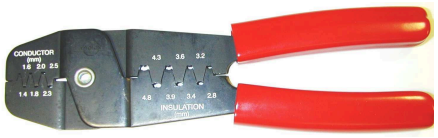
ServiceGrade™ Hand Crimp Tool

molex

Application Tooling Specification Sheet



Order No. 63811-1000

FEATURES

- Ergonomic soft grip handles for comfortable crimping with small handle spread
- Accepts material thicknesses of 0.15 to 0.40mm and conductor barrel lengths of 2.00 to 3.50mm
- Ideal for field repair and prototyping
- Available in custom packaging for customer resale
- Available through distribution only

SCOPE

Products: Molex Open Barrel Crimp Terminals, 14 to 24 AWG

CRIMPING INFORMATION:

Tool Profiles should be selected based on the wire AWG and insulation diameter.

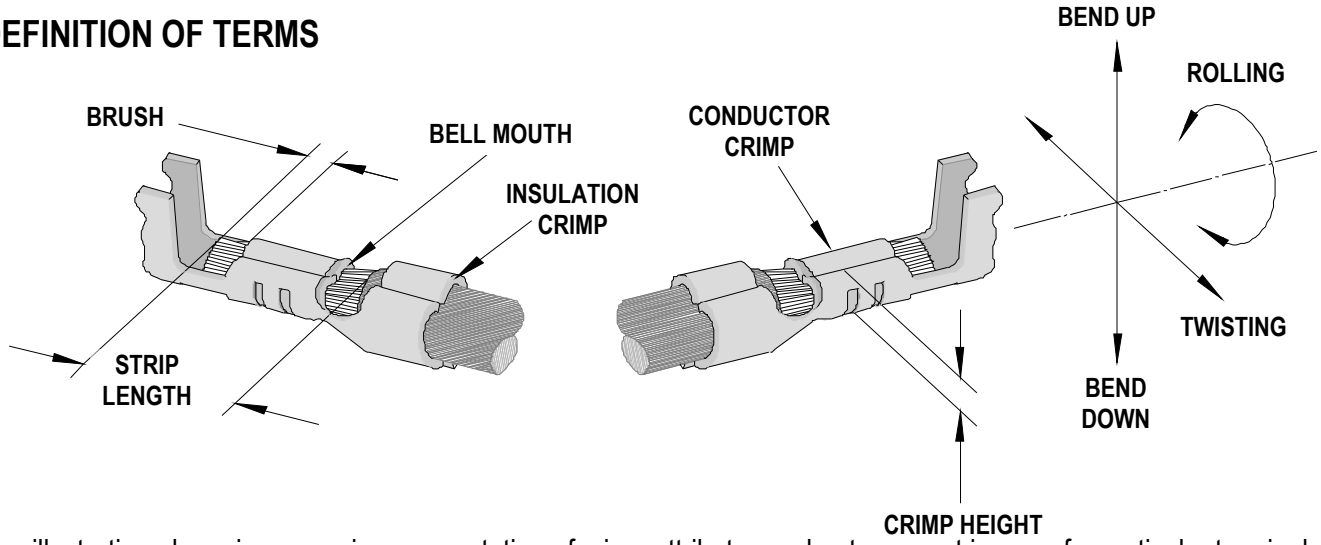
Wire Size		Conductor Tool Section Range		Pull Force Min. ▼	
AWG	mm2	mm	in	N	Lb.
14	2.00	2.30 - 2.50	.091 - .098	222.6	50.0
16	1.30	2.00 - 2.30	.079 - .091	133.5	30.0
18	0.80	1.60 - 2.00	.063 - .079	89.0	20.0
20	0.50	1.40 - 1.80	.055 - .071	57.9	13.0
22	0.35	1.40 - 1.60	.055 - .063	35.6	8.0
24	0.20	1.40 - 1.40	.055 - .055	22.2	5.0
▼ Each application should be verified for pull force.					

