

**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.

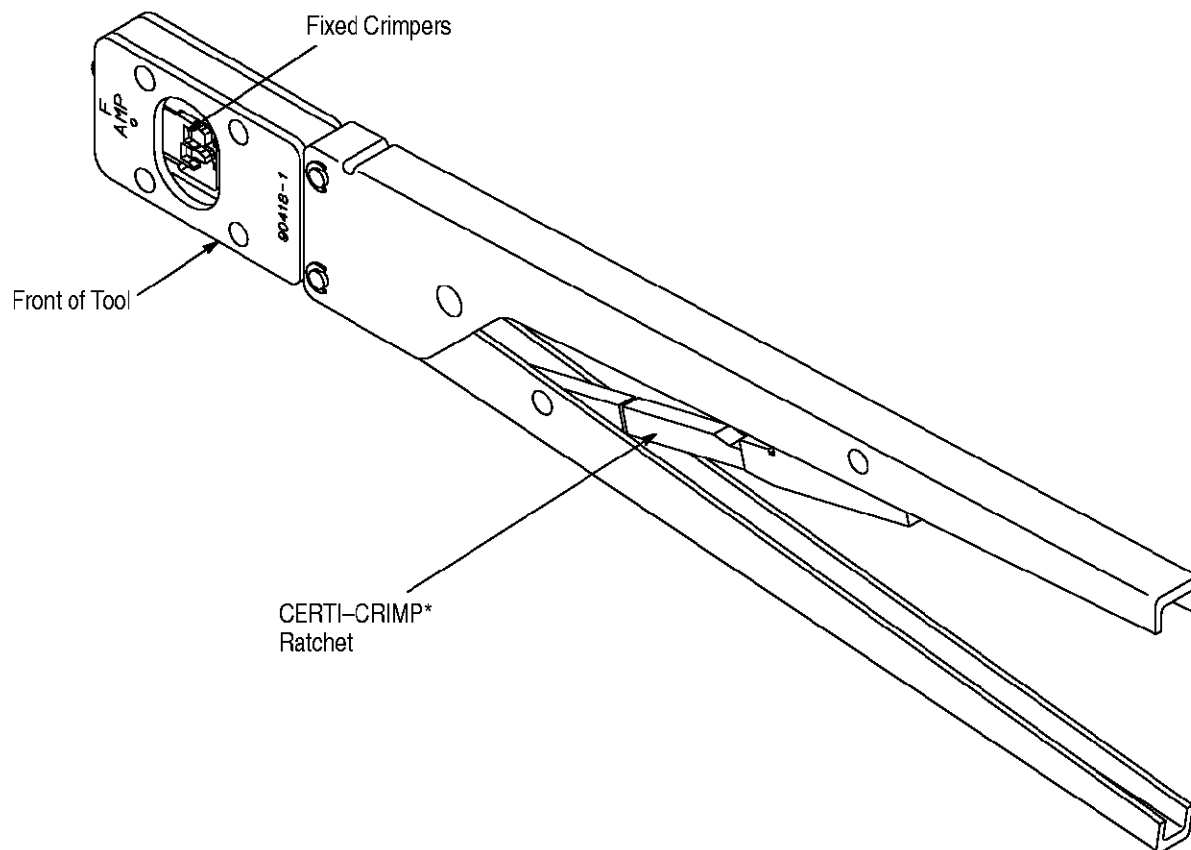


Figure 1

**1. INTRODUCTION**

This instruction sheet covers the use of Hand Crimping Tool 90418-1 which is designed to crimp AMPMODU MOD IV Pin and Receptacle Contacts with an insulation diameter of 1.02–1.52 mm [.040–.060 in.] onto wire sizes 26–22 AWG. Read these instructions thoroughly before crimping the contacts.

**NOTE** *Measurements are in millimeters [followed by inch equivalents in brackets]. Figures and illustrations are for identification only and are not drawn to scale.*

Reasons for reissue are provided in Section 7, REVISION SUMMARY.

