

Mini-Mac Applicator Application Tooling Specification Mechanical Feed-Metal Strip Order No. 63881-2100



FEATURES

- Directly adapts to most crimp presses and automatic wire processors
- Applicator designed to industry standard mounting and shut height of 135.80mm (5.346")
- Conductor and insulation rings allow quick adjustment for conductor and insulation crimp height change
- Quick set-up time; plus the crimp height, track and feed adjustments can be set without removing the applicator from the crimp press

SCOPE

Products: Avikrimp® Metal strip fed low profile FIQD Terminals 10-12 AWG

Testing

Mechanical

The tensile test, or pull test, is a means of evaluating the mechanical properties of the crimped connections. The following chart shows the UL and government specifications (MIL-T-7928) for various wire sizes. The tensile strength is shown in pounds and indicates the minimum acceptable force to break or separate the terminal from the conductor.

| Color Code | Wire Size (AWG) | *UL - 486 A | *UL – 486 C | *UL – 310 | *Military Class 2 |
|------------|-----------------|-------------|-------------|-----------|----------------------|
| Yellow | 26 | 3 | N/A | N/A | 7 |
| Yellow | 24 | 5 | N/A | N/A | 10 |
| Red | 22 | 8 | 8 | 8 | 15 |
| Red | 20 | 13 | 10 | 13 | 19 |
| Red | 18 | 20 | 10 | 20 | 38 |
| Blue | 16 | 30 | 15 | 30 | 50 |
| Blue | 14 | 50 | 25 | 50 | 70 |
| Yellow | 12 | 70 | 35 | 70 | 110 |
| Yellow | 10 | 80 | 40 | 80 | 150 |
| Red | 8 | 90 | 45 | N/A | 225 |
| Blue | 6 | 100 | 50 | N/A | 300 |

*<u>UL - 486 A</u> - Terminals (Copper conductors only)

*UL - 486 C - Butt Splices, Parallel Splices, Closed End Connectors, and Wire Nuts

*<u>UL - 310</u> - Quick Disconnects, Flag and Couplers

*Military Class 2- Military Approved Terminals only as listed

Product List

The following is a partial list of the product order numbers and their specifications that this tool is designed to run. Updates to this list are available on <u>www.molex.com</u>.

| Terminal No. | Terminal Eng. No. | Wire Size | | Insulation Diameter Max. | | Strip Length | |
|--------------|-------------------|-----------|-----------------|--------------------------|------|--------------|------|
| | | AWG | mm ² | mm | ln. | mm | ln. |
| 19606-0004 | 19606-0004 | 10-12 | 3.30-5.00 | 5.84 | .230 | .344 | 8.73 |

DEFINITION OF TERMS

The following illustrations are a generic terminal representation and not an exact image of any terminal listed in the scope.



Figure 1

Tool Calibration

To recalibrate this applicator, make sure the power is completely shut off on the press.

- 1. The Mini-Mac applicator must be properly installed in the press.
- 2. Crimping dies must be properly installed in the Mini-Mac applicator.
- 3. The recommended method of measuring the crimp height of the conductor dies is the soft metal slug method, (See Figure 2).
- 4. The slug must have a diameter 0.51 mm (.020") larger than the "X" No Go dimension before crimping.
- Place the soft metal slug (solder) into the nest of the bottom die and crimp (by hand cycling the press) similar to a terminal. The crimp height can be measured with a blade type micrometer or dial caliper, (Dimension "X").
- 6. Adjustment of the crimp height can be accomplished by indexing the conductor cam. The letter "A" gives the loosest position and "K" gives the tightest position. A total adjustment of 0.50mm (.020") can be achieved by adjusting the conductor cam.

Note: If the crimp height is too tight on the setting "A", check the shut height of the press. See the Industrial Mini-Mac Applicator Manual Section 2.1 for adjustments.



