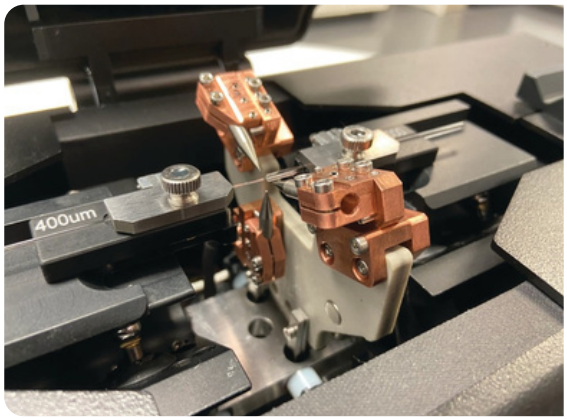
3SAE PENTAPOD® FUSION SPLICER (PFS)

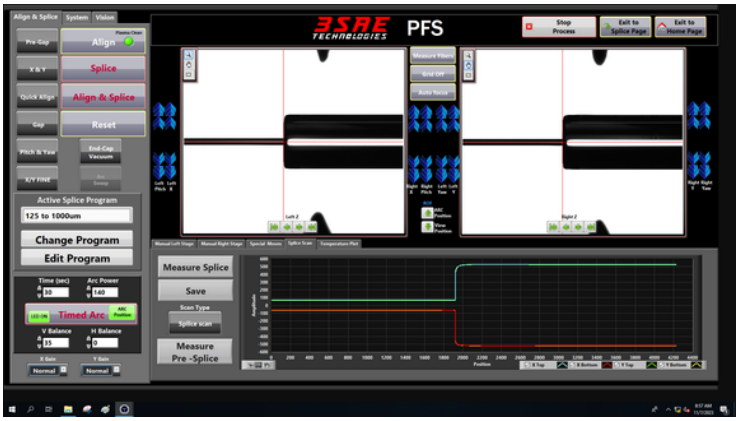
Rapid developments in fiber laser technologies and the increased demand of high-power fiber laser component fabrication has created the need for a dedicated and cost-effective high performance fusion splicer. It must be capable of processes outside of those available with standard production fusion splicers and glass processing equipment. These new capabilities must be ideal for production and R&D environments yet sophisticated enough to satisfy the stringent requirements of fiber laser fabrication.

3SAE Technologies PentaPod® Fusion Splicer (PFS) is the world's first table-top fusion splicer that provides capabilities that overcome the limitations of current angle critical fusion splicing processes to meet the most demanding requirements for the high-power fiber laser component fabrication. The PFS is a semi-automated fusion splicing station that provides a far greater range of positional adjustment than conventional splicers. The PFS was specially designed for volume production, repeatability, precision, and user-friendly operation while maintaining unprecedented splice quality.

The PFS leverages 3SAE's patented PentaPod® alignment stages that offers 12 separate positional axes allowing unprecedented control of the material being spliced and the latest 3rd generation Ring of Fire® heat source which provides a highly controllable plasma field that completely encapsulates the component being spliced and provide uniform circumferential heat distribution facilitating consistent and repeatable fusion splicing process. With the combination of a precision mechanical design, high contrast optics, absolute control of relative positional and angular alignment, and a next generation highly stable ROF® plasma source, sets the PFS apart from any existing technologies. Additionally, new splice scanning technology provides a detailed analysis of the splice quality.



3rd generation Ring of Fire® (ROF) dissimilar splice.



PFS Control Software GUI featuring dissimilar splice.

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Specifications are subject to change without notice.

