

1. Kit Contents

1.1 Ribbon Kit

- ½ -inch Flat Braided Tubing – provides protection of 36 fiber ribbons from the point where they exit the cable to the point where they are divided into 12 fiber ribbons. It is used to transport up to eight 36f ribbons. Braided tubing is secured with heat-shrink tubing.
- ¾-inch Diameter Braided Tubing – provides protection of ribbons from the point where they exit the cable to the point where they enter the fiber optic termination housing. It is used to transport up to nine 24 – fiber ribbons or 36 fiber ribbons that have been split into three 12 – fiber ribbons. Braided tubing is secured with heat-shrink tubing.
- ¼-inch Diameter Braided Tubing – used to transport all 12 – fiber ribbons, or 24 fiber ribbons that have been split into two 12 – fiber ribbon units.
- ½-inch Diameter Heat-shrink Tubing – used to secure the ends of three ¼-inch braided tubes and create a grip surface for the 1 inch diameter shrink tubing.
- 1-inch Diameter Heat-shrink Tubing – used to secure the joints between braided tubes used to route ribbons.
- 1.125-inch Diameter Heat-shrink Tubing – used to secure braided tubes as the ribbons exit the buffer tube of the cable.

1.2 EMF KIT for 864 cable

- Braided ½-inch tubing 6.5 feet
- Braided 3/8-inch tubing 5.5 feet
- Braided ¼-inch tubing 393 feet
- Heat-shrink tubing, ½-inch diameter 12 X 2.0 inch (must be cut into 1 inch lengths)
- Heat-shrink tubing, 1-inch diameter 18 inch (must be cut into 3 inch lengths)
- Heat-shrink tubing, 34 mm(1.3-inch) diameter 3.0 inch piece

2. Tools Required

- Heat gun
- Scissors
- Measuring tape

3. Cable End Preparation

Use Large Cable Bracket 10-006414 for mounting ribbon cables on the EMF. It positions the cable directly over the frame fiber path.

Access the ribbons at the point where the cable sheath is to be terminated, referring to the installation procedure for the cable being used. Fiber branching is more easily accomplished if the cable can be placed on a flat surface rather than hanging on the EMF.

- Step 1:** Slide the 34mm diameter heat-shrink tubing on to the cable above the point where the cable will be stripped. Do not shrink the tubing at this time. Cut the cable sheath to expose the central fiber tube. (Remove armor, if present.)

- Step 2:** Score the central fiber tube so that 1 inch (2.5 cm) extends beyond the end of the cable sheath. Flex the central fiber tube so it fractures and remove it from the fibers. Do not leave more than 1 inch because the first splice module is near the top of the frame.
- Step 3:** Use the approved cleaning compound to wipe the gel from the ribbons until they are completely dry. Regroup the ribbons into the groups in table 1 using tape or Velcro.
- Step 4:** Slit the central fiber tube 3/8 inch in 4 places 90 degrees apart. Use a side cutter, not a knife, to make the slits.
- Step 5:** Use needle nose pliers to flare the end of the central fiber tube slightly. Do not pry against the ribbons.
- Step 6:** Clean and dry the outer surface of the central fiber tube.

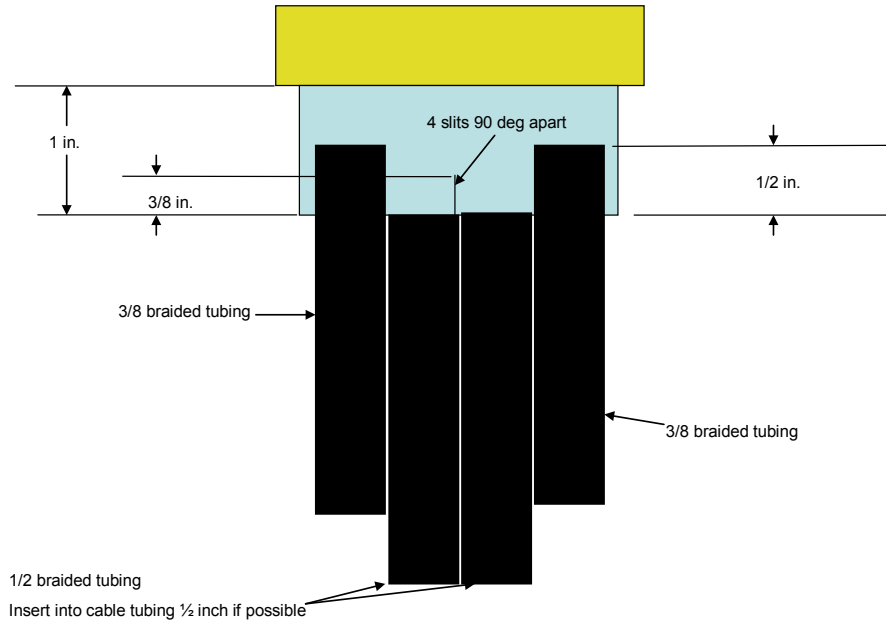


Figure 1

4. Ribbon Branching

The ribbons are furcated at different heights. Staggering them reduces cable bulk.

