

**PROPER USE GUIDELINES**

Cumulative Trauma Disorders can result from the prolonged use of manually powered hand tools. Hand tools are intended for occasional use and low volume applications. A wide selection of powered application equipment for extended-use, production operations is available.

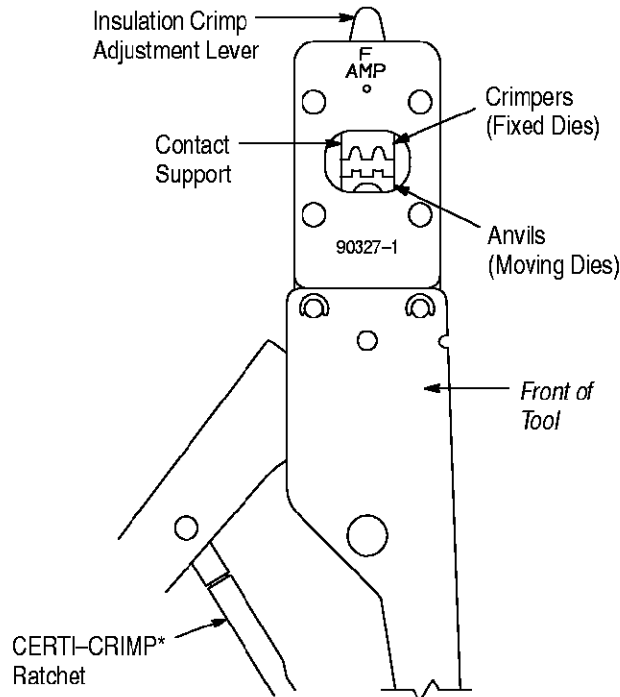


Figure 1

**NOTE** Dimensions in this instruction sheet are in millimeters [with inches in brackets]. Figures are not drawn to scale.

**1. INTRODUCTION**

Hand Crimping Tool 90327-1 (shown in Figure 1) is used to crimp Type VI Multimatte contacts listed in Figure 2 onto wire sizes 22 through 18 AWG with an insulation diameter range of 1.27 through 2.79 [.050 through .110]. Read these instructions thoroughly before crimping any contacts.

Reasons for reissue of this instruction sheet are provided in Section 7, REVISION SUMMARY.

**2. DESCRIPTION**

The tool features two fixed dies (crimpers), two moving dies (anvils), insulation crimp adjustment lever, contact support, locator/insulation stop, ejector, and CERTI-CRIMP ratchet. When mated, the dies form two crimping chambers.

The FRONT of the tool, into which the contact is inserted, has the tool number marked on it. The

BACK of the tool, into which the wire is inserted, has the wire size marked above each crimping chamber.

The insulation crimp adjustment lever is used to regulate the crimp height of the contact insulation barrel. The contact support prevents the contact from bending during the crimping operation.

The locator/insulation stop positions the contact between the dies before crimping and limits the insertion distance of the stripped wire into the contact. In use, it rests in the locator slot of the contact. The wire stop helps to position the contact between the dies and locate the wire in the contact. The ejector pulls the locator down and ejects the crimped contact.

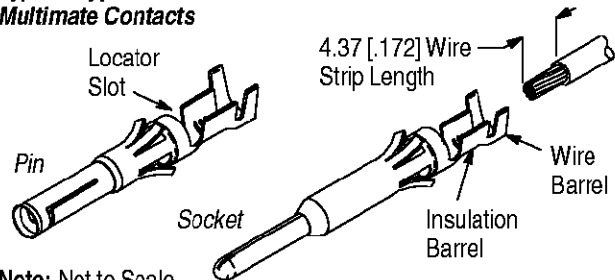
The CERTI-CRIMP ratchet assures full crimping of the contact. Once engaged, the ratchet will not release until the handles have been FULLY closed.

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

**3. CRIMPING PROCEDURE**

Make sure that the specified wire size and insulation diameter is compatible with the contact and tool. Strip the wire to the length indicated in Figure 2—do NOT cut or nick the wire strands.

