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THORLABS

# FSX2000PM - October 8, 2020

Item # FSX2000PM was discontinued on October 8, 2020. For informational purposes, this is a copy of the website content at that time and is valid only for the stated product.

## VYTRAN® STAND-ALONE FUSION SPLICER AND PREPARATION STATIONS: SM, MM, AND PM

- **Modules for Preparing and Splicing SM, MM, or PM Fiber**
- **Allows for Increased Throughput Compared to All-In-One Systems**

**Base Units and Components Sold Separately**

**FPC200**
Fiber Preparation Workstation

**FSX2000PM**
Fiber Fusion Splicer Workstation

**FHBR1**
Fiber Holding Blocks (Right Block Shown)

**FTV7**
Tungsten Fusion Splicing Filament

**CST080180**
Thermo-Mechanical Stripping Blade Insert Set

vytran®


Hide Overview

## OVERVIEW 

### Features

- Two Modular Units for Preparing and Splicing Fibers
- FPC200 Fiber Preparation Station:
  - Stripping
  - Cleaning
  - Flat Cleaving
  - Accepts SM, MM, or PM Fiber with Cladding Diameters from 80 µm to 400 µm
- FSX2000PM Fusion Splicing Station:
  - Fusion Splicing
  - Accepts SM, MM, or PM Fiber with Cladding Diameters from 80 µm to 200 µm

Thorlabs' Vytran® Stand-Alone Preparation and Fusion Splicing Stations are designed to allow preparation and splicing operations to be performed simultaneously for increased throughput or in different locations of the facility. Offering similar performance to our FFS2000 all-in-one workstation, the FPC200 preparation station and FSX2000PM Fusion Splicing Station accept SM, MM, or PM fiber. The FPC200 accepts fiber with cladding diameters from 80 µm to 400 µm, while the FSX2000PM accepts fiber with cladding diameters from 80 µm to 200 µm.

To build a complete fiber preparation and splicing system, you must purchase both the FPC200 and FSX2000PM base units, as well as other components that depend upon the fibers' cladding and coating diameters. For more information on how to make your selections, please see the *Decisions* tab.

Thorlabs also offers a line of stand-alone recoaters and proof testing systems that can be utilized to reapply a coating layer to the spliced region and to test the strength of the fiber splice.

## Questions? We're All Ears!

To build a complete fiber processing system, you will need to purchase base unit(s) plus additional components that are dependent upon the size of the fiber being processed. Upon receipt of your order, we will review it for completeness and accuracy and contact you if there appear to be any discrepancies. All inserts are installed and factory-aligned within the base unit prior to shipping.

If you would like assistance in choosing the correct components or have questions about component compatibility, please contact tech support. We're more than happy to answer your questions any time before or after purchase.

Hide Specs

SPECS

| Item # | FPC200 (Fiber Preparation Station) |
|---|---|
| Fiber Type | SM, MM, or PM |
| **Thermo-Mechanical Stripper** | |
| Accepted Fiber Buffer Diameters | Up to 600 µm |
| Accepted Fiber Cladding Diameters | 80 to 400 µm |
| Accepted Coating Materials | Single or Dual Acrylate |
| Maximum Stripping Temperature | ~130 °F (54 °C) |
| **Ultrasonic Cleaner** | |
| Accepted Cleaning Solvents | Acetone or Isopropyl Alcohol |
| Cleaning Time | 1 to 120 s |
| **Cleaver** | |
| Accepted Fiber Buffer Diameters | Up to 400 µm |
| Accepted Fiber Cladding Diameters | 80 to 200 µm[a] |
| Cleave Method | Tension and Scribe |
| Cleave Type | Flat (0°) |
| Maximum Tension[b] | 2.45 N (0.55 lbs) |
| **General** | |
| Operating Temperature | 0 to 40 °C (Non-Condensing) |
| Storage Temperature | -20 to 70 °C |
| Power | 90 to 250 VAC (47 - 63 Hz) |
| Size (L x W x H) | 10.12" x 7" x 6.25" (257 mm x 178 mm x 158 mm) |
| Weight | 11 lbs (5 kg) |

- a. The maximum diameter is 200 µm assuming a soft glass fiber. If a silica glass fiber is used, the maximum diameter is 125 µm.
- b. Tension can be adjusted manually by the user for different fiber sizes. These cleavers are calibrated using standard weights that are hung off a pulley, so the tension settings are programmed into the handset in grams. This maximum tension corresponds to 250 g.

| Item # | FSX2000PM (Fiber Fusion Splicing Station) |
|---|---|
| **Splicing Specifications** | |
| Fusion Method | Filament Fusion |
| Fiber Type | SM, PM, or MM |
| Fiber Cladding Diameter | 80 to 200 µm |
| Filament Power | 40 W (Max) |
| Alignment Method | Fully Automated by True Core Imaging® or External Feedback |
| XY Fiber Positioning Resolution | Stepper Motor Controlled with 0.01 µm Resolution |
| Z Fiber Feed Resolution | Stepper Motor Controlled with 0.125 µm Resolution |
| Insertion Loss (SMF to SMF) | 0.02 dB (Typical) |
| Tensile Strength | >250 kpsi (Typical) |

| PM Rotation Specifications | |
|---|---|
| Rotation Alignment | Fully Automated by End-View Alignment Technology or External Feedback |
| Rotation Resolution | Stepper Motor Controller with 0.01° Resolution |
| Rotation Travel | 190° |
| Extinction Ratio | -35 dB (Typical) |
| **General Specifications** | |
| Operating Temperature | 0 °C to 40 °C (Non-Condensing) |
| Storage Temperature | -20 °C to 70 °C |
| Size (L x W x H) | 12" x 9" x 10.5" (304 mm x 229 mm x 267 mm) |
| Weight | 25.5 lbs (11.6 kg) |
| Power | 90 to 250 VAC (47 - 63 Hz) |
| Operating System | Integrated Windows® 7 PC with Software GUI Installed |

