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## 1. General

The 1032B5 (standard version) and the 1032B6 (international version) Tool Kits contain tools to assemble ST<sup>®</sup> II, ST<sup>®</sup> II+, and SC Connectors onto building and optical-fiber cables. Required consumables are sold separately.

The D-182739 Consumables Kit (for singlemode connectors) and the D-182738 Consumables Kit (for multimode connectors) each contain polishing paper, epoxy, and other materials required to assemble approximately 100 connectors. See the table below for proper applications.

Ordering Information for these kits is provided in **Section 9**.

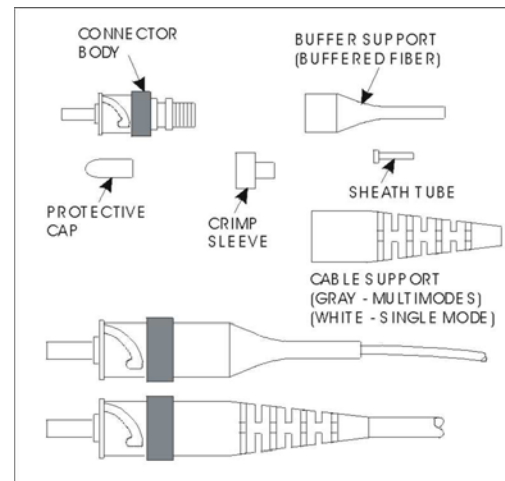
The 1032B5 Kit is identical to the 1032B6 Kit except the 200A1 Curing Oven replaces the 200A Curing Oven in the 1032B6 international version.

The assembled ST<sup>®</sup> II Fiber Optic Connector is intended for use in Local Area Networks (LANs), Premises Distribution Systems (PDSs), fiber to the home, and other applications where quality, small-size, low-loss, and low-cost connections are required.

**Ordering Information** for this connector assembly is provided in **Section 9**.



**Figure 1.** 1032 Tool Kit for ST<sup>®</sup> II, ST<sup>®</sup> II+, and SC



**Figure 2.** ST<sup>®</sup> II+ Fiber Optic Connector

Table 1. Connector Product Description

Applicable Connectors	Type Mode	Buffer or Jacket Size (mm)	End Face Geometry	Consumable Kit Required (Note 1)	1032( )Tool Kit Required
<b>P2070A-Z</b>	MM	0.9, 1.6, 3.0	Domed	D-182738	B5, B6
<b>P2071A-Z</b>	MM	0.9	Domed	D-182738	B5, B6
<b>P3070A-Z</b>	SM	0.9, 1.6, 3.0	Domed	D-182739	B5, B6
<b>P3071A-Z</b>	SM	0.9	Domed	D-182739	B5, B6

**Note 1:** When using 250- $\mu$ m coated fiber, also use D-181755 Consumable Kit (see Section 3.1). The D-182918 Consumable Kit is required for 1.6-mm MiniCord™ termination.

**Note 2:** Jacketed Fiber Cable (Cordage) Compatibility: The ST II+ connector should only be installed onto 1.6mm MiniCord™ or 3.0 mm 9000 Series cordage containing stiff nylon buffered fibers. The ST II+ connector will not function properly when installed onto cordages with soft PVC buffered fibers.

## 2. Precautions

Safety glasses should be worn at all times while performing the installation procedures.

Avoid skin contact with epoxy adhesive.

When the heater is in operation, place it away from combustibles.

Disconnected optical connectors may emit radiation if the far end is coupled with a working laser or Light-Emitting Diode (LED). Do not view the fiber end of a cable or plug with an optical instrument until absolute verification is established that the fiber is disconnected from any laser or LED source.

For cleaning of these fiber optic products, always use Isopropyl Alcohol (>91% 2-Propanol + water).

It is recommended that you use the E-Series Ultrajet\* from Chemtronics\*, Inc. when canned air is required.

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\* Chemtronics and Ultrajet are registered trademarks of Chemtronics, Inc.

### 3. Cable and Fiber Preparation

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#### 3.1. Coated Fiber

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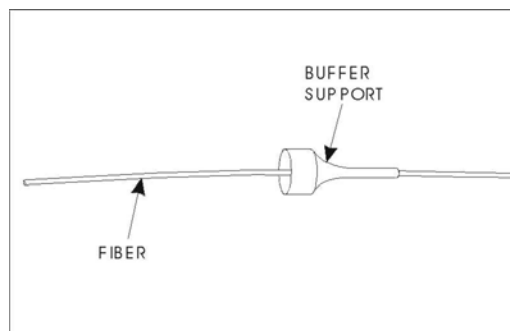
⇒ **NOTES:**

**Note 1:** Use the appropriate procedures for preparing outside plant (OSP) cable. See 636-299-110 for more information on grounding, blocking, and buffering Fiber Optic Cable.

**Note 2:** Before starting cable and fiber preparation, the curing oven may be set up to save warm-up time later. See **Section 6 - Curing Epoxy** section for detailed instructions.

**Important:** Do not attempt to remove the fiber coating until a buffer tube has been placed over the coated fiber. This is to prevent cutting the fiber by mistake.

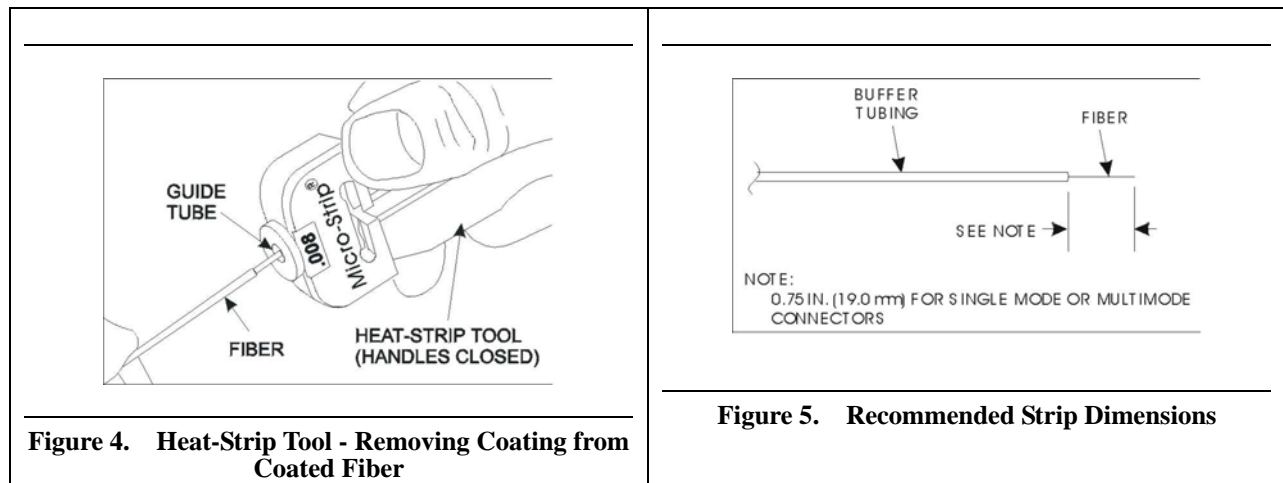
1. **EXPOSE AN APPROPRIATE LENGTH OF COATED FIBER** (as specified in the D-181755 Kit) to allow for connector installation and termination.
2. **PLACE AN APPROPRIATE LENGTH OF BUFFERED TUBING** from the D-181755 Kit over the fiber to be stripped.
3. **PLACE BUFFER SUPPORT ONTO FIBER** Slip the buffer support onto the buffer tube covering the fiber (Figure 3).



