

AMP

AMP INCORPORATED
HARRISBURG, PA 17105

**APPLICATION AND MAINTENANCE
FOR AMP* HAND CRIMPING TOOL
90302-1**

IS 7634

TOOLING ASSISTANCE 1 800 722-1111
AMP FAX 1 800 522-6752

RELEASED
6-8-92

PROPER USE GUIDELINES

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

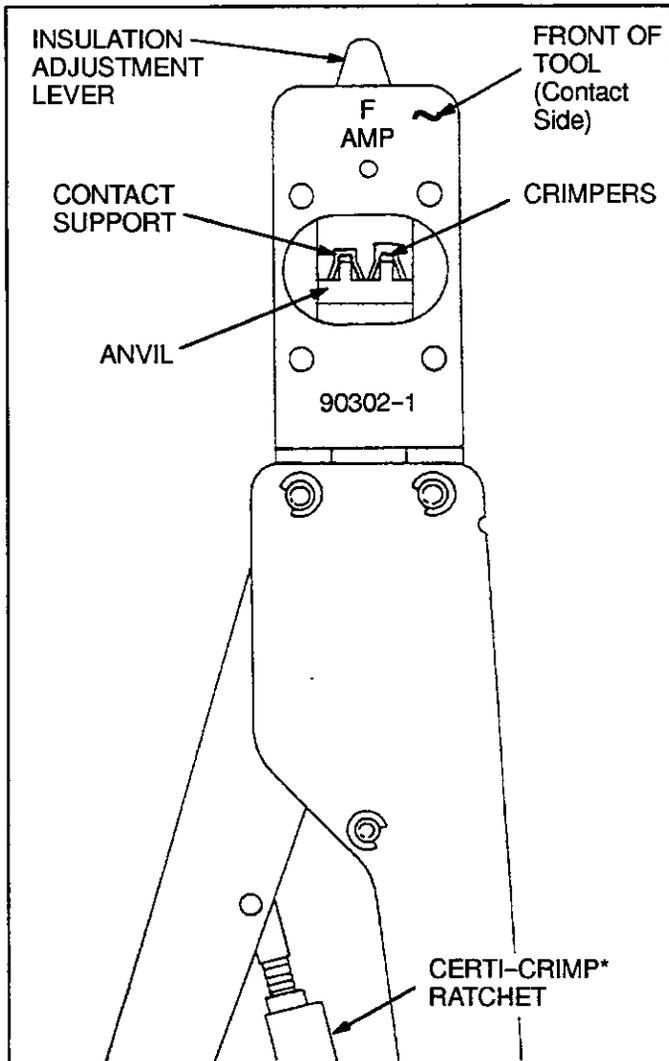


Fig. 1

41T-7A

1. INTRODUCTION

AMP Hand Crimping Tool 90302-1 (see Figure 1) is designed to crimp the AMPLIMITE* High Density size 20 loose piece (LP) pin and socket contacts listed in Figure 2. Read these instructions thoroughly before crimping any contacts.

NOTE

All dimensions on this document are in metric units [with U. S. customary units in brackets].

2. DESCRIPTION

The FRONT OF TOOL (Contact Side), into which the contact is inserted, has the tool number marked on it. The BACK OF TOOL (Wire Side), into which the wire is inserted, has the wire size marked above each crimp section.

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

The insulation adjustment lever is used to regulate the crimp height of the contact insulation barrel. Refer to Paragraph 5, INSULATION CRIMP ADJUSTMENT.

The contact locator positions the contact between the crimping dies. In use, it rests in the contact locator slot (see Figures 2 and 3).

The wire stop aids in locating the wire in the contact.

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

The color code dots aid in determining the appropriate crimp section for the contact. A matching color dot appears on the underside of the contact wire barrel.

