



A Furukawa Company

Your Optical Fiber Solutions Partner™

## Crimp & Cleave Termination Instructions

for 200  $\mu\text{m}$  F07 Connectors

### For Use With:

F07 Termination Kits

200  $\mu\text{m}$  HCS® Fiber-Optic Cable

F07 Crimp & Cleave Connectors



## Important Safety and Warranty Information

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### 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 Specialty Photonics Division **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 Specialty Photonics Division 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 Specialty Photonics Division 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]

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# F07 Termination Kit Contents

## Contents

Part Numbers	Description
DT03732-37	200 $\mu$ m F07 Termination Kit
AP03557-01	200 $\mu$ m F07 Instruction Booklet
DT03732-02	200 $\mu$ m F07 Diamond Cleave Tool (Green Spring)
AP01224	Cable Stripper
BT03865-05	Crimp Tool (Blue Handles)
CP01229-20	Fiber Stripper (White Blade Insert)
AP01225	Scissors
K16248	Booklet: Importance of Cleave Tool Cleaning and Maintenance

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



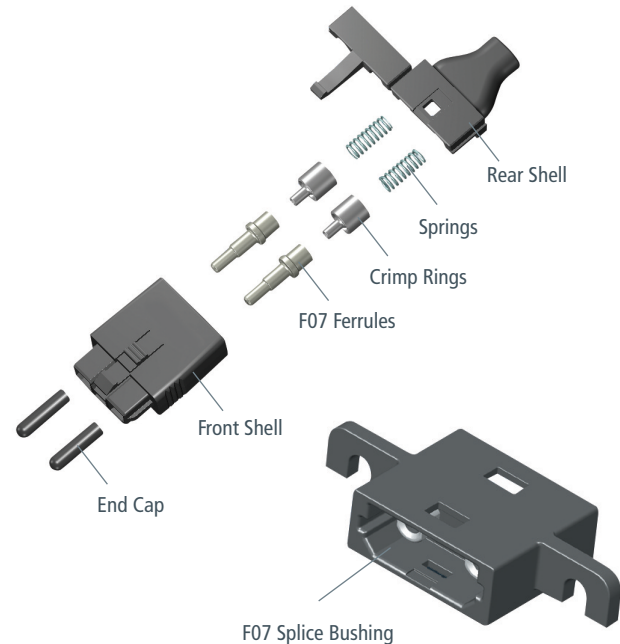
## Related Products and Accessories (Sold Separately)

Part Numbers	Description
P10188-07	Insertion Loss Test Kit for 200 $\mu\text{m}$ F07
P10188-08	Insertion Loss Test Kit for 200 $\mu\text{m}$ F07, V-Pin, ST <sup>®</sup> , and SMA Connectors
P16247	Cleave Tool Cleaning Kit
AT03290	Diamond Blade Replacement Kit

### F07 Crimp and Cleave Connectors (Sold Separately)

Part Numbers	Description
BP05974	F07 Duplex Connector
F07 Duplex Connector Subcomponents	
	End Caps
	Front Shell
	F07 Ferrules
	Crimp Rings
	Springs
	Rear Shell
AP02719	F07 Splice Bushing

### F07 Duplex Connector Subcomponents



## Termination Instructions

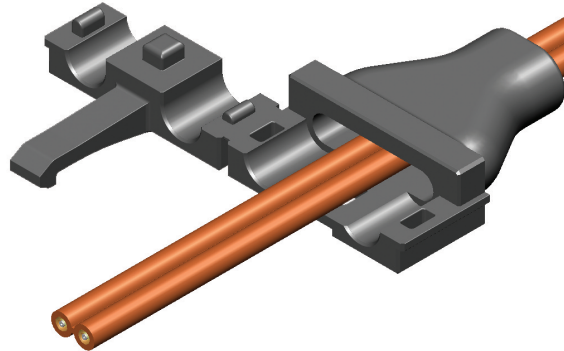
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### STEP 1

#### Installation of First Read Body

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- Install the REAR BODY, tapered end first.



#### NOTE:

Terminate one end at a time.

