

Figure 1

1. INTRODUCTION

These Miniature Quick-Change Applicators, when installed in the appropriate "T" Terminator, apply Tab-Lok Terminals to pre-stripped wires. See Figure 1. Each applicator accepts the strip form of Tab-Lok terminals, which are identified on the applicator parts list and exploded view drawing for each applicator. The terminal number on the applicator's data plate is the terminal that was specified when the applicator was ordered.

This instruction sheet, the parts list and exploded view drawing packaged with the applicator, and the machine Customer Manuals (409-5207 or 409-5289) provide all the information required to operate and maintain the applicator and terminator. (Refer to Figure 1 for component parts of the applicator.)

2. APPLICATOR DESCRIPTION

Although these applicators accept only certain terminals, a valuable measure of application flexibility is provided by a wire crimp that can be easily adjusted

for as many as four different wire sizes, and an insulation crimp that can be adjusted to accept eight insulation diameters.

The main components of the applicator are identified in Figure 1. The ram assembly is shown in detail in Figure 2.

The terminal strip is fed into the applicator with the receptacle to the left and the open Tab-Lok wire barrel to the right, between the front (outer) and rear (inner) strip guides. It then passes under the pressure block and the stock drag, and the lead terminal is positioned ahead of the feed finger. The feed finger advances the terminal strip one terminal length during each terminating unit cycle. This is accomplished by mechanical action between the ram assembly's feed cam and the feed finger.

This applicator requires a post-feed cam which advances the lead terminal over the anvil on the downward stroke of the ram assembly, leaving the anvil clear when the terminator is at-rest.

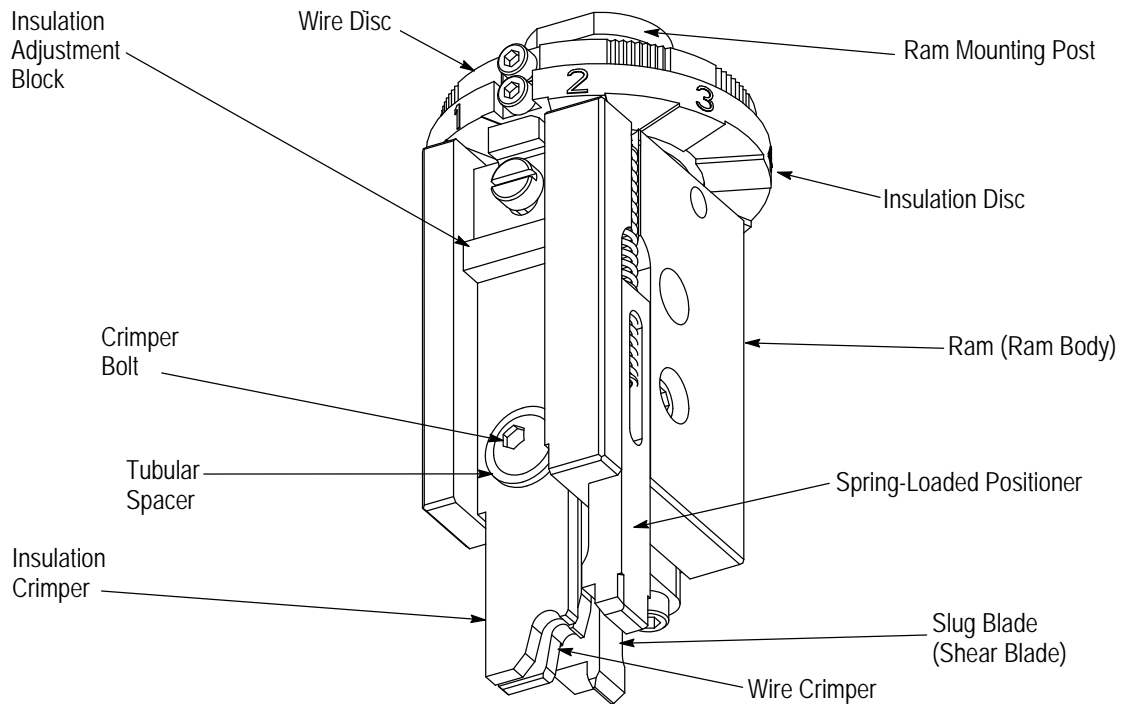


Figure 2

The ram post (ram mounting post) of the ram assembly engages the post adapter of the terminator ram, and it is the terminator ram that actuates the applicator. Just below the ram post are the wire disc and an insulation disc. The wire disc has as many as four pairs of pads, depending on the number of different wire size options provided for the terminals to be applied. See Figure 3.

