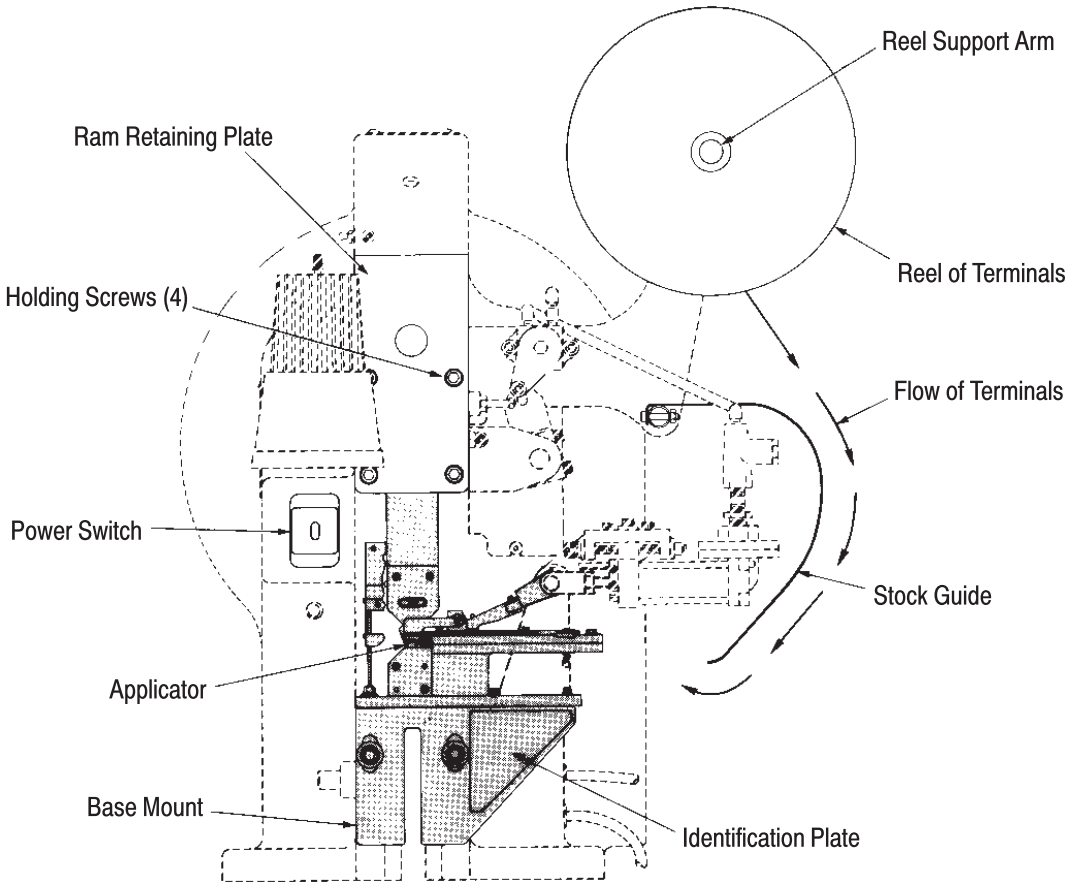


Figure 1

1. INTRODUCTION

Standard Type Side–Feed Applicators apply side–feed strip terminals to pre–stripped wires. Each applicator accepts the strip form of certain terminals, which are identified on the applicator parts list for each applicator. The terminal listed on the identification plate is the one that was specified when the applicator was ordered. Some terminals have two carrier strips, others just one.

This instruction sheet, along with the parts list and exploded view drawing packaged with the applicator, and the appropriate customer manual (409–5128 for the Basic AMP–O–LECTRIC* Machine, or 409–5040 for the AMP–O–MATIC* Machine), provides all the information required to operate and maintain the applicator and machine.

See Section 11, REVISION SUMMARY, for revision information.

NOTE

All dimensions on this document are in metric units [with U.S. customary units in brackets]. Figures and illustrations are for identification only and are not drawn to scale.

2. APPLICATOR DESCRIPTION

A typical applicator is shown mounted in an AMP–O–LECTRIC Machine in Figure 1.

