

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.

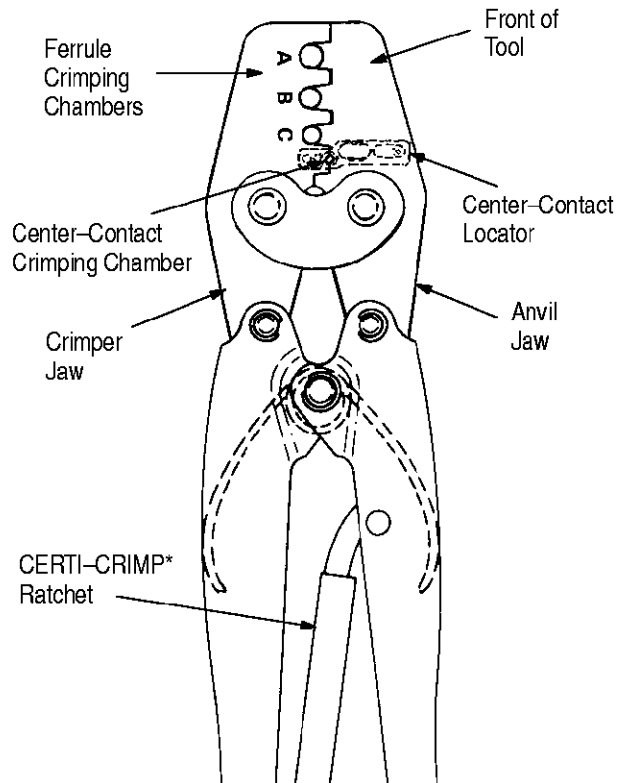


Figure 1

1. INTRODUCTION

AMP* Hand Crimping Tool 220066-2 crimps COAXICON* contacts and ferrules for AMP ARINC connectors. Read these instructions thoroughly before using the tool.

NOTE *Dimensions in this instruction sheet are in metric units [with U.S. customary units in brackets]. Figures are not drawn to scale.*

Reasons for reissue are provided in Section 6, REVISION SUMMARY.

2. DESCRIPTION

The tool features multiple sets of crimping chambers (contained within the crimper and anvil jaws), a center-contact locator, and a CERTI-CRIMP ratchet. The ferrule crimping chambers (A, B and C) are used to crimp various sizes of ferrules and the center-contact crimping chamber is used to crimp various sizes of center contacts. See Figure 1.

The center-contact locator aids in positioning the center contact in the center-contact crimping chamber. It is located on the back of the tool and is adjustable to three positions (1, 2 or 3) to accommodate the various size contacts.

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

CAUTION *The crimping jaws 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.*

Each contact assembly consists of a ferrule, a center contact, and a pin or socket body, as shown in Figure 2. The chart in Figure 2 identifies the various contact assembly sizes and indicates which ferrule crimp section and center-contact locator position of the tool is to be used.

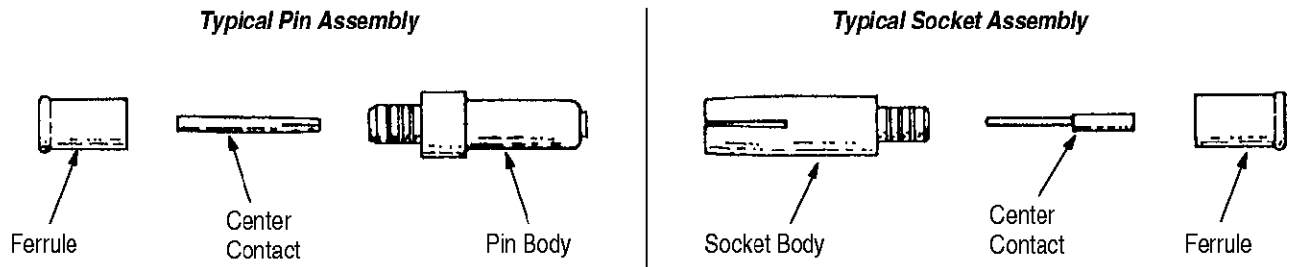
3. CRIMPING PROCEDURE

NOTE *Each hand tool is coated with a preservative to prevent rust or corrosion. Wipe this preservative from the tool, particularly from the crimping jaws, before using the tool.*