Hide Decisions

## DECISIONS

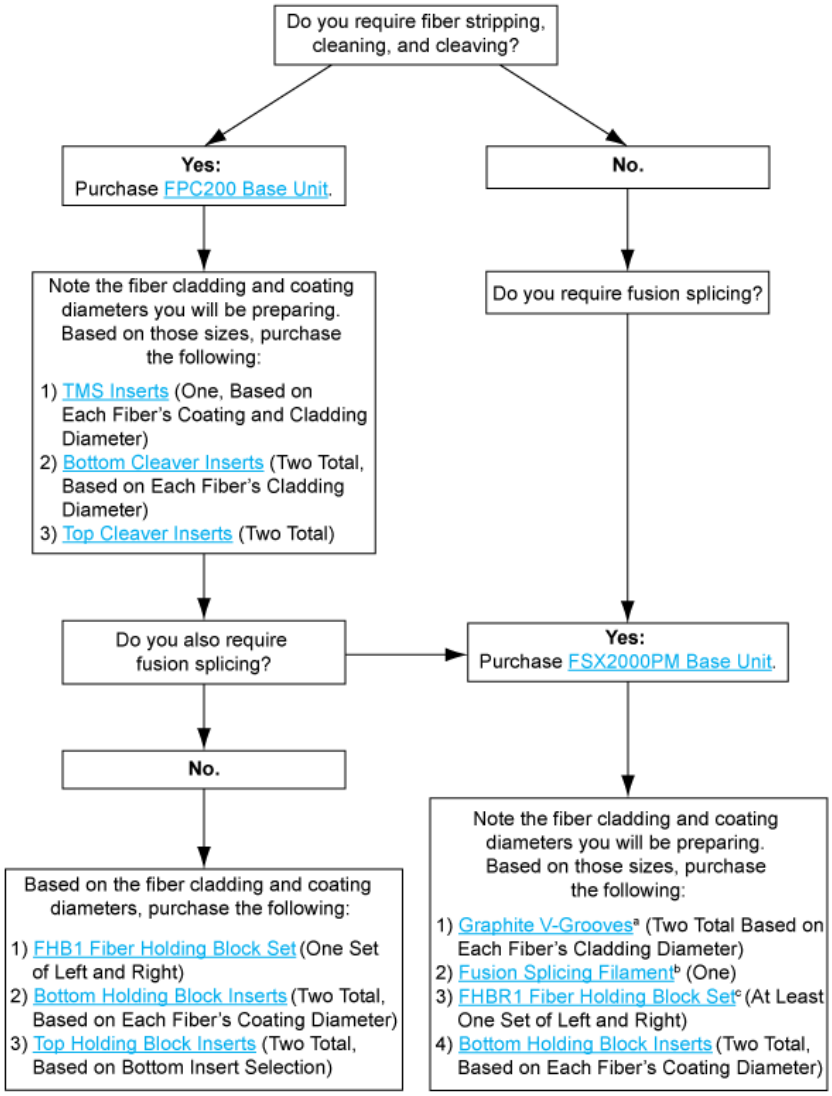
The FPC200 and FSX2000PM base units include all of the accessories that do not depend upon the particular fibers being processed. Required components that depend upon the fiber size or type must be purchased separately. We have arranged this page in a way that will help you ensure that you have all the required components. Simply scroll down the page; the red headings will indicate whether an item must be purchased and for which system (FPC200 preparation station or FSX2000PM splicer).

If you purchase either an FSX2000PM or FPC200 and do not have one or more of the required components in your order, we will contact you to help you complete the purchase. If you have any pre- or post-sale questions, please contact tech support.

The FSX2000PM is designed to directly accept fibers prepared for splicing using the FPC200. If you are planning to utilize these stand-alone units in tandem, we suggest purchasing two sets of FHBR1 fiber holding blocks and inserts so that the preparation and fusion splicing processes can be performed simultaneously by different operators.

The flow chart below details the decisions that must be made and the products that must be purchased to build a complete system. Click on the blue links to jump to the specific product grouping for more information.

### Questions to Ask When Choosing Components




- a. The FSX2000PM has two pre-installed VHG125 Graphite Inserts by default; if you would like a different insert at the time of purchase, please contact Tech Support. Additional graphite inserts can be purchased below.
- b. The FSX2000PM has a pre-installed FTV7 Tungsten Filament by default; if you would like a different insert at the time of purchase, please contact Tech Support. Additional tungsten or iridium filaments can be purchased below.
- c. If multiple users will be using the FSX2000PM and FPC200 simultaneously, purchase two sets of Holding Blocks and Inserts

Hide Product Demos

## PRODUCT DEMOS

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## Product Demonstrations

Thorlabs has demonstration facilitates for the Vytran® fiber glass processing systems offered on this page within our Morganville, New Jersey office. We invite you to schedule a visit to see these products in operation and to discuss the various options with a fiber processing specialist. Please schedule a demonstration by contacting technical support. We welcome the opportunity for personal interaction during your visit!

