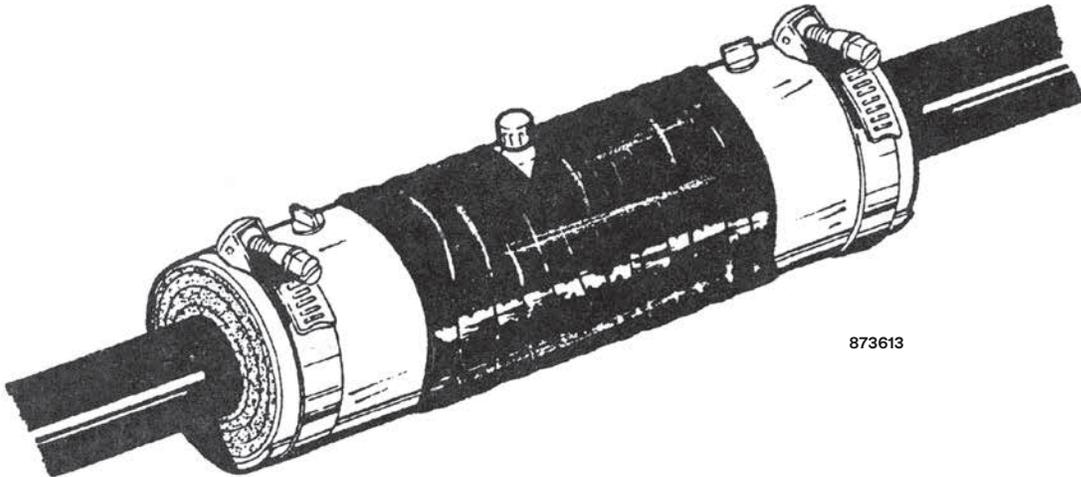


3M™ Scotchcast™ Blocking Closure Kits 4530 and 4530-L

Installation Instructions



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Contents

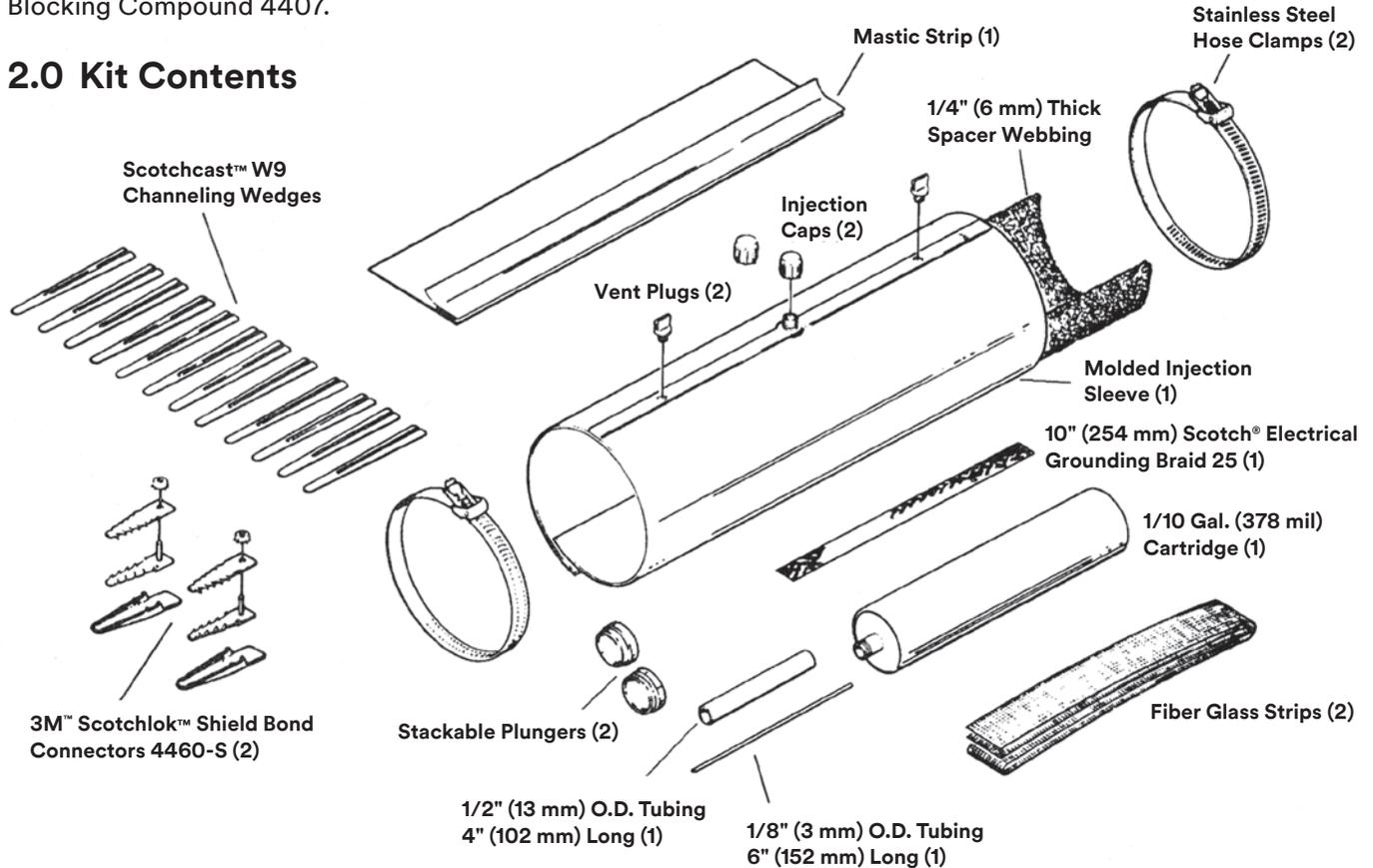
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1.0 General