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

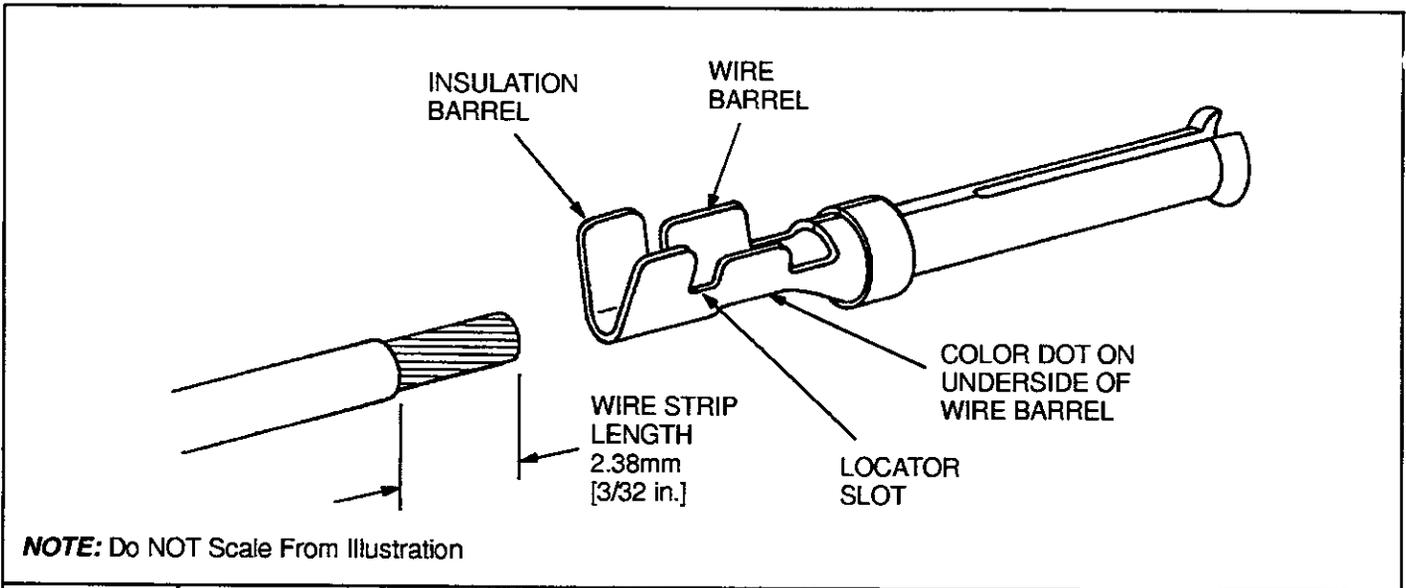
The CERTI-CRIMP ratchet assures full crimping of the contact. Once engaged, the ratchet will not release until the handles have been FULLY closed.

CAUTION

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

3. WIRE STRIPPING

Using the chart in Figure 2, select wire that is within the specified wire size and insulation diameter. Strip the wire to the length indicated, taking care not to nick or cut the wire strands.



WIRE SIZE mm ² [AWG]	INSULATION DIAMETER	CRIMP SECTION WIRE SIZE MARKING [AWG]	CONTACT ■			
			COLOR DOT	TYPE	LP	STRIP
0.2 to 0.6 [24 - 20]	1.52 to 1.27 [.060 - .050]	24 - 20	RED	PIN	66506-[]	66506-[]
				SOCKET	66504-[]	66504-[]
0.09 to 0.2 [28 - 24]	1.02 to 0.76 [.040 - .030]	28 - 24	BLUE	PIN	66507-[]	66507-[]
				SOCKET	66505-[]	66505-[]

■ For further verification of terminal to tooling compatibility, contact your local AMP Representative or call the Tooling Assistance Number at the top of page 1.

Fig. 2

47T-8

4. CRIMPING PROCEDURE

After stripping the wire as in Paragraph 3, select an applicable loose piece contact ■ and identify the appropriate crimp section (according to the wire size markings on the BACK of the tool). The color dot on the contact must match the color dot above the appropriate tool crimp section. Refer to Figure 3 and proceed as follows:

1. Hold tool so BACK (Wire Side) is facing you.
2. Make sure ratchet is released — squeeze tool handles together and allow them to open FULLY.
3. Looking straight into BACK of appropriate crimp section, insert contact (insulation barrel first) into FRONT of crimp section. Position contact in crimpers so locator enters locator slot in contact with the locator against the wire barrel.
4. Hold contact in this position and squeeze tool handles together until insulation anvil starts entry into insulation crimper. Do NOT deform insulation barrel or wire barrel.

5. Insert a properly stripped wire through wire slot in locator and into wire barrel of contact until it butts against wire stop.
6. Holding wire in place, squeeze tool handles together until ratchet releases.
7. Allow tool handles to open fully so ejector can push contact out of crimpers. Remove crimped contact from tool.

5. INSULATION CRIMP ADJUSTMENT

The insulation barrel crimp height is regulated by the insulation 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.

