

The launch of new clad alignment fusion splicer

Fujikura Ltd. is pleased to announce the launch the new『45S』 clad alignment fusion splicer. We will begin shipping this new product.

The『45S』fusion splicing kit, including the『SS05』single fiber stripper and『CT50』optical fiber cleaver, provides 30% less*1 splicing cycle time compared to the previous model.

[Feature]

- The『45S』fusion splicing kit allows the operator to simultaneous prepare two fibers for fusion splicing. This simultaneous fiber preparation capability and its lowered tube heating time achieve a 30% reduction in total splicing cycle time compared to the previous model.
- The adjustable monitor position, swappable battery, and expandable working tray provide ease-of-use in challenging environments.
- These and other features improve the operational efficiency of fusion splicing and contribute to labor reductions for fiber installation and repair.

The steps required for fiber preparation such as, stripping the fiber coating, fiber cleaning, fiber cleaving, and loading into the fusion splicer, traditionally, required handling of each fiber individually and in sequential order. The new single fiber stripper『SS05』allows for stripping the coating of two fibers simultaneously and the『CT50』optical fiber cleaver can likewise cleave two fibers simultaneously. Furthermore, with a fiber in each hand, the operator can simultaneously load in each sheath clamp of the『45S』fusion splicer. The『45S』debuts a novel capability where the sheath clamp lid closes as the fiber is lowered into the sheath clamp base, without the need for a 2nd hand to perform this step.

Unloading the spliced fiber from the sheath clamps is also faster as the『45S』simultaneously opens the sheath clamp lids and wind protector in tandem if the operator desires. Lastly, the

newly designed tube heater provides faster heating of splice protection sleeves compared to the previous Fujikura clad alignment model.

Moreover, the『45S』enhances ease-of-use in constrained environments with adjustable monitor position, easily swappable battery, and expandable work tray depending on the space available.

The『45S』fusion splicing kit also includes “ACTIVE FUSION CONTROL TECHNOLOGY” *2 which automatically controls the arc condition and “ACTIVE BLADE MANAGEMENT TECHNOLOGY” *3 which manages the condition of the optical fiber cleaver blade via wireless communication between the splicer and cleaver. These technologies provides stable low-loss splicing and reduce the need for rework by preventing installation of bad splices.

As societies around the globe require robust fiber optic networks to support the need for improved access to data and analytics, Fujikura will continue pushing the capabilities of network installation and repair through its innovative contributions in fusion splicing equipment. The『45S』improves operational efficiency of fiber splicing and lessens both the skill required and time spent for fiber construction, both of which are needed to achieve the quick and quality turn-up and repair of these vital networks.

*1 Approx. 30% reduction in operation time compared to the Fujikura previous model from Fujikura testing.

*2 “ACTIVE FUSION CONTROL TECHNOLOGY”
Splicer automatically controls the arc condition based on cleave end-face quality and analysis of fiber brightness in real time.

*3 “ACTIVE BLADE MANAGEMENT TECHNOLOGY”
Splicer monitors the cleaver blade condition, and after detecting a blade worn, splicer will wirelessly signal the cleaver to rotate blade.



Clad Alignment Fusion Splicer 『45S』



Single Fiber Stripper 『SS05』



Optical Fiber Cleaver 『CT50』

Simultaneous Fiber Preparation



Fiber Stripping



Finer Cutting



Fiber Setting to Splicer

New features of the 『45S』 fusion splicing



Angle Adjustable Monitor



Swappable Battery



Expandable Working Tray

Points relevant to the 17 SDGs

As societies around the globe require robust fiber optic networks to support the need for improved access to data and analytics, Fujikura will continue pushing the capabilities of network installation its innovative contributions in fusion splicing equipment.



Launch of 12-kW beam-profile-controllable CW fiber laser

We, Fujikura group are supplying high quality and high reliability fiber lasers to the market, by integrating our optical design and manufacturing technologies such as optical fibers and laser diodes. This time, we have launched new fiber laser products named BPC model which have beam profile control functions.

In comparison with our conventional models, which has the single beam with unimodal power distribution, the BPC model can also output another beam with a ring-shaped power distribution.

