



# ofs

A Furukawa Company

Fusion Splicers

Cleaver

Stripper

Other Tools



## FITEL® Fusion Splicers & Tools Catalog



# FITEL

## FUSION SPLICERS FOR OPTICAL FIBER

Optical fiber plays a critical role in today's communication networks – from telecommunications to CATV to data. Furukawa is a major manufacturer and provider of high quality optical fiber and fiber optic products. This includes a complete line of fusion splicers that produce highly accurate, reliable splices with minimal loss. Furukawa's fusion splicers are designed using state-of-the-art technology, decades of manufacturing experience and feedback from countless customer installations. You'll find that FITEL splicers are simple yet precise and reliable tools that can support your full range of fiber manufacturing, R & D, installation, and maintenance applications.



**S123C / S123M4 /  
S123M8 / S123M12**  
...page 5-7

With its low profile and IP-52 rated super rugged body, the FITEL S123 series fusion splicer offers speedy operation at every splicing field, FTTx, LAN, backbone or long-haul installations.

Large battery capacity makes it possible to perform 70 cycles on S123C and S123M4 with single battery and 100 cycles on S123M8 and S123M12 with two batteries.

Combining the portability, power flexibility and field ruggedness, S123 delivers the fast and consistent splicing with outstanding mobility and extreme ease-of-use.



**S153A**  
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The Fitel S153A using "Active V-Groove alignment" is the first choice for low cost field splicing equipment.

The Active V-Groove technology used on the S153A delivers low loss splices with ease while eliminating common Fixed V-Groove splicing errors.

Using the same rugged metal body as also-new FITEL S178, the S153A is designed to endure harsh operating conditions by improving shock / impact resistance with rubber pads embedded on 4 corners of the splicer body. It also achieves water resistance compliant to IPX2 and dust resistance compliant to IP5X.

# C O N T E N T S

## Fusion Splicers

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**S178A**  
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The FITEL S178A Hand-Held Core-Alignment Fusion Splicer is the latest, state-of-the-art addition to the S17x series of splicers. By combining speed, precision, durability and portability in one unit, the S178A Fusion Splicer brings an entirely new range of applications for core alignment splicing.

The S178A is equipped with a new alignment system that can reduce the splicing time by up to 20%. In addition, the improved heating mechanism also reduces the protection sleeve shrink time by more than 30% and the newly incorporated USB 2.0 interface speeds up PC communication and image / video transfer, whilst enhancing reliability.



**S183PMII / S184PM-SLDF**  
...page 14-17

The S18x Full Function Splicer series provides you the ultimate splicing solution. Designed primarily to address production and research splicing needs in the optical components industry, this is the most advanced series, along with S184PM-SLDF, in FITEL's extensive line of high performance machines.

## OPTICAL FIBER SPLICING PROCESS

### STRIPPING

22 - 23

Using a fiber stripper to remove the coating material from the fiber.

### CLEANING

24

Using alcohol and a specially designed wiper to clean the bare fiber.

### CLEAVING

21

Using a precise cleaver to cut the fiber.

### SPLICING

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Using a fusion splicer to align fibers & discharge the arc to connect the fibers. In addition, the unit will inspect the quality of the splice after the process.







### PROTECTION

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Using a heat-shrinking sleeve to protect spliced fiber.

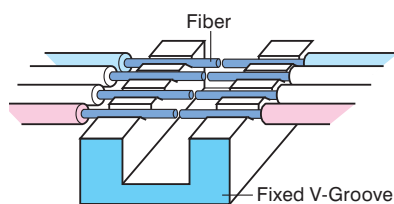
# Types of Fusion Splicers in the industry

There are a number of ways to categorize splicers. Here we categorize them based on the fiber alignment type: Fixed V-Groove alignment type, Active V-groove alignment and Core-Alignment type. The Fixed V-Groove is typically used for ribbon fiber splicing. Active V-groove alignment and Core-Alignment type is used for single fiber splicing with more precise requirements, such as optical components manufacturing.

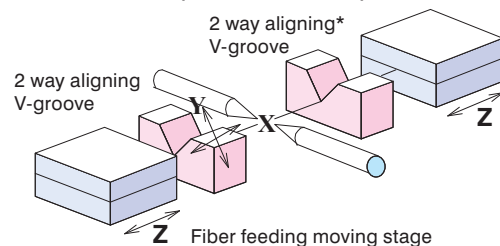
Type	 S123C / S123M4	 S123M8 / S123M12	 S153A	 S178A	 S183PMII	 S184PM-SLDF
Alignment Type	Fixed V-groove (Clad Alignment)		Active V-groove (Clad Alignment)	Core Alignment		
Fiber Observation	2 Cameras					
Applicable Fiber	SM, MM, DSF, NZD, BIF / UBIF		SM, MM, DSF, NZD, BIF / UBIF	SM, MM, DSF, NZD, EDF, BIF / UBIF	SM, MM, DSF, NZD, CSF, EDF, PMF, LDF	SM, MM, DSF, CSF, PMF, LDF
Fiber Count	S123C: Single Fiber S123M4: 1~4 Fibers	S123M8: 1~8 Fibers S123M12: 1~12 Fibers	Single Fiber			
Cladding Diameter	125 $\mu\text{m}$		80~150 $\mu\text{m}$		80~500 $\mu\text{m}$	80~1200 $\mu\text{m}$
Coating Diameter	Single: 250~900 $\mu\text{m}$ Ribbon: 280~400 $\mu\text{m}$		Single: 100~1000 $\mu\text{m}$		Single: 160~2000 $\mu\text{m}$	
Cleave Length	S123C: 5~10 mm S123M4: 10 mm	10 mm	250 $\mu\text{m}$ Coating: 5~10 mm or 5~16 mm 900 $\mu\text{m}$ Coating: 10 or 16 mm		Normal Strength: 9~11 mm High Strength: 3~5 mm	Normal Strength: 9~11 mm High Strength: 5 mm
Dissimilar Splicing	No			Yes		
Specialty Splicing	No			Yes		
High Strength Splicing	No			Yes		
PM Fiber Splicing	No			Yes		
Applicable Sleeves	Single: 20 / 40 / 60 mm Ribbon: 40 / 60 mm		Single: 20 / 40 / 60 mm			
Battery	Available				No	
Application	LAN, FTTx, Backbone, Long Haul Installation				OEM, R&D, Production	

## ALIGNMENT TYPE

### FIXED V-GROOVE (S123)



### CORE ALIGNMENT (S178, S183, S184)



\*S183, S184 only

# S123 SERIES Hand-Held Fusion Splicer



With its low profile and IP-52 rated super rugged body, the FITEL S123 series fusion splicer offers speedy operation in every splicing field, FTTx, LAN, backbone or long-haul installations.

Large battery capacity makes it possible to perform 70 cycles for S123C and S123M4 with a single battery, and 160 cycles with two batteries.

Combining portability, power flexibility and field ruggedness, the S123 delivers fast and consistent splicing with outstanding mobility and extreme ease-of-use.

## KEY FEATURES:

- **IP-52 - Rugged and compact hand held design** for demanding environmental conditions
- **Fast splice (13 sec)** at low loss and **Fast Heating (25 sec)** for single fiber<sup>\*1</sup>
- **Simple operation** with Fixed V-groove
- **Splicer is compatible with the Seikoh Giken and Diamond Splice-on-connector (SOC)<sup>\*2</sup>**
- **70 cycles (Splicing & Heating)** with single battery<sup>\*3</sup>
- **Available for All METRO / LAN / FTTx fibers** including **ultra bend-insensitive fibers** (e.g. EZ-Bend™)
- **Easy maintenance** - Toolless electrode replacement/mirror free alignment system
- **Easy Software upgrade** via the Internet
- **Easily exchanged fiber holder systems** (tight holder / fiber holder / SOC holder)
- **PC interface software** to allow user manage splicing programs and results
- **Auto-start** shrink sleeve oven feature
- **Improved GUI** to further enhance ease-of-use
- **RoHS compliant**

\*1 By using semi-auto mode for splicing and pre-heating mode for heating.

\*2 S123M4/8/12 are compatible with Seikoh Giken 9 mm cleave length connector only.

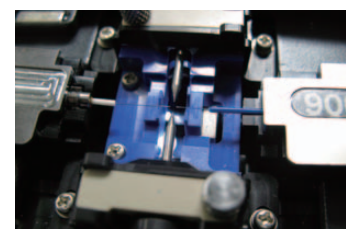
\*3 By using semi-auto mode for splicing and regular mode for heating.

## PRODUCT LINE UP:

Model	Application
S123C-A	Splicing for single fiber (with Soft Case)
S123C-B	Splicing for single fiber (with Hard Case)
S123M4-A	Splicing for single to 4 ribbon fiber (with Soft Case)
S123M4-B	Splicing for single to 4 ribbon fiber (with Hard Case)
S123M8	Splicing for single to 8 ribbon fiber
S123M12	Splicing for single to 12 ribbon fiber



Compatible with Splice-on-connector (SOC)



FITEL Splicer SOC partners



Fusion Splicers

## UNDER TOUGH ENVIRONMENT:

S123 series passed criteria as below \*4;

### Drop Resistance

76 cm Drops from 5 different angles



### Water Resistance

IPX2 rating drip proof\*5



### Dust Resistance

IP5X rating dust proof\*6



\*4 Above tests were performed at Furukawa Electric Labs, and do not guarantee that the machine will be undamaged under these conditions.

\*5 IPX2 rating drip proof means that the machine can be exposed to 3 mm/min drip from 4 different angles with 15° tilt for 2.5 min each and still functions.

\*6 IP5X rating dust proof means that the machine can be exposed to dust particles with a diameter of 0.1 to 25 μm for 8 hours and still functions.

## SPECIFICATIONS:

Applicable Fibers	SM (ITU-T G.652), MM (ITU-T G.651), DSF (ITU-T G.653), NZD (ITU-T G655), BIF / UBIF (Bend Insensitive Fiber ITU-T G.657)
Cladding Diameter	125 μm
Coating Diameter	250 to 900 μm for single fiber 280 to 400 μm for ribbon (thickness) [S123M4, S123M8, S123M12]
Fibers Cleave Length	5 to 10 mm (S123C) 10 mm (S123M4, S123M8, S123M12)
Average Splice Loss	SM: 0.05 dB, MM: 0.03 dB, DS 0.08 dB, NZDS 0.08 dB
Splice Time	Single fiber: 13 seconds Ribbon fiber: 15 seconds
Heat Time	Single fiber: 25 seconds (S922: 40 mm sleeve, S921: 60 mm sleeve) (Pre-heatmode) <sup>*7</sup> (S123C, S123M4) Ribbon fiber: 35 seconds (S924: 40 mm sleeve) (Pre-heat mode) <sup>*7</sup>
Splice Programs	Max. 150
Heat Programs	Max. 18
Automatic Heating Start	Available
Applicable Sleeves	20 / 40 / 60 mm
Fiber Holding	Tight holder (Loose tube applicable) or Fiber holder system (S123C) Fiber holder system (S123M4, S123M8, S123M12)
Tension Test	1.96 N
Return Loss of Splice	60 dB or more
Fiber Image Magnification	58X (S123C), 48X (S123M4), 28X (S123M8), 20X (S123M12)
Splice Memory	Max. 1500 (S123C, S123M4), Max. 1000 (S123M8, S123M12)
Image Capture Capacity	Last 100 images to be automatically captured + Up to 24 images to be stored permanently
Dimension	S123C, S123M4: 127 W × 199 D × 81 H mm (not including shock absorber) 159 W × 231 D × 104 H mm (including shock absorber) S123M8, S123M12: 127 W × 199 D × 105 H mm (not including shock absorber) 159 W × 231 D × 130 H mm (including shock absorber)
Weight	S123C, S123M4: 1.4 kg (without battery), 1.6 kg (with S943B battery) S123M8, S123M12: 1.6 kg (without battery), 2.0 kg (with two S943B batteries)
Monitor	3.5" color LCD monitor
Data Output	USB ver. 2.0 mini
Displaying Language	20 languages
Battery Capacity <sup>*7</sup>	Typical 70 splice / heat cycles with S943B battery (S123C, S123M4) <sup>*8</sup> Typical 160 splice / heat cycles with two S943 batteries (S123M8, S123M12) <sup>*9</sup>
Operating Temperature	-10 to 50°C (without excessive humidity)
Storage Temperature	-40 to 60°C (without excessive humidity)
Humidity	0 to 95% RH (non-condensing)
Power Source	AC input 100 to 240 V (50 / 60 Hz), DC Input 11 to 17 V without any change of hardware

\*7 The first heating after turning on the power can be longer than usual heating time.

