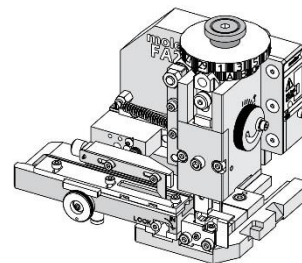


**Order Number**  
**63808-2300**

**molex**<sup>®</sup>

## Application Tooling Specification



### FEATURES

- Applicator designed to industry-standard mounting and 135.80mm (5.346") shut height
- Quick setup time; plus, the crimp height, track and feed adjustments can be set without removing the applicator from the press
- Fine adjustment allows users to achieve target with little effort by adjusting in increments of .015mm (.0006") for conductor crimp height and .025mm (.001") for insulation height
- Independent adjustment rings allow users to quickly adjust the conductor or insulation crimp height without affecting each other
- Directly adapts to most automatic wire processing machines
- This applicator was designed for use in a wire processor only
- Fine adjustment of the bend is achieved using the bend adjust dial

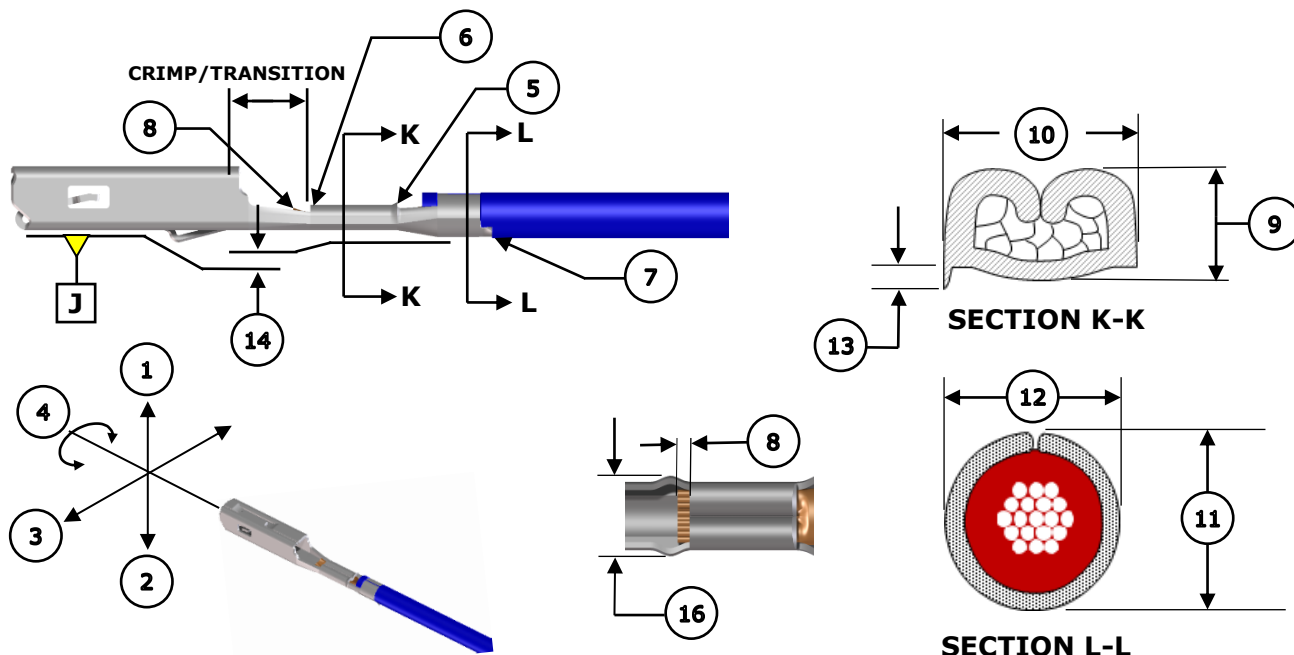
### SCOPE

**Products:** MX150 Mat Seal/Unsealed Receptacle Terminals: 14 AWG, 16 AWG, 1.25mm<sup>2</sup> and 1.50mm<sup>2</sup> specific type wires below:

