Telecommunication uses

Splicers	Core Alignment Fusion Splicer 90S+ Kit
	Mass Fusion Splicer 90R Kit series
	Clad Alignment Fusion Splicer 45S Kit
	Mass Fusion Splicer 41R Kit
Other	Splice+ Cloud Connectivity App
	Optical Fiber Identifier FID-30R/31R/32R

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

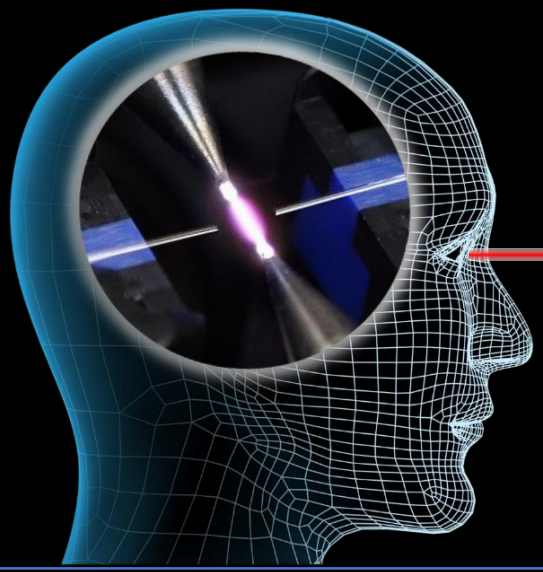
Core Alignment Fusion splicer 90S+ kit

ACTIVE FUSION

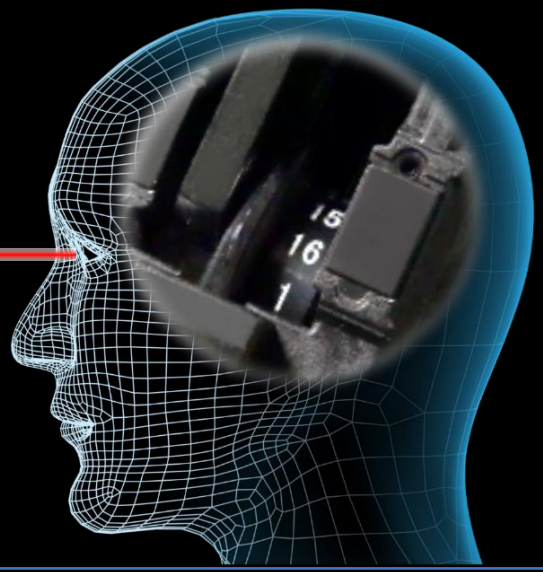
CONTROL TECHNOLOGY

ACTIVE BLADE

MANAGEMENT TECHNOLOGY



Enhanced Splice Quality



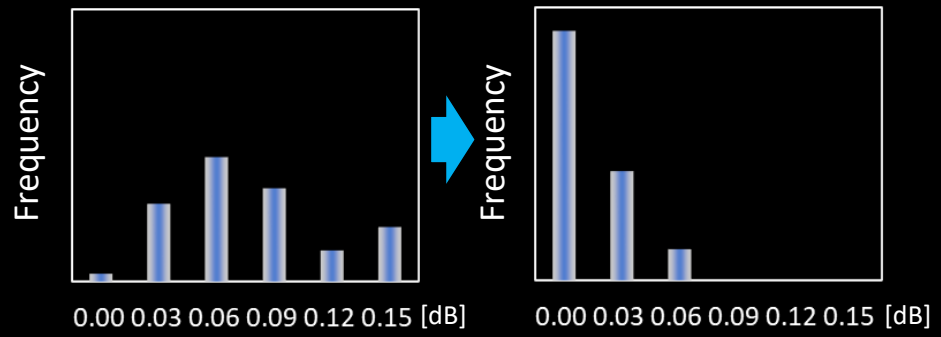
Fujikura

Active Fusion Control Technology

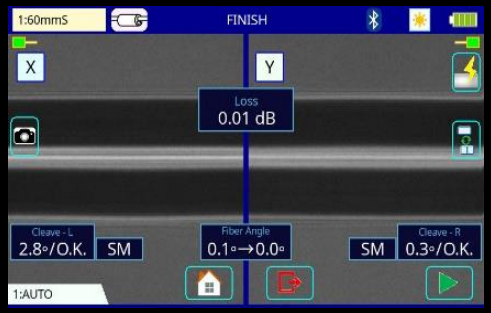
ACTIVE FUSION
CONTROL TECHNOLOGY

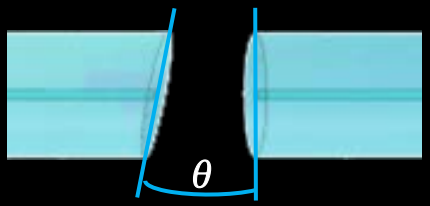
1. Active Fusion control by cleave condition

One of main causes of high splice loss is bad cleave end face. The 90S+ analyzes the condition of both L and R cleave end faces and performs optimal fusion control. This advanced technology improves splice loss significantly and reduces the risk of re-installation.



Splice loss with large cleave angle : 3 < θ < 5 degree

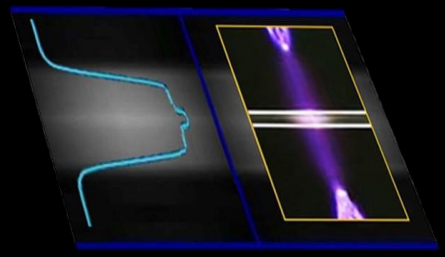


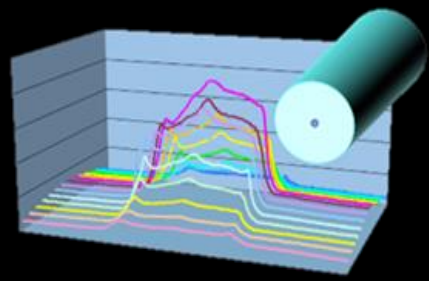


*G.652 splicing result measured with a cut-back method. The splicing result changes depending on the fiber type and fiber characteristics.

2. Active Fusion control by fiber brightness

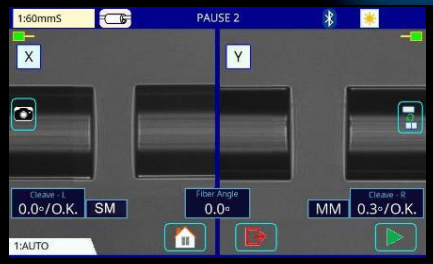
Fusion is easily affected by changes in the environment. The 90S+ uses real-time fusion parameter control by analyzing the fiber's brightness intensity during fusion. It contributes to stable, reduced splice loss.



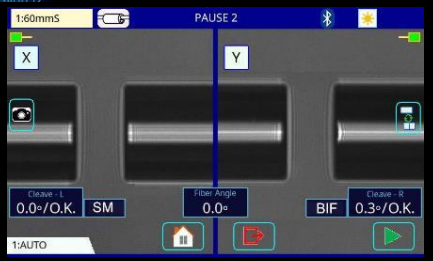


3. Active Fusion control by fiber discrimination

Adequate splice parameters may differ depending on fiber type. The 90S+ automatically applies the optimum splice parameters depending on the fiber type.



Left:G.652-Right:G.651



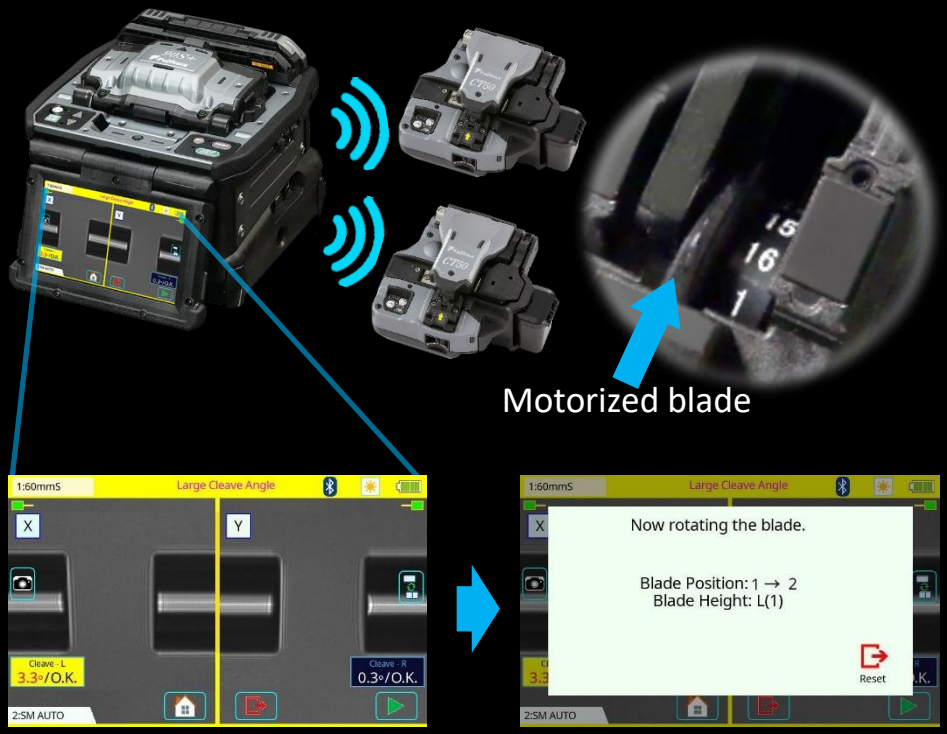
Left:G.652-Right:G.657

Active Blade Management Technology

ACTIVE BLADE
MANAGEMENT TECHNOLOGY

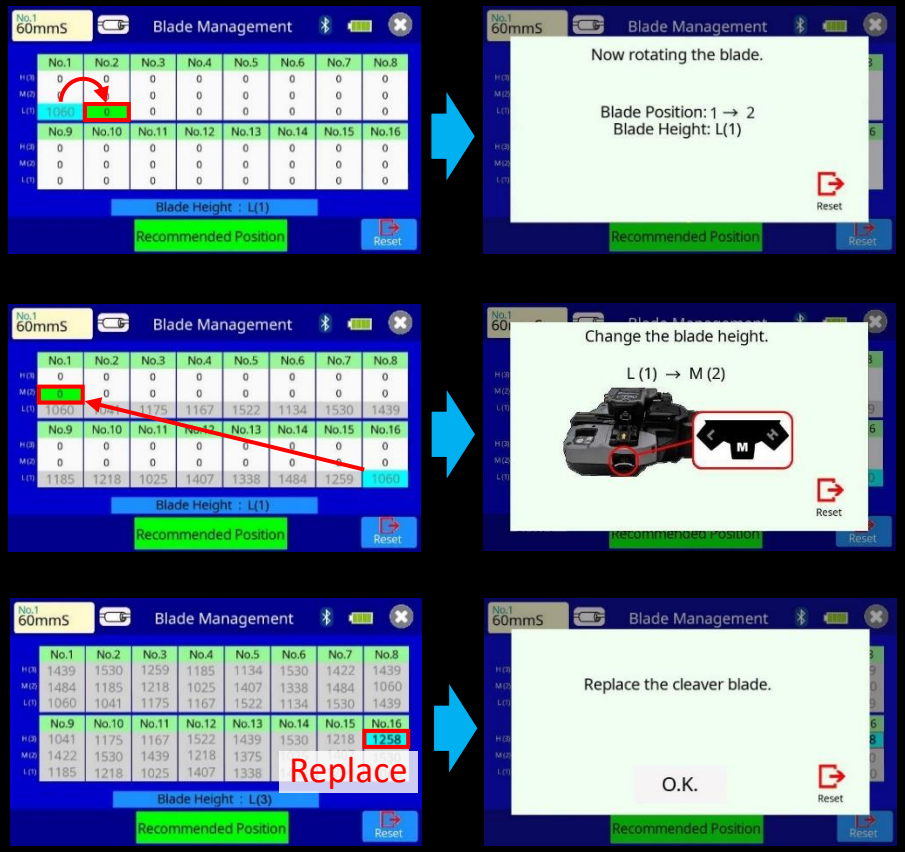
1. Active Blade rotation by motor

The 90S+ and CT50 fiber cleaver are enabled with wireless data connectivity. This capability allows automatic cleaver blade rotation when the 90S+ judges the blade is worn. The 90S+ can connect to two CT50s simultaneously.



2. Active Blade life management

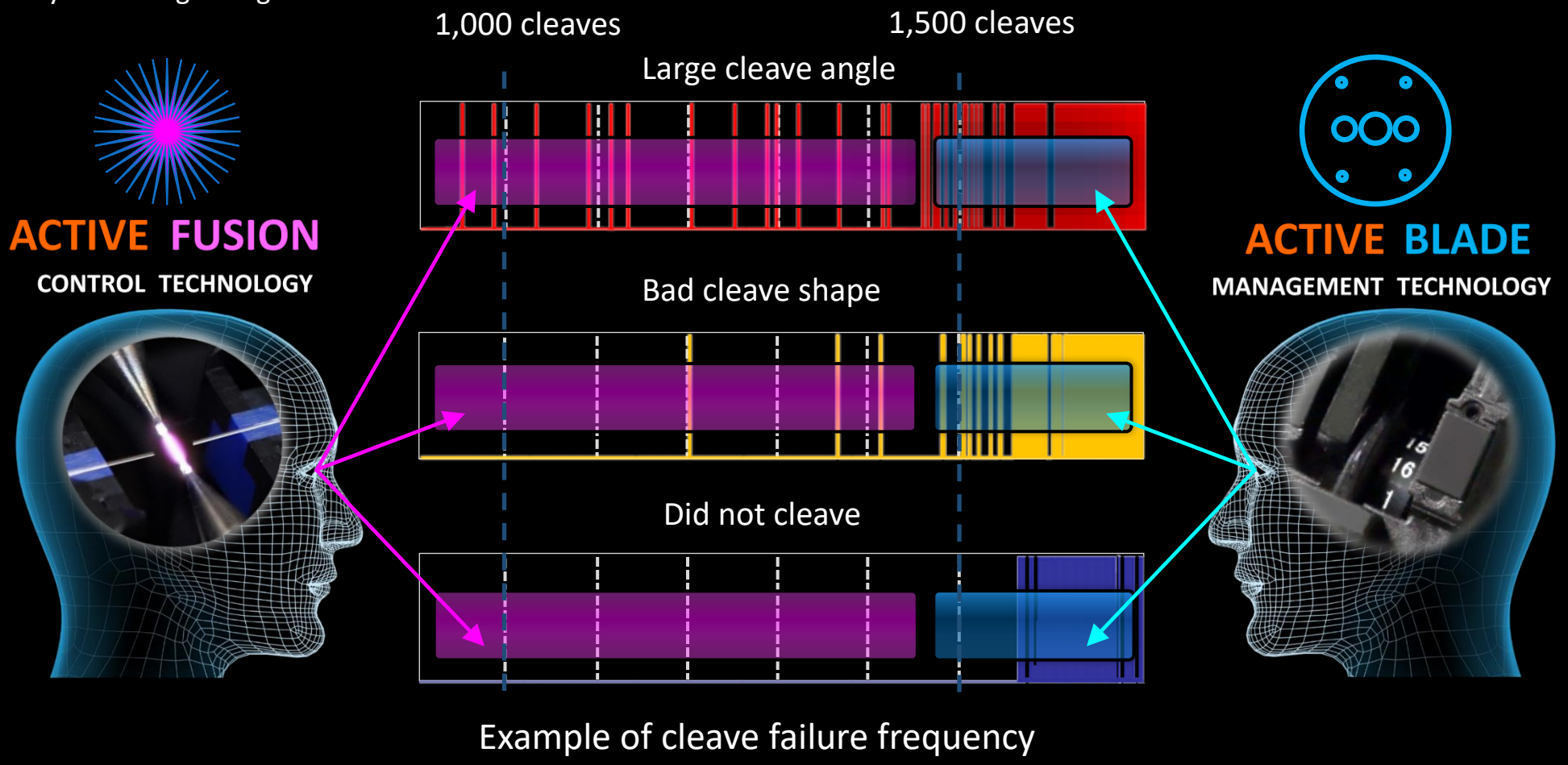
The 90S+ displays the remaining blade life and informs the user when a blade height change, position change, or new blade is required.



Enhanced Splice Quality

The below graphs show the number of cleaves on the horizontal line with frequency of large cleave angle, bad cleave shape and no cleave at all. When the frequency of large cleave angle increases, **Active Blade** Management Technology can detect this increasing ratio point and rotate the blade position automatically. **Active Blade** Management Technology significantly reduces frequency of large cleave angles occurring but even when it does occur **Active Fusion** Control Technology can reduce high splice loss by precise fusion control.

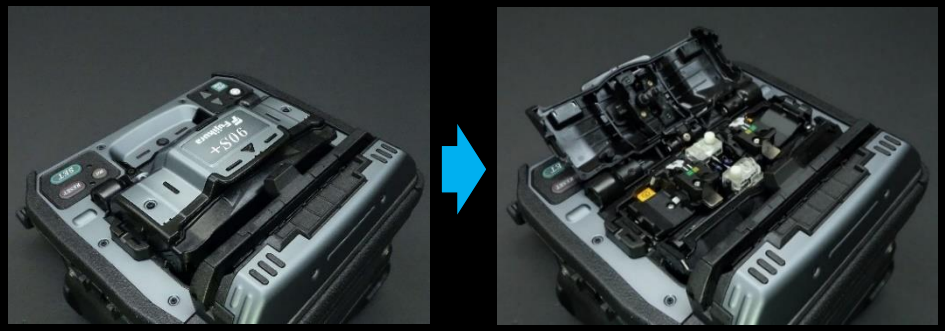
The 90S+ can minimize the occurrence of high splice loss and contribute to reduce the risk of re-Installation by using these 2 key technologies together.



