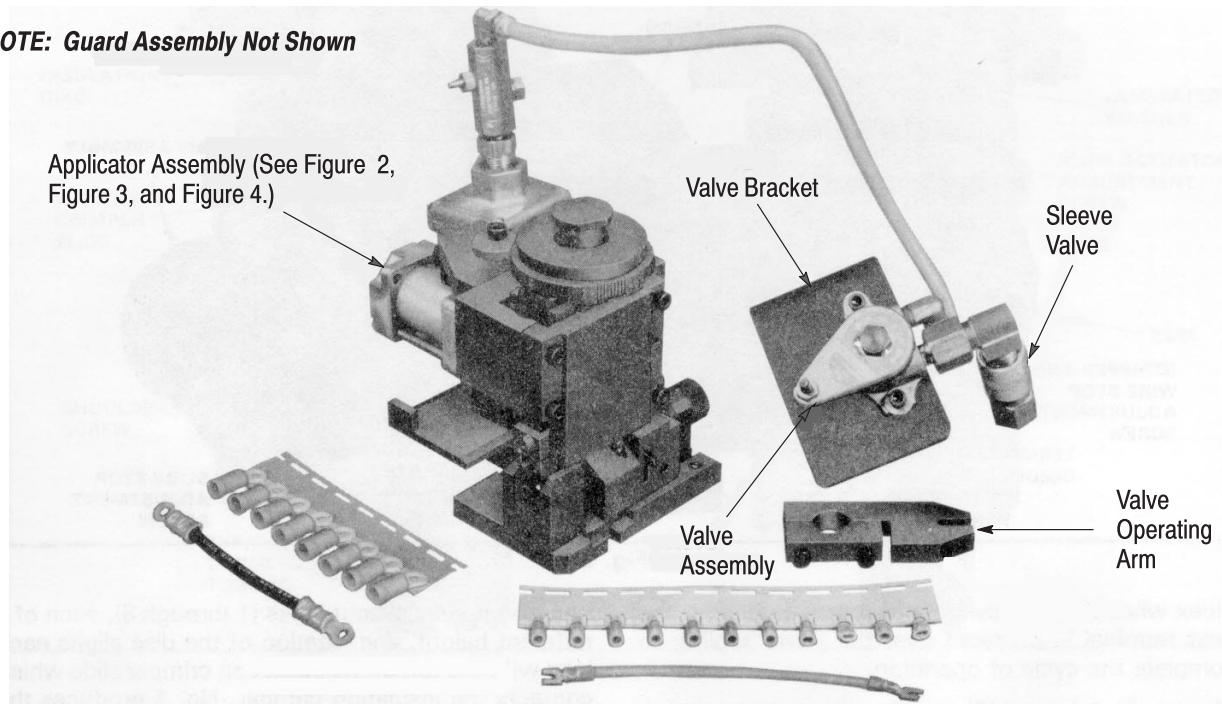


**NOTE: Guard Assembly Not Shown**



*Typical Product Tapes and Terminated Wires*

Figure 1

## 1. INTRODUCTION

These instructions cover applicators that crimp PIDG, SOLISTRAND, and PLASTI-GRIP terminals on No. 26 through NO 10 AWG wire that has been pre-stripped.

The terminals are retained in a plastic carrier strip and supplied in reel form for feeding into the applicator "target area," where carrier tape is pulled from the terminals as they are being crimped to the ends of the inserted wires. The wire crimp height is a fixed dimension, but the insulation crimp height is adjustable for variations in insulation diameters by changing the insulation disc setting (1 through 8). The wire crimp is determined by the bottoming of the upper and lower tooling installed in the applicator, and the machine shut-height. However, it should be noted that it is possible to change each applicator wire range by replacing the wire and insulation crimpers and anvils with different part numbers.

These applicators are used in modified Model "K" AMP-O-ELECTRIC\* Terminating Machine No. 565435-5. This instruction sheet, the exploded view drawing and the parts list packaged with the applicator, and customer manual 409-5128), packaged with the machine, will provide all

information necessary to operate and maintain the applicator and machine in which it is installed.

Reasons for revision can be found in Section 9, REVISION SUMMARY.

