CORNING

Installing Wire Mesh Pulling Grips on Fiber Optic Cables

005-204, Issue 1

related literature |	
005-081	Instructions, Aerial Self-support FlexNAP™ System RPX™ Cable Installation
005-011	Instructions, Duct Installation of Fiber Optic Cable

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Figure 1

1. General

1.1 This procedure provides general instructions for installing a wire mesh pulling grip (Figure 1) on ALTOS® ribbon, and SST-Ribbon™ gel-free, and high strength fiber optic cables.

1.2 This procedure contains references to specific tools and materials in order to illustrate a particular method. Such references are not intended as product endorsements.

2. Safety Precautions

2.1 Safety Glasses

CAUTION: Corning Optical Communications recommends the use of safety glasses (spectacles) for eye protection from accidental injury when handling chemicals, cables, or working with fiber. Pieces of glass fiber are very sharp and have the potential to damage the eye.

2.2 Safety Gloves

CAUTION: The wearing of cut-resistant safety gloves to protect your hands from accidental injury when using sharp-bladed tools.

2.3 Laser Handling Precautions

WARNING: Never look directly into the end of a fiber that may be carrying laser light. Laser light can be invisible and can damage your eyes. Viewing it directly does not cause pain. The iris of the eye will not close involuntarily as when viewing a bright light. Consequently, serious damage to the retina of the eye is possible. Should accidental eye exposure to laser light be suspected, arrange for an eye examination immediately.

2.4 Cable Handling Precautions

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.

CAUTION: Before starting any aerial cable installation, all personnel must be thoroughly familiar with all safety and health regulations, AS/NZ wiring codes, state and local regulations, and company safety practices and policies. Failure to do so can result in life-threatening injury to employees or the general public.

3. Tools and Materials

The following tools and materials are required to complete this procedure:

- Kellems-brand pulling grip
- Side cutters (diagonal cutting pliers)
- Vinyl electrical tape (19 mm)
- Swivel, ball-bearing type
- Hex wrench or screwdriver (to fit swivel)
- Tape measure
- Permanent marker
- Scissors

4. Grip Selection

Prior to installation, the proper size grip must be chosen for the cable to be pulled. Grip selection is based on cable diameter. Generally speaking, use the smallest grip which will fit over the cable sheath without excessive difficulty.

If the cable diameter is in the range of...	Kellems-brand part number
9.1 - 12.3 mm	033-29-1184
12.4 - 15.6 mm	033-29-1185
15.7 - 18.9 mm	033-29-1186
19.0 - 22.2 mm	033-29-1187
22.3 - 25.4 mm	033-29-1188

Step 1: Measure the cable outside diameter and determine the proper grip to use based on the supplier's recommendations

Step 2: Once the proper grip is obtained, inspect it for damage, broken wires, bulges due to stress, rust, etc.

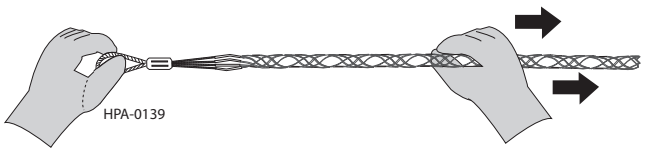

Figure 2

Step 3: Grasp the pulling eye in one hand (gloves recommended) and smooth out the mesh with the other, tightening the wires (Figure 2). This technique is critical when reusing grips.

5. Pulling Grip Installation

Step 1: To ease the grip installation, use side cutters to trim any protruding tubes or strength members (Figure 3).

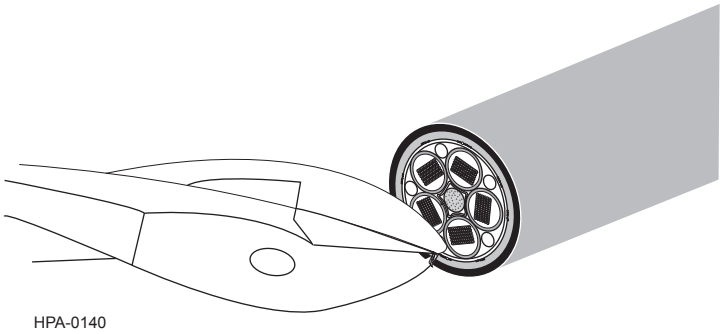

Figure 3

Step 2: Slide the open end of the grip over the cable and use a pumping action to “walk” the grip down the jacket by bringing your hands together and then relaxing them (Figure 4). “Walk” the grip down the cable until the cable’s end in the grip is 6 mm ($^1/_4$ in) behind the grip’s basket.