Made in the USA

www.3SAE.com

Key Features: PentaPod® Fusion Splicer (PFS)

- Specifically designed to accurately splice end-caps to fibers for R&D and production environments.
- The PFS can also be used to perform bundle-to-fiber splices of various diameters, and dissimilar fiber sizes.
- The unique, patented PentaPod® alignment stages are compact, rigid, and stable.
- Both the fiber and end-cap stages provide individual alignment in X, Y, and Z as well as Pitch, Yaw, and Theta yielding 6-axes of motion control (X, Y, Z, XΘ, YΘ, ZΘ) per side.
- ±6mm of relative linear alignment (X, Y, Z axes) with positional accuracy <0.1µm
- ±6° of angular alignment (XΘ, YΘ, ZΘ axes) with positional accuracy <0.01°
- A new implementation of the 3SAE Ring of Fire® (ROF) technology provides superior thermal stability for applications from 125µm to 2.5mm fiber diameter.
- Sophisticated machine vision provides the highest alignment quality and facilitates detailed process evaluation. Two Orthogonal (X & Y) live views of the splice during the splicing process
- New splice scanning technology provides a detailed analysis of the splice quality and facilitates 3SAE's Curvature Based Thermal Splice Calibration™.
- Fibers, bundles and end-caps are fixtured in removable, interchangeable carriages that can be customized to specific applications.
- Accurate control of the vertical alignment of the ROF with respect to the components being spliced ensures even circumferential thermal distribution during the splice.
- Highly flexible splice process allows continuous control of arc temperature and fiber placement during the splice.
- Pre & post splice data export for convenient splice tracking and data analysis.

Standard Package

Part Number	Product	Includes
SPL-01-0001	3SAE Pentapod Fusion Splicer (PFS)	PC with all necessary software, 23" monitor and accessories Left & Right Fiber Holder Carriages Accessory kit including 1.5mm ball nose driver, spare electrode set, electrode cleaning disc, IPA bottle, all necessary PC and PFS interconnect cables, power supply, electronic user's manual PFS Hard Transport Case Manufacturer's 1-year parts and labor warranty **Fiber Holders sold separately

Technical Specifications

Feature	Specification
Dimensions	398 (W) x 305 (D) x 250 (H) mm
Weight	13.6 kg
Power Source	(1) 24VDC, 8.3A
Cladding Diameter	125um to 2.5mm
Splice Programs	>100

Accessories and Consumables

Part Number	Product	Part Number	Product
ACC-01-0252	PFS Short End Cap Holding Option (Vacuum)	ACC-01-1508	PFS Fiber Holder - 850um (Right)
ACC-01-0250	PFS End Cap Holder, 1mm-3mm (non-vacuum)	ACC-01-0260	PFS Fiber Holder - 1000um (Left)
ACC-01-0251	PFS End Cap Holder, 3mm-7mm (non-vacuum)	ACC-01-0261	PFS Fiber Holder - 1000um (Right)
ACC-01-0268	PFS End Cap Holder, 6mm-12mm (non-vacuum)	ACC-01-0262	PFS Fiber Holder - 1500um (Left)
ACC-01-0315	PFS Carriage Holder	ACC-01-0263	PFS Fiber Holder - 1500um (Right)
ACC-01-0254	PFS Fiber Holder - 250um (Left)	ACC-01-0264	PFS Fiber Holder - 2000um (Left)
ACC-01-0255	PFS Fiber Holder - 250um (Right)	ACC-01-0265	PFS Fiber Holder - 2000um (Right)
ACC-01-0256	PFS Fiber Holder - 400um (Left)	ACC-01-0266	PFS Fiber Holder - 2500um (Left)
ACC-01-0257	PFS Fiber Holder - 400um (Right)	ACC-01-0267	PFS Fiber Holder - 2500um (Right)
ACC-01-0271	PFS Fiber Holder - 550um (Left)	ACC-01-0253	PFS Hard Transport Case
ACC-01-0272	PFS Fiber Holder - 550um (Right)	ACC-01-0147	Power Supply 200W 24V 8.33A (CMS/LDS/LFS/LPS/PFS)
ACC-01-0258	PFS Fiber Holder - 700um (Left)	ACC-01-1512	Magnetic Copper Electrode Holders (set of 3) for ROF - PFS
ACC-01-0259	PFS Fiber Holder - 700um (Right)	CON-10-0022	Electrode Cleaning Discs- Black (Pack of 25)
ACC-01-1507	PFS Fiber Holder - 850um (Left)	CON-10-0026	Electrode Set (CMS/PFS/TMS)