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## 1. General

The 1032F1 Tool Kit contains tools to assemble ST® II, ST® II+, and SC Connectors onto building and optical-fiber cables. Required consumables are sold separately.

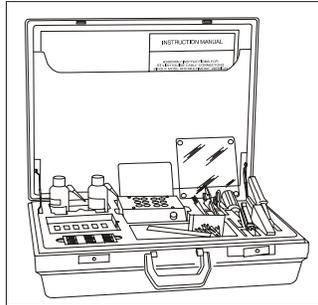


Figure 1. 1032 Tool Kit for ST® II, ST® II+, and SC

The D-182709 Consumable Kit (for flat-tipped multimode connectors), the D-182720 Consumable Kit (for domed singlemode connectors), and the D-182804 Consumable Kit (for domed multimode connectors) each contain polishing paper, adhesive, and other materials required to assemble the connectors. See the table below for proper applications.

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

The 1032F1 Kit is identical to the 1032B5 Kit except the 200A Curing Oven is omitted.

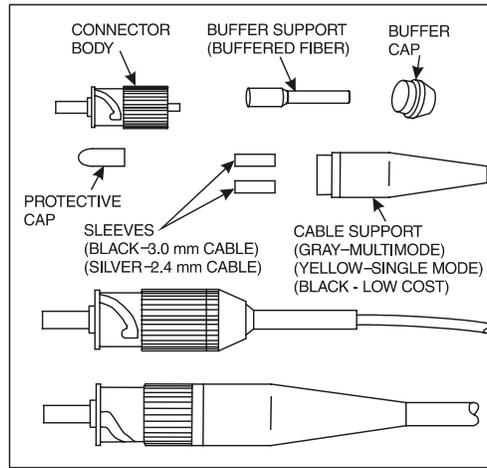


Figure 2. ST® II Fiber Optic Connector

The assembled ST® 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**.

Recommended usage temperatures for primer and adhesive used in these procedures		
Storage	-5°C to 30°C	23°F to 86°F
Installation	0°C to 38°C	32°F to 100°F
Operating	-40°C to 75°C	-40°F to 167°F

**Table 1. Connector Product Description**

Applicable Connectors	Type Mode	End Face Geometry	Buffer or Jacket Size (mm)	Consumable Kit Required (Note)	1032( ) Tool Kit Required
P2020C-C	MM	Flat	0.9, 2.4, 3.0	D-182709	B, B1, B5, B6, F, or F1
P2020C-Z	MM	Domed	0.9, 2.4, 3.0	D-182804	B, B1, B5, B6, F, or F1
P2021C-Z	MM	Domed	0.9	D-182804	B, B1, B5, B6, F, or F1
P2024A-Z	MM	Domed	3.0	D-182804	B, B1, B5, B6, F, or F1
P3020A-Z	SM	Domed	0.9, 2.4, 3.0	D-182720	B, B1, B5, B6, F, or F1
P3021A-Z	SM	Domed	0.9	D-182720	B, B1, B5, B6, F, or F1

**Note 1:** When using 250- $\mu$ m coated fiber, also use D-181755 Consumable Kit (see Section 3.1). The D-182969 Consumable Kit is required for 1.6-mm MiniCord™ cable termination.

**Note 2:** Jacketed Fiber Cable (Cordage) Compatibility: The ST II connector should only be installed onto 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.

## **3. Cable and Fiber Preparation**

### **3.1 Coated Fiber**

**Note:** 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.

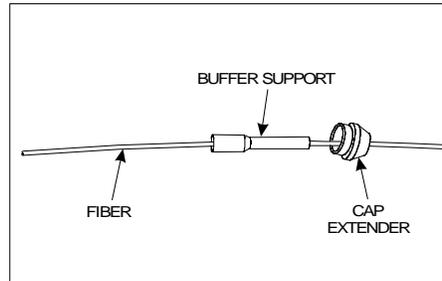
**Important:** Do not attempt to remove the fiber coating until a buffer tube has been placed over the coated fiber. This will prevent cutting the fiber by mistake.

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.

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

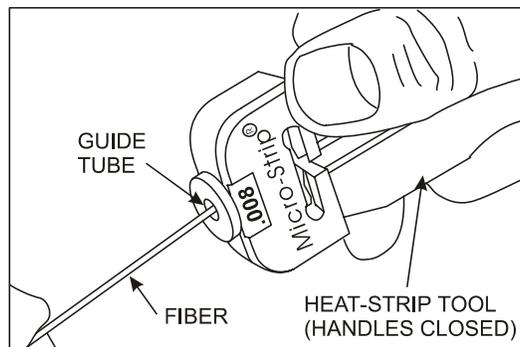
3. **PLACE BUFFER CAP AND SUPPORT ONTO FIBER** Slip the buffer cap and the buffer support onto the buffer tube covering the fiber (Figure 3).



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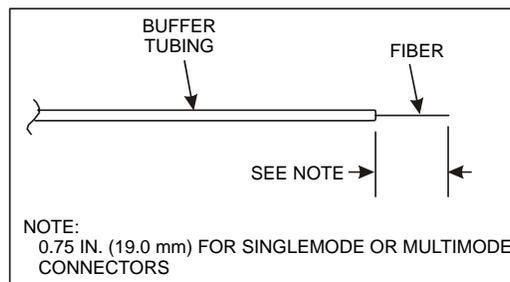
**Figure 3. Install Buffer Cap and Buffer Support on Buffer Tubing**

4. **REMOVE FIBER COATING** With the stripper handles open and the buffered tube aligned with the end of the fiber, insert both fiber and buffer tubing through the guide tube opening enough to allow about 0.75 inch (19.0 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.



