

Mass Termination Tooling Assembly 543580-1

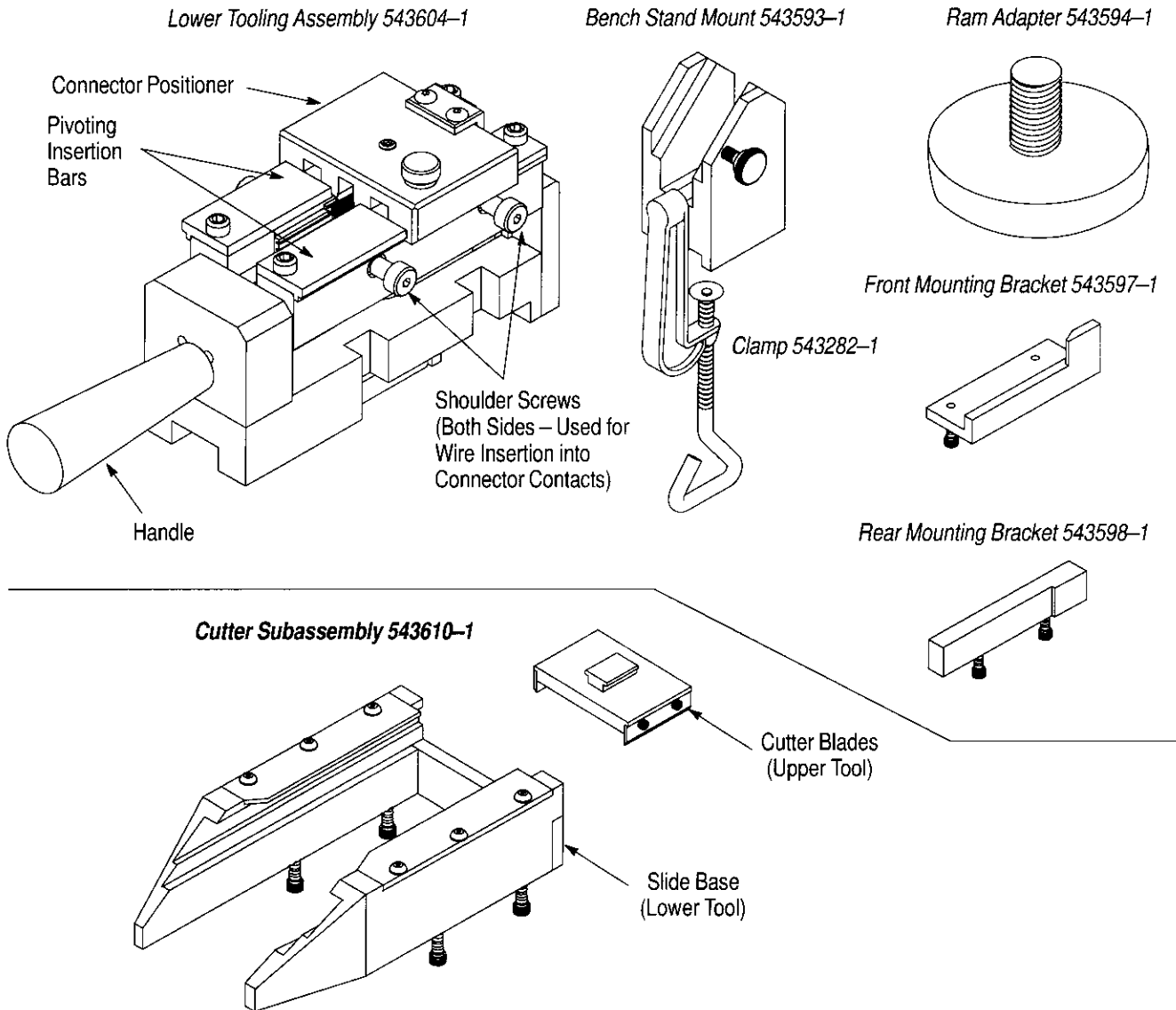


Figure 1

1. INTRODUCTION

This instruction sheet covers AMP* Mass Termination Tooling Assembly 543580-1 and Cutter Subassembly 543610-1 (shown in Figure 1), which are used to apply discrete-wire cable to CHAMP* 0.8 mm Connectors. The tooling assembly is used with AMP Manual Frame Assembly 91085-2 or AMP Miniature Manual Frame Assembly 91295-1.

For detailed information on setup of AMP Manual Frame Assembly 91085-2, refer to instruction sheet 408-7777. For detailed information on setup of AMP Miniature Manual Frame Assembly 91295-1, refer to instruction sheet 408-9817. For information on CHAMP 0.8 mm Connectors, refer to AMP Catalog 65972.