**Typical Type VI Multimatte Contacts**



Note: Not to Scale

WIRE		CONTACT	
SIZE RANGE (AWG)	INSUL DIA	LOOSE PIECE	STRIP-FORM
22-18	1.27-2.79 [.050-.110]	66591-[ ] (Pin)	66581-[ ] (Pin)
		66592-[ ] (Socket)	66582-[ ] (Socket)

Figure 2

**Crimping Contact**

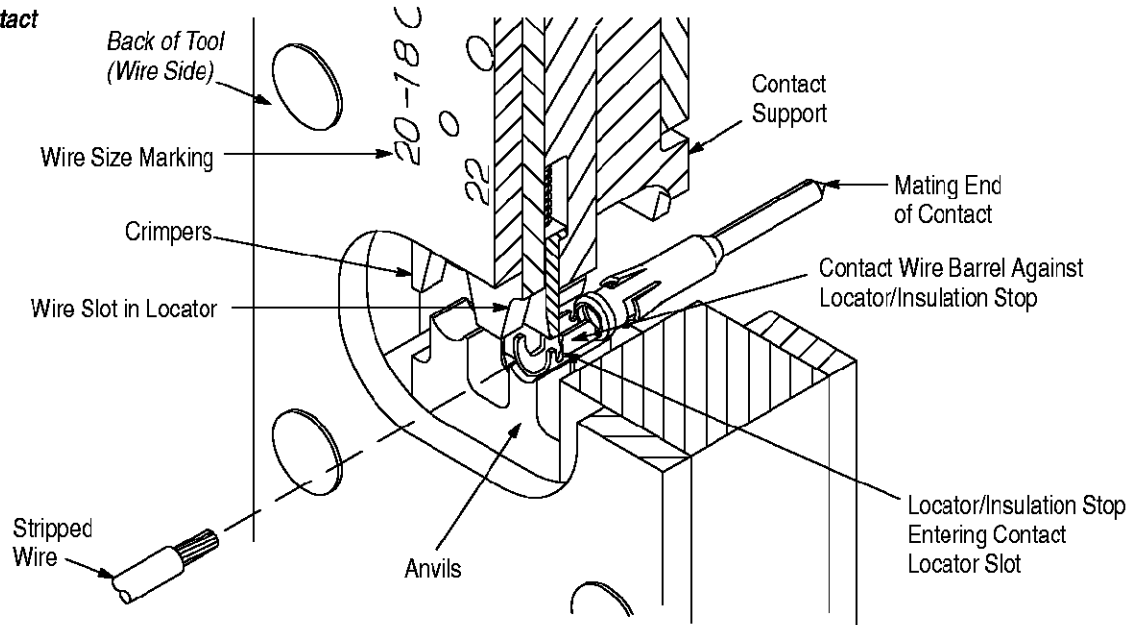


Figure 3

**NOTE** If using strip-form contact, the cutoff tabs **MUST** meet the dimension requirement stated on the customer drawing for the product or Application Specification 114-10007.

Proceed as follows:

1. Hold tool so BACK side (wire side) faces you.
2. Ensure that the tool ratchet is released by squeezing tool handles and allowing them to open.
3. Insert contact, mating end first, into the crimping chamber from the BACK of tool. Position contact between crimpers so that the locator/insulation stop enters the contact locator slot. Make sure that the wire barrel butts against the locator/insulation stop. See Figure 3.
4. Holding the contact in position, squeeze the tool handles together until insulation barrel anvil starts entry into the insulation crimper. Do NOT deform contact insulation barrel or wire barrel.
5. Insert a properly stripped wire through the wire slot in the locator and into the contact wire barrel until the wire insulation butts against the locator/insulation stop.
6. Holding the wire in place, squeeze the tool handles together until the ratchet releases. Allow tool handles to open FULLY.
7. Remove crimped contact from tool, and inspect the crimp according to Figure 4.

