

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.

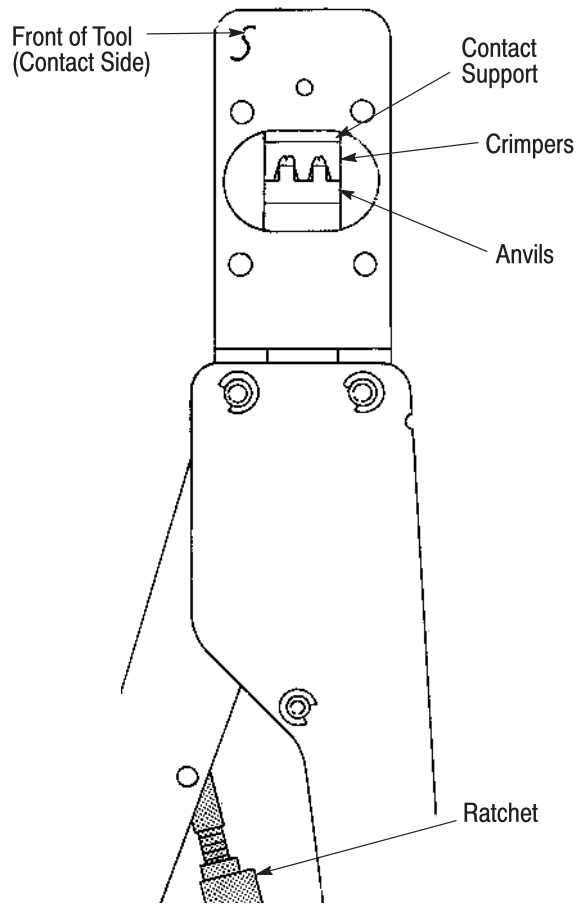


Figure 1

1. INTRODUCTION

This instruction sheet covers the use of Hand Crimping Tool 90313-2, which is designed to crimp the FFC round wire loose piece (LP) pin and receptacle contacts listed in Figure 2. 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)

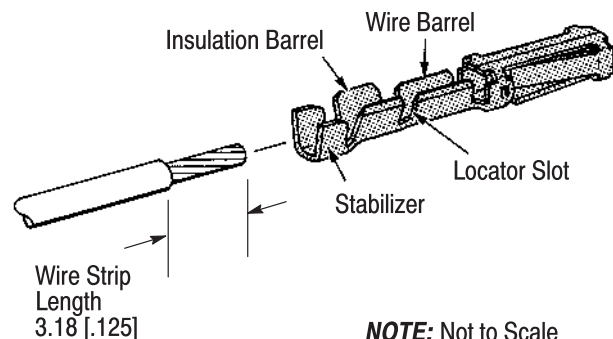
The FRONT OF TOOL is marked with the tool number. The BACK OF TOOL (wire side), into which

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

This tool features two fixed dies (crimpers), two movable dies (anvils), a contact support, a contact locator, a wire stop, an ejector, and a CERTI-CRIMP* Hand Crimping Tool ratchet control.

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

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



Wire		Contact			Crimp Sect (Wire Size Marking)
Size (AWG)	Insul Dia	Type	LP	Strip	
32 to 28	.64 to 1.22 [.025 to .048]	Pin	88048-3, -5, 1-88048-0, 1-88048-3	88048-2, -4, -6, -7, -8, -9, 1-88048-1, 1-88048-2	28-32
		Rcpt	88017-6, -7, -8, 1-88017-7	88017-2, -3, -4, 1-88017-0, 1-88017-1, 1-88017-2, 1-88017-5, 1-88017-6	
26	.64 to 1.22 [.025 to .068]	Pin	88048-3, -5, 1-88048-0, 1-88048-3	88048-2, -4, -6, -7, -8, -9, 1-88048-1, 1-88048-2	26
		Rcpt	88017-6, -7, -8, 1-88017-7	88017-2, -3, -4, 1-88017-0, 1-88017-1, 1-88017-2, 1-88017-5, 1-88017-6	

Figure 2

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

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

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



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

3. CRIMPING PROCEDURE

Refer to Figure 2 and select wire of the specified size and insulation diameter. Strip the wire to the length indicated – Do NOT cut or nick the wire strands.

