

3M

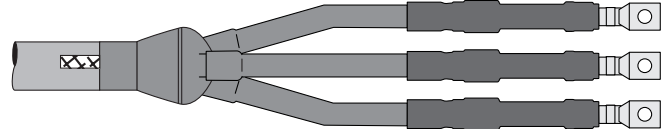
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QT-III

Cold Shrink Silicone Rubber

7600-T-3W Series Three Core Indoor Termination

Instructions

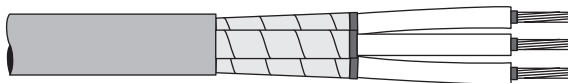


Kit Contents:

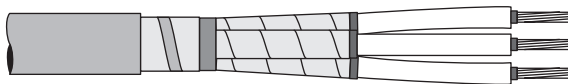
- 1—Cold Shrink Silicone Rubber Breakout Boot Assembly
- 3—Silicone Rubber Phase Re-jacketing Sleeve Assembly
- 3—Cold Shrink Silicone Rubber Termination Assembly
- 1—Roll Tinned Copper Ground Braid
- 3—Constant-Force Spring (Small)
- 1—Constant-Force Spring (Large)
- 2—Mastic Seal Strips
- 1—Roll Vinyl Tape
- 1—Cable Preparation Kit
- 1—Installation Instructions

Termination Application Ranges (Final determining factor is cable insulation diameter. Listed insulation ranges allow +2.54 mm (0.10") for shielding.)

Kit Number	BIL (kV)	Cable Insulation Range [mm (inches)]	3.3 kV (mm ²) IEC	3.3 kV (mm ²) JIS	5.0 kV (AWG) AEIC	6.6 kV (mm ²) JIS	6.6 kV (mm ²) IEC	8.7 kV (AWG) AEIC	10 kV (mm ²) IEC	15 kV (mm ²) IEC	15 kV (AWG) AEIC	20 kV (mm ²) IEC	25/28 kV (AWG) AEIC
7620-T95-3W	95	8.40–12.7 (0.33–0.50)	16–35	8–22	8–2	—	16–25	6–4	—	—	—	—	—
7621-T95-3W	95	12.7–17.8 (0.50–0.70)	50–95	38–60	1–3/0	—	35–70	2–2/0	10–50	16–25	—	—	—
7623-T95-3W	95	17.8–23.4 (0.70–0.92)	120–185	100–150	4/0–400	—	95–150	3/0–350	70–150	35–95	—	—	—
7624-T95-3W	95	23.4–30.0 (0.92–1.18)	240–300	200–250	500–750	—	185–300	400–600	185–300	120–185	—	—	—
7625-T95-3W	95	30.0–38.6 (1.18–1.52)	—	300–325	800–1000	—	—	750–1000	—	200–325	—	—	—
7621-T110-3W	110	12.7–17.8 (0.50–0.70)	50–95	38–60	1–3/0	14–38	35–70	2–2/0	10–50	16–25	2–1	—	—
7622-T110-3W	110	17.8–23.4 (0.70–0.92)	120–185	100–150	4/0–400	60–100	95–150	3/0–350	70–150	35–95	1/0–4/0	—	—
7624-T110-3W	110	23.4–30.0 (0.92–1.18)	240–300	200–250	500–750	150–250	185–300	400–600	185–300	120–185	250–450	—	—
7625-T110-3W	110	30.0–38.6 (1.18–1.52)	—	300–325	800–1000	300–325	—	750–1000	—	200–325	500–750	—	—
7622-T125-3W	125	17.8–23.4 (0.70–0.92)	120–185	100–150	4/0–400	60–100	95–150	3/0–350	70–150	35–95	1/0–4/0	25–70	—
7624-T125-3W	125	23.4–30.0 (0.92–1.18)	240–300	200–250	500–750	150–250	185–300	400–600	185–300	120–185	250–450	95–185	—
7625-T125-3W	125	30.0–38.6 (1.18–1.52)	—	300–325	800–1000	300–325	—	750–1000	—	200–325	500–750	240–300	—
7693-T150-3W	150	17.8–23.4 (0.70–0.92)	120–185	100–150	4/0–400	60–100	95–150	3/0–350	70–150	35–95	1/0–4/0	25–70	2–1/0
7694-T150-3W	150	23.4–30.0 (0.92–1.18)	240–300	200–250	500–750	150–250	185–300	400–600	185–300	120–185	250–450	95–185	2/0–250
7695-T150-3W	150	30.0–38.6 (1.18–1.52)	—	300–325	800–1000	300–325	—	750–1000	—	200–325	500–750	240–300	300–500



3/C Copper Tape Shield Cable



3/C Copper Tape Shield—Armored Cable

3M™ Cold Shrink
Silicone Rubber Indoor Termination
 for 3/C Copper Tape Shield Cables
 without Ground Wires

