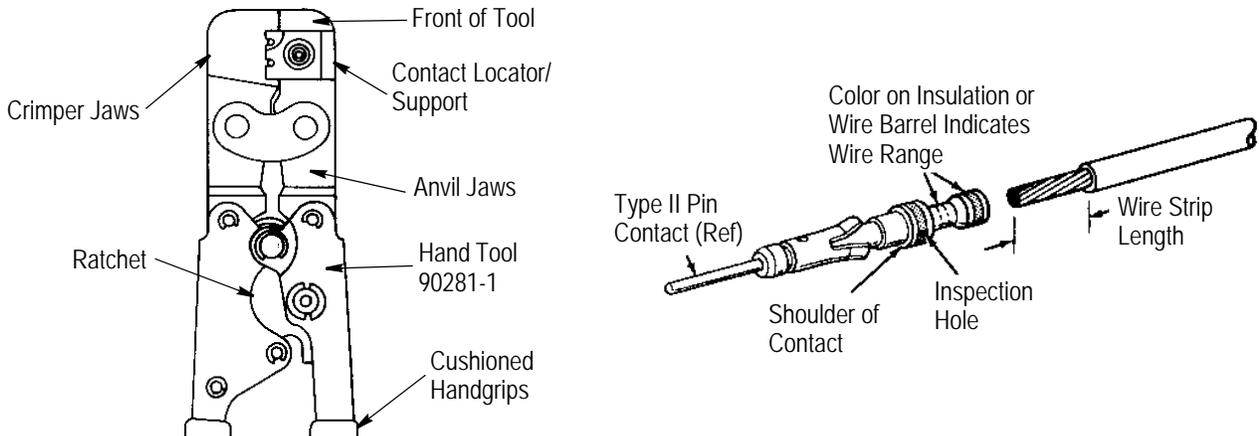


PROPER USE GUIDELINES

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.

ORIGINAL INSTRUCTIONS

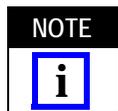


WIRE			COLOR CODE	MULTIMATE CONTACT		CRIMP SET (Wire Size Marking)
SIZE (AWG)	INSUL DIA	STRIP LENGTH		PIN	SOCKET	
24-20	1.40-2.16 [.055-.085]	5.16 [.203]	Yellow	200334	200331	24-20
				200679	201328	
	201330			---		
	201578			201580		
	---			201584		
18-16	Contacts Do Not Have Insulation Barrel	6.35 [.250]	Blue	---	200333	18-16 14
				200336	---	
				200681	---	
				---	201589	
14			Violet	201570	201568	
			Violet	201645	---	

Figure 1

1. INTRODUCTION

Hand Crimping Tool 90281-1 is designed for crimping the Multimate Type II pin and socket contacts listed in Figure 1. Read these instructions thoroughly before crimping any contacts. The tool is recommended for field repair use ONLY.



All dimensions on this document are in metric units [with U.S. customary units in brackets]. Figures and illustrations are for identification only and are not drawn to scale.

Reason for revision is given in Section 7, REVISION SUMMARY.

2. DESCRIPTION (Figures 1 and 2)

This tool features two crimper jaws, two anvil jaws, two crimp sections with applicable color-coded wire size markings, a contact locator/support, a ratchet to ensure full contact crimping, and spring-actuated handles with cushioned handgrips. See Figure 1.

A color band appears around either the contact insulation barrel or wire barrel.

3. CRIMPING PROCEDURE

Refer to the table in Figure 1 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.