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**Figure 3. Install Buffer Support on Buffer Tubing**

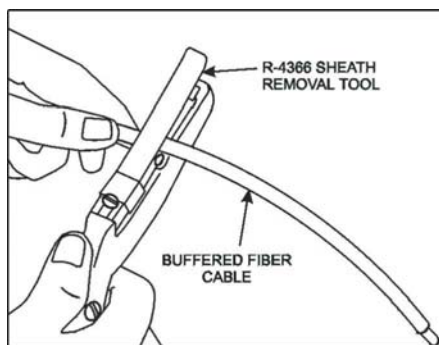
4. **REMOVE FIBER COATING** With the stripper handles open and the buffered tube aligned with the end of the fiber, insert both fiber and buffered tubing through the guide tube opening enough to allow about 0.75 inch (19 mm) of buffer and fiber coating to be removed (Figure 4).
5. Close the handles and pull the buffer away from the tool with a smooth motion.
6. Wipe the stripped fiber with a wipe dampened with isopropyl alcohol to remove any residual coating.



- 7. INSTALL CONNECTOR ON FIBER** Use the procedures outlined in **Connector Installation, Section 5.1**, in this manual to complete installation of the connector, cure the epoxy, polish and inspect the fiber end.

### 3.2. Buffered Fiber Cable (Premises/Building)

- 1. REMOVE OUTER JACKET** Ring-cut the outer sheath the required distance from the cable end with the R-4366 sheath removal tool. **IMPORTANT: Do not cut into the fibers.** Typical length is approximately 24 to 36 inches (0.61 to 0.91 meters).



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**Figure 6. R-4366 Sheath Removal Tool - Ring-Cut Cable Jacket**

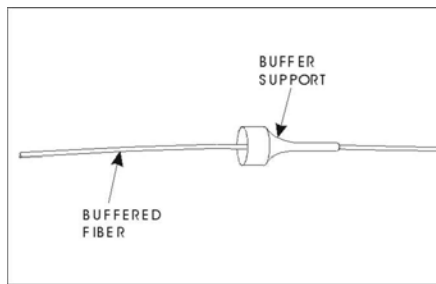
⇒ **NOTES:**

**Note 1:** The exposed buffered fiber should be long enough to:

- Allow for placement into the equipment cabinet
- Allow access to the curing oven, polishing plate, etc.
- Prevent stress on the fiber during the application of the connector.

**Note 2:** See Table 1, page 1, to verify correct connector choice for cable type.

**2. PLACE BUFFER SUPPORT ONTO CABLE** Slip the buffer cap and the buffer support onto the buffered fiber.

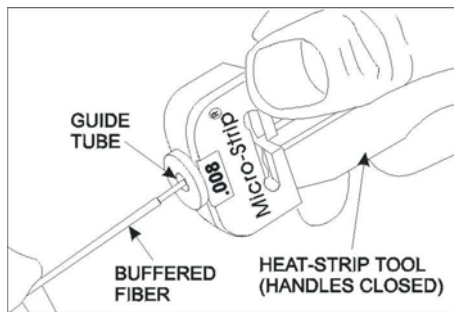


**Figure 7. Install Buffer Support on Buffered Fiber**

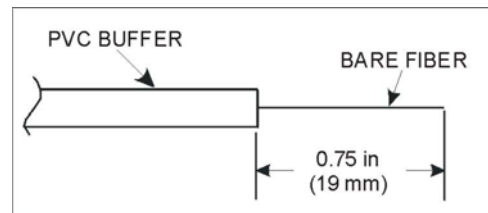
**3. MEASURE AND MARK THE BUFFERED FIBER** 0.75 inch (19 mm) from the end.

**4. REMOVE BUFFER AND FIBER COATING**

- Refer to 1026A Heat-Strip Tool Operating Instructions for setup. Make sure heater unit is fully inserted.
- Insert buffered fiber through the guide tube to allow 0.75 inch (19 mm) of the buffer and coating to be removed.
- Close the handles and wait 6 to 10 seconds for softening of the buffer to occur. Pull the fiber from the tool with one smooth motion.
- Wipe the stripped fiber once with a wipe dampened with isopropyl alcohol to remove any residual coating.

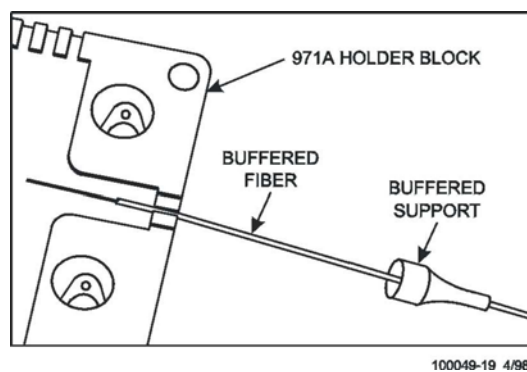


**Figure 8. Heat-Strip Tool - Removing Fiber Coating from Buffered Fiber**



**Figure 9. Buffered Fiber Stripping Dimensions**

- 5. SET ASIDE THE PREPARED FIBERS** Place the prepared fiber into the grooves of the 971A holder block (provided with the tool kits).



**Figure 10. 971A Holder Block with Buffered Fiber**

- 6. INSTALL CONNECTOR ON FIBER** Use the procedures outlined in Connector Installation, Section 5.1, to complete the installation of the connectors, cure the epoxy, polish and inspect the fiber end.

### 3.3. Jacketed Fiber Cable (1.6 mm MiniCord™ Cable and 3.0 mm)

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(See Table 1, Note 2 on page 3 before proceeding.)

1. **PLACE CABLE SUPPORT AND SLEEVE ONTO CABLE.** Slip the cable support and the crimp sleeve onto the cable. Depending on connector application, the appropriate color crimp sleeve and cable support must be selected. See Figure 2, page 2 for proper color selection. If terminating 1.6-mm MiniCord™ cable, use the crimp sleeve provided in the D-182918 kit.

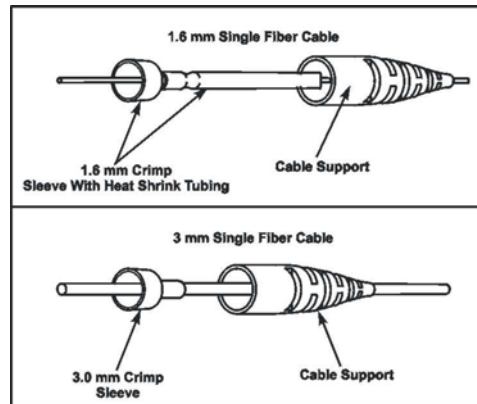


Figure 11. Cable Support and Sleeve on Single Fiber Cable

2. **MEASURE AND MARK CABLE** Using either a scale or template, measure and mark the cable 1.35 inches (34.3 mm) from the end of the cable.
3. **REMOVE OUTER JACKET** Using the Number 1 notch on the blue-handled 700A stripping tool, remove the outer jacket back to the mark.

