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1. CARTON CONTENTS

- (1) Dome cover
- (1) End cap
- (2) M8x14 Hex bolts
- (1) Sealing ring
- (1) Clamping ring
- (1) Frame assembly
- (2) Slack baskets

A — Wrench for closing screw
C — Maximum diameter for tape-wrapped cable in express ports
E — Maximum cable diameter for small (10 mm) rubber sealing grommet
F — Maximum cable diameter for large (15 mm) rubber sealing grommet
G — Wrench for compression screw
H — End cap closing gauge
K — Minimum cable diameter for small (5 mm) rubber sealing grommet

Accessory kit (p/n SCF-4C-ACCY)
- (1) Vented grounding screw
- (1) Solid grounding screw
- (1) End cap gauge tool (Table 1)
- (1) Alcohol cleaning tissue
- (1) Sealing paste - labeled “dichtpaste”
- (1) Sealing tape
- (2) 8-inch grounding wires
- (2) Grounding clamps
- (1) Brush
- (1) UCN lubricant
- (1) Hook-and-loop strap
- (5) Small cable ties
- (3) Flat washers
- (2) M6x40 Hex screws
- (1) M6x90 Hex screw

(1) Drop port cable strain-relief kit (p/n SCF-KT-4CBL) containing:
- (1) 10-32 Phillips-head screw
- (1) Drop bracket
- (1) 7/16 x 1-inch hose clamp
- (1) Central member restraint cap
- (3) #8 washers
- (2) 8-32 lock nuts
- (1) Toothed washers
- (1) Inside plastic grommets (lock nuts)
- (1) 10.5-15 mm sealing grommets
- (1) 5-10 mm sealing grommets
- (2) Outside plastic grommets (compression screws)

(1) Express port cable strain-relief kit (p/n SCF-KT-EXP-SM) containing:
- (2) Express brackets
- (2) 3/4 x 1 1/2-inch hose clamps
- (2) 7/16 x 1-inch hose clamps
- (2) Central member restraint caps
- (4) #8 washers
- (4) 8-32 lock nuts

Table 1-Combination Wrench Tool
2. **TOOLS AND MATERIALS REQUIRED**

- Tape measure
- Scissors
- Side cutters
- Cable or utility knife
- Adjustable wrench
- 11/32-inch nut driver
- 3/8-inch nut driver
- 5/16-inch nut driver
- 7/16-inch nut driver
- 1/2-inch deep socket
- 10 mm socket
- Ratchet
- Heat-shrink fusion splice protectors (p/n 2806032-01, package of 50, 40 mm long)
- Optical Fiber Access Tool (p/n OFT-000)
- Slotted screwdriver
- Phillips-head screwdriver
- Permanent marker
- Paint marker pen
- Vinyl tape
- Hand pump
- Air pressure gauge
- Torque wrench
- Soapy water (to verify leaks)
- Hacksaw
- Ideal® coaxial cable stripper (p/n 100107-01)

3. **INSTALLING THE CLOSURE**

**WARNING:** Do not install telecommunications equipment or work with telephone wiring during a lightning storm. Telephone lines can carry high voltages from lightning causing electrical shock resulting in severe injury or death.

**CAUTION:** Recommend the use of safety glasses (spectacles) conforming to ANSI Z87, for eye protection from accidental injury when handling chemicals, cables, or working with fiber. Pieces of glass fiber are very sharp and have the potential to damage the eye.

**CAUTION:** The wearing of cut-resistant safety gloves to protect your hands from accidental injury when using sharp-bladed tools and armored cable is strongly recommended. Use extreme care when working with severed armor. There will be a sharp edge where armor is cut. To minimize the chance of injury from the cut armor, cover the exposed edge with a wrap of electrical tape. To minimize the chance of injury from sharp-bladed tools, always cut away from yourself and others. Dispose of used blades and armor scrap properly.

**CAUTION:** Fiber optic cable is sensitive to excessive pulling, bending, and crushing forces. Consult the cable specification sheet for the cable you are installing. Do not bend the cable more sharply than the minimum recommended bend radius. Do not apply more pulling force to the cable than specified. Do not crush the cable or allow it to kink. Doing so may cause damage that can alter the transmission characteristics of the cable; the cable may have to be replaced.

3.1. **Prepare the Express Cable**

**IMPORTANT:** Typical lengths are illustrated. Since the actual application may vary, it is recommended to route the buffer tubes as they will lie in the closure to determine actual strip lengths before cutting fibers. Refer to routing illustration, if necessary. Do not expose the fibers until after the cable has been placed in the closure end cap.