Hide Fiber Preparation Station Base Unit: Stripping, Cleaning, and Precision Cleaving

## Fiber Preparation Station Base Unit: Stripping, Cleaning, and Precision Cleaving

**Components Included**

- FPC200 Base Unit
- Handset Controller
- 12 V Power Supply
- Location-Specific AC Power Cord
- DC Power Cord
- Tool Kit

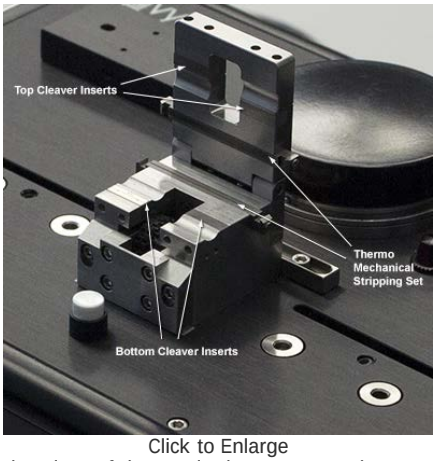
**Must Be Purchased Separately**

- Thermo-Mechanical Stripping Blade Sets (One Required)
- Bottom Cleaver Inserts (Two Required)
- Top Cleaver Inserts (Two Required)
- Fiber Holding Blocks* (One Required)
- Holding Block V-Groove Inserts*
- Cleaning Solvents (Not Available from Thorlabs)

* Your choice of Fiber Holding Blocks and Inserts is determined by whether you are also buying an FSX2000PM. Please see the *Decisions* tab for more information.

- Integrated Stripping, Cleaning, and Cleaving Station
- Accepts SM, MM, and PM Fiber
- Accepts Fibers with Cladding Diameters from 80 µm to 400 µm
- Strip Single or Dual Acrylate Coatings
- Tension-and-Scribe Method for Flat Cleaves
- Includes Handset Controller
- Designed to Prepare Fibers for the FSX2000PM Fusion Splicer (Sold Below)

The FPC200 Fiber Preparation Station is an all-in-one fiber stripper, cleaner, and cleaver. The unit is designed to support the FSX2000PM fusion splicer (sold below), performing all of the necessary steps to prepare fiber for splicing. The thermo-mechanical stripping station uses a filament to heat the fiber, softening the acrylate coating for stripping, with an LED light to indicate when the heating process is complete. The stripper uses a blade set (sold below) to scrape the buffer off in two locations.




Click to Enlarge
The locations of the required components that must be purchased separately are labeled in the schematic above and are available for purchase below. For more details, please see the list to the right and the *Decisions* tab.

Fiber holding blocks are not provided with the FPC200 base unit. If using the unit as a stand-alone cleaner, stripper, and cleaver, then we recommend buying the FHB1 non-rotating fiber holding blocks (available below). If utilizing the FPC200 with the FSX2000 as a combined preparation and splicing system, then we recommend buying at least one set of FHBR1 rotating fiber holding blocks. For more information, please see the *Decisions* tab.

The initial alignment of the components in the FPC200 preparation station is critical to ensure all processes work seamlessly together. For that reason, your complete system will ship with all of the components factory installed. Once you receive the system, all inserts can be easily replaced by the user if needed.

To clean the fiber, the entire fiber holding block (available separately below) can be moved from the stripping station to the cleaning station, eliminating direct handling of the fiber at each step. After installing the holding block next to the ultrasonic cleaner, simply tilt it to dip the stripped end of the fiber into the solvent-filled ultrasonic cleaner. An indicator light turns off when the cleaning process is complete. The built-in ultrasonic cleaner must be filled with user-supplied acetone or isopropyl alcohol.

The cleaving station uses the "tension-and-scribe" cleaving method, where tension is applied along the length of the fiber followed by an automatic scribing process utilizing a diamond cleave blade. After the blade scribes the fiber, tension is maintained, causing the scribe to propagate across the fiber width and complete the

cleave. During the cleaving process, the fiber holding block can apply up to 2.45 N (0.55 lbs) of tension along the length of the fiber to create flat cleaves.

A handset controller is included with the FPC200 for setting the thermo-mechanical stripper heating time and ultrasonic cleaner run time.

Once the cleaving process is complete, the cleaved fibers can be transferred, in the fiber holding blocks, to the FSX2000PM (available below) for splicing.

Replacement cleave blades are available separately below.

| Part Number | Description | Price | Availability |
|---|---|---|---|
| FPC200 | Stand-Alone Fiber Stripper, Cleaner, and Precision Cleaver - Base Unit | $15,474.29 | Lead Time |

Hide Thermo-Mechanical Stripping Blade Inserts - One Required for FPC200

## Thermo-Mechanical Stripping Blade Inserts - One Required for FPC200

- Thermo-Mechanical Stripper (TMS) Blade Insert Sets for FPC200 Fiber Stripping and Cleaning Station
- Blade Sets Include:
  - Standard Wedge: One Top and One Bottom Insert
  - Half-Moon: Two Top Inserts and One Bottom
- For Fibers with Claddings from Ø80 µm to Ø400 µm and Buffers Up to Ø600 µm
- Pre-Installed if Ordered with the FPC200 Station
- Interchangeable by the User

| TMS Blade Insert Sets[a] | | | | |
|---|---|---|---|---|
| Item # | Accepted Cladding Diameter | | Max Buffer Diameter | Blade Type |
| | End 1 | End 2 | | |
| CST080180 | 80 µm | 80 µm | 180 µm | Wedge |
| CSTM080125 | 80 µm | 125 µm | 250 µm | Wedge |
| CST125250 | 125 µm | 125 µm | 250 µm | Wedge |
| CST125400 | 125 µm | 125 µm | 400 µm | Wedge |
| CST200400U | 200 µm | 200 µm | 400 µm | Half-Moon |
| CST250400U | 250 µm | 250 µm | 400 µm | Half-Moon |
| CST400600U | 400 µm | 400 µm | 600 µm | Half-Moon |

- a. For different cladding diameters than those listed here, please contact Tech Support. TMS blade insert sets are available for cladding diameters up to Ø400 µm as a special.