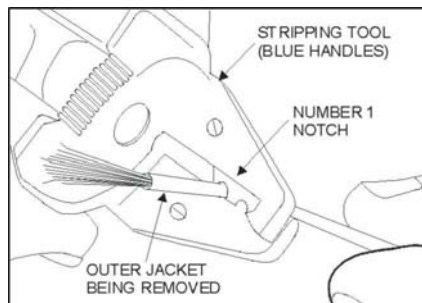
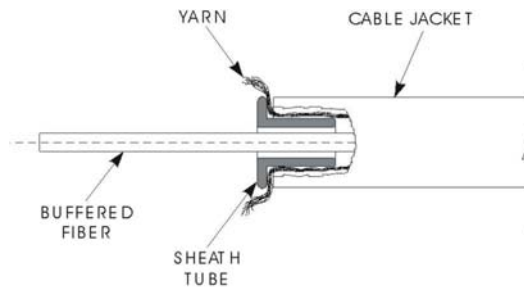


Figure 12. Stripping Outer Jacket of Single Fiber Cable



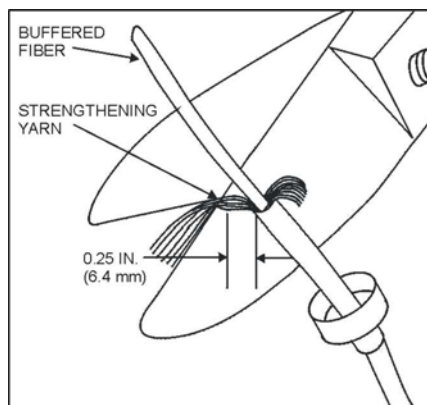
#### 4. INSERT SHEATH TUBE INTO CABLE JACKET

- For 3.0-mm cable, insert the sheath tube over the buffered fiber and into the cable jacket.



**Figure 13. Sheath Tube Insertion 3.0 mm**

- 5. CUT STRENGTHENING YARN** With the strengthening yarn separated into two equal size bundles, use scissors to trim the strands 0.25 inch (6.4 mm) from the edge of the outer jacket. Flare the strengthening yarn evenly all around the cable.



**Figure 14. Cutting Strengthening Yarn – Single Fiber Cable**

- 6. MEASURE AND MARK BUFFERED FIBER** Measure and mark the buffered fiber 0.75 inch (19 mm) from the end of the buffered fiber.

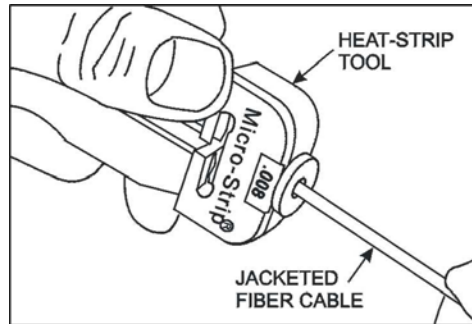


Figure 15. Heat-Strip Tool - Jacketed Fiber Cable

**7. REMOVE BUFFER AND FIBER COATING**

- Refer to 1026A Heat-Strip Tool Operating Instructions for setup. Make sure heater unit is fully inserted.
- Insert buffered fiber through the guide tube to allow 0.75 inch (19 mm) of the buffer and coating to be removed.
- Close the handles and wait 6 to 10 seconds for softening of the buffer to occur. Pull the fiber from the tool with one smooth motion.
- Wipe the stripped fiber once with a wipe dampened with isopropyl alcohol to remove any residual coating.

**RECOMMENDED DIMENSIONS FOR 1.6-mm MiniCord™ AND 9000 SERIES CORDAGE**

The recommended dimensions for the prepared cable and fiber are shown in Figure 16.

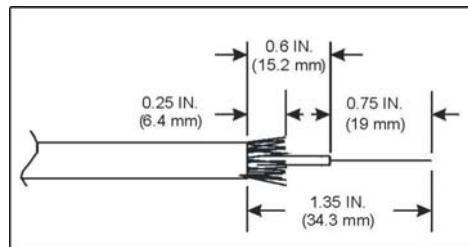
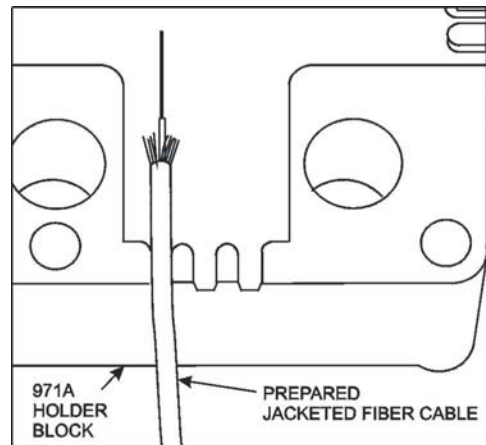


Figure 16. Recommended Dimensions for MiniCord™ and 9000 Series Cordage

- 8. SET ASIDE PREPARED CABLE** Place the prepared cable into the grooves of the 971A holder block provided with the tool kit.
- 9. INSTALL CONNECTOR ON FIBER** Use the procedures outlined in Connector Installation, Section 5.2, to complete installation of the connector, cure the epoxy, polish and inspect the fiber end.



**Figure 17. 971A Holder Block with Jacketed Fiber Cable**

## **4. Epoxy Preparation**

The epoxy package is furnished with the consumable kit. See the ordering information in the back of this manual.

### **4.1. Preparation of Epoxy Furnished in Plastic Container**

- 1. REMOVE EPOXY DIVIDER** This is a two-part epoxy separated with a divider. The divider must be removed to allow the epoxy to be mixed.

2. **MIX THE EPOXY** Using the divider, thoroughly mix the epoxy until both parts are blended into a smooth, uniform color.

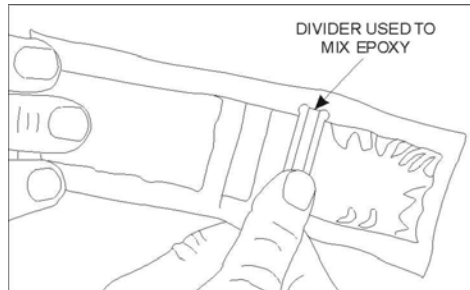


Figure 18. Mix the Epoxy

3. **INSTALL SYRINGE TIP** Place the syringe tip onto the syringe and twist to lock it in place. Then remove the plunger to allow the mixed epoxy to be loaded into the syringe.
4. **PLACE EPOXY INTO SYRINGE** Fold the epoxy package in half, cut the corner of the package, and squeeze the mixed epoxy into the syringe. Replace the plunger in the syringe. A 3/4-inch length (19 mm) of epoxy will be enough for about 12 connectors.

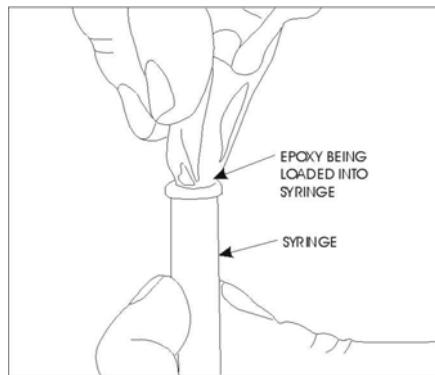


Figure 19. Place Epoxy into Syringe

5. **REMOVE AIR FROM SYRINGE** Remove air pockets from the syringe by holding the syringe tip upward and ejecting epoxy until the air pockets are removed.

## 5. Connector Installation

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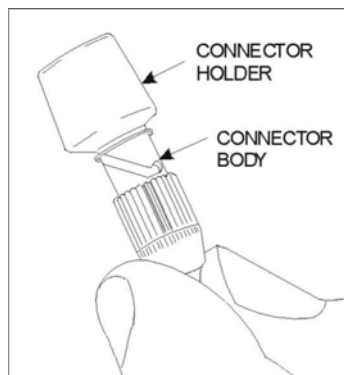
### 5.1. Connector – Buffered Fiber Assembly

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1. **PLACE CONNECTOR IN 600B CONNECTOR HOLDER** Hold the connector towards a light and check to make sure the hole in the connector tip is clear of foreign matter. Use music wire (furnished) to clear the hole if necessary.