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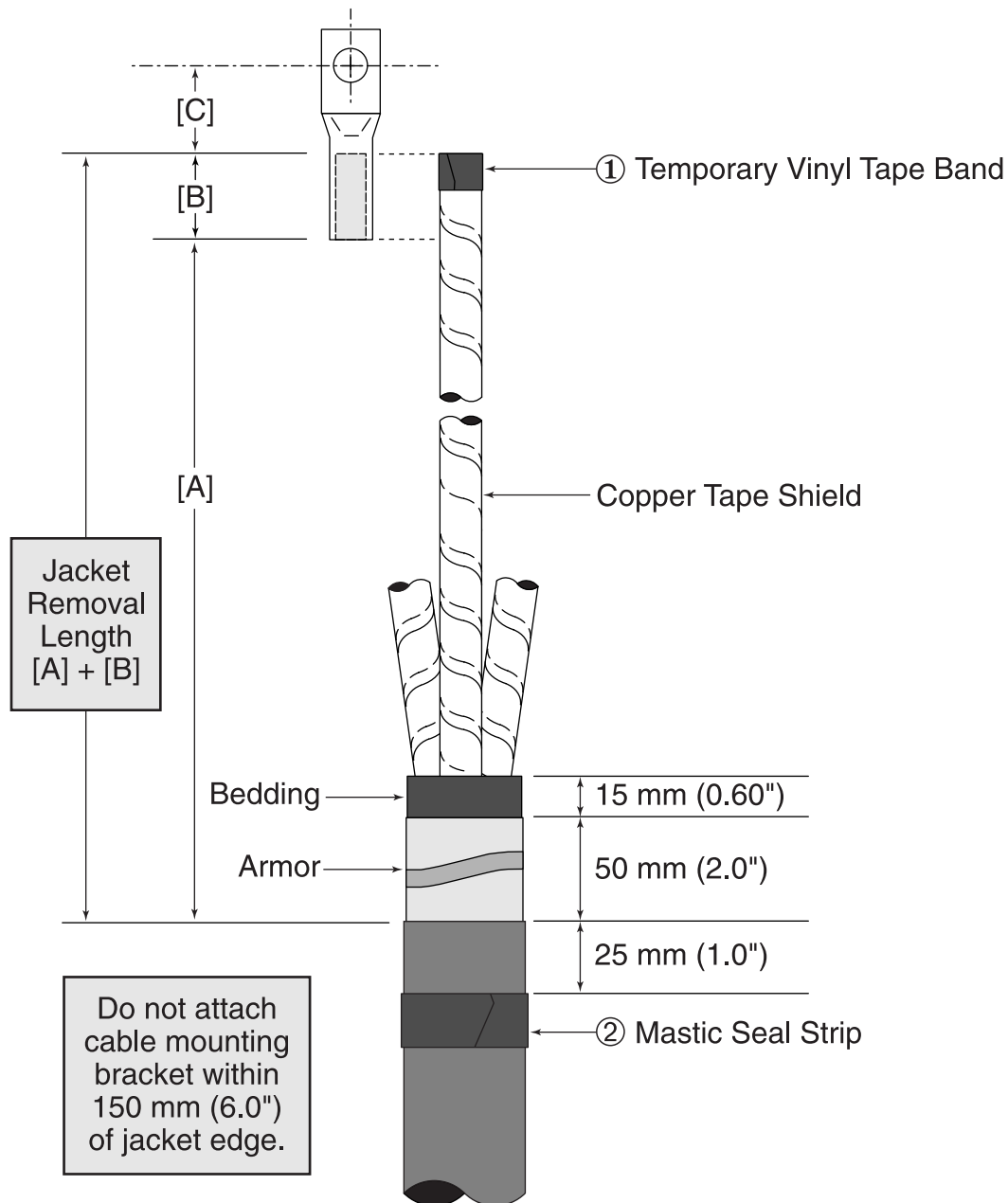
1.0 Prepare Cable.

- 1.1 Determine cable jacket removal length required for correct phase spacing and bolted terminal lug connections ($[A] + [B]$ Figure 1, based on the longest phase to be connected). Allow for dimension $[C]$ as needed.

Note: *Individual phase length and separation dimensions vary according to specific installation and equipment design requirements. They must, therefore, be determined by the installer and must conform to accepted engineering practices.*

- 1.2 Remove cable jacket, armor, bedding (inner sheath) and core fillers according to Figure 1 dimensions. Secure each copper tape shield end with a temporary band of vinyl tape (① Figure 1).
- 1.3 Using light tension, wrap a mastic seal strip around cable jacket 25 mm (1.0") below the cut edge (② Figure 1).