These procedures provide instructions on the use of the hand tool for crimping only. For information pertaining to the individual contact assemblies, such as cable stripping dimensions and assembly of component parts, refer to instruction sheets 408-2348, -1, and -2. The crimping procedure requires two separate crimps. First, the center contact assembly must be crimped to the center conductor of the cable; then the ferrule is crimped to the cable and connector.

3.1. Crimping the Center Contact (Figure 3)

1. Slide ferrule onto cable, then strip the cable to the dimensions specified on the instruction sheet provided with the connector. Do NOT nick or cut cable braid.
2. Refer to Figure 2 to determine the appropriate position of the center-contact locator. If necessary, loosen the socket-head capscrew of the center-contact locator with a 3/32-in. hex wrench and slide the center-contact locator to the desired position. Then tighten the capscrew.



RG/U CABLE	CONTACT ASSEMBLY●			CENTER-CONTACT LOCATOR POSITION	FERRULE CRIMPING CHAMBER
	SIZE	TYPE	PART NUMBER		
.141 Dia Semi-Rigid	5	Pin	225790-3	2	B
180, 195	5	Pin	225790-4	N/A●	B
183, 316	5	Pin	225790-5	N/A●	C
179, 187	5	Pin	225790-6	N/A●	C
58C, 141, 141A	5	Pin	225790-1	2	B
223	5	Pin	225790-2	N/A●	B
58C, 141, 141A	5	Socket	225791-1	1	B
223	5	Socket	225791-2	N/A●	B
188, 316	5	Socket	225791-3	N/A●	C
179, 187	5	Socket	225791-4	N/A●	C
.141 Dia Semi-Rigid	5	Socket	225791-6	1	B
180, 195	5	Socket	225791-8	N/A●	B
58C, 141A	7	Socket	225796-1	2	B
142	7	Socket	225796-2	2	B
58C, 141A	9	Pin	225935-1	N/A●	B
174, 188	9	Pin	225935-4	N/A●	C
142	9	Pin	225935-5	N/A●	B
.141 Dia Semi-Rigid	9	Socket	225936-1	1	B
58C, 141A	9	Socket	225936-2	N/A●	B
174, 188, 316	9	Socket	225936-3	N/A●	C
142	9	Socket	225936-5	N/A●	B
58C	3	Pin	226053-1	N/A●	B

● For additional contact information and applicable tooling, refer to AMP Catalogs 82010 and 82074 and instruction sheets 408-2348, -1, -2, -3, and -4.

Figure 2

3. Hold tool so that the FRONT side is facing you. Open the crimping jaws by squeezing the tool handles together until the CERTI-CRIMP ratchet releases.
4. Insert the center contact fully into the center-contact locator.
5. Slowly close tool handles until the contact is held firmly in place. Do not deform the wire barrel of the center contact.
6. Insert center conductor of cable into wire barrel of center-contact until cable dielectric butts against contact.
7. While holding cable in place, close tool handles until ratchet releases. Allow handles to open fully and remove crimped contact.

3.2. Crimping the Ferrule (Figure 4)

1. Insert crimped center contact into appropriate contact body until cable dielectric bottoms against dielectric inside contact body. Braid should fit over braid support section of contact.
2. Position ferrule over braid and against shoulder on contact body.
3. Refer to Figure 2 to determine the appropriate ferrule crimp section (A, B or C).
4. Open the tool's jaws by squeezing the handles together until the ratchet releases and then allow the handles to open FULLY.
5. Position the contact assembly into the appropriate ferrule crimping chamber.

