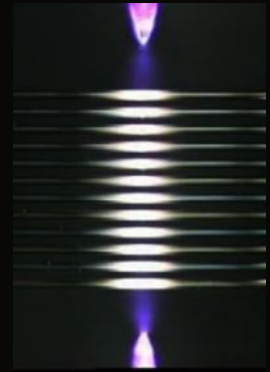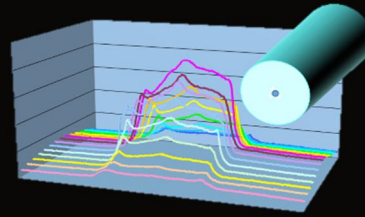# Mass Fusion Splicer
88R12

Designed to keep you going

Fujikura

Mass Fusion Technology

The 88R12 mass fusion splicer has a wide heating area for up to 12 fibers. The wide electrode gap melts the fibers uniformly and has real-time arc discharge control by analyzing the arc's brightnessintensity. The 88R12 does not have active core alignment mechanisms, however, during the discharge, fiber surface tension effects minimizepreexisting offsets.
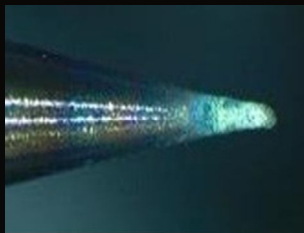
Analyzing arc power by observing the brightness intensity

Advanced Innovation

Replaceable V groove

The88R12 mass fusion splicerincludesa spare set of 12 fiber V-grooveswith electrodes installed andready to splice as part of the standard package. These spare V-grooves are field replaceable, so your downtime is minimized.

Glass deposition on Electrode

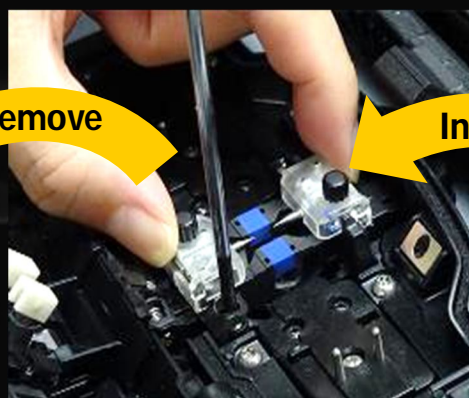### Glass deposition on V-groove

Cause of Large Fiber Offset

No.	Gap [µm]	Offset [µm]	Cleave L	Cleave R
1	68	0.9	1.4°	1.9°
2	63	0.3	0.5°	1.1°
3	55	1.3	0.7°	0.9°
4	54	5.2	1.7°	1.2°
5	54	0.4	1.3°	0.4°
6	62	1.1	0.4°	0.7°
7	48	1.2	1.9°	0.3°
8	48	2.7	1.0°	1.5°
9	48	0.8	1.9°	0.1°
10	43	6.7	0.9°	0.3°
11	42	0.7	0.4°	1.8°
12	40	2.8	2.0°	0.5°

1:40mmR   Large Fiber Offset   1:SM AUTO
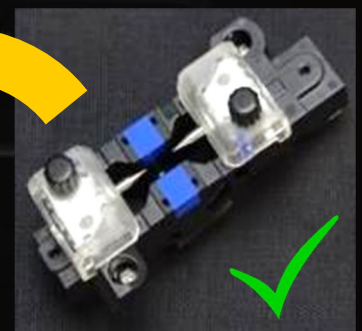
Glass deposited V-groove and electrodes

Remove

Install

## Spare V-groovewith stabilizedelectrodes

Universal Features

1. Universal Fiber Holder

The FH-70-12 fiber holder is compatible with many types of 12 fiber ribbon, such as 0.3mm or 0.4mm thick encapsulated ribbons and 200µm or 250µm coated Spider Web Ribbon (SWR). The 250 µm pitch V-groovesin the FH-70-12 fiber holder simplify SWR loading and ribbon preparation.