Operation Time Reduction

1. Automatic Open-Close Wind protectors

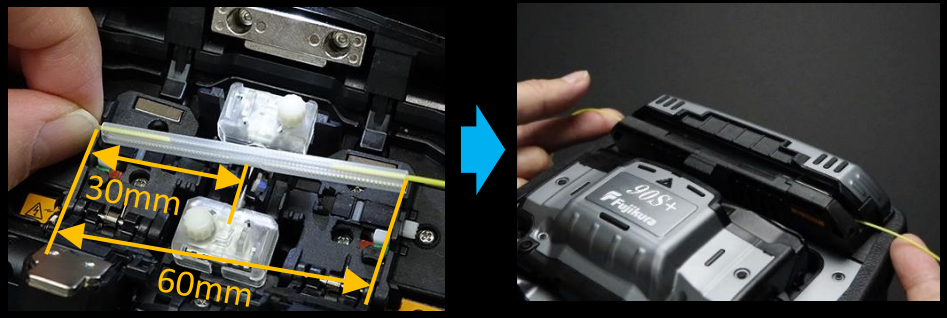
The faster automated features of the 90S+ reduce installation times. With this splicer, an operator can complete the entire splice process from splicing to heating without touching the 90S+ and only moving the fiber.



Automatic Open-Close wind protectors

2. Operation time reduction

The shape of the sheath clamp is optimized for 60mm length protection sleeves. The length from splice point to the edge of the sheath clamp is 30mm. Therefore, it is easy to center the protection sleeve over the splice by using your fingers to reference the splice point.

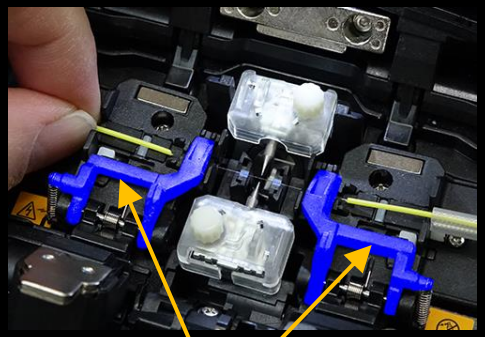


Easy centering

Automatic heater clamp

3. Fiber retention clamp

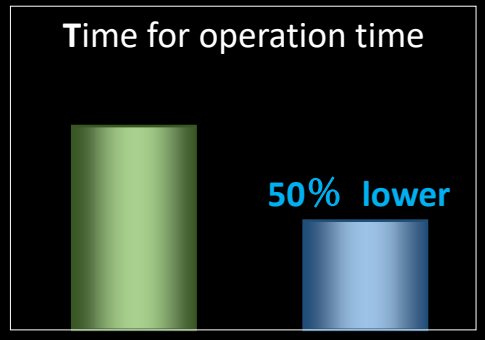
The fiber retention clamps support the automated operations. When the sheath clamps open automatically after splicing, the fiber retention clamps gently hold the spliced fiber to keep it from flying out. The retention clamps release when the fiber is lifted by the operator.



Fiber retention clamps

4. Operation time reduction

These functions enable the 90S+ to reduce operation time by 50% over the previous model.



User Friendly

1. Carrying Case

There are multiple ways to utilize the 90S+ carrying case. The 90S+ is ready to use just by opening the case, but it is also possible to use the 90S+ on top of the carrying case or only with the work tray depending on the work environment.

Ready to use

Open

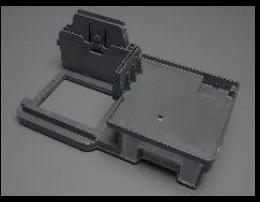
Lid of carrying case becomes a work tray

Large storage space under work tray

2. Work Tray

The work tray has many functions. There are two drawers for storage which 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



Cleaver & Stripper

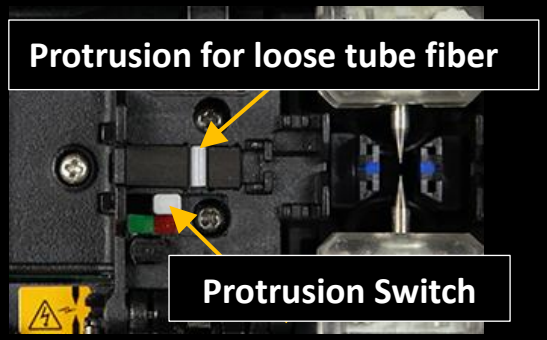
Plenty of space in work tray

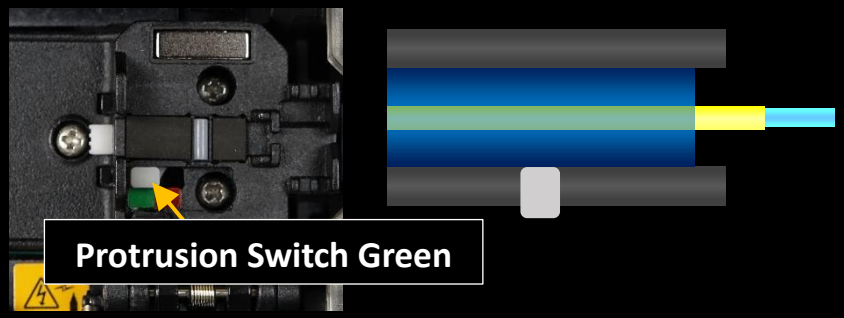
Battery packs

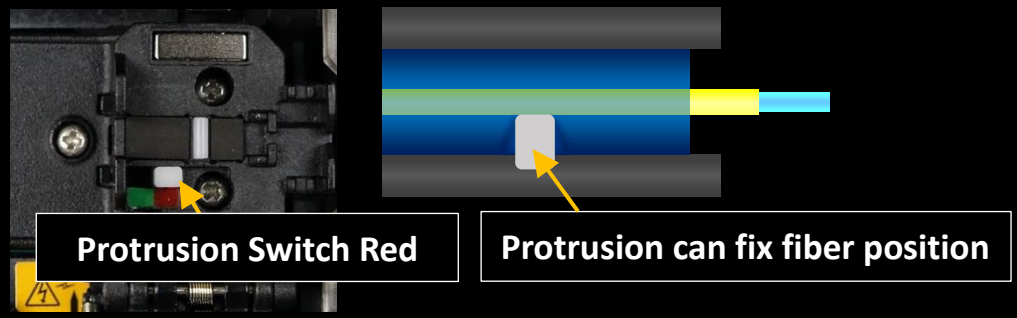
User Friendly

3. Loose tube Compatibility

The sheath clamp of the 90S+ is compatible with loose tube fiber. The Protrusion part on of the sheath clamp for loose tube fiber engages or retracts by simply changing the switch position with your finger.

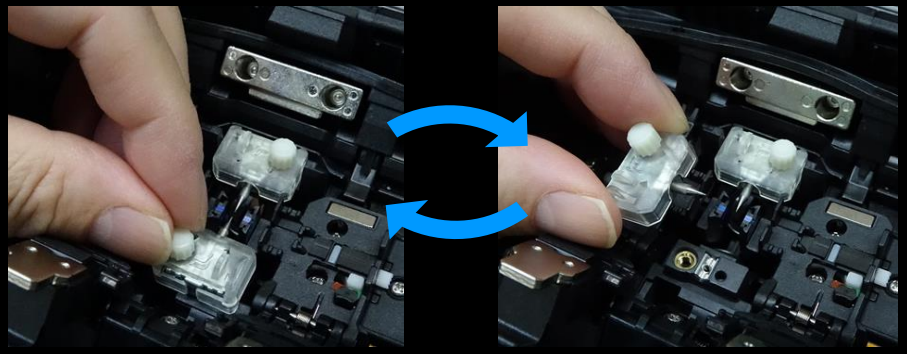






4. Tool-less Electrodes and illumination

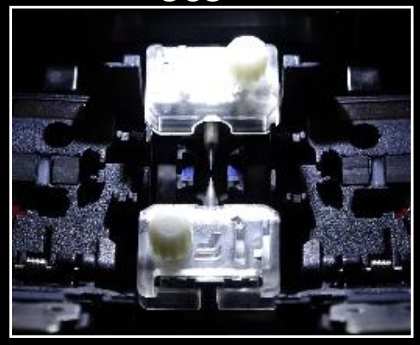
The 90S+ electrodes come as an “assy” including the fixing screw. You can rotate the screw by hand without tools, enabling easy electrode replacement.



The transparent electrode covers support wider illumination of the v-groove. As the sheath clamp opens on the opposite side of the illumination lamp, the sheath clamp area is illuminated without shadow.

70S+

90S+



Wider Illumination range

Standard Package

90S+ Standard Package

(1)


(2)


(3)


(4)


(5)


(6)


(7)


(8)


(9) (10) (11)


(12)


(13)


(14)


(15)


(16)


Description	Model No.	Qty
Core Alignment Fusion Splicer	90S+	1pc
(1) Battery Pack*	BTR-15	1pc
(2) AC Adapter	ADC-20	1pc
(3) AC Power Cord	ACC-14, 15, 16, 17 or 18	1pc
(4) USB Cable	USB-01	1pc
(5) Fusion Splicer Strap	ST-02	1pc
(6) Electrodes, for spare	ELCT2-16B	1pair
(7) Fiber Holder Set Plate	SP-03	1pair
(8) Carrying Case	CC-39	1pc
(9) Work Tray Left	WT-09L	1pc
(10) Work Tray Right	WT-09R	1pc
(11) Work Tray J-Plate	JP-09	1pc
(12) Tripod Screw	TS-03	2pcs
(13) Carrying Case Strap	ST-03	1pc
(14) Alcohol Dispenser	AP-02	1pc
(15) Quick Reference Guide	QRG-02-E	1pc
(16) Instruction Manual	PDF file stored in Splicer	
Single Fiber Stripper	SS03	1pc
Optical Fiber Cleaver	CT50	1pc
(1) Fiber Scrap Collector	FDB-05	1pc
(2) Fiber Setting Plate	AD-10-M24	1pc
(3) Case, for cleaver	CC-37	1pc
(4) Hexagonal Wrench	HEX-01	1pc

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

(1)


(2)


(3)


(4)


Specifications

90S+ Specifications

Item		Specification
Fiber alignment method		Active core alignment
Fiber count can be spliced		Single fiber
Applicable fiber	Fiber type	Single mode optical fiber
		Multi mode optical fiber
	Cladding dia.	80 to 150μm *1
Applicable coating	Sheath clamp	Coating dia. : Max. 3000μm
		Cleave length : 5 to 16mm *1
Fiber splice performance	Splice loss *2	ITU-T G.652 : Avg. 0.02dB
		ITU-T G.651 : Avg. 0.01dB
		ITU-T G.653 : Avg. 0.04dB
		ITU-T G.654 : Avg. 0.04dB
		ITU-T G.655 : Avg. 0.04dB
		ITU-T G.657 : Avg. 0.02dB
	Splice time *3	SM FAST mode : Avg. 7 to 9sec.
		AUTO mode : Avg. 14 to 16sec.
Applicable protection sleeve	Sleeve type	Heat shrinkable sleeve
	Sleeve length	Max. 66mm
	Sleeve dia.	Max. 6.0mm before shrinking
Sleeve heat performance	Heat time *4	60mm slim mode : Avg. 9 to 10sec.
		60mm mode : Avg. 13 to 15sec.
Fiber tensile test force		Approx. 2.0N
Electrode life *5		Approx. 5000 splices
Physical description	Dimensions W	Approx. 170mm without projection
	Dimensions D	Approx. 173mm without projection
	Dimensions H	Approx. 150mm without projection
	Weight	Approx. 2.8kg including battery
Environmental condition	Temperature	Operate : -10 to 50°C
		Storage : -40 to 80°C
	Humidity	Operate : 0 to 95%RH non-condensing
		Storage : 0 to 95%RH non-condensing
	Altitude	Max. 5000m
AC adaptor	Input	AC100 to 240V, 50/60Hz, Max. 1.5A
Battery pack	Type	Rechargeable Lithium Ion
	Output	Approx. DC14.4V, 6380mAh
	Capacity *6	Approx. 300 splice and heat cycles
	Temperature	Recharge : 0 to 40°C
		Long Term Storage : -20 to 30°C
	Battery life *7	Approx. 500 recharge cycles
Display	LCD monitor	TFT 4.9 inches with touch screen
	Magnification	Approx. 200 to 320x
Illumination	V-grooves	LED lamp
Interface	PC	USB2.0 Mini B type
	External LED lamp	USB2.0 A type Approx. DC5V, 500mA
	Ribbon Stripper	Mini DIN 6pin DC12V, Max. 1A
	Wireless *8	Bluetooth 4.1 LE
Data storage	Splice mode	100 splice modes
	Heat mode	30 heat modes
	Splice result	20000 splices
	Splice image	100 images
Screw hole for tripod		1/4-20UNC
Other features	Automatic functions	Splice mode select by fiber type analysis
		Fusion control
		Wind protector : open and close
		Sheath clamp : open
		Heater lid : open and close
		Heater clamp : open and close
	Reference guide	Video and PDF file stored in splicer
	Sheath clamp	Easy sleeve positioning clamp
	Electrode	Replaceable without tool

90S+ Options

Item	Model	Remark
Fiber holder	FH-70-200	200μm coating diameter
	FH-70-250	250μm coating diameter
	FH-70-900	900μm coating diameter
	FH-FC-20	900μm in 2mm diameter cable
	FH-FC-30	900μm in 3mm diameter cable
DC Adapter	DCA-03	Connect AC adapter not through battery
DC power cord	DCC-20	Car cigar socket to BTR-15/DCA-03
	DCC-21	Car battery to BTR-15/DCA-03
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-03	60mm, Max. 900μm coating diameter
	FP-03(L=40)	40mm, Max. 900μm coating diameter
	FP-03M	FP-03 with magnetic material

Notes

*1 Use CT58 and FH-70-160 for splicing 80μm cladding dia. and 160μm coating dia. fiber.

length range depending on fiber type
5 to 16mm : 125μm cladding dia. and 250μm coating dia.
10 to 16mm : 125μm cladding dia. and 400 or 900μm coating dia.
5 to 10mm : 80μm cladding dia. and 160μm coating dia.
5 to 16mm : 150μm cladding dia. and 250μm coating dia.

*2 Measured with a cut-back method after splicing the same type of fibers. The average splice loss changes depending on the environmental condition and fiber characteristics.

*3 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.

*4 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.

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

*6 Test condition
(1) Splice and heat time : 1 minute cycle
(2) Using the splicer power save settings, subject to our testing condition.
(3) Using a not degraded battery
(4) At room temperature
The battery capacity changes when testing with different conditions from the above.

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

*8 Bluetooth® mark and logos are the registered trademarks of Bluetooth SIG, Inc.

Specifications

CT50 Specifications

Item		Specification
Applicable fiber	Fiber type	Single mode optical fiber
		Multi mode optical fiber
	Fiber count	Single and up to 16 fiber ribbon
	Cladding dia.	Approx. 125µm
Applicable coating	Fiber setting plate	AD-10-M24 : Max. 900µm coating diameter
		AD-50 : Max. 3mm coating diameter
		AD-16A : Max. 900µm coating diameter 1 fiber + Max. 250µm coating diameter 1 fiber
	Fiber holder	Coating shape. : Refer to splicer options
Cleave length	Fiber setting plate	AD-10-M24 : 5 to 20mm *1
		AD-50 *C.D. : coating diameter C.D. = 250µm or less : 5 to 20mm *1 250µm < C.D. < =900µm : 10 to 20mm 900µm < C.D. < =3mm : 14 to 20mm
		AD-16A : 5 to 20mm *1
	Fiber holder	Approx. 10mm
Cleave angle *2	Single fiber	Avg. 0.3 to 0.9 degrees
	Fiber ribbon	Avg. 0.3 to 1.2 degrees
Blade life *3		Approx. 60000 fiber cleaves
Physical description	Dimensions W	Approx. 117mm without projection *4
	Dimensions D	Approx. 94mm without projection *4
	Dimensions H	Approx. 59mm without projection *4
	Weight	Approx. 306g including battery and AD-10-M24
Environmental condition	Temperature	Operate : -10 to 50°C
		Storage : -40 to 80°C
	Humidity	Operate : 0 to 95%RH non-condensing
		Storage : 0 to 95%RH non-condensing
Battery		2 pieces of LR03, AAA dry battery
Wireless interface *5		Bluetooth 4.1 LE
Screw hole for tripod		1/4-20UNC
Holding mechanism for the fiber holder		Equipped
Other features	Blade rotation	Motorized rotation
		Manual rotation dial
	Replaceable parts	Blade
		Clamp arm

CT50 Options

Item	Model	Remark
Fiber Setting Plate	AD-50	Max. 3mm coating diameter
	AD-16A	Max. 900µm coating diameter 1 fiber + Max. 250µm coating diameter 1 fiber
Blade	CB-08	Blade for replacement
Clamp Arm	ARM-CT50-01	Clamp arm with anvil for replacement
Fiber Scrap Collector	FDB-05	Spare scrap collector
Side cover	SC-CT50-01	Side cover instead of scrap collector
Spacer	SPA-CT08-10	Cleave length 10mm
	SPA-CT08-09	Cleave length 9mm
	SPA-CT08-08	Cleave length 8mm

Notes

*1 When the cleave length is less than 10mm, the coating diameter should be 250µm or less. Also, a blade height adjustment is required before cleaving. The average cleave angle is worse than the specification when the cleave length is less than10mm.

*2 Measured with an interferometer at room temperature, not with a splicer. A new blade was used to cleave both the single fibers and ribbon fibers. The average cleave angle changes depending on the environmental conditions, blade condition, operating method, and cleanliness.

*3 The blade life changes depending on the environmental conditions, operating method, and the fiber type cleaved.

*4 Measured in a condition when closing the lever.

*5 Bluetooth® mark and logos are the registered trademarks of Bluetooth SIG, Inc.