The terminal strip is fed into the applicator between the front and rear strip guides, with the barrel end (wire end) toward the operator and the open side UP. It passes under the stock drag, and the LEAD terminal is centered over the anvil so that the feed finger tip engages the feed holes in the terminal strip. The feed finger feeds one terminal during each cycle of the machine.

The machine may have either an air–feed system, which is actuated at the proper time during the machine cycle, or a mechanical feed system, which is linked to the machine feed arm drive shaft.

The crimp height is adjusted by raising or lowering the base mount, which holds the applicator and lower tooling. The upper tooling, mounted on the ram, includes the wire and insulation crimpers.

As the ram moves downward, the feed finger moves back to engage the feed hole for the next terminal. The terminal over the anvil is crimped and sheared from the terminal strip. As the ram moves upward, the feed finger moves the next terminal over the anvil.

3. APPLICATOR REMOVAL AND INSTALLATION

3.1. Removal

A. Feed Finger Assembly

1. If the AMP–O–LECTRIC Machine has air–feed, disconnect the air hose from the machine. Remove the air–feed assembly from the applicator by removing the two holding screws on the back of the base mount. If the machine has mechanical–feed, remove the feed arm from the feed arm drive shaft. Refer to the exploded view drawing in the customer manual for instructions on removing these parts.

2. Remove the cowling pin from the clevis pin. See Figure 2.

3. Loosen the screw on the tension adjustment plate.

4. Remove the clevis pin from the clevis, being careful to capture the tension spring.

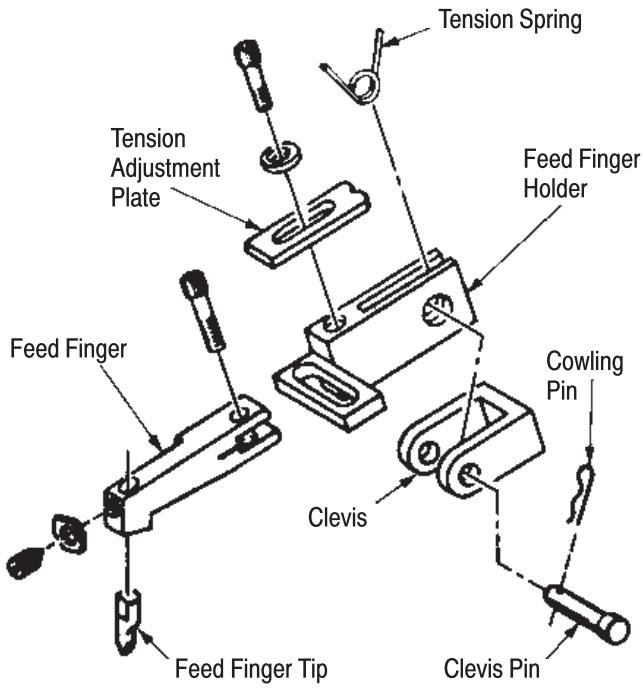


Figure 2

5. Remove the feed finger assembly.

B. Upper and Lower Tooling

1. Remove the ram retaining plate by removing the four holding screws shown in Figure 1.

2. Loosen the two base mount holding screws and turn the crimp height adjusting screw down until the base mount is at its lowest point. See Figure 3.

