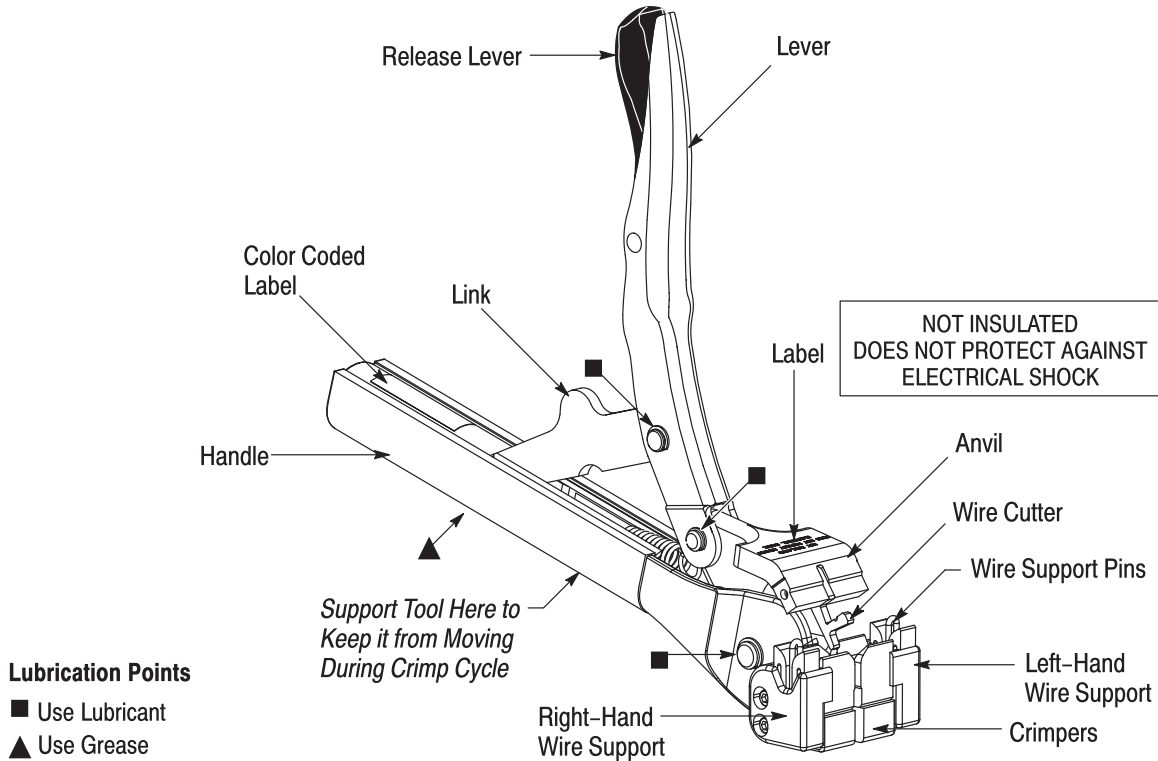


**PROPER USE GUIDELINES**

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.



WIRE SIZE RANGE (AWG)	PICABOND MINI CONNECTOR	
	PART NUMBER	COLOR
28-24	552466-[ ]	Pink
26-22	552041-[ ]	Blue
24-19	552043-[ ]	Brown

Figure 1

**1. INTRODUCTION**

MR-1 Comfort Grip Hand Tool 2031690-2 is used to crimp the connectors listed in Figure 1 onto wire sizes 28 through 19 AWG having copper conductors insulated with plastic, paper, or pulp material for through splicing applications.



*Dimensions in this instruction sheet are in millimeters [with inches in brackets]. Figures are not drawn to scale.*

**2. DESCRIPTION**

The hand tool consists of a set of dies (an anvil and two crimpers), handle, lever, pivot link, and release lever, two wire supports and pins, and a wire cutter. Also included is a carrying case and crimp height gage assembly. The release lever is black to indicate that the tool crimps mini connectors only.

In use, the wire supports hold and position the wires in the crimpers. As the tool is cycled, the wire cutter cuts off excess wire and the dies crimp the connector to the wires. Continuous pressure applied to the lever forces the link to snap the handle closed, thus completing the crimp cycle. After the cycle is completed, the release lever is used to open the handle.

### 3. USING THE TOOL

**IMPORTANT:** To avoid splice build-up, groups of finished connections should be arranged along the splice opening in order to build a uniform, compact splice. Move the tool along the splice opening about 31.75 [1.25] after crimping every 25 to 50 wire pairs. Alternate the direction in which the tool is moved — first to one side of the center, then to the other side.