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

2. DESCRIPTION

The Mass Termination Tooling Assembly (shown in Figure 1) includes the Lower Tooling Assembly, a Bench Stand Mount with Clamp, a Ram Adapter, and Front and Rear Mounting Brackets. The mounting brackets locate and hold the lower tooling assembly in a manual frame assembly (not supplied) when the tool is used to terminate the product. See Figure 2. The brackets are secured to the frame assembly with four socket head cap screws (supplied).

The Ram Adapter attaches to the manual frame assembly and is used as an upper tool to apply force to the shoulder screws of the lower tooling assembly during the termination process.

The bench stand mount and clamp are used to mount and hold the lower tooling assembly to a work surface to provide stability when lacing wires, cutting wires, and when loading and unloading the connector.

The lower tooling assembly is used to hold the cable, lace the individual wires, position the connector, and terminate the wires onto the connector.

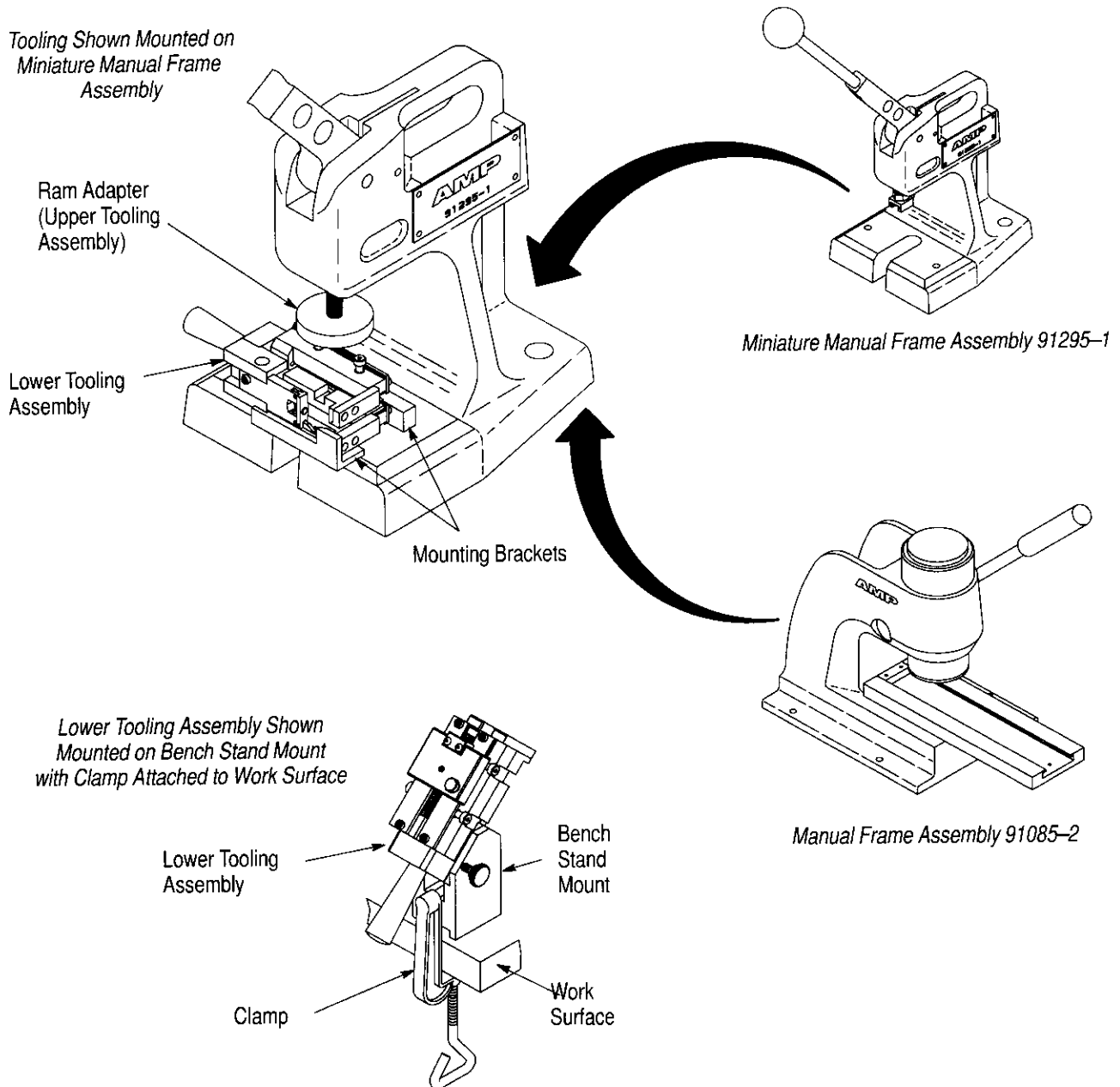
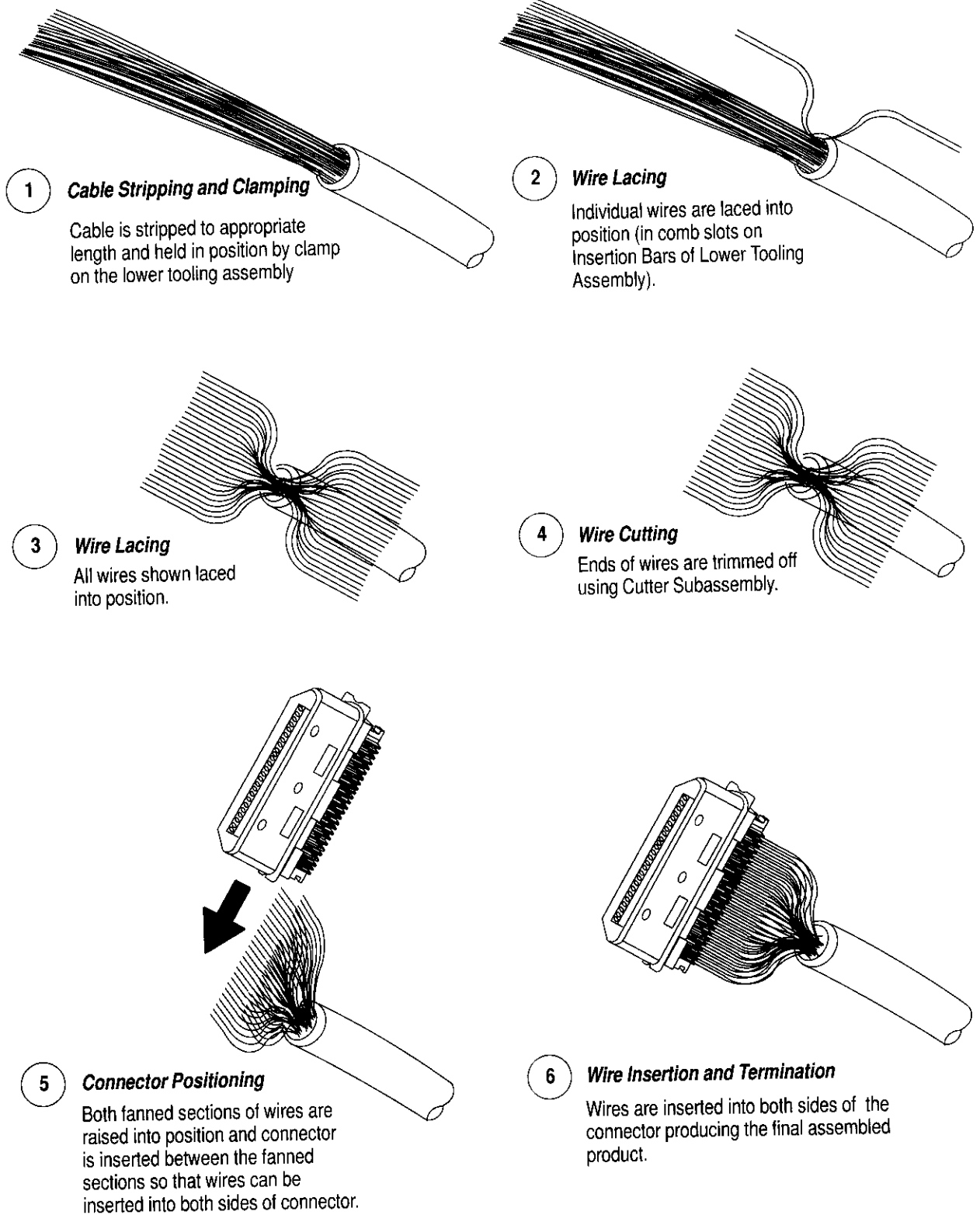


