ofs
A Furukawa Company

Your Optical Fiber Solutions Partner®

Crimp & Cleave Termination Instructions

for SEL ST Connectors

For Use With:

ST Termination Kit
(SEL, Part Number BT05402-01)

200 µm HCS® Fiber-Optic Cable

ST Crimp & Cleave Connectors

SEL®

Important Safety and Warranty Information

Please Read First

Please make sure to **READ** and understand termination instructions completely. Improper assembly will cause poor termination results and cause damage to termination kit components.

Make sure you **WEAR** eye protection during the cleaving process. The bare fiber is sharp and may splinter; handle very carefully. Make sure fiber is disposed of properly, in a hard-sided container.

OFS **WARRANTS** this termination kit to be free of defects for a period of 90 days from the date of purchase. Each kit is qualified at our factory prior to shipment. OFS will, at their discretion, repair or replace any tools found to be defective due to workmanship within the stated warranty period. (Excludes damage to the fiber stripper, cleave tool, and/or diamond blade due to misuse.)

OFS recommends that all replacements or repairs be made at our manufacturing facility, except where specifically outlined. Please **CONTACT** the sales representative in your region or call the factory for technical support:

Mon-Friday, 8:00 am-5:00 pm EST.

888-438-9936 [Toll free in the US and Canada]
860-678-0371 [International]

Table of Contents

SEL ST Termination Kit Contents

Contents

Part Numbers	Description
BT05402-01	SEL ST Termination Kit
AP04244-02	SEL ST Instruction Booklet
DT03732-06	ST Diamond Cleave Tool (Green Spring)
AP01224	Cable Stripper
BT03865-03	Crimp Tool (Red Handles)
CP01229-02	Fiber Stripper (White Insert)
AP01224	Scissors
K16248	Booklet: Importance of Cleave Tool Cleaning and Maintenance

Other Items Required (not included in kit): Safety Glasses, Marker

Related Products and Accessories Sold Separately

Part Numbers	Description
AT03290	Diamond Blade Replacement Kit

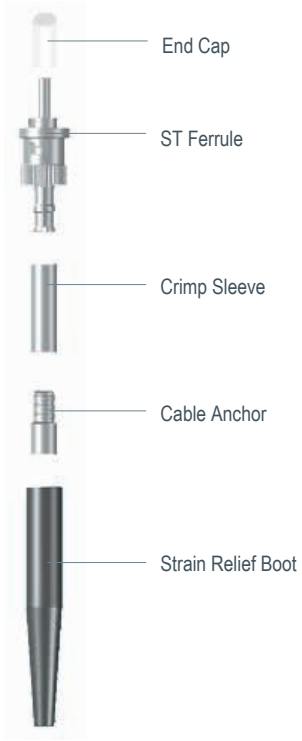
ST Connectors (Sold Separately)

Part Numbers	Description
BP05065-11	ST Connectors for 1.8 mm (Bag of 25)
BP05065-12	ST Connectors for 2.2 mm (Bag of 25)
BP05065-13	ST Connectors for 2.5 mm (Bag of 25)
BP05065-14	ST Connectors for 3.0 mm (Bag of 25)

ST Connector Components
- Strain Relief Boot
- Cable Anchor
- Crimp Sleeve
- ST Ferrule
- End Cap

AP01960	ST Splice Bushing

ST Connector Subcomponents



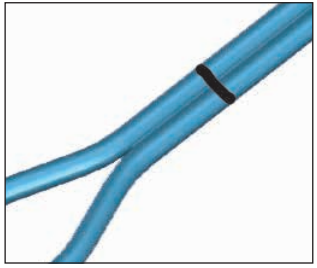
STEP 1

Strip Cable Outer Jacket

Zipcord Cable (FZ)

a. Mark cable outer jacket 6 inches from the end of the cable with a marker.

b. Initiate a cut between the two branches of cable and carefully pull the two ends apart approximately 6 inches (to the mark) from the end of the cable.



c. Mark cable outer jacket 2 1/2 inches from the end with a marker.

d. Select the 1.0 cutting hole on the cable stripper.