Insulation Diameter Range		Insulation Tool Section Range	
mm	in	mm	in
3.50 - 3.99	.138 - 0.157	3.90 - 4.80	.154 - .189
3.00 - 3.50	.118 - 0.138	3.40 - 4.80	.134 - .189
2.49 - 3.00	.098 - 0.118	2.80 - 3.90	.110 - .154
2.01 - 2.49	.079 - 0.098	2.30 - 3.40	.091 - .134
1.50 - 2.01	.059 - 0.079	1.80 - 2.80	.071 - .0140
0.99 - 1.50	.039 - 0.059	1.40 - 2.00	.055 - .079
3.99 - 4.50	.157 - 0.177	4.30 - 4.80	.169 - .189

Restrictions:

Termination crimp quality is dependent on the conductor profile choice and skill of the operator. Customers should independently verify that intended termination meets quality and performance needs. Not all terminal, wire and profile combinations will provide minimum pull force requirements, or provide an acceptable crimp form.

DEFINITION OF TERMS



The illustration above is a generic representation of crimp attributes and not an exact image of a particular terminal.

OPERATION

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

WARNING: Make sure that the wire is ***DISCONNECTED*** from any power supply

Make sure work area is clean and dry and wear approved eye protection.

Crimping Terminals

1. Select the appropriate Molex terminal.
2. Verify that the wire size, terminal material thickness and conductor barrel length are within the specifications for this tool.
3. Strip the wire to the proper strip length.
4. Open the tool handles and insert the conductor grip area of the terminal into the desired conductor profile. See Figure 1.
5. Squeeze the tool handles together enough to allow the terminal barrel to touch the top of the profile radii.
6. Align the insulation edge between the conductor and insulation barrel and then insert the stripped wire into the terminal.
7. Verify that the conductor brush is present. If the wire does not fit into the terminal, the conductor profile selection may be too narrow.
8. Holding the wire in place, squeeze the tool handles firmly together. Use two hands, if necessary.
9. After crimping, if any strands of wire are visible at the top of the crimp form, the conductor profile selection chosen may be too wide
10. Open the tool handles and insert the terminal into the desired insulation section. Evaluate the housing opening before crimping the insulation. See Figure 2.

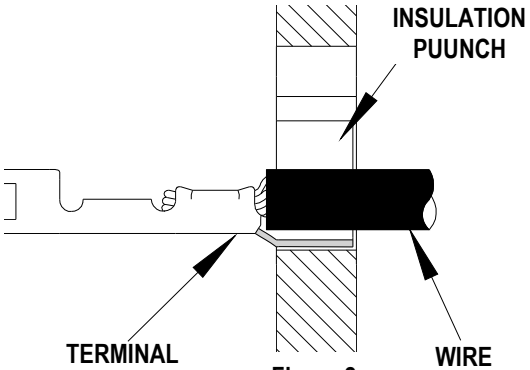


Figure 2

11. Gently squeeze the tool handles together to allow the terminal insulation profile to provide an acceptable strain relief.
12. Remove the crimped terminal from the tool. Inspect the crimp for loose wire strands, missing crimp, or other damage. Any minor terminal bending may be straightened by hand.

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. Light oil (such as SAE30W oil) applied at the oil points, shown in Figure 4, every 5,000 crimps or 3 months, is recommended.
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.

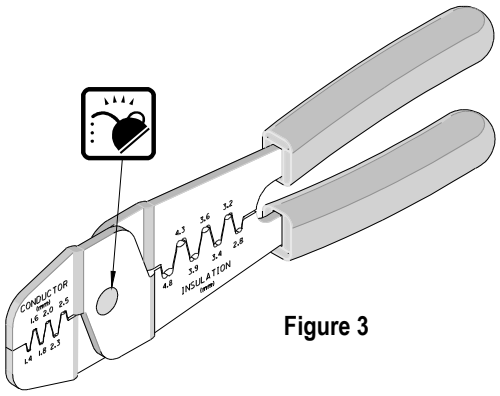


Figure 3

Warranty

This tool is for electrical terminal crimping purposes only. All tools are warranted to be free of manufacturing defects for a period of 30 days. Should such a defect occur, the tool will be repaired or exchanged free of charge. This 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.

ServiceGrade™ crimp hand tools are low cost tools used in field repair for a limited number of terminations. If a high quality tool is required or a higher volume of terminations required, please purchase the corresponding PremiumGrade™ crimp hand tool. A ServiceGrade™ crimp tool may or may not have a terminal locator and in some case may need the locator removed to operate properly.

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. **NEVER** perform crimps on active electrical circuits.
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 ServiceGrade™ hand tools but rather supplies the following guidelines for customers to maintain their 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.
- When the hand tool is no longer capable of achieving minimum pull force, it should be replaced.

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