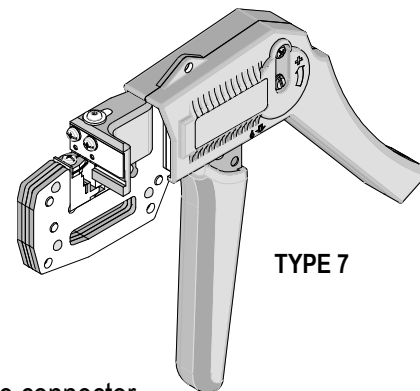




# HAND CRIMP TOOL SPECIFICATION SHEET Order No. 63819-4800



TYPE 7

## FEATURES

- % A full cycle ratcheting hand tool ensures complete crimps
- % This tool is designed to be used with reeled product due to the small size of the connector
- % This tool is designed for prototype work only and is not designed for production
- % The reeled product must be cut into 5-inch strips to be processed in this hand tool
- % This tool is IPC/WHMA A-620 Class 2 compliant as indicated
- % This tool is RoHS compliant, however RoHS compliant is not required

## SCOPE

Products: 1.20mm (.047") Pitch Pico-EZmate™ Wire-to-Board Crimp Terminal, 28 AWG.

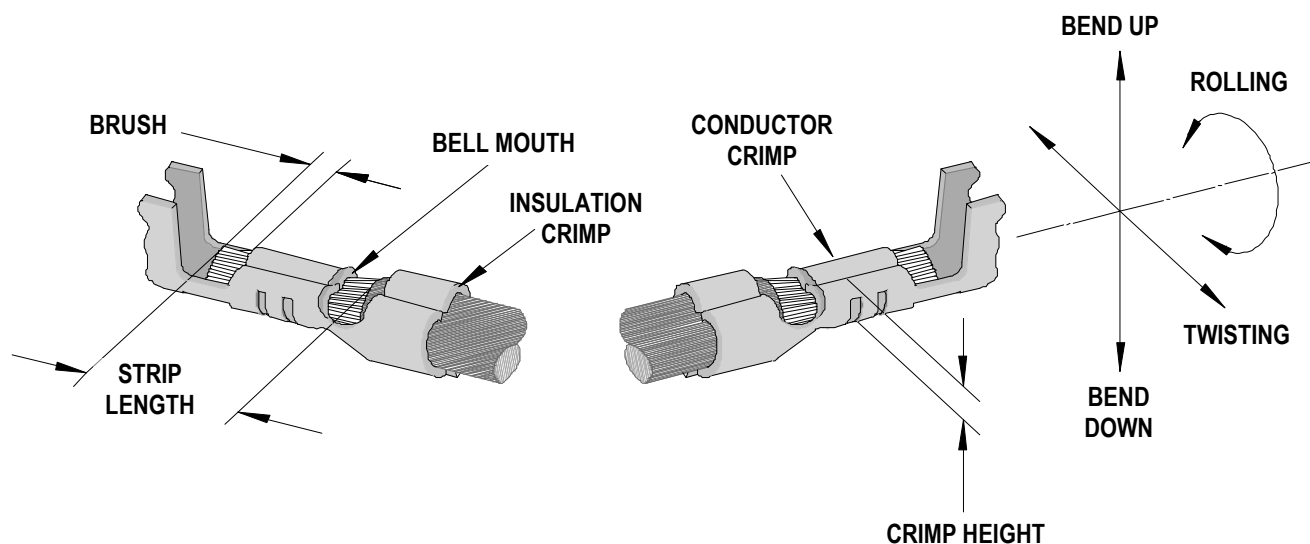
| Terminal Series No. | Terminal Order No.<br>* Reel Form Only | Wire Size |      | Insulation Diameter |           |             |           | Strip Length |           |
|---------------------|----------------------------------------|-----------|------|---------------------|-----------|-------------|-----------|--------------|-----------|
|                     |                                        |           |      | IPC/WHMA-A620 ♦     |           | Terminal ♦♦ |           |              |           |
|                     |                                        | AWG       | mm²  | mm                  | In.       | mm          | In.       | mm           | In.       |
| 78172               | 78172-0410                             | 28        | 0.08 | 0.55-0.70           | .022-.028 | 0.55-0.70   | .022-.028 | 0.90-1.30    | .035-.051 |
|                     | 78172-0411                             |           |      |                     |           |             |           |              |           |

♦ To achieve optimum IPC-A620 insulation crimps, use this insulation OD range.