\*8 The number of the splicing and heating the machine can produce using a full charged battery at room temperature of 20°C, semi-auto mode for splicing and regular mode for heating. Depending on the condition of the battery and the operation environment, the number can vary.

\*9 The number of the splicing and heating the machine can produce using two full charged batteries at room temperature of 20°C, semi-auto mode for splicing and regular mode for heating. Depending on the condition of the batteries and the operation environment, the number can vary.

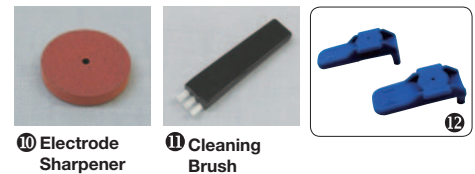
## STANDARD PACKAGE:

Item	P / N	Quantity					
		S123C-A	S123C-B	S123M4-A	S123M4-B	S123M8	S123M12
① S123C Main Body	S123-C-A-0001	1	1	—	—	—	—
① S123M4 Main Body	S123-M4-A-0001	—	—	1	1	—	—
① S123M8 Main Body	S123-M8-0001	—	—	—	—	1	—
① S123M12 Main Body	S123-M12-0001	—	—	—	—	—	1
② Soft Carrying Case	SCC-01	1	—	1	—	—	—
③ Hard Carrying Case	HCC-02	—	1	—	1	1	1
④ Battery Pack	S943B	1	1	1	1	1 or 2	1 or 2
⑤ Battery Charger	S958B	1	1	1	1	1	1
⑥ Spare Electrodes	S969	1	1	1	1	1	1
⑦ AC Adaptor for S123C/M4	S976A	1	1	1	1	1	1
⑧ AC Adaptor for S958B	S977A	1	1	1	1	1	1
⑨ AC Cable Cord	—	2	2	2	2	2	2
⑩ Electrode Sharpener	D5111	1	1	1	1	1	1
⑪ Cleaning Brush	VGC-01	1	1	1	1	1	1
⑫ Fiber Reformer (4)	S122-X-A-0004	—	—	1pair	1pair	—	—
⑫ Fiber Reformer (8 / 12)	S122-X-A-0008	—	—	—	—	1pair	1pair
User Manual	—	1	1	1	1	1	1



## OPTIONAL ACCESSORIES:

Item	P / N	Quantity
① Soft Carrying Case	SCC-01	1
② Cooling Tray	CTX-01	1
③ Angled Stand	AGS-01	1
④ Working Belt	WBT-01	1
⑤ USB Cable	USB-01	1
⑥ Car Cigarette Cable	CDC-01	1
⑦ Tight Holder		
16 mm Cleave length	S712T-016	1pair
10 mm Cleave length	S712T-010	1pair
⑧ Fiber Holder		
250 μm coating diameter fiber	S712S-250	1pair
500 μm coating diameter fiber <sup>*10</sup>	S712S-500	1pair
900 μm coating diameter fiber	S712S-900	1pair
2 Ribbon Fiber Holder	S712A-002	1pair
4 Ribbon Fiber Holder	S712A-004	1pair
8 Ribbon Fiber Holder	S712A-008	1pair
12 Ribbon Fiber Holder	S712A-012	1pair
Loose Tube Fiber (Left side)	S712S-LT-L	1pair
Loose Tube Fiber (Right side) <sup>*11</sup>	S712S-LT-R	1pair
⑨ SOC Holders		
<For Ferrule>		
Seiko Giken FC / SC connector (9 mm)	S712C-SGS9-L	1
Seiko Giken FC / SC connector (5 mm)	S712C-SGS5-L	1
Seiko Giken LC connector (9 mm)	S712C-SGL9-L	1
Seiko Giken LC connector (5 mm)	S712C-SGL5-L	1
Diamond E-2000™ / F-3000™ LC / SC connector	S712C-DM25-L	1
<For Cordage>		
Seiko Giken Cordage (5 mm)	S712C-SGC5-R	1
Seiko Giken Cordage (9 mm)	S712C-SGC9-R	1
Diamond Cordage (5 mm cleave, 1.8~3 mm cordage) <sup>*12</sup>	S712-LT-R	1
<Tool>		
Diamond Mount	WTX-01	1
Smart Fuse	SF-01	1
Software Interface for Machine		



③ Angled Stand in Action    ④-1 Working Belt in Action    ④-2 Working Belt in Action

\*10 Used for 400-500 μm coating diameter fiber.

\*11 Also work as diamond cordage holder.

\*12 Also work as loose tube fiber holder (R).

# S153A Hand-Held Active Alignment Splicer



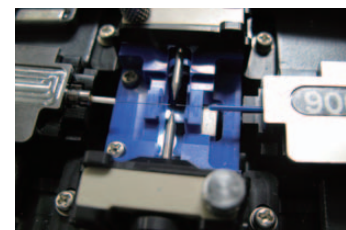
The Fitel S153A using “Active V-Groove alignment” is the first choice for low cost field splicing equipment.

The Active V-Groove technology used on the S153A delivers low loss splices with ease while eliminating common Fixed V-Groove splicing errors.

**NEW**



**Compatible with Splice-on-connector (SOC)**



## KEY FEATURES:

- **Active V-groove**, More Reliable than conventional Fixed V-groove machines
- **Rugged and compact hand held design** for demanding environmental conditions
- **Fast splice (9 sec)** at super low loss and **Fast Heating (25 sec)**<sup>\*1</sup>
- **200 cycles (Splicing & Heating)** with Fitel series battery configuration<sup>\*2</sup>
- **Available for All METRO / LAN / FTTx fibers** including ultra bend-insensitive fibers (e.g. EZ-Bend™)
- **Splicer is compatible with the Seikoh Giken and Diamond Splice-on-connector (SOC)**
- **Easy maintenance** - Toolless electrode replacement/mirror free alignment system
- **Easy Software upgrade** via the Internet
- **Easily exchanged fiber holder systems** (tight holder/fiber holder/SOC holder)
- **PC interface software** to allow user manage splicing programs and results
- **Auto-start** shrink sleeve oven feature
- **Improved GUI** to further enhance ease-of-use
- **Large memory** for storing data (2,000 splice data) and image (100 images)
- **RoHS compliant**

\*1 By using semi-auto mode for splicing and pre-heating mode for heating.

\*2 By using 2-batteries, semi-auto mode for splicing and regular mode for heating.



**FITEL Splicer SOC partners**



## UNDER TOUGH ENVIRONMENT:

S153A passed criteria as below <sup>\*3</sup>;

### Drop Resistance

76 cm Drops from 5 different angles



### Water Resistance

IPX2 rating drip proof <sup>\*4</sup>



### Dust Resistance

IP5X rating dust proof <sup>\*5</sup>



\*3 Above tests were performed at Furukawa Electric Labs, and do not guarantee that the machine will be undamaged under these conditions.

\*4 IPX2 rating drip proof means that the machine can be exposed to 3 mm/min drip from 4 different angles with 15° tilt for 2.5 min each and still functions.

\*5 IP5X rating dust proof means that the machine can be exposed to dust particles with a diameter of 0.1 to 25 μm for 8 hours and still functions.



## SPECIFICATIONS:

<b>Applicable Fibers</b>	SM (ITU-T G.652), MM (ITU-T G.651), DSF (ITU-T G.653), NZD (ITU-T G.655), BIF / UBIF (Bend insensitive fiber, ITU-T G.657)
<b>Cladding Diameter</b>	80 to 150 $\mu\text{m}$
<b>Coating Diameter</b>	100 to 1,000 $\mu\text{m}$
<b>Fibers Cleave Length</b>	5 to 16 mm
<b>Average Splice Loss</b>	SM: 0.04 dB, MM: 0.02 dB, DSF: 0.06 dB, NZD: 0.06 dB
<b>Splice Time</b>	9 seconds (semi-auto mode) 11 seconds (regular mode)
<b>Heat Time</b>	25 seconds* <sup>6</sup> (S922: 40 mm Sleeve, S921: 60 mm Sleeve) (Pre-heat mode) 31 seconds* <sup>6</sup> (S922: 40 mm Sleeve, S921: 60 mm Sleeve) (Regular mode)
<b>Splice Programs</b>	Max. 150
<b>Heat Programs</b>	Max. 18
<b>Automatic Heating Start</b>	Available
<b>Applicable Sleeves</b>	20 / 40 / 60 mm
<b>Fiber Holding</b>	Tight holder (Loose tube applicable) or Fiber Holder System
<b>Tension Test</b>	1.96 N
<b>Return Loss of Splice</b>	60 dB or more
<b>Fiber Image Magnification</b>	76X, 235X
<b>Splice Memory</b>	Max. 2,000
<b>Image capture Capacity</b>	Last 100 images to be automatically captured + Up to 24 images to be stored permanently
<b>Dimension</b>	127 W × 199 D × 105 H mm (not including shock absorber) 159 W × 231 D × 130 H mm (including shock absorber)
<b>Weight</b>	1.7 kg (without battery) 2.1 kg (with two batteries)
<b>Monitor</b>	3.5" color LCD monitor
<b>Data Output</b>	USB ver. 2.0 mini
<b>Diplaying Language</b>	20 languages (e.g. English, Spanish, Japanese, Chinese)
<b>Battery Capacity</b>	Typical 80 splice / heat cycles with single battery* <sup>7</sup> Typical 200 splice / heat cycles with 2 batteries* <sup>8</sup>
<b>Altitude</b>	5,000 mh
<b>Wind Protection</b>	Max. wind velocity of 15 m/s.
<b>Operating Temperature</b>	-10 to +50°C (0 to 95% Relative Humidity [Non-Condensing])
<b>Storage Temperature</b>	-40 to +60°C (0 to 95% Relative Humidity [Non-Condensing])
<b>Humidity</b>	0 to +95% RH (non-condensing)
<b>Power Source</b>	AC Input 100 to 240 V (50 / 60 Hz), DC Input 11 to 17 V without any change of hardware

\*6 The first heating after turning on the power can be longer than the usual heating time.

\*7 The number of the splicing and heating the machine can produce using a fully charged brand new battery at room temperature of 20°C, semi-auto mode for splicing and regular mode for Heating. Depending on the condition of the batteries and operation environment, the number can vary.

\*8 The number of the splicing and heating the machine can produce using 2 fully charged brand new batteries at room temperature of 20°C, semi-auto mode for splicing and regular mode for Heating. Depending on the condition of the batteries and operation environment, the number can vary.

