CORNING

Indoor Applications Kit - 6- or 12-Fiber Buffer Tube Fan-out (BTF) Kit

p/n 000-084, Issue 17

related literature |	
EVO-163-EN	Buffer Tube Fan-out Kits Spec Sheet
SRP-000-088	Outdoor Applications Kit - 6- or 12-Fiber Buffer Tube Fan-out (BTF) Kit Instruction

1. GENERAL

This procedure describes how to install a Corning Cable Systems 6-fiber (“6 f”) Buffer Tube Fan-Out (BTF) on 2.5 mm buffer tubes or a 12-fiber (12-f) BTF on 3.0 mm buffer tubes for indoor applications. These kits (part number FAN-BTXX-YY) are rated for temperatures from 0 to +70°C.

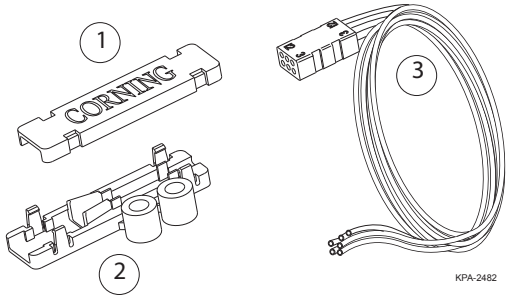
Fan-Outs branch the fibers from a buffer tube into individual fibers protected by 900 micron PVDF protective tubing. The fibers can then be connectorized according to hardware interface requirements.

Indoor application BTF kits should not be used in outdoor applications. For instructions for outdoor applications, refer to SRP-000-088, Outdoor Applications Kit - 6- or 12-Fiber Buffer Tube Fan-Out (BTF) Assembly.

2. CARTON CONTENTS

Each Corning Cable Systems Outdoor BTF kit contains the following:

- BTF Top
- BTF Bottom
- One 6-fiber or 12-fiber 900 micron color-coded assembly, 25, 36, or 47 inches long



3. TOOLS AND MATERIALS REQUIRED

- Lint-free tissues
- Scissors
- Buffer tube stripper
- Electrical tape
- Permanent marking pen
- Pliers
- Clean rags
- Wire markers
- Strapping tape
- Fiber-Clean® cleaning wipes (if filling compound is present in the buffer tubes)

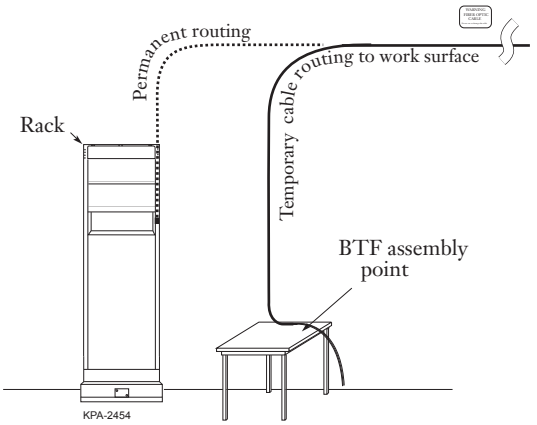
4. CABLE PREPARATION

NOTE: Fiber optic cable is sensitive to excessive pulling, bending, and crushing forces. Consult the cable specification sheet for the cable you are installing. Do not bend the cable more sharply than the minimum recommended bend radius. Do not apply more pulling force to the cable than specified. Do not crush the cable or allow it to kink. Doing so may cause damage that can alter the transmission characteristics of the cable; the cable may have to be replaced.

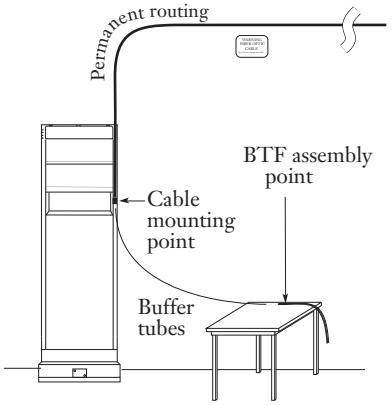
IMPORTANT: Read and understand the cable manufacturer's sheath removal instructions. Some cable stripping procedures may call for a slightly longer length at the end of the cable to allow for cable core (buffer tube) damage caused when accessing rip cords, etc. Be sure to add such length (typically 6 to 10 inches) to the strip length.