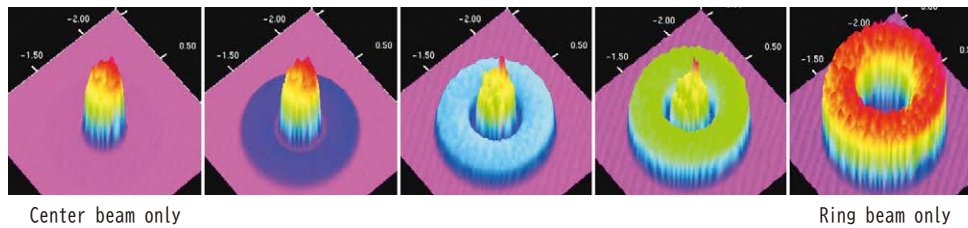
The total output power of the center and ring beams reaches up to 12 kW. In addition, our BPC models accepts independent output power/modulation control to give more flexibility for the process. The functions are allowing the output conditions to be optimized according to the type of the processing and/or the object. Recently, especially for highly-reflective and difficult-to-process

materials such as copper and aluminum, excellent results due to this beam-profile-control function has been reported such as, reductions of the spatter during cutting and welding, stable processings, and improvement of the finished quality. For these reasons, the BPC models are increasingly being introduced, especially in the automotive industry where high quality is required.

In addition to the essential features of our fiber laser products such as high reflection immunity and long-term output stability, our new BPC models support the customer in creating new value by realizing to improve the processing speed and quality.

We will continue to promote the spread of fiber lasers, which have excellent environmental performance due to their high energy efficiency, and contribute to realize the sustainable society.

■ Figure 1 Example of how beam profile varies



■ Photo 1 Appearance of the new model



■ Table 1 Product specifications

Type	BPC-OX/OY-W-1030	
Wavelength	1070nm	
Beam characteristics	Center	Ring
Core outer diameter	100 μ m	300 μ m
Output power (example)	4kW	8kW
Beam quality (BPP)	3.5mm·mrad	15mm·mrad
Fiber length (standard)	20m	
External dimensions	W780×D800×H860mm	

■ Table 2 Processing results by our BPC fiber laser

	By single beam laser	By BPC laser	Features of BPC laser processing
Welding example Material: Aluminum			Spatterless and smoothness after welding lead to reduce processing defects.
Cutting example Material: Mild steel			Improvement of the surface roughness and cutting-edge quality reduce post-processing cost.

■ Points relevant to the 17 SDGs

With more than twice the energy efficiency of legacy lasers (YAG, CO₂), our fiber lasers save power consumption and CO₂ emissions drastically, contributing to the prevention of global warming and the development of a sustainable society.



Introduction of floating coaxial connector PML series

The PML series is an original connector with a mechanism (floating mechanism) that tolerates mating misalignment. By providing a floating mechanism in a size equivalent to the SMA connector, it is possible to absorb pitch

misalignment of up to 1 mm when multiple connectors are mounted in a chassis. This connector is ideal for connecting units in mobile phone base stations and transmission equipment.

■ Photo 1 Connector appearance



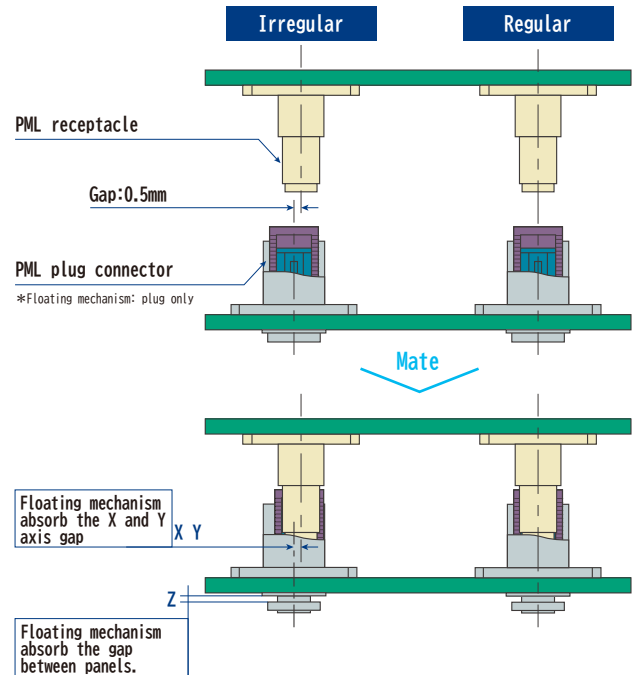
■ Table 1 Product specifications

Characteristic impedance	50Ω
Rated voltage	500 VAC (r.m.s.)
Dielectric withstanding voltage	1,000 VAC (r.m.s.)/minute
Insulation resistance	1,000 MΩ min. at 500 VDC
Contact resistance	10 mΩ max.
Voltage standing wave ratio	1.5 max. (DC to 6 GHz)
Offset allowable range	X,Y=±0.5mm, Z=±0.8mm
Operating temperature range	-55 to +85°C