**Step 1:** For express (midspan) cable applications remove 118 inches (3 meters) of the cable sheath (and armor, if included) as shown.

For endspan or drop cable applications, remove indicated length of cable sheath and armor (where applicable) as shown according to cable manufacturer’s instructions.
Step 2: Cut the central member of each cable to 6 inches (approximately 15 cm) from the sheath using side cutters.

Step 3: If aramid yarn is present, leave 6 inches (approximately 15 cm) of yarn for additional strain-relieving.

3.2. Install Grounding Hardware (Armored Cable Only)

If installing armored distribution or drop cable, it should be grounded to a primary ground. Ground armored cables using the hardware in the accessory kit as shown. Additional grounding hardware (p/n SCF-KT-6GND includes two #6 AWG ground leads and two ground clamp assemblies), if needed, may be purchased by contacting your customer service representative.

IMPORTANT: Do not install express cables until Section 3.4 or drop cables until Section 3.6.

Step 1: Cut a slit into opposite sides of the outer sheath and armor about 1 inch (2.5 cm). To do this, score the armor with a cable knife (being careful not to damage the inner sheath, if present) and split the sheath by flexing it or use the ripcords to do the same thing when accessing the cable.

Step 2: Position the grounding clamp base plate under the armor. The stops of the clamp should just touch the outside of the armor and sheath. Tap the sheath above the ground clamp base to drive the teeth on the plate into the cable sheath.

Step 3: Position the top plate and lock nut on the outer sheath over the base plate. Tighten with a 3/8-inch wrench so that the teeth on the upper plate are driven into the sheath.

Step 4: Wrap the grounding clamp and split portion of the cable sheath with vinyl tape.

Step 5: Place the eyelet on the ground wire over the stud on the base plate. Add a second lock nut and tighten using a 3/8-inch wrench.

NOTE: Ground lead will be attached to end cap in a later step.

3.3. Install Express Strain-relief Hardware

Determine cable and strength member type and proceed accordingly:

- Strength members in single-tube cables must be separated by the restraint cap threaded stud.
- Single strength members in loose tube design cables must be secured in the cap.
- Strength members in cables (central tube) with sheath-mounted GRP (Glass Reinforced Plastic) need only the strength member(s) on one side of the cable secured in the cap.
Install strain-relief bracket(s) onto the opposite side (180 degrees) from the grounding clamp when applicable:

**Step 1:** Place a hose clamp over the cable and bracket approximately 0.75 inches (18 mm) below the sheath end.

**IMPORTANT:** If grounding hardware is used, make sure the hose clamp does not overlap the ground clamp.

**Step 2:** Tighten the hose clamp in the notch on the bracket with the tensioning body on the hose clamp on the same side of the bracket as the threaded stud. Tighten hose clamp to a torque value of 30 in-lb.

**Step 3:** Place a washer over the threaded stud on the strain-relief bracket.

**Step 4:** Wrap the yarn (if present) twice, clockwise, around the threaded stud.

**Step 5:** Install a washer and nut and tighten securely.

**Step 6:** Mark the cable in the location shown.

**Step 7:** Trim the strength member flush with the top of the strain-relief bracket.

**Step 8:** Insert the restraint cap threaded stud through the hole in the strain-relief bracket capturing the strength member between the two.

**Step 9:** With the strength member behind the bracket, install a nut on the restraint cap threaded stud.

**Step 10:** Confirm buffer tubes are clear of the strength elements. Tighten nut securely.

**Step 11:** Repeat for the second cable, when applicable.
3.4. Install Cable into the End Cap Express Ports

**NOTE:** Use the two main cable ports in the center of the end cap first. Use the drop ports as needed.

### 3.4.1 Prepare the end cap

**Step 1:** Remove the frame from the end cap.

**Step 2:** Pull the end cap halves apart.

**Step 3:** Beginning with the inside of the end cap, apply sealing tape to the end cap half containing the metallic standoffs. Cut holes in the tape to expose the standoffs.

**IMPORTANT:** It is imperative that the strain-relief bracket have no contact with the tape. Make sure the strain-relief tracks on the inside of the end cap and the screw holes are not obstructed by the sealing tape.

### 3.4.2 Apply sealing tape to the cable

**CAUTION:** Isopropyl alcohol is flammable with a flashpoint at 54°F. It can cause irritation to eyes on contact. In case of contact, flush eyes with water for at least 15 minutes. Inhaling fumes may cause mild dizziness. In case of ingestion, consult a physician.