| Terminal Series No.     | Terminal Order No.       | Wire Type and Size   |                     | Insulation Diameter |           | Strip Length (Ref.) |           |
|-------------------------|--------------------------|--|---------------------|---------------------|-----------|---------------------|-----------|
|                         |                          | Type   | Wire Size           | mm                  | In.       | mm                  | In.       |
| 33001<br>33012<br>34750 | 33001-3003<br>33001-3021 | M1L-135A1 (UTX)  | 14 AWG              | 2.10-2.70           | .083-.106 | 4.70-5.60           | .185-.220 |
|                         | 33001-5001<br>33001-5021 | M1L-123A4 (TXL)  | 16 AWG              |                     |           |                     |           |
|                         | 33012-3001<br>33012-3021 | JASO D611 (AVSS)   | 1.25mm <sup>2</sup> |                     |           |                     |           |
|                         | 33012-5021<br>34750-1001 | M1L-126A1<br>FLR91X-A-XLPO<br>EXRAD BLOCKED<br>EXRAD UNBLOCKED<br>PSA FTP 00949_10_00770 | 1.50mm <sup>2</sup> |                     |           |                     |           |

**CAUTION:** This applicator was designed for use in a wire processor only.

## DEFINITION OF TERMS



## CRIMP SPECIFICATIONS

The following crimp specifications are based on document AS-33012-002 Rev. E:

| Feature  | Requirement  |                              |                              |                              |                 |                 |        |                              |                              |                 |        |                              |                  |                     |                              |  |                     |                              |                              |                        |                              |                              |
|--|--|------------------------------|------------------------------|------------------------------|-----------------|-----------------|--------|------------------------------|------------------------------|-----------------|--------|------------------------------|------------------|---------------------|------------------------------|--|---------------------|------------------------------|------------------------------|------------------------|------------------------------|------------------------------|
| <b>1. Bend Up</b>  | 3° Max   |                              |                              |                              |                 |                 |        |                              |                              |                 |        |                              |                  |                     |                              |  |                     |                              |                              |                        |                              |                              |
| <b>2. Bend Down</b>  | 3° Max   |                              |                              |                              |                 |                 |        |                              |                              |                 |        |                              |                  |                     |                              |  |                     |                              |                              |                        |                              |                              |
| <b>3. Twist</b>  | 3° Max   |                              |                              |                              |                 |                 |        |                              |                              |                 |        |                              |                  |                     |                              |  |                     |                              |                              |                        |                              |                              |
| <b>4. Roll</b>   | 3° Max   |                              |                              |                              |                 |                 |        |                              |                              |                 |        |                              |                  |                     |                              |  |                     |                              |                              |                        |                              |                              |
| <b>5. Rear Bell Mouth</b>                                      | 0.30-0.70mm (.012-.028")   |                              |                              |                              |                 |                 |        |                              |                              |                 |        |                              |                  |                     |                              |  |                     |                              |                              |                        |                              |                              |
| <b>6. Front Bell Mouth</b>                                     | Not Applicable   |                              |                              |                              |                 |                 |        |                              |                              |                 |        |                              |                  |                     |                              |  |                     |                              |                              |                        |                              |                              |
| <b>7. Cut-Off Tab</b>  | 0.50mm (.020") Max<br>No Burr  |                              |                              |                              |                 |                 |        |                              |                              |                 |        |                              |                  |                     |                              |  |                     |                              |                              |                        |                              |                              |
| <b>8. Conductor Brush</b>                                      | 0.40mm (.016") Max<br>Not to extend above conductor crimp/transition height  |                              |                              |                              |                 |                 |        |                              |                              |                 |        |                              |                  |                     |                              |  |                     |                              |                              |                        |                              |                              |
| <b>Conductor Crimp</b>   | <table border="1"> <thead> <tr> <th>Wire Type</th> <th>Wire Size</th> <th>9. Crimp Height</th> <th>10. Crimp Width</th> </tr> </thead> <tbody> <tr> <td>M1L-135A1 (UTX)</td> <td>14 AWG</td> <td>1.60-1.70mm<br/>.063-.067 in.</td> <td rowspan="5">2.35-2.55mm<br/>.093-.100 in.</td> </tr> <tr> <td>M1L-123A4 (TXL)</td> <td>16 AWG</td> <td>1.30-1.40mm<br/>.051-.054 in.</td> </tr> <tr> <td>JASO D611 (AVSS)</td> <td>1.25mm<sup>2</sup></td> <td>1.30-1.40mm<br/>.051-.054 in.</td> </tr> <tr> <td>MIL-126A1<br/>FLR91X-A-XLPO<br/>EXRAD BLOCKED<br/>EXRAD UNBLOCKED</td> <td>1.50mm<sup>2</sup></td> <td>1.35-1.45mm<br/>.053-.057 in.</td> </tr> <tr> <td>PSA FTP 00949_10_00770</td> <td></td> <td>1.40-1.50mm<br/>.054-.059 in.</td> </tr> </tbody> </table>   | Wire Type                    | Wire Size                    | 9. Crimp Height              | 10. Crimp Width | M1L-135A1 (UTX) | 14 AWG | 1.60-1.70mm<br>.063-.067 in. | 2.35-2.55mm<br>.093-.100 in. | M1L-123A4 (TXL) | 16 AWG | 1.30-1.40mm<br>.051-.054 in. | JASO D611 (AVSS) | 1.25mm <sup>2</sup> | 1.30-1.40mm<br>.051-.054 in. | MIL-126A1<br>FLR91X-A-XLPO<br>EXRAD BLOCKED<br>EXRAD UNBLOCKED | 1.50mm <sup>2</sup> | 1.35-1.45mm<br>.053-.057 in. | PSA FTP 00949_10_00770       |                        | 1.40-1.50mm<br>.054-.059 in. |                              |
|  | Wire Type  | Wire Size                    | 9. Crimp Height              | 10. Crimp Width              |                 |                 |        |                              |                              |                 |        |                              |                  |                     |                              |  |                     |                              |                              |                        |                              |                              |