NOTE:
C800FX/FDST have 200 µm ST connectors (SEL #090-5001).

NOTE:
Make sure the cable has no kinks or sharp bends.

Step 1 continues onto the next page →

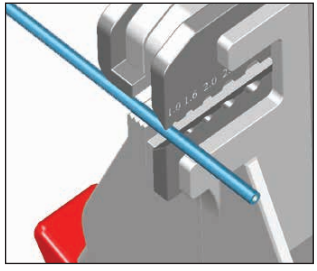
Termination Instructions

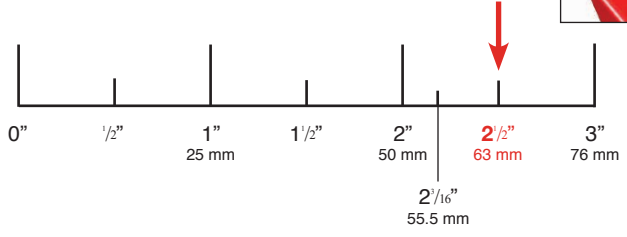
STEP 1

Strip Cable Outer Jacket

Zipcord Cable (FZ) continued

e. Using the cable stripper, apply quick squeezing action, release and remove the 2 1/2 inches of cable outer jacket.





f. Verify proper strip length against the Strip Template, shown below.

g. Repeat steps **a** thru **f** on the second branch of cable.

NOTE:
If cable outer jacket is difficult to remove in one step, it may be removed in shorter sections.

2-Channel Cable (FD)

a. Mark cable outer jacket 8 1/2 inches from the end of the cable with a marker.

b. Cut back the cable outer jacket to the 8 1/2 mark.

c. Apply a 1 1/2 inch section of 3/8 inch heat shrink over the cable outer jacket, overlapping inner cables by 1/2 inch.

d. Mark inner cables and cable outer jacket, 2 1/2 inches from the end with a marker.

e. Select the 1.0 cutting hole on the cable stripper.

f. Using the cable jacket strip tool, apply quick squeezing action, release and remove the 2 1/2 inches of cable outer jacket.

g. Verify proper strip length against the Strip Template, shown on page 4.

h. Repeat steps **a** thru **g** on the second inner cable.

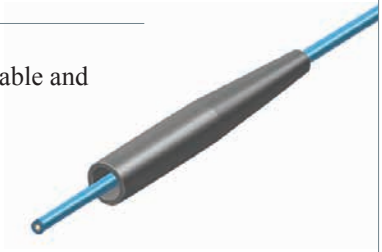
NOTE:
If cable outer jacket is difficult to remove in one step, it may be removed in shorter sections.

Termination Instructions

STEP 2

Install Strain Relief Boot

- Slide strain relief boot (tapered end first) onto cable and move up out of the way for easy stripping.



NOTE:
The tapered end of the boot may be trimmed with scissors to suit larger diameter cables.

STEP 3

Strip Fiber Buffer

Before you start:

Make sure to use the appropriate strip tool insert for the buffer removal process: 200 µm = WHITE.

Careful while handling the FIBER STRIPPER. Handle as a precision device and do not strike on hard surfaces or drop.

Clean blades frequently using small bristle brush supplied.

Pull straight when stripping the fiber buffer. This is important in order to avoid damage to the HCS cladding.

a. Insert buffered fiber through guide tube of the fiber buffer strip tool until the cable outer jacket bottoms out in the tube.

b. Holding cable securely, squeeze handles to cut buffer and PULL STRAIGHT to remove buffer. Inspect HCS cladding for damage from improper buffer stripping. (i.e. white dusty stripe)

c. Less than 5/16 inch of buffer should be exposed.

d. Verify proper buffer strip length to be approximately 2 3/16 inches.

e. Repeat for the second cable.

NOTE:
If unable to insert buffered fiber through guide tube, trim tip of the fiber using scissors. If a short length of cable is being terminated, wrap the cable around your finger to prevent fiber and aramid yarn from pulling out of cable jacket.

