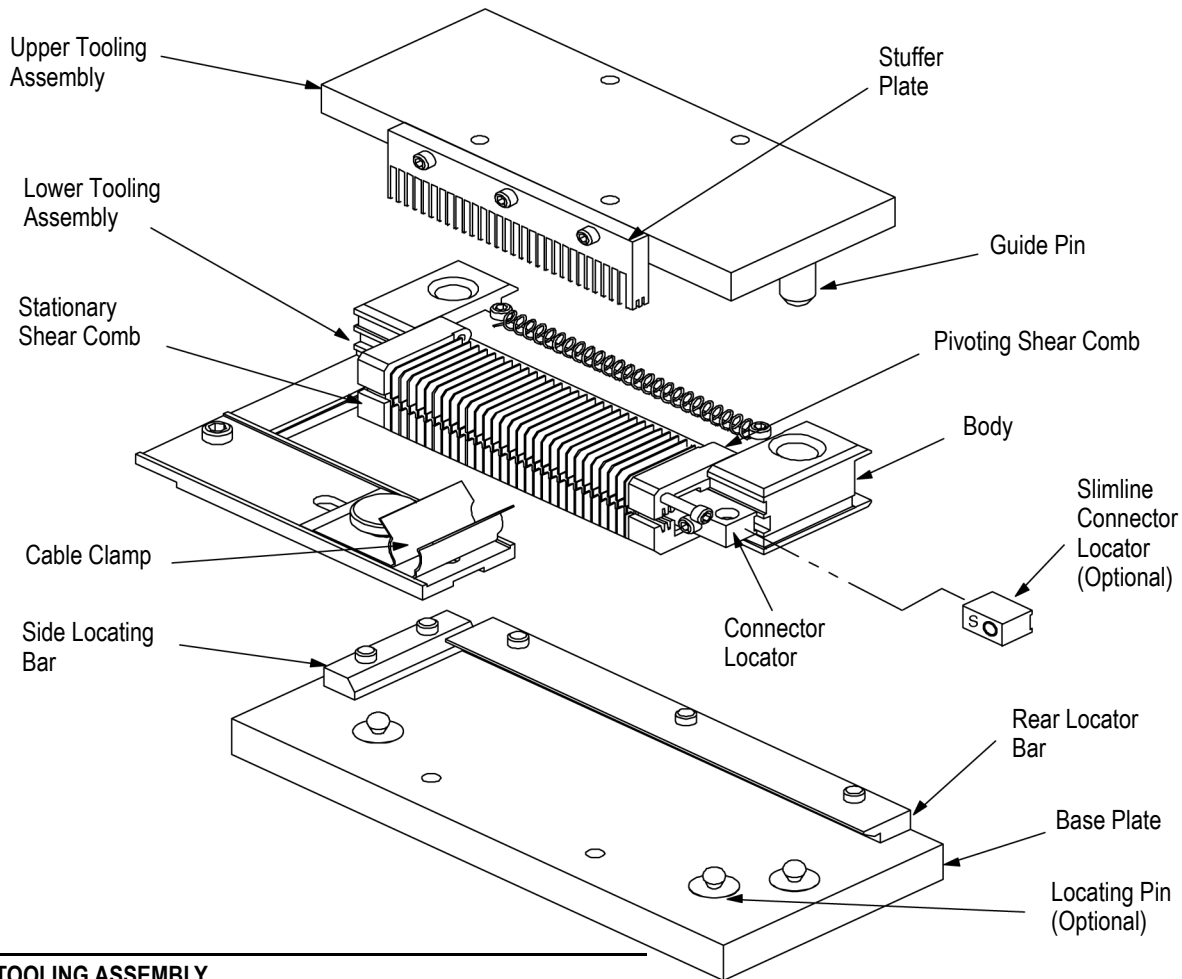


**PROPER USE GUIDELINES**

Cumulative Trauma Disorders can result from the prolonged use of manually powered hand tools. Hand tools are intended for occasional use and low volume applications. A wide selection of powered application equipment for extended-use, production operations is available.



