1. INTRODUCTION
This instruction sheet covers the Hand Crimping Tools listed in Figure 1, which are used to crimp the terminal types listed in Figure 2.

NOTE
Dimensions on this sheet are in millimeters [with inch–equivalent dimensions in brackets]. Figures and Illustrations are for identification only and are not drawn to scale.

Reasons for reissue are provided in Section 9, REVISION SUMMARY.

2. DESCRIPTION (Figure 1)
The handles and label (if applicable) of the crimping tools are color–coded to match the color coding of the connectors to be applied, as listed in Figure 3. The crimping tools may show more than one color code. Check Figure 3 to be sure that the correct tool/connector combination is being used.

For example, tool 47386 can be used to apply PIDG terminals and splices with a yellow color code, as well as spare wire caps with a red color code.

Figure 3 lists the number of dots (or rib) that appear embossed on a crimped item when the connector is crimped in the correct tooling.

The CERTI–CRIMP hand crimping tool ratchet control ensures full crimping of terminals and splices. Once engaged, the ratchet will not release until the tool handles have been FULLY closed.
3. CRIMPING PROCEDURE

3.1. For PIDG and PLASTI-GRIP Terminals and Splices

1. Strip the wire to the dimension provided in Figure 3, being careful to avoid nicking or damaging the conductor(s).

CAUTION
Do NOT use wire with nicked or missing conductors.

2. Open the tool jaws by closing the tool handles until the ratchet releases, then allow the handles to open fully.

3. Place the terminal or splice in the dies as shown in Figure 4 or Figure 5.

4. Close the tool handles until the terminal or splice is held firmly in place. Do NOT deform the terminal or splice wire barrel.

5. Insert properly stripped wire(s) into the terminal or splice, as shown in Figure 4 or Figure 5.

CAUTION
Do NOT allow wire insulation to enter the terminal or splice wire barrel.

6. Complete the crimp by closing the tool handles until the ratchet releases.

7. Release the tool handles, allow the handles to open fully, and remove the crimped terminal or splice.

8. To crimp the other half of a splice, re-position the uncrimped half of the splice in the tool as shown in Figure 5. Follow the procedure used to crimp the first splice half.

9. Refer to Section 4 and Figure 7 for terminal and splice crimp inspection procedure.

3.2. For Spare Wire Caps

1. Strip the wire to the dimensions provided in Figure 3.

CAUTION
Do NOT use wire with nicked or missing conductors.

2. Place the crimping tool’s insulation adjustment pins in the No. 3 position.

3. Close the tool handles until the crimping jaws partially close, but leave enough space for the cap to be inserted between the dies.

4. Raise the locator so that the end of the cap rests against the recessed surface of the locator, as shown in Figure 6.

5. Close the tool handles until the cap is held firmly in place. Do NOT deform the cap wire barrel.

6. Insert the properly stripped wire into the cap until the wire bottoms.

7. Hold the wire in position and complete the crimp by closing the tool handles until the ratchet releases.

8. Release the tool handles, allow the handles to open fully, and remove the crimped spare wire cap.

9. Refer to Section 4 and Figure 7 for spare wire cap crimp inspection procedure.
### Hand Crimping Tools

**PLASTI-GRIP Terminal**

**Spare Wire Cap**

**PIDG Butt Splice**

**PIDG Type Terminals**

**FASTON Receptacle**

3 Equally Spaced Color Stripes on Insulation Restricting

3 Equally Spaced Color Stripes on Insulation Restricting

- **Color Stripe on Radiation Resistant**

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<th>Tool Color and Dot Code</th>
<th>Product</th>
<th>Product Insulation Color Code</th>
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- **TIGHT INSULATION SUPPORT FOR WIRES WITH THIN WALL INSULATION**

---

*Figure 3 (cont’d)*
### Hand Crimping Tools

**Figure 3 (end)**

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<td>PIDG INSULATION restricting NYLON TERMINALS</td>
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<td></td>
<td>24</td>
<td>0.79–1.40 [0.031–0.055]</td>
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| 47386 47386–5               | 26              | 0.66–1.40 [0.026–0.055]     | PIDG INSULATION restricting NYLON TERMINALS MS 79281–1 THRU –10 | YELLOW W/3 BLACK STRIPES | 6.4 [1/4]        |
|                             | 24              | 0.79–1.40 [0.031–0.055]     |                         |         |                               | 7.1 [9/32]      |

