Infrared Communication Port

Pushbutton

Display

Left−Side Reed Switch Location

Right−Side Reed Switch Location

PART NUMBER	DESCRIPTION
1804300−1	Electronic Applicator Counter Assembly
1804313−1	Electronic Applicator Counter Kits used with HDM Mechanical Feed Applicators (inch)
1804312−1	Electronic Applicator Counter Kits used with HDI Mechanical Feed Applicators (metric)
1804314−1	Electronic Applicator Counter Kits used with HDM Air Feed Applicators
1804315−1	Electronic Applicator Counter Kits used with Tab−Lok Terminal Mechanical Feed Applicators

Figure 1

1. INTRODUCTION

These instructions cover the installation and use of the kits listed in the table in Figure 1.

The counter, when properly installed, will count the number of applicator cycles. This "total count" can be used to determine when applicator inspection and maintenance should be performed.

When the counter is used in conjunction with the Electronic Applicator Counter Software, the number of cycles for individual tooling can be tracked and maintenance data can be logged to a file on a personal computer.

Refer to Customer Manual 409–10063 for more information on this software.

Reason for revision may be found in Section 6, REVISION SUMMARY.

2. DESCRIPTION

The counter (Figure 1) is battery powered with a minimum expected operating life of 10 years. There are two reed switches inside the counter. One located on the back left side; the other on the back right. The ring magnet is installed so it actuates one of the reed switches each time the applicator cycles.

The counter counts each cycle. The total number of cycles recorded is displayed on the counter's display. A single button on the counter activates the display and is used to scroll though various modes and change settings. The counter also has a wireless

infrared communication port. This port is located in the upper right hand corner on the front of the counter. The counter implements the IrDA® Standards for communication.

DANGER **STOP**
To avoid personal injury, replace the counter immediately if the plastic case becomes cracked. Although the counter has been sealed, cracks or leaks could expose the internal battery to flammable liquid resulting in the possibility of fire, or explosion. DO NOT SUBMERGE THE COUNTER IN A FLAMMABLE LIQUID.

3. INSTALLATION

NOTE **i**
Before beginning the installation, you will need to be familiar with the counter's operation. Refer to Paragraph 4.

Refer to the specific type of installation procedure for your application.

3.1. Installation of the Electronic Applicator Counter to HDM and HDI Mechanical Feed Applicators

NOTE **i**
Refer to the appropriate applicator instructions sheet for specific applicator adjustments and maintenance.

The kit (Figure 2) includes the electronic applicator counter, counter mounting bracket, ring magnet, adjustment screw, feed rod guide, and hardware for mounting the counter and ring magnet to the applicator.
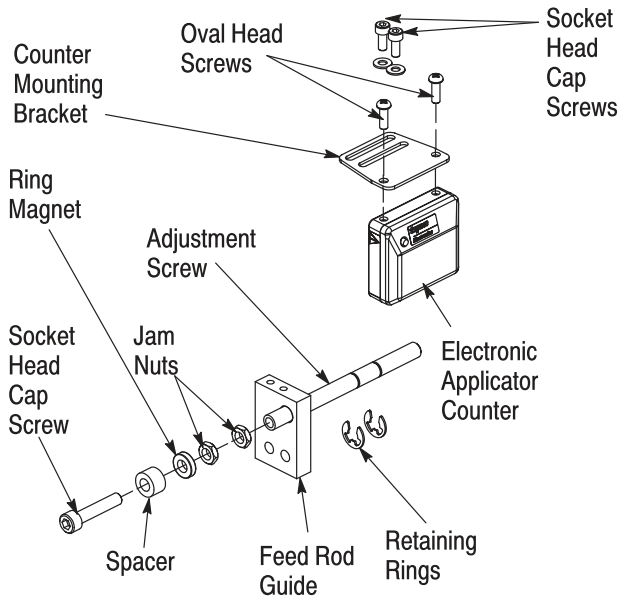
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LOC B