TOOLING ASSEMBLY PART NUMBER	WIRE INSULATION DIAMETER
91291-1	Min. .012 to .889 [ .032 to .035]
91291-2	Max. 0.736 to .787 [.029 to .031]

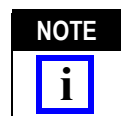
Figure 1

**1. INTRODUCTION**

This instruction sheet covers Mass Termination Tooling Assembly 91291-[ ], which is used to apply discrete-wire cable to AMPLIMITE\* .050 Series Connectors. The tooling assembly is used with Manual Arbor Frame Assembly 58024-1.

Read these instructions, and all referenced materials, thoroughly, before terminating any connectors.

For detailed information on setup of Arbor Frame Assembly 58024-1, refer to Instruction Sheet 408-6923.



All dimension on this sheet are in millimeters [with inch equivalents in brackets]. Figures and illustrations are for identification only and are not drawn to scale.

Reasons for reissue of this sheet are provided in Section 7, REVISION SUMMARY.


## 2. DESCRIPTION (Figure 1)

The base plate of the assembly features a rear-locating bar, a side-locating bar, and three locating pins. The base plate holds and locates the lower tooling in place during termination, and is secured to the arbor frame assembly with four socket head cap screws.

The upper tooling assembly consists of guide pins and a stuffer plate. The guide pins ensure proper location between the stuffer plate and the shear combs on the lower tooling assembly, preventing tooling damage during termination.


The stuffer plate consists of a series of stuffers that push the wires through the shear comb, shear the wires, and terminate the wires into the insulation displacement slots of each connector contact. The stuffer plate is secured to the ram tool mount plate with three socket head cap screws.

The lower tooling assembly consists of a body, a connector locator, a pressure plate, a cable clamp, and two shear combs (one pivoting comb and one stationary comb). The body holds the connector while the connector locator and the pressure plate secure and position the connector in line with each wire slot on the shear combs.

**NOTE**  Connector Locator 543506-1, purchased separately, can be used to terminate AMPLIMITE Slimline Connectors.

Both shear combs hold the wires in position and provide an edge for the shearing of the wires. One shear comb pivots to allow loading and unloading of the connector.

## 3. TOOLING ASSEMBLY SETUP

**NOTE**  For proper tooling installation, the arbor frame assembly should NOT be mounted to the work surface.

With the tooling assembly and arbor frame assembly located on a suitable work surface, proceed as follows:

1. Carefully lift the upper tooling assembly away from the lower tooling assembly.
2. Using four socket head cap screws, mount the upper tooling assembly to the arbor frame ram, making sure that the tooling assembly stuffer plate is toward the front of the arbor frame. Refer to Figure 2.
3. Refer to Figure 3 and mount the base plate to the arbor frame with four socket head cap screws. Do NOT tighten the screws at this time.

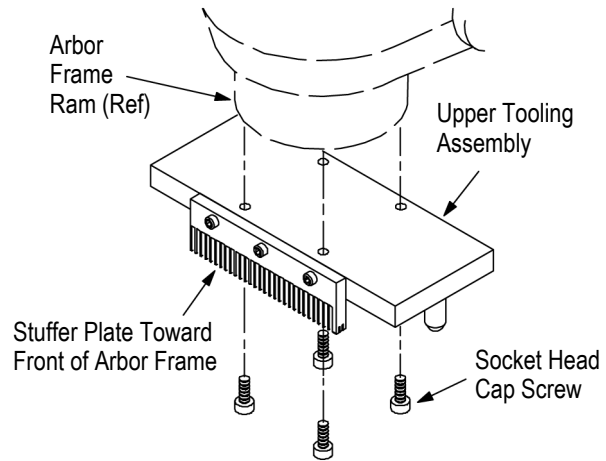


Figure 2

4. Place the lower tooling onto the base plate, as shown in Figure 4. Make sure that the lower tooling flange fits under the base plate's rear locating bar and that the side of the tooling butts against the left locating bar on the base plate. Press down on the lower tooling assembly to snap it in place.

