

TABLE OF CONTENTS

1. General	2
2. Precautions	4
3. Cable and Fiber Preparation	4
3.1 Buffered Fiber Preparation (0.9-mm)	4
3.2 Shipboard and Tactical Optical Fiber Cable (2.0 to 3.0 mm)	6
4. Epoxy Preparation	9
4.1 Preparation of Epoxy Furnished in Plastic Container	9
5. Connector Installation	11
5.1 Connector – Buffered Fiber Assembly	11
5.2 Connector – Shipboard and Tactical Optical Fiber Cable Assembly (2.0 to 3.0 mm)	14
6. Curing Epoxy, Cleaving and Polishing	20
6.1 Curing Epoxy	20
6.2 Cleaving the Fiber	21
6.3 Polishing Connector Ends	21
6.3.1 Polishing Flat-Tipped Connector Ends (P2050AC and P2052AC)	24
6.3.2 Polishing Domed-Tipped Connector Ends (P2050A-Z, P2052A-Z, and P3050A-Z)	25
7. Inspection	28
7.1 Using Microscope to Inspect Fiber	28
7.2 Repairs (Domed Connectors Only)	28
8. Interconnecting with Ruggedized ST® Fiber Optic Connectors	29
8.1 Cleaning Connector and Coupling	29
8.2 Installing Coupling on Ruggedized ST® Connectors	30
9. Ordering Information	31
9.1 Tool Kits	31
9.2 Consumables (D-Kits)	32
9.3 Ruggedized ST® Connectors	33
9.4 Couplings	34
10. Assistance Information	34

1. General

The 1032B5 (standard version) and the 1032B6 (international version) Tool Kits contain 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

The D-182739 Consumables Kit (for domed singlemode connectors) and the D-182738 Consumables Kit (for flat and domed 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.

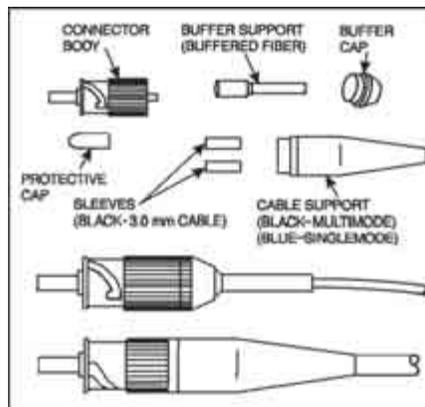


Figure 2. Ruggedized ST® Connector

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

Table 1. Connector Product Description

Code	Type Mode	Military Part No. (Version)	End Face	Buffer or Jacket Size (mm)	Consumables	1032() Tool Kit Required
P2050A-C	MM	NA Nonlocking	Flat	0.9, 2.0-3.0	D-182738	B, B1, B5, or B6
P2052A-C	MM	NA Locking	Flat	2.0-3.0	D-182738	B, B1, B5, or B6
P2050A-Z	MM	M83522/16-DNX Nonlocking (QPL)	Domed	2.0-3.0	D-182738	B, B1, B5, or B6
P2052A-Z	MM	M83522/16-ANX Locking (QPL)	Domed	2.0-3.0	D-182738	B, B1, B5, or B6
P3050A-Z	SM	M83522/16-DNY Nonlocking (QPL)	Domed	2.0-3.0	D-182739	B, B1, B5, or B6

⇒ NOTE:

For installation of Quality Product List (QPL) products, refer to MIL-STD-2042-5A, Method 5B1. Military standard requirements shall always supersede these instructions. Lucent's M83522/16-DNX is the same as M83522/16-CNXX. Lucent's M83522/16-DNY is the same as M83522/16-CNY.

2. Precautions

- Safety glasses should be worn at all times while performing the installation procedures.
- Avoid skin contact with epoxy.
- 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 Buffered Fiber Preparation (0.9-mm)

⇒ NOTE:

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.

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

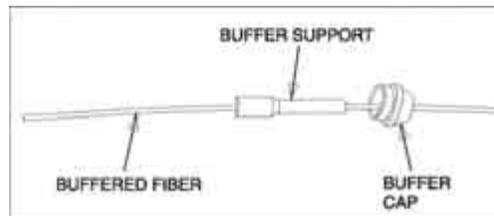


Figure 3. Install Buffer Cap and Buffer Support on Buffered Fiber

2. MEASURE AND MARK THE BUFFERED FIBER 0.75 inch (19.0 mm) from the end.

3. 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 fiber from tool with one smooth motion.
- Wipe stripped fiber once with a wipe dampened with isopropyl alcohol to remove any residual coating.