- Step 1:** Prepare Ribbon — Only 4 braided tubs will fit into the cable central fiber tube so all 864 fibers have to be bundled into 4 groups.
- Step 2:** Cut all of the 3/8- and 1/2-inch diameter tubing to the lengths shown in Table 1. Cut the 1/4-inch diameter ribbon into the lengths shown in table 2. There will be 12 of each length.

Group	Length & Order of Pieces	3/8-inch Braided Tubing	1/2-inch Braided Tubing
1	1 piece 5 inches long	6 24-fiber ribbons	
2	1 piece 15 inches and 1 piece 12 inches		8 36-fiber ribbons
3	1 piece 38 inches and 1 piece 12 inches		8 36-fiber ribbons
4	1 piece 61 inches long	6 24-fiber ribbons	

Table 1: Ribbon Branching Lengths

Step 3: Install the first four pieces of braided tubing over the appropriate fiber ribbon bundles. The 5-inch piece of $\frac{3}{8}$ -inch tubing is placed on the 24-fiber ribbons with 12-fiber ribbons numbered 1 through 12. Make sure the two $\frac{3}{8}$ -inch diameter outside braided tubes are pushed up into the cable central fiber tube (Figure 1) approximately $\frac{1}{2}$ inch. Insert the two $\frac{1}{2}$ -inch braided tubes into the central fiber tube the same $\frac{1}{2}$ inch. Be sure to start with the 15-inch braided tubing for the second bundle (12-fiber ribbons 13 – 36) and the 38-inch piece of braided tubing for the third bundle (12-fiber ribbons 37 – 60). Do not shrink the 34mm heat-shrink tubing yet because there is limited room for the next step.