♦♦ Overall insulation OD specification for terminal.

\* Customer to cut off terminal from reel: 0.05mm (.002") maximum Cut-off Tab.

## DEFINITION OF TERMS



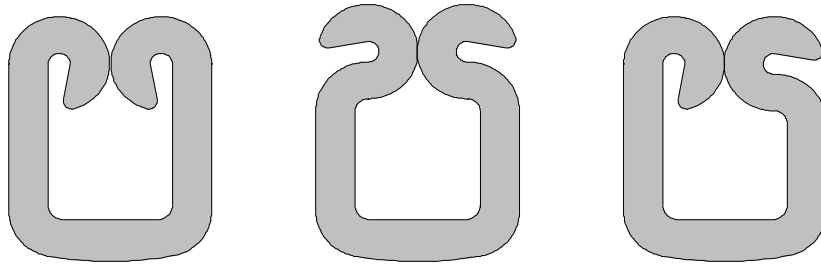
The above terminal drawing is a generic terminal representation. It is not an image of a terminal listed in the scope.

## INSULATION CRIMP FORM

This crimp terminal is designed for miniaturization; therefore, each dimension of insulation crimp portion appears small as compared to the terminal material thickness. In order to avoid insulation piercing the crimp forms by the insulation barrel, coining is provided inside of the insulation barrel. For this reason, various crimp forms will occur at the tip of the insulation crimp barrel shown in the figure below.

These crimp forms maybe changed completely by a small change in the wire, insulation punch, or terminal.

These crimp forms are satisfactory for original function of the insulation crimp portion and it is confirmed that all of these forms below are acceptable insulation crimps.



## CONDITIONS:

After crimping, the conductor profiles should measure the following.

| Terminal Series No | Wire Size |      | Conductor Crimp (Ref) |           |       |      | Insulation Crimp (Ref) |      |       |      | Pull Force Minimum |      |
|--------------------|-----------|------|-----------------------|-----------|-------|------|------------------------|------|-------|------|--------------------|------|
|                    |           |      | Height                |           | Width |      | Height                 |      | Width |      |                    |      |
|                    | AWG       | mm²  | mm                    | In.       | mm    | In.  | mm                     | In.  | mm    | In.  | N                  | Lb.  |
| 78172              | 28        | 0.08 | 0.44-0.48             | .017-.019 | 0.85  | .033 | 0.77                   | .030 | 0.85  | .033 | 10.0               | 2.25 |

## OPERATION

**CAUTION:** Install only Molex terminals listed above with this tool. Do not crimp hardened objects as damage can occur to the tool or die.

Open the tool by squeezing the handles together, at the end of the closing stroke, the ratchet mechanism will release the handles, and the hand tool will spring open.

### Crimping Terminals

1. Select the desired terminal listed in the preceding charts.
2. Cut a strip of the terminals approximately 5.0" off the reel. Position the terminal strip into the slot of the carrier guide with terminals facing forward.
3. Push the strip in until it locks into the (2) detent in the carrier guide and a terminal is centered with the punch nest. See Figure 1.
4. Partially close the jaws of the hand tool by squeezing the handles until you hear the first click of the ratchet.
5. From the top of the hand tool insert the pre-stripped wire into the terminal.
6. Compress the terminal by squeezing the tool handles until the ratchet mechanism cycle has been completed. Release handles to open the jaws.

**Note:** The tamper proof ratchet action will not release the tool until it has been fully closed.

7. Lift up the crimped terminal from the terminal locator.
8. Visually inspect the crimped terminal for proper crimp location.
9. If crimping more wires advance the terminal strip by (1) detent until the terminal is centered with the punch nest.
10. Repeat this procedure until all the desired terminals are crimped on the strip.

