Instructions for

# Scotchcast®

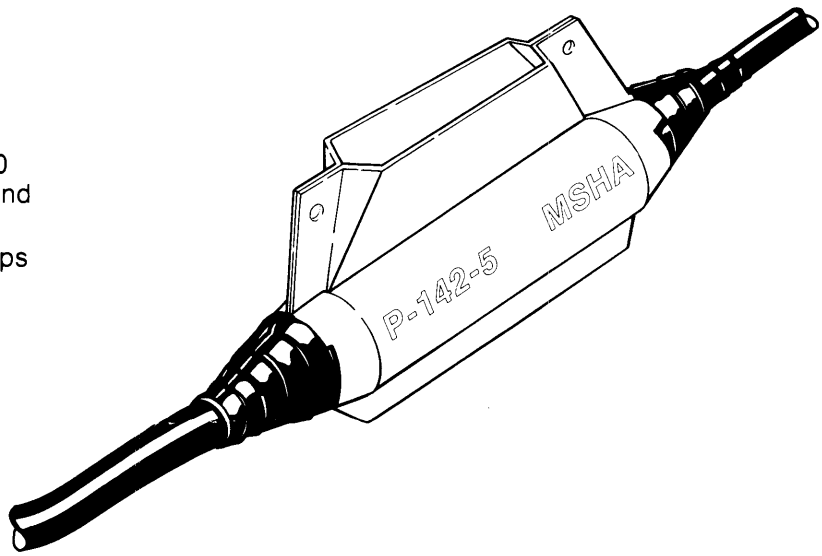
3M

# 82-F Series
# Flexible Power Cable Splice Kits

**for use in weather-exposed, direct burial or submerged locations. For making inline splices on non-shielded portable power cables and cords rated up to 5 kV for 1-conductor, and up to 1000 V. (600/2000 V. mine portable cable) for multi-conductors.**

**Kit Contents:**

| 82-F1 | 82-F2 | |
|---|---|---|
| 1 | 1 | Removable Mold |
| 1 sz. B | 1 sz. C | SCOTCHCAST Brand 2130 Compound in "Unipak" Brand Container |
| 2 | 2 | Scotch Brand 23 Tape Strips |
| 1 | 1 | Abrasive Strip 80J Grit |




These kits will accommodate the following copper connector and conductor sizes:

Table 1

| Kit No. | Cable O.D. Range (Inches) | No. of Conductors | Connection Max. O.D. (Inches) | Voltage Rating (Max. Volts) | Conductor Size Range (AWG) |
|---|---|---|---|---|---|
| 82-F1 | 0.25 – 0.80 | 1 | 0.62 (Connector) | 5000 | 6 – 1/0 |
| | | Multi | 0.90 (Connector Bundle O.D.) | 1000 (600/2000)* | ** |
| 82-F2 | 0.80 – 1.20 | 1 | 0.82 (Connector) | 5000 | 2/0 – 4/0 |
| | | Multi | 1.30 (Connector Bundle O.D.) | 1000 (600/2000)* | ** |

*Mine Portable Cable Rating
**Base Selection on Cable O.D. Range

**Technical Information:**

For use on Non-shielded Portable Power Cable & Portable Cords

— Single Conductor — to 5 kV, 6 AWG - 4/0
— Multi Conductor — to 1000 V., Cable O.D. 0.25″ — 1.20″
— 600/2000 V. Mine portable cable
— P-142-5 MSHA — Mine Safety & Health Administration Acceptance

| Issue | Date | Rev. | Ch. |
|---|---|---|---|
| 1 | Jan. 1, 1985 | | |
| Not to scale | | Ch. | |
| Dr. | | App. | |

