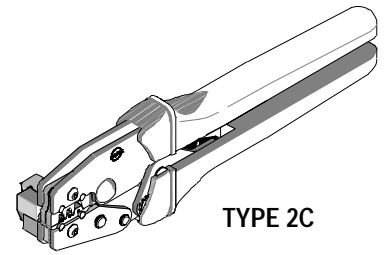




# HAND CRIMP TOOL SPECIFICATION SHEET

Order No. 63811-5000



TYPE 2C

## FEATURES

- A full cycle ratcheting hand tool ensures complete crimps
- Ergonomic soft grip handles for comfortable crimping
- A precision user-friendly terminal locator wire stop holds terminals in the proper crimping position
- This tool is WHMA-IPCA620 Class 2 and RoHS compliant

## SCOPE

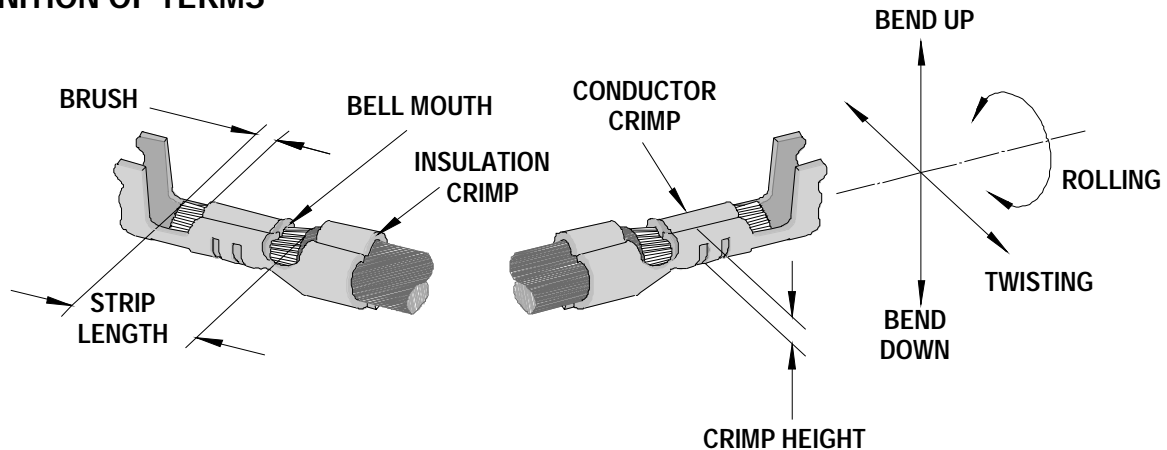
Products: Mini-Fit Jr.™, Mini-Fit HCS™, and Mini-Fit Plus HCS™, Male, and Female Crimp Terminal 16 - 24 AWG.

Terminal Series No.	Terminal Order No.				Wire Size		Insulation Diameter Maximum		Strip Length	
	Loose Piece		Reel		AWG	mm <sup>2</sup>	mm	In.	mm	In.
5556	39-00-0078	39-00-0174	39-00-0077	39-00-0173	16	1.30	3.10	.122	3.00-3.50	.118-.138
	39-00-0080	39-00-0180	39-00-0079	39-00-0179						
	39-00-0090	39-00-0186	39-00-0089	39-00-0185						
	39-00-0094	39-00-0199	39-00-0093	39-00-0198						
	39-00-0113	39-00-0205	39-00-0112	39-00-0204						
	39-00-0119	39-00-0212	39-00-0118	39-00-0211						
	39-00-0142	39-00-0218	39-00-0141	39-00-0217						
	39-00-0158	39-00-0448	39-00-0157	39-00-0447						
	39-00-0168		39-00-0167							
	39-00-0039	39-00-0201	39-00-0038	39-00-0200	18-24	0.80-0.20				
	39-00-0056	39-00-0208	39-00-0055	39-00-0207						
	39-00-0060	39-00-0214	39-00-0059	39-00-0213						
	39-00-0074	39-00-0406	39-00-0073	39-00-0405						
	39-00-0109	39-00-0429	39-00-0108	39-00-0410						
	39-00-0115	39-00-0441	39-00-0114	39-00-0419						
	39-00-0154	40-13-0852	39-00-0153	39-00-0425						
	39-00-0164		39-00-0163	39-00-0428						
	39-00-0170		39-00-0169	39-00-0436						
	39-00-0176		39-00-0175	39-00-0440						
	39-00-0182		39-00-0181	40-13-0851						
39-00-0195		39-00-0194								
5558	39-00-0082	39-00-0125	39-00-0081	39-00-0124	16	1.30				
	39-00-0084	39-00-0131	39-00-0083	39-00-0130						
	39-00-0096	39-00-0224	39-00-0095	39-00-0223						
	39-00-0100	39-00-0450	39-00-0099	39-00-0449						
	39-00-0041	39-00-0220	39-00-0040	39-00-0219	18-24	0.80-0.20				
	39-00-0054	39-00-0431	39-00-0053	39-00-0411						
	39-00-0062	40-13-0854	39-00-0061	39-00-0420						
	39-00-0076		39-00-0075	39-00-0426						
	39-00-0121		39-00-0120	39-00-0430						
	39-00-0127		39-00-0126	39-00-0437						
39-00-0148		39-00-0147	40-13-0853							