Make sure that the bayonet pins of the holder are fully seated in the bayonet slots of the connector housing.

**(Note:** Only 600B connector holders should be used.)



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**Figure 20. Install Connector Holder**

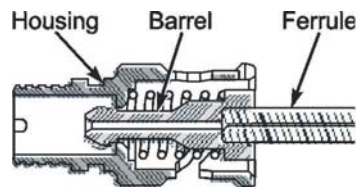
## 2. INJECT EPOXY INTO THE CONNECTOR TIP

- Insert the tip of the syringe into the back of the connector until it bottoms.
- Slowly inject epoxy into the connector until a small bead appears on the connector tip.

**Important:** The bead should cover at least one-half of the end face surface.

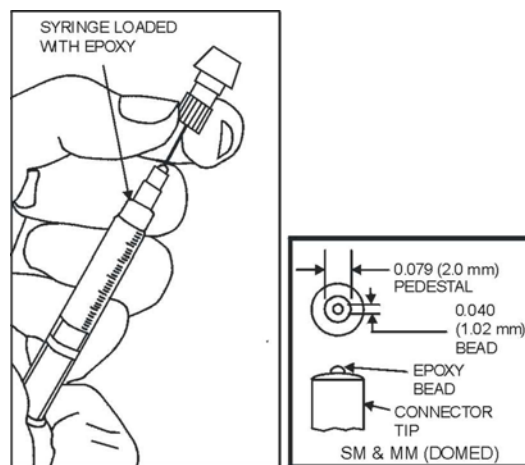
- When the epoxy forms the correct size bead on the tip, maintain pressure on the plunger and slowly withdraw the syringe.

**Note:** Do not overfill the barrel with adhesive. Do not allow the adhesive to get onto the connector housing components.



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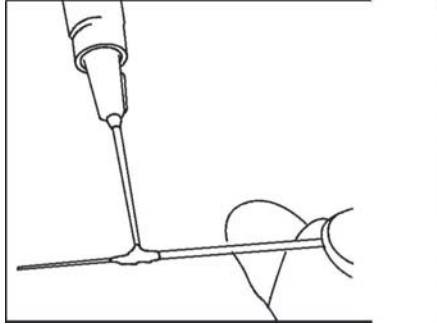
Figure 21. ST II+ Connector Components



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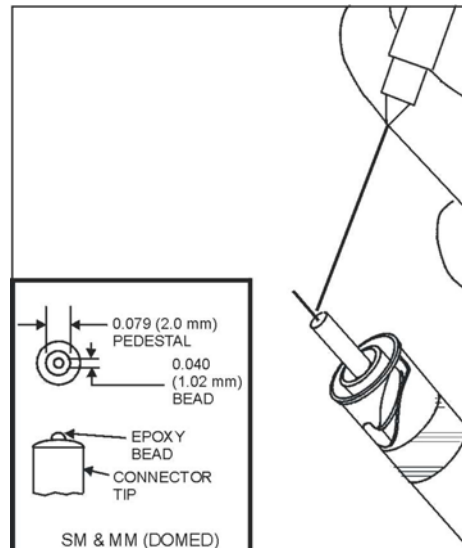
Figure 22. Inject Epoxy into Connector Tip

- 3. APPLY EPOXY TO FIBER AND BUFFER** Using the syringe, apply a **thin** coating of epoxy to the fiber and 0.1 inch (2.5 mm) of the buffer.



**Figure 23. Apply Epoxy to Fiber and Buffer**

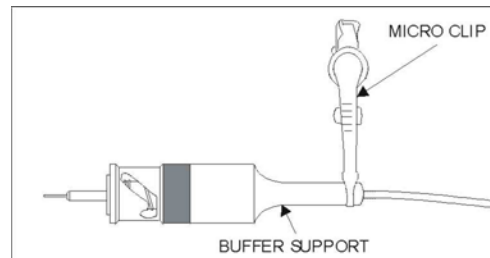
- 4. INSERT FIBER INTO CONNECTOR** Insert the fiber through the connector, carefully feeling for the opening in the tip. When the fiber is seated, pull it back slightly and watch for movement at the tip to make sure the fiber has not been broken. Reseat the fiber into the connector making sure the buffer is completely seated against the ceramic.
- 5. CHECK FIBER/CONNECTOR TIP INTERFACE** Inspect the tip of the connector. If the epoxy is wicked away on the fiber as it is inserted, the bead must be reestablished. A proper bead will cover **one-half of the end face surface**.



**Figure 24. Check Fiber/Connector Interface**

- 6. INSTALL BUFFER SUPPORT** Apply a drop of epoxy to the large groove at the back of connector housing. Slip the buffer support onto the connector housing and rotate to distribute epoxy. Make sure the fiber is fully inserted into the connector.

**Important:** Use only the connector holder or buffer support when handling the connector assembly. Make sure that the buffered fiber is fully inserted into the connector. Place a micro clip on the buffer support as shown. This inhibits the buffered fiber from being accidentally pulled out of the connector.



**Figure 25. Install Buffer Support and Micro Clip**

## **5.2. Connector – Jacketed-Fiber Cable Assembly (1.6-mm MiniCord™ Cable and 3.0 mm)**

- 1. PLACE CONNECTOR IN 600B CONNECTOR HOLDER** Hold the connector towards a light and check to make sure the hole in the connector tip is clear of foreign matter. Use music wire (furnished) to clear the hole if necessary.

Make sure that the bayonet pins of the holder are fully seated in the bayonet slots of the connector housing.

**Note:** Only 600B Connector Holder should be used.

**2. INJECT EPOXY INTO THE CONNECTOR TIP**

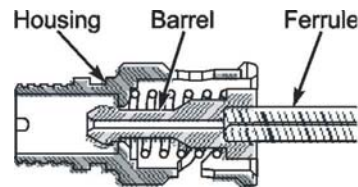
- Insert the tip of the syringe into the back of the connector until it bottoms.
- Slowly inject epoxy into the connector until a small bead appears on the connector tip.

**Important:** The bead should cover at least one-half of the end face surface.

- When the epoxy forms the correct size bead on the tip, maintain pressure on the plunger and slowly withdraw the syringe.

**Note:** Do not overfill the barrel with adhesive. Do not allow the adhesive to get onto the connector housing components.

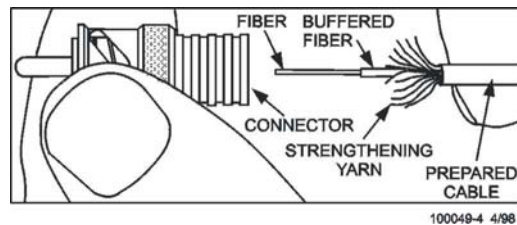




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Figure 26. ST II+ Connector Components

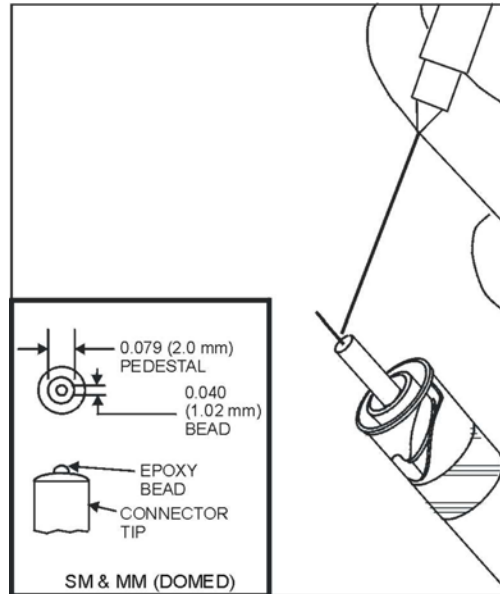
3. **APPLY EPOXY TO FIBER AND BUFFER** Using the syringe, apply a **thin** coating of epoxy to the fiber and 0.1 inch (2.5 mm) of the buffer.
4. **INSERT FIBER INTO CONNECTOR** Insert the fiber into the connector. Rotate the connector carefully feeling for the opening in the tip. When the fiber is seated, pull it back slightly and watch for movement at the tip to make sure the fiber has not been broken. **Reseat the fiber into the connector so the outer jacket butts against the connector barrel.**



