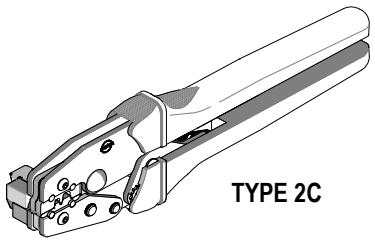


Tool Kit
Order No. 63811-7570

molex

Application Tooling Specification Sheet



Hand Crimp Tool
Order No. 63811-7500

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
- Tool kits are easily installed into the Hand Crimp Tool or the 63816-0300 Power Crimp Head, which is installed into the 63816-0200 (110 V) or the 63816-0250 (220 V) Battery Powered Tool
- Many different Tool kits can be used with a single Battery Powered Tool
- This tool is IPC/WHMA-A-620 Class 2 and RoHS compliant as indicated
- Both black and gray locators are included with hand tool

SCOPE

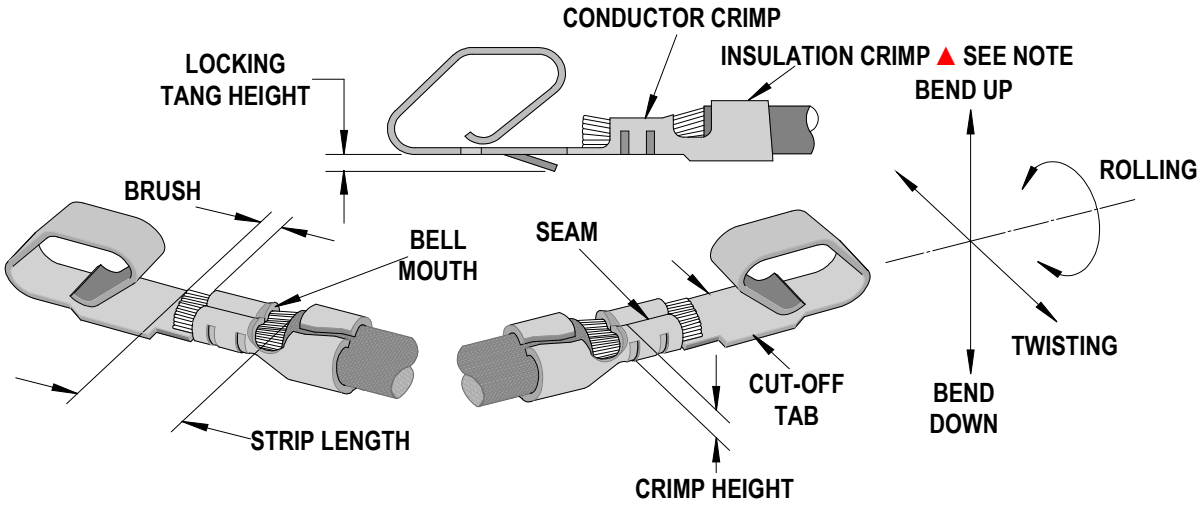
Products: 3.96mm (.156") Pitch KK Crimp Terminal for 18-24 AWG.

Terminal Series No.	Terminal Order No.				Wire Size		*Insulation Diameter		Strip Length	
	Loose Piece		*Reel		AWG	mm²	mm	In.	mm	In.
2477	08-50-0110	08-56-0114	08-50-0109	08-56-0113	18-24	0.80-0.20	1.39-2.79	.055-.110	2.54-3.17	.100-.125
2478	08-50-0006	08-56-0106	08-50-0001	08-52-0073	18-24	0.80-0.20	1.39-2.79	.055-.110	2.54-3.17	.100-.125
	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		✳Insulation Diameter		Strip Length	
	Loose Piece		✳Reel		AWG	mm²	mm	In.	mm	In.
2878	08-50-0116		08-50-0115	08-55-0138	18-20	0.80-0.50	1.52-2.79	.060-.110	2.54-3.17	.100-.125
	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	0.80-0.35	1.52-2.41	.060-.095	2.54-3.17	.100-.125
	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	0.80-0.20	1.39-2.48	.055-.098	2.54-3.17	.100-.125
6348	08-50-0165	08-56-0139	08-50-0164	08-53-0813	18-20	0.80-0.50	1.52-2.41	.060-.095	2.54-3.17	.100-.125
	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	0.80-0.50	1.52-2.79	.060-.110	2.54-3.17	.100-.125
	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						
	08-53-1102	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							
8818	08-50-0023	08-58-0136	08-50-0008	08-58-0135	18-22	0.80-0.35	1.52-2.79	.060-.110	4.00-4.75	.157-.187
	08-50-0706	08-65-0129	08-50-0705	08-65-0128						
	08-52-0132		08-52-0131	40-01-1181						
	08-56-0188		08-56-0187	40-01-1182						
8993	08-50-0276		08-50-0011	08-50-0277	18-24	0.80-0.20	1.39-2.79	.055-.110	2.54-3.17	.100-.125
172160			172160-1803	172160-1804	18-20	0.80-0.50	1.52-2.79	.060-.110	2.54-3.17	.100-.125
			172160-1801	172160-1802						
			172160-1805	172160-1806						

