point and fiber protection sleeve are in the center of the tube heater.
- (4) Press  to start a tube-heating cycle. Upon completion of heating, The heater LED turns off.
 - a Note: To abort the tube heating cycle, press .
- (5) Open the left and right heater clamps. While applying tension to the fiber, gently remove the splice reinforcement.

a Note: On occasions the fiber protection sleeve may adhere the bottom of the tube heater. Simply use a cotton swab or similar soft tip object to gently push the fiber protection sleeve to dislodge.

(6) Visually check the splice reinforcement for bubbles and impurities. Shown in Fig.4-16, Three for disqualification needed rework; Twain for eligibility.

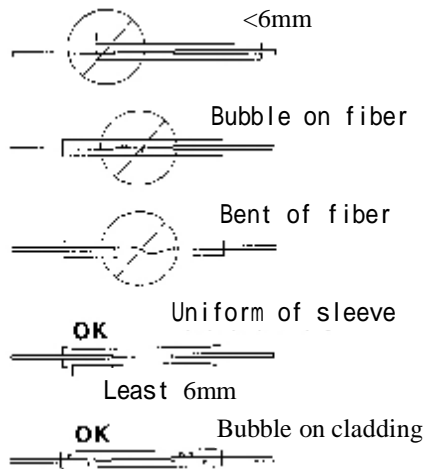


Fig.4-12 Possible result

§ 4. 9. Storing the fusion splicer

Fusion splicer is an exact instrument. Its carrying case WY-725-06 is especially design, With guarantee the fusion spliceer not influence of bump、 dust、 hydrosphere. Put in carrying case in time of the fusion

splicer after fusion.

a Check: Cut off the power before storing.

a Check: Cleaning the crucial parts in time: Pickup camera、 Lamp-house lens、 Fiber press and V-groove, Wipe off the dust and dunghill.

a Check: Would the LCD surveillance screen vertical vail, Entireness cling to the fusion splicer

a Check: Unchain the having line put in the carrying case.

a Check: Lift the fusion splicer cased the carrying case.

a Check: Cased the other fittings and expendable, Lid and button the carrying case.

a Note: Eliminate cleanly the liquid in the bottle in time if the alcohol bottle in the carrying case . For fear spill influence the facility.

§ 5. Maintenance of Splicing Quality

§ 5. 1 Cleaning and Checking before Splicing

Critical cleaning points and maintenance checks are described below.

§ 5.1.1 Cleaning V-grooves

If contaminants in the V-grooves, correct clamping may not occur, resulting in higher splice loss. The V-grooves should be frequently inspected and periodically cleaned during normal operation.

- (1) Open the wind protector and fiber clamps.
- (2) Clean the bottom of the V-groove with an alcohol-impregnated thin cotton swab as shown in Fig. 5—1. Remove excess alcohol from the V-groove with a clean dry swab.

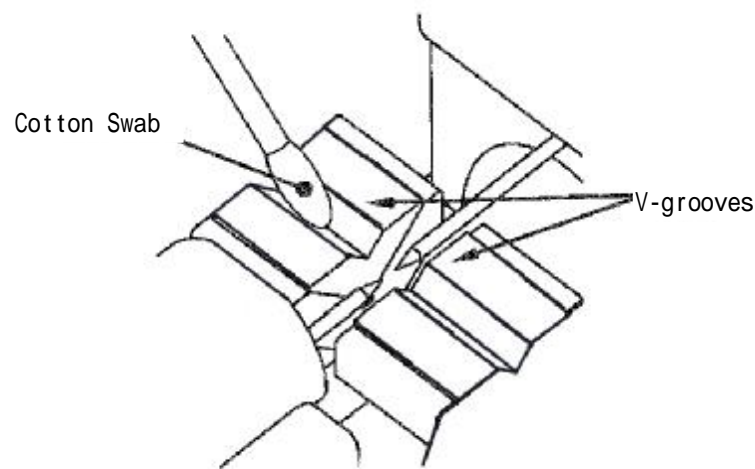


Fig.5—1. Cleaning V-grooves with Cotton Swab

han 99% pure.

] Check: Use care not to contact the electrode tips.

] Check: Do not use excessive force when cleaning the V-groove. The V-groove arm may be damaged.

- (3) If the contaminants in V-groove cannot be removed with an alcohol-impregnated thin cotton swab, use a cleaved fiber end-face to dislodge contaminants from V-groove bottom. Repeat step (2) after this procedure.

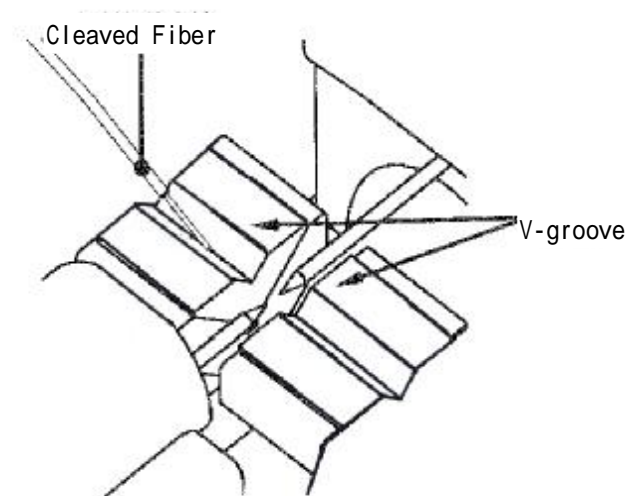


Fig.5—2 Cleaning V-grooves with Cleaved Fiber

§ 5.1.2. Cleaning Fiber Clamp Chips

If contaminants are present on the clamp chips, correct clamping may not occur, resulting in poor quality splices. The fiber clamp chips should be frequently inspected and periodically cleaned