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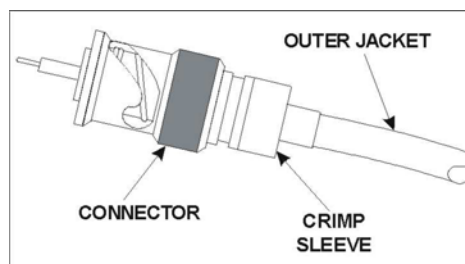
Figure 27. Insert Fiber into Connector (Single-Fiber Cable)

- 5. CHECK FIBER/CONNECTOR TIP INTERFACE** Inspect the tip of the connector. If the epoxy is wicked away on the fiber as it is inserted, the bead must be reestablished. A proper bead will cover **one-half of the end face surface**.
- 



**Figure 28. Check Fiber/Connection Interface**

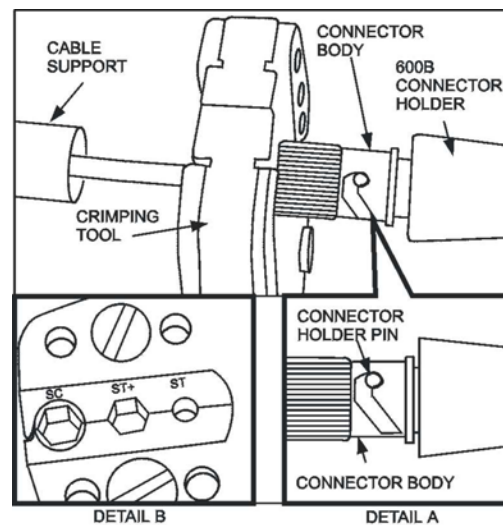
- 6. INSTALL CRIMP SLEEVE** Slip the crimp sleeve over the outer jacket and trap the strengthening yarn between the connector housing and the sleeve.
- 



**Figure 29. Install Crimp Sleeve (Single-Fiber Cable)**

**7. Before crimping, make sure the sleeve is fully seated on the connector barrel.** For 3.0-mm cable, align the crimp sleeve with the “ST+” cavity of the 1510B Crimping Tool and squeeze the crimping tool handles until they release. Rotate the connector 60°. Make sure the hex flats, just formed by the tool, are again aligned with the flats in the tool dies and crimp again.

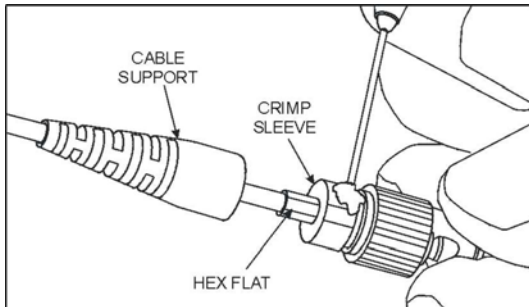
For 1.6-mm MiniCord™ cable, use the crimp sleeve provided in the D-182918 kit. Align the crimp sleeve with the “ST+” cavity of the 1510B Crimping Tool and squeeze the crimping tool handles until they release. Now crimp the small end of the crimp sleeve by positioning the “ST” cavity over the smaller diameter. Squeeze the crimping tool handles until they release.



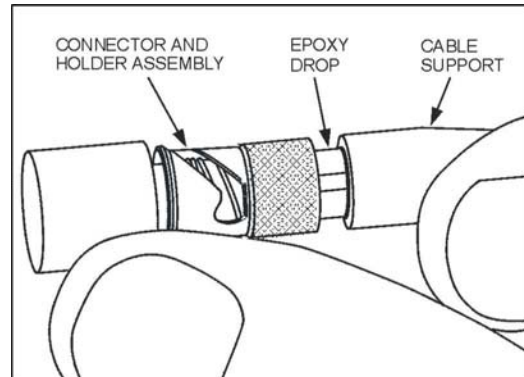
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**Figure 30. Crimp Cable Sleeve (Single-Fiber Cable)**

**8. INSTALL CABLE SUPPORT** Apply a drop of epoxy onto the crimp sleeve and large groove at the back of the connector housing. Push the cable support over the crimp sleeve and onto the connector housing. The assembly is now ready to be placed into the curing oven.



**Figure 31. Apply Epoxy to Crimp Sleeve and Connector Housing**



**Figure 32. Install Cable Support (Single-Fiber Cable)**

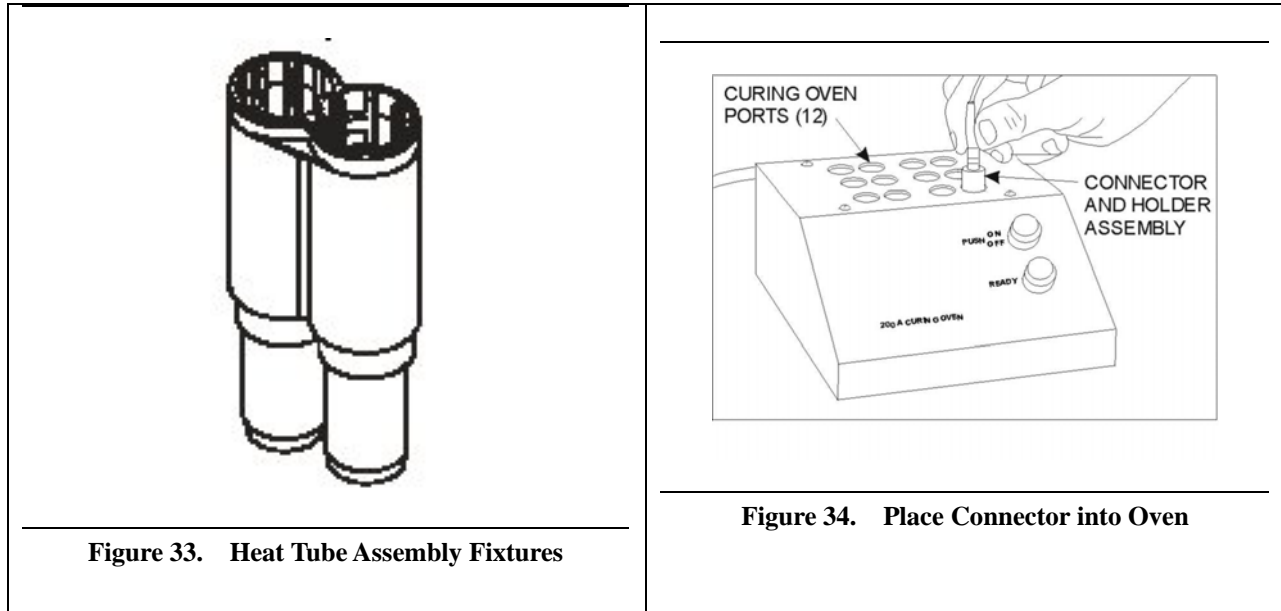
## **6. Curing Epoxy, Cleaving and Polishing**