6. MAINTENANCE/INSPECTION

These instructions have been approved by AMP Design, Production, and Quality Control Engineers to provide documented maintenance and inspection procedures in

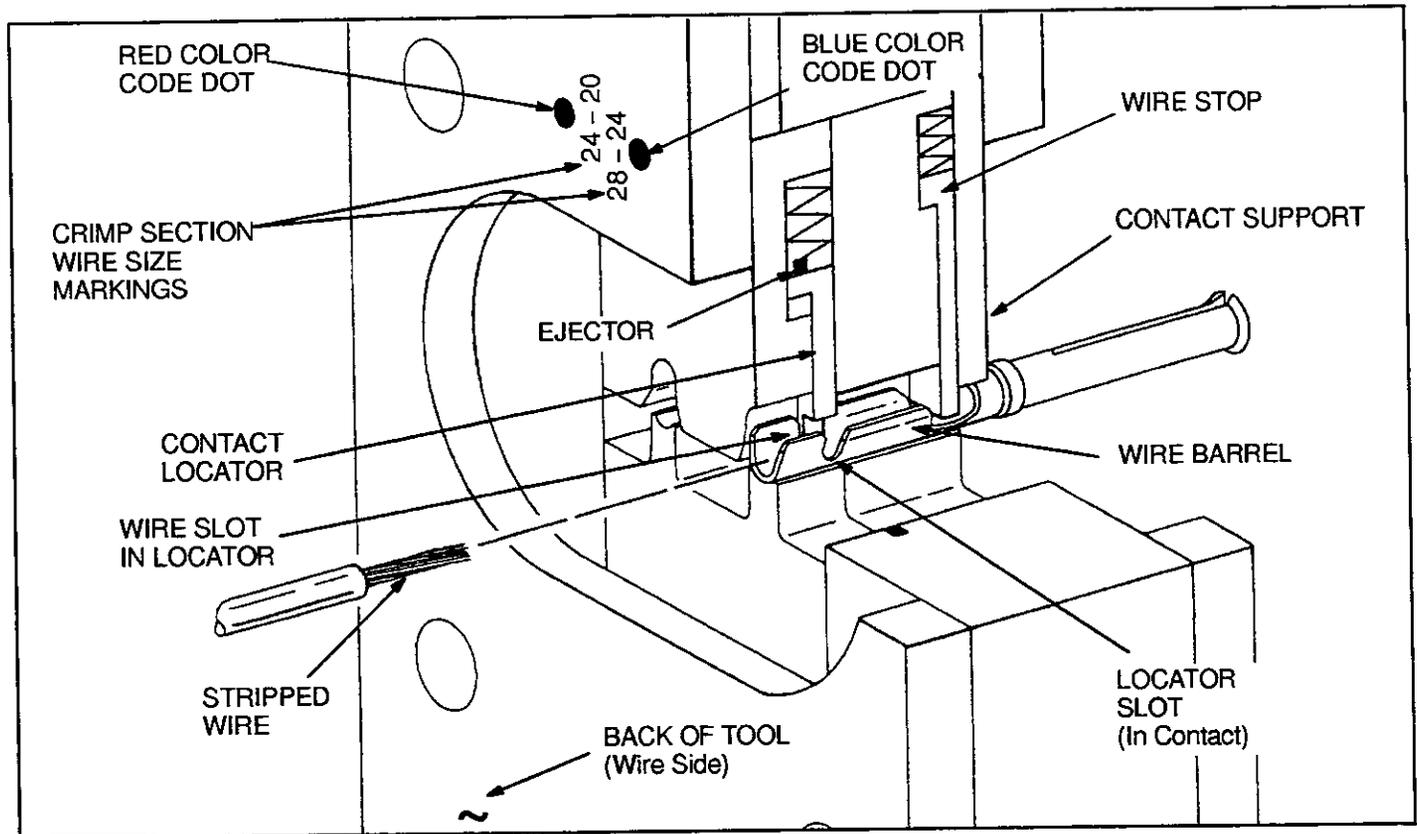


Fig. 3

47T-10

accordance with AMP Corporate Policy Number 3-3. Through AMP Test Laboratories and the inspection of production assembly, the procedures described herein have been established to assure quality and reliability of AMP hand crimping tools.

Customer replaceable parts are listed in Figure 4. A complete inventory should be stocked and controlled to prevent lost time when replacement of parts is deemed necessary. When ordering, order the replacement parts listed in Figure 4 by part number and description, not item number.

