

Figure 1

1. INTRODUCTION

This applicator instruction sheet covers a basic applicator design, and provides general instructions for applicators of this design.

Refer to the applicator drawings shipped with this machine, as well as Customer Manual 409-5128 (for the AMP-O-LECTRIC* Machine) for further information.

2. DESCRIPTION

Figure 1 illustrates many of the machine components.

The applicator's identification plate (Figure 1) shows the serial number, as well as the applicator number. The serial number identifies a particular applicator. The applicator number identifies the applicator as one that can crimp terminals appearing on the parts list.

3. WIRE STRIPPING

Strip the insulation to the length shown on the parts list shipped with the applicator.

4. INSPECTING THE APPLICATOR

Every applicator is aligned and tested before shipment. If the applicator was damaged during shipment, file a claim against the carrier and notify Tyco Electronics immediately.

If you received a terminating machine with the applicator already installed, proceed to Section 6, SET-UP PROCEDURE.

5. INSTALLING THE APPLICATOR IN THE MACHINE

5.1. Removing the Old Applicator

A. Removing the Feed Finger

1. Disconnect electrical and air power from the AMP-O-LECTRIC machine.
2. Remove the air feed assembly from the applicator by removing the holding screws on the back of the base mount (Figure 1). If the machine has mechanical feed, remove the feed arm from the feed arm drive shaft.
3. Remove the cotter pins from the clevis pin. See Figure 2.
4. Loosen the screw on the tension adjustment plate (provided the feed finger is so equipped).

PRELIMINARY

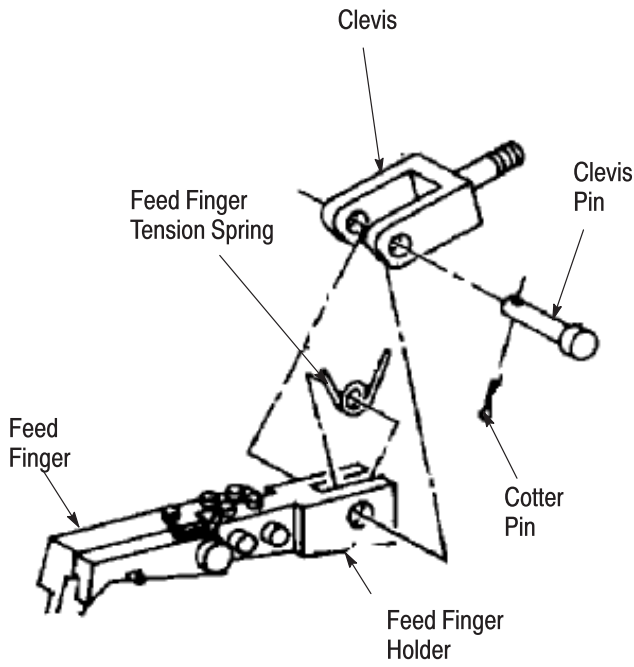


Figure 2

5. Remove the clevis pin from the clevis.

NOTE Be SURE to capture the feed finger tension spring.