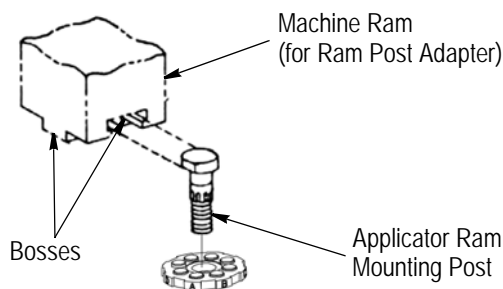


Figure 3

Each pair of pads has a different height. By rotating the disc, each pair of pads can be aligned with the two bosses on the terminator ram (post adapter) to vary the depth of the stroke of the wire crimper over the anvil.

The insulation disc contains eight pairs of pads of differing heights. When this disc is rotated, the pads align with the insulation adjustment block to vary the insulation crimp height in relation to the ram assembly and wire crimper stroke.

The wire crimper, held in a preset position by a screw in its upper end and the crimper bolt, is attached near the bottom of the ram assembly. See Figure 2. The insulation crimper is also held by the crimper bolt, but is free to move vertically so the insulation crimp may be varied in relation to the wire crimp by rotating the insulation disc. The slug blade (shear blade), which during crimping removes the connecting tab from between the lead and the second terminals, is attached to the bottom of the ram assembly.

The spring-loaded positioner, located on the ram assembly, acts as a terminal hold-down during the crimping and shearing process.

The applicator's mounting surface is its base plate, which supports the hinge bar and anvil. The hinge bar is secured by the hinge pin, and contains the anvil insert, the shear plates, the strip guides, and the pressure block. The pressure block holds the anvil end of the hinge bar off the base plate. The hinge bar is deflected against the spring tension of the pressure when the ram assembly bottoms during the crimping process. This action allows the locking tines to be clinched over the tab in place on the underside of the terminal.

3. APPLICATOR REMOVAL AND INSTALLATION



CAUTION

With the applicator installed, NEVER ATTEMPT to cycle the terminating machine under power with terminals properly loaded as described in Paragraph 4. Otherwise, damage may occur to the applicator.

This applicator was designed to be used with the Model "T" Terminator (Customer Manuals 409-5207 or 409-5289). Installation and removal of the applicator is accomplished as follows:

1. Turn off and disconnect power to the terminating machine.
2. Push in the release bar on the quick-change release plate. The locking latch will pivot downward.
3. Place the applicator on the quick-change base plate and slide it back until two notches engage the stops at the back of the plate. At the same time, guide the ram post into the terminator ram post adaptor.
4. Flip the locking latch up to hold the applicator in place.
5. To remove the applicator, cut the terminal strip one or two terminals from the entry to the strip guides. Then perform Step 2 and slide the applicator forward until it is clear of the terminator ram.



NOTE
If the applicator is NOT to be re-installed immediately, prepare it for storage as described in Paragraph 8.

4. APPLICATOR LOADING AND UNLOADING

4.1. Terminal Strip Loading



CAUTION
Before attempting to load terminal strip in an applicator, be CERTAIN the installed applicator is the correct one for the terminal to be applied. Compare the terminal number with the numbers listed on the applicator parts list.

1. Turn off and disconnect the power to the terminating unit.
2. Be certain the ram assembly is fully raised. If necessary, hand-cycle the terminating machine to obtain this condition. Refer to Customer Manuals 409-5207 or 409-5289.
3. Remove the length of terminal strip left in the applicator by grasping the terminal over the anvil with needle-nosed pliers and pulling the strip straight out the front of the applicator.
4. With a reel of terminals installed on the reel support, feed the terminal strip into the applicator between the two strip guides.



CAUTION
Be CERTAIN the terminal strip enters the strip guides with the receptacle to the left and an open Tab-Lok wire barrel facing up and to the right.

5. Pull outward on the drag lever, and feed terminals under the pressure block and stock drag until the third terminal has passed under the feed finger.

6. Be certain the applicator is properly adjusted (as described in Paragraph 5) by performing several test cycles.

4.2. Terminal Strip Unloading

1. Cut the terminal strip near the entry to the strip guides.



NOTE
It is recommended that the applicator never be unloaded unnecessarily. A section of terminal strip should always be left in the unit. Since it is not necessary to remove the strip section for cleaning, lubrication, or repair, it normally will be removed only as a part of the loading procedure.