Figure 2

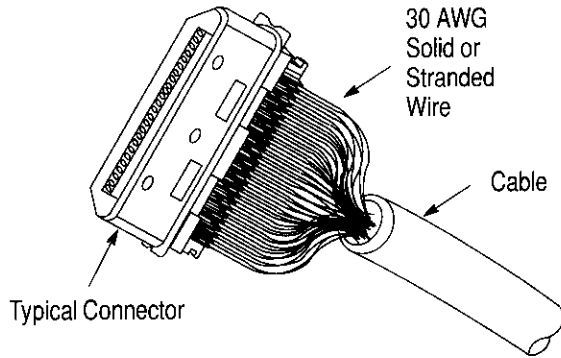
Termination Process

NOTE For clarity, the required tooling is not shown

*Figure 3*

The tooling is used in a process for terminating 36, 50 and 68 position CHAMP 0.8 mm cable plug connectors with 30 AWG solid or stranded wire. The termination process is illustrated and described in Figure 3. Figure 4 identifies the two types of connectors.

the lower tooling assembly is used to hold the cable in place. An adjustable set screw in the clamp arm is used to accommodate various cable sizes.



CHAMP 0.8 mm Connectors

PART NUMBER	DESCRIPTION
787131-2	36 Position Connector
787131-1	50 Position Connector
787131-3	68 Position Connector

Figure 4

To set up for the process, the lower tooling assembly is positioned in the bench mount and clamp as shown in Figure 5. The connector positioner is then removed from the lower tooling assembly (loosen its thumbscrew and pull positioner in direction shown in Figure 5). This allows the pivoting insertion bars to pivot open, exposing the comb slots used for lacing the wire.

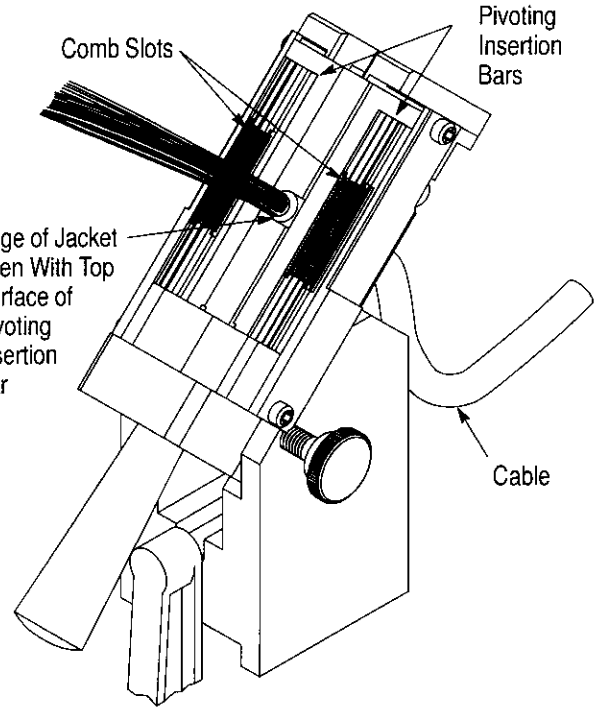


Figure 6

After the cable is properly positioned, the individual wires are laced into the comb slots on the insertion bars. Refer to Figure 7. The wires are laced beginning with the uppermost slots and in color-code order per the desired application.

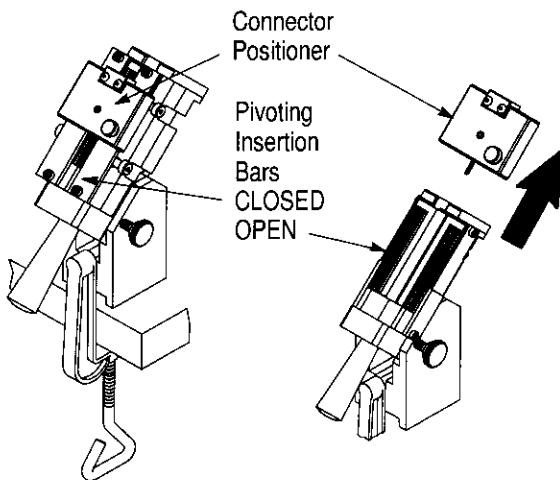


Figure 5

After the cable is stripped to the appropriate length, the cable is positioned in the lower tooling assembly as shown in Figure 6. A cable clamp on the rear of

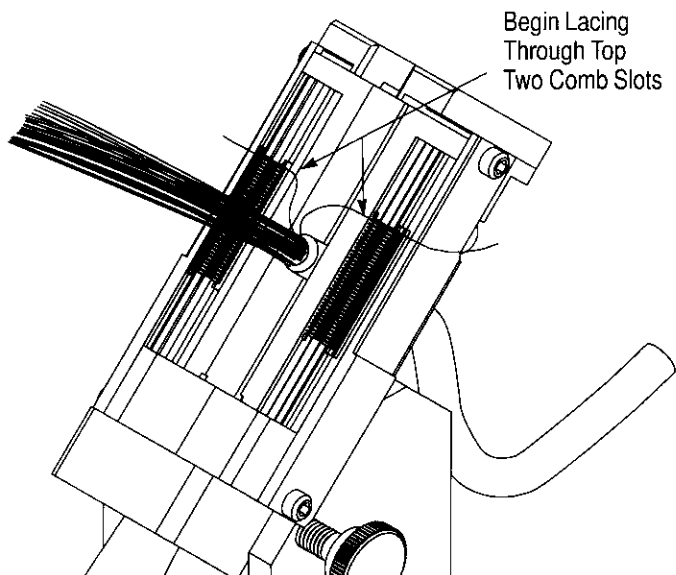


Figure 7

All wires are laced into the comb slots as shown in Figure 8. All wires should be completely inserted into the comb slots so that they are held firmly in place for cutting and insertion.