6. Remove the feed finger holder with the attached feed finger.

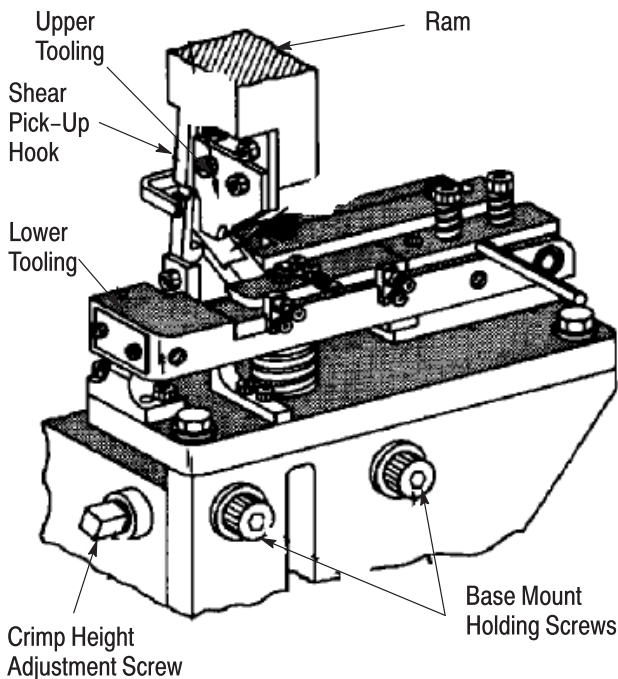


Figure 3

B. Removing the 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 adjustment screw "down" until the base mount is at its lowest point. See Figure 3.
3. Remove the base mount holding screws.
4. Swing the the upper and lower tooling toward you.
5. When the lower tooling has cleared the machine, pull it away from the upper tooling and set it aside.
6. Push the ram back into place.
7. Hand-cycle the machine according to the procedures in the AMP-O-ELECTRIC machine manual. Hand-cycle the machine until the ram reaches its lowest point.
8. Loosen the socket set screw shown in Figure 4.
9. Pull the ram toward you.
10. Remove the ram link pin and ram with the attached tooling.

5.2. Installing the New Applicator

1. Attach the ram to the toggle link by inserting the ram link pin. See Figure 4.

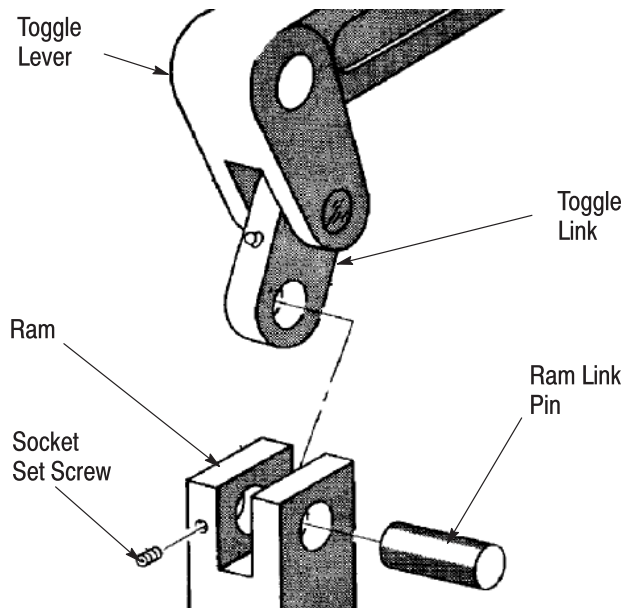


Figure 4

2. Tighten the socket set screw on the ram.
3. Turn the machine flywheel forward until the machine is in the “rest” (TDC) position.
4. Pull the ram toward you and place the shear pick up hook under the shear blade. Refer to Figure 3.
5. Swing the upper and lower tooling into the machine.
6. Insert and tighten the two base mount holding screws.
7. Replace the ram retaining plate.
8. Attach the the spring to the shear pick-up hook holder and bracket. See Figure 5.

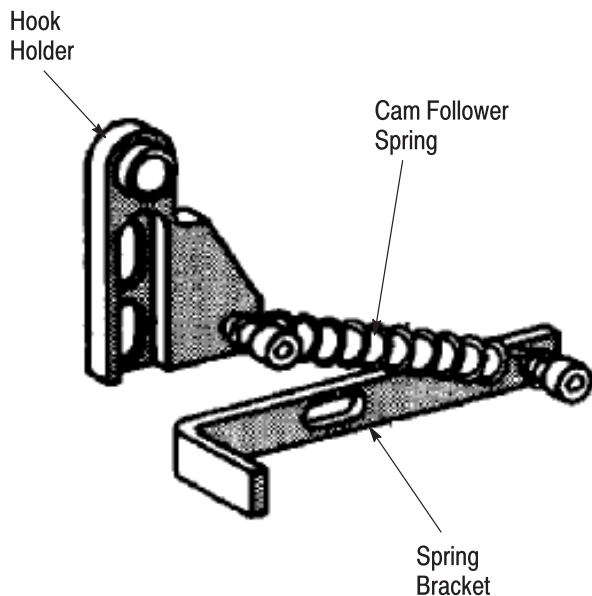


Figure 5

5.3. Raising the Base Mount

1. Remove the small strip of terminals from the applicator.
2. Slowly hand-cycle the machine until the ram is at it's lowest position.

