

SPECIALTY FUSION SPLICING SYSTEMS

ARCMASTER® FSM-100M/ P | ARCMaster® FSM-100M+/ P+
LZM-100 LAZERMaster™

ARCMaster™

FSM-100M and FSM-100P Fusion Splicers

Whether splicing similar fiber types or double clad LDF fibers for high power lasers, the ARCMaster series splicers provide multiple solutions for diverse production needs. With State of the ARC™ technology, the ARCMaster sets the standard for fusion splicing with a multitude of new features designed to make splicing easier.

The patent-pending “split V-groove” fiber clamping system accommodates optical fiber ranges from 60 to 500 μm for cladding or 125 to 2000 μm for coating without changing V-grooves. The “Plasma Zone” fiber positioning system incorporates multiple fiber and electrode positioning techniques to provide unprecedented versatility for splicing LDF, heat sensitive or small diameter fibers.

With a new fiber imaging technology, Interrelation Profile Alignment (IPA), alignment and splicing capabilities are possible with a variety of PM fiber type. Longer fiber tapering application is possible with Fujikura’s Sweep Arc technology. Incorporating PAS (cold fiber image) and WSI (warm image) technologies, the optical analysis system provides a number of advanced features including improved loss estimation capabilities, fiber image performance with both LDF, small or heat sensitive fibers.

Users can program multi-step glass processing operations either in the machine or from a PC. These include non-splicing operations such as generating tapers or lenses. Dual LCD monitors provide enhanced data and graphical information that is user-selectable during each stage of the splicing process. Both units are designed with the needs for production in mind and are suitable for the most popular production workstations.



FSM-100M



FSM-100P

Features: FSM-100M and FSM-100P

- Split V-groove clamping system
- “Plasma Zone” fiber positioning
- PAS and WSI
- New IPA alignment method for PM fibers
- Enhanced sweep arc technology
- Zero degree fiber handling for LDF
- Special functions for glass processing capability
- Fiber profile memory function
- New arc calibration technology
- Short cleave length capability
- Fast and accurate PANDA splice mode
- Ergonomic, production friendly design
- User selectable display on dual LCD monitors

FSM-100M and FSM-100P Specifications

PARAMETER	VALUE
Applicable Fiber	Silica based Single-mode and Multimode glass fiber: SMF (G.652), MMF (G.651), NZDSF (G.655), EDF, DCF, LDF and PMF, etc.
Fiber Dimension	Cladding diameter: 60 to 500 μm; Coating diameter: 100 to 2,000 μm
Cleave Length	Glass clamping: 8mm to 10 mm (standard 9mm); Coating clamping: 3mm to 5 mm (standard 4mm)
Typical Splice Loss	SMF: 0.03 dB; MMF: 0.02 dB; NZDSF/LDF: 0.05 dB; PMF: 0.06 dB (FSM-100P)
Splicing Time	SMF/MMF: 15 seconds; NZDSF/LDF: 25 seconds; PMF (PANDA): 35 to 50 seconds (FSM-100P); PMF (IPA): 90 to 300 seconds (FSM-100P)
Polarization Cross-Talk	PMF (PANDA): -40 dB / 0.6 degree (FSM-100P); PMF (IPA): -32 dB / 1.4 degree (FSM-100P)
Return Loss	60 dB or more
Heating Time	FP-03 (40 mm): 30 seconds; FP-03 (60 mm): 35 seconds; Micro sleeves: 55 seconds
Sweep Length	±5 mm
Electrode Life	2,500 Arc Discharges (SMF G.652 splicing at 1 mm gap)
Electrode Gap	1mm to 3 mm
Electrode Offset	-0.3mm to +0.1 mm
Proof Test	1.96 N to 2.45 N
Monitor Type	Dual 4.1 inch TFT color LCD monitors
Magnification	125 μm: 187 to 300 X, 250 μm: 58 to 300 X, 400 μm: 58 to 93 X
Dimensions	311 mm (W) x 232 mm (D) x 160 mm (H)
Weight	FSM-100M: 7.5 kg / FSM-100P: 8.0 kg
Power Supply	AC adapter: ADC-15, Input: AC100 to 240 V (50 to 60 Hz)
Operating Conditions	Temperature: 0 to 40°C, Humidity: 0 to 95% RH (Non-condensing)
Storage Conditions	Temperature: -40 to 80°C, Humidity: 0 to 95% RH (Non-condensing)

ARCMaster™

FSM-100M+ and FSM-100P+ Fusion Splicers

The FSM-100M+ and FSM-100P+ specialty fusion splicers provide advanced capabilities suitable for fiber lasers, sensors, research and development and the medical field. New capabilities include an innovative “end-view” fiber observation system, XLDF (Extra Large Diameter Fiber) splicing capability using “Plasma Zone Path Modulation,” enhanced sweep arc technology and other features for glass processing and fiber tapering, and patented split V-groove clamping system. With State of the ARC™ technology, the ARCMaster series of fusion splicers sets a new standard for fusion splicing, providing the ultimate in performance and flexibility.



FSM-100P+



FSM-100M+

Features: FSM-100M+ and FSM-100P+ have all of the features of the 100 M and P, and the following:

- End-view observation system for alignment of non-circular, “holey” and other exotic fibers
- XLDF (Extra Large Diameter Fiber) splicing capability up to 1200 μm diameter fiber
- Patented “split V-groove” clamping system covers a range from 60 to 2000 μm
- Advanced “Plasma-Zone” control methods to optimize heating for specific fiber types
 - Motorized electrodes to change electrode gap to optimize Plasma Zone shape
 - Adjustable vertical height to position fiber within Plasma Zone
 - Electrode oscillation produces “Plasma Zone Path Modulation” for XLDF splicing
- Enhanced ability for fiber shaping, glass processing, tapering, etc.
 - Custom multi-step “Special Functions” programmability
 - Long-travel sweep arc technology (fiber sweep motion up to 32 mm)
 - Long-travel left/right Z-drive mechanisms
- Three selectable arc calibration methods
 - Conventional calibration method for standard fibers
 - New melt-back method with new parameters for special fibers including XLDF
 - Real-time calibration by arc brightness observation (with fiber brightness learning function)
- Dual 4.1 inch monitors with user-selectable information display
- Extensive PC connectivity functions (software upload, data upload/download, PC control)