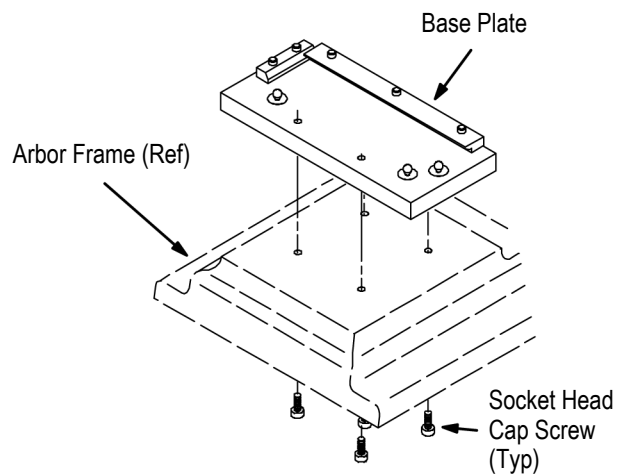


Figure 3

5. Carefully lower the ram until the guide pins of the upper tooling assembly enter the guide holes in the lower tooling assembly. The lower tooling assembly may shift slightly as it aligns with the upper tooling. Continue lowering the ram until the stuffers enter the shear comb, then leave the tool in this position.
6. While holding the tooling in place, tighten the four lower tooling assembly mounting screws.

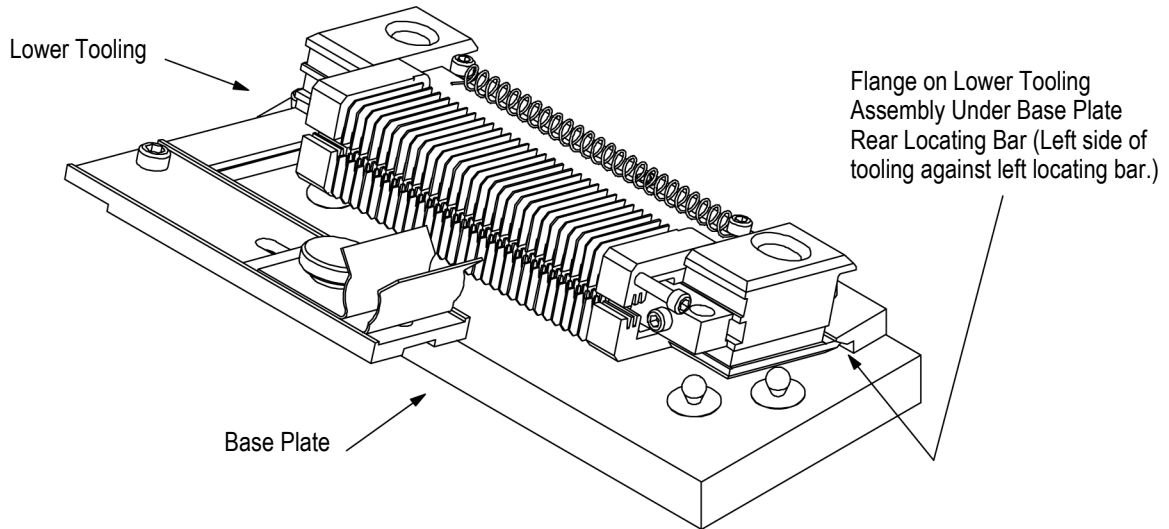


Figure 4



If the upper tooling assembly binds with the lower tooling assembly and the ram will not lower completely, then loosen the upper tooling mount screws (on the ram) and shift the upper tooling assembly properly. Once the proper alignment is attained, securely tighten all tooling mounting screws.