Thorlabs offers seven sets of blades for stripping fiber. The maximum buffer diameter is limited by the size of the channel in the insert. When ordered with the FPC200, Thorlabs will install the TMS blade set in the thermo-mechanical stripper prior to shipping. Each wedge blade set consists of a top and bottom insert, and each insert has a flat blade at both ends. Each half-moon blade set has two top inserts and one bottom insert, and features semi-circular blades.

Except for the CSTM080125*, the blade sets are designed to strip the same size cladding on both the left and right ends, and can be interchanged by the user if necessary. For easy identification, the maximum buffer diameter is engraved on the blade inserts. We offer seven inserts from stock to accommodate standard and larger fiber sizes. TMS blade insert sets are available for cladding diameters up to Ø400 µm as a special by contacting Tech Support.

* The CSTM080125 blade set is designed to strip Ø80 µm cladding fiber on one end and Ø125 µm cladding fiber on the other. When ordered with the FPC200, it will be installed by default with the blades for Ø80 µm claddings (End 1) on the left and the blades for Ø125 µm claddings (End 2) on the right. If installing a CSTM080125, be sure to keep the Ø80 µm end of the bottom and top inserts aligned on the same side of the TMS stripper. If the Ø80 µm cladding blade is aligned with the Ø125 µm cladding blade when installed in the stripper, the system will not properly strip and the fiber may be damaged.

| Part Number | Description | Price | Availability |
|---|---|---|---|
| CST080180 | TMS Blade Insert Set for Ø80 µm Cladding, up to Ø180 µm Buffer | $1,549.59 | Today |
| CSTM080125 | TMS Blade Insert Set for Ø80 µm and Ø125 µm Claddings, up to Ø250 µm Buffer | $1,549.59 | Today |
| CST125250 | TMS Blade Insert Set for Ø125 µm Cladding, up to Ø250 µm Buffer | $1,549.59 | Today |
| CST125400 | TMS Blade Insert Set for Ø125 µm Cladding, up to Ø400 µm Buffer | $1,549.59 | 5-8 Days |
| CST200400U | TMS Blade Insert Set for Ø200 µm Cladding, up to Ø400 µm Buffer | $2,866.04 | Today |
| CST250400U | TMS Blade Insert Set for Ø250 µm Cladding, up to Ø400 µm Buffer | $2,866.04 | Lead Time |
| CST400600U | TMS Blade Insert Set for Ø400 µm Cladding, up to Ø600 µm Buffer | $2,866.04 | Lead Time |

Hide Bottom Cleaver Inserts - Two Required for FPC200

## Bottom Cleaver Inserts - Two Required for FPC200

- V-Groove Inserts Align the Fibers within Fiber Cleaver Unit

- Five Versions to Support the FPC200 Cleaver's Accepted Cladding Diameters (From 80 µm to 200 µm)
- Two Required: One Each for Left and Right Cleaver

These Bottom Cleaver Inserts secure the fiber inside the cleaving assembly of the FPC200 preparation station. They are sold individually to allow cleaving of differently sized fibers held within the left and right fiber holding blocks. Different inserts are available to support a variety of fiber sizes; compatibility is listed in the table to the right.

Two bottom cleaver inserts, one for both the left and right fibers, must be purchased in order to operate your workstation; when purchased with an FPC200 base unit, the bottom cleaver inserts will be installed at the factory. If necessary, the cleaver inserts can be replaced by the user. When the cleaving assembly is closed, the top (sold in the next product grouping) and bottom inserts mate to secure the stripped fiber.

| Compatible Fiber Cladding Diameters[a] | | | |
|---|---|---|---|
| Item # | Nominal Diameter | Minimum Diameter | Maximum Diameter |
| SCV075 | 75 µm | 68 µm | 82 µm |
| SCV100 | 100 µm | 90 µm | 110 µm |
| SCV125 | 125 µm | 113 µm | 137 µm |
| SCV150 | 150 µm | 135 µm | 165 µm |
| SCV200 | 200 µm | 180 µm | 220 µm |

- a. Please note that the cladding diameter range of the base unit is limited to 80 µm to 200 µm.

| Part Number | Description | Price | Availability |
|---|---|---|---|
| SCV075 | Bottom Cleaver Insert for Ø68 µm - Ø82 µm Cladding | $138.51 | Today |
| SCV100 | Bottom Cleaver Insert for Ø90 µm - Ø110 µm Cladding | $138.51 | Today |
| SCV125 | Bottom Cleaver Insert for Ø113 µm - Ø137 µm Cladding | $138.51 | Today |
| SCV150 | Bottom Cleaver Insert for Ø135 µm - Ø165 µm Cladding | $138.51 | Today |
| SCV200 | Bottom Cleaver Insert for Ø180 µm - Ø220 µm Cladding | $138.51 | Today |

Hide Top Cleaver Insert - Two Required for FPC200

## Top Cleaver Insert - Two Required for FPC200

- Top Insert for the Fiber Cleaver Unit
- Two Required: One Each for Left and Right Cleaver

The Top Cleaver Insert is a flat plate that helps secure the fiber inside the cleaving assembly of the FPC200. It is sold individually, so two items must be purchased, one for the left and one for the right fiber cleaver.