## STANDARD PACKAGE:

Item	P / N	Quantity
① S153A Main Body	S153-A-A-0001	1
② Hard Carrying Case	HCC-01	1
③ Battery Pack Depending on the package	S943B	1 or 2
④ Battery Charger	S958B	1
⑤ Spare Electrodes	S969	1pair
⑥ AC Adaptor for S153A	S976A	1
⑦ AC Adaptor for S958B	S977A	1
⑧ AC Cable Cord For S976A / S977A	—	2
⑨ Electrode Sharpener	D5111	1
⑩ Cleaning Brush	VGC-01	1
User Manual	FTS-351	1



⑤ Spare Electrodes



⑨ Electrode Sharpener



⑩ Cleaning Brush

## OPTIONAL ACCESSORIES:

Item	P / N	Quantity
① Soft Carrying Case	SCC-01	1
② Cooling Tray	CTX-01	1
③ Angled Stand	AGS-01	1
④ Working Belt	WBT-01	1
⑤ USB Cable	USB-01	1
⑥ Car Cigarette Cable	CDC-01	1
⑦ Tight Holder		
16 mm Cleave length	S712T-016	1pair
10 mm Cleave length	S712T-010	1pair
⑧ Fiber Holder		
160 μm coating diameter fiber	S712S-160	1pair
250 μm coating diameter fiber	S712S-250	1pair
500 μm coating diameter fiber <sup>*9</sup>	S712S-500	1pair
900 μm coating diameter fiber	S712S-900	1pair
Loose Tube Fiber (Left side)	S712S-LT-L	1
Loose Tube Fiber (Right side) <sup>*10</sup>	S712S-LT-R	1
⑨ SOC Holders		
<For Ferrule>		
Seiko Giken FC / SC connector (9 mm)	S712C-SGS9-L	1
Seiko Giken FC / SC connector (5 mm)	S712C-SGS5-L	1
Seiko Giken LC connector (9 mm)	S712C-SGL9-L	1
Seiko Giken LC connector (5 mm)	S712C-SGL5-L	1
Diamond E-2000™ / F-3000™ LC / SC connector	S712C-DM25-L	1
<For Cordage>		
Seiko Giken Cordage (5 mm)	S712C-SGC5-R	1
Seiko Giken Cordage (9 mm)	S712C-SGC9-R	1
Diamond Cordage (5 mm cleave, 1.8~3 mm cordage) <sup>*11</sup>	S712S-LT-R	1
<Tool>		
Diamond Mount	WTX-01	1
Smart Fuse		
Software Interface for Machine	SF-01	1

\*9 Used for 400-500 μm coating diameter fiber.

\*10 Also work as diamond cordage holder.

\*11 Also work as loose tube fiber holder (R).



③ Angled Stand in Action



④ -1 Working Belt in Action



④ -2 Working Belt in Action

## ORDERING NUMBER FORM: S153A-(X1)-(X2)

Category	Code	Remark
X1	Fiber Holder	1 16 mm Tight Holder S712T-016
	Type	2 10 mm Tight Holder S712T-010
		3 Fiber Holder System
X2	Number of Battery Pack	1 1 pack (with 1 S958B battery charger and 1 S977A AC adaptor)
	(S943B)	2 2 packs (with 1 S958B battery charger and 1 S977A AC adaptor)

# S178A Hand-Held Core-Alignment Fusion Splicer



The FITEL S178A Hand-Held Core-Alignment Fusion Splicer is the latest, state-of-the-art addition to the S17x series of splicers. By combining speed, precision, durability and portability in one unit, the S178A Fusion Splicer brings an entirely new range of applications for core alignment splicing.



Fusion Splicers

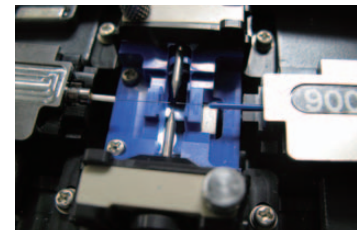
## KEY FEATURES:

- **Rugged and compact handheld design** endure harsh environmental conditions
- **Fast splice (7 sec)** at super low loss and Fast Heating (25 sec)<sup>\*1</sup>
- **200 cycles (Splicing & Heating)** with new battery configuration<sup>\*2</sup>
- **Available for All METRO / LAN / FTTx fibers** including ultra bend-insensitive fibers (e.g. EZ-Bend™)
- **Splicer is compatible with the Seikoh Giken and Diamond Splice-on-connector (SOC)**
- **Easy maintenance** - Easy electrode replacement / mirror free alignment system
- **Easy Software upgrade** via the internet
- **Easily exchanged fiber holder systems** (tight holder / fiber holder / SOC holder)
- **PC interface software** to allow user manage splicing recipes and splicing results
- **Auto-start** shrink sleeve oven feature
- **Improved GUI** to further enhance ease-of-use
- **Large memory** for storing data (2,000 splice data) and image (100 images)
- **RoHS compliant**

\*1 By using semi-auto mode for splicing and pre-heating mode for heating.

\*2 By using 2-batteries, semi-auto mode for splicing and regular mode for heating.

## Compatible with Splice-on-connector (SOC)



FITEL Splicer SOC partners



## UNDER TOUGH ENVIRONMENT:

S178A passed criteria as below <sup>\*3</sup>;

### Drop Resistance

76 cm Drops from 5 different angles



### Water Resistance

IPX2 rating drip proof <sup>\*4</sup>



### Dust Resistance

IP5X rating dust proof <sup>\*5</sup>



\*3 Above tests were performed at Furukawa Electric Labs, and do not guarantee that the machine will be undamaged under these conditions.

\*4 IPX2 rating drip proof means that the machine can be exposed to 3 mm / min drip from 4 different angles with 15° tilt for 2.5 min each and still functions.

\*5 IP5X rating dust proof means that the machine can be exposed to dust particles with a diameter of 0.1 to 25 μm for 8 hours and still functions.

## SPECIFICATIONS:

<b>Applicable Fibers</b>	SM, MM, DSF, NZD, EDF, BIF / UBIF (Bend insensitive fiber)
<b>Cladding Diameter</b>	80 to 150 $\mu\text{m}$
<b>Coating Diameter</b>	100 to 1,000 $\mu\text{m}$
<b>Fibers Cleave Length</b>	5 to 16 mm
<b>Average Splice Loss</b>	SM: 0.02 dB, MM: 0.01 dB, DSF: 0.04 dB, NZD: 0.04 dB
<b>Splice Time</b>	7 seconds (semi-auto mode) 9 seconds (regular mode)
<b>Heat Time</b>	25 seconds* <sup>6</sup> (S922: 40 mm Sleeve, S921: 60 mm Sleeve) (Pre-heat mode) 31 seconds* <sup>6</sup> (S922: 40 mm Sleeve, S921: 60 mm Sleeve) (Regular mode)
<b>Splice Programs</b>	Max. 150
<b>Automatic Splicing Selection</b>	SM (SM, DSF, NZD, BIF / UBIF), MM
<b>Heat Programs</b>	Max. 18
<b>Automatic Heating Start</b>	Available
<b>Applicable Sleeves</b>	20 / 40 / 60 mm
<b>Fiber Holding</b>	Tight holder (Loose tube applicable) or Fiber Holder System
<b>Tension Test</b>	1.96 N
<b>Return Loss of Splice</b>	60 dB or more
<b>Attenuation splice function</b>	Intentional high splice loss of 0.1 dB to 10 dB (0.1 dB step) can be made for an inline fixed attenuator
<b>Fiber Image Magnification</b>	304X, 608X
<b>Splice Memory</b>	Max. 2,000
<b>Image capture Capacity</b>	Last 100 images to be automatically captured + Up to 24 images to be stored permanently
<b>Dimension</b>	127 W $\times$ 199 D $\times$ 105 H mm (not including shock absorber) 159 W $\times$ 231 D $\times$ 130 H mm (including shock absorber)
<b>Weight</b>	1.9 kg (without battery) 2.3 kg (with two batteries)
<b>Monitor</b>	3.5" color LCD monitor
<b>Data Output</b>	USB ver.2.0 mini
<b>Diaplaying Language</b>	20 languages (e.g. English, Spanish, Japanese, Chinese)
<b>Battery Capacity</b>	Typical 80 splice / heat cycles with single battery* <sup>7</sup> Typical 200 splice / heat cycles with 2 batteries* <sup>8</sup>
<b>Altitude</b>	5,000 mh
<b>Wind Protection</b>	Max. wind velocity of 15 m/s.
<b>Operating Temperature</b>	-10 to +50°C (0 to 95% Relative Humidity [Non-Condensing])
<b>Storage Temperature</b>	-40 to +60°C (0 to 95% Relative Humidity [Non-Condensing])
<b>Humidity</b>	0 to +95% RH (non-condensing)
<b>Power Source</b>	AC Input 100 to 240 V (50 / 60 Hz), DC Input 11 to 17 V without any change of hardware

\*<sup>6</sup> The first heating after turning on the power can be longer than the usual heating time.

\*<sup>7</sup> The number of the splicing and heating the machine can produce using a fully charged brand new battery at room temperature of 20°C, semi-auto mode for splicing and regular mode for Heating. Depending on the condition of the batteries and operation environment, the number can vary.

\*<sup>8</sup> The number of the splicing and heating the machine can produce using 2 fully charged brand new batteries at room temperature of 20°C, semi-auto mode for splicing and regular mode for Heating. Depending on the condition of the batteries and operation environment, the number can vary.

## STANDARD PACKAGE:

Item	P / N	Quantity
① S178A Main Body	S178-A-A-0001	1
② Hard Carrying Case	HCC-01	1
③ Battery Pack Depending on the package	S943B	1 or 2
④ Battery Charger	S958B	1
⑤ Spare Electrodes	S969	1pair
⑥ AC Adaptor for S178A	S976A	1
⑦ AC Adaptor for S958B	S977A	1
⑧ AC Cable Cord For S976A / S977A	—	2
⑨ Electrode Sharpener	D5111	1
⑩ Cleaning Brush	VGC-01	1
User Manual	FTS - 347	1



## OPTIONAL ACCESSORIES:

Item	P / N	Quantity
❶ Soft Carrying Case	SCC-01	1
❷ Cooling Tray	CTX-01	1
❸ Angled Stand	AGS-01	1
❹ Working Belt	WBT-01	1
❺ USB Cable	USB-01	1
❻ Car Cigarette Cable	CDC-01	1
❼ Tight Holder		
16 mm Cleave length	S712T-016	1pair
10 mm Cleave length	S712T-010	1pair
❽ Fiber Holder		
160 μm coating diameter fiber	S712S-160	1pair
250 μm coating diameter fiber	S712S-250	1pair
500 μm coating diameter fiber <sup>*9</sup>	S712S-500	1pair
900 μm coating diameter fiber	S712S-900	1pair
Loose Tube Fiber (Left side)	S712S-LT-L	1
Loose Tube Fiber (Right side) <sup>*10</sup>	S712S-LT-R	1
❾ SOC Holders		
<For Ferrule>		
Seiko Giken FC / SC connector (9 mm)	S712C-SGS9-L	1
Seiko Giken FC / SC connector (5 mm)	S712C-SGS5-L	1
Seiko Giken LC connector (9 mm)	S712C-SGL9-L	1
Seiko Giken LC connector (5 mm)	S712C-SGL5-L	1
Diamond E-2000™ / F-3000™ LC / SC connector	S712C-DM25-L	1
<For Cordage>		
Seiko Giken Cordage (5 mm)	S712C-SGC5-R	1
Seiko Giken Cordage (9 mm)	S712C-SGC9-R	1
Diamond Cordage (5 mm cleave, 1.8~3 mm cordage) <sup>*11</sup>	S712S-LT-R	1
<Tool>		
Diamond Mount	WTX-01	1
Smart Fuse		
Software Interface for Machine	SF-01	1

\*9 Used for 400-500 μm coating diameter fiber.

\*10 Also work as diamond cordage holder.

\*11 Also work as loose tube fiber holder (R).



❸ Angled Stand in Action



❹ -1 Working Belt in Action



❹ -2 Working Belt in Action

## ORDERING NUMBER FORM: S178A-(X1)-(X2)

Category	Code	Remark
X1 Fiber Holder Type	1	16 mm Tight Holder S712T-016
	2	10 mm Tight Holder S712T-010
	3	Fiber Holder System
X2 Number of Battery Pack (S943B)	1	1 pack (with 1 S958B battery charger and 1 S977A AC adaptor)
	2	2 packs (with 1 S958B battery charger and 1 S977A AC adaptor)

# S183PMII Fusion Splicer



The S183PMII Advanced Fusion Splicer was designed specifically for the demanding production and research applications of the optical components industry, being capable of:

- Splicing specialty and exotic fiber combinations
- Very large diameter fiber splicing (up to 500  $\mu\text{m}$ )\*
- Polarization maintaining fiber splicing
- High-strength splicing application
- RoHS compliant

\* With optional LDF holder and LDF electrode.