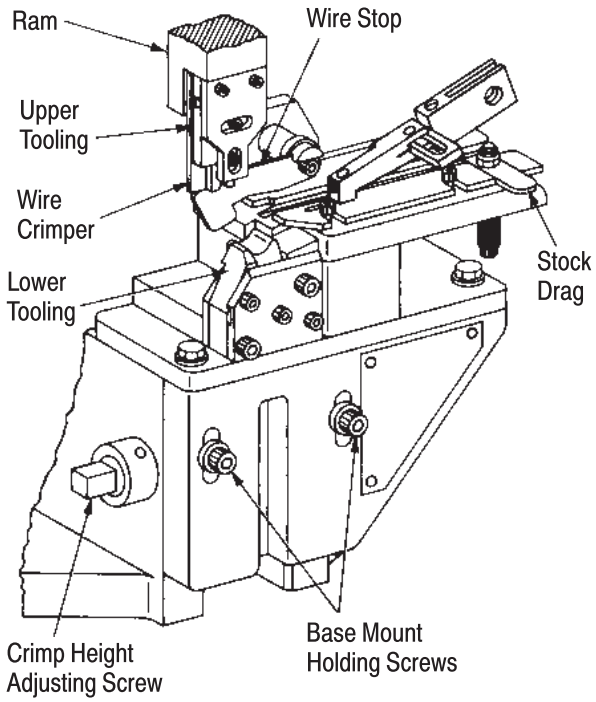


Figure 3

3. Remove the base mount holding screws; then swing the upper and lower tooling toward you.

4. When the lower tooling has cleared the machine, pull it away from the upper tooling and set it aside.

5. Push the ram back in place.

6. Hand–cycle the machine according to the procedure in the customer manual, until the ram reaches its lowest position.

7. Loosen the socket setscrew shown in Figure 4, and pull the ram toward you.

8. Remove the ram link pin and ram (with the upper tooling attached) from the toggle link.

3.2. Installation

A. Upper and Lower Tooling

1. Align the holes in the ram and toggle link, and insert the ram link pin. See Figure 4.

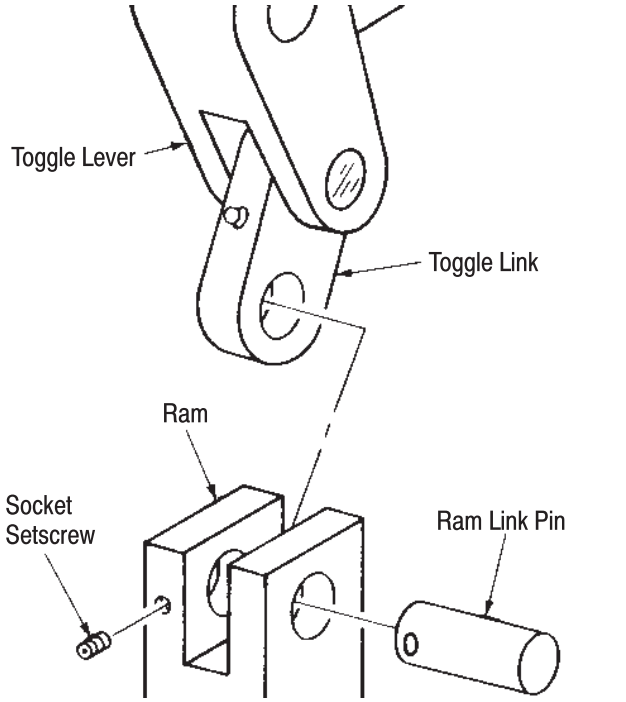


Figure 4

2. Tighten the socket setscrew in the ram.

3. Turn the flywheel forward until the machine is in the rest position.

4. Pull the ram toward you and place the wire crimper in front of the wire stop. See Figure 3.

5. Swing the upper and lower tooling into the machine. Insert and tighten two base mount holding screws.

6. Replace the ram retaining plate. See Figure 1.

B. Raising the Base Mount

1. Remove the short strip of terminals from the applicator.

2. Hand–cycle the machine until the ram is at its lowest position.

3. Loosen the two base mount holding screws. See Figure 3.

4. Push in on the base mount and turn the base mount holding screws finger tight.

5. Hold three thicknesses of paper over the anvil.

6. Turn the crimp height adjusting screw up, until the crimpers make an impression on the paper, then stop. See Figure 3.