7. Carefully lift the ram from the lower tooling assembly.

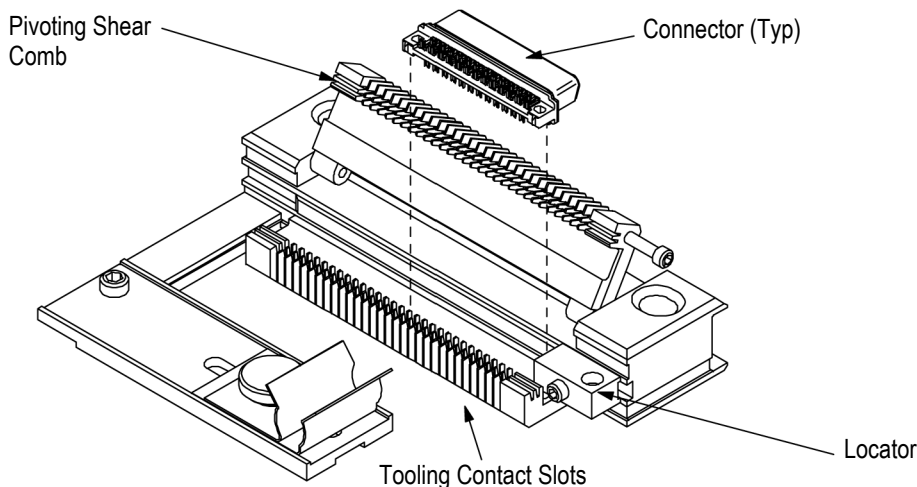


If interference occurs with the shear comb, it may need to be moved slightly by loosening the two socket head cap screws that mount it to the body.

8. Remove the lower tooling assembly from the base plate, turn the tooling over, and reposition the tooling back onto the base plate.

9. Slowly lower the ram to be sure that the upper guide pins and stuffer plate properly enter the lower tooling assembly guide holes and shear comb, respectively.

10. Refer to Figure 5, open the pivoting shear comb, and load a connector into the tooling. Place the connector edge at the connector locator, insert the connector contacts into the tooling contact slots, then press downward on the front of the connector until the connector snaps into place.



**DETAIL**

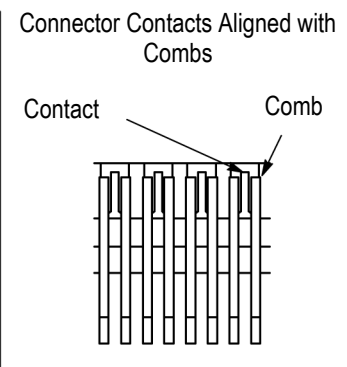


Figure 5


11. Check that the insulation displacement slot on each contact aligns with the slots on the shear comb, as shown in Figure 5. If the alignment is not correct, loosen the locking screw on the locator and move the locator and connector until the proper alignment is attained.

12. With a connector in place, position the cable clamp so that the center of the cable is aligned with the center of the connector. Adjust the clamp for the applicable cable diameter and tighten the thumbscrew.

13. Completely close the pivoting shear comb.

14. Lower the ram until the upper tooling stuffers enter the lower shear comb and bottom on the connector wall.

15. Loosen the ram stop collar setscrew, move the collar to the top of the arbor frame, then tighten the setscrew securely. Refer to Figure 6.


**NOTE**  Examine the first connector termination to be sure that the ram stop collar is correctly positioned. The wires should completely enter the contacts, and the contacts should not be damaged.


#### 4. TERMINATION PROCEDURE

Obtain the appropriate cable and connector(s). Secure the arbor frame onto a suitable work surface. With the tooling installed as described in Section 3, TOOLING ASSEMBLY SETUP, proceed as follows:

1. Remove the lower tooling assembly from the base plate and lay the tooling on the work surface or mount the tooling onto the bench mount, which is included with the tooling. For detailed information on using the bench mount, refer to Section 5, USING THE BENCH MOUNT.