## Termination Instructions

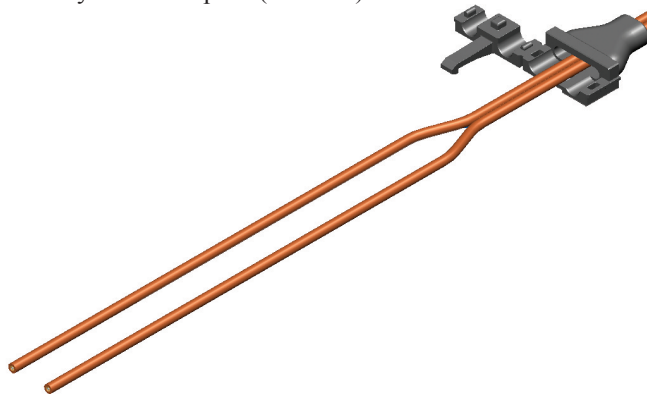
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### STEP 2

#### Strip Cable Outer Jacket

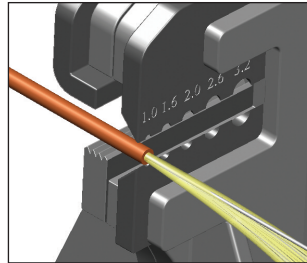
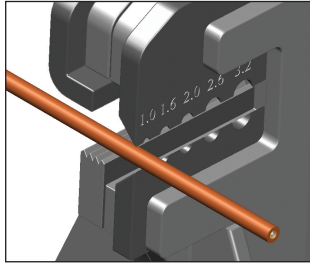
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- Initiate a cut between the two branches of zipcord and carefully pull the two ends approximately 6 inches apart. (152 mm)



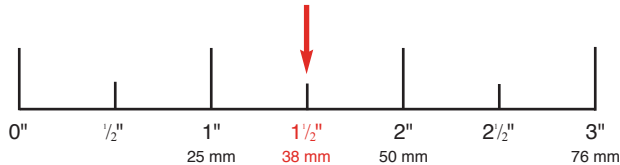
- Mark cable outer jacket 1 1/2 inches (38 mm) from end with a marker. Use strip template shown below.

- Select the 1.0 cutting hole on CABLE JACKET STRIP TOOL.



- Use CABLE JACKET STRIP TOOL, apply quick squeezing action, release and remove the 1 1/2 inches (38 mm) of cable outer jacket.

- Verify proper strip length against the Strip Template, shown below.
- Repeat this step for second channel of zipcord.



**NOTE:**

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

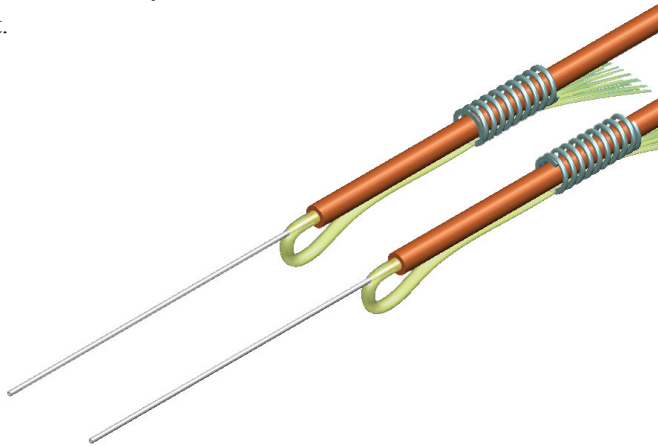


## Termination Instructions

### STEP 3

### Install Springs

- Insert the SPRING over the aramid yarn and cable outer jacket.



### NOTE:

Disregard reference to aramid yarn when terminating blue V-System® cable.

## STEP 4

### Strip Fiber Buffer

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#### **!** Before you start:

Make sure to use the appropriate strip tool insert for the buffer removal process: White blade inserts

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.

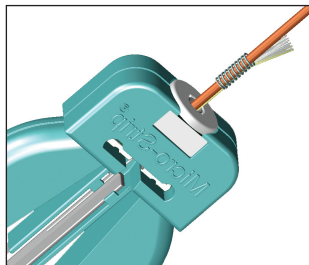
**Step 4 continues  
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## Termination Instructions step 4 continued

### STEP 4

#### Strip Fiber Buffer (continued)

- Insert the buffered fiber through the guide tube of the fiber stripper until the cable outer jacket bottoms out in the tube.
- Holding cable securely, squeeze handles to cut buffer and **PULL STRAIGHT** to remove buffer.
- Release the buffer strip tool handles.
- Inspect HCS fiber cladding for damage from improper buffer stripping. (i.e. white dusty stripe)
- Repeat this step for second channel of zipcord.