## FEATURES & APPLICATIONS:

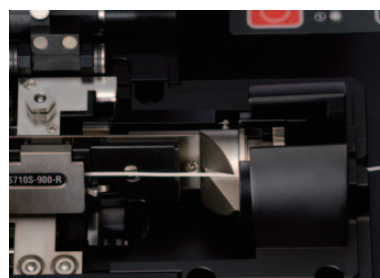
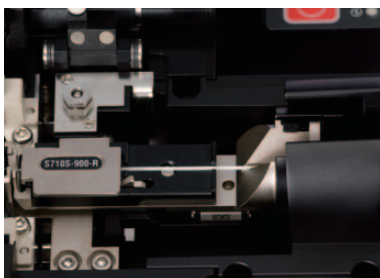
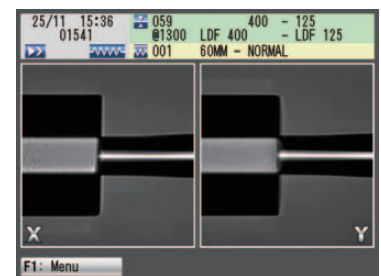


### Specialty Splicing Made Easy

The advanced features of the S183PMII allow you to splice today's and tomorrow's most exotic fiber types. Whether performing high-strength splices, splicing small cladding fibers (80  $\mu\text{m}$ ), large cladding fibers (500  $\mu\text{m}$ ), high  $\Delta$  splicing combinations, PM fibers, or erbium doped fiber, the S183PMII is the splicer for your high-end application.

### Fast Splice Time

The splice time is lightning fast at 35 seconds for PANDA and 15 seconds for SM. The S183PMII Fusion Splicer is the fastest in the industry for most fiber applications, allowing you to increase efficiency on your production line.



### Safe PM Fiber Rotation

The new rotation mechanism on the S183PMII Fusion Splicer allows PM fiber to rotate while keeping it straight and stable. This minimizes fiber twist, which can be detrimental to sensitive splicing applications.

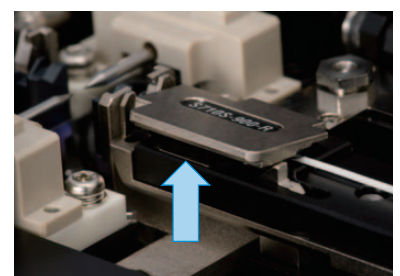


### Quick Loading & Automatic Machine Adjustment

The S183PMII Fusion Splicer automatically adjusts for different fiber coating and cladding sizes. There is no need to exchange v-grooves, or fiber clamps. In addition, the S183PMII Fusion Splicer has been designed so that the user simply loads the fiber and closes the lid to begin the fusion process. There is no need to lower or set fiber clamps before beginning your splice.

### Automatic Fiber Holder Release

The S183PMII Fusion Splicer automatically performs a tensile proof test on the fiber and releases the holder lid to avoid twisting the fiber after the splice. This automation eliminates the need for the user to manually open and reset the splicer after each fusion splice.



**SPECIFICATIONS:**

<b>Applicable Fibers</b>	SM, MM, DSF, NZD, CSF, EDF, PMF, LDF
<b>Cladding Diameter</b>	80 to 500 $\mu\text{m}$
<b>Coating Diameter</b>	160 to 2000 $\mu\text{m}$
<b>Cleave Length</b>	3 to 5 mm with coating clamping / 9 to 11 mm with bare Fiber clamping
<b>Typical Insertion Loss (Similar Fiber Splicing)</b>	0.02 dB for identical SM / 0.01 dB for identical MM 0.04 dB for identical DSF / 0.05 dB for identical PMF
<b>Typical Insertion Loss (Dissimilar Fiber Splicing)</b>	0.05 dB for SM to PANDA Fiber 0.15 dB for SM to BOW-TIE Fiber
<b>Typical Extinction Ratio (Cross Talk) (Similar Fiber Splicing)</b>	-40 dB (0.6 degree) for identical PANDA Fiber -32 dB (1.4 degree) for identical BOW-TIE Fiber
<b>Typical Extinction Ratio (Cross Talk) (Dissimilar Fiber Splicing)</b>	-30 dB (1.8 degree) for PANDA Fiber to BOW-TIE Fiber
<b>Return Loss</b>	60 dB or more
<b>Splice Time</b>	15 seconds for identical SM 35 seconds for identical PMF (cladding clamping) 55 seconds for identical PMF (coating clamping)
<b>Heat Time</b>	51 seconds for 60 mm sleeves 40 seconds for 40 mm sleeves
<b>Splice Programs</b>	61 Default / 150 Available
<b>Heat Programs</b>	9 Default / 12 Available
<b>Applicable Sleeves</b>	20 / 40 / 60 mm
<b>Tensile Strength</b>	typical 300 kpsi (25 N) with high strength splice
<b>Magnification</b>	215X & 430X
<b>Splice Memory</b>	Max. 2,000
<b>Dimension</b>	350 W $\times$ 197 D $\times$ 154 H mm
<b>Weight</b>	8.5 kg
<b>Monitor</b>	6.5" color LCD monitor
<b>Video Output</b>	Analog RGB
<b>Data Interface</b>	USB ver. 1.1 and LAN (10BASE-T)
<b>Operating Temperature</b>	0 to 40°C (without excessive humidity)
<b>Storage Temperature</b>	-40 to 60°C (without excessive humidity)
<b>Power Source</b>	AC 100 to 240 V (50 / 60 Hz) with AC adaptor

**STANDARD PACKAGE:**

P / N	Description	Qty
S183-P2-A-0001	S183PMII Main Body	1
S710S-250	250 $\mu\text{m}$ Coating Fiber Holders	1 pair
S710S-400	400 $\mu\text{m}$ Coating Fiber Holders	1 pair
S710S-900	900 $\mu\text{m}$ Coating Fiber Holders	1 pair
S974A	AC Adaptor	1
S960	Spare Electrode	1 pair
D5111	Electrode Sharpener	1
—	Operation Manual	1

**OPTIONAL ACCESSORIES:**

P / N	Description	Qty
S710S-080	160 $\mu\text{m}$ Coating Fiber Holders	1 pair
S968	Electrodes For Large Diameter Fiber	1 pair
S710S-LDF	Fiber Holders For Large Diameter Fiber	1 pair
S183-X2-A-0002	Fiber Transporter	1

\* Export of S183PMII from Japan is controlled under Foreign Exchange and Foreign Trade Control Act by Japanese government. Please note that the export of this product requires permission from Japanese government in advance.

# S184PM-SLDF Fusion Splicer



Featuring 3SAE Technologies' "Ring of Fire", this 3 phase wide area plasma splicer makes it possible for flame polish, core diffusion, as well as large cladding fiber splicing. It is perfect solution for advanced OEM, R & D, Production and other special applications.



Fusion Splicers

## FEATURES & APPLICATIONS:

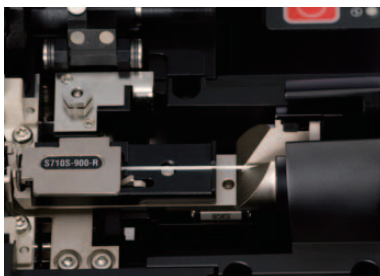
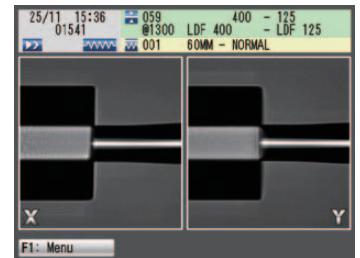


### Three Electrodes

The S184PM-SLDF Fusion Splicer has three electrodes instead of the standard two electrodes. This groundbreaking technology makes the plasma field (temperature field) wider and adjustable.

### Applicable Fiber

Applicable from clad diameter 80  $\mu\text{m}$  up to 1200  $\mu\text{m}$ .



### Smooth Rotation Mechanism

The new rotation mechanism on the S184PM-SLDF Fusion Splicer allows PM fiber to rotate while keeping it straight and stable. This minimizes fiber twist, which can be detrimental to sensitive splicing applications.

### Automatic Adjustment for Fiber Size / Length

The S184PM-SLDF Fusion Splicer automatically adjusts for different fiber coating, cladding sizes and cleaves length. There is no need to exchange electrodes, V-grooves, or fiber clamps.

### Simple Operation

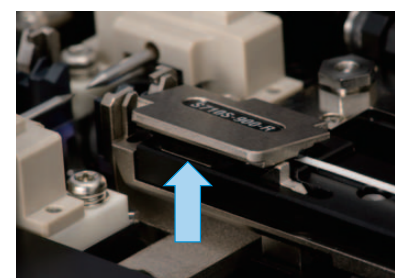
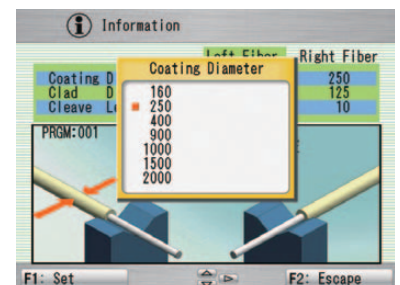
The S184PM-SLDF Fusion Splicer has been designed so that the user simply loads the fiber and closes the lid to begin the fusion process. The user can easily pick up the fibers after fusion splicing process.

### Intuitive Interface

The S184PM-SLDF Fusion Splicer features an intuitive GUI (graphical user interface) and transreflective LCD screen technology, the S184PM-SLDF operation is a snap! Function keys are simple and information displays are crisp and clear.

### Large Monitor

The S184PM-SLDF Fusion Splicer has a large high resolution color monitor. The location of the monitor can be easily switched either to the front or back of the splicer depending on user preference.





## SPECIFICATIONS:

<b>Applicable Fibers</b>	SM, MM, DSF, CSF, PMF, LDF
<b>Cladding Diameter</b>	80 to 1200 $\mu\text{m}$
<b>Coating Diameter</b>	160 to 2000 $\mu\text{m}$
<b>Cleave Length</b>	5 mm with coating clamping / 9 to 11 mm with bare Fiber clamping
<b>Typical Insertion Loss (Similar Fiber Splicing)</b>	0.03 dB for identical SM
<b>Typical Extinction Ratio (Cross Talk) (Similar Fiber Splicing)</b>	-35 dB (1.0degree) for identical PANDA Fiber
<b>Return Loss</b>	60 dB or more
<b>Splice Time</b>	20 seconds for identical SM 45 seconds for identical PMF (cladding clamping)
<b>Heat Time</b>	51 seconds for 60 mm sleeves 40 seconds for 40 mm sleeves
<b>Splice Programs</b>	11 Default / 150 Available
<b>Heat Programs</b>	9 Default / 12 Available
<b>Applicable Sleeves</b>	20 / 40 / 60 mm
<b>Tensile Strength</b>	typical 300 kpsi (25 N) with high strength splice
<b>Magnification</b>	215X & 430X
<b>Splice Memory</b>	Max. 2000
<b>Dimension</b>	350 W $\times$ 197 D $\times$ 154 H mm
<b>Weight</b>	8.8 kg
<b>Monitor</b>	6.5" color LCD monitor
<b>Video Output</b>	Analog RGB
<b>Data Interface</b>	USB ver. 1.1 and LAN (10BASE-T)
<b>Operating Temperature</b>	0 to 40°C (without excessive humidity)
<b>Storage Temperature</b>	-40 to 60°C (without excessive humidity)
<b>Power Source</b>	AC 100 to 240 V (50 / 60 Hz) with 2 AC adaptors

## STANDARD PACKAGE:

P / N	Description	Qty
S184-PS-A-0001	S184PM-SLDF Main Body	1
S968	Spare Electrodes for LDF	1 pair
<b>S184-X-A-0003</b>	Spare LDF Vertical Electrode	1
S184-X-A-0005	Spare Electrodes	1 pair
S184-X-A-0006	Spare Vertical Electrode	1
S974A	AC Adaptor	1
S975A	AC Adaptor	1
—	AC Cable	2
S183-X2-A-0010	Z Stage Lock	1 pair
S710S-250	250 $\mu\text{m}$ Fiber Holders	1 pair
S710S-400	400 $\mu\text{m}$ Fiber Holders	1 pair
S710S-900	900 $\mu\text{m}$ Fiber Holders	1 pair
S710S-LDF	Fiber Holders for LDF	1 pair
S184-X-A-0004	Change Tool of Vertical Electrode	1
D5111	Electrode Sharpener	1
—	Operation Manual	1

## OPTIONAL COMPONENTS:

P / N	Description	Qty
S710S-080	160 $\mu\text{m}$ Coating Fiber Holders	1 pair
S183-X2-A-0002	Fiber Transporter	1 pair

"Ring of Fire" is a registered trademark of 3SAE Technologies, Inc. in the US.

