



# Datasheet



0370 330 6021  
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## Hand-Held Core-Alignment Fusion Splicer

**NEW**

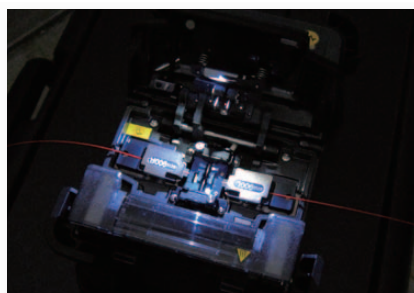
### S178A ver.2 NEW features

The S178A Hand-Held Core-Alignment Fusion Splicer has been enhanced and updated to version 2. The battery is automatically charged internally when connected to AC mains power even during operation. The new illumination lamp lights up a wide area around the V-grooves and helps operation in low light environment. The redesigned and strengthened heater simplifies the protection sleeve loading process.

### Features and applications

The S178A is fast and durable, it continues the FITEL tradition of quality and excellence by delivering precise and accurate splices even under rigorous field conditions.

The S178A is equipped with a core alignment system that can complete a splice in 7 seconds (semi-auto mode) and an integrated heater which can shrink a protection sleeve in 25 seconds (pre-heat mode). The USB 2.0 mini interface speeds up PC communication and image / video transfer, whilst enhancing reliability.



Although the S178A is significantly smaller and lighter in weight than previous models, its canopy design, durable metal body frame and rubber protection corners provide robust protection. This enables use in demanding environments without compromising splicing performance. Along with its rugged durability, the splicer also offers convenience. An internal battery system allows up to 200 splicing cycles (splicing/heating) and an innovative, mirror-free alignment system reduces maintenance work.

The S178A is a versatile choice for a wide range of applications including FTTx, LAN, backbone, enterprise, long-haul installations, data-center and OEM. It is an excellent option for use in the conventional telecommunications industry, along with other industries (including oil and gas and outside broadcast).



## Key features

- NEW Internal battery charging**
- NEW Illumination lamp** lights up a wide area around V-grooves
- NEW User friendly LCD display** offers 4 different X/Y image layouts
- NEW Simplified splice result indicator** red / green icon
  - **Rugged and compact handheld design** to 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 Internal batteries<sup>\*2</sup>
  - **Splice programs 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** electrode replacement /mirror free alignment system
  - **Easy Software upgrade** via the Internet
- NEW Simplified program fusion and heater programming**
  - **Easily exchanged fiber holder systems** (Tight holder/Removable fiber holder/SOC holder)
  - **PC interface software** to allow user manage splicing recipes and splicing results
  - **Auto-start** heater oven option
- NEW Improved GUI** enhancing ease-of-use
  - **Large memory** for storing 2,000 splice records and last 100 splice result images
  - **RoHS compliant**

<sup>\*1</sup> By using semi-auto mode for splicing and pre-heating mode for heating.

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

## 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>

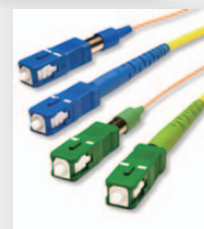
<sup>\*3</sup> Above tests were performed at Furukawa Electric Co., Labs, and do not guarantee that the machine will be undamaged under these conditions.

<sup>\*4</sup> 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.

<sup>\*5</sup> 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.



### FITEL Splicer SOC partners



Drop Resistance



Water Resistance



Dust Resistance

## SPECIFICATIONS

<b>Applicable Fibers</b>	SM, MM, DSF, NZD, EDF, BIF/UBIF (Bend insensitive fiber)
<b>Cladding Diameter</b>	80~150 $\mu\text{m}$
<b>Coating Diameter</b>	100~1,000 $\mu\text{m}$
<b>Fiber Cleave Length</b>	5~16 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: 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 Removal Fiber Holder System
<b>Tension Test</b>	1.96 N
<b>Return Loss of Splice</b>	60 dB or greater
<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>	127W $\times$ 199D $\times$ 105H mm (not including shock absorber) 159W $\times$ 231D $\times$ 130H 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>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 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 Spare Electrodes	S969	1pair
⑤ AC Adaptor for S178A and S958C	S976A	1
⑥ AC Cable Cord	—	1
⑦ Electrode Sharpener	D5111	1
⑧ Cleaning Brush	VGC-01	1
⑨ Tool case	TCC-01	1
User Manual	FTS-B405	1



