

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.

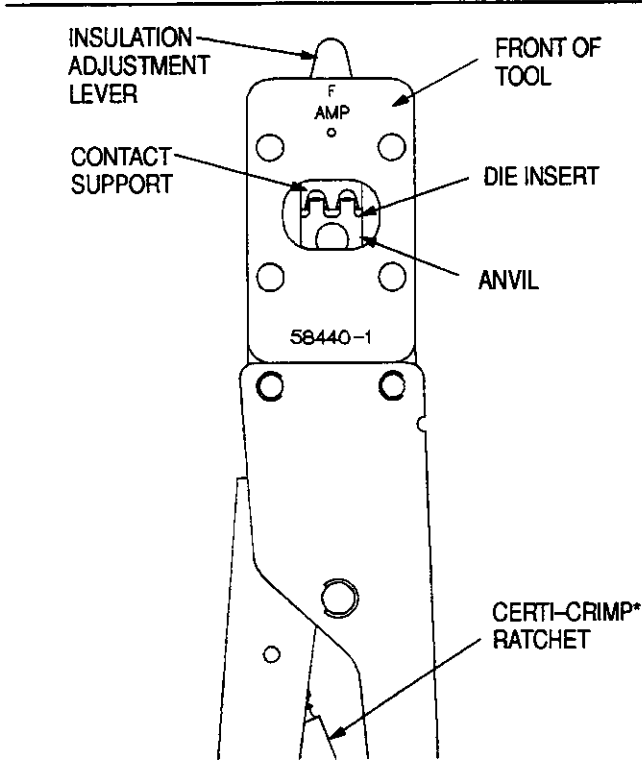


Figure 1

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1. INTRODUCTION

AMP Hand Crimping Tool 58440-1, shown in Figure 1, is designed for crimping AMPSEAL* Loose Piece contacts listed in Figure 2. Read these instructions thoroughly before crimping any contact.

NOTE

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

2. DESCRIPTION

The FRONT of the tool, 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 the wire size marked above the crimp section.

The tool features two fixed upper die inserts, two bottom movable dies (anvils), an insulation crimp adjustment lever, a contact support, a locator, an ejector, and a CERTI-CRIMP ratchet. The insulation adjustment lever is used to regulate the crimp height of the contact insulation barrel. Refer to Paragraph 4, INSULATION CRIMP ADJUSTMENT. The contact

support prevents the contact from bending during the crimping operation.

The locator has two functions: first, it positions the contact between the upper insert and the anvil before crimping; and, second, it limits the insertion distance of the stripped wire into the contact. In use, it rests in the locator slot of the contact (see Figures 2 and 3).

The ejector pulls the 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

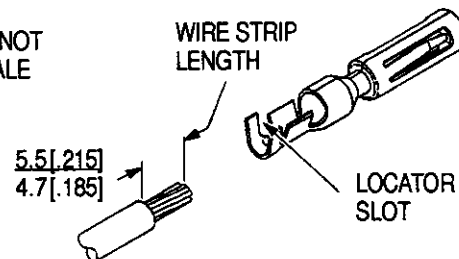
The crimping jaws bottom before the CERTI-CRIMP ratchet releases. This is a design feature that ensures maximum electrical and tensile performance of the crimp. Do NOT re-adjust the ratchet.

3. CRIMPING PROCEDURE

Refer to the chart in Figure 2 and ensure that the wire is of the specified size and insulation diameter, and is compatible with the contact and the wire size marking on the BACK of the tool. Strip the wire to the length indicated — do NOT cut or nick the wire strands.

WIRE		TOOL CRIMP SECTION (Wire Size Marking)	CONTACT PART NUMBER	
SIZE (AWG)	INSULATION DIAMETER RANGE		LOOSE PIECE	STRIP FORM*
16	1.7 - 2.7	16	770854-1	770520-1
20 - 18	[.067 - .106]	20 - 18		

NOTE: NOT TO SCALE



• SEE CAUTION BELOW

Figure 2

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CAUTION

Do NOT cut strip form* (reeled) contacts into loose piece form. This will produce burrs on the cut-off tab which will damage the wire seal in the plug assembly.

