

Hand Crimp Tool

**Application Tooling  
Specification Sheet**

**Order No. 63827-9500**

**FEATURES**

- A full cycle ratcheting hand tool ensures complete crimps
- Ergonomically designed soft handles
- Precisely designed crimping profiles with simple contact positioning
- Easy handling due to outstanding force ratio
- Modular Crimp Head is removable and can be used in the Air Powered Tool Order No. 63816-0100, accompanied by Air Powered Crimp Adapter (Order No. 63816-0700)
- Can also be used in the Battery Powered Tool Order No. 63816-0200 (110 V) or 63816-0250 (220 V), accompanied by Battery Powered Crimp Adapter (Order No. 63816-0600)
- This tool was reviewed for IPC/WHMA A-620 Class 2 compliancy, but does not meet the specifications.
- This tool is RoHS compliant

**SCOPE**

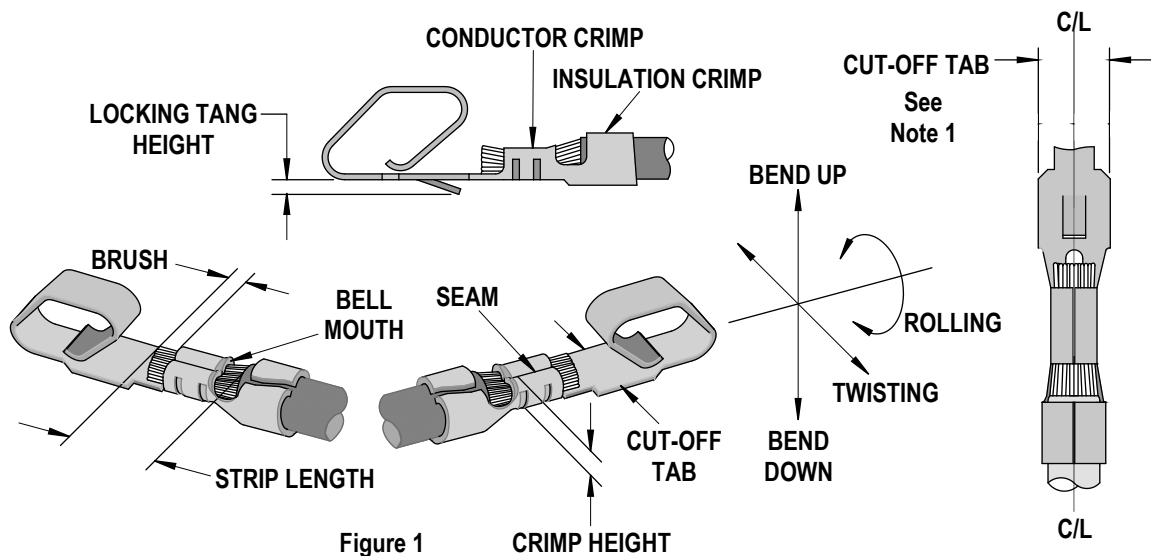
Products: 3.96mm (.156") Pitch KK Crimp Terminal for 18-24 AWG.