Terminal Series No.	Terminal Order No.				Wire Size		Insulation Diameter Maximum		Strip Length	
	Loose Piece		Reel		AWG	mm <sup>2</sup>	mm	In.	mm	In.
30490	30490-1012		30490-1002	30490-9802	18-24	0.80-0.20	3.10	.122	3.00-3.50	.118-.138
	30490-2012		30490-2002	30490-9902						
44476	44476-3112	44476-3212	44476-3111	44476-3211	16	1.30	3.10	.122	3.00-3.50	.118-.138
	44476-1112	44476-1212	44476-1111	44476-1211	18-20	0.80-0.50				
44478	44478-3112	44478-3212	44478-3111	44478-3211	16	1.30	3.10	.122	3.00-3.50	.118-.138
	44478-3122	44478-3222	44478-3121	44478-3221						
	44478-9904	44478-9908	44478-9903	44478-9907						
	44478-1112	44478-1212	44478-1111	44478-1211	18-20	0.80-0.50				
	44478-1122	44478-1222	44478-1121	44478-1221						
44478-9902	44478-9906	44478-9901	44478-9905							
44485	44485-3212	44485-3412	44485-3211	44485-3411	16	1.30	3.10	.122	3.00-3.50	.118-.138
	44485-3312		44485-3311							
	44485-1212	44485-1412	44485-1211	44485-1411	18-24	0.80-0.20				
	44485-1312		44485-1311							
45750	45750-3112	45750-3212	45750-3111	45750-3211	16	1.30	3.10	.122	3.00-3.50	.118-.138
	45750-1112	45750-1212	45750-1111	45750-1211	18-20	0.80-0.50				
46012	46012-3142	46012-3242	46012-3141	46012-3241	16	1.30	3.10	.122	3.00-3.50	.118-.138
	46012-1142	46012-1242	46012-1141	46012-1241	18-20	0.80-0.50				
46018	46018-3542		46018-3541		16	1.30	3.10	.122	3.00-3.50	.118-.138
	46018-1542		46018-1541		18-20	0.80-0.50				
46083	46083-3112	46083-3122	46083-3111	46083-3121	16	1.30	3.10	.122	3.00-3.50	.118-.138
	46083-3212	46083-3222	46083-3211	46083-3221						
	46083-1112	46083-1122	46083-1111	46083-1121	18-20	0.80-0.50				
	46083-1212	46083-2222	46083-1211	46083-2221						
46098	46098-3541		46098-3542		16	1.30	3.10	.122	3.00-3.50	.118-.138
	46098-1541		46098-1542		18-20	0.80-0.50				

See Conditions on page 3.

**DEFINITION OF TERMS**




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

**CONDITIONS:**

After crimping, the conductor profiles should measure the following (See note on page 4).