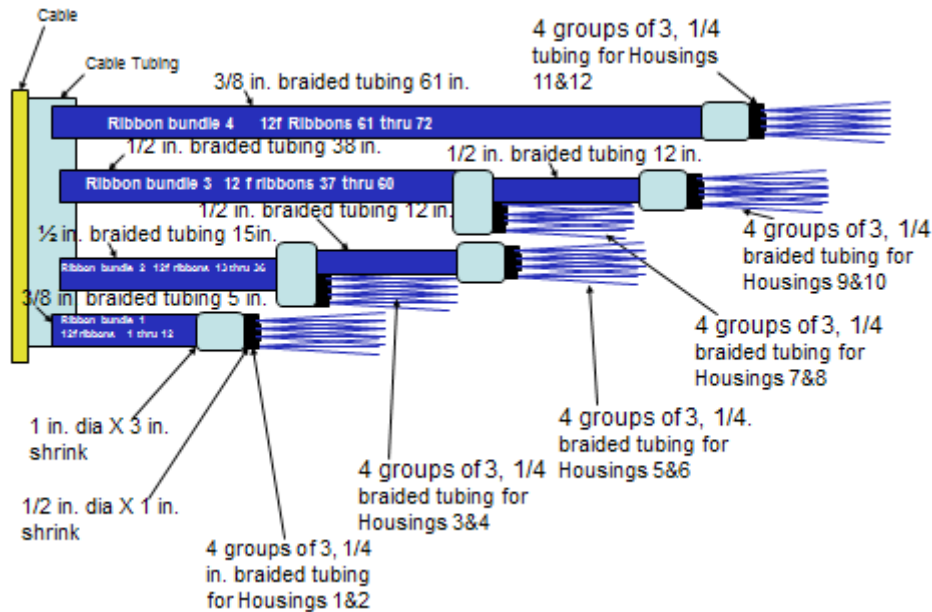


Figure 2

- Step 4:** Cut a 3-inch long piece of 1-inch diameter heat-shrink tubing and slide it up over the six 24-fiber ribbons that will be routed to housings 1 and 2. Slide the tubing up past the bottom of the $\frac{3}{8}$ -inch diameter braided tubing.
- Step 5:** Separate the 24-fiber ribbons into individual 12-fiber ribbons.
- Cut all twelve $\frac{3}{4}$ - by 2-inch diameter heat-shrink tubing into 1-inch lengths.
- Step 6:** Insert 12 fiber ribbons 1 through 3 into a $\frac{1}{2}$ -inch diameter piece of heat-shrink tubing and slide the tubing up to within 1 inch of the bottom of the $\frac{3}{8}$ -inch braided tubing. Do the same for 12-fiber ribbons 4-6, 7-9, and 10-12 for a total of four groups.
- Step 7:** Slip appropriate lengths of $\frac{1}{4}$ -inch braided tubing over each 12-fiber ribbon. The lengths of the $\frac{1}{4}$ -inch tubing are shown in Table 2. These same lengths will be repeated for every two EMF housings. For example, the length of the braided tubing for fiber ribbon 1 is 60 inches, for ribbon 2 the length is 61 inches, etc.

For 864-fiber cable	Bundles B1 through B4 with 12-fiber Ribbon Numbers R1 through R72						1/4-inch Braided Tubing Length in Inches	Bundles B1 through B4 with Corresponding EMF Housing Numbers H1 through H12					
Ribbon Bundle Number	B1 in 3/8-inch braided tubing	B2 in 1/2-inch braided tubing	B2 in 1/2-inch braided tubing	B3 in 1/2-inch braided tubing	B3 in 1/2-inch braided tubing	B4 in 3/8-inch braided tubing		B1	B2	B2	B3	B3	B4
12-fiber ribbon numbers	R1	R13	R25	R37	R49	R61	60	H1	H3	H5	H7	H9	H11
	R2	R14	R26	R38	R50	R62	61	H1	H3	H5	H7	H9	H11
	R3	R15	R27	R39	R51	R63	62	H1	H3	H5	H7	H9	H11
	R4	R16	R28	R40	R52	R64	63	H1	H3	H5	H7	H9	H11
	R5	R17	R29	R41	R53	R65	64	H1	H3	H5	H7	H9	H11
	R6	R18	R30	R42	R54	R66	65	H1	H3	H5	H7	H9	H11
	R7	R19	R31	R43	R55	R67	66	H2	H4	H6	H8	H10	H12
	R8	R20	R32	R44	R56	R68	67	H2	H4	H6	H8	H10	H12
	R9	R21	R33	R45	R57	R69	68	H2	H4	H6	H8	H10	H12
	R10	R22	R34	R46	R58	R70	69	H2	H4	H6	H8	H10	H12
	R11	R23	R35	R47	R59	R71	70	H2	H4	H6	H8	H10	H12
	R12	R24	R36	R48	R60	R72	71	H2	H4	H6	H8	H10	H12

Table 2: Braided Tubing Lengths

Step 8: Slide the pieces of 1/4-inch diameter braided tubing into the 1/2-inch diameter heat-shrink tubing keeping the heat-shrink tubing about 1 inch below the 3/8-inch diameter braided tubing. Repeat this for the three remaining bundles of three 12-fiber ribbons (Figure 3). Be sure the ends of the braided tubing protrude slightly out of the 1/2-inch heat-shrink tubing so the heat-shrink tube adhesive doesn't contact the ribbons.

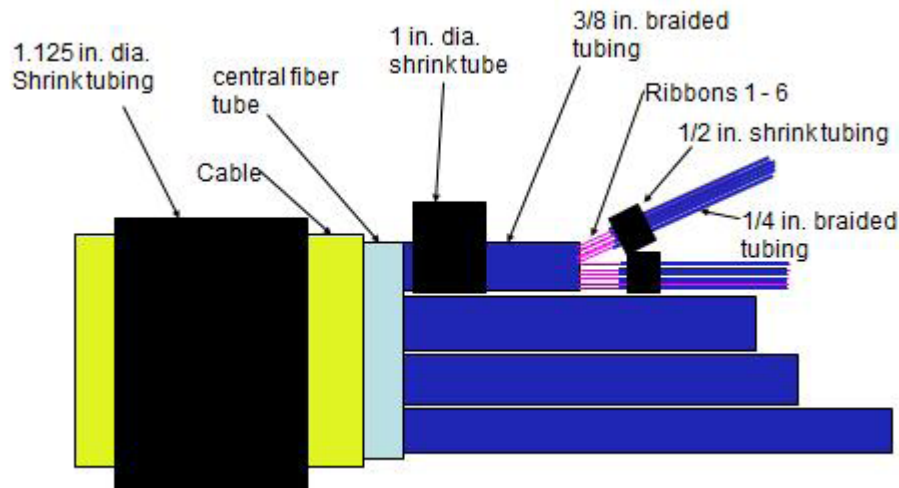


Figure 3

Step 9: Completely shrink both of the 1/2-inch tubing around the ends of the six 1/4-inch braided tubing pieces.