7. Tighten the two base mount holding screws.

8. Turn the flywheel until the ram returns to the rest position. Remove the paper.

C. Tooling Alignment

1. Loosen the two upper tooling holding screws at the top of the shear depressor; make them finger tight. See Figure 7.

2. Hold three thicknesses of paper over the anvil.

3. Hand–cycle the machine until the crimpers bottom on the paper, then stop.

4. With the crimpers bottomed, tighten the two holding screws securely. The tooling is now aligned.

5. Turn the flywheel until the ram returns to the rest position. Remove the paper.

D. Installing the Feed Finger

1. Place the new feed finger holder in the clevis. See Figure 2.

2. Insert the clevis pin through the first hole in the clevis and the first hole in the feed finger holder.

3. Insert the tension spring and push the clevis pin through its opening.

4. Push the pin through the remaining two holes and insert the cowling pin.

5. Slide the tension adjustment plate against the tension spring and tighten the screw.

6. In a machine with mechanical–feed, attach the feed assembly to the feed arm drive shaft according to the instructions in the customer manual. In a machine with air–feed, attach the air hose to the machine. Then attach the air feed assembly to the new applicator by inserting and tightening the two holding screws on the back of the base mount.

7. Refer to the applicator parts list for the proper feed point. Using this feed point, refer to the customer manual for instructions on feed adjustment and adjust the feed.

4. APPLICATOR LOADING AND UNLOADING

4.1. Terminal Strip Loading

1. Attach the reel of terminals to the reel support arm. See Figure 1.

2. Remove the short strip of terminals from the applicator.

3. Pull the terminal strip from the reel and around the stock guide.

4. Make sure the terminal strip enters the applicator with the barrel end (wire end) toward you and the open side UP.

5. Push down on the stock drag handle and feed the terminal strip between the strip guides. See Figure 3.

6. If the machine has air feed, attach the air hose to the machine.

7. Push the first terminal slightly past the anvil. Pull back on the terminal strip until it catches on the feed finger tip. The terminal should be centered over the anvil. If it is not, adjust the forward feed position according to the procedure in the customer manual.

8. Slowly hand–cycle the machine according to the procedure in the customer manual and crimp a terminal on wire. As the ram descends, the feed finger withdraws over the terminal strip. The terminal over the anvil will be crimped and sheared from the terminal strip. As the ram rises, the feed finger pushes the next terminal over the anvil. If the machine does not feed properly, refer to the customer manual for feed adjustment (air or mechanical).

NOTE

If the machine cannot be cycled by hand, refer to Paragraph 3.2.C for tooling alignment.

4.2. Terminal Strip Unloading

Cut the terminal strip one or two terminals from the end of the applicator and leave the short terminal strip section in the applicator. This will identify the type of terminals to be used in the applicator when it is put back into service.

5. PRE–PRODUCTION CHECK OUT

5.1. Crimp Height

Find the recommended crimp height setting on the parts list packaged with the applicator. Check this with the information written on the sample pack of terminals that accompanied the applicator. Measure the crimp height as indicated in Instruction Sheet 408–7424. See Paragraph 8.2 for crimp height adjustment.

5.2. Terminal Feed

Changes to crimp height may affect terminal feed. When adjusting crimp height, always make sure the feed finger has fed the terminal properly. If it has not, center the terminal over the anvil by hand and then adjust the feed after you obtain proper crimp height.

5.3. Crimped Terminal Inspection

If the crimp height and terminal feed check out, you may operate the machine under power. Plug in the power cord and turn the power switch “ON”. See Figure 1. Crimp several terminals on wire and inspect them as follows:

1. The insulation must extend past the insulation barrel, but not into the wire crimp.

2. There must be a bellmouth at the back end of the wire barrel.

3. A slight bellmouth is permitted at the front end of the wire barrel.

4. The wire must lie flat and extend past the wire barrel slightly. Check the crimp height frequently during the first half hour of operation.

6. PRODUCTION OPERATION

DANGER

Make sure the guard is in place before operating the machine under power.

Refer to the customer manual for instructions regarding production operation.

7. PRODUCTION CHECKS

At the beginning of each eight–hour shift, and several times during each shift, the following checks should be made to ensure the quality of the crimped terminations.

7.1. Crimped Terminals

A. Wire Placement

Make sure the wire is stripped to the correct strip length. The strip length of the wire and the position of the wire stop over the terminal will determine the amount of bare wire that extends past the wire barrel. The wire stop should rest on the terminal as close as possible to the wire crimper. See Paragraph 8.1 for wire stop adjustment.