A BTF kit can be assembled any time after the cable sheath has been removed and the buffer tubes cleaned. Installation factors such as the length of cable slack available, the location of the terminating hardware, and the question of storing buffer tube slack as opposed to cable slack, can dictate when and where you choose to mount the cable end and assemble the BTF.

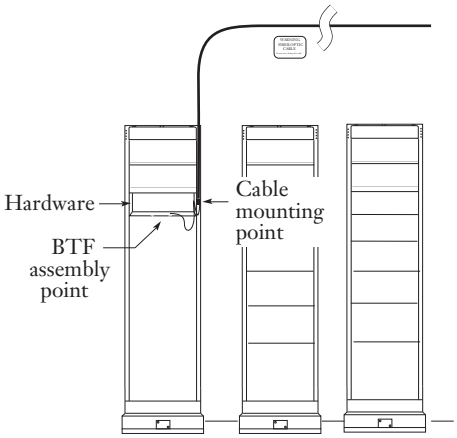
This figure illustrates three typical installation options.



Option 1
- Prepare the cable end
- Route the cable end to a work surface
- Assemble the BTF
- Mount the cable on the hardware, route BTF and tubes inside hardware
- Install the BTF in the hardware



Option 2
- Prepare the cable end
- Mount the cable on the hardware
- Route the buffer tubes to a work surface
- Assemble the BTF
- Route BTF and tubes inside the hardware
- Install the BTF in the hardware



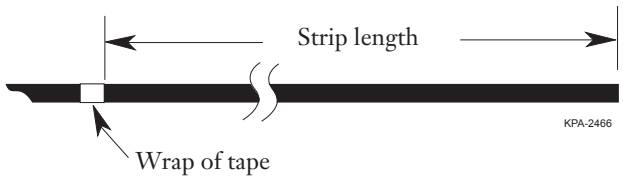
Option 3
- Mount the cable on the hardware
- Route the cable end to a work surface
- Assemble the BTF at the hardware
- Install the BTF in the hardware

Step 1: Determine total strip length:

a. Length from cable sheath attachment point to location of BTF body *plus*
b. 35 inches (for 25-inch assembly) OR 46 inches (for 36-inch assembly) OR 57 inches for 47-inch assembly) *plus*
c. (Optional) any additional length for cable stripping procedure as safety factor *plus*
d. (Optional) the distance from cable mounting point to work surface.

Step 2: Mark strip length from end of cable with wrap of tape.

Step 3: Strip cable per manufacturer's instructions. Determine cable central member and strength member yarn lengths from the hardware instructions where the BTF will be used.



Step 4: If cable is grease- or gel-filled, use a Fiber-Clean wipe to remove flooding compound.

	WARNING: Fiber wipes contain hydrocarbons. Apply in rooms having normal room ventilation. For prolonged and/or repeated use, gloves are recommended. Avoid eye contact. Keep away from open flames and ignition sources. If ingested, DO NOT induce vomiting. Consult a physician. If contact with eyes, wash eyes with water for 15 minutes.

Step 5: Mark the buffer tubes 35, 46, or 57 inches from the end, as determined in Step 1b.

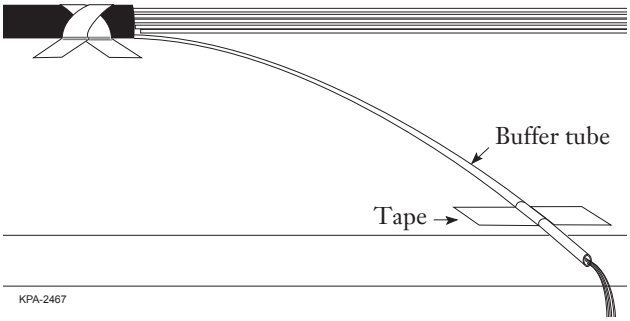
5. BUFFER TUBE PREPARATION

To minimize the chance of breaking a fiber, perform the remaining steps in this procedure on one buffer tube at a time.