In addition to these top cleaver inserts, you must buy the bottom insert that matches your fiber size (see the previous product grouping). When purchased with an FPC200 base unit, the top cleaver inserts will be installed at the factory. If necessary, the cleaver inserts can be replaced by the user. When the cleaving assembly is closed, the top and bottom inserts mate to secure the fiber.

| Part Number | Description | Price | Availability |
|---|---|---|---|
| SCV000 | Top Cleaver Insert | $138.51 | Today |

Hide Non-Rotating Fiber Holding Block Set - One Required for Stand-Alone FPC200

## Non-Rotating Fiber Holding Block Set - One Required for Stand-Alone FPC200

- Non-Rotating Fiber Holding Blocks for a Stand-Alone FPC200 Preparation Station
- Sold as a Set of Two (Left and Right Pair)
- Requires V-Groove Inserts (Available Separately in the Next Product Grouping)

Fiber Holding Blocks secure the fiber and simplify moving the fibers between the different processing steps. The FHB1, which is sold as a pair of left and right fiber holding blocks, is designed for processing of fibers on the FPC200 where PM rotational alignment is not necessary.

In order to securely hold a fiber with a particular diameter, a set of bottom V-Groove Inserts is installed within the fiber holding block. V-groove inserts must be purchased separately below. For the FHB1 non-rotating fiber holding block, you must purchase both the bottom V-groove insert based upon your fiber size (any Item # ranging from VHH125 to VHH900S) as well as the corresponding top insert (either Item # VHH000 or VHH900).

### Are you planning on purchasing an FSX2000PM Fusion Splicer? If so, the FHB1 is not necessary.

The FHB1 fiber holding blocks do not contain the rotation mechanism necessary to align PM fibers for splicing on the FSX2000PM. Therefore, you should choose the FHBR1 rotating fiber holding blocks available below. For more details please see the *Decisions* tab or contact Tech Support.

| Part Number | Description | Price | Availability |
|---|---|---|---|
| FHB1 | Set of Right and Left Non-Rotating Fiber Holding Blocks for SM and MM Fiber | $5,299.20 | Today |

Hide Bottom V-Groove Inserts for Non-Rotating Fiber Holding Blocks - Two Required for FHB1

## Bottom V-Groove Inserts for Non-Rotating Fiber Holding Blocks - Two Required for FHB1

- V-Groove Inserts Align Fibers within the FHB1 Fiber Holding Blocks
- Support Buffer or Coating Diameters Ranging from 90 µm to 990 µm (See Table to the Right)
- Two Required for FHB1: One Each for Left and Right Holding Blocks

These bottom V-Groove Inserts are designed for the bottom of the FHB1 Non-Rotating Fiber Holding Blocks. A total of two items must be purchased, one insert for the left holding block and one insert for the right holding block. They are provided individually so as to allow for the construction of a system that can process two fibers with different coating diameters. Different V-groove sizes are provided to support a range of fiber cladding diameters; compatibility is listed in the table to the right.

Two bottom inserts from the list below must be purchased if you are purchasing FHB1 fiber holding blocks. When purchased with an FHB1 fiber holding block set, the bottom fiber holding block inserts will be installed at the factory. If necessary, these inserts can be replaced by the user. In addition, a top insert (sold in the next product grouping) is required.

| Compatible Fiber Buffer/Coating Diameters | | | |
|---|---|---|---|
| Item # | Nominal Diameter | Minimum Diameter | Maximum Diameter |
| VHH100 | 100 µm | 90 µm | 110 µm |
| VHH125 | 125 µm | 113 µm | 137 µm |
| VHH160 | 160 µm | 144 µm | 176 µm |
| VHH250 | 250 µm | 225 µm | 275 µm |
| VHH300 | 300 µm | 250 µm | 350 µm |
| VHH400 | 400 µm | 350 µm | 450 µm |
| VHH500 | 500 µm | 450 µm | 550 µm |
| VHH600 | 600 µm | 540 µm | 660 µm |
| VHH900S | 900 µm | 810 µm | 990 µm |

| Part Number | Description | Price | Availability |
|---|---|---|---|
| VHH100 | Bottom V-Groove Insert for Fiber Holding Blocks, Ø90 µm - Ø110 µm Coating | $172.06 | Today |
| VHH125 | Bottom V-Groove Insert for Fiber Holding Blocks, Ø113 µm - Ø137 µm Coating | $172.06 | Today |
| VHH160 | Bottom V-Groove Insert for Fiber Holding Blocks, Ø144 µm - Ø176 µm Coating | $172.06 | Today |
| VHH250 | Bottom V-Groove Insert for Fiber Holding Blocks, Ø225 µm - Ø275 µm Coating | $172.06 | Today |
| VHH300 | Bottom V-Groove Insert for Fiber Holding Blocks, Ø250 µm - Ø350 µm Coating | $172.06 | Today |
| VHH400 | Bottom V-Groove Insert for Fiber Holding Blocks, Ø350 µm - Ø450 µm Coating | $172.06 | Today |
| VHH500 | Bottom V-Groove Insert for Fiber Holding Blocks, Ø450 µm - Ø550 µm Coating | $172.06 | Today |
| VHH600 | Bottom V-Groove Insert for Fiber Holding Blocks, Ø540 µm - Ø660 µm Coating | $172.06 | Today |
| VHH900S | Bottom V-Groove Insert for Fiber Holding Blocks, Ø810 µm - Ø990 µm Coating | $172.06 | Today |