SWR

FH-70-12

250µm coated SWR

V-groove Surface

200µm coated SWR

V-groove Surface
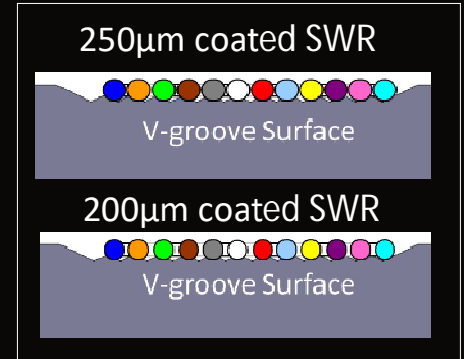
2. Pitch Conversion Fiber Holder

The pitch conversion fiber holder, FH-70-12PC, enables pitch conversion ofindividual 200µm coated fibersfrom a 200µm to 250µm pitch. The pitch converted 200µm fibers can now be loadedinthe 88R12 mass fusion splicer.

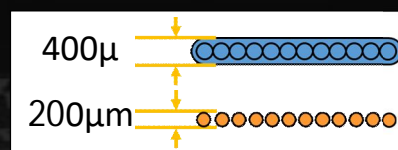**FH-70-12PC**

Converting

200um

V-groove Surface

250um

V-groove Surface
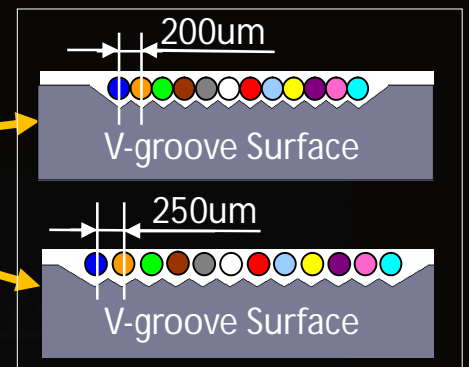
3. Universal Ribbon Stripper

The RS series ribbon strippersare compatible with 200 µm to 400µm coated fiberswithout replacingthe stripperblades.
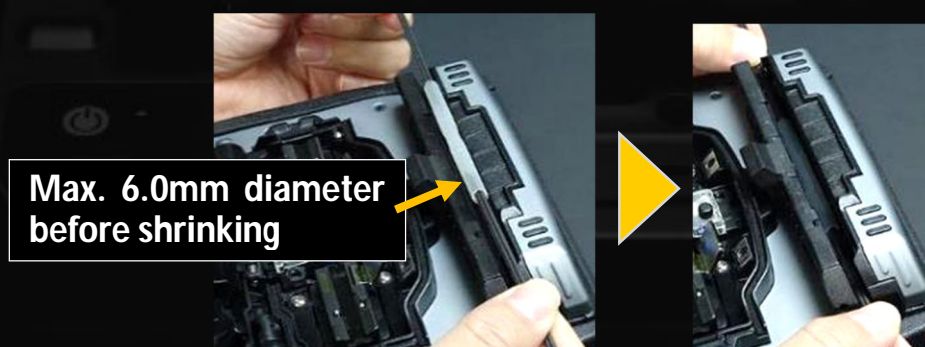
400µ

200µm

Available thickness range

RS03

4. Universal Tube Heater

The 88R12 mass fusion splicer can accommodate amax6.0mmdiameter heat sleeve before shrinking. As a result, itsupportsa wide rangeof protection sleeve sizes.