### **6.1. Curing Epoxy**

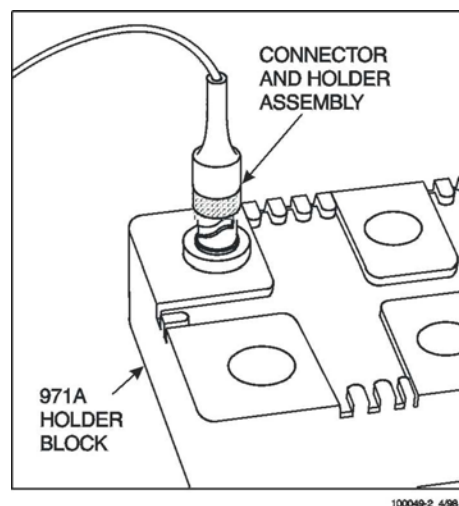
- 1. SET UP THE CURING OVEN** Place the oven away from combustibles, and connect the power cord to a power source (**120 V 60 Hz AC for the 200A oven and 220 V 50 Hz AC for the 200A1 international oven**). To apply power, push the ON/OFF switch to the ON position. The switch will illuminate, indicating that the power is on. In about 5 minutes, an illuminated READY lamp indicates that the oven is ready for use.

**Note:** If terminating 1.6mm MiniCord cable, place the Heat Tube Assembly Fixtures into the ports of the oven.

- 2. PLACE CONNECTOR INTO OVEN** Place the connector and holder assembly into one of the oven ports. Cure for 10 minutes. Conne3ctors with 1.6 mm MiniCord cable will be inserted into the Heat Tube Assembly Fixtures



- 3. PLACE CONNECTOR INTO 971A HOLDER BLOCK** After 10 minutes of curing time, remove the assembly from the oven and place it into one of the ports in the 971A holder block to cool. Remove micro clip from buffer support after connector has cooled.



## 6.2. Cleaving the Fiber

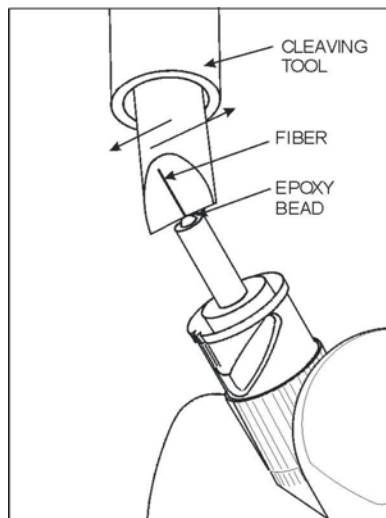
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1. **SCORE THE FIBER** Remove the 600A or 600B holder from the connector. Using one or two strokes with the cleaving tool, score the fiber close to the crest of the epoxy bead. Scissors may be used as an optional method of removing the excess fiber.

⇒ **NOTE:**

A clean, short score significantly improves the success rate. **Do not break the fiber.**

2. Using a **gentle straight pull**, remove the exposed fiber. If the fiber does not pull off with a gentle pull, rescore and try again.



---

Figure 36. Scoring the Fiber

## 6.3. Polishing Connector Ends

---

1. **PREPARE POLISHING MATERIAL** Before positioning the polishing material, clean the bare polishing plate and the back of the non-foam-backed polishing paper with a wipe dampened with isopropyl alcohol. Blow the plate and paper dry with canned air. If domed connectors are to be polished, also clean the rubber pad. Blow the pad dry with canned air.

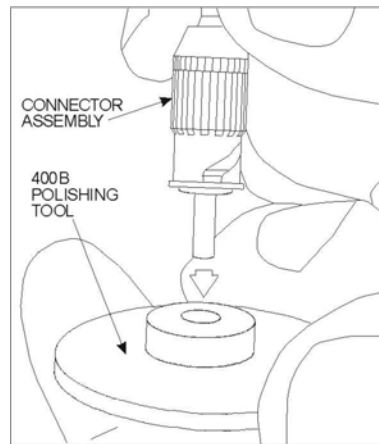
**Important:** Foreign material can cause scratches on the end face of the ferrule if the polishing plate or paper is not properly cleaned.

2. **PREPARE POLISHING TOOL** Clean the surface of the 400B or 1510A polishing tool and the connector tip with a wipe dampened with alcohol.
3. **AIR POLISH THE CLEAVED FIBER** Hold the Type A polishing paper (brown side down, white side up) over the connector. Point the connector ferrule upward and, using light circular or figure-8 strokes, polish the cleaved fiber down flush with the epoxy bead.

**Note:** This will reduce the risk of breaking the fiber during the first polishing.

4. **INSERT CONNECTOR INTO POLISHING TOOL** Insert the connector tip into the 400B or 1510A polishing tool.

*Refer to the Polishing Guide Table and the detailed instructions in the following sections*



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**Figure 37. Prepare Polishing Tool**

## ST® II+ Connector Polishing Guide

(Epoxy Installation)

	1 <sup>st</sup> Polish		2 <sup>nd</sup> Polish		3 <sup>rd</sup> Polish	Repairs	
Product Code	P2070AZ P2071AZ	P3070AZ P3071AZ	P2070AZ P2071AZ	P3070AZ P3071AZ	P3070AZ P3071AZ	P2070AZ P2071AZ	P3070AZ P3071AZ
Ferrule Type	MM Zirconia	SM Zirconia	MM Zirconia	SM Zirconia	SM Zirconia	MM Zirconia	SM Zirconia
End Face Geometry	Domed	Domed	Domed	Domed	Domed	Domed	Domed
Pad Type	Rubber	Rubber	Rubber & type A paper	Rubber & type A paper	Rubber & type A paper	Rubber & type A paper	Rubber & type A paper
Paper Type	A, over pad	A, over pad	C or D, over type A & pad	C or D, over type A & pad	E, over type A & pad	F, over type A & pad	F, over type A & pad
Polishing Solution	None	None	None	None	Distilled water	Distilled water	Distilled water
Polishing Time or Number of Strokes	Until thin layer of epoxy remains	Until thin layer of epoxy remains	Remove remaining epoxy	Remove remaining epoxy	10 to 15 strokes	Until flaw is removed (40 strokes max)	Until flaw is removed (40 strokes max), then E over type A & pad, 10 to 15 strokes



### 6.3.1. Polishing Domed-Tipped Connector Ends

#### 1st Polish – Singlemode and Multimode Connector

1. Place rubber pad on the polishing plate.
2. Place a sheet of Type A Polishing Paper (foam-backed) over the pad (foam-side down).
3. Carefully place the connector ferrule into the polishing tool. Starting with **extremely light pressure**, polish the connector on the Type A paper using figure-8 strokes. Check periodically with the eye loupe or magnifier until a shiny halo can be observed around a thin layer of epoxy remaining on the tip.

#### ⇒ NOTE:

**EXTREMELY** light pressure should be used during the first few polishing strokes to avoid breaking the fiber off below the connector tip surface.