2. Pull outward on the drag lever, raise the feed finger, and advance the lead terminal to a position over the anvil.

5. ADJUSTMENTS

5.1. Wire Crimp Adjustment

1. Refer to the data plate and select the pad letter (A, B, C, D) for the AWG wire size to be used.
2. Rotate the applicator's wire disc (upper disc) to align the selected pad letter with bosses on the terminator ram post adapter. This should provide proper crimp height for that wire size.
3. After making Insulation crimp adjustment (described in Paragraph 5.2) perform several test cycles and inspect the terminals CLOSELY for the following:

- a. Evidence of rough or sharp edges around crimped barrels (flash), deformed crimps, bent terminals, or other defects caused by worn or broken tooling. If necessary, replace the tooling as described in Paragraph 6, then repeat this step.
- b. If the terminations appear normal, measure the crimp height of each termination (refer to Instruction Sheet 408-7424, packaged with the applicator).

The crimp height must agree with the measurement specified on the parts list for the particular wire size being used. Record and retain the crimp height dimensions for reference.

- c. If the wire crimp height is incorrect, remove the applicator and install an applicator that is known to produce terminations of correct crimp height. Make several test cycles and repeat Step b. If the crimp height is still incorrect for this applicator, the problem is in the terminator shut-height, and corrective information may be obtained from the appropriate terminator manual.

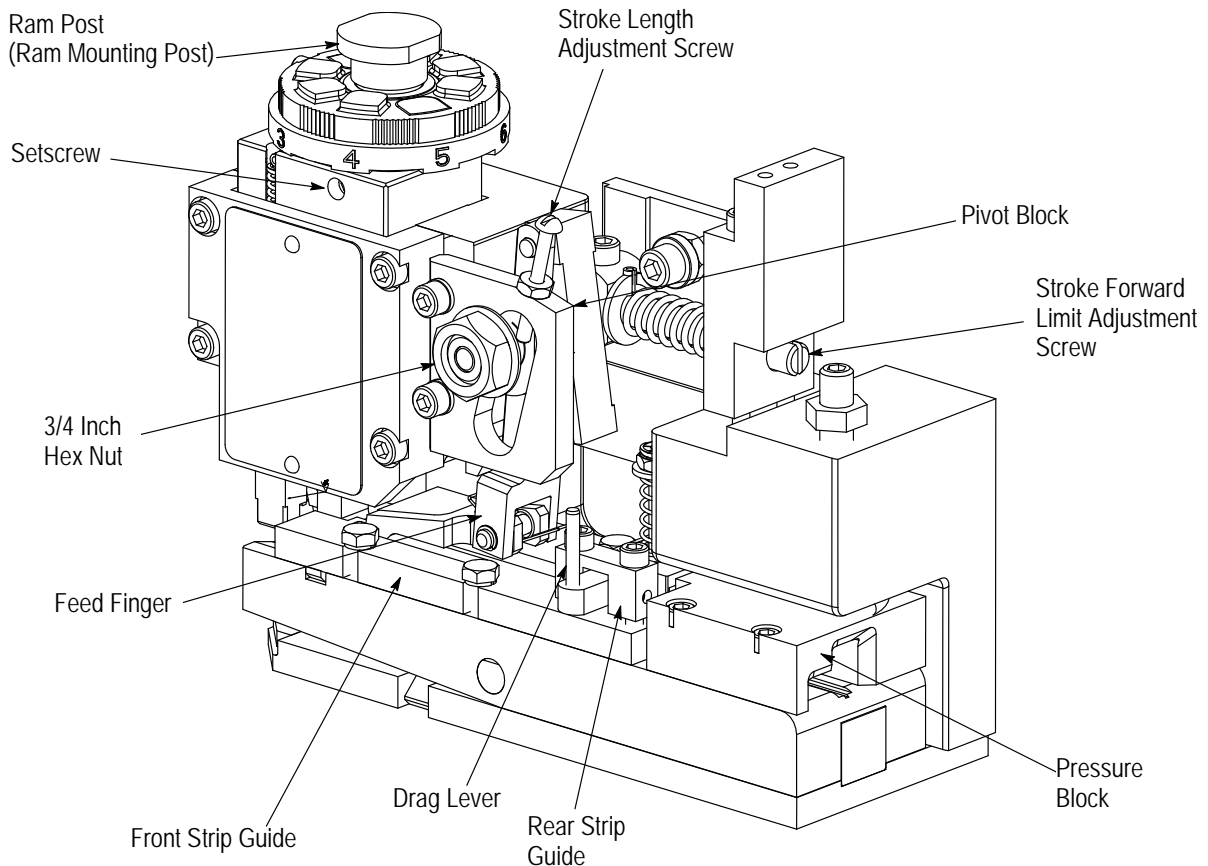


Figure 4

If the crimp height is correct, the problem is in the original applicator, and corrective measures are presented in Paragraph 6.5, Crimp Height Repair.