CAUTION *Be sure there is no interference between the upper and lower tooling.*

3. Loosen the two base mount holding screws. Refer to Figure 3.
4. Push “in” on the base mount.
5. *Finger* tighten the base mount holding screws.

6. Turn the crimp height adjustment screw until the anvil begins to show through the anvil insert.
7. Fully tighten the two base mount holding screws.
8. Manually turn the machine flywheel until the machine returns to the rest position.

5.4. Installing the Feed Finger

1. Place the new feed finger holder (with the attached feed finger) 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 feed finger tension spring and push the clevis pin through it's opening.
4. Push the pin through the remaining two holes and insert the cotter pin.
5. Attach the feed assembly to the feed arm drive shaft according to the instructions in the Tyco Electronics' customer machine manual.
6. Refer to the parts list shipped with the applicator for the proper feed point. Using this feed point, refer to the machine manual for instructions on feed-cycle adjustment. Adjust the feed.

6. SET-UP PROCEDURES

Your applicator has been thoroughly adjusted prior to shipment. However, these adjustments should be checked prior to placing the machine in operation.

Be sure to check these items after extended machine operation AND after replacing worn or damaged parts.

6.1. Checking the Wire Crimper/Anvil Alignment

Slowly hand-cycle the machine according to the procedure in the appropriate customer machine manual.

DANGER

To avoid personal injury, be sure power is turned “off” and disconnected before checking the crimper/anvil alignment.

The anvil should protrude from the anvil insert slot and center in the arc of the wire crimper. See Figure 6. If necessary, adjust as follows:

1. Loosen the two wire crimper holding screws. See Figure 6.
2. Place the wire crimper at it's correct position over the anvil.
3. Tighten the two wire crimper holding screws.
4. Hand-cycle the machine to check the adjustment.

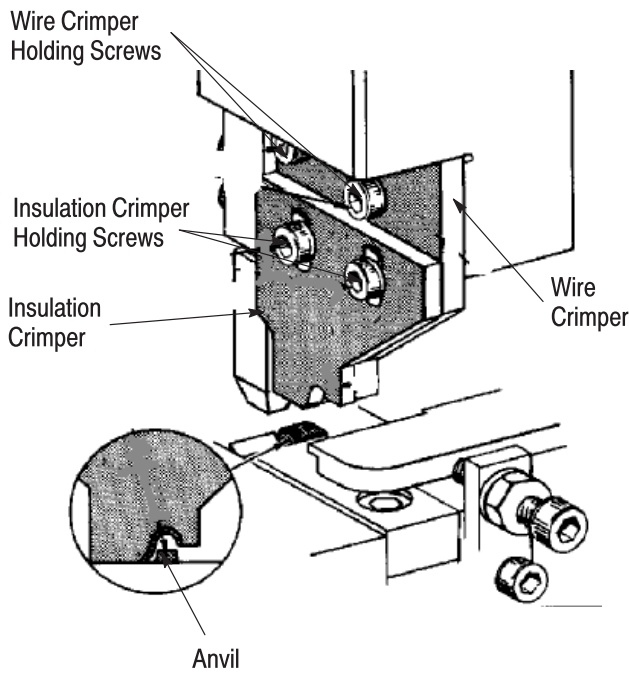


Figure 6

6.2. Loading Terminals

1. Place the reel of terminals on the reel support bar so they will enter the applicator with their wire barrels "upright." See Figure 1.
2. Pull the terminal strip from the reel and around the stock guide.
3. Release the stock drag by depressing the stock drag handle, and feed the terminal strip between the strip guides.
4. Push the terminal strip forward until the shear blade can rest between the first and second terminal. See Figure 7.

NOTE

If the shear blade does not return to the terminal strip at the end of each cycle, the limit switch will cut off power to the operator's pedal, and the terminating unit cannot be cycled. When this occurs, properly position the shear blade and hand-cycle the machine. If it occurs again, adjust the terminal feed distance according to the procedure in the customer machine manual.

5. The feed finger should rest at the feed point called out on the parts shipped with the applicator. If necessary, refer to the customer machine manual for instructions on feed cycle adjustment. Adjust the feed.

6.3. Tab Placement

NOTE

The Tab Placement procedures and Tab Engagement procedures involve precise adjustments that may require repetition until the desired results are achieved.