\* Export of S184PM-SLDF from Japan is controlled under Foreign Exchange and Foreign Trade Control Act by Japanese government. Please note that the export of this product requires permission from Japanese government in advance.

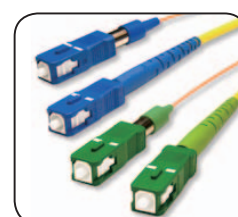
# Connector Termination System / Splice on Connector (SOC)

FITEL's connector termination system allows for unsurpassed performance and flexibility in the field. Splice on connector (SOC) eliminates the need for field polishing and significantly improves the quality of the termination and installation time required.

FITEL's new S123C, S153A and S178A now can terminate connectors from both Seiko Giken and Diamond.

## ORDERING INFORMATION

	P / N	Description
Fusion Splicer Cleaver	S123C-A/B	S123C Hand-Held Fusion Splicer
	S153A-XX	S153A Hand-Held Active Alignment Splicer
	S178A-XX	S178A Hand-Held Active Core-Alignment Splicer
	S325A	S325A Hand-Held High Precision Cleaver
<b>Tools for Seiko Giken SOC</b>		
Holder for Ferrule Side	S712C-SGS9-L	Seiko Giken FC / SC connector (9 mm) Left Holder
	S712C-SGS5-L	Seiko Giken FC / SC connector (5 mm) Left Holder
	S712C-SGL9-L	Seiko Giken LC connector (9 mm) Left Holder
	S712C-SGL5-L	Seiko Giken LC connector (5 mm) Left Holder
Holder for Cordage Side	S712C-SGC5-R	Seiko Giken Cordage (5 mm) Right Holder
	S712C-SGC9-R	Seiko Giken Cordage (9 mm) Right Holder
Others	S240A	S240A Slitter Snapper
	SS-01	SS-01 Splicer Scissors
	S211B	S211B 3-Hole Fiber Stripper
	CRP-01	CRP-01 SOC Crimp Tool
<b>Tools for Diamond SOC</b>		
Holders	S712C-DM25-L	Diamond E-2000 / F-3000 LC / SC connector Left Holder
	S712S-LT-R	Diamond Cordage (5 mm cleave, 1.8~3 mm cordage)
Others	1058895	Assembling Tool E-2000 (TM)
	1057672	Assembling Tool SC
	1056105	Assembling Tool F-3000 (TM)
	1056892	Crimping pliers FTTH



SOC CONNECTORS



S123C

S153A

S178A

## TECHNICAL INFORMATION - SPLICER

Type	S123C	S153A	S178A
Splicing Method	Clad Alignment	Active Alignment	Core Alignment
Fiber Type	SM, MM, DSF, NZD, BIF / UBIF	SM, MM, DSF, NZD, BIF / UBIF	SM, MM, DSF, NZD, EDF, BIF / UBIF
Insertion Loss	Typical 0.05 dB (SM)	Typical 0.04 dB (SM)	Typical 0.02 dB (SM)
Battery Capacity	70 splicing cycles	200 splicing cycles with 2 batteries	200 splicing cycles with 2 batteries
Applicable Sleeves	20 - 60 mm	20 - 60 mm	20 - 60 mm

## TECHNICAL INFORMATION - SEIKO GIKEN CONNECTOR

Type	SC / Ultra PC; FC / Ultra PC	SC / Angled PC; FC / Angled PC
Insertion Loss	Typical 0.30 dB	
Reflectance	< -55 dB	< -65 dB
Fiber Type	SM	
Jacket Type	900 μm, 2 mm, 3 mm	
Ferrule type	Zirconia ceramic ferrule with pre-polished fiber stub	

## TECHNICAL INFORMATION - DIAMOND CONNECTOR

Type	Multimode 0° PC	Singlemode 0° PC	Singlemode 8° APC	Units	Test conditions
Insertion Loss (IL)	Typ. 0.2 max. 0.5	Typ. 0.25 max. 0.5	Typ. 0.25 max. 0.5	dB	IEC 61300-3-4; λ=1300 / 1550 nm
Return Loss (RL)	Min. 40	Min. 50	Min. 70*	dB	IEC 61300-3-6; λ=1300 / 1550 nm
Repeatability of IL	Max. ±0.1			dB	IEC 61300-2-2; λ=1300 / 1550 nm
Service life	1000 mate / demate cycles				According to field experience
Operating temperature	-25 / +70**			°C	
Storage temperature	-25 / +70**			°C	

\* Measured with high precision reflectometer

\*\* May be further limited by cable specifications

# Seiko Giken Connectors

## Ordering Information - SC Splice-On Connector Singlemode

1. SC / UPC Singlemode SOC for  $\phi$  0.9 mm buffer cord

SSCS-P1 **a**

Ex.) SSCS-P1 **EUA**

a	Length of bare fiber	5 mm bare fiber	(none)
		9 mm bare fiber	EUA

2. SC / UPC Singlemode SOC for the jacketed cordage

SSCS-P **a** **b**

Ex.) SSCS-P 2 **EUA**

a	Cable O.D.	$\phi$ 2 mm	2
		$\phi$ 3 mm	3
		$\phi$ 4.8 mm (only with Single crimping ring)	5
		5 mm bare fiber / Dual crimping rings	(none)
b	Length of bare fiber / Type of crimping ring	5 mm bare fiber / Single crimping ring	EA
		9 mm bare fiber / Single crimping ring	EUA

3. SC / APC Singlemode SOC for  $\phi$  0.9 mm buffer cord

SSCS-PN1 **a**

Ex.) SSCS-PN1 **EUA**

a	Length of bare fiber	5 mm bare fiber	(none)
		9 mm bare fiber	EUA

4. SC / APC Singlemode SOC for the jacketed cordage

SSCS-PN **a** **b**

Ex.) SSCS-PN 2 **EUA**

a	Cable O.D.	$\phi$ 2 mm	2
		$\phi$ 3 mm	3
		$\phi$ 4.8 mm (only with Single crimping ring)	5
		5 mm bare fiber / Dual crimping rings	(none)
b	Length of bare fiber / Type of crimping ring	5 mm bare fiber / Single crimping ring	EA
		9 mm bare fiber / Single crimping ring	EUA

5. SC / PC Multimode SOC for  $\phi$  0.9 mm buffer cord

SSCS-P1N **a** **b**

Ex.) SSCS-P1N 1 **EUA**

a	Type of fiber	50 / 125 $\mu$ m	1
		62.5 / 125 $\mu$ m	2
		OM - 3	3
b	Length of bare fiber / Type of boot	5 mm bare fiber / Flexible boot	(none)
		5 mm bare fiber / Silicon boot	EA
		9 mm bare fiber / Flexible boot	EU
		9 mm bare fiber / Silicon boot	EUA

6. SC / PC Multimode SOC for the jacketed cordage

SSCS-P **a** M **b** **c**

Ex.) SSCS-P 2 M 1 **EUA**

a	Cable O.D.	$\phi$ 2 mm	2
		$\phi$ 3 mm	3
		50 / 125 $\mu$ m	1
b	Type of fiber	62.5 / 125 $\mu$ m	2
		OM - 3	3
c	Length of bare fiber / Type of crimping ring	5 mm bare fiber / Single crimping ring	EA
		9 mm bare fiber / Single crimping ring	EUA

## Ordering Information - SC Splice-On Connector Multimode

1. SC / PC Multimode SOC for  $\phi$  0.9 mm buffer cord

SSCS-P1M **a** **b**

Ex.) SSCS-P1M 1 **EUA**

a	Type of fiber	50 / 125 $\mu$ m	1
		62.5 / 125 $\mu$ m	2
		OM-3	3
b	Length of bare fiber / Type of boot	5 mm bare fiber / Flexible boot	(none)
		5 mm bare fiber / Silicon boot	EA
		9 mm bare fiber / Flexible boot	EU
		9 mm bare fiber / Silicon boot	EUA

2. SC / PC Multimode SOC for the jacketed cordage

SSCS-P **a** M **b** **c**

Ex.) SSCS-P 2 M 1 **EUA**

a	Cable O.D.	$\phi$ 2 mm	2
		$\phi$ 3 mm	3
		50 / 125 $\mu$ m	1
b	Type of fiber	62.5 / 125 $\mu$ m	2
		OM - 3	3
c	Length of bare fiber / Type of crimping ring	5 mm bare fiber / Single crimping ring	EA
		9 mm bare fiber / Single crimping ring	EUA

## Ordering Information - FC Splice-On Connector Singlemode

1. FC / UPC Singlemode SOC for  $\phi$  0.9 mm buffer cord

SAPS-358 **a**

Ex.) SAPS-358 **EUA**

a	Length of bare fiber	5 mm bare fiber	(none)
		9 mm bare fiber	EUA

2. FC / UPC Singlemode SOC for the jacketed cordage

SAPS-P35 **a** **b**

Ex.) SAPS-P35 6 **EUA**

a	Cable O.D.	$\phi$ 2 mm	6
		$\phi$ 3 mm	7
b	Length of bare fiber / Type of crimping ring	5 mm bare fiber / Dual crimping rings	(none)
		5 mm bare fiber / Single crimping ring	EA
		9 mm bare fiber / Single crimping ring	EUA

3. FC / APC Singlemode SOC for  $\phi$  0.9 mm buffer cord

SAPS-388 **a**

Ex.) SAPS-388 **EUA**

a	Length of bare fiber	5 mm bare fiber	(none)
		9 mm bare fiber	EUA

4. FC / APC Singlemode SOC for the jacketed cordage

SAPS-38 **a** **b**

Ex.) SAPS-38 6 **EUA**

a	Cable O.D.	$\phi$ 2 mm	6
		$\phi$ 3 mm	7
b	Length of bare fiber / Type of crimping ring	5 mm bare fiber / Dual crimping rings	(none)
		5 mm bare fiber / Single crimping ring	EA
		9 mm bare fiber / Single crimping ring	EUA

## Ordering Information - LC Splice-On Connector Singlemode

### 1. LC / UPC Singlemode SOC for $\phi$ 0.9 mm buffer cord

SLCS-P1 a

Ex.) SLCS-P1 UA

a	Length of bare fiber / Type of boot	5 mm bare fiber / Flexible boot	(none)
		5 mm bare fiber / Silicon boot	A
		9 mm bare fiber / Flexible boot	U
		9 mm bare fiber / Silicon boot	UA

### 2. LC / UPC Singlemode SOC for $\phi$ 2 mm jacketed cordage

SLCS-P2 a

Ex.) SLCS-P2 EUA

a	Length of bare fiber / Type of boot	5 mm bare fiber / Short flexible boot	EB
		9 mm bare fiber / Long flexible boot	EUA

### 3. LC / UPC Singlemode SOC for $\phi$ 3 mm jacketed cordage

SLCS-P3 a

Ex.) SLCS-P3 EUA

a	Length of bare fiber / Type of boot	5 mm bare fiber / Long flexible boot	EA
		9 mm bare fiber / Long flexible boot	EUA

### 4. LC / APC Singlemode SOC for $\phi$ 0.9 mm buffer cord

SLCS-PN1 a

Ex.) SLCS-PN1 UA

a	Length of bare fiber / Type of boot	5 mm bare fiber / Flexible boot	(none)
		5 mm bare fiber / Silicon boot	A
		9 mm bare fiber / Flexible boot	U
		9 mm bare fiber / Silicon boot	UA