Crimping Center Contact

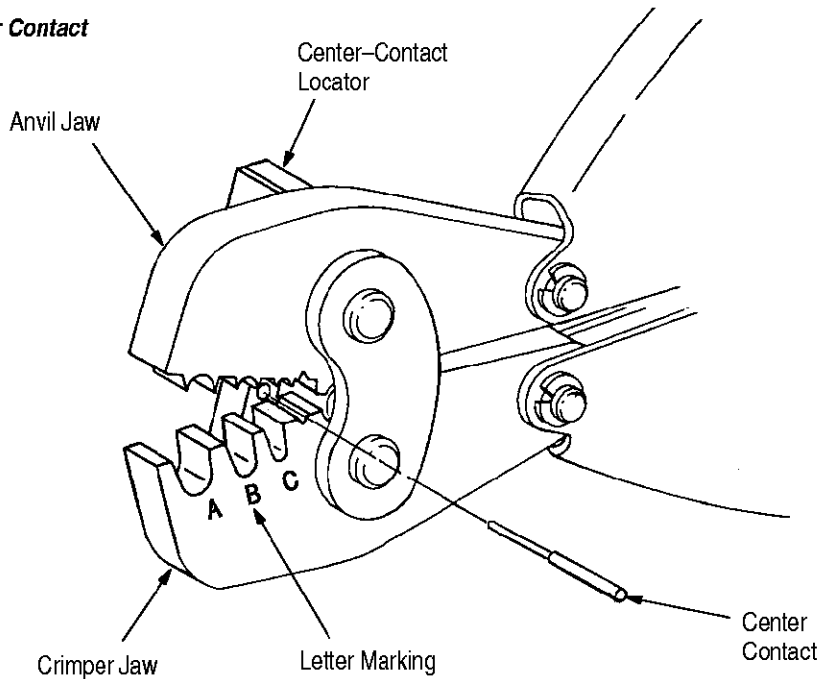


Figure 3

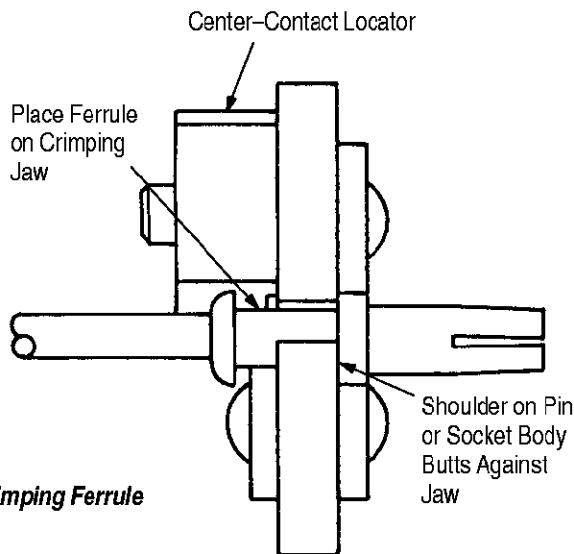


Figure 4

6. To complete crimp, close handles until ratchet releases. Allow handles to open fully and remove crimped contact assembly.

4. MAINTENANCE AND INSPECTION PROCEDURE

AMP recommends that a maintenance and inspection program be performed periodically to ensure dependable and uniform terminations. Though

recommendations call for at least one inspection a month, frequency of inspection depends on:

1. The care, amount of use, and handling of the hand tool.
2. The presence of abnormal amounts of dust and dirt.
3. The degree of operator skill.
4. Your own established standards.

The hand tool is inspected before being shipped; however, AMP recommends that the tool be inspected immediately upon arrival to ensure that the tool has not been damaged during shipment.

4.1. Daily Maintenance

1. Hand tool should be immersed (handles partially closed) in a reliable commercial degreasing compound to remove accumulated dirt, grease, and foreign matter. When degreasing compound is not available, tool may be wiped clean with a soft, lint-free cloth. Do NOT use hard or abrasive 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 crimping jaws. Store the tool in a clean, dry area.