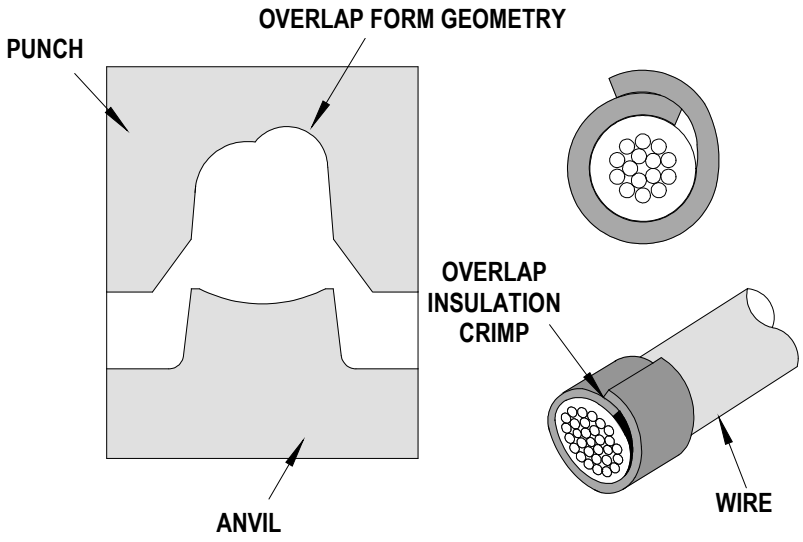
✳ Customer to cut off terminal from reel: 2.72 ± .13mm (.107 ± .005") maximum cut off tab.
✳ See Conditions on page 4.

DEFINITION OF TERMS



▲ Insulation Crimp Note

Due to the terminal's insulation grip design and/or insulation diameter range, this tool uses "overlap" form geometry in the insulation punch. This produces an overlap insulation crimp (A620 – compliant). While 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).



CONDITIONS

After crimping, the conductor profiles should measure the following (see notes below):

