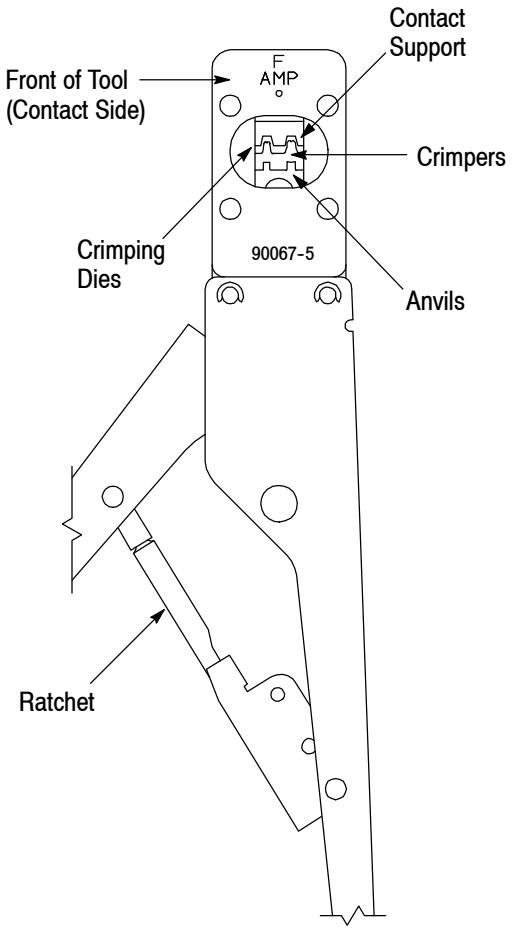


Figure 1

1. INTRODUCTION

Hand Crimping Tool 90067-5 shown in Figure 1 is designed to crimp Type III(+) and Type VI pin and socket contacts listed in Figure 2. Read these instructions thoroughly before crimping any contacts.

NOTE

All numerical values in this instruction sheet are in metric units [with U.S. customary units in brackets]. Dimensions are in millimeters [and inches]. Figures are not drawn to scale.

Reasons for reissue of this instruction sheet are provided in Section 6, REVISION SUMMARY.

2. DESCRIPTION (Figure 1)

The front of the tool (contact side), into which the contact is inserted, has the tool number marked on it. The back of the tool (wire side), into which the wire is inserted, has an applicable wire size marking.

This tool features two fixed dies (crimpers), two movable dies (anvils), contact support, locator/insulation stop, ejector, and ratchet. When mated, the dies form two crimping chambers. Each crimping chamber is marked with the applicable wire size and color dot.

The ratchet ensures full crimping of the contact. Once engaged, the ratchet will not release until the handles have been FULLY closed.

CAUTION

The dies bottom before the ratchet releases. This design feature ensures maximum electrical and tensile performance of the crimp. DO NOT re-adjust the ratchet.

The locator/insulation stop has two functions. First, it positions the contact between the dies and second, it aids in locating the wire in the contact. In use, it rests in the locator slot of the contact. The contact support prevents the contact from bending during crimping. The ejector pulls the locator/insulation stop down, and ejects the crimped contact when the tool handles are FULLY opened.

Type III(+) contacts have a color dot code located on the contact spring. Type VI contacts have the applicable wire size stamped on the underside of the insulation barrel.

3. CRIMPING PROCEDURE

Refer to Figure 2, and select wire of the specified size and insulation diameter for the type and part number of contact. Strip the wire to the length indicated. DO NOT cut or nick the wire strands.

Identify the appropriate crimping chamber (according to the color dot and/or wire size marking). The markings on the contact must match the markings for the crimping chamber of the tool.

Refer to Figure 3, and proceed as follows:

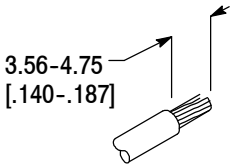
1. Hold the tool so the BACK (wire side) is facing you.

