**Table 4–19 Crimping Tools for TJS Terminals**

| Series I | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Module Block Size | Contact | | | | | Crimping Tools | | Contact Ins/Rem Tools |
| | Part No. | Bin Code | Mating End Size | Wire Barrel Size | Wire Size Range | Basic | Positioner or Turret | |
| 22D | M39029/1-507 | 507 | 20 | 22D | 22-28 | M22520/2-32 | M22520/2-32 | M81968/14-01 or MS27534-22D or M81969/8-01 and M81969/8-02 |
| 22 | M39029/1-100 | 100 | 16 | 22 | 22-26 | M22520/2-01 | M22520/2-11 | M81969/14-10 or MS27534-20 |
| 20 | M39029/1-101 | 101 | 16 | 20 | 20-24 | M22520/2-01 M22520/1-01 | M22520/2-11 M22520/1-02 (blue) | M81969/14-10 or MS27534-20 |
| 16 | M39029/1-102 | 102 | 14 | 16 | 16-20 | M22520/2-01 | M22520/1-02 (blue) | M81969/14-03 or MS27534-16 |
| 12 | M39029/1-103 | 103 | 12 | 12 | 12-14 | M22520/2-01 | 2520/1-02 yellow) | M81969/14-04 or MS27534-12 |
| **Series I** | | | | | | | | |
| Module Block Size | Contact | | | | | Crimping Tools | | Contact Ins/Rem Tools |
| | Part No. | Bin Code | Mating End Size | Wire Barrel Size | Wire Size Range | Basic | Positioner or Turret | |
| 22 | M39029/22-191 | 191 | 22 | 22 | 22-26 | M22520/7-01 | M22520/7-11 | M81968/16-04 |
| 20 | M39029/22-192 | 192 | 20 | 20 | 20-24 | M22520/1-01 | Daniels No. Th343 (red) | M81969/14-10 |
| 16 | M39029/22-193 | 193 | 16 | 16 | 16-20 | M22520/1-01 | Daniels No. Th343 (blue) | M81969/14-03 |
| 12 | M39029/22-605 | 605 | 12 | 12 | 12-14 | M22520/1-01 | M22520/1-16 | M81969/16-03 |

**Crimping of Terminals**

**98.** The terminals are crimped on the wires, using the appropriate crimping tool as indicated in Table 4–19. Crimping is accomplished as follows:

**a.** Burn through the insulation with a hot wire stripper. Do not remove the insulation at this point. This will protect the wire from contamination and the strands from splaying. Recommended wire stripping dimensions are as follows:

| Series | Contact Size | Wire Stripping Dimensions (mm) |
|---|---|---|
| I | 20 and 22 | 3.18 to 3.96 |
| | 16 and 12 | 5.54 to 6.35 |
| II | 22,20,16 | 5.26 + 0.76 |
| | 12 | 5.72 + 0.51 |

**NOTE**

Wires may be stripped by any of the methods listed in Section 2, Chapter 3.

**b.** Place the contact into the crimp tool (of the selected wire size) with the contact crimp barrel facing up.

**c.** Remove the small piece of burnt insulation from the wire, taking care not to pinch the insulation with the finger nails.

**d.** Insert the bare wire into the open end of the contact barrel. Push the wire in until it bottoms. Squeeze the crimp tool. (The crimp tool will release the contact only when the full crimping cycle has been performed.)

**e.** Check that the wire is crimped correctly by looking at the inspection hole on the side of the contact crimp barrel. Visibility of the bare wire in the contact inspection hole indicates that the wire has been properly inserted.

**Insertion and Extraction of Terminals**

**99.** Insertion and extraction of the contacts are accomplished through use of the applicable tool, see Table 4–19. All the tools are of the same basic design but differ in size and all are colour-coded. The tools, squared at the middle for strength and ease in handling, have tapered tubes at each end: one for insertion and one for removal of the contact.