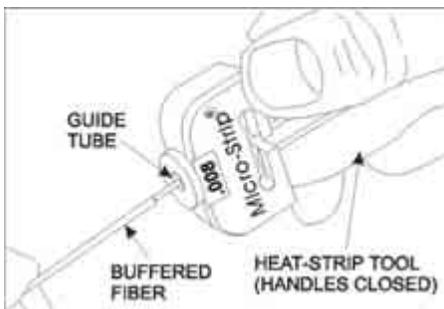


Figure 4. Heat-Strip Tool - Removing Fiber Coating from Buffered Fiber

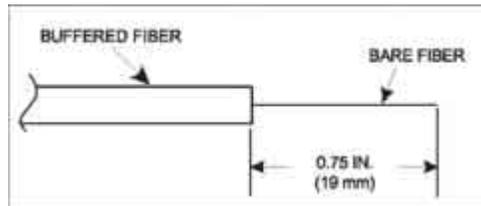


Figure 5. Buffered Fiber Stripping Dimensions

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

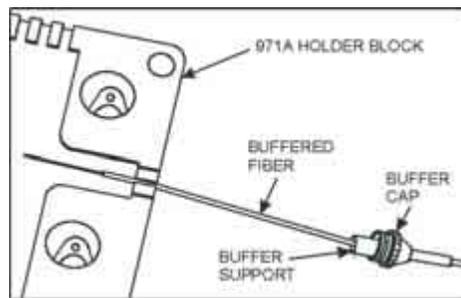


Figure 6. 971A Holder Block with Buffered Fiber

5. **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.

3.2 Shipboard and Tactical Optical Fiber Cable (2.0 to 3.0 mm)

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

⇒ NOTE:

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

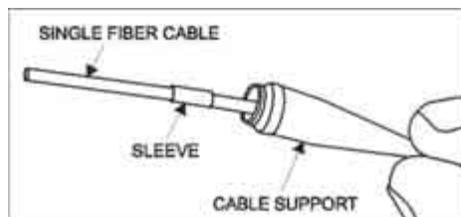


Figure 7. Cable Support and Sleeve on Jacketed Fiber Cable

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.

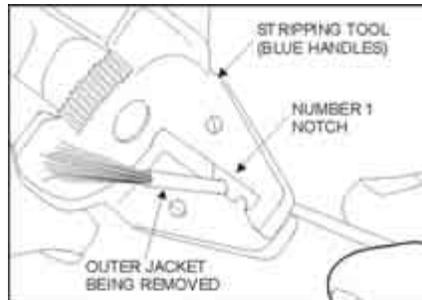


Figure 8. Stripping Outer Jacket of Single Fiber Cable

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

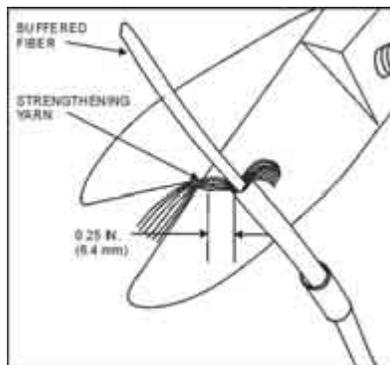


Figure 9. Cutting Strengthening Yarn - Jacketed Fiber Cable

5. **MEASURE AND MARK BUFFERED FIBER** Measure and mark the buffered fiber 0.75 inch (19 mm) from the end of the buffered fiber.
6. **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.
 - Wipe the stripped fiber with a wipe dampened with isopropyl alcohol to remove any residual coating.

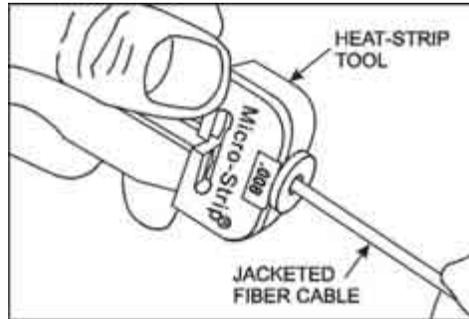


Figure 10. Heat-Strip Tool - Jacketed Fiber Cable

RECOMMENDED DIMENSIONS

The recommended dimensions for the prepared cable and fiber are shown in Figure 11.

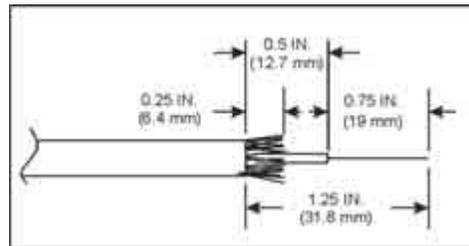


Figure 11. Recommended Dimensions

7. SET ASIDE PREPARED CABLE Place the prepared cable into the grooves of the 971A holder block provided with the tool kit.

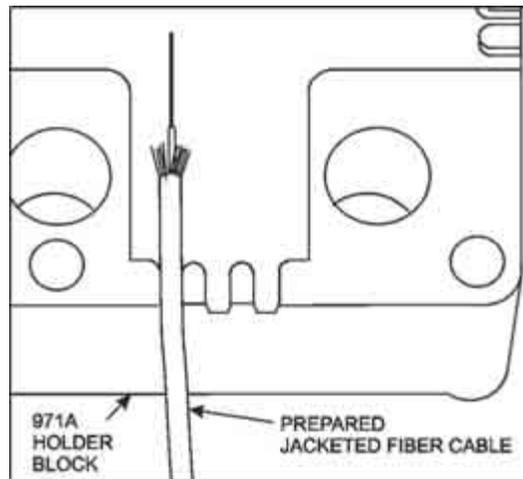


Figure 12. 971A Holder Block with Jacketed Fiber Cable

8. 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. Epoxy Preparation

⇒ NOTE:

For installation of QPL products, use epoxies as specified in MIL-S-24792 (that is, Lucent P/N 105 489 355). Do not use epoxy furnished in tubes for QPL product installation.