### 5. LC / APC Singlemode SOC for $\phi$ 2 mm jacketed cordage

SLCS-PN2 a

Ex.) SLCS-PN2 EUA

a	Length of bare fiber / Type of boot	5 mm bare fiber / Short flexible boot	EB
		9 mm bare fiber / Long flexible boot	EUA

### 6. LC / APC Singlemode SOC for $\phi$ 3 mm jacketed cordage

SLCS-PN3 a

Ex.) SLCS-PN3 EUA

a	Length of bare fiber / Type of boot	5 mm bare fiber / Long flexible boot	EA
		9 mm bare fiber / Long flexible boot	EUA

## Ordering Information - LC Splice-On Connector Multimode

### 1. LC / PC Multimode SOC for $\phi$ 0.9 mm buffer cord

SLCS-P1M a b

Ex.) SLCS-P1M 3 UA

a	Type of fiber	50 / 125 $\mu$ m	1
		62.5 / 125 $\mu$ m	2
		OM-3	3
b	Length of bare fiber / Type of boot	5 mm bare fiber / Flexible boot	(none)
		5 mm bare fiber / Silicon boot	A
		9 mm bare fiber / Flexible boot	U
		9 mm bare fiber / Silicon boot	UA

### 2. LC / PC Multimode SOC for $\phi$ 2 mm jacketed cordage

SLCS-P2M a b

Ex.) SLCS-P2M 1 EUA

a	Type of fiber	50 / 125 $\mu$ m	1
		62.5 / 125 $\mu$ m	2
		OM-3	3
b	Length of bare fiber / Type of boot	5 mm bare fiber / Short flexible boot	EB
		9 mm bare fiber / Long flexible boot	EUA

### 3. LC / PC Multimode SOC for $\phi$ 3 mm jacketed cordage

SLCS-P3M a b

Ex.) SLCS-P3M 1 EUA

a	Type of fiber	50 / 125 $\mu$ m	1
		62.5 / 125 $\mu$ m	2
		OM-3	3
b	Length of bare fiber / Type of boot	5 mm bare fiber / Long flexible boot	EA
		9 mm bare fiber / Long flexible boot	EUA

## Diamond Connectors

Please refer the parts number list and data sheet on Diamond's website (<http://www.diamond-fo.com/en/index.asp>) or a separate data sheet made by Furukawa.

# Cleaver

## S325A Hand-Held High Precision Cleaver

### KEY FEATURES:

- One-Step Action
- Cleave Anywhere! - In Your Palm or on Your Desktop
- Easy Fiber Loading
- Simple Operation
- High Capacity Waste Fiber Collection
- Durable Design
- Easy Maintenance on-Site



### SPECIFICATIONS:

<b>Fiber Types</b>	All fiber types, single to 12-fiber ribbons
<b>Clad Diameter</b>	0.125 mm
<b>Coating Diameter</b>	0.25 mm and 0.9 mm for single fiber; 0.3 mm to 0.4 mm thickness for ribbons
<b>Cleave Length</b>	Single Fiber: Fixed Length - 10 & 16 mm Variable Length - 3 to 20 mm Ribbon Fiber: 10 mm Fixed Length
<b>Dimensions / Weight</b>	93 W × 68 D × 52 H mm, 330 g

\* S325S80 High precision cleave for 80 μm cleaving is also available.

### STANDARD PACKAGE:

P / N	Description	Qty
S325X-01	Main Body	1
S325X-02 or S325X-06	Soft Carrying Case or Semi Hard Case	1
S325X-03	Normal Fiber Waste Bin	2
S325X-04	Single Fiber Adapter	1
S325X-05	Large Capacity Fiber Waste Bin	1
FTS-B277	Operation Manual	1



## S310 and S315 Single Fiber Cleavers

The FITEL S310 and S315 Single Fiber Field Cleavers are designed for cleaving fiber in the field quickly and easily. The S310 and S315 Field Cleavers can accommodate 0.25 mm and 0.9 mm coating diameters and their small lightweight size makes them the perfect addition to any field splicing system. The S310 and S315 field cleavers require some skill to achieve the desired cleave angle and may not be appropriate for some splicing applications. The S310 is specifically designed to cleave fiber in the field accurately to a 16 mm length. The S315 has a graduated scale, which allows for cleave lengths of 5 to 20 mm.

### APPLICABLE OPTICAL FIBER:

Silica glass-based optical fibers, single fiber, 0.25 mm and 0.9 mm coating diameter, 0.125 clad diameter.

### MODELS:

S310 : For cleaving 16 mm length

S315 : For cleaving 2 to 20 mm length adjusting with scale

**Dimensions** 20 W × 125 D × 42 H mm

**Weight** 65 g



# S218R Thermal Stripper



When you need a cordless, light-weight, quick-strip solutions, the S218R optical fiber stripper efficiently solves your problems. This hot-stripping tool removes the coating of single fiber and ribbon fibers and runs on a built-in battery, providing cordless access around your workplace.



## SPECIFICATIONS:



<b>Fiber Types</b>	All fiber types, single to 12-fiber ribbons		
<b>Clad Diameter</b>	0.125 mm		
<b>Coating Diameter</b>	0.25 to 0.4 mm for single fiber; 0.3 to 0.4 mm thickness for ribbons		
<b>Power Source</b>	DC 11 ~ 14 V	AC 100 ~ 240 V*	*using S952 AC Adapter
<b>Battery Running Time</b>	Approximately 10 hrs.		*using normal mode
<b>Charge Time</b>	Approximately 2.5 hrs.		*when unit is in off position
<b>Operating Environmet</b>	Temperature: 0 ~ 40°C Humidity: Below 95%		*non-condensing
<b>Dimensions / Weight</b>	125 W × 48 D × 41 H mm / 260 g		*weight including battery

## PACKAGE & ACCESSORIES:

Model	P / N	Description	Qty	Notes
S218R	S218R-01	Main Body	1	
	S944	Battery	1	
	S952	AC Adapter	1	
	—	Hexagon Wrench	1	For replacing blade
	—	Screwdriver	1	For battery cover
	—	Operation Manual	1	
S218R Optional Parts	S218X-02	Power Cord A	1	Cord used to connect S218R to splicer
	S218X-03	Single Fiber Adapter	1	Used when stripping single fiber without a fiber holder
	S218X-06	Spare Blade	1	
	S218X-22	Adjuster	1	To adjust the cleave length between 4 ~ 9 mm
	S218X-23	Stand	1	Unit frame supporter



# S218H High Strength Thermal Stripper



The S218H Thermal Stripper is among FITEL's latest innovations for factory-based and high-strength fiber stripping. Designed to provide increased control and precisions when stripping single fiber in the lab or factory.



\* Stand is optional

## SPECIFICATIONS:

<b>Fiber Types</b>	Single fiber only		
<b>Clad Diameter</b>	0.125 mm		
<b>Coating Diameter</b>	0.25 mm, 0.9 mm for single fiber		
<b>Tensile Strength</b>	33.8 N with High strength strip	*Measured by Furukawa Electric's 0.25 mm single fiber	
<b>Power Source</b>	DC 11 ~ 14 V	AC 100 ~ 240 V*	*using S952 AC Adapter
<b>Battery Running Time</b>	Approximately 10 hrs.	*using normal mode	
<b>Charge Time</b>	Approximately 2.5 hrs.	*when unit is in off position	
<b>Operating Environment</b>	Temperature: 0 ~ 40°C Humidity: Below 95%	*non-condensing	
<b>Dimensions / Weight</b>	129 W × 48 D × 41 H mm / 270 g	*weight including battery	

## PACKAGE & ACCESSORIES:

Model	P / N	Description	Qty	Notes
S218H	S218H-□□□	Main Body	1	□□□: 250 → ø0.25 mm for single fiber 900 → ø0.9 mm for single fiber
	S944	Battery	1	
	S952	AC Adapter	1	
	S218X-22	Adjuster	1	To adjust the cleave length between 4 ~ 9 mm
	—	Hexagon Wrench	1	For replacing blade
	—	Screwdriver	1	For battery cover
	—	Cleaning Brush	1	
	—	Operation Manual	1	
S218H Optional Parts	S218X-03	Single Fiber Adapter	1	Used when stripping single fiber without a fiber holder
	S218X-23	Stand	1	Unit frame supporter
	S218H-41	Blade unit for ø0.25 mm	1	Spare Blade. For ø0.25 mm single fiber.
	S218H-43	Blade unit for ø0.9 mm	1	Spare Blade. For ø0.9 mm single fiber.

## S210 Single Fiber Stripper

The FITEL S210 Single Fiber Stripper is designed to strip 0.25 mm as well as 0.9 mm diameter fiber. This easy to use stripper has a 20 mm wide base with the blade located in the center to ensure safe longitudinal stripping.



## APPLICABLE OPTICAL FIBER:

Silica glass-based optical fibers, single fiber, 0.25 mm and 0.9 mm coating diameter, 0.125 mm clad diameter.

**Dimensions** 20 W × 80 D × 26 H mm

**Weight** 70 g

# Fusion Splicer Accessories and Consumables

## S42X Fusion Splicer Tool Kits

The S42X Series Fusion Splicer Tool Kit contains all of the necessary tools required for optical fusion splicing in a rugged carrying case. The durable carrying case features separate compartments for organizing tools and consumables.



Description	Model			Qty
	S422	S423	S424	
S210 Single Fiber Stripper	✓	✓	✓	1
Carrying case	✓	✓	✓	1
250cc Polyethylene bottle with siphon	✓	✓	✓	1
Cleaning cotton for optical fiber	✓	✓	✓	1
Cotton stick for cleaning V-groove, lens, mirror	✓	✓	✓	1
Blower brush for cleaning V-groove, lens, mirror	✓	✓	✓	1
Precision screw driver set and hexagonal wrench set	✓	✓	✓	1
Electrode sharpener	✓	✓	✓	2
S310 Single Fiber Cleaver	✓			1
S325A Hand-Held High Precision Cleaver		✓	✓	1
S218R Thermal Stripper			✓	1

## S220A Optical Ribbon Fiber Separator

Designed to initiate separating 2 to 12-fiber ribbons into single fibers. After shaving with S220A, the ribbon fiber can be easily separated by fingers into single fibers. Compact carrying case included as standard.



### APPLICABLE OPTICAL FIBER:

2 to 12 fiber ribbons with the thickness of 0.30 ~ 0.40 mm

<b>Dimensions</b>	55 W × 30 D × 42 H mm
<b>Weight</b>	100 g

#### Caution

Do not use the S220A on live fiber or for a mid-span strip. Discard the section of the fibers to which the S220A was applied before splicing or reconnecting the exposed fibers.

P / N	Description	Qty
S220A	Optical Ribbon Fiber Separator	1
FTS-B013	Operation Manual	1



## S233 Optical Ribbon Fiber Splitter

FITEL S233 Ribbon Splitter splits 4, 8, 12, and 24-fiber ribbons more easily, quickly, and accurately than ever before. Another great Fitel fusion splicing accessory from Furukawa Electric.

### KEY FEATURES:

- Small, simple, and compact design for field use
- All-metal body for maximum durability
- Interchangeable fiber guides for different ribbon sizes
- No tools required to change fiber guides

### APPLICABLE OPTICAL FIBER:

0.125 mm cladding diameter; 4 / 8 / 12 / 24-fiber ribbons; 0.25 mm pitch; 0.30 to 0.40 mm thickness; UV-cured acrylic resin coating\*

\*S233 may not work satisfactorily with some ribbon fiber coating materials.

<b>Dimensions</b>	115 W × 20 D × 20 H mm
<b>Weight</b>	95 g



### Models :

(see below for Fiber Guide descriptions)

**S233A** : Fiber Guide A is included as standard

**S233B** : Fiber Guide B is included as standard

**S233C** : Fiber Guide C is included as standard

### Caution

Do not use the S233 on live fiber or for a mid-span strip.

Discard the section of the fibers to which the S233 was applied before splicing or reconnecting the exposed fibers.

