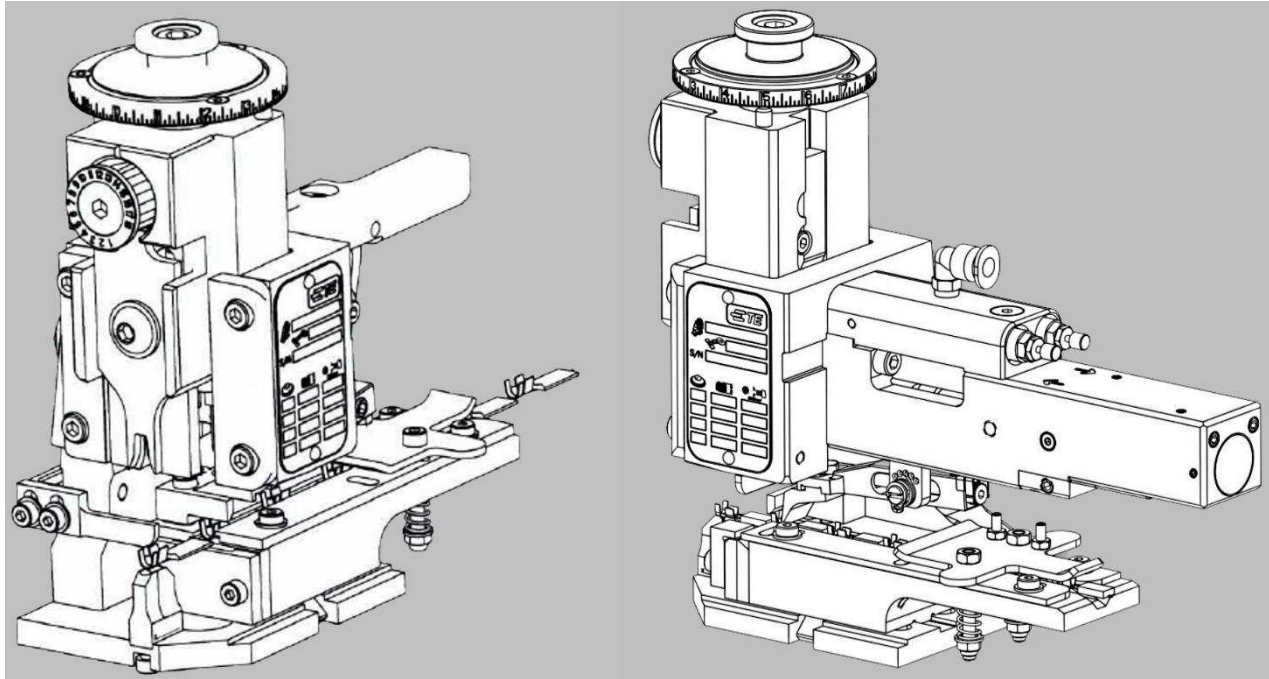


Figure 1: Ocean 2.0 end-feed applicators



1. INTRODUCTION

Ocean 2.0 end-feed applicators are available with a mechanical terminal feeder or a pneumatic terminal feeder assembly. Each applicator accepts the end-feed strip-form of terminals identified on the applicator drawing to apply to pre-stripped wires.



NOTE

Dimensions in this instruction sheet are in millimeters with [inches in brackets]. Figures are for reference only and are not drawn to scale.

This instruction sheet, along with the parts list, exploded-view drawing (packaged with applicator), and applicable terminating machine manual (Table 1), provide all the information required to operate and maintain the applicator and machine.

Table 1: Terminating machine manuals

Machine	Manual
Basic AMP-O-LECTRIC™	409-5128
Model T	409-5207 409-5289
Model G	409-5842
AMP 3K™ 1725950-[] AMP 5K™ 1725900-[]	409-10047
AMP 3K/40™ 2119683-[] AMP 5K/40™ 2119684-[]	409-10099



NOTE

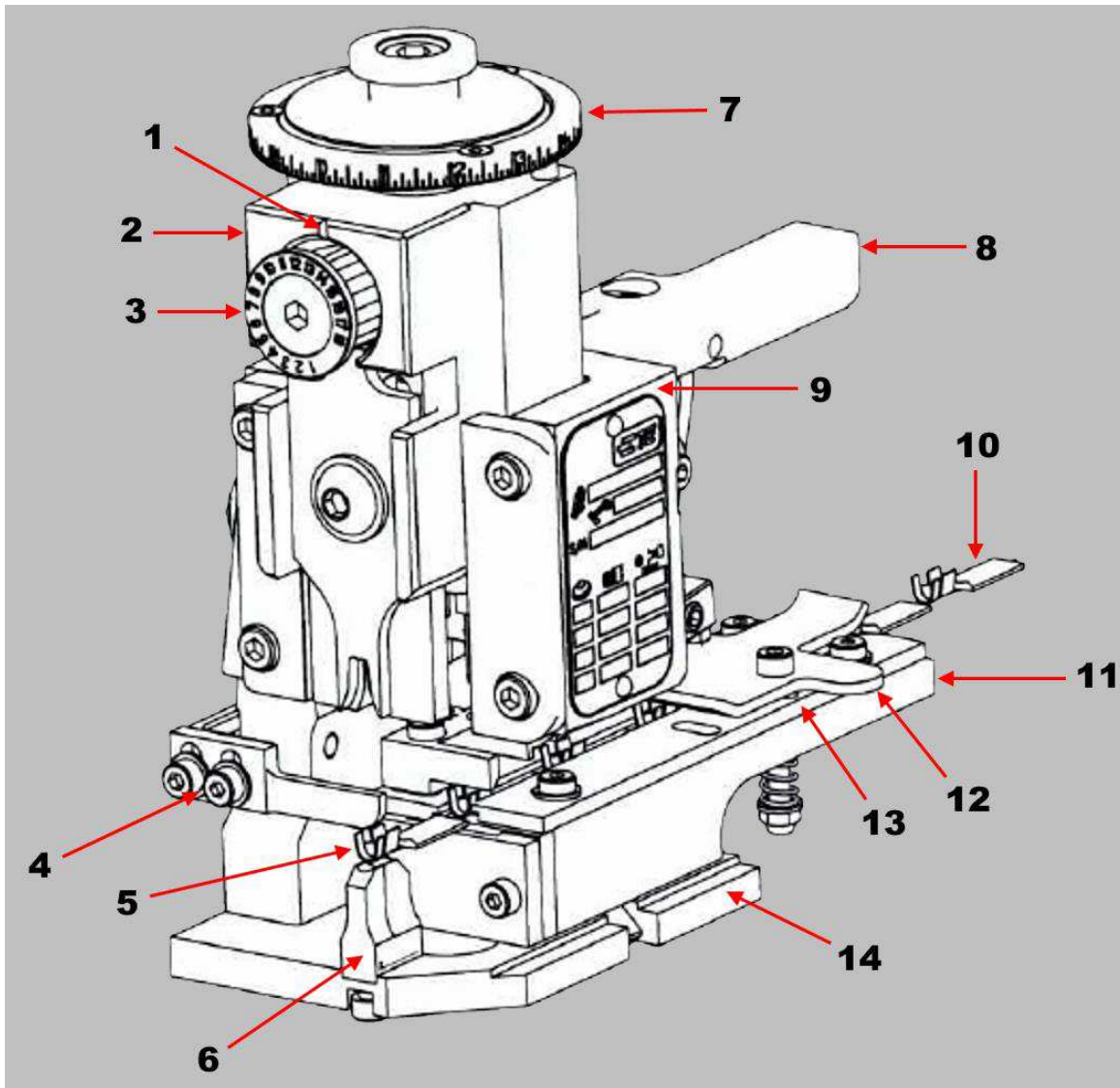
Refer to instruction sheet [408-35005](#) for translations of the safety warnings specified herein.

2. DESCRIPTION

Figure 2 shows the main components of the mechanical feed applicator. Figure 3 shows the main components of the air feed applicator.

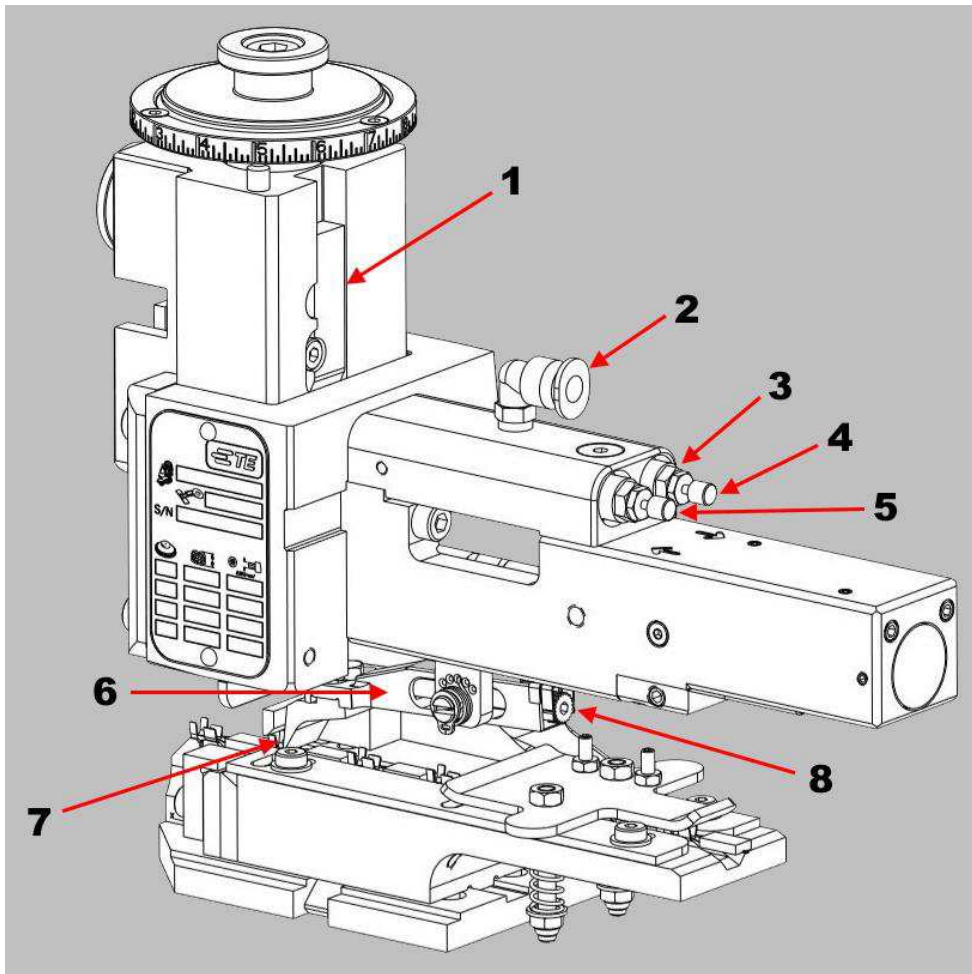
Each applicator is individually designed for specific terminals. The wire crimp height and insulation crimp height can be adjusted to accommodate different wire sizes and insulation ranges. The applicator is also designed to accept modular-feed packages.