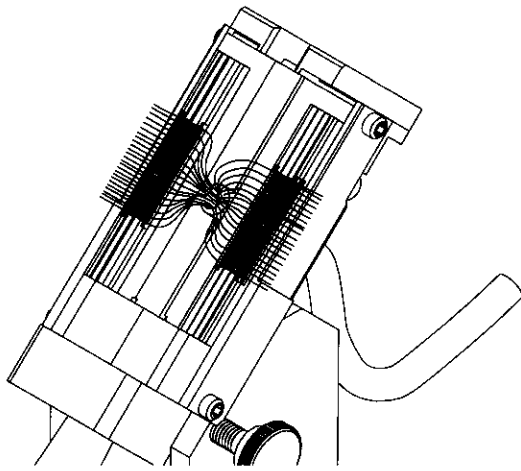


Figure 8

Once all wires have been properly laced, the tooling assembly is removed from the bench mount and placed in the cutter subassembly as shown in Figure 9. The subassembly is designed for mounting on the miniature manual frame assembly with the cutter blades used as the upper tool and the slide base used as the lower tool. The cutter is used to trim off the wire ends even with the outermost edges of the insertion bars.

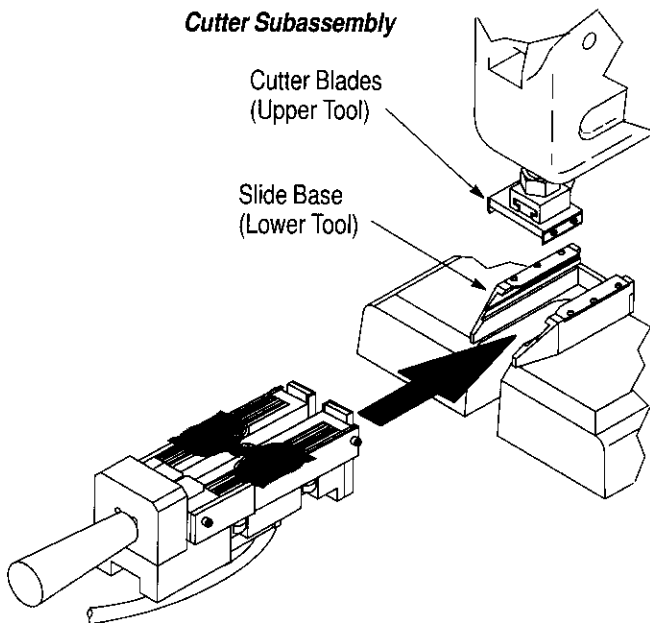


Figure 9

After the wires are trimmed, the lower tooling assembly is removed from the cutter and placed back into the bench mount as shown in Figure 10. At this point, the wires should be inspected to insure that they have remained firmly seated and that the wire ends have been properly trimmed.

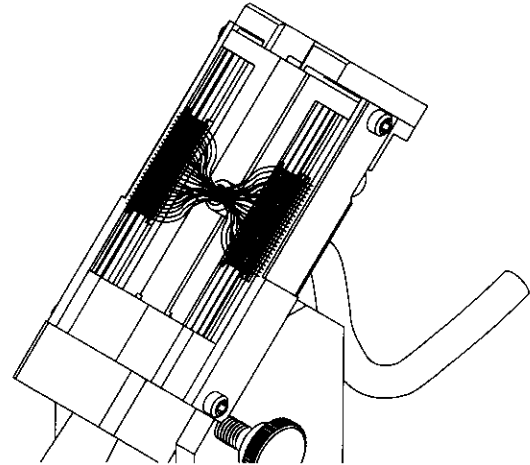


Figure 10

Once all wires have been properly trimmed, the connector is loaded into the connector positioner as shown in Figure 11. The connector is inserted into the positioner so that the guide tips (at both ends of connector) fit into the groove of the slotted guide bar, as the connector is pushed into the positioner. The connector is inserted until it bottoms against the back stop of the positioner.

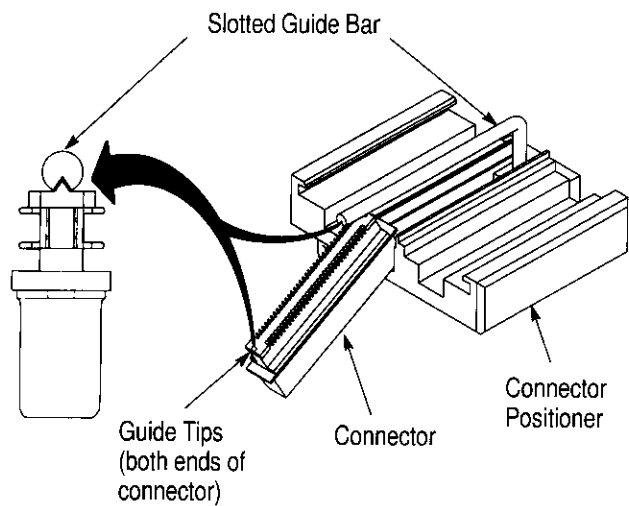


Figure 11

When the connector is properly loaded in the positioner, the pivoting insertion bars on the lower tooling assembly are held closed and the positioner is returned in place on the lower tooling assembly. The thumb screw is then tightened to secure positioner in place. Refer to Figure 12.