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**Figure 4. Heat-Strip Tool- Removing Coating from Coated Fiber**



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**Figure 5. Recommended Strip Dimensions**

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.

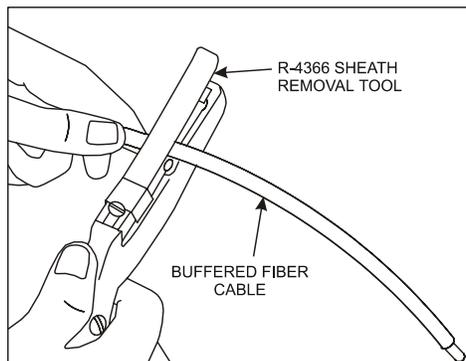
### 3.2 Buffered Fiber Cable (Premises/Building)

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

**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.

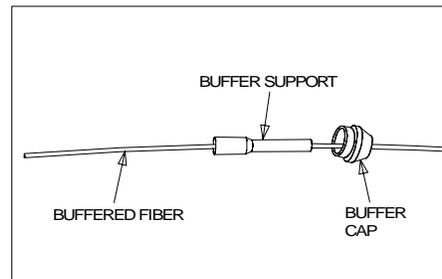
**Note 2:** See Table 1, page 1, to verify correct connector choice for cable type.



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

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



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

3. **MEASURE AND MARK THE BUFFERED FIBER** 0.75 inch (19.0 mm) from the end. **Note:** For 2024A-Z connectors, measure and mark 0.69 inch (17.5 mm) from the end of the buffered fiber.

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.

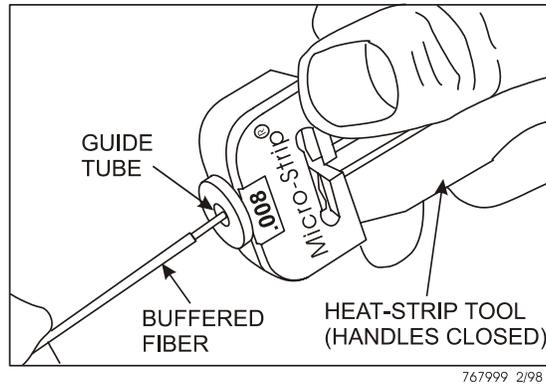


Figure 8. Heat-Strip Tool - Removing Fiber Coating from Buffered Fiber

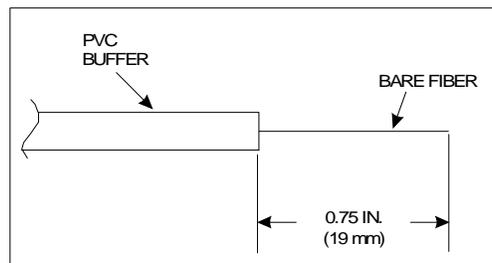


Figure 9. Buffered Fiber Stripping Dimensions

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

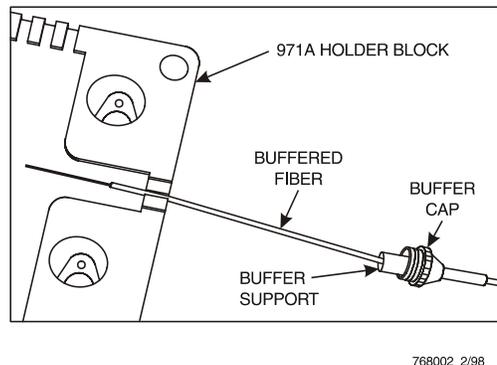


Figure 10. 971A Holder Block with Buffered Fiber

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.

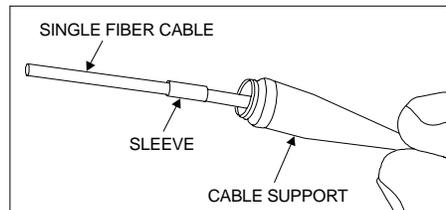
### 3.3 Jacketed Fiber Cable (1.6, 2.4, and 3.0 mm)

**Note:** See Table 1, Note 2 before proceeding

1. **PLACE CABLE SUPPORT AND SLEEVE ONTO CABLE** Slip cable support and crimp sleeve onto cable.

**Note:** For a 1.6-mm MiniCord™ cable, slip the cable support, 3.0 mm (black) crimp sleeve, and the 2-inch long polyvinyl chloride (PVC) tube (from the D-182969 Kit) onto the cable.

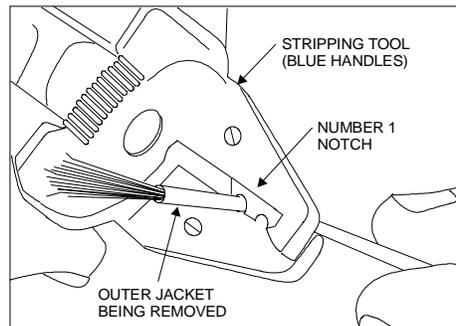
**Depending on connector application, the appropriate color crimp sleeve and cable support must be selected. See Figure 2 for color selection.**



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**Figure 11. Cable Support and Sleeve on Jacketed Fiber Cable**

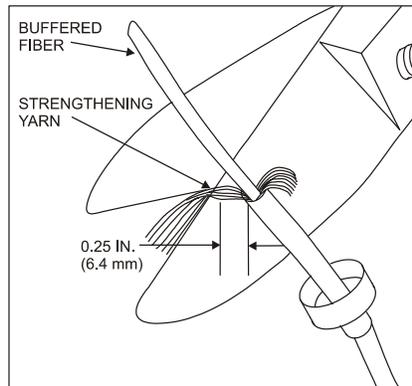
2. **MEASURE AND MARK CABLE** Using either a scale or template, measure and mark the cable 1.25 inches (31.8 mm) from the end of the cable.
3. **REMOVE OUTER JACKET** Using the Number 1 notch on the blue-handled 700A stripping tool, remove the outer jacket back to the mark.