Terminal Series No.	Terminal Order No.				Wire Size		(2) Insulation Diameter		Strip Length	
	Loose Piece		(1) Reel		AWG	mm <sup>2</sup>	mm	In.	mm	In.
2477	08-50-0110	08-56-0114	08-50-0109	08-56-0113	18-24	N/A	1.39-2.79	.055-.110	2.82-3.32	.111-.131
2478	08-50-0006	08-56-0106	08-50-0001	08-52-0073	18-24	N/A	1.39-2.79	.055-.110	2.82-3.32	.111-.131
	08-50-0016	08-56-0154	08-50-0014	08-52-0114						
	08-50-0045	08-58-0104	08-50-0015	08-52-0811						
	08-50-0046	08-58-0115	08-50-0047	08-53-0004						
	08-50-0056	08-58-0122	08-50-0055	08-53-0811						
	08-50-0064	08-65-0115	08-50-0063	08-55-0103						
	08-50-0074	39-00-0345	08-50-0073	08-55-0133						
	08-50-0093	39-00-0344	08-50-0091	08-56-0105						
	08-50-0106	39-00-0346	08-50-0103	08-56-0153						
	08-50-0120	39-00-0348	08-50-0105	08-58-0103						
	08-50-0147	40-01-1120	08-50-0119	08-58-0114						
	08-52-0024	50-29-1762	08-50-0146	08-58-0121						
	08-52-0045	50-30-4428	08-50-0271	08-65-0114						
	08-52-0047	50-30-4429	08-50-0281	39-00-0286						
	08-52-0072		08-51-0000	39-00-0343						
	08-52-0074		08-51-0720	39-00-0345						
	08-52-0115		08-52-0023	39-00-0347						
	08-52-0812		08-52-0027	40-01-1118						
	08-53-0812		08-52-0044	50-29-1689						
	08-55-0104		08-52-0046	50-29-1768						
08-55-0134		08-52-0071								

Terminal Series No.	Terminal Order No.				Wire Size		(2) Insulation Diameter		Strip Length	
	Loose Piece		(1) Reel		AWG	mm <sup>2</sup>	mm	In.	mm	In.
2878	08-50-0116		08-50-0115	08-55-0138	18-20	N/A	1.52-2.79	.060-.110	2.82-3.32	.111-.131
	08-52-0127		08-51-0109	08-58-0127						
	08-58-0128		08-52-0126	08-65-0118						
	08-65-0119		08-53-0814							
838	08-50-0132	08-55-0143	08-50-0131	08-55-0142	18-22	N/A	1.52-2.41	.060-.095	2.82-3.32	.111-.131
	08-55-0140	08-55-0146	08-55-0125	08-55-0145						
	08-55-0141	08-55-0148	08-55-0139	08-55-0147						
5167	08-70-0013	08-70-1034	08-70-0012	08-70-0097	18-24	N/A	1.39-2.48	.055-.098	2.82-3.32	.111-.131
6348	08-50-0165	08-56-0139	08-50-0164	08-53-0813	18-20	N/A	1.52-2.41	.060-.095	2.82-3.32	.111-.131
	08-51-0802		08-51-0801	08-56-0135						
	08-56-0133		08-51-0813	08-56-0137						
6838	08-50-0029	08-58-0119	08-50-0024	08-58-0105	18-20	N/A	1.52-2.79	.060-.110	2.82-3.32	.111-.131
	08-50-0189	08-58-0132	08-50-0026	08-58-0108						
	08-50-0251	08-58-0189	08-50-0028	08-58-0110						
	08-51-0107	08-60-0002	08-50-0187	08-58-0118						
	08-52-0113	50-29-1763	08-50-0275	08-58-0131						
	08-53-0102	50-29-1879	08-51-0106	08-58-0187						
	08-58-0106		08-52-0112	08-60-0001						
	08-58-0109		08-53-0101	50-29-1639						
08-58-0111		08-58-0102								
8993	08-50-0276		08-50-0011	08-50-0277	18-24	N/A	1.39-2.79	.055-.110	2.82-3.32	.111-.131
172160			172160-1803	172160-1804	18-20	N/A	1.52-2.79	.060-.110	2.82-3.32	.111-.131
			172160-1801	172160-1802						
			172160-1805	172160-1806						

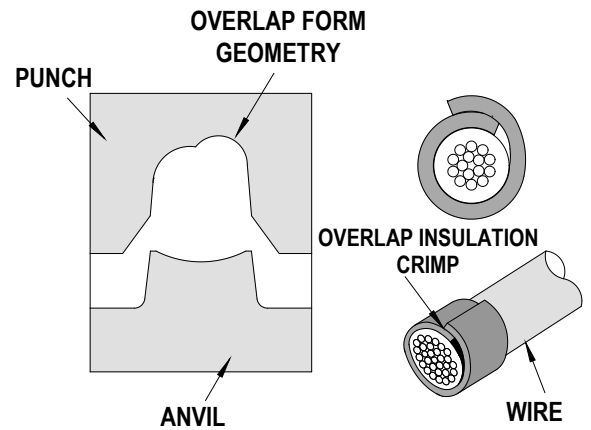
- (1). This hand tool operates best with loose piece terminals. If reeled terminals are used, customers must cut the terminal from the carrier strip and are responsible for achieving the proper cut-off specification:  $2.72 \pm 0.08\text{mm}$  (.107  $\pm$  .003"). See Figure 1.
- (2). This hand tool was reviewed for IPC/WHMA-A-620 compliance but does not meet the specifications.