### STANDARD PACKAGE:

P / N	Description	Qty	Notes	Model		
				S233A	S233B	S233C
S233X-01	Main Body**	1	All-metal base body for all fiber guides	✓	✓	✓
S233X-02	Cleaning Brush	1	Tool to remove fiber jacket waste	✓	✓	✓
S233X-03	Carrying Case	1	Clear; holds all standard components	✓	✓	✓
S233X-11	Fiber Guide A	1	Obverse: 4-fiber ribbon > 2 x 2-fiber ribbons Reverse: 4-fiber ribbon > 3-fiber ribbon & single-fiber	✓	—	—
S233X-12	Fiber Guide B	1	Obverse: 4-fiber ribbon > 2 x 2-fiber ribbons Reverse: 8-fiber ribbon > 2 x 4-fiber ribbons	—	✓	—
S233X-13	Fiber Guide C	1	Obverse: 12-fiber ribbon > 2 x 6-fiber ribbons Reverse: 24-fiber ribbon > 2 x 12-fiber ribbons	—	—	✓
S233X-82	Operation Manual	1	Operation Manual	✓	✓	✓

\*\*Not sold individually

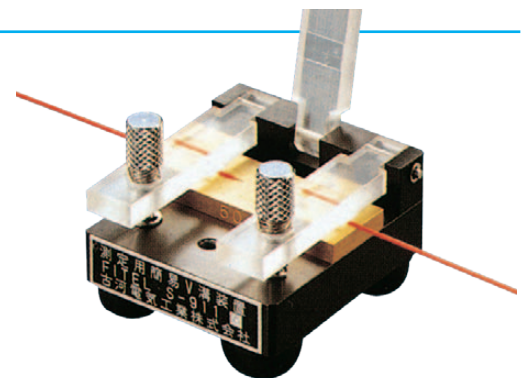
## S91X Temporary Fiber Aligner

Designed as a jig for temporary jointing the fibers for measuring transmission loss or for experimental purposes. A simple procedure to strip, clean, cleave and load the fiber makes a temporary jointing with a typical average loss of 0.25 dB for SM fiber (when using matching oil).

P / N	Description	Qty
S91X	Main Body	1
—	Operation Manual	1

### SPECIFICATIONS:

<b>Fiber Type</b>	SM, MM (Single Fiber)
<b>Insertion</b>	0.25 dB (with matching gel)
<b>Dimensions</b>	50 W × 55 D × 33 H mm
<b>Weight</b>	350 g



Model	Dia. of Applicable Fibers	Qty
S911	0.90 × 0.90	1
S912	0.90 × 0.40	1
S913	0.40 × 0.40	1
S914	0.40 × 0.25	1
S915	0.25 × 0.25	1
S916	0.25 × 0.90	1

## S903 Ultra Sonic Cleaner



### FEATURES:

- Perfect fiber cleaning solution to go with FITEL S18x series
- Can clean 2 fibers at the same time
- The height of the holder stand can be adjusted according to the amount of alcohol
- RoHS compliant

### SPECIFICATIONS:

Item	Specification	Notes
Applicable Fibers	Quartz optical fiber	
Applicable Holders	S707, S709, S710, S710LDF	
Fibers Cleave Length	3 to 10 mm	Length between Holder to Fiber tip : 13 mm
Dimension	Ultrasonic Cleaner: 193 W × 116 D × 118 H mm Cleaner Adapter: 114 W × 114 D × 80.5 H mm	
Weight	Ultrasonic Cleaner + Cleaner Adapter : 1150 g Ultrasonic Cleaner : 950 g	
Operating Environment	5 to 45°C	Maker Specification
Storage Environment	-30 to 75°C	Maker Specification
Humidity	20 to 80%	Maker Specification
Power Source	AC 120 or 200 V (50 / 60 Hz)	
Safety Timer	5 minutes	Maker Specification



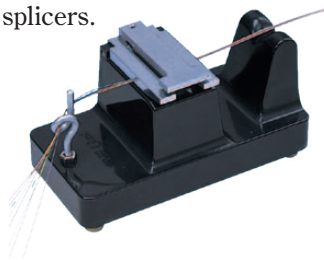
### STANDARD PACKAGE:

Item	P / N	Description	Qty
S903 A-sets	S903-A	Cleaner Adapter Operation Manual Ultrasonic Cleaner (120 V)	1
S903 B-sets	S903-B	Cleaner Adapter Operation Manual Ultrasonic Cleaner (200 V)	1

## S612 Ribbon Forming Fixture

Designed to form a ribbon-like fiber with 2 to 12 single fibers. S612 offers a high efficient simultaneous fiber splice with FITEL ribbon fusion splicers.

- Easy to operate
- Smallest fixture in the industry
- Consumables are adhesive only



### SPECIFICATIONS:

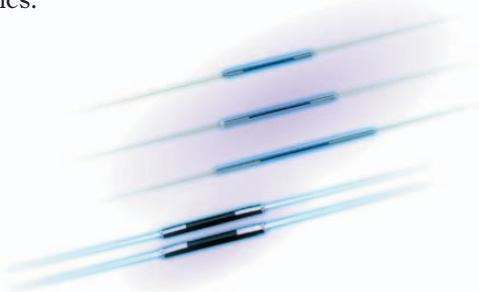
Applicable Optical Fiber	2 to 12 fiber ribbons
Dimensions	120 W × 60 D × 58 H mm
Weight	400 g

### STANDARD PACKAGE:

P / N	Description	Qty
S612	Ribbon forming fixture	1
S611-04	Adhesive	50 ml × 2 bottles
FTS-B010	Operation Manual	1

## Protection Sleeves

FITEL offers a wide variety of protection sleeves to accommodate single and ribbon fiber. FITEL's protection sleeves come in ribbon, standard, slim, mini, and macro sizes. They are composed of an outer an inner sleeve reinforced by an internal member made of stainless steel or ceramics.



### MODEL, SPECIFICATION AND APPLICABLE FIBER:

Model	Applicable fiber	Length	Material of strength member	Pieces / pack
S921	Single fiber, 0.25-0.9 mm coating diameter	60 mm	Stainless steel	25
S922	Single fiber, 0.25-0.9 mm coating diameter	40 mm	Stainless steel	25
S924	Single fiber and up to 8-fiber ribbon	40 mm	Quartz	25
S927A	Single fiber and up to 8-fiber ribbon	40 mm	Ceramic	100
S927B	Single fiber and up to 12-fiber ribbon	40 mm	Ceramic	100
S928A20	Single fiber 0.25-0.4 mm coating diameter	20 mm	Stainless steel	100
S928A25		25 mm	Stainless steel	100
S928A35		35 mm	Stainless steel	100

# ID-H / R Fiber Identifier



The FITEL ID-H / R is a rugged, user-friendly tool which identifies optical fibers by detecting the optical signals passing through the fiber utilizing local detection technology.

The feature and benefits are:

## FEATURES:

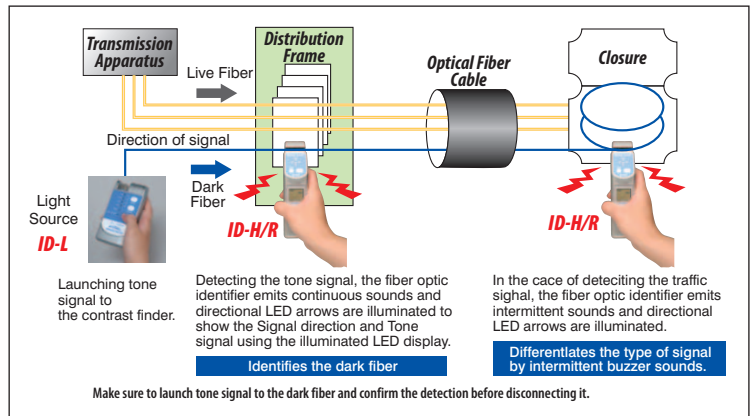
- Wide dynamic range
- No head changing or adjustments
- LCD screen adoption  
(Detection Light Level , Modulation Light Frequency , Machinery Information)
- Detects the signal without disrupting traffic
- Detects the tone signal and traffic signal
- Lighted LED displays for clear identification
- Lightweight design for easy handling
- Super low insertion loss
- RoHS Compliant



## STANDARD PACKAGE:

P / N	Description	Notes
AI02H	Main Unit	Battery and Strap and Instruction manual are included
AI02H-001	Carrying Case	Easily to belt or tool pouch

## EXAMPLE OF APPLICATION:



## SPECIFICATIONS:

Applicable Fiber	Up to SM 12-fiber ribbon SM 250 $\mu$ m single fiber	Up to 3 mm Cordage (built-in only SM 250 $\mu$ m single fiber)	SM 900 $\mu$ m tight buffer (PVC)
Applicable Wavelength	900 ~ 1700 nm		
Frequency for Tone Signal	270 Hz and 1 kHz and 2 kHz (Duty ratio 50 $\pm$ 10%) Modulation Light No Modulation Light Communication Light that Continued		
Measurement Range of Optical Power	0 ~ -80 dBm		
Maximum Level of Insertion Loss (Typical)	1310 nm	0.1 dB	0.5 dB
	1550 nm	1.0 dB	2.0 dB
	1650 nm	2.5 dB	3.0 dB
Average Minimum Detection Level * (Typical)	1310 nm	-40 dB	-30 dB
	1550 nm	-50 dB	-40 dB
	1650 nm		
Indication for Traffic Signal or Tone Signal	[ Traffic Signal *2] Direction LED illuminates + Intermittent buzzer sound + Displayed an Optical power measurement range by LCD [ Tone Signal ] Direction LED illuminates + Tone LED illuminates + Continuous buzzer sound + Displayed an Optical power measurement range by LCD + Displayed Frequency by LCD		
Operating Time	8 hours (Using alkaline battery)		
Dimensions	40 W × 65 D × 153 H mm		
Weight	160 g (Including battery)		

\*1: This specification is based on our optical fiber with our test method.

\*2: DO NOT disconnect or rewire based only on the traffic signal detection. Make sure to launch the tone signal before disconnecting or rewiring the fiber.

# ID-L Hand-Held Light Source



## FEATURES:

- 4 wavelength lineup  
1310 nm / 1490 nm / 1550 nm / 1610 nm
- Boost function  
Activating the BOOST function increases the output signal by 10 dB
- Selection of 4 frequencies  
CW / 270 Hz / 1 kHz / 2 kHz
- Lightweight design for easy handling
- Operate more than 60 hours on battery  
With Alkaline battery at 23°C / Without using boost function
- Removable adapter for easy cleaning
- RoHS compliant

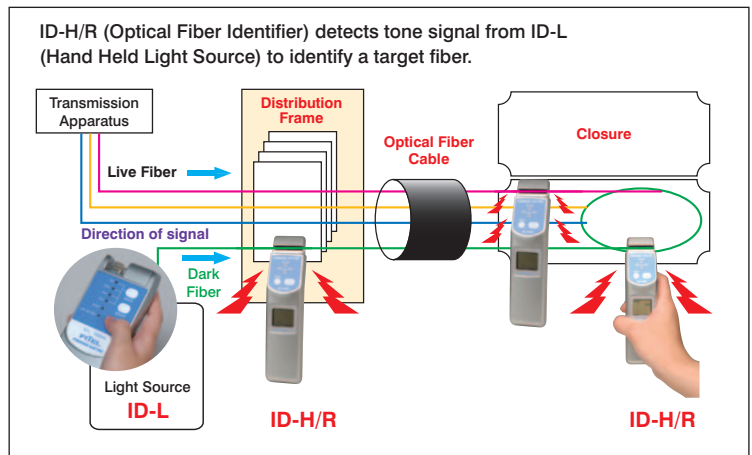


**CLASS1 LASER PRODUCT**

## OPTIONAL ACCESSORIES:

P / N	Description	Notes
AT03H-001	Carrying Case	—
AT03H-002	SC Adapter	Standard Accessory
AT03H-003	FC Adapter	—

## EXAMPLE OF APPLICATION:



## SPECIFICATIONS:

Product Name	ID-L Handy Light Source 1310 nm	ID-L Handy Light Source 1490 nm	ID-L Handy Light Source 1550 nm	ID-L Handy Light Source 1610 nm
Code	AT03H31	AT03H49	AT03H55	AT03H61
Wavelength	1310±10 nm	1490±10 nm	1550±10 nm	1610±10 nm
Fiber Type	Single Mode Fiber			
Spectrum Width	Less than 1 nm (-20 dB from peak power)			
Modulation	CW / 270 Hz / 1 kHz / 2 kHz			
Output Power	Normal: -2.5±2 dBm Boost: +7.5±2 dBm (3 dB down at 270 Hz, 1 kHz, 2 kHz mode)			
Stability	±0.05 dB (1 hour / Constant temperature)*			
Optical Connector	SC Adapter (FC adapter is option)			
Battery Type	AA Battery (Alkaline / Zinc-carbon / NiMH)			
Battery Life	Over 60 hours (Alkaline battery at 23°C)			
Auto Shutdown	10 minutes without any operation			
Operating Temperature	0 to 40°C			
Operating Humidity	20 to 90%RH (non-condensing)			
Dimensions	70 W × 22.5 D × 128 H mm			
Weight	160g (Including batteries)			
Accessories	Strap: 1 AA alkaline batteries: 2 SC adapter: 1 Instruction manual: 1			

\*Excluding state of boost

# LBT-101 Short Range Optical Tester



Measurement Tool for Live Fiber testing of FTTx. 1610 nm OTDR for short Distance testing with Built-in Optical Filter.