**CAUTION:** Use sealing paste and cable cleaner in a well-ventilated area to eliminate the possibility of dizziness and nausea. If paste or cleaner comes in contact with skin or eyes, wash area immediately with soap and water to avoid irritation. Do not induce vomiting if paste cleaner is ingested.

**Step 1:** Clean the cable where the tape will be applied using the provided alcohol pad.

**Step 2:** Beginning at the mark shown, use wax-paper backing from the sealing tape to spread the “dichtpaste” sealing paste evenly around the cable in the area where the sealing tape will be applied. Allow the sealing paste to dry.

**Step 3:** Cut and pull the strip of sealing tape as shown. The tape will stretch and thin before it breaks.

**Step 4:** Wrap the tape around the cable so that it doesn’t extend above the mark shown until it fills the diameter “C” on the end cap gauge tool. Express ports will accommodate cable with a maximum diameter of 1.0 inch (25 mm); some cables require only one wrap of sealing tape to reach this diameter. Always finish with a complete wrap that overlaps the starting point by approximately 0.5 inch.
NOTE: The combination wrench tool is used in several steps during the assembly process. Use only this tool for measuring and tightening components where indicated.

Step 5: Repeat Section 3.4.2 for the other cable to be installed in the express port, if applicable.

3.4.3 Install cable

Step 1: Wrap hose clamps and restraint caps with vinyl tape to prevent the sharp edges from damaging the fiber.

Step 2: Place one side of the express cable sheath in the express port on the untaped end cap half by inserting the strain-relief bracket in the tracks.

Step 3: Place the other side of the express cable sheath on the taped end cap half in the center express port by inserting the strain-relief bracket in the tracks.

3.4.4 Use a dummy plug

When the closure only has one cable installed in the express ports, use a dummy plug (p/n SCF-4-6-PLUG, purchased separately) to fill the unused port.

Step 1: If using a dummy plug follow instructions in Section 3.4.2 to install sealing paste and tape to dummy plug.

Step 2: Install dummy plug with the closed end of the plug flush against the outside of the end cap.

3.4.5 Close end cap halves

IMPORTANT: Do not use power tools to tighten the end cap.

Step 1: Place the upper end cap half over the lower end cap half.

Step 2: Install one short bolt and washer on each side of the end cap half.

Step 3: Install one long bolt and washer in the center hole.

Step 4: Alternately tighten the bolts to close the end cap.
IMPORTANT: While tightening, ensure that the feet of the strain-relief brackets remain inside the tracks.
Do not use power tools to tighten.

Step 5: Tighten the bolts until the combination wrench gauge tool (Section H) fits over the sides and center measuring points of the end cap.

Step 6: Cut excess sealing tape from the sealing ring channel and strain-relief tracks using scissors or side cutters.

NOTE: Do not pull or stretch sealing tape.

Step 7: Completely remove any remaining sealing tape inside the sealing ring channel with the blade of a screwdriver.

3.4.6 Install vented grounding screw

Step 1: Apply a thin coat of UCN lubricant to the threads of the vented grounding screw.

Step 2: Install the vented grounding screw in the threaded insert on the inside of the end cap finger-tight plus one half turn (approximately 40 to 60 in-lb).

3.5. Ground Armored Cable Only

Ground armored cable per local practices.

Remove the small insert from the vented grounding screw and attach previously installed grounding wire(s). Tighten the insert.

3.6. Install Cable into the Drop Cable Port(s)

3.6.1 Prepare Drop Cable Port(s)

Step 1: Choose a cable port to be used and open the port using a hacksaw or a knife. Be careful not to damage the internal threads of the drop port while sawing.

Step 2: Smooth the port opening using a utility or cable knife as shown.
Step 3: Place the combination wrench tool to determine which size sealing grommet is required.

<table>
<thead>
<tr>
<th>Cable Diameter Range:</th>
<th>If Cable Diameter Is:</th>
<th>Select Grommet Size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Greater than or equal to:</td>
<td>Less than:</td>
</tr>
<tr>
<td>15 mm Wrench Gauge &quot;E&quot; AND Wrench Gauge &quot;F&quot;</td>
<td>Large</td>
<td></td>
</tr>
<tr>
<td>5 mm Wrench Gauge &quot;K&quot;</td>
<td>Small</td>
<td></td>
</tr>
<tr>
<td>Less than &quot;K&quot; Cable is too small for sealing system.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flat Requires p/n SCF-KT-G42-F Grommet kit (purchased separately)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE: Dimensions are for reference only.