Select an applicable loose-piece 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 the tool so the BACK (wire side) faces you.
2. Make sure the ratchet is released. Squeeze the tool handles together and allow them to open FULLY.

3. Looking straight into BACK of appropriate crimping chamber, insert the contact (stabilizer first) into the FRONT of the crimping chamber. Position the contact in the dies so that the locator enters locator slot (between the insulation and wire barrels) in the contact.

4. Hold the contact in this position and squeeze the tool handles together until the insulation anvil starts entry into the insulation crimper. Do NOT deform the insulation barrel or wire barrel.

5. Insert a properly stripped wire through the wire slot in the locator and into the wire barrel of the contact until the wire butts against the wire stop.

6. Holding the wire in place, squeeze the tool handles until the ratchet releases.

7. Allow the tool handles to open fully so that the ejector can push the contact out of the crimpers. Remove the crimped contact from the tool.

4. MAINTENANCE AND INSPECTION

4.1. 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.

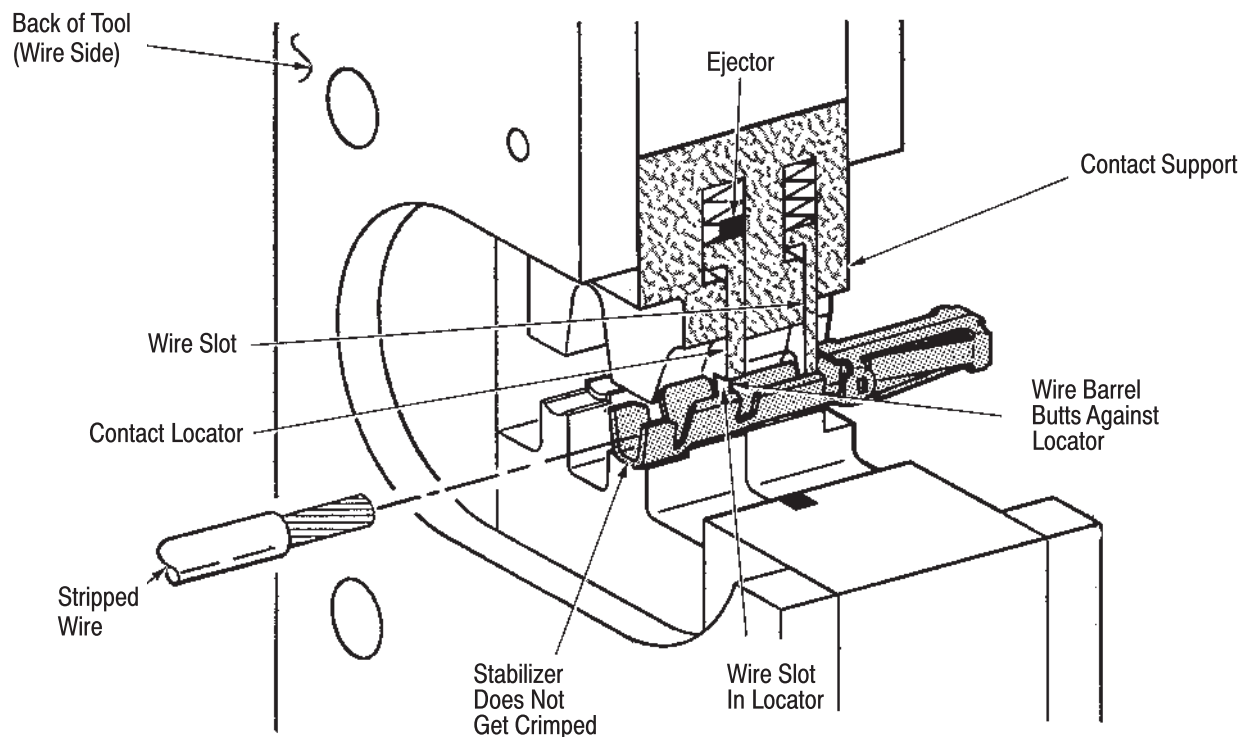


Figure 3

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.