This Instruction Manual describes the procedure for constructing open sheath pressure plugs using the 3M™ Scotchcast™ Blocking Closure Kits 4530 and 4530-L, using 3M™ Scotchcast™ Encapsulating and Blocking Compound 4407.

2.0 Kit Contents



Note: 3M Scotchcast Blocking Closure Kit 4530-L also includes a funnel.

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2.1 Additional Materials Required

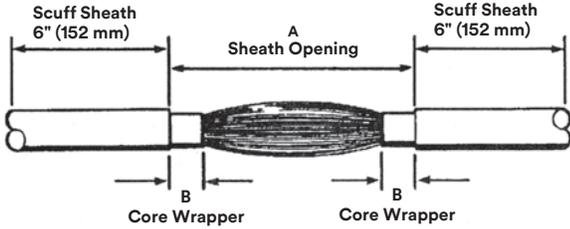
- 3M™ Scotchcast™ Encapsulating and Blocking Compound 4407

Note: *This compound is a universal plugging compound which can be used to plug air core PIC cables as well as paper and pulp cables.*

- Caulking Gun
- B Sealing Tape
- 3/4" (19 mm) DR Tape
- 3M™ Scotchcast™ Sheath Scuff 4435
- 1 1/2" (38 mm) Scotch® All Weather Telephone Vinyl Plastic Tape 88T
- Solid Bond Strap

3.0 Cable Preparation – Single Sheath Cable

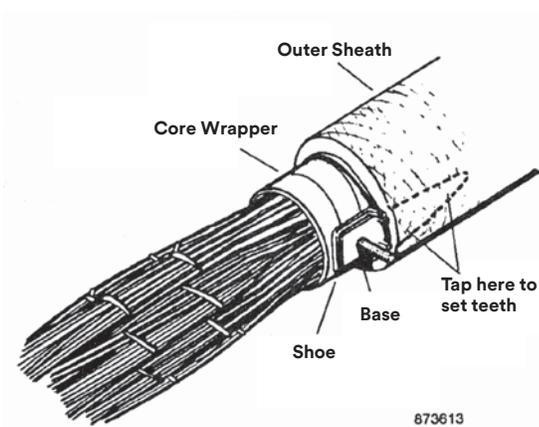
3.1 Prepare sheath and shield as shown. Cut shield flush with outer sheath. Thoroughly scuff 6" (152 mm) of cable jacket.



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	4530	4530-L
A	8" (203 mm)	12" (305 mm)
B	¾" (19 mm)	1½" (40 mm)

Note: 3M™ Scotchlok™ Shield Bond Connectors 4460-S are inserted into the cables SIDE so the bonding strap doesn't interfere with compound flow.



