Specialty Fiber Fusion Splicers

ARC Master™

FSM-100 series

FSM-100M, FSM-100P, FSM-100M+, FSM-100P+

- Advanced plasma zone control methods
- LDF (Large Diameter Fiber) splicing capability
- Enhanced arc calibration methods
- Dual splice loss estimation
- Enhanced Sweep arc
- Fiber profile learning function
- Enhanced ability for fiber shaping, glass processing, tapering
- EndView observation system (FSM-100M+, FSM-100P+)
- Advanced PM fiber alignment methods (FSM-100P, FSM-100P+)

Additional information can be found at www.StateoftheARC.com website which is the central repository of information for all of Fujikura’s state of the art fusion splicer products. Stay tuned to www.StateoftheARC.com for forthcoming additions to the ARC Master family of specialty fusion splicers where incremental capabilities will be revealed.
Specialty Fiber Fusion Splicers

**FSM-100 series**

Fujikura specialty fiber splicer FSM-100 series 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, LDFs, PMFs and so on.

**Functions**

**Optimum Plasma Zone Control**
Patented “Split V-groove” and electrode systems create flexible the plasma zone flexible.

- Fiber diameter : 80 µm
  - Reducing heat by electrode offset
- 125 µm
  - Standard setting
- 400 µm
  - Wide arc discharge by increasing electrode gap
- 1200 µm
  - Further wider area heat by "electrode swing" (FSM-100M+, FSM-100P+)

**Enhanced Sweep Arc**
Sweep function moving both L and R fiber together, guides to better splice loss especially for dissimilar fiber splicing and fiber shaping.

**PM Fiber Splicing FSM-100P, FSM-100P+**
Three alignment methods for PM fibers
- Fast PANDA mode aligning by PAS system
- New IPA mode for aligning all kinds of PM fibers
- EndView PM fiber aligning (FSM-100P+ only)

**Enhanced Arc Calibrations**
FSM-100 series provides three types of arc calibration methods, for not only 125 µm fibers but also LDF.

**Dual Splice Loss Estimation**
FSM-100 series provides loss estimation method by both cold and warm splice image. It offers accurate splice loss estimation.

**USB, GPIB Communication**
Splicer firmware can be upgraded via internet connection. Also, splice data upload/download is available. GPIB connection provides power meter feedback aligning.

**Fiber Profile Learning function**
The splicer learns the fiber profile with the adequate focusing in order to observe the core accurately. After learning, it shorten the splicing time.
FSM-100P and FSM-100P+ learn the PM fiber profile to analyze polarization.
FSM-100 series can...

**Specialty Fiber Splicing**

<table>
<thead>
<tr>
<th>PM Fiber Splicing</th>
<th>Special Shape Fiber Splicing</th>
<th>Dissimilar Fiber Splicing</th>
</tr>
</thead>
<tbody>
<tr>
<td>By PAS FSM-100P</td>
<td>Polygon shape fiber FSM-100P+</td>
<td>Different MFD</td>
</tr>
<tr>
<td>By EndView FSM-100P+</td>
<td>Photonic crystal fiber FSM-100M+</td>
<td>Different diameter</td>
</tr>
</tbody>
</table>

**Fiber Shaping**

- Tapering
- End Cap

**Comparison of FSM-100 series**

<table>
<thead>
<tr>
<th></th>
<th>FSM-100M</th>
<th>FSM-100P</th>
<th>FSM-100M+</th>
<th>FSM-100P+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cladding diameter</td>
<td>60 ~ 500 µm</td>
<td>60 ~ 1200 µm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleave length</td>
<td>Coating clamp 3-8 mm (standard 4 mm)</td>
<td>8-13 mm (standard 9 mm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Glass clamp 3-21 mm (standard 4 mm)</td>
<td>8-26 mm (standard 9 mm)</td>
<td></td>
<td></td>
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<tr>
<td>PM fiber splicing</td>
<td>–</td>
<td>–</td>
<td>‟√“</td>
<td>‟√“</td>
</tr>
<tr>
<td>EndView</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>‟√“</td>
</tr>
<tr>
<td>Electrode swinging</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>‟√“</td>
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<tr>
<td>Maximum sweep length</td>
<td>± 5 mm</td>
<td></td>
<td>± 18 mm</td>
<td></td>
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</table>
### Specifications