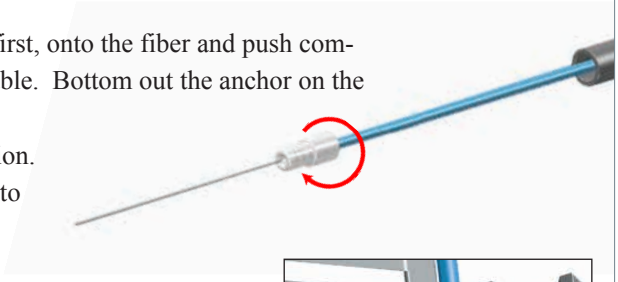
NOTE:
Be careful not to touch the HCS fiber coating. Once the fiber has been stripped, the coating will retain finger oils, which can transfer to and damage gripper pads in the cleaver during step 8 in the termination process.

Termination Instructions

STEP 4

Install Cable Anchor

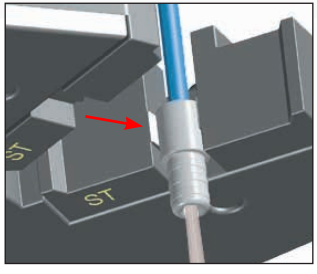
a. Slide anchor, large end first, onto the fiber and push completely down onto the cable. Bottom out the anchor on the cable outer jacket using a clockwise turning motion. (i.e. screw the anchor onto the cable outer jacket).



b. Position anchor in crimp tool such that end of anchor aligns with edge of crimp die.

c. Squeeze crimp tool handles together until it clicks, then releases.

d. Repeat for the second cable.



NOTE:

Be careful not to touch the HCS fiber coating once the fiber has been stripped. The coating will retain finger oils which can transfer to and damage the gripper pads in the cleaver during Step 8 in the termination process.

STEP 5

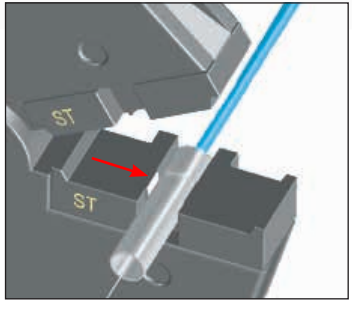
Install Crimp Sleeve

a. Slide the crimp sleeve over the cable anchor until it bottoms out on the cable anchor.

b. Position the crimp sleeve in crimp tool such that the back edge of the crimp sleeve is aligned with the edge of the crimp nest.

c. Squeeze the crimp tool together until it clicks, then releases.

d. Repeat for the second cable.



Termination Instructions

STEP 6

Install Ferrule

a. Feed the fiber through hole in rear of the ferrule.

b. Slide the ferrule for the ST connector down the fiber and into the crimp sleeve. Push the ferrule firmly until it bottoms out in the crimp sleeve.

c. Repeat for the second cable.

STEP 7

Crimp Ferrule

Before you start:

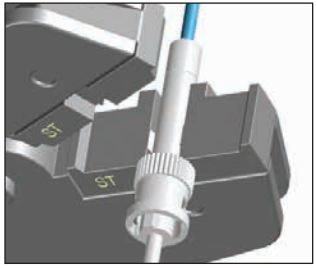
Make sure the ferrule is fully seated in the crimp sleeve.

Check to make sure the crimp die is stamped properly for the connector type, 'ST' facing to the right. Proper positioning of the connector in the die set is critical for proper crimp location. Failure to crimp in the prescribed location will result in poor connector retention strength.

Crimp dies can be reversed at the factory for left-handed operators.

ST Connector

a. Position the back of the ST coupling nut against the side of the crimp die set stamped ST, as shown.



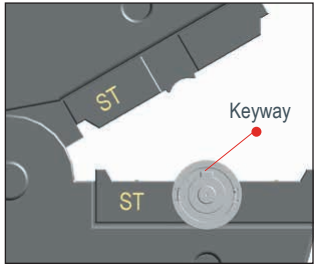
Step 7 continues onto the next page →

Termination Instructions

STEP 7

Crimp Ferrule continued

a. Rotate ST connector so that its key is oriented in the crimp die as shown.



b. Squeeze the crimp tool handles together until the tool releases.

c. Repeat for the second cable.