#### 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 5 in the termination process.

#### NOTE:

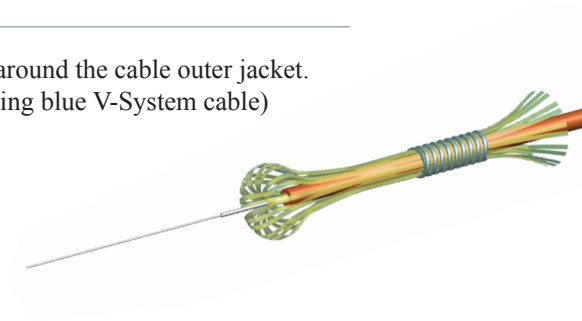
If damage is visible, cut off the damaged fiber and repeat the procedure from step 1: Strip Cable Outer Jacket.

## STEP 5

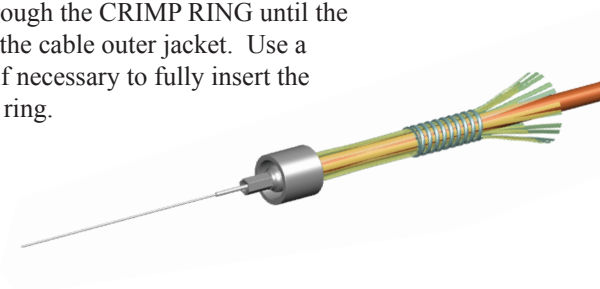
### Install Crimp Rings

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- Fan the aramid yarn evenly around the cable outer jacket.  
(Disregard this step when using blue V-System cable)



- Carefully feed the fiber through the CRIMP RING until the crimp ring bottoms out on the cable outer jacket. Use a clockwise turning motion if necessary to fully insert the cable jacket into the crimp ring.



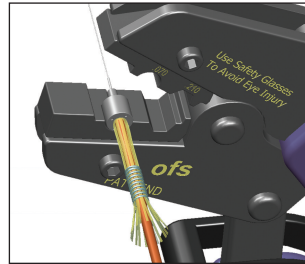
**Step 5 continues  
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## Termination Instructions

### STEP 5

#### Install Crimp Rings continued

- Holding cable and crimp ring in left hand and CRIMP TOOL in the right, insert small end of crimp ring completely into the front die nest of the crimp tool.
- Squeeze crimp tool handles together until it clicks, then releases.
- Repeat this step for second channel of zipcord.



#### NOTE:

The F07 crimp ring is not interchangeable with other connectors.

#### NOTE:

If a connector is not crimped properly, there is potential that the glass optical fiber may move with respect to the connector when tension is applied during cleaving in step 7.

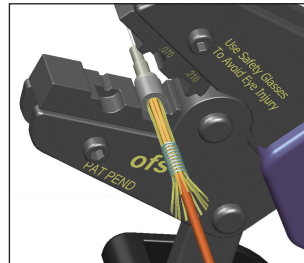
## STEP 6

### Install Ferrules

- Carefully feed the fiber through the FERRULE, large end first, and push completely into the outer flange of the crimp ring.



- Insert the crimp ring completely into the rear die nest of the crimp tool.
- Squeeze crimp tool handle together until it clicks, then releases.
- Repeat this step for second channel of zipcord



#### NOTE:

If a connector is not crimped properly, there is potential that the glass optical fiber may move with respect to the connector when tension is applied during cleaving in step 7.

#### NOTE:

The process of crimping this ferrule correctly deforms the circular crimp ring into a hexagonal shape.