**Applicable Fiber**
- Standard Items
- Optional Items

**Cleave Length**
- Coating Diameter: 60 to 500 µm
- Cladding Diameter: 60 to 1200 µm

**Typical Splice Length**
- SMF: 0.01 dB
- MMF: 0.02 dB
- PMF: 0.06 dB

**Typical Splice Time**
- SMF: 15 sec
- NYSFP/LDF: 20 sec
- PMF (PANDA): 30 to 50 sec
- PMF (non-PANDA): 70 to 100 sec

**Typical Polarization Crosstalk**
- PMF (PANDA): -32 dB/6.6 deg
- PMF (non-PANDA): -32 dB/6.6 deg

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### Standard Items

<table>
<thead>
<tr>
<th>Name</th>
<th>Model</th>
<th>FSM-100M</th>
<th>FSM-100P</th>
<th>FSM-100M+</th>
<th>FSM-100P+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Splicer Main Body</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fiber Holder</td>
<td>FH-100-250</td>
<td>1pc</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FH-100-400-EV</td>
<td>1pc</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>AC Adaptor</td>
<td>ADC-15</td>
<td>1pc</td>
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<tr>
<td>Electrodes</td>
<td>ELCT2-25</td>
<td>2pairs</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>EndView Light Source</td>
<td>EV-L501</td>
<td>1pc</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>USB Cable</td>
<td>USB-01</td>
<td>1pc</td>
<td></td>
<td></td>
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<tr>
<td>Dust Cleaning Stick</td>
<td>DCS-01</td>
<td>1pc</td>
<td></td>
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<td></td>
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<tr>
<td>Electrode Cleaner</td>
<td>EC-01</td>
<td>1pc</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Warning and Cautions</td>
<td>H-1000E-1</td>
<td>1pc</td>
<td></td>
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<tr>
<td>Splicing Report</td>
<td>SR-01-E</td>
<td>1pc</td>
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</tr>
</tbody>
</table>

### Optional Items

<table>
<thead>
<tr>
<th>Item</th>
<th>Model</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiber Holder</td>
<td>FH-100-xxx</td>
<td>1pc: coating diameter</td>
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<tr>
<td></td>
<td>FH-100-xxx-EV</td>
<td>1pc: coating diameter up to 25 mm</td>
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<tr>
<td></td>
<td>FH-40-LT900</td>
<td>1pc: for 900 µm coating loose tube fiber</td>
</tr>
<tr>
<td>Fiber Cleaver</td>
<td>CT-100</td>
<td>Cladding diameter: 80-250 µm</td>
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<tr>
<td></td>
<td>CT-250</td>
<td>Cladding diameter: 3-40 mm</td>
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<tr>
<td>Jacket Stripper</td>
<td>JS-02-900</td>
<td>Cladding diameter: 125 µm, Cladding diameter 900 µm</td>
</tr>
<tr>
<td></td>
<td>JS-02-800</td>
<td>Cladding diameter: 125 µm, Cladding diameter 250-400 µm</td>
</tr>
<tr>
<td></td>
<td>JS-02-600</td>
<td>Cladding diameter: 80 µm, Cladding diameter up to 250 µm</td>
</tr>
<tr>
<td>Ultra Sonic Cleaner</td>
<td>USC-02</td>
<td></td>
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<tr>
<td>Reofter &amp; Proof Tester</td>
<td>FSR-02</td>
<td>Selectable mold size: 195 µm, 280 µm, 450 µm, 670 µm, 1000 µm</td>
</tr>
</tbody>
</table>

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**Special Features**

- Tube Heat Time: 30 sec
- Electrode Life: 2000 arc discharged, SMF with 1 mm electrode gap
- Inclined viewing observation system with Endview mirror
- 35 to 300 changeable magnification on LCD
- Power supply: 110/220VAC or 120VAC
- Storage Condition: 0 to 95%RH and 0 to 40°C respectively

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Specifications and descriptions are subject to change without prior notice.