**2. DESCRIPTION** (Figures 1 and 3)

The FRONT OF TOOL is marked with the tool number. The BACK OF TOOL (wire side), into which

the wire is inserted, has the wire size marked above each crimping chamber.

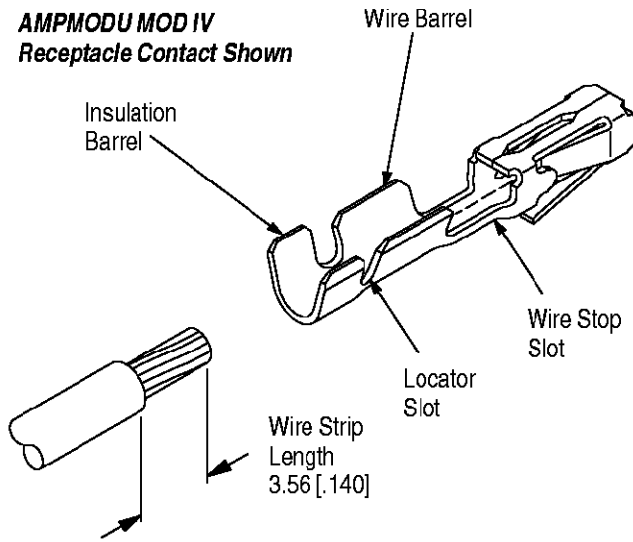
This tool features two fixed dies (crimpers), two movable dies (anvils), an insulation crimp adjustment lever, a locator/insulation stop, a contact support, an ejector, and a CERTI-CRIMP ratchet.

The insulation crimp adjustment lever is used to control the crimp height of the contact insulation barrel. Refer to Section 4, INSULATION CRIMP ADJUSTMENT.

The locator/insulation stop has two functions. First, it positions the contact between the crimping dies, and second, it aids in locating the wire in the contact. In use, it rests in the locator slot. See Figures 2 and 3.

The contact support prevents the contact from bending during the crimping procedure.

**AMP MODU MOD IV  
Receptacle Contact Shown**



**NOTE:** Not to Scale

Figure 2

The ejector pulls the locator down, and ejects the crimped contact when the tool handles are FULLY opened.

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

**CAUTION**

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

**3. CRIMPING PROCEDURE**

Select wire of specified size and insulation diameter. Strip the wire to the length indicated in Figure 2. Do NOT cut or nick the wire strands. Select a contact, and identify the appropriate crimping chamber (according to the wire size markings on the BACK of the tool). Refer to Figure 3 and proceed as follows:

1. Hold tool so BACK (wire side) faces you.
2. Make sure ratchet is released. Squeeze tool handles together and allow them to open FULLY.
3. Looking straight into BACK of appropriate crimping chamber, insert contact (insulation barrel first) into FRONT of crimping chamber. Position the contact in the dies so that the locator enters locator slot in the contact.
4. Hold contact in locator slot and squeeze tool handles together until anvil starts entry into crimper. Do NOT deform insulation barrel or wire barrel.
5. Insert a properly stripped wire through the wire slot in locator and into wire barrel of contact until insulation butts against locator/insulation stop.

