

# CORNING

## **LC Slimpack™ Connectors Termination Procedure**

**Series: 721-N4NN-NNNN**

E	Update address and fax number	10/26/18
D	Change cable jacket cut length from 6mm to 8mm	9/20/07
C	Easy to cover the clip	6/3/06
B	Change crimp die dimension to 6.48mm	2/10/04
A	Initial Release	3/18/03
Version	Revision History Summary	Issue Date

## I INTRODUCTION

This document describes the termination procedure of LC duplex slimpack connectors. This connector is assembled with 3mm or 2.4mm outer diameter cable which has two 900um buffered fibers (Corning DFX cable). Please read this procedure thoroughly before starting assembly.

## II DESCRIPTION

Fig. 1 shows the structure of LC duplex slimpack connector, which consists of Subassembly, Dust Cap, Upper Clip, Lower Clip, Crimp Tube and Boot. Follow the following steps to make LC Cable Assembly.

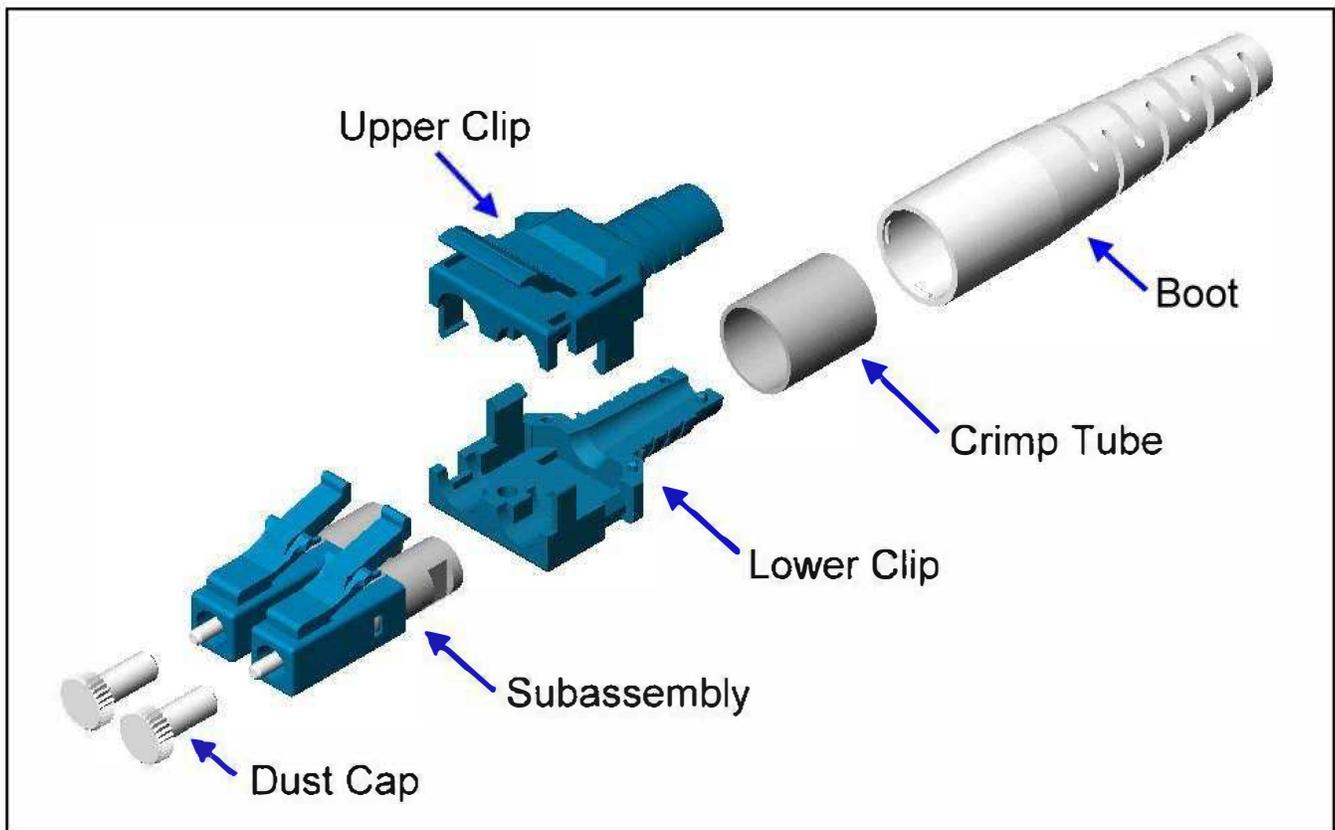


Fig 1

### III ASSEMBLY PROCEDURE

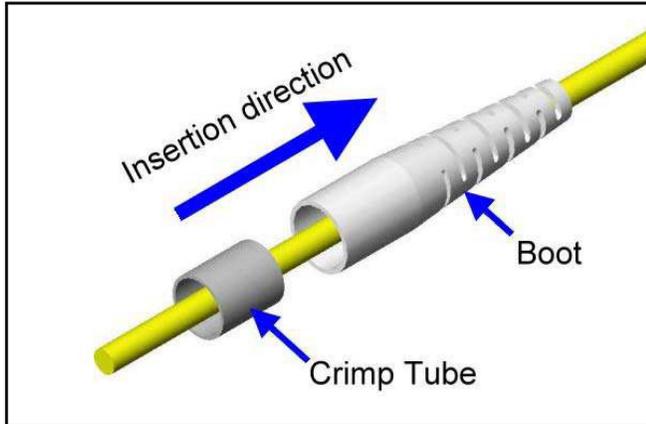


