molex®

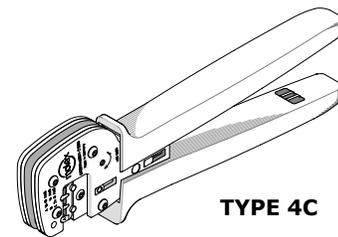## Order Number 200218-3700

Application Tooling Specification

TYPE 4C

FEATURES

- A full-cycle ratcheting hand tool ensures complete crimps
- Ergonomic soft grip handles for comfortable crimping
- Precisely designed crimping profiles with simple contact positioning
- Easy handling due to outstanding force ratio
- Tooling can be installed in the 63816-1915 Power Crimp Adapter, which is mounted on the 63816-1900 Electric Crimp Machine, or the 63816-0270 (110 V) and 63816-0280 (220 V) Battery Powered Tools.
- This tool is IPC/WHMA-A-620 compliant
- This tool is RoHS compliant; however, RoHS compliance is not required

SCOPE

Products: Piggyback Quick Disconnect Terminal, 16 and 18 AWG UL1015 wires.

Series No.	Terminal Order No.	Wire		Insulation Diameter (REF)		Strip Length (REF)	
		Wire Type	Size	mm	In.	mm	In.
35725	35725-3910	UL1015	18 AWG	2.79	.110	6.00	.236
		UL1015	16 AWG	3.15	.124	6.00	.236