Slowly hand-cycle the machine and observe while a terminal is crimped. If the wire barrel passes through the slot (see Figure 8), proceed to Paragraph 6.4, Tab Engagement. If the tab misses the slot, adjust as follows:

A. Tab Too Far to the Left or Too Far to the Right

DANGER

To avoid personal injury, be sure power is turned "off" and disconnected before making tab adjustments.

1. Loosen the holding screws and locking nuts on the adjusting screws from the front strip guide. See Figure 7.
2. Turn the adjustment screw clockwise and counterclockwise and observe the positioning. Adjust the position appropriately.
3. Tighten the locking nuts.
4. Hand-cycle the the machine to check the adjustment.

B. Tab Too Far to the Front or Back

Adjust the feed distances according to the the procedures in the customer machine manual.

6.4. Tab Engagement

NOTE

The Tab Placement procedures and Tab Engagement procedures involve precise adjustments that may require repetition until the desired results are achieved.

Inspect a crimped terminal. The tab should have engaged one or both locking lances. Refer to Figure 8,A. If this condition does not exist, adjust as follows:

DANGER

To avoid personal injury, be sure power is turned "off" and disconnected before making tab adjustments.

A. Tab Fails to Reach Locking Lances (Figure 8,B.)

1. Loosen the holding screws and locking nuts on the adjustment screws for the front strip guide. See Figure 7.
2. Turn the adjustment screws clockwise.
3. Tighten the holding screws.
4. Hand-cycle the machine and check the adjustment.

B. Tab Fails to Engage Locking Lances (Figure 8,C.)

Make a fine adjustment of the feed distance according to the procedures in the machine manual.

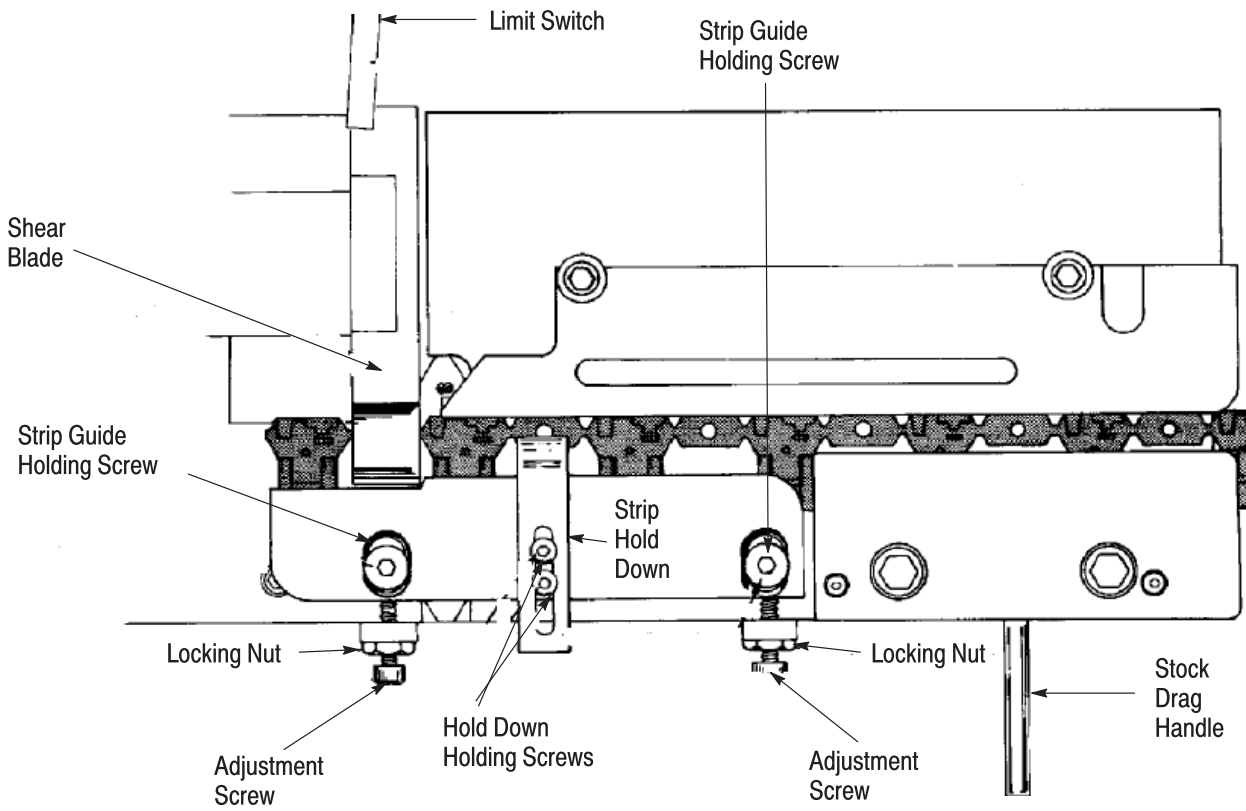
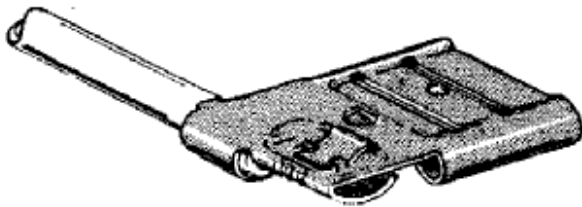
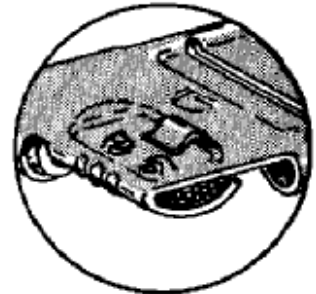