| 47386 47386–5 69151–1†       | 22              | 0.97–2.79 [0.038–0.110]     | YELLOW AND RED ONE DOT (TOOL NO. 69151–1 MOD. F IS CODED RED ONLY) | PIDG INSULATION restricting NYLON TERMINALS | RED W/3 GREEN STRIPES | 8 [5/16]         |
|                             | 20              | 1.17–2.79 [0.046–1.110]     |                         |         |                               | 8.7 [11/32]      |
|                             | 18              | 1.42–2.79 [0.056–1.110]     |                         |         |                               |                   |

| 47387                       | 16              | 1.60–3.30 [0.063–1.130]     | BLUE AND GREEN TWO DOTS | PIDG INSULATION restricting NYLON TERMINALS | BLUE W/3 BLUE STRIPES |                   |

* TIGHT INSULATION SUPPORT FOR WIRES WITH THIN WALL INSULATION

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| 47387                       | 16–14           | BLUE AND GREEN TWO DOTS | SPARE WIRE CAP NO. 328306 | BLUE              |                   |

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**Figure 4**

**PIDG and PLASTI–GRIP Terminals**

- **PIDG Terminal**
- **PIDG Insulation Restricting Terminal**
- **Plasti-Grip Terminal**

End of Wire Conductor Butts Against Tool Locator (Note: Wire Butts Against FASTON Receptacle Wire Stop)

"B" Equals Wire Barrel
"C" Equals Insulation Barrel

---

Figure 4
4. CRIMP INSPECTION

Inspect crimped terminals and splices by checking the features described in Figure 7. Terminals and splices not meeting these conditions should NOT be used.

5. INSULATION CRIMP ADJUSTMENTS

5.1. For PIDG Terminals and Splices

NOTE  
PIDG terminals and splices feature a wire “insulation grip.”

The insulation crimping section of the hand tool has three positions: 1 (tight), 2 (medium), and 3 (loose). To adjust the section:

1. Insert the insulation crimp adjustment pins into the No. 3 position. Refer to Figure 1 or Figure 5.
2. Place the terminal or splice into the crimping jaws as shown in Figure 4 or Figure 5.
3. Insert the UNSTRIPPED wire into ONLY the insulation barrel (refer to Figure 4 or Figure 5) portion of the terminal or splice.
4. Close the tool handles to complete the crimp.
5. Remove the crimped terminal or splice and check the insulation crimp by bending the wire back and forth once. The terminal or splice should retain its grip on the wire insulation. If the wire pulls out, set the insulation crimp adjustment pins to the next higher position (No. 2).
6. Perform another crimp and repeat the adjustment as necessary until the correct insulation grip is attained. Do not use a tighter setting than required.

CAUTION  Make sure that both insulation crimp adjustment pins are in the same position.

5.2. For PLASTI–GRIP Terminals and Splices

NOTE  PLASTI–GRIP terminals and splices feature a wire “insulation support” only. The terminal or splice insulation should ideally be in contact with the wire insulation.

1. Set adjustment pins in position No. 3 for wire having a large insulation diameter.
2. Set adjustment pins in position No. 2 for wire having a medium insulation diameter.
3. Set adjustment pins in position No. 1 for wire having a small insulation diameter.

CAUTION  Make sure that both insulation crimp adjustment pins are in the same position.
6. INITIAL TOOL INSPECTION

Hand crimping tools are inspected before shipment. The tool received should be inspected immediately upon arrival to ensure that the tool has not been damaged during shipment, and that it performs according to the criteria described in this sheet. If a tool is damaged upon arrival, retain the shipping container, file a claim with the carrier, and notify Tyco Electronics immediately.

7. MAINTENANCE/INSPECTION

7.1. Daily Maintenance

1. Remove dust, moisture, and other contaminants from the tool with a clean brush or a soft, lint–free cloth. Do NOT use objects that could damage the tool.

2. Make sure that the proper retaining pins are in place and are secured with the proper retaining rings.

3. Make certain that all pins, pivot points, and bearing surfaces are protected with a THIN coat of any good SAE 20 motor oil. Do NOT oil excessively.