6.1. Daily Maintenance

It is recommended that each operator of the tool be made aware of — and responsible for — the following four steps of 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 sure the proper retaining pins are in place and secured with the proper retaining rings.
3. Make certain all pins, pivot points, and bearing surfaces are protected with a THIN coat of SAE No. 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

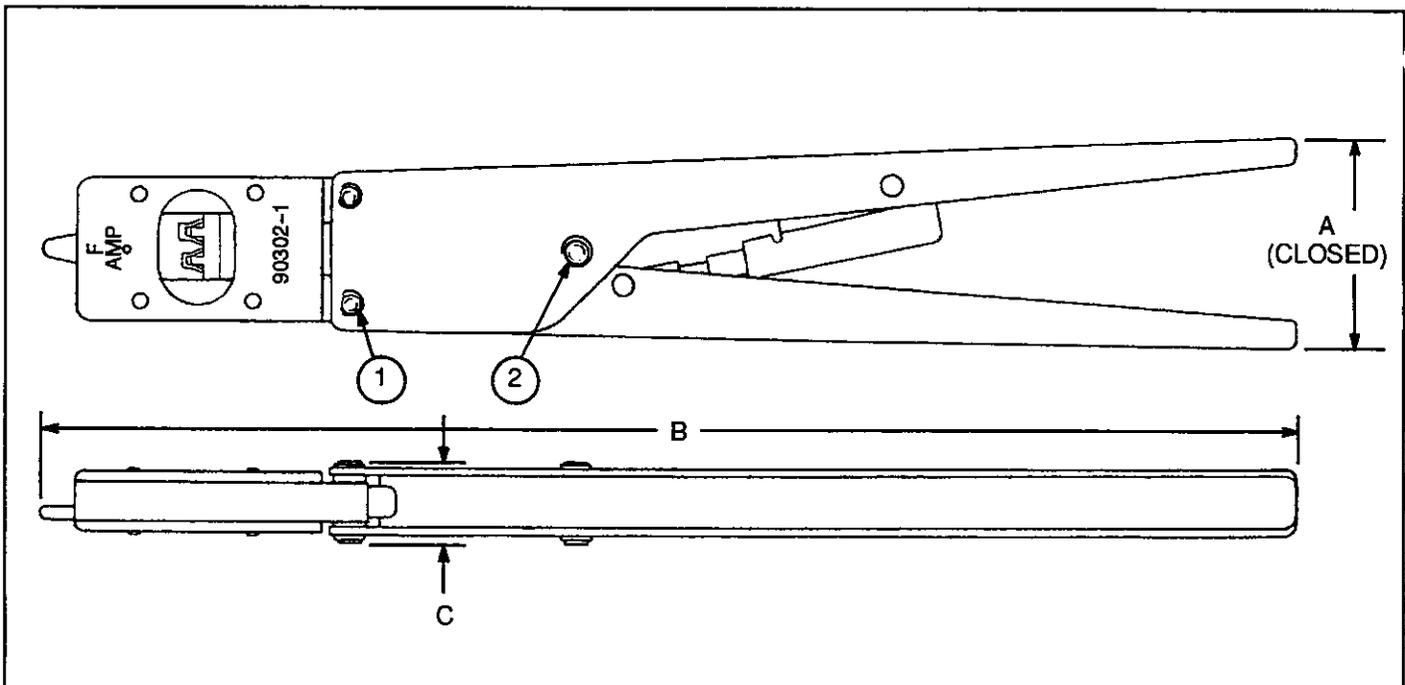
the crimping dies and store the tool in a clean, dry area.

6.2. 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 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 effect 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 4.
3. Close the tool handles until the ratchet releases, then allow the handles to open freely. If they do not open quickly and fully, the spring is defective and must be replaced (see Paragraph 7, REPAIR).



TOOL SPECIFICATIONS		REPLACEMENT PARTS			
DIMENSION	WEIGHT	ITEM	DESCRIPTION	PART NUMBER	QUANTITY
A	63.5mm [2.50 in.]	1	Ring, Retaining	21045-3	4
B	288.93mm [11.375 in.]				
C	19.10mm [0.75 in.]	2	Ring, Retaining	21045-9	2

CAUTION DO NOT REMOVE THE RETAINING PINS, AS PERMANENT DAMAGE TO THE TOOL MAY RESULT. (See Paragraph 7).