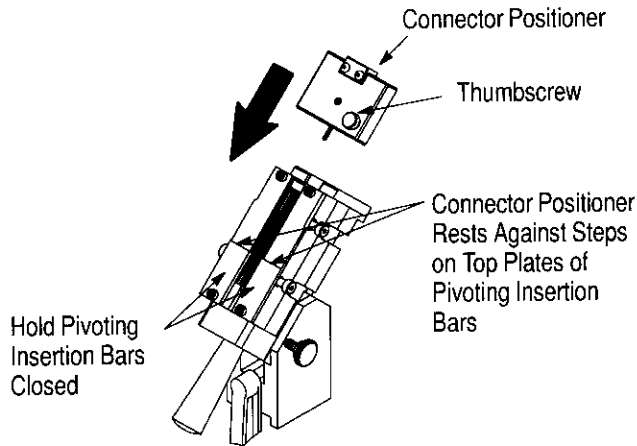


Figure 12

Once the connector positioner is in place (with the loaded connector), the lower tooling assembly is removed from the bench mount and positioned on the manual frame assembly, as shown in Figure 13. The manual frame assembly is then cycled until the ratchet releases and the handle returns to its original position. When cycled, the ram adapter applies the required pressure to the shoulder screws of the lower tooling assembly, causing the insertion bars to insert the wires into the connector. At this point, the connector is terminated.

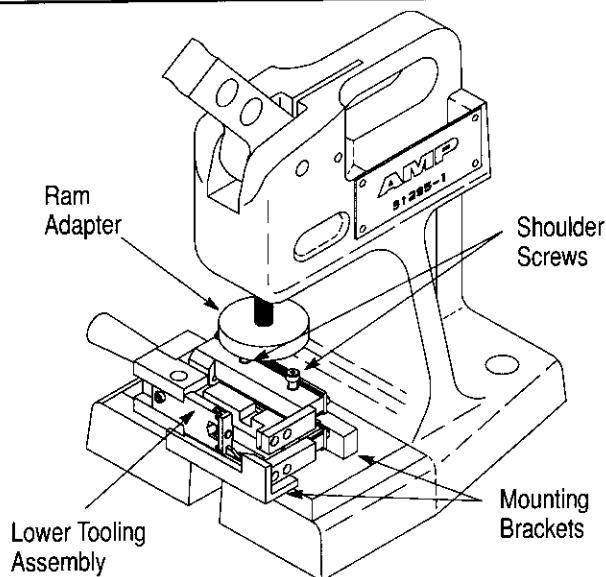


Figure 13

After termination, return the lower tooling assembly to the bench mount, remove the connector positioner, open the pivoting insertion bars, release the cable clamp, and remove the final cable assembly.

3. TOOLING SETUP

3.1. Mass Termination Tooling Assembly

Determine which Manual Frame Assembly will be used in conjunction with the termination tooling assembly. See Figure 2.

NOTE

If the Miniature Manual Frame Assembly is used, remove the upper tool mount and hex nut from the ram. If the Manual Frame Assembly is used, remove the slide base assembly from the base of the frame.

The following instructions reference use of the Miniature Manual Frame Assembly; however, the instructions are also applicable for use of the Manual Frame Assembly.

1. Assemble the Ram Adapter (upper tool) onto the ram by turning the threaded portion into the ram of the frame. (See Figure 13).
2. Assemble the locating brackets onto the base of the manual frame assembly with the four socket head cap screws (supplied). Do not tighten the screws.
3. Slide the positioner onto the lower tooling assembly and place entire assembly onto the base of the arbor, between the mounting brackets as shown in Figure 13.
4. With lower tooling assembly in position, adjust the mounting brackets against the lower tooling assembly and tighten the socket head cap screws.
5. Adjust shut height of the frame by turning the upper tool clockwise until the shut height of the arbor is high enough so that the ratchet will release after cycling the press with the tool assembly in place.

NOTE

This tooling assembly will bottom on itself and the upper tool should be adjusted so the last click of the ratchet takes place when the shoulder screws have depressed fully.

6. Adjust the cable clamp on the lower tooling assembly (see Figure 14) to the appropriate cable size by turning the setscrew on the clamp arm. Turn the setscrew in for smaller diameter cables and out for larger diameter cables. Proper adjustment is made when the cable is held tightly in the clamp.