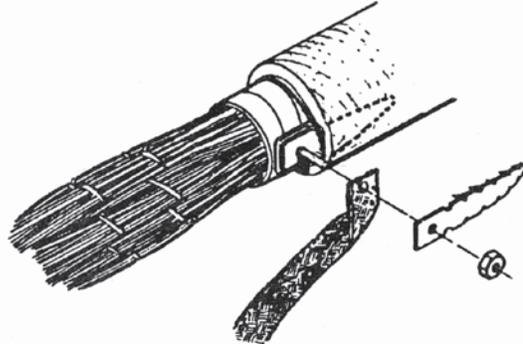
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a. Insert plastic shoe between shield and core wrapper until stops meet outer sheath. Insert base between shield and shoe until stops meet outer sheath. Omit shoe on smaller diameter 1.25" (32 mm) or less PAP cable.

Note: For cables ¾" (19 mm) In diameter and less, slit sheath 1" (25 mm) 180° from connector location.

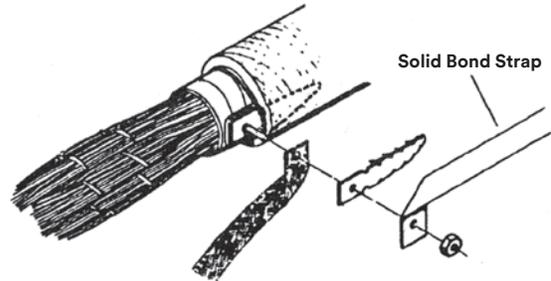
b. Tap outer sheath to set connectors teeth.

c. Bend the bonding braid 90° 1½" (40 mm) from each end. Separate the strands and push braid onto shield connector studs. Set shield connector top on stud and fasten assembly with locknut.



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d. For external bonds, a piece of solid bond strap is required. Assemble as shown and fasten with locknut.



e. For an isolation joint, solid bonding strap should be used.

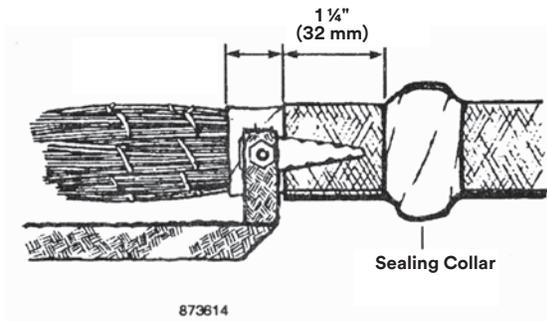


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3.2 Sealing Collar Installation

Note: Sealing collars are built to ensure a good block with no leaks.

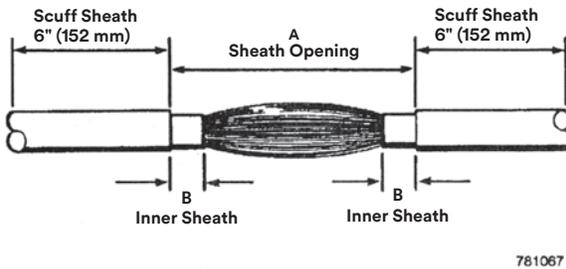
- f. Build sealing collars just beyond nose of shield connectors.



- g. Wrap one layer of 3/4" (19 mm) wide B Sealing Tape around cable.
- h. Completely overwrap B Sealing Tape with highly stretched 3/4" (19 mm) wide DR Tape, white side out.

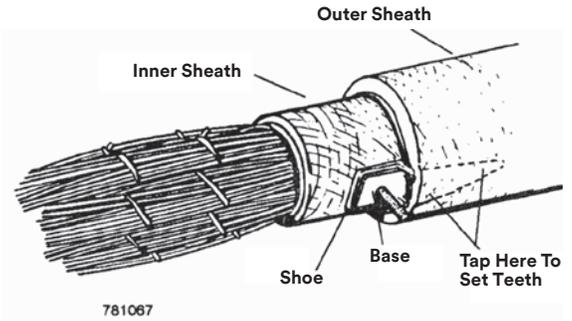
4.0 Cable Preparation Double Sheath Cable

- 4.1 Prepare outer sheath and shield as shown below.
- 4.2 Thoroughly scuff 6" (152 mm) of outer sheath and the exposed inner sheath.



	4530	4530-L
A	8" (203 mm)	12" (305 mm)
B	3/4" (19 mm)	1 1/2" (40 mm)

- 4.3 3M™ Scotchlok™ Shield Bond Connectors 4460-S should be inserted so the bonding strap doesn't interfere with compound flow.



- a. Insert plastic shoe between shield and inner sheath until stops meet outer sheath. Insert base between shield and shoe until stops meet outer sheath. Omit shoe on smaller diameter 1.25" (32 mm) or less PAP cable.