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.

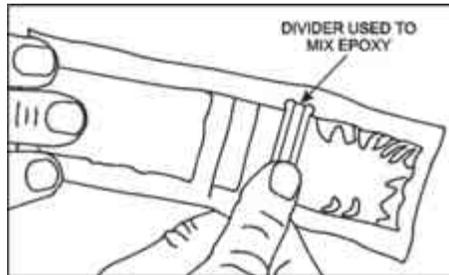


Figure 13. Mix the Epoxy

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.

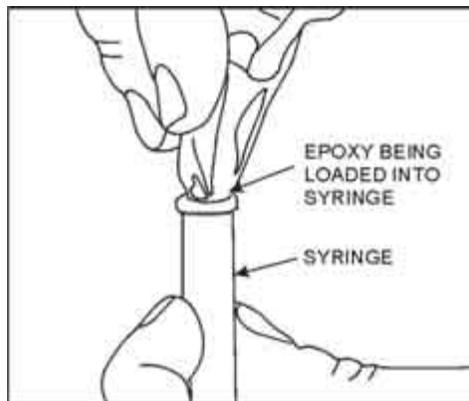


Figure 14. Place Epoxy into Syringe

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

5.1 Connector – Buffered Fiber Assembly

1. PLACE CONNECTOR IN 600A OR 600B CONNECTOR HOLDER Hold the connector toward 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.

Place the connector into a 600A or 600B Connector Holder making sure that the bayonet pins of the holder are fully seated in the bayonet slots of the connector housing.

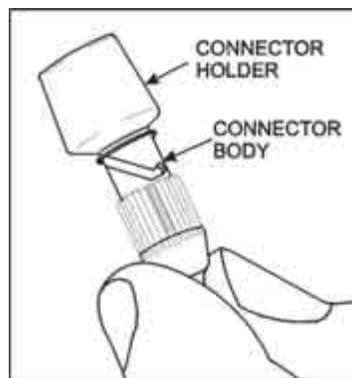


Figure 15. Install Connector Holder

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.

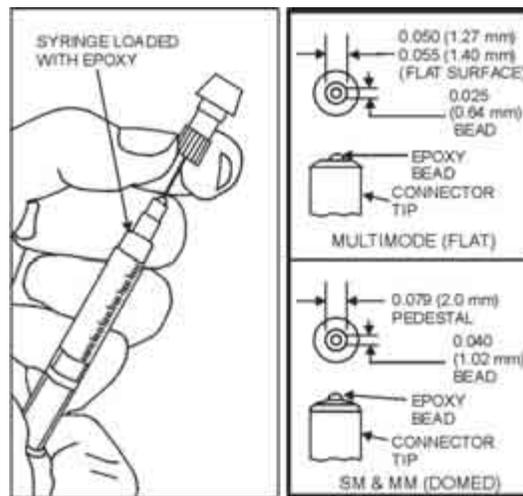


Figure 16. Inject Epoxy into Connector Tip

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.

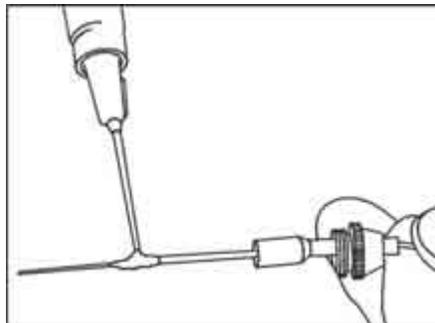


Figure 17. Apply Epoxy to Fiber and Buffer

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.

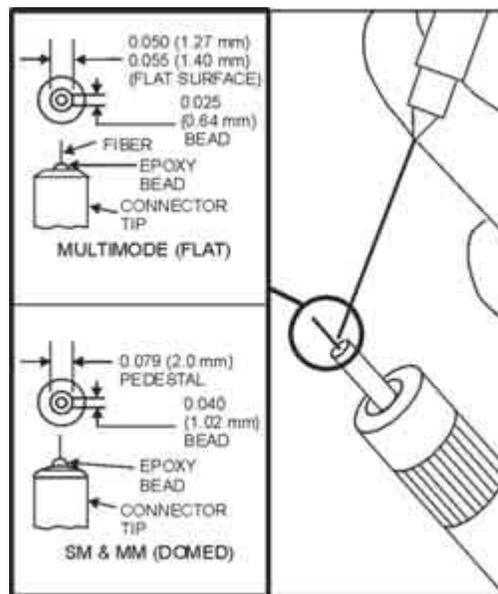


Figure 18. Check Fiber/Connection Interface

6. **INSTALL BUFFER SUPPORT** Apply a drop of epoxy onto the barrel of the connector. Slip the buffer support onto the connector barrel.
7. **INSTALL BUFFER CAP** Apply a drop of epoxy onto the threads of the buffer cap. Slip the buffer cap over the buffer support and screw the buffer cap into the connector body. Make sure the fiber is fully inserted into 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.