### DEFINITION OF TERMS



**▲ Insulation Crimp Note**

Due to the terminal's insulation grip design or insulation diameter range, this tool uses the overlap form geometry in the insulation punch. This produces an overlap insulation crimp. Although the insulation punch profile may appear lopsided, this is a normal condition for this tool. See figure to the right. (Some tools with multiple crimp pockets may not have the overlap profile on all pockets.)



**CRIMP SPECIFICATIONS**

Terminal Series No.	Bell Mouth		Conductor Brush		Bend Up	Bend Down	Twist	Roll	Seam
	mm	In.	mm	In.	Degree Max.		Degree Max.		
2477	0.20-0.50	.008-.020	0.15-0.70	.006-.028	3	3	4	8	Seam shall not be open and no wire allowed out of crimping area
2478									
2878									
4838									
5167									
6438									
6838									
8993									
172160									

After crimping, the crimp profiles should measure the following:

Terminal Series No.	Wire		Conductor Crimp				Insulation Crimp				Pull Force		Profile			
			Height		Width		Height (Ref.)		Width (Ref.)		N	Lb.	A	B	C	D
	Wire Type	AWG	mm	In.	mm	In.	mm	In.	mm	In.						
2477	UL1007	18	1.09-1.14	.043-.045	1.85-1.95	.073-.077	2.51	.098	2.53	.099	110	24.7				X
		20	1.02-1.09	.040-.043			2.32	.091	2.45	.096	66	14.8			X	
		22	0.96-1.02	.038-.040			2.17	.085	2.44	.096	44	9.89		X		
		24	0.91-0.97	.036-.038			2.06	.081	2.44	.096	35	7.86	X			
	UL1015	18	1.09-1.14	.043-.045	1.85-1.95	.073-.077	2.76	.109	2.66	.104	110	24.7				X
		20	1.02-1.09	.040-.043			2.43	.095	2.53	.100	66	14.8			X	
		22	0.96-1.02	.038-.040			2.27	.089	2.51	.099	44	9.89		X		
		24	0.91-0.97	.036-.038			2.23	.087	2.49	.098	35	7.86	X			
2478	UL1007	18	1.09-1.14	.043-.045	1.85-1.95	.073-.077	2.51	.098	2.53	.099	110	24.7				X
		20	1.02-1.09	.040-.043			2.32	.091	2.45	.096	66	14.8			X	
		22	0.96-1.02	.038-.040			2.17	.085	2.44	.096	44	9.89		X		
		24	0.91-0.97	.036-.038			2.06	.081	2.44	.096	35	7.86	X			
	UL1015	18	1.09-1.14	.043-.045	1.85-1.95	.073-.077	2.71	.107	2.71	.107	110	24.7				X
		20	1.02-1.09	.040-.043			2.43	.095	2.53	.100	66	14.8			X	
		22	0.96-1.02	.038-.040			2.27	.089	2.51	.099	44	9.89		X		
		24	0.91-0.97	.036-.038			2.23	.087	2.49	.098	35	7.86	X			
2878	UL1007	18	1.09-1.14	.043-.045	1.85-1.95	.073-.077	2.51	.098	2.53	.099	110	24.7				X
		20	1.02-1.09	.040-.043			2.32	.091	2.45	.096	66	14.8			X	
	UL1015	18	1.09-1.14	.043-.045	1.85-1.95	.073-.077	2.71	.107	2.66	.104	110	24.7				X
		20	1.02-1.09	.040-.043			2.43	.095	2.53	.100	66	14.8			X	