Terminal Series No.	Wire Size		Conductor Crimp				Insulation Crimp				Pull Force Minimum		Profile		
			Height (Ref.)		Width (Ref.)		Height (Ref.)		Width (Ref.)		N	Lb.	A	B	C
	AWG	mm <sup>2</sup>	mm	In.	mm	In.	mm	In.	mm	In.					
5556	16	1.30	1.14-1.24	.045-.049	1.91	.075	2.95	.116	2.75	.108	68.5	15.40	X		
	18	0.80	0.97-1.07	.038-.042	1.61	.063	2.73	.107	2.55	.100	88.0	19.80		X	
	20	0.50	0.79-0.89	.031-.035	1.61	.063	2.51	.099	2.35	.092	58.7	13.20			X
	22	0.35	0.79-0.89	.031-.035	1.61	.063	2.51	.099	2.35	.092	39.1	8.80			X
	24	0.20	0.79-0.89	.031-.035	1.61	.063	2.51	.099	2.33	.091	29.3	6.60			X
5558	16	1.30	1.14-1.24	.045-.049	1.91	.075	2.95	.116	2.75	.108	68.5	15.40	X		
	18	0.80	0.97-1.07	.038-.042	1.61	.063	2.73	.107	2.55	.100	88.0	19.80		X	
	20	0.50	0.79-0.89	.031-.035	1.61	.063	2.51	.099	2.35	.092	58.7	13.20			X
	22	0.35	0.79-0.89	.031-.035	1.61	.063	2.51	.099	2.35	.092	39.1	8.80			X
	24	0.20	0.79-0.89	.031-.035	1.61	.063	2.51	.099	2.33	.091	29.3	6.60			X
30490	18	0.80	0.97-1.07	.038-.042	1.61	.063	2.73	.107	2.55	.100	88.0	19.80		X	
	20	0.50	0.79-0.89	.031-.035	1.61	.063	2.51	.099	2.35	.092	58.7	13.20			X
	22	0.35	0.79-0.89	.031-.035	1.61	.063	2.51	.099	2.35	.092	39.1	8.80			X
	24	0.20	0.79-0.89	.031-.035	1.61	.063	2.51	.099	2.33	.091	29.3	6.60			X
44476	16	1.30	1.14-1.24	.045-.049	1.91	.075	2.95	.116	2.75	.108	68.5	15.40	X		
	18	0.80	0.97-1.07	.038-.042	1.61	.063	2.73	.107	2.55	.100	88.0	19.80		X	
	20	0.50	0.79-0.89	.031-.035	1.61	.063	2.51	.099	2.35	.092	58.7	13.20			X
44478	16	1.30	1.14-1.24	.045-.049	1.91	.075	2.95	.116	2.75	.108	68.5	15.40	X		
	18	0.80	0.97-1.07	.038-.042	1.61	.063	2.73	.107	2.55	.100	88.0	19.80		X	
	20	0.50	0.79-0.89	.031-.035	1.61	.063	2.51	.099	2.35	.092	58.7	13.20			X
44485	16	1.30	1.14-1.24	.045-.049	1.91	.075	2.95	.116	2.75	.108	68.5	15.40	X		
	18	0.80	0.97-1.07	.038-.042	1.61	.063	2.73	.107	2.55	.100	88.0	19.80		X	
	20	0.50	0.79-0.89	.031-.035	1.61	.063	2.51	.099	2.35	.092	58.7	13.20			X
	22	0.35	0.79-0.89	.031-.035	1.61	.063	2.51	.099	2.35	.092	39.1	8.80			X
	24	0.20	0.79-0.89	.031-.035	1.61	.063	2.51	.099	2.33	.091	29.3	6.60			X
45750	16	1.30	1.14-1.24	.045-.049	1.91	.075	2.95	.116	2.75	.108	68.5	15.40	X		
	18	0.80	0.97-1.07	.038-.042	1.61	.063	2.73	.107	2.55	.100	68.5	15.40		X	
	20	0.50	0.79-0.89	.031-.035	1.61	.063	2.51	.099	2.35	.092	58.7	13.20			X
46012	16	1.30	1.14-1.24	.045-.049	1.91	.075	2.95	.116	2.75	.108	68.5	15.40	X		
	18	0.80	0.97-1.07	.038-.042	1.61	.063	2.73	.107	2.55	.100	68.5	15.40		X	
	20	0.50	0.79-0.89	.031-.035	1.61	.063	2.51	.099	2.35	.092	58.7	13.20			X
46018	16	1.30	1.14-1.24	.045-.049	1.91	.075	2.95	.116	2.75	.108	68.5	15.40	X		
	18	0.80	0.97-1.07	.038-.042	1.61	.063	2.73	.107	2.55	.100	68.5	15.40		X	
	20	0.50	0.79-0.89	.031-.035	1.61	.063	2.51	.099	2.35	.092	58.7	13.20			X
46083	16	1.30	1.14-1.24	.045-.049	1.91	.075	2.95	.116	2.75	.108	68.5	15.40	X		
	18	0.80	0.97-1.07	.038-.042	1.61	.063	2.73	.107	2.55	.100	68.5	15.40		X	
	20	0.50	0.79-0.89	.031-.035	1.61	.063	2.51	.099	2.35	.092	58.7	13.20			X
46098	16	1.30	1.14-1.24	.045-.049	1.91	.075	2.95	.116	2.75	.108	68.5	15.40	X		
	18	0.80	0.97-1.07	.038-.042	1.61	.063	2.73	.107	2.55	.100	68.5	15.40		X	
	20	0.50	0.79-0.89	.031-.035	1.61	.063	2.51	.099	2.35	.092	58.7	13.20			X

