

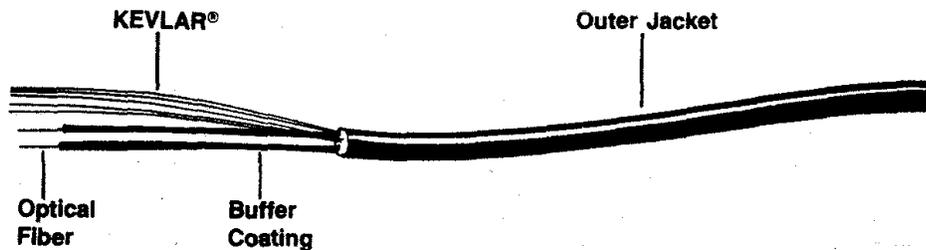
NORLAND PRODUCTS INCORPORATED

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Assembly Procedure for Norland Flexible Splice Housing P/N 20960M

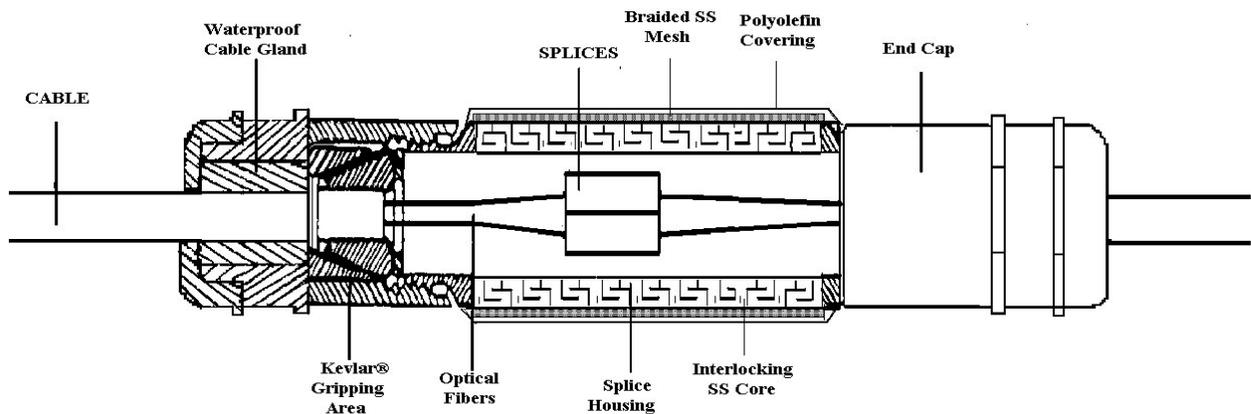
Basic Cable Design

The cable is composed of three different elements. It has an outer jacket or insulation which is usually black in color. Inside it has a bundle of yellow aramid fibers that provide strength to the cable. The aramid fibers, sometimes called strength member fibers or KEVLAR® are designed to take any pulling force that the cable is exposed to. Also inside are two optical fibers. Each fiber is coated with a plastic buffer coating for protection.



Outline of Repair Procedure

There are two objectives when repairing the cable. First the optical fibers must be spliced together to restore the signal carrying ability to the cable. Second, everything must be enclosed in a splice housing. This is to protect the splice and optical fibers and at the same time restore the cable strength.



Flexible Splice Housing
for Tactical Field Cable

NOT TO SCALE

REPAIR PROCEDURE

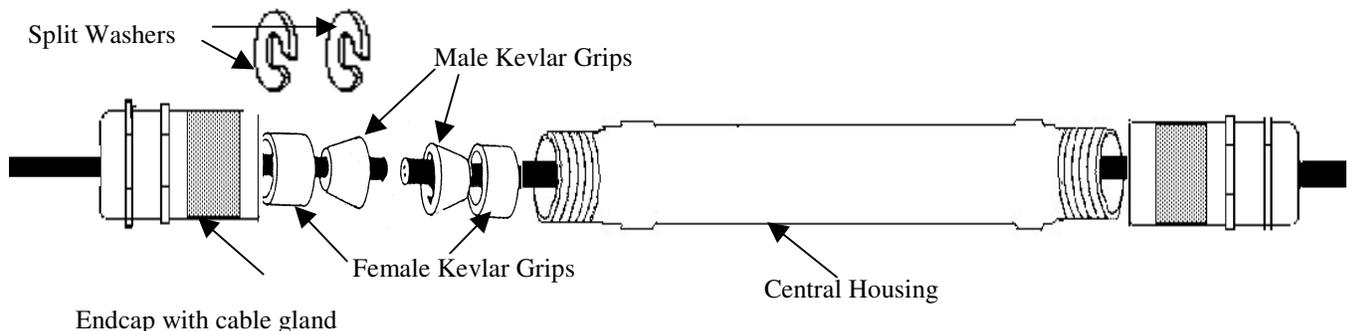
A. Cable Preparation

WARNING: Before beginning, put on safety glasses. These must be worn whenever handling optical fibers. Read entire instructions once completely before beginning.