Figure 2: Mechanical feed applicator



- | | | |
|--|--|------------------------------|
| 1 Indicator notch / cutout | 6 Anvil | 11 Strip guide plate |
| 2 Ram assembly | 7 Wire crimp disc | 12 Drag release lever |
| 3 Insulation crimp dial | 8 Terminal feeder assembly | 13 Strip guide |
| 4 Stripper | 9 Applicator housing | 14 Base plate |
| 5 Lead terminal (for reference) | 10 End-feed strip-form terminal strip | |

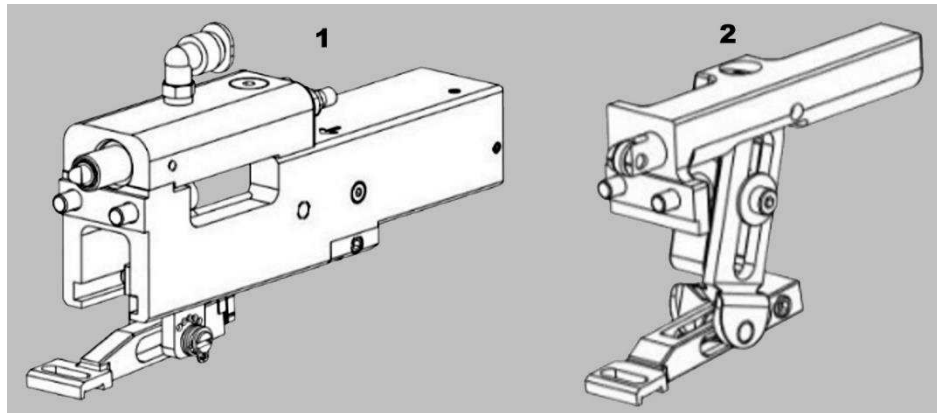
Figure 3: Air-feed applicator



- | | |
|--------------------------------|-------------------------------|
| 1 Air feed cam | 5 Extend speed control |
| 2 Air supply connection | 6 Feed arm |
| 3 Locking nut | 7 Feed pawl |
| 4 Retract speed control | 8 Mounting screws |

The applicator is also designed to accept modular feed assemblies (Figure 4).

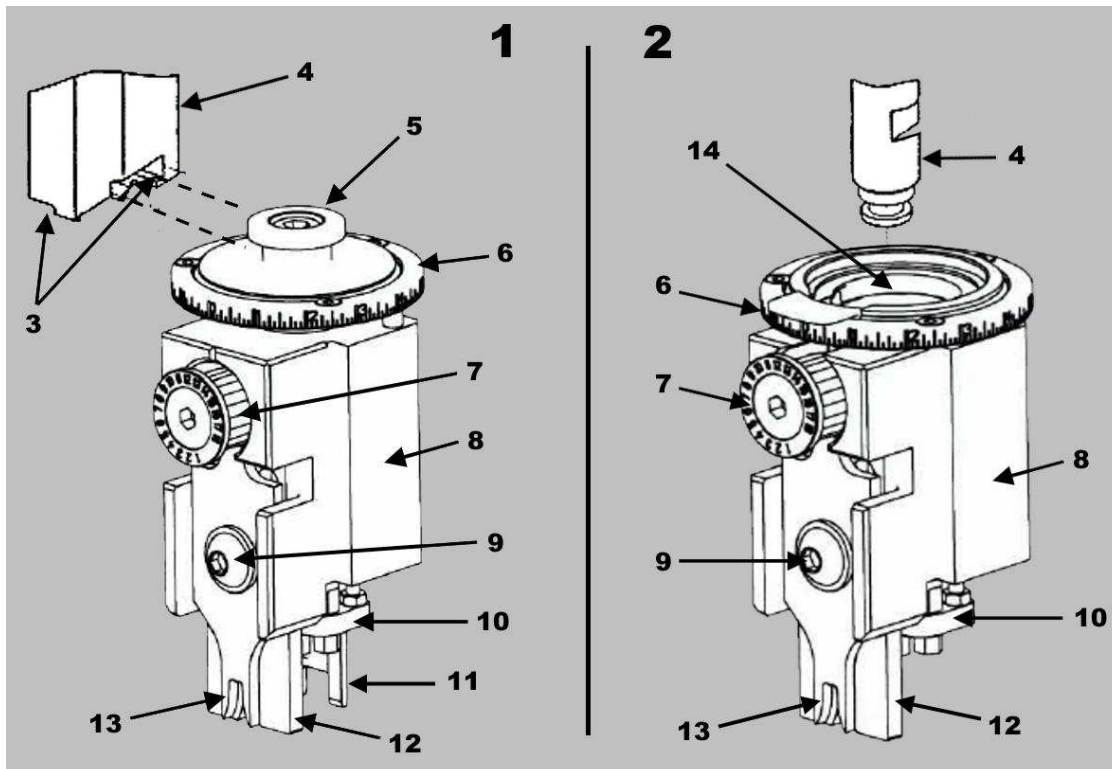
Figure 4: Feeder assemblies



- 1** Pneumatic terminal feeder assembly
- 2** Mechanical terminal feeder assembly

The Ocean applicator can be used in various machines, provided the machine has the proper stroke length and all the necessary equipment. Two basic applicator design styles (Atlantic and Pacific) are available to meet many of the terminator and leadmaker configurations worldwide (Figure 5). The applicator ram and base plate interfaces are different, but most of the Ocean applicator features and adjustments are the same.

Figure 5: Basic applicator design styles



- | | | |
|---|--------------------------------|------------------------------|
| 1 Atlantic | 6 Wire crimp disc | 11 Slug blade |
| 2 Pacific | 7 Insulation crimp dial | 12 Wire crimper |
| 3 Boss | 8 Applicator ram | 13 Insulation crimper |
| 4 Machine ram for ram post adapter | 9 Crimper bolt | 14 Ram clamp |
| 5 Ram post | 10 Terminal hold-down | |

The terminal strip must be fed into the applicator, with the wire barrels facing up and first into the applicator, between the strip guide plates. It passes under the stock drag, and the lead terminal is positioned over the anvil (for pre-feed applicators) or one terminal length from the anvil (for post-feed applicators). The feed pawl feeds one terminal during each cycle of the machine. The ram post (also referred to as the ram mounting post) engages the post adapter of the machine ram, which actuates the applicator.

The wire crimp disc is located just below the ram post interface. The wire crimp disc is designed with a spring-loaded adjustment mechanism for precise crimp height adjustment increments of 0.01 mm [.0004 in.] and a total adjustment range of 1.50 mm [.059 in.]. By rotating the wire crimp disc, the ram interface raises and lowers relative to the applicator housing. The indicator notch of the ram points to the numbers on the perimeter of the wire crimp disc, indicating a relative crimp height. For proper crimp height, the number on the wire crimp disc must correspond to the number on the applicator identification tag and drawing.

The wire and insulation crimpers are held in a pre-set position by the ram and the crimper bolt. The insulation crimper is free to move up and down so that the insulation crimp height can be adjusted by pulling the spring-loaded insulation crimp dial out slightly and rotating it to a different number.

The slug blade, which cuts the connection tab from the strip between the lead and second terminals, is also attached to the bottom of the ram. The spring-loaded terminal hold-down, located on the ram, holds the terminal in place during the crimping and slugging process.

The applicator mounting surface is the base plate. The anvil, strip guide plate, and applicator housing are mounted on the base plate. The strip guides, stock drag, front and rear shear plates, and strip hold-down plate are all mounted on the strip guide plate. The shear plates are spaced to allow the slug blade to pass between them, removing the connecting tab between the terminals.

2.1. Terminal lubricant

Some terminal strips require the use of a terminal lubricant to reduce tooling wear and damage to the plating on some terminals. Wick-type lubricators apply lubricant to the terminal strip as it feeds into the applicator. Ocean applicator lubricator assembly PN 2119955-2 is available.



Disconnect electrical power when performing maintenance or repair on this equipment.



NOTE

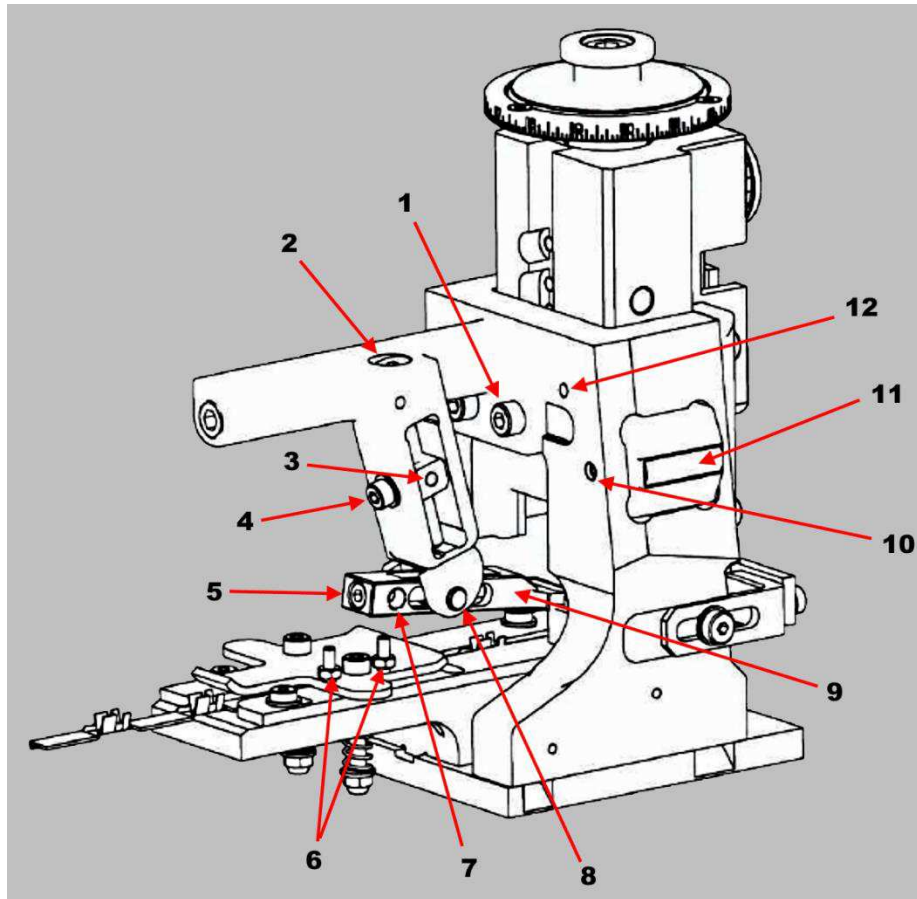
*The question of whether a lubricant is required depends on the final use of the crimped terminal. To determine whether your applications warrant the use of a terminal lubricant, contact your TE representative. (See section 6 **Error! Reference source not found.** for contact information.)*

If your application warrants the use of a terminal lubricant, use Stoner Terminal Lubricant E807 from Stoner, Inc. Call 800-227-5538 or visit Stoner's [Critical Cleaning](#) website.