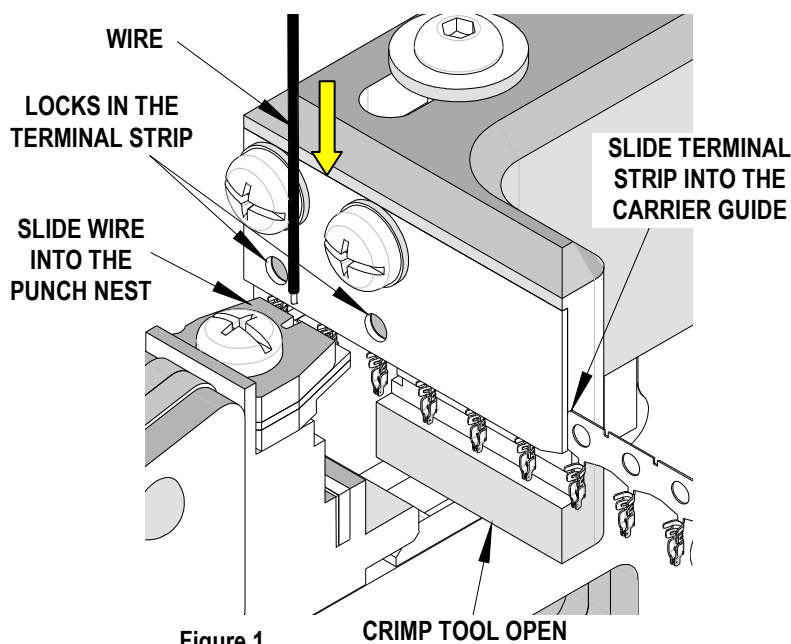


Figure 1

## Maintenance

It is recommended that each operator of the tool be made aware of, and responsible for, the following maintenance steps:

1. Remove the plastic handles from the metal tool frame by removing the screws and remove dust, moisture, and other contaminants with a clean brush, or soft, lint free cloth.
2. Do not use any abrasive materials that could damage the tool.
3. Make certain all pins; pivot points and bearing surfaces are protected with a thin coat of high quality machine oil. Do not oil excessively. The tool was engineered for durability but like any fine piece of equipment it needs cleaning and lubrication for a maximum service life of trouble free crimping. Light oil used at the pivot points every 5,000 crimps or 3 months, will significantly enhance the tool life.
4. Wipe excess oil from hand tool, particularly from crimping area.
5. When 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.

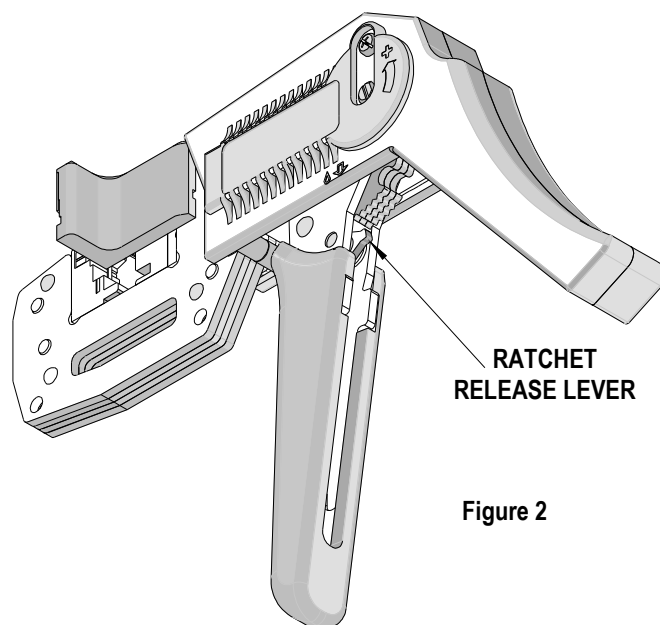


Figure 2

## Miscrimps or Jams

Should this tool ever become stuck or jammed in a partially closed position, **Do Not** force the handles open or closed. The tool will open easily by pressing the ratchet release lever up. See Figure 2.

## How to Adjust Tool Preload

It may be necessary over the life of the tool to adjust tool handle preload force. Listed below are the steps required to adjust the crimping force of the hand tool to obtain proper crimp conditions:

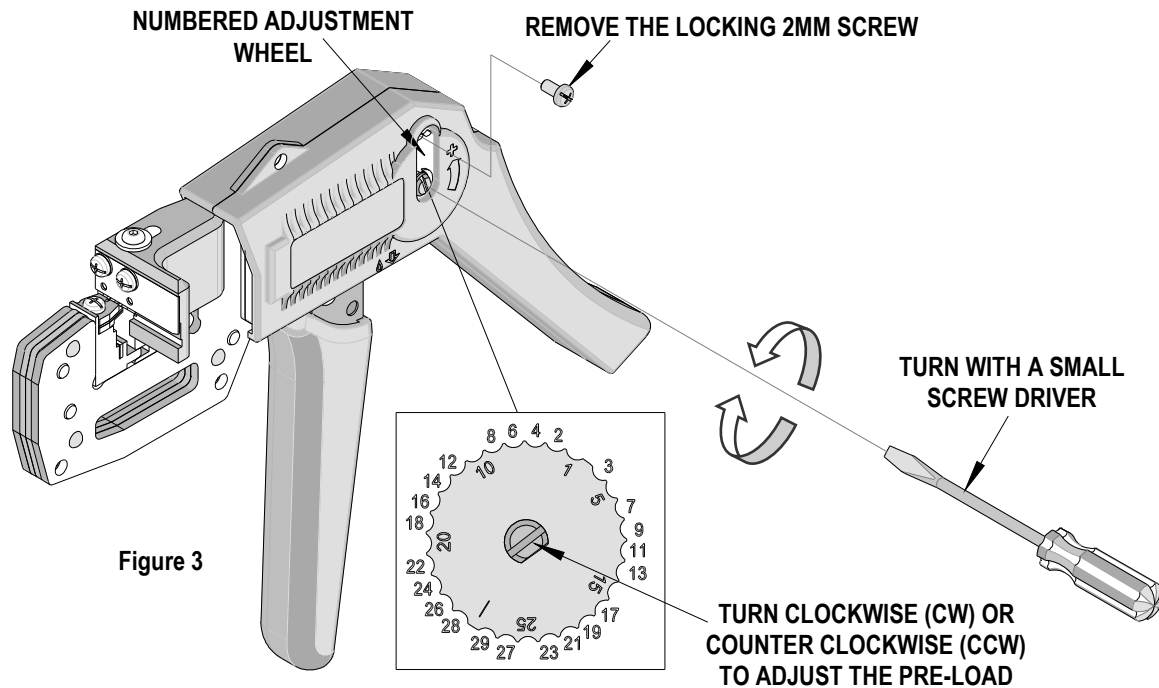


Figure 3

1. Remove the 2mm locking screw from the numbered adjusting wheel using a screw driver. See Figure 3.
2. Using the same screw driver turn the adjustment wheel to the next highest number.  
Note: The uneven numbers are in clockwise (CW) direction and the even numbers are counter clockwise (CCW).
3. Example: If the preload is set at number 5, then to increase the preload, turn the adjustment wheel until the 6<sup>th</sup> position is located over the 2mm locking screw tapped hole. If it is necessary to move to the 7<sup>th</sup> position, then the adjustment wheel should be turned counter clockwise (CCW) until the 7<sup>th</sup> position is over the 2mm locking screw tapped hole.
4. Replace the 2mm locking screw, aligning the nearest notch in the setting wheel to locking screw.
5. Check the crimp specifications and conduct a pull test after tool handle preload force is adjusted. Repeat these steps until the desired result is obtained.

## Warranty

This tool is for electrical terminal crimping purposes only. This tool is made of the best quality materials. All vital components are long life tested. All tools are warranted to be free of manufacturing defects for a period of 30 days. Should such a defect occur, we will repair or exchange the tool free of charge. This repair or exchange will not be applicable to altered, misused, or damaged tools. This tool is designed for hand use only. Any clamping, fixturing, or use of handle extensions voids this warranty.

**CAUTION:** Molex crimp specifications are valid only when used with Molex terminals and tooling.

## **CAUTIONS:**

1. Manually powered hand tools are intended for low volume, prototyping, or field repair. This tool is **NOT** intended for production use. Repetitive use of this tool should be avoided.
2. Insulated rubber handles are not protection against electrical shock.
3. Wear eye protection at all times.
4. Use only the Molex terminals specified for crimping with this tool.

## **Certification**

Molex does not certify or re-certify hand tools but rather supplies the following guidelines for customers to re-certify hand tools.

- % This tool is qualified to pull force only. To re-certify, crimp a terminal to a wire, which has been stripped 12.7mm (1/2") long, so there is no crimping of the insulation. Pull the terminal and wire at a rate no faster than 25mm (1.00") per minute. See the Molex web site for the Quality Crimp Handbook for more information on pull testing.
- % If the tool does not meet minimum pull force values, handle preload should be increased and the pull test rerun, (See How To Adjust Preload).
- % When the hand tool is no longer capable of achieving minimum pull force, it should be taken out of service and replaced.