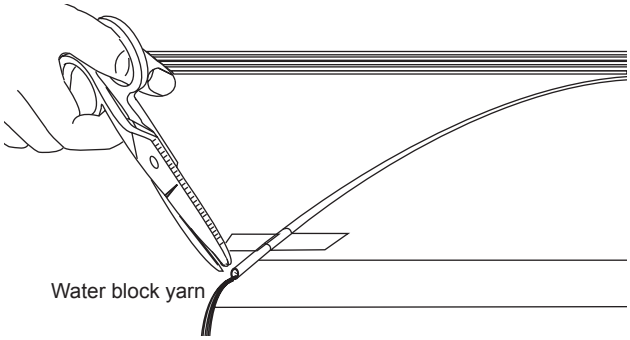
Step 1: Secure the cable end to a work surface with tape. Ensure the marks on the buffer tubes can reach the edge of the work surface.

Step 2: Select the first buffer tube. Remove the buffer tube back to the mark with a buffer stripping tool as described in Corning Cable Systems' Standard Recommended Procedure (SRP) 005-005.

Step 3: Tape down the buffer tube so that 1 to 2 inches of tube overhang the edge.

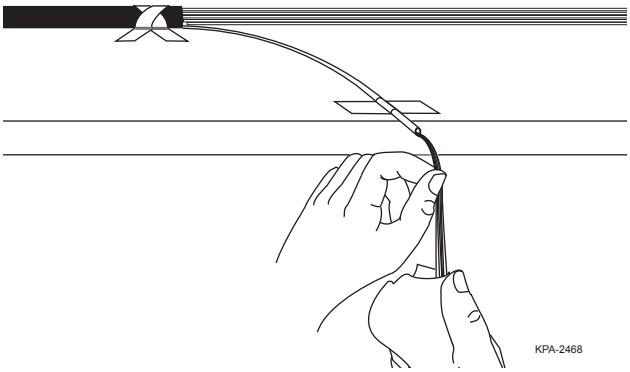


Step 4: **If the buffer tube is gel-free,** carefully cut out any water block yarns with scissors and skip to Step 6.



IMPORTANT: Use extreme care not to cut away any fibers.

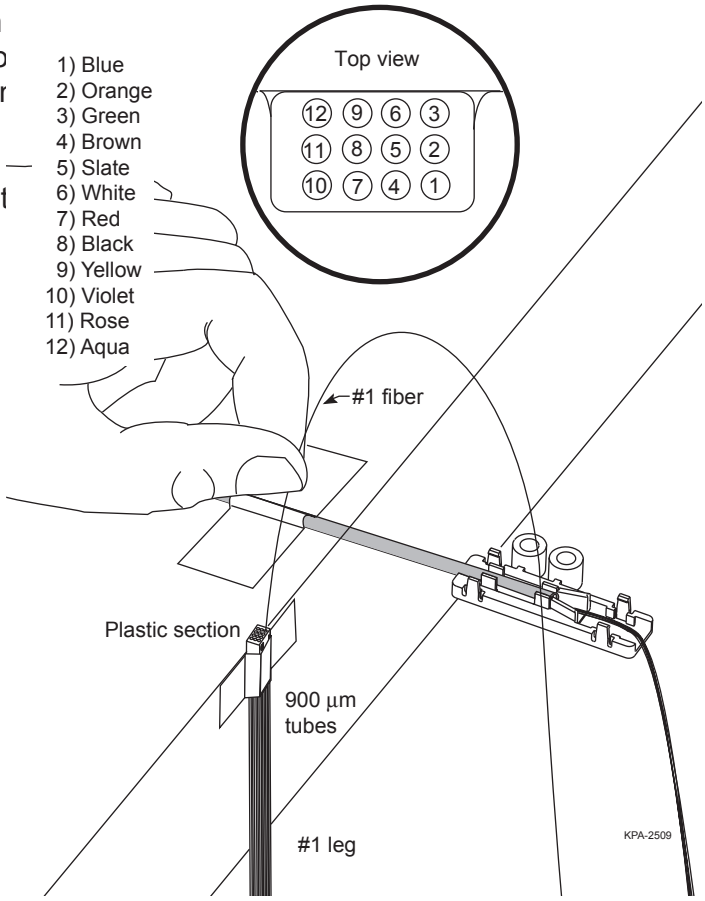
Step 5: **If the buffer tube is non-gel-free,** use a clean lint-free tissue to thoroughly dry each fiber. Then run a dry finger along each fiber to check for any filing compound residue. If residue is present on the fiber, repeat the cleaning process with a clean lint-free tissue until no residue remains.