4. During extensive operation, periodically repeat Step 3 to ensure that the applicator is producing correct terminations.

5.2. Insulation Crimp Adjustment

To adjust the insulation crimp height, rotate the insulation disc (lower disc) to align the number (1 through 8) with the top of the insulation block on the ram assembly.

i **NOTE**
 No. 8 makes the tightest crimp and No. 1 makes the loosest crimp -- a difference of approximately 1.78 mm [.070 in.], providing a wide variation.

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

5.3. Terminal Strip Feed Adjustment

1. With the terminal strip properly loaded in the applicator as described in Paragraph 4.1, check the

position of the lead terminal in relation to the slug blade by actuating the applicator to advance the feed finger to the forward limit of the stroke. The blade must slug out the connecting tab between the lead and second terminals -- *without* deforming either terminal.

2. If the forward limit of the feed finger stroke is correct, proceed to Step 5, if not, continue with Step 3.

3. Loosen the screw on top of the pivot block. Turn stroke forward limit adjustment screw clockwise to shorten the forward limit, or counterclockwise to lengthen the forward limit.

4. Tighten the screw on top of the pivot block.

5. If necessary, repeat Step 1 and Step 2. When the adjustment is correct, proceed to Step 6.

6. Observe the movement of the feed finger as the terminator is hand-cycled several times. It should have sufficient -- but not excessive -- over travel on the backstroke to pickup the next terminal.

i **NOTE**
 If the feed stroke length is satisfactory, proceed with Step 11. If the feed stroke length is unsatisfactory, continue with Step 7

7. Slightly loosen the 3/4 inch hex nut on the side of the applicator to allow movement of the pivot shaft (Figure 4).

8. Loosen the locknut on the stroke length adjustment screw, and turn the screw “in” to shorten the stroke; or “out” to lengthen the stroke. Tighten the locknut to secure the screw.

9. Be certain the pivot shaft bushing is up against the stroke length adjustment screw, then tighten the 3/4 inch hex nut. Repeat Step 6 to check for proper stroke length.

10. Repeat Step 7, Step 8, and Step 9 until the proper stroke length is obtained. Recheck Step 1 (forward limit) before proceeding to Step 11.

11. Hand-cycle the terminator several times and check the lateral (side-to-side) centering of the lead terminal on the anvil. The lances on the bottom of the terminal must be centered on the anvil. If the lances are centered the adjustments are complete. If the lances are not centered, perform Step 12.

12. Make lateral adjustment at strip guides.

- Loosen the screws securing the strip guides.
- Move both guides in the desired direction.
- Tighten the screws securing the strip guides.
- Check to be sure the guides are parallel and that the terminal strip can move freely without excessive side clearance.
- Recheck the lateral centering (Step 11).

5.4. Stock Drag Adjustment



NOTE

The stock drag must be adjusted to only enough pressure so the terminal strip will stop at the end of the feed finger stroke.

- Turn the stock drag adjustment nut (see Figure 4) down to increase the drag or up to decrease the drag.
- Cycle the terminator to be sure the drag is properly adjusted.

6. REPAIR AND REPLACEMENT OF COMPONENTS

The following procedures cover those applicator parts which most often require repair or replacement due to wear. Remove the applicator from the terminator before performing maintenance work.



DANGER

Be SURE all power to the terminator is turned off and disconnected prior to removing the applicator from the terminator. The terminator ram should be in the raised position.



NOTE

When moving or replacing parts, wipe the parts individually with a clean, dry, cloth as they are removed.

Then, when replacing parts, wipe the mating surfaces of all parts with your fingers to be sure all lint and other foreign matter are removed.

6.1. Anvil Replacement

1. Turn the applicator on its side, remove two screws that secure the anvil mounting plate to the bottom of the base plate, and remove the anvil mounting plate.

2. Remove the anvil by sliding it down through the anvil insert.

3. Install new anvil by using the reversed procedure.



NOTE

The beveled edge on the tip of the anvil assists in the locking of the tab during crimping and must be toward the front of the applicator when the anvil is installed.

6.2. Anvil Insert and Front Shear Plate Replacement

1. Remove the anvil as described in Step 1 and Step 2 of Paragraph 6.1.

2. Loosen the screw in the front of the hinge bar in front of the anvil (refer to Figure 1).

3. Lift the anvil insert and front shear plate up and out of the hinge bar.

4. Re-install parts using reversed procedure.



NOTE

The beveled edge on the tip of the anvil assists in the locking of the tab during crimping and must be toward the front of the applicator when the anvil is installed.