## OPTIONAL COMPONENTS

Item	P/N	Quantity
① Soft Carrying Case	SCC-01	1
② Battery Charger	S958C	1
③ AC Adaptor for S958C	S977A	1
④ Cooling Tray	CTX-01	1
⑤ Angled Stand	AGS-01	1
⑥ Working Belt	WBT-01	1
⑦ USB Cable	USB-01	1
⑧ Car Cigarette Cable	CDC-01	1
⑨ Tripod Adapter	TPA-01	1
⑩ Tight Holder 16 mm Cleave length 10 mm Cleave length	S712T-016 S712T-010	1pair 1pair
⑪ Removal Fiber Holder 160 μm coating diameter fiber 250 μm coating diameter fiber 500 μm coating diameter fiber* <sup>9</sup> 900 μm coating diameter fiber Loose Tube Fiber (Left side) Loose Tube Fiber (Right side)	S712S-160 S712S-250 S712S-500 S712S-900 S712S-LT-L S712S-LT-R	1pair 1pair 1pair 1pair 1 1
⑫ SOC Holder <For Ferrule> Seiko Giken FC/SC connector (9 mm) Seiko Giken FC/SC connector (5 mm) Seiko Giken LC connector (9 mm) Seiko Giken LC connector (5 mm) Diamond E-2000™/F-3000™ LC/SC connector <For Cordage> Seiko Giken Cordage (5 mm) Seiko Giken Cordage (9 mm) Diamond Cordage (5 mm cleave, 1.8~3 mm cordage) <Tool> Diamond Mount	S712C-SGS9-L S712C-SGS5-L S712C-SGL9-L S712C-SGL5-L S712C-DM25-L S712C-SGC5-R S712C-SGC9-R S712C-DMC5-R WTX-01	1 1 1 1 1 1 1 1 1
Smart Fuse Software Interface for Machine	SF-01	1

\*<sup>9</sup> Used for 400-500 μm cladding diameter fiber.



⑤ Angled Stand in Action



⑥ -1 Working Belt in Action



⑥ -2 Working Belt in Action

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

Category	Code	Remark
X1	1	16 mm Tight Holder S712T-016
	2	10 mm Tight Holder S712T-010
	3	Fiber Holder System
X2	1	1 pack
	2	2 packs

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### Contact Us:

#### Furukawa Electric Co., Ltd.

##### Head Office:

2-3, Marunouchi 2-chome,  
Chiyoda-ku, Tokyo,  
100-8322, Japan  
TEL: + 81 3 3286 3227  
FAX: + 81 3 3286 3978  
www.furukawa.co.jp  
comsales@ho.furukawa.co.jp

##### Europe:

#### Furukawa Electric Europe, Ltd.

3rd Floor, Newcombe House  
43-45 Notting Hill Gate,  
London W11 3FE U.K.  
TEL: + 44 20 7313 5320  
FAX: + 44 20 7313 5310  
www.furukawa.co.uk  
splicers@furukawa.co.uk

##### North & South America:

#### OFS Fitel, LLC

2000 Northeast Expressway  
Norcross, Georgia 30071, U.S.A  
TOLL FREE: + 1 866 452 9516  
TEL: + 1 678 783 1090  
FAX: + 1 678 783 1093  
www.ofsoptics.com  
splicers@ofsoptics.com

##### China:

#### Furukawa Shanghai, Ltd. Beijing Branch

1001A, Full Tower, No.09 Dong-  
sanhuan ZhongRoad, Chaoyang  
District, Beijing 100020, P.R. China  
TEL: + 86 10 8591 0608  
FAX: + 86 10 8591 0609  
www.furukawa-sh.cn

##### South East Asia:

#### Furukawa Electric Singapore Pte. Ltd.

10 Anson Road, #25-08  
International Plaza, Singapore  
079903  
Tel: + 65 6328 9870  
Fax: + 65 6224 2362  
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#### Sunbelt Rentals UK Test & Monitoring

242-252 London Road, Staines, London TW18 4JQ

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#### Sunbelt Rentals UK Test & Monitoring

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### STOKESLEY

#### Sunbelt Rentals UK Test & Monitoring

2 Ellerbeck Way, Stokesley Business Park, Stokesley, North Yorkshire TS9 5JZ

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