2.2. Applicator with mechanical feed system

With this applicator (Figure 6), the terminals are fed by the action of the feed cam and a series of rods and levers that move the feed pawl.

Figure 6: Applicator with mechanical feed system

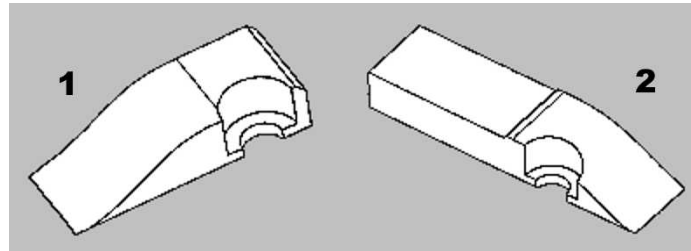


- | | |
|--|---|
| 1 Feed mounting screw (2 places) | 7 Fine feed adjustment lock screw (far side) |
| 2 Stroke length adjustment screw | 8 Feed pawl pin |
| 3 Stroke pivot | 9 Feed pawl holder |
| 4 Stroke length adjustment lock screw | 10 Applicator counter set screw |
| 5 Fine feed adjustment screw | 11 Applicator counter |
| 6 Stock drag adjustment nuts | 12 Spare feed cam storage location |

Two feed cams (Figure 7) can be used with the mechanical feed applicator.

- The *pre-feed* cam advances the lead terminal over the anvil on the upward stroke of the ram assembly so that a terminal is over the anvil when the machine is at rest. The pre-feed set up is typically used for side-feed bench applications.
- The *post-feed* cam advances the lead terminal over the anvil on the downward stroke of the ram assembly. The post-feed set up is typically used for leadmaker and end-feed bench applications.

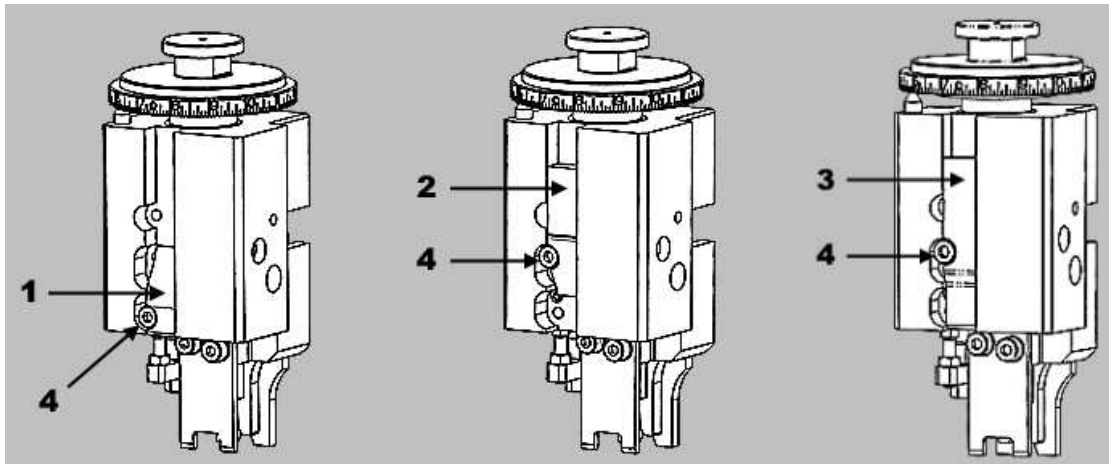
Figure 7: Mechanical feed cams



- 1** Pre-feed cam
- 2** Post-feed cam

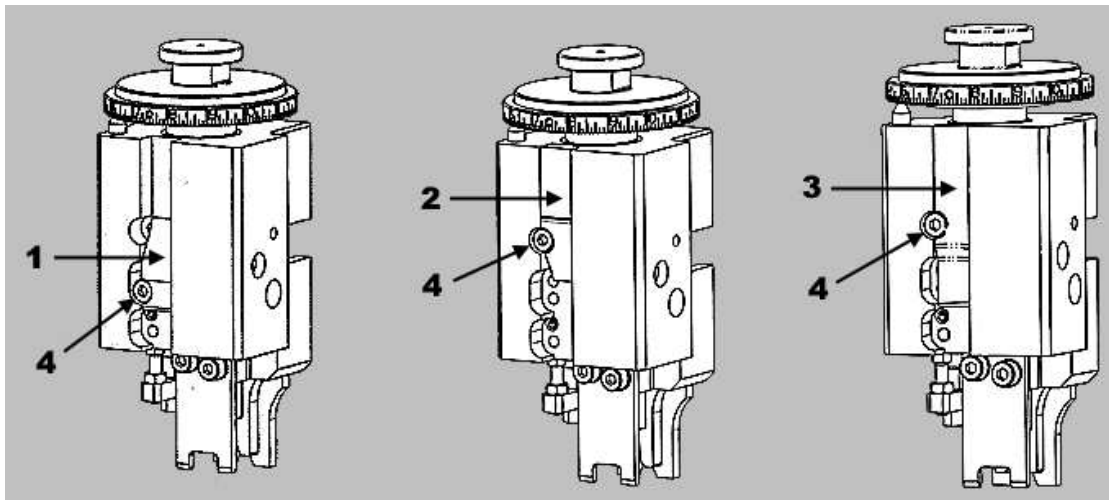
These feed cams can be mounted in two different mounting holes, depending on machine stroke length and feed type (Figure 8 and Figure 9). When not in use, the spare feed cam can be mounted to the applicator housing in the spare feed cam storage location (Figure 6).

Figure 8: Mounting a feed cam on 40-mm [1½-in.] stroke machine



- 1** Mechanical pre-feed cam
- 2** Mechanical post-feed cam
- 3** Air-feed pre- or post-feed cam
- 4** Mounting screw

Figure 9: Mounting a feed cam on 30-mm [1 $\frac{1}{8}$ -in.] stroke machine



- 1 Mechanical pre-feed cam
- 2 Mechanical post-feed cam
- 3 Air-feed pre- or post-feed cam
- 4 Mounting screw



NOTE

Pacific applicators can only be used with 30-mm stroke machines. They have only the 30-mm feed cam mounting positions on the applicator ram.



NOTE

The recommended setup for mechanical end-feed applications is post-feed. The applicator can be configured for pre-feed, but this causes problems with some applications. Feed issues or terminal jamming can occur in the mechanical pre-feed configuration.

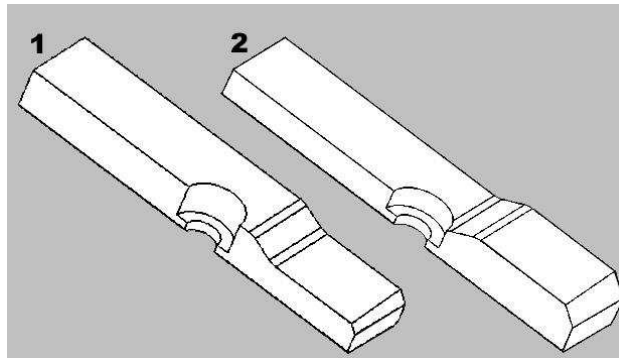
2.3. Applicator with air feed system

With an air feed applicator (Figure 3), the terminals are fed by the action of an air feed module using a constant air supply that moves the feed pawl. The speed control valves control the speed of the feed and retract strokes.

Two feed cams (Figure 10) can be used with the air feed applicator.

- The supplied *pre-feed* feed cam advances the lead terminal over the anvil on the upward stroke of the ram assembly, leaving a terminal over the anvil when the machine is at rest.
- An optional *post-feed* cam (part number 2391975-1) is available. It advances the lead terminal over the anvil on the downward stroke of the ram assembly, leaving the anvil clear when the machine is at rest.

Figure 10: Air feed cams



- 1** Pre-feed cam
- 2** Post-feed cam (optional)

These feed cams can be mounted in two different mounting holes, depending on machine stroke length and feed type (Figure 8 and Figure 9).

- The air supply connection (Figure 3) must be connected to an air supply line providing continuous pressure of 5.00 to 6.00 bars [72 to 87 psi] at the applicator.
- **No** oil lubrication of air is required for the Ocean air feed module after receiving and use within a production environment.
- The ram collar must be installed when changing crimp tooling to prevent the ram from becoming captured. If this occurs, the air feed assembly must be removed to release the applicator ram.