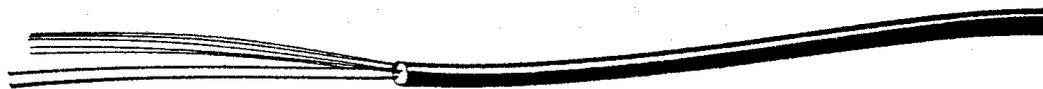
1. Cut out damaged section of cable with utility knife or shears to provide flush ends on the cables. Remove excessive mud and/or dirt from cable jacket at least 12 inches back from each cable end. **DO NOT USE** alcohol pads to clean cable jacket. Use wipes provided in kit or equivalent.
2. Take a splice housing from the kit.



3. Endcaps include both the hexagonal cable gland and the long knurled section up to the central housing. Grip endcaps by knurled section and unscrew from central housing. Remove split washers and male and female KEVLAR® grips.
4. Slide one endcap, one female grip and one male grip down each cable. **NOTE:** *If the cable is too large for the male grips, leave them off until step 7.* Slide central housing down one of the cables as illustrated below. All components should be slid out of the way, about 2 feet down cables. Set washer aside for later use.

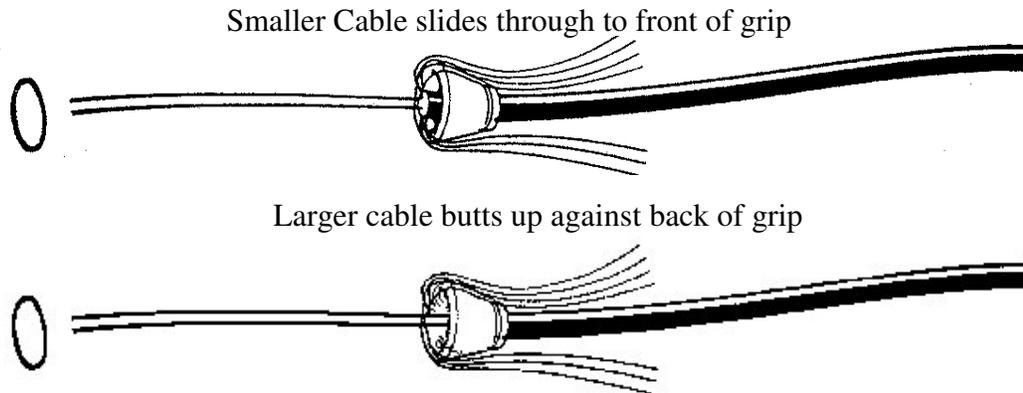


5. Remove 7.5 inches of outer jacket with the cable stripper in 1 inch increments from each cable end. Use the 10 gauge or the 12 gauge holes on the stripper. These are marked on the side of the cutting blade. Separate the optical fibers from the KEVLAR®.

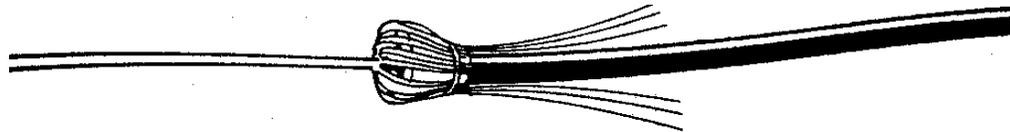


6. Take one of the small rubber bands and stretch it over the tips of the tweezers. Alternately, if a small plastic cone is supplied, this can also be used to stretch the small rubber band open.

7. Take the cable without the central housing and slide the male KEVLAR® grip up to the end of the outer jacket. The front end of the cable jacket should be flush with the front end of the grip. *NOTE: If the cable was too large for the male grip, thread the fibers and KEVLAR® through the hole in the male grip at this time. Butt the cable up to the back of the male grip. Fan the KEVLAR® out and back around the grip.*

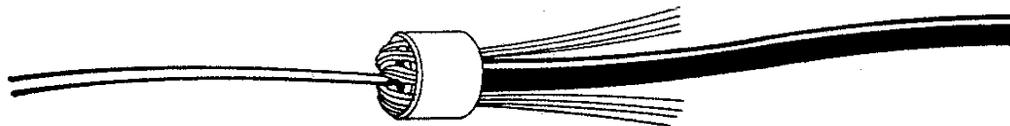


8. Grip KEVLAR® at back of sleeve with one hand. With other hand, stretch the rubber band open with the tweezers or use plastic cone to stretch rubber band over the optical fibers and down over the KEVLAR® and the male grip. Release band into groove at rear of the grip.