**NOTE**



Always start with the cable units to the **REAR** of the cable opening.

1. Take a pair (tip and ring) of conductors from one side of the cable opening. Separate them far enough that one wire can be inserted into the wire support.
2. Holding the tool in one hand, lace the wire into the wire support and out between the crimpers. Make sure the wire has sufficient slack, then bottom it in the wire support. Refer to Figure 2.
3. Repeat Steps 1 and 2 using a pair of conductors from the other side of the cable opening. Make sure to use matching wires—tip to tip and ring to ring.
4. Insert a connector into the tool making sure the wire cutter enters the slots in the middle of the connector. Refer to Figure 2. Make sure there is sufficient slack in the wires; otherwise, they could pull out of the connector during the crimp cycle.
5. Place the tool in one hand so that the center portion of the handle is supported as indicated in Figure 1. Grasp the front portion of the handle and use the other hand to close the lever. See Figure 3. Squeeze the handle and lever until they fully close.
6. Depress the release lever and allow the handle to open, then remove the crimped connector.
7. Join the other conductors of the same pair in the same manner.

### 4. CRIMP INSPECTION

Make the following inspections on the first and last connector crimped during a shift. Replace any improperly crimped or defective connections.

#### 4.1. Crimp Height (See Figure 4)

Using the crimp height gage assembly, check the crimp height within a short time of crimping the connector according to the following.

1. Select the proper end of the crimp height gage — the color dots on the end of the gage must match the color of the connector.

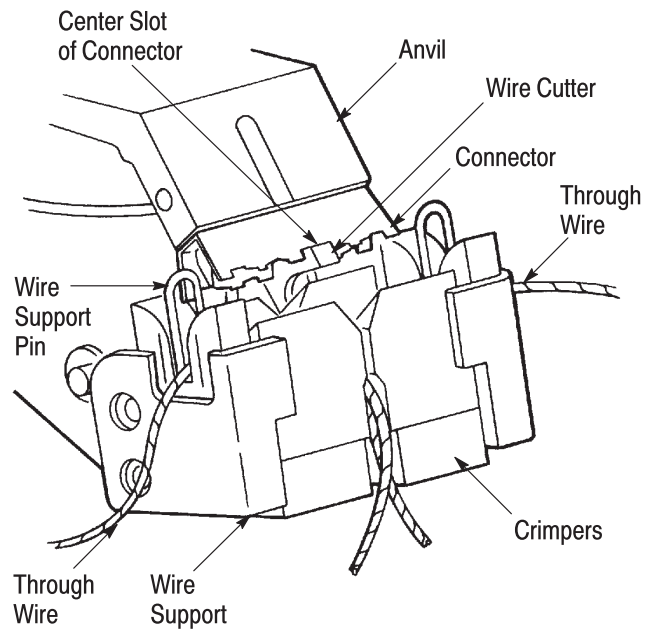


Figure 2

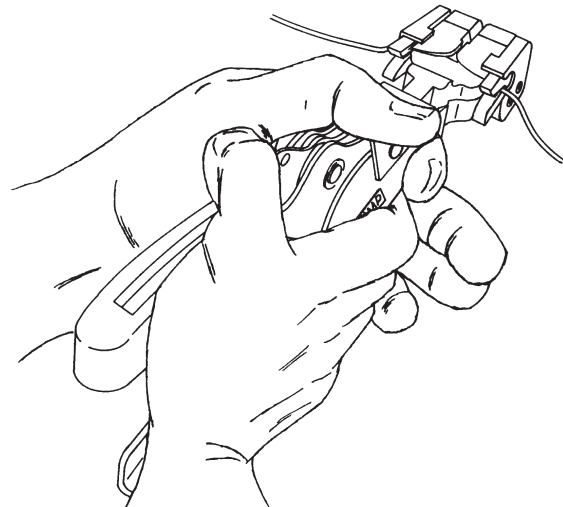


Figure 3

2. Place the connector in the crimp height gage so that both ends of the connector are flush with the sides of the gage.
3. Hold the wire and slide the crimp height gage off of the connector using only very slight force. *The gage must slide off easily.* If it does, make a few sample crimps and gage them. If they gage properly, continue using the tool. If they do not gage properly, return the tool for repair. In either case, replace any improperly crimped connectors.