|  | M1L-135A1 (UTX)  | 14 AWG                       | 1.60-1.70mm<br>.063-.067 in. | 2.35-2.55mm<br>.093-.100 in. |                 |                 |        |                              |                              |                 |        |                              |                  |                     |                              |  |                     |                              |                              |                        |                              |                              |
|  | M1L-123A4 (TXL)  | 16 AWG                       | 1.30-1.40mm<br>.051-.054 in. |                              |                 |                 |        |                              |                              |                 |        |                              |                  |                     |                              |  |                     |                              |                              |                        |                              |                              |
|  | JASO D611 (AVSS)   | 1.25mm <sup>2</sup>          | 1.30-1.40mm<br>.051-.054 in. |                              |                 |                 |        |                              |                              |                 |        |                              |                  |                     |                              |  |                     |                              |                              |                        |                              |                              |
| MIL-126A1<br>FLR91X-A-XLPO<br>EXRAD BLOCKED<br>EXRAD UNBLOCKED | 1.50mm <sup>2</sup>  | 1.35-1.45mm<br>.053-.057 in. |                              |                              |                 |                 |        |                              |                              |                 |        |                              |                  |                     |                              |  |                     |                              |                              |                        |                              |                              |
| PSA FTP 00949_10_00770   |  | 1.40-1.50mm<br>.054-.059 in. |                              |                              |                 |                 |        |                              |                              |                 |        |                              |                  |                     |                              |  |                     |                              |                              |                        |                              |                              |
| <b>Insulation Crimp</b>  | <table border="1"> <thead> <tr> <th>Wire Type</th> <th>Wire Size</th> <th>11. Crimp Height</th> <th>12. Crimp Width</th> </tr> </thead> <tbody> <tr> <td>M1L-135A1 (UTX)</td> <td>14 AWG</td> <td>2.60-2.80mm<br/>.102-.110 in.</td> <td rowspan="3">2.50-2.70mm<br/>.098-.106 in.</td> </tr> <tr> <td>M1L-123A4 (TXL)</td> <td>16 AWG</td> <td>2.30-2.50mm<br/>.091-.098 in.</td> </tr> <tr> <td>JASO D611 (AVSS)</td> <td>1.25mm<sup>2</sup></td> <td>2.41-2.61mm<br/>.095-.103 in.</td> </tr> <tr> <td>MIL-126A1<br/>FLR91X-A-XLPO<br/>EXRAD BLOCKED<br/>EXRAD UNBLOCKED</td> <td>1.50mm<sup>2</sup></td> <td>2.63-2.73mm<br/>.104-.107 in.</td> <td rowspan="2">2.63-2.73mm<br/>.104-.107 in.</td> </tr> <tr> <td>PSA FTP 00949_10_00770</td> <td></td> <td>2.45-2.55mm<br/>.096-.100 in.</td> </tr> </tbody> </table> | Wire Type                    | Wire Size                    | 11. Crimp Height             | 12. Crimp Width | M1L-135A1 (UTX) | 14 AWG | 2.60-2.80mm<br>.102-.110 in. | 2.50-2.70mm<br>.098-.106 in. | M1L-123A4 (TXL) | 16 AWG | 2.30-2.50mm<br>.091-.098 in. | JASO D611 (AVSS) | 1.25mm <sup>2</sup> | 2.41-2.61mm<br>.095-.103 in. | MIL-126A1<br>FLR91X-A-XLPO<br>EXRAD BLOCKED<br>EXRAD UNBLOCKED | 1.50mm <sup>2</sup> | 2.63-2.73mm<br>.104-.107 in. | 2.63-2.73mm<br>.104-.107 in. | PSA FTP 00949_10_00770 |                              | 2.45-2.55mm<br>.096-.100 in. |
|  | Wire Type  | Wire Size                    | 11. Crimp Height             | 12. Crimp Width              |                 |                 |        |                              |                              |                 |        |                              |                  |                     |                              |  |                     |                              |                              |                        |                              |                              |
|  | M1L-135A1 (UTX)  | 14 AWG                       | 2.60-2.80mm<br>.102-.110 in. | 2.50-2.70mm<br>.098-.106 in. |                 |                 |        |                              |                              |                 |        |                              |                  |                     |                              |  |                     |                              |                              |                        |                              |                              |
|  | M1L-123A4 (TXL)  | 16 AWG                       | 2.30-2.50mm<br>.091-.098 in. |                              |                 |                 |        |                              |                              |                 |        |                              |                  |                     |                              |  |                     |                              |                              |                        |                              |                              |
|  | JASO D611 (AVSS)   | 1.25mm <sup>2</sup>          | 2.41-2.61mm<br>.095-.103 in. |                              |                 |                 |        |                              |                              |                 |        |                              |                  |                     |                              |  |                     |                              |                              |                        |                              |                              |
| MIL-126A1<br>FLR91X-A-XLPO<br>EXRAD BLOCKED<br>EXRAD UNBLOCKED | 1.50mm <sup>2</sup>  | 2.63-2.73mm<br>.104-.107 in. | 2.63-2.73mm<br>.104-.107 in. |                              |                 |                 |        |                              |                              |                 |        |                              |                  |                     |                              |  |                     |                              |                              |                        |                              |                              |
| PSA FTP 00949_10_00770   |  | 2.45-2.55mm<br>.096-.100 in. |                              |                              |                 |                 |        |                              |                              |                 |        |                              |                  |                     |                              |  |                     |                              |                              |                        |                              |                              |