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**Figure 12. Stripping Outer Jacket of Single Fiber Cable (Blue-Handled Stripping Tool)**

4. **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. Flair the strengthening yarn evenly all around the cable.



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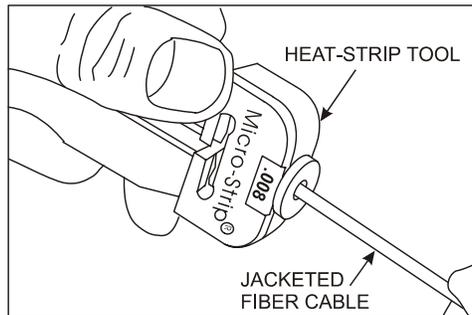
Figure 13. Cutting Strengthening Yarn - Jacketed Fiber Cable

5. **POSITION AND SECURE PVC TUBE** (1.6-mm MiniCord™ cable only) Apply a small drop of Loctite® 414 adhesive to the MiniCord™ jacket, about 0.25 inch (6.4 mm) from the end. Slide PVC tube forward until it is even with the end of the MiniCord™ jacket. Hold tube in place for 10 seconds until the adhesive sets.

**Caution:** Avoid getting adhesive on your fingers and the strengthening yarn.

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

**Note:** For the P2024A-Z connector, the buffered fiber and the bare fiber lengths should be 0.56 inch (14.2 mm) and 0.69 inch (17.5 mm), respectively.



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Figure 14. Heat-Strip Tool - Jacketed Fiber Cable

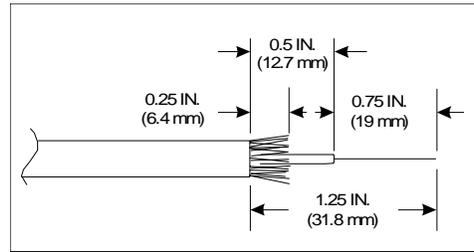
7. **REMOVING BUFFER AND FIBER COATING**

- 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. The delay is not necessary for 1800 and 2000 series cordage.
- Wipe the stripped fiber with a wipe dampened with isopropyl alcohol to remove any residual coating.

\* Registered trademark of Loctite Corporation.

**RECOMMENDED DIMENSIONS FOR 1800, 2000, AND 9000 SERIES CORDAGE**

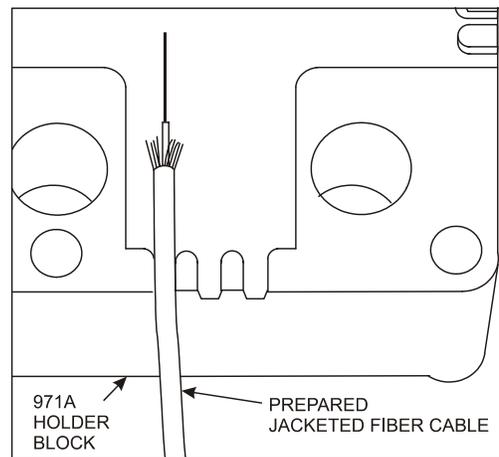
The recommended dimensions for the prepared cable and fiber are shown in Figure 15.



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**Figure 15. Recommended Dimensions for 1800, 2000, 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.



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**Figure 16. 971A Holder Block with Jacketed Fiber Cable**

9. **INSTALL CONNECTOR ON FIBER** Use the procedures outlined in Connector Installation, Section 5.2, to complete the installation of the connector, cure the epoxy, polish and inspect the fiber end.

## **4. Adhesive and Primer Preparation**

**PREPARE ADHESIVE** by shaking the bottle of adhesive vigorously.

**Note:** Use adhesive Comcode 106 730 856 and primer Comcode 106 730 849.

- Remove the cap from the bottle of adhesive. If adhesive has not been opened, poke a hole in tip of the nozzle with a straight pin.
- Remove the plunger and cap from a syringe and load the adhesive into the syringe. Replace the plunger and twist a syringe tip into place. (As a second option, simply twist a syringe tip onto the nozzle of the adhesive bottle making sure that it fits snugly.)

**PREPARE PRIMER** by shaking the bottle of primer vigorously.

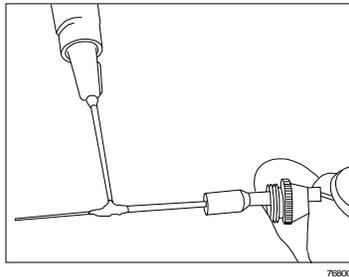
- Place a syringe tip onto a 3-cc syringe and twist to lock it in place.
- Remove the top from the bottle of primer and draw 0.5 cc of primer into the syringe.

**Note:** Once the installation procedure has been completed, any extra primer in the syringe may be returned to the original bottle. However, the syringe tip should be removed to avoid getting adhesive, which may be on the tip, mixed in with the primer.

## **5. Connector Installation**

### **5.1 Connector –Buffered Fiber Assembly**

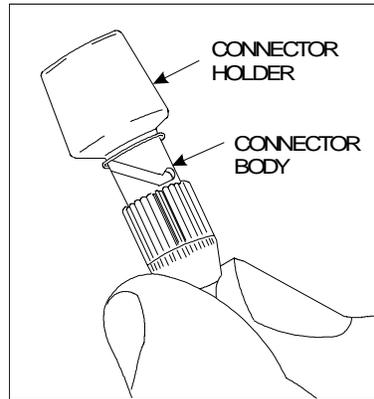
1. **APPLY THE PRIMER TO FIBER BUFFER** Using the syringe with the primer in it, apply primer to 0.25 inch of the buffer. Avoid getting the primer on the fiber. If several connectors are being terminated, it is recommended that all of the buffers be primed before moving on to the next step.



