

Figure 1. Dome-Off Interior View of a BDO™ ETS Pedlock® Pedestal

Fiber Cable Preparation, Termination and Splicing Instructions for the BDO-ETS Series of Fiber Pedlock® OSP Pedestals in Sealed Fiber Terminal Block Applications

1. GENERAL

This document provides Telco-to-customer fiber optic cable connection instructions for the fiber cable technician to properly perform fiber cable preparations, terminations and splicing using Charles Industries' Buried Distribution Optical (BDO™) ETS series of Pedlock® pedestals in special preconnectorized terminal block applications. These instructions facilitate loop-through (express) configuration installations. Figure 1 shows an interior, dome-off view of a BDO ETS model. See Table 3 for information on all models in the series or call Charles Industries (see Part 3) to request more information or literature.

— NOTE —

Hereafter the Charles' Pedlock BDO-ETS series of pedestals will be commonly referred to as the "BDO" or "pedestal." Specific model numbers will be specified where key differences apply.

1.2 Document Status

The fourth printing of this document updates Step 39 to add a mounting bracket. The third printing updated Table 3. Print 2 updated Steps 1, 4, 9, 14 and 18 of Table 1 and updated the shipped contents in the figure in Table 3. Whenever this document is updated, the reason will be stated in this paragraph.

1.3 Product Purpose and Description

Charles' nonmetallic BDO pedestals provide a superior protective enclosure for OSP above-grade splices of Telco-feed and customer-drop buried fiber cables at mid-span or end span points. Pedestal pedestals protect against floods, fire, dirt, weather, insects and impact. The bottom section is a square-shaped, expanded-capacity, 2-piece split base designed to open and easily install around conduit-fed cable bundles in new or replacement construction to accept less flexible cables. The top section is covered by a dome, which protects the interchangeably-designed interior backboard that allows technicians to mount splice trays, splitters and terminal blocks with room to route, attach and store cable stubs needed for in-field splicing. The BDS-ETS series of pedestals feature an interior backboard (mounting plate) that offers ease of drop cable installation with the ability to accept and mount preconnectorized terminal block kits (terminal blocks and splice trays not included).

1.4 Product Mounting

This Installation Guide assumes the BDO pedestal base is properly installed in a trench or hole in the ground, up to the ground line indicator on the base, at the FTTP or FTTH distribution point. The pedestal backboard, where all cable preparations, routings, connections, splittings and terminal block or splice tray mountings are performed (as described in this document),

mounts to the base. Once all terminal block and cable installations and connections are complete, the dome is placed over and attached to the base to protect all cabling, connections, and equipment. The base contains holes or knock-outs at the rear and both sides which accept an optional, metallic, mounting stake or a pole-mount stake.

2. LOOP-THRU CONFIGURATION CABLE INSTALLATION

The instructions in Table 1 help the cable technician to perform the terminal block mounting and all feed-cable preparations, routings, attachments and connections, including splicing of the working feed fibers to the terminal block, as well as the drop-off cable installation and connections. The instructions that follow in Table 1 presume the following conditions:

- **Cable Architecture/Deployment** – The CO/feed cable architecture is a "loop-through" type configuration with fiber cables.
- **Equipment Installation** – A BDO™ base has been properly installed at the desired field site (for base installation information, see the pedestal base installation document that was factory-attached to the pedestal). A sealed terminal block (not provided) is typically installed on the pedestal backboard, and spliced to the feed cable via the terminal block cable tail, as described herein.
- **Trench Setup** – The trench is either dug and open, or backfilled but with feed cable or conduit installed and present at or within the pedestal base. The CO/feed cable is looped at the pedestal, entering and exiting the pedestal at the bottom of the base.
- **Feed Cable Design and Placement** – The CO feed cable is a flexible loose-tube type with stranded fiber (not ribbon, although BDO does accommodate ribbon). *Splicing will be required to connect feed fibers at the pedestal.*
- **Drop Cable Design** – The drop cables are factory-terminated at each end with special fiber connectors as described herein. *No splicing is required at the pedestal.*
- **No Transportation Tubing** – Protective transportation is *not* required.

- WARNING -

- Corrugated metal or armor that may be present in feed cables is very sharp when cut or exposed. Exercise extreme caution to prevent personal injury. Use protective work gloves when handling armored cable.
- Cable/fiber cleaning solvents may contain hazardous materials or harmful ingredients. Always read and follow the manufacturer's precautions, warnings and instructions when working with cleaning solvents/products.
- Shards/cleaved glass fibers are very sharp and can easily pierce the skin. Do not let cut pieces of fiber stick to your clothing or drop in the work area where they can later cause injury. Use tweezers to pick up cut or broken pieces of glass fibers and place them on a loop of tape or in a container specifically meant for this purpose. Good housekeeping is important.
- Risk of eye damage. Never look into the end of a fiber optic line/circuit. Always exercise caution when installing, testing or performing maintenance on live circuits.