Max. 6.0mm diameter before shrinking

User Friendly

1. Automated Functionality

The automated wind protector and heater clamps support the operator in completing the entire splicing process with minimal manual steps.
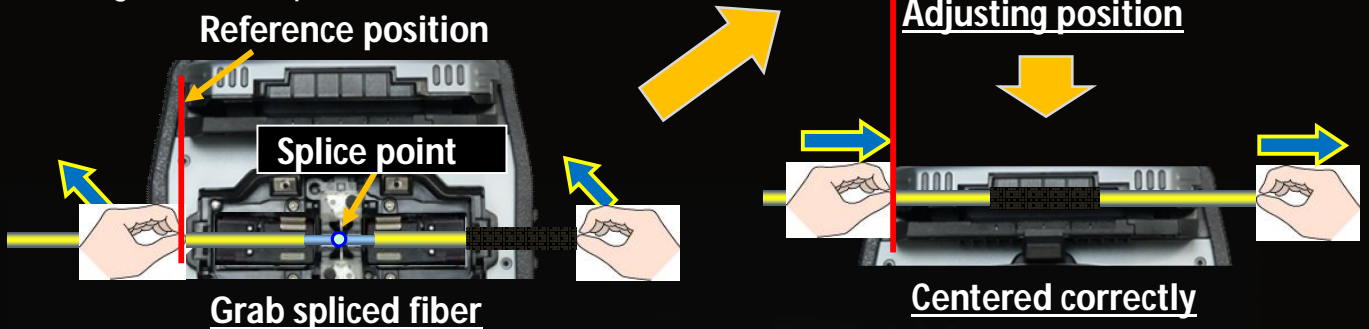
Automated open-close Wind protector

Automated Tube heater clamp

2. Simple sleeve centering

The 88R12 mass fusion splicer features simple sleeve positioning with its designated centering area on top of the tube heater.

Reference position

Splice point

Grab spliced fiber

Reference position

Adjusting position

**Centered correctly**

3. Carrying Case

There are multiple ways to utilize the 88R12 carrying case. The 88R12 is ready to use just by opening the case, but it is also possible to use the 88R12 on top of the carrying case or only with the work tray depending on the work environment.

Ready to use

Open

Lid of carrying case becomes a work tray

Work tray

4. Work Tray

The newly designed work tray has many functions. There are two drawers for storage, and the drawers are large enough to store tools or battery packs. Also, the work tray can be divided in two, so it is configurable to fit your work space.

Separable Work Tray
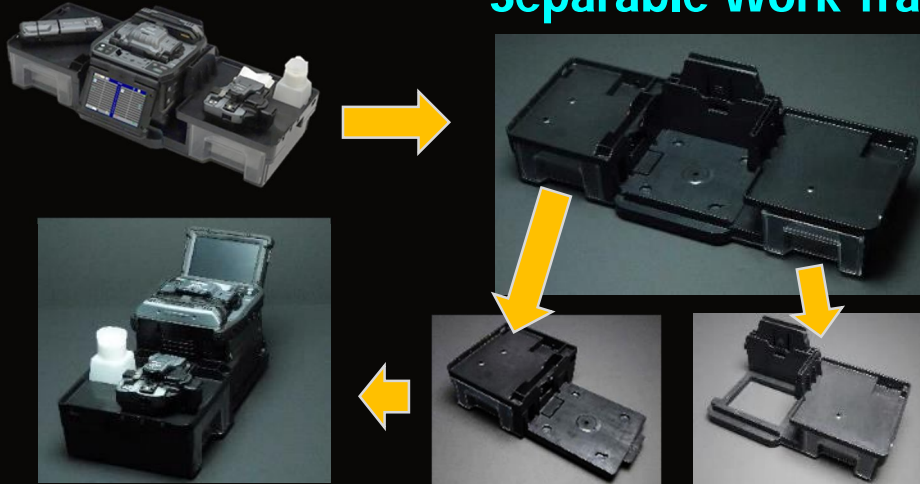
Plenty of space in carrying case

Cleaver & Stripper **Battery packs** **Large storage space under work tray**

Active Blade ManagementTechnology

1. Automatic Blade Rotation

The 88R12 fusion splicer and CT50 fiber cleaver are enabled with wireless data connectivity. This capability allows automatic cleaver blade rotation when the splicer judges the blade is worn. Also, the 88R12 fusion splicer can connect to two CT50s and RS03 simultaneously.