**Crimp Inspection**

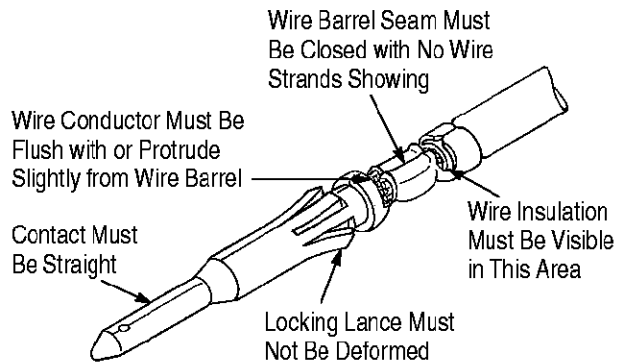


Figure 4

**NOTE** For detailed crimp inspection requirements, refer to Application Specification 114-10007.

**4. INSULATION CRIMP ADJUSTMENT**

The insulation barrel crimp height is regulated by the insulation crimp adjustment lever. To determine the proper setting, test crimp a contact using the setting which approximates the wire insulation size: 1—small, 2—medium, or 3—large. If the crimped insulation barrel is too tight or too loose, change the setting accordingly. The crimp should hold the wire insulation firmly without cutting into it.

**5. MAINTENANCE AND INSPECTION**

The tool is inspected before shipment. It is recommended that the tool be inspected immediately upon arrival at your facility to ensure that the tool was not damaged during shipment and that it conforms to the dimensions provided in Section NO TAG.

**5.1. Daily Maintenance**

1. Remove all foreign particles with a clean, soft brush, or a clean, soft, lint-free cloth. Make sure the proper retaining pins are in place, and secured with the proper retaining rings. If foreign matter cannot be removed easily, or if the proper replacement parts are needed, refer to Section 6, REPLACEMENT AND REPAIR.
2. Make certain all pivot points and bearing surfaces are protected with a THIN coat of any good SAE 20 motor oil. Do NOT oil excessively.
3. When tool is not in use, keep the handles closed to prevent objects from becoming lodged between the crimping dies, and store the tool in a clean, dry area.

**5.2. 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 personnel responsible for the tool. Though recommendations call for at least one inspection a month, the inspection frequency should be based on the amount of use, ambient 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 all retaining pins are in place and secured with retaining rings. If replacements are necessary, refer to Section 6.

**CAUTION** Do NOT remove the retaining pins as permanent damage to the tool may result.

3. Close the tool handles until the ratchet releases, then allow the tool handles to open freely. If handles do not open quickly and fully, the spring is defective and must be replaced (refer to Section 6, REPLACEMENT AND REPAIR).
4. Inspect the head assembly, with special emphasis on checking for worn, cracked, or broken dies. If damage to any part of the head assembly is evident, refer to Section 6.

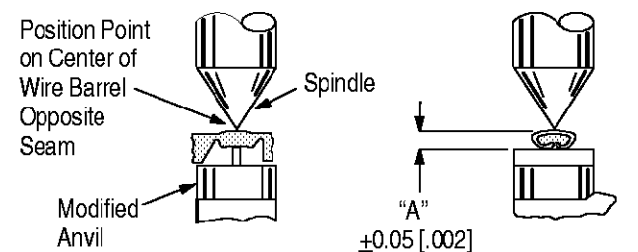
**B. Crimp Height Inspection**

This inspection requires the use of a micrometer with a modified anvil as shown in Figure 5. It is recommended using the modified micrometer (Crimp Height Comparator RS-1019-5LP) which can be purchased from:

Manufacturer	Telephone
Shearer Industrial Supply Co	717-767-7575
VALCO	610-691-3205

Proceed as follows:

1. Select a contact and *maximum* size wire for the tool.
2. Refer to Section 3, CRIMPING PROCEDURE, and crimp the contact accordingly.
3. Using a crimp height comparator, measure wire barrel crimp height as shown in Figure 5. If the crimp height conforms to that shown, the tool is considered dimensionally correct. If not, refer to Section 6 for information on obtaining evaluation and repair.



CONTACT NUMBER	WIRE SIZE, AWG (MAX)	CRIMP SECT (WIRE SIZE MARKING)	CRIMP HEIGHT DIM. "A"
66591 66592	22	22	0.94 [ .037 ]
66591 66592	18	18-20	1.12 [ .044 ]

Figure 5

For additional information concerning the use of the crimp height comparator, refer to Instruction Sheet 408-7424.