## 2. DESCRIPTION

Major components of the applicator are identified in Figure 1, Figure 2, Figure 3, and Figure 4. The terminal tape enters the applicator from the left, passing over the terminal guide; then the tape containing the terminals passes under the drag and engages with the tape wheel. The lead terminal is always positioned in the "target area" and centered over the lower tooling at the beginning of each machine cycle. This requires air pressure to be applied to the extension port of the feed cylinder.

On the downward stroke of the ram, air pressure to the cylinder is stopped to allow it to retract by internal spring pressure and to exhaust air within. As the ram fully bottoms, and with a pre-stripped wire inserted in the lead terminal in the "target area," the terminal is crimped on the wire to produce the correct crimp heights. At the same time the terminal is being crimped, the ratchet slide is actuated toward the rear. This pulls the carrier strip from the terminal which is held by the terminal stripper.

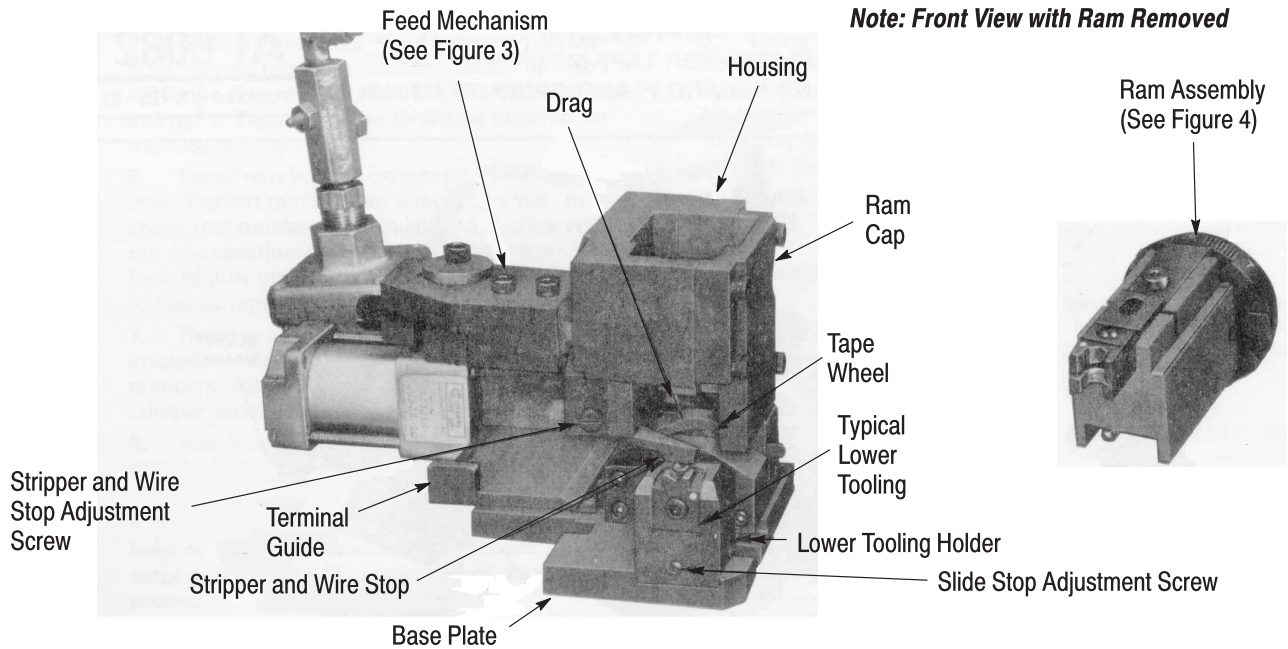


Figure 2

On the upward stroke of the ram, the terminated wire is released by the tooling for removal, and the feed air cylinder is again pressurized to advance the terminal strip one increment by the index pawl engaging in the index wheel. As the cylinder becomes extended, the next terminal is centered over the lower tooling to complete the cycle of operation.

and must bottom on the lower tooling. The insulation crimper is adjustable in relation to the wire crimper.