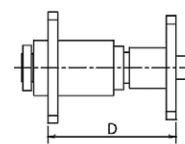
■ Table 2 Distance between panels

Mating connector	Max. distance between panels D	Min. distance between panels E
PML-SR	18.8mm	17.2mm
PML-PJ2-85-S0	22.2mm	20.6mm
PML-PJ2-1.5DHW-CR1	22.2mm	20.6mm

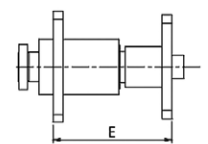
■ Figure 1 Connector mechanism



<Max. Panel Distance >



<Min. Panel Distance >



■ Points relevant to the 17 SDGs

By reducing the size and space of connectors and improving installation workability, we contribute to the development of infrastructure and energy saving.



Development of lightweight and thin cables for side airbag harnesses

We have developed lightweight and thin cables for side airbag harnesses and started to distribute cable samples.

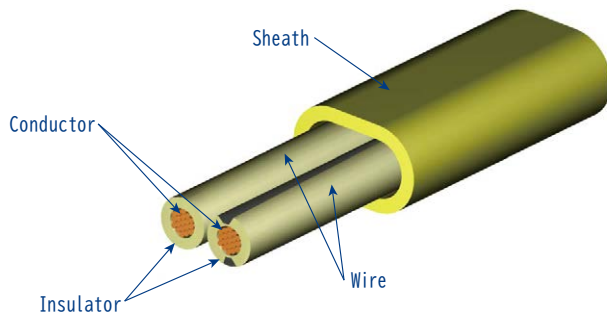
We have been selling wire harnesses that are arranged inside the seats to transmit the initiating signal for the side airbag system. Our cables for side airbag harnesses cover a sheath with a protective function on the outer periphery of the wire, achieving the same level of resistance to external damage as protection of wires by PVC tubes.

In response to the need to reduce the weight and diameter of harnesses, we have reduced the diameter of conductors by improving the strength of the conductor

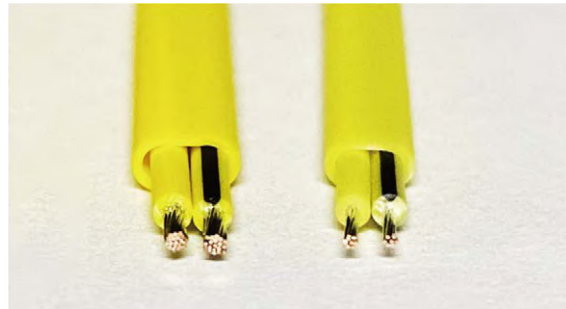
materials used and optimized the insulator thickness and sheath thickness by enhancing the resistance performance of resin materials to external damage. The developed cable is 30% lighter and 10% thinner than current cable while maintaining the same level of resistance to external damage as that of PVC tubes. This improves the flexibility of the harness arrangement and further reduces the weight of the side airbag system.

We will continue to promote the development of high-value-added products that accurately capture customer needs.

■ Figure 1 Cable schematic



■ Photo 1 Comparison of appearance



Left: Current cable (conductor size: 0.3mm)
Right: Developed cable (conductor size: 0.13mm)

■ Table 1 Product specifications

	Current cable	Developed cable
Conductor size	0.3mm	0.13mm
Resistance to external damage	PVC tube-equivalent	PVC tube-equivalent
Product weight*	1	0.7
Cable outer diameter*	Minor diameter	0.9
	Major diameter	0.9

*Ratio to the current cable

■Points relevant to the 17 SDGs

Our cables for side airbag harnesses will contribute to a society that achieves both the development of an increasingly multifunctional automobile industry and the realization of a carbon-neutral society by continuously pursuing weight and diameter reduction utilizing our unique technology.



✉ Automotive Products Business Unit : wwwadmin@jp.fujikura.com