Terminal Series No.	Hand Tool Locator	Wire Size		Conductor Crimp Height (REF)		Punch Width (Ref)				Pull Force Minimum		✱Profile	
						Conductor		Insulation					
		AWG	mm²	mm	In.	mm	In.	mm	In.	N	Lb.	A	B
2477	Black 63811-7576	18	0.80	1.01-1.11	.040-.044	2.00	.079	2.50	.098	89.0	20.00	X	
		20	0.50	1.01-1.11	.040-.044	2.00	.079	2.50	.098	57.8	13.00	X	
		22	0.35	0.86-0.96	.034-.038	2.00	.079	2.50	.098	35.6	8.00		X
		24	0.20	0.86-0.96	.034-.038	2.00	.079	2.50	.098	22.2	5.00		X
2478	Black 63811-7576	18	0.80	1.01-1.11	.040-.044	2.00	.079	2.50	.098	89.0	20.00	X	
		20	0.50	1.01-1.11	.040-.044	2.00	.079	2.50	.098	57.8	13.00	X	
		22	0.35	0.86-0.96	.034-.038	2.00	.079	2.50	.098	35.6	8.00		X
		24	0.20	0.86-0.96	.034-.038	2.00	.079	2.50	.098	22.2	5.00		X
2878	Black 63811-7576	18	0.80	1.01-1.11	.040-.044	2.00	.079	2.50	.098	89.0	20.00	X	
		20	0.50	1.01-1.11	.040-.044	2.00	.079	2.50	.098	57.8	13.00	X	
4838	Black 63811-7576	18	0.80	1.01-1.11	.040-.044	2.00	.079	2.50	.098	89.0	20.00	X	
		20	0.50	1.01-1.11	.040-.044	2.00	.079	2.50	.098	57.8	13.00	X	
		22	0.35	0.86-0.96	.034-.038	2.00	.079	2.50	.098	35.6	8.00		X
5167	Black 63811-7576	18	0.80	1.01-1.11	.040-.044	2.00	.079	2.50	.098	89.0	20.00	X	
		20	0.50	1.01-1.11	.040-.044	2.00	.079	2.50	.098	57.8	13.00	X	
		22	0.35	0.86-0.96	.034-.038	2.00	.079	2.50	.098	35.6	8.00		X
		24	0.20	0.86-0.96	.034-.038	2.00	.079	2.50	.098	22.2	5.00		X
6438	Black 63811-7576	18	0.80	1.01-1.11	.040-.044	2.00	.079	2.50	.098	89.0	20.00	X	
		20	0.50	1.01-1.11	.040-.044	2.00	.079	2.50	.098	57.8	13.00	X	
6838	Black 63811-7576	18	0.80	1.01-1.11	.040-.044	2.00	.079	2.50	.098	89.0	20.00	X	
		20	0.50	1.01-1.11	.040-.044	2.00	.079	2.50	.098	57.8	13.00	X	
8818	✱✱ Gray 63811-7575	18	0.80	1.01-1.11	.040-.044	2.00	.079	2.50	.098	89.0	20.00	X	
		20	0.50	1.01-1.11	.040-.044	2.00	.079	2.50	.098	57.8	13.00	X	
		22	0.35	0.86-0.96	.034-.038	2.00	.079	2.50	.098	35.6	8.00		X

Terminal Series No.	Hand Tool Locator	Wire Size		Conductor Crimp Height (REF)		Punch Width (Ref)				Pull Force Minimum		✳Profile	
						Conductor		Insulation					
		AWG	mm^2	mm	In.	mm	In.	mm	In.	N	Lb.	A	B
8993	Black 63811-7576	18	0.80	1.01-1.11	.040-.044	2.00	.079	2.50	.098	89.0	20.00	X	
		20	0.50	1.01-1.11	.040-.044	2.00	.079	2.50	.098	57.8	13.00	X	
		22	0.35	0.86-0.96	.034-.038	2.00	.079	2.50	.098	35.6	8.00		X
		24	0.20	0.86-0.96	.034-.038	2.00	.079	2.50	.098	22.2	5.00		X
172160	Black 63811-7576	18	0.80	1.01-1.11	.040-.044	2.00	.079	2.50	.098	89.0	20.00	X	
		20	0.50	1.01-1.11	.040-.044	2.00	.079	2.50	.098	57.8	13.00	X	

✳ **To Achieve IPC-A-620 Class 2 Crimps, the following overall wire insulation diameter ranges are recommended:**

1. **Profile A:** 1.70-2.00mm (.067-.079")
2. **Profile B:** 1.65-1.85mm (.065-.073")

Tool Qualification Notes

1. Pull force should be measured with no influence from the insulation crimp.
2. The above specifications are guidelines to an optimal crimp.

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 very slightly. An occasional destructive pull force test should be preformed to check hand tool crimp. Pull force value must exceed the minimum pull force specifications listed.

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

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.

Crimping Terminals

1. Select the desired terminal and hand tool locator listed in the preceding charts (see Locator Removal and Installation).
2. Swing the terminal locator away from the crimp tool shown in Figure 1. 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 original position.
3. Insert the proper terminal into the proper nest opening. Make sure when choosing the nest opening that it corresponds with the A or B profiles on the hand tool.
4. Press down on the wire stop on the locator as shown in Figure 2. ** For terminal series 8818 (using the gray hand tool locator), the wire stop will fall between the contact and the anti-fish hooking feature. See Figure 4.
5. Return the locator to its original position.
6. Insert the proper wire over the terminal. Some large OD 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.
7. Compress the terminal by squeezing the tool handles until the ratchet mechanism cycle has been completed. Release handles to open the jaws.
8. 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.
9. Visually inspect the crimped terminal for proper crimp location.