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https://www.optic-product.fujikura.com/

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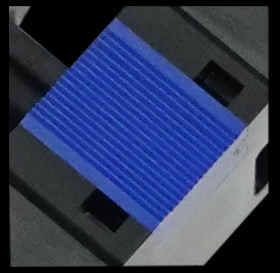
ACTIVE FUSION
CONTROL TECHNOLOGY

ACTIVE BLADE
MANAGEMENT TECHNOLOGY

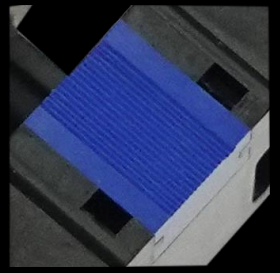
Mass Fusion Splicer 90R kit series

Replaceable V-groove

Up to 16F



250µm fiber spacing



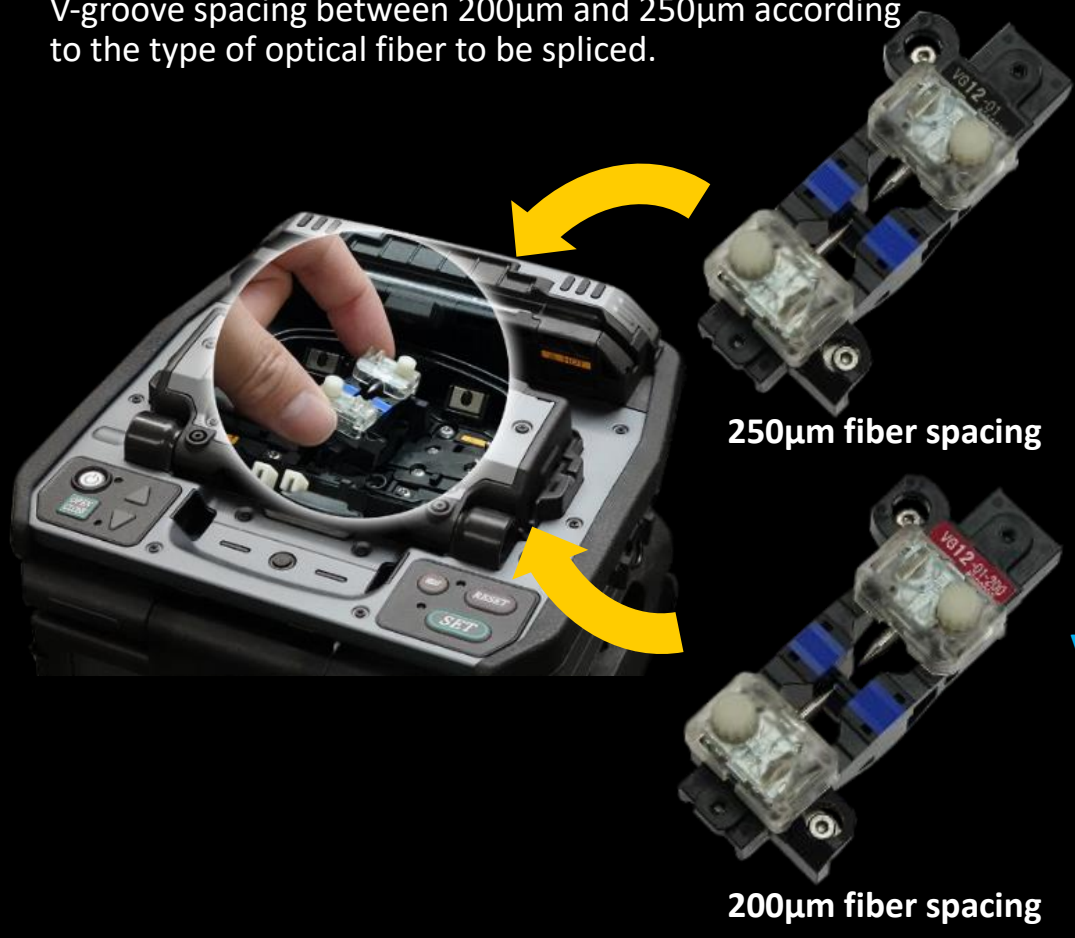
200µm fiber spacing

Fujikura

Cutting-edge Feature

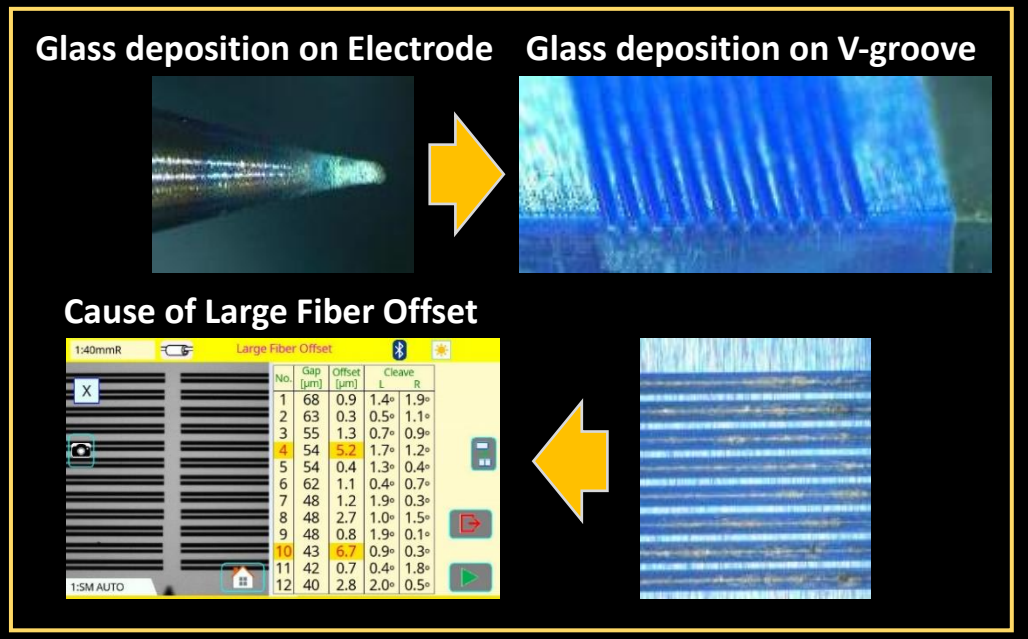
1. Replaceable 200µm/250µm spacing V-groove

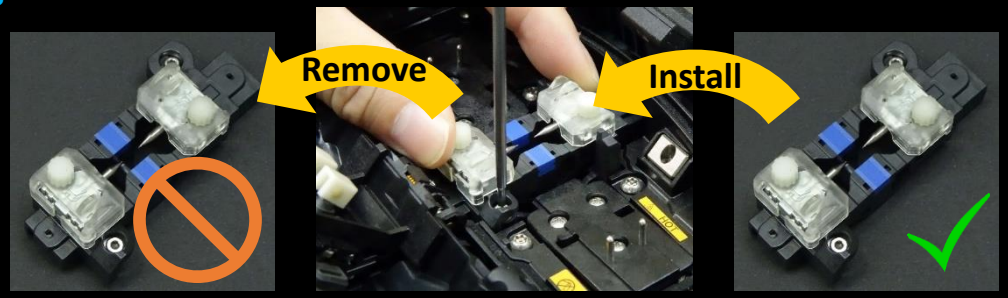
The 90R features an easily replaceable V-groove system, which allows customers to install and remove the V-groove very quickly. Almost all ribbon cables that have already been installed contain ribbons with fibers that have 250µm coating and therefore a 250µm fiber-to-fiber spacing. But with increasing cable densities, cable installations with 200µm coated fibers at a 200µm spacing is increasing. The 90R user can splice various types (and combination) of ribbon fiber by switching the V-groove spacing between 200µm and 250µm according to the type of optical fiber to be spliced.



2. Minimizing the downtime on the field

Accumulation of dust and melted glass on the V-groove is one of the causes of high splice loss during fusion splicing. The 90R includes a spare set of 12 fiber V-grooves with electrodes installed and ready to splice as part of the standard package. These spare V-grooves are field replaceable, so user downtime is minimized. The electrodes are pre-stabilized, so electrode stabilization is not required.

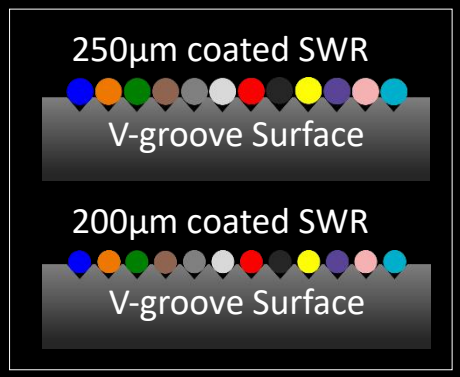




3. Universal Fiber Holder

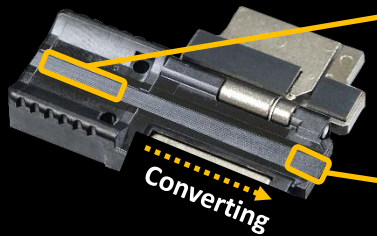
The FH-70-12 fiber holder is compatible with many types of 12 fiber ribbon, such as 0.3mm or 0.4mm thick encapsulated ribbons and 200µm or 250µm coated Spider Web Ribbon (SWR). The 250µm spacing V-grooves in the FH-70-12 fiber holder simplify SWR loading and ribbon preparation.

FH-70-12

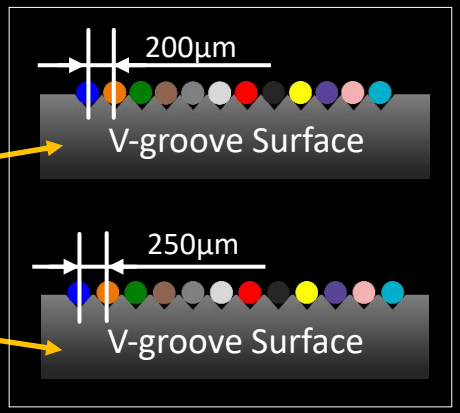


4. Pitch Conversion Fiber Holder

The pitch conversion fiber holder, FH-70-12PC, enables pitch conversion of individual 200µm coated fibers from a 200µm to 250µm spacing. It also enables many ribbons with 200µm spacing to be converted to 250µm spacing so they can be loaded into the standard 90R 250µm V-groove.

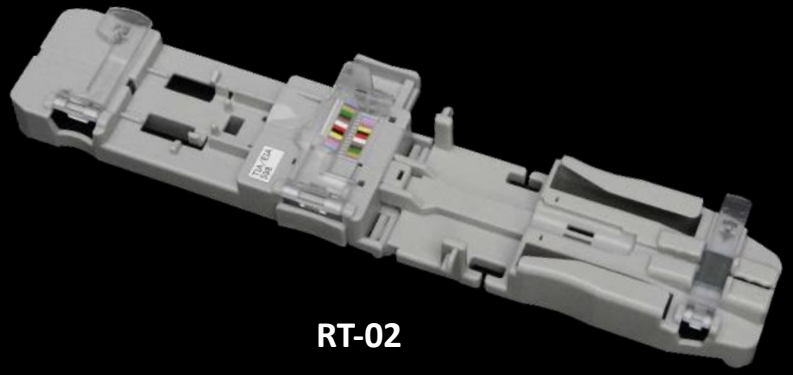


FH-70-12PC

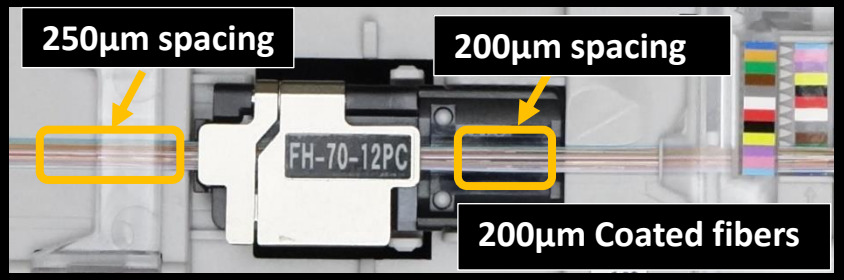


5. Ribbonizing Tool

The RT-02 is a tool which enables quick and easy ribbonization of 12 individual fibers into a temporary ribbon which can be spliced using a 90R. No glue or adhesive is required when using this ribbonizing tool since the arranged fibers are immediately loaded into the fiber holder. The RT-02 doesn't require the user to insert the fibers in the color code sequence, which is necessary with other ribbon arrangement tools. The user can choose any fiber at random and place it in the correct slot by referring to the color code label on the tool. The RS-02 is applicable to ribbonize both 200µm and 250µm coated fibers. It's also capable of ribbonizing 200µm coated fibers into 250µm spacing ribbon using the FH-70-12PC pitch conversion fiber holder or a 200µm spacing using the "Red Label" FH-70-12-200 (200µm spacing) fiber holder.

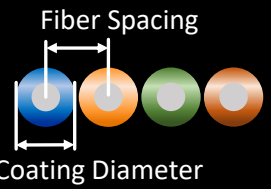


RT-02



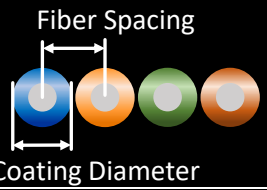
Ribbonizing 200µm coated fiber at a 250µm pitch

6. 90R16 Accessories Enable Splicing any Combination of 250μm and 200μm Ribbon



Coating Diameter	Fiber Spacing	Ribbon Structure	Replaceable V-groove	Fiber Holder
250μm	—	 Single fibers	 VG16-01-250  250μm	 FH-70-16
	250μm	 Encapsulated ribbon		
200μm		 Flexible Ribbon		
200μm	—	 Single fibers	 VG16-01-200  200μm	 FH-70-16-200
	200μm	 Encapsulated ribbon		
		 Flexible Ribbon		

7. 90R12 Accessories Enable Splicing any Combination of 250µm and 200µm Ribbon



Coating Diameter	Fiber Spacing	Ribbon Structure	Replaceable V-groove	Fiber Holder
250µm	—	Single fibers	 VG12-01  250µm	 FH-70-12
	250µm	Encapsulated ribbon  Flexible Ribbon		
200µm				
200µm	—	Single fibers		 FH-70-12PC
	200µm ↓ 250µm	Encapsulated ribbon → Single fibers		
		Flexible Ribbon → Single fibers		
200µm	—	Single fibers	 VG12-01-200  200µm	 FH-70-12-200
	200µm	Encapsulated ribbon		
		 Flexible Ribbon		

Well-developed operability

1. Carrying Case

There are multiple ways to utilize the 90R carrying case. The 90R is ready to use just by opening the case, but it is also possible to use the 90R on top of the carrying case or only with the work tray depending on the work environment.

Ready to use

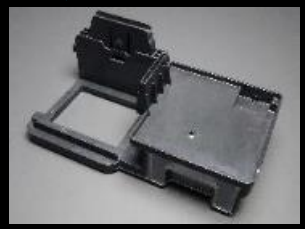
Large storage space under work tray

Lid of carrying case becomes a work tray

2. Work Tray

The work tray has many functions. There are two drawers for storage which 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



Cleaver & Stripper

Battery packs

Plenty of space in work tray

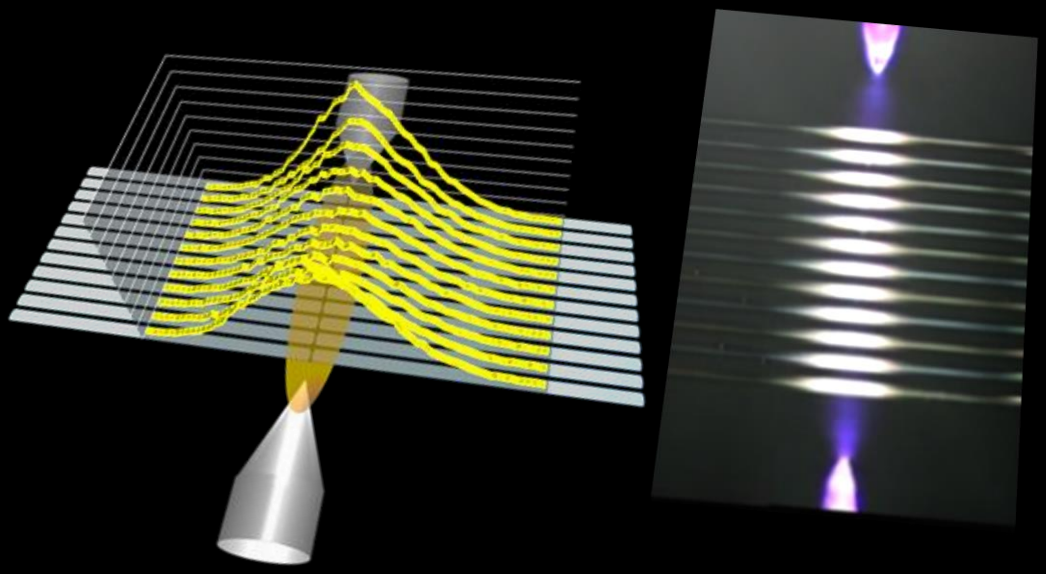
Active Fusion Control Technology

ACTIVE FUSION
CONTROL TECHNOLOGY

The 90R features ACTIVE FUSION CONTROL TECHNOLOGY which has two key components. This function enables stable fusion splicing with a wide variety of optical fibers and field conditions.

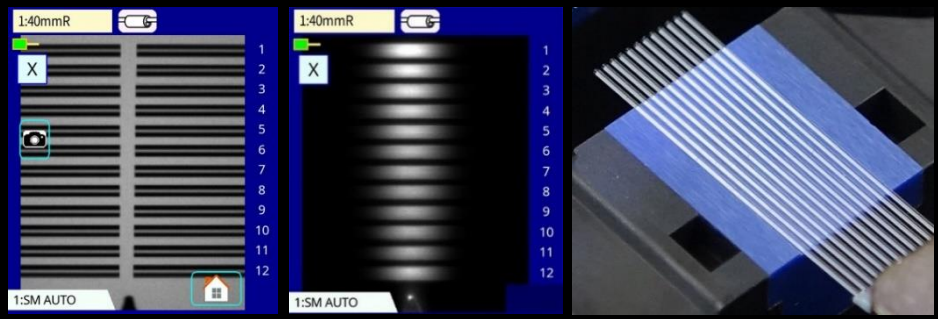
1. Active Fusion control by Real-time

The 90R mass fusion splicer uses a wide electrode gap and heats the ribbon fibers uniformly. It features real-time fusion power control by analyzing the fiber's brightness intensity during the splicing arc. Therefore, it can splice the fiber by appropriate fusion parameters.
The 90R does not have active core alignment mechanisms, however, during the fusion, fiber surface tension effects minimize preexisting offsets.