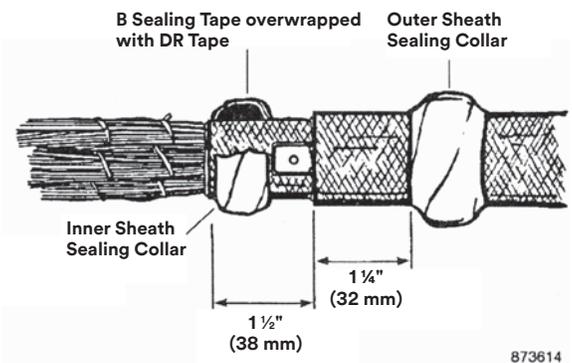
Note: To ease connector insertion on cables 3/4" (19 mm) in diameter and less, slit sheath 1" (25 mm) 180° from connector location.

- b. Tap outer sheath to set connectors teeth.

4.4 Sealing Collar Installation

Sealing collars are built to ensure a good block with no leaks.

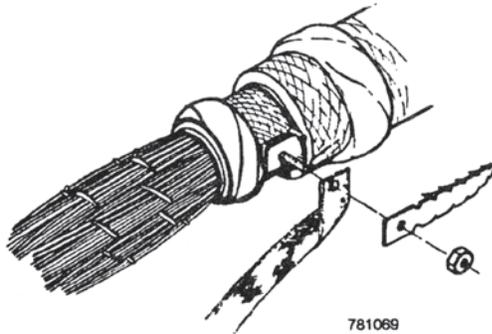
- a. Build sealing collars on outer sheath, just beyond nose of shield connectors. Build additional sealing collars on inner sheath, just inside connector.



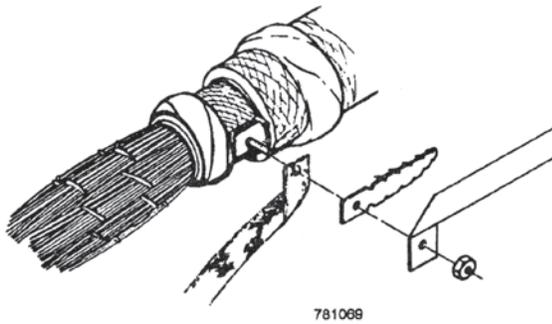
- b. Wrap one layer of 3/4" (19 mm) wide B Sealing Tape around cable.
- c. Completely overwrap B Sealing Tape with highly stretched 3/4" (19 mm) wide DR Tape, white side out.

Note: B Sealing Tape is conductive and must not come in contact with conductors.

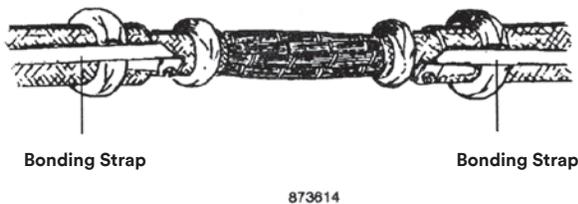
- d. Bend the bonding braid 90° 1 ½" (40 mm) from each end. Separate the strands and push onto shield connector studs. Set shield connector top on stud and fasten assembly with locknut.



- e. For external bonds, a piece of solid bond strap is required. Attach bonding braid and strap. Set shield connector top on stud and fasten assembly with locknut.

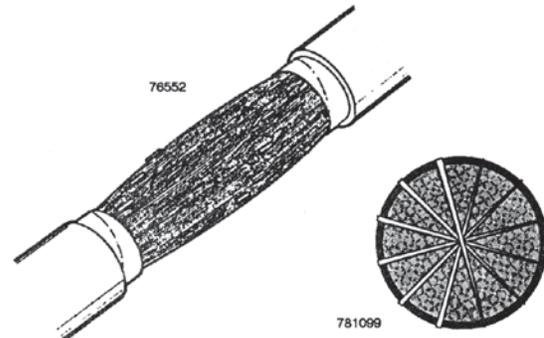


- f. For an isolation joint, solid bonding strap should be used.