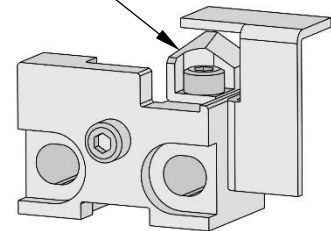
| Pull Force                       | Wire Type  | Wire Size           | Minimum Force |          | To be measured with no influence from the insulation crimp. |
|----------------------------------|--|---------------------|---------------|----------|---|
|                                  | M1L-135A1 (UTX)  | 14 AWG              | 180 N         | 40.5 lb. |   |
|                                  | M1L-123A4 (TXL)  | 16 AWG              | 120 N         | 27.0 lb. |   |
|                                  | JASO D611 (AVSS)   | 1.25mm <sup>2</sup> | 176.5 N       | 39.7 lb. |   |
|                                  | MIL-126A1<br>FLR91X-A-XLPO<br>EXRAD BLOCKED<br>EXRAD UNBLOCKED | 1.50mm <sup>2</sup> | 150 N         | 33.7 lb. |   |
| PSA FTP 00949_10_00770           | 155 N  |                     | 34.8 lb.      |          |   |
| <b>13. Conductor Anvil Flash</b> | 0.1mm (.004") Max  |                     |               |          |   |
| <b>14. Insulation Grip Step</b>  | 0.20-0.40mm (.008-.016") from Datum J                          |                     |               |          |   |
| <b>15. Conductor Grip Step</b>   | 0.00±0.10mm (.000±.004") from Datum J                          |                     |               |          |   |
| <b>16. Crimp Bulge</b>           | 2.55mm (.100") Max within the crimp/transition area            |                     |               |          |   |