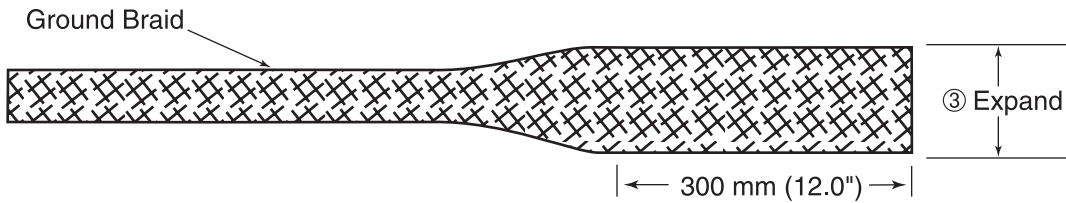
Figure 1



2.0 Attach Metallic Shield Grounding Braids.

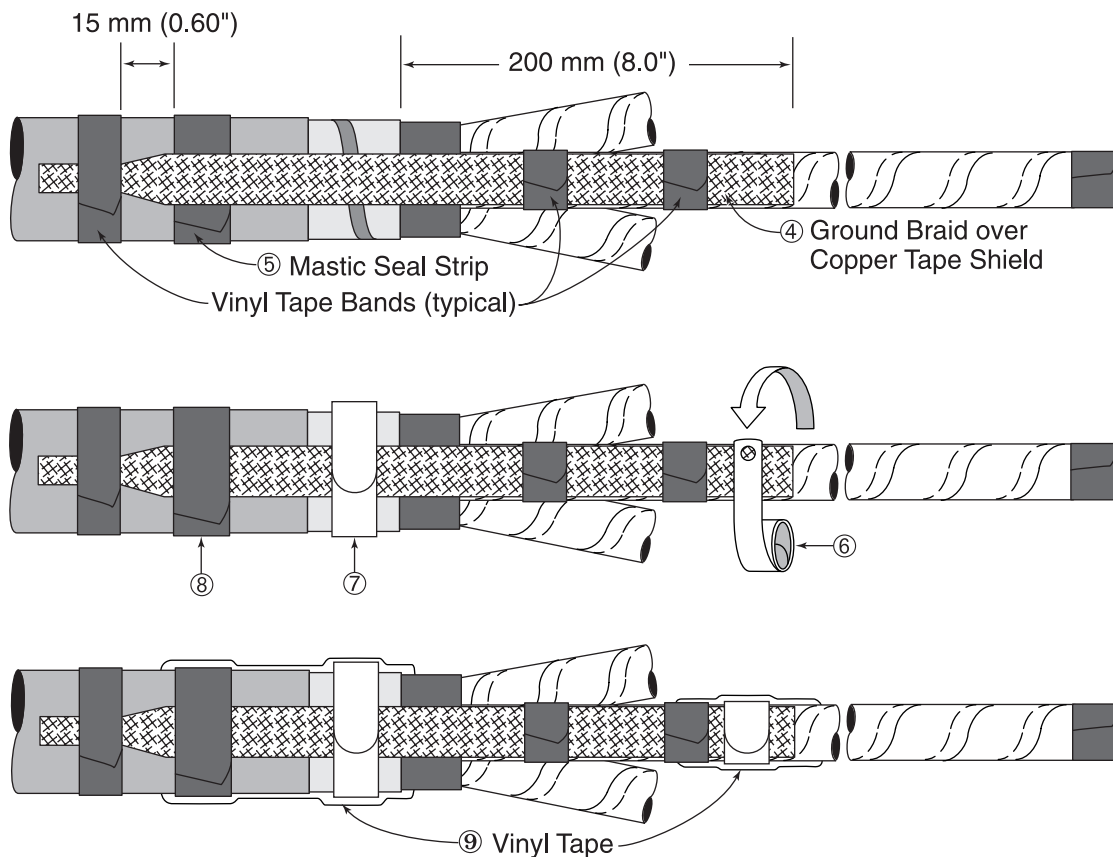
2.1 Cut supplied tinned copper grounding braid into three equal 600 mm (2.0') lengths. Expand each braid end for a distance of 300 mm (12.0") (③ Figure 2).

Figure 2



2.2 Position each expanded ground braid end over cable as shown in Figure 3. Using vinyl tape bands, secure upper braid end to copper tape shielding 200 mm (8.0") beyond armor edge (jacket edge for non-armored cable, ④ Figure 3). Secure to cable jacket 15 mm (0.60") below mastic seal strip (⑤ Figure 3).