B. Wire Crimp Height

Check the crimp height of the samples. Refer to the customer manual for crimp height adjustment.

C. Insulation Crimp

The main purpose of the terminals’ insulation crimp is to keep the bare wire from flexing against the edge of the wire crimp. The insulation barrel should be just tight enough to support the wire insulation. See Paragraph 8.3 for insulation support adjustment.

7.2. Terminal Feed

A. Feed Point

Check the applicator parts list for the proper feed point. With the terminal centered over the anvil, the tip of the feed finger should fall into a hole in the terminal carrier strip.

B. Overfeed

If the feed finger positions the terminal too far over the anvil, a feed adjustment or stock drag tension adjustment may be necessary. Refer to Paragraphs 8.5 and 8.6 for these adjustments.

C. Underfeed

If the terminal is not positioned far enough over the anvil, a feed adjustment may be necessary. Refer to Paragraph 8.5 for instructions on adjusting the feed.

7.3. Stock Drag Tension

Stock drag tension affects the terminal feed. If the tension is too loose, the terminal feed will be erratic; if too tight, the carrier strip may bend or tear. See Paragraph 8.6 for adjustments on stock drag tension.

8. ADJUSTMENTS

8.1. Wire Stop

1. Loosen the screw on the wire stop guide. See Figure 5.

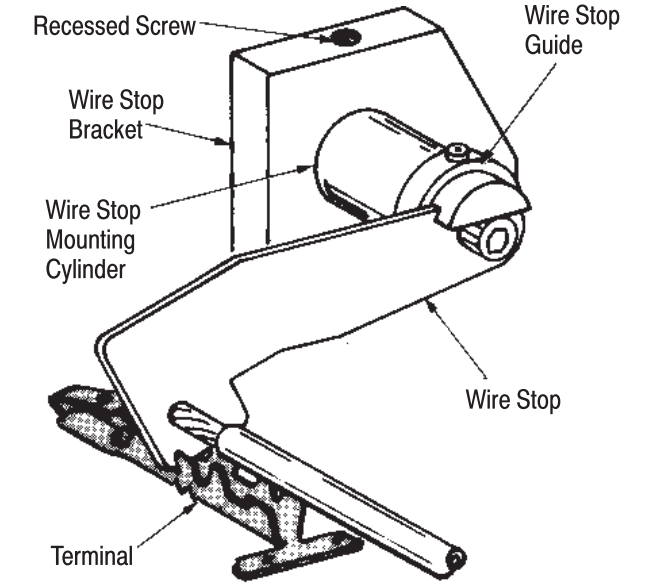


Figure 5

2. Loosen the recessed screw on the wire stop mounting bracket.

3. Move the wire stop mounting cylinder until the wire stop is in the proper position. Be sure the wire stop can pivot at least 6.35 mm [.250 in.] above the terminal. Then tighten the recessed screw.

4. Move the wire stop guide until it touches the wire stop, and then tighten the screw.

8.2. Crimp Height

Adjust the crimp height as described in the customer manual for the machine.

8.3. Insulation Support

1. Loosen the two insulation crimper holding screws on the insulation crimper mounting plate. See Figure 6.

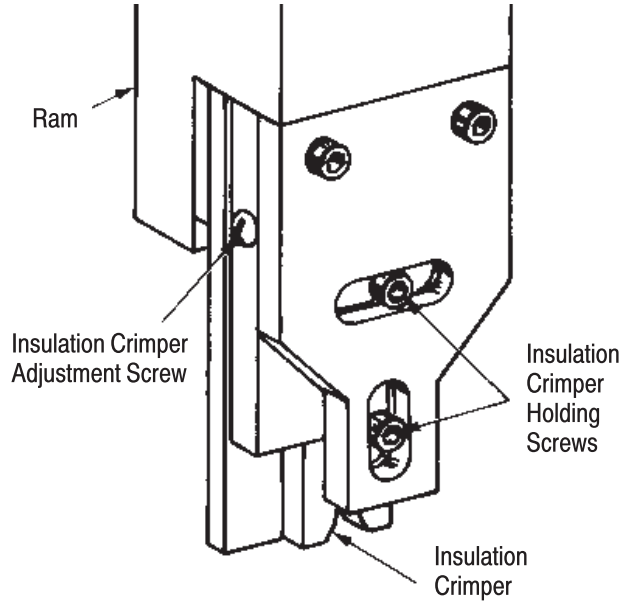


Figure 6

2. If the crimp is TOO LOOSE, turn the insulation crimper adjusting screw CLOCKWISE; if TOO TIGHT, turn it COUNTER–CLOCKWISE.