IMPORTANT: Make sure that the fibers are clean and dry. Any residue left on the fiber will obstruct threading operations into the 900 micron assembly pieces.

CAUTION: Do not deform or crush the buffer tube in the next step; doing so may cause bending in the fibers.

Step 6: Place crimp tabs of the BTF bottom on the end of the buffer tube. Use pliers to gently bend the crimps tabs over the er of the buffer tube. Check the crimp for effectiveness by gently pulling on and twisting the tube — the tube should not move.



6. THREADING THE FIBERS

Step 1: Approximately 2 inches (5 cm) off to either side of the tube and BTF bottom, use strapping tape to secure the plastic section of the 900 micron assembly to the table's edge as shown.

NOTE: The plastic section of the 900 micron assembly has numbers on its plastic housing. The number 1, or blue tube, should be on the right front corner of the assembly (see the inset).

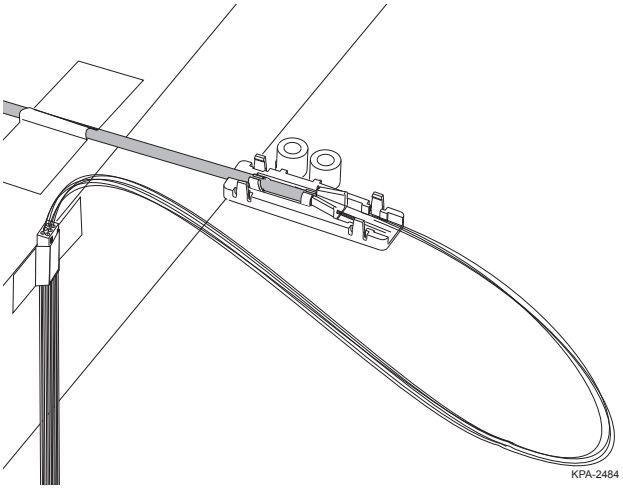
Step 2: Separate and untangle the number 1 (blue) fiber back to the point it exits the buffer tube.

Step 3: Carefully thread about three inches of the first fiber into the #1 (blue) 900 micron tube.

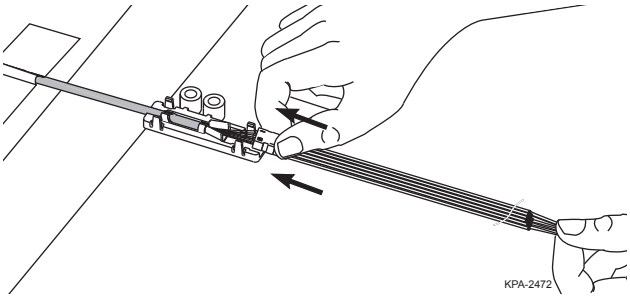
Step 4: Repeat Steps 2 and 3 for the remaining fibers in sequential fiber order (i.e., orange, green, brown, etc.). Work the threading process across the 900 micron tube assembly in the proper order. Do not let any of the fibers cross each other during this threading operation.

Step 5: After all of the fibers have been inserted into the 900 micron tubes, gently push the fibers into the tubes as a group until the fiber ends protrude from the ends of the tubes.

Step 6: Carefully pull the fibers out of the tube ends to take up most of the excess length between the BTF body and the 900 micron assembly. Leave a small fiber loop between the BTF body and the 900 micron assembly to prevent fiber breakage during later steps in this procedure.