**Figure 17. Apply Primer to Buffer**

2. **PREPARE CONNECTOR TIP** Make sure that the hole in the connector tip is clear of any foreign matter. Use music wire to clear the hole if necessary. Place a wipe on the work table. Using the syringe, place a drop of primer on the wipe. Wipe the end of the connector through the primer on the wipe one time.

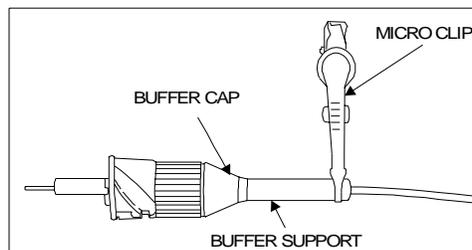
3. **INSTALL CONNECTOR HOLDER** Place the installed connector in a 600A or 600B Connector Holder.



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**Figure 18. Install Connector Holder**

4. **INJECT ADHESIVE INTO CONNECTOR** Gently insert the syringe tip on the adhesive into the barrel of the connector until it bottoms and inject the adhesive into the connector until a bead of adhesive forms on the tip of the ferrule. The adhesive bead should cover at least one-half of the ferrule end face. Withdraw the syringe tip from the connector, but maintain pressure on the bottle or syringe to fill the barrel of the connector with the adhesive.
5. **IMMEDIATELY INSERT THE FIBER** through the connector, carefully feeling for the ferrule capillary. Rotate the connector as the fiber is inserted to allow the fiber to pass through the connector without hanging up. Once the fiber has been fully inserted, use the syringe to place a drop of primer over the bead of adhesive on the ferrule end face. Be careful not to break the fiber. Seat the fiber into the connector making sure the buffer is completely seated against the ceramic inside the connector.
6. **INSTALL BUFFER SUPPORT** Slip the buffer support onto the connector barrel and rotate the support to allow for proper adhesive distribution.
7. **INSTALL BUFFER CAP** Apply a drop of Loctite Super Bonder 495 to the threads of the buffer cap. Slip the buffer cap over the buffer support and screw the extender into the connector body. Again, make sure that the fiber is fully seated into the connector and place a micro clip (1043A Tool) on the buffer support to make sure the fiber is not inadvertently pulled out of the connector.
- Important: Use only the connector 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.**



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**Figure 19. Install Buffer Cap**

8. **ALLOW ADHESIVE TO CURE** Place the assembly in the 971A Holder Block. Allow the adhesive to cure at least 1 minute.

## 5.2 Connector – Jacketed Fiber Cable Assembly (1.6, 2.4, and 3.0 mm)

1. **APPLY THE PRIMER TO FIBER BUFFER** Using the syringe with the primer in it, apply primer to 0.25 inch of the buffer. Avoid getting the primer on the fiber. If several connectors are being terminated, it is recommended that all of the buffers be primed before moving on to the next step.

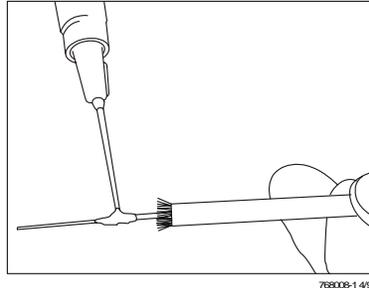


Figure 20. Apply Primer to Buffer

2. **PREPARE CONNECTOR TIP** Make sure that the hole in the connector tip is clear of any foreign matter. Use music wire to clear the hole if necessary. Place a wipe on the work table. Using the syringe, place a drop of primer on the wipe. Wipe the end of the connector through the primer on the wipe one time.
3. **INSTALL CONNECTOR HOLDER** Place the installed connector in a 600A or 600B Connector Holder.
4. **INJECT ADHESIVE INTO CONNECTOR** Gently insert the syringe tip on the adhesive into the barrel of the connector until it bottoms and inject the adhesive into the connector until a bead of adhesive forms on the tip of the ferrule. The adhesive bead should cover at least one-half of the ferrule end face. Withdraw the syringe tip from the connector, but maintain pressure on the bottle or syringe to fill the barrel of the connector with the adhesive.
5. **IMMEDIATELY INSERT THE FIBER** through the connector, carefully feeling for the ferrule capillary. Rotate the connector as the fiber is inserted to allow the fiber to pass through the connector without hanging up. Once the fiber has been fully inserted, use the syringe to place a drop of primer over the bead of adhesive on the ferrule end face. Be careful not to break the fiber.

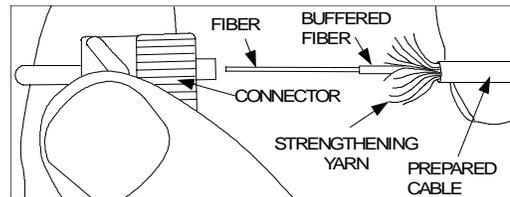


Figure 21. Insert Fiber into Connector (Single-Fiber Cable)

6. **INSTALL CABLE SLEEVE** Slip the cable (crimp) sleeve over the outer jacket and the connector barrel to capture the yarn between the barrel and sleeve.