## Termination Instructions

### STEP 7

#### Cleave Fiber

##### ! Before you start:

Make sure the appropriate cleave tool positioner plate is being used: **F07**

Make sure the appropriate colored tension spring is being used: **Green**

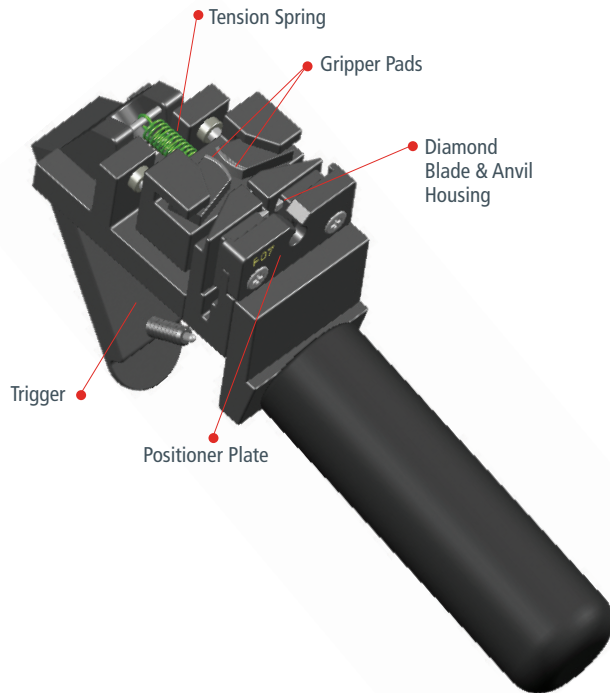
Refer to diagram of the Cleave Tool.

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

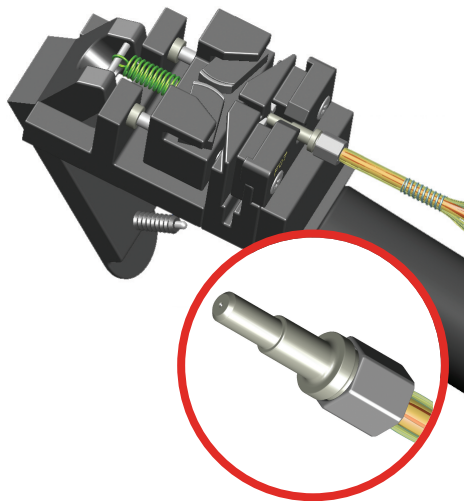
Keep the cleave tool clean and free from oils, including naturally occurring finger oils. Gripper pads, diamond blade and anvil should be cleaned after every 50 cleaves. Use the OFS Cleave Tool Cleaning Kit — Part #P16247, available separately.

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.



- Hold the CLEAVE TOOL in a horizontal position, grip the handle while leaving your index finger free to actuate trigger.
- Place the ferrule assembly into the hold of the positioner plate until it is fully inserted.
- Release the connector in the CLEAVE 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.

**Step 7 continues  
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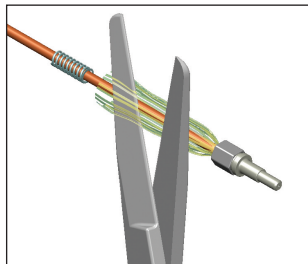


## Termination Instructions

### STEP 7

#### Cleave Fiber continued

- 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 cleave tool. Grasp 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.
- Using SCISSORS, trim exposed aramid yarn as close to ferrules as possible.
- Repeat the step for second channel of zipcord.



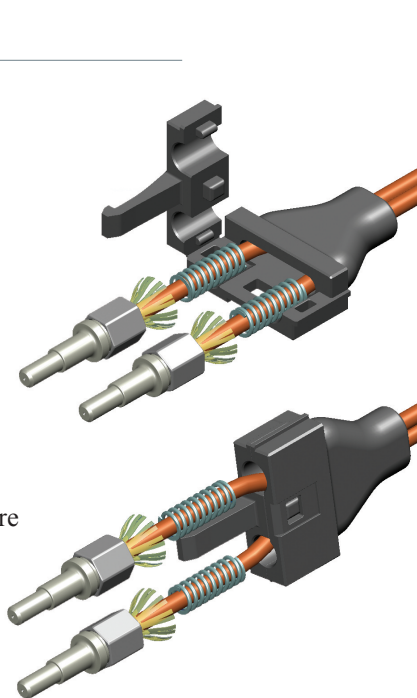
#### NOTE:

Disregard the aramid yarn trimming step when using blue V-System cable.

**STEP 8**

## Assemble Connector Body

- Slide the REAR BODY up to the ferrules.
- Fold the rear body over the springs.



- Pull rear body back slightly and flip the entire assembly over.