Figure 2

The kits can be used on Tyco Electronics side–feed type and end–feed type mechanical applicators. See Figure 3.

| NOTE	*The stainless steel hardware and aluminum spacer included in the kits must be used to mount the ring magnet and the counter for proper operation of the counter. If any of the hardware in the kit is replaced, use parts made from the same material as the original.*

NOTE	*When the Electronic Applicator Counter Assembly is mounted on an end–feed mechanical applicator installed in a Model "K" Terminating Unit, the Model "K" guard may require modification, as shown in Drawing 1633459.*

To install the kit, proceed as follows:

1. Disconnect machine power and remove the applicator from the machine.

2. Remove the ram assembly from the applicator housing.

3. Remove the original adjustment feed rod screw from the applicator. The feed return spring, pivot block, and pivot block screw will be reused. See Figure 4.

4. Assemble the pivot block onto the new adjustment screw with the supplied retaining rings.

5. Install the adjustment screw and the pivot block into the applicator. Tighten the pivot block screw so the adjustment screw can not rotate. This must be

done so the adjustment screw does not rotate when the jam nut is tightened in Step 10.
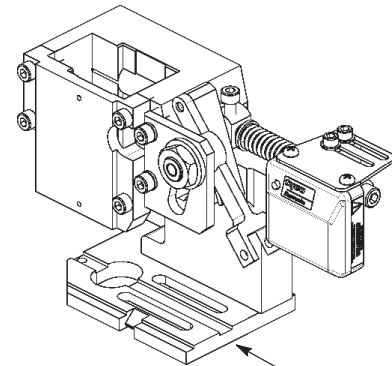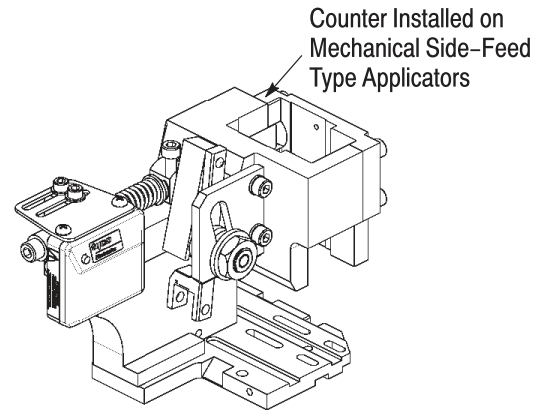
Figure 3

6. Place the feed return spring on the adjustment screw and bolt the new feed rod guide to the applicator. The original flat washer is not required.

7. Check that the feed rod guide does not bind on the adjustment screw. Adjust the position of the feed rod guide to eliminate any binding.
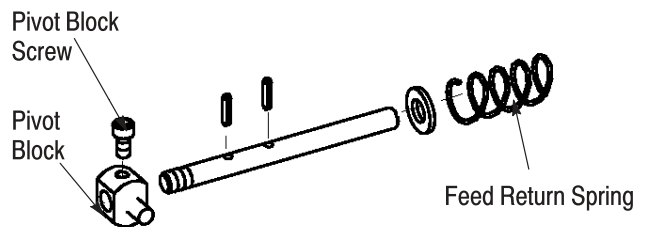

Figure 4

8. Install the spacer and ring magnet onto the socket head cap screw and secure the magnet with a jam nut. Refer to Figure 2. Apply removable thread locking compound to the jam nut.

CAUTION

Damage may occur to the magnet by over–tightening the jam nut.

9. Place the second jam nut on the socket head cap screw leaving a 1mm gap between the jam nuts. See Figure 5.
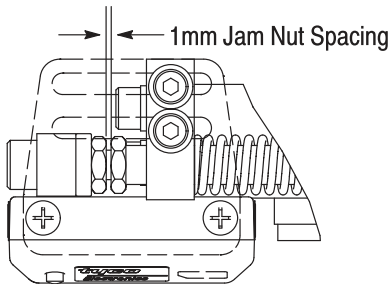
1mm Jam Nut Spacing

Figure 5

10. Install the socket head screw into the adjustment screw. Tighten the jam nut to prevent the socket head screw from turning in the adjustment screw. Check that the 1mm gap between the jam nuts has been maintained.