The applicator ram (Figure 4) supports the upper tooling which comprises the wire crimper and insulation crimper. The wire crimper is not adjustable

The top of the ram contains the ram post that connects to the machine ram post adapter. On the post is the wire disc (spacer). Beneath the wire disc is the insulation disc and laminated washer. The insulation disc contains eight lobes (1 through 8), each of a different height, and rotation of the disc aligns each lobe with the top of the insulation crimper. No. 1 position produces the greatest crimp height while No. 8 position produces the tightest crimp.

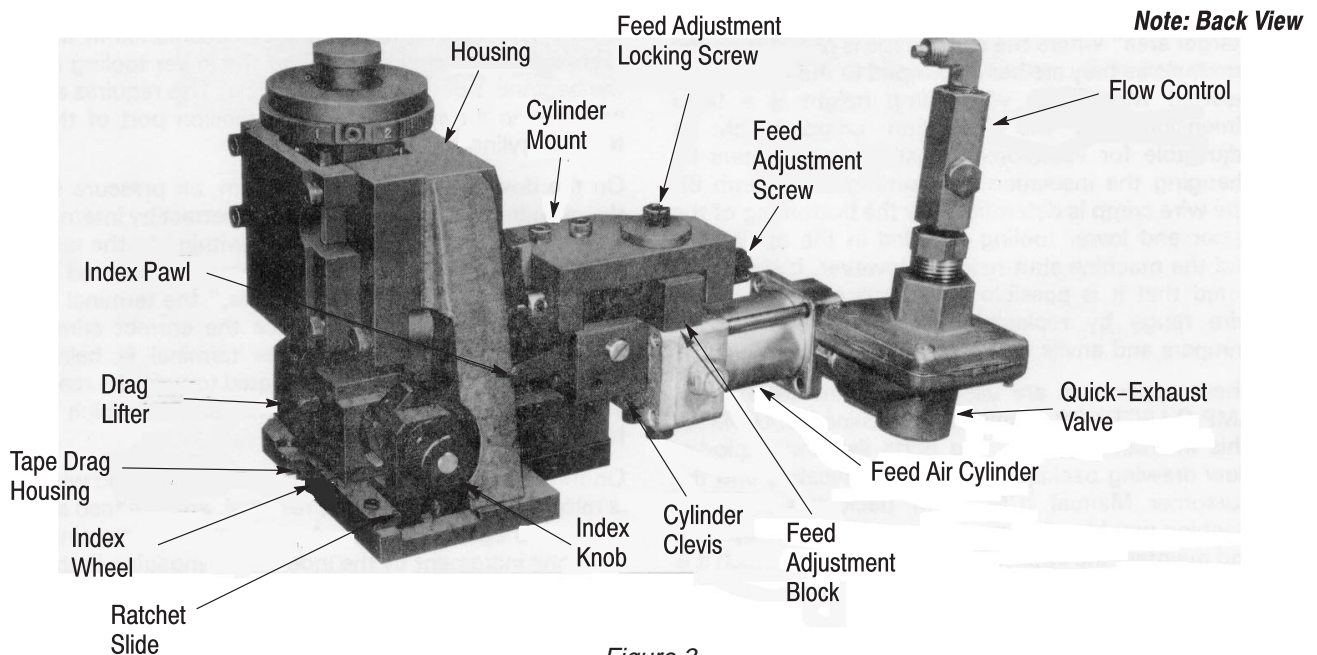


Figure 3

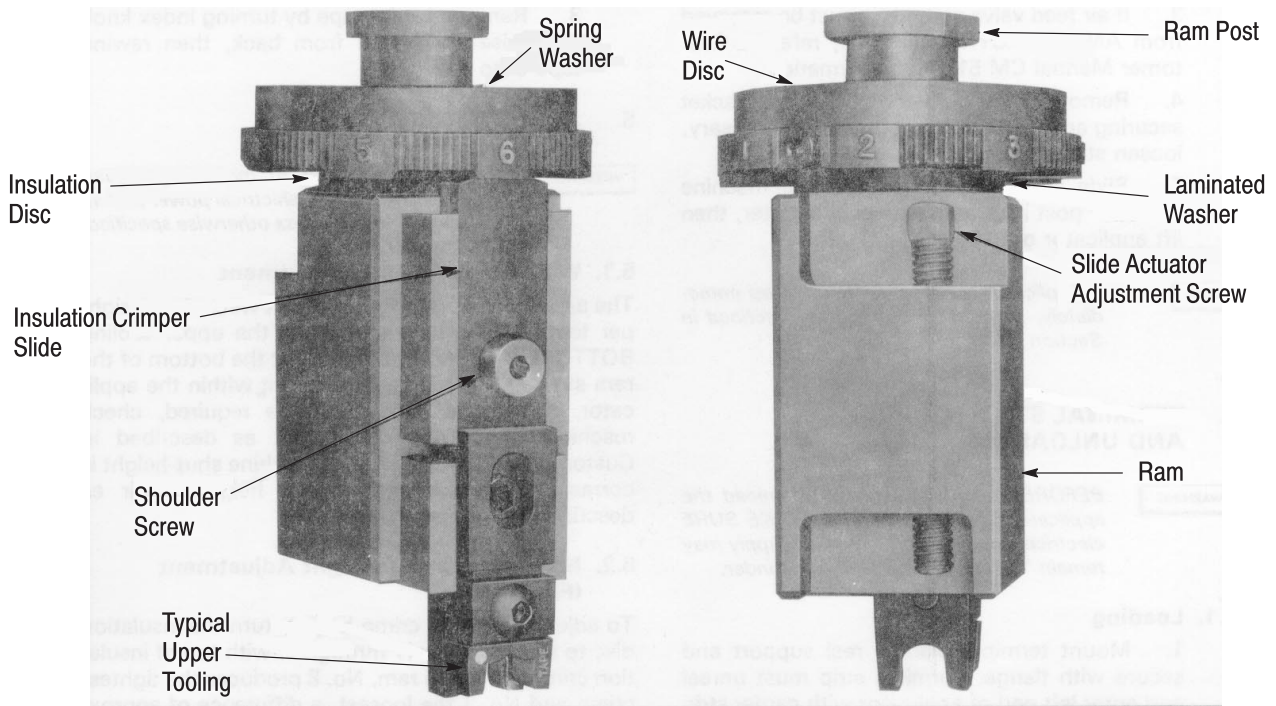



Figure 4

The laminated washer provides a means of fine adjustment of the wire crimp height for the machine tolerances within the applicator to produce correct crimp heights in machines with a pre-set shut height. At the back of the ram is the slide actuator adjustment screw which contacts the slide actuator to move the indexing mechanism back BEFORE the ram bottoms.

The applicator mounting surface is the base plate which supports the lower tooling, terminal guide, indexing mechanism, and applicator housing. The indexing mechanism consists of an indexing wheel, tape drag, and terminal stripper.

The air feed mechanism is attached to the left side of the housing. It comprises the feed air cylinder, cylinder mount, feed adjustment block and screw, cylinder clevis, and index pawl.

### 3. APPLICATOR INSTALLATION AND REMOVAL

**DANGER**  BEFORE attempting to install or remove the applicator from the machine, MAKE SURE electrical power and air supply are disconnected and/or turned off.

#### 3.1. Installation

1. Place the applicator on the machine base mount.

**NOTE** 

The machine must be equipped with a base mount for miniature quick-change applicators. The AMP-O-LECTRIC machine must have Machine Conversion Kit 690675-2 installed, which includes the base mount as described in Applicator Instructions 408-8022.

2. Insert the applicator ram post in the machine ram post adapter while sliding the applicator back into position. It may be necessary to loosen the stop on the mount during placement.
3. Secure the applicator with the hold-down bracket and two screws. Tighten the stop on the base mount, if loosened.
4. Install and adjust the air feed valve assembly as described in customer manual 409-5128.
5. Load the applicator with terminal strip as described in Section 4.
6. With the machine in the rest position and the electrical power off, turn the air supply on. The feed air cylinder must fully extend and position the lead terminal over anvils.
7. Make any adjustments necessary as described in Section 5.
8. Install the guard to enclose the applicator before operating the machine.

#### 3.2. Removal

1. Unload the terminal strip from the applicator as described in Section 4.



- Remove the guard.