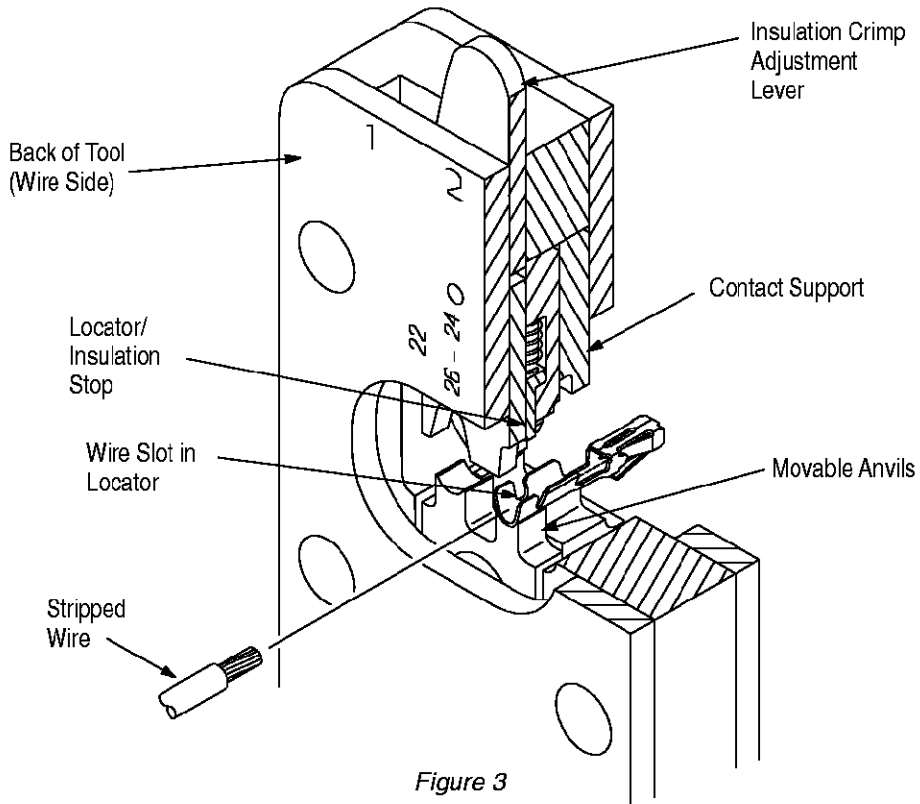


Figure 3

6. Holding wire in place, squeeze tool handles until ratchet releases.
7. Allow tool handles to open fully and remove crimped contact.

**CAUTION**

*Damaged contacts must be replaced with new ones. The damaged contact must be cut from the wire, the wire re-stripped, and a new contact applied.*

#### 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 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 insulation firmly without cutting into it.

#### 5. MAINTENANCE AND INSPECTION

##### 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 are secured with the proper retaining rings.
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 the 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 supervisory 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 visual inspections should be performed in the following sequence:

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 parts listed in Figure 5.
3. 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 (see 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, return the tool to Tyco Electronics for evaluation and repair (see Section 6, REPLACEMENT AND REPAIR).

#### 5.3. Crimp Height Inspection

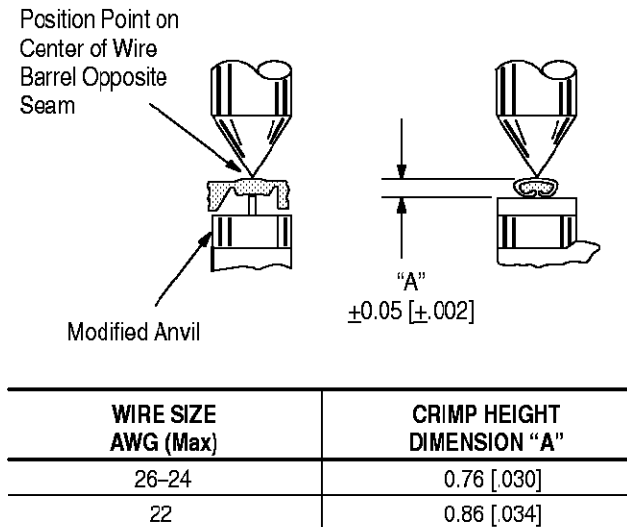
This inspection requires the use of a micrometer with a modified anvil as shown in Figure 4. Tyco Electronics recommends the modified micrometer (Crimp Height Comparator RS-1019-5LP) which can be purchased from:

Shearer Industrial Supply Co. or VALCO  
717-767-7575 610-691-3205

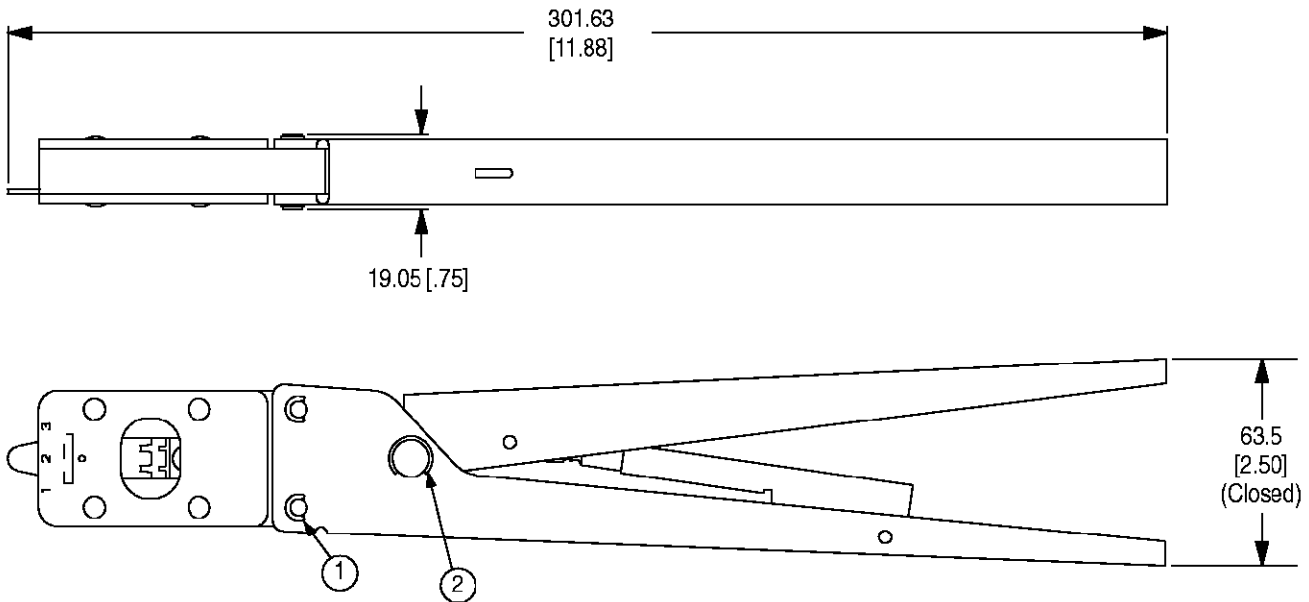
Proceed as follows:

1. Refer to Figure 4, and select a contact and a *maximum* wire size for each crimping chamber.
2. Refer to Section 3, CRIMPING PROCEDURE, and crimp the contacts accordingly.
3. Using a crimp height comparator, measure wire barrel crimp height as shown in Figure 4. If the crimp height conforms to that shown in Figure 4, the tool is considered dimensionally correct. If not, return the tool for evaluation and repair (see Section 6, REPLACEMENT AND REPAIR).

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



*Figure 4*



**WEIGHT:** 539 g [1 lb, 4 oz]

**CAUTION:** Do not remove the retaining pins as permanent damage to the tool could result (see Section 6, REPLACEMENT AND REPAIR).

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

Figure 5

**5.4. CERTI-CRIMP Ratchet Inspection**

Obtain a 0.025 mm [.001 in.] shim that is suitable for checking the clearance between the bottoming surfaces of the crimping dies.

Proceed as follows:

1. Select a contact, maximum size wire, and the designated crimping chamber for the wire being used (see Figure 4).
2. Position the contact and wire between the crimping dies, according to Section 3, CRIMPING PROCEDURE (Steps 1 through 5). Holding the wire in place, squeeze the tool handles together until the CERTI-CRIMP 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 crimping dies. If the clearance is 0.025 mm [.001 in.] or less, the ratchet is satisfactory. If clearance exceeds 0.025 mm [.001 in.], 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**

Replacement parts are 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 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 Tyco Electronics Representative at 1-800-526-5136.

**7. REVISION SUMMARY**

Per EC 0990-0704-02:

- Updated document to corporate requirements
- Added caution to Section 3
- Added phone number to crimp comparator supplier in Paragraph 5.3
- Added wire size 26 to table in Figure 4