11. Install the ram back into the applicator and install the applicator into the machine.

12. Insert terminals into the applicator. Loosen the screw on top of the pivot block. Adjust the applicator feed to the required position. Refer to Instruction Sheets 408–8039 for END FEED and 408–8040 for SIDE FEED type applicators. Tighten the screw on top of the pivot block when complete.

NOTE

If the pivot block screw is not loosened prior to making the feed adjustment, the fed rod jam nut will become loose.

13. Disconnect machine power and remove the applicator from the machine.

14. Remove the ram assembly from the applicator housing.

15. Assemble the counter to the counter bracket with the supplied oval head screws.

16. Loosely install (finger tight) the counter bracket to the feed rod guide using the supplied washers and socket head cap screws. Position the counter so the terminal feed arm lever does not hit it with the ram removed from the applicator. Make sure

that there is a minimum 0.5mm gap between the back of the counter and the ring magnet.

NOTE

This gap is to ensure that the ring magnet does not rub against the counter when the applicator is cycled.

17. Replace the ram and install the applicator into the machine.

18. Put the counter into the **Switch Selection** mode and select which reed switch to use. Typically, the left switch is selected for side–feed type applicators and the right switch is selected for end–feed type applicators. Only one switch should be selected.

19. With the terminator at top–dead–center observe the state of the switch by putting the counter in the **Switch State** mode. Slide the counter away from the feed arm until the switch state changes. Then move it an additional 1mm away from the feed arm and tighten the counter bracket mounting screws.

NOTE

It does not matter which state the switch is in at top–dead–center. It is only important that the state changes when the applicator is cycled and returns to the original state at the end of the cycle.

20. Verify that a minimum gap of 0.5mm still exists between the back of the counter and the magnet. Reposition the counter if necessary.

21. Cycle the machine. Verify that the counter's "Total Count" increases by one for every machine cycle.

NOTE

After any feed adjustment to the applicator, the counter's operation should be checked.

3.2. Installation of the Electronic Applicator Counter to HDM Air Feed Counter Kit

NOTE

Refer to the appropriate applicator instruction sheet for specific applicator adjustments and maintenance.

The kit (Figure 6) includes the electronic applicator counter, counter mounting bracket, grooved pin, counter bracket, ring magnet, stripper spacer, and hardware for mounting the counter and ring magnet to the applicator.
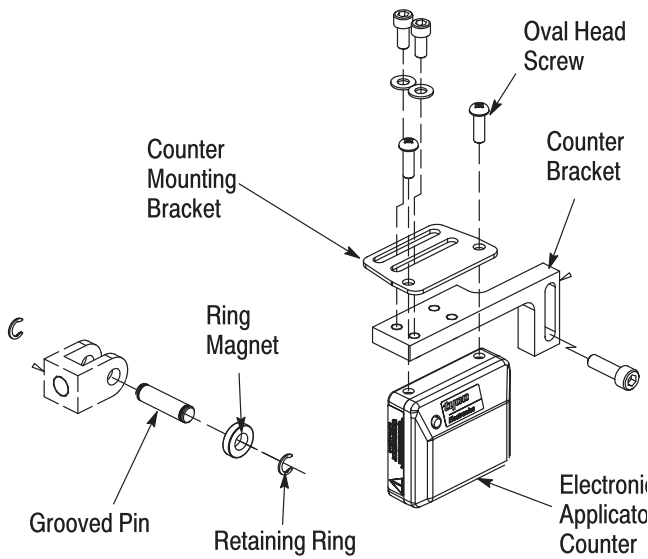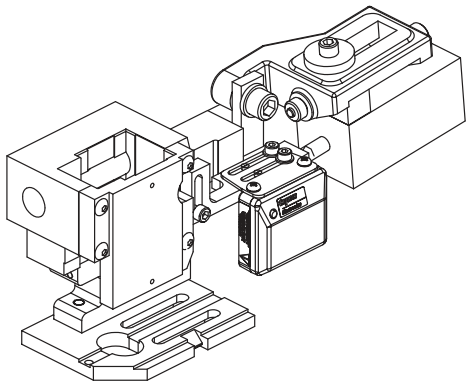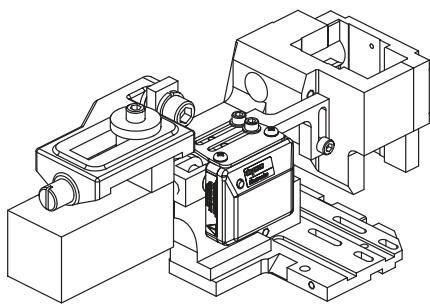
Figure 6