4. When the tool is not in use, keep the handles closed to prevent objects from becoming lodged in the crimping areas and store the tool in a clean, dry area.
7.2. Periodic Inspection

Regular inspections should be performed by quality control personnel. A record of scheduled inspections should remain with the tool and/or be supplied to supervisory personnel responsible for the tool. Though recommendations call for at least one inspection per month, the inspection frequency should be based on the amount of use, working conditions, operator training and skill, and established company standards. These inspections should be performed in the following sequence:

A. Visual Inspection

1. Remove all lubrication and accumulated film by immersing the tool (handles partially closed) in a suitable commercial degreaser that will not affect paint or plastic material.

2. Make certain that all retaining pins are in place and are secured with retaining rings. If replacements are necessary, refer to the parts list in Figure 11.

3. Inspect crimping areas for pitted or chipped surfaces.

4. Close the tool handles until the ratchet releases, then allow handles to open freely. If they do not open quickly and fully, the spring is defective and must be replaced. Refer to Section 8, REPLACEMENT AND REPAIR.

B. Gaging the Crimping Areas

This inspection requires the use of plug gages conforming to the dimensions listed in Figures 8 and 9. Tyco Electronics does not manufacture or market these gages.

To gage the crimping area(s), refer to Figure 10 and proceed as follows:

1. Close the crimping areas by squeezing the tool handles together until the crimping dies have bottomed, and then HOLD the tool handles in this position. Do not force the dies beyond initial contact.

---

**SUGGESTED PLUG GAGE DESIGN — WIRE BARREL CRIMP**

![Diagram of crimping area with dimensions](image)

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<th>“C” MAX.</th>
<th>“R” RADIUS</th>
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† Die closure dimensions apply when wire barrel jaws are bottomed, but not under pressure.
‡‡ Material—Tool Steel.
SUGGESTED PLUG GAGE DESIGN — INSULATION CRIMP

```
Figure 9
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<th>DIE CLOSURE DIM’S. “F”† (Set Insulation Adjustment Pins at No. 1 Position)</th>
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† Die closure dimensions apply when wire barrel jaws are bottomed, but not under pressure.
‡ ‡ Material — Tool Steel.

2. Align the GO element of the gage with the appropriate crimping area to be checked. Refer to Figure 10. Push the element straight into the area without using force. The GO element must pass completely through the crimping area.

3. Align the NO–GO element of the gage with the same crimping area, and try to insert the element. The NO–GO element may start entry, but it must not pass completely through the crimping area.

4. Repeat the gage inspection procedure for each crimping area, making sure to use the correct plug gage for each inspection.

If the crimping areas conform to the gage inspection, the tool is considered dimensionally correct. If the crimping areas do not conform to the inspection, the tool must be repaired. Refer to Section 8, REPLACEMENT AND REPAIR.

For additional information concerning the use of the plug gage, refer to instruction sheet 408–7424.

C. CERTI-CRIMP Hand Crimping Tool Ratchet Control Inspection

Obtain a .025–mm [0.001–in.] shim that is suitable for checking the clearance between the bottoming surfaces of the crimping dies. To inspect the ratchet control:

1. Refer to Figure 3 and select a terminal or splice and wire (maximum size).

2. Position the terminal or splice in the appropriate crimping area, according to the method described in Paragraph 3.1, Steps 1 through 5.

3. While holding the wire in place, squeeze the tool handles together until the ratchet releases. Hold the tool in this position, maintaining just enough pressure to keep the dies closed.
4. Check the clearance between the bottoming surfaces of the crimping dies. If the clearance is .025 mm [.001 in.] or less, the ratchet is satisfactory. If clearance exceeds .025 mm [.001 in.], the ratchet is out of adjustment, and must be repaired. Refer to Section 8, REPLACEMENT AND REPAIR. If the tool conforms to these inspection procedures, lubricate it with a THIN coat of any good SAE 20 motor oil and return it to service.

8. REPLACEMENT AND REPAIR

Replacement parts are listed in Figure 11. Parts other than those listed in Figure 11 should be replaced by Tyco Electronics to ensure quality and reliability of the tool. Order replacement parts through your Tyco Electronics Representative, or call 1–800–526–5142, or send a facsimile of your purchase order to 1–717–986–7605, or write to:

CUSTOMER SERVICE (38–35)
TYCO ELECTRONICS CORPORATION
P.O. BOX 3608
HARRISBURG, PA  17105–3608

For tool repair service, please contact a representative at 1–800–526–5136.

9. REVISION SUMMARY

Since the previous release of this sheet, the following changes were made:

- Updated document to corporate requirements
- Added part number 47386–5 to tables in Figures 1, 3, 8, 9, and 11
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Figure 11