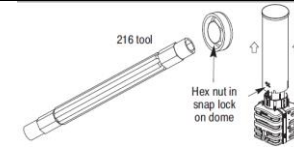
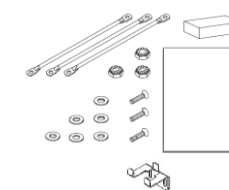
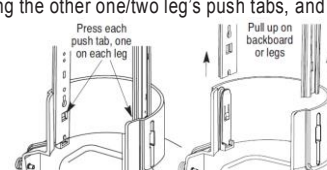
- CAUTION -

- In cold environments, some loose tube cable designs may exhibit low temperature induced signal attenuation when long lengths of buffer tubes have been exposed and then stored. Contact the cable manufacturer concerning recommended exposed buffer tube lengths in your installation area.
- Buffer tubes are sensitive to excessive pulling, bending and crushing forces. Exercise great care when handling buffer tubes, as excessive bending will cause kinking which may damage the fibers inside.
- Perform all bonding and grounding prior to any electrical and communications connections.

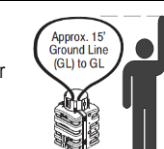
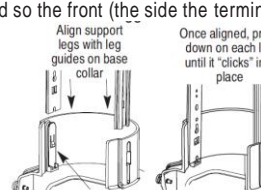
Table 1 – Loop-Through Configuration Installation

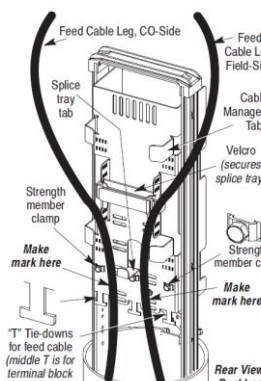
Step	Instruction
1.	<p>Obtain tools, materials and equipment. Obtain the following tools and equipment to perform fiber feed/drop cable connections in the installed pedestal.</p> <ul style="list-style-type: none"> o 216 tool/can wrench o Cable marking tool & labels o Isopropyl alcohol and clean wipes (to clean fibers) o Gel removal compound (to clean stripped cables) o Connector cleaner o Tape measure o Screwdrivers o Work gloves (optional) o Fiber splicing equipment o Safety glasses o Splice tray & labels o Assorted cable ties o Wrenches or socket set o Bag of parts (provided) <ul style="list-style-type: none"> o Properly installed base of BDS-ETS model o Sealed fiber terminal block (not provided, from manufacturer of choice) o Mounting hardware for terminal block (included) o Optical Fiber Access Tool to slit the length of the buffer tube in continuous loop applications) o Buffer tube stripper tool (to score/cut buffer tubes) o Cable-entry tool or utility knife with hook blade (to cut feed cable) o Cable bond clamps o Cable grounding materials and equipment o Tweezers & tape (for cleaved glass fibers/shards) o Hose clamps for feed cable only) o Shovel to gain access to drop cable hole) o Proper lengths of preconnectorized drop cables o Drop trenching equipment & site clean-up tools

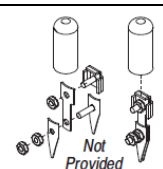
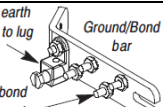
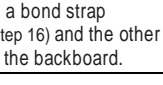
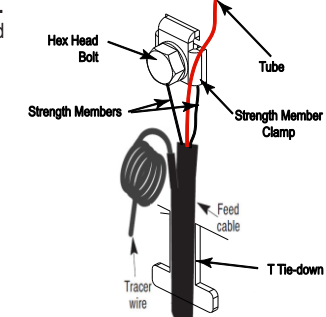
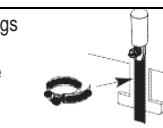
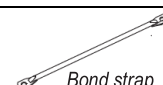
Preparing and Opening the Pre-Installed Pedestal

2. **Verify pedestal is installed and inspect.** Find the BDO™ pedestal installation site and verify the pedestal is properly installed in the ground. Inspect it for damage.
3. **Remove dome from base.** If the dome is installed, remove it with a 216 tool or can wrench. Turn the snap lock's hex nut 1/4-turn counterclockwise; hold it in that position, then lift up on the dome. Set it aside until needed when the installation is complete.
 
4. **Remove plastic bag and verify contents.** Locate the clear plastic bag typically attached to the interior backboard of the pedestal and verify the following remaining contents.
 - o Three mounting screws
 - o Three bond straps
 - o Foam plug (may be installed in drop channel)
 - o Six washers
 - o Documentation
 - o Lower Mounting Bracket (BDO5)
5. **Remove backboard (optional) to facilitate earth ground installation.** Remove the backboard, if necessary, to facilitate the earth ground installation per local company practice. Remove the backboard by first pressing one finger push tab in one support leg, pulling up on that support leg, pressing the other one/two leg's push tabs, and pulling up on the other leg(s). The push tabs are accessed through a hole in each leg in the inside top collar of the base. Once the tabs are unlocked or released, pull the backboard out of the base and temporarily set it aside.
 