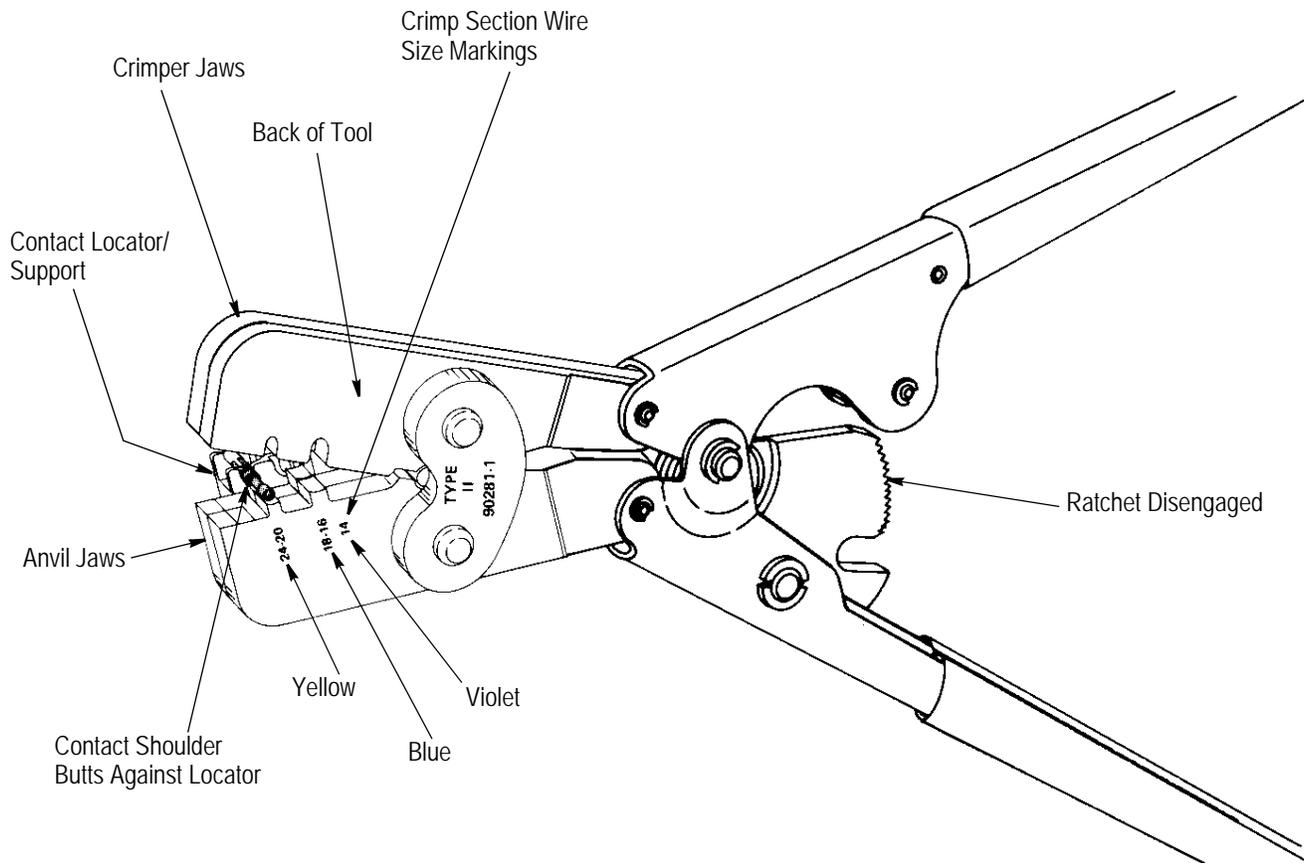


Figure 2

Select an applicable contact and identify the appropriate crimp section (according to the wire size markings on the BACK of the tool). The color band on the contact insulation or wire barrel must match the color-coded wire size marking beside the appropriate tool crimp section. Refer to Figure 2 and proceed as follows:

1. Hold tool so BACK (wire side) is facing you. Make sure ratchet is released - squeeze tool handles together and allow them to open fully.
2. Looking straight into BACK of appropriate crimp section, insert contact (insulation barrel first) into FRONT of crimp section. Position contact on anvil jaws, with contact shoulder against locator. Allow contact to rest in contact locator/support.
3. Squeeze tool handles together until ratchet engages enough to hold contact in position. Do NOT deform insulation barrel or wire barrel.
4. Insert a properly stripped wire into contact wire barrel until it bottoms.
5. Holding wire in place, squeeze tool handles together until ratchet releases. Allow tool handles to open FULLY, and remove crimped contact.

6. Check to be sure contact is properly crimped. Wire must be visible through inspection hole in contact.

4. MAINTENANCE/INSPECTION PROCEDURES

4.1. 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 any good 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 jaws 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 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 the parts list in Figure 4.
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 5, REPAIR).
4. Inspect the head assembly, with special emphasis on checking for worn, cracked, or broken jaws. If damage to any part of the head assembly is evident, the tool must be repaired (see Section 5, REPAIR).

B. Crimp Height Inspection

Crimp height inspection is performed through the use of a micrometer with a modified anvil, commonly referred to as a crimp-height comparator. TE does not manufacture or market crimp-height comparators. Detailed information on obtaining and using crimp-height comparators can be found in Instruction Sheet 408-7424.

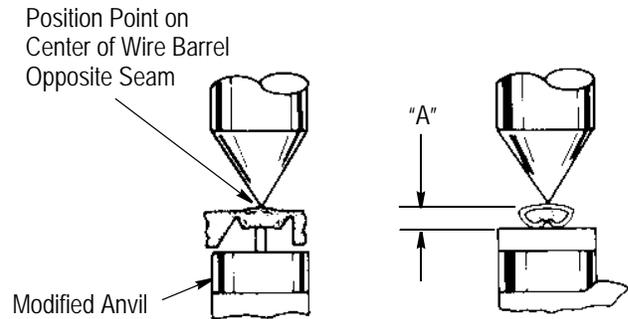
Proceed as follows:

1. Refer to the table in Figure 1, and select a contact and a wire (maximum size) for each crimp section listed in the table.
2. Refer to Section 3, CRIMPING PROCEDURE, and crimp the contact(s) accordingly.
3. Using a crimp height comparator, measure wire barrel crimp height as shown in Figure 3. If the crimp height conforms to that shown in the table, the tool is considered dimensionally correct. If not, the tool must be repaired (see Section 5, REPAIR).