Figure 3



2.3 Connect ground braid upper ends to copper tape shield using small constant force spring (⑥ Figure 3).

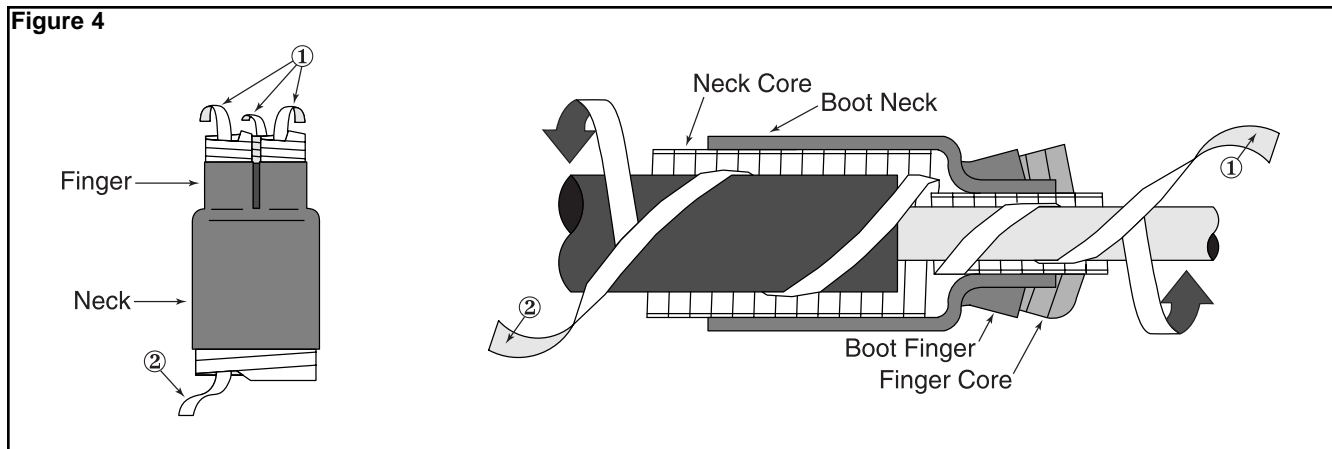
Armored cables: Connect three ground braids to cable armoring using one large constant force spring (⑦ Figure 3). Following application, cinch (twist with hand) each spring to tighten.

2.4 Apply a second mastic seal strip over ground braids and previously-applied mastic strip (⑧ Figure 3).

2.5 Apply two highly stretched half-lapped layers vinyl tape over mastic seal strips and constant force springs (⑨ Figure 3).

3.0 Install Cold Shrink Silicone Rubber Breakout Boot Assembly. **COPY**

3.1 Inspect boot assembly and confirm that all loose plastic core ends are free as shown (① and ② Figure 4).



3.2 To ensure that the breakout boot can be fully seated into the breakout area of the cable, it will be necessary to unwind a few turns of each finger core.

Caution: Do not unwind too far such that boot fingers begin to collapse.

3.3 Hold loose neck-end core ribbon ② to one side so that it can not become trapped between cable phases. Slide boot assembly over cable end, guiding individual cable cores through boot assembly fingers.

Hint: View end of cable through finger cores to ease cable phase insertion.

3.4 Slide breakout boot assembly onto cable as far as it will go. Large neck-end should fully extend over cable jacket.

Hint: Spread cable phases while sliding boot assembly to ease the installation.

3.5 Remove large neck-end core. Grasping loose core ribbon end ②, pull and unwind counter clock-wise around cable.

3.6 Remove each finger core. Grasping loose core ribbon end ①, pull and unwind counter clock-wise around each cable phase leg.

4.0 Install Silicone Rubber Re-jacketing Sleeves.

4.1 From the chart below, determine the correct [A] dimension for the QT-III Product being installed.

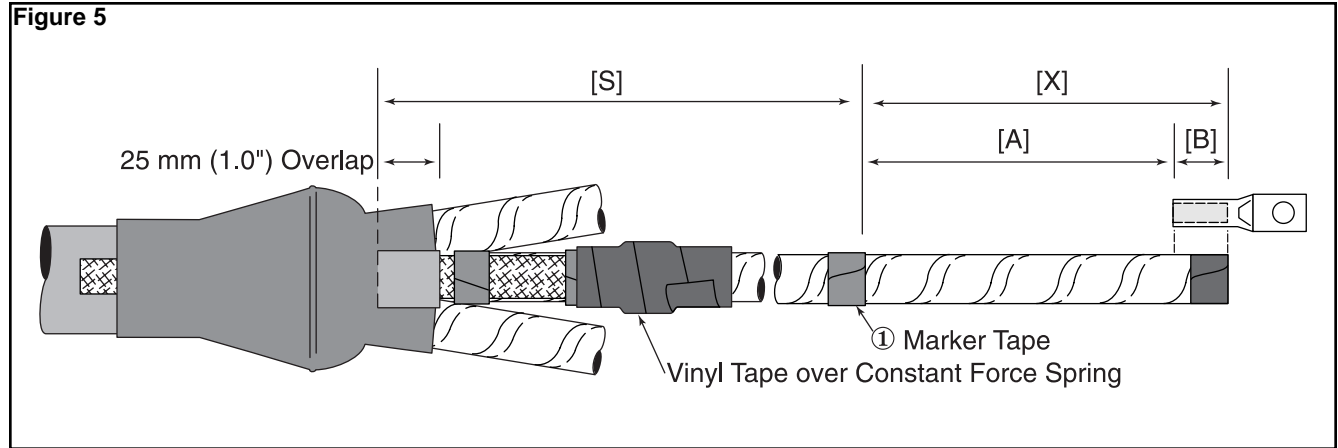
Dimension [A] (According to QT-III Termination Product Number)