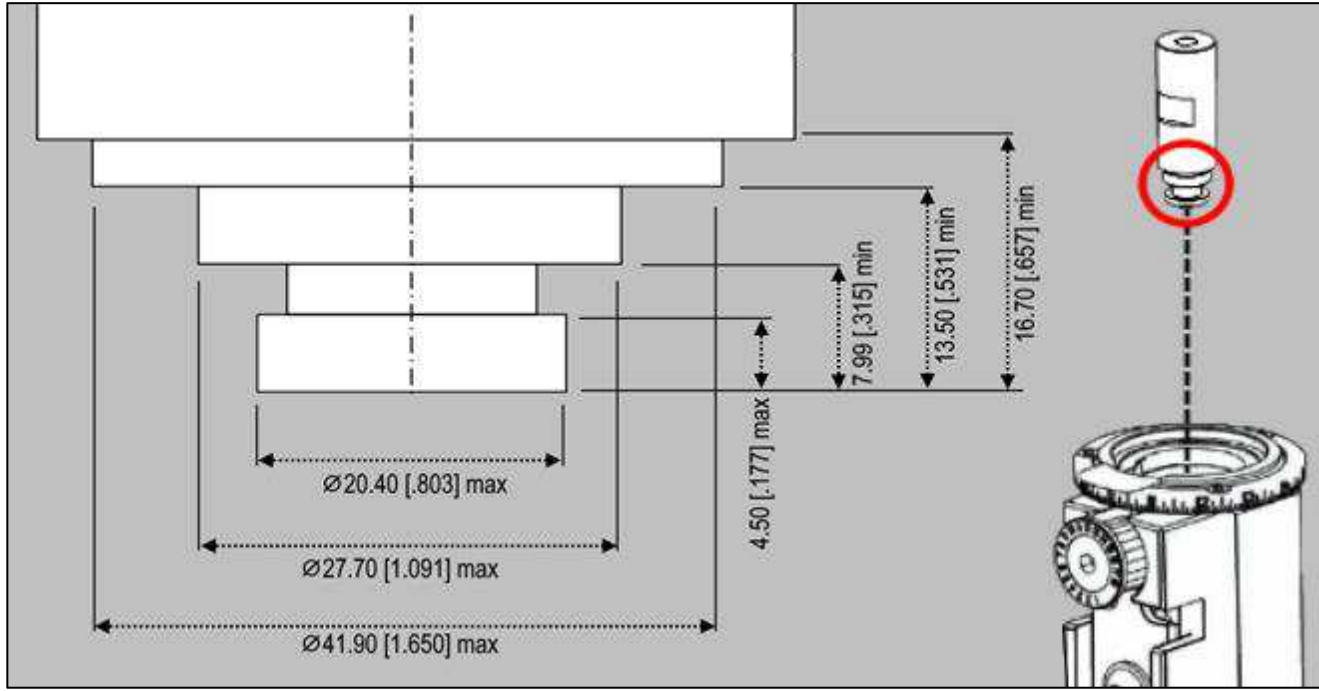
CAUTION

The air feed housing has a vertical etched line that serves as a visual aid to ensure that the piston assembly is located within the limits of the air cylinder position (see Figure 3). The feed pawl holder must be positioned to the right of the line. Incorrect positioning of the feed pawl can cause the air feed module to fail prematurely.

2.4. Applicator with Pacific head

The Pacific applicator works only if the machine's ram falls within the envelope shown in Figure 11. (Dimensions are in millimeters, with inches in brackets.)

Figure 11: Ram dimensions for use with Pacific applicator



3. INSTALLING AND REMOVING THE APPLICATOR



Disconnect electrical power when performing maintenance or repair on this equipment.



Disconnect air supply when performing maintenance or repair on this equipment.



DANGER

To avoid personal injury, use the applicator **only** in an appropriate terminating machine. Do not connect the pressurized air supply until after the applicator is properly installed.



CAUTION

With the applicator in the machine, **do not** attempt to cycle the machine under power unless the terminals have been properly loaded, as described in section 4. Doing so can damage the tooling.



NOTE

Remove the ram transportation collar after installing the applicator on a machine. Do not reinstall the ram transportation collar until you are ready to remove the applicator from the machine.

3.1. AMP-O-LECTRIC and Model K machines (with mini-applicator conversion)

A. Installation

This machine must be equipped with machine conversion kit PN 690675-2 to adapt it for use with miniature applicators. The kit includes applicator instruction sheet [408-8022](#), which explains how to install and remove an applicator with a mechanical feed.

B. Removal

1. Turn off the machine.
2. Disconnect the power cord.
3. Unload the applicator as described in section 4.
4. Remove the hold-down bracket and movable stop.
5. Slide the applicator away from the stop on the base mount until the ram post is clear of the machine ram.

3.2. Model T terminating unit (Atlantic only)

A. Installation

1. Turn off the machine.
2. Disconnect the power cord.
3. *Push in* the release bar on the quick-change base plate. The locking latch pivots *downward*.
4. Place the applicator on the quick-change base plate.
5. Slide it back until two notches engage the stops at the back of the plate, while guiding the ram post into the ram post adapter.
6. Flip the locking latch up to secure the applicator in place.

B. Removal

1. Turn off the machine.
2. Disconnect the power cord.
3. Cut the terminal strip one or two terminals from the end of the applicator.
4. *Push in* the release bar on the quick-change base plate. The locking latch pivots *downward*.
5. Slide the applicator forward until it is clear of the ram post adapter.

3.3. Other terminating machines

Refer to the appropriate machine manual (Table 1) for installation and removal procedures for the following machines:

- Basic AMP-O-LECTRIC
- Model G
- AMP 3K
- AMP 5K
- AMP 3K/40
- AMP 5K/40

For any other terminating machines, refer to the customer documentation supplied with the machine.



NOTE

When switching between the bench terminator and an automatic leadmaker, you might have to adjust the wire stripper up or down.

4. LOADING AND UNLOADING THE TERMINAL STRIP

4.1. Loading the terminal strip

1. Make sure that the installed applicator is the right one for the terminal to be applied. Compare the terminal part number on the reel with the numbers listed on the applicator parts list.
2. Turn off the machine.
3. Disconnect the power cord.
4. Make sure that the ram assembly is all the way up. If necessary, hand-cycle the machine to raise the ram. Refer to the machine customer manual.
5. Remove the applicator guard assembly.
6. Raise the stock drag by turning the drag release lever upward.
7. Remove a length of the terminal strip left in the applicator by grasping the terminals at the strip guide entry, raising the feed pawl, and pulling the strip straight out of the applicator.
8. With the reel of terminals installed on the reel support, feed the terminal strip into the applicator between the strip guides with the terminal wire barrel entering first and the open side of the wire barrel facing up.
9. Raise the feed pawl and continue to feed the terminal strip until the lead terminal is over the anvil and the feed pawl engages the terminal in the proper position.
10. If terminals are post-feed, lift the feed pawl and pull the strip back one terminal length. The lead terminal is moved over the anvil on the downward stroke of the ram assembly. Make sure that the tip of the feed pawl is in the feed hole of the carrier strip.

**NOTE**

Some carrier strips have additional holes that are not used for feed purposes.

11. Hand-cycle the machine several times to make sure the applicator is properly adjusted as described in section 5.
12. Reinstall the applicator guard assembly.

4.2. Unloading the terminal strip

Remove the strip section only as part of the loading procedure. It is not necessary to remove it for cleaning, lubrication, or repair.

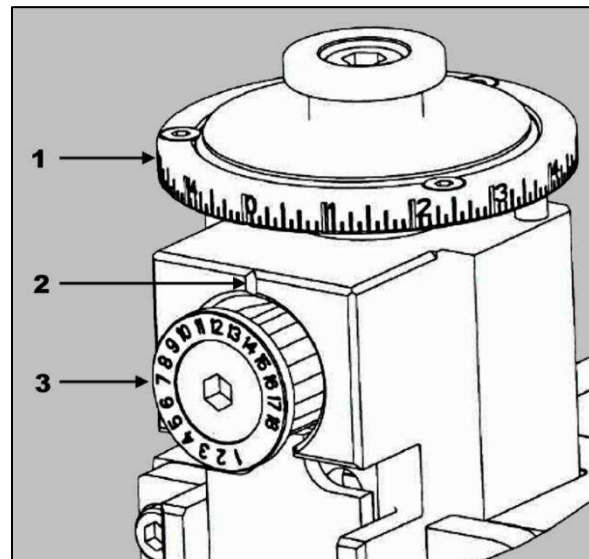
1. Cut the terminal strip one or two terminals from the end of the applicator.
2. If terminals are post-feed, turn the drag release lever upward to raise the stock drag, lift the feed pawl, and move the lead terminal over the anvil.

5. ADJUSTMENTS

5.1. Adjusting the wire crimp height

1. Select an increment number from the data plate for the wire size to be used.
 - Values range from 0 (the largest crimp height) to 150 (the smallest).
 - Each increment represents a change in crimp height of 0.01 mm [.0004 in.].
2. Adjust the crimp height by turning the wire crimp height adjustment disc until the required increment number lines up with the indicator notch on the front of the ram (Figure 12).
 - Turn the disc clockwise to decrease the crimp height.
 - Turn the disc counter-clockwise to increase the crimp height.

Figure 12: Wire crimp height adjustment disc



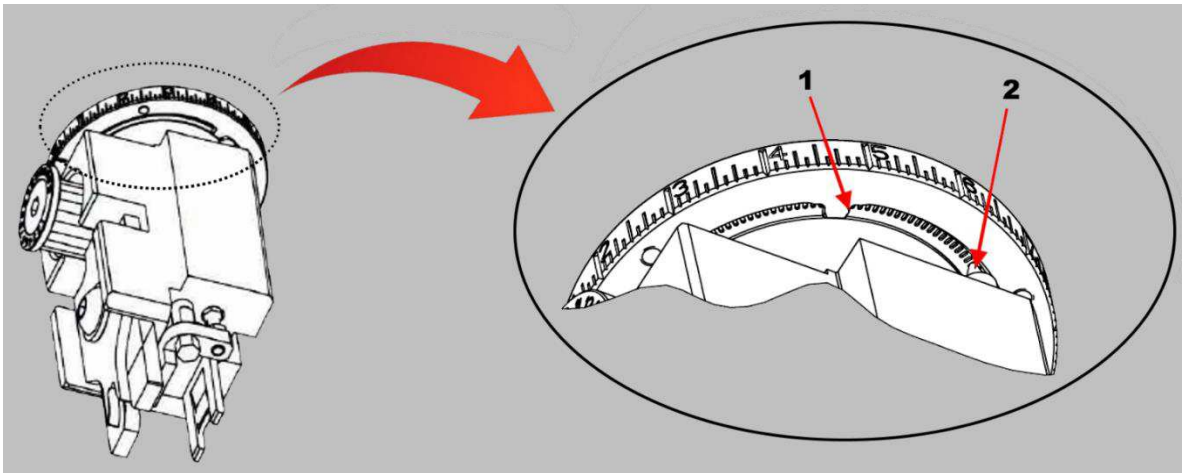
- 1 Wire crimp disc
- 2 Indicator notch
- 3 Insulation crimp dial

3. Adjust the insulation crimp as described in section 5.3.
4. Make several test cycles and inspect the terminations closely. Look for rough or sharp edges around the crimped barrels (flash), deformed crimps, bent terminals, or other defects caused by worn or broken tooling. If necessary, replace the tooling as described in section 6.
 - If the terminations appear normal, measure the crimp height of each termination as described in instruction sheet [408-7424](#) (packaged with the applicator). The crimp height must agree with the measurement specified on the applicator drawing for the wire size being used. Record crimp height dimensions for reference.
 - If the crimp height is incorrect, remove the applicator and install one that is known to produce terminations of correct crimp height.
5. Make several test cycles and repeat the inspection.
 - If the crimp height is incorrect for this applicator, the problem is the machine shut height. Refer to the appropriate machine manual (Table 1) for corrective measures.
 - If the crimp height is correct, the problem is in the original applicator. Refer to section 6.6, **Repairing the adjustable crimp height**, for corrective measures.
6. During extensive operation, periodically inspect the terminals as described in step 4 to ensure that the applicator is producing correct terminations.