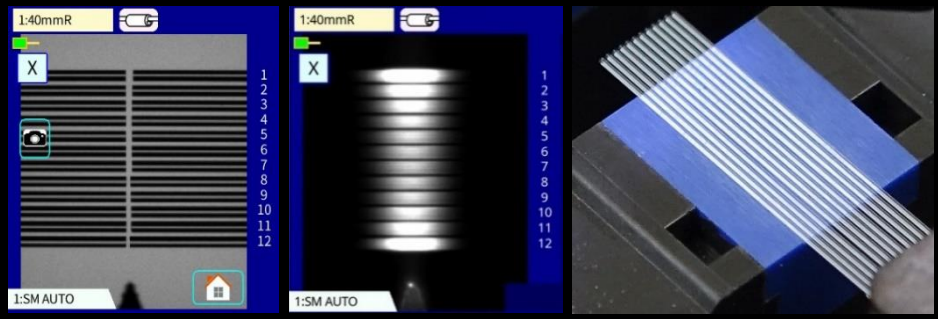


2. Active Fusion control by V-groove and fiber count

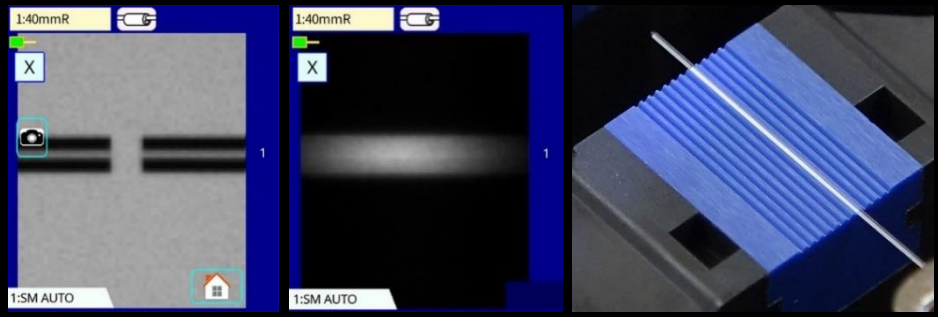
The 90R automatically determines the appropriate fusion splicing parameters according to the ribbon fiber count and the installed V-groove spacing.



250µm fiber spacing / 12-fiber ribbon



200µm fiber spacing / 12-fiber ribbon



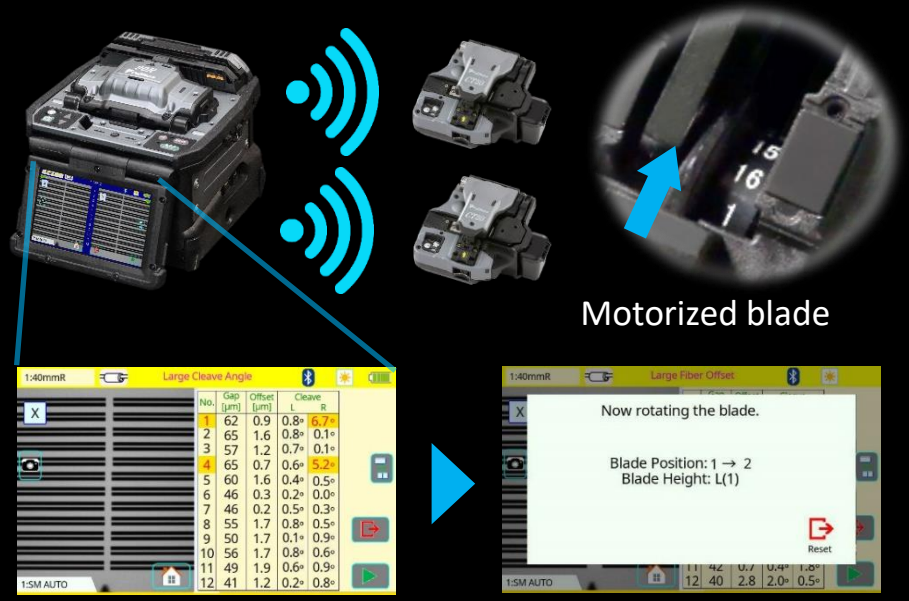
Single fiber

Active Blade Management Technology

ACTIVE BLADE
MANAGEMENT TECHNOLOGY

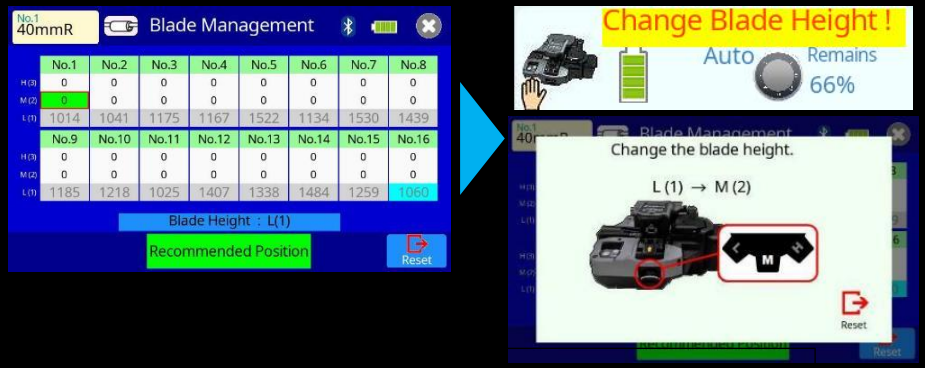
1. Active Blade rotation by motor

The 90R and CT50 fiber cleaver are provided with wireless data connectivity. This capability allows automatic cleaver blade rotation when the 90R judges the blade is worn. The 90R can be connected to two CT50 cleavers simultaneously.



2. Active Blade life management

The 90R displays the remaining blade life and informs the user when a blade height change, position change, or new blade is required.



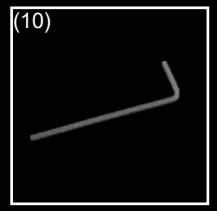
3. Stripping Condition Control

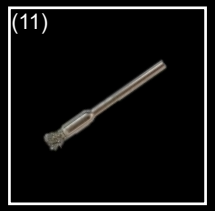
When the user changes the splice mode, e.g. from 12 fiber ribbon splice mode to SWR fiber splice mode, a wireless command from the splicer automatically changes the ribbon stripper RS03 heating temperature and time.

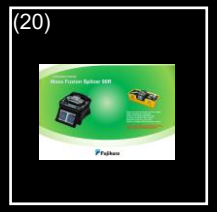
Standard Package

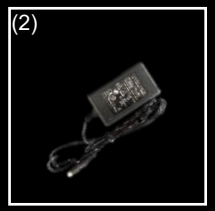
Item	Model	90R16	90R12
Mass Fusion Splicer	90R16	1 pc	—
	90R12	—	1 pc
(1) Battery Pack *	BTR-15	1 pc	
(2) AC Adapter	ADC-20	1 pc	
(3) AC Power Cord	ACC-14, 15, 16, 17 or 18	1 pc	
(4) USB Cable	USB-01	1 pc	
(5) Fusion Splicer Strap	ST-02	1 pc	
(6) Electrodes, on spare V-groove	ELCT2-16B	2 pair	1pair
(7) 16 fiber V-groove, spare	VG16-01, 250 to 255µm spacing	1 pc	—
(8) 16 fiber V-groove, spare	VG16-01-200, 200 to 210µm spacing	1 pc	—
(9) 12 fiber V-groove, spare	VG12-01, 250 to 255µm spacing	1 pc	
(10) Hexagonal Wrench	HEX-01	1 pc	
(11) V-groove Cleaning Brush	VCB-01	1 pc	
(12) Carrying Case	CC-39	1 pc	
(13) Work Tray Left	WT-09L	1 pc	
(14) Work Tray Right	WT-09R	1 pc	
(15) Work Tray J-Plate	JP-09	1 pc	
(16) Tripod Screw	TS-03	2 pcs	
(17) Carrying Case Strap	ST-03	1 pc	
(18) Alcohol Dispenser	AP-02	1 pc	
(19) Quick Reference Guide	QRG-03-E	1 pc	
(20) Instruction Manual	PDF file stored in Splicer RS03		
Ribbon Fiber Stripper	RS03	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, for cleaver	CC-37	1 pc	
(4) Hexagonal Wrench	HEX-01	1 pc	

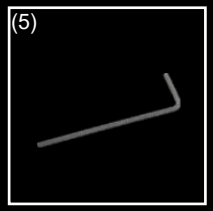
* Please follow IATA regulation when shipping the battery by air.

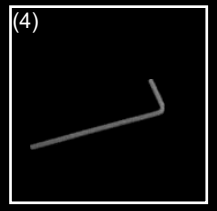










Specifications

90R16 Specifications

Item		Specification
Fiber alignment method		Self cladding alignment with surface melting tension
Fiber count can be spliced		90R16 : Single and up to 16 fiber ribbon
Applicable fiber	Fiber type	Single mode optical fiber
		Multi mode optical fiber
	Cladding dia.	Approx.125µm
Applicable coating	Fiber holder	Coating shape. : Refer to options
		Cleave length : Approx.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. 17 to 18sec.
		SM AUTO mode : Avg. 20 to 21sec.
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 FAST mode : Avg. 17 to 19sec.
		Single 60mm mode: Avg. 13 to 15sec.
Fiber tensile test force		Approx. 2.0N
Electrode life *4		Approx. 800 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°C
		Storage : -40 to 80°C
	Humidity	Operate : 0 to 95%RH non-condensing
		Storage : 0 to 95%RH non-condensing
	Altitude	Max. 2000m
AC adaptor	Input	AC100 to 240V, 50/60Hz, Max. 1.5A
Battery pack	Type	Rechargeable Lithium Ion
	Output	Approx. DC14.4V, 6380mAh
	Capacity *5	Approx. 130 splice and heat cycles
	Temperature	Recharge : 0 to 40°C
		Long Term Storage : -20 to 30°C
	Battery life *6	Approx. 500 recharge cycles
Display	LCD monitor	TFT 4.9 inches with touch screen
	Magnification	Approx. 15X : 16 ribbon to 60X : single
Illumination	V-grooves	LED lamp
Interface	PC	USB2.0 Mini B type
	External LED lamp	USB2.0 A type Approx. DC5V, 500mA
	Ribbon Stripper	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	10000 splices
	Splice image	100 images
Screw hole for tripod		1/4-20UNC
Other features	Automatic functions	Splice mode select by fiber count analysis
		Fusion power calibration
		Wind protector : open and close
		Heater lid : open and close
		Heater clamp : open and close
	Reference guide	Video and PDF file stored in splicer
	Electrode	Replaceable without tool

90R16 Options

Item	Model	Remark
V-groove	VG12-01-200	12 fiber ribbon, 200 to 210µm spacing
	VG16-01-200	16 fiber ribbon, 200 to 210µm spacing
Fiber holder	FH-70-200	200µm coating diameter
	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-70-10	10 fiber ribbon
	FH-70-12	12 fiber ribbon
	FH-70-16	16 fiber ribbon
	FH-70-12PC	Pitch conversion for 12 fiber ribbon
	FH-70-16PC	Pitch conversion for 16 fiber ribbon
	FH-70-12-200	12 fiber ribbon, 200 to 210µm spacing
	FH-70-16-200	16 fiber ribbon, 200 to 210µm spacing
	FH-FC-20	900µm in 2mm diameter cable
	FH-FC-30	900µm in 3mm diameter cable
	FH-60-LT900	900µm loose buffer cable
DC adapter	DCA-03	Connect AC adapter not through battery
DC power cord	DCC-20	Car cigar socket to BTR-15/DCA-03
	DCC-21	Car battery to BTR-15/DCA-03
	DCC-11	Splicer to ribbon stripper
Ribbonizing tool	FAT-04	2 to 16 fibers, 250µm diameter
Transfer Ccamp	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 fiber ribbon

Notes

*1 Measured with a cut-back method after splicing the same type of fibers.

*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) 16 fiber ribbon : Splice and heat time : 3.5 minutes cycle with FP-05 sleeve
(2) Using the splicer power save settings, subject to our testing condition.
(3) Using a not degraded battery
(4) At room temperature
(5)Without accessories ,RS03 etc., that use the power supply of the fusion splicer
The battery capacity changes when testing with different conditions from the above.

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

*7 Bluetooth® mark and logos are the registered trademarks of Bluetooth SIG, Inc.

Specifications

90R12 Specifications

Item		Specification
Fiber alignment method		Self cladding alignment with surface melting tension
Fiber count can be spliced		90R12 : Single and up to 12 fiber ribbon
Applicable fiber	Fiber type	Single mode optical fiber
		Multi mode optical fiber
	Cladding dia.	Approx.125µm
Applicable coating	Fiber holder	Coating shape. : Refer to options
		Cleave length : Approx.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. 16 to 17sec.
		SM AUTO mode : Avg. 19 to 20sec.
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 FAST mode : Avg. 17 to 19sec.
		Single 60mm mode: Avg. 13 to 15sec.
Fiber tensile test force		Approx. 2.0N
Electrode life *4		Approx. 1500 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°C
		Storage : -40 to 80°C
	Humidity	Operate : 0 to 95%RH non-condensing
		Storage : 0 to 95%RH non-condensing
	Altitude	Max. 3700m
AC adaptor	Input	AC100 to 240V, 50/60Hz, Max. 1.5A
Battery pack	Type	Rechargeable Lithium Ion
	Output	Approx. DC14.4V, 6380mAh
	Capacity *5	Approx. 165 splice and heat cycles
	Temperature	Recharge : 0 to 40°C
		Long Term Storage : -20 to 30°C
	Battery life *6	Approx. 500 recharge cycles
Display	LCD monitor	TFT 4.9 inches with touch screen
	Magnification	Approx. 20X : 12 ribbon to 60X : single
Illumination	V-grooves	LED lamp
Interface	PC	USB2.0 Mini B type
	External LED lamp	USB2.0 A type Approx. DC5V, 500mA
	Ribbon Stripper	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	10000 splices
	Splice image	100 images
Screw hole for tripod		1/4-20UNC
Other features	Automatic functions	Splice mode select by fiber count analysis
		Fusion power calibration
		Wind protector : open and close
		Heater lid : open and close
		Heater clamp : open and close
	Reference guide	Video and PDF file stored in splicer
	Electrode	Replaceable without tool

90R12 Options

Item	Model	Remark
V-groove	VG12-01-200	12 fiber ribbon, 200 to 210µm spacing
Fiber holder	FH-70-200	200µm coating diameter
	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-70-10	10 fiber ribbon
	FH-70-12	12 fiber ribbon
	FH-70-12PC	Pitch conversion for 12 fiber ribbon
	FH-70-12-200	12 fiber ribbon, 200 to 210µm spacing
	FH-FC-20	900µm in 2mm diameter cable
	FH-FC-30	900µm in 3mm diameter cable
	FH-60-LT900	900µm loose buffer cable
DC Adapter	DCA-03	Connect AC adapter not through battery
DC power cord	DCC-20	Car cigar socket to BTR-15/DCA-03
	DCC-21	Car battery to BTR-15/DCA-03
	DCC-11	Splicer to ribbon stripper
Ribbonizing Tool	FAT-04	2 to 16 fibers, 250µm diameter
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 fiber ribbon

Notes

*1 Measured with a cut-back method after splicing the same type of fibers.

*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) 12 fiber ribbon : Splice and heat time : 2 minutes cycle with FP-05 sleeve
(2) Using the splicer power save settings, subject to our testing condition.
(3) Using a not degraded battery
(4) At room temperature
(5)Without accessories ,RS03 etc., that use the power supply of the fusion splicer
The battery capacity changes when testing with different conditions from the above.

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

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Specifications

CT50 Specifications

Item		Specification
Applicable fiber	Fiber type	Single mode optical fiber
		Multi mode optical fiber
	Fiber count	Single and up to 16 fiber ribbon
	Cladding dia.	Approx. 125µm
Applicable coating	Fiber setting plate	AD-10-M24 : Max. 900µm coating diameter
		AD-50 : Max. 3mm coating diameter
		AD-16A : Max. 900µm coating diameter 1 fiber + Max. 250µm coating diameter 1 fiber
	Fiber holder	Coating shape. : Refer to splicer options
Cleave length	Fiber setting plate	AD-10-M24 : 5 to 20mm *1
		AD-50 *C.D. : coating diameter C.D. = 250µm or less : 5 to 20mm *1 250µm < C.D. < =900µm : 10 to 20mm 900µm < C.D. < =3mm : 14 to 20mm
		AD-16A : 5〜20mm *1
	Fiber holder	Approx. 10mm
Cleave angle *2	Single fiber	Avg. 0.3 to 0.9 degrees
	Fiber ribbon	Avg. 0.3 to 1.2 degrees
Blade life *3		Approx. 60000 fiber cleaves
Physical description	Dimensions W	Approx. 117mm without projection *4
	Dimensions D	Approx. 94mm without projection *4
	Dimensions H	Approx. 59mm without projection *4
	Weight	Approx. 306g including battery and AD-10-M24
Environmental condition	Temperature	Operate : -10 to 50°C
		Storage : -40 to 80°C
	Humidity	Operate : 0 to 95%RH non-condensing
		Storage : 0 to 95%RH non-condensing
Battery		2 pieces of LR03, AAA dry battery
Wireless interface *5		Bluetooth 4.1 LE
Screw hole for tripod		1/4-20UNC
Holding mechanism for the fiber holder		Equipped
Other features	Blade rotation	Motorized rotation / Manual rotation dial
	Replaceable parts	Blade / Clamp arm

CT50 Options

Item	Model	Remark
Fiber Setting Plate	AD-50	Optional fiber setting plate
	AD-16A	Optional fiber setting plate
Blade	CB-08	Blade for replacement
Clamp Arm	ARM-CT50-01	Clamp arm with anvil for replacement
Fiber Scrap Collector	FDB-05	Spare scrap collector
Side cover	SC-CT50-01	Side cover instead of scrap collector
Spacer	SPA-CT08-10	Cleave length 10mm
	SPA-CT08-09	Cleave length 9mm
	SPA-CT08-08	Cleave length 8mm

Notes

*1 When the cleave length is less than 10mm, the coating diameter should be 250µm or less. Also, a blade height adjustment is required before cleaving. The average cleave angle is worse than the specification when the cleave length is less than 10mm.