**C. CERTI-CRIMP Ratchet Inspection**

Obtain a 0.0254 [ .001 ] shim that is suitable for checking the clearance between the bottoming surfaces of the dies. Proceed as follows:

1. Select a contact and *maximum* wire size for the tool.
2. Position the contact and wire between the dies, according to Section 3, CRIMPING PROCEDURE.

Holding the wire in place, squeeze the tool handles together until the ratchet releases. Hold the tool handles in this position, maintaining just enough pressure to keep the dies closed.

3. Check the clearance between the bottoming surfaces of the dies. If the clearance is 0.0254 [.001] or less, the ratchet is satisfactory. If clearance exceeds 0.0254 [.001] the ratchet is out of adjustment and must be repaired (see Section 6, 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.

**6. REPLACEMENT AND REPAIR**

Customer-replaceable parts are listed in Figure 6. A complete inventory should be stocked and controlled to prevent lost time when replacement of parts is necessary. Parts other than those listed

should be replaced by Tyco Electronics to ensure quality and reliability. Order replacement parts through your representative, or call 1-800-526-5142, or send a facsimile of your purchase order to 717-986-7605, or write to:

CUSTOMER SERVICE (038-035)  
TYCO ELECTRONICS CORPORATION  
PO BOX 3608  
HARRISBURG PA 17105-3608

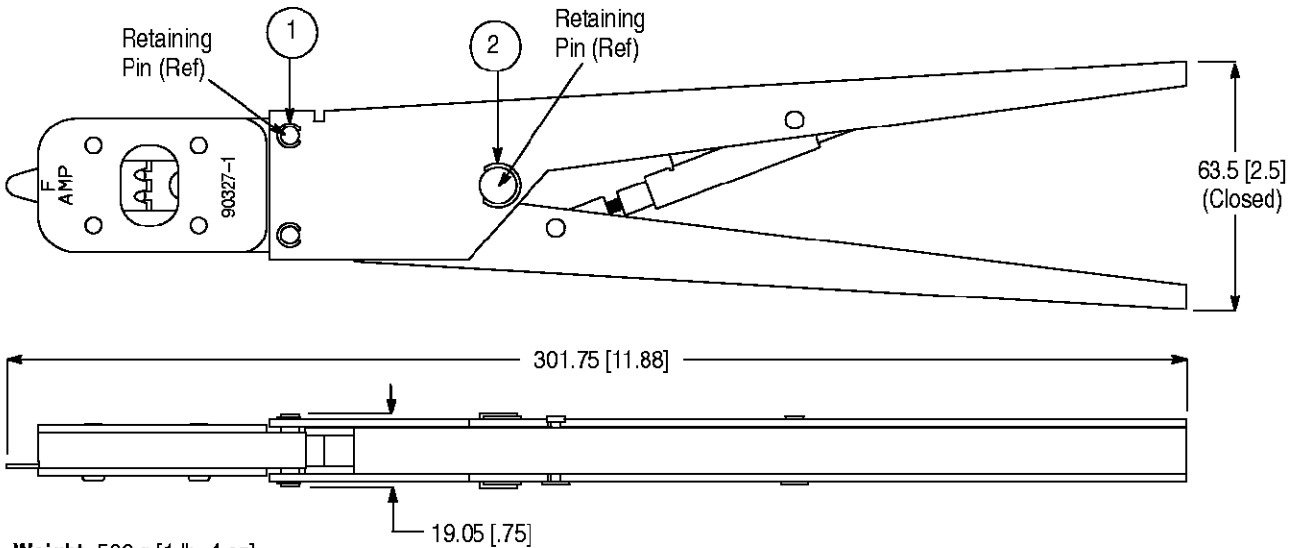
For customer repair service, please contact a representative at 1-800-526-5136.

**7. REVISION SUMMARY**

Revisions to this instruction sheet per EC: 0990-1566-01 include:

- Updated document to corporate requirements
- Added phone numbers to Paragraph 5.2.B
- Added new information to Figure 5

**CAUTION:** Do NOT remove retaining pins as permanent damage to the tool may result.



Weight: 509 g [1 lb, 4 oz]

**REPLACEMENT PARTS**

ITEM	PART NUMBER	DESCRIPTION	QTY PER TOOL
1	21045-3	RING, Retaining	4
2	21045-9	RING, Retaining	2

Figure 6