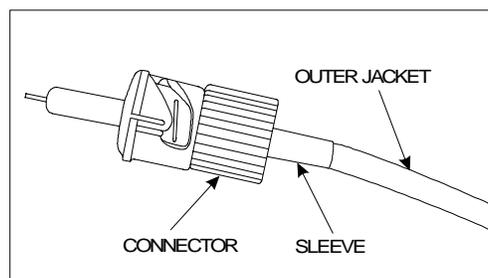
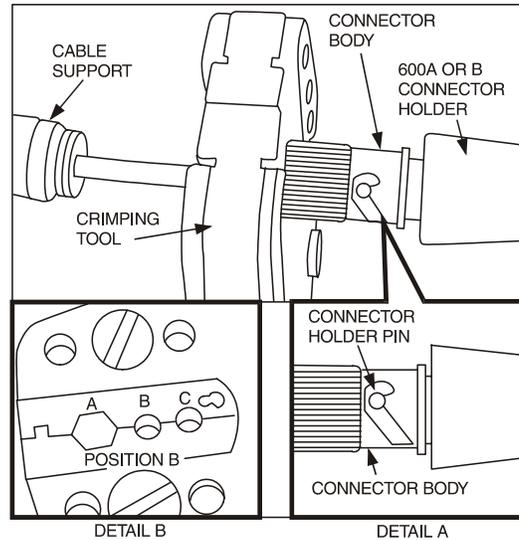


Figure 22. Install Cable Sleeve (Single-Fiber Cable)

7. **CRIMP CABLE SLEEVE** Position the 600A or 600B connector holder pins onto the connector body as shown in Detail A (Figure 23) for the crimping and curing operation. This will allow the sleeve to be fully exposed for crimping.

**Before crimping, make sure the sleeve is butted against the connector.** Place position B of the 102A Crimping Tool [shown in Detail B (Figure 23) and used for silver 2.4-mm sleeve] over the sleeve so when crimped the first two indentations on the sleeve appear over the connector barrel and the third appears over the cable jacket. This will ensure a good crimp and prevent cable rotation. Squeeze the crimping tool handles until they release. Rotate the connector 90° and crimp again.

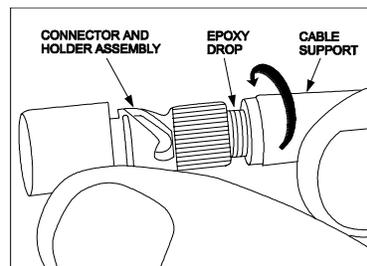
For black 3.0-mm sleeves, follow the same procedures described above except use position C on the 102A Crimping Tool, or the position marked "ST" on the 1510B Crimping Tool. **DO NOT use the 1510B Crimping Tool to crimp silver 2.4-mm sleeves.**



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**Figure 23. Crimp Cable Sleeve (Single-Fiber Cable)**

8. **INSTALL CABLE SUPPORT** Place a drop of adhesive on the threads of the cable support. Slip the support over the crimped sleeve and screw the support into the connector body. Place the assembly in the 971A Holder Block. Allow the adhesive to cure for at least 1 minute.



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**Figure 24. Install Cable Support (Single-Fiber Cable)**

## 6. Cleaving and Polishing

### 6.1 Cleaving the Fiber

**SCORE THE FIBER** Remove the 600A or 600B holder from the connector. Carefully wipe any uncured adhesive from around the fiber where it protrudes from the adhesive bead using the edge of a wipe. Be careful not to break the exposed fiber. Using one or two strokes with the cleaving tool, score the fiber close to the crest of the adhesive bead.

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

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

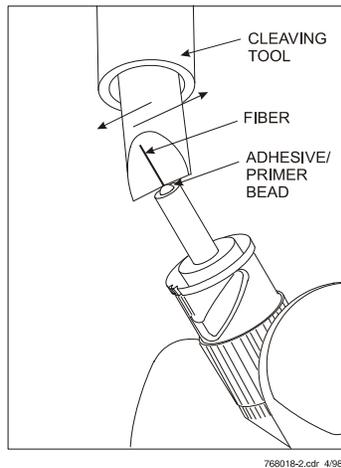


Figure 25. Scoring the Fiber

### 6.2 Polishing Connector Ends

**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.

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

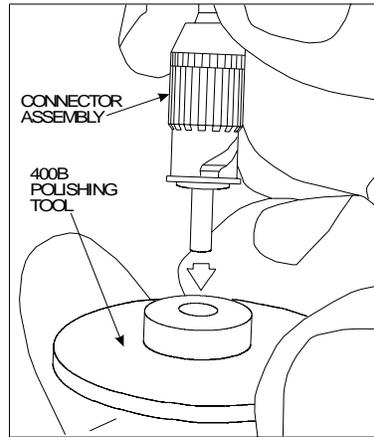
**PREPARE POLISHING TOOL** Clean the surface of the 400B or 1510A polishing tool and the connector tip with a wipe dampened with alcohol.