The kits can be used on Tyco Electronics HDM Air Feed Applicators. See Figure 7 for counter assembly mounting of end–feed type and side–feed type air feed applicators.

Counter Installed on End–Feed Air Feed Type Applicators

Counter Installed on Side–Feed Type Air Feed Applicators

Figure 7

To install the kit, proceed as follows:

1. Disconnect the machine power and air supply.

2. Remove the air feed assembly by removing the 3/8 inch (0.37 inch) air feed mounting screw.

3. Remove the retaining ring and grooved pin from the air cylinder clevis and discard it.

4. Install the retaining rings, ring magnet, and new grooved pin on the cylinder clevis. See Figure 8.
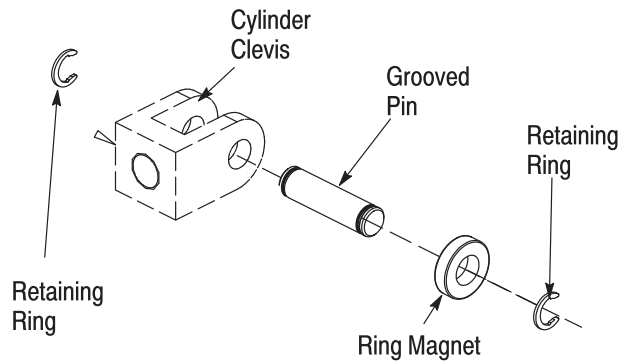

Figure 8

5. Reinstall the air feed assembly using the 3/8 inch (0.37 inch) air feed mounting screw.

6. Assemble the counter to the counter mounting bracket with the supplied oval head screws. See Figure 9.

7. Loosely install (finger tight) the counter mounting bracket to the counter bracket using the supplied washers and socket head cap screws. See Figure 9.
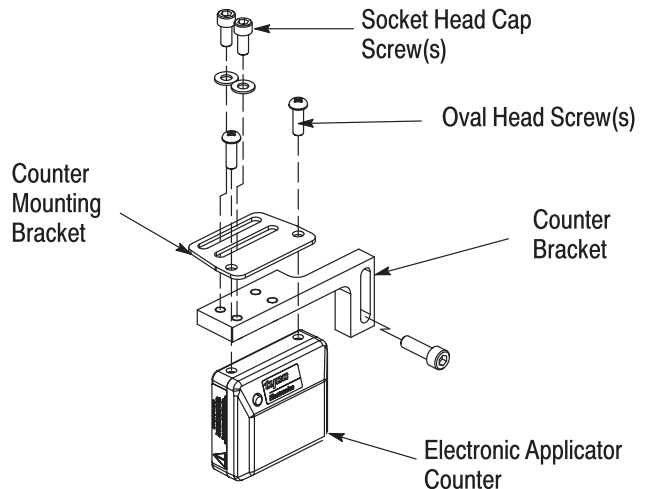

Figure 9

8. Reconnect the air supply.

9. Extend the feed finger to the forward position.

10. Install the air feed counter bracket to the applicator housing using the supplied socket head

screw. Install in the lower housing hole and position the counter toward the housing. The counter should be positioned vertically so that the center of the ring magnet is the same height as the counter display.

