

# ***POF Polishing Kit Instructions***



**INDUSTRIAL FIBER OPTICS**

## ***Introduction***

This kit is to provide you with instructions and polishing materials to correctly terminate the ends of plastic optical fiber. The procedure and materials are applicable to jacketed and unjacketed fiber sizes 250  $\mu\text{m}$  to 2 mm in diameter.

## **Kit Contains**

2 sheets of 11.5 x 14 cm (4.5 x 5.5 inches) 2000-grit polishing paper

2 sheets of 11 x 14 cm (4.25 x 5.5 inches) 3  $\mu\text{m}$  polishing paper

Instruction sheet

## **Equipment Required**

Professional Fiber Cutter (Sharp knife or single-edged razor blade is an acceptable substitute)

Wire Stripper

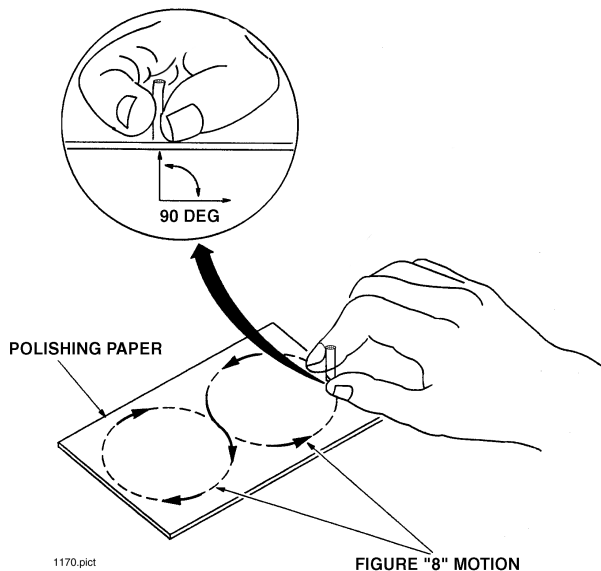
Section of fiber optic cable to be polished

Tissue paper

Small amount of water, light oil or glycerin

## **Polishing Procedure**

1. Choose a flat, level table approximately 60 x 90 cm (2 x 3 feet) in size as your work area for this activity.
2. Assemble all items from the "EQUIPMENT REQUIRED" list above at your work area.
3. Carefully cut 1 to 2 mm from the end of the damaged or unpolished fiber optic cable with the Professional Fiber Cutter. (The Professional Fiber cutter will insure that the fiber ends are cut square. It is available for purchase from Industrial Fiber Optics distributors.) A single-edged razor blade or sharp knife can also be use, but try to make your cut as square as possible.
4. Place the 2000-grit polishing paper on a hard flat surface, wet the paper with a light liquid. Polish the end of the fiber in a "figure 8" pattern as shown in Figure 1. Repeat the pattern while holding the fiber at a 90° or perpendicular angle to the polishing surface. Supporting the fiber against a flat object, such as a small wooden block, during polishing will aid in obtaining a good flat termination.



**Figure 1. The pattern and orientation of the optical fiber during polishing.**

5. After 20 complete strokes, observe the end of the fiber. (A microscope or magnifying glass is helpful, but not required.) If the fiber end is cloudy, not flat, or has scratches, go back and repeat Steps 3 through 5. If the end is not flat, it is because some angular rotation is occurring when polishing, so be careful to keep the fiber perpendicular to the polishing paper during the complete "figure 8" motion.
6. Repeat steps 3 through 5 with the opposite end of the fiber cable
7. Place the 3  $\mu\text{m}$  polishing paper on a hard flat surface, wet the paper with a light liquid. Polish the end of the fiber in the same "figure 8" pattern, as shown in Figure 1.
8. After 20 strokes, wipe the end of the fiber off with tissue paper, observe the end of the fiber. The fiber should have a nice gloss with a flat fiber end. (A microscope or magnifying glass is helpful, but not required.) If the fiber end is cloudy, not flat, or has scratches, go back and repeat Step 7.
9. Remove the jacket from the fiber with a fiber stripper to expose bare fiber if required. Caution: Avoid nicking the fiber.
10. Repeat steps 7 through 9 with the opposite end of the fiber cable.

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1725 West 1st Street  
Tempe, AZ 85281  
USA