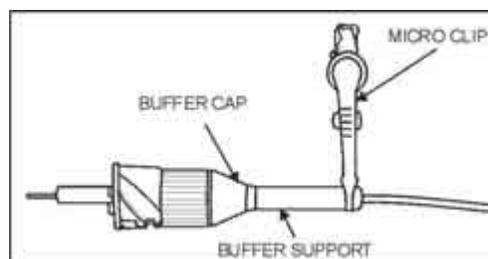


Figure 19. Install Buffer Cap and Micro Clip

5.2 Connector – Shipboard and Tactical Optical Fiber Cable Assembly (2.0 to 3.0 mm)

1. PLACE CONNECTOR IN 600A OR 600B CONNECTOR HOLDER Hold the connector toward 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.

Place the connector into a 600A or 600B Connector Holder making sure that the bayonet pins of the holder are fully seated in the bayonet slots of the connector housing.

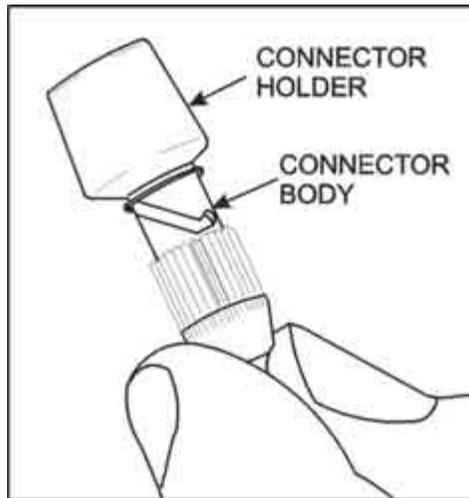


Figure 20. Install Connector Holder

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.

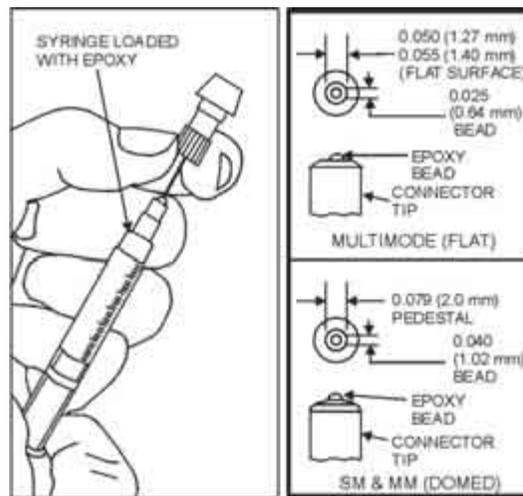


Figure 21. Figure Caption

3. FOR LOCKING VERSIONS, INSTALL WASHER(S) For P2052A-C connectors, place one flat washer on the barrel as shown in Detail A (Figure 22). For P2052A-Z connectors (QPL product), install the flatwasher, lockwasher, and the serrated washer, in that order, as shown in Detail B (Figure 22). The serrations on the serrated washer should face away from the connector body.

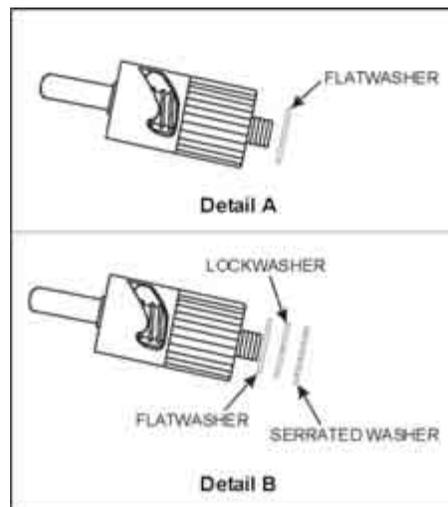


Figure 22. Washer Installation for Connectors P-2052A-C and P-2052A-Z

4. FOR NONLOCKING VERSIONS, APPLY EPOXY TO CONNECTOR BARREL Using the syringe, apply a thin coating of epoxy to the first 1/8-inch (3.2 mm) of the connector barrel.