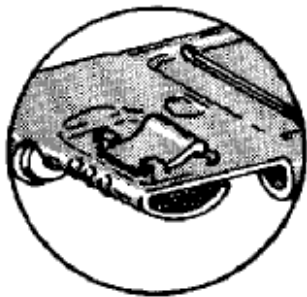
Figure 7



Tab Engaging Both Lances



B



Tab Engaging One Lance
And Against the Other

A



C

Figure 8

6.5. Setting the Wire Crimp Height

NOTE

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

Find the recommended crimp height setting in the parts list shipped with the applicator. Check this with the information written on the sample pack of terminals. Check the crimp height and adjust, if necessary, according to the instructions in the machine manual.

6.6. Inspecting the Crimped Terminals

DANGER

BE SURE all the guards are on the machine before operating the machine under power.

1. Connect the power and turn the machine "on."
2. Crimp several terminals on the wire and inspect the crimps as follows:
 - Both bare wire and insulation should be visible in the slot between the insulation barrel and the wire barrel. See Figure 9.
 - The bare wire should protrude slightly from the front of the wire barrel.
 - Terminals should be straight and not deformed.

To assure optimum results from the crimped terminals, make sure they meet with the requirements outlined in the applicable customer documents.

NOTE

The list of documents in Figure NO TAG is NOT complete. It is merely a sampling of documents.

7. OPERATING PROCEDURES

Insert a stripped wire beneath the inverted "V" of the crimpers at a slight angle against the shear blade, which also serves as a wire stop. Depress and release the operator's pedal.

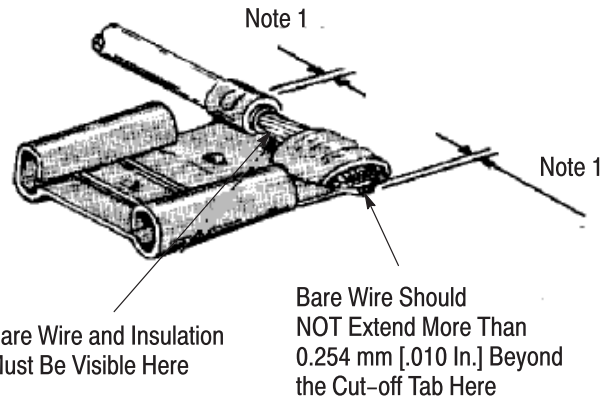
The machine will cycle, the terminal will be crimped and sheared from the strip, and the next terminal will be positioned over the anvil.

Refer to the Tyco Electronics machine manual for optimum operating efficiency.