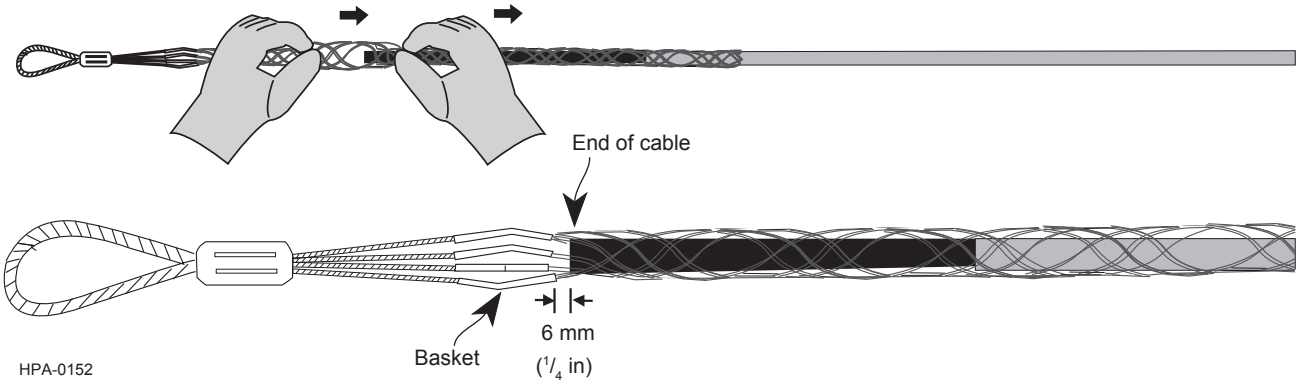

Figure 4

Step 3: Compress the basket so that it is no larger than the combined outside diameter of the grip and cable.

Step 4: Smooth the mesh back over the cable, moving from the pulling eye to the cable jacket.

Step 5: Tug on the grip to tighten its hold on the cable (Figure 5).

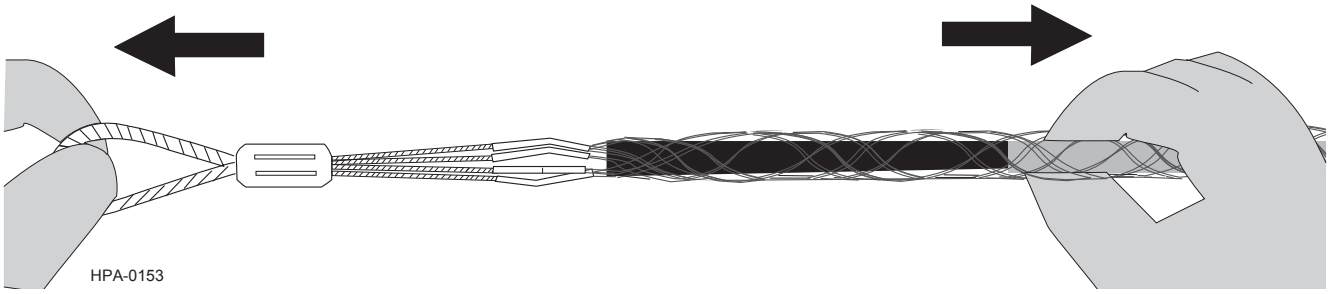

Figure 5

Step 6: Starting at least 2.5 cm (1 in) beyond the mesh on the cable, wrap vinyl tape TIGHTLY to the top of the grip. The mesh's imprint should show boldly through the tape (Figure 6). The tape must be tight to help compress the mesh against the cable. Lightly tug on the grip to press it against the cable.

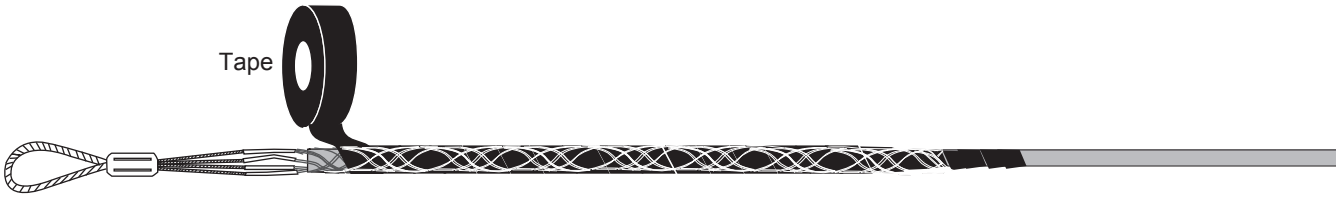

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Figure 6

Step 7: Connect the pulling eye to the appropriate ball bearing swivel and pulling tape or rope (Figure 7). The grip installation is now ready for cable placement.

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Figure 7

6. Pulling Grip Removal

To remove the pulling grip after completion of the pull:

a. Cut the cable 90 cm (35 in) behind the grip

b. Place a protective cap over the exposed cable end and tape the cap in place to prevent water intrusion.

c. Store the coiled splicing slack so that it is protected from damage.

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