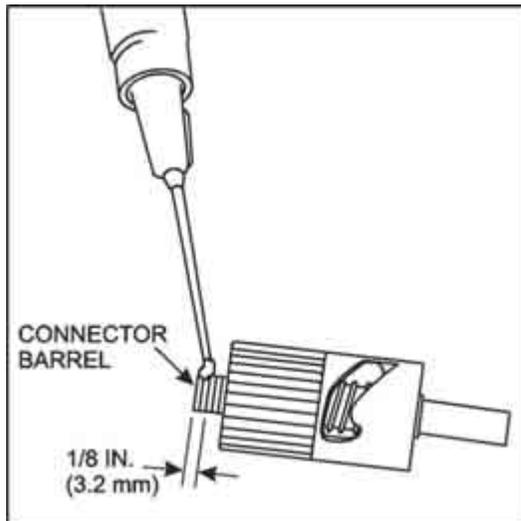


Figure 23. Apply Epoxy to Connector Barrel (Nonlocking Versions Only)

5. 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.

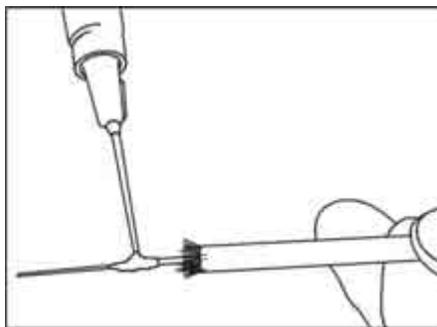


Figure 24. Apply Epoxy to Fiber and Buffer

6. 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.

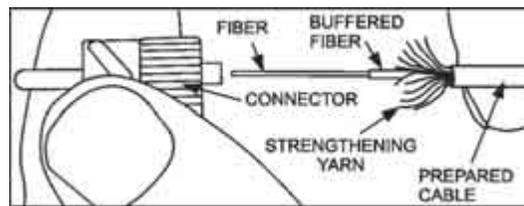


Figure 25. Insert Fiber into Connector (Single-Fiber Cable)

7. 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.

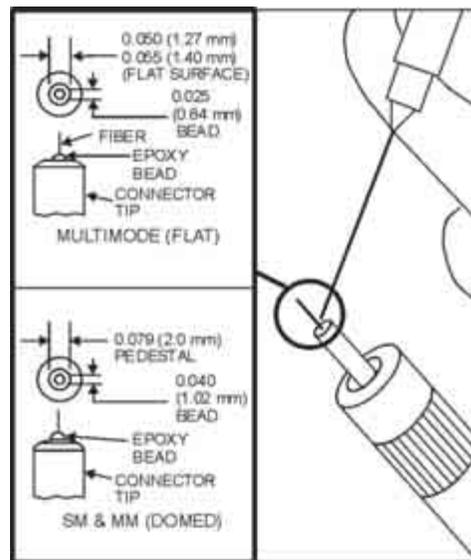


Figure 26. Check Fiber/Connection Interface

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

⇒ NOTE:

The crimp sleeve holds the washers in place on the locking versions.

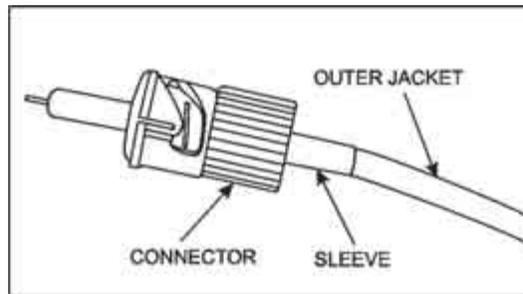


Figure 27. Install Cable Sleeve (Single-Fiber Cable)

9. **CRIMP CABLE SLEEVE** Position the 600A or 600B connector holder pins onto the connector body as shown in Detail A (Figure 28) for the crimping operation. This will allow the sleeve to be fully exposed for crimping.

⇒NOTE:

Before crimping, make sure the sleeve is butted against the washers or connector.

10. Place position C of the 102A Crimping Tool [shown in Detail B (Figure 28)] or the position marked "ST" on the 1510B Crimping Tool 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.

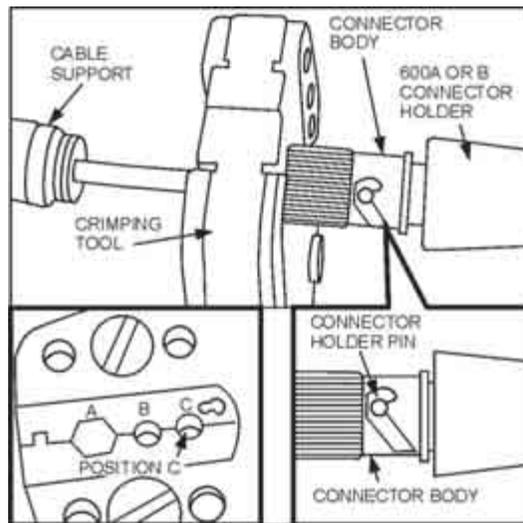


Figure 28. Crimp Cable Sleeve (Single-Fiber Cable)

⇒ NOTE:

In the following step, do not apply epoxy to the cable support threads for locking versions.

11. **INSTALL CABLE SUPPORT** Apply a drop of epoxy onto the threads of the cable support, slip the support over the crimped sleeve, and screw the support into the connector body. The assembly is now ready to be placed into the curing oven.