2. Open the pivoting shear comb and place a connector into position.

**NOTE**  To position the connector, place the connector edge at the locator, insert the connector contacts into the tooling contact slots, then press downward on the front of the connector until the connector snaps into place.

**NOTE**  When terminating connectors having more than 68 positions, it is recommended that the termination bar, which is included with the tooling assembly, be placed onto the connector to insure proper termination depth.

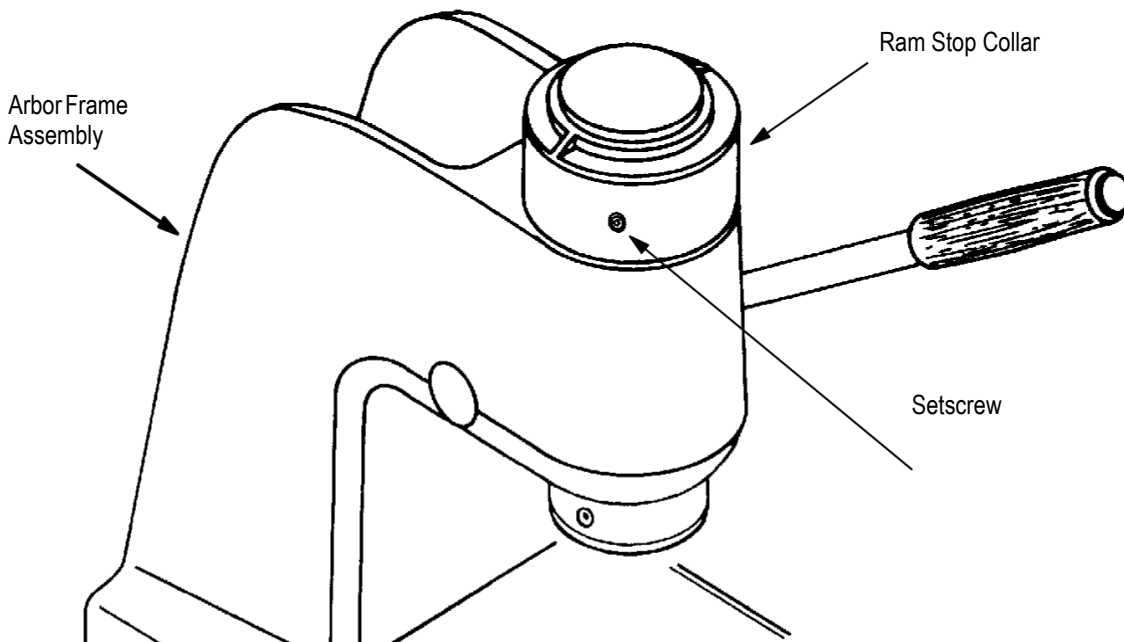


Figure 6

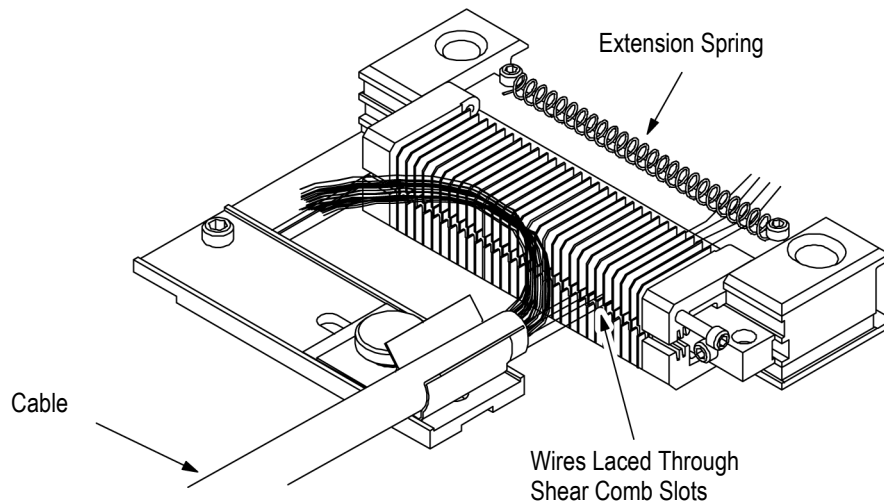



Figure 7

3. With the connector in position, close the pivoting shear comb and clamp the prepared cable into the cable clamp. The end of the cable jacket should be placed just beyond the cable clamp.