2. Make sure the ratchet is released by squeezing the tool handles and allowing them to open FULLY.

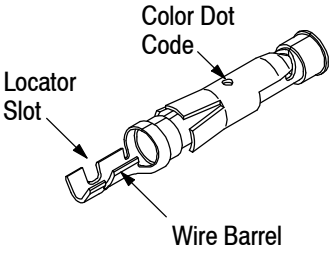
3. Insert the contact (insulation barrel first) into the FRONT of the appropriate crimping chamber. Position the contact in the crimpers so that the locator/insulation stop enters the locator slot of the contact.

4. Hold the contact in this position and squeeze the tool handles together until the insulation anvil starts entry into insulation crimper. DO NOT deform the contact insulation barrel or wire barrel.

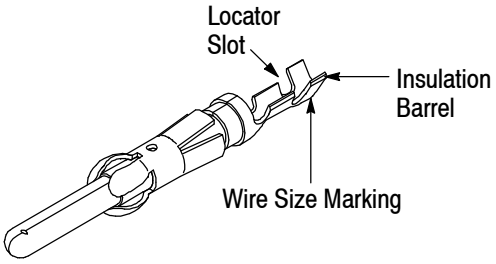
Wire Stripping Dimension Range



Type III+ Socket Contact



Type VI Pin Contact



WIRE		CONTACT					CRIMPING CHAMBER (Wire Size Marking)	COLOR DOT CODE
SIZE (AWG) RANGE	INSULATION DIAMETER RANGE	TYPE	LOOSE PIECE		STRIP			
			PIN	SOCKET	PIN	SOCKET		
24-20	2.03-2.54 [.080-.100]	III(+)	66400	66399	66332	66331	24-20	2 Dots
18-16		III(+)	66099	66101	66098	66100	18-16	—
		VI	66589	66590	66579	66580		

Figure 2

5. Insert a properly stripped wire through wire slot of the locator/insulation stop and into the wire barrel of the contact until the wire insulation butts against the locator/insulation stop.

6. Holding the wire(s) in place, squeeze the tool handles until the ratchet releases.

7. Allow the tool handles to open fully and remove the crimped contact.

CAUTION

DO NOT use defective or damaged contacts. A damaged contact can be cut from the wire, the wire re-stripped, and a new contact applied.

4. MAINTENANCE AND INSPECTION

It is recommended that a maintenance and inspection program be performed periodically to ensure dependable and uniform terminations.