6.3. Rear Shear Plate Replacement

1. Remove the front strip guide by removing two screws securing it to the hinge bar. (Refer to Figure 1).



NOTE

The stock drag is attached to the front strip guide and removed with it.

2. Remove the rear strip guide by removing two screws securing it to the hinge bar.

3. Remove the shear plate from the hinge bar.

4. Install new rear shear plate using reversed procedure.

5. Re-adjust strip guides so terminal strip moves freely and the lead terminal is properly aligned with the anvil insert (see Paragraph 3.5, Step 10 and Step 11).

6.4. Insulation Crimper, Wire Crimper, and Slug Blade Replacement

1. Remove the ram assembly from the applicator by lifting upward.

2. Replace parts as follows:

- a. To replace the insulation crimper, remove the crimper bolt and tubular spacer and slide the insulation crimper out of the ram assembly.
- b. To replace wire crimper, remove the crimper bolt, tubular spacer, and insulation crimper. Then remove the screw in the top of the wire crimper and lift the wire crimper out. Note the orientation of parts for re-assembly.
- c. To replace the slug blade, remove two screws securing the slug blade to the bottom of the ram assembly.

3. Reverse the removal process to install new parts.



CAUTION

Be **CERTAIN** the parts are oriented properly as noted during removal. The wire crimper must be squarely seated against the stop at the top before the screw holding it to the ram assembly is tightened.



NOTE

When replacing the slug blade, slide it up against the wire crimper, then tighten two screws only enough to hold the blade in place. Install the ram assembly in the applicator and the applicator in the terminator. Hand-cycle the terminator through one complete cycle. Since the slug blade can move slightly as it engages the shear plates when the ram bottoms, the shear parts align themselves properly without being damaged because of hinge bar arc. Carefully remove the applicator from the terminator and the ram assembly from the applicator. Tighten the two screws holding the slug blade to the ram assembly.

6.5. Crimp Height Repair

Beneath the insulation disc is a laminated washer which may break or compress, causing the applicator to produce terminations with different crimp heights than specified. To correct this problem, perform the following steps:

1. Subtract the specified nominal crimp height from the average crimp height recorded and retained from Paragraph 5.1, Wire Crimp Height Adjustment. The difference of washer (s) No. 690125-1 to be added to the insulation disc.



NOTE

Washer 690125-1 is a peel-type, laminated washer consisting of five layers. Each layer is 0.05 mm [.002 in.] thick.

2. Remove the ram assembly from the applicator, and loosen the set screw in the side of the applicator ram that secures the ram post. It may be necessary to manually actuate the feed finger to release the ram.
3. Unscrew the ram from the ram post, leaving the wire disc and insulation disc in place. If necessary, the end of the ram post may be secured in a vise to free both hands for further turning of the ram.



CAUTION

Do **NOT** remove the wire disc or the insulation disc from the ram post. Detent balls will pop out and may become lost if discs are removed.

4. Place washer(s) of thickness determined in Step 1 on the ram post.

If the old washer is broken and must be replaced, measure the thickness of the broken washer with a micrometer. Add this measurement to the amount to be added (determined in Step 1) and select new washer(s) of this thickness. Place the new washers on the ram post.

5. Replace the ram on the ram post and tighten by hand until it is snug.

6. Check that the numbers on the on the wire disc and the letters on the insulation disc align properly over the insulation adjustment block. Discs are retained in position by ball detents. If necessary, turn the ram back slightly, until proper alignment is attained. Tighten the setscrew to secure the ram post.



NOTE

Rotate the wire and insulation discs to other positions. When the "click" of the detent ball is heard, check for the centering of the letter or number over the insulation adjustment blocks.

7. Re-install the ram assembly in the applicator.
8. Install the applicator in the terminator and make some test crimps.
9. Measure the crimp height of the test crimps and check the measurements against specified on the applicator parts list. If the crimp heights are within the specified tolerances, the applicator may be placed in service. If not, repeat this procedure, beginning with Step 1.

7. CLEANING AND LUBRICATION

For best performance and minimum downtime, applicator should be cleaned, inspected, and lubricated; refer to Instruction Sheet 408-8059 for daily and monthly cleaning.



NOTE

Lubricate Tab-Lok applicators every time applicator is removed from the machine, after four hours of continuous operation, or 10,000 crimp cycles.

8. APPLICATOR STORAGE

For proper applicator storage, refer to Instruction Sheet 408-8059.

9. REVISION SUMMARY

- Updated document to corporate requirements
- Deleted and added text in Sections 7 and 8