Motorized blade

No.	Gap [μm]	Offset [μm]	Cleave L	R
1	62	0.9	0.8°	6.7°
2	65	1.6	0.8°	0.1°
3	57	1.2	0.7°	0.1°
4	65	0.7	0.6°	5.2°
5	60	1.6	0.4°	0.5°
6	46	0.3	0.2°	0.0°
7	46	0.2	0.5°	0.3°
8	55	1.7	0.8°	0.5°
9	50	1.7	0.1°	0.9°
10	56	1.7	0.8°	0.6°
11	49	1.9	0.6°	0.9°
12	41	1.2	0.2°	0.8°

Now rotating the blade.

Blade Position: 1 → 2
Blade Height: L(1)

Reset

2. Blade Life Management

The 88R12 fusion splicer displays the remaining blade life and informs the user when a blade height change, position change, or new blade is required.
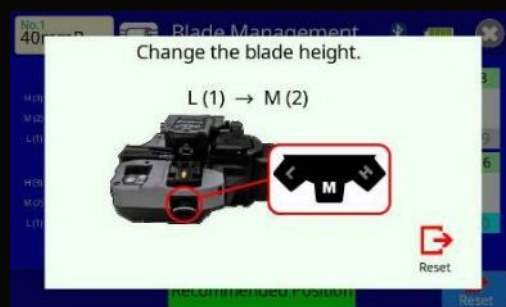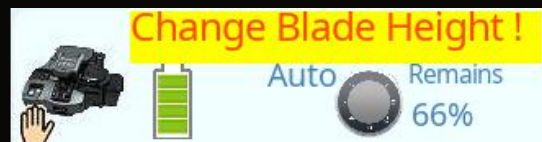

3. Stripping Condition Control

When the user changes the splice mode, e.g. from 12 fiber ribbonsplice mode to SWR fiber splice mode, the ribbon stripper RS03 automatically changes its heating temperature and timewith a wireless command from the splicer.
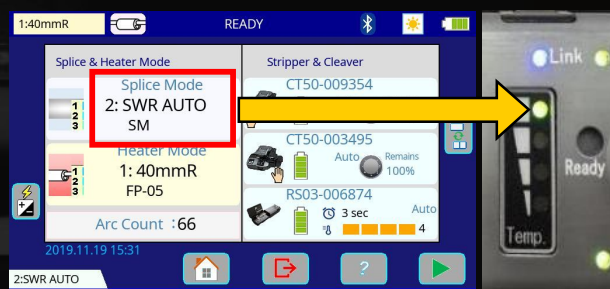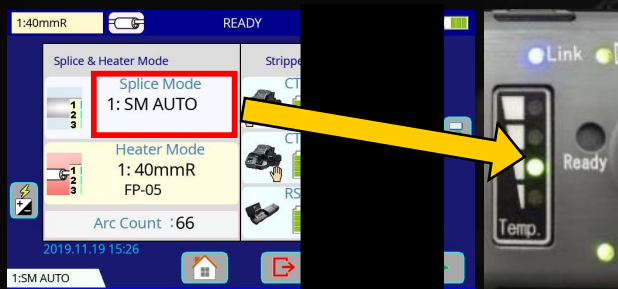
Heat temperature changes in accordance with Splice mode