DEFINITION OF TERMS
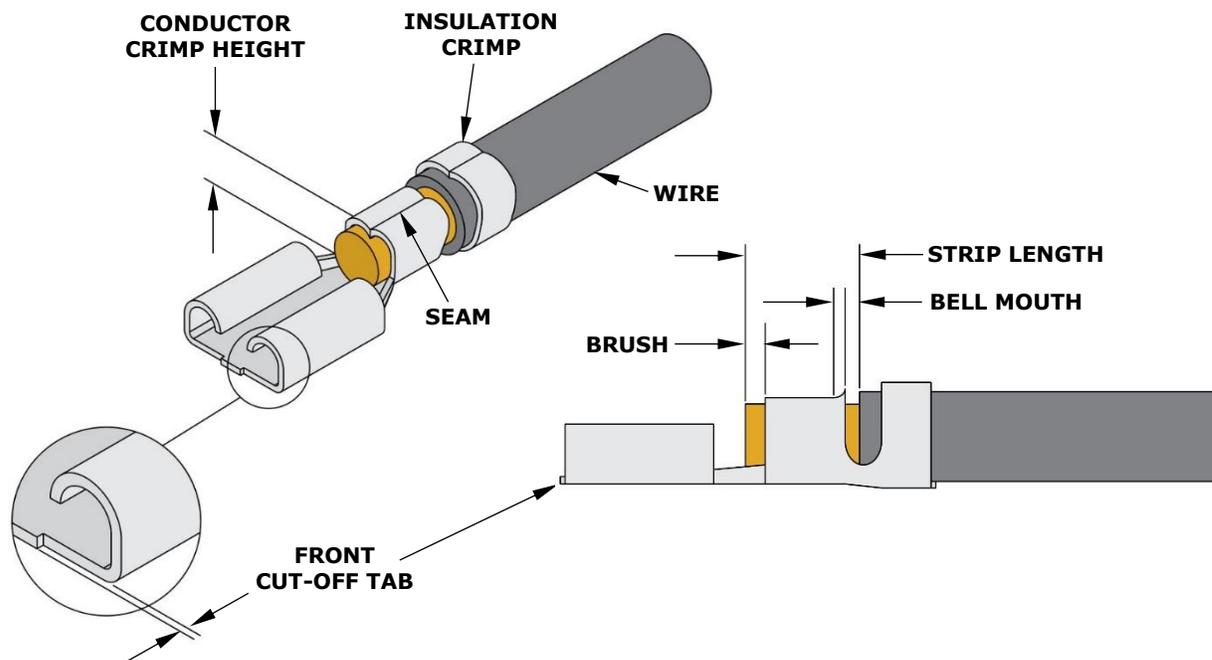
CONDITIONS

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

Feature	Requirement				
Bend Up	3° Max				
Bend Down	3° Max				
Twist	3° Max				
Roll	3° Max				
Bell Mouth Rear	0.20-0.90mm (.008-.035")				
Bell Mouth Front	0.00-0.50mm (.000-.020")				
Conductor Brush	0.70mm (.028")				
Conductor Crimp	Wire Type	Wire Size	Crimp Height		Crimp Width	
	UL1015	18 AWG	1.50-1.60mm	.059-.063 in.	2.30-2.40mm	.091-.094 in.
	UL1015	16 AWG	1.76-1.86mm	.069-.073 in.	2.50-2.60mm	.098-.102 in.
Insulation Crimp	Wire Type	Wire Size	Crimp Height		Crimp Width	
	UL1015	18 AWG	3.00-3.20mm	.118-.126 in.	3.60-3.80mm	.142-.150 in.
	UL1015	16 AWG	3.60-3.80mm	.142-.150 in.	3.75-3.95mm	.148-.156 in.
Pull Force	Wire Type	Wire Size	Minimum Force		Profile	
			N	Lb.	16	18
	UL1015	18 AWG	88.96	20.0		X
	UL1015	16 AWG	133.44	30.0	X	
Conductor Anvil Flash	1.73mm (.068") Max 1.48mm (.058") Max					
Insulation Grip Step	0.00-0.20mm (.000-.008")					
† To achieve IPC/WHMA-A-620 compliant crimps, the following overall wire insulation diameter ranges are recommended: • **18 AWG UL1015:** 2.20–3.05mm (.087–.120'') • **16 AWG UL1015:** 2.50–3.30mm (.098–.130'')					

Tool Qualification Notes

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

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

SETUP

To install the tool kit into the power crimp head, follow the steps below:
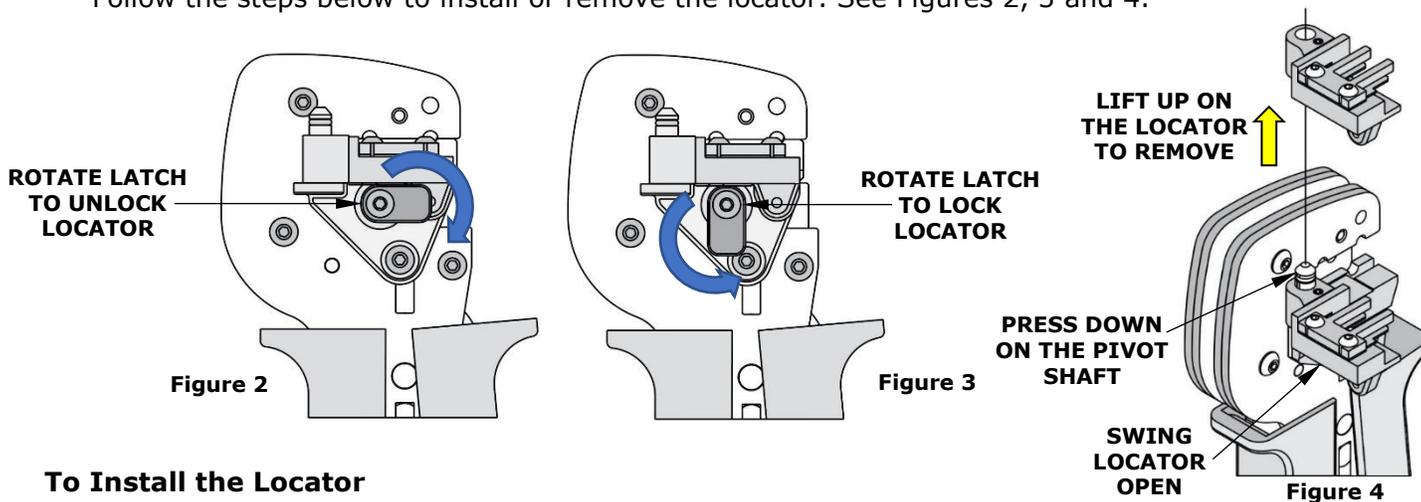
Installing Anvils and Punches

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 1.

