LDMLAX A-87S

LDMLAX A-87S Fusion Splicer User Manual

Model: A-87S

1. Introduction

The LDMLAX A-87S Fusion Splicer is an advanced optical fiber hot melt machine designed for efficient and precise fiber optic splicing. It integrates features such as fast splicing, rapid heating, and a high-capacity battery, making it suitable for various optical fiber and cable projects. This manual provides detailed instructions for the safe and effective operation, maintenance, and troubleshooting of your A-87S Fusion Splicer.

2. Safety Information

Always observe the following safety precautions to prevent injury and damage to the device:

- Do not expose the splicer to extreme temperatures, humidity, or dust.
- Ensure the work area is well-ventilated.
- Handle optical fibers with care. They are fragile and can cause splinters.
- Avoid direct eye exposure to the arc discharge during splicing.
- Use only the provided power adapter and accessories.
- Keep the device away from flammable materials.

3. Product Overview

The A-87S Fusion Splicer features a compact design with a 3.5-inch TFT color LCD display for clear operation. It includes a multifunctional fixture for various fiber types and an integrated heating element.

Figure 3.1: Front view of the A-87S Fusion Splicer, showing the display and control buttons.

Figure 3.2: Top view of the A-87S Fusion Splicer with the fiber splicing area open, revealing the fiber clamps and heating element.

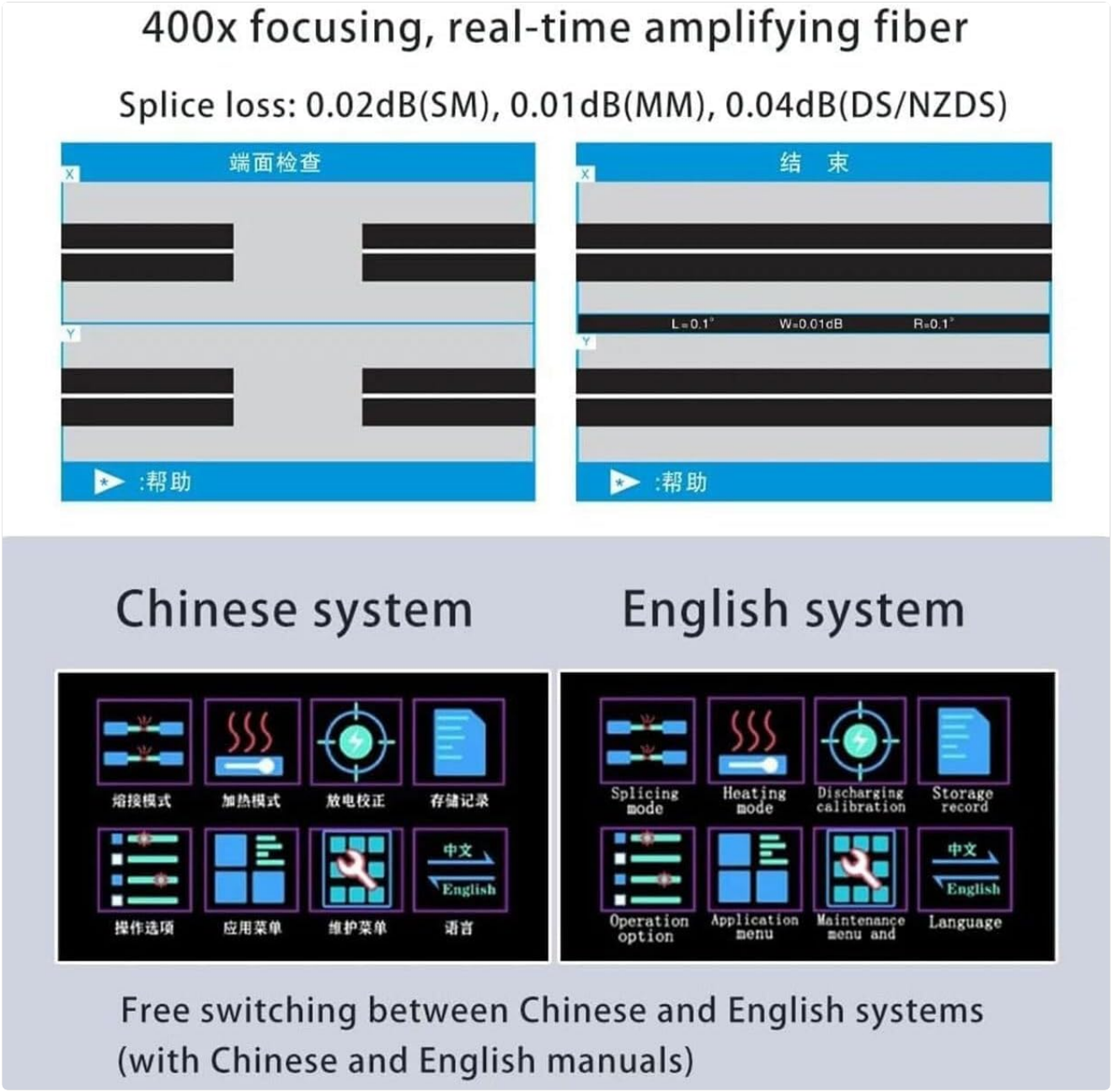

Figure 3.3: Internal view of the A-87S Fusion Splicer, highlighting the four-motor high-precision automatic core alignment system and V-type high-power automatic heater.

