



A Furukawa Company

Your Optical Fiber Solutions Partner®

Crimp & Cleave Termination Instructions

for 200 μm Factory5 Cable with ST and SMA Connectors



For Use With:

200 μm ST and SMA Factory5
Termination Kits

200 μm HCS® Factory5 Fiber-Optic Cable

ST and SMA Factory5 Crimp & Cleave
Connectors

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:

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

888-438-9936 [Toll free in the US and Canada]

860-678-0371 [International]

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Factory5 ST and SMA Termination Kit Contents

Contents


| Part Numbers | Description |
|----------------------|--|
| DT03732-39 | 200 μ m Factory5 SMA Termination Kit |
| DT03732-40 | 200 μ m Factory5 ST Termination Kit |
| P18225 | 200 μ m Factory5 ST/SMA Instruction Booklet |
| DT03732-05 | SMA 200 μ m Diamond Cleave Tool (Green Spring) |
| DT03732-06 | ST 200 μ m Diamond Cleave Tool (Green Spring) |
| AP01224 | Cable Stripper |
| BT03865-03 | Crimp Tool (Red Handles) |



Termination kit contents
continues onto the next page →

ST and SMA Termination Kit Contents continued

| | |
|----------------------|---|
| CP01229-02 | 200 μ m Fiber Stripper (White Blade Insert) with Cleaning Brush and Prong Tool |
| AP01225 | 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 |
|--------------|---|
| BT01827 | SMA Positioner Plate (use to convert an ST kit to an SMA kit) |
| BT01900 | ST Positioner Plate (use to convert an SMA kit to an ST kit) |
| P10188-03 | Insertion Loss Test Kit for 200 μ m ST Connectors |
| P10188-05 | Insertion Loss Test Kit for 200 μ m SMA Connectors |
| P10188-08 | Insertion Loss Test Kit for 200 μ m ST, SMA, V-Pin, and F07 Connectors |
| P16247 | Cleave Tool Cleaning Kit (Includes cleaning fluid and safe cleaning swabs) |
| AT03290 | Diamond Blade Replacement Kit |

NOTE:

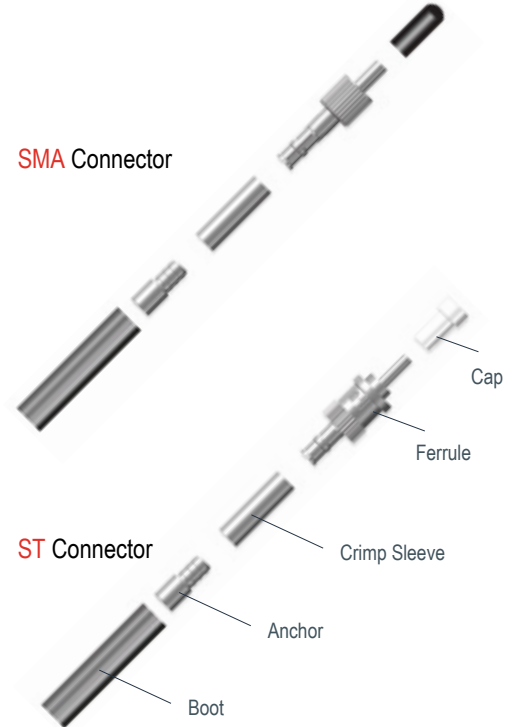
Only one component part replacement is required to convert an ST Termination Kit to its same size equivalent SMA Termination Kit and vice versa.

**Termination kit contents
continues onto the next page →**

Related Products and Accessories Sold Separately - continued

Factory5 ST and SMA Connectors

| Description | Part Numbers |
|----------------------|--------------|
| SMA Connectors | P18241 |
| ST Connectors | P18242 |



Termination Instructions

STEP 1

Install Strain Relief Boot

- Slide STRAIN RELIEF BOOT onto cable and move up and out of the way for easy stripping.