## NOTES

### Applicator Notes

- This applicator is for automatic wire processor use only.
- This applicator does not include a cutting insert.
- Installing a cutting insert will cause jamming in this applicator.

### CUTTING INSERT



### Specification Notes

- It is very important that the brush length is consistently within specification for this sealed connector system to work properly.
- This applicator should only be run in a properly set up wire processor to consistently achieve the brush length.

### General Notes

1. Molex recommends that an extra perishable tooling kit be maintained at your facility.
2. Verify tooling alignment by hand cycling the press and applicator before crimping under power. Check that all screws are tight.
3. Slugs, terminals, dirt and oil should be kept clear of the work area.
4. Wear safety glasses at all times.
5. For recommended maintenance, refer to the FA2 manual (TM-638080200).
6. Molex recommends crimping stranded copper wire only.
7. Lubrication must be used when crimping gold and select gold terminals to prevent terminals from sticking in the conductor punch. Use 63801-7240 oiler or equivalent.

## WARNINGS

**CAUTION:** This applicator must be installed in a press with a standard shut height of 135.80mm (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 tooling crimp specifications are valid only when used with Molex terminals and tooling manufactured by Molex and sold by Molex or authorized distributors ("Molex Tooling"). When using tooling other than Molex Tooling with Molex-specific connector systems listed in our ATS documents, the Molex Tooling qualification does not apply, and the responsibility for full qualification of the connector system is that of the customer. Molex accepts no liability for connector performance or tooling support where tooling other than Molex Tooling is used or where Molex Tooling is modified.

**PARTS LIST**

| <b>Applicator 63808-2300</b>  |                  |                        |                             |                 |
|---|------------------|------------------------|-----------------------------|-----------------|
| <b>Item</b>   | <b>Order No.</b> | <b>Engineering No.</b> | <b>Description</b>          | <b>Quantity</b> |
| <b>Perishable Tooling</b>   |                  |                        |                             |                 |
|   | 63808-2370       | 63808-2370             | Tool Kit (All "Y" Items)    | REF             |
| 1   | 63454-0165       | 63454-0165             | Insulation Punch            | 1 Y             |
| 2   | 63457-0116       | 63457-0116             | Conductor Punch             | 1 Y             |
| 3   | 63456-0113       | 63456-0113             | Insulation Anvil            | 1 Y             |
| 4   | 63455-0143       | 63455-0143             | Conductor Anvil             | 1 Y             |
| 5   | 63443-0034       | 63443-0034             | Cut-Off Plunger             | 1 Y             |
| <b>Other Components</b>   |                  |                        |                             |                 |
| 6   | 63443-0128       | 63443-0128             | Front Plunger Retainer      | 1               |
| 7   | 11-24-1067       | 4996-4                 | Cut-Off Plunger Spring      | 1               |
| 8   | 63443-0117       | 63443-0117             | Front Scrap Chute           | 1               |
| 9   | 63443-7505       | 63443-7505             | Anvil Mount                 | 1               |
| 10  | 63443-0090       | 63443-0090             | Wire Stop                   | 1               |
| 11  | 63443-3601       | 63443-3601             | Front Plunger Striker       | 1               |
| 12  | 63443-3702       | 63443-3702             | Front Plunger Striker Screw | 1               |
| 13  | 63600-5776       | 63600-5776             | Nose Hold Down              | 1               |
| 14  | 63600-5775       | 63600-5775             | Nose Hold Down Shank        | 1               |
| 15  | 63443-4711       | 63443-4711             | Terminal Guide              | 1               |
| 16  | 63808-0229       | 63808-0229             | Bend Adjust Dial            | 1               |
| 17  | 63808-0220       | 63808-0220             | Hold Down Block             | 1               |
| 18  | 63808-0297       | 63808-0297             | Feed Cam                    | 1               |
| 19  | 63868-2008       | 63868-2008             | Checking Aid †              | 0               |
| <b>Frame</b>  |                  |                        |                             |                 |
| 20  | 63808-0200       | 63808-0200             | Applicator Core             | 1               |
| 21  | 63808-0190       | 63808-0190             | Track Assembly              | 1               |
| 22  | 63808-0197       | 63808-0197             | Mechanical Feed Assembly    | 1               |
| <b>Hardware</b>   |                  |                        |                             |                 |
| 23  | —                | —                      | M3 Inner Tooth Lock Washer  | 1*              |
| 24  | —                | —                      | M3 by 12 Long SHCS          | 1*              |
| 25  | —                | —                      | M4 by 6 Long SHCS           | 1*              |
| 26  | —                | —                      | M4 by 8 Long SHCS           | 2*              |
| 27  | —                | —                      | M4 by 50 Long SHCS          | 2*              |
| 28  | —                | —                      | M5 by 12 Long SHCS          | 1*              |
| 29  | —                | —                      | M2.5 by 4 Long SHCS         | 1*              |
| 30  | —                | —                      | #10-32UNF by .25" Long SHCS | 1*              |
| 31  | —                | —                      | M3 by 3 Long Flat Point SSS | 2*              |
| 32  | —                | —                      | M4 by 6 Long Flat Point SSS | 1*              |
| 33  | —                | —                      | M3 Flat Washer Hard         | 1*              |
| 34  | —                | —                      | M3 Hex Nut                  | 1*              |
| *Fastener parts can be purchased through most industrial suppliers by using the description in the table above. |                  |                        |                             |                 |