| NOTE | *Some applicators may require the air feed counter to be installed in the upper housing hole to vertically align the counter with the ring magnet.* |

| NOTE | *End feed applicators require a stripper spacer between the air feed counter bracket and the housing. See Figure 7.* |

11. Put the counter into "Switch Selection" mode and select the appropriate reed switch to use. Typically, the left switch is used for side–feed type applicators and the right switch is used for end–feed type applicators.

| NOTE | *Only one switch should be selected.* |

12. With the feed finger in the forward feed position, observe the state of the switch by putting the counter in the "Switch State" mode. Slide the counter away from the applicator housing until switch state changes. Then move it additional 1mm away from the housing and tighten the counter bracket mounting screws.

13. Verify that a gap exists between the back of the counter and the grooved pin in the clevis.

14. Extend and retract the air cylinder. Verify that the counter's "Total Count" by one for every cylinder cycle.

| NOTE | *After any feed adjustment to the applicator, the counter's operation should be check.* |

3.3. Installation of the Electronic Applicator Counter to Tab–Lok Terminal Mechanical Feed Applicators

| NOTE | *Refer to the appropriate applicator instructions sheet for specific applicator adjustments and maintenance.* |

The kit (Figure 10) includes the electronic applicator counter, the pivot block, the counter mounting bracket, the magnet holder bracket, the feed rod guide, the ring magnet and hardware for installing the counter to the applicator.
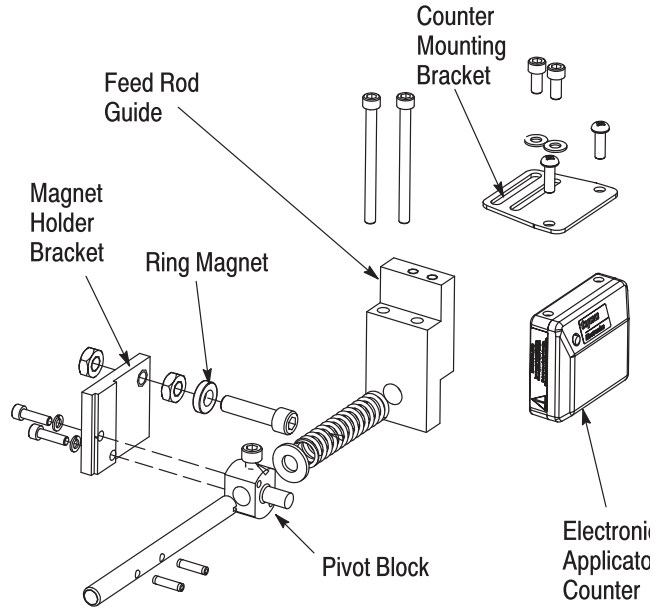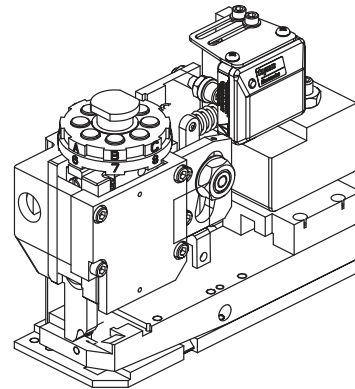

Figure 10

The kits can be used on Tyco Electronics Tab–Lok Terminal Mechanical Feed Applicators. See Figure11.