*2 Measured with an interferometer at room temperature, not with a splicer. A new blade was used to cleave both the single fibers and ribbon fibers. The average cleave angle changes depending on the environmental conditions, blade condition, operating method, and cleanliness.

*3 The blade life changes depending on the environmental conditions, operating method, and the fiber type cleaved.

*4 Measured in a condition when closing the lever.

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RS03 Specifications

Item		Specification
Applicable fiber	Fiber type	Single mode optical fiber
		Multi mode optical fiber
	Fiber count	Single and up to 16 fiber ribbon
	Cladding dia.	Approx. 125µm
	Coating dia.	200 to 400µm
Stripping length		Max. 35mm
Heat time *1		Approx. 3sec
		Approx. 5sec with Eco-mode
Heat temperature		85 to 140 °C
Physical description	Dimensions W	Approx.156mm without projection
	Dimensions D	Approx.49mm without projection
	Dimensions H	Approx.37mm without projection
	Weight	Approx. 265g including battery
Environmental condition	Temperature	Operate : -10 to 50°C
		Storage : -40 to 80°C
	Humidity	Operate : 0 to 95%RH non-condensing
		Storage : 0 to 95%RH non-condensing
AC adaptor	Input	AC100 to 240V, 50/60Hz, Max. 0.58A
DC input		DC10 to 17V, Approx. 1A
Battery pack	Type	Rechargeable Lithium Ion
	Output	Approx. DC7.2V, 1840mAh
	Capacity *2	Approx. 600 times with Eco-mode
	Temperature	Operate : -10 to 50°C
		Recharge : 0 to 40°C
		Long Term Storage : -20 to 30°C
	Battery life *3	Approx. 500 recharge cycles
Wireless interface *4		Bluetooth 4.1 LE
Other features	Stripping force	Lower stripping force design
	Automatic heat setting	Controlled from splicer or smartphone

RS03 Options

Item	Model	Remark
Spacer	SPA-RS02-08	Coating length 8mm
DC power cord	DCC-11	Splicer to ribbon fiber stripper

Notes

*1 Measured at room temperature. The heat time changes depending on the environmental conditions and fiber coating type.

*2 Tested at room temperature with a not degraded battery and Eco-mode. The number of cycles changes depending on the environmental conditions, stripper settings and battery degrading condition.

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

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91330-2411-0098-14

Clad Alignment Fusion Splicer

45S

The Essential Splicer

Faster operation
User-friendly design
Consistent quality

Fujikura

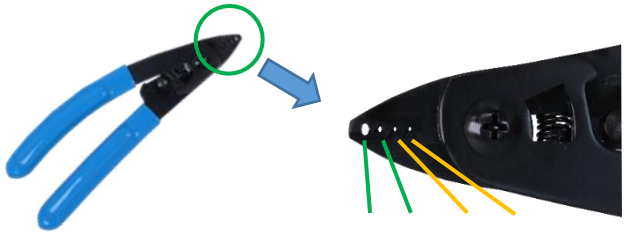
Faster operation

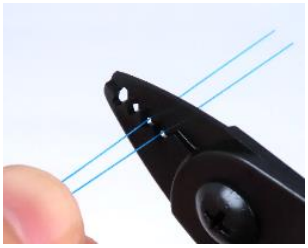
■Simultaneous fiber preparation

Fiber preparation, stripping, cleaving, and setting in the splicer usually needs repeating separately for both left and right-side fibers. The 45S process does away with that and enables simultaneous fiber preparation thanks to the new SS05 fiber stripper, the new AD-16A fiber adapter for the CT50 cleaver and the clever set plate mechanism of the 45S itself.

●Simultaneous fiber stripping

The SS05 fiber stripper is equipped with four blades: ① for 2mm/3mm, ② for 900µm, ③④ for 250µm fibers. Using blades ③ & ④ allows simultaneous stripping of 250µm fibers.

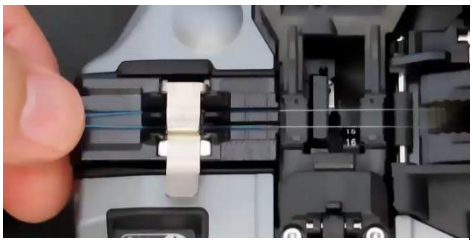




Fiber Stripper SS05

●Simultaneous fiber cleaving

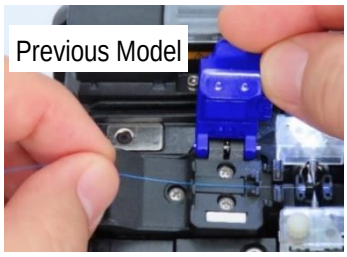
The new AD-16A fiber adapter for the CT50 cleaver is equipped with two grooves. Placing one fiber in each groove provides simultaneous cleaving.



Optical Fiber Cleaver CT50

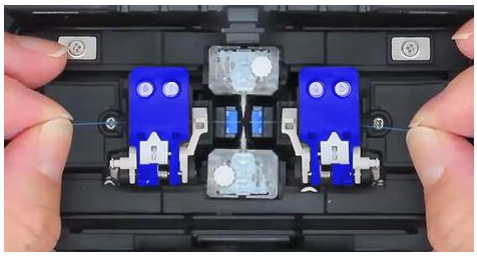
●Simultaneous fiber setting

Previous fusion splicers required two-handed operation to close fiber clamp and hold the fiber. Thanks to a new clamp mechanism, the 45S close with fiber setting and provides one-handed fiber setting and simultaneous fiber setting.



Two-handed

One-handed



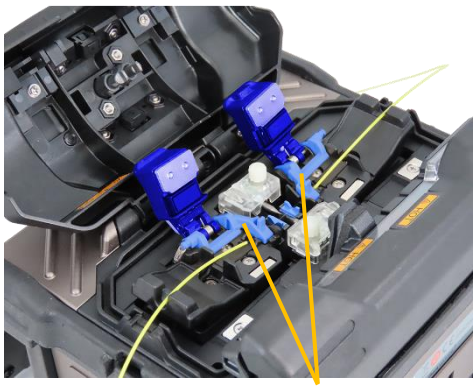
Simultaneously fiber setting

Refer to the movie

Faster operation

■Faster fiber transportation time

The 45S is equipped with a mechanism linking the wind protector and fiber clamp so when you open wind protector, the fiber clamps open automatically.
The 45S is also equipped with retention clamps which are reputed by our conventional fusion splicer models. The retention clamps prevent the fiber from jumping out after the fiber clamps are opened.
These mechanisms work in tandem to provide easy fiber handling and a reduction in the time it takes to transfer the fiber to the heater.



Fiber retention clamps

Refer to the movie

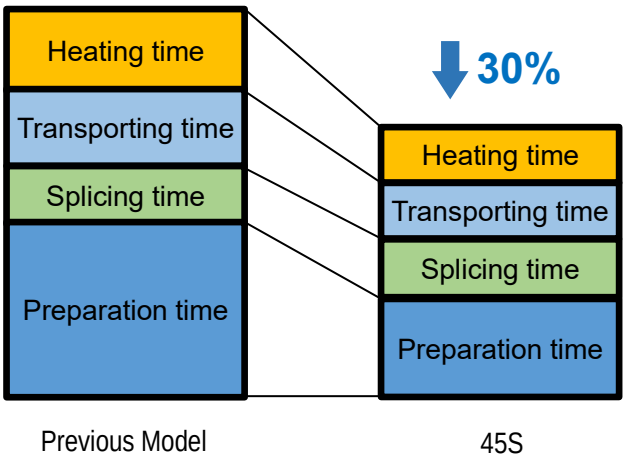
■Faster heating time

The heater for shrinking the protection sleeve is designed to heat the protection sleeve between two heaters in the front and rear.
It shortens 15% of the heating time in case of using FP-03 sleeve.

※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. In addition, since the heating operation is constantly optimized, the average heating time changes depending on the usage conditions of the fusion splicer.

■30% faster than previous model

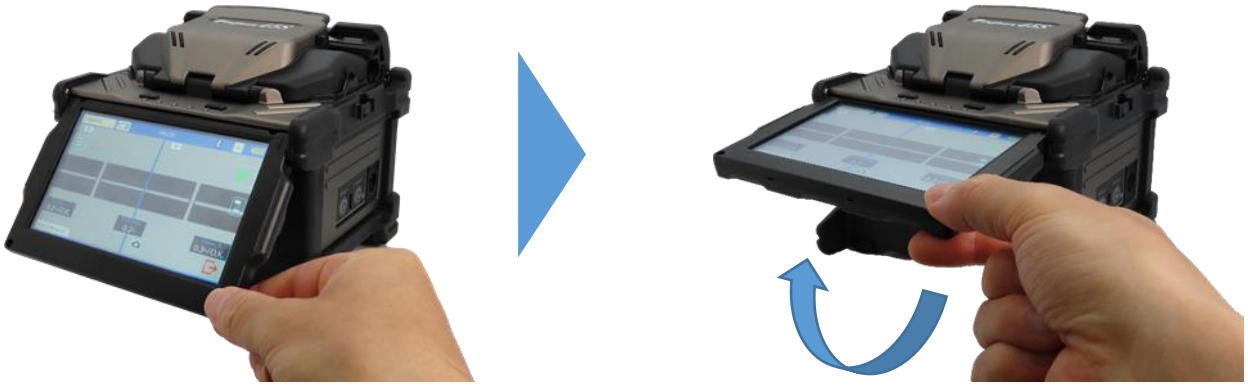
Thanks to the way the 45S streamlines the preparation process, reduces transport time and delivers faster heating, it is 30% faster than the 41S+ it replaces.



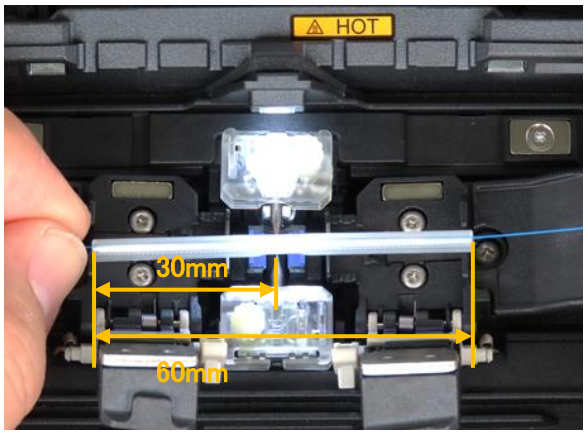
User-friendly design

■Movable LCD monitor

The 45S is equipped with a movable 4.95-inch color LCD monitor to ensure optimum visibility in a range of conditions, even when outside under direct sunlight.



■Easy sleeve positioning



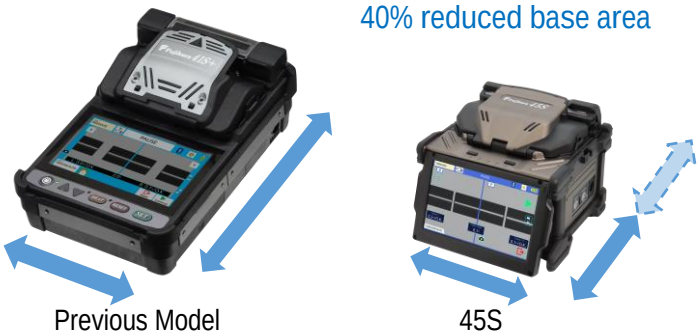
The space between the edges of the left and right fiber clamp edges is 60mm, as per the image to the left. This distance allows for easy sleeve positioning, with the splice point positioned in the middle of the sleeve. The scale on the heater shows the guide for other sleeve lengths, for example 40mm.

■Removable battery

The removable battery makes replacement easy and convenient.

■Smaller footprint

The cube shape provides a reduced base area while also giving the user a large operating space.



User-friendly design

■Carrying case with work tray

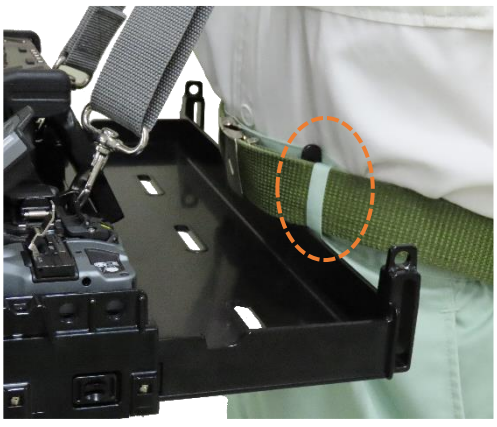
The configurable 45S carrying case provides various usage configurations.

Configuration example 1
Open the carrying case and start operation.

Configuration example 2
Remove the work tray and put on top of the carrying case.

Removing the work tray from the carrying case allows the tray to expand. Using the work tray with the strap provides a portable work surface and the strap can be fixed to the work tray at the sides of the splicer to secure the usability.

Secure working space



Increased security when used with a belt

Consistent quality

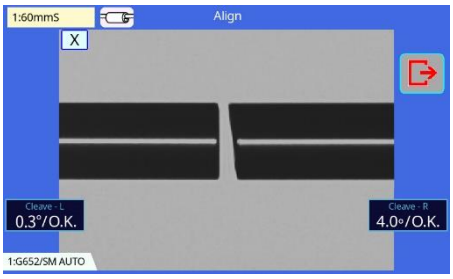
■Active Fusion Control

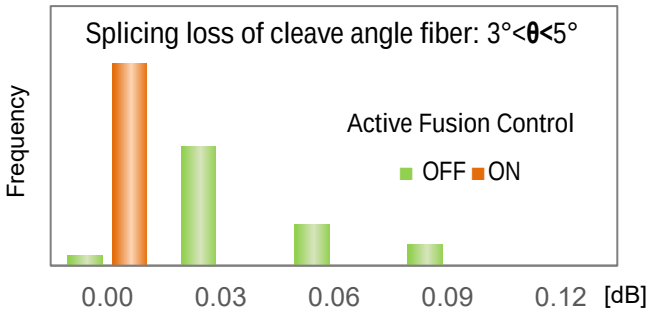
The 45S is equipped with Fujikura Active Fusion Control Technology, which analyses the fiber image during fusion and controls the arc discharge accordingly. The result is stable splice loss irrespective of the environment.

ACTIVE FUSION
CONTROL TECHNOLOGY

●Control by fiber cleaved surface

A bad cleave end face is a potential reason for high splice loss. The 45S can address this because it's equipped to control fusion according to the condition of the cleaved surface. This function helps reduce splice loss by compensating for poor cleaves.

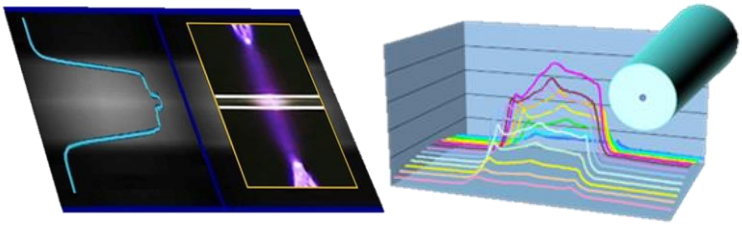




※Fujikura test result of ITU-T G652 fibers measured by cut-back method.
The splice loss may vary depending on operating environment or fiber characteristics.

●Real-time fusion control

The 45S analyses the fiber image during fusion and controls fusion power according to the real-time condition of the fiber. This helps to minimize splice loss irrespective of the environment.



Analyzing fiber image during fusion

This process also provides Warm Splice Image (WSI) technology. WSI analyses during the splice and provides loss estimation, even though the 45S is a clad alignment splicer.
It would help to prevent the case of "good loss estimation but bad actual loss".

■Active Blade Management

The 45S monitors the blade condition of the CT50 cleaver via wireless communication.
When the 45S judges that the blade is worn, it will command the CT50 to rotate the blade to a new position to ensure the CT50 keeps delivering consistent cleaving performance.

ACTIVE BLADE
MANAGEMENT TECHNOLOGY

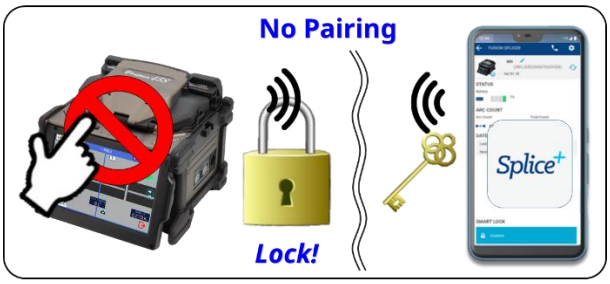
Additional features

■Splice+ app

The Splice+ app provides convenient splicer management by wireless communications, between the 45S and mobile phone.