POWER CRIMP HEAD

PUNCHES

M4 X 18 LONG BHCS

M4 X 10 LONG BHCS

ANVILS
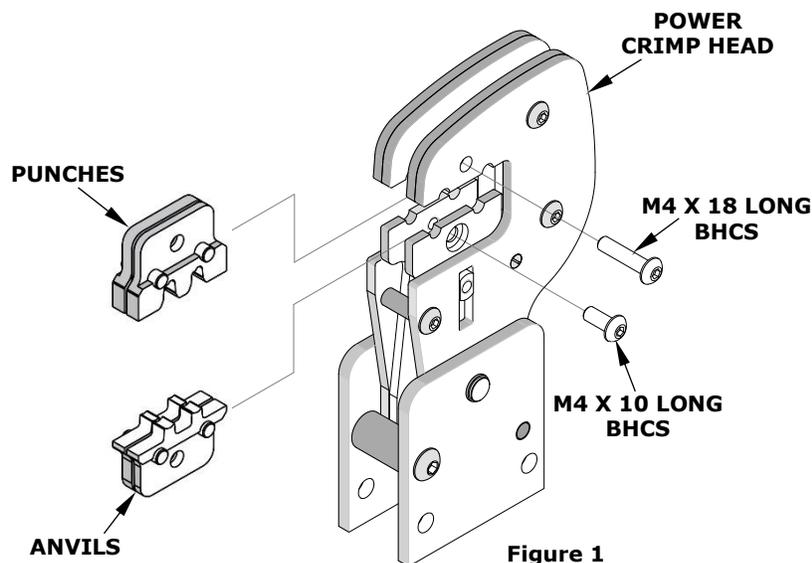
Figure 1

Installing or Removing the Locator

Follow the steps below to install or remove the locator. See Figures 2, 3 and 4.

ROTATE LATCH TO UNLOCK LOCATOR

Figure 2

ROTATE LATCH TO LOCK LOCATOR

Figure 3

LIFT UP ON THE LOCATOR TO REMOVE

PRESS DOWN ON THE PIVOT SHAFT

SWING LOCATOR OPEN

Figure 4

To Install the Locator

1. Open the hand crimp tool.
2. Position the locator with the hole over the pivot shaft and snap it into place.
3. Rotate the latch counterclockwise to lock the locator in place.

To Remove the Locator

1. Open the hand crimp tool.
2. Rotate the latch clockwise to unlock the locator.
3. Swing the existing locator open and away from the hand tool.
4. Firmly press down on the pivot shaft with your thumb while pulling up on the locator. Slip the locator off the top of the pivot shaft.

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 listed in the preceding charts.
2. Some terminals with large insulation grips may interfere with the crimp tooling when swinging the locator into position. This terminal must then be loaded into the locator in the closed position. See Figure 5.
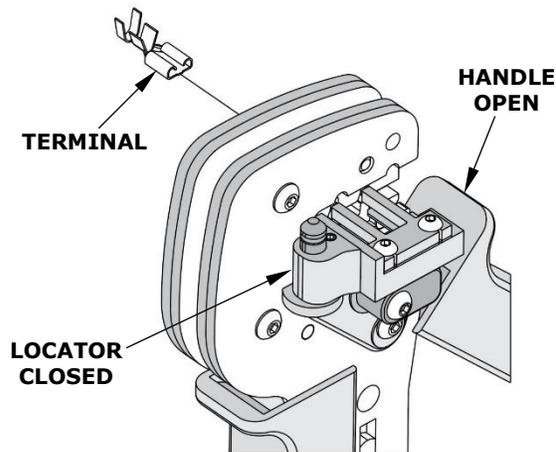