5.2. Locking the wire crimp position

The wire crimp height adjustment can be locked in position by inverting the detent pin (see Figure 13).

Figure 13: Location of detent pin



- 1 Ring stop
- 2 Detent pin

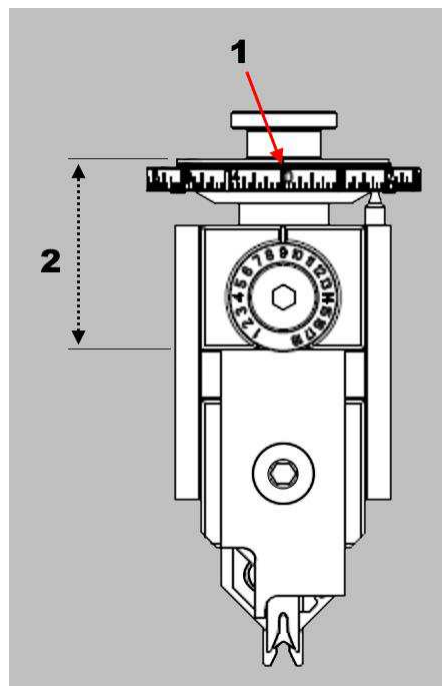
1. Verify the fine adjustment head setup distance (the distance from the crimper seating feature on the ram to the top of the crimp height adjustment head). See Figure 14.



NOTE

Some applicators have a special insulation adjustment dial with different range and increments. Refer to the marking on the front of the insulation crimp dial for correct increments.

Figure 14: Setup distance



- 1 Adjustment set to zero
- 2 Fine adjustment head setup distance

2. While holding down the spring-loaded detent pin, turn the adjustment head clockwise until the detent pin can be removed.

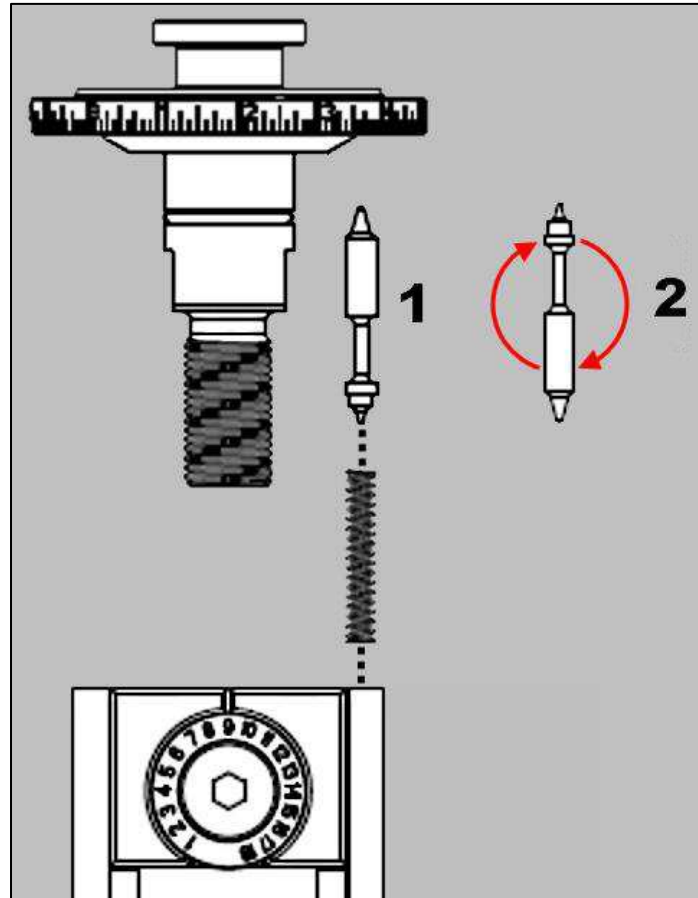


DANGER

The spring-loaded pin can injure you if released unexpectedly.

3. Invert the pin so that the locking end contacts the detent plate (Figure 15).

Figure 15: Inverting the detent pin



- 1 Detent orientation
- 2 Lock orientation

4. Reinstall the pin and spring.
5. While holding the pin down, turn the adjustment head until the proper set-up dimension is reached.
6. Verify the crimp height as shown in section 5.1.



CAUTION

When changing crimp height while in the locked orientation, the spring-loaded detent pin must be depressed to rotate the number ring. Failure to do so damages the ring.

5.3. Adjusting the insulation crimp

The insulation crimp is adjustable in increments of 0.19 mm [.0075 in.]. Pull the insulation crimp dial out (refer to Figure 5) and turn it to line up with a number (1 through 18) so that it is shown at the indicator notch on the ram.

- Number 1 makes the loosest crimp.
- Number 18 makes the tightest crimp.

The total range of adjustment is approximately 3.30 mm [.130 in.]. Start with number 1 and make test crimps while increasing the setting one number at a time until the proper insulation crimp height is achieved.



NOTE

Some applicators have a special insulation adjustment dial with different range and increments. Refer to the marking on the front of the insulation crimp dial for correct increments.

5.4. Adjusting the terminal strip feed

A. Mechanical feed applicator

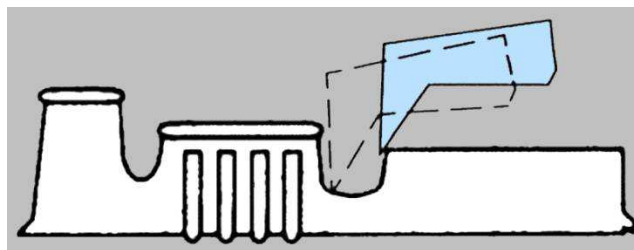


NOTE

When adjusting a mechanical feed applicator, always start by properly adjusting the stroke length. Then adjust the fine feed adjustment to position the terminal over the anvil.

1. With the terminal strip properly loaded, check the position of the lead terminal relative to the slug blade. Position the feed pawl in the required location on the terminal (typically the end of the wire barrel). Refer to Figure 6. The slug blade must remove the connecting tab between lead and second terminals without deforming either terminal.
2. Watch the feed pawl as the machine is hand-cycled (or slowly cycled) several times. It should have enough over-travel on the backstroke to pick up the next terminal, but not so much over-travel that the feed pawl moves up onto the body of the terminal (see Figure 16).
 - If the pick-up point is the mating end of the terminal, the backstroke over-travel should be about equal to the distance between the wire barrel and the mating end of the terminal (Figure 2).
 - For other types of terminals (for example, ring tongue), over-travel should be about the same, depending on the terminal features and configurations (for example, stud hole).

Figure 16: Feed pawl backstroke over-travel



3. Check the backstroke position.
 - If the backstroke position is correct, the tab is correctly slugged out, and the terminals are not damaged, the feed adjustments are complete.
 - If not, continue to the next step.



NOTE

Two adjustments work in combination to properly position the lead terminal over the anvil and give the proper backstroke position to pick up the next terminal feed hole. Use **one** or **both** adjustment types to properly adjust the applicator.

4. If the slug blade does not shear the terminal in the correct position, make note of the position and continue to cycle the applicator to check the backstroke position. If the lead terminal is not slugged out correctly and the backstroke position is incorrect, both the stroke length and the fine feed position must be adjusted. Stroke length (backstroke position) must be adjusted before final centering of other terminals *under* the slug blade.
 - a. Loosen the stroke length adjustment lock screw (see Figure 6).
 - b. Turn the stroke length adjustment screw to adjust the stroke length.
 - Turn the screw counter-clockwise to reduce the stroke length.
 - Turn the screw clockwise to increase the stroke length.
 - c. Tighten the stroke length adjustment lock screw.
5. Repeat steps 1 through 4 as required until the proper stroke length is achieved.
6. If the feed pawl stroke length is satisfactory and the backstroke position is correct, but the lead terminal is not slugged out correctly (or positioned under the slug blade correctly) and the stroke is correct, but the position is incorrect, an adjustment to the fine feed screw is required.
 - a. Loosen the fine feed adjust lock screw on the side of the feed pawl holder to allow the fine feed adjustment screw to turn. Refer to Figure 6.

**CAUTION**

Do not remove the fine feed adjust lock screw. A nylon plug is captured behind the lock screw. Loss of this plug causes damage to the fine feed adjustment screw threads when the lock screw is tightened.

- b. Turn the adjustment screw to position the feed pawl and place the terminal *under* the slug blade.
 - Turn the screw counter-clockwise to move the feed pawl away from the anvil.
 - Turn the screw clockwise to move the feed pawl toward the anvil.
 - c. Tighten the lock screw to secure the fine feed adjustment screw.
7. Re-check the adjustment for the proper position and stroke as described in step 1. Repeat the adjustment procedure as necessary.

B. Air feed applicator**DANGER**

To avoid personal injury, use this applicator only in an appropriate terminating machine.

**DANGER**

*To avoid personal injury, do not connect the pressurized air supply until **after** the applicator is properly installed in the terminating machine. When the machine is manually cycled, the mechanism moves forward and backward once during each machine stroke, unless the air is disconnected.*

**DANGER**

Moving parts can crush and cut. Never insert hands into installed equipment.

**DANGER**

Do not wear jewelry, loose clothing, or long hair that can catch in moving parts of the equipment.

**DANGER**

Do not operate the equipment without guards in place.

**CAUTION**

Do not tamper with the set screws located in the air feed valve assembly.

**NOTE**

The life of the piston seal can be extended by applying either MAGNALUBE™-G or Parker Super O-lube to the air cylinder piston shaft.

B.1. Adjusting the feed

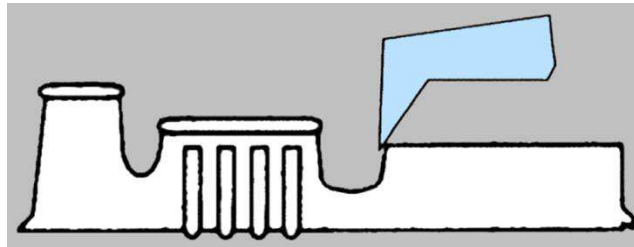
The feed stroke (terminal pitch), terminal position, and feed speed adjustments are set at the factory. If adjustment is necessary, follow the instructions below:

- If the pick-up point is the end of the wire barrel, the backstroke over-travel (Figure 16) should be approximately equal to the distance between the wire barrel and the mating end of the terminal.
- For other types of terminals (for example, ring tongue), over-travel should be about the same, depending on the terminal features and configurations (for example, stud hole).

B.2. Adjusting the feed stroke

1. Remove air pressure from the air feed module.
2. Release terminal drag.
3. Install the terminal strip in the applicator until the feed pawl drops into the backstroke position (Figure 17).