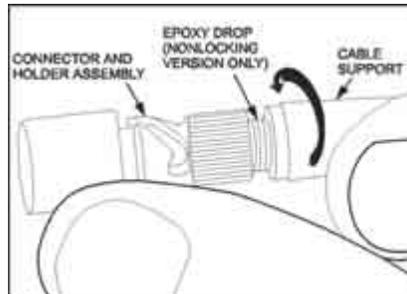


Figure 29. Install Cable Support

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.
2. **PLACE CONNECTOR INTO OVEN** Place the connector and holder assembly into one of the oven ports. Cure for 10 minutes.

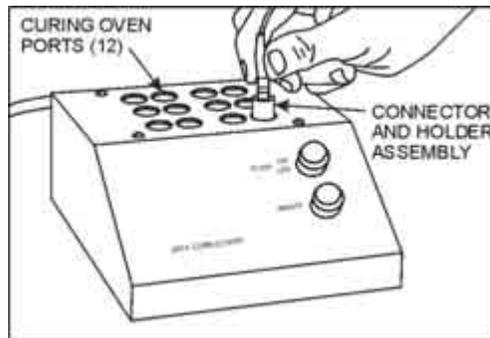


Figure 30. Place Connector into Oven

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.

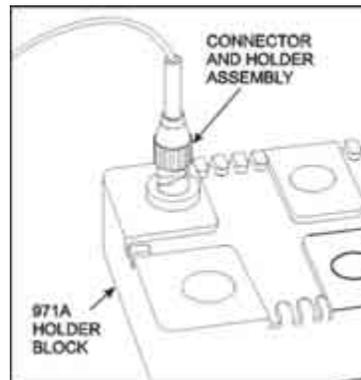


Figure 31. Place Connector into 971A Holder Block

6.2 Cleaving the Fiber

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.

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

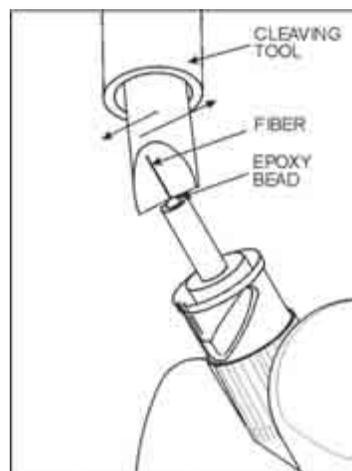


Figure 32. Scoring the Fiber

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.

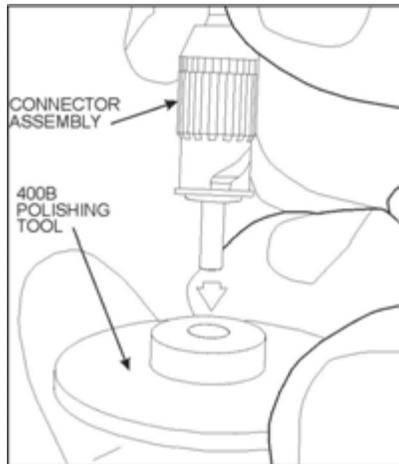


Figure 33. Prepare Polishing Tool

Ruggedized STO Connector Polishing Guide
(Epoxy Installation)

Product Code	1st Polish			2nd Polish			3rd Polish	Repairs	
	P2050AC P2052AC	P2050AZ P2052AZ	P3050AZ	P2050AC P2052AC	P2050AZ P2052AZ	P3050AZ		P2050AZ P2052AZ	P3050AZ
Ferrule Type	MM Alumina	MM Zirconia	SM Zirconia	MM Alumina	MM Zirconia	SM Zirconia	SM Zirconia	MM Zirconia	SM Zirconia
End Face Geometry	Flat	Domed	Domed	Flat	Domed	Domed	Domed	Domed	Domed
Pad Type	None	Rubber	Rubber	None	Rubber & type A paper	Rubber & type A paper	Rubber & type A paper	Rubber & type A paper	Rubber & type A paper
Paper Type	A, over glass	A, over pad	A, over pad	C or D, over glass	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	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	Until thin layer of epoxy remains	Remove remaining epoxy	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 Flat-Tipped Connector Ends (P2050AC and P2052AC)

1st Polish – Multimode Connector

1. Position a sheet of the Type A (brown foam-backed) polishing paper onto the polishing plate, foam side down. The foam backing cushions the fiber during the initial polishing operation. Start with a very light pressure using figure-8 motions. A shiny halo can be observed around the thin layer of epoxy remaining on the tip at the end of the first polishing procedure. The polishing time may vary with the size of the epoxy bead. Use the eye loupe or magnifier to verify that a thin layer still remains.
2. Whenever the polishing tool is lifted from the polishing paper, use canned air to remove grit from the tool and paper. For the first and second polish, make sure that the paper is aligned with the glass plate. This will prevent damage to the connector end face by preventing it from hitting the edge of the polishing plate during polishing.
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 and the tool. Once cleaned, replace the connector into the tool.