Figure 3.4: Close-up of the three-in-one clamp system, demonstrating its compatibility with bare fiber, pigtail, and leather cable.

4. Setup

1. **Unpacking:** Carefully remove all components from the packaging. Verify that all items listed in the package list are present. The package includes the splicer kit and various tools.

Figure 4.1: Contents of the A-87S Fusion Splicer kit, including the splicer, power adapter, and various fiber preparation tools.

2. **Charging the Battery:** Connect the provided power adapter to the splicer and a power outlet. The built-in 11.1V 4800mAh lithium battery takes approximately 3.5 hours to fully charge.
3. **Power On:** Press and hold the power button to turn on the splicer. The 3.5-inch TFT color LCD display will illuminate.
4. **Language Selection:** The device supports both Chinese and English. Navigate to the settings menu on the LCD display to select your preferred language.

Figure 4.2: Screenshot of the A-87S Fusion Splicer's display showing the option to switch between Chinese and English system languages.

5. Operating Instructions

5.1 Fiber Preparation

1. **Strip the Fiber:** Use a fiber stripper to remove the coating layer from the optical fiber. For coating layers below 250µm, strip approximately 8-16mm. For 250µm-1000µm, strip approximately 16mm.
2. **Clean the Fiber:** Use an alcohol wipe to thoroughly clean the bare fiber.
3. **Cleave the Fiber:** Use a high-precision fiber cleaver to cut the fiber end at a perfect 90-degree angle. A clean cleave is crucial for successful splicing.

5.2 Splicing Process

1. **Place Fibers:** Open the splicer lid and carefully place the prepared fibers into the V-grooves of the multifunctional fixture. Ensure the fiber ends are positioned correctly for alignment.
2. **Close Lid:** Gently close the splicer lid. The automatic core alignment system will begin to align the fibers.
3. **Initiate Splicing:** The splicer will automatically initiate the splicing process. The typical connection time is 9 seconds. The display will show the splicing progress and estimated splice loss.
4. **Inspect Splice:** After splicing, the splicer will display the splice loss. A typical splice loss for SM (G.652) fiber is 0.02dB. Inspect the splice visually on the screen.

5.3 Heat Shrinking

1. **Position Heat Shrink Tube:** Slide a heat shrink tube over the spliced joint.
2. **Place in Heater:** Carefully transfer the spliced fiber with the heat shrink tube to the built-in heating oven.
3. **Initiate Heating:** Close the heater cover. The typical heating time is 26 seconds, but this can be adjusted in the settings.
4. **Remove and Cool:** Once heating is complete, carefully remove the fiber and allow the heat shrink tube to cool and harden.

6. Maintenance

- **Electrode Cleaning:** Regularly clean the electrodes with a cotton swab dipped in alcohol to ensure optimal performance. Replace electrodes when they show signs of wear or after approximately 3000 splices.
- **V-Groove Cleaning:** Keep the V-grooves clean from fiber debris and dust. Use a soft brush or compressed air.
- **Display Cleaning:** Clean the LCD display with a soft, dry cloth. Do not use abrasive cleaners.
- **Battery Care:** To prolong battery life, avoid fully discharging the battery frequently. Store the splicer in a cool, dry place when not in use.

7. Troubleshooting

Problem	Possible Cause	Solution
High Splice Loss	Dirty fiber ends, poor cleave, worn electrodes, dirty V-grooves.	Reclean and recleave fibers. Clean electrodes and V-grooves. Replace electrodes if necessary.
Splicer Not Powering On	Low battery, faulty power adapter.	Charge the battery. Check power adapter connection.
Fiber Not Aligning	Dirty V-grooves, damaged fiber clamps, incorrect fiber placement.	Clean V-grooves. Ensure fibers are seated correctly. Contact support if clamps are damaged.

Problem	Possible Cause	Solution
Heating Element Not Working	Heater malfunction.	Ensure heater cover is fully closed. If issue persists, contact support.

8. Specifications

Feature	Detail
Magnification	400X (X or Y axes)
Return Loss	Better than 60dB
Typical Connection Time	9 seconds
Typical Heating Time	26 seconds (adjustable)
Cladding Diameter	80-150µm
Coating Diameter	100-1000µm
Cutting Length (Below 250µm)	8-16mm
Cutting Length (250µm-1000µm)	16mm
Heat Shrink Tubing	60mm, 40mm, and micro shrink tubing
Display	3.5in TFT color LCD
External Interface	USB interface
Splice Modes	17 groups
Heating Modes	9 groups
Connection Loss Storage	Internal memory saves 5000 results
Built-in Battery	11.1V 4800mAh Lithium
Charging Time	3.5 hours
Applicable Fibers	SM (G.652, G.657), MM (G.651), DS (G.653), NZDS (G.655), custom
Optical Fiber Fixture	Multifunctional (bare fiber, pigtail, jumper, leather cable, SC/other connectors with replacement fixture)
Product Weight	12.13 pounds (approx. 5.5 kg)
Model Number	20250422

9. Warranty and Support

For any questions or issues not covered in this manual, please contact LDMLAX customer support. Refer to your purchase documentation for specific warranty terms and conditions.

Contact Information:

- Email: Refer to your product packaging or purchase platform for the official support email address.
- Online Support: Visit the official LDMLAX website for FAQs and additional resources.

If you have any other questions, you can send us an email and we will be happy to solve the problem for you.