Terminal Series No.	Wire		Conductor Crimp				Insulation Crimp				Pull Force Minimum		Profile			
			Height		Width		Height (Ref.)		Width (Ref.)							
	Wire Type	AWG	mm	In.	mm	In.	mm	In.	mm	In.	N	Lb.	A	B	C	D
4838	UL1007	18	1.09-1.14	.043-.045	1.85-1.95	.073-.077	2.51	.098	2.53	.099	110	24.7				X
		20	1.02-1.09	.040-.043			2.32	.091	2.45	.096	66	14.8				X
		22	0.96-1.02	.038-.040			2.17	.085	2.44	.096	44	9.89			X	
	UL1015	18	1.09-1.14	.043-.045	1.85-1.95	.073-.077	2.65	.104	2.66	.104	110	24.7				X
		20	1.02-1.09	.040-.043			2.43	.095	2.53	.100	66	14.8				X
		22	0.96-1.02	.038-.040			2.27	.089	2.51	.099	44	9.89			X	
5167	UL1007	18	1.09-1.14	.043-.045	1.85-1.95	.073-.077	2.51	.098	2.53	.099	110	24.7				X
		20	1.02-1.09	.040-.043			2.32	.091	2.45	.096	66	14.8				X
		22	0.96-1.02	.038-.040			2.17	.085	2.44	.096	44	9.89			X	
		24	0.91-0.97	.036-.038			2.06	.081	2.44	.096	35	7.86	X			
	UL1015	18	1.09-1.14	.043-.045	1.85-1.95	.073-.077	2.65	.104	2.66	.104	110	24.7				X
		20	1.02-1.09	.040-.043			2.43	.095	2.53	.100	66	14.8				X
22		0.96-1.02	.038-.040	2.27			.089	2.51	.099	44	9.89			X		
24		0.91-0.97	.036-.038	2.23			.087	2.49	.098	35	7.86	X				
6438	UL1007	18	1.09-1.14	.043-.045	1.85-1.95	.073-.077	2.51	.098	2.53	.099	110	24.7				X
		20	1.02-1.09	.040-.043			2.32	.091	2.45	.096	66	14.8				X
	UL1015	18	1.09-1.14	.043-.045	1.85-1.95	.073-.077	2.65	.104	2.66	.104	110	24.7				X
		20	1.02-1.09	.040-.043			2.43	.095	2.53	.100	66	14.8				X
6838	UL1007	18	1.09-1.14	.043-.045	1.85-1.95	.073-.077	2.51	.098	2.53	.099	110	24.7				X
		20	1.02-1.09	.040-.043			2.32	.091	2.45	.096	66	14.8				X
	UL1015	18	1.09-1.14	.043-.045	1.85-1.95	.073-.077	2.75	.108	2.66	.104	110	24.7				X
		20	1.02-1.09	.040-.043			2.43	.095	2.53	.100	66	14.8				X
8993	UL1007	18	1.09-1.14	.043-.045	1.85-1.95	.073-.077	2.51	.098	2.53	.099	110	24.7				X
		20	1.02-1.09	.040-.043			2.32	.091	2.45	.096	66	14.8				X
		22	0.96-1.02	.038-.040			2.17	.085	2.44	.096	44	9.89			X	
		24	0.91-0.97	.036-.038			2.06	.081	2.44	.096	35	7.86	X			
	UL1015	18	1.09-1.14	.043-.045	1.85-1.95	.073-.077	2.65	.104	2.66	.104	110	24.7				X
		20	1.02-1.09	.040-.043			2.43	.095	2.53	.100	66	14.8				X
		22	0.96-1.02	.038-.040			2.27	.089	2.51	.099	44	9.89			X	
		24	0.91-0.97	.036-.038			2.23	.087	2.49	.098	35	7.86	X			
172160	UL1007	18	1.09-1.14	.043-.045	1.85-1.95	.073-.077	2.51	.098	2.53	.099	110	24.7				X
		20	1.02-1.09	.040-.043			2.32	.091	2.45	.096	66	14.8				X
	UL1015	18	1.09-1.14	.043-.045	1.85-1.95	.073-.077	2.65	.104	2.66	.104	110	24.7				X
		20	1.02-1.09	.040-.043			2.43	.095	2.53	.100	66	14.8				X