FSM-100M+ and FSM-100P+ Specifications

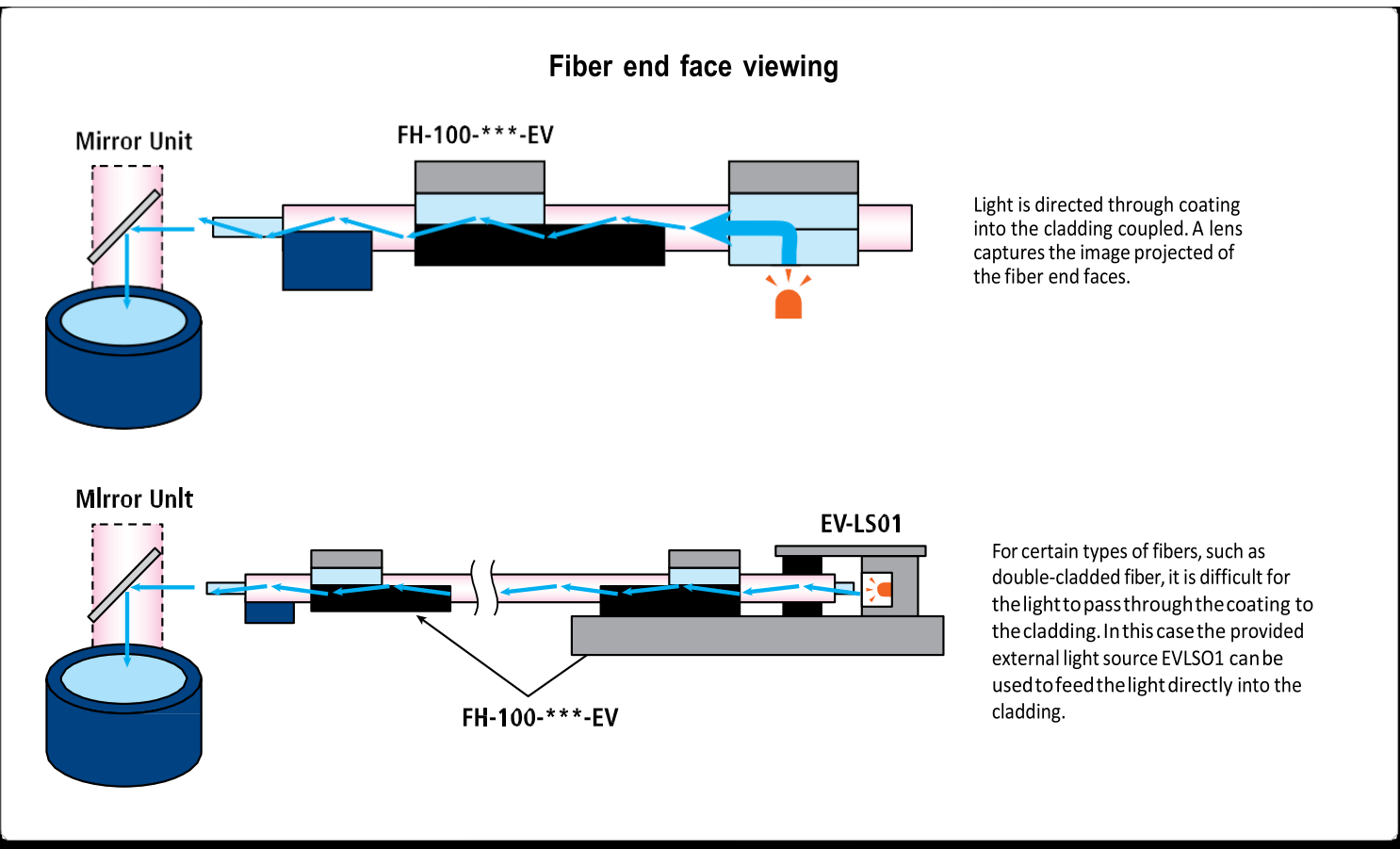
	VALUE
Applicable Fiber	Silica based Single-mode and Multimode glass fiber: SMF (G.652), MMF (G.651), NZDSF (G.655), EDF, DCF, LDF and PMF, etc.
Fiber Dimension	Cladding diameter: 60μm to 1,200 μm; Coating diameter: 100μm to 2,000 μm
Cleave Length	Glass clamping 8mm to 30 mm (standard 9 mm); Coating clamping 3 to 5 mm (standard 4 mm)
Typical Splice Loss	SMF: 0.03 dB; MMF: 0.02 dB; NZDSF/LDF: 0.05 dB; PMF: 0.06 dB (FSM-100P+)
Splicing Time	SMF/MMF: 15 seconds; NZDSF/LDF: 25 seconds; PMF (PANDA): 35 to 50 seconds (FSM-100P+); PMF (IPA): 70 to 300 seconds (FSM-100P+)
Polarization Cross-Talk	PMF (PANDA): -40 dB / 0.6 degree (FSM-100P+); PMF (IPA): -40 dB / 0.6 degree (FSM-100P+)
Return Loss	60 dB or more
Heating Time	FP-03 (40 mm): 30 seconds; FP-03 (60 mm): 35 seconds; Micro sleeves: 55 seconds
Sweep Range	±18 mm
Electrode Life	2,500 Arc Discharges (SMF28 G.652 with 1 mm electrode gap)
Electrode Gap	1mm to 3 mm
Electrode Offset	-0.3mm to +0.1 mm
Proof Test	1.96 to 2.45 N
Monitor Type	Dual 4.1 inch TFT color LCD monitors
Magnification	125 μm: 187 to 300 X, 250 μm: 3.5 to 300 X, 400 μm: 58 to 93 X, 1000 μm: 3.5 to 7.0 X
Dimensions	470 mm (W) x 232 mm (D) x 160 mm (H)
Weight	FSM-100M+: 8.5 kg / FSM-100P+: 9.5 kg
Power Supply	AC adapter: ADC-15, Input: AC100 to 240 V (50 to 60 Hz)
Operating Conditions	Temperature: 0°C to 40°C, Humidity: 0% to 95% RH (Non-condensing)
Storage Conditions	Temperature: -40°C to 80°C, Humidity: 0% to 95% RH (Non-condensing)

Comparison of properties of the FSM-100 series

MODEL	100M	100M+	100P	100P+
Split V-Groove	•	•	•	•
PAS Alignment Technology	•	•	•	•
IPA Alignment Technology			•	•
End View Alignment Technology		•		•
Plasma Zone Fiber Positioning	•	•	•	•
Plasma Zone Path Modulation		•		•
In the Variable Fiber Layer				
Sweep Arc Technology (5 mm)	•		•	
Extended Sweep Arc Technology (18 mm)		•		•
Glass Fiber Molding Processing	•	•	•	•
LDF Splice (60 bis 500 μm)	•	•	•	•
XLDF Splice (60 bis 1200 μm)		•		•
Production Friendly Design	•	•	•	•
Improved Splice Loss Estimation	•	•	•	•
Zero Degree Fiber Holder Position	•	•	•	•
Special Arc Calibration	•	•	•	•
Internet Firmware Updates	•	•	•	•
USB & GPIB	•	•	•	•

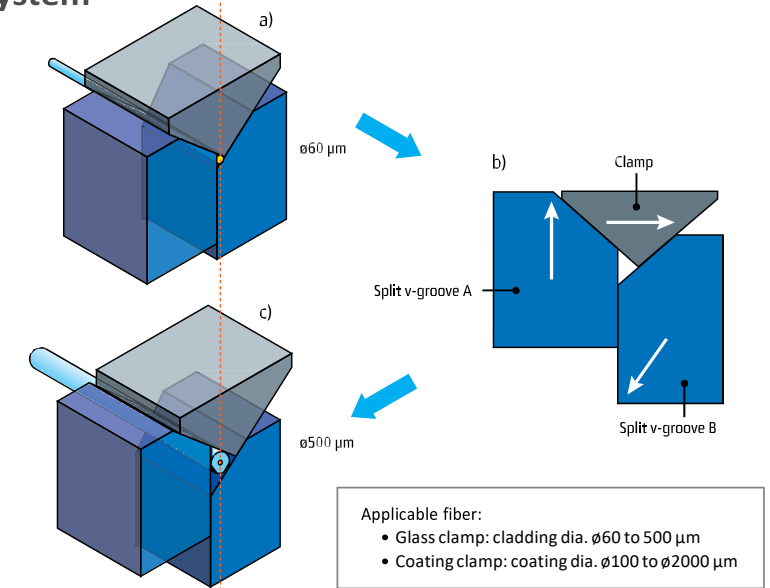
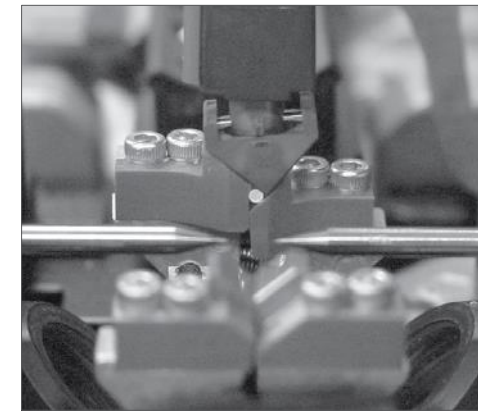
FSM-100 Series Fusion Splicers

Fujikura's new specialty splicers FSM-100M and FSM-100P offer a host of innovative technology to address the rapidly expanding splicing needs for factory, manufacturing, laboratory and R&D applications. These models are introduced as "ARCMaster" splicers due to their unique capabilities to control the plasma zone of the fusion arc. These capabilities will revolutionize the way users will splice various types of specialty fibers; LDF, low contrast PM, holey structured, etc.