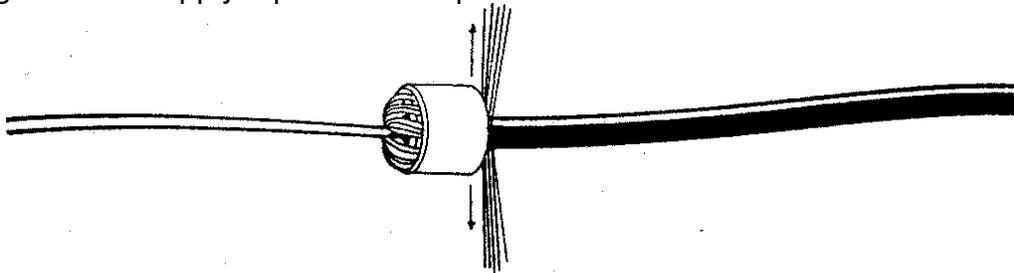


9. Fan KEVLAR® out EVENLY on front of grip surface. Pull any loose strands of KEVLAR® back so they rest flush and tight against the grip surface.

10. Slide up the female grip on cable. Insert KEVLAR® fibers through female grip and seat male grip inside it.



11. Divide KEVLAR® into two bunches and pull at a right angle to the cable to snug the mating surfaces. Apply tape to hold in place if desired.

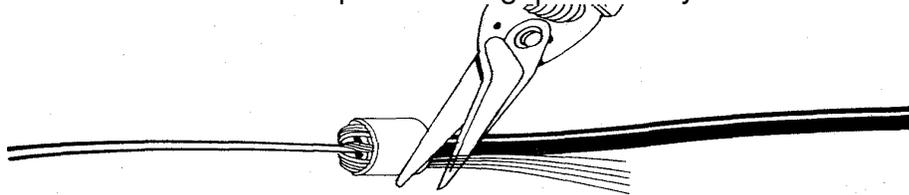


B. Making Splices

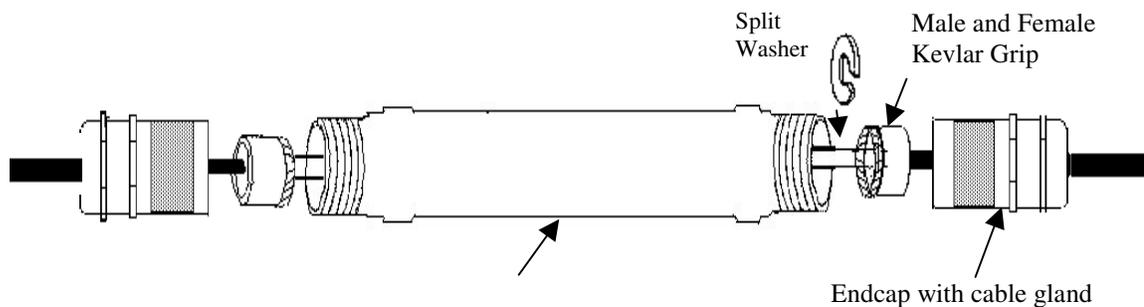
1. Remove 1.25 inches of buffer from all four fibers.
2. Clean fibers with alcohol wipe.
3. Cleave all four fibers to 12.5mm with cleaving tool.
4. Assemble splices according to manufacturers' instructions.
5. Use an OTDR to check the loss of both splices. If good proceed. If not, go back to step 4 of cable preparation and repeat process until low loss splices are completed.

Housing Assembly:

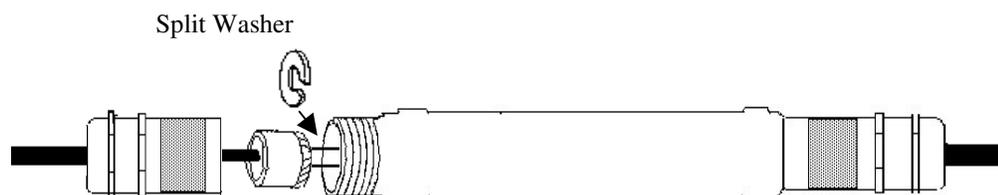
1. Go back to Kevlar grip assemblies. Pull snug again as instructed in step 10 of cable assembly. While pulling on KEVLAR[®] with one hand, use shears to trim loose KEVLAR[®] as close as possible to grip assembly



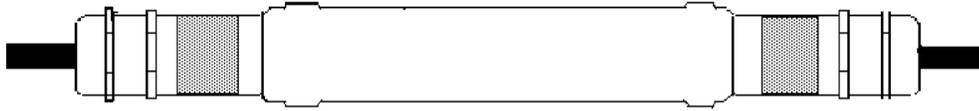
2. Slide central housing up over one grip assembly and center it over splice with grips on either side.
3. Bring up one end cap. Insert split washer onto fibers in front of grips. Hold cable and end cap stationary and screw the housing onto the end cap. Do not allow the cable to twist.



4. Bring up the other end cap. Insert split washer. Gently move any excess fiber into central housing and screw the cap on the body. Hold the cable with little finger in back of hand to prevent twisting. Screw end cap with thumb and forefinger until snug.



5. Tighten hexagonal cable gland caps on each end by hand until snug.



6. Hold cable at arms length with housing centered and pull to spread excess fiber throughout the cable.

Kevlar® is a registered trademark of E.I. DuPont.