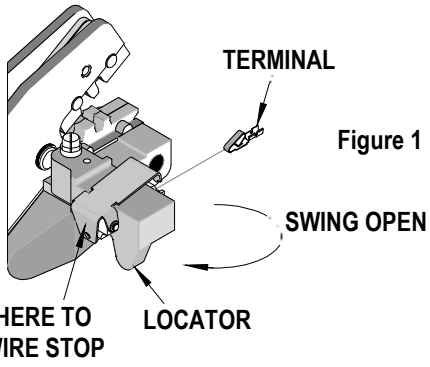


Figure 1

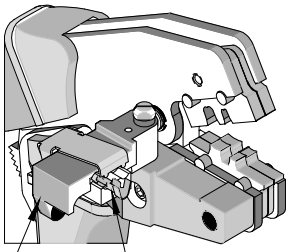


Figure 2

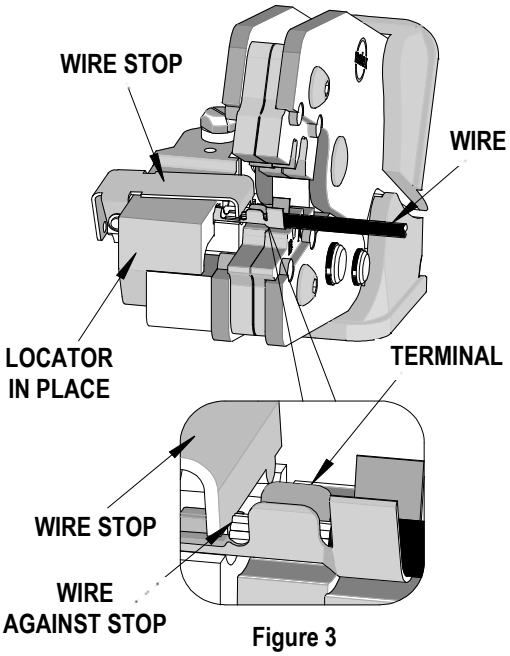


Figure 3

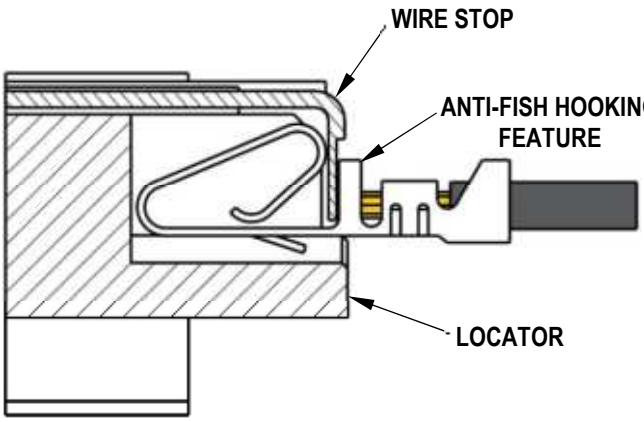


Figure 4

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

For the Battery Power Tool Operation:

1. Cycle the Battery Power Tool to crimp the terminal to the wire.
2. 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.
3. Visually inspect the crimped terminal for proper crimp location.

Locator Removal and Installation

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 up on the locator. Slip the locator off of the top of the brass pivot shaft. See Figure 5.
4. Replace it with the proper locator by putting it over the brass pivot shaft and snapping it into place.

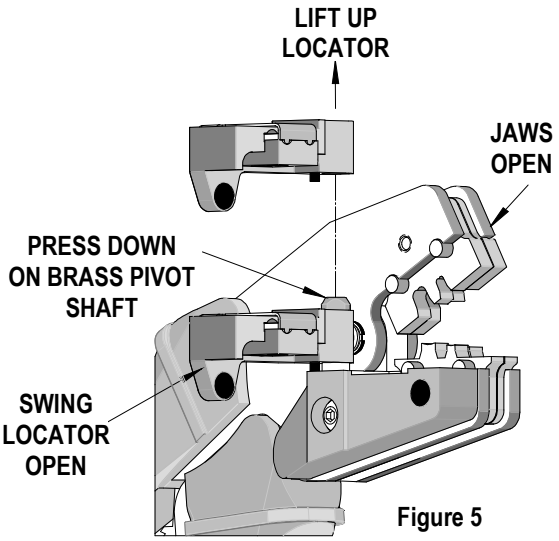


Figure 5

Locator Replacement

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

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 fine piece of equipment, it needs cleaning and lubrication for a maximum service life of trouble-free crimping. A 30 weight automotive (light) oil used at the oil points every 5,000 crimps or 3 months will significantly enhance the tool life. See Figures 6A and 6B.
4. Wipe excess oil from the hand tool, particularly from the 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.