**100.** Insertion is accomplished as follows:

**a.** Hold the coloured half of the appropriate insertion/removal tool between the thumb and forefinger and lay the wire to be inserted along the slot, leaving about 12.7mm of wire protruding. Then snap the wire into the tool. (See Figure 4–43)

**b.** Pull the wire back through the tool, until the tip of the tool seats against the shoulder of the contact.

**c.** Holding the module block with the cavities facing you, slowly push the contact straight in to the cavity.

**d.** A firm stop will be evident when the contact is locked in place in the module block. Then let go of the wire and pull out the tool.

**101.** Removal is accomplished as follows:

**a.** With the module facing you, snap the white end of the appropriate size double-ended plastic tool over the wire of the contact to be removed. (See Figure 4–44.)

**b.** Slowly slide the tool along the wire into the insert cavity until it engages the contact rear and a positive resistance is felt. At this time, the contact retaining fingers are in the unlocked position.

**c.** Press the wire of the contact to be removed against the serrations of the plastic tool and pull both the tool and the contact wire assembly out.

**NOTE**

No insertion-extraction tool, whether plastic or metal, should be subjected to mishandling or left loose among tools in a toolbox. They should be stored and carried in a separate container to prevent being damaged. Their tapered ends in particular shall be protected when the tool is not in use. The tips of all tools shall be inspected prior to use. Tools with broken, cracked, or bent tips shall not be used.

**NOTE**

All cavities shall be filled with contacts. Sealing plugs will be inserted in the cavities in the rear of all unwired contacts.

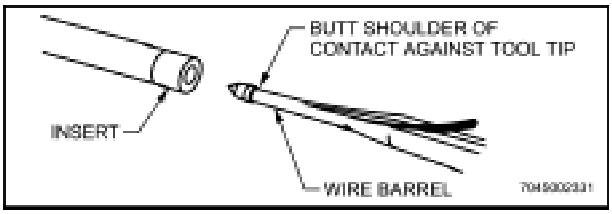


**Figure 4–43 Contact Insertion in Removable Contact Wire Splices**

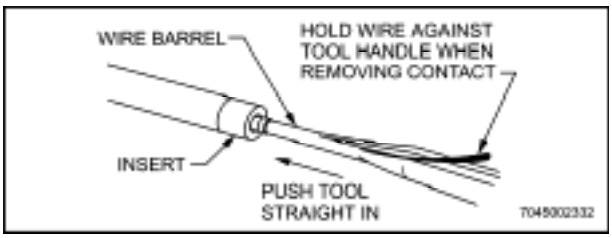


**Figure 4–44 Contact Removal from Removable Contact Wire Splices**

**Insulation Repair**

**102.** Unless otherwise specified by design or official directive, wire/cable that has insulation damage, and the centre conductor itself is not damaged, may be repaired if approved by authorised engineering officer. Damaged area must not be in excess of 7.6cm in length, and no more than two damaged areas in a three foot section. Repair may be made with a non-adhesive backed tape, such as those listed in Table 4–20, utilizing the following procedures:

**a.** Wrap tape around the cable for one complete turn, beginning 5cm from the damaged area.

**b.** Using the same continuous length of tape, spiral wrap with a 50% overlap, wrap to a point 5cm past the damaged area. Terminate by wrapping one complete turn around the cable then cut the tape.

**c.** With nylon lacing string, spot tie both ends to the tape and at 25mm intervals over the entire length.

**Table 4–20 Insulation Repair Tape**

| Colour | Adhesive Type | Specification |
|---|---|---|
| Black | Self-bonding | MIL-I-46852 |
| Red | Self-bonding | MIL-I-46852 |
| Black | Non-adhesive | MIL-S-1103GE |
| NOTE<br>Silicone rubber tapes shall not be used where they will be exposed to fluids such as jet fuels, hydraulic fluids, engine oils, silicone damping fluid (DC-200), etc. These fluids may cause silicone rubber tapes to swell and/or lose adhesive properties. | | |