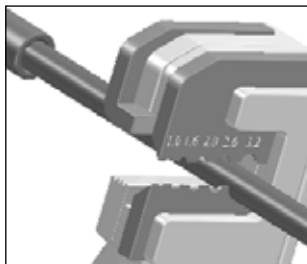


Termination Instructions

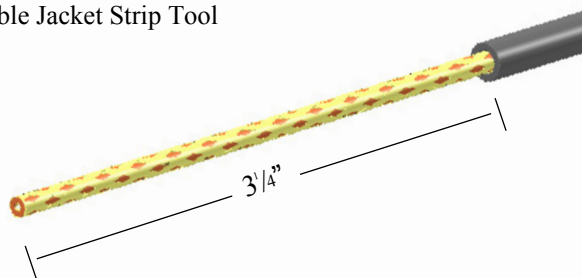
STEP 2

Strip Cable Outer Jacket

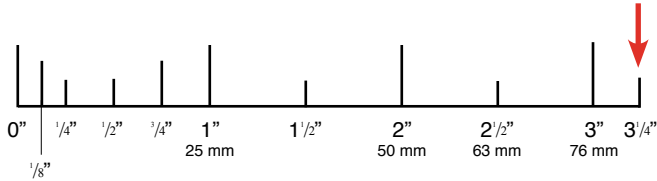
- Mark cable outer jacket $3\frac{1}{4}$ inches from the end with a marker.



- Select the 3.2 hole on the Cable Jacket Strip Tool to strip Cable Outer Jacket



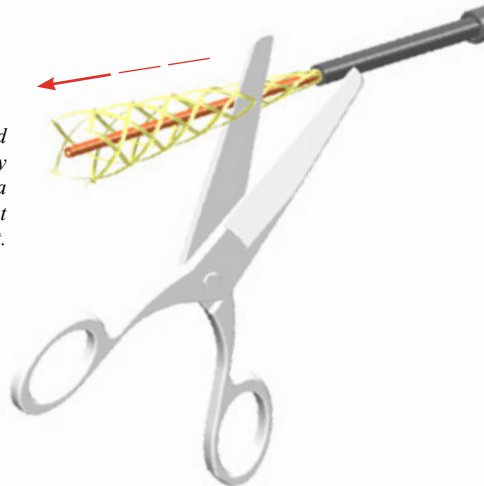
- Verify proper strip length against the strip template shown below.



- Carefully unravel the aramid braid with a pointed instrument.

Slide scissors or other pointed object in this direction, carefully unravelling as many yarns at a time as is manageable without creating a knot.

- When the yarns are unravelled, cut them as closely to the cable outer jacket as possible.

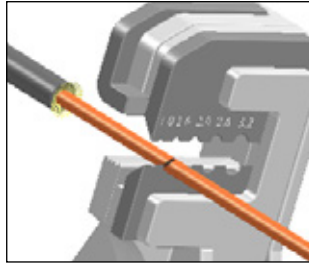


Termination Instructions

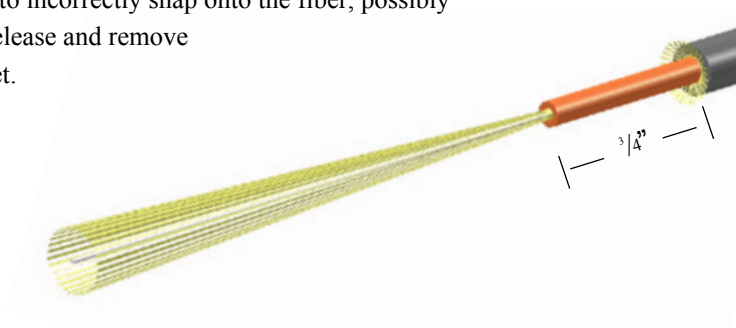
STEP 3

Strip Sub Unit Jacket

- Mark sub unit jacket 3/4 inches away from the cable outer jacket with a marker.



- Strip jacket using the 1.6 hole using the CABLE JACKET STRIP TOOL, apply a quick-but-partial squeezing action (fully compressing the handles will cause the tool to incorrectly snap onto the fiber, possibly breaking it), release and remove the outer jacket.