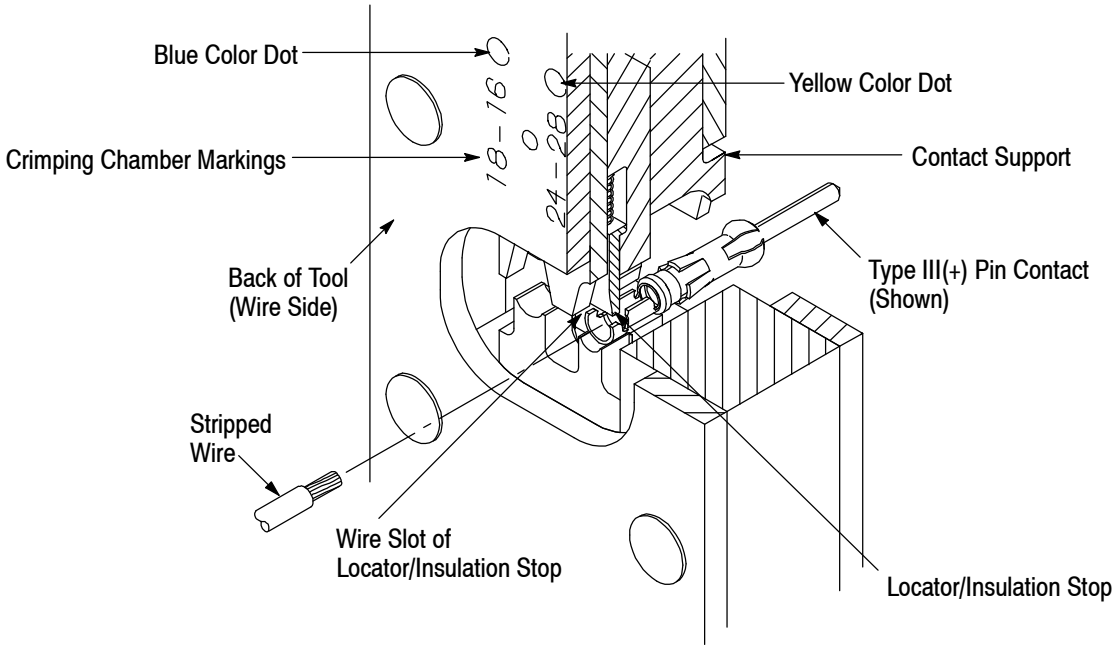


Figure 3

Frequency of inspection depends on:

— the care, amount of use, and handling of the hand tool

— the presence of abnormal amounts of dust and dirt

— the degree of operator skill

— your own established standards.

The hand tool is inspected before being shipped; however, it is recommended that the tool be inspected immediately upon its arrival at your facility to ensure that the tool has not been damaged during shipment.

Due to the precision design, it is important that no parts of this tool be interchanged except the replacement part listed in Figure 5.

4.1. Daily Maintenance

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

2. Make certain that the retaining pins are in place and that they are secured with retaining rings.

3. All pins, pivot points, and bearing surfaces should be 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 handles closed to prevent objects from becoming lodged in the dies. Store the tool in a clean, dry area.

4.2. Lubrication

Lubricate all pins, pivot points, and bearing surfaces with SAE 20 motor oil as follows:

Tools used in daily production — lubricate daily
Tools used daily (occasional) — lubricate weekly
Tools used weekly — lubricate monthly

Wipe excess oil from tool, particularly from crimping area. Oil transferred from the crimping area onto certain terminations may affect the electrical characteristics of an application.

4.3. Periodic Inspection

1. The hand tool should be immersed (handles partially closed) in a reliable commercial degreasing compound to remove accumulated dirt, grease, and foreign matter.

2. Close the tool handles until the ratchet releases and then allow them to open freely. If they do not open quickly and fully, return the tool for evaluation and repair. See Section 5, REPLACEMENT AND REPAIR.

3. Inspect the dies for worn, cracked, or broken areas. If damage is evident, return the tool for evaluation and repair. See Section 5, REPLACEMENT AND REPAIR.

4.4. Crimp Height Inspection

This inspection incorporates the use of a crimp height comparator (micrometer with a modified anvil) as shown in Figure 4. Detailed information on obtaining and using a crimp height comparator can be found in instruction sheet 408-7424.

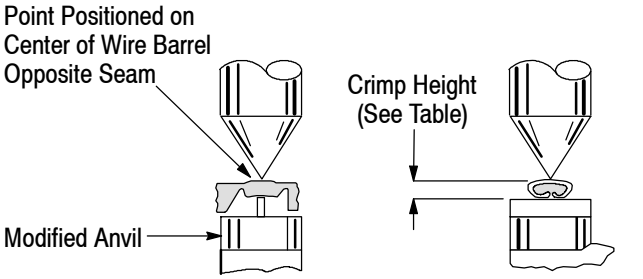
Proceed as follows:

1. Determine the maximum wire size, and select the applicable contact for the tool.

2. Refer to Section 3, CRIMPING PROCEDURE, and crimp the contact accordingly.

3. Using the crimp height comparator, measure the wire barrel crimp height as shown in Figure 4.

If the crimp height conforms to the dimensions shown in Figure 4, the tool is considered dimensionally correct. If not, return the tool for evaluation and repair (see Section 5, REPLACEMENT AND REPAIR).