7620-T95-3W 7621-T95-3W 7623-T95-3W 7624-T95-3W 7625-T95-3W	7621-T110-3W 7622-T110-3W 7624-T110-3W 7625-T110-3W	7622-T125-3W 7624-T125-3W 7625-T125-3W	7693-T150-3W 7694-T150-3W 7695-T150-3W
160 mm (6.3")	215 mm (8.5")	180 mm (7.1")	305 mm (12.0")

4.2 Place a vinyl tape marker on each cable phase leg at dimension [X] (① Figure 5).

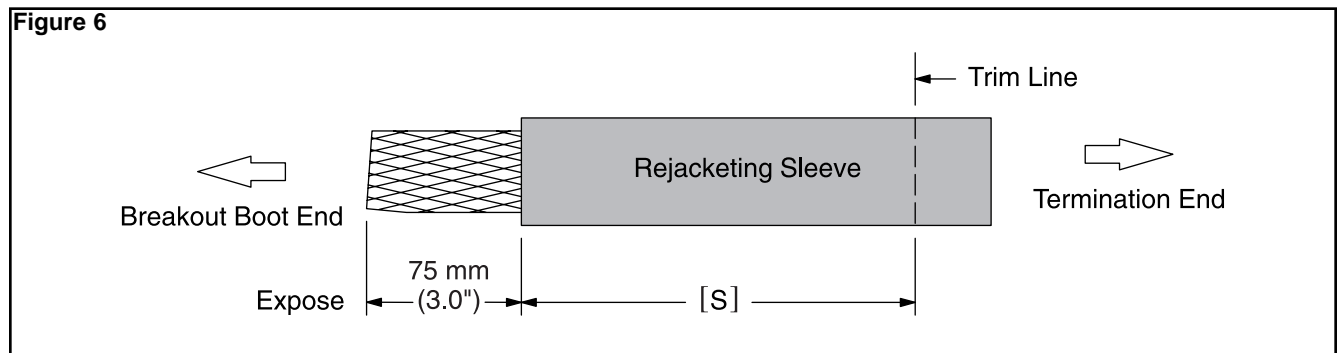
Note: $[X] = [A] + [B]$ (Lug barrel depth). Allow for crimp growth when using aluminum lugs.

4.3 Determine required re-jacketing sleeve length for each phase leg (Distance [S], Figure 5). Be sure to include 25 mm (1.0") breakout boot finger overlap in measurement.



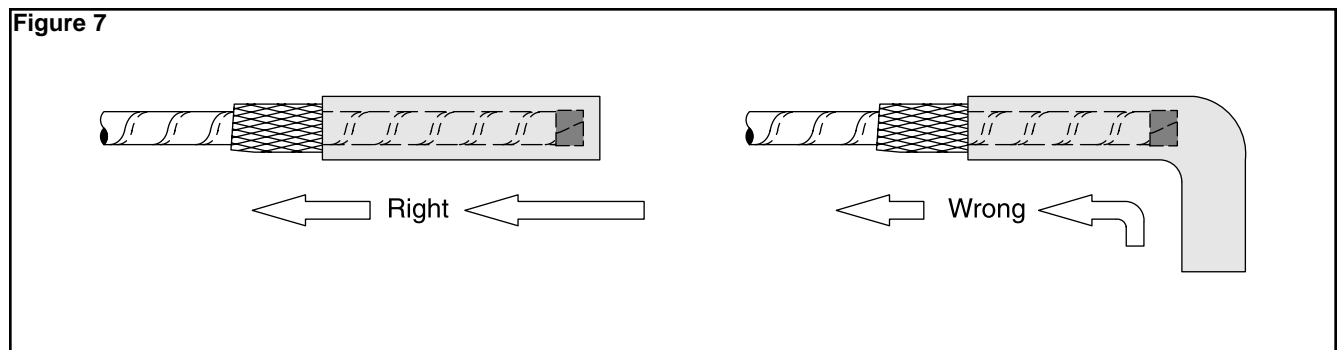
4.4 Using scissors, trim re-jacketing sleeve assembly to length required (Figure 6). Cut tubing and inner braid together.