**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 adhesive bead.

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

**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 26. Prepare Polishing Tool**

**ST II Connector Polishing Guide  
(EZ Adhesive Installation)**

	1 <sup>st</sup> Polish			2 <sup>nd</sup> Polish		Repairs	
<b>Product Code</b>	P2020CC	P2020CZ P2021CZ P2024AZ	P3020AZ P3021AZ	P2020CC	P3020AZ P3021AZ	P2020CZ P2021CZ P2024AZ	P3020AZ P3021AZ
<b>Ferrule Type</b>	MM Alumina	MM Zirconia	SM Zirconia	MM Alumina	SM Zirconia	MM Zirconia	SM Zirconia
<b>End Face Geometry</b>	Flat	Domed	Domed	Flat	Domed	Domed	Domed
<b>Pad Type</b>	None	Paper	Paper	None	Paper	Rubber & type A paper	Rubber & type A paper
<b>Paper Type</b>	A, over glass	G, over pad	G, over pad	D or C over plate	E, over pad	F, over type A & pad	F, over type A & pad
<b>Polishing Solution</b>	None	None	None	None	Distilled water	Distilled water	Distilled water
<b>Polishing Time or Number of Strokes</b>	Until thin layer of adhesive remains	Remove all adhesive	Remove all adhesive	Remove remaining adhesive	10 to 15 strokes, to improve return loss	Until flaw is removed (40 strokes max)	Until flaw is removed (40 strokes max), then E over type A & pad, 10 to 15 strokes

## 6.2.1 Polishing Flat-Tipped Connector Ends (P2020C-C-125 )

### 1st Polish – Multimode Connector

1. Position a sheet of the Type A (foam-backed) polishing paper onto the polishing plate, foam side down. The foam backing cushions the fiber during the initial polishing operation.
2. Carefully insert the connector tip into the 400B polishing tool. **Gently** place the tool on the polishing paper, being careful not to shatter the fiber end.

**Note:** The universal 1510A polishing tool may be used in place of the 400B.

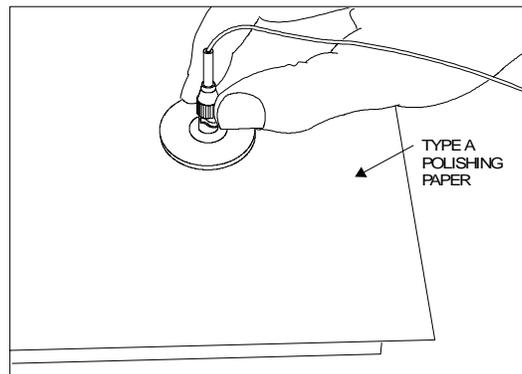
3. Starting with **extremely light pressure**, polish the connector face by moving the tool across the paper in a figure-8 pattern approximately 2 inches (5 cm) high. Gradually increase pressure as you continue to polish. Polish the connector until a shiny halo can be observed around a thin layer of adhesive remaining on the tip. Polishing time varies according to the size of the adhesive bead.

Use the eye loupe or magnifier to verify that a thin layer still remains.

**Note 1:** Whenever the polishing tool is lifted from the polishing paper, use canned air to remove grit from the tool and paper.

**Note 2:** For the first and second polish, make sure that the paper is aligned with the polishing plate. This will prevent damage caused by the connector end face hitting the edge of the glass plate during polishing.

Remove the connector from the polishing tool and clean both the connector and the tool with a wipe dampened with isopropyl alcohol. Then, use canned air to dry the connector and the tool. Once cleaned, replace the connector into the tool.

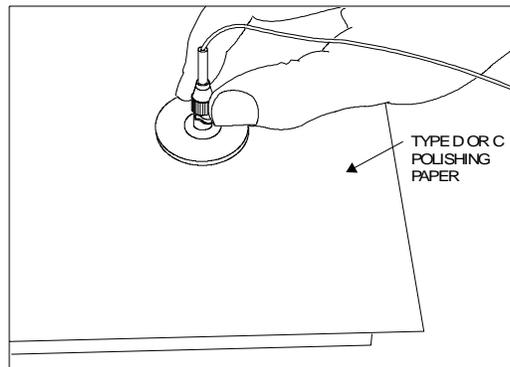


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Figure 27. 1<sup>st</sup> Polish - Multimode (Flat-Tipped Connectors)

**2nd Polish – Multimode Connector**

1. Position the mylar-backed Type C (gray) or D (light green) polishing paper over the polishing plate (glossy side down). **Note:** One wipe can be used under the Type C or D paper for the first few polishing strokes to protect the fiber. **Do not use water on the polishing pad.**
2. Using **very light pressure**, polish in figure-8 motions approximately 2 inches (5 cm) high **until all the remaining adhesive has been removed.**
3. Remove the connector from the polishing tool and clean both the connector and the tool with a wipe dampened with isopropyl alcohol. Then, use canned air to dry the connector tip.



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**Figure 28. 2<sup>nd</sup> Polish - Multimode (Flat-Tipped Connectors)**

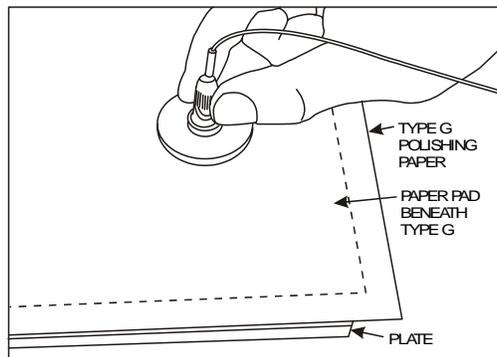
## 6.2.2 Polishing Domed-Tipped Connector

### 1st Polish – Singlemode and Multimode Connector

1. Place a paper polishing pad on the polishing plate.
2. Place a sheet of Type G (green) Polishing Paper over the pad.
3. Carefully place the connector ferrule into the polishing tool. Starting with **extremely light pressure**, polish the connector on the Type G paper using figure-8 strokes until all adhesive has been removed. Check periodically with the eye loupe or magnifier to verify that all of the adhesive has been removed. **No further polishing is required for multimode connectors.**

**Note:** **EXTREMELY** light pressure should be used during the first few polishing strokes to avoid breaking the fiber.