STEP 8

Cleave Fiber

Before you start:

Make sure the appropriate cleave tool positioner plate is being used: **ST**

Make sure the appropriate colored tension spring is being used: **200 µm = GREEN**

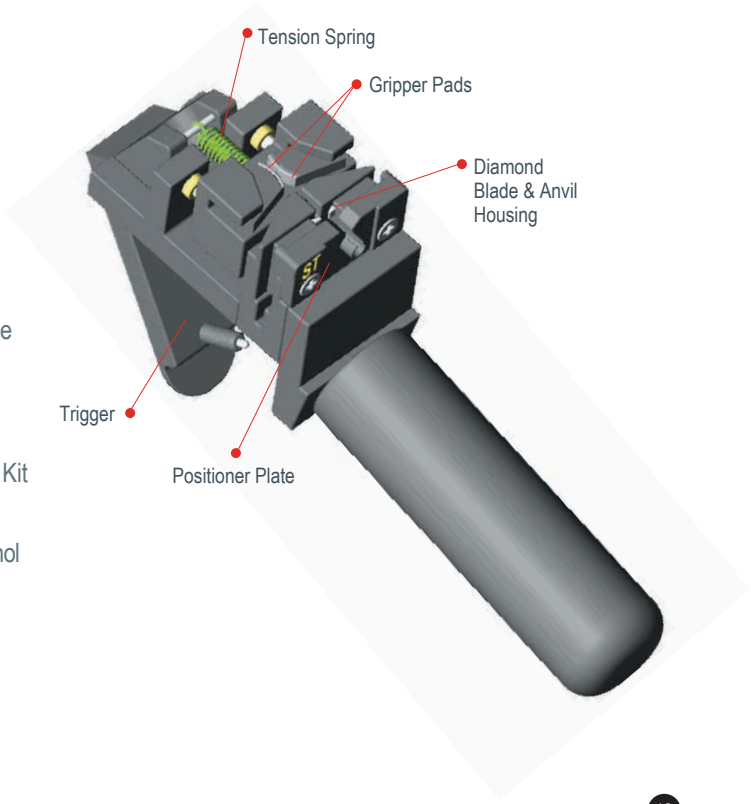
Refer to diagram of the Cleave Tool.

Careful while handling the Cleave Tool. Handle as a precision device and do not strike on hard surfaces or drop.

Keep the cleave tool clean and free from oils, including naturally occuring finger oils. Gripper pads, diamond blade and anvil should be cleaned after every 50 cleaves. Use the OFS Cleave Tool Cleaning Kit — Part #P16247 - available separately.

Do not use alcohol to clean the diamond blade or the gripper pads. Alcohol will chemically react with the gripper pads and ruin them.

Do not insert metal tools near the diamond blade, as it is fragile and may chip.

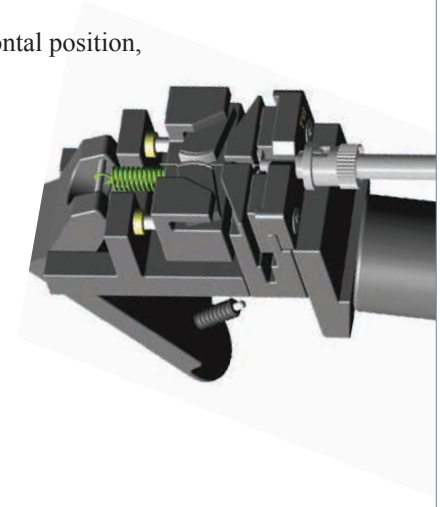


Termination Instructions

STEP 8

Cleave Fiber continued

a. Holding the CLEAVE TOOL in a horizontal position, grip the handle while leaving your index finger free to actuate trigger.



b. Place the ferrule into the hole of the positioner plate until it is fully inserted.

c. Release the connector in the tool.

d. Using your index finger, SLOWLY and GENTLY depress the trigger to perform the cleave process. The cleave process is complete when the fiber snaps away from the connector. (Do not release the trigger!).