- Verify proper strip length against the strip template shown on page 7.

Termination Instructions

STEP 4

Strip Fiber Buffer

! Before you start:

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

Be sure to clean blades frequently using small bristle brush supplied.

IMPORTANT: Pull straight when stripping the fiber buffer. The HCS fiber cladding can be damaged if fiber is not pulled straight.

- Separate buffered fiber from yellow aramid yarn by pulling yarn back along the cable.



NOTE:

If unable to insert buffered fiber through guide tube, trim tip of the fiber using scissors.

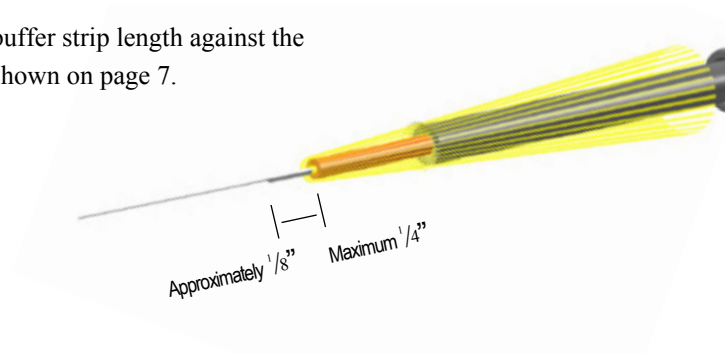
NOTE:

If a short length of cable is being terminated, wrap the cable around your hand to prevent fiber and aramid yarn from pulling out of 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 9 in the termination process.

- Insert the buffered fiber through the guide tube of the fiber stripper until the sub unit outer jacket bottoms out inside the tube.
- 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)
- Verify proper buffer strip length against the strip template shown on page 7.



NOTE:

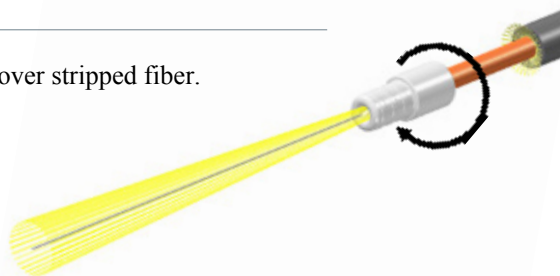
If damage is visible cut off the damaged fiber and repeat the procedure from Step 2: Strip Cable Outer Jacket.

Termination Instructions

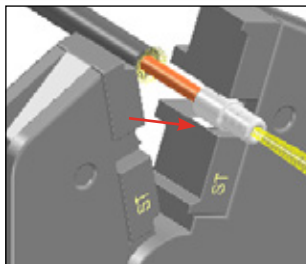
STEP 5

Install Cable Anchor

- Pull aramid yarn strands back over stripped fiber.



- Holding aramid yarn and fiber at very top. Feed the fiber and the aramid yarn through the CABLE ANCHOR. Bottom out the anchor on the cable sub-unit outer jacket using a clockwise turning motion. (i.e. screw the anchor onto the cable outer jacket, if necessary)



- Position anchor in CRIMP TOOL, centering the rear end of the anchor in the crimp nest.
- Squeeze crimp tool handles together until it clicks, then releases.

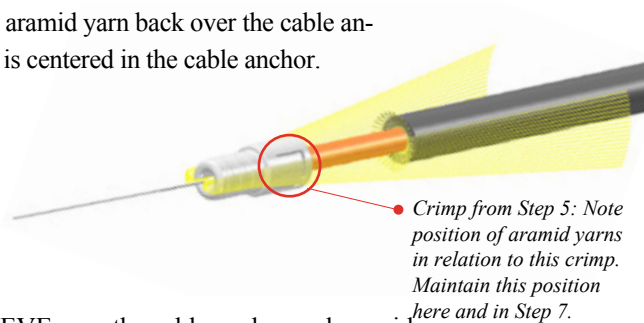
NOTE:

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 9 in the termination process.