## PARTS LIST

| Item | Order No   | Description      | Quantity |
|------|------------|------------------|----------|
| REF  | 63819-4800 | Hand Crimp Tool  | Figure 4 |
| 1    | 63819-4870 | Tool Kit         | 1        |
| 2    | 11-11-0320 | Spring (Ratchet) | 1        |
| 3    | 63600-0479 | Spring (Main)    | 1        |
| 4    | 69008-0972 | Adjuster Wheel   | 1        |

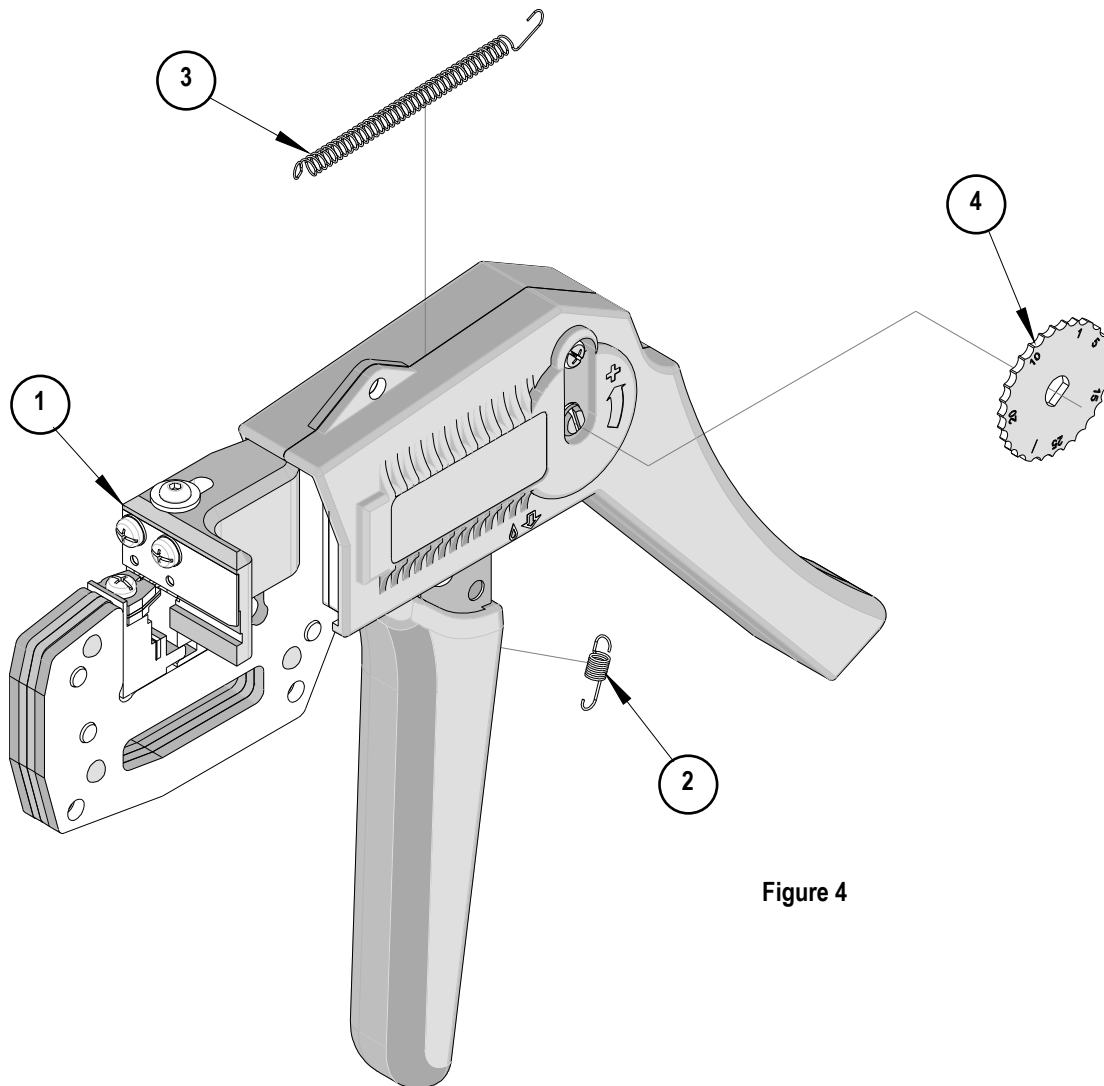


Figure 4

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