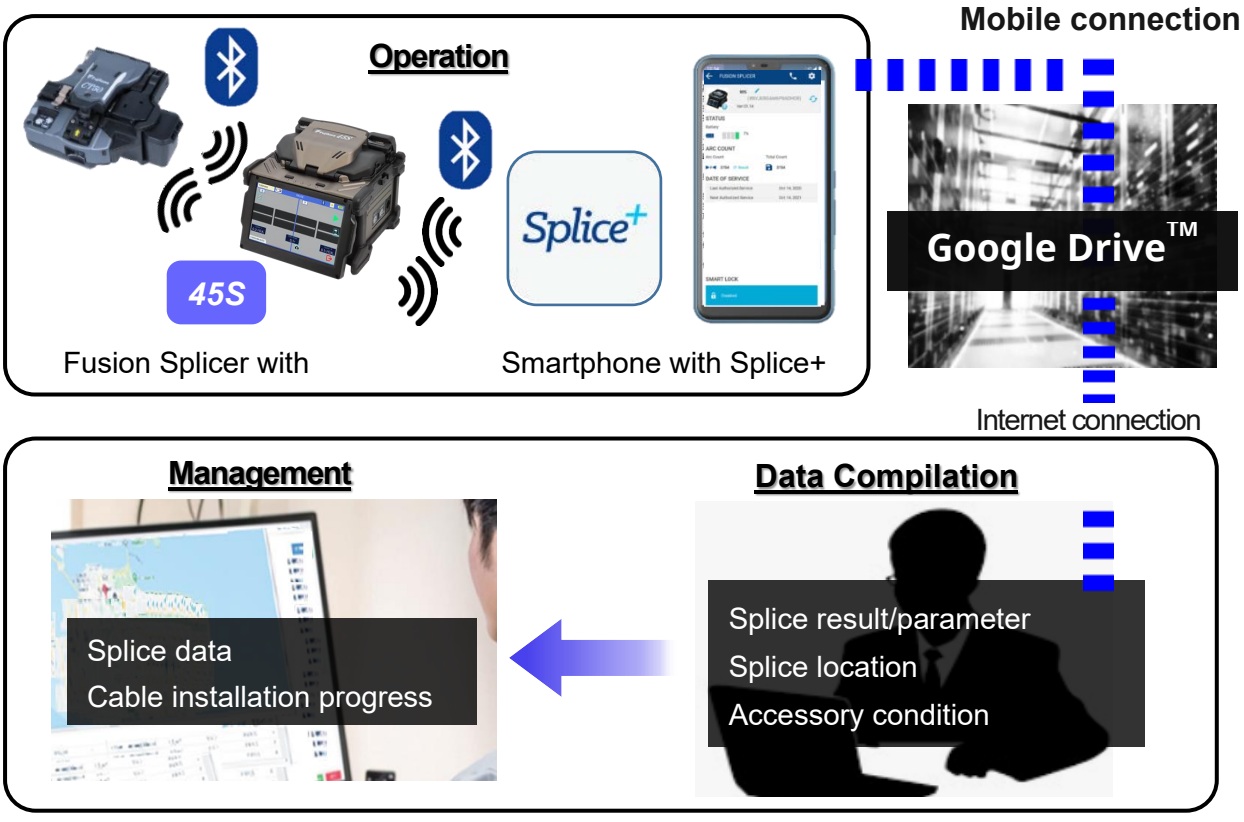
●Smart lock

A break in the pairing of wireless communication between the splicer and mobile phone can lock the splicer which prevents misuse and works as an anti-theft measure.



●Data management

The data management function retrieves data from the splicer and saves it to the cloud. This data can include the GPS data of a phone, which is useful for splicer operation management.



You can find and obtain Splice+ App from Google Play and App Store.

GET IT ON Google Play

Download on the App Store

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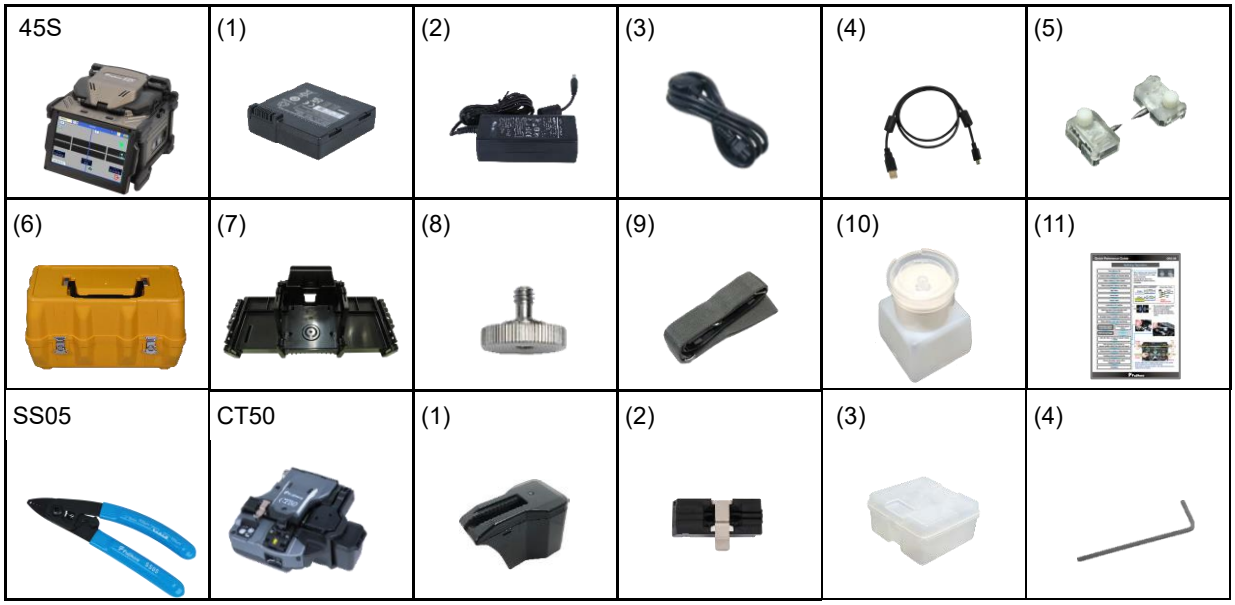
Google Drive is trademarks of Google LLC.

Specifications／Items

45S Standard Items

Item	Model	Qty
Clad Alignment Fusion Splicer	45S	1 pc
(1) Battery Pack *	BTR-17	1 pc
(2) AC Adapter	ADC-21	1 pc
(3) AC Power Cord	ACC-08, 09, 10, 11 or 12	1 pc
(4) USB Cable	USB-01	1 pc
(5) Electrodes, for spare	ELCT2-16B	1 pair
(6) Carrying Case	CC-45	1 pc
(7) Work Tray	WT-10	1 pc
(8) Tripod Screw	TS-03	1 pc
(9) Carrying Case Strap	ST-04	1 pc
(10) Alcohol Dispenser	AP-02	1 pc
(11) Quick Reference Guide	QRG-08-E, C or J	1 pc
Single Fiber Stripper	SS05	1 pc
Optical Fiber Cleaver	CT50	1 pc
(1) Fiber Scrap Collector	FDB-05	1 pc
(2) Fiber Setting Plate	AD-16A	1 pc
(3) Case, for cleaver	CC-37	1 pc
(4) Hexagonal Wrench	HEX-01	1 pc

＊Please follow IATA regulation when shipping the battery by air



45S Options

Item	Model	Remarks
Fiber Holder	FH-70-200	200μm coating diameter
	FH-70-250	250μm coating diameter
	FH-70-900	900μm coating diameter
	FH-FC-20	900μm in 2mm diameter cable
	FH-FC-30	900μm in 3mm diameter cable
Sheath Clamp	CLAMP-S35B	900μm loose buffer cable
Fiber holder set plate	SP-04	Fiber holder set base
Transfer Clamp	CLAMP-DC-12	Transferring drop cable on work tray
Protection sleeve	FP-03	60mm, Max. 900μm coating diameter
	FP-03(L=40)	40mm, Max. 900μm coating diameter
	FP-03M	FP-03 with magnetic material
Battery Charger	BTC-17	Battery Charger Body Capable of charging 2 pcs of BTR-17 simultaneously
	ADC-21	AC Adapter
	ACC-08, 09, 10, 11 or 12	AC Power Cord

Specifications／Items

45S Specifications

Item		Specification
Fiber alignment method		Active clad alignment
Fiber count can be spliced		Single fiber
Applicable fiber	Fiber type	Single mode optical fiber
		Multi mode optical fiber
	Cladding dia.	Approx.125μm
Applicable coating	Sheath clamp	Coating dia. : Max. 3000μm
		Cleave length : 5 to 16mm *1
Fiber splice performance	Splice loss *2	ITU-T G.652 : Avg. 0.03dB
		ITU-T G.651 : Avg. 0.01dB
		ITU-T G.653 : Avg. 0.05dB
		ITU-T G.655 : Avg. 0.05dB
		ITU-T G.657 : Avg. 0.03dB
	Splice time *3	SM FAST mode : Avg. 6 to 8sec.
Applicable Protection sleeve	Sleeve type	Heat shrinkable sleeve
	Sleeve length	Max. 66mm
	Sleeve dia.	Max. 6.0mm before shrinking
Sleeve heat performance	Heat time *4	60mm mode : Avg. 21 to 23sec.
		60mm slim mode : Avg. 16 to 18sec.
Fiber tensile test force		Approx. 2.0N
Electrode life *5		Approx. 6,000 splices
Physical description	Dimensions W	Approx.131mm without projection
	Dimensions D	Approx.123mm without projection
	Dimensions H	Approx.121mm without projection
	Weight	Approx. 1.4kg including battery
Environmental condition	Temperature	Operate: -10 to 50 °C
		Storage: -40 to 80 °C
	Humidity	Operate: 0 to 95%RH non-condensing
		Storage: 0 to 95%RH non-condensing
	Altitude	Max. 5000m
AC adaptor	Input	AC100 to 240V, 50/60Hz, Max. 1A
Battery pack	Type	Rechargeable Lithium Ion
	Output	Approx. DC14.4V, 3190mAh
	Capacity *6	60mm mode: Approx. 200 splice and heat cycles
		60mm slim mode : Approx. 230 splice and heat cycles
	Temperature	Recharge: 0 to 40 °C
		Long Term Storage : -20 to 30 °C
	Battery life *7	Approx. 500 recharge cycles
Display	LCD monitor	TFT 4.95 inches with touch screen
	Magnification	Approx. 132 to 300x
Illumination	V-grooves	LED lamp
Interface	PC	USB2.0 Mini B type
	External LED lamp	USB2.0 A type Approx. DC5V, 500mA
	Wireless *8	Bluetooth 5.2
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	Fusion control
		Blade management and control
	Reference guide	PDF file stored in splicer
	Sheath clamp	Open with/without Wind Protector
		Close with fiber setting
		Easy sleeve positioning clamp
	Electrode	Replaceable without tool

Notes

*1 Cleave length range depending on fiber type
5 to 16mm : 125μm cladding dia. and 250μm coating dia.
10 to 16mm : 125μm cladding dia. and 400 or 900μm coating dia.

*2 Measured with a cut-back method after splicing the same type of fibers. The average splice loss changes depending on the environmental condition and fiber characteristics.

*3 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.

*4 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. In addition, since the heating operation is constantly optimized, the average heating time changes depending on the usage conditions of the fusion splicer.

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

*6 Test condition
(1) Splice and heat time:1 minute cycle
(2) Using the splicer power save settings, subject to our testing condition.
(3) Using a not degraded battery
(4) At room temperature
The battery capacity changes when testing with a different conditions from the above.

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

*8 Bluetooth® mark and logos are the registered trademarks of Bluetooth SIG, Inc.

Specifications／Items

CT50 Specifications

Item		Specification
Applicable fiber	Fiber type	Single mode optical fiber
		Multi mode optical fiber
	Fiber count	Single and up to 16 fiber ribbon
	Cladding dia.	Approx. 125μm
Applicable coating	Fiber setting plate	AD-10-M24: Max. 900μm coating diameter
		AD-50: Max. 3mm coating diameter
		AD-16A : Max. 900μm coating diameter 1 fiber + Max. 250μm coating diameter 1 fiber
	Fiber holder	Coating shape: Refer to splicer options
Cleave length	Fiber setting plate	AD-10-M24: 5 to 20mm *1
		AD-50 *C.D. : coating diameter C.D. = 250μm or less : 5 to 20mm *1 250μm < C.D. < =900μm: 10 to 20mm 900μm < C.D. < =3mm : 14 to 20mm
		AD-16A : 5 to 20mm *1
	Fiber holder	Approx. 10mm
Cleave angle *2	Single fiber	Avg. 0.3 to 0.9 degrees
	Fiber ribbon	Avg. 0.3 to 1.2 degrees
Blade life *3		Approx. 60000 fiber cleaves
Physical description	Dimensions W	Approx. 117mm without projection *4
	Dimensions D	Approx. 94mm without projection *4
	Dimensions H	Approx. 59mm without projection *4
	Weight	Approx. 306g including battery and AD-10-M24
Environmental condition	Temperature	Operate: -10 to 50°C
		Storage: -40 to 80°C
	Humidity	Operate: 0 to 95%RH non-condensing
		Storage: 0 to 95%RH non-condensing
Battery		2 pieces of LR03, AAA dry battery
Wireless interface *5		Bluetooth 4.1 LE
Screw hole for tripod		1/4-20UNC
Holding mechanism for the fiber holder		Equipped
Other features	Blade rotation	Motorized rotation
		Manual rotation dial
	Replaceable parts	Blade
		Clamp arm

Notes

*1 When the cleave length is less than 10mm, the coating diameter should be 250μm or less. Also, a blade height adjustment is required before cleaving. The average cleave angle is worse than the specification when the cleave length is less than 10mm.
*2 Measured with an interferometer at room temperature, not with a splicer. A new blade was used to cleave both the single fibers and ribbon fibers. The average cleave angle changes depending on the environmental conditions, blade condition, operating method, and cleanliness.
*3 The blade life changes depending on the environmental conditions, operating method, and the fiber type cleaved.
*4 Measured in a condition when closing the lever.
*5 Bluetooth® mark and logos are the registered trademarks of Bluetooth SIG, Inc.

CT50 Options

Item	Model	Remark
Fiber Setting Plate	AD-50	Max. 3mm coating diameter
	AD-10-M24	Max. 900μm coating diameter
	AD-16A	Max. 900μm coating diameter 1 fiber + Max. 250μm coating diameter 1 fiber
Blade	CB-08	Blade for replacement
Clamp Arm	ARM-CT50-01	Clamp arm with anvil for replacement
Fiber Scrap Collector	FDB-05	Spare scrap collector
Side cover	SC-CT50-01	Side cover instead of scrap collector
Spacer	SPA-CT08-10	Cleave length 10mm
	SPA-CT08-09	Cleave length 9mm
	SPA-CT08-08	Cleave length 8mm

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91360-2502-0155-04

Mass Fusion Splicer 41R kit

Smart Management

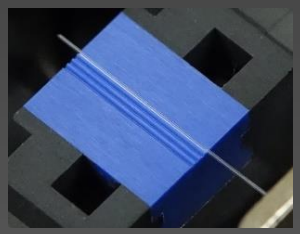
Fujikura

Active Fusion Control Technology

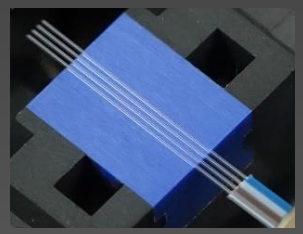
ACTIVE FUSION
CONTROL TECHNOLOGY

1. Active Fusion control by fiber count

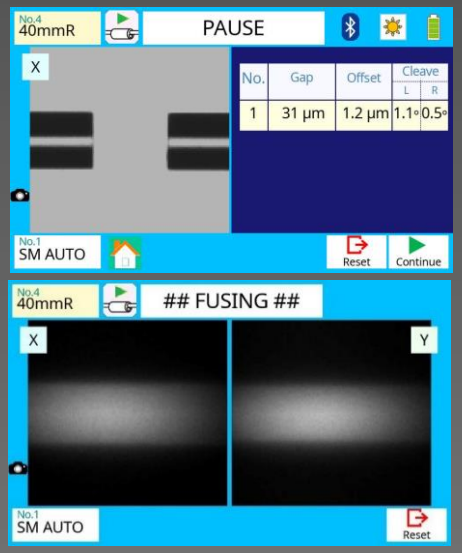
The 41R automatically determines the number of optical fibers from a single to maximum of 4 fiber ribbon. It minimizes splice loss by performing fusion splicing according to the number of fibers.

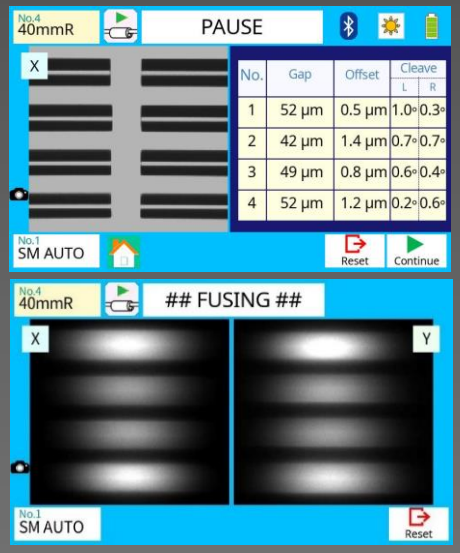


Single fiber



4 fiber ribbon

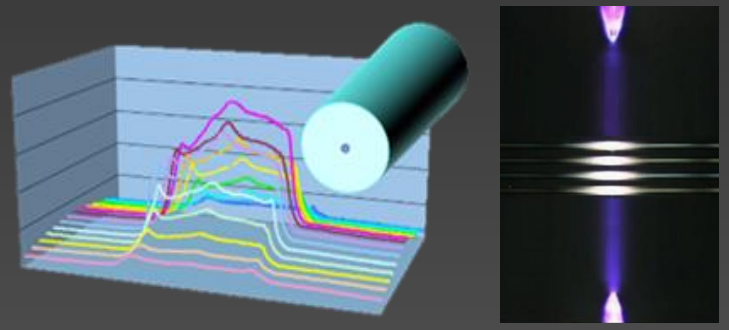




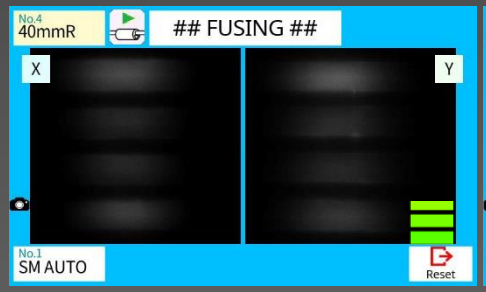
Automatic fusion control by fiber count

2. Active Fusion control in real-time

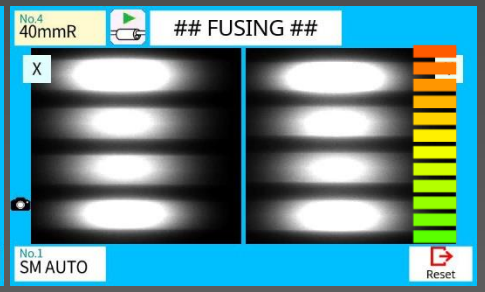
The 41R features real-time fusion power control by analyzing the fiber's brightness intensity during splicing. Therefore, it can splice the fiber using appropriate fusion parameters. The 41R does not have active core alignment mechanisms, however, during fusion, fiber surface tension effects minimize preexisting offsets.