6. **Verify/prepare earth ground.** Always follow local codes and company practice when grounding cables/equipment. Per local company practice, verify the presence of an earth ground at the pedestal base. If earth ground is not present and local practice requires one, prepare one at this time. Do not connect earth ground to the backboard until it is reattached to the base.

Preparing the Loop-through Feed Cable

7. **Verify sufficient feed cable length.** Verify approximately 15 feet of looped feed cable, ground line to ground line, is stored inside the pedestal base. Bring it up and out of the base (8.5' for cable stub configurations). Make sure the cable is behind the backboard, if installed (the Charles logo is on the front side of the base). See the base installation document for instructions on installing the base and routing cables into the base.
 
8. **Attach backboard.** (Skip this step if the backboard is installed.) Install the backboard so it can be determined where to cut the feed cable sheathing to expose the buffer tube with the assigned working fibers. Larger diameter BDOs have three support legs instead of two. For two-legged models, install the backboard so the front (the side the terminal block is mounted) faces the front of the base (the side with the Charles logo). Position the cable so it is at the rear of the backboard. Align the backboard support legs with matching leg guides in the base top collar. Push down on the backboard (or the legs) until it stops (audible clicks indicate proper leg insertion).
 

9. **Mark cable for sheathing removal.** Remove approximately 12" of cable sheathing from the middle of the 15' cable loop (approx. 7' from an 8.5' stub) for fiber routing, storage and splicing, with sufficient sheathing length remaining to attach to the backboard. To find the exact symmetrical/sheathing cut locations, at the rear of the backboard, find the outermost upside down T at the lower left corner (a "T" is a cable attachment tie-down). Hold the CO side leg of the cable loop against the chosen T, and mark a visible cut line on the cable midway between the T and the strength member clamp (approx. 1.5" higher than the bottom of the T). Make another mark on the cable loop's field side leg at the outermost T at the backboard's lower right corner.
 

10. **Remove backboard, for sheathing removal (optional).** If desired, remove the backboard to facilitate the sheathing removal procedure. See Step 5 for details.
11. **Remove outer sheathing.** Per company practice, use the tool/method of choice to carefully remove the outer cable sheathing between the two marked locations on the cable loop, to expose the inner buffer tubes and strength members (for stub-end cable, remove from the mark to the cable end). Discard the removed sheathing.
12. **Clean buffer tubes.** Per company practice and cable type, find, expose, and clean the loose buffer tubes, if needed.
13. **Trim strength members to length.** Per company practice, find and trim the cable strength member(s) so they are about 4" longer than the cable sheathing cut.
14. **Attach bond clamp to cable.** Per company practice, attach a company-approved bond clamp onto the cable at each sheath cut location, prior to attaching the backboard. Some bond clamps also serve to secure the strength members (making Step 18 optional, per company practice). Trim the strength member(s) to the precise length required to fit into the bond clamps, if securing strength members in bond clamps.
 
15. **Attach backboard.** If still removed, re-install the backboard (see Step 8).
16. **Connect earth ground to ground/bond bar.** Per local code/company practice, install an earth ground wire of proper gauge from the earth ground to the pedestal at the ground/bond bar's ground lug.
 
17. **Bond backboard to ground/bond bar.** Attach one end of a bond strap (provided) to a post on the ground/bond bar (see figure in Step 16) and the other end to the back-board's bond post at the bottom-center of the backboard.
 
18. **Attach strength members to strength member clamps (optional).** Strength member clamps are provided to optionally secure cable strength members, per local company practice, if the strength members are not trimmed and secured within the cable bond clamps (see Step 14). To use the strength member clamp, loosen the hex screw of the clamp that is directly above the T tie-down that will be used in Step 19 to secure the cable leg. Trim the strength members so they fit under the strength member clamp. Slide the members between the clamp and the backboard wall, and verify the fiber cable buffer tube is free and clear of the clamp. If the cable contains a tracer wire, attach/bond it per local company practice, or coil/guide it down or away from the clamp. Firmly tighten the clamp's hex screw. Repeat for the other cable leg.
 
19. **Secure cable to backboard.** Further secure both cable legs to the backboard using hose clamps at the T tie-downs (designed specifically for attaching cables). Align the cable to the sheath cut is 2" above the bottom of the T (between the T and strength member clamp).
 
20. **Bond cable to ground/bond bar.** Attach a bond strap (provided) from the cable bond clamp (Step 14) to one of the bonding posts on the ground/bond bar.
 
21. **Separate working fiber buffer tube from bundle and loop/store bundle.** Find and separate from the fiber bundle the buffer tube with the fibers to be spliced. Loop and secure the rest of the the cable bundle at the rear of the backboard between the four cable management tabs provided. Gently criss-cross the bundle to create as many loops as needed to contain the cable within the tabs. Secure the bundle to the backboard with cable ties at appropriate intervals. Do not over-tighten the ties.
 