Note: Inner polyester braid should extend approximately 75 mm (3.0") beyond re-jacketing tube end before cutting. There is no need for termination-end braid exposure.



4.5 Guide one re-jacketing sleeve assembly over each cable phase leg (Figure 7).

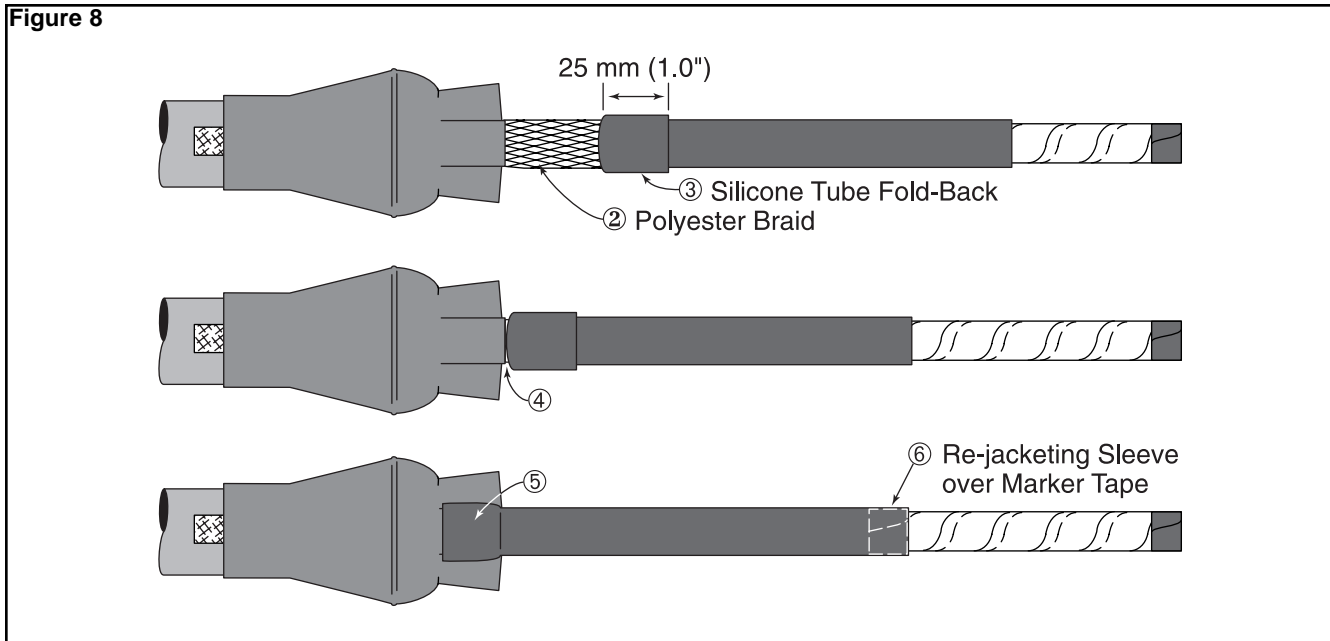
Push sleeve assembly from above. Continuously guide the free end maintaining sleeve-to-cable-core alignment.



- 4.6 Slide re-jacketing sleeve until inner polyester braid is adjacent to breakout boot finger (② Figure 8).
- 4.7 Fold outer silicone tubing back on itself for 25 mm or 1.0" (③ Figure 8) and trim off exposed polyester braid.

Note: Do not damage silicone tubing while cutting. Sleeve assembly may be rotated to ease trimming. When doing so, rotate in the direction of the cable copper tape shield wrap.

Figure 8



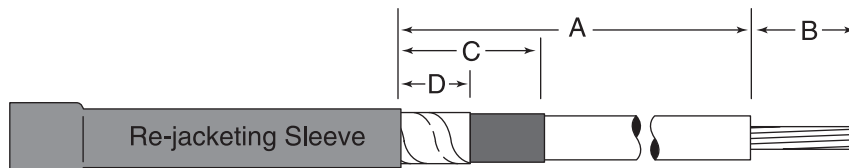
- 4.8 Slide re-jacketing sleeve assembly down until folded tube contacts edge of breakout boot finger (④ Figure 8).
- 4.9 Pull folded silicone tube section down onto breakout boot finger (⑤ Figure 8).

Note: Re-jacketing tube end should align with upper edge of installed marker tape (⑥ Figure 8). Minor tube adjustments can be made as needed.

5.0 Install QT-III Cold Shrink Termination Assemblies.

- 5.1 Prepare cable phase legs according to dimensions shown (Figure 9).