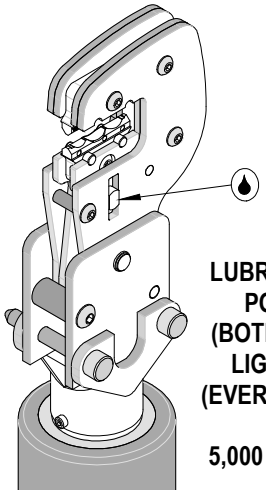
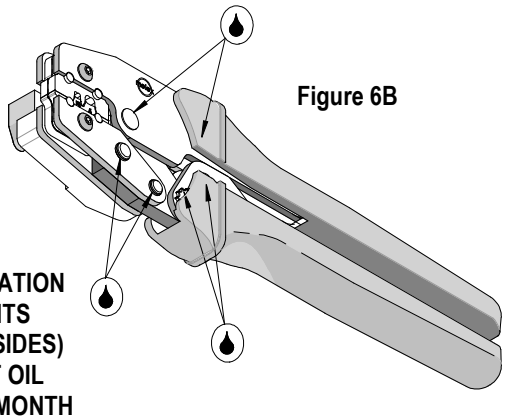


Figure 6A


Figure 6B

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 7.

How to Adjust Tool Preload (See Figure 7)

This hand tool is factory preset to 25-45 pounds 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:

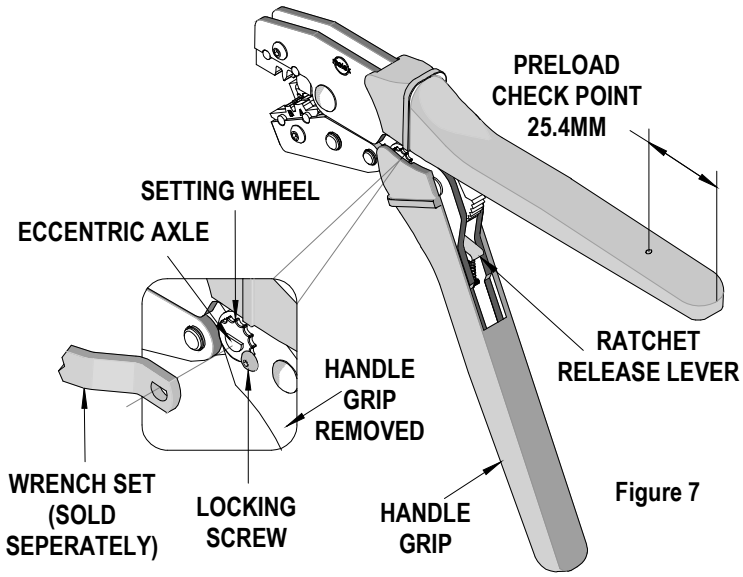


Figure 7

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 counterclockwise (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.

INSTALLATION

To install the Tool Kit into the Power Crimp Head, follow the steps below:

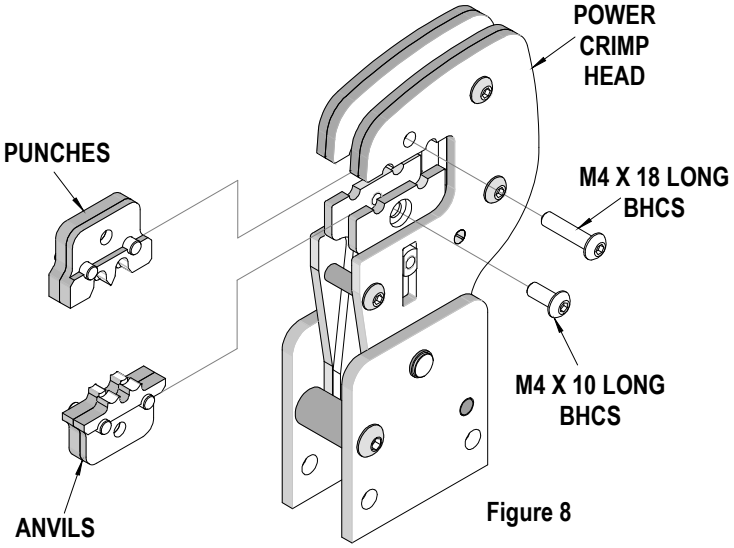


Figure 8

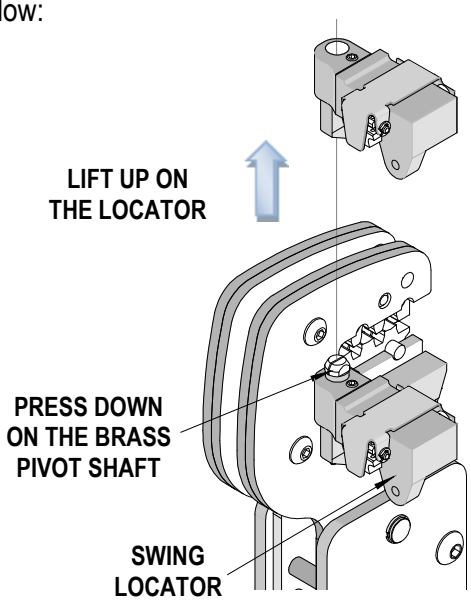


Figure 9

Anvils and Punches Installation

1. Insert the anvils into the bottom slots of the nest. Install the M4 x 10 long BHCS and tighten in place.
2. Insert the punches into the top slots of the nest. Install the M4 x 18 long BHCS and tighten in place. See Figure 8.

Locator Removal and Installation

3. Open the power crimp head.
4. Swing the existing locator open and away from the crimp tool.
5. Firmly press down on the brass pivot shaft with your thumb while pulling up on the locator. Slip the locator off of the top of the brass pivot shaft. See Figure 9.
6. Replace it with the proper locator by putting the locator over the brass pivot shaft and snapping it into place.

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

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.

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 that has been stripped 12.7mm (1/2") long so that 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 website 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 should be 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.

The chart below shows all applications for this Tool Kit.

Tool Kit Order No.	Tool Order No.	Tool Description	Power Head Order No.	Adapter Description	Figure No.
63811-7570	63810-0100	Hand Crimp Frame (Short)	N/A	N/A	9
	63810-0400	Hand Crimp Frame (Long)	N/A	N/A	9
	63816-0200	Battery Power Tool (110 V)	63816-0300	Power Crimp Head	10
	63816-0250	Battery Power Tool (220 V)	63816-0300	Power Crimp Head	10

Applications for the Tool Kit

Hand Crimp Tool

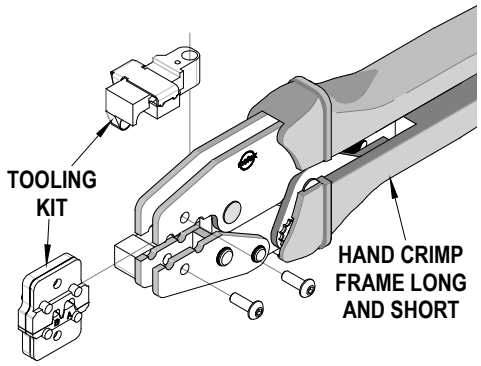


Figure 9

Battery Powered Tool

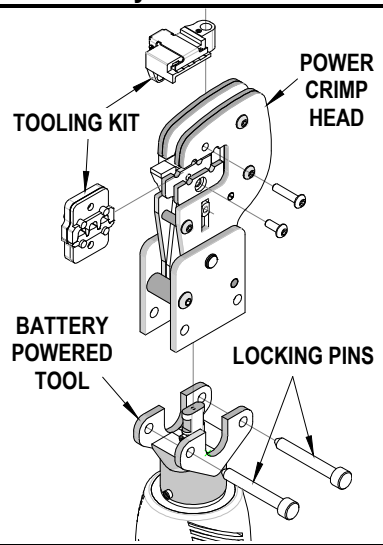


Figure 10

WARNING: *NEVER* operate service, install tool kits or adjust the power crimp head without proper instruction and without first reading and understanding the instructions in the proper manual or specification sheet. See chart above for the correct manual or specification sheet.