4. Following the predetermined color code, place each wire through the appropriate shear comb slot and into the extension spring, as shown in Figure 7.

**NOTE**  It is recommended that the operator completely load one side of the connector, then turn the assembly over to load the other side of the connector. If this procedure is not convenient, then the lower tooling assembly should not be used with the bench mount. Refer to Section 5, USING THE BENCH MOUNT,

5. Once all of the wires are loaded into the tooling assembly, place the assembly, **with the pivoting comb side of the assembly facing downward**, onto the base plate.

6. Rotate the frame handle until the ram bottoms on the pre-adjusted stop collar. The tooling will shear the wires and insert them into the appropriate contacts.

7. While holding the lower tooling assembly in place, lift the ram back out of the shear comb.


8. Remove the lower tooling assembly from the base plate, then turn the tooling over and replace the tooling onto the base plate, with the pivoting comb facing upward.

9. Repeat Steps 6 and 7 to terminate the other connector side.


10. Remove the lower tooling assembly from the base plate and place the assembly on the work surface.

11. Open the pivoting comb.

12. Lift the cable out of the cable clamp, then grasp the cable immediately behind the connector. Push the cable forward and lift the connector out of the tooling.

**NOTE**  If desired, a small screwdriver or other tool may be used to carefully loosen one end of the connector from the tooling.

13. Inspect the connector for proper wire terminations. The wires should be fully inserted into the connector contacts, as shown in Figure 8.

**NOTE**  Remove the termination bar, if applicable.

14. Install the connector's termination cover, which is supplied with the connector.

15. Remove all sheared wires from the extension spring on the tooling assembly.

## 5. USING THE BENCH MOUNT

In most applications, the lower tooling assembly should be placed in the bench mount to assist in loading the wires into the tooling combs on both sides of the connector.

To install the bench mount, refer to Figure 9 and proceed as follows:

1. Select a suitable work table having an edge that is no more than 51 mm [2 in.] thick.
2. Place the bench stand at the edge of the table.
3. Place the tool mount on the stand, with the thumbscrew positioned away from the operator.