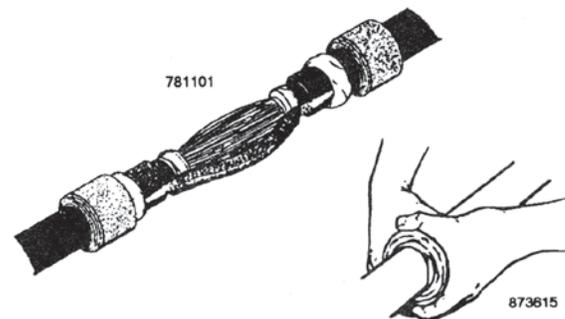
5.0 Conductor Preparation

- 5.1 Cut and remove all accessible binders. (To make binders more accessible, balloon conductors). Make sure all binders have been cut.
- 5.2 Insert channeling wedges. Trim the wedges small ends flush with bundle.

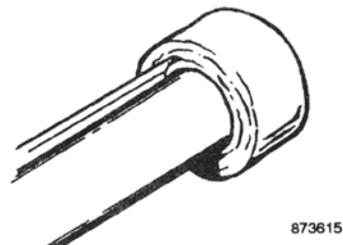


Note: For vertical installation go to step 6.10.

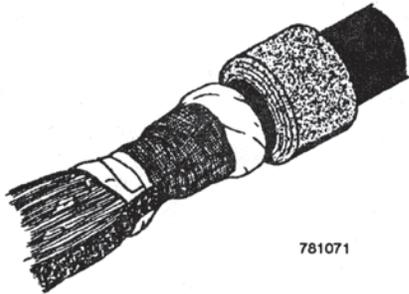
- 5.3 Build closure end collars with B Sealing Tape. Position so that they are just inside the ends of the closure body. End collars must be equal in diameter and slightly higher than shield connector studs ½" (13 mm). Compress the end collars to remove any gaps between the tape layers by placing your hands around the end collars and squeezing.



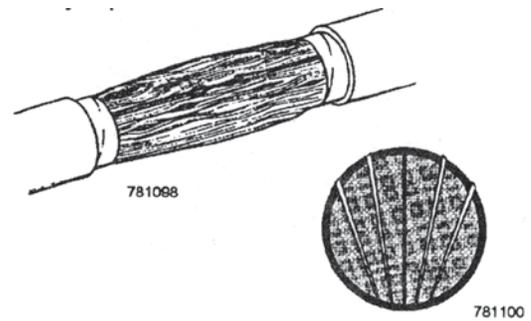
Note: For external bonds, seal bond strap in end collars with at least one wrap of B Sealing Tape above and below bond strap.



- 5.4 Wrap fiber glass strips over edges of the sheath opening. Punch ends of fiber glass strip directly onto shield connector stud to hold in place. (Do not use vinyl tape).



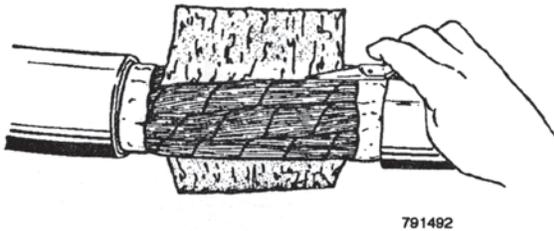
- f. Insert channeling wedges. Trim wedges flush with bundle by cutting excess wedge length from small ends.



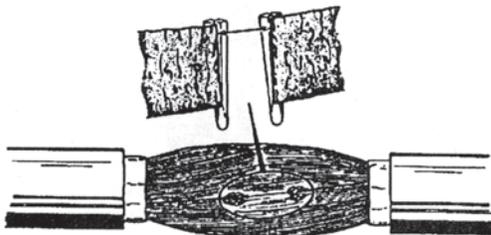
- 5.5 Preparation of screened cable.

Note: It may be necessary to remove binders to get at screens.

- a. Remove as much of the external exposed screen as possible.



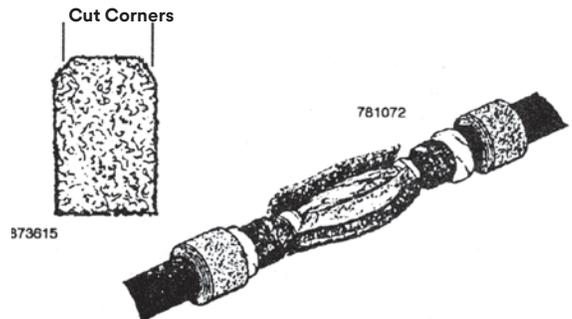
- b. Insert two wedges 1" (25 mm) apart next to internal screen.