 To Achieve IPC-A-620 Class 2 Crimps, the following over-all wire insulation diameter ranges are recommended:  
 Profile A: 1.90-3.10mm (.075-.122 inch)  
 Profile B: 1.68-3.10mm (.066-.122 inch)  
 Profile C: 1.40-2.54mm (.055-.100 inch)

## 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. Swing the terminal locator away from the crimp tool shown in Figure 2. Some terminals with large insulation grips may interfere with the crimp tooling when swinging the locator into position. The terminal must then be loaded into the locator in the closed/crimp position.

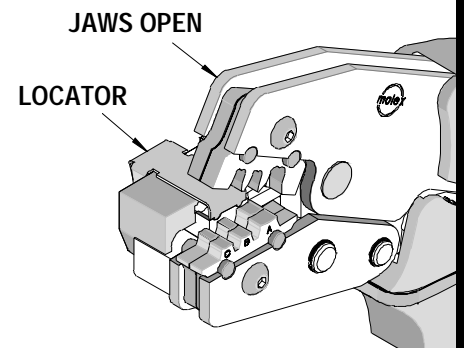


Figure 1

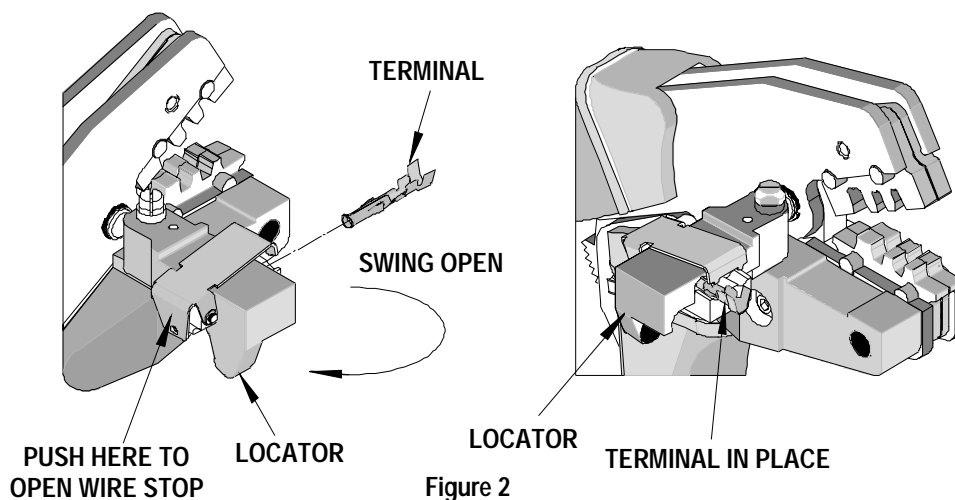


Figure 2

3. When using the locator, press down on the wire stop on the locator as shown in Figure 2. Insert the proper terminal into the proper nest opening. Make sure when choosing the nest opening, it will correspond with the A, B, or C profile on the hand tool.
4. Return the locator to its original position.
5. Insert the proper wire over the terminal. Some large O.D. wires may need to be placed into the terminal before closing the tool. Gently touch the wire stop with the end of the wire. See Figure 3.
6. Compress the terminal by squeezing the tool handles until the ratchet mechanism cycle has been completed. Release handles to open the jaws.

