

## Termination Guide

### Step-by-Step Plastic Cable Connector Instructions

The following step-by-step guide describes how to terminate plastic fiber optic cable. It is ideal for both field and factory installations. Connectors can be easily installed on cable ends with standard tools such as wire strippers and cutters.

Finishing the cable is accomplished with the Agilent HFBR-4593 Polishing Kit, consisting of a polishing fixture, 600 grid abrasive paper and 3  $\mu\text{m}$  pink lapping film (3M Company, OC3-14). The connector can be used immediately after polishing.

The following materials are needed for plastic fiber termination:

1. Plastic optical fiber cable  
(Example: HFBR-RUD500)
2. Wire cutters or scissors
3. 16 gauge wire stripper  
(Example: Ideal Stripmaster type 45-092)
4. HFBR-4593 polishing kit  
(optional)
5. Crimpless connectors

#### Step 1: Stripping the Fiber

The zip cord structure of the duplex cable permits easy separation of the channels. The channels should be separated a minimum of 100 mm (4 in) to a maximum of 150 mm (6 in) back from the ends to permit connecting, polishing and cable end flexibility.

After cutting the cable to the desired length, strip off approximately 7 mm (0.3 in) of the outer jacket with the 16 gauge wire strippers.



When using the duplex connector arrangement, the separated duplex cable should be stripped to roughly equal lengths on each cable end.

For the non-latching version (HFBR-4531), the same connector is used for simplex and duplex arrangement. No crimping is necessary. The top half of the connector will snap into the ferrule half to secure the fiber.



#### Step 2: Putting on the Connector

Place the connector on each end of the fiber, and slide the connector down until the fiber jacket stops it. The fiber should protrude *no less* than 1.5 mm (0.06 in) from the end of the connector.



To install *simplex* connectors flip the top half of the connector over and snap it into the ferrule half (with your fingers). When the top half latches inside the body of the ferrule half, proper connector-to-cable attachment is achieved.

For *duplex* connector installation place one connector on top of the other, so that the top half of each connector is over the ferrule half of the opposite connector.



Manually press connectors together in the center of the arrangement. Then latch by pressing on the sides of each connector. As with the simplex version, connectors are secured when top halves latch into the ferrule halves.

#### Step 3: Trimming and Polishing

Any fiber in excess of 1.5 mm (0.06 in) protruding from the connector end should be cut off with wire cutters or scissors.

Insert the connector fully into the polishing fixture with the trimmed fiber protruding from the bottom of the fixture. This plastic polishing fixture can be used to polish two simplex connectors simultaneously or one duplex connector.



#### Step 4: Finishing

Place the flush connector and polishing fixture on the dull side of the 3  $\mu\text{m}$  pink lapping film and continue to polish the fiber in the same figure eight pattern for approximately 25 strokes. The fiber end should be flat, smooth and clean.

**Note:** *The four dots on the bottom of the polishing fixture are wear indicators. Replace the polishing fixture when any dot is no longer visible.*

Press the polishing tool down on the 600 grit abrasive paper. Polish the fiber using a figure eight pattern until the connector is flush with the bottom of the polishing fixture. Wipe the connector and fixture with a clean cloth or tissue.



#### HFBR-4593 Polishing Kit

**Note:** *Use of the pink lapping film fine polishing step results in approximately 2 dB improvement in coupling performance of either a transmitter-receiver link or a bulkhead/splice over a 600 grit polish alone. This fine polish is comparable to the Agilent factory polish. The fine polishing step may be omitted for short link lengths.*