**NOTE**

If the applicator is to be re-installed on the AMP-O-ELECTRIC machine, it is not necessary to remove the air feed valve assembly. Disconnect tubing from the on-off valve.

- If the air feed valve assembly must be removed from the AMP-O-ELECTRIC machine, refer to customer manual 409-5128 for information.
- Remove the two screws and hold-down bracket securing the applicator to the base mount. If necessary, loosen the stop on the left side.
- Slide the applicator toward the front of the machine until the ram post is clear of the ram post adaptor, then lift the applicator out.

**NOTE**

If the applicator is not to be re-installed immediately, prepare for storage as described in Section 8.

#### 4. TERMINAL STRIP LOADING AND UNLOADING

**DANGER**

BEFORE attempting to load or unload the applicator with terminal strip, MAKE SURE the electrical power is off. The air supply may remain on to extend the feed air cylinder.

##### 4.1. Loading Product

- Mount the terminal reel on the reel support and secure with flange. The terminal strip must unreel and enter the left end of the applicator with the carrier strip to the back and the terminal barrel facing up.
- Make sure the machine ram is fully raised. If necessary, hand-cycle the machine as described in customer manual 409-5128.
- Feed the terminal strip into the applicator, passing over the terminal guide and under the tape drag.
- When feed holes in the tape engage with teeth on the tape wheel, turn the index knob on the back of the applicator until the FIRST terminal to be terminated is one increment from the "target area."
- Turn the air supply on to extend the feed air cylinder and position the lead terminal in the "target area."
- Check the position of the lead terminal over the lower tooling. If not centered or not properly located front-to-back, refer to Section 5 for adjustments.

7. Run several test cycles under power to assure that the applicator is operating properly and that it is producing the correct crimp height as specified on the instruction sheet (408-XXXX) supplied with the die set.

8. Turn the electrical power and air supply on when you are ready for a production run.

#### 4.2. Unloading Product

- Make sure the electrical power and air supply are turned off.
- Cut the used portion of the carrier tape from the terminal tape.
- Remove the carrier tape by turning the indexing knob clockwise as viewed from the back, then rewind the tape onto the reel.

#### 5. ADJUSTMENTS

**DANGER**

Before attempting to make any adjustments, MAKE SURE electrical power and air supply are turned off and disconnected, unless otherwise specified.

##### 5.1. Wire Crimp Height Adjustment

The applicator produces the correct wire crimp height per terminal size AND wire size when the upper tooling BOTTOMS on the lower tooling at the bottom of the ram stroke. There is no adjustment within the applicator, but should adjustment be required, check the machine for correct shut-height as described in customer manual 409-5128. If the machine shut-height is correct, make applicator crimp height repair as described in Section 6.

##### 5.2. Insulation Crimp Height Adjustment (Figure 4)

To adjust the insulation crimp height, turn the insulation disc to align the number (1 through 8) with the top of the insulation crimper slide on the ram.

**NOTE**

No. 8 position produces the tightest crimp. No. 1 position produces the loosest crimp. There is a difference of approximately .070 inches between the positions.

To find the desired crimp height, start with No. 1 position and make test crimps, increasing one increment at a time until the proper crimp height is obtained.

##### 5.3. Feed Mechanism Adjustment (Figure 5)

Centering the terminals over the lower tooling (anvil) is controlled by the advancement of the index pawl when the feed air cylinder is fully extended by air pressure at the end of the machine cycle. When necessary, adjust the mechanism as follows:

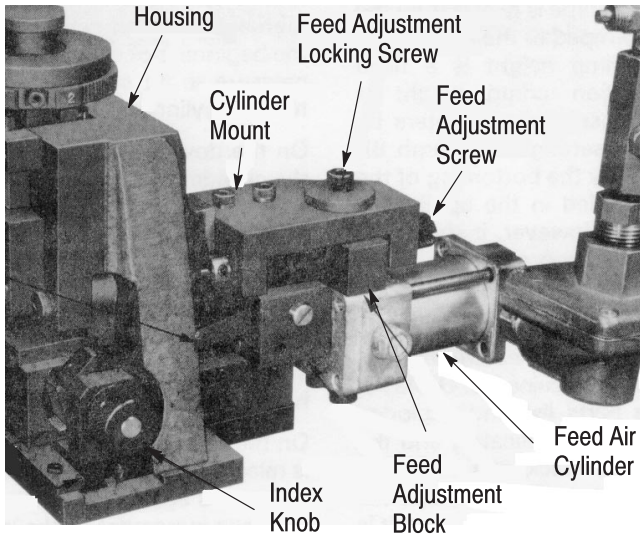


Figure 5

1. With the machine in the standby condition, turn on the air supply to position a terminal over the lower tooling.
2. Make sure the index wheel is in contact with the feed pawl by turning the index knob clockwise as viewed from the back of the applicator.
3. Determine the direction of adjustment required by checking the position of the terminal over the lower tooling.
4. Loosen the feed adjustment locking screw.
5. Turn the feed adjustment screw as required to advance or retract the feed pawl.



*If retracting the feed pawl, turn the index knob to keep the wheel in contact with the feed pawl.*

6. After completing the adjustment, tighten the feed adjustment locking screw.
7. Turn the air supply on and turn it off several times, to advance terminals over the lower tooling while checking terminal position. Repeat this procedure, if necessary.

**5.4. Ratchet Slide Adjustment**

The ratchet slide controls the front-to-back position of the terminals over the lower tooling when the machine is at the standby condition. The slide is spring-loaded to the front against the slide stop adjustment screw. On the downward stroke of the ram, the slide actuator adjustment screw in the ram contacts the slide actuator and moves the slide back BEFORE the upper tooling bottoms on the lower

tooling. This pulls the tape from the terminal being crimped and being retained by the terminal stripper.

To adjust, proceed as follows:

1. Make sure the machine is in the standby condition and that a terminal is centered over the lower tooling.
2. Determine the direction of the adjustment required (front-to-back) to properly position the terminal over the lower tooling.
3. Turn the slide stop adjustment screw (Figure 6) in the direction required to move the terminal front or back.
4. If necessary, adjust the terminal stripper and wire stop as described in Paragraph 5.5 before continuing.
5. Hand-cycle the terminating machine as described in customer manual 409-5128, until the upper tooling bottoms on the lower tooling.
6. Check the actuation of the slide assembly toward the back. There should be a minimum of .020 in. additional travel remaining after the ram has fully bottomed.
7. To increase or decrease the slide assembly travel, turn the slide actuator adjustment screw (Figure 4) in the back of the ram post as required.
8. After completing the adjustment, return the machine to the standby condition. Perform several test cycles to assure proper adjustment.

**5.5. Stripper and Wire Stop Adjustment (Figure 6)**

The position of the stripper and wire stop determines the insertion depth of wires into terminals, and prevents pull-back of the terminals when the slide assembly is actuated into the rear.

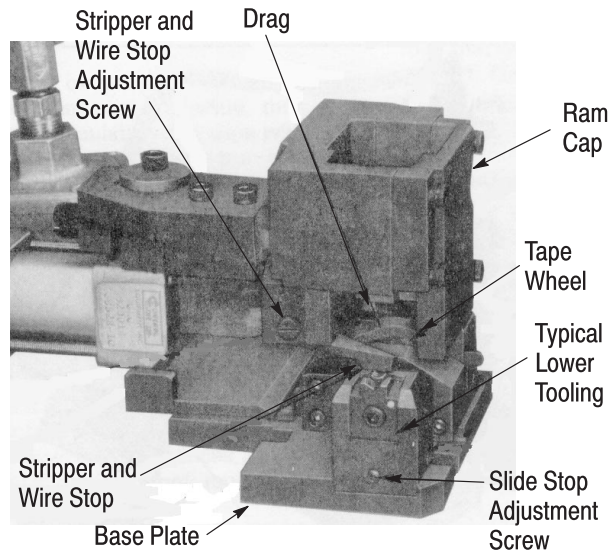


Figure 6

When necessary, adjust as follows:

1. Make sure the slide assembly is properly adjusted as described in Paragraph 5.4.
2. Determine the direction of adjustment required.
3. Turn the stripper and wire stop adjustment screw to move the wire stop front or back.
4. Perform several test cycles to assure proper adjustment.