C. Ratchet Inspection

Obtain a 0.03-mm [.001-in.] shim that is suitable for checking the clearance between the bottoming surfaces of the crimping jaws.

Proceed as follows:



WIRE SIZE (AWG) MAX	CRIMP SECTION (WIRE SIZE MARKING)	CRIMP HEIGHT (DIM. "A")
20	24-20	1.14 ±0.08 [.045 ±.003]
16	18-16	1.588 ±0.089 [.0625 ±.0035]
14	14	

Figure 3

1. Select a contact and wire (maximum size) for the tool (see Figure 1).
2. Position the contact and wire between the crimping jaws, according to Section 3, CRIMPING PROCEDURE (Steps 1 through 4). 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 jaws closed.
3. Check clearance between the bottoming surfaces of the crimping jaws. If the clearance is 0.03 mm [.001 in.] or less, the ratchet is satisfactory. If clearance exceeds 0.03 mm [.001 in.], the ratchet is out of adjustment and must be repaired (see Section 5, 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.

5. REPAIR

All parts of the tool can be replaced. 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. If parts that affect ratchet setting are replaced, the ratchet must be adjusted using the spanner wrench (see Figure 4).

Proceed as follows:

1. Loosen the ratchet nut on the back of tool (side with wire size markings).
2. Check bottoming of tool jaws according to Paragraph 4.2.C, Ratchet Inspection. Turn screw on front of tool CLOCKWISE to tighten ratchet or COUNTERCLOCKWISE to loosen ratchet.

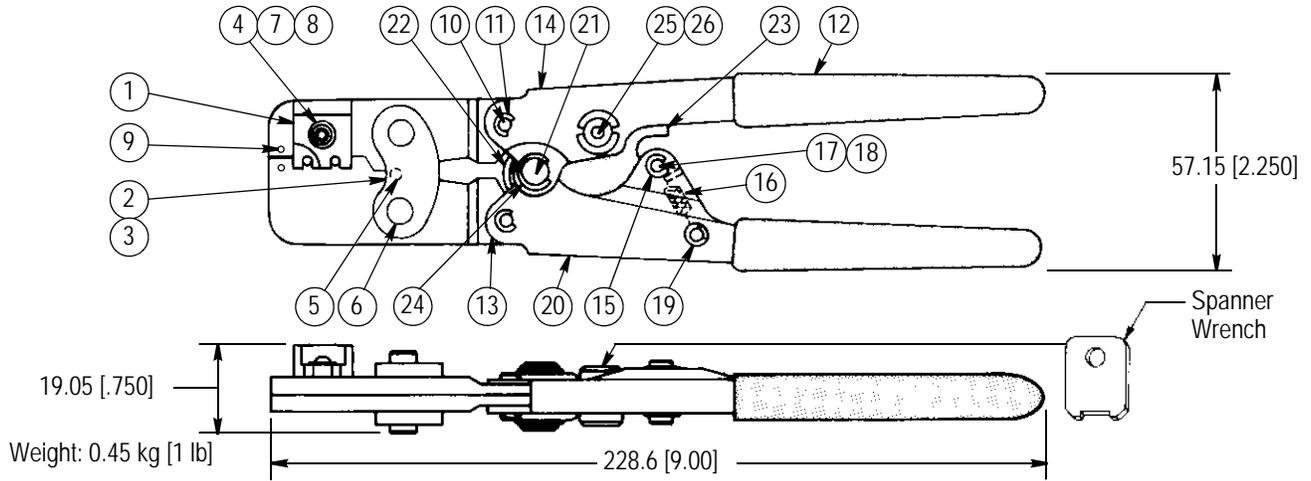
3. When tool jaws bottom properly, retighten nut.

6. REVISION SUMMARY



It may be necessary to hold the ratchet screw while securing the ratchet nut.

- Updated document to corporate requirements
- New logo



REPLACEMENT PARTS

ITEM	PART NO.	DESCRIPTION	QTY PER TOOL	ITEM	PART NO.	DESCRIPTION	QTY PER TOOL
1	127302-1	LOCATOR	1	14	127256-1	HANDLE, Inside	1
2	127303-1	LINK	1	15	127251-1	PAWL	1
3	127304-1	LINK	1	16	127292-1	SPRING, Extension	1
4	127305-1	SCREW, 6-32 x 3/8 Long	1	17	127253-1	PIN, Spring	1
5	127306-1	PIN	1	18	127255-1	PAWL, Pivot	1
6	127307-1	RIVET	2	19	127293-1	RING, Retaining	4
7	127272-1	WASHER, Spring	1	20	127257-1	HANDLE, Outside	1
8	127308-1	BUSHING	1	21	127294-1	PIN, Pivot	1
9	127309-1	RIVET	2	22	127295-1	SPRING, Torsion	1
10	127252-1	PIN	2	23	127258-1	RATCHET	1
11	127290-1	RING, Retaining	4	24	127296-1	RING, Retaining	2
12	127254-1	GRIP	2	25	127259-1	STUD, Eccentric	1
13	127291-1	WASHER	4	26	127297-1	NUT	1

Figure 4