Fig 1

**Step 1** Slide the Crimp tube and boot onto the cable in the correct order and direction.

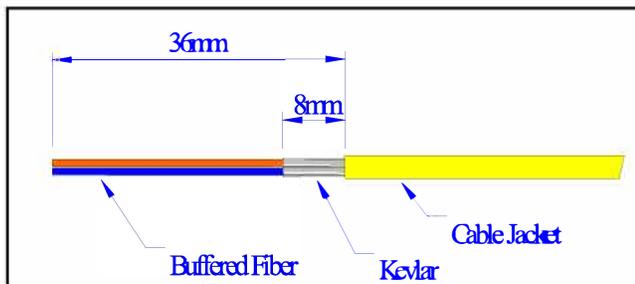


Fig 2

**Step 2** Use jacket stripper to cut cable jacket 38mm. Next, cut the kevlar to a length of 8mm using the kevlar cutter.

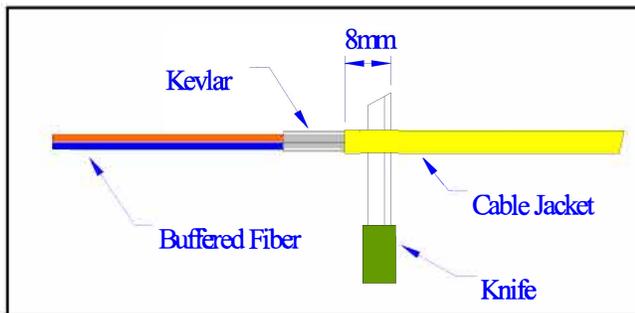


Fig 3

**Step 3** Use knife to make two 6mm slots on opposite edges of the cable jacket.

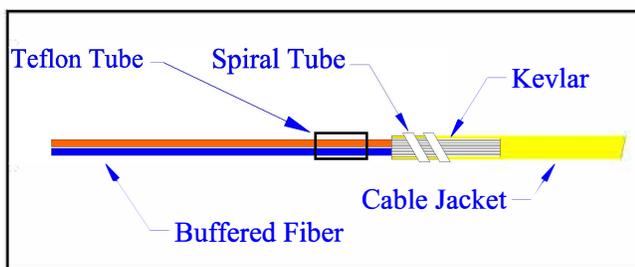


Fig 4

**Step 4** Insert the spiral tube from the end of fiber and secure the tube by folding it back over the buffered fiber so that the kevlar does not unravel, pack Teflon tube into the buffered fiber.

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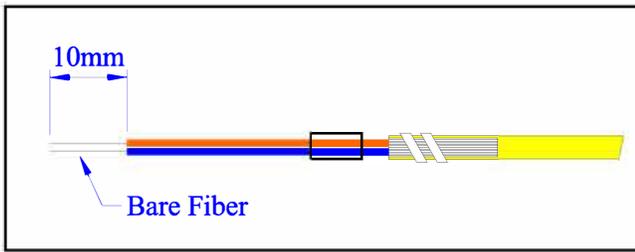


Fig 5



Fig 6

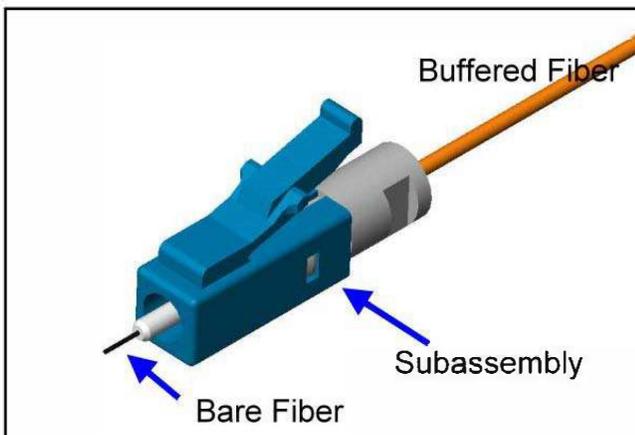


Fig 7

**Step 5** Use buffer stripper to remove the required length of buffer and use alcohol and lens wiper to clean the bare fiber.