Standard Package

88R12 Standard package

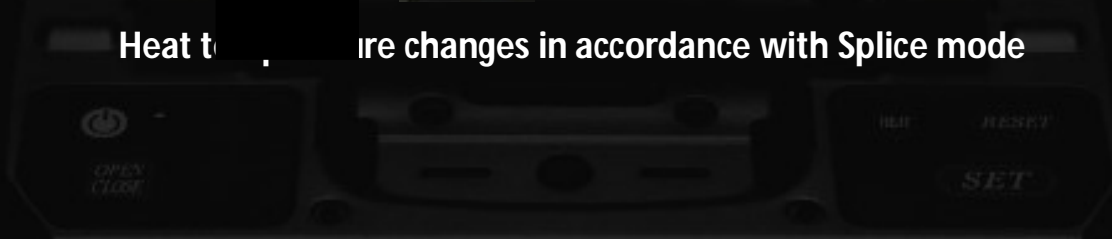| Item	Model	Qty
Mass Fusion Splicer	88R12	1 pc
(1) Battery Pack *	BTR-15	1 pc
(2)AC Adapter	ADC-20	1 pc
(3)AC Power Cord	ACC-14, 15, 16 or 17	1 pc
(4)USB Cable	USB-01	1 pc
(5)Fusion Splicer Strap	ST-02	1 pc
(6)Electrodes (on spare V-groove)	ELCT2-16B	1 pair
(7)12 fiber V-groove (spare)	VG12-01	1 pc
(8)Hexagonal Wrench	HEX-01	1 pc
(9)V-groove Cleaning Brush	VCB-01	1 pc
(10)Carrying Case	CC-39	1 pc
(11) Work Tray Left	WT-09L	1 pc
(12) Work Tray Right	WT-09R	1 pc
(13) Work Tray J-Plate	JP-09	1 pc
(14)Tripod Screw	TS-03	2 pcs
(15)Carrying Case Strap	ST-03	1 pc
(16)Alcohol Dispenser	AP-02	1 pc
(17)Quick Reference Guide	QRG-03-E, C or J	1 pc
Ribbon Fiber Stripper	RS03 or RS02	1 pc
(1)Battery Pack *	BTR-12A	1 pc
(2)AC Adapter	ADC-09A	1 pc
(3)AC Power Cord	ACC-08, 09, 10, 11 or 12	1 pc
(4)Blade Cleaning Brush	BRS-02	1 pc
(5)Hexagonal Wrench	HEX-01	1 pc
Single Fiber Stripper	SS03 or SS01	1 pc
Optical Fiber Cleaver	CT50	1 pc
(1)Fiber Scrap Collector	FDB-05	1 pc
(2)Fiber Setting Plate	AD-10-M24	1 pc
(3)Case	CC-37	1 pc
(4)Hexagonal Wrench	HEX-01	1 pc