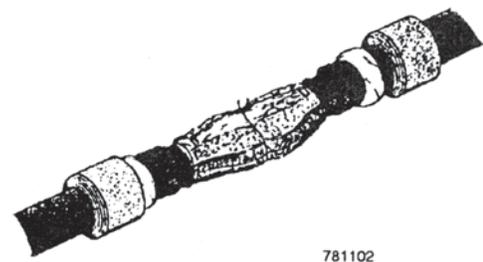
- c. Insert two more wedges on other side of screen across from first pair of wedges.
- d. Remove a 1" (25 mm) section of internal screen between wedges.
- e. Leave wedges in place. Do not remove wedges after screen is cut out. (Wedges will insulate cut edges of screen from conductors).

6.0 Closure Installation

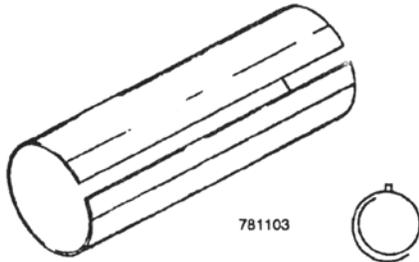
- 6.1 Cut corners off one end of spacer webbing so webbing can easily be slipped under bonding strap. Wrap spacer webbing under bonding strap and around conductor bundle. Cut off excess length, leaving a 1" (25 mm) gap at top so spacer webbing doesn't interfere with compound flow.



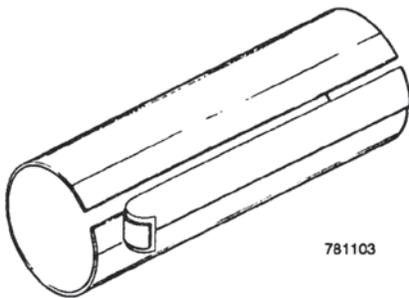
- 6.2 Tie trimmed webbing in place with a length of scrap conductor. Do not use vinyl tape. Do not compress conductor bundle.



- 6.3 To size closure, wrap tightly over end collars. If closure overlap interferes with injection port or vent holes, remove section(s) by folding closure at the grooves then cutting along the fold.

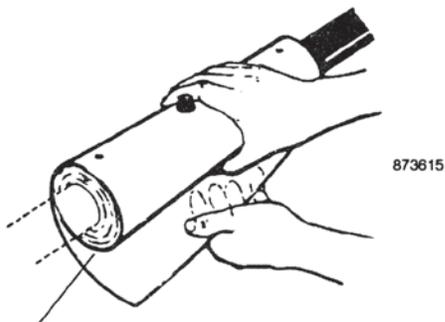


- 6.4 Stick mastic strip along outside edge of one closure flap, leaving the release liner in place.



- 6.5 Place closure over end collars with injection port as nearly vertical as possible. Be sure port is not blocked by spacer webbing, bonding strap, etc.

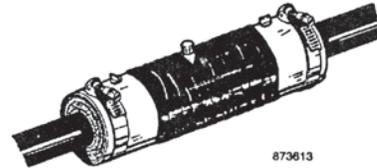
- 6.6 Hold closure firmly on end collars. Pull closure flap with mastic strip tightly against end collars. Closure ends must be firmly seated on end collars. Remove release liner from mastic strip. Pull other flap tightly against end collar and over mastic strip. Seal closure overlap to mastic strip.



Edge With
Mastic Strip

- 6.7 Center hose clamp on end collars and tighten to ensure a good seal between closure and end collars.

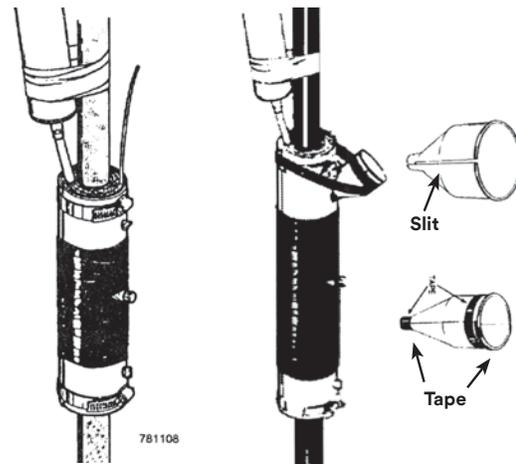
- 6.8 Install vent plugs in open position. Starting at center of closure and working to each end, apply two half-lapped layers of 1 1/2" (38 mm) Scotch® All Weather Telephone Vinyl Plastic Tape 88T around closure between vent holes, to reinforce the mastic seal. A restricting tape can also be used to provide additional strength.