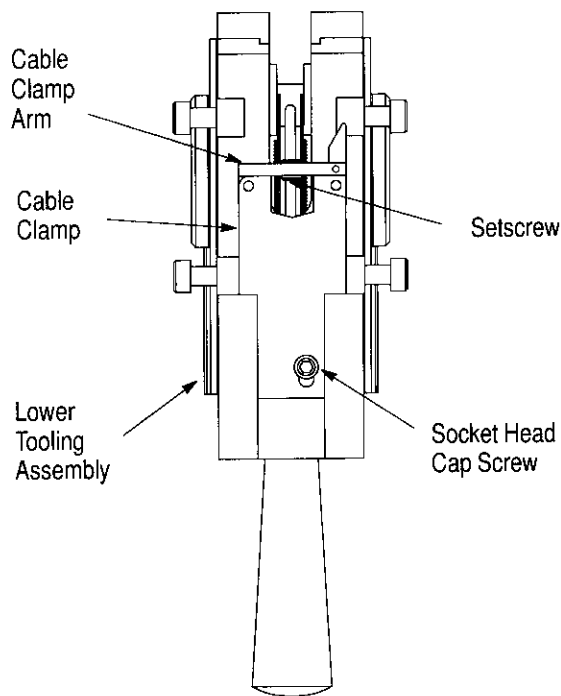


Figure 14

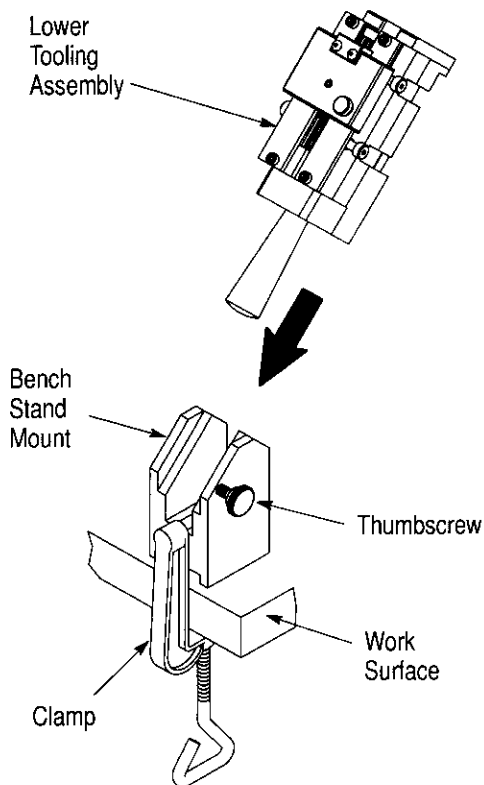


Figure 15

7. Adjust the location of the cable clamp so the center of the cable is in the center of the flutes being used. (For location of wires, see Step 4, Termination Procedure). This is done by loosening the socket head cap screw and sliding the cable clamp forward or backward. When in position, tighten screw.

8. Attach the bench stand mount and clamp to a suitable work surface. See Figure 15.

9. Slide the lower tooling assembly into the bench stand mount, as shown in Figure 15, and tighten thumbscrew.

3.2. Cutter Subassembly

The cutter subassembly is designed for mounting on the Miniature Manual Frame Assembly. The cutter blades are used as an upper tool and the slide base is used as a lower tool mount to hold the lower tooling assembly in place during cutting. Refer to Figure 9 and proceed as follows:

1. Mount the slide base onto the frame assembly using the four socket head cap screws supplied. DO NOT tighten the screws.
2. Slide the upper tool (with blades) into the upper tool mount of the frame assembly until the ball detent snaps into hole of the upper tool.
3. Remove the connector positioner from the lower tooling assembly, open the pivoting insertion bars, and slide the assembly into the slide base.

NOTE

The anvil plates (mounted on the top sides of the slide base) are adjusted to be adjacent to the combs on the lower tooling assembly and should not need further adjustments.

4. Carefully lower the upper tool onto the anvil plates, making sure the cutter blades clear the combs of the lower tooling assembly.

NOTE

The shut height of the frame assembly may need to be adjusted so that the ratchet releases after contact is made with the anvil plates. Refer to instruction sheet 408-9817 for shut height adjustment.

NOTE

When tightening the hex nut on the frame assembly, be sure the upper tool blades are parallel with the combs on the lower tooling assembly. This ensures a straight cut of the wires during the cutting procedure.

5. While holding the upper tool with its cutting blades tightly against the anvil plates, tighten the socket head cap screws to secure the lower slide base in position.

6. After the cutter subassembly is properly positioned, cycle the press of the frame assembly once or twice to be sure that no further adjustments are necessary.