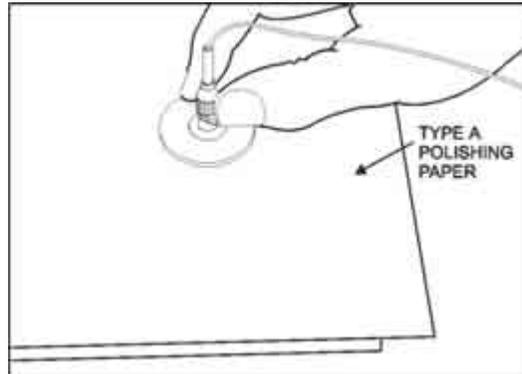


Figure 34. 1st Polish - Multimode (Flat-Tipped Connectors)

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). Do not use water or the polishing pad. Using figure-8 motions, polish the connector tip until all the 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.
2. 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.

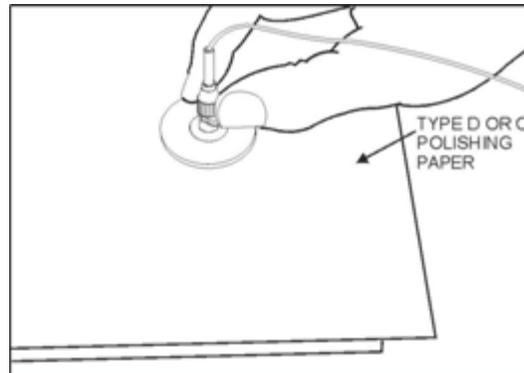


Figure 35. 2nd Polish - Multimode (Flat-Tipped Connectors)

6.3.2 Polishing Domed-Tipped Connector Ends (P2050A-Z, P2052A-Z, and P3050A-Z)

1st Polish – Singlemode and Multimode Connector

1. Place the rubber pad on the polishing plate.
2. Place a sheet of Type A Polishing Paper (brown 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.

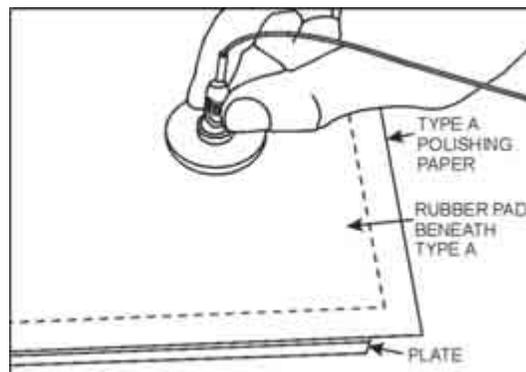


Figure 36. Polishing Domed-Tipped Connectors (Type A Paper/Rubber Pad)

2nd Polish – Singlemode and Multimode Connector

1. Place the Type C (gray) or Type D (light green) polishing paper (glossy side down) over the Type A paper. 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 C or 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.**

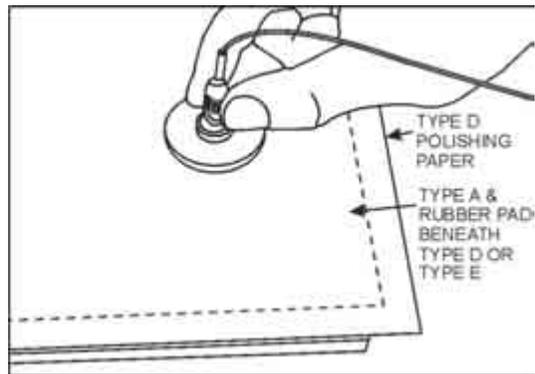


Figure 37. Polishing Domed-Tipped Connectors (Type D or E/Type A Paper/Rubber Pad)

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

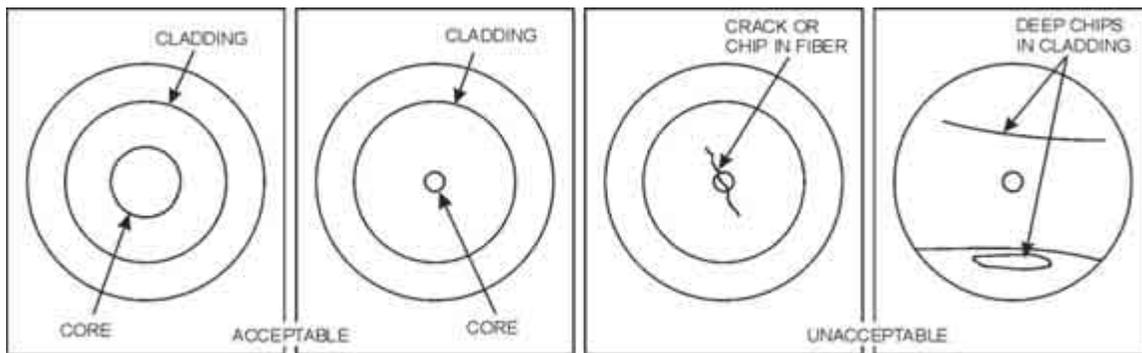


Figure 38. Fiber End Views (Microscope)

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 3rd Polish - Singlemode Connector in Section 6.3.2.