4.2. Periodic Inspection

A. 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.

B. Visual Inspection

1. Close tool handles until ratchet releases and then allow them to open freely. If they do not open quickly and fully, the spring is defective and must be replaced.
2. Inspect head assembly for worn, cracked, or broken jaws. If damage is evident, return the tool to AMP for evaluation and repair. See Section 5.

C. Gaging the Crimping Chambers

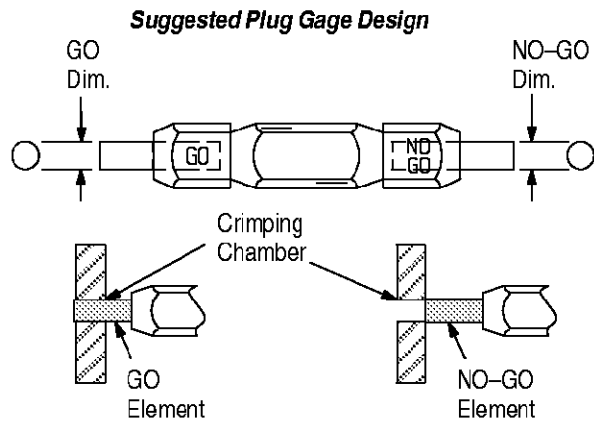
This inspection requires the use of plug gages conforming to the dimensions provided in Figure 5. AMP does not manufacture or market these gages. To gage the crimping chambers, proceed as follows:

To gage the ferrule crimping chambers, proceed as follows:

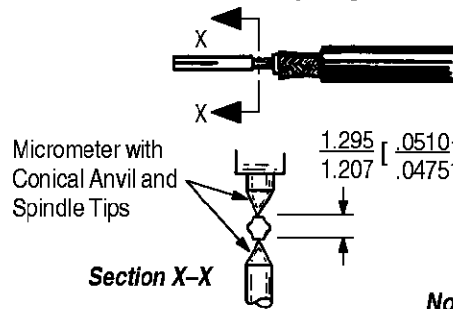
1. Remove traces of oil or dirt from crimping chambers and plug gages.
2. Close the tool handles until the jaws have bottomed; then hold in this position. Do not force the jaws beyond initial contact.
3. Carefully insert GO element straight into the corresponding crimping chamber; do not force it. The GO element must pass completely through the crimping chamber. See Figure 5.
4. In the same manner, try to insert the NO-GO element into the same crimping chamber. The NO-GO element may start entry, but must not pass completely through the crimping chamber.
5. Repeat Steps 3 and 4 for each crimp section listed in the chart in Figure 5.

If the crimping chambers conform to the gage inspection, they are considered dimensionally correct, and should be lubricated with a THIN coat of any good SAE 20 motor oil. If not, return the tool to AMP for further evaluation and repair. See Section 5.

For additional information concerning the use of a plug gage or crimp height measurement, refer to instruction sheet 408-7424.



Center Contact Crimp Height Measurement



Note: Not to Scale

FERRULE CRIMP SECTION	GAGE ELEMENT DIMENSIONS	
	GO	NO-GO
A	6.426 – 6.434 [.2530 – .2533]	6.602 – 6.604 [.2599 – .2600]
B	5.486 – 5.494 [.2160 – .2163]	5.662 – 5.664 [.2229 – .2230]
C	4.242 – 4.249 [.1670 – .1673]	4.392 – 4.394 [.1729 – .1730]

Figure 5

D. CERTI-CRIMP Ratchet Inspection

The CERTI-CRIMP ratchet feature on AMP hand tools should be checked to ensure that the ratchet does not release prematurely, allowing the jaws 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 crimping jaws. Proceed as follows:

1. Select a connector and *maximum* size cable for the hand tool.
2. Position the connector and cable between the crimping jaws, as described in Section 3, CRIMPING PROCEDURE.
3. Holding connector in place, squeeze the tool handles together until the CERTI-CRIMP ratchet releases. Hold the handles in this position, maintaining just enough tension to keep the jaws closed.