*Note: Two of the fiber must have the same length, the different length will get more bending loss.*

**Step 6** Have the epoxy ready according to the manufactures instructions and put part of the mixed epoxy into a small container. The rest of epoxy should be stored in the freezer for latter use.

**Step 7** Apply a couple of drops of the epoxy to the inside of subassembly by using a needle or syringe.

**Step 8** Insert fiber carefully into the epoxy-filled subassembly. Slightly rotate the subassembly will help the fiber to get through the ferrule.

**Step 9** Slide the fiber gently in and out of ferrule to form the epoxy bead on the end of ferrule. Or, apply a drop of epoxy on the ferrule end face to form the epoxy bead around fiber.

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Fig 8

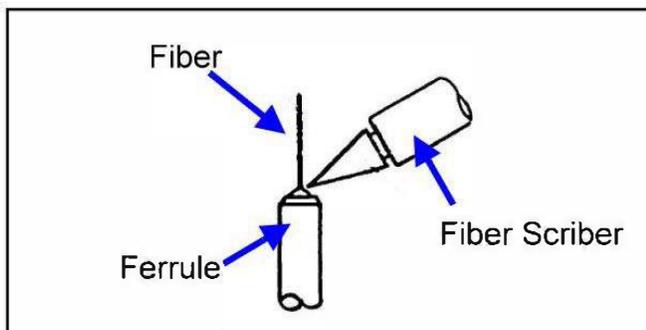


Fig 9

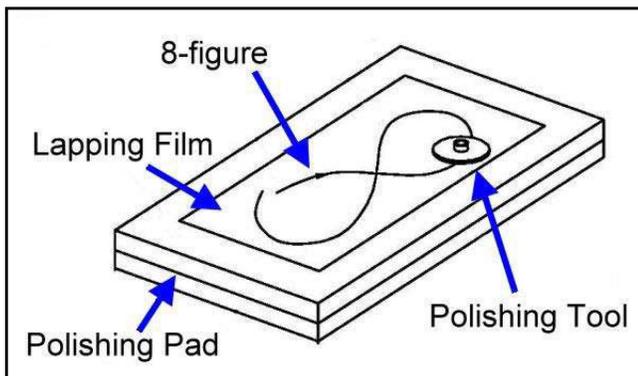


Fig 10

**Step 10** Carefully mount the connector subassembly onto the curing fixture, and cure it. The heating temperature is 120°C for 20 minutes.

*Note:* During the curing, the cable should maintain vertically to avoid any bending which can cause micro-bending loss after assembly.

**Step 11** Remove the fixture from the connector subassembly after epoxy is fully cured. Use a fiber scribe to score the protruded fiber slightly at the point where the fiber and epoxy bead meet. Gently push the tip of fiber until the fiber separates.

*Note:* Do not break the fiber directly when the fiber is scored. Fiber shall be scored again if fiber is not broken by light push on the tip of fiber.

**Step 12** Use alcohol and lens wiper to clean the polishing pad and polishing tool and place a 16 µm lapping film on the polishing pad and mount the connector onto suitable polishing fixture.

*Note:* Polishing Machine manufacturers offer different polishing procedures. Please refer to the polisher manuals for proper polishing process. Also, this polishing procedure is for reference only. Cable assembly makers should develop their own polishing process.

**Step 13** Polish the end of connector by applying light pressure on the connector and move the polishing jig by an 8-figure motion until the polishing traces caused by protruded fiber disappear.