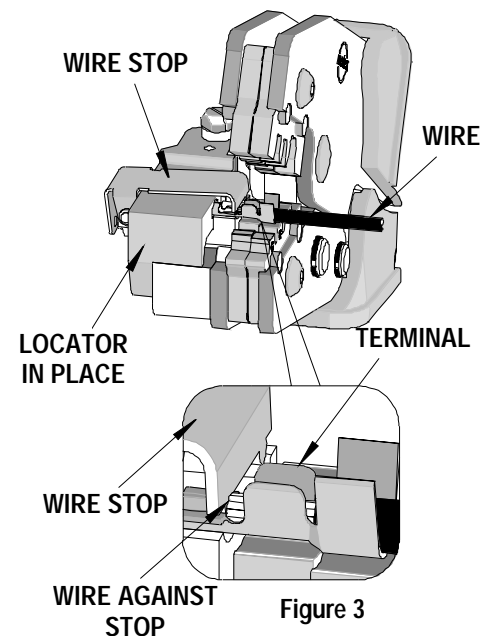


Figure 3

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

7. Remove the crimped terminal from the terminal locator by pressing down on the wire stop and gently pulling on the wire. The terminal locator can be in either position.
8. Visually inspect the crimped terminal for proper crimp location.

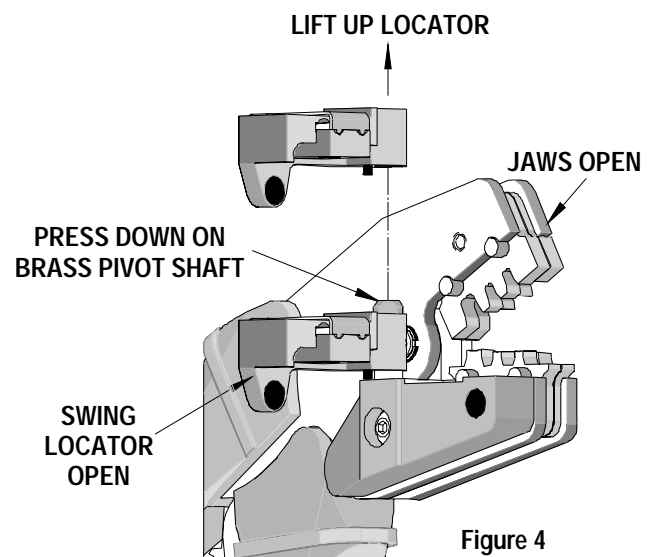
**Note:**

A crimp height chart is provided with this manual as Reference Only. Due to the wide range of wires, strands, insulation diameters, and durometers, actual crimp height measurements may vary slightly. An occasional, destructive, pull force test should be performed to check hand tool crimp. Pull Force value Must exceed the Minimum pull force specifications listed on page 2.

### Locator Replacement

See the parts list on the last page of this document for the proper locator order number. Follow the steps below to replace the locator.

1. Open the crimp hand tool.
2. Swing the existing locator open and away from the hand tool.
3. Firmly press down on the brass pivot shaft with your thumb, while pulling the locator up. Slip the locator off the top of the brass pivot shaft. See Figure 4.
4. Replace it with the new locator by putting over the brass pivot shaft and snapping it into place.