Analyzing Brightness Intensity

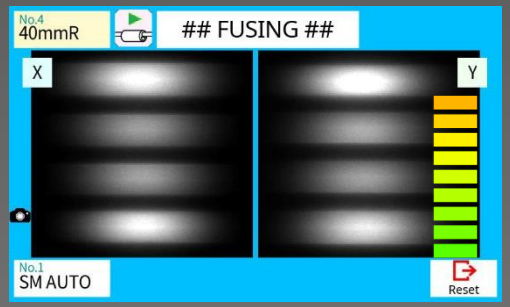


Fiber brightness : Weak



Fiber brightness : Strong

Real-time Fusion control



Fiber brightness : Appropriate

Real-time Fusion control

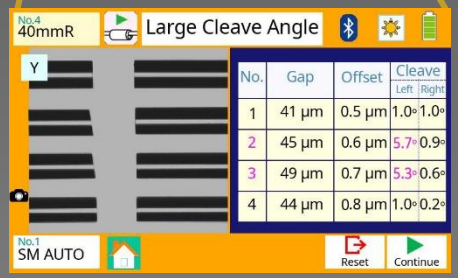
Active Blade Management Technology

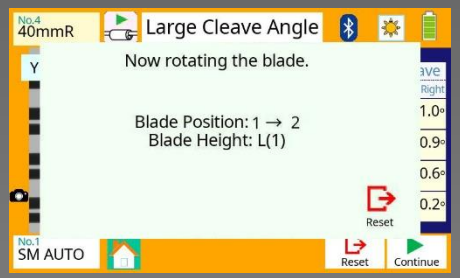
ACTIVE BLADE
MANAGEMENT TECHNOLOGY

1. Active Blade rotation by motor

The 41R 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.

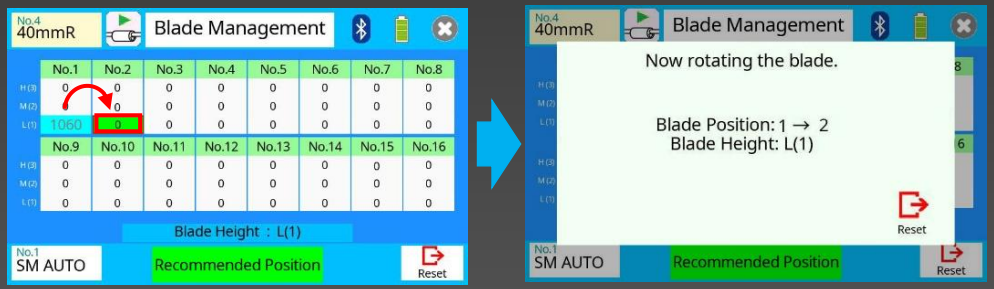
Motorized blade



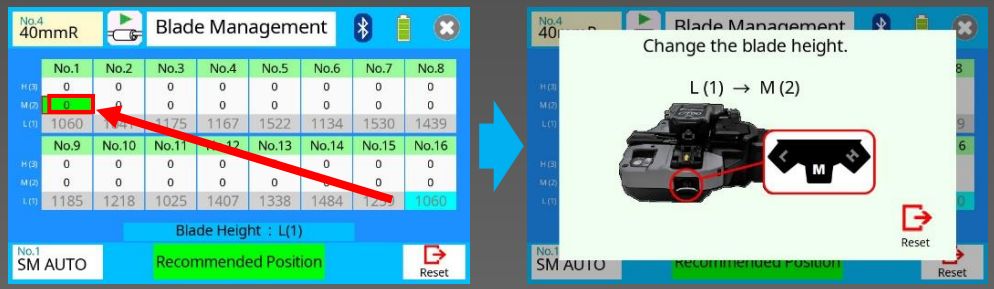


2. Active Blade life management

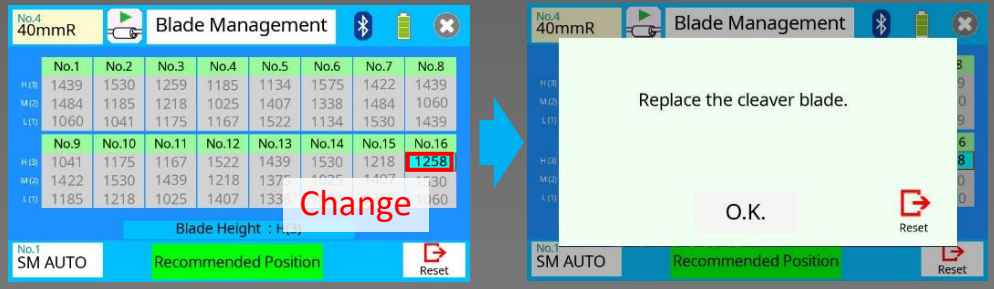
The 41R fusion splicer displays the remaining blade life and informs the user when a blade height change, position change, or new blade is required.



Instructions for changing position



Instructions for changing height

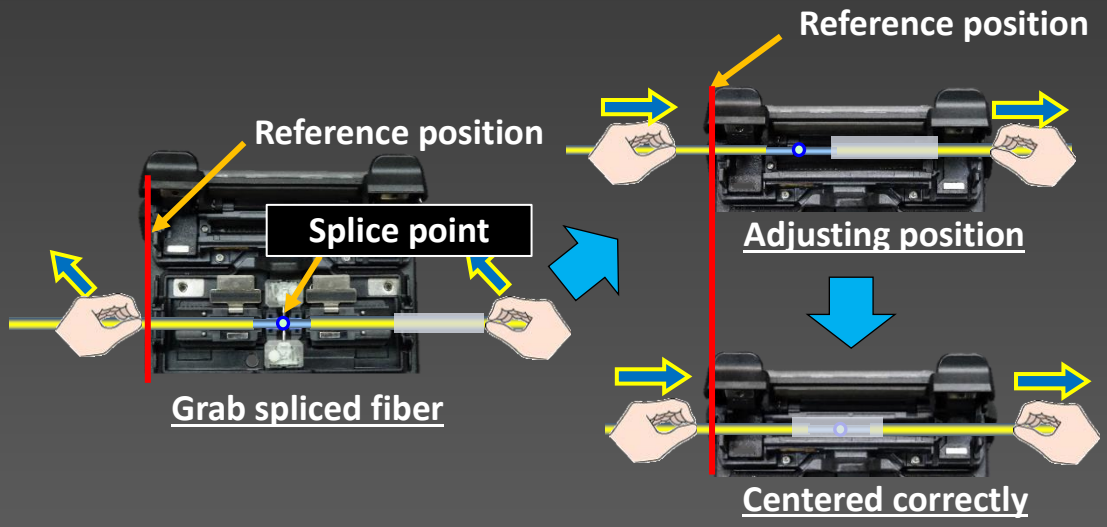


Instructions for changing new blade

Well-developed operability

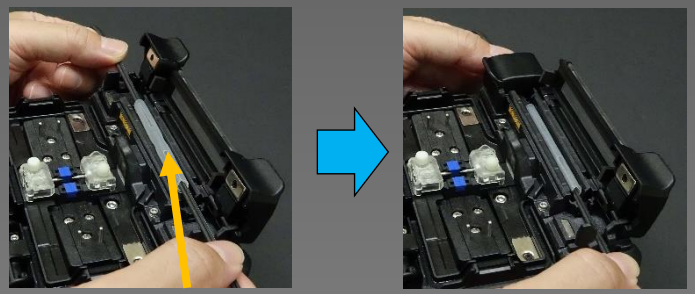
1. Simple sleeve centering

The 41R mass fusion splicer features simple sleeve positioning with its designated centering area on top of the tube heater.



2. Universal Tube Heater

The 41R mass fusion splicer can accommodate a max 6.0mm (before shrinking) diameter protection sleeve. As a result, it supports a wide range of protection sleeve sizes.

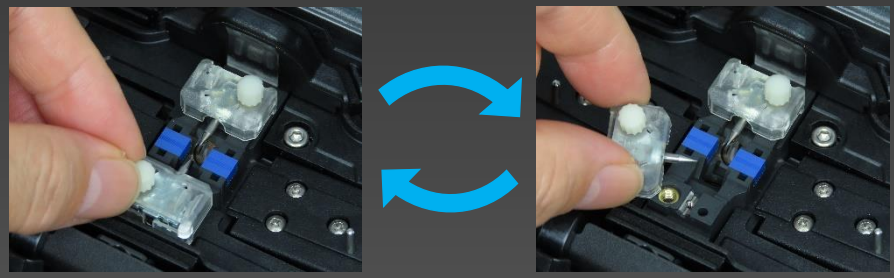


Max. 6.0mm diameter before shrinking

3. Easy replacement of consumable parts

3-1 Tool-less Electrode replacement

The 41R electrode comes as an assembly including the fixing screw. The screw can be tightened by hand without tools, enabling easy electrode replacement.



Electrode replacement without tools

3-2 Easy Maintenance

The CT50 fiber cleaver has a user replaceable blade and rubber clamps - there's no need to send the device to a service center for blade or clamp replacement.

Replaceable rubber clamps **Replaceable cleaver blade**

4. Carrying Case

There are multiple ways to utilize the 41R carrying case. The 41R is ready to use just by opening the case, but it is also possible to place the tray on top of the carrying case or only with the work tray depending on the work environment.

5. Work Tray

The tray incorporates a drawer which can be slid open to provide more work-space. A locking mechanism is also provided which secures the alcohol pot in place

Splicing on the Carrying Case

Ready to use !

Expandable work tray structure

Stable aerial operation with belts

Standard Package

41R Standard Package

Item	Model	Qty
Mass Fusion Splicer	41R	1 pc
(1) Battery Pack *	BTR-11A	1 pc
(2) AC Adapter	ADC-19A	1 pc
(3) AC Power Cord	ACC-08, 09, 10, 11 or 12	1 pc
(4) USB Cable	USB-01	1 pc
(5) Electrodes, for spare	ELCT2-16B	1 pair
(6) V-groove Cleaning Brush	VCB-01	1 pc
(7) Carrying Case	CC-36	1 pc
(8) Work tray	WT-08	1 pc
(9) Tripod Screw	TS-03	1 pc
(10) Carrying Case Strap	ST-03	1 pc
(11) Alcohol Dispenser	AP-02	1 pc
(12) Quick Reference Guide	QRG-04-E	1 pc
(13) Instruction Manual	PDF file stored in Splicer	
Single Fiber Stripper	SS03	1 pc
Ribbon Fiber Stripper	RS03	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
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, for cleaver	CC-37	1 pc
(4) Hexagonal Wrench	HEX-01	1 pc

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



(1)


(2)


(3)


(4)


(5)


(6)


(7)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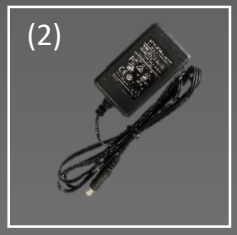
(12)


(13)

Instruction manual
Mass Fusion Splicer 41R
Fujikura



(1)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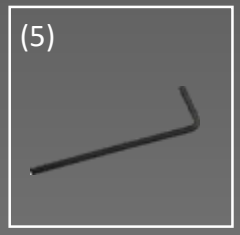
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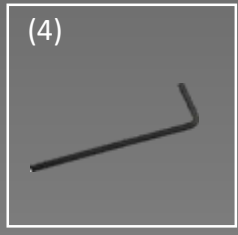
(4)

Specifications

41R Specifications

Item		Specification
Fiber alignment method		Self cladding alignment with surface melting tension
Fiber count can be spliced		Single and up to 4 fiber ribbon
Applicable fiber	Fiber type	Single mode optical fiber
		Multi mode optical fiber
	Cladding dia.	Approx.125µm
Applicable coating	Fiber holder	Coating shape. : Refer to options
		Cleave length : Approx. 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. 10 to 12sec.
		SM AUTO mode : Avg. 15 to 18sec.
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-04T mode : Avg. 29 to 30sec.
		Single 60mm mode: Avg. 25 to 27sec.
Fiber tensile test force		Approx. 2.0N
Electrode life *4		Approx. 2000 splices
Physical description	Dimensions W	Approx.131mm without projection
	Dimensions D	Approx.201mm without projection
	Dimensions H	Approx.79mm without projection
	Weight	Approx. 1.2kg including battery
Environmental condition	Temperature	Operate : -10 to 50°C
		Storage : -40 to 80°C
	Humidity	Operate : 0 to 95%RH non-condensing
		Storage : 0 to 95%RH non-condensing
	Altitude	Max. 3700m
AC adaptor	Input	AC100 to 240V, 50/60Hz, Max. 1.5A
Battery pack	Type	Rechargeable Lithium Ion
	Output	Approx. DC14.4V, 3190mAh
	Capacity *5	Approx. 140 splice and heat cycles
	Temperature	Recharge : 0 to 40°C
		Long Term Storage : -20 to 30°C
	Battery life *6	Approx. 500 recharge cycles
Display	LCD monitor	TFT 4.9 inches with touch screen
	Magnification	Approx. 44 to 66X
Illumination	V-grooves	LED lamp
Interface	PC	USB2.0 Mini B type
	External LED lamp	USB2.0 A type Approx. DC5V, 500mA
	Wireless *7	Bluetooth 4.1 LE
Data storage	Splice mode	100 splice modes
	Heat mode	30 heat modes
	Splice result	10000 splices
	Splice image	100 images
Screw hole for tripod		1/4-20UNC
Other features	Automatic functions	Splice mode select by fiber count analysis
		Fusion power calibration
	Reference guide	PDF file stored in splicer
	Electrode	Replaceable without tool

41R Options

Item	Model	Remark
Fiber holder	FH-70-200	200µm coating diameter
	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-FC-20	900µm in 2mm diameter cable
	FH-FC-30	900µm in 3mm diameter cable
	FH-60-LT900	900µm loose buffer cable
Transfer Clamp	CLAMP-DC-12	Transferring drop cable on work tray
Protection sleeve	FP-04(T)	40mm, up to 8 fiber ribbon

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 minute cycle
(2) Using the splicer power save settings, subject to our testing condition.
(3) Using a not degraded battery
(4) At room temperature
The battery capacity changes when testing with different conditions to the above.

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

*7 Bluetooth® mark and logos are the registered trademarks of Bluetooth SIG, Inc.

Specifications

CT50 Specifications

Item		Specification
Applicable fiber	Fiber type	Single mode optical fiber
		Multi mode optical fiber
	Fiber count	Single and up to 16 fiber ribbon
	Cladding dia.	Approx. 125µm
Applicable coating	Fiber setting plate	AD-10-M24 : Max. 900µm coating diameter
		AD-50 : Max. 3mm coating diameter
		AD-16A : Max. 900µm coating diameter 1 fiber + Max. 250µm coating diameter 1 fiber
	Fiber holder	Coating shape. : Refer to splicer options
Cleave length	Fiber setting plate	AD-10-M24 : 5 to 20mm *1
		AD-50 *C.D. : coating diameter C.D. = 250µm or less : 5 to 20mm *1 250µm < C.D. < =900µm : 10 to 20mm 900µm < C.D. < =3mm : 14 to 20mm
		AD-16A : 5 to 20mm *1
	Fiber holder	Approx. 10mm
Cleave angle *2	Single fiber	Avg. 0.3 to 0.9 degrees
	Fiber ribbon	Avg. 0.3 to 1.2 degrees
Blade life *3		Approx. 60000 fiber cleaves
Physical description	Dimensions W	Approx. 117mm without projection *4
	Dimensions D	Approx. 94mm without projection *4
	Dimensions H	Approx. 59mm without projection *4
	Weight	Approx. 306g including battery and AD-10-M24
Environmental condition	Temperature	Operate : -10 to 50°C
		Storage : -40 to 80°C
	Humidity	Operate : 0 to 95%RH non-condensing
		Storage : 0 to 95%RH non-condensing
Battery		2 pieces of LR03, AAA dry battery
Wireless interface *5		Bluetooth 4.1 LE
Screw hole for tripod		1/4-20UNC
Holding mechanism for the fiber holder		Equipped
Other features	Blade rotation	Motorized rotation
		Manual rotation dial
	Replaceable parts	Blade
		Clamp arm

CT50 Options

Item	Model	Remark
Fiber Setting Plate	AD-50	Max. 3mm coating diameter
	AD-16A	Max. 900µm coating diameter 1 fiber + Max. 250µm coating diameter 1 fiber
Blade	CB-08	Blade for replacement
Clamp Arm	ARM-CT50-01	Clamp arm with anvil for replacement
Fiber Scrap Collector	FDB-05	Spare scrap collector
Side cover	SC-CT50-01	Side cover instead of scrap collector
Spacer	SPA-CT08-10	Cleave length 10mm
	SPA-CT08-09	Cleave length 9mm
	SPA-CT08-08	Cleave length 8mm

Notes

*1 When the cleave length is less than 10mm, the coating diameter should be 250µm or less. Also, a blade height adjustment is required before cleaving. The average cleave angle is worse than the specification when the cleave length is less than 10mm.