- 6.9 Tap hose clamps lightly and retighten.
- 6.10 For kits with funnels, insert funnel into one fill hole on closure and thread injection cartridge onto injection port. On inclined cable, place funnel in highest fill port. Place cap in remaining fill hole, overwrap with Scotch® All Weather Telephone Vinyl Plastic Tape 88T, and start vent plugs into vent holes.

6.11 Vertical Cable

- a. Build upper end collar with both plastic tubes between the end collar layers and protruding not more than 1/8" (3 mm) beyond inside edge of end collar.



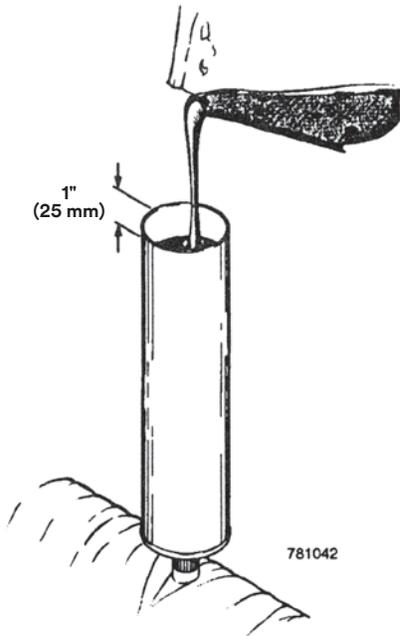
- b. Build lower end collar to same diameter as upper end collar.
- c. Complete closure installation following steps 6.1 - 6.9. Tighten vent plugs and install injection cap to seal closure.
- d. Tape the cartridge to the cable.
- e. For kits with funnels, place the funnel into the upper fill hole and tape in position. The funnel maybe slit and taped to reduce its size.

7.0 Compound Delivery

- 7.1 Screw cartridge onto injection port or tube.
- 7.2 Thoroughly mix 3M™ Scotchlok™ Encapsulating and Blocking Compound 4460-S per instructions on guard bag.

Note: For health, safety and disposal information refer to label or Safety Data Sheet for 3M Scotchcast Encapsulating and Blocking Compound 4407.

- 7.3 Strip compound from corners of bag and pour into cartridge.



- 7.4 Fill closure with compound as quickly as possible, repeating steps 7.2 and 7.3, allowing air bubbles to escape through vents. See Table One for the approximate amount of compound needed. When closure is full and compound starts to flow from vent(s), tighten plugs. On vertical closures, bend vent tube over and tape.

Note: Closure must be filled quickly so the compound can fully saturate the core. If the compound doesn't flow quickly into the closure, it will have to be injected (especially in cooler temperatures when the viscosity of the compound is higher).

Note: More compound may be required. Compound requirements are dependent on end collar size and wire gauge. Larger end collars and coarser wire gauges will require more compound. The Tables show minimum compound needed. Make sure enough compound is available to complete compound delivery. Extra plungers are available in the 4477-R PUP (Plugging Under Pressure) Petcock Replenishment Kit