4.2. 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).

4.3. 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.
717-767-7575

or

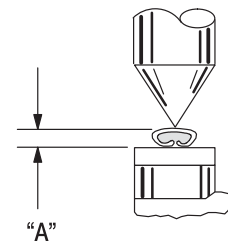
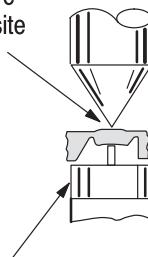
VALCO
610-691-3205

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.

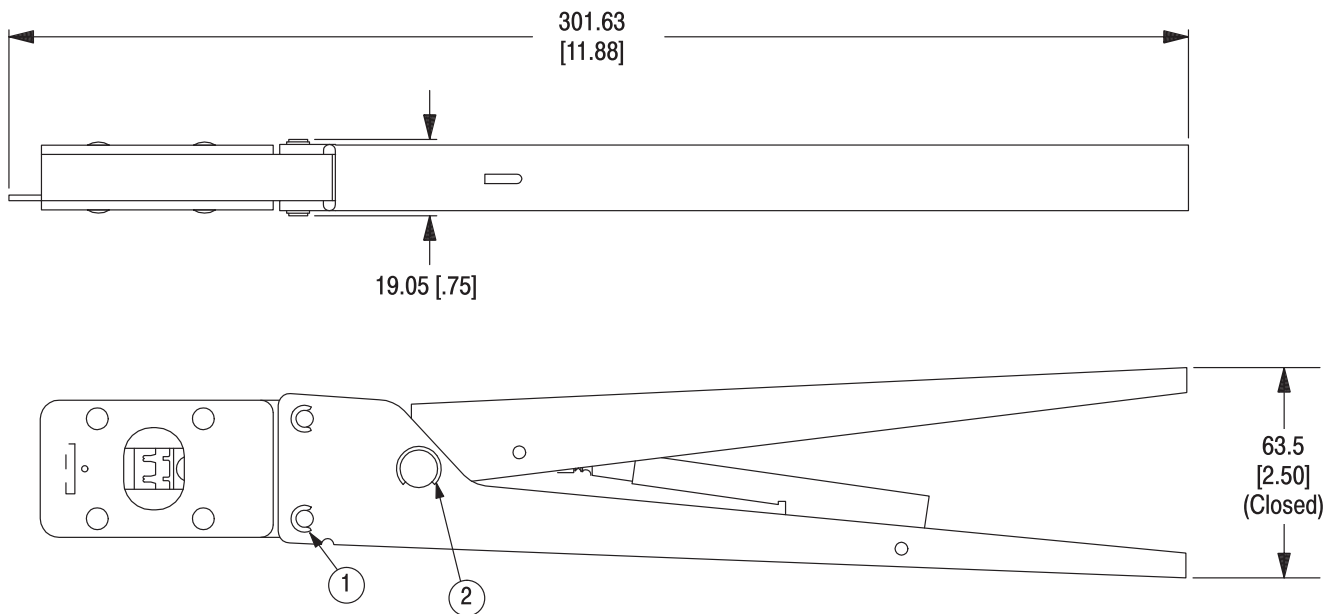
Position Point on
Center of Wire
Barrel Opposite
Seam



Modified Anvil

CONTACT PART NO. (LP)	WIRE SIZE AWG (Max)	CRIMPING CHAMBER (Wire Size Marking)	CRIMP HEIGHT DIM. "A"
88048-3 88048-5 1-88048-0 1-88048-3 88017-6 88017-7	28	28-32	.058 ± .02 [.0230 ± .0010]
1-88017-8 1-88017-7	26	26	.068 ± .02 [.0270 ± .0010]

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

4.4. 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 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.

5. 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.

6. REVISION SUMMARY

Since the last revision of this document, the following changes have been made:

- Updated document to corporate requirements