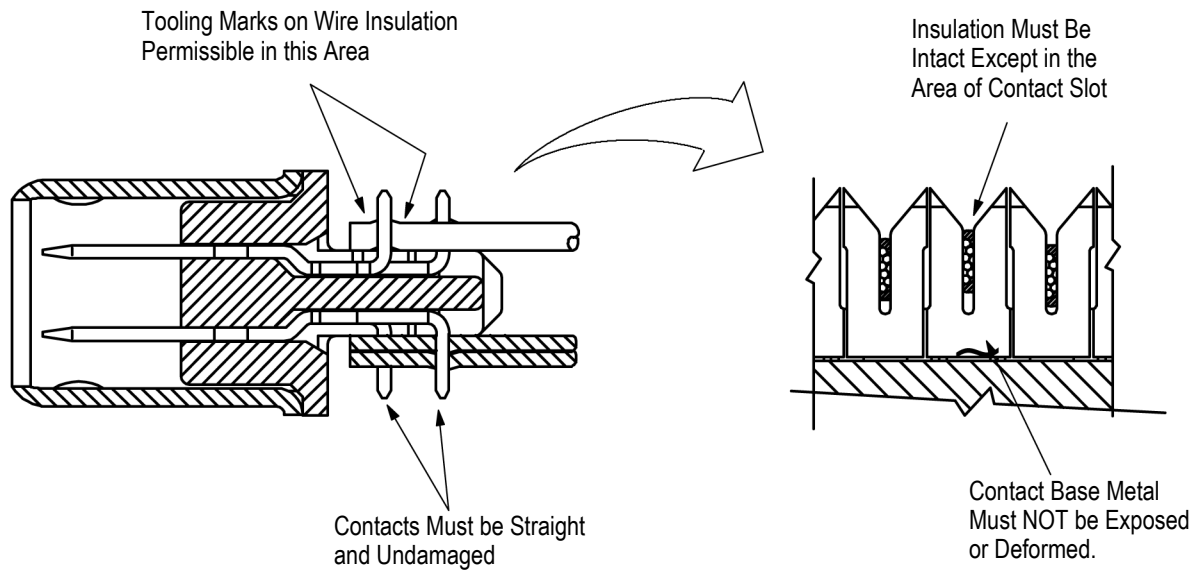


Figure 8

4. Align the hole in the tool mount with the slot in the top of the bench stand.
5. Place the clamp post through the bench stand and into the tool mount, then tighten the clamp.

CUSTOMER SERVICE (038-035)  
 TYCO ELECTRONICS CORPORATION  
 PO BOX 3608  
 HARRISBURG PA 17105-3608

To place the lower tooling assembly into the bench mount:

1. Locate the lower tooling assembly, with the clamp bar facing downward, onto the tool mount. The upper leg of the mount should slide through the opening on the tooling assembly.
2. Tighten the thumbscrew to secure the assembly. Lace the wires through the combs and extension spring, as described in Section 4, TERMINATION PROCEDURE. The tooling may be alternated from left to right to facilitate the lacing of the wires (cross-row termination), or the operator may completely lace one side, then position the tooling to lace the wires on the other side (in-row termination).

**6. TOOLING INSPECTION AND REPLACEMENT**

AMPLIMITE .050 Series Mass Termination Assemblies are inspected before shipment. TE recommends that the tooling be inspected immediately upon arrival at your facility to ensure that the tooling has not been damaged during shipment. If the tooling is damaged, retain all shipping material, file a claim with the carrier, and contact TE immediately.

A list of customer-replaceable parts is provided in Figure 10.

Order replacement parts through your TE Representative, or call 1 800 526-5142, or send a facsimile of your purchase order to 1 717 986-7605, or write to:

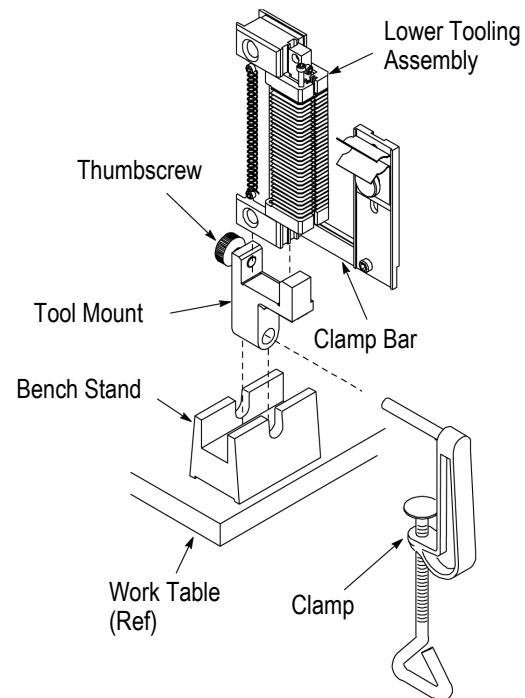
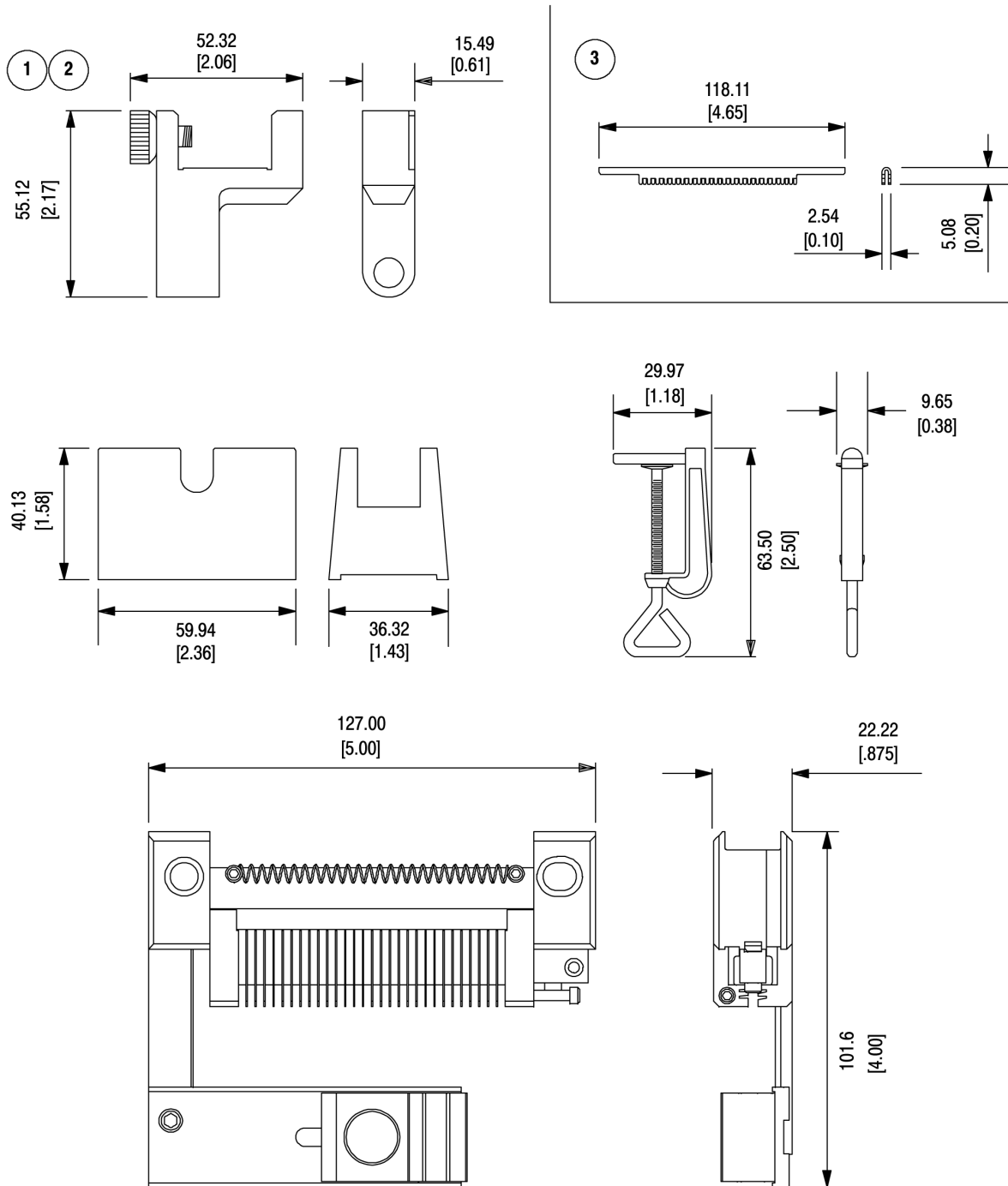


Figure 9

**7. REVISION SUMMARY**

Since the previous release of this Instruction Sheet, the new company logo has been applied.



ITEM	DESCRIPTION	PART NUMBER
1	ASSEMBLY, Lower Tooling w/ 0.86 mm [.034 In.] Slots	543465-1
2	ASSEMBLY, Lower Tooling w/ 0.74 mm [.029 In.] Slots	543465-2
3	BAR, Termination	543464-1

Figure 10