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



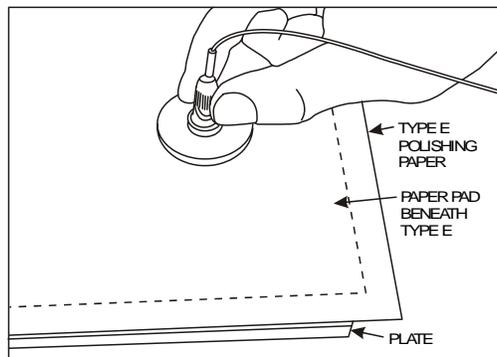
**Figure 29. Polishing Domed-Tipped Connectors (Type G Paper/Paper Pad)**

Remove the connector from the polishing tool and clean both the connector and the tool with a wipe dampened with isopropyl alcohol. Then, use canned air to dry the connector and the tool. Once cleaned, replace the connector into the tool.

### 2nd Polish – Singlemode Connector

To achieve optimum return loss, replace the Type G paper with a sheet of Type E (white) polishing paper (glossy side down). 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 30. Polishing Domed-Tipped Connectors (Type E/Paper Pad)**

## 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 adhesive film or bead still exists on the connector end face.

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 reterminated.
3. If the connector is not to be used immediately, cover the end with the protective cap.

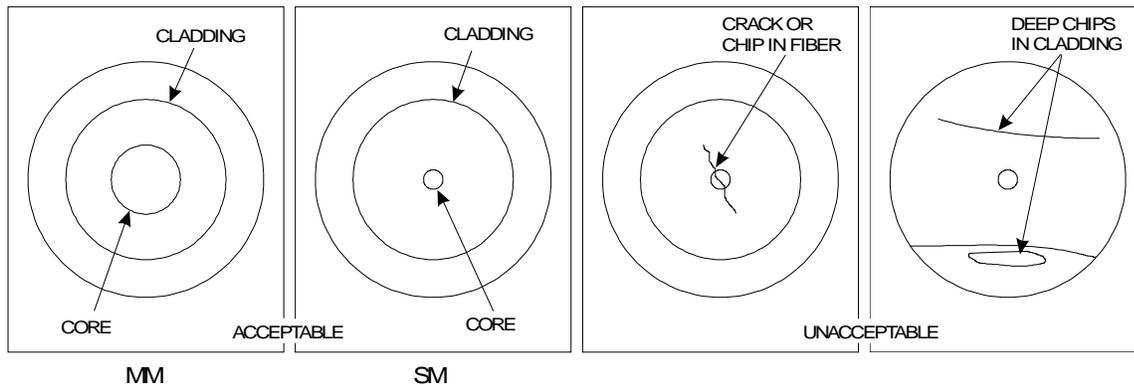


Figure 31. Fiber End Views (Microscope)

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### 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 paper polishing pad 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 2<sup>nd</sup> Polish - Singlemode Connector in Section 6.2.2.**

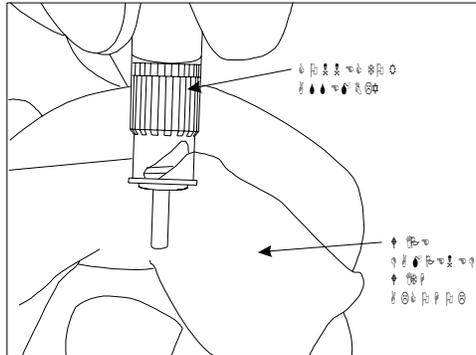
## 8. Interconnecting with ST<sup>®</sup> II Fiber Optic Connectors

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

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.**

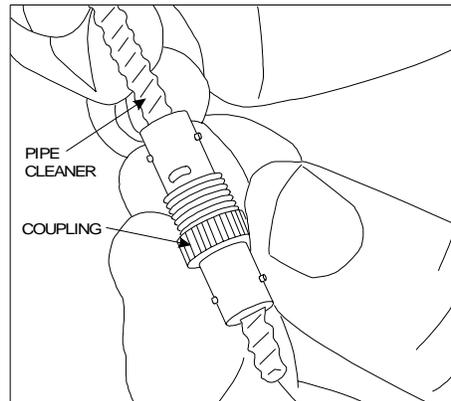


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**Figure 32. Cleaning Connector Tip**

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.

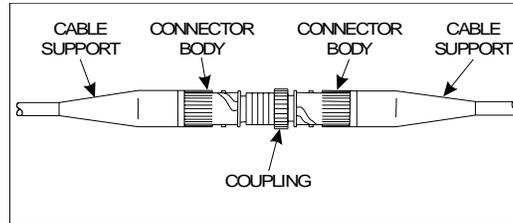


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**Figure 33. Cleaning Coupling**

## 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.



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**Figure 34. 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

### 9.1 Tool Kits

#### 1032F1 Tool Kit (Comcode 107 149 320)

Kit Quantity	Description	Replacement Comcode	Replacement Quantity
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 Block
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	Isopropyl 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	105 536 718	1 Manual
15	Micro Clips (1043A)	106 228 455	15 Micro Clips
12	SC Curing Fixture	106 919 004	12 Fixtures
2	Modified SM/MM SC Grips	107 480 022	10 Grips
1	Instruction Sheet (ST <sup>®</sup> II+ EZ)	107 107 799	1 Copy
1	Instruction Sheet (SC EZ)	107 185 860	1 Copy
1	Rubber Polishing Pad	106 978 992	10 Pads
1	1039B Cut-Length Template	107 149 783	5 Templates
1	Eye Loupe or Magnifier	NA	

## 9.2 Consumables (D-Kits)

### D-182709 Kit (Comcode 108 918 301)

The D-182709 Kit of Consumables contains consumables to install 500 flat-tipped multimode ST<sup>®</sup> Connectors using anaerobic adhesive. The P2020C-C-125 Connectors are not included in this kit.