STEP 6

Install Crimp Sleeve

- Divide the aramid yarn into approximately two equal halves.
- Fold both halves of the aramid yarn back over the cable anchor. Be sure the fiber is centered in the cable anchor.



- Slide the CRIMP SLEEVE over the cable anchor and aramid yarn until it bottoms out on the cable anchor.



Step 6 continues
onto the next page →

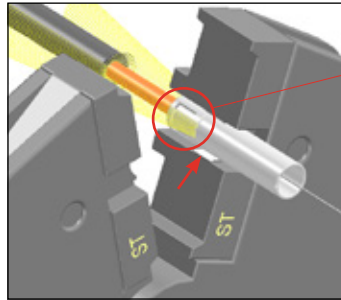
Termination Instructions

STEP 6

Install Crimp Sleeve continued

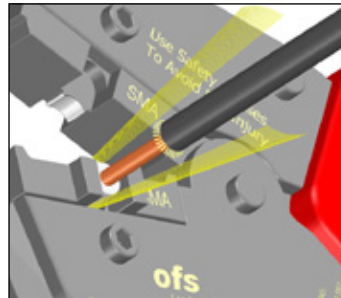
- Position the crimp sleeve in the CRIMP TOOL such that:

~ The back edge of the crimp sleeve is aligned with the edge of the crimp nest.



• *Crimp from Step 5: Note that the orientation of aramid yarns is maintained in relation to the jaws of the crimp tool.*

~ The aramid yarn halves are positioned over the jaws.

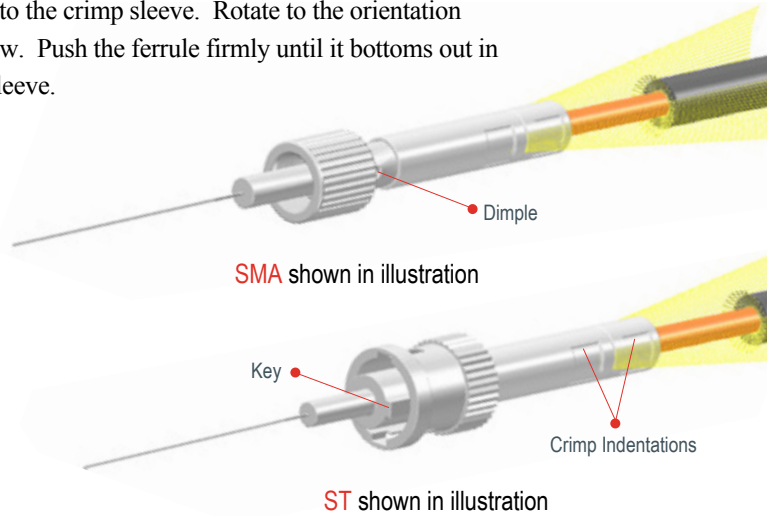


- Squeeze crimp tool handles together.

STEP 7

Install Ferrule

- Feed fiber through hole in rear of FERRULE.
- Slide the ferrule for either SMA or ST connector down the fiber and into the crimp sleeve. Rotate to the orientation shown below. Push the ferrule firmly until it bottoms out in the crimp sleeve.



Termination Instructions

STEP 8

Crimp Ferrule



Before you start:

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

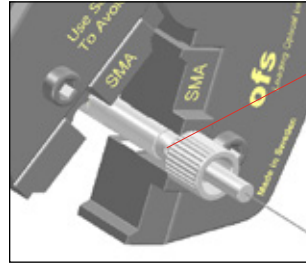
Check to make sure the crimp die set is stamped properly for the connector type, 'SMA' on one side and 'ST' on the other.

Proper positioning of the connector in the die set is critical for a proper crimp location. Failure to crimp in the prescribed location will result in poor connector retention strength.