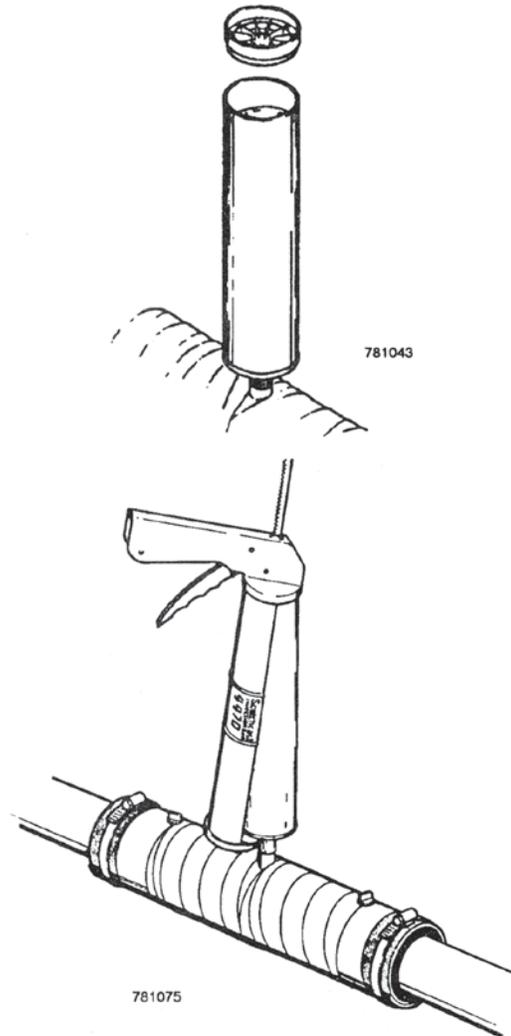
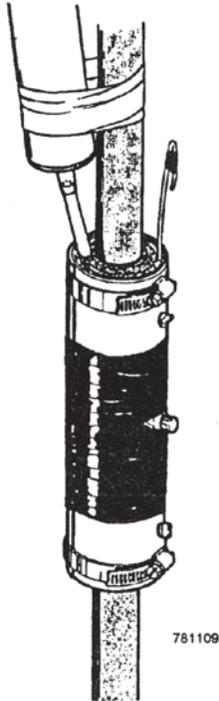
Table Two - 3M Scotchcast Blocking Closure Kit 4530-L
Approximate Minimum Compound Requirements

Cable O.D.	Minimum Compound needed
2.5" (64 mm)	3000 grams
3.0" (76 mm)	4000 grams
3.5" (89 mm)	5000 grams
3.5"+ (89 mm+)	6000 grams

Table One - 3M Scotchcast Blocking Closure Kit 4530
Approximate Minimum Compound Requirements

Cable O.D.	Minimum Compound needed	Suggested 4407 bags needed
1" (25 mm)	24 oz. (680 g)	1D + 1B
2" (51 mm)	48 oz. (1361 g)	2D + 1B
3" (76 mm)	72 oz. (2041 g)	3D + 1C
3"+ (76 mm+)	96 oz. (2722 g)	4D + 1C

- 7.5 Add compound to refill cartridge to within 1" (25 mm) of top.
- 7.6 Press a plastic plunger (tape side down, do not remove tape) into cartridge. Place caulking gun on cartridge and inject compound slowly about one "click" every ten seconds)



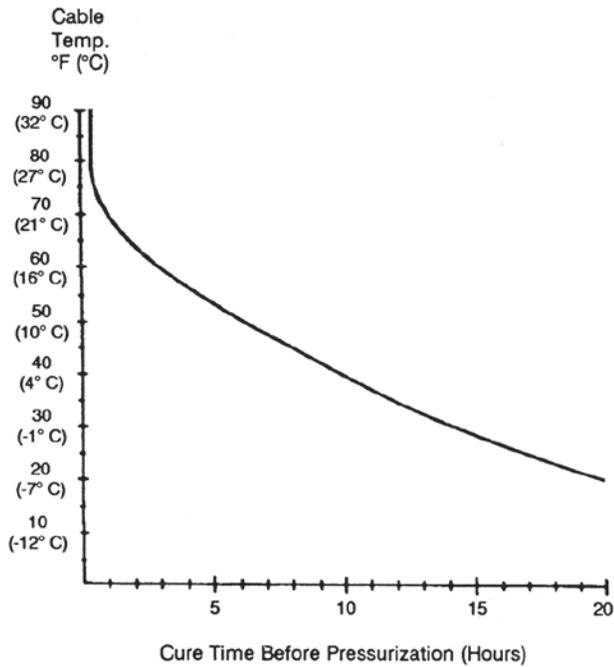
Important - Do Not Rush Injection

- 7.7 With larger size cables; if air bubbles or voids remain inside the closure, or if no back pressure is felt, a second cartridge should be injected.
- Remove caulking gun. It is not necessary to remove first plunger.
 - Refill cartridge to within 1" (25 mm) of top.
 - Press 2nd stackable plunger into cartridge (tape side down, do not remove tape).
 - Replace caulking gun.
 - Inject compound (taking about one "click" every 10 seconds).

- 7.8 Remove caulking gun and cartridge together (so back pressure won't force compound back into cartridge), then quickly push cap onto injection port. Block is complete after compound has cured.
- 7.9 See Graph 1 for approximate time before applying pressure to block.

Graph 1

**3M™ Scotchcast™ Encapsulating and Blocking Compound 4407
Direct or Open Sheath Blocks
Approximate Times Before Pressurization**



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