Kit Quantity	Description	Replacement Comcode	Replacement Quantity	Physical Description
10 Pkgs.	Wipes	105 205 678	250 Sheets	
5 Vials	Music Wire	105 071 013	4 Vials	
75 Syringes	Syringes	105 257 422	10 Syringes	
125 Tips	Dispensing Tips	105 157 879	125 Tips	
2 Bottles	Adhesive	106 730 856	1 Bottle	
2 Bottles	Primer	106 730 849	1 Bottle	
125 Sheets	Type A Polishing Paper	105 488 175	100 Sheets	Brown (Foam Backed)
125 Sheets	Type C Polishing Paper	105 076 798	100 Sheets	Gray
2 Copies	Instruction Sheet	Contact OFS Rep	1 Copy	

### D-182804 Kit (Comcode 108 919 143)

The D-182804 Kit of Consumables contains consumables to install 500 domed multimode ST<sup>®</sup> II, ST<sup>®</sup> II+, or SC Connectors using anaerobic adhesive.

Kit Quantity	Description	Replacement Comcode	Replacement Quantity	Physical Description
10 Pkgs.	Wipes	105 205 678	250 Sheets	
5 Vials	Music Wire	105 071 013	4 Vials	
75 Syringes	Syringes	105 257 422	10 Syringes	
125 Tips	Dispensing Tips	105 157 879	125 Tips	
2 Bottles	Adhesive	106 730 856	1 Bottle	
2 Bottles	Primer	106 730 849	1 Bottle	
25 Sheets	Type A Polishing Paper	105 488 175	100 Sheets	Brown (Foam Backed)
1 Sheet	Type F Polishing Paper	106 960 123	10 Sheets	Yellow
2 Copies	Instruction Sheet (ST <sup>®</sup> II)	Contact OFS Rep	1 Copy	
2 Copies	Instruction Sheet (ST <sup>®</sup> II+)	Contact OFS Rep	1 Copy	
2 Copies	Instruction Sheet (SC EZ)	Contact OFS Rep	1 Copy	
50 Sheets	Paper Polishing Pad	107 107 591	50 Sheets	Brown
125 Sheets	Type G Polishing Paper	107 107 625	100 Sheets	Green
2 Bottles	Loctite Super Bonder 495		Obtain Locally	

**640-252-044-02**  
**Instruction Sheet**

**D-182720 Kit (Comcode 106 834 039)**

The D-182720 Kit of Consumables contains consumables to install 100 domed singlemode ST<sup>®</sup> II, ST<sup>®</sup> II+, or SC Connectors using anaerobic adhesives.

<b>Kit Quantity</b>	<b>Description</b>	<b>Replacement Comcode</b>	<b>Replacement Quantity</b>	<b>Physical Description</b>
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	
1 Bottle	Adhesive	106 730 856	1 Bottle	
1 Bottle	Primer	106 730 849	1 Bottle	
25 Sheets	Type A Polishing Paper	105 488 175	100 Sheets	Brown (Foam Backed)
20 Sheets	Type E Polishing Paper	106 960 115	100 Sheets	White
2 Sheets	Type F Polishing Paper	106 960 123	10 Sheets	Yellow
1 Copy	Instruction Sheet (ST <sup>®</sup> II)	Contact OFS Rep	1 Copy	
1 Copy	Instruction Sheet (ST <sup>®</sup> II+)	Contact OFS Rep	1 Copy	
25 Sheets	Paper Polishing Pad	107 107 591	50 Sheets	Brown
25 Sheets	Type G Polishing Paper	107 107 625	100 Sheets	Green
1 Bottle	Loctite Super Bonder 495	Obtain Locally		

**D-182969 Kit (Comcode 108 292 426)**

The D-182969 Kit contains consumables to terminate MiniCord<sup>™</sup> cable with ST<sup>®</sup> II Fiber Optic Connectors.

<b>Kit Quantity</b>	<b>Description</b>	<b>Replacement Comcode</b>	<b>Replacement Quantity</b>
1	Instruction Manual	Contact OFS Rep.	NA
100	3.0-mm PVC Tube (50.8 mm long)	NA	NA
1	Loctite 414 Super Bonder	NA	NA

### 9.3 ST<sup>®</sup> II Connectors

Connector Code	Comcode	Fiber Mode	Ferrule Type	Description Housing	Cable Size (mm)	Fiber OD (μm)	Packaging
P2020C-C-125	105 143 911	MM	Flat Alumina	Enh-Metal	0.9/2.4/3.0	125	Individual
P2020C-Z-125	106 812 274	MM	Domed Zirconia	Enh-Metal	0.9/2.4/3.0	125	Individual
P2020C-Z-125-100	106 952 500	MM	Domed Zirconia	Enh-Metal	0.9/2.4/3.0	125	Bulk (100 pieces)
P2021C-Z-125	108 056 078	MM	Domed Zirconia	Enh-Metal	0.9	125	Individual
P2024A-Z-125-100	108 170 432	MM	Domed Zirconia	Plastic	3.0	125	Bulk (100 pieces)
P3020A-Z-125	106 812 258	SM	Domed Zirconia	Enh-Metal	0.9/2.4/3.0	125	Individual
P3020A-Z-125-100	106 952 518	SM	Domed Zirconia	Enh-Metal	0.9/2.4/3.0	125	Bulk (100 pieces)
P3021A-Z-125-100	107 223 430	SM	Domed Zirconia	Enh-Metal	0.9	125	Bulk (100 pieces)

### 9.4 Couplings (Standard)

Coupling Code	Comcode	Description
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 your OFS Sales Representative.

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