Figure 2

Wire Size "X" Dimension Conductor Crimp Pull Force Min. No Go Go Mean AWG Lbs Ν mm² In In In mm mm mm 10 5.25 .114 2.90 .111 2.82 .117 2.97 80.0 355.9 12 3.30 2.90 .111 2.82 .114 .117 2.97 70.0 311.4

| Terminal Series No. | Cut-off Tab Max. | | |
|---------------------|------------------|------|--|
| Terminur Jernes No. | mm | In. | |
| 19606-0004 | 0.38 | .015 | |

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

CRIMP SPECIFICATIONS

PARTS LIST

| I.a | 0.1.1 | | plicator 63881-2100 | 0 |
|------|------------|-----------------|---|----------|
| ltem | Order No | Engineering No. | Description | Quantity |
| | | | shable Tooling | |
| | 63881-2170 | 63881-2170 | Tool Kit (All "Y" Items) | REF |
| 1 | 63465-0023 | 63465-0023 | Conductor Punch | 1 Y |
| 2 | 63464-0022 | 63464-0022 | Conductor Anvil | 1 Y |
| 3 | 63463-0022 | 63463-0022 | Insulation Punch | 1 Y |
| 4 | 63462-0024 | 63462-0024 | Insulation Anvil | 1 Y |
| 12 | 63466-0201 | 63466-0201 | Cut-off Plunger Rear | 1 Y |
| 14 | 63466-0301 | 63466-0301 | Rear Plunger Retainer | 1 Y |
| 16 | 63466-0002 | 63466-0002 | Cut-Off Blade | 1 Y |
| | | Other Comp | onents (Ref. 12150) | |
| 22 | 63466-0404 | 63466-0404 | Cut-off Plunger Striker (Rear) | 1 |
| 24 | 63466-0101 | 63466-0101 | Scrap Chute | 1 |
| 25 | 63700-0539 | 63700-0539 | Cut-Off Plunger Spring | 1 |
| 33 | 63443-0021 | 63443-0021 | Lower Tooling Key | 1 |
| 35 | 63466-1040 | 63466-1089 | Spacer | 1 |
| 36 | 63466-1089 | 63466-1040 | Spacer | 1 |
| 42 | 63466-0921 | 63466-0921 | Terminal Stripping Blade | 1 |
| 51 | 63600-1290 | 63600-1290 | Washer | 1 |
| 52 | 63890-0866 | 63890-0866 | Collar-6.40 Lg. | 1 |
| 53 | 63890-0867 | 63890-0867 | Collar-7.70 Lg. | 1 |
| 72 | 63801-4510 | 63801-4510 | Terminal Guide Front | 1 |
| 96 | 63600-0110 | 63600-0110 | M4 Washer, 3mm Thick | 1 |
| | | | Frame | 1 |
| 81 | 63801-3201 | 63801-3201 | Mechanical Feed Applicator Frame Head | REF |
| 82 | 63801-3281 | 63801-3281 | Base | REF |
| 83 | 63801-4550 | 63801-4550 | Track Assembly | REF |
| | | | Hardware | |
| 91 | N/A | N/A | M4 by 10 Lg SHCS | 2** |
| 92 | N/A | N/A | M4 by 12 Lg SHCS | _]** |
| 93 | N/A | N/A | M4 by 20 Lg SHCS | 4** |
| 94 | N/A | N/A | M4 by 45 Lg. SHCS | 1** |
| 95 | N/A | N/A | M4 by 50Lg. SHCS | 1** |
| 97 | N/A | N/A | M8 by 30 Lg. BHCS |]** |
| 98 | N/A | N/A | 3mm by 6 Lg. Roll Pin 1** | |
| | | / | ply company such as MSC (1-800-645-727) | י. חו |

Note: Crimp profiles used in 63881-2100 are equivalent to 19031-0041 and 19031-0042.



NOTES

- 1. Molex recommends an extra perishable tooling kit be maintained at your facility.
- 2. Verify tooling alignment by manually cycling the press with applicator before crimping under power. Check that all screws are tight.
- 3. Slugs, terminals, dirt, and oil should be kept clear of work area.
- 4. Wear safety glasses at all times.
- 5. For recommended maintenance refer to the Mini-Mac Applicator Manual (Document no. 63880-0000).

CAUTION: This applicator should only be used in a press with a shut height of 135.80 mm (5.346"). Tooling damage could result at a lower setting.

CAUTION: To prevent injury, never operate this applicator without the guards supplied with the press or wire-processing machine in place. Reference the press or wire processing manufacturer's instruction manual.

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

Contact Information

For more information on Molex application tooling please contact Molex at 1-800-786-6539.

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