TERMINAL

HANDLE OPEN

LOCATOR CLOSED

Figure 5

WIRE AGAINST WIRE STOP

WIRE IN TERMINAL
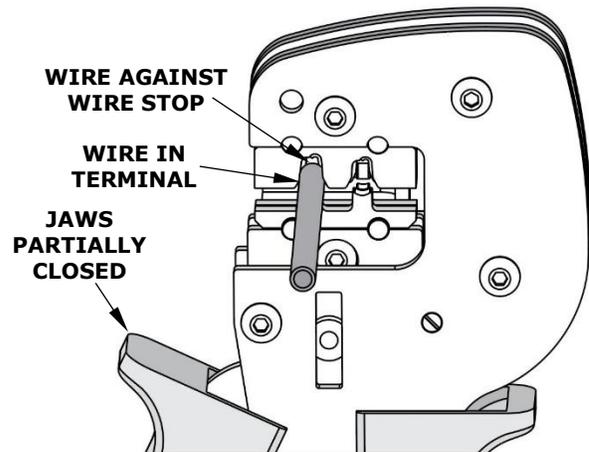
JAWS PARTIALLY CLOSED

Figure 6

3. Press down on the wire stop on the locator as shown in Figure1. Insert the proper terminal into the proper nest opening. When choosing the nest opening, make sure it will correspond with the 16 or 18 profile on the hand tool.
4. Insert the proper wire over the terminal.
5. Gently touch the wire stop with the end of the wire. See Figures 6 and 7.
6. Compress the terminal by squeezing the tool handles until the ratchet mechanism cycle has been completed. Release the handles to open the jaws.
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.
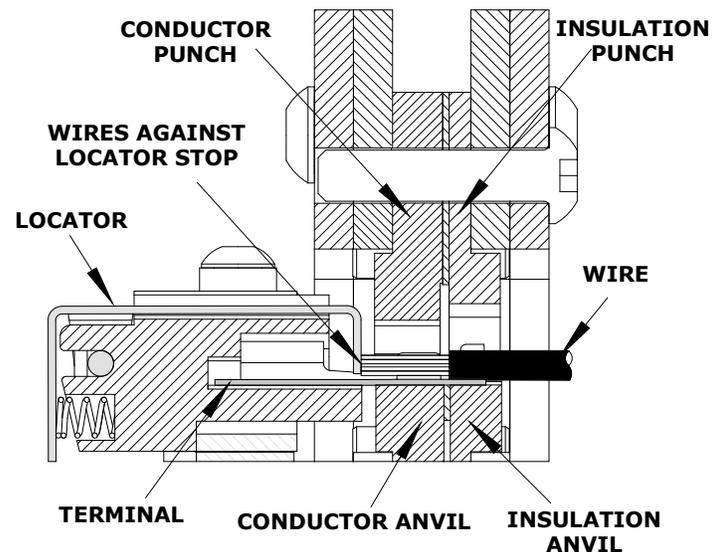8. Visually inspect the crimped terminal for proper crimp location.

CONDUCTOR PUNCH

INSULATION PUNCH

WIRES AGAINST LOCATOR STOP

LOCATOR

WIRE

TERMINAL

CONDUCTOR ANVIL

INSULATION ANVIL

Figure 7

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

For Battery-Powered Tools and Electric Crimp Machine

1. Cycle the 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.

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 in the tool head are protected with a thin coat of high-quality machine oil. Do not oil excessively. This 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. The use of light oil such as 30 weight automotive oil every 5,000 crimps or monthly will significantly enhance the tool life and ensure a stable calibration. See Figures 8A and 8B for lubrication points.
4. Store the tool in a clean and dry area when it is not in use.

LUBRICATION POINTS (BOTH SIDES) LIGHT OIL (EVERY MONTH OR 5,000 CRIMPS)
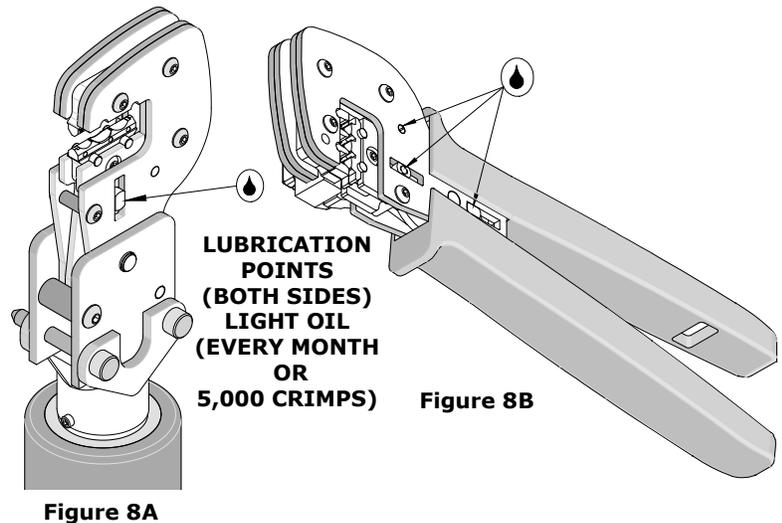
Figure 8A

Figure 8B

Miscrimps or Jams for Hand Crimp Tools Only (See Figure 12)

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 rotating the ratchet release screw. See Figure 12.

Warranty

This tool kit is for electrical terminal crimping purposes only. This tool kit 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 kit free of charge. This repair or exchange will not be applicable to altered, misused or damaged tools.

> **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.