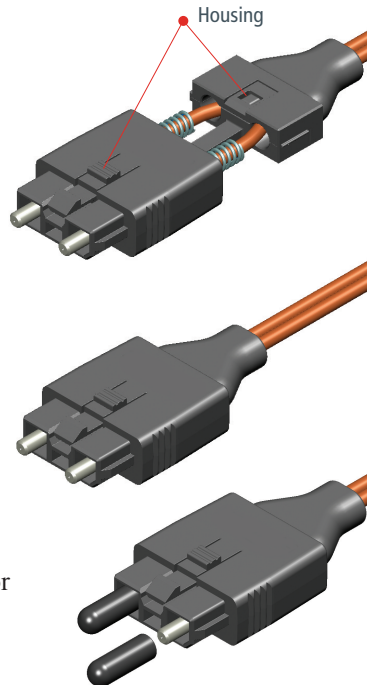
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## Termination Instructions

### STEP 8

#### Assemble Connector Body continued

- Insert ferrules into HOUSING as shown. Be certain that the indicated markings on the rear body align with those on the housing as shown.
- Push the rear body and the housing together until they snap together and are locked in place.
- Install PROTECTIVE CAPS onto both connector ferrules to protect cleaved fiber surface.



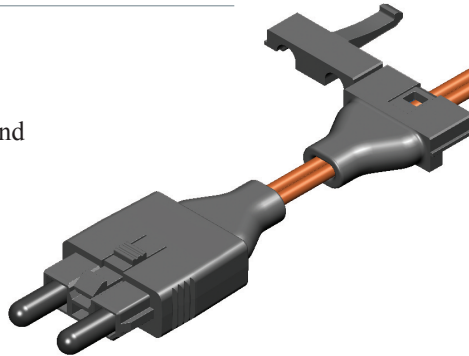
**STEP 9**

## Final Assembly

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### Installation of Second Connector Body on Opposite End of Cable

- Install the REAR BODY on the other end of the cable in the orientation shown.
  
- Repeat all steps to terminate ferrules and install housing.



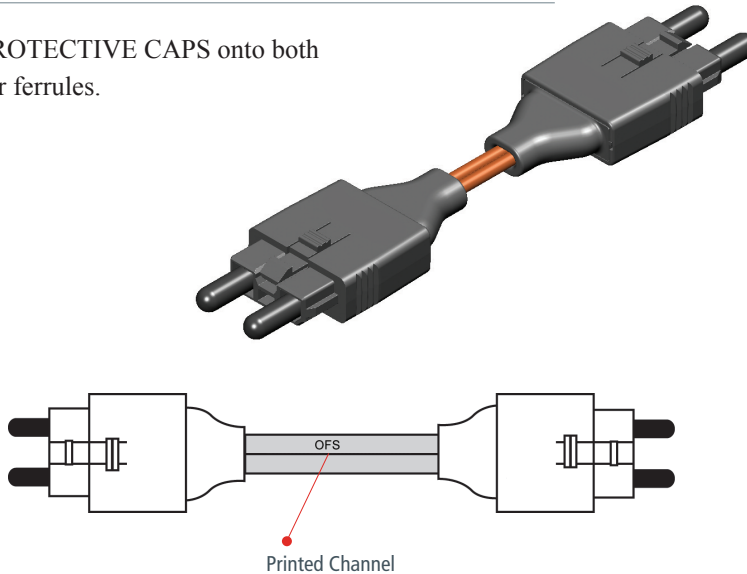
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## Termination Instructions step 4

### STEP 9

#### Final Assembly continued

- Install PROTECTIVE CAPS onto both connector ferrules.



#### NOTE:

To obtain proper transmit/receive function it is important to maintain orientation of the two fiber channels with respect to the two connector housings, as shown. This may be difficult on long cable length installations. It is recommended that the printing on the one cable channel be used as a reference, as shown.

# Maintenance & Trouble Shooting Guide

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## 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.
- ~ Fiber must be kept perpendicular to the diamond blade.

## 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 Step 2 or 4</i></p> <p>Improper crimp position <i>Refer to Step 5</i></p>	<p>Improper crimp position <i>Refer to Step 5</i></p> <p>Improper cleave techniques <i>Refer to Step 7</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 19</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 7</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 19</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 &amp; 6</i></p> <p>Improper cleave techniques <i>Refer to Step 7</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>

If you are still experiencing problems, please call for Technical Support 888 438 9936 (US & Canada) or 860 678 0371

## Termination and Test Kits Available

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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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AP03557-01 Rev. L

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