Hide Top Inserts for Non-Rotating Fiber Holding Blocks - Two Required for FHB1

## Top Inserts for Non-Rotating Fiber Holding Blocks - Two Required for FHB1

- Select the Top Inserts that Match Your Bottom V-Groove Inserts Selected Above (See Table to the Right for Compatibility)
- Two Required for FHB1: One Each for Left and Right Fiber Holding Blocks

In addition to the bottom V-groove inserts that must be installed in the FHB1 non-rotating fiber holding blocks, top inserts must be purchased as well. There are two choices of top inserts. The VHH000 is a flat insert that fits in the lid of one of the fiber holding blocks; it is compatible with all of our bottom V-Groove inserts except the VHH900S. If you are using the VHH900S as a bottom V-groove insert, you must select the VHH900 as the top insert to allow clearance for the lid of the holding block to close.

When purchased with an FHB1 fiber holding block set, the top inserts will be installed at the factory. If necessary, the top inserts can be replaced by the user.

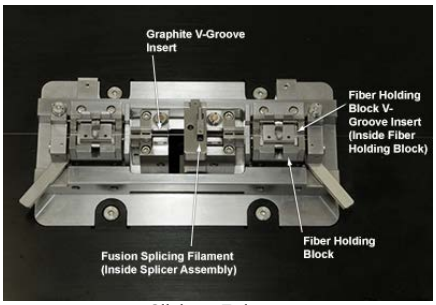
| Required Top Insert Selection Guide | | |
|---|---|---|
| Bottom V-Groove Item # | Top Insert VHH000 | Top Insert VHH900 |
| VHH100 | ✓ | |
| VHH125 | ✓ | |
| VHH160 | ✓ | |
| VHH250 | ✓ | |
| VHH300 | ✓ | |
| VHH400 | ✓ | |
| VHH500 | ✓ | |
| VHH600 | ✓ | |
| VHH900S | | ✓ |

| Part Number | Description | Price | Availability |
|---|---|---|---|
| VHH000 | Top Insert for Fiber Holding Blocks, Flat | $54.11 | Today |
| VHH900 | Top Insert for Fiber Holding Blocks, Clearance Slot for Large-Diameter Fiber | $172.06 | Today |

Hide Fiber Fusion Splicer Station Base Unit

## Fiber Fusion Splicer Station Base Unit

- Fiber Splicer for SM, MM, and PM Fiber with Cladding Diameters from 80 µm to 200 µm
- True Core Imaging® Technology for Alignment of the Fibers for Optimal Splicing
- Filament Fusion Technology:
  - Yields High-Strength, Low-Loss Splices on SM, MM, and PM Fibers
  - Tungsten or Iridium Filament (Tungsten Filament Pre-Installed in System) and Inert Purging Gas Provide Precision Control of the Fusion Temperature
- Post-Fusion Fire Polish Cleans Deposits or Impurities Adjacent to the Splice, Enhancing Splice Strength
- Integrated Windows® 7 PC with GUI for Precise Splicing Control

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The locations of the components that can be purchased separately are labeled in the schematic above and are available for purchase below. An FTV7 Tungsten filament and two VHG125 Graphite V-Grooves come pre-installed with each FSX2000PM). For more details, please see the list to the left and the *Decisions* tab.

**Components Included**

- FSX2000PM Base Unit
- One FTV7 Tungsten Filament Installed
- Two VHG125 Graphite V-Grooves Installed (for Ø80 - Ø125 µm Cladding)
- Location-Specific AC Power Cord
- Monitor, Mouse, and Keyboard
- Large Tank Regulator with Gas Line (For Argon Supply)
- Fiber Holding Block Transfer Jig
- Tool Kit

**Must Be Purchased Separately**

- Additional Graphite V-Groove Inserts for Splicer Assembly
- Additional Fusion Splicing Filaments
- FHBR1 Fiber Holding Blocks (One Required)
- FHBR1 Holding Block V-Groove Inserts (Two Required)
- >99.999% Purity Argon Gas (Not Available from Thorlabs)

For more information on how these components are integrated into the FSX2000PM base unit, please see the *Decisions* tab.

The FSX2000PM is a fusion splicing workstation designed for demanding manufacturing and R&D environments. Ideal for splicing PM fibers, PCF, dissimilar glass compositions, soft glass fibers, as well as standard SM and MM fibers, it can be used for device splices, volume manufacturing, and customized R&D splicing.

Splicing is accomplished using filament fusion technology, which leads to high-strength, low-loss splices. Precision control of splicing is achieved by using a tungsten or iridium filament (purchased separately) and inert argon purging gas (user supplied). True Core Imaging gives a high-resolution image of the fibers' inner core structure, which enables precise alignment of the fibers for splicing using a three-axis stepper motor positioning system. For PM fibers, end-face imaging and a 4th axis stepper motor allows for precise rotational adjustment for aligning the fiber stress members. Fiber holding blocks (available separately) and a transfer jig (included) allow for precise positioning and minimize handling when transferring the fibers between our FPC200 preparation station and the FSX2000PM splicer.