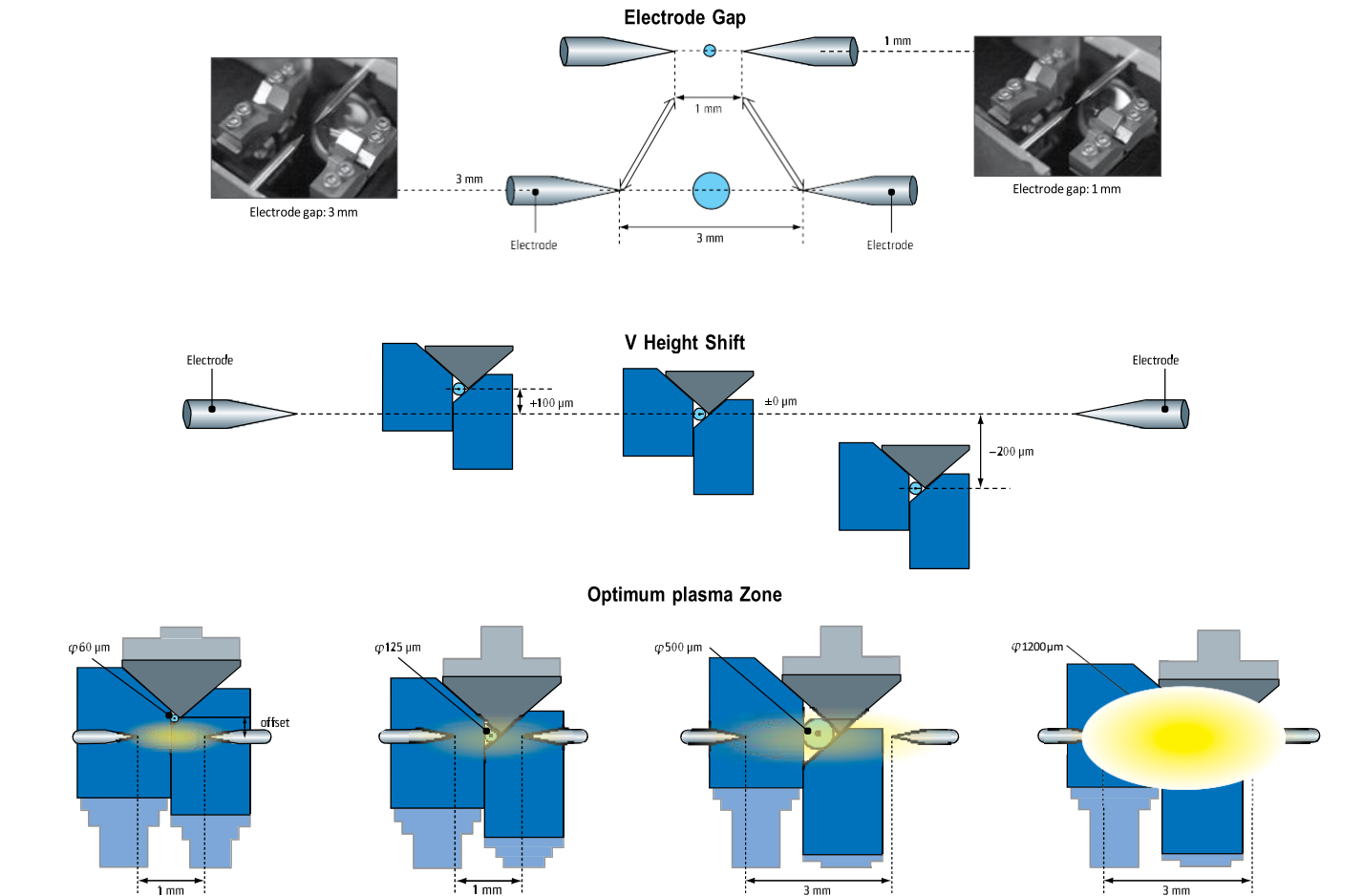
Patented "Split V-groove" clamping system

The FSM-100 series has the revolutionary design clamp system.
 - No need to change V-groove or clamp part
 - Programmable for any fiber or coating size
 - Reliably "captures" fiber for good alignment



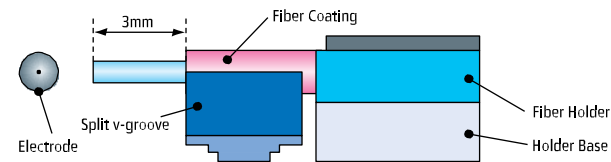
"Plasma Zone" fiber positioning

The FSM-100 series has two electrode positioning techniques in order to provide unprecedented versatility for each specialty fiber.



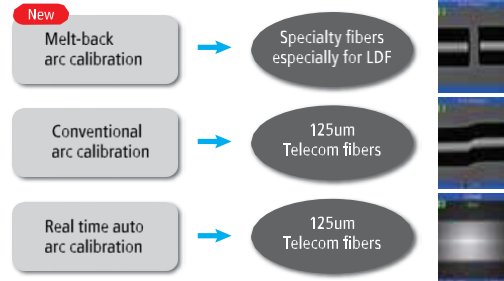
Short cleave length capability

For minimizing the length of stripped fiber at splice point, FSM-100 series can splice a short cleave length fiber.



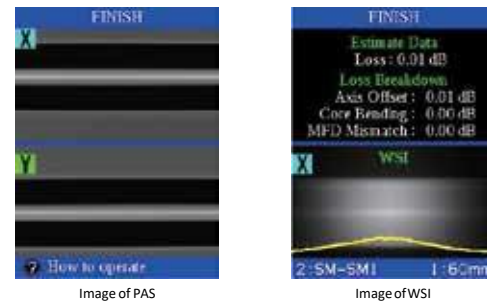
Special arc calibration

This calibration technology facilitates an easy transfer of high end splicing applications from R&D to production by ensuring consistent performance and takes full advantage of "Plasma Zone" capabilities.



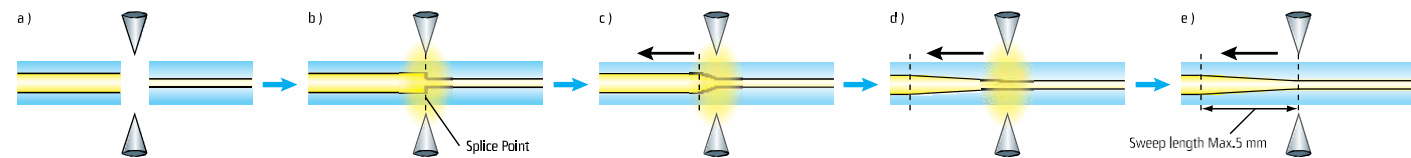
Dual splice loss estimation

Combining the best features of both cold and warm splice imaging, FSM-100 series offer unprecedented accuracy for splice loss estimation.



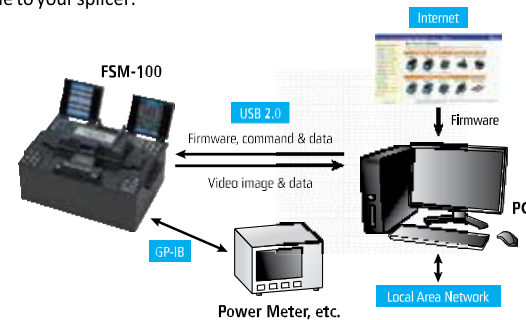
Enhanced sweep arc

Increased travel range for "sweep arc" provides improved MFD matching capability and the ability for reshaping non-circular fibers in preparation for splicing.



Internet firmware update & interface

An industry first! Customers can now upgrade firmware as new capabilities become available from Fujikura. Upgrading is as simple as connecting a USB cable to your splicer.



Production environment friendly design

A low profile design that eliminates fiber catch points, the dimensions of both splicers are consistent with the most popular production splicing work-benches in use today.



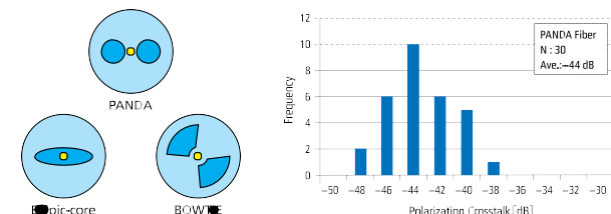
Zero degree fiber holder position – For splicing LDF fibers with minimal core angle, the fiber holders are horizontally positioned relative to the v-grooves.

Fiber profile learning function

The splicer learns the fiber profile with the best focusing position in order to observe the core position accurately. After learning, the focusing time during a splice will be short.

Dual PM Alignment (FSM-100P and P+)