Step 7: Untape the 900 micron assembly from the table edge. Carefully slide the assembly while gently pulling the bare fibers protruding from the 900 micron tube ends until the assembly is above the fan-out body.

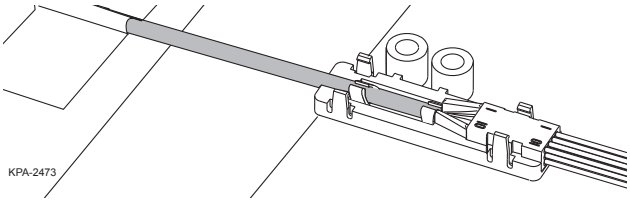


NOTE: At times the fibers will twist as a group when sliding the 900 micron assembly towards the buffer tube. Rotate the 900 micron assembly opposite the direction of twist until the fibers straighten out. Severe twists left in the fibers could exhibit long term microbending effects on the fiber performance and add loss.

Because buffer tubes are semi-rigid, they require careful handling to compensate for the tubes memory and springy nature. Buffer tubes will tend to quickly return to their original position after handling. Whenever you use tape to anchor the tubes down, use care to control the tubes when removing the tape.

Step 8: Carefully remove the tape securing the buffer tube and reposition the BTF body on the work surface. Retape the tube to hold the body in place.

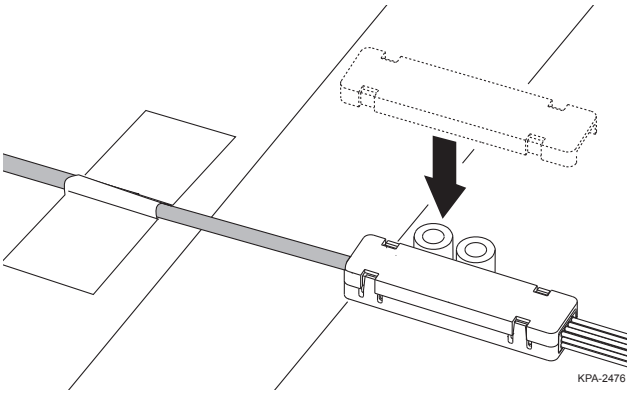
Step 9: Lower the insert section into the BTF body and press it into place.



Step 10: Align the top of the BTF body with the bottom and hand press them together until the top snaps into place.

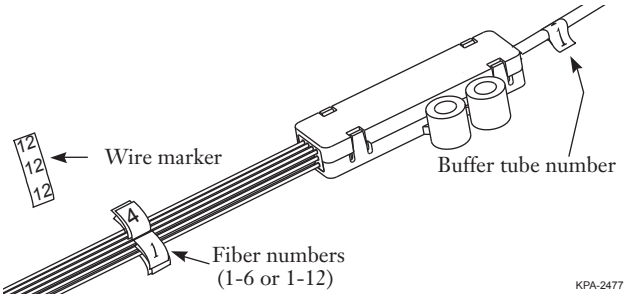
Step 11: Remove the tape from the buffer tube.

Step 12: Separate another buffer tube and assemble the next BTF by repeating the steps in this section. Corning Cable Systems recommends working with the tubes in sequential order to maintain installation organization.



7. MARKING THE BTF

To aid in the identification and maintenance of the fan-out assemblies, use numbered wire markers to individually identify each BTF with respect to its buffer tube number if the tubes are not easily distinguished.



8. FIBER TERMINATION

Step 1: Trim the excess fiber lengths to a length of 2 inches (5 cm) from the end of the 900 micron tubing.

Step 2: Terminate each fiber, working one BTF assembly at a time, following the instructions provided with the connectors.

Step 3: Test the connectors in accordance with standard test procedures or any recommended test procedures supplied by the connector vendor.

9. BTF INSTALLATION INTO HARDWARE

The BTF can be either bolted or taped into pieces of hardware. Refer to the instructions provided with the hardware being used to determine the best method. To route the BTF assembly into the hardware:

Step 1: Hold the BTF body while grasping the buffer tube just outside the assembly.

Step 2: Carefully guide the BTF assembly into place, taking care to prevent the buffer tube from kinking at the entrance to the BTF body.

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