## Maintenance

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

1. 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 (such as 30 weight automotive oil) used at the oil points, shown in Figure 5, every 5,000 crimps or 3 months, will significantly enhance the tool life.
4. Wipe excess oil from hand tool, particularly from crimping area. Oil transferred from the crimping area onto certain terminations may affect the electrical characteristics of an application.
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.

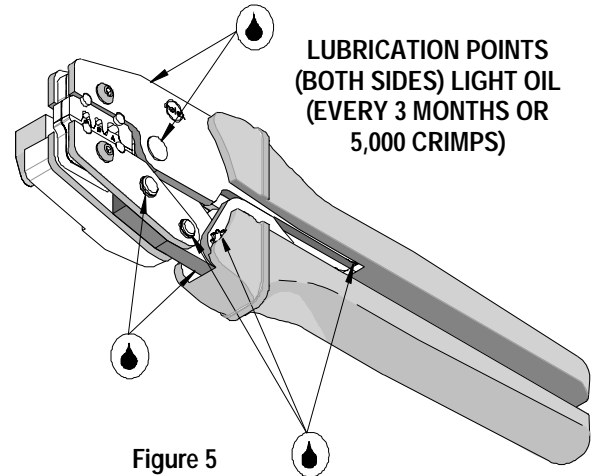


Figure 5

## 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. See Figure 6.

## How to Adjust Tool Preload (See Figure 6)

This hand tool is factory preset to 25-45 LBS. 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:

1. Remove or fold back the handle grip from the handle to expose the eccentric axle and setting wheel.
2. Remove the locking screw with a 2mm hex wrench. The wrench set (63810-0101), is not supplied. It is sold separately from the hand tool.
3. Turn the eccentric axle and setting wheel with the wrench or pliers Counter-clockwise (CCW) to increase handle force.
4. Replace the locking screw, aligning the nearest notch in the setting wheel to locking screw.
5. Replace the handle grip.
6. Check the crimp specifications or conduct a pull test after tool handle preload force is adjusted.

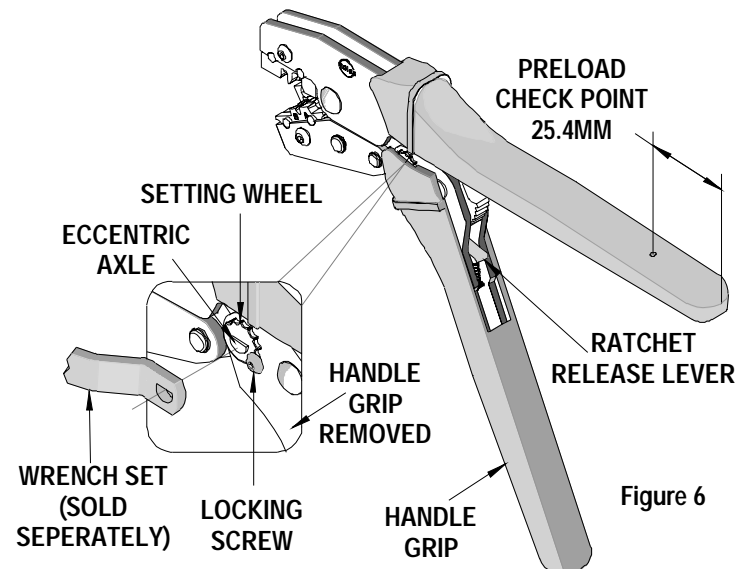


Figure 6

## 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 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 commercial grade 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 Number	Order Number	Description	Quantity
REF	63811-5000	Hand Crimp Tool	Figure 7
1	63810-0101	Wrench Set (Not included)	0
2	63810-0102	Locator Base Assembly	1
3	63810-0103	Repair Kit (Not included)	0
4	63811-5075	Locator	1