WARNING: *NEVER* install tooling or service this tool while it is connected to any power source. Make sure the power is turned off.

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.

HAND TOOL PARTS LIST

Item Number	Order Number	Description	Quantity
1	63810-0100	Hand Crimp Frame (Short)	1
2	63810-0101	Wrench Set (Not included)	0
3	63810-0102	Locator Base	1
4	63810-0103	Repair Kit (Not included)	0
5	63811-7570	Tool Kit with Locator	1
6	63811-7575	*Gray Locator (only)	REF
7	63811-7576	*Black Locator (only)	REF
*Both Locators are included with hand tool			

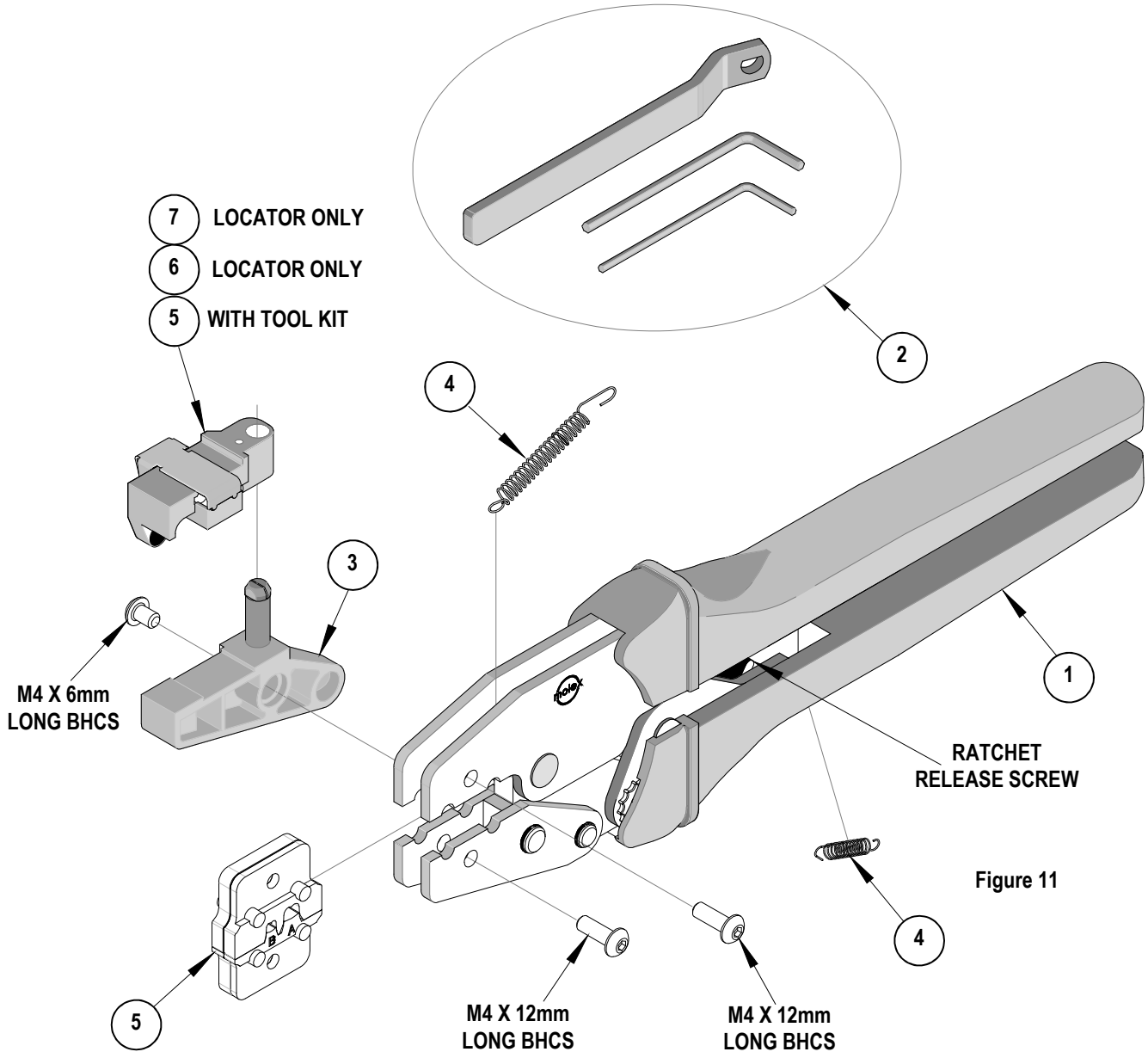


Figure 11

POWER HEAD PARTS LIST

Item	Order No.	Engineering No.	Description	Quantity
1	63816-0300	63816-0300	Power Crimp Head	1
2	63811-7570	63811-7570	Tool Kit	1