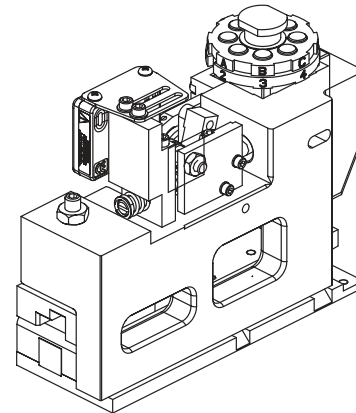*Counter Installed on Tab–Lok Terminal Applicators*

Figure 11

To install the kit, proceed as follows:

1. Remove the ram assembly from the applicator housing.

2. Remove the pivot block screw, adjusting plate screws and feed mechanism parts from the applicator. See Figure 12.
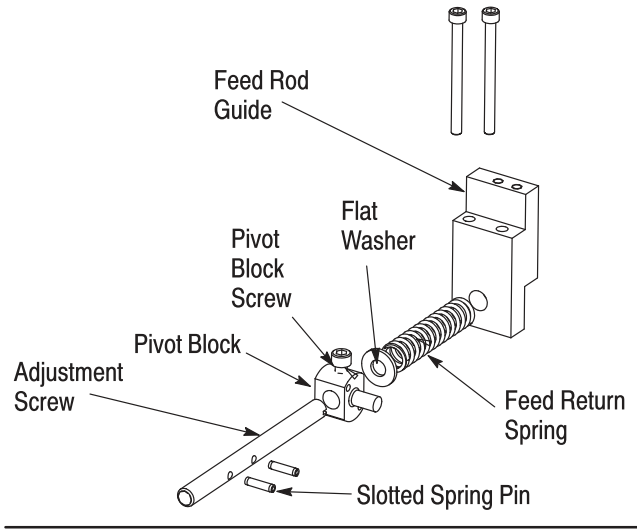

Figure 12

3. Remove the feed rod guide, and remove the adjustment screw. See Figure 12.

NOTE *The feed return spring, flat washer, and pivot block screw will be reused.*

4. Remove the slotted spring pin from the adjustment screw and remove the pivot block.

CAUTION *Take care to NOT bend the adjustment screw when removing and installing the slotted spring pin.*

5. Discard the used pivot block and used feed rod guide.

6. Assemble the new pivot block on the adjustment screw and install the new slotted spring pin into the adjustment screw.

7. Install the adjustment screw back into the applicator.

NOTE *Lightly grease the pivot block before installing the feed mechanism parts.*

8. Install the feed mechanism parts.

9. Install the flat washer, feed return spring, and pivot block screw.

10. Install the new feed rod guide using the long socket head cap screws.

11. Check that the feed rod guide does not bind on the adjustment screw. Adjust the position of the feed rod guide to eliminate binding.

12. Adjust the feed of the applicator.

13. Install the ring magnet onto the stainless steel screw and secure the magnet with a hex jam nut. See Figure 13.

CAUTION *Damage MAY occur to the magnet by over-tightening the hex jam nut.*

14. Install the stainless steel screw into the magnet holder bracket. Lock the screw by tightening the hex jam nut behind the mounting holder bracket

15. Attach the magnet holder bracket to the pivot block using two socket head cap screws. See Figure 13.
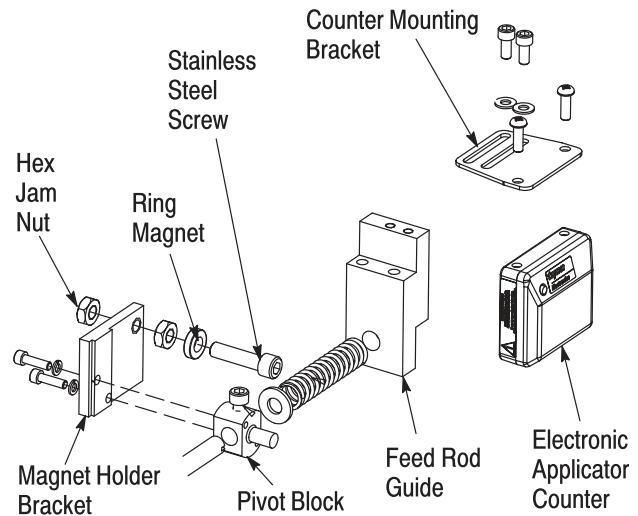

Figure 13

16. Attach the electronic applicator counter to the counter mounting bracket using two oval head cap screws.

17. Loosely install (finger tight) the counter mounting bracket to the feed rod guide using the supplied washers and socket head cap screws.