Step 10: Open the $\frac{3}{8}$ -inch braided tubing bottom end and slide the four groups of $\frac{1}{4}$ -inch braided tubing approximately $\frac{1}{2}$ inch into the $\frac{3}{8}$ -inch braided tubing (Figure 4).

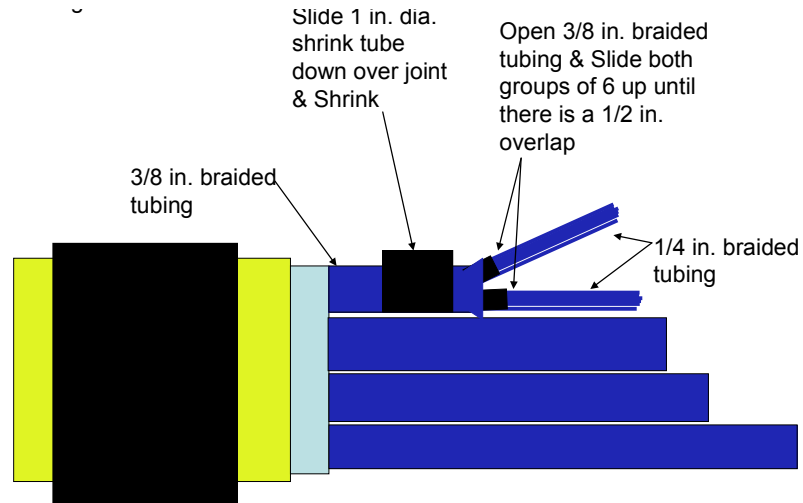


Figure 4

Step 11: Slide the 1-inch diameter heat-shrink tubing down over the joint until it is centered and completely shrink it over the joint. Be sure the heat-shrink tubing is heated from all sides, working from the center out, until the adhesive starts to show at the ends.

Step 12: Make sure all of the large braided tubes are still inside the center tube as described in Step 3 and the central tube is still clean and dry. Slide the 1.125-inch diameter heat-shrink tubing down over the cable end and shrink the heat-shrink tubing from all sides, working from the center out, until the adhesive starts to show at the ends (Figure 5). Be sure the heat-shrink tubing overlaps the braided tubing about 1 inch.

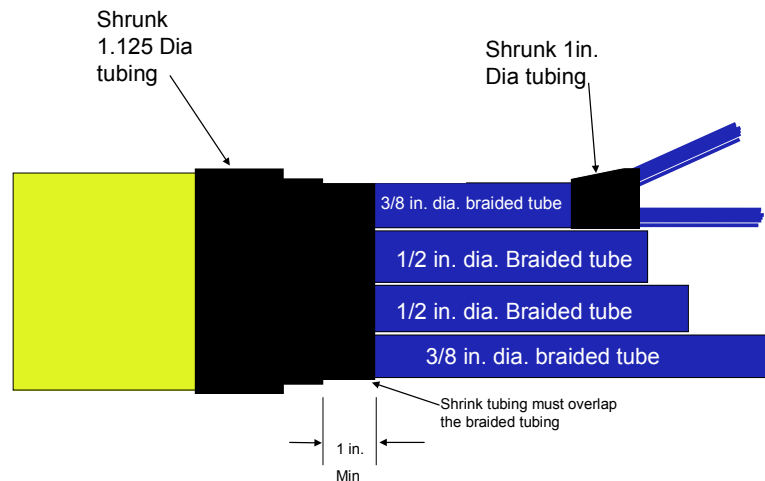


Figure 5

Step 13: Route the 12--fiber ribbons into the corresponding modules in housings 1 and 2.

Step 14: The second bundle of ribbons has 8 - 36-fiber ribbons. Slide a piece of 1-inch diameter heat-shrink tubing up over this bundle and the end of its braided tubing. Separate the four ribbons with 12-riber ribbon numbers 13 through 24 from the bundle. Slide the 12-inch length piece of $\frac{1}{2}$ -inch braided tubing over the remaining 36-fiber ribbons (Figure 6). Separate the 12-fiber ribbons 13 through 24 into four groups 13-15, 16-18, 19-21, and 22-24 and slide $\frac{1}{2}$ -inch diameter heat-shrink tubing over each group to within an inch of the $\frac{1}{2}$ -inch braided tubing. Slide the appropriate lengths of $\frac{1}{4}$ -inch braided tubing over the 12-fiber ribbons (See Table 2). Shrink the $\frac{1}{2}$ -inch diameter tubing onto the ends of each group of the $\frac{1}{4}$ -inch diameter braided tubing groups.