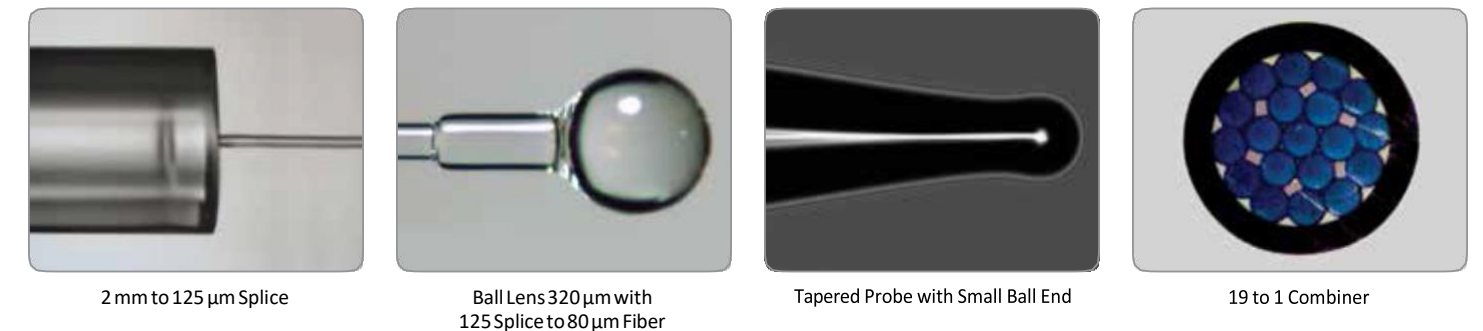
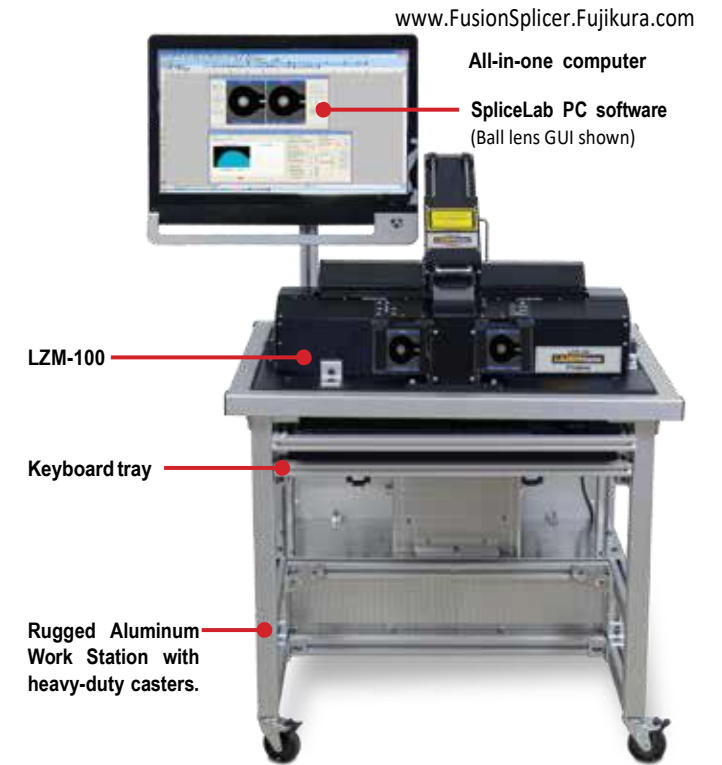
To properly align and splice the ever increasing and technically challenging variety of PM fibers, Fujikura developed IPA which is a new alignment technology. The FSM-100P and P+ includes both traditional PAS alignment as well as the new IPA technology, and it provides users with the most comprehensive capabilities on the market for splicing PM fiber. IPA also enables accurate PER estimation for all PM fiber types.



LZM-100 LAZERMaster™

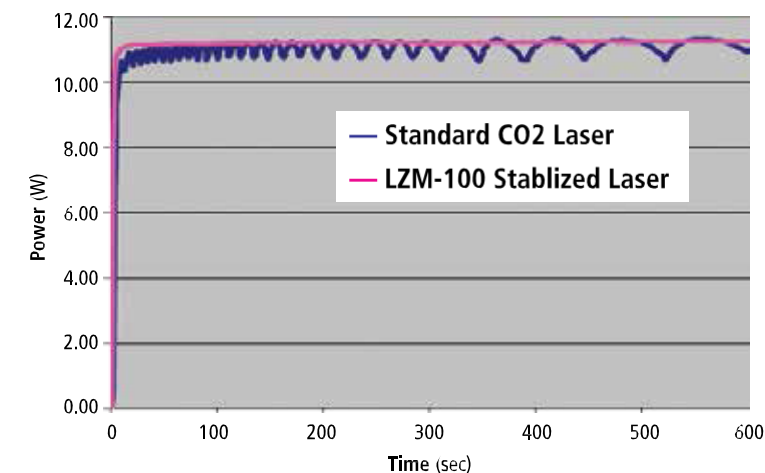
The LZM-100 LAZERMaster is a glass processing and splicing system that uses a CO₂ laser heat source to perform splicing, adiabatic tapering (to create MFAs or pump combiners), lensing, or other glass shaping operations. The high resolution optical analysis system works in conjunction with on-board firmware for fully automatic splicing, tapering and other glass shaping processes.

High precision glass processing is enabled by the intuitive and user-friendly on-board firmware (virtually identical to that of the Fujikura FSM-100 ARCMaster splicers). Operations may also be performed manually and by PC control. A SpliceLab PC control GUI is supplied with the LZM-100 to provide additional features, greater flexibility and finer control. The SpliceLab GUI is pre-installed on the All-in-one computer. Customers can also create proprietary PC control algorithms using a complete set of PC control commands.



Clean & Stable Heating by CO₂ Laser

The LZM-100 LAZERMaster uses a CO₂ laser heat source to heat fibers, ensuring repeatable performance and low maintenance, and eliminating electrode or filament maintenance and instability. CO₂ laser heating also eliminates any deposits on the fiber surface that might occur from use of a filament or electrodes. The very clean and deposit-free fiber surface ensures reliable operation of very high power fiber lasers or power delivery systems.

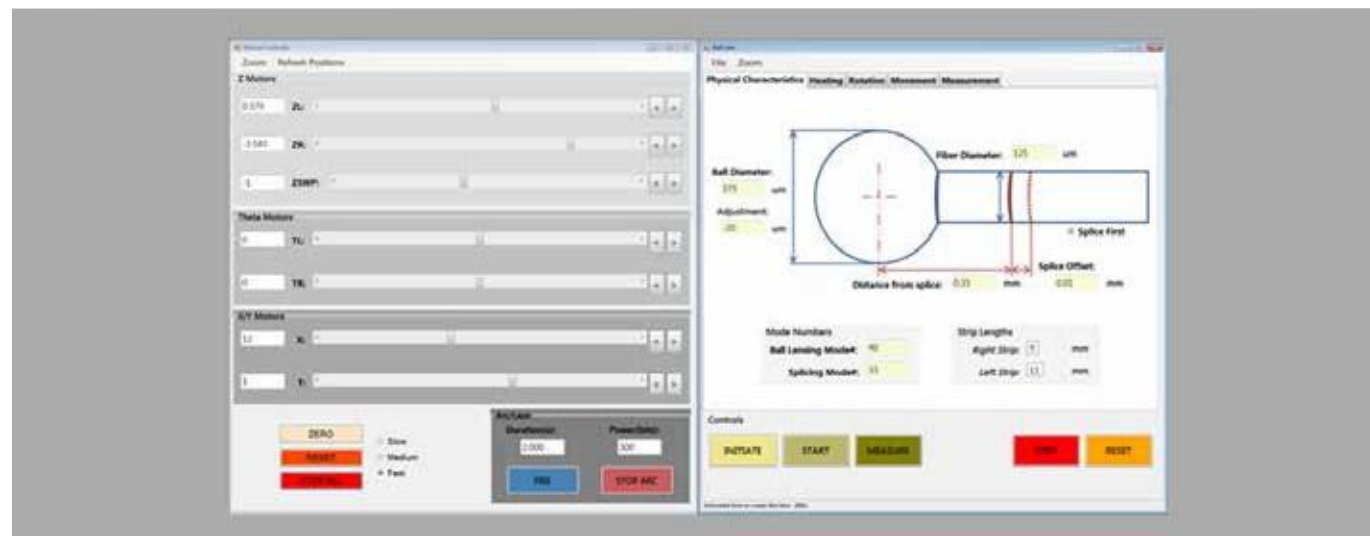
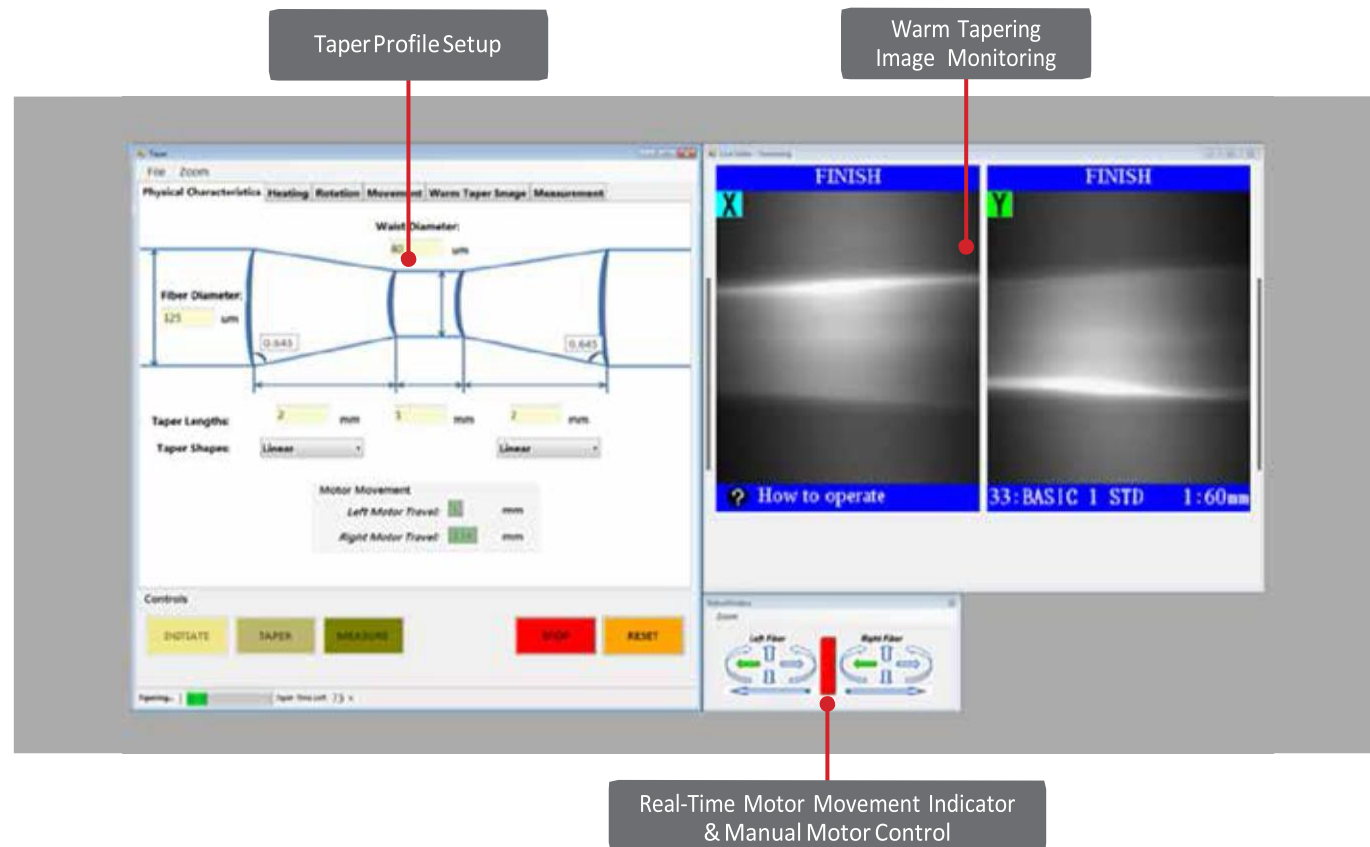