*Please follow IATA regulation when shipping the battery by air.
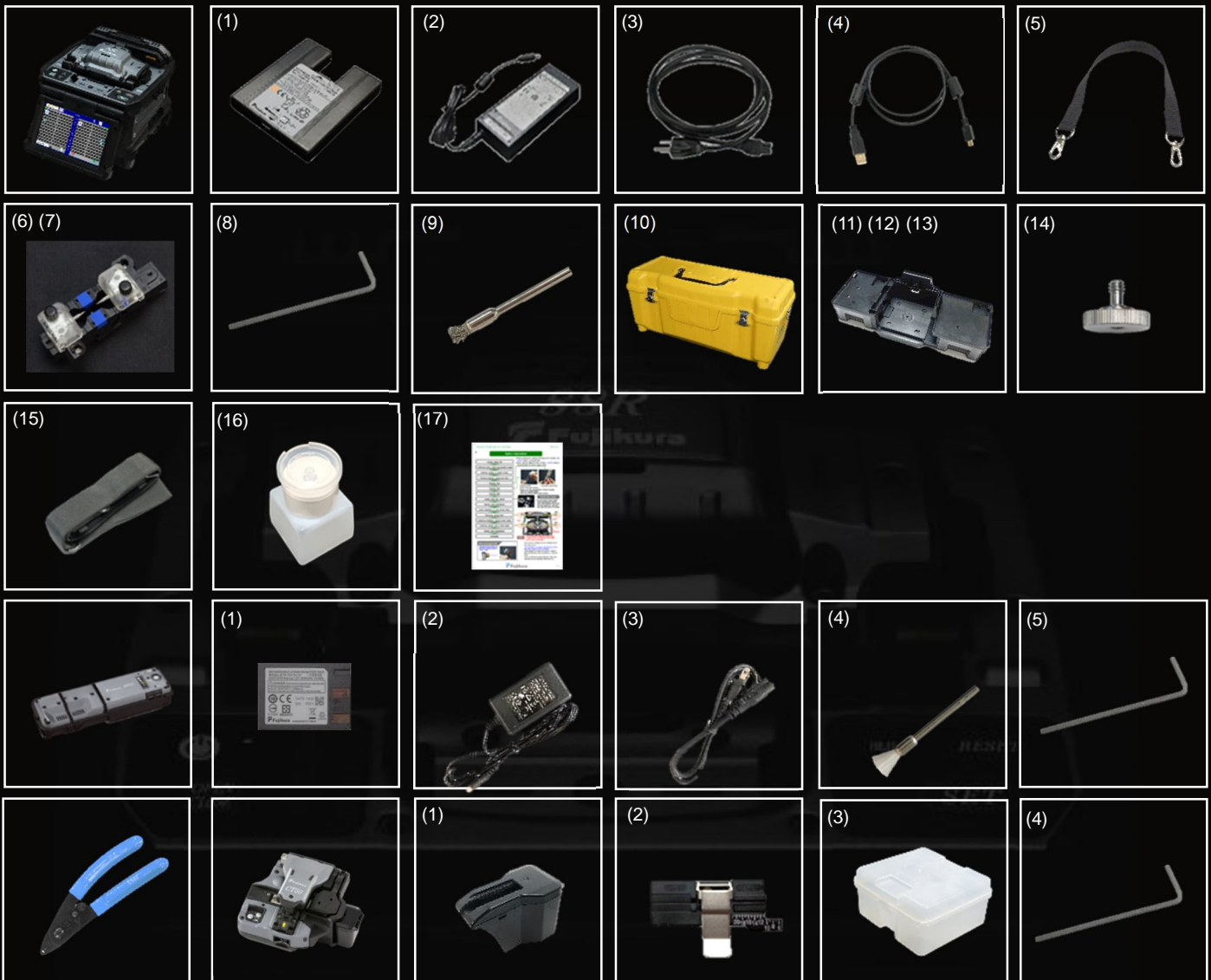
Specifications