Figure 9

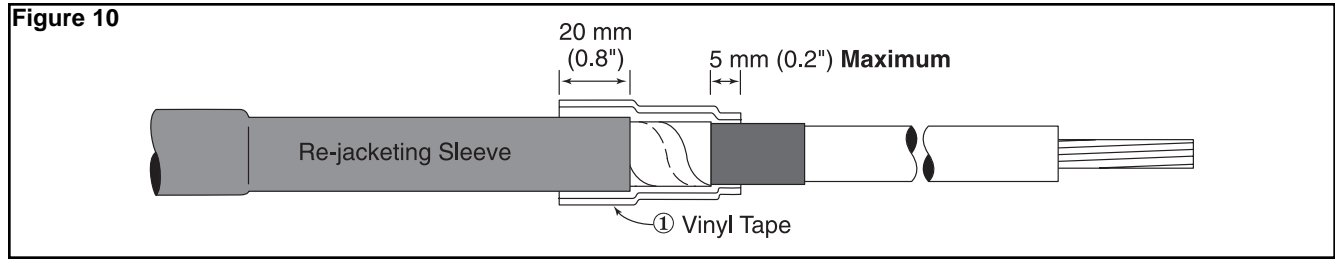


	7620-T95-3W 7621-T95-3W 7623-T95-3W 7624-T95-3W 7625-T95-3W	7621-T110-3W 7622-T110-3W 7624-T110-3W 7625-T110-3W	7622-T125-3W 7624-T125-3W 7625-T125-3W	7693-T150-3W 7694-T150-3W 7695-T150-3W
A	160 mm (6.3")	215 mm (8.5")	180 mm (7.1")	305 mm (12.0")
B	Lug Depth*	Lug Depth*	Lug Depth*	Lug Depth*
C	40 mm (1.6")	65 mm (2.6")	40 mm (1.6")	65 mm (2.6")
D	20 mm (0.8")	30 mm (1.2")	20 mm (0.8")	30 mm (1.2")

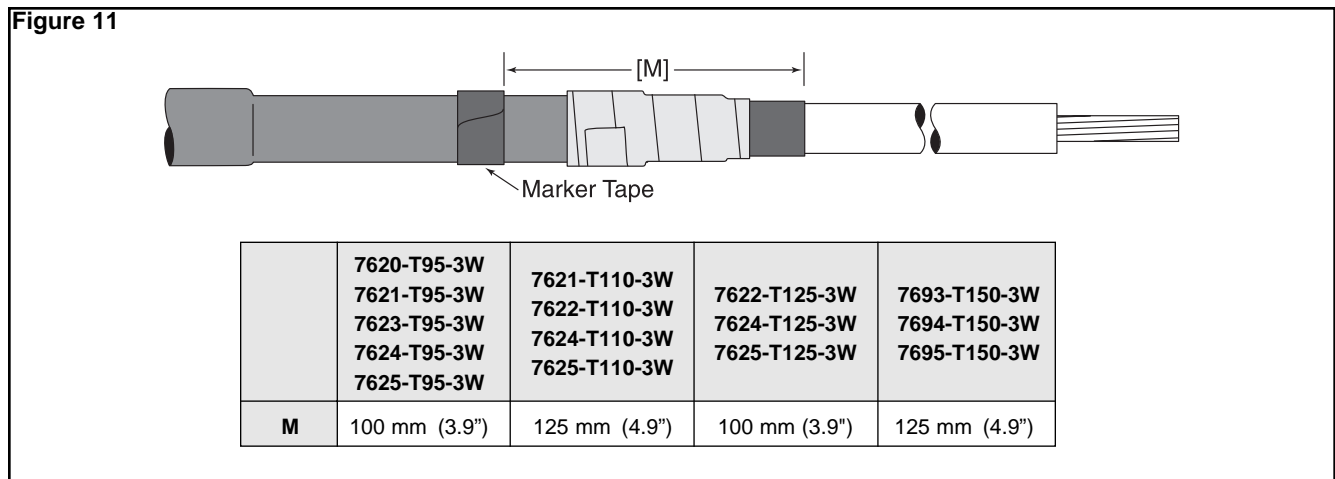
*Allow for crimp growth when using aluminum lugs and connectors.

5.2 Secure re-jacketing sleeve and cable copper tape shield ends with two half-lapped layers of vinyl tape (① Figure 10). Start taping 20 mm (0.8") over re-jacketing sleeve, extend 5 mm (0.2") over cable semi-con and return to starting point.

Note: Do not exceed 5 mm (0.2") semi-con overlap.