#### ⚠ WARNING:

*To avoid pitting the fiber end face, DO NOT remove all of the epoxy during this step.*

4. Start with a fresh area of the polishing paper for each connector to be polished.

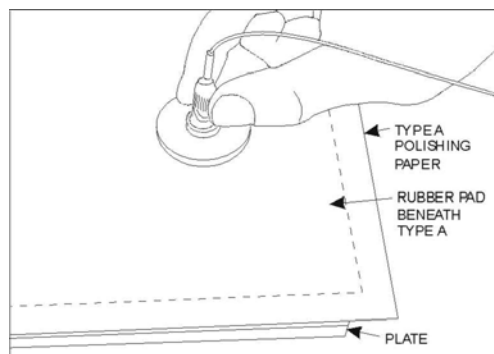


Figure 38. Polishing Domed-Tipped Connectors (1st Polish)

#### 2nd Polish – Singlemode and Multimode Connector

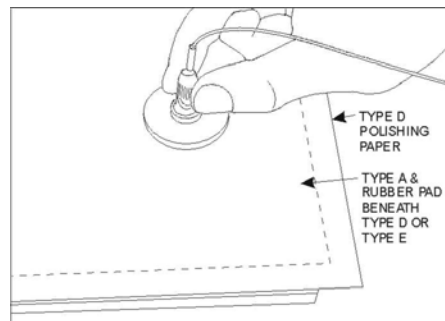
1. Place the Type D (light green) polishing paper over the Type A paper (glossy side down). Using figure-8 strokes, polish the connector until all of the remaining epoxy is removed. Check periodically with the eye loupe or magnifier. When all the epoxy has been removed, the entire end face will appear shiny. **No further polishing is required for multimode connectors.** Start with a fresh area of paper for each connector.

### **3rd Polish – Singlemode Connector**

1. To achieve optimum return loss, replace the Type D paper with a sheet of Type E (white) polishing paper (glossy side down). Remove the connector from the tool and clean with a wipe dampened with isopropyl alcohol. Add a small amount of water to the portion of the paper that will be the working area. Using the polishing tool, work the water into the polishing paper. Place the connector ferrule into the polishing tool and polish the connector ferrule for 10 to 15 strokes; each stroke should be approximately 2 inches in height.

**⚠ WARNING:**

*DO NOT exceed 15 strokes.*



**Figure 39. Polishing Domed-Tipped Connectors (2nd and 3rd Polish)**

## **7. Inspection**

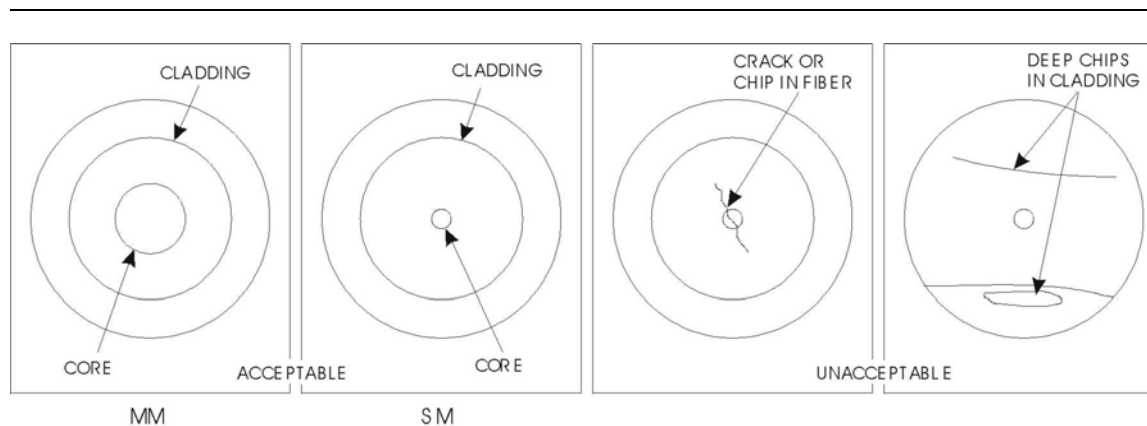
### **7.1. Using Microscope to Inspect Fiber**

1. **ATTACH CONNECTOR TO MICROSCOPE** See **Precautions** on **page 2**. Insert the connector tip into the bottom of the microscope. Open the microscope barrels to illuminate the connector tip, and use the side wheel to focus. A high-intensity light may be used at the other end of the fiber to illuminate the core area.

**⚠ CAUTION:**

*Do not use a laser or LED to illuminate the core area for viewing.*

The core may not necessarily illuminate if an epoxy film or bead still exists on the connector end face.



**Figure 40. Fiber End Views (Microscope)**

2. **INSPECT FIBER END** An acceptable fiber end is free of cracks. Voids or scratches must be avoided in the core area. If the fiber is unacceptable, this fiber end must be repaired or reterminated.
3. If the connector is not to be used immediately, cover the end with the protective cap.

## **7.2. Repairs (Domed Connectors Only)**

In some instances when the fiber is cracked or scratched in or near the core, the plug may be repaired. Using Type F (yellow) polishing paper with water, placed over the Type A paper and rubber pad, polish the connector for 20 to 40 strokes or until the flaw has been removed. No further polishing is required for multimode.

**For singlemode, once the flaw is removed, repeat the 3<sup>rd</sup> Polish - Singlemode Connector in Section 6.3.1.**

## 8. Interconnecting with ST<sup>®</sup> II+ Fiber Optic Connectors

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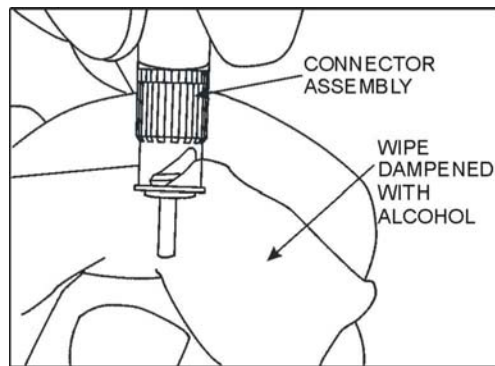
Several interconnecting couplings are available for joining the ST<sup>®</sup> II+ Fiber Optic Connectors. See Ordering Information in this manual.

### 8.1. Cleaning Connector and Coupling

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1. **CLEAN END OF CONNECTOR TIP.** Clean the end and sides of the connector ferrule with a wipe dampened with isopropyl alcohol.

**Important:** If the connector tip is not thoroughly cleaned, the signal performance will be affected.



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**Figure 41. Cleaning Connector Tip**

2. **CLEAN INTERIOR OF COUPLING** Use pipe cleaners saturated with isopropyl alcohol to remove debris from the interior of the coupling. *This should be done only if necessary.*

Using canned air, remove any dust particles from the interior of the coupling.

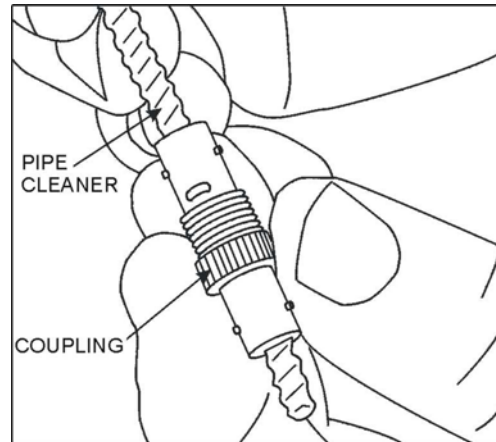


Figure 42. Cleaning Coupling

## 8.2. Installing Coupling on ST® II+ Connectors

1. **INSTALL COUPLING** Install the ST® II+ connectors onto the coupling by aligning the notch on the rim of the connector body with the slot in the coupling. Complete the connection by pushing the connectors onto the coupling with a clockwise twist-locking motion.

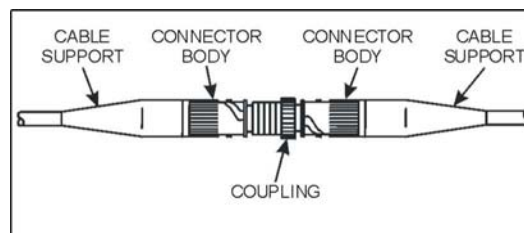


Figure 43. ST® II+ Connectors Coupled

2. If a high-loss condition exists, use canned air to reclean the interior of the coupling, and reinstall the coupling as just described.
3. When doing rearrangements or reinsertions of an ST® II+ connector, blow any dust from the coupling using canned air. Clean the connector tip with a wipe dampened with isopropyl alcohol and push the connector onto the coupling with a clockwise twist-locking motion.