† The Crimped Terminal Checking Aid (63868-2008) can be ordered separately if required. (This item is not included with the Applicator and is shown for reference purposes only.)

**ASSEMBLY DRAWING**

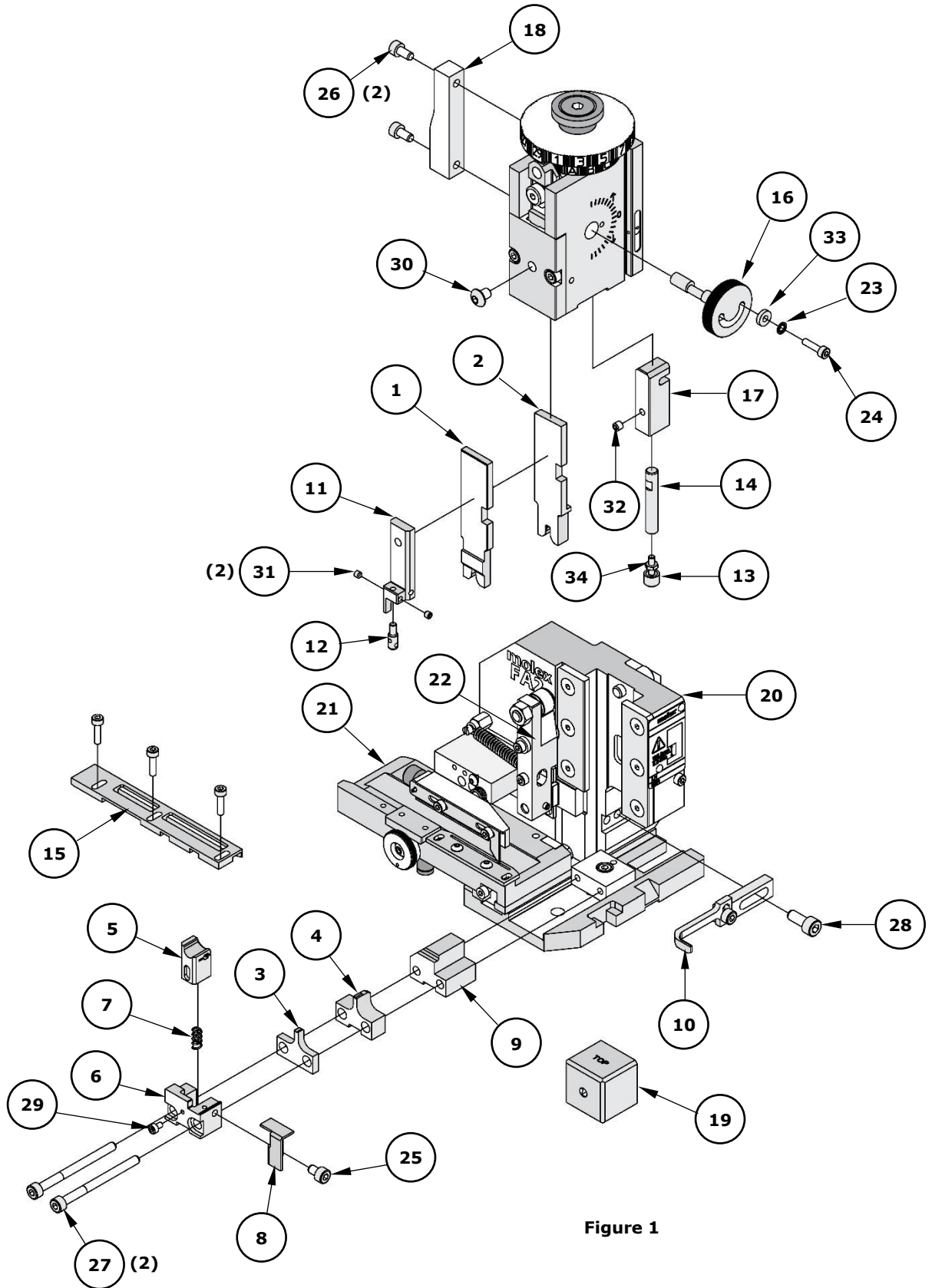


Figure 1

## FACTORY SETTINGS

### Feed Pawl Assembly

The FA2 applicator number 638082300 ships with the following factory settings. See Figure 2:

- The feed pawl shaft and M3 screw that holds the feed pawl spring are in position 3.
- The pin is in position B.

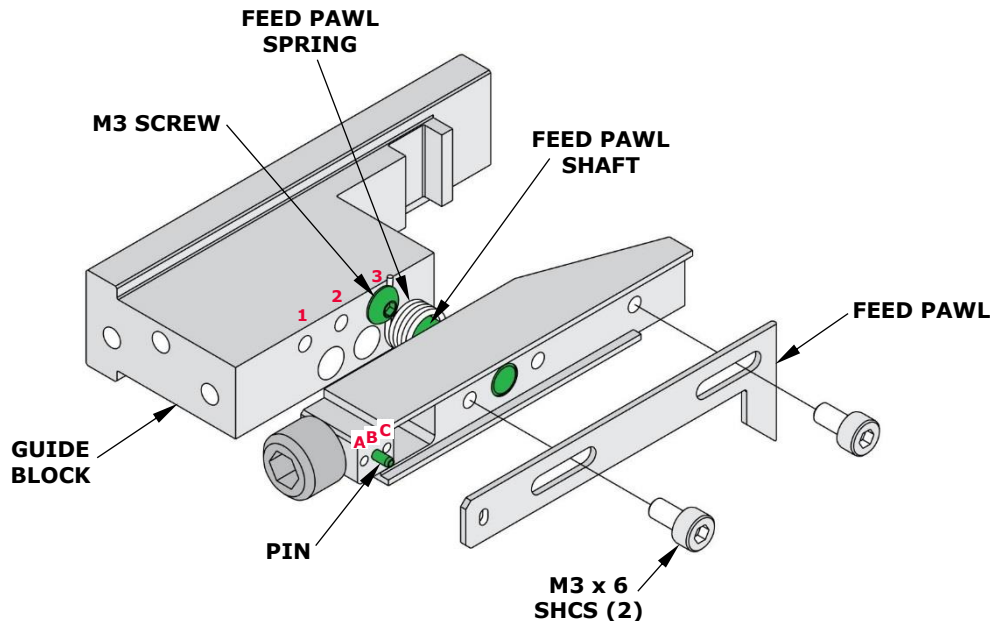


Figure 2

**Note:** Each applicator is configured and tested by Molex prior to shipping, and the above settings were used to produce the included sample crimps.