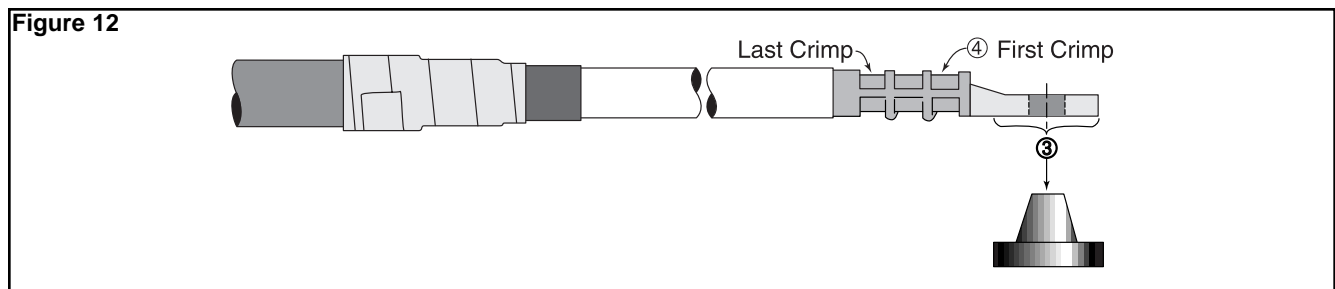
5.3 Place a termination installation marker tape at position [M] (Figure 11).



5.4 Install terminal lugs.

Note: Special Case—When lug spade dimension is larger than inside diameter of white plastic termination core, position termination assemblies over cable phase legs prior to installing lugs. Remove inner red shipping core from each termination assembly by pulling and unwinding the loose red core ribbon. Position one termination over each cable phase leg. Each termination assembly must be positioned with its loose white core ribbon end directed toward the open (cut) end of the cable. Continue with lug installations.

- A. For Aluminum Conductors—Thoroughly wire brush conductor strands to remove aluminum oxide layer. Immediately insert conductor into terminal lug barrel as far as it will go.
- B. Ensure that each lug face is parallel to equipment bushing or lug connection interface (③ Figure 12).



- C. Crimp terminal lug according to manufacturer recommendations. Start at the upper end as shown (④ Figure 12). Remove all traces of oxide inhibitor that may have come out of lug barrel during crimping.
- D. Thoroughly clean primary insulation and lug barrel area using solvent wipe from supplied cable preparation kit.

Note: Do not allow solvent contact with cable semi-conductive screen.

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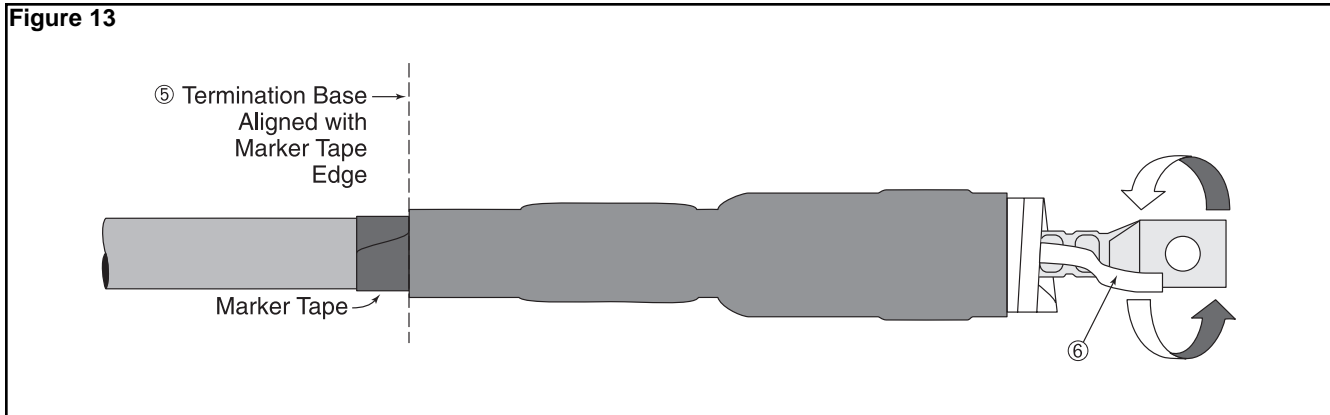
5.5 Install QT-III Termination assemblies.

- A. Remove the inner red shipping core from the termination assembly by pulling and unwinding the loose red core end.
- B. Position the termination assembly with the loose white core ribbon directed toward the terminal lug.
- C. Align the base of the termination (not the plastic core) with the installation marker tape as shown (⑤ Figure 13).
- D. Grasp the loose white core ribbon. Pull and unwind counter clock-wise around cable phase end (⑥ Figure 13).

Note: *After the silicone rubber termination makes adequate contact (approximately 25 mm or 1.0"), release the assembly and continue unwinding the core. Do not pull or push on the assembly while unwinding.*

- E. Remove the installation marker tape.

5.6 Collect shield-grounding braids together and connect to system ground (earth) according to normal practice.



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