Laser Power Stability

Typical CO₂ lasers have a typical output power fluctuation of +/- 5%. This produces inconsistent splicing results and may cause irregularity and ripple in a taper profile.

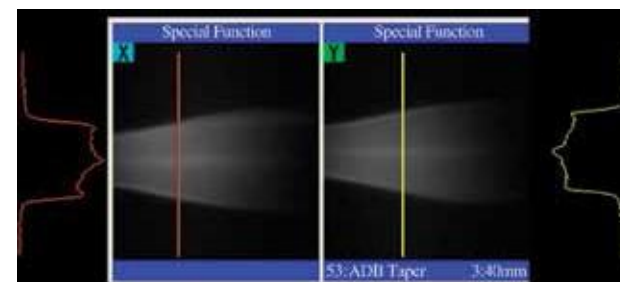
The LZM-100 utilizes proprietary (patent pending) closed-loop power stabilization techniques, resulting in power stability within 0.5%, as shown to left. This enables highly repeatable processes and very smooth taper profiles.

Advanced Adiabatic Tapering Capability User-Friendly Tapering Graphical User Interface



Warm Tapering Image Monitoring for Precise Control of Heating Power

The Warm Tapering Image (WTI) brightness level is captured in real time during the tapering process. The WTI value can be used to adjust the CO₂ laser output power in real time to a level appropriate for the decreasing mass of a fiber as it is tapered to a smaller diameter. This can be critical to ensure achievement of the desired taper shape.



LZM-100 Specifications

PARAMETER	VALUE
Fiber Heating and Splicing Method	CO ₂ Laser
Laser Safety Features	Metal cover with interlock, class 1 enclosure Automatic actuation of safety shutter Automatic laser power cutoff Triple redundancy
Laser Beam Control	Proprietary feedback system assures laser beam power stability Laser beam size and shape may be customized to meet specific user requirements
Typical Splice Loss	0.02 dB for SMF (ITU-T G.652)
Typical Splice Strength	>400 kpsi for SMF (ITU-T G.652) using appropriate fiber preparation equipment
Camera Field of View	2.7 mm
Fiber Observation Methods	<ul style="list-style-type: none"> PAS (Profile Alignment System) via transverse fiber observation. WSI (Warm Splice Image) and WTI (Warm Taper Image) End-view observation (Optional)
Applicable Fiber Diameter	80 μm to 2300 μm for automatic alignment by PAS Larger diameter fibers may be aligned manually or by power meter feedback
V-Groove Clamping System	Infinitely variable from 80 μm up to 2300 μm, Clamping bare fiber or fiber coating and Patented "split V-groove" system
Fiber Handling	Fujikura FSM-100, FSM-45 and FSM-40 splicer fiber holders Custom fixtures to meet specific customer requirements
Alignment Methods	PAS (Profile Alignment System, automatic alignment by camera observation) Manual Other methods by PC control Power meter feedback via GPIB (Optional) End-view (Optional)
X/Y Alignment Resolution	0.1 μm
Maximum Z Travel Length	150 mm (both left and right Z units)
Z Travel Resolution	0.125 μm theoretical
Maximum Taper Length	130 mm
Maximum Taper Ratio	10:1 standard (For uniform direction, one-pass tapering) Dual direction tapering offers greatly increased taper ratios, as does tapering with more than one tapering pass.
Maximum Taper Speed	1 mm/sec standard (Optional 5 mm/sec)
Splicing Control	Internal firmware or operation by PC
Fiber Tapering & Glass Shaping Control	Internal firmware or operation by PC
PC Control	Fiber Processing software will be provided and Complete command set for PC control
PC Option	An all-in-one computer is required. Use of the Fiber Processing software on a PC provides finer control and additional features compared to the LZM-100 internal firmware. Using another software application, the PC interface also allows for advanced maintenance functions such as the ability to confirm laser beam alignment, and align if required.
Interface Ports	USB 2.0 (For PC communications, data and image download, etc.) GPIB (Optional, for power meter feedback)
Rotation Motors	Optional (Provides theta rotational motion for PM fiber alignment. Available for both left and right fibers, or one side only depending upon customer requirements.)
PM Fiber Alignment Methods	<ul style="list-style-type: none"> PAS (For PANDA and other PM fibers) IPA (Interrelation Profile Alignment, applicable to almost all PM fibers. Three distinct IPA methods available.) End-view (Optional) Power meter feedback (Requires polarizer and analyzer, as well as optional GPIB interface) Manual Other methods by PC control
End-View Observation & Alignment	Optional internal end-view system
Dimensions	1524mm(W) x 660mm(D) x 1422mm(H)
Weight	90 kg
Power Supply	Input: AC100 to 240 V (50 to 60 Hz)
Operating Conditions	Temperature: 15°C to 40°C, Humidity: 0 to 95% RH (Non-condensing)
Storage Conditions	Temperature: 0°C to 60°C, Humidity: 0 to 95% RH (Non-condensing)

† Preliminary Specifications, subject to revision and refinements

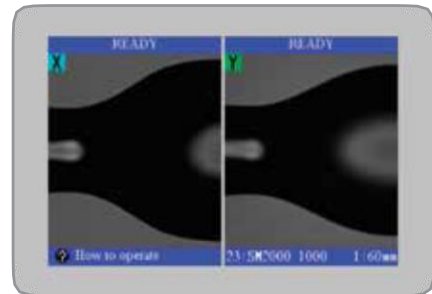
DESCRIPTION
LAZERMaster LZM-100 Glass Processing & Splicing System (Standard baseline LZM-100 system. Includes AC adapters & cords and SpliceLab PC software)
LAZERMaster LZM-100 (with dual theta motors)
All-in-one Computer (includes keyboard and mouse, monitor stand for mounting all-in-one computer. SpliceLab software pre-installed.) (Required)
End-View Observation & Alignment Option
Side Table Work Surface Option (Work surface to provide additional area for accessories such as fiber preparation equipment. May be attached to the left or right side of the LZM-100 or both. Folds down against the side of the LZM-100 chassis when not needed or to allow easy movement through narrow doorways.)
Cylindrical Lens and Lens Holder (optional)
LZM-100 Training (USA) - Customer Location
LZM-100 Training (International)

LAZERMaster™

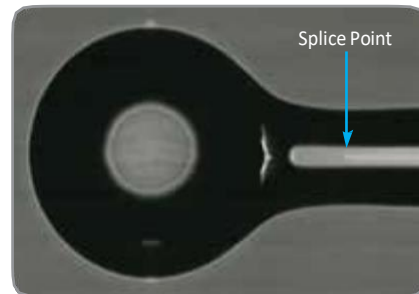
LZM-110M/110P

The LZM-110M/110P LAZERMaster is a splicing and glass processing system that uses a CO₂ laser heat source to perform splicing, tapering (to create MFAs), lensing, or other glass shaping operations with glass diameters up to 2.3 mm. The high resolution optical analysis system works in conjunction with on-board firmware for fully automatic splicing, tapering and other glass shaping processes.