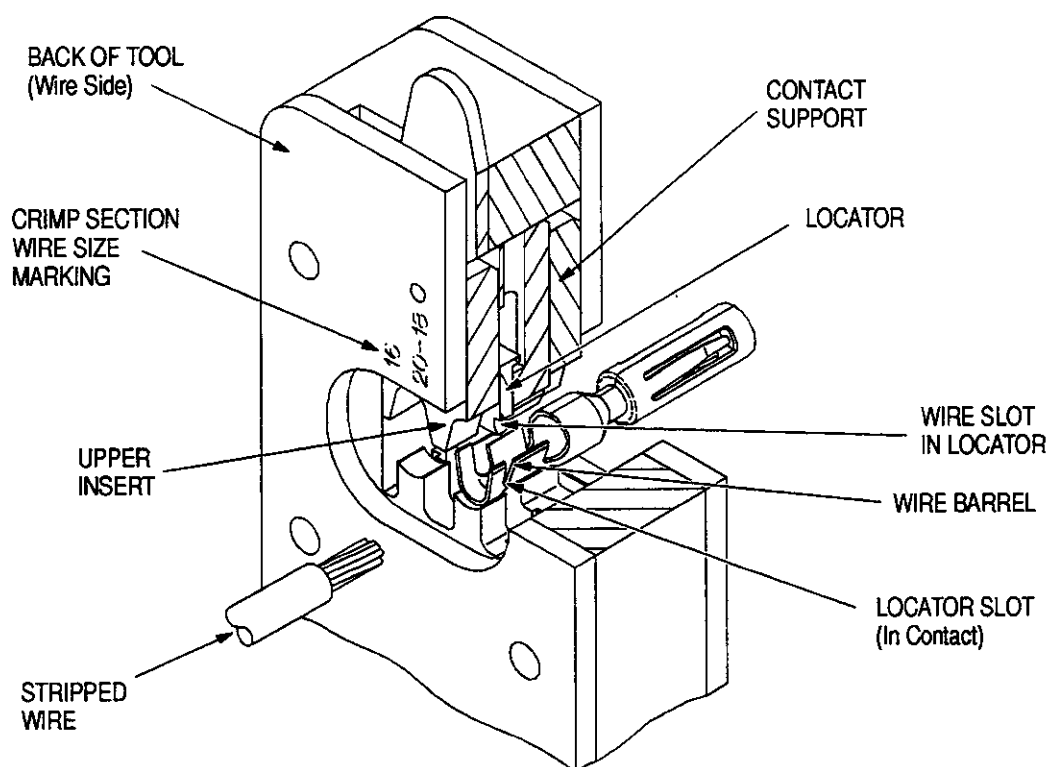


Figure 3

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For dimensional information on the product, refer to AMP Application Specification 114-16016. Then proceed as follows:

1. Hold tool so **BACK** side (wire side) faces you. See Figure 3.
2. Ensure that tool ratchet is released by squeezing tool handles and allowing them to open.
3. Holding contact by its mating portion and looking straight into crimp section, insert contact from the **FRONT** of tool into **BACK** of crimp section. Position contact between the crimping dies so the locator-insulation stop enters the locator slot in contact. The wire barrel should butt against the locator/insulation stop.
4. Holding contact in this position, squeeze tool handles together until insulation barrel anvil starts entry into the upper insert (insulation). Do **NOT** deform insulation barrel or wire barrel.
5. Insert properly stripped wire through the wire slot in locator and into wire barrel of contact until insulation butts against the locator/insulation stop.
6. Holding wire in place, crimp contact to wire by squeezing tool handles together until ratchet releases.
7. Allow tool handles to open **FULLY** and remove crimped contact from tool.

4. 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.