Step 4: Place a toothed washer onto the sealing grommet and insert both into the opened port from the strain-relief side of the end cap. Verify correct placement of toothed washer on grommet.

3.6.2 Install Drop Port Cable into End Cap

Step 1: Secure the sealing grommet and toothed washer with the lock nut on the inside of the end cap.

Step 2: Use the end cap gauge to tighten the nut until it stops and is tight.

Step 3: Slide the compression screw over the cable.

Step 4: Slide the cable through the port.

Step 5: Prepare cable per Section 3.1. If the cable is armored, attach grounding hardware as shown in Section 3.2.

3.6.3 Strain-relieve Drop Port Cables

If installing SST-Drop™ cables in drop ports, refer to the instruction provided with the strain-relief kit (p/n SCF-KT-G42-F, purchased separately).

Install a drop port strain-relief bracket onto each drop port cable on the opposite side of the cable (180 degrees) from the ground clamp when applicable:

Step 1: Pull the cable approximately 12 inches away from the end cap to ease bracket installation.

IMPORTANT: Secure the cable to the side of the bracket opposite the threaded stud.
Step 2: Place a hose clamp over the cable and bracket 0.75 inches (18 mm) below the sheath end.

**IMPORTANT:** If grounding hardware is used, make sure the hose clamp does not overlap the ground clamp.

Step 3: Tighten the hose clamp in the notch on the bracket with the tensioning body on the hose clamp on the same side of the bracket as the threaded stud. Tighten hose clamp to a torque value of 30 in-lb.

Step 4: Trim nonmetallic strength member flush with the top of the bracket.

Step 5: Insert the restraint cap threaded stud through the hole in the strain-relief bracket, capturing the central strength member between the two.

Step 6: Install a washer and nut onto the restraint cap stud and tighten securely.

Step 7: Wrap the aramid yarn, if present, twice in a clockwise direction around the threaded stud on the bracket.

Step 8: Install a second washer and nut and tighten securely.

**IMPORTANT:** Ensure that all buffer tubes are cleared from beneath the strength member prior to tightening the restraint cap.

Step 9: Wrap hose clamp and restraint cap with vinyl tape to prevent the sharp edges from damaging the fiber.

### 3.6.4 Complete Frame Assembly

Reattach the frame assembly to the end cap.

### 3.6.5 Attach Strain-relief Bracket

Attach the strain-relief bracket to the frame:

- **Step 1:** Pull the cable back to the end cap.
- **Step 2:** Center the cable over the port and slide the attached screw on the strain-relief bracket into the slot on the metal frame.
- **Step 3:** Tighten the strain-relief bracket mounting screw.

### 3.6.6 Tighten End Cap Compression Screw

Secure compression screw into end cap. Tighten with the combination wrench tool until the clicking sound stops or the screw is butted against the end cap.

**IMPORTANT:** DO NOT overtighten the screw.

### 3.7. Splice

#### 3.7.1 Prepare fiber for splicing

- **Step 1:** Remove quick release clips and slack basket from the studs on the frame. Place an empty tray stacker onto the studs on the frame. Place an empty splice tray onto the studs on the frame.
Step 2: Select the buffer tubes to be spliced in this splice tray and route the buffer tube(s) next to the corner of the splice tray.

Step 3: Use a permanent marker to mark the buffer tube 0.75 in (19 mm) from the corner of the splice tray.

Step 4: Remove the buffer tube at the mark made in the previous step.

Step 5: Clean fibers according to cable manufacturer’s instructions.

Step 6: Remove the splice tray from the studs.

Step 7: Secure the buffer tube to the tray per instructions provided with the splice tray.

Step 8: Prepare any other splice trays the same way.

Step 9: When all trays are prepared, splice per local practice.

3.7.2 Secure splice trays

Step 1: Place the spliced trays onto the studs on the frame.

Step 2: Install the slack basket over the studs and secure using the quick-release fasteners.

Step 3: Loop buffer tubes in the slack basket. Bundle tubes together using vinyl tape, if desired.

Step 4: Store the combination wrench tool between the splice tray stacker and the frame.

IMPORTANT: Position the wrench so that it does not interfere with the dome cover during installation.

3.7.3 Store buffer tube slack

Step 1: Store unused cable slack inside the slack basket on the opposite side of the frame.

Step 2: Secure all buffer tubes, splice trays and the combination wrench using the hook-and-loop straps.
3.8. Seal the Canister Closure

NOTE: Do not use liquid encapsulant in SCF closures.

3.8.1 Install seal

Step 1: Roll the sealing ring over frame and down to the end cap with arrows as shown.