> **CAUTION:** Repetitive use of this tool should be avoided.

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-qualify, crimp a terminal to a wire that has been stripped 12.7mm (0.50") 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 website for the Quality Crimp Handbook for more information on pull testing.
- When the hand tool is no longer capable of achieving minimum pull force, it should be taken out of service and replaced.
- This tool is very difficult to disassemble and reassemble. Customer repair is not recommended.

The chart below shows all applications for this crimp tooling:

Tool Order No.	Tool Description	Adapter Order No.	Adapter Description	Figure No.
63816-0270	Battery Power Tool (110 V)	63816-1915	Power Crimp Adapter	10
63816-0280	Battery Power Tool (220 V)	63816-1915	Power Crimp Adapter	10
63816-1900	Electric Crimp Machine	63816-1915	Power Crimp Adapter	11

Crimp Tooling Applications		
Hand Crimp Tool	**Battery Powered Tool**	**Electric Crimp Machine**
Figure 9	**Figure 10**	**Figure 11**
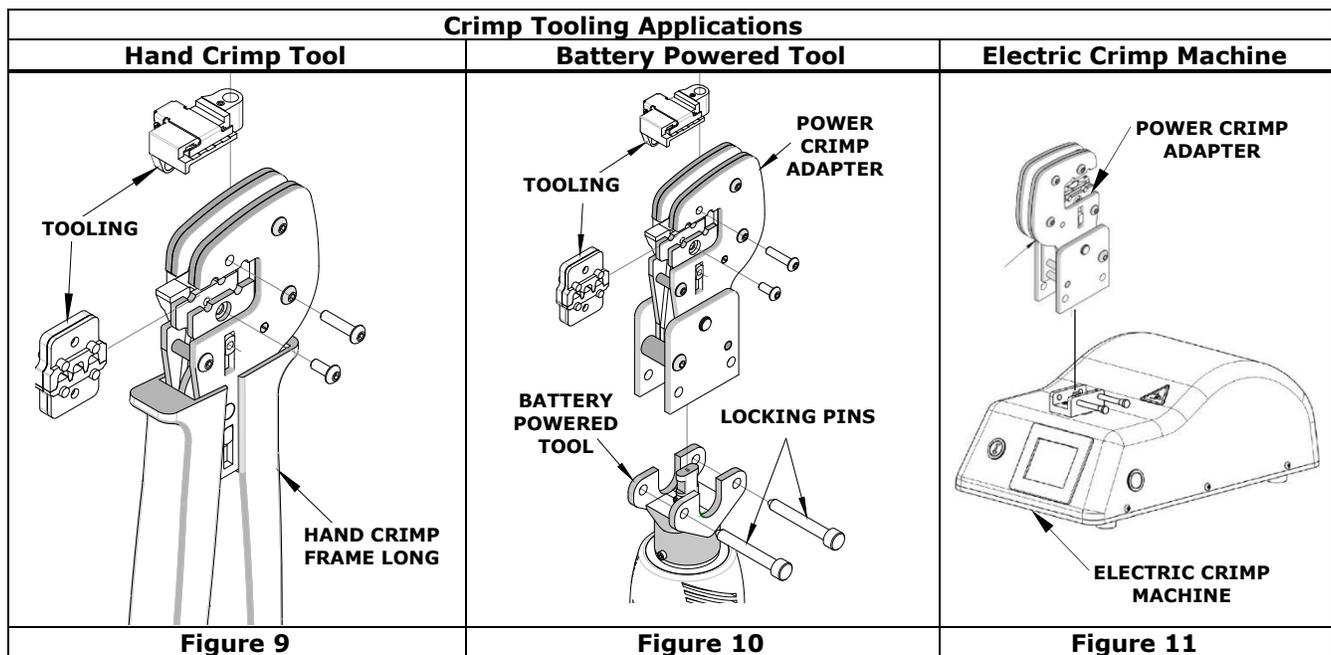
WARNING: *NEVER* operate, service, install tool kits or adjust the power crimp head without proper instruction and without first reading and understanding the instructions in the proper manual or specification sheet. See chart above for the correct manual or specification sheet.
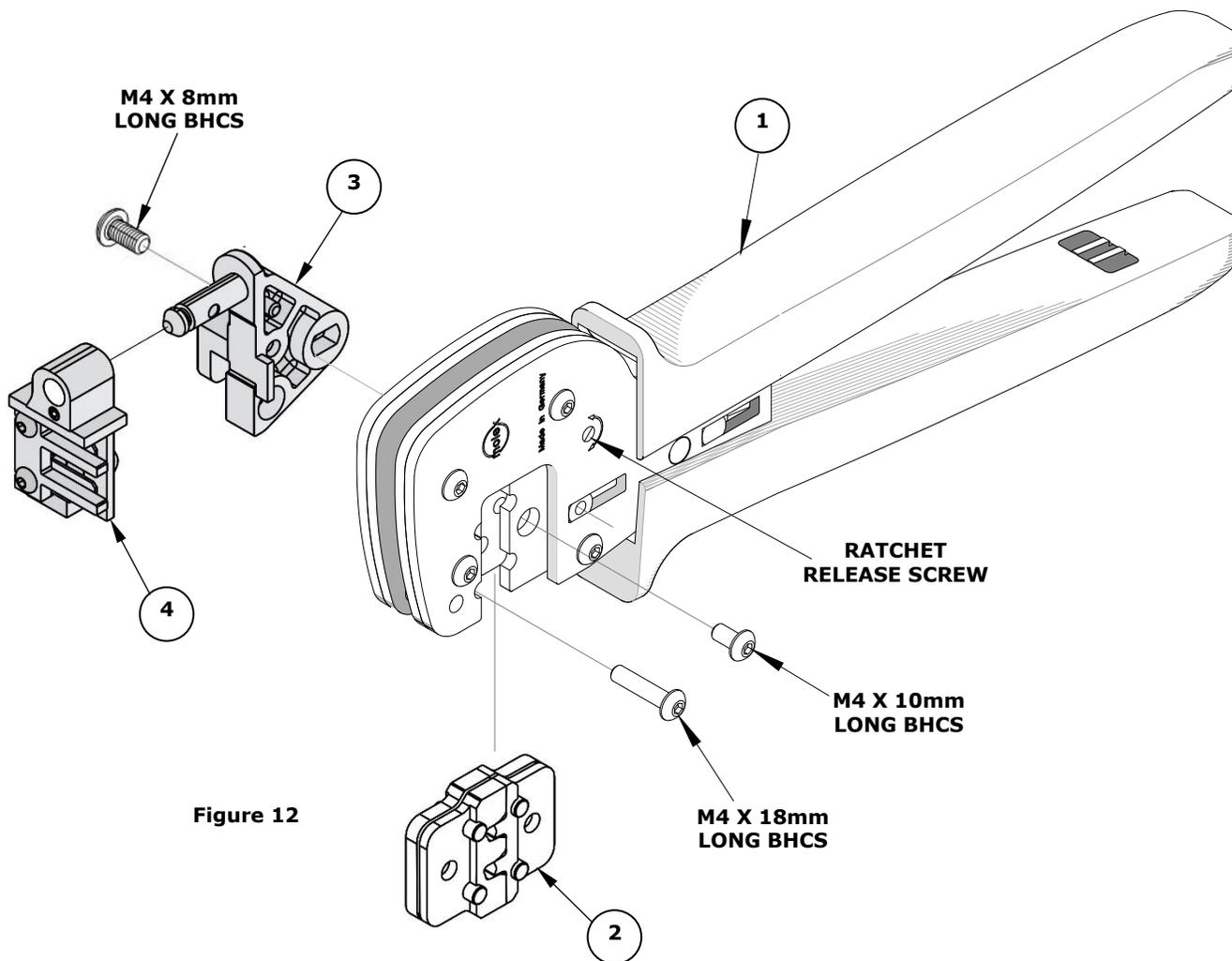
WARNING: *NEVER* install tooling or service this tool while it is connected to any power source. Make sure the power is turned off.

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

CAUTION: Wear safety glasses when operating or servicing this tool.

HAND TOOL PARTS LIST

Item Number	Order Number	Description	Quantity
1	---	Hand Crimp Frame	1
2	---	Tool Kit	
3	63811-5573	Locator Base	1
4	200218-3775	Terminal Locator	1

M4 X 8mm LONG BHCS

1

3

4

RATCHET RELEASE SCREW

M4 X 10mm LONG BHCS

Figure 12

M4 X 18mm LONG BHCS

2

Application Tooling Support

E-Mail: toolingsupport@molex.com
Website: www.molex.com/applicationtooling