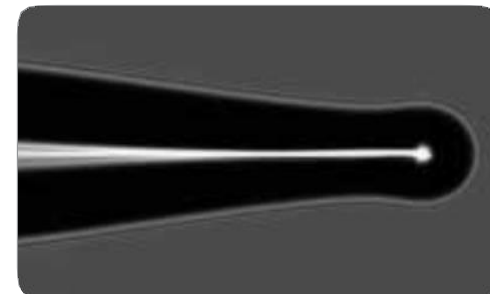
High precision glass processing is enabled by the intuitive and user-friendly on-board firmware (virtually identical to that of the Fujikura FSM-100 splicers). Operations may also be performed manually and by PC control. The FPS PC control GUI is supplied with the LZM-110M/110P to provide additional features, greater flexibility and finer control. The FSP GUI may be used on a PC chosen by the customer. Customers can also create proprietary PC control algorithms using a complete set of PC control commands.



1 mm to 2 mm X-LDF Splice



Coreless Ball Lens to Collimate SMF Fiber Output



Tapered Probe with Small Ball End

LAZERMaster™

LZM-110M+/110P+

The LZM-110M+/110P+ LAZERMaster is a splicing and glass processing system that uses a CO₂ laser heat source to perform splicing, tapering (to create MFAs), lensing, or other glass shaping operations with glass diameters up to 2.3 mm. The high resolution optical analysis system works in conjunction with on-board firmware for fully automatic splicing, tapering and other glass shaping processes.

High precision glass processing is enabled by the intuitive and user-friendly on-board firmware (virtually identical to that of the Fujikura FSM-100 splicers). Operations may also be performed manually and by PC control. The FPS PC control GUI is supplied with the LZM-110M+/110P+ to provide additional features, greater flexibility and finer control. The FSP GUI may be used on a PC chosen by the customer. Customers can also create proprietary PC control algorithms using a complete set of PC control commands.



Specifications

PARAMETER	ZM-110M /110P	LZM-110M+/110P+
Fiber Heating and Splicing Method	CO ₂ Laser	
CO ₂ Laser Power	30 W standard (Lasers with other power levels may be selected to meet customer requirements.)	
Laser Safety Features	Metal cover with interlock, class 1 enclosure Automatic actuation of safety shutter Automatic laser power cutoff Triple redundancy	
Laser Beam Control	Proprietary feedback system assures laser beam power stability Laser beam size and shape may be customized to meet specific user requirements	
Typical Splice Loss	0.02 dB for SMF (ITU-T G.652)	
Typical Splice Strength	250+ kpsi for SMF (ITU-T G.652) using appropriate fiber preparation equipment	
Camera Field of View	2.3 mm	
Fiber Observation Methods	<ul style="list-style-type: none"> PAS (Profile Alignment System) via transverse fiber observation. WSI (Warm Splice Image) and WTI (Warm Taper Image) 	<ul style="list-style-type: none"> PAS (Profile Alignment System) via transverse fiber observation. WSI (Warm Splice Image) and WTI (Warm Taper Image)
Applicable Fiber Diameter	80 μm to 2300 μm for automatic alignment by PAS Larger diameter fibers may be aligned manually or by power meter feedback	
V-Groove Clamping System	Infinitely variable from 80 μm up to 2300 μm Clamping bare fiber or fiber coating Patented "split V-groove"	
Fiber Handling	Fujikura FSM-100, FSM-45, and FSM-40 splicer fiber holders Custom fixtures to meet specific customer	
Alignment Methods	PAS (Profile Alignment System, automatic alignment by camera observation) Manual Other methods by PC control Power meter feedback via GPIB	PAS (Profile Alignment System, automatic alignment by camera observation) Manual Other methods by PC control Power meter feedback via GPIB End-view
Endless Theta Rotation	360° endless rotation, angle resolution 0.1°	
X/Y Alignment Resolution	0.1 μm	
Maximum Z Travel Length	10 mm (both left and right Z units) as well as sweep	36 mm (both left and right Z units) as well as sweep
Z Travel Resolution	0.125 μm theoretical	
Maximum Taper Length	8 mm	36 mm
Maximum Taper Ratio	10:1 standard (For uniform direction, one-pass tapering) Dual direction tapering offers greatly increased taper ratios, as does tapering with more than one tapering pass.	
Maximum Taper Speed	1 mm/sec standard	
Splicing Control	Internal firmware or operation by PC	
Fiber Tapering and Glass Shaping	Internal firmware or operation by PC	
PC Control	FPS software will be provided Complete command set for PC control	
PC Option	All-in-one computer is available as an option. Use of the FPS software on a PC provides finer control and additional features compared to the LZM-110 internal firmware	
Interface Ports	USB 2.0 (For PC communications, data and image download, etc.) GPIB (for power meter feedback)	
Rotation Motors	For LZM-110P, theta rotational motion is available for PM fiber alignment.	For LZM-110P+, theta rotational motion is available for PM fiber alignment.
PM Fiber Alignment Methods	<ul style="list-style-type: none"> PAS (For PANDA and other PM fibers) IPA (Interrelation Profile Alignment, applicable to almost all PM fibers. Three distinct IPA methods available.) Power meter feedback (Requires polarizer and analyzer, as well as GPIB interface) Manual Other methods by PC control 	
End-View Observation and Alignment	NA	Internal end-view system
Flexibility for Customer Design Input	Customizable platform	
Dimensions	482mm(W) x 584mm(D) x 483mm(H)	
Weight	25 kg(LZM-110M), 25 kg(LZM-110P)	25 kg(LZM-110M), 25 kg(LZM-110P)
Power Supply	Input: AC100 to 240 V (50 to 60 Hz)	
Operating Conditions	Temperature: 15°C to 40°C, Humidity: 0% to 95% RH (Non-condensing)	
Storage Conditions	Temperature: 0°C to 60°C, Humidity: 0% to 95% RH (Non-condensing)	

APM-101/102 Automatic Preparation Machine

The new APM-101/102 performs all the steps required to prepare optical fibers before splicing – automatically and with high repeatability. This includes stripping the fiber without degrading fiber quality, cleaning fiber with alcohol to remove coating residue, and cleaving consistently at a right angle to the fiber axis. The entire process is complete in as little as 23 seconds.

	APM-101	APM-102
Applicable optical fiber	Silica Glass Optical Fiber	
Applicable cladding diameter	125 μm	
Applicable coating	UV curable resin coating	
Applicable coating diameter	250 μm	
Fiber clamping	FH-100-250 series or FH-40-250 fiber	FH-60-250 fiber holder
Cleave length	3mm to 9mm	
Cleaving Angle Performance	Typical 0.5°	
Operating time	Typical 23 seconds (in the case of 125 μm diameter fiber with 250 μm coating)	
Daily maintenance	Typically every 150 cycles	
Operation action	1 step (Press start button only)	
Air pressure	4 bar	
Dimensions	170mm(W) x 370mm(D) x 120mm(H)	
Weight	5.0 kg	
Operating Conditions	Temperature: 0 to 40°C, Humidity: 0 to 95% RH (Non-condensing)	
Storage Conditions	Temperature: -40 to 80°C, Humidity: 0 to 95% RH (Non-condensing)	



PowerCleave®

To complement the line of world class splicing systems, AFL's PowerCleave combines the precision of an ultrasonic cleaver with the ease and improved fiber management of the Fujikura fiber holder system. The PowerCleave utilizes the tensile stress method to avoid touching or damaging the bare glass surface during cleaving, ensuring highly robust, reliable and durable splice results. The PowerCleave provides consistent flat ends even at cleave lengths as short as 3 mm. Specially designed for use with Fujikura's specialty market splicers, this advanced cleaving system allows for more reliability and greater splicing consistency with less dependence on operator technique

Fibers Cleaved	80μm to 200μm (cladding diameter)
Minimum Cleave Length	3 mm
Cleaving Angle Performance	<0.6 °typical (95% of cleaves)
Blade	Diamond with an estimated life of over 20,000 cleaves
Clamping System	Compatible with Fujikura specialty market fiber holder systems
Case	ABS impact resistant with non-slip feet and a 6.25 mm (.24 inch) BSW thread tripod mount for hard mounting to a workstation
Dimensions	153mm(W) x 150mm(D) x 75 mm(H)
Weight	1.1 kg
Power Supply	Battery 9V alkaline (MN 1604), battery life approximately 10,000 cleaves
Operating Conditions	Temperature: 0 to 45°C, Humidity: 0 to 95% RH (Non-condensing)
Storage Conditions	Temperature: -20 to 60°C, Humidity: 0 to 95% RH (Non-condensing)