IMPORTANT: The sealing ring must be installed in the orientation shown.

Step 2: Verify there is no sealing tape in the sealing ring channel. Flatten any sealing tape with a slotted screwdriver.

Step 3: Use the supplied brush to apply a third of the UCN lubricant tube to the sealing ring channel on the end cap.

Step 4: Stretch the sealing ring over the channel.

Step 5: Fold the edge of the seal that overlaps the outside of the end cap until the seal seats in the channel as shown.

IMPORTANT: The installed sealing ring must be oriented as shown with the arrows pointing towards the incoming cable.

Step 6: Retain a small amount of UCN lubricant for use later. Apply the remaining lubricant to all sides of the sealing ring.

3.8.2 Install the canister cover

Step 1: Slide the canister over the closure assembly.

Step 2: Loosen both bolts on the clamping ring.

Step 3: Apply a thin coat of UCN lubricant retained previously to the threads of the clamping ring latch bolts to prevent the bolts from seizing on reentry.
Step 4: Place the clamping ring over the flange of the canister and the sealing ring with the embossed lettering toward the outside of the closure. Ensure that both the sealing ring and the canister flange are within the clamping ring.

NOTE: The clamping ring seams must be oriented 90 degrees from the end cap seam.

Step 5: Swing the clamping ring into closing position. Tighten the bolts until the plastic on the ring touches, then torque to a 50 in-lb value.

IMPORTANT: A torque value of 50 in-lb should be sufficient. Do not use power tools to tighten the clamping ring; a torque value of more than 80 in-lb causes the hardware to crack and the clamping ring to become defective. If the clamping ring does not close properly, make sure the sealing ring and clamping ring are oriented correctly.

3.9. Pressure Test Closure

3.9.1 Install valve stem
Step 1: Apply a thin coat of UCN lubricant retained previously to the threads of the valve stem (p/n UCN-KT-FV, package of five, purchased separately).
Step 2: Install the valve stem finger-tight, then another half turn with a wrench, into the grounding port as shown.

3.9.2 Perform flash test
Step 1: Inject 12 to 14 psi of air into the closure using a hand pump. Check pressure regularly.

WARNING: To avoid a potentially hazardous situation that could result in death or serious injury, do not exceed 14 psi (100 kpa) gauge pressure. The closure could burst.
Step 2: Apply soapy water to the seal points and watch closure for signs of leakage (bubbling of soap). A correctly sealed closure maintains pressure with no leaks.
Step 3: After the flash test has been performed and the closure sealed correctly, carefully release pressure, remove the air valve and allow air to escape.
Step 4: Apply a thin coat of UCN lubricant retained previously to the threads of a solid, two-piece nonvented grounding screw.
Step 5: Install the screw into the end cap from the outside of the end cap finger-tight, then another half turn (approximately 40 to 60 in-lb).
3.10. Ground the Closure

Step 1: Remove the smaller insert from the grounding screw.
Step 2: Connect a grounding cable (not supplied) to the screw.
Step 3: Screw the smaller insert back into the screw.
Step 4: Tighten the insert using a small adjustable wrench.
Step 5: Terminate the other end of the ground per local practices.

3.11. Reenter the Canister Closure

Step 1: If it is necessary to reenter the canister closure, verify there is no pressure by removing external ground screw and allowing air to escape.
Step 2: Remove clamping ring by untightening the two bolts.
Step 3: Perform any tests, modifications or examinations of the closure that are necessary.
Step 4: Reinstall the clamping ring per Section 3.8.2.
Step 5: Perform pressure test per Section 3.9 on every entry.
Step 6: Reterminate the grounding cable, if applicable, per Section 3.10.

3.12. Reopen the End Cap

Step 1: Reenter the closure as described in Section 3.11.
Step 2: Separate the frame from the end caps by removing the two bolts.
Step 3: Remove the end cap sealing ring.
Step 4: Remove the two short bolts and one long bolt holding the end cap segments together.
Step 5: Insert a slotted screwdriver in the square opening on either side of the end cap to help pry open the end cap segments.
Step 6: Remove any sealing tape from inside the square opening on either side of the end cap where the bolt will be inserted to prevent the threads of the bolt from becoming clogged.
Step 7: Insert one of the short bolts into either hole that has a threaded insert (next to the outer closing holes) as shown.
Step 8: Tighten the short bolts on either side of the end cap while holding the screwdriver in place.
Step 9: Alternate tightening the bolts until the end cap halves are fully separated.

IMPORTANT: Do not use power tools to separate the end caps.