8. PERIODIC CHECKS

8.1. Checking Crimped Terminals

At the beginning of each eight hour shift of operation, crimp several terminals onto wire under power and check the following:



Notes:

1. Cut-Off Tabs Must Not Interfere with the Function of the Receptacle or Be Bent Up Enough to Abrade the Wire Insulation.
2. The Receptacle MUST Be Straight When Viewd from the Top and Side and Must Not Be Deformed.

Figure 9

A. Wire Placement

Be sure your wire is stripped to the correct strip length. The strip length of the wire and the angle of the wire placement against the shear blade will determine the amount of bare wire that extends past the crimped wire barrel.

To assure optimum results from the crimped terminals, make sure they meet the requirements outlined in specification 114-2078.

B. Wire Crimp Height

Check the crimp height of the samples. Refer to the appropriate customer machine manual for crimp height setting procedures.

C. Insulation Crimp

The insulation barrel should be just tight enough to support the wire insulation. The main purpose of the insulation support of the terminal is to keep the bare wire from flexing against the edge of the wire crimp. See Paragraph 9.1 for Insulation Support Adjustments.

D. Tab Placement and Tab Adjustment

The wire barrel tab should pass through the slot and engage one or both of the locking lances. See Paragraph 6.3 and Paragraph 6.4 for adjustments.

8.2. Checking Terminal Feed

A. Feed Point

Check the applicator parts list for the proper feed point. With a terminal centered over the anvil, the tip

of the feed finger should fall directly behind the wire barrel of a specific terminal.

B. Over Feed

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 the machine manual for the feed adjustment, and Paragraph 9.5 for the stock drag tension adjustment.

C. Under Feed

If the terminal is *not positioned far enough* over the anvil, a feed adjustment may be necessary. Refer to the instructions in the machine manual to adjust the feed.

9. OPERATING ADJUSTMENTS

9.1. Insulation Crimp Adjustment

DANGER *To prevent personal injury, be sure power to the machine is turned “off” and disconnected if making this adjustment while the applicator is installed in the machine.*

1. While holding the insulation crimper at it’s present position. Loosen the the two insulation crimper holding screws. See Figure 6.
2. Move the insulation crimper to a new position and tighten the insulation crimper holding screws.

CAUTION *BE SURE the bottom of the insulation crimper is not lower than the bottom of the wire crimper.*

3. Hand-cycle the machine to check the adjustment.
4. Reconnect power, if necessary.

9.2. Shear Depressor Adjustment

DANGER *To prevent personal injury, be sure power to the machine is turned “off” and disconnected if making this adjustment while the applicator is installed in the machine.*

The shear depressor should depress the shear blade slightly beyond the shearing point. If it does not, proceed as follows:

1. Loosen the nut on the shear depressor screw.
2. Tighten the depressor screw to raise it; loosen the screw to lower it.
3. Tighten the jam nut and hand-cycle the machine.

4. Turn “on” the machine and connect the power, if necessary.

9.3. Strip Hold Down Adjustment

The strip hold down rests on the edge of the terminal carrier strip, as shown in Figure 7. If adjustment is necessary, simply loosen the holding screws, position the strip hold down and tighten the holding screws.

9.4. Ram Retainer Plate Adjustment

DANGER *To prevent personal injury, be sure power to the machine is turned “off” and disconnected if making this adjustment while the applicator is installed in the machine.*

If play develops in the ram, proceed as follows:

1. Tighten the two wear plate adjusting screws until the ram cannot be moved when the machine is hand-cycled. Refer to Figure 10.
2. Back off each screw approximately 1/8 turn.
3. Hand-cycle the machine.
4. Turn “on” the machine and connect the power, if necessary.