Figure 17: Feed pawl in backstroke position



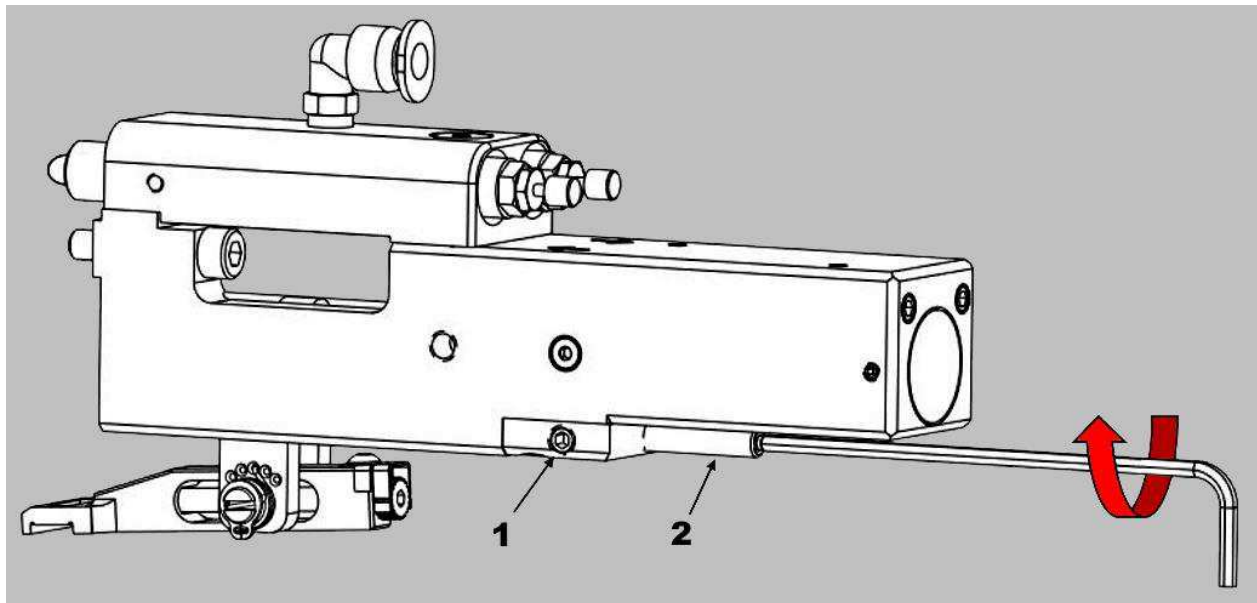
4. Engage terminal drag.
5. Manually extend the feed arm.
6. Manually retract the slide until the feed pawl is at the backstroke position for the next terminal.

7. If the feed pawl reaches the backstroke position before the slide hits the rear stop adjustment screw, adjust the rear stop adjustment screw.
 - a. Loosen the rear stop locking screw (Figure 19).
 - b. Turn the rear stop adjustment screw clockwise until it meets the slide.
 - c. Verify that the feed pawl is in the backstroke position.
 - d. Tighten the locking screw.


NOTE

Use a 2.5mm ball end hex key wrench to adjust the feed stroke and feed positions. One-quarter turn of the rear stop adjustment screw adjusts the backstroke 0.20mm (0.008 inch).

Figure 18: Rear stop locking screw



- 1 Rear stop adjustment screw
- 2 Rear stop locking screw

8. If the slide hits the rear stop adjustment screw before the feed pawl reaches the backstroke position, adjust the rear stop adjustment screw.
 - a. Loosen the rear stop locking screw.
 - b. Turn the rear stop adjustment screw counter-clockwise.
 - c. Push the slide against the rear stop adjustment screw.
 - d. Verify that the feed pawl is in the backstroke position. If not, repeat substeps b and c.
 - e. Tighten the locking screw.
9. Extend and retract the slide by hand. Verify that the feed finger is in the backstroke position. If not, repeat steps 7 and 8 to adjust the feed stop position of the feed finger.
10. Apply pressurized air to the air feed module.
11. Cycle the terminator in jog mode or by hand until the feed pawl retracts.
12. Verify that the pawl is in the correct location. If not, repeat steps 6 through 10.

B.3. Adjusting the feed position

**NOTE**

It is not necessary to remove air pressure from the air feed module before making a feed adjustment.

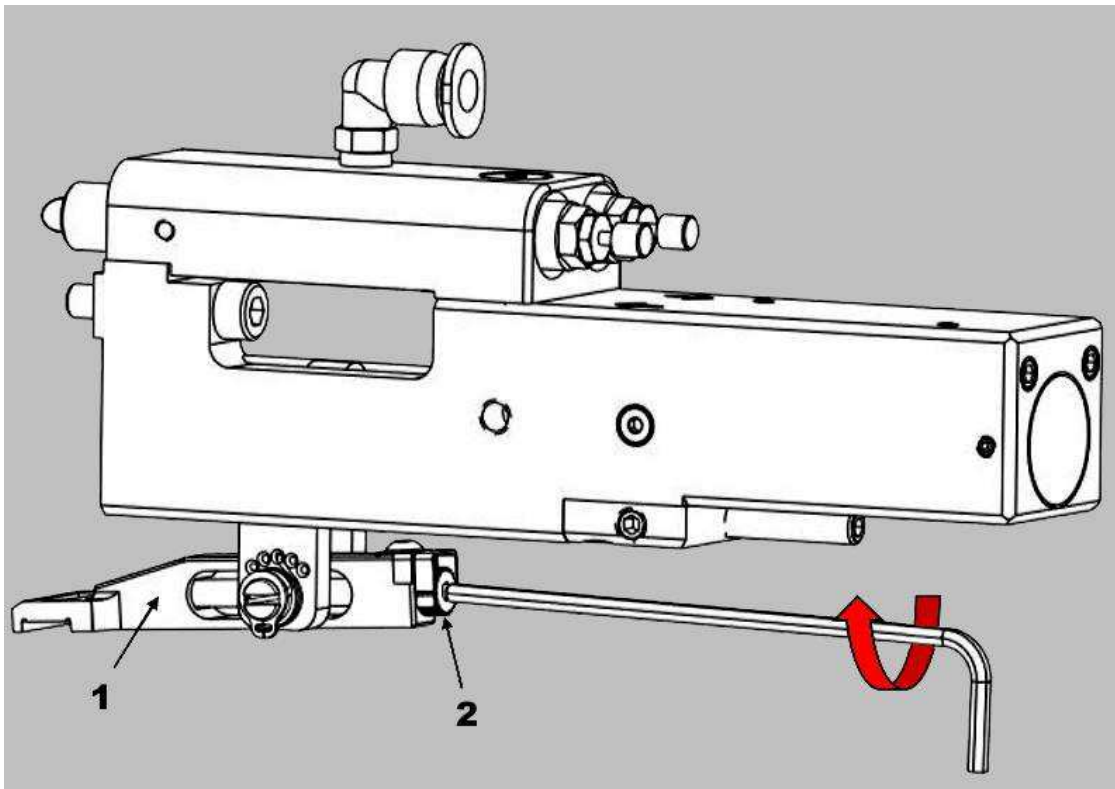
1. Extend the feed fully.
2. Retract the feed fully. The terminal should be positioned over the anvil.
3. If the terminal is not over the anvil, turn the feed adjustment screw (Figure 19) to reposition the terminal (Figure 16).
 - If the terminal stops before the anvil (underfed), turn the screw clockwise.
 - If the terminal is past the anvil (overfed), turn the screw counter-clockwise.

**NOTE**

One click of the feed adjustment screw equals 0.025mm (0.001 inch) of adjustment. Make small adjustments before checking the feed.

4. Retract the feed slide and terminals by pulling back on the terminal strip.
5. Extend the feed slide to feed a terminal.
6. If the terminal is not centered properly, repeat step 3.

Figure 19: Feed adjustment screw



- 1** Feed arm
2 Feed adjustment screw

B.4. Adjusting the feed speed



NOTE

The air feed speed is set at the factory. It requires readjustment only in exceptional circumstances.



CAUTION

Do not fully open the speed controls to maximize feed speed. Excessive feed or retract speeds can damage the air feed module or cause inconsistent feeds.

The feed mechanism is adjusted at the factory to ensure that the terminal is advanced at the lowest possible speed. In rare occasions, it is possible for the feed speed to be too slow (if the applicator is used on a fully automatic machine). The feed speed can be adjusted by means of the two speed controls (Figure 3).



NOTE

Open the retract speed control first to try to speed up the feed cycle.

1. Loosen the locking nut with a hex wrench. Ensure that the setting does not change while loosening the locking nut (Figure 3).
2. Rotate the speed control $\frac{1}{2}$ turn to adjust the speed.
 - Turn it clockwise to decrease the speed.
 - Turn it counter-clockwise to increase the speed.
3. Hold the speed control while tightening the locking nut.
4. Test the feed speed and repeat steps 1 through 3 as needed.

5.5. Adjusting the stock drag

Adjust the stock drag to apply **only** enough pressure to the terminal strip so that it stops at the end of the feed finger stroke.

1. Turn the stock drag adjustment nuts (shown in Figure 6) to adjust the drag.
 - Turn the nuts clockwise to increase the drag.
 - Turn the nuts counter-clockwise to decrease the drag.
2. Cycle the machine under power to verify that the stock drag is properly adjusted.

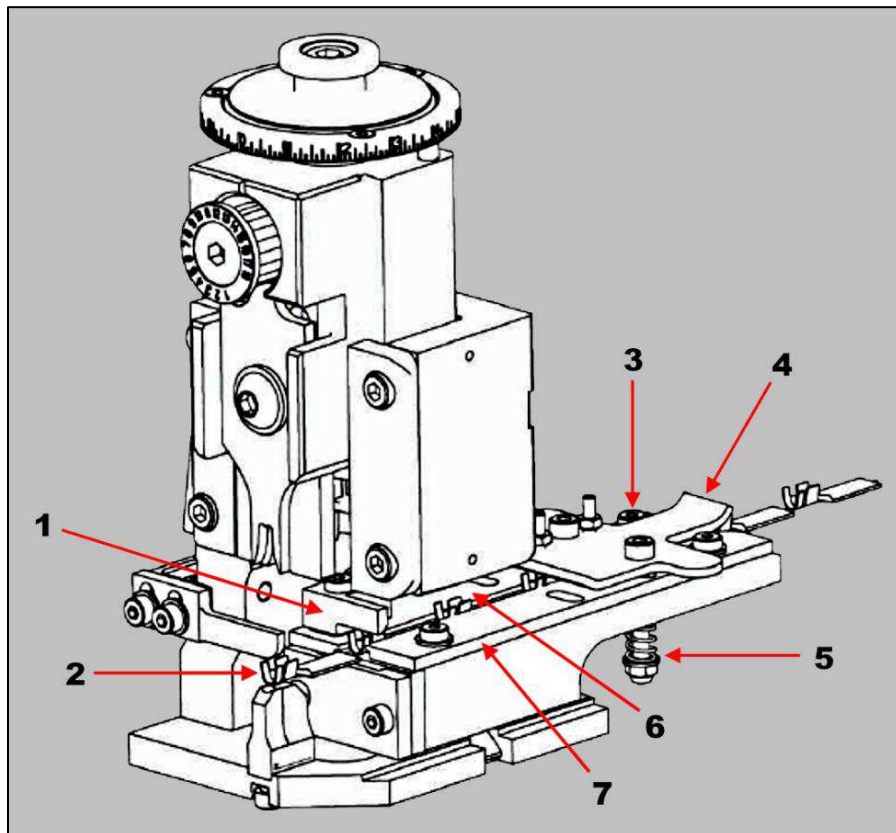
5.6. Adjusting the front and rear strip guides



Disconnect electrical power when performing maintenance or repair on this equipment.