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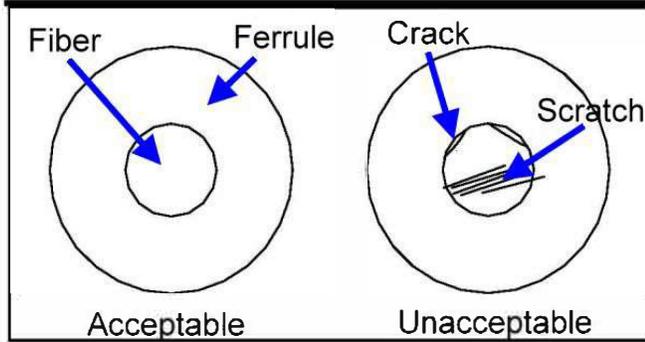


Fig 11



Fig 12

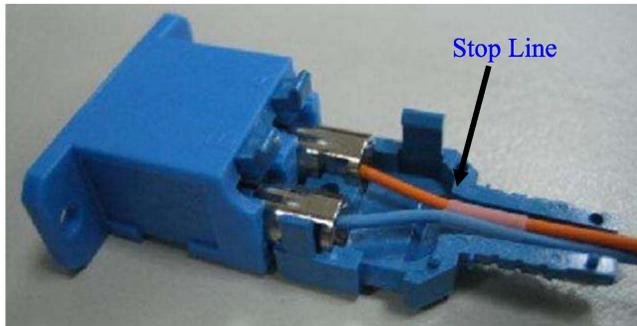


Fig 13

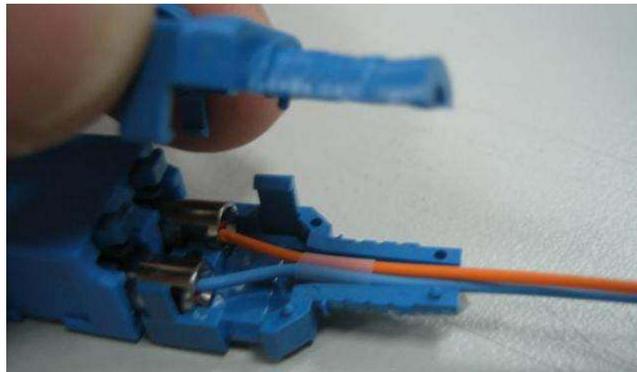


Fig14

**Step 14** Repeat the previous step with a 9 $\mu$ m, 3 $\mu$ m, 1 $\mu$ m and 0.3 $\mu$ m lapping film respectively.

**Step 15** Clean connector end and use a X200 microscope to inspect the end surface of the connector. No adhesive, crack and scratch should be visible.

**Step 16** After passing the visual inspection, put into LC duplex adapter. (Fig 12)

**Step 17** Slide the Teflon tube until stop line, can protect fiber not to crush.

**Step 18** Press the upper clip into the connector subassembly until the lower and upper clip assemble.

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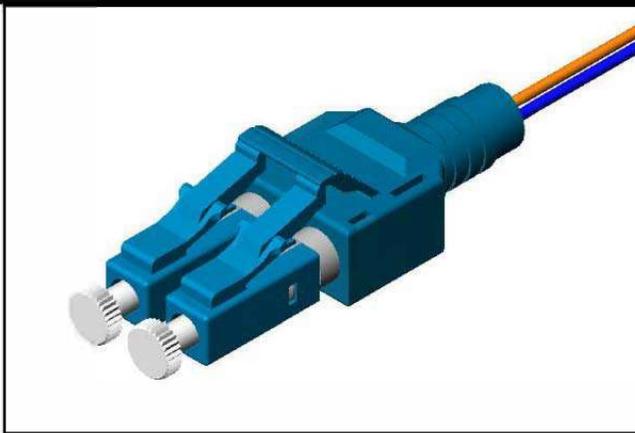