The alignment of the components in the FSX2000PM splicer is critical to proper performance. For that reason, your complete system will ship with all of the included components factory installed. Once you receive the system, most inserts (except the Graphite V-Groove Inserts) can be easily replaced by the user if needed. The FSX2000PM comes with one FTV7 Tungsten Filament and two VHG Graphite V-Grooves (for Ø80 µm - Ø125 µm cladding) pre-installed. If a different filament or graphite v-groove is needed (see below for additional options), contact Tech Support when purchasing to request a substitution.

An on-board Windows PC with GUI provide control of the splicing functions; an included mouse, keyboard, and monitor allow for user input of commands and display of the fiber alignment. A library of splice files provided on the PC offers options for many common fiber splicing applications, and new splice files can easily be added by the end user.

| Part Number | Description | Price | Availability |
|---|---|---|---|
| **FSX2000PM** | **Stand-Alone Fusion Splicer for SM, MM and PM Fiber - Base Unit** | **$39,518.53** | **Lead Time** |

Hide Additional Graphite V-Groove Inserts for Splicing Unit

## Additional Graphite V-Groove Inserts for Splicing Unit

- V-Grooves Support Fibers for Fusion Splicing (Two VHG125 are Installed in FSX2000PM)
- Support Cladding Diameters Ranging from 80 µm to 200 µm (See Table to the Right)

| Compatible Fiber Cladding Diameters | | | |
|---|---|---|---|
| **Item #** | **Nominal Diameter** | **Minimum Diameter** | **Maximum Diameter** |

- Two Required: One Each for Left and Right Sides of the Splicer Assembly

| | | | |
|---|---|---|---|
| VHG125 | 125 µm | 80 µm | 125 µm |
| VHG200 | 200 µm | 150 µm | 200 µm |

These Graphite V-Groove Inserts help to position the fiber in the FSX2000PM fusion splicer. The fiber size is limited by the size of the channel in the insert; the compatible sizes are listed in the table to the right.

These items are sold individually; two graphite V-groove inserts are needed for operation, one for the left and one for the right side of the splicer assembly. Due to the alignment precision required, these inserts must be installed and aligned at the factory and are not user replaceable. The FSX2000PM comes with two VHG125 (for Ø80 µm - Ø125 µm cladding) installed in the unit; if you need a different V-Groove, contact Tech Support when purchasing. If you require a different insert size for an existing system, please contact Tech Support to arrange the reconfiguration.

| Part Number | Description | Price | Availability |
|---|---|---|---|
| VHG125 | Graphite V-Groove, Ø80 µm - Ø125 µm, 0.313" Length | $143.92 | Today |
| VHG200 | Graphite V-Groove, Ø150 µm - Ø200 µm, 0.313" Length | $143.92 | Today |

Hide Additional Fusion Splicing Filaments

## Additional Fusion Splicing Filaments

- Two Options Available:
  - FTV7 Tungsten Filament Ideal for Most Applications
  - ETV7 Iridium Filament Ideal for Soft Glass Fibers
- Omega Shape Provides Uniform Concentric Heat Source

There are two available fusion splicing filaments for the FSX2000PM splicer. The FTV7 tungsten filament is ideal for most splicing applications, while the ETV7 iridium filament is ideal for soft glass fibers. The omega-shaped filament is housed in an included mount and is easily replaced by the end user. The omega shape provides a uniform concentric heat source for fusing the fiber tips and for an optional post-fusion fire polishing step. Filament lifetimes will depend upon the particular splicing parameters used but are typically about 40 minutes.

One FTV7 tungsten filament comes pre-installed in the workstation. Additional filaments are recommended, as this is a consumable item.

| Part Number | Description | Price | Availability |
|---|---|---|---|
| FTV7 | Tungsten Fusion Splicing Filament for the FSX2000PM and FFS Series | $203.44 | Lead Time |
| ETV7 | Iridium Fusion Splicing Filament for the FSX2000PM and FFS Series | $275.94 | Today |

Hide Rotating (PM Compatible) Fiber Holding Block Set - One Required for FSX2000PM

## Rotating (PM Compatible) Fiber Holding Block Set - One Required for FSX2000PM

- Fiber Holding Blocks for the FSX2000PM Splicer
- Allows for Rotational Alignment of PM Fiber Prior to Splicing
- Sold as a Set of Two (Left and Right Pair)
- Requires V-Groove Inserts (Available Separately Below)

Fiber Holding Blocks secure the fiber and simplify moving the fibers between the different processing steps. The FFBR1, which is sold as a pair of left and right fiber holding blocks, is designed for processing of fibers on the FSX2000PM splicer by itself or when used in conjunction with the FPC200 preparation station.

If you plan on using the FPC200 preparation station and FSX2000PM splicer simultaneously, then two FHBR1 holding block sets, along with inserts for each, should be purchased.