**6. REPAIR AND REPLACEMENT**

The following paragraphs cover repair or replacement of parts in the applicator. With the exception of tooling, refer to the parts list and exploded view drawing supplied with the applicator for parts identification and part numbers.



*BEFORE attempting to make repairs or replace parts, remove the applicator from the machine as described in Section 3. AFTER making repairs, or replacing parts, BE SURE all adjustments are correct as described in Section 5.*

**6.1. Tooling (Die Set) Replacement**

When it is necessary to replace the tooling (die set), refer to the instruction sheet shipped with the die set for procedures and crimp height information.

**6.2. Crimp Height Repair**

Under the insulation disc is a laminated washer which may break or compress, causing the applicator to produce terminations with a different crimp height than specified. To correct this problem, proceed as follows:

1. Subtract the specified nominal crimp height from the average crimp height the applicator is producing. This dimension will be the thickness of the washer(s) (No. 690125-1) to be added to the insulation disc.



*Washer No. 690125-1 is a peel type laminated washer consisting of five layers, each layer being .002 inch thick.*

2. Remove the ram from the applicator housing by pulling the ram upward.
3. Loosen the setscrew in the side of the ram that secures the ram post, then turn the ram upside-down and secure the ram in a vise.
4. Unscrew the ram from the ram post, leaving the insulation disc, the wire disc, and the spring washer on the ram post.



*If the insulation disc is removed from the ram post, a detent ball and spring will pop out and MAY become lost.*

5. Measure the thickness of the laminated washer after removal from the ram post, using a micrometer. ADD this dimension to the thickness determined in Step 1. The total is the thickness required for the new washer.
6. Install the new washer on the ram post; then install the ram. Tighten the ram on the ram post until the ram is snug., then check that the numbers on the insulation disc align with the top of the insulation crimper slide. If not, turn the ram back slightly until they DO align; then tighten the setscrew and secure the ram post.
7. Remove the ram assembly from the vise; then turn the insulation disc to other positions to check the numbers for centering on top of the insulation crimper slide.
8. Install the ram assembly in the applicator housing.
9. Install the applicator in the machine.
10. Make some test crimps under power and measure the crimp heights of the terminations. If the crimp heights are within specified tolerances, the applicator may be placed in service. If not, repeat this procedure.

**7. CLEANING AND LUBRICATION**

For optimum performance and minimum downtime, the applicator should be cleaned and lubricated after each eight hours of operation, and each time the applicator is removed from the machine to be placed in storage.

**7.1. Cleaning**

1. Remove the applicator from the machine as described in Section 3.
2. Remove the ram assembly from the applicator housing by pulling the ram upward.



*Compressed air used for cleaning MUST be reduced to LESS than 30 psi, and effective chip-guarding and personal equipment (including eye protection) MUST BE worn.*

3. Using a clean cloth (Or an appropriate-type air hose), remove all evidence of dirt and other foreign matter. If desired the entire applicator may be immersed in a suitable, commercial solvent (one that will not affect paint or plastic) to flush out dirt, chips, etc.
4. Dry with an air hose.

5. Lubricate the applicator as described in Paragraph 7.2, before installing the ram assembly.

## 7.2. Lubrication

The applicator is to be lubricated at the following points using a good grade SAE No. 20 motor oil (non-detergent) or a light grease.



*Do NOT use an excessive amount of lubricant. Any excess MUST be removed. Avoid lubricants between discs on top of the ram assembly.*

1. Apply a few drops of oil to the pivot points of the feed finger.
2. Apply a few drops of oil to the pivot points of the slide actuator.
3. Apply a few drops of oil to the index shaft and the index mechanism slide
4. Apply a thin film of grease to the four corners of the ram assembly or applicator housing for ram assembly.

5. Install the ram assembly in the applicator housing.

6. Remove excess grease and oil.

## 8. APPLICATOR STORAGE

1. Unload the terminal strip as described in Paragraph 4.2.
2. Remove the applicator from the machine as described in Section 3.
3. Clean and lubricate the applicator as described Section 7.
4. Place and store the applicator in a clean, dust-free area.

## 9. REVISION SUMMARY

Since the previous release, the Tyco Electronics logo was updated.