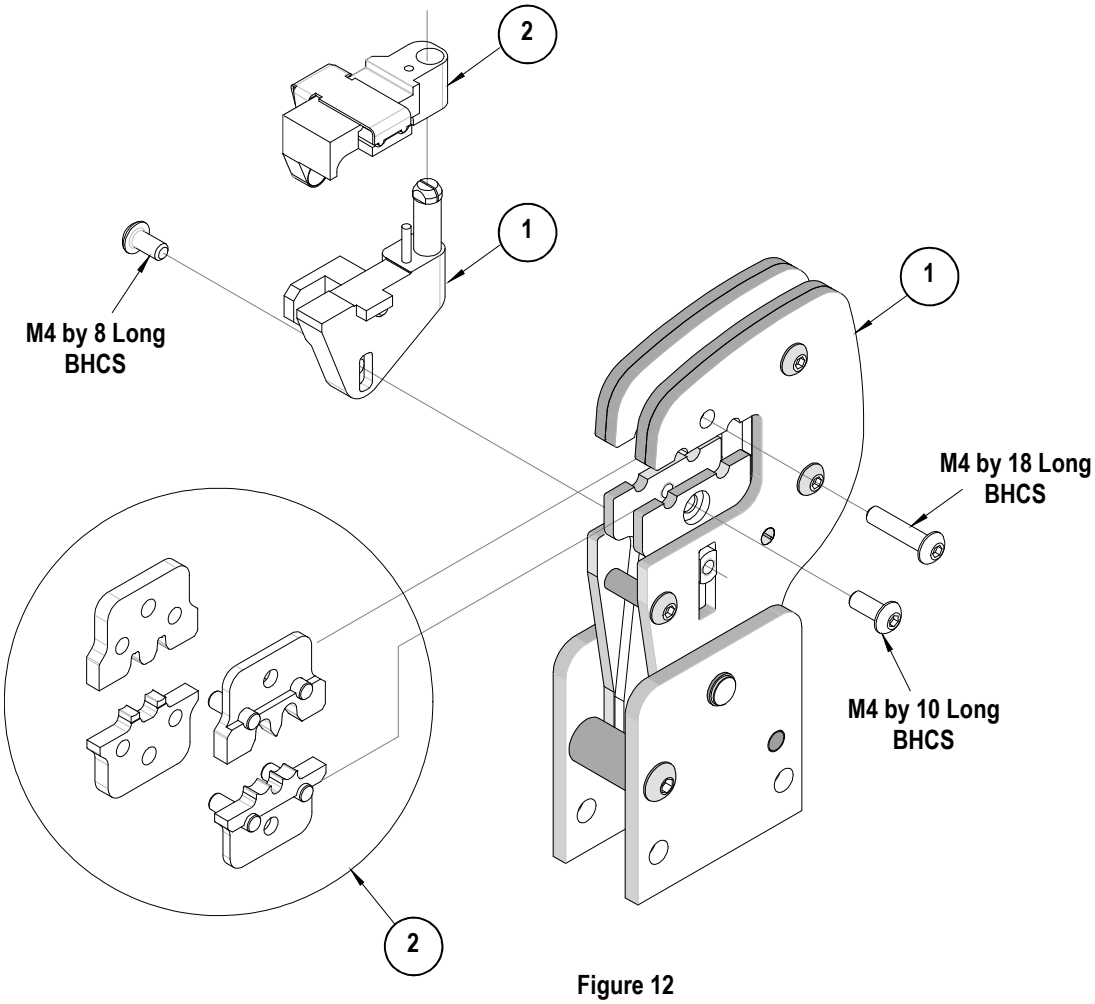


Figure 12

Application Tooling Support

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