AFL PowerStrip™

AFL PowerStrip is a thermal stripper used in high reliability splicing. Using the proven blade and centering design of the Schleuniger FiberStrip 7030 in addition to the fiber holder system, the AFL PowerStrip automatically centers the fiber, heats the buffer or coating and strips the buffer at a controlled rate with perfect alignment. The fiber holder system reduces fiber handling, making this tool ideal for any production environment

Fibers Stripped - Single Buffered Fiber	Cladding diameter: 125 μm standard, 80 μm optional Coating diameter: 250 μm and 900 μm standard, 160 μm and 400 μm optional
Clamping System	Fujikura fiber holder clamp; compatible with FSM-45F/PM and 100 series fiber
Stripping Length	Up to 35 mm
Heater Temperature Range	110°C to 150°C
Heating Time	1.5 to 13 seconds
Cycle Time	Approximately 5 seconds/cycle (after heating)
Power Supply	Input: 100 to 240 V AC, 50/60 ± 3 Hz; Output: 12 V DC, 12 W, 1 A
Dimensions	209 mm(W) x 57 mm(D) x 45 mm(H)
Weight	0.7 kg
Operating Conditions	Temperature: 0 to 45°C, Humidity: 0 to 95% RH (Non-condensing)
Storage Conditions	Temperature: -20 to 60°C, Humidity: 0 to 95% RH (Non-condensing)



USC-03 Ultrasonic Cleaner

The Fujikura USC-03 Ultrasonic Cleaner provides a simple and cost effective method for cleaning optical fibers when high reliability fusion splices are required. This ultrasonic cleaner readily accepts all FH-40-XXX, FH-50-XXX, FH-60-XXX and FH-100-XXX series fiber holders. The Universal Fiber Holder Adapter, available as an optional accessory, enables the use of FH-XXX series fiber holders.

The high frequency ultrasonic action cleans debris and coating residue without damaging the exposed cladding and a built-in timer ensures that the required cleaning time is consistently used for all fibers processed. This cleaner, when used in conjunction with high reliability stripping and cleaving accessories, produces outstanding results for the most demanding high reliability applications.

Applicable Optical Fiber	Single Optical Fiber
Applicable Fiber Holders	FH-40, FH-50, FH- 60 and FH-100 series
Recommended Fluid	Ethyl-alcohol, Iso-propanol
Tank Capacity	43cm ³ to 53 cm ³
Ultrasonic Frequency	50 kHz
Fiber Cleaning Length	49 mm (max), adjustable
Output Power	3W (max), adjustable
Timer Range	1 to 99 seconds
Dimensions	95mm(W) x 190mm(D) x 162mm(H)
Weight	1 kg
Power Supply	AC adapter: ADC-10, Input: AC100 to 240 V (50 to 60 Hz)
Operating Conditions	Temperature: 0 to 40°C, Humidity: 0 to 95% RH (Non-condensing)
Storage Conditions	Temperature: -20 to 60°C, Humidity: 0 to 95% RH (Non-condensing)



Ribbon Fiber Stripper RS03


The RS03 is designed and developed with emphasis on operability and usability where less force is required for the stripping process. By using an optional spacer, a short lead (3 mm to 5 mm) is also possible. Fiber holder is compatible with FH - 100 series and FH - 40 series. Furthermore, equipped with new features such as large capacity battery for 600 stripping cycles, 6 times larger than conventional stripper, and wireless link with smartphones for operational parameters adjustment.

MODEL	RS02	RS03	RS03-80
Applicable Fiber Count	1 to 12 Fiber Ribbon		Single
Applicable Cladding diameter	125μm		80μm
Applicable Coating diameter	200 μm to 400 μm		150 to 250μm
Stripping Length	Up to 35 mm		
Typical heating time	3sec 5sec at Eco mode		
Standard heating temperature	100°C		
Applicable Fiber Holder	FH-50series, FH-60 series, FH-100 series, Except for FH-50-250		
Wireless connectivity	Bluetooth®4.1 LE OS : Android 5.0 or above , iOS 8.0 or above (iPhone6 or above) *The Bluetooth wireless connection of this product is not guaranteed to work with all smartphones or other devices.		
Dimensions	155.5 mm(W) x 48.7mm(D) x 32.5mm(H)	155.5 mm(W) x 48.7mm(D) x 36.8mm(H)	
Weight	185 g	265 g (with Battery)	
Power Supply	100 to 240V AC with optional AC adapter, ADC-09A DC10 ~ 17V with external DC power supply: DC7.4 with Battery pack , BTR-12(Rechargeable Lithium-ion battery)		
Battery capacity	-	1620mAh : Typical 3.5h , 600 times at Eco mode	
Operating Conditions	Temperature: -10 to 50°C, Humidity: 0 to 95% RH (Non-condensing)		
Storage Conditions	Temperature: -40 to 80°C, Humidity: 0 to 95% RH (Non-condensing)		
Resistance feature	Shock resistance : 76cm (30inch) all surface drop(Telcordia GR -955-CORE) Rain resistance : H=10mm/hr for 10min(JIS C 0 034)		




CT52 Fiber Cleaver

The CT52 is a modified version of our standard cleaver model CT50. The modifications allow use of a spacer system that provides for the full range of acceptable cleave lengths for use with our FSM-100 series factory fusion splicers. The CT52 also allows for a reduced cleave length of 8 mm on 900 μm jacketed fibers and as short as 3 mm on 250 μm and 400 μm coated fibers. Included with the CT52 is a 1 mm spacer that allows for the recommended cleave lengths for use with our factory fusion splicer models.

	Applicable optical fiber	Silica Glass Optical Fiber
	Number of fibers	Single
	Cladding diameter	125 μm
	Coating diameter	0.25 mm to 0.9 mm depending on fiber holder (FH-100 series)
	Cleaving Angle Performance	Typically <0.5°
	Blade lifetime	60,000 cleaves (1,000 x 3 heights x 16 positions)
	Dimensions	120 mm(W) x 95 mm(D) x 58 mm(H)
	Weight	300 g
	Operating Conditions	Temperature: 0 to 40°C, Humidity: 0 to 95% RH (Non-condensing)
	Storage Conditions	Temperature: -40 to 80°C, Humidity: 0 to 95% RH (Non-condensing)


CT58 Fiber Cleaver

The CT58 cleaver is designed for cleaving silica fibers with 80 μm cladding. Utilizing the same one step design of our popular CT50 cleaver, the CT58 is quick, easy, and dependable. The 16 position blade yields 60,000 cleaves by providing for blade height and position adjustments. The cleaver can be used with either the FSM-100 series fiber holder systems or with the AD-10-M24 adapter plate for applications.

	Applicable optical fiber	Silica Glass Optical Fiber
	Number of fibers	Single
	Cladding diameter	80μm
	Coating diameter	0.10mm to 0.25mm depending on fiber holder (FH-100 series)
	Cleaving Angle Performance	Typically <0.5°
	Blade lifetime	60,000 cleaves (1,000 x 3 heights x 16 positions)
	Dimensions	90 mm(W) x 95mm(D) x 58mm(H)
	Weight	265 g
	Operating Conditions	Temperature: 0 to 40°C, Humidity: 0 to 95% RH (Non-condensing)
	Storage Conditions	Temperature: -40 to 80°C, Humidity: 0 to 95% RH (Non-condensing)




CT-101 and CT-102 Fiber Cleaver

Precise cleaving is required for photonic splicing applications as the types of optical fiber become more diversified to meet new applications. In addition, angled cleaving is often required for low back-reflection fiber end preparation. The CT-101 and CT-102 have been developed to offer adjustability and versatility for these various fiber types and applications while offering superior tension cleaving performance beyond conventional cleavers that utilize a scribe and bend cleaving method. The CT-101 and CT-102 are equipped with a motorized diamond blade that touches the fiber after tension has been applied providing high-strength cleaving capability. The CT-101 is designed to accommodate the Fujikura FH-100 fiber holders while the CT-102 has been designed to accommodate the FH-60 fiber holders.