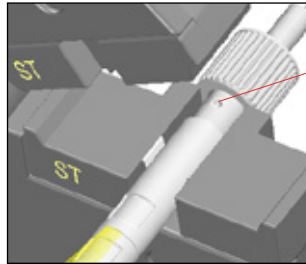
Crimp dies can be reversed at the factory for left-handed operators.

SMA Connector

- Position the back of the SMA COUPLING NUT against the side of the crimp die set stamped 'SMA' as shown.
- Rotate the SMA connector so that its location dimple is oriented in the crimp die set as shown.
- Squeeze CRIMP TOOL handles together until the tool releases.



Location dimple



Location dimple

**Step 8 continues
onto the next page →**

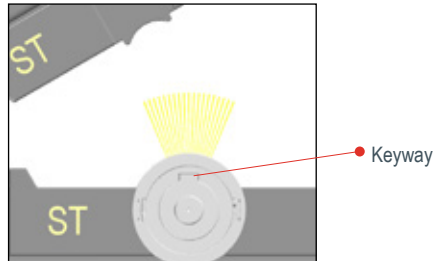
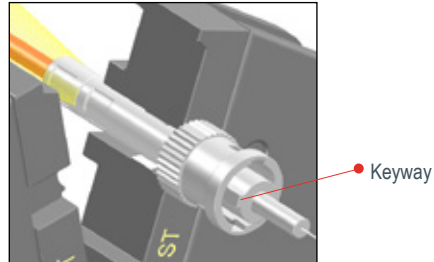
Termination Instructions

STEP 8

Crimp Ferrule continued

ST Connector

- Position the back of the ST COUPLING NUT against the side of the crimp die set stamped 'ST'.
- Rotate the ST connector so that its key is oriented in the crimp die set as shown.
- Squeeze CRIMP TOOL handles together until the tool releases.



STEP 9

Cleave Fiber



Before you start:

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

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

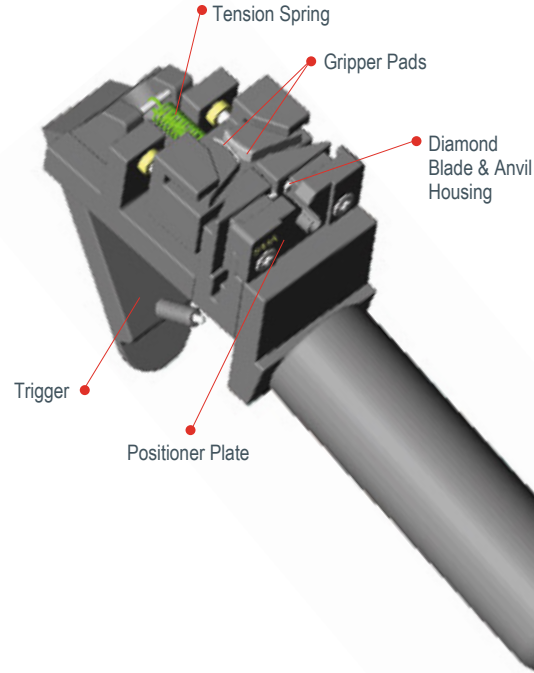
Refer to diagram of the Cleave Tool.

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 occurring 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.



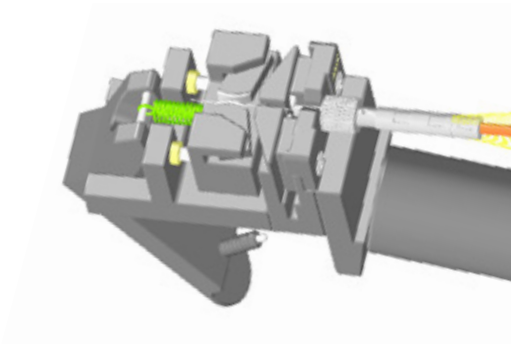
Step 9 continues onto the next page →

Termination Instructions

STEP 9

Cleave Fiber continued

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



- Place the ferrule into the hole of the positioner plate until it is fully inserted.
- Release the connector in the tool.