3. Lift the insulation crimper as far as it will go and tighten the two holding screws.

4. Place an unstripped wire in the insulation barrel only and crimp the terminal.

5. Check the insulation crimp on the terminal, and repeat this adjustment until you get the proper insulation crimp.

8.4. Feed Finger Tip and Strip Guides

The terminal strip guides are attached to a strip guide plate or to the base plate directly. The front strip guide has a slot, which exposes the terminal carrier strip. The feed finger rides in the slot and falls into a hole in the terminal carrier strip.

A. Feed Finger Tip

1. Loosen the nut and screw that hold the feed finger to the feed finger holder.

2. Slide the feed finger until its tip falls into the slot in the front strip guide and contacts the strip guide plate.

3. Tighten the holding screw and nut.

B. Strip Guides

NOTE

The strip guides are adjusted at the factory when the applicator is built and rarely need adjustment. When adjusting is necessary, use the following procedure:

1. Loosen the holding screws on the front and rear strip guides.

2. With the first terminal centered over the anvil, slide the front strip guide until the terminal carrier strip passes through the slot in the shear and lies in a straight line along the strip guide plate or base plate.

3. Tighten the screw on the front strip guide nearest the anvil.

4. Make sure the front strip guide is parallel to the strip guide plate or base plate. To be certain, measure the distance between the edge of the plate and the edge of the strip guide near each screw hole.

5. Tighten the other holding screw on the front strip guide.

6. Move the rear strip guide into position against the terminal carrier strip, and tighten the holding screws.

7. Adjust the feed finger tip. See Paragraph 8.4.A.

8.5. Terminal Feed

See Paragraph 8.4 and the machine customer manual for feed adjustments.

8.6. Stock Drag Tension Adjustment

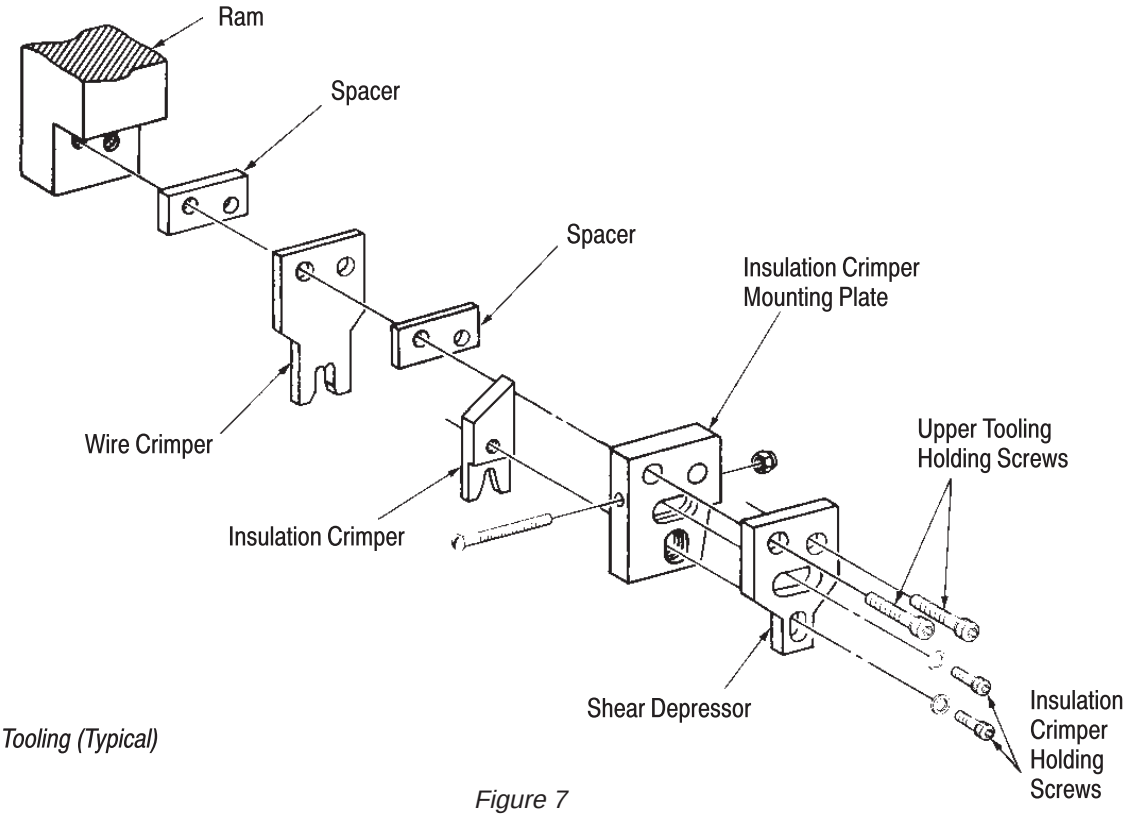
Adjust the stock drag tension by loosening or tightening the nut that compresses the stock drag spring.