## LIVE FIBER TESTING

1610 nm light source and built-in optical filter realized the test of live fiber of PON system.

### KEY FEATURES:

#### Live Fiber Testing \*1

Enabled live fiber testing by launching 1610 nm wavelength, (1310 nm / 1490 nm / 1550 nm).

#### Portable

LBT-101 is a lightweight, handheld, user-friendly tool. Easily held in one hand.

#### Easy Operation

Just pressing "START" button and it will start. Easy to operate for less experienced user.

#### High Resolution

5 cm distance resolution. 2 m dead zone.

#### Built-in Fiber

Measurable from the first connector.

#### Real Time Sweeping

Real time sweeping to identify target fiber.

#### Data Storage

Internal data storage is 40 MB (up to 800 traces). Also supported by external USB memory.

#### Wide Screen

Full color 4.3" wide screen, which provides high visibility, both indoor and outdoor.



#### Long Battery Life

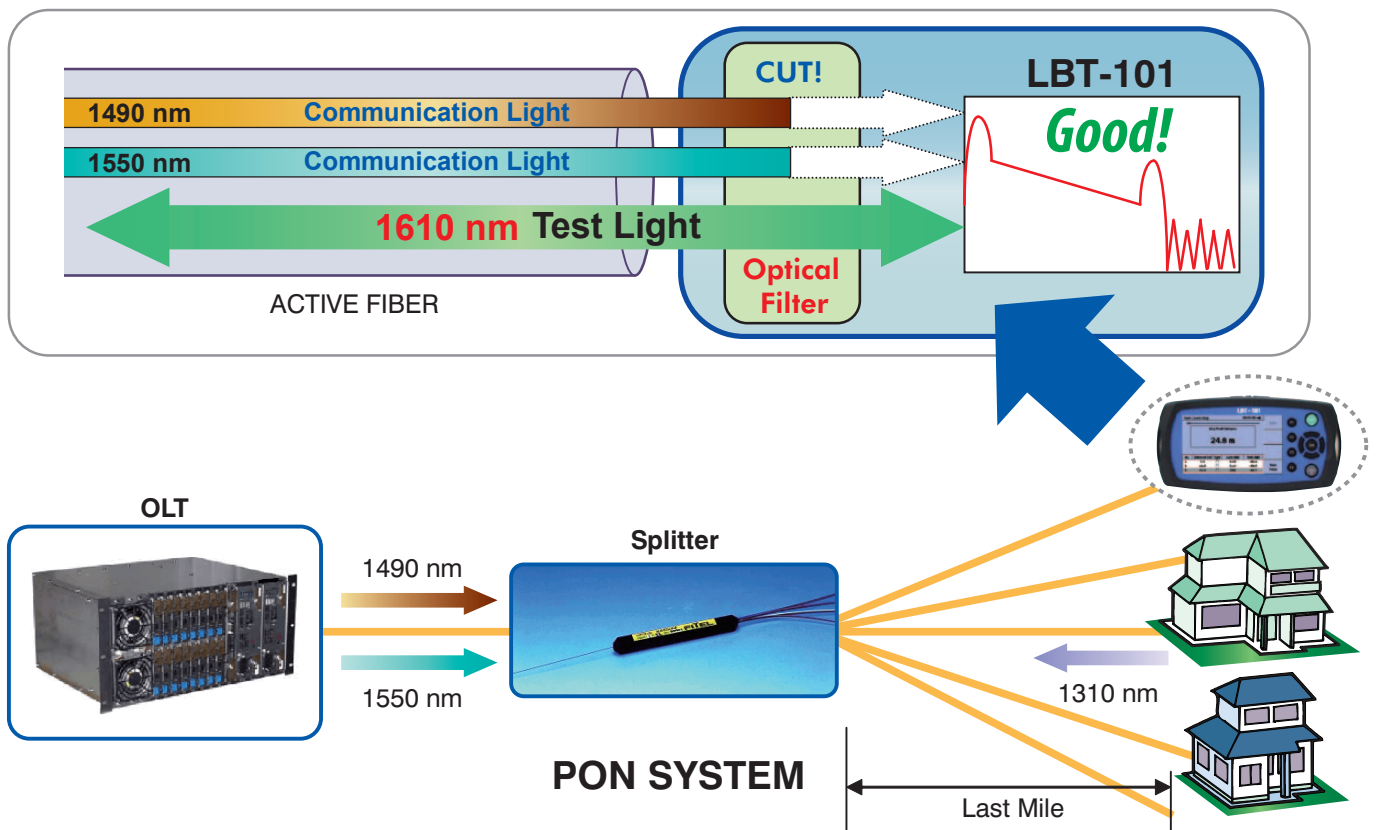
Typically 3.5 hours by single charge.

#### RoHS compliant

#### **New** Upgrade Measurable Distance

Measurable distance expanded to **10 km** (conventional 2.5km)

\*1 : The confirmation that there is no influence on the actual communication system is necessary.



Other tools

## SPECIFICATIONS:

<b>Wavelength<sup>*1</sup></b>	1610±5 nm
<b>Fiber Type</b>	10 / 125 μm SM (ITU-T G.652)
<b>Built-in Fiber</b>	10 m
<b>Distance Range<sup>*2</sup></b>	1.0 km (3,000 ft) or 2.5 km (8,000 ft) or 10 km (30,000 ft) set automatically
<b>Pulse width</b>	15±3 ns (1.0 / 2.5 km Range) / 30±6 ns (10 km Range)
<b>Dynamic Range</b>	≥ 6 dB
<b>Deadzone</b>	Fresnel: < 2 m <sup>3</sup> , Backscatter: < 7 m <sup>4</sup>
<b>Data Storage</b>	Internal memory: 40 MB (up to 800 traces), External (USB): up to 20,000 traces with 1 GB
<b>Dimensions</b>	190 W × 96 H × 48 D mm (7.5" × 3.8" × 1.9")
<b>Weight</b>	< 800 g (< 2 lbs)
<b>Display</b>	4.3" TFT-LCD (480 × 272, with backlight, transparent type)
<b>Interface</b>	USB 1.1, Type A × 1 (memory), Type Mini-B × 1 (USB mass storage)
<b>Power Supply</b>	DC 9 V, AC 100 to 240 V, Allowable input voltage: 80 to 264 V, 50 / 60 Hz
<b>Battery</b>	NiMH, Operating Time: 3.5 hours (typical) <sup>*5</sup> , Recharge Time: < 4 hours <sup>*6</sup>
<b>Environmental Conditions</b>	Operation: 0 to 40°C, < 80% (non-condensing) <sup>*7</sup> , Storage: -20 to 60°C, < 80% Vibration: MIL-T28800E Class 3, Dust and Drip proof: IP 51
<b>EMC</b>	EN61326
<b>Laser Safety</b>	IEC Pub 60825-1: 2001 Class 1

\*1: @25°C

\*2: Averaging: 10 seconds, SNR=1, 25°C

\*3: Return loss 45 dB, Deviation ±0.5 dB, 25°C, 1.0 / 2.5 km Range

\*4: Return loss: 45 dB, 25°C (1.5 dB down from the peak of Fresnel), 9.0 / 2.5 km Range

\*5: back light low, sweeping halted at 25°C

\*6: 10 to 30°C, Power OFF

\*7: 10 to 30°C (During Recharging battery, Power OFF)

IEC 60825-1 2007  
**CLASS 1 LASER PRODUCT**

THIS PRODUCT COMPLIES WITH 21 CFR 1040.10 AND 1040.11 EXCEPT FOR DEVIATIONS PURSUANT TO LASER NOTICE NO 50 DATED JULY 24 2007

## STANDARD PACKAGE:

P / N	Description	Notes
LBT-101	Main Unit	
—	AC Adapter	Standard Accessory
—	Battery Pack	Standard Accessory

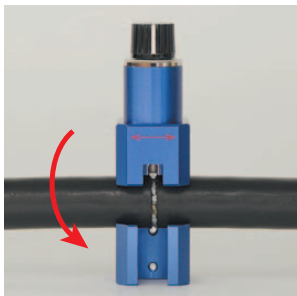
# CS201 Cable Sheath Strippers

The need for fast Mid-Span Access to the fiber cable core is very important for the rapid growing FTTx market. The CS201 is a tool which can perform mid span sheath stripping reliably, easily, and safely.

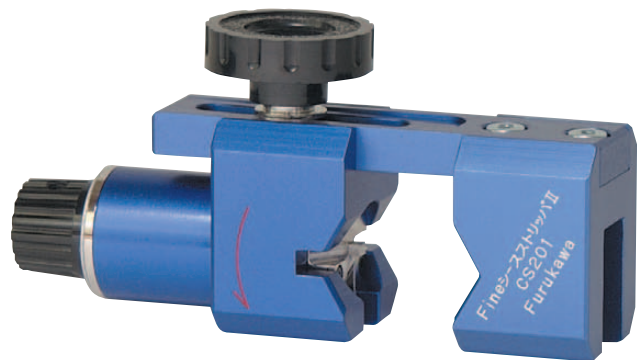
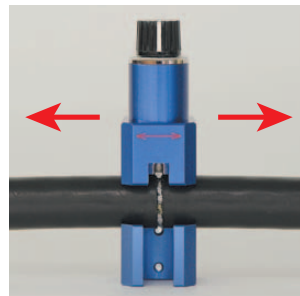
## FEATURES:

- Accurately removes the sheath of a cable without damaging the fiber
- Can be used for making circular and lateral cuts in the cable
- Blade is designed for safety
- Small and lightweight design

Circular cut in cable



Lateral cut along the cable



CS201

## SPECIFICATIONS:

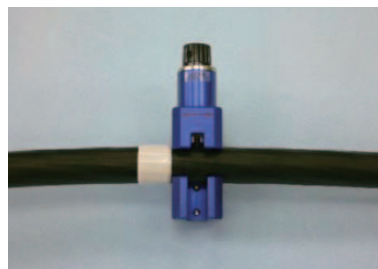
Applicable cable diameter	ø10 ~ 32 mm
Applicable cable jacket type	Polyethylene Jacket, Laminated Aluminum Polyethylene Jacket. (Jacket Thickness : Less than 4 mm)
Dimensions	90 W × 38 D × 52 H mm
Weight	200 g
Change blade (Option)	Specify as CS202

## SHEATH REMOVING INSTRUCTIONS:

**STEP 1 :** Use PVC tape to mark the section of Jacket be removed



**STEP 2 :** Attach the CS201 to the cable.



**STEP 3 :** Cut the cable laterally between the marked position.



**STEP 4 :** Cut around the cable at the both ends (Circular)



**STEP 5 :** Strip the sheath off



**STEP 6 :** Pull the fiber out



# FITEL<sup>®</sup>

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