88R12 Specifications

Item		Specification
Fiber alignment method		Self cladding alignment with melting surface tension
Fiber count can be spliced		Up to 12 fiber ribbon
Applicable fiber	Fiber type	Single mode optical fiber
		Multi mode optical fiber
	Cladding dia.	Approx.125μm
Applicablecoating	Fiber holder	Coating shape. : Refer to options
		Cleave length : 10mm
Fiber splice performance	Splice loss *1	ITU-T G.652 : Avg. 0.05dB
		ITU-T G.651 : Avg. 0.02dB
		ITU-T G.653 : Avg. 0.08dB
		ITU-T G.655 : Avg. 0.08dB
		ITU-T G.657 : Avg. 0.05dB
	Splice time *2	SM FAST mode : Avg. 11 to 12sec.
		SM AUTO mode : Avg. 16 to 17sec.
Applicable protection sleeve	Sleeve type	Heat shrinkable sleeve
	Sleeve length	Max. 66mm
	Sleeve dia.	Max. 6.0mm before shrinking
Sleeve heat performance	Heat time *3	40mm FP-05 mode : Avg. 38 to 40sec.
		40mm FP-04T mode : Avg. 17 to 19sec.
		Single 40mm mode: Avg. 14 to 16sec.
		Single 60mm mode: Avg. 13 to 15sec.
Fiber tensile test force		Approx. 2.0N
Electrode life *4		Approx. 1,500 splices
Physical description	Dimensions W	Approx.170mm without projection
	Dimensions D	Approx.173mm without projection
	Dimensions H	Approx.150mm without projection
	Weight	Approx. 2.6kg including battery
Environmental condition	Temperature	Operate : -10 to 50 degreeC
		Storage : -40 to 80 degreeC
	Humidity	Operate : 0 to 95%RH non-condensing
		Storage : 0 to 95%RH non-condensing
	Altitude	Max. 3,700m
AC adaptor	Input	AC100 to 240V, 50/60Hz, Max. 1.5A
Battery pack	Type	Rechargeable Lithium Ion
	Output	Approx. DC14.4V / 6,380mAh
	Capacity *5	Approx. 165 splice and heat cycles
	Temperature	Recharge : 0 to 40 degreeC
		Storage : -20 to 30 degreeC
	Battery life *6	Approx. 500 recharge cycles
Display	LCD monitor	TFT 5 inches with touch screen
	Magnification	88R1212 : Approx. 20X : 12 ribbon to 60X : single
		88R124 : Approx. 60X
Illumination	V-grooves	LED lamp
Interface	PC	USB2.0 Mini B type
	External LED lamp	USB2.0 A type
		Approx. DC5V, 500mA
	RibbonStripper	Mini DIN 6pin
		DC12V, Max. 1A
	Wireless *7	Bluetooth 4.1 LE
Data storage	Splice mode	100 splice modes
	Heat mode	30 heat modes
	Splice result	20,000 splices
	Splice image	100 images
Screw hole for tripod		1/4-20UNC
Other features	Automatic functions	Splice mode select by fiber count analysis
		Discharge power calibration
		Wind protector : open/close
		Heater lid : open/close
		Heater clamp : open/close
	Reference guide	Video and PDF file stored in splicer
	Electrode	Replaceable without tool

88R12Options

Item	Model	Remark
Fiber holder	FH-70-250	250μm coating diameter
	FH-70-900	900μm coating diameter
	FH-70-2	2 fiber ribbon
	FH-70-4	4 fiber ribbon
	FH-70-8	8 fiber ribbon
	FH-70-12	12 fiber ribbon
	FH-70-12PC	Pitch conversion for 12 fiber ribbon
	FH-FC-20	900μm in 2mm diameter jacket
	FH-FC-30	900μm in 3mm diameter jacket
	FH-60-LT900	900μm loose buffer fiber
DC Adapter	DCA-03	Connect AC adapter not through battery
DC power cord	DCC-20	Car cigar socket to BTR15/DCA-03
	DCC-21	Car battery to BTR-15/DCA-03
	DCC-11	Splicer to ribbon stripper
Transfer Clamp	CLAMP-DC-12	Transferring drop cable on work tray
J-Plate	JP-10	Attaching to splicer, not to work tray
	JP-10-FC	JP-10 with fiber clamps
Protection sleeve	FP-04(T)	40mm up to 8 fiber ribbon
	FP-05	40mm up to 12

Notes

*1: Measured with a cut-back method relevant to ITU-T and IEC standard after splicing Fujikura identical fibers. The average splice loss changes depending on the environmental condition and fiber characteristics.

*2: Measured at room temperature. The definition of splice time is from the fiber image appeared in LCD monitor to the estimated loss displayed. The average splice time changes depending on the environmental conditions, fiber type, and fiber characteristics.

*3:Measured at room temperature with the AC adapter. The heat time is defined from the start beep sound to the finish beep sound. The average heat time changes depending on the environmental conditions, sleeve type and battery pack condition

*4: The electrode life changes depending on the environmental conditions, fiber type and splice modes.

*5: Test condition
  (1) Splice and heat time: 2 minutes cycle
    With 12 fiber ribbon and FP-05 sleeve
  (2) Using the splicer power save settings
  (3) Using a not degraded battery
  (4) At room temperature
  The battery capacity changes when testing with different conditions from the above.

*6: The battery capacity halves after approx. 500 discharge and recharge cycles. The battery life is shortened further when using outside of the storage temperature range, operating temperature range, or if completely discharged by storing for a long time without recharging.

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