NOTE:
It is critical to fully insert the connector into the positioner plate. Failure to do so, may cause poor cleave quality and/or damage to the diamond blade.

NOTE:
It is critical to fully insert the connector into the positioner plate. Failure to do so, may cause poor cleave quality and/or damage to the diamond blade.

NOTE:
Do not hold onto the connector during the cleave process. Doing so may cause poor cleave quality.

e. Before releasing the trigger, remove the connector from the cleave tool and grasp the top of the scrap fiber while releasing the trigger. Gently remove the scrap fiber while keeping it away from the diamond blade.

f. Dispose of scrap fiber safely in a hard-sided container.

g. Install protective cap onto connector to protect cleaved fiber surface.

h. Repeat for the second cable.

Termination Instructions

STEP 9

Position Strain Relief Boot

a. Slide strain relief boot onto connector (up to the rear of the coupling nut) to complete termination.

Importance of Cleave Tool Cleaning and Maintenance

The Cleave Tool supplied with OFS's Termination Kits contains movable parts, wear items, and a diamond blade that require regular maintenance, care, or replacement after useful life in order to perform satisfactorily. Damage and parts replacement expense can result if recommended procedures are not followed.

~ The diamond blade must be cleaned; the gripper pads must be cleaned, kept oil-free, and replaced after wear.

~ The cleave-tool trigger must be depressed slowly.

Cleave Tool Cleaning Kit

For cleaning your cleave tool, please order the OFS Cleave Tool Cleaning Kit (part #P16247) which includes recommended cleaning fluid, swabs, and complete instructions.

Diamond Blade Replacement Kit

For replacing the diamond blade/anvil assembly, please order the Diamond Blade Replacement Kit (Part #AT03290.) The kit includes a new diamond blade, anvil, replacement screws, and complete instructions for performing this simple procedure at your facility.

Trouble Shooting Guide →

Trouble Shooting Guide

Problem	Dim-light termination/ no light termination	Poor cleave quality / High insertion loss	Fiber does not cleave	Fiber protrudes or recesses after cleave
Possible Explanations	Improper strip technique *Refer to Steps 2 & 3* Improper crimp position *Refer to Steps 4 - 7*	Improper crimp position *Refer to Steps 4 - 7* Improper cleave techniques *Refer to Step 8* Incorrect tooling for fiber size or connector type *Refer to Page 1* Diamond blade needs to be cleaned or replaced *Refer to Page 20* Gripper pads worn and need to be replaced *Call Tech Support to place a purchase order for service.*	Fiber has not been first thoroughly stripped *Refer to Step 3* Improper cleave techniques *Refer to Step 8* Incorrect tooling for fiber size or connector type *Refer to Page 1* Diamond blade needs to be cleaned or replaced *Refer to Page 20* Gripper pads worn and need to be replaced *Call Tech Support to place a purchase order for service.*	Improper crimp position *Refer to Steps 4 - 7* Improper cleave techniques *Refer to Step 8* Incorrect tooling for fiber size or connector type *Refer to Page 1* Gripper pads worn and need to be replaced *Call Tech Support to place a purchase order for service.*

Termination and Test Kits Available

OFS offers a specialized Termination Kit—and associated Insertion Loss Test Kit—for each type of Crimp & Cleave connector we support. These kits are available in various combinations of sizes and/or connector types. Customer Relations at our factory can help you select the correct kit for your purposes.

This document is for informational purposes only and is not intended to modify or supplement any OFS warranties or specifications relating to any of its products and services.

0814

ofs
A Furukawa Company

55 Darling Drive, Avon, CT 06001

To learn more, please call or visit our website.

Phone: **1 860 678 0371**
Toll Free: **1 888 438 9936**
Web: **www.ofsoptics.com**

AP04244-02 Rev. G

Trademark Information:

Manufactured in the USA by OFS.

HCS is a registered trademark in the USA of OFS Fitel, LLC.