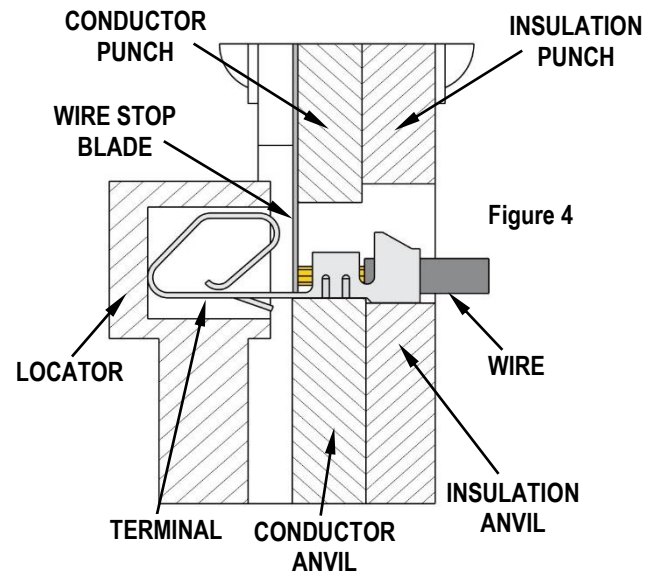
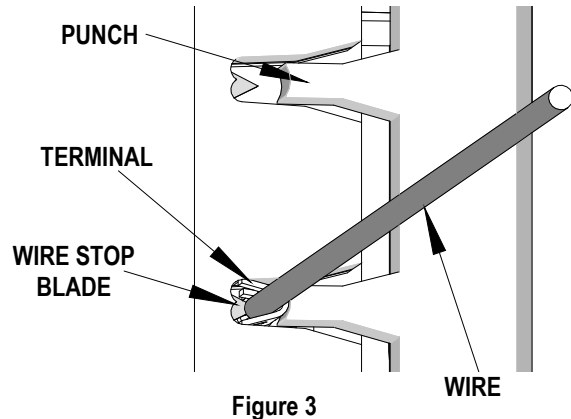
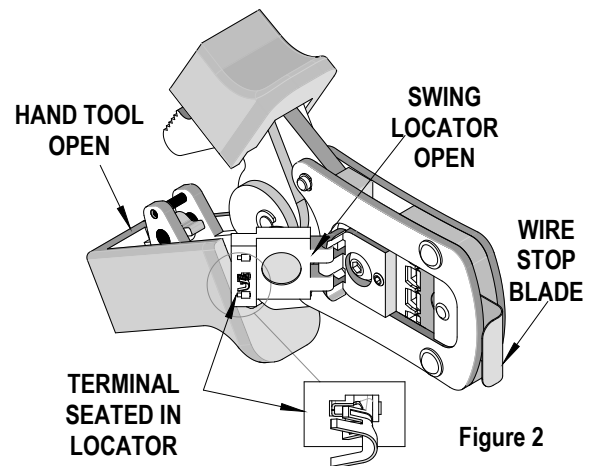
**Tool Qualification Notes**

1. (Ref) means the dimension provided is approximate due to the wide range of wires, conductor stranding, insulation diameter and insulation hardness.
2. An occasional pull force test should be performed. It must exceed the minimum pull force specification.
3. Pull force should be measured with no influence from the insulation crimp. To ensure this, strip the wire long enough so the terminal insulation grips do not contact the wire insulation.

## OPERATION

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.

1. With the hand tool in the open position, pivot the terminal locator open by pulling up on the locator knob, and lift the wire stop blade. See Figure 2.
2. Insert the terminal into the correct profile until the terminal is fully seated and stops.
3. Gently pivot the locator closed.
4. Bring down the wire stop blade.
5. Make sure the wire stop blade is fully seated on the terminal behind the conductor grip section.