MAXIMUM WIRE SIZE (AWG)	CRIMPING CHAMBER (Wire Size Marking)	CRIMP HEIGHT
16	18-16	1.3±0.051 [.051±.002]
20	24-20	0.99±0.051 [.039±.002]

Figure 4

4.5.Ratchet Inspection

The ratchet should be checked to ensure that the ratchet does not release prematurely, allowing the dies to open before they have fully bottomed. Obtain a 0.025 [.001] shim that is suitable for checking the clearance between the bottoming surfaces of the dies. Proceed as follows:

1. Select the maximum size wire and strip it within the dimensions in Figure 2.

2. Select the contact and crimping chamber corresponding to the selected wire size (refer to Figure 2).

3. Position the contact and wire between the dies as described in Section 3, CRIMPING PROCEDURE.

4. Hold the wire in place, and squeeze the handles until the ratchet releases. Hold the handles in this position, maintaining just enough tension to keep the dies closed.

5. Check the clearance between the bottoming surfaces of the dies. If the clearance is 0.025 [.001] or less, the ratchet is satisfactory. If clearance exceeds 0.025 [.001], the ratchet is out of adjustment and must be repaired. See Section 5, REPLACEMENT AND REPAIR.

5. REPLACEMENT AND REPAIR

A replacement part is listed in Figure 5. Parts other than those listed in Figure 5 should be replaced by Tyco Electronics to ensure quality and reliability of the tool. Order the replacement part through your Representative, or call 1-800-526-5142, or send a facsimile of your purchase order to 1-717-986-7605, or write to:

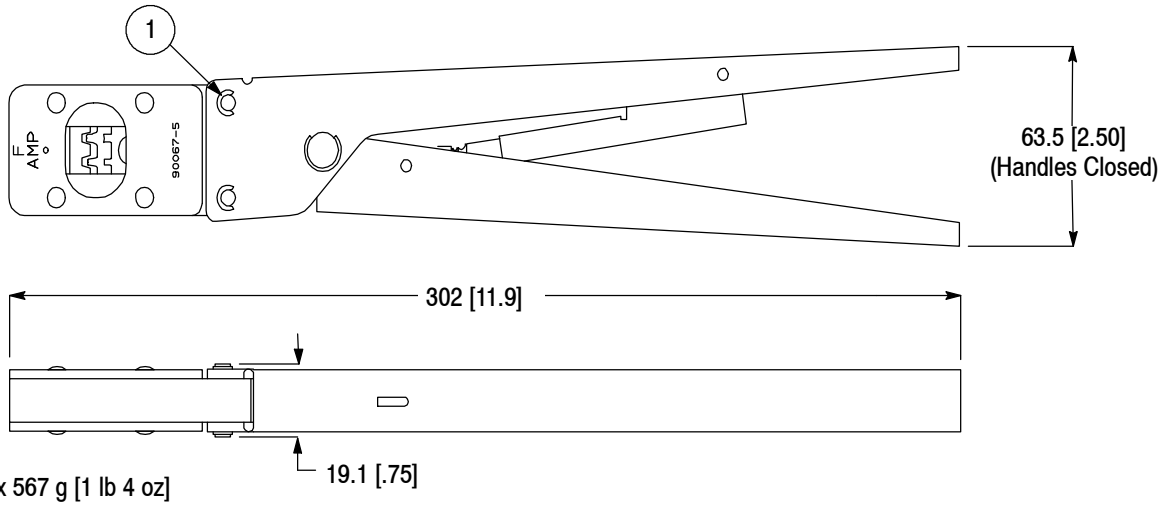
CUSTOMER SERVICE (38-35)
TYCO ELECTRONICS CORPORATION
PO BOX 3608
HARRISBURG PA 17105-3608

For customer repair service, call 1-800-526-5136.

6. REVISION SUMMARY

Revisions to this instruction sheet include:

- Updated document to corporate requirements
- Removed part number for crimp height comparator and company names from Paragraph 4.4



Weight: Approx 567 g [1 lb 4 oz]

ITEM	PART NUMBER	DESCRIPTION	QTY PER TOOL
1	21045-3	RING, Extra Crescent Retaining, .188-in. Dia Shaft	4

Figure 5