## 9. Ordering Information

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### 9.1. Tool Kits

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**1032B5 Tool Kit** (Comcode 106 705 213) – Contains the following tools and materials for assembly of ST<sup>®</sup> II, ST<sup>®</sup> II+, and SC Fiber Optic Connectors.

<b>1032B5 Tool Kit Quantity</b>	<b>Description</b>	<b>Replacement Comcode</b>	<b>Replacement Quantity</b>
1	1510B Crimping Tool	106 918 998	1 Tool
1	300B Microscope	104 412 077	1 Microscope
1	1510A Polishing Tool	106 918 980	1 Tool
12	600B Connector Holders	107 118 549	12 Holders
1	700A Stripping Tool	104 278 478	1 Tool
1	1026A Heat-Strip Tool	105 514 764	1 Tool
2	971A-1 Holder Blocks	104 229 398	1 Holder
1	975A Cleaving Tool	103 808 770	1 Tool
1	Scissors	105 257 364	2 Scissors
1	6-inch Scale	105 257 356	5 Scales
1	Alcohol Bottle	105 257 463	2 Bottles
1	Glass Plate	105 075 618	2 Plates
1	Sheath Removal Tool (R-4366)	105 114 581	1 Tool
1	Instruction Manual	Contact OFS Rep.	1 Manual
15	Micro Clips (1043A)	106 228 455	15 Micro Clips
1	200A Curing Oven	104 055 058	1 Oven
12	1510C SC Connector Holder	106 919 004	12 Fixtures
2	Modified SM/MM SC Grips	107 480 022	10 Grips

<b>1032B5 Tool Kit Quantity</b>	<b>Description</b>	<b>Replacement Comcode</b>	<b>Replacement Quantity</b>
1	Rubber Polishing Pad	106 978 992	1 Pad
1	1039A Cut-Length Template	106 075 146	5 Templates
1	1039B Cut-Length Template	107 149 783	5 Templates
1	7X Eye Loupe	Obtain Locally	

**1032B6 Tool Kit** (Comcode 106 919 012) – The 1032B6 Tool Kit is the same as the 1032B5 Tool Kit except the 200A Curing Oven is replaced by the 200A1 Curing Oven for use internationally. The 200A1 oven operates on 220 V 50 Hz. Replacement Comcode for the 200A1 oven is 105 537 690 and is replaced in quantities of one each.

**Heat Tube Assembly** (Comcode 108 262 835) – The Heat Tube assembly is used with the 200A curing oven for curing ST II+, SC, and LC connectors terminated on to MlniCord cable. The Heat Tubes come in quantities of 6 when ordered.

## **9.2. Consumables (D-Kits)**

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**D-181755 Kit** (Comcode 105 052 047) – Contains the parts required to make a transition from ribbon or LIGHTPACK® bundle to individually buffered fibers.

**D-182739 Kit** (Comcode 106 919 244) – Contains consumables to install 100 (P3070A-Z or P3071A-Z) single-mode ST® II+ Fiber Optic Connectors with Zirconia ferrules using heat-cured epoxy.

<b>Kit Quantity</b>	<b>Description</b>	<b>Replacement Comcode</b>	<b>Replacement Quantity</b>	<b>Physical Description</b>
25 Sheets	Type A Polishing Paper	105 488 175	100 Sheets	Brown (Foam-Backed)
25 Sheets	Type D Polishing Paper	106 960 107	100 Sheets	Light Green
20 Sheets	Type E Polishing Paper	106 960 115	100 Sheets	White
2 Sheets	Type F Polishing Paper	106 960 123	10 Sheets	Yellow
2 Pkgs.	Wipes	105 205 678	250 Sheets	
1 Vial	Music Wire	105 071 013	4 Vials	
15 Syringes	Syringes	105 257 422	10 Syringes	
25 Tips	Dispensing Tips	105 157 879	125 Tips	
10	Pipe Cleaners	Obtain Locally		
1 Pkg.	Epoxy	105 489 355	15 Packs	



**D-182738 Kit** (Comcode 108 905 860) – Contains consumables to install 100 (P2070A-Z or P2071A-Z) multimode ST<sup>®</sup> II+ Fiber Optic Connectors with pre-radiused Zirconia ferrules using heat-cured epoxy. The kit is the same as the D-182739 kit except no Type E Polishing Paper is provided.

Kit Quantity	Description	Replacement Comcode	Replacement Quantity	Physical Description
25 Sheets	Type A Polishing Paper	105 488 175	100 Sheets	Brown (Foam-Backed)
25 Sheets	Type D Polishing Paper	106 960 107	100 Sheets	Light Green
2 Sheets	Type F Polishing Paper	106 960 123	10 Sheets	Yellow
2 Pkgs.	Wipes	105 205 678	250 Sheets	
1 Vial	Music Wire	105 071 013	4 Vials	
15 Syringes	Syringes	105 257 422	10 Syringes	
25 Tips	Dispensing Tips	105 157 879	125 Tips	
10	Pipe Cleaners	Obtain Locally		
1 Pkg.	Epoxy	105 489 355	15 Packs	

**D-182918 MiniCord<sup>™</sup> Termination Kit** (Comcode 107 983 033) – Contains consumables to terminate MiniCord<sup>™</sup> cable.

Kit Quantity	Description	Replacement Comcode	Replacement Quantity
1	Termination Instructions	Contact OFS Rep.	NA
100	Crimp Sleeves (ST <sup>®</sup> II+ MiniCord <sup>™</sup> Cable)	NA	NA

### **9.3. ST® II+ Connectors**

<b>Connector Code</b>	<b>Comcode</b>	<b>Fiber Mode</b>	<b>Ferrule (Zirconia)</b>	<b>Description Housing</b>	<b>Cable Size (mm)</b>	<b>Fiber OD (μm)</b>	<b>Packaging</b>
P2070A-Z-125	107 082 786	MM	Domed	Enh-Metal	0.9/1.6/3.0	125	Individual
P2070A-Z-125-100	107 226 706	MM	Domed	Enh-Metal	0.9/1.6/3.0	125	Bulk (100 pieces)
P2071A-Z-125	107 082 802	MM	Domed	Enh-Metal	0.9	125	Individual
P2071A-Z-125-100	107 226 714	MM	Domed	Enh-Metal	0.9	125	Bulk (100 pieces)
P3070A-Z-125	107 082 810	SM	Domed	Enh-Metal	0.9/1.6/3.0	125	Individual
P3070A-Z-125-100	107 227 076	SM	Domed	Enh-Metal	0.9/1.6/3.0	125	Bulk (100 pieces)
P3071A-Z-125	107 082 836	SM	Domed	Enh-Metal	0.9	125	Individual
P3071A-Z-125-100	107 227 084	SM	Domed	Enh-Metal	0.9	125	Bulk (100 pieces)

### **9.4. Couplings (Standard)**

<b>Coupling Code</b>	<b>Comcode</b>	<b>Description</b>
C2000A-2	104 148 028	Bayonet/Threaded Coupling (MM)
C3000A-2	105 271 142	Bayonet/Threaded Coupling (SM)

## **10. Assistance Information**

For more **information**, contact an OFS Sales Representative.

For fiber optic **technical assistance**, call **1-888-FIBER HELP**.