	PARAMETER	CT-101	CT-102
	Applicable optical Fiber	Silica Glass Optical Fiber	
	Number of fibers	Single	
	Cladding Diameter	80μm to 250μm	
	Coating Diameter	160μm to 2000 μm	
	Cleave Angle Capability	0 ° to 15 ° (adjustable)	
	Cleave Length	0mm to 40mm	
	Fiber Holder	FH-100 series	FH-60 series
	Cleaving Angle Performance	Typical 0.3° (SMF28e)	
	Blade Life time	20,000 fibers (1,000 fibers x 20 positions)	
	Dimensions	140 mm (W) x 110 mm (D) x 95 mm (H)	
	Weight	900 g or less (excluding batteries)	
	Power Supply	a) 4 "AA" size batteries (approx. 2000 cleaves) b) AC adapter: ADC-16, Input: AC100 to 240 V (50 to 60 Hz)	
	Operating Conditions	Temperature: 0°C to 40°C, Humidity: 0% to 95% RH (Non-condensing)	
	Storage Conditions	Temperature: -40°C to 80°C, Humidity: 0% to 95% RH (Non-condensing)	

CT-104, CT-105 and CT-106 Fiber Cleavers

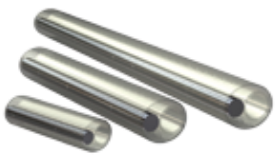
When exceptional cleave quality is required for fibers up to 1,250 μm, the new large diameter CT-104/CT-105/CT-106 cleaver family provides a variety of options depending on your needs. The color LCD shows cleaving progress and recommended insert size depending on fiber coating and cladding diameter. Saving and storing cleaving programs to a PC or tablet is accomplished using a USB port. The LDF cleaver's extensive programming features allow for optimal results.

  	PARAMETER	CT-104	CT-105	CT-106
	Applicable optical fiber	Glass optical fibers, capillary		
	Number of fibers	Single		
	Cladding diameter	80μm to 600μm	80μm to 1,250μm	
	Coating diameter	160μm to 3,000μm		
	Fiber clamping	Manual clamping with torque driver when required	Automatic clamping	
	Cleaving length	5mm to 40 mm		
	Angled cleaving	NA	NA	0 °to 15° (up to 800μm cladding fiber)
	Blade life time	20,000 fibers (Cladding diameter 125μm)		
	Number of cleaving mode	Maximum 100		
	Language	English/Japanese		
	Monitor	4.7 inch, color LCD, Tilt angle		
	Terminal	USB 2.0 (Mini-B type) for PC communication		
	Dimensions	240 mm(W)× 134 mm(D) × 155mm(H)	240 mm(W) × 134mm(D) × 62.5mm (H)	
	Weight	3.4 kg	3.5 kg	3.8 kg
Power supply	AC adapter: ADC-19, Input: AC100 to 240 V (50 to 60 Hz) (max. 20 W)			
Operating condition	Temperature: 0°C, to 40°C, Humidity: 0% to 95% RH (Non-condensing)			
Storage condition	Temperature: -40°C, to 80°C, Humidity: 0% to 95% RH (Non-condensing)			

Splice Protection Sleeves

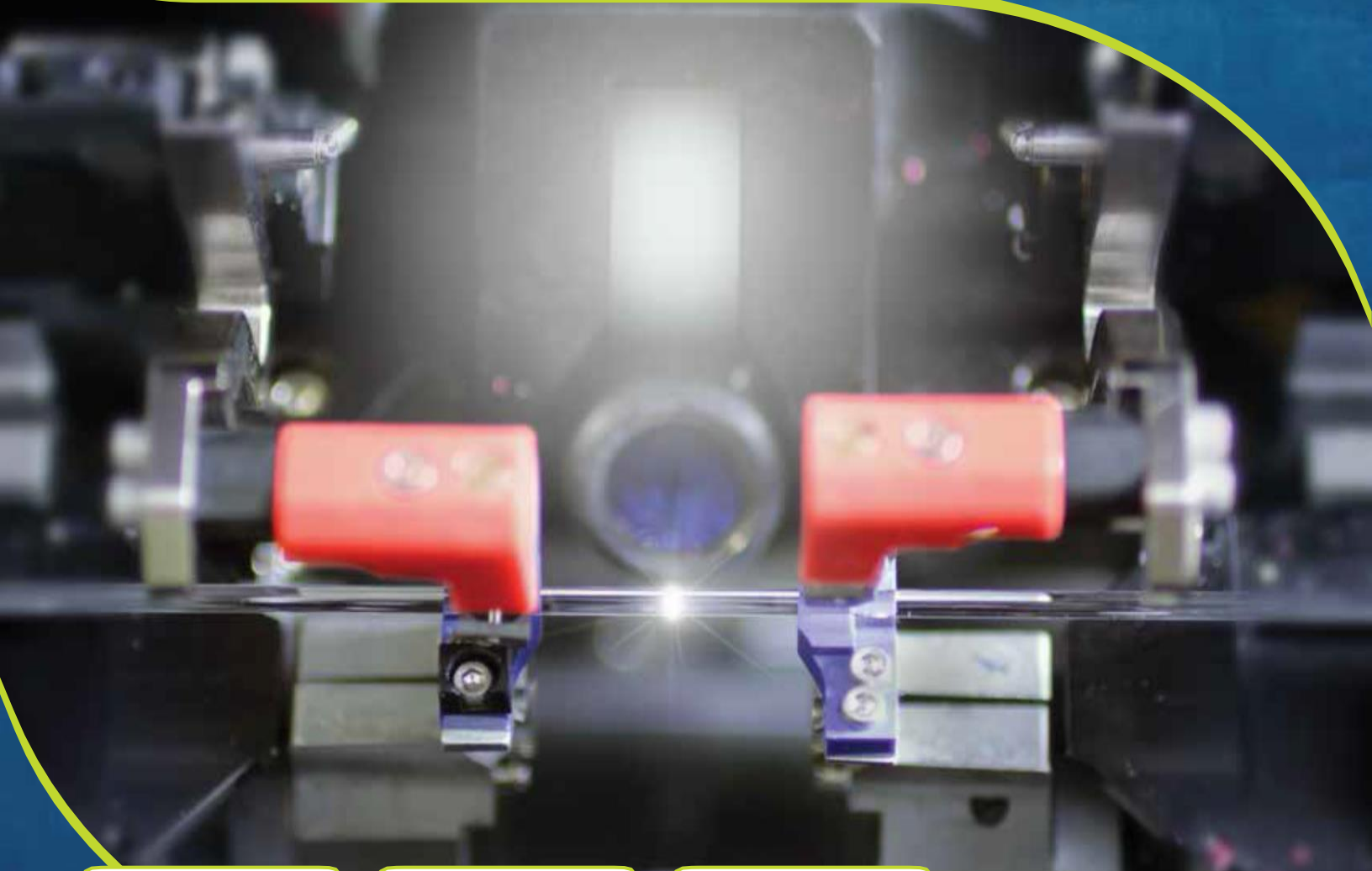
Fujikura offers a wide selection of fiber protection sleeves to meet any application. The FP-03 series is the industry standard for durable and lasting protection of single fiber splices in field installations, while the FP-04(T) and FP-05 provide the same durable protection for 8 and 12 fiber ribbon respectively.

The FPS series are specially designed for optical components, where small packaging is a priority. These micro sleeves provide the known reliability of Fujikura sleeves in the smallest possible lengths. This easy and cost effective method is a great alternative to recoating. The FPS series offer a wide range of options to accommodate various coating sizes, and are manufactured in a variety of lengths. This gives great flexibility in designing optical modules.

	Outer tube	FP-03 series / FPS series FP-04(T) / FP-05	Polyethylene
	Inner tube	FP-03 series / FPS series FP-04(T) / FP-05	Ethylene-Vinyl Acetate (Polyolefin Copolymer)
	Strength member	FP-03 series / FPS series FP-04 (T)	Stainless steel
		FP-05	Quartz glass
	Operating condition (after shrink)	Temperature: -10°C to 50°C, Humidity: 0% to 95% RH (Non-condensing)	
	Storage condition (before shrink)	Temperature: -40°C to 60°C, Humidity: 0% to 95% RH (Non-condensing)	

NOTES

NOTES



© 2016 Fujikura Ltd

Specifications and descriptions are subject to change without prior notice.

Fujikura Ltd.

Fujikura Asia Ltd.

Fujikura Europe Ltd.

AFL

Fujikura (China) Co., Ltd

1-5-1, Kiba, Koto-ku, Tokyo 135-8512, Japan

Phone : +81-3-5606-1164 Fax : +81-3-5606-1534

<http://www.fujikura.co.jp>

460, Alexandra Road, #22-02 PSA Bldg., Singapore 119963

Phone : +65-6-271-1312 Fax : +65-6-278-0965

<http://www.fujikura.co.sg>

C51 Barwell Business Park, Leatherhead Road, Chessington, Surrey KT9 2NY, UK

Phone : +44-20-8240-2000 Fax : +44-20-8240-2010

<http://www.fujikura.co.uk>

260, Parkway East, Hillside Industrial Park, Duncan, SC 29334 USA

Phone : +1-800-235-3423 Fax : +1-800-926-0007

<http://www.AFLglobal.com>

7th Floor, HSBC Tower, 1000 Lujiazui Ring Road, Pudong, Shanghai 200120, China.

Phone : +86-21-6841-3636 Fax : +86-21-6841-2070

<http://www.fujikura.com.cn>