In order to securely hold a fiber with a particular diameter, a set of V-Groove Inserts is installed within the fiber holding block. V-Groove inserts must be purchased separately below.

| Part Number | Description | Price | Availability |
|---|---|---|---|
| FHBR1 | Set of Right and Left Rotating Fiber Holding Blocks for SM, MM, and PM Fiber | $6,427.78 | Lead Time |

Hide V-Groove Inserts for Rotating (PM Compatible) Fiber Holding Blocks - Two Required for FHBR1

## V-Groove Inserts for Rotating (PM Compatible) Fiber Holding Blocks - Two Required for FHBR1

- V-Groove Inserts Align Fibers within the FHBR1 Rotating Fiber Holding Blocks
- Support Buffer or Coating Diameters Ranging from 90 µm to 990 µm
- Two Required: One Each for Left and Right Holding Blocks

These inserts are designed for the FHBR1 Rotating Fiber Holding Blocks. A total of two items must be purchased, one insert for the left holding block and one insert for the right holding block. They are provided individually so as to allow for the construction of a system that can process two fibers with different coating diameters. Different V-groove sizes are provided to support a range of fiber coating diameters; compatibility is listed in the table to the right.

When purchased with an FHBR1 fiber holding block set, the inserts will be installed at the factory. If necessary, the V-groove inserts can be replaced by the user.

| Compatible Fiber Buffer/Coating Diameters | | | |
|---|---|---|---|
| Item # | Nominal Diameter | Minimum Diameter | Maximum Diameter |
| VHN100 | 100 µm | 90 µm | 110 µm |
| VHN125 | 125 µm | 113 µm | 137 µm |
| VHN135 | 135 µm | 130 µm | 145 µm |
| VHN160 | 160 µm | 144 µm | 176 µm |
| VHN200 | 200 µm | 180 µm | 220 µm |
| VHN250 | 250 µm | 225 µm | 275 µm |
| VHN300 | 300 µm | 270 µm | 330 µm |
| VHN400 | 400 µm | 360 µm | 440 µm |
| VHN500 | 500 µm | 450 µm | 550 µm |
| VHN600 | 600 µm | 540 µm | 660 µm |
| VHN700 | 700 µm | 630 µm | 770 µm |
| VHN800 | 800 µm | 720 µm | 880 µm |
| VHN900 | 900 µm | 810 µm | 990 µm |

| Part Number | Description | Price | Availability |
|---|---|---|---|
| VHN100 | V-Groove Insert for FHBR1, Ø90 µm - Ø110 µm Coating | $160.15 | Today |
| VHN125 | V-Groove Insert for FHBR1, Ø113 µm - Ø137 µm Coating | $160.15 | Today |
| VHN135 | V-Groove Insert for FHBR1, Ø130 µm - Ø145 µm Coating | $160.15 | Lead Time |
| VHN160 | V-Groove Insert for FHBR1, Ø144 µm - Ø176 µm Coating | $160.15 | Today |
| VHN200 | V-Groove Insert for FHBR1, Ø180 µm - Ø220 µm Coating | $160.15 | Today |
| VHN250 | V-Groove Insert for FHBR1, Ø225 µm - Ø275 µm Coating | $160.15 | Today |
| VHN300 | V-Groove Insert for FHBR1, Ø270 µm - Ø330 µm Coating | $160.15 | Today |
| VHN400 | V-Groove Insert for FHBR1, Ø360 µm - Ø440 µm Coating | $160.15 | Today |
| VHN500 | V-Groove Insert for FHBR1, Ø450 µm - Ø550 µm Coating | $160.15 | Today |
| VHN600 | V-Groove Insert for FHBR1, Ø540 µm - Ø660 µm Coating | $160.15 | Today |
| VHN700 | V-Groove Insert for FHBR1, Ø630 µm - Ø770 µm Coating | $160.15 | Today |
| VHN800 | V-Groove Insert for FHBR1, Ø720 µm - Ø880 µm Coating | $160.15 | Today |
| VHN900 | V-Groove Insert for FHBR1, Ø810 µm - Ø990 µm Coating | $160.15 | Today |

Hide Replacement Diamond Cleave Blade

## Replacement Diamond Cleave Blade

- Replacement Blade for Our Fiber Cleaving Systems (See List to the Right)
- 0.08" (2.0 mm) Long Diamond Blade
- User Installable

Click to Enlarge
The blade is shipped in a protective covering.

The ACL83 Diamond Cleave Blade is a replacement blade for the Vytran fiber processing systems listed to the right. Each system is shipped with a blade included.

When used with proper cleave parameters, a single location on the blade can provide up to 5,000 cleaves (dependent on the cladding properties of the fiber being cleaved). The blade can be positioned approximately 10 times before replacement (assuming proper cleave parameters and usage that does not cause unexpected damage to the blade). Blade replacement instructions for each system are provided in the user manuals.

### Compatible Systems

- FPC200 Fiber Preparation Station
- CAC400 and CAC400A Fiber Cleavers
- LDC401 and LDC401A Fiber Cleavers
- LDC450B Portable Fiber Cleaver
- GPX3800 and GPX3850 Automated Glass Processors with Cleavers
- FFS2000 and FFS2000PT Fiber Preparation and Splicing Workstations
- FFS2000PM and FFS2000WS Fiber Preparation, Splicing, and Proof Testing Workstations
- Former Generation LDC-200 Fiber Cleaver

Note: Severe damage to the blade can occur if conditions cause high stress perpendicular to the edge of the blade or if incorrect parameters are used to cleave the fiber.

| Part Number | Description | Price | Availability |
| --- | --- | --- | --- |
| ACL83 | Replacement Diamond Cleave Blade | $662.26 | Today |


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FSX-2000 FIBER SPLICER
START
STOP
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