Fig 15

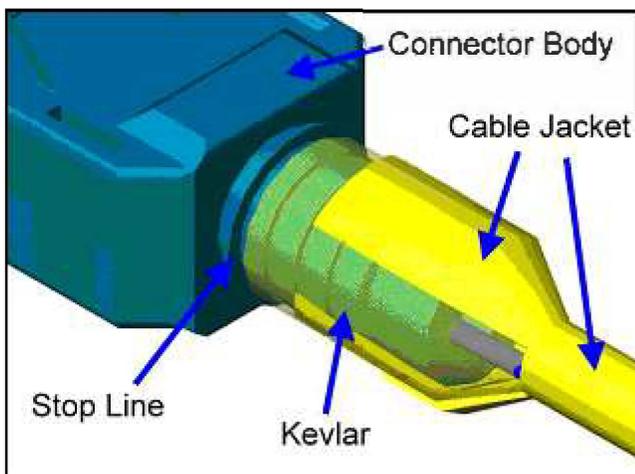


Fig 16

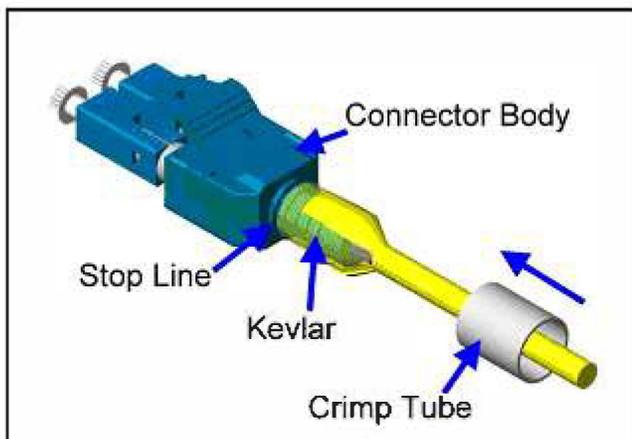


Fig 17

**Step 19** Place the original dust cap over the end of connector ferrule.

**Step 20** Careful remove the sprial tube. Position the kevlar and cable jacket forward onto the rear of the connector body.

**Step 21** Slide the crimp tube over the kevlar and cable jacket until stop line.

*Note: Cable jacket must put in upper and lower.*

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**Step 22** Crimp the crimp tube by the LC Slimpack Connector crimp tool. The hexagon die dimension is shown as the fig 18.

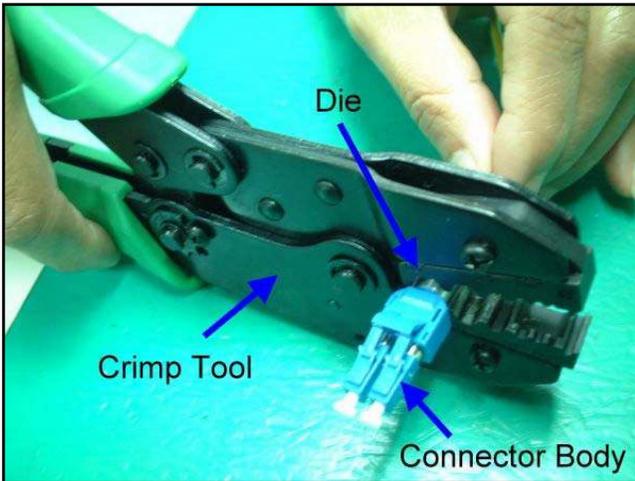


Fig 18

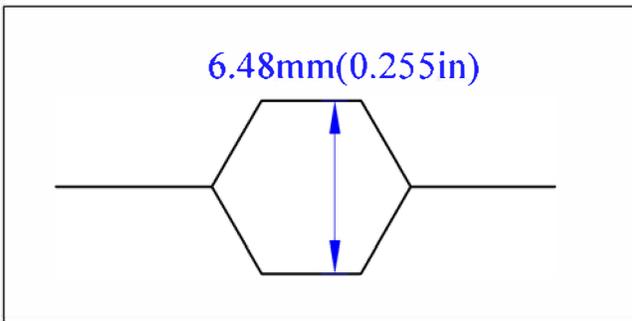


Fig 19

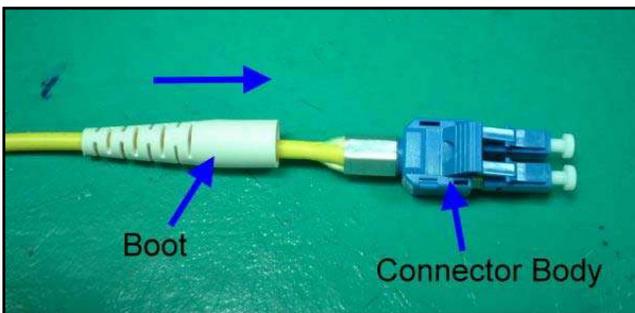


Fig 20

**Step 23** Slide the boot over the crimp tube.

## **IV Required Tools and Materials**

*Note: Most Tools and Consumable material are standard and can be purchased through its own manufacturers or distributors.*

<b>TOOLS</b>
JACKET STRIPPER
KEVLAR CUTTER
BUFFER STRIPPER
FIBER SCRIBER
KNIFE
MICROSCOPE X200
CRIMPING TOOL
POLISHING TOOL(LC)
POLISHING PAD
HEAT BLOWER
<b>CONSUMABLE ITEMS</b>
EPOXY (EPO-TEK 353ND)
SPIRAL TUBE
LAPPING FILM 16 $\mu\text{m}$
LAPPING FILM 9 $\mu\text{m}$
LAPPING FILM 3 $\mu\text{m}$
LAPPING FILM 1 $\mu\text{m}$
LAPPING FILM 0.3 $\mu\text{m}$
LENS WIPER
SYRINGE