**2047 X159**

**Electrical Products Division/3M**
St. Paul, MN 55144 Made in U.S.A.

**Scotchcast®**
**82-F Series**
**Flexible Power Cable**
**Splice Kits**

**Single Conductor**

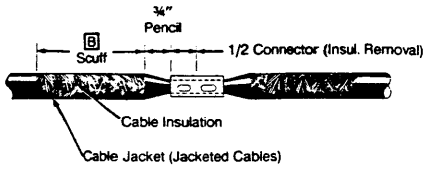



Figure 1

**Multi-Conductor**

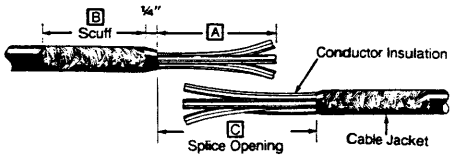



Figure 2

**A. PREPARE CABLE**

Table 2

| Kit No. | Dimension A | Dimension B | Dimension C |
|---|---|---|---|
| 82-F1 | 3" | 3" | 3½" |
| 82-F2 | 5½" | 5" | 7½" |

1. **Single Conductor** (up to 5 kV)
   a. Remove conductor insulations (and jackets if applicable) for ½ connector length (Figure 1).
   b. Smoothly pencil cable insulations for ¾" (Figure 1).
   c. Scuff ends of insulation or jacket for Dimension B with coarse abrasive cloth provided. Remove all wax, dirt and dust from surface (Table 2 and Figure 1).
2. **Multi-Conductors** (up to 1000 V., or 600/2000 V.)
   a. Remove cable jackets for Dimension A (Table 2 and Figure 2).
   b. Taper ends of cable jackets for ¼" (Figure 2).
   c. Scuff ends of cable jackets for Dimensions B with coarse abrasive cloth provided. Remove all wax, dirt and dust from jacket surface (Table 2 and Figure 2).
   d. Remove cable fillers back to jacket (Figure 2, Dimension A ).
   e. Cut off individual conductor ends to allow for connector staggering with a maximum splice opening of Dimension C . Provide for ¼" spacing between connector ends (Table 2 and Figure 3).
   f. Remove conductor insulations for ½ connector length (Figure 3).

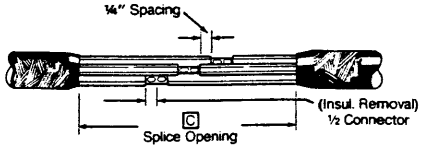



Figure 3

**B. INSTALL CONNECTOR(S)**

1. **Multi-Conductors:** Phase match conductors to appropriate color codes, if applicable.
2. Join conductors with proper connector(s) and appropriate crimping tool and die.

**C. INSULATE CONNECTION(S) Multi-Conductors only**

1. **Non-insulated connectors only:** Overwrap connector(s) with 4 half-lapped layers of vinyl electrical tape (e.g. SCOTCH Super 33+ Tape), extending ¼" onto conductor insulations.
2. Bundle conductors together with a band of vinyl tape wrapped around the center of the splice opening.

**D. INSTALL MOLD**

1. Trim tapered ends of mold with knife or diagonal cutting pliers to fit cable diameter (Figure 4).

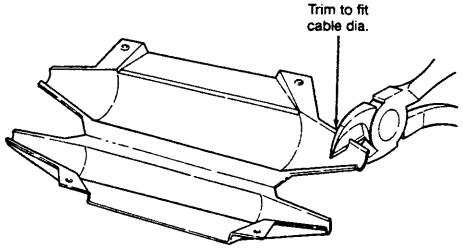



Figure 4

2. Center mold over splice and tape into place by applying SCOTCH 23 Tape (provided in kit) over the mold ends and onto the cable (Figure 5).

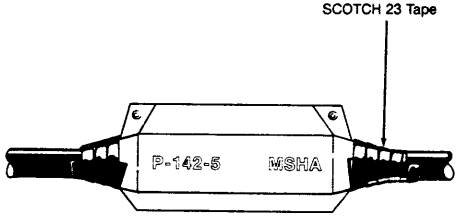



Figure 5

3. Center splice within the mold by tensioning (pulling) cables from both ends.
   *HINT: Use empty kit carton as a work stand.*
   a. Make a straight knife slit in cover of closed carton that is slightly longer than the mold's hinge (Figure 6).

