

Flaring Tools

for use with HELIAX Elliptical Waveguide Connectors and Splices



Use flaring tools to produce a waveguide flare that has a uniform contact area. You can prepare the connector or splice using Step 1 through Step 4 (below), or you can use the instructions in the connector or splice bulletins.

Tools and Materials Required for Assembly

Flaring Tool(s)

- Single tool (used to flare the major and minor axis)
- Two tool set
 - Tool No. 1 used to flare the major axis
 - Tool No. 2 used to flare the minor axis

Note: Always flare the major axis before the minor axis. The flaring procedure is the same whether you use the single tool or the two tool set.

Allen wrench (included)

bottle brush

flat file

hacksaw, fine blade

knife

saw guide (included)

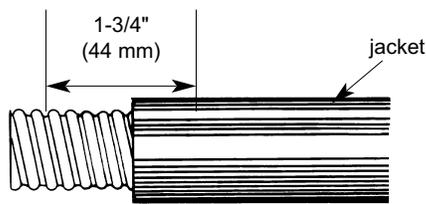
scale, 6 inch (150 mm)

small screwdriver

solvent (comothene, vythene, or other non-flammable cleaning fluid)

Step 1: Prepare the Waveguide

Prepare the waveguide as shown in Figure 1. Wrap a straight-edged piece of paper around the jacketing to form a cutting guide. Tilt the waveguide downward while cutting to keep copper chips from falling into the waveguide. Remove burrs from the cut end of the waveguide with a knife and file. Clean the exposed copper with a solvent and then clean the inside of the waveguide with a bottle brush.



Clean the copper surface with solvent.

Figure 1

Step 2: Attach the Compression Ring to the Line

Remove the split flare ring assembly from the compression ring. Apply a thin coat of silicone grease to the inside tapered surface of the compression ring and slide the compression ring over the end of the waveguide onto the jacket. Turn the gasket inside out and stretch it over the waveguide jacketing. Apply a thin coat of silicone grease to the gasket. See Figure 2.

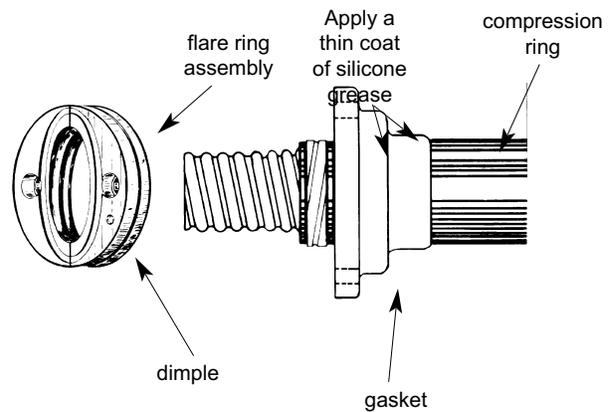


Figure 2

Step 3: Attach the Flare Ring Assembly

Refer to Figures 2 and 3. Flip the gasket over onto the exposed waveguide to the position shown in Figure 3.

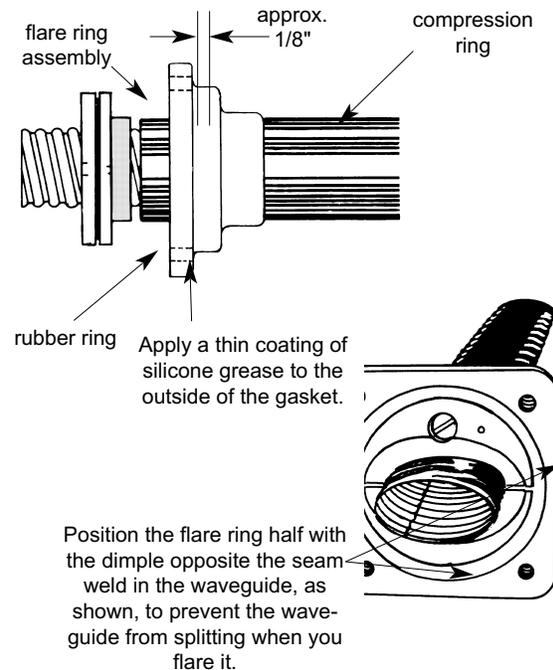


Figure 3

Apply a thin coat of silicone grease to the outer surface of the gasket. Gently pull the flare ring's halves apart so that there is enough clearance to place the flare ring assembly against the gasket. Slip the flare ring assembly over the end of the waveguide.

If a small gap is present, eliminate it by repositioning the gasket against the flare ring assembly. The side of the flare ring with the elliptical groove must face out from the waveguide.

Step 4: Attach the Compression Ring to the Split Flare Ring

Pull the compression ring forward and position it against the flare ring assembly. See Figure 4. Attach the compression ring to the flare ring assembly with screws. Tighten the screws completely.