Step 15: Open the end of the upper ½-inch braided tubing and slide the ¼-inch tubing and the two groups of ¼-inch braided tubing up inside approximately ½ inch. Let the top braided tubing close and slide the 1-inch heat-shrink tubing down over the joint until it is centered. Shrink the tubing evenly over the joint from all sides, working from the center out, until the adhesive starts to show at the ends.

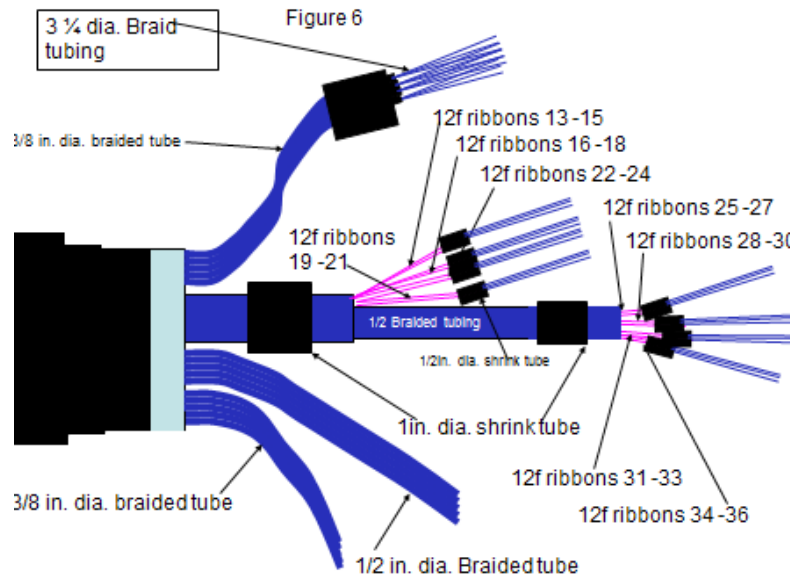


Figure 6

- Step 16:** Route the 12 fiber ribbons to the corresponding modules in housings 3 and 4.
- Step 17:** Slide a piece of 1-inch diameter heat-shrink tubing up over the remaining ribbons in the second bundle and up over the end of the ½-inch braided tubing.
- Step 18:** Separate 12-fiber ribbons 25 through 36 into two groups 25-30 and 31-36. Slide ¾-inch diameter heat-shrink tubing over them to within 1 inch of the ½-inch braided tubing. Slide appropriate lengths of ¼-inch braided tubing over the 12-fiber ribbons (Table 2). Shrink ¾-inch diameter tubing onto the ends of each group of ¼-inch diameter braided tubing groups.
- Step 19:** Open the end of the upper braided tubing and slide the ¼-inch braided tubing groups up inside approximately ½ inch. Let the top braided tubing close and slide the 1-inch heat-shrink tubing down over the joint until it is centered. Shrink the tubing evenly over the joint from all sides, working from the center out, until the adhesive starts to show at the ends.
- Step 20:** Route the 12 fiber ribbons to the corresponding modules in housings 5 and 6.
- Step 21:** Repeat steps 14 through 20 for the third bundle of ribbons. The ribbons that are to be split into 12-fiber ribbons at this point are 37 through 48 for housings 7 and 8. Ribbons 49 through 60 will be split at the bottom furcation point on fiber bundle 3 for housings 9 and 10.
- Step 22:** The remaining ribbon bundle only has one furcation point. Remember to slide the 1-inch heat-shrink tubing up over the braided tubing before splitting into 12-fiber ribbons. Slide the ¾-inch heat-shrink tubing up over the 12 fiber ribbon groups 61-66 and 67-72. Complete the furcation process the same way as in Steps 18 through 20.
- Step 23:** Route the 12 fiber ribbons to the corresponding modules in housings 11 and 12.

Corning Optical Communications LLC • PO Box 489 • Hickory, NC 28603-0489 USA
 800-743-2675 • FAX: 828-325-5060 • International: +1-828-901-5000 • www.corning.com/opcomm

Corning Optical Communications reserves the right to improve, enhance, and modify the features and specifications of Corning Optical Communications products without prior notification. A complete listing of the trademarks of Corning Optical Communications is available at www.corning.com/opcomm/trademarks. All other trademarks are the properties of their respective owners. Corning Optical Communications is ISO 9001 certified. © 2012, 2016 Corning Optical Communications. All rights reserved.