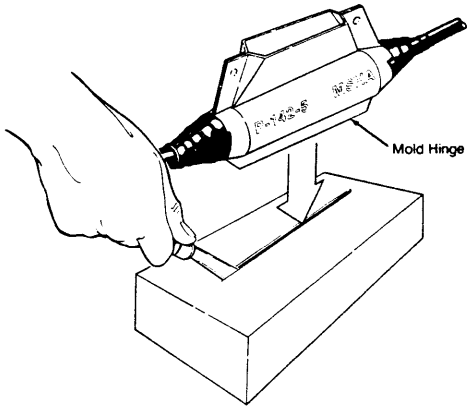



Figure 6

   b. Position carton beneath splice and press the mold's hinge into the knife slit. This holds splice in position for compound pouring (Figure 6).

**E. POUR COMPOUND**

1. Premix BLACK side of Unipak Brand Container 2130 Compound by squeezing to a smooth consistency.
2. Firmly grasp each flat side of the Unipak Container near the center barrier; at the same time pull sides of barrier apart and roll sides of thumbs through barrier. Break the barrier all the way across to the side seals (Figure 7).

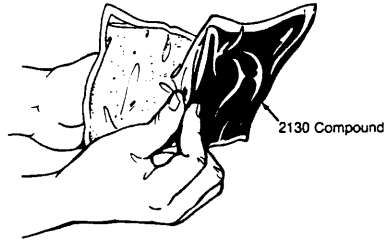



Figure 7

3. Alternately squeeze ends of Unipak Container forcing compound rapidly back and forth, strip compound from corners of Unipak Container between fingers. Mix until color is completely uniform—30 to 40 VIGOROUS SQUEEZES. DO NOT EXCEED 1 MINUTE (Figure 8).

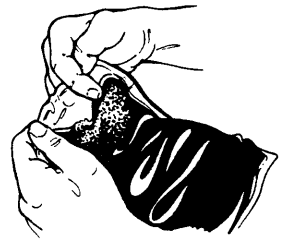


Figure 8

4. Clip off a corner of Unipak and immediately pour into mold.
5. Fill mold until compound reaches a level that is within the mold's filler spout (Figure 9).

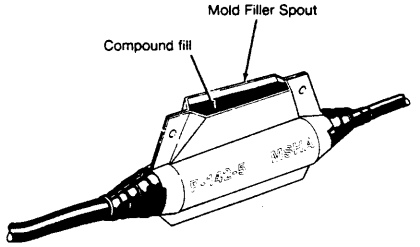



Figure 9

6. Allow compound to cure. Check compound in Filler Spout for curing.
   *NOTE: Splice may be demolded when compound is no longer tacky.*

**F. DEMOLD**

1. Remove SCOTCH 23 Tape from mold ends.
2. Remove mold; start removal by first separating mold halves at the filler spout.
3. Trim off excess compound from filler spout by cutting off at base (Figure 10).

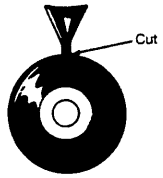



Figure 10

**Important Notice:** All statements, technical information and recommendations contained herein are based on tests we believe to be reliable, but the accuracy or completeness thereof is not guaranteed, and the following is made in lieu of all warranties, express or implied: Seller's and manufacturer's only obligation shall be to replace such quantity of the product proved to be defective. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising out of the use of or the inability to use the product. Before using, user shall determine the suitability of the product for his intended use, and user assumes all risk and liability whatsoever in connection therewith. No statement or recommendation not contained herein shall have any force or effect unless in an agreement signed by officers of seller and manufacturer.

**80-6101-6006-3** **34-7019-4088-3** Litho in U.S.A. with 3M Offset Plates, Film and Chemicals.

**Electrical Products Division/3M**
St. Paul, Minnesota 55144-1000

3M