6. Slide the pre-stripped wire into the terminal; make sure to aim the wire brush toward the tip point on the wire stop blade. See Figure 3. Align the wire so that it is parallel and sitting into the terminal. Maintain a light and constant pressure on the wire that is seated in the terminal at all times. (Do not let go of the wire.) Be sure to hold the wire and terminal in place until the terminal is fully crimped. See Figure 4.
7. Close the tool until the ratchet releases.
8. Lift the wire stop blade.
9. Carefully remove the crimped terminal.

**Note:** To maintain good brush control and a consistent bell mouth, the crimping instructions must be followed.

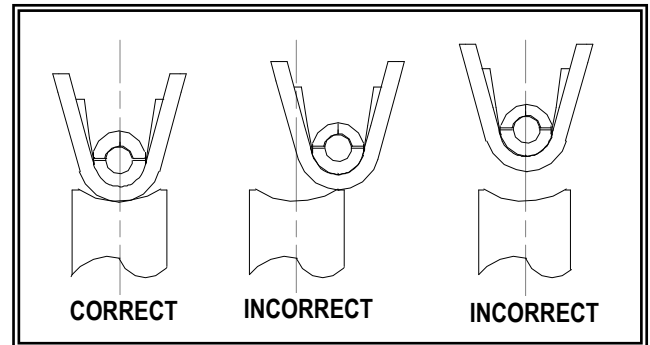
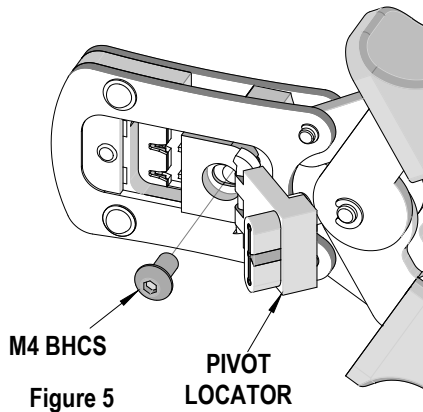
**Note:** The tamper-proof ratchet action will not release the tool until it has been fully closed.

## Terminal Locator Replacement

This section describes the procedure for changing the locator.

### Removal

1. With the tool in the open position, pivot the terminal locator outward.
2. Remove the M4 BHCS. See Figure 5.



### Installation

1. Place the locator on the hand tool. Install the M4 BHCS. See Figure 5.
2. Tighten the screw enough to hold the locator. Make sure the locator can still float freely with hand pressure.
3. Insert the proper terminal into the correct profile slot until the terminal is fully seated and stops. Then, gently pivot the locator closed.
4. With hand pressure, slowly slide the locator to the correct position. See Figure 6.
5. Gently pivot the locator open without disturbing the location.
6. Hold the locator firmly in place, and slowly tighten the M4 BHCS.

### 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 a 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 other 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 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 the 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.

### 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 lifting the ratchet release lever. See Figure 10.

## 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, Molex 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:** Repetitive use of this tool should be avoided.

## **CAUTIONS:**

1. Manually powered hand tools are intended for low-volume use 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.

## **Notes:**

1. This tool should only be used for the terminals and wire gauges specified on this sheet.
2. This tool is not adjustable for crimp height. Variations in tools, terminals, wire stranding and insulation types may affect crimp height.
3. This tool is intended for standard conductor sizes. It may not give good insulation crimp support for all insulation sizes.
4. Molex does not repair hand tools (see warranty above). The replacement parts listed are the only parts available for repair. If the handles or crimp tooling are damaged or worn, a new tool must be purchased.
5. Pull force should be used as the final criterion for an acceptable crimp. Pull force is measured with no influence from the insulation crimp. The insulation should be stripped long (1/2") so the insulation grips on the terminal do not grip the wire insulation or the conductor. Refer to Molex Quality Crimping Handbook 63800-0029 for additional information on crimping and crimp testing.
6. Molex does not certify crimp hand tools.