4. TERMINATION PROCEDURE

With the lower tooling assembly positioned and secured in the bench stand mount, proceed as follows:

1. Remove the connector positioner and open the pivoting insertion bars. See Figure 5.
2. Clamp prepared cable in cable clamp between pivoting insertion bars with the discrete wires pointing up toward operator. Edge of jacket must be even with the top surface of the pivoting arms. See Figure 6.
3. Begin lacing wires into the slots of the combs, beginning with the uppermost slots on the insertion bars. See Figure 7. If the 36 or 50-position connector is being used, all the slots on the tool will NOT be used.

NOTE

The operator should be careful to push each wire down into the comb slots of the insertion bars. The combs hold the wires during cutting and prior to termination.

4. Continue lacing wires across slots and into combs until each wire is placed per the applicable color code. See Figure 8.

NOTE

Be sure each wire is completely inserted into the comb slots. The combs hold the wires during cutting.

5. Remove lower tooling assembly from bench stand mount and slide it into cutter subassembly. See Figure 9.

NOTE

Be sure all wires pass over the anvil plates of the cutter while sliding tool back under blades.

6. Cycle the frame assembly to cut the wires.
7. Remove lower tooling assembly from cutter and place back into bench stand mount. Inspect wires to ensure that they have been properly cut and that they remained firmly seated in the comb slots. Refer to Figure 10.
8. When all wires are properly cut and positioned, carefully close the pivoting insertion bars.
9. Place the connector into the connector positioner. This is done by turning the positioner upside down and placing the mating face of the connector onto the lower surface of the slot and pivoting the connector up and into the slot. Make sure the guide tip on the connector enters the slot in the slotted guide bar on the positioner. Refer to Figure 11. The connector should be oriented per the applicable wiring application.

NOTE

Be sure the connector is fully into the slot of the connector positioner. It should rest against the back wall of the slot.

10. Flip connector positioner over and slide onto lower tooling assembly with connector in place. Be sure positioner is against step on top plate of pivoting arms. Tighten thumbscrew (see Figure 9).

NOTE

Pivot arms may have to be squeezed together to enable positioner to slide onto cover plates.

11. Loosen thumbscrew on bench stand and remove entire assembly and place into mounting brackets on Frame Assembly.
12. With lower tooling assembly in place, cycle arbor frame until ratchet releases and handle returns to original position.
13. Remove lower assembly from arbor frame and return it to the bench stand. Tighten thumbscrew.
14. Remove positioner, rotate pivot arms open, open cable clamp, and remove cable assembly.

5. MAINTENANCE AND INSPECTION

AMP recommends that a maintenance and inspection program be performed periodically to ensure dependable and uniform terminations. Frequency of inspection depends on:

1. The care, amount of use, and handling of the tooling assembly.
2. The presence of abnormal amounts of dust and dirt.
3. The degree of operator skill.
4. Your own established standards.

The tooling assembly is thoroughly inspected before packaging. Since there is the possibility of damage during shipment, the tooling assembly should be inspected immediately upon arrival at your facility.

5.1. Daily Maintenance

AMP recommends that each operator be responsible for the following steps of daily maintenance:

1. Remove dust, moisture, and other contaminants with a clean, soft brush, or a lint-free cloth. DO NOT use objects that could damage the tooling assembly.
2. Make certain that all subassemblies and locating brackets are in place and properly secured.
3. When the tooling assembly is not in use, store it in a clean, dry area.

5.2. Periodic Inspection

Regular inspections should be performed by quality control personnel. A record of scheduled inspections should remain with the tooling assembly or be supplied to supervisory personnel responsible for the tooling assembly. Though recommendations call for a least one inspection a month, the frequency should be based on amount of use, working conditions, operator training and skill, and your established company policies.

1. Remove all lubrication and accumulated film with a suitable commercial degreaser that will not affect paint or plastic material.
2. Make certain that all components are in place. If replacements are necessary, refer to Section 6, **REPLACEMENT AND REPAIR**.
3. Inspect assembly for worn, cracked, chipped, or broken areas. If damage is evident, return the assembly to AMP for evaluation and repair. See Section 6, **REPLACEMENT AND REPAIR**.

6. REPLACEMENT AND REPAIR

Replacement blades for the upper tool of the cutter subassembly may be ordered by PN 543613-1. Specify quantity when ordering.

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

CUSTOMER SERVICE (38-35)
AMP INCORPORATED
P.O. BOX 3608
HARRISBURG, PA 17105-3608

For further repair and replacement information, call the AMP Tooling Assistance Center:
1-800-722-1111.

When repair is necessary, return tooling assembly (along with a written description of the problem) to:

CUSTOMER REPAIR (01-12)
AMP INCORPORATED
1523 NORTH 4TH STREET
HARRISBURG, PA 17102-1604