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

5. REPLACEMENT AND REPAIR

The parts listed in Figure 6 are customer-replaceable. A complete inventory can be stocked and controlled to prevent lost time when replacement of parts is necessary. Parts other than those listed should be replaced by AMP to ensure quality and reliability of the tool. 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
PO BOX 3608
HARRISBURG PA 17105-3608

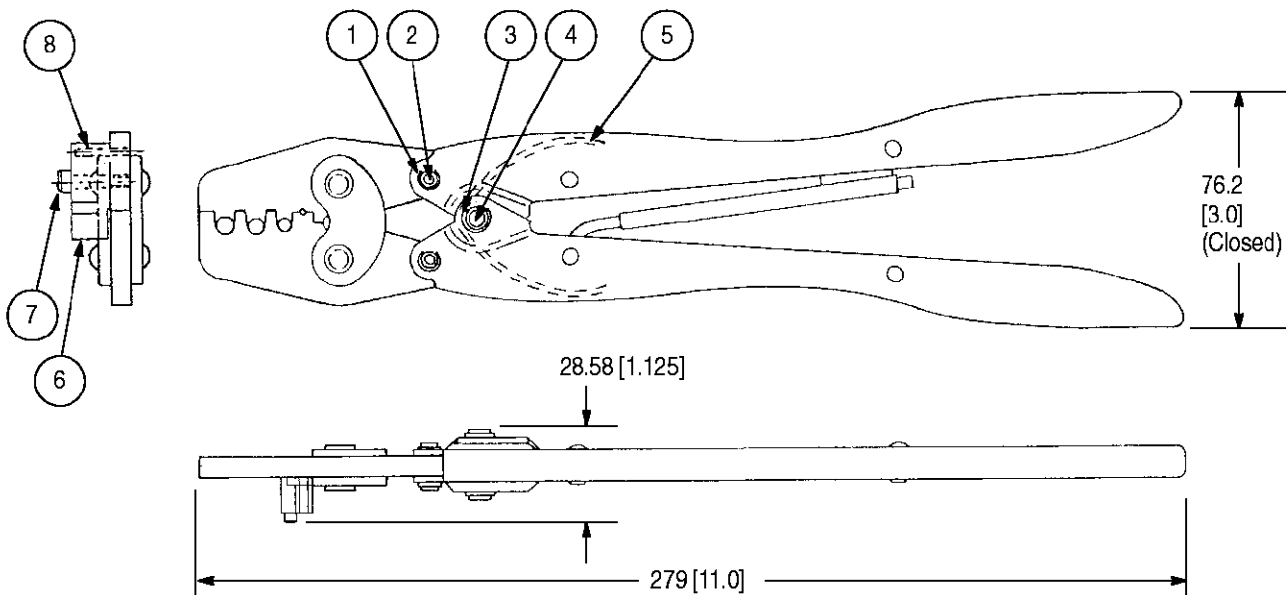
Tools may also be returned to AMP for evaluation and repair. For tool repair service, contact an AMP representative at 1-800-526-5136.

6. REVISION SUMMARY

Revisions to this document include:

Per EC 0990-0760-99:

- Changed tool repair service information in Section 5, REPLACEMENT AND REPAIR
- Updated document format



WEIGHT: Approx. 595 g [1 lb. 5 oz.]

REPLACEMENT PARTS

ITEM	PART NUMBER	DESCRIPTION	QTY PER TOOL
1	21045-3	Ring, Retaining	4
2	1-23619-6	Pin, Retaining	2
3	21045-6	Ring, Retaining	2
4	2-23620-9	Pin, Retaining	1
5	39364	Spring	1
6	313131-1	Locator	1
7	1-21000-6	Screw, Hex Head Cap	1
8	21028-8	Pin, Slotted Spring	1

Figure 6