9. REPLACEMENT OF PARTS

The parts list packaged with the applicator shows several replacement parts coded (■). Keep at least one of each replacement part on hand.

9.1. Insulation Crimper

1. While holding the insulation crimper with one hand, remove the bottom holding screw from the insulation crimper mounting plate. See Figure 7.



Upper Tooling (Typical)

Figure 7

2. Remove the defective crimper.

3. Insert a new crimper and lift it as far as it will go.

4. Insert and tighten the bottom holding screw.

9.2. Wire Crimper

1. Loosen the two upper tooling holding screws on top of the shear depressor. See Figure 7.

2. Pull the upper tooling and two holding screws away from the ram.

3. Replace the defective part with a new one. Be sure the location and orientation of every part is as shown on the exploded view drawing packaged with the applicator.

4. Mount the upper tooling on the ram. The top surface of the upper tooling must be squarely against the bottom surface of the ram. Finger tighten the two holding screws.

5. Align the tooling according to Paragraph 3.2.C.

9.3. Anvil

1. Remove the terminal strip stabilizer, if present, and its holding screw. See Figure 8.

2. Remove the anvil holding screw and anvil.

3. Replace the defective anvil with the new one, making sure there are no metal chips or dirt under it.

4. Insert and tighten the anvil holding screw.

5. Replace the terminal strip stabilizer, if required. Insert and tighten the holding screw.

9.4. Shear Plate

1. Remove the lower tooling holding screw, and the shear plate holding screw. See Figure 8.

2. Pull the lower tooling away from the base block.