*2 Measured with an interferometer at room temperature, not with a splicer. A new blade was used to cleave both the single fibers and ribbon fibers. The average cleave angle changes depending on the environmental conditions, blade condition, operating method, and cleanliness.

*3 The blade life changes depending on the environmental conditions, operating method, and the fiber type cleaved.

*4 Measured in a condition when closing the lever.

*5 Bluetooth® mark and logos are the registered trademarks of Bluetooth SIG, Inc.

RS03 Specifications

Item		Specification
Applicable fiber	Fiber type	Single mode optical fiber
		Multi mode optical fiber
	Fiber count	Single and up to 16 fiber ribbon
	Cladding dia.	Approx. 125µm
	Coating dia.	200 to 400µm
Stripping length		Max. 35mm
Heat time *1		Approx. 3sec
		Approx. 5sec with Eco-mode
Heat temperature		85 to 140°C
Physical description	Dimensions W	Approx.156mm without projection
	Dimensions D	Approx.49mm without projection
	Dimensions H	Approx.37mm without projection
	Weight	Approx. 265g including battery
Environmental condition	Temperature	Operate : -10 to 50°C
		Storage : -40 to 80°C
	Humidity	Operate : 0 to 95%RH non-condensing
		Storage : 0 to 95%RH non-condensing
AC adaptor	Input	AC100 to 240V, 50/60Hz, Max. 0.58A
DC input		DC10 to 17V, Approx. 1A
Battery pack	Type	Rechargeable Lithium Ion
	Output	Approx. DC7.2V, 1840mAh
	Capacity *2	Approx. 600 times with Eco-mode
	Temperature	Operate : -10 to 50°C
		Recharge : 0 to 40°C
		Long Term Storage : -20 to 30°C
	Battery life *3	Approx. 500 recharge cycles
Wireless interface *4		Bluetooth 4.1 LE
Other features	Stripping force	Lower stripping force design
	Automatic heat setting	Controlled from splicer or smartphone

Notes

*1 Measured at room temperature. The heat time changes depending on the environmental conditions and fiber coating type.

*2 Tested at room temperature with a not degraded battery and Eco-mode. The number of cycles changes depending on the environmental conditions, stripper settings and battery degrading condition.

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

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91330-2309-0108-08

Splice+

Cloud Connectivity App

Convenient splice data management and more!

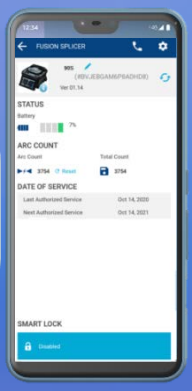
- *Splice data with splice location/error message*
- *Cable installation progress*

Management **Evaluation** **Investigation**

The Solution!

Operation

Fusion Splicer & Accessories

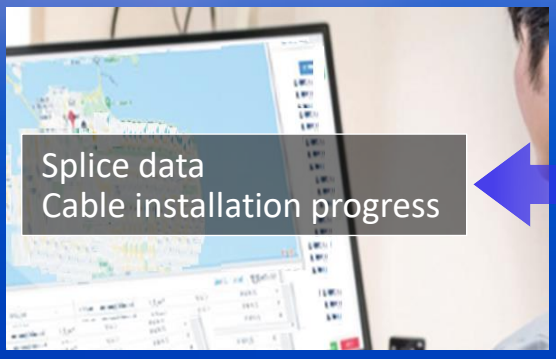


Smartphone with Splice+ app.

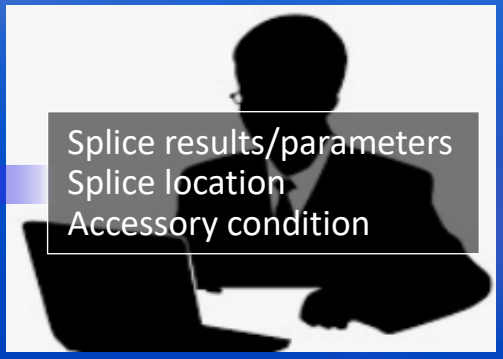
Mobile connection

Internet connection

Management



Data Compilation



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Splice+ Function

GET IT ON Google Play

Download on the App Store

Real Time Data Collection

Splice+ collects splice & accessory data together, in real time.
Splice+ can provide GPS data for each splice data via smartphone.

Smart Lock Security

The fusion splicer is automatically locked when Bluetooth communication with the smartphone is lost, preventing unauthorized use. But users can easily unlock the fusion splicer when pairing via smartphone.

Software Update

Splice+ can update the software version of fusion splicers & accessories.

- USB cable between fusion splicer and smartphone is required.
- Fusion splicer software update feature is only available on Android™.
  Android is trademarks of Google LLC.

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91330-2209-0100-02

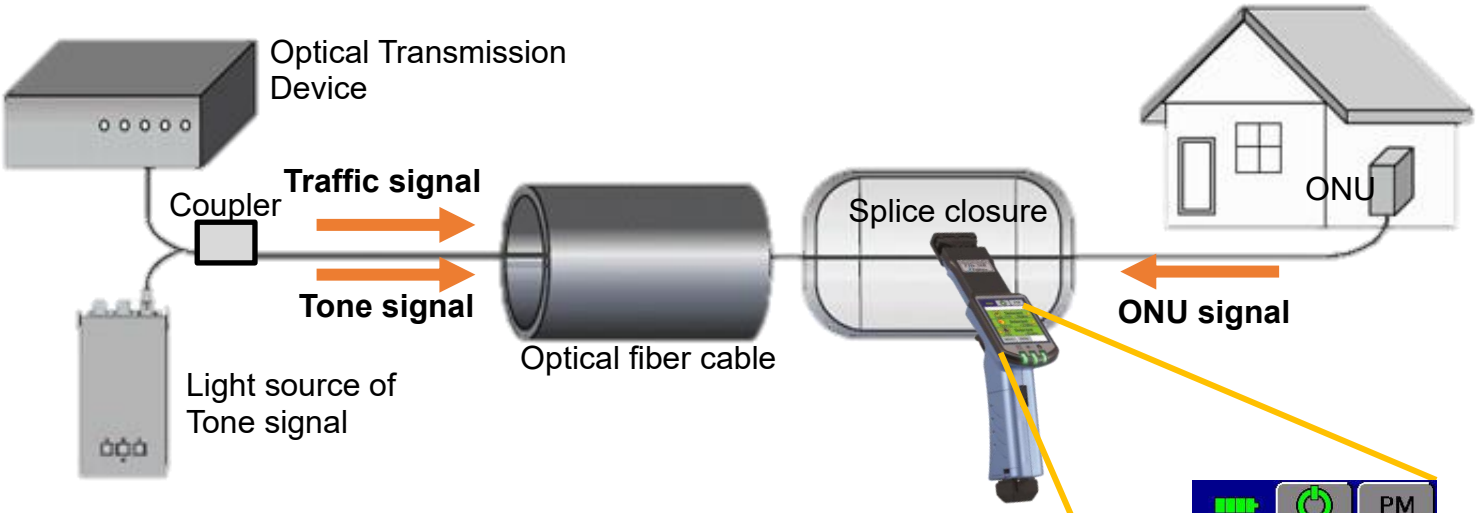
Optical Fiber Identifier

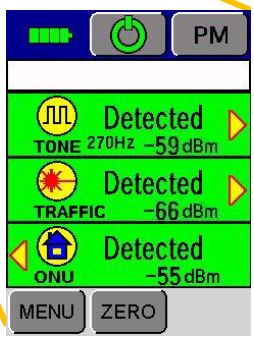
FID-30R/FID-31R

One Shot, Detects All

Fujikura

Advanced Features





1. Various measurement functions

FID-30R is a device that easily and quickly detects the presence or absence of "Tone signal", "Traffic signal", and "ONU signal" without interrupting the light by bending the optical coated fiber*. It supports single-mode and multimode optical fibers. The measurement mode (Normal, Fast, Fine) can be changed depending on the purpose of use and the line conditions.

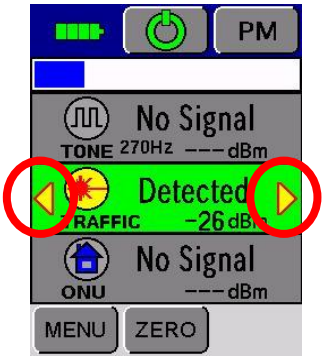
*It does not mean that all ONUs can be detected. If there is an ONU that is not detected, there is a possibility of analyzing and optimizing the waveform of ONU to detect.

2. No need to change clamp heads

The clamp head can accommodate 250µm single fiber up to 3000µm Jacketed cord, and up to 12-fiber ribbon. No need to change the clamp head depending on the type of optical fiber.

3. External Light Detection

Strong external light such as direct sunlight can cause false detection of "Traffic signal". When FID-30R detects external light, triangles indicating the light propagation direction are lit on both sides of the LCD screen at the same time. False detection can be prevented by covering the clamp head with your hand to block the external light source.



4. Power Meter for FID-30R

FID-30R is equipped with a power meter. It can measure "Traffic signal" with the wavelengths of 1310/1490/1550nm, as well as the intensity 270Hz/330Hz/1kHz/2kHz "Tone signal". It is possible to connect various optical connectors by selecting the optical connector head according to the connector type.

Specifications

FID-30R/31R Specifications

Item			Specification		
Identification	Applicable fiber	Fiber type	Single mode optical fiber/Multi mode optical fiber		
		Cladding dia.	Approx.125µm		
	Applicable Cable		250 to 900um coated fiber		
			Up to 12 fiber ribbon		
			1100 to 3000µm Jacketed cord		
	Wavelength		850 to 1650nm		
	Display range of optical power	Fast mode	23 to -62dBm		
		Normal Mode	23 to -67dBm		
		Fine Mode	23 to -73dBm		
	Detectable light signals *1		270Hz, 330Hz, 1kHz, 2kHz		
	Direction detection		Display the direction of tone *2		
	ITU-T G.651 Insertion loss & Required Core power for Identification *3	Wavelength	850nm	1300nm	—
		250µm *4	Insertion loss : 0.2dB or less Normal mode : Avg. -43dBm or more	Insertion loss : 0.5dB or less Normal mode : Avg. -53dBm or more	—
		Fiber ribbon *4	Insertion loss : 0.2dB or less Normal mode : Avg. -40dBm or more	Insertion loss : 0.5dB or less Normal mode : Avg. -50dBm or more	
	ITU-T G.652 Insertion loss & Required Core power for Identification *3	Wavelength	1310nm	1550nm	1650nm
		250µm *4	Insertion loss : 0.5dB or less Normal mode : Avg. -53dBm or more	Insertion loss : 2.0dB or less Normal mode : Avg. -53dBm or more	Insertion loss : 3.0dB or less Normal mode : Avg. -64dBm or more
		900µm *4	Insertion loss : 0.5dB or less Normal mode : Avg. -17dBm or more	Insertion loss : 2.5dB or less Normal mode : Avg. -27dBm or more	Insertion loss : 3.5dB or less Normal mode : Avg. -27dBm or more
		1.1mm *4	Insertion loss : 0.3dB or less Normal mode : Avg. -42dBm or more	Insertion loss : 2.0dB or less Normal mode : Avg. -52dBm or more	Insertion loss : 2.0dB or less Normal mode : Avg. -52dBm or more
		1.5mm *4	Insertion loss : 0.3dB or less Normal mode : Avg. -43dBm or more	Insertion loss : 1.5dB or less Normal mode : Avg. -55dBm or more	Insertion loss : 2.0dB or less Normal mode : Avg. -55dBm or more
		1.7mm *4	Insertion loss : 0.5dB or less Normal mode : Avg. -11dBm or more	Insertion loss : 2.0dB or less Normal mode : Avg. -21dBm or more	Insertion loss : 3.0dB or less Normal mode : Avg. -21dBm or more
		2mm *4	Insertion loss : 0.5dB or less Normal mode : Avg. -17dBm or more	Insertion loss : 2.0dB or less Normal mode : Avg. -27dBm or more	Insertion loss : 3.0dB or less Normal mode : Avg. -27dBm or more
		3mm *4	Insertion loss : 1.0dB or less Normal mode : Avg. -13dBm or more	Insertion loss : 3.0dB or less Normal mode : Avg. -23dBm or more	Insertion loss : 4.0dB or less Normal mode : Avg. -23dBm or more
		Fiber ribbon *4	Insertion loss : 0.5dB or less Normal mode : Avg. -50dBm or more	Insertion loss : 2.5dB or less Normal mode : Avg. -60dBm or more	Insertion loss : 3.5dB or less Normal mode : Avg. -60dBm o more
	ITU-T G.657.A1 Insertion loss & Required Core power for Identification *3	Wavelength	1310nm	1550nm	1650nm
		250µm *4	Insertion loss : 0.2dB or less Normal mode : Avg. -41dBm or more	Insertion loss : 1.0dB or less Normal mode : Avg. -55dBm or more	Insertion loss : 1.5dB or less Normal mode : Avg. -55dBm or more
		500µm *4	Insertion loss : 0.5dB or less Normal mode : Avg. -55dBm or more	Insertion loss : 2.0dB or less Normal mode : Avg. -64dBm or more	Insertion loss : 3.5dB or less Normal mode : Avg. -64dBm or more
Live Fiber Detection	Display range of optical power		23 to -59dBm		
	Detectable light signals *1		CW, Traffic		
Power Meter FID-30R	Wavelength		1310nm, 1490nm, 1550nm		
	Measurement Range		10 to -60dBm at modulated tone		
			10 to -40dBm at CW or Traffic *1		
	Accuracy *5		+/- 0.3dB		
	Detectable light signals *1		CW, Traffic or 270Hz, 330Hz, 1kHz, 2kHz tone		
ONU Detection FID-30R/31R	Applicable Cable		250 to 500um coated fiber		
			900um Loose tube		
	Required Core Power *6	G(E)-PON	Upper stream signal at 1310nm : -7.5 to 9.0dBm		
			Down stream signal at 1490nm : -25.5 to -6.7dBm		
			Down stream signal at 1550nm : -12.0 to 2.8dBm		
		B-PON	Upper stream signal at 1310nm : -5.5 to 4.0dBm		
			Down stream signal at 1490nm : -21.6 to -12.7dBm		
Physical description		Dimensions	Without projection Approx. W50mm × D210mm× H113mm		
		Weight	FID-31R Approx. 220g including battery FID-30R Approx. 235g including battery		
Environmental condition		Temperature	Operate : -10 to 50 degreeC, Storage : -20 to 60 degreeC		
		Humidity	Operate : 0 to 95%RH non-condensing, Storage : 0 to 95%RH non-condensing		
Interface		PC	USB2.0 Mini B type for Firmware update		
Power Source		Battery type	2 pieces of LR6/AA dry battery		
		Battery life *7	Approx. 8 hours		
Display		LCD monitor	TFT 2.4 inches with touch screen		
Other features	Trigger		Trigger hold function		
	Software for PC		Firmware update via internet		

Note

*1 CW is a light signal that is not modulated. Traffic is a light signal modulated by a random data sequence. Tone is a light signal modulated into a nominal 50% duty cycle square wave.

*2 The direction may not be displayed for fiber type, coating material, color, environmental condition, etc.

*3 Using 270Hz modulatede light at 25degreeC. Insertion loss and minimum detect level varies due to coating material, color, environmental condition, etc.

*4 ITU-T G.651 250µm : ITU-T G.651 with 250µm coated fiber
ITU-T G.651 Fiber ribbon : ITU-T G.651 with 2 to 12 fiber ribbon
ITU-T G.652 250µm : ITU-T G652 with 250µm coated fiber
ITU-T G.652 900µm : ITU-T G652 with 900µm coated fiber
ITU-T G.652 1.1 to 3mm : ITU-T G.652 with 1.1 to 3mm Jacketed cord
ITU-T G.652 Fiber ribbon : ITU-T G.652 with 2 to 12 fiber ribbon
ITU-T G.657.A1 250µm : ITU-T G.657.A1 with 250µm coated fiber
ITU-T G.657 A1 500µm : ITU-T G657 A1 with 500µm coated fiber
Fiber in the loose tube
ITU-T G.652 0.25mm : ITU-T G.652 with 250µm coated fiber
ITU-T G.657.A1 0.25mm : ITU-T G.657 with 250µm coated fiber

*5 Under the condition of temperature 25degreeC with input power at -20dBm.

*6 It does not mean that all ONUs can be detected. If there is an ONU that is not detected, there is a possibility of analyzing and optimizing the waveform of ONU to detect.

*7 Test condition (1) Operation cycle : measuring operation for 5 seconds, and waiting for 5 seconds. (2) At room temperature (3) Using a not degraded alkaline batteries
The battery life changes when testing with a different conditions from the above.

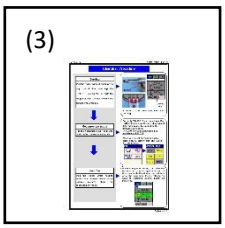
Standard Package

FID-30R/31R Standard package

Item	Model	Qty
Optical Fiber Identifier	FID-30R / FID-31R	1 pc
(1) Soft Case	FID-CASE-02	1 pc
(2) Instruction Manual	M-FID30R	1 pc
(3) Quick Reference Guide	QRG-07-E or J	1 pc
(4) Strap	ST-01	1 pc

(1)


(2)


(3)


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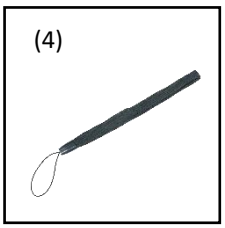

Options

Item	Model	Remark
Optical Connector Head	OCH-02-FC	Optical connector head for FC type
	OCH-02-UC	Optical connector head for UC type
	OCH-02-LC	Optical connector head for LC type
	OCH-02-SC	Optical connector head for SC type
USB Cable	USB-01	USB(A)-USB(miniB)

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