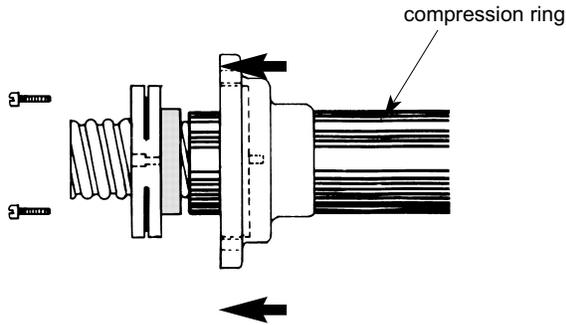
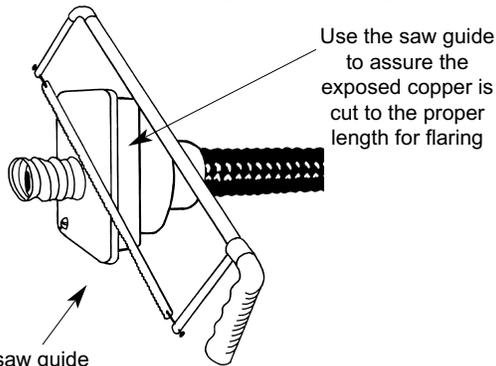


Figure 4

Step 5: Trim the Waveguide

With a hacksaw, make a flush cut to remove the exposed portion of the waveguide. See Figure 5.



Hold the saw guide in place by attaching it to the compression ring with a screw.

Figure 5

Step 6: Smooth the Waveguide's Cut End

With the saw guide in place, use a flat file to smooth the cut end of the waveguide flush with the saw guide. See Figure 6. Then remove the saw guide and use a knife to remove any burrs. Clean away any copper filings with a brush.

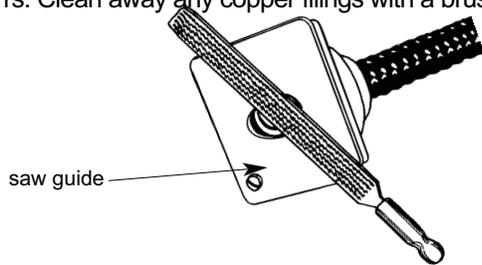


Figure 6

Step 7: Flare the Major Axis

With the dies closed and centered, place the major axis flaring tool flush against the compression ring and secure it using the Allen screws provided.

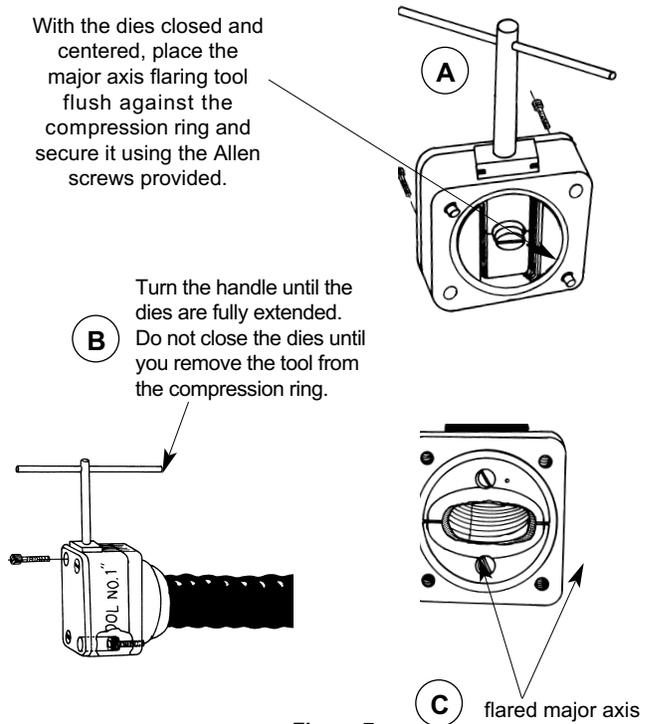


Figure 7

Step 8: Flare the Minor Axis

With the dies closed and centered, place the minor axis flaring tool flush against the compression ring and secure it using the Allen screws provided.

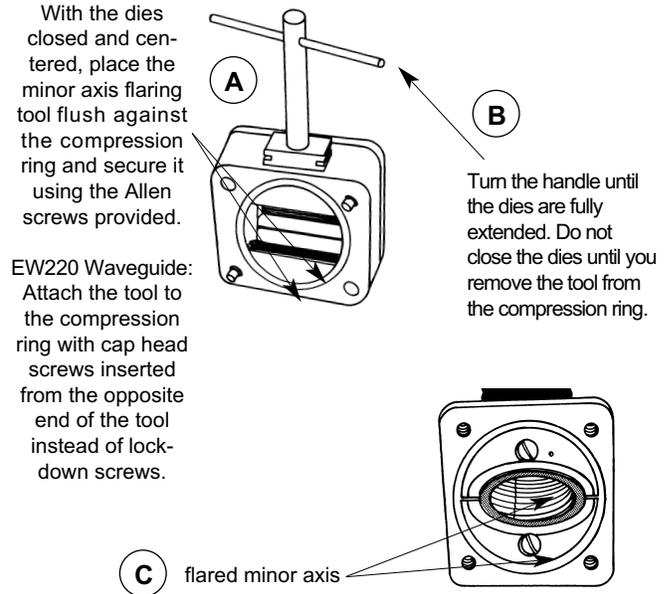


Figure 8

Step 9: Clean the Flared Copper

Clean the flare with solvent to remove any silicone grease. Clean inside the waveguide with a bottle brush.

Step 10: Complete Assembly

To complete the assembly, refer to the connector or splice bulletin.