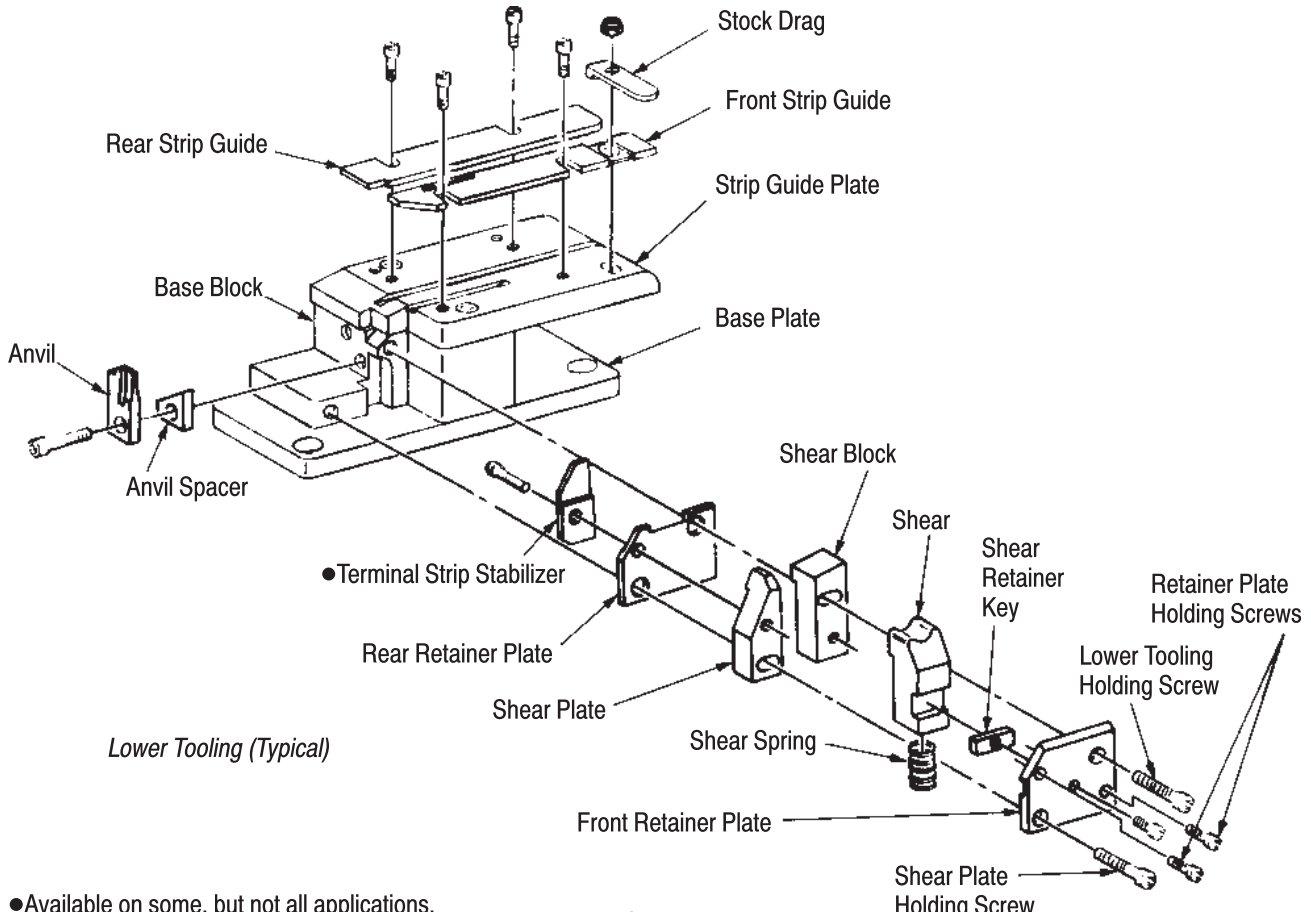
3. Remove the terminal strip stabilizer, if used, and its holding screw from the shear plate.

4. Remove and replace the defective shear plate.

5. Mount the lower tooling on the base block.;

6. Tighten all holding screws. Be sure the front retainer plate is flush with the base block and the base plate, and that it is against the shear.

7. Replace the terminal strip stabilizer, if required, and tighten the holding screw.



●Available on some, but not all applications.

Figure 8

9.5. Shear or Shear Spring

1. Remove the two front retainer plate holding screws. See Figure 8.

2. Remove the front retainer plate and the defective shear or shear spring.

3. Replace the defective part with the new one.

4. Replace the front retainer plate and push down on the shear. This will allow the shear retainer key to engage the slot in the shear.

5. With the shear depressed, insert and tighten the two holding screws. Be sure the front retainer plate is flush with the base block and the base plate, and that the shear plate is against the shear.

10. CLEANING AND LUBRICATION

10.1. Cleaning

Frequently clean the metal chips and dirt from the applicator with a small brush.

10.2. Lubrication

Occasionally apply a small amount of light machine oil to all cutting surfaces of the shear plates and the shear blade.

Do NOT over–lubricate.

11.REVISION SUMMARY

This paragraph covers the most recent changes to this revision which include the following:

- Updated document to corporate requirements
- New format
- Changed the term “press” to “machine” in all instances