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



## Applications for the Modular Crimp Head

**WARNING:** NEVER operate, service, install or adjust this Modular Crimp Head without proper instruction and without first reading and understanding the instructions in the proper manual or specification sheet. See chart below for the correct manual or specification sheet.

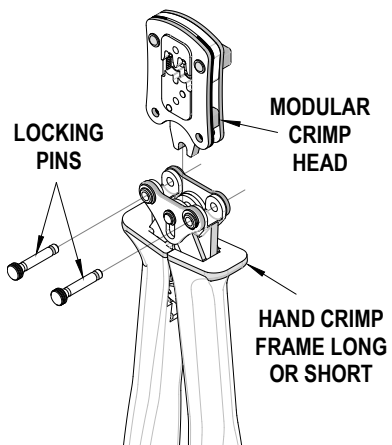
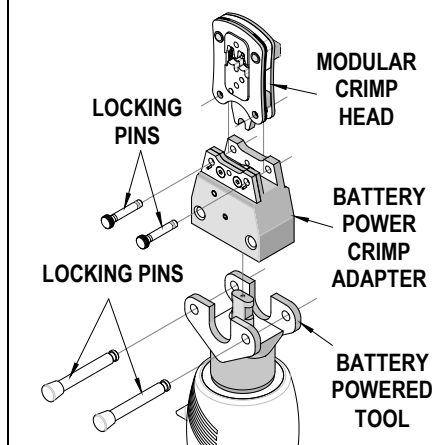
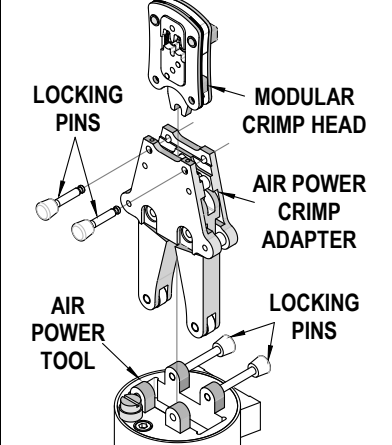
**WARNING:** NEVER install tooling or service this tool while it is plugged into any power source. Disconnect the power by unplugging, or turn off the actuator from its power source.

**CAUTION:** Keep fingers away from the crimping area when operating this tool. It may cause severe injury.

**CAUTION:** Wear safety glasses when operating or serving this tool.

The chart below shows all applications for this modular crimp head:

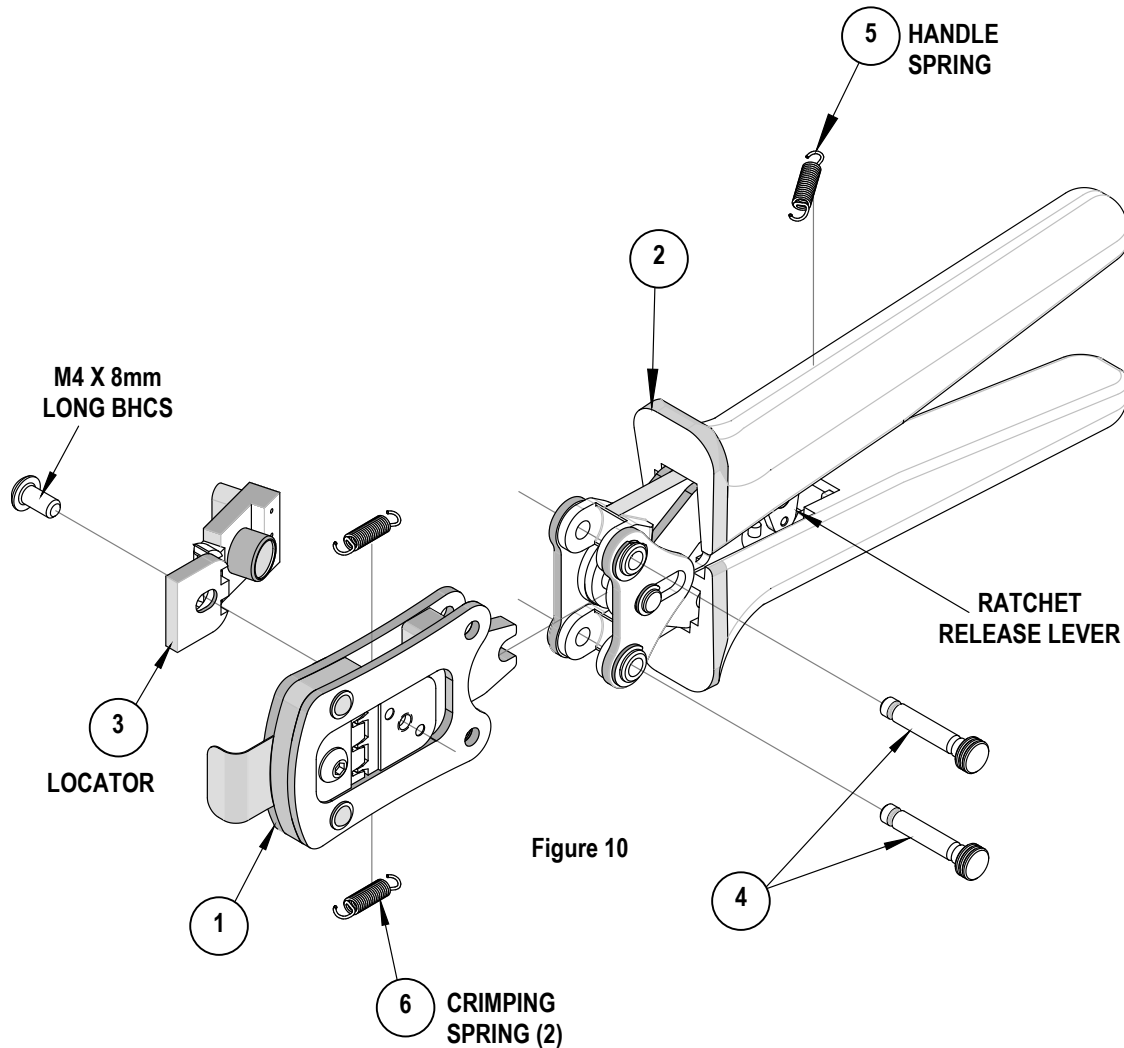
Modular Crimp Head Order No.	Tool Order No.	Tool Description	Adapter Order No.	Adapter Description	Figure No.
63827-9570	63816-0000	Hand Crimp Frame (Short)	N/A	N/A	6
	63816-0050	Hand Crimp Frame (Long)	N/A	N/A	6
	63816-0200	Battery Power Tool (110 V)	63816-0600	Battery Power Crimp Adapter	7
	63816-0250	Battery Power Tool (220 V)	63816-0600	Battery Power Crimp Adapter	7
	63816-0100	Air Power Tool	63816-0700	Air Power Crimp Adapter	8

Applications for the Modular Crimp Head		
Hand Crimp Tool	Battery Powered Tool	Air Powered Tool
 <p>LOCKING PINS MODULAR CRIMP HEAD HAND CRIMP FRAME LONG OR SHORT</p>	 <p>LOCKING PINS MODULAR CRIMP HEAD BATTERY POWER CRIMP ADAPTER BATTERY POWERED TOOL</p>	 <p>LOCKING PINS MODULAR CRIMP HEAD AIR POWER CRIMP ADAPTER AIR POWER TOOL LOCKING PINS</p>
Figure 7	Figure 8	Figure 9



**PARTS LIST**

Item	Order Number	Description	Quantity
1	63827-9570	Modular Crimp Head	1
2	63816-0000	Hand Crimp Frame (Short)	1
3	63827-9575	Locator	1
4	63816-0001	Locking Pin	2
5	63600-0525	Handle Spring	1
6	63600-0520	Crimping Spring	2



**Application Tooling Support**

**Phone:** (402) 458-TOOL (8665)  
**E-Mail:** applicationtooling@molex.com  
**Website:** www.molex.com/applicationtooling

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