### Third Dial/Ram Assembly

○ Indicates item number on the Parts List and Assembly Drawing

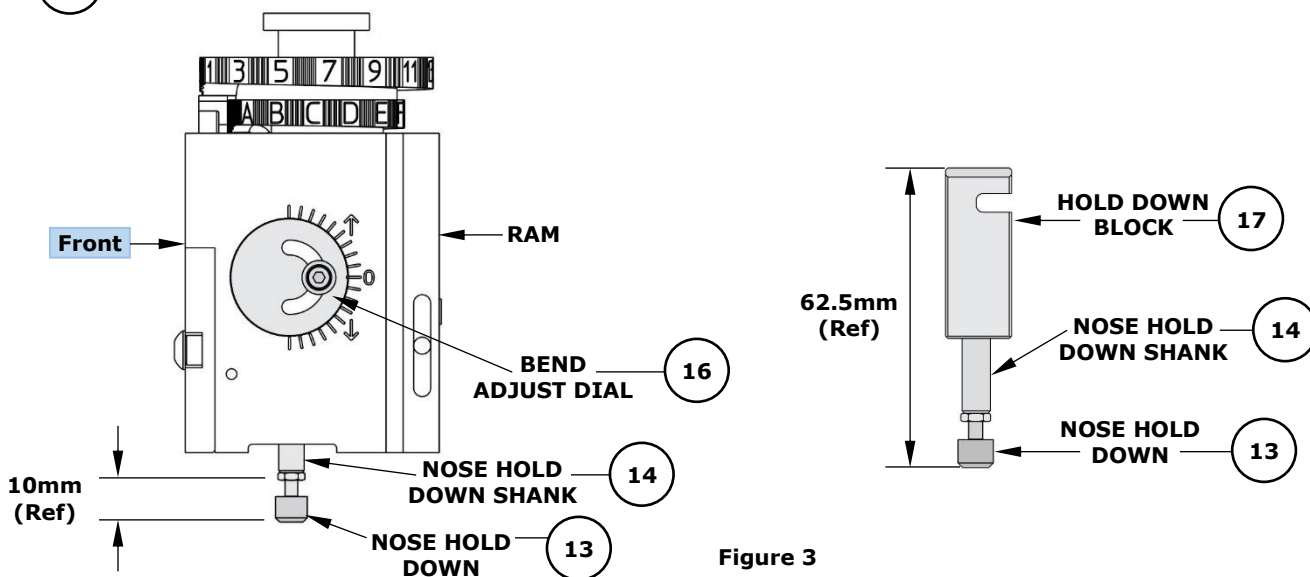


Figure 3

**Note:** The above dimensions were measured during setup and are included as a reference only. Additional adjustments may be required before crimping for production.

### Mounting Datum Location

This applicator was assembled and tested by Molex with the mounting datum in the location shown in Figure 4. Do not remove the mounting datum.

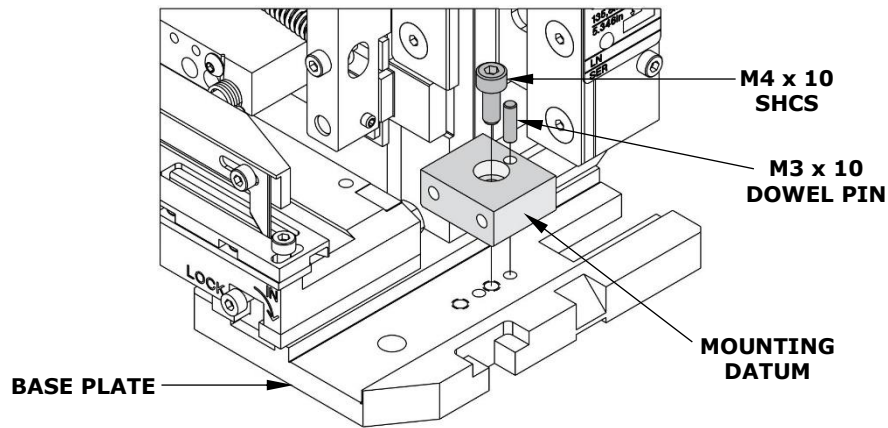


Figure 4

### Application Tooling Support

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

Molex is a registered trademark of Molex, LLC in the United States of America and may be registered in other countries; all other trademarks listed herein belong to their respective owners.