#### 4.2. Visual Inspection (See Figure 5)

1. Check the insulation of the connector. If the insulation is peeled back or untucked, replace the

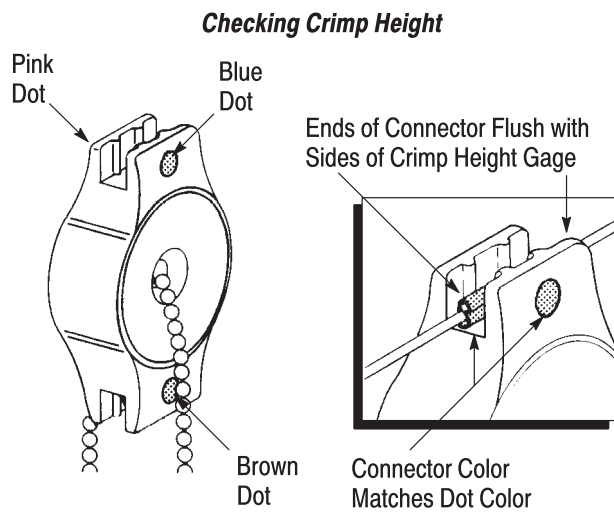


Figure 4

connector. This could be caused by too much slack between the wire supports and cable or it could be the result of the tool moving during the crimp cycle.

2. Check the connector for wire protruding from the seam of the connector. If there are any, replace the connector. If this occurs frequently, return the tool for adjustment.

3. Make sure that there are no cut or score marks on the connector. If there are any, replace the connector.

4. Check for crushed or distorted areas of the connector. If there are any, make sure that the connector is properly placed and there is no foreign matter or burrs on the dies.

## 5. TOOL INSPECTION

Check the plastic wire support brackets. If they are damaged or if the pins in the wire supports are bent or have a rough surface, replace the wire supports. Use Wire Support Replacement Kit 229188-2 according to 408-7474 included with the kit.

## 6. MAINTENANCE AND CLEANING

It is recommended using Cleaning Kit 229333-1 according to 408-7534 included with the kit for cleaning this tool. The kit consists of a bristle brush for general purpose cleaning, tube cleaner for cleaning the crimping dies, tube brush for cleaning inside the tool, extractor for removing scrap wire and plastic particles from inside the crimping dies.

1. Remove all loose dirt with a clean bristle brush.
2. Liberally spray the tool with solvent or cleaner and allow it to dry. Remove any particles that loosened.

## Visual Crimp Inspection

Replace Connector If:

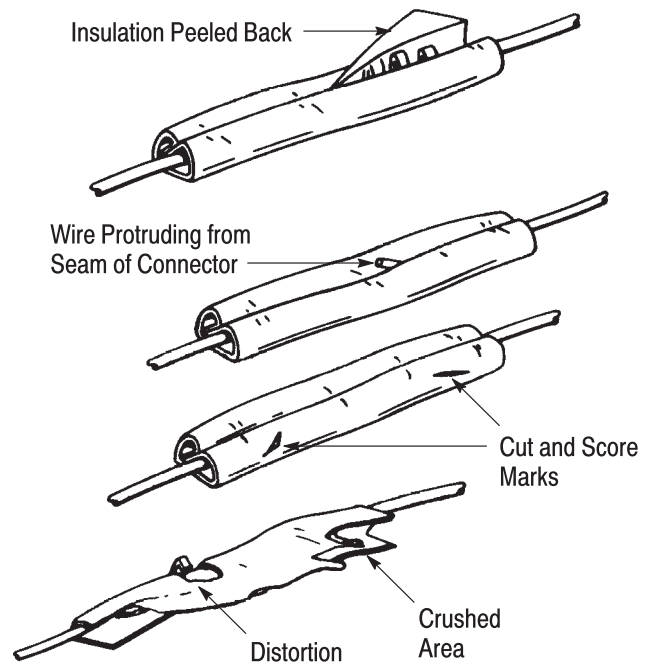


Figure 5

### NOTE



It is recommended using Solvent/Cleaner 590, which can be purchased from Orb Industries, Inc. (215-874-2537), for removing accumulated film.

3. Lubricate the tool with a penetrating lubricant spray and an all-purpose grease. Refer to Figure 1 for lubrication points.

## 7. REPLACEMENT AND REPAIR

Order replacement parts through your representative, or call 1-800-526-5142, or send a facsimile of your purchase order to 717-986-7605, or write to:

CUSTOMER SERVICE (038-035)  
 TYCO ELECTRONICS CORPORATION  
 PO BOX 3608  
 HARRISBURG PA 17105-3608

For customer repair service, call 1-800-526-5136. For customer repair service in Canada, send the tool to:

AMP OF CANADA LTD  
 20 ESNA PARK DRIVE  
 MARKHAM, ONTARIO  
 CANADA, L3R 1E1  
 ATTENTION: TOOL REPAIR

## 8. REVISION SUMMARY

- Initial release of instruction sheet