1. Turn off the machine.
2. Disconnect the power cord.
3. Raise the ram.
4. Remove the applicator from the machine as described in section 3, INSTALLING AND REMOVING THE APPLICATOR.
5. Remove the ram assembly from the applicator.
6. Remove the two retaining nuts that secure the drag springs on the terminal drag plate (Figure 20).

Figure 20: Adjusting the strip guide



- | | |
|---|---|
| 1 Strip hold-down plate (if present) | 5 Drag spring and retaining nut (2 places) |
| 2 Terminal strip aligned with anvil | 6 Rear strip guide |
| 3 Strip guide screw (4 places) | 7 Front strip guide |
| 4 Terminal drag plate | |

7. Remove the drag plate and springs.
8. Loosen (but do not remove) the four screws securing the front and rear strip guides.
9. With a terminal strip in place, adjust the guides to align and center the strip over the anvil.
10. Securely tighten the four screws. The strip should slide easily between the guides with a minimum of clearance.

11. Adjust the strip hold-down plate (if present) so that it is perpendicular to the terminal strip. Position it so that it does not interfere with the slug blade tooling on the ram (Figure 5).
12. Tighten the remaining screws on the strip guide.
13. Verify that the terminal strip is centered over the anvil and in line with the radius nest on top of the anvil.
14. Reinstall the drag plate, drag springs, and securing nuts.
15. Adjust the drag.

6. REPLACEMENT AND REPAIR

These procedures cover the applicator parts that most often need replacement or repair due to wear. Stock and control a complete inventory to prevent lost time when replacement of parts is necessary. Order replacement parts through your TE representative. You can also order parts by any of the following methods:

- Go to TE.com and click the **Shop TE** link at the top of the page.
- Call 800-522-6752.
- Write to:
CUSTOMER SERVICE (038-035)
TE CONNECTIVITY CORPORATION
PO BOX 3608
HARRISBURG PA 17105-3608

For customer repair services, call 800-522-6752.



Disconnect electrical power when performing maintenance or repair on this equipment.

6.1. Before replacing or repairing

1. Turn off the machine.
2. Disconnect the power cord.
3. Ensure that the machine ram is in the raised position
4. Remove the applicator from the machine.
5. For identification of parts, refer to the exploded view drawing on the applicator log and the parts list packaged with the applicator.
6. Wipe the parts with a clean, dry cloth as you remove them from the applicator.
7. Before putting parts back into the applicator, wipe the mating surfaces with your fingers to ensure that all lint and other foreign matter have been removed.

6.2. Replacing the anvil

1. Verify that the part number of the new anvil matches the number on the applicator parts list.
2. From the bottom of the base plate, remove the screw that secures the anvil to the base plate.
3. Remove the anvil from the groove in the top of the base plate.
4. Install the new anvil.
5. Reinstall the screw that secures the anvil to the base plate.

6.3. Replacing shear plates

1. Lift the stock drag and feed pawl.
2. Pull the section of the terminal strip back so that the lead terminal is between strip guides.
3. Remove the two screws that fasten the shear plates and spacers (if used) to the strip plates.
4. Record the position of the front and rear shear plates so that you can reinstall them correctly.
5. Remove the parts from the applicator.
6. Check the worn shear plates to determine whether they can be reoriented to provide another usable shearing edge.
 - Most rear plates are the same at the front and rear. If so, and if the second side is not worn, turn the plate front to the rear, making sure that the widest part of the chip clearance groove is at the bottom.
 - If the front plate is completely symmetrical, turn it so that any unused edge is at the top rear.
 - If the front plate does not require spacers and is the same on the top and bottom, turn it top to bottom (if the bottom edge is not already worn).
 - Make sure that the grooves face the rear shear plate.
7. With the old plates reoriented or the new plates properly positioned, install the shear plates and spacers (if used).
8. Secure them with the two screws.
9. While holding the top of the ram assembly with one hand, move the feed pawl with the other hand. Slowly lower the ram assembly to check the alignment of the slug blade with the shear plates.
 - If side-to-side alignment is needed, loosen the two screws holding the shear plates. Move the plates to line them up properly. Re-tighten the screws.
 - If front-to-back alignment is needed, lay the applicator carefully on its side. Slightly loosen the four screws that hold the strip guide plate to the base plate. Move the strip guide plate in the required direction until the slug blade can pass freely between the shear plates. With the slug blade between the shear plates, retighten the four screws.
10. Set the applicator upright.
11. Raise the ram assembly until the slug blade is clear of the shear plates.
12. Lower and raise the ram assembly several times to make sure that the slug blade moves in and out of the shear plates freely.
13. Lift the stock drag and feed pawl.
14. Slide the terminal strip section forward until the lead terminal is over the anvil.

6.4. Replacing the crimper

1. If you are installing new parts, verify that the part numbers match the numbers on the applicator parts list.
2. Loosen the crimper bolt slightly
3. Remove the ram assembly from applicator by pulling upward. If necessary, move the feed pawl forward to release the ram assembly.
4. Record the location of parts for reinstallation.
5. Remove the crimper bolt that secures the front shear depressor, front shear depressor spacer, tubular spacer, insulation crimper, crimper spacer, and wire crimper to the ram assembly.
6. Remove the front shear depressor, front shear depressor spacer, tubular spacer, insulation crimper, crimper spacer, and wire crimper.
7. Install the new wire crimper.
8. Reinstall the crimper spacer, insulation crimper, tubular spacer, front shear depressor spacer, and front shear depressor.



NOTE

*Crimpers **must** be positioned with the part number facing up.*

9. Verify that the upper end of the wire crimper rests against the shoulder of the ram assembly.
10. Tighten the crimper bolt *only* finger-tight.
11. Reinstall the ram assembly in the applicator.
12. Install the applicator in the machine.
13. Lift the feed pawl and pull the terminal strip back until the lead terminal is between the strip guides.
14. Form a piece of heavy paper over the anvil.
15. Slowly hand-cycle the machine while watching alignment of the crimpers with the anvil.
16. When the ram assembly reaches the bottom of the stroke, carefully tighten the crimper bolt to a torque between 10.8 and 13.6 Nm [8 and 10 ft-lb]. The crimpers must move without interference over the anvil after the heavy paper is removed.
17. Set the wire disc crimp height reference setting to zero.
18. Incrementally adjust toward the required crimp height.



CAUTION

Setting the crimp height reference setting too high can damage the crimp tooling.

6.5. Replacing air feed bushings, piston rods, and O-rings

Air feed module rebuild kits PN 2217901-[] are available to replace worn air feed bushings, piston rods, and O-rings. Call the number at the bottom of page 1 for kit information. For installation instructions, refer to [408-32121](#).

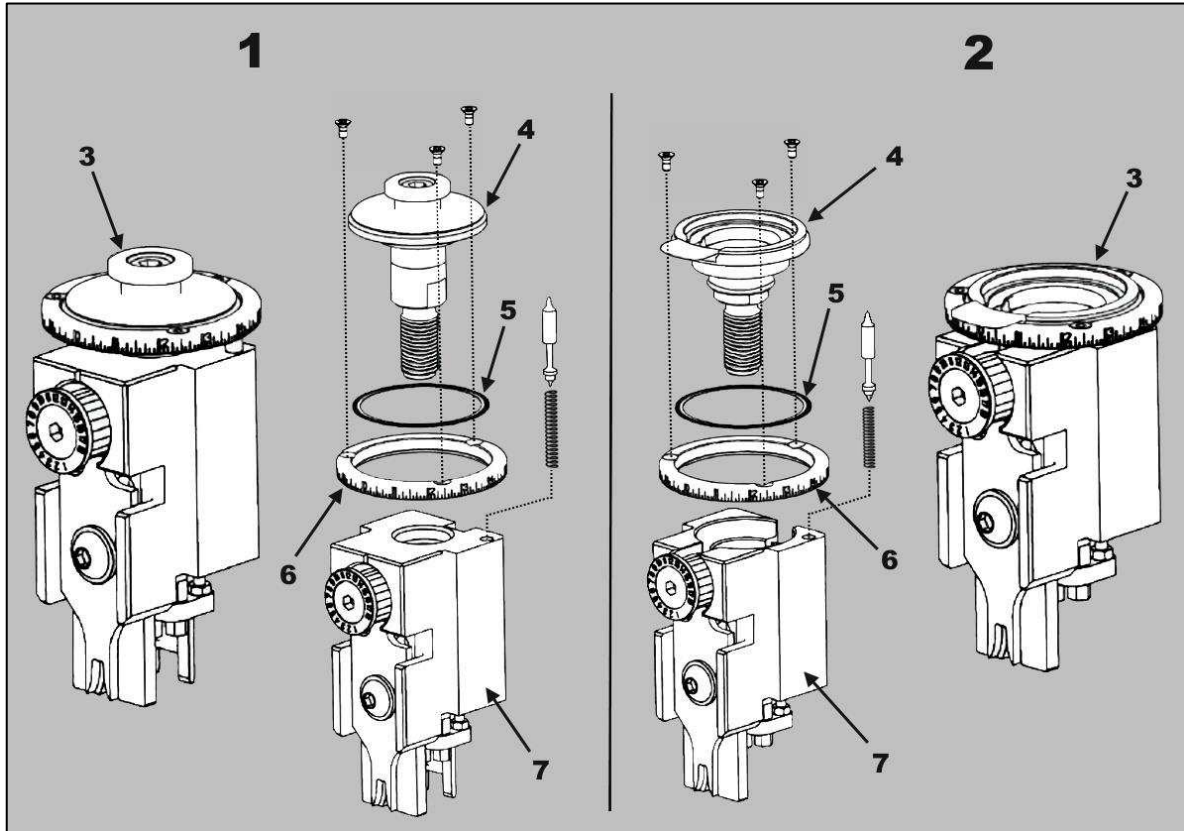
6.6. Repairing the adjustable crimp height

A. Replacing the detent plate

Under severe long-term use, the detent plate can become worn. This makes it difficult to feel the increments of adjustment. To replace the detent plate, complete the following steps.