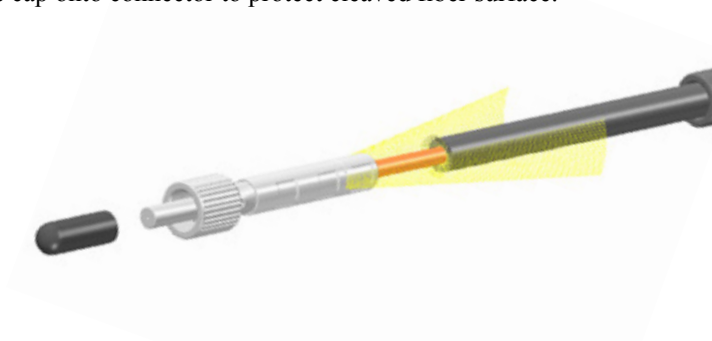
NOTE:

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.

- Using index finger, slowly and gently depress trigger to perform the cleave process. The cleave process is complete when the fiber snaps away from the connector. Do not release trigger!
- 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.
- Dispose of scrap fiber safely in a hard-sided container.
- Install protective cap onto connector to protect cleaved fiber surface.



Termination Instructions

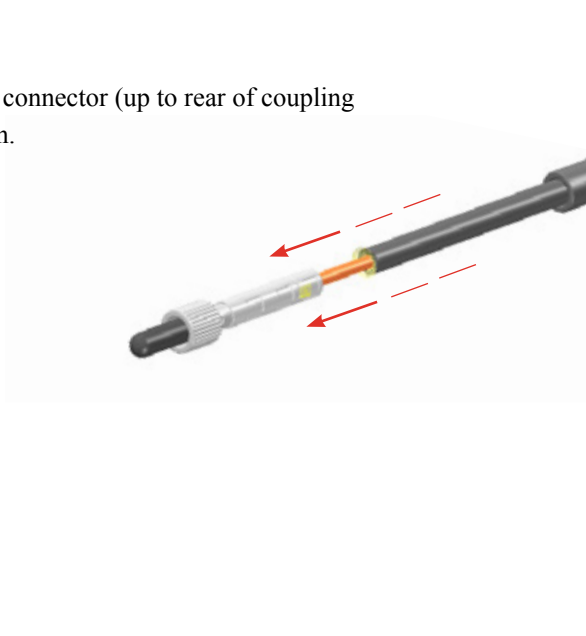
STEP 10

Position Strain Relief Boot

- Using scissors, trim exposed aramid yarn as close to crimp sleeve as possible.



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



Maintenance & Trouble Shooting Guide

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

| 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 | <p>Improper strip technique <i>Refer to Steps 2 - 4</i></p> <p>Improper crimp position <i>Refer to Steps 5 - 8</i></p> | <p>Improper crimp position <i>Refer to Steps 5 - 8</i></p> <p>Improper cleave techniques <i>Refer to Step 9</i></p> <p>Incorrect tooling for fiber size or connector type <i>Refer to Page 1</i></p> <p>Diamond blade needs to be cleaned or replaced <i>Refer to Page 23</i></p> <p>Gripper pads worn and need to be replaced <i>Call Tech Support to place a purchase order for service.</i></p> | <p>Fiber has not been first thoroughly stripped <i>Refer to Step 4</i></p> <p>Improper cleave techniques <i>Refer to Step 9</i></p> <p>Incorrect tooling for fiber size or connector type <i>Refer to Page 1</i></p> <p>Diamond blade needs to be cleaned or replaced <i>Refer to Page 23</i></p> <p>Gripper pads worn and need to be replaced <i>Call Tech Support to place a purchase order for service.</i></p> | <p>Improper crimp position <i>Refer to Steps 5 - 8</i></p> <p>Improper cleave techniques <i>Refer to Step 9</i></p> <p>Incorrect tooling for fiber size or connector type <i>Refer to Page 1</i></p> <p>Gripper pads worn and need to be replaced <i>Call Tech Support to place a purchase order for service.</i></p> |

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.

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Trademark Information:

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