8. Interconnecting with Ruggedized ST® Fiber Optic Connectors

Several interconnecting couplings are available for joining the ST® 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.

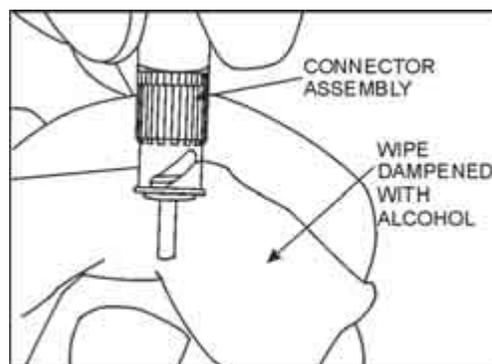


Figure 39. Cleaning Connector Tip

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.

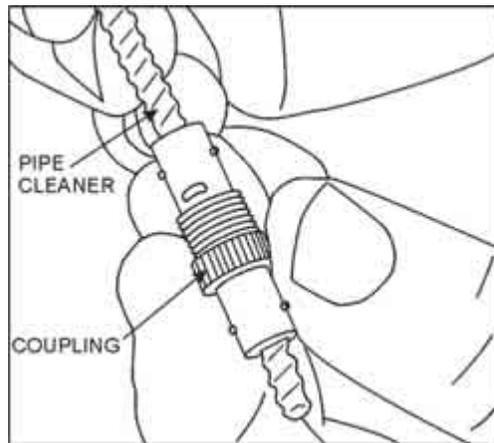


Figure 40. Cleaning Coupling

8.2 Installing Coupling on Ruggedized ST® Connectors

1. **INSTALL COUPLING** Install the ST® 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.

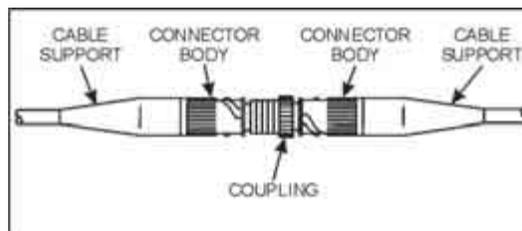


Figure 41. ST® Connectors Coupled

2. **Locking Versions Only** To install locking versions, unscrew the cable support completely, install the connector plug as in Step 1, then screw the cable support into the connector housing until it bottoms against the washer(s). Screw in cable support fingertight.
3. If a high-loss condition exists, use canned air to reclean the interior of the coupling, and reinstall the coupling as just described.
4. When doing rearrangements or reinsertions of an ST® 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

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

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 Block	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	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 Lucent 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 Holders	106 919 004	12 Fixtures
2	Modified SM/MM SC Grips	107 480 022	10 Grips
1	Rubber Polishing Pad	106 978 992	10 Pads
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.

9.2 Consumables (D-Kits)

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 P3050A-Z singlemode Ruggedized ST® Fiber Optic Connectors with zirconia ferrules using heat-cured epoxy.

Kit Quantity	Description	Replacement Comcode	Replacement Quantity	Physical Descriptions
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	
1 Pkg.	Epoxy	105 489 355	15 Packs	
10	Pipe Cleaners	Obtain Locally		

D-182738 Kit (Comcode 106 919 236) – Contains consumables to install 100 P2050A-C, P2050A-Z, or P2052A-Z multimode Ruggedized ST® Fiber Optic Connectors 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	
1 Pkg.	Epoxy	105 489 355	15 Packs	
10	Pipe Cleaners	Obtain Locally		

9.3 Ruggedized ST® Connectors

Connector Code	Comcode	Fiber Mode	Ferrule Type	Housing Description	Cable Size (mm)	Fiber OD (mm)	Packaging
P2050A-C-125	105 753 669	MM	Flat	Enh-Metal	0.9/2.0 to 3.0	125	Individual
P2052A-C-125	105 753 677	MM	Flat	Enh-Metal	2.0 to 3.0	125	Individual
P2050A-Z-125	107 629 602	MM	Domed	Enh-Metal	2.0 to 3.0	125	Individual
P2052A-Z-125	107 259 665	MM	Domed	Enh-Metal	2.0 to 3.0	125	Individual
P3050A-Z-125	107 259 673	SM	Domed	Enh-Metal	2.0 to 3.0	125	Individual

9.4 Couplings

Coupling Code	Comcode	Description
C2050A-2	105 777 288	Bayonet/Threaded Coupling (MM)
C3050A-2	105 777 270	Bayonet/Threaded Coupling (SM)
C2051A-2	107 262 198	(QPL) Bayonet/Threaded Coupling (MM)
C3051A-2	107 779 746	(QPL) Bayonet/Threaded Coupling (SM)

10. Assistance Information

For more information, contact the OFS Sales Representative.

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