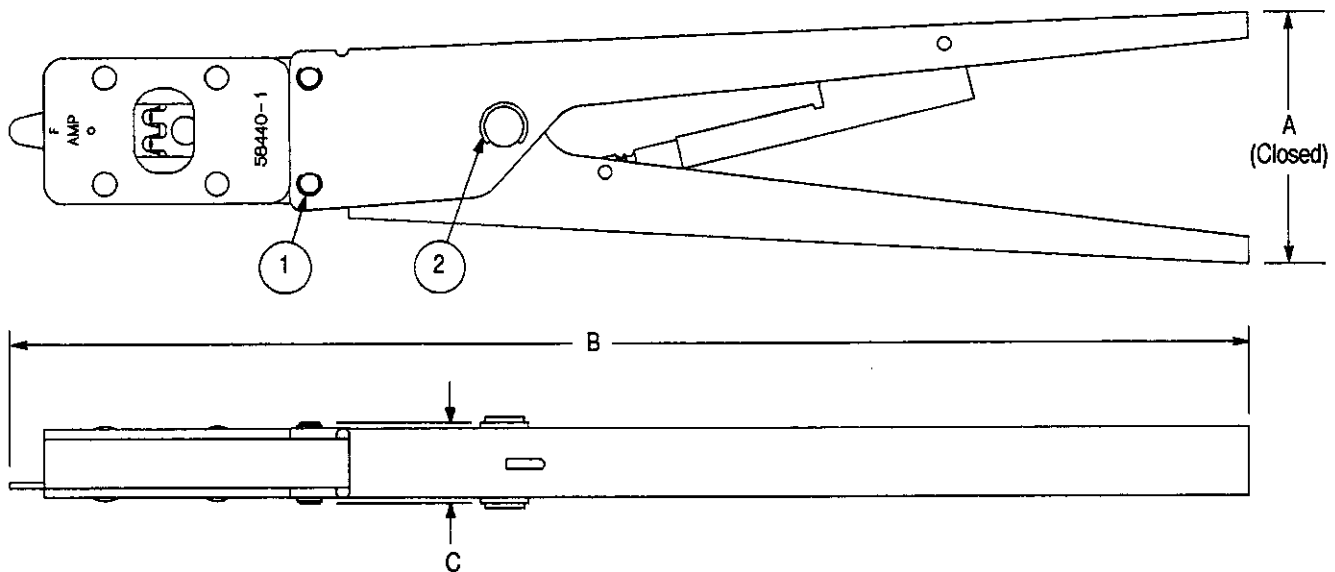
5. MAINTENANCE/INSPECTION

These instructions have been approved by AMP Design, Production, and Quality Control Engineers to provide documented maintenance and inspection procedures. Through AMP test laboratories and the inspection of production assembly, the procedures described herein have been established to ensure 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 necessary. When parts are needed, order by part number and description.

5.1. Daily Maintenance

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/substances



TOOL SPECIFICATIONS		CUSTOMER-REPLACEABLE PARTS			
DIMENSION	WEIGHT	ITEM	PART NUMBER	DESCRIPTION	QTY
A	63.5 [2.5]	1	21045-3	RING, Retaining	4
B	289 [11.375]				
C	20.1 [0.79]				
	567 g [1 lb. 4 oz.]	2	21045-9	RING, Retaining	2

CAUTION DO NOT REMOVE THE RETAINING PINS AS PERMANENT DAMAGE TO THE TOOL MAY RESULT.

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Figure 4

cannot be removed easily, or if the proper replacement parts are not available, return the tool to your supervisor.

Make certain all pivot points and bearing surfaces are protected with a THIN coat of any good SAE No. 20 motor oil. Do NOT oil excessively. When tool is not on 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 inspection 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 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 4.

3. Close the tool handles until the ratchet releases, then allow the tool handles to open freely. If they do not open quickly and fully, the spring is defective and must be replaced (see Paragraph 6, 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 AMP for evaluation and repair (see Paragraph 6, REPLACEMENT AND REPAIR).

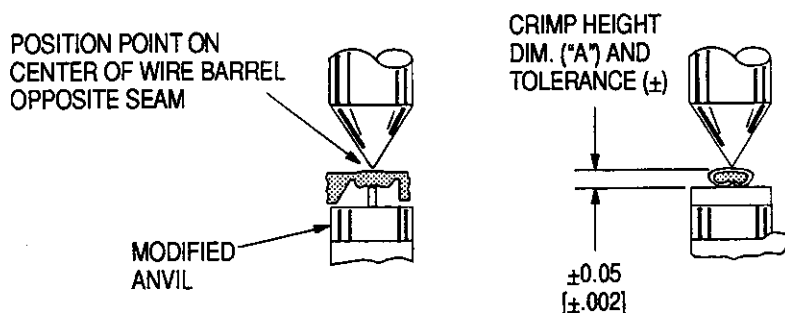
B. Crimp Height Inspection

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

York Machinery & Supply Co.
20 North Penn Street
York, PA 17401-1014

or

VALCO
1410 Stonewood Drive
Bethlehem, PA 18017-3527



CONTACT NUMBER STRIP FORM	CONTACT NUMBER LOOSE PIECE	WIRE SIZE AWG (Max)	CRIMP SECTION (Wire Size Marking)	CRIMP HEIGHT DIMENSION "A"	HAND TOOL NUMBER
770520-1	770854-1	20	20 - 18	1.22 [.048]	58440-1
		18	20 - 18	1.22 [.048]	
		16	16	1.40 [.055]	

Figure 5

200-002E

Proceed as follows:

1. Refer to chart in Figure 5 and select a contact and a wire (maximum size) for each crimp section listed in the chart.
2. Refer to Paragraph 3, CRIMPING PROCEDURE, and crimp the contact(s) 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 in the chart, the tool is considered dimensionally correct. If not, return the tool to AMP for evaluation and repair (see Paragraph 6, REPLACEMENT AND REPAIR).

For additional information concerning the use of the crimp height comparator, refer to AMP instruction sheet 408-7424.

C. CERTI-CRIMP Ratchet Inspection

Obtain a .025mm [.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, wire (maximum size) and the designated crimp section for the wire you are using (see Figure 5).
2. Position the contact and wire between the crimping dies, according to Paragraph 3, CRIMPING PROCEDURE (STEPS 1 THROUGH 5). Holding the wire in place, squeeze the 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 .025mm [.001 in], or less, the ratchet is satisfactory. If clearance is greater, the ratchet is out of adjustment and must be repaired (see Paragraph 6, REPLACEMENT AND REPAIR).

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

6. REPLACEMENT AND REPAIR

The parts listed in Figure 4 are customer-replaceable. A complete inventory can be stocked and controlled to prevent lost time when replacement of parts is necessary. Order replacement parts through your AMP 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)
AMP INCORPORATED
P.O. BOX 3608
HARRISBURG PA 17105-3608

Tools may also be returned to AMP for evaluation and repair. For repairs, send tool, with a written description of the problem, to:

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