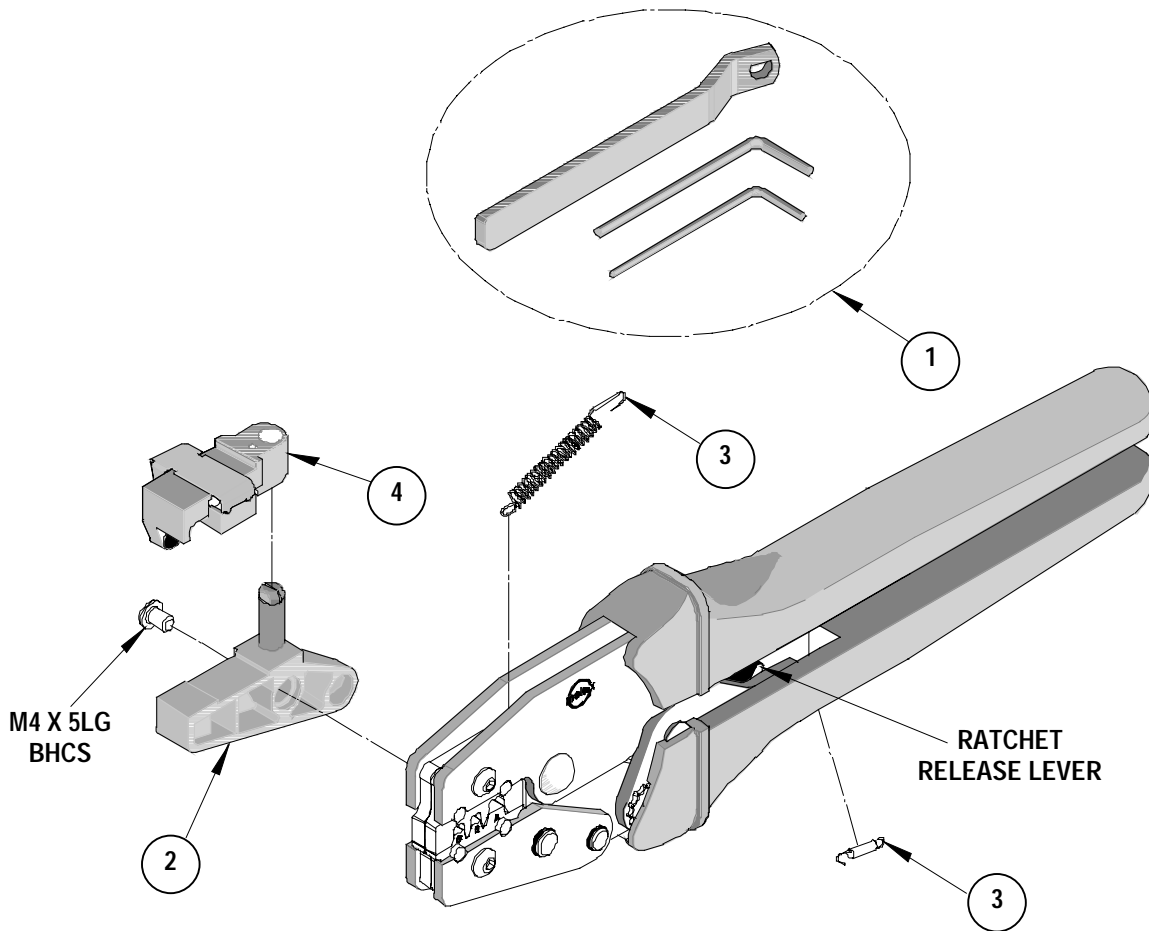


Figure 7

**Americas Headquarters**  
 Lisle, Illinois 60532 U.S.A.  
 1-800-78MOLEX  
 amerinfo@molex.com

**Far East North Headquarters**  
 Yamato, Kanagawa, Japan  
 81-462-65-2324  
 feninfo@molex.com

**Far East South Headquarters**  
 Jurong, Singapore  
 65-6-268-6868  
 fesinfo@molex.com

**European Headquarters**  
 Munich, Germany  
 49-89-413092-0  
 eurinfo@molex.com

**Corporate Headquarters**  
 2222 Wellington Ct.  
 Lisle, IL 60532 U.S.A.  
 630-969-4550  
 Fax: 630-969-1352

Visit our Web site at <http://www.molex.com>