Fig. 4

38T-16A

B. Crimp Height Inspection

This inspection incorporates the use of a micrometer with a modified anvil as shown in Figure 5. We recommend the modified micrometer (Crimp Height Comparator RS-1019-5LP) which can be purchased from:

York Machinery & Supply Co. VALCO
 20 North Penn Street or 1410 Stonewood Drive
 York, PA 17401-1014 Bethlehem, PA 18017-3527

Proceed as follows:

1. Refer to the chart in Figure 5, and select a contact and a wire (maximum size) for each crimp section.
2. Refer to Paragraph 4, CRIMPING PROCEDURE, and crimp the contacts accordingly.
3. Using a crimp height comparator, measure each wire barrel crimp height as shown in Figure 5. If the height conforms to that shown in the chart, the tool is considered dimensionally correct. If not, return the tool to AMP for evaluation and repair. (see Paragraph 7, REPAIR). For additional information

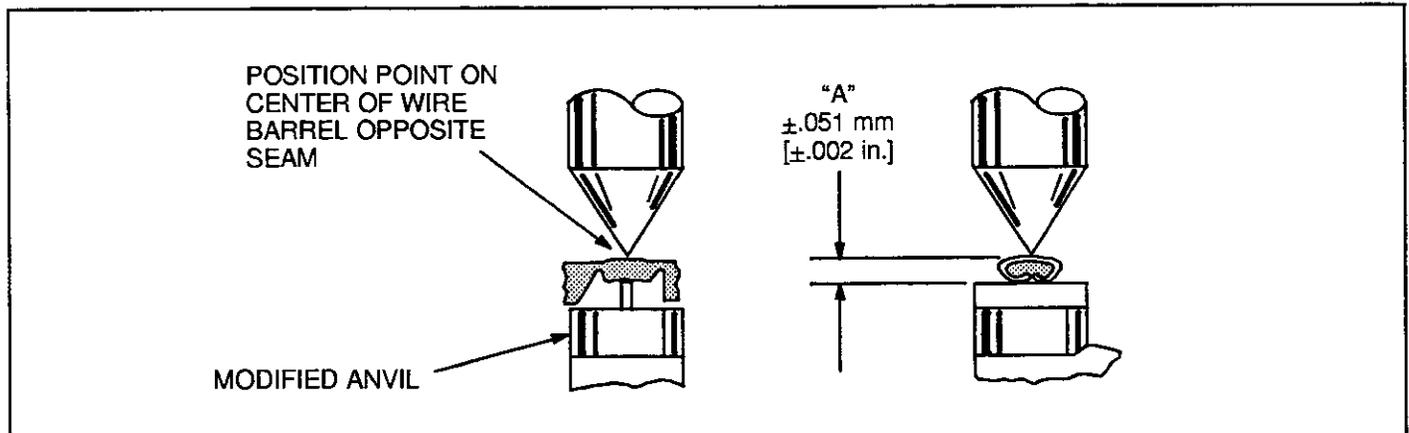
concerning the use of the crimp height comparator, refer to AMP Instruction Sheet IS 7424.

C. CERTI-CRIMP Ratchet Inspection

Obtain a .051mm [.002 in.] shim for checking the clearance between the bottoming surfaces of the crimping dies.

Proceed as follows:

1. Select a contact and a wire (maximum size) for the tool (see Figure 5).
2. Position the contact and wire between the crimping dies, according to Paragraph 4, CRIMPING PROCEDURE (Steps 1 through 5). Holding the wire in place, squeeze the tool handles until the CERTI-CRIMP ratchet releases. Hold the tool handles in this position, maintaining just enough tension to keep the dies closed.
3. Check the clearance between the bottoming surfaces of the crimping dies. If the clearance is .051 mm [.002 in.] or less, the ratchet is satisfactory. If clearance exceeds .051 mm [.002 in.], the ratchet



CONTACT ■ NUMBER	WIRE SIZE (MAX) mm ² [AWG]	CRIMP SECTION MARKING	DIM "A" mm [in.]
66504-[] 66506-[]	0.6 [20]	[24 - 20]	.749 [.0295]
66505-[] 66507-[]	0.2 [24]	[28 - 24]	.724 [.0285]

■ SEE NOTE, FIGURE 2

Fig. 5

200-002E

is out of adjustment and must be repaired (see Paragraph 7 REPAIR).

If the tool conforms to these inspection procedures, lubricate it with a THIN coat of SAE No. 20 motor oil and return it to service.

7. REPAIR

A complete inventory of the customer-replaceable parts listed in Figure 4 should be stocked for immediate replacement. Replacement parts can be ordered from:

CUSTOMER SERVICE (38-35)
AMP INCORPORATED
P. O. BOX 3608
HARRISBURG, PA 17105-3608

Tools may be returned (along with a written description of the problem) to AMP for evaluation and repair. Ship tools to:

CUSTOMER REPAIR (01-12)
AMP INCORPORATED
1523 NORTH 4TH STREET
HARRISBURG, PA 17102-1604