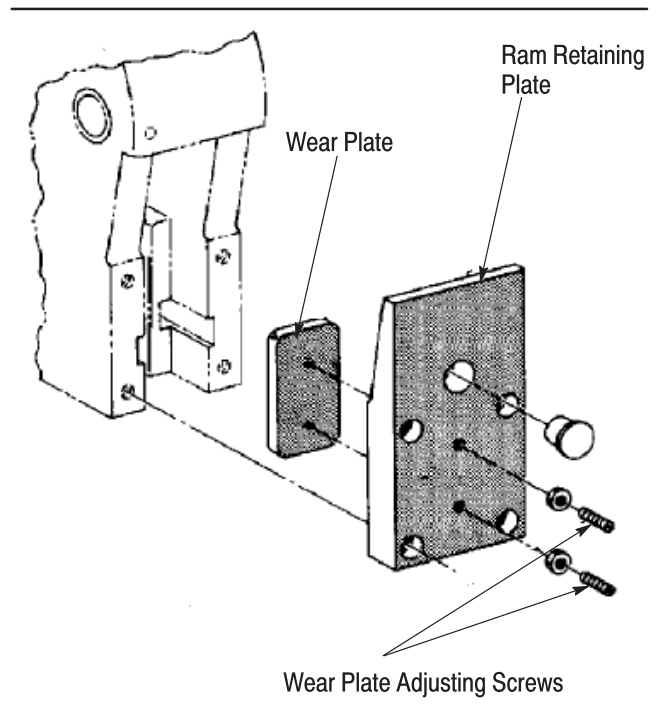


Figure 10

9.5. Stock Drag Tension Adjustment

Adjust the stock drag tension by loosening or tightening the screws that compress the stock drag springs.

10. MAINTENANCE

10.1. Preventive Maintenance

Preventive maintenance should be performed on a regular basis to keep the applicator in optimum running condition.

Preventive maintenance consists primarily of lubrication and cleaning.

A. Lubrication

From time to time (on a regular basis) apply a small amount of machine oil between: (1) the inner surfaces of the hinge bar assembly and the front stabilizing bar and; (2) the hinge block and the stabilizer.

B. Cleaning

Frequently clean the dirt and metal chips from the machine with a small brush or a clean, lint-free rag.

10.2. Replacement Parts

Refer to the parts list shipped with the applicator for spare parts. Certain parts are designated “wearable” parts. These items are the one most like to require replacement. It is recommended that these parts be kept on hand for immediate replacement.

10.3. Replacing Worn or Broken Parts

A. Wire Crimper Replacement

Refer to the parts list (and exploded view drawing) shipped with the applicator and replace the wire crimper as described below.

DANGER

To prevent personal injury, be sure power to the machine is turned “off” and disconnected if this replacement procedure is performed while the applicator is installed in the machine.

1. Note the insulation crimper location. Then remove the two *insulation* crimper holding screws and the *insulation* crimper.
2. Remove the two *wire* crimper holding screws and the *wire* crimper.
3. Place a new wire crimper against the ram and make the two holding screws finger tight.
4. Hand-cycle the machine, so that the bottom surface of the wire crimper touches the anvil insert.
5. Pull the wire crimper toward you, until it's crimping surface *almost* touches the anvil insert.
6. Securely tighten the wire crimper holding screws.
7. Continue hand-cycling the machine until the protrudes from the anvil insert slot. The anvil

should center in the arc of the wire crimper as shown in Figure 6.

8. Continue hand-cycling the machine until it returns to the rest position.
9. Replace the insulation crimper and insulation crimper holding screws. Check the wire crimp height according to the procedures in the machine manual.
10. Check the insulation crimp height.
11. Turn “on” the machine and connect the power, if necessary.

B. Anvil Replacement

Refer to the parts list (and exploded view drawing) shipped with the applicator and replace the anvil as described below.

DANGER

To prevent personal injury, be sure power to the machine is turned “off” and disconnected if this replacement procedure is performed while the applicator is installed in the machine.

1. Remove the two anvil holder screws.
2. Slide the anvil holder toward the stock drag.
3. Tilt the anvil holder and remove it.
4. Remove the anvil.
5. Insert a new anvil in the anvil insert slot.
6. While holding the anvil in place, insert the anvil holder into the anvil insert.
7. Move the anvil holder away from the stock drag, so that it's slot engages the anvil's pin.
8. Move the anvil holder up and down to be sure the anvil is engaged and moves freely.
9. Hand-cycle the machine until the ram reaches it's lowest point.
10. Move the anvil holder away from the stock drag as far as it will go, making sure the anvil holder is parallel to the base plate.
11. Securely tighten the two anvil holder screws.
12. Continue hand-cycling the machine while observing the crimper/anvil alignment. If necessary, align the crimpers to the anvil.
13. Turn “on” the machine and connect the power, if necessary.

11. REVISION SUMMARY

- Replaced “Form IC-9” with 114-2078
- Updated format to current corporate requirements