1. Note the number indicated on the wire crimp disc (Figure 21).

Figure 21: Replacing the detent plate



- | | |
|---------------------------------------|--------------------------|
| 1 Atlantic | 5 Detent plate |
| 2 Pacific | 6 Wire crimp disc |
| 3 Head assembly | 7 Ram |
| 4 Crimp height adjustment head | |

2. Turn the disc to 0 (zero), against the ring stop (Figure 13).
3. Measure the setup dimension from the crimp height adjustment head to the crimper seating feature on the ram (see Figure 14).



NOTE
The factory setting is listed on the applicator print.

4. While depressing the detent pin, rotate the adjustment head clockwise.
5. Remove all three M3 flat-head screws from the disc.
6. Separate the disc from the head.

7. Inspect the detent plate for wear in the areas the detent pin contacts. Replace the plate if these areas around the ring are broken.

**NOTE**

In some cases, the detent plate can be rotated or flipped over so that the detent pin contacts a new (unused) section.

8. Reassemble, keeping the three M3 screws loose to allow the disc to rotate on the head.
9. Apply grease to the detent plate to lubricate the detent pin contact surface.
10. After reinstalling the crimp head assembly and detent pin, rotate the head assembly until the proper set-up dimension is reestablished.
11. Turn the wire crimp disc to the ring stop. The number ring should indicate 0 (zero).
12. Torque the three M3 flat-head screws to 6-8 lbf-in [0.7-0.9 Nm].
13. Verify proper crimp height (see section 5.1).

B. Recalibrating the crimp height adjustment mechanism

If the crimp height adjust mechanism has been removed for any reason, it **must** be re-calibrated. The applicator print lists the proper setup dimension for the applicator. To perform a ram fine adjustment calibration:

1. Loosen the three M3 flat-head screws on the wire crimp disc. The disc must freely rotate on the head.
2. Using calipers, measure the distance between the crimp height adjustment head and the crimper seating feature on the ram (see Figure 14).
3. Rotate the head assembly up or down to achieve the measurement listed on the applicator print.

**NOTE**

As the head rotates, the wire crimp disc should remain free to rotate relative to the head assembly. The detent/locking pin prevents continued disc rotation.

4. Turn the wire crimp disc against the detent/lock pin to the 0 (zero) position.
5. Torque the three M3 flat-head screws to 6-8 lbf-in [0.7-0.9 Nm].

**DANGER**

Do not cycle the applicator under power until you have calibrated it to the proper setup dimension. Doing so can injure people near the machine and damage the applicator.

6.7. Aligning the applicator housing to the base plate

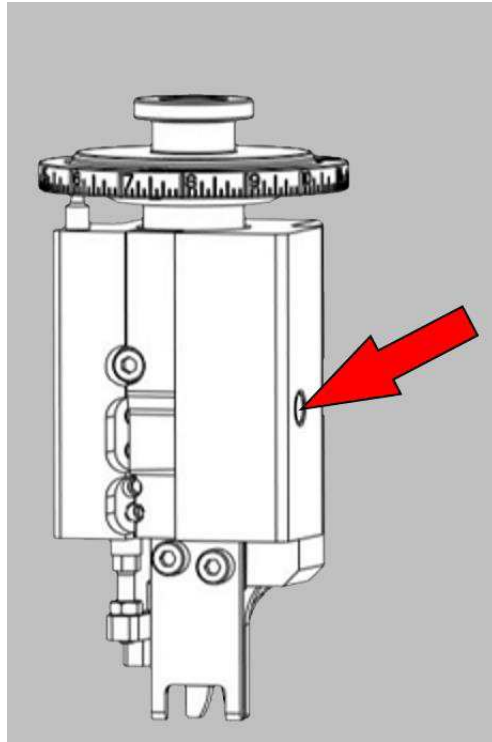
Each applicator is properly aligned at the factory, and the base plate bolts are sealed. However, it is possible to misalign the applicator housing from the base plate by mishandling or dropping the applicator. If the applicator becomes misaligned, contact a TE field service representative or order an end-feed applicator alignment gage (part number 2161422-3).

When aligning the applicator, make sure to torque the base plate screws (and, if needed, the gib screws) to the proper specification. Torque the base plate screws to 11.298 Nm [100 in.-lbs] and the gib screws to 5.649 Nm [50 in.-lbs].

6.8. Orienting the counter magnet

The applicator counter magnet (Figure 22) properly actuates the applicator counter **only** if it is installed with the correct side facing out from the ram. If the magnet is removed for any reason, you must determine which side of the magnet actuates the counter before reinstalling the magnet. You can do this by running the magnet behind the counter by hand.

Figure 22: Application counter magnet



6.9. Wire depressor accessory

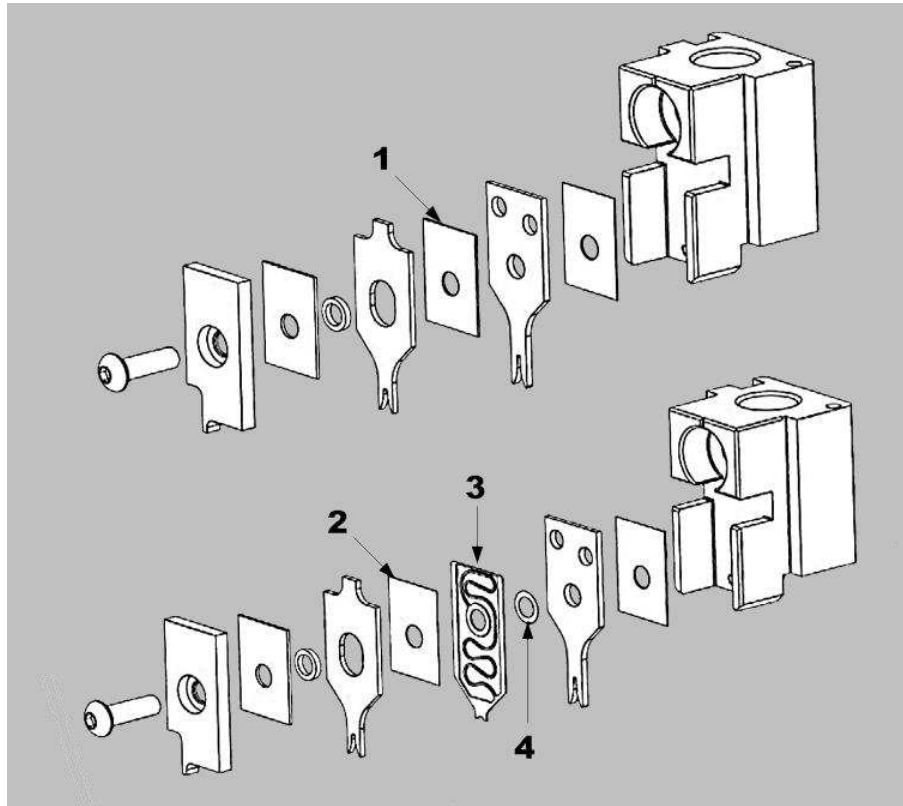
If this accessory was not installed on the applicator at the factory, use Figure 23 to identify the parts you need in order to add it.



NOTE

To add a wire depressor to an existing applicator, the existing crimper spacer must be at least 0.64 mm [.025 in.] thick.

Figure 23: Wire depressor accessory parts



- 1 Existing crimper spacer
- 2 Replacement crimper spacer
- 3 Wire depressor (select based on wire size range)
- 4 Wire depressor washer spacer (part number 2119943-1) required

1. Use the following formula to calculate the thickness of the replacement crimper spacer:

$$S_e - 0.64 \text{ mm [.025 in.]} = S_r$$

where:

- S_e** = Existing crimper spacer thickness
- S_r** = Replacement crimper spacer thickness

- Use Table 2 to determine which crimper spacers you need to achieve the required thickness.

Table 2: Crimper spacers, by thickness

Thickness mm [in.]	Crimper spacer part number	Thickness mm [in.]	Crimper spacer part number	Thickness mm [in.]	Crimper spacer part number
0.25 [.010]	455888-1	1.52 [.060]	1-455888-2	2.67 [.105]	2-455888-3
0.30 [.012]	455888-2	1.57 [.062]	1-455888-3	2.67 [.105]	2-455888-3
0.38 [.015]	455888-3	1.65 [.065]	1-455888-4	2.79 [.110]	2-455888-4
0.51 [.020]	455888-4	1.78 [.070]	1-455888-5	2.92 [.115]	2-455888-5
0.66 [.026]	455888-5	1.91 [.075]	1-455888-6	3.18 [.125]	2-455888-7
0.79 [.031]	455888-6	2.03 [.080]	1-455888-7	4.37 [.172]	2-455888-8
0.89 [.035]	455888-7	2.16 [.085]	1-455888-8	5.08 [.200]	2-455888-9
1.02 [.040]	455888-8	2.29 [.090]	1-455888-9	3.63 [.143]	3-455888-2
1.14 [.045]	455888-9	2.36 [.093]	2-455888-0	3.56 [.140]	3-455888-7
1.27 [.050]	1-455888-0	2.41 [.095]	2-455888-1	4.83 [.190]	7-455888-2
1.40 [.055]	1-455888-1	2.54 [.100]	2-455888-2		

- Choose a wire depressor based on the wire size range (Table 3).

Table 3: Wire depressors, by wire size range

Wire size range	Wire depressor part number
0.008-1.305 mm ² [38-16 AWG]	2119791-5
0.150-5.270 mm ² [20-10 AWG]	2119791-9

- Order the replacement components you need.
 - Crimper spacers (chosen in step 1)
 - Wire depressor (chosen in step 3)
 - Washer spacer (part number 2119943-1)



NOTE

When fitting crimper spacer PN 455888-5 or 455888-6 to the applicator, use **only** the wire depressor and corresponding spacer.

7. CLEANING, LUBRICATION, AND STORAGE

For best performance and minimum downtime, the applicator should be cleaned (daily and monthly), inspected, lubricated, and stored as indicated in instruction sheet [408-8059](#).

8. REVISION SUMMARY

Revisions to this instruction sheet include:

- Reformatted to current standard for instruction sheets.
- Edited and reorganized the entire document.
- Updated information about feed cams in sections 2.2 and 2.3.