NOTE *Be sure there is a gap between the the back of the counter and the head of the stainless steel screw. This gap is to ensure that the ring magnet does not rub against the counter when the applicator is cycled. Adjust, if necessary.*

18. Lock the stainless steel screw by tightening the hex jam nut behind the mounting holder bracket.

19. Replace the ram and install the applicator in the machine.

20. Place the counter in the "Switch Selection" mode and select select the left reed switch. (Refer to Section 4.4.)

21. With the terminator at "top–dead–center," observe the state of the switch by putting the the counter in the "Switch State" mode. Slide the counter toward the housing until the state of the switch changes. Then move the counter an additional 1mm toward the housing and tighten the counter bracket mounting screws.

> **NOTE** **i**
> *It doesn't matter which state the counter is in at "top–dead–center." It is only important that the state changes when the applicator is cycled and returns to the original state at the end of the cycle.*

22. Cycle the machine. Verify that the counter's "Total Count" increases by one for every machine cycle.

> **NOTE** **i**
> *Check the counter's operation after any feed adjustment to the applicator.*

4. COUNTER OPERATION

The counter is always in an "ON" state. Whenever the ring magnet actuates a reed switch, a count will be recorded. However, to conserve battery life the counter enters a **Sleep** mode when no activity is detected. In the **Sleep** mode both the display and the infrared communication port are turned off.

Pressing the counter's pushbutton turns on the display. However, it remains on only for a short time unless the pushbutton is held down.

4.1. Total Count Mode

The first time the pushbutton is pressed, the display is turned on, the test screen is momentarily flashed, and then the Total Count is displayed. If the pushbutton is held down, the Total Count continues to be displayed (Figure 14). The counter will return to the **Sleep** mode five seconds after the pushbutton is released.
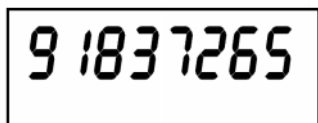

Figure 14

> **NOTE** **i**
> *The Total Count cannot be reset.*

4.2. Serial Number Mode

If the pushbutton is pressed a second time, the serial number for the counter is displayed. The serial number is used to uniquely identify the counter and the applicator (Figure 15).
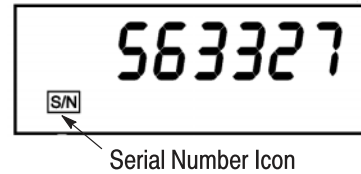

Serial Number Icon

Figure 15

If the counter has *not* been programmed with a serial number, a series of dashes is displayed. The serial number is programmed into the counter using the Electronic Applicator Counter Software.

If the pushbutton is held down, the serial number continues to be displayed. The counter will return to the **Sleep** mode five seconds after the pushbutton is released.

> **NOTE** **i**
> *The serial number cannot be changed.*

4.3. Infrared Communication Mode/Test Display/ Software Version

If the pushbutton is pressed a third time, the counter is put in its infrared communication mode. See Figure 16.
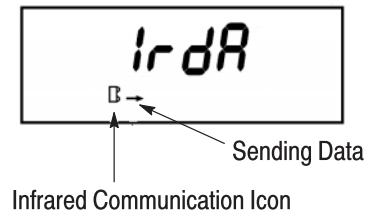

Sending Data

Infrared Communication Icon

Figure 16

Arrows are displayed to the right of the infrared communication icon to indicate whether data is being read from or sent to the counter. The counter is placed in the **Infrared Communication** mode so it can communicate with a host computer running the Electronic Applicator Counter Software.

If the pushbutton is held down for three seconds, the test display and the counter's software version are alternately displayed. The counter will return to the **Sleep** mode 15 seconds after the pushbutton is

released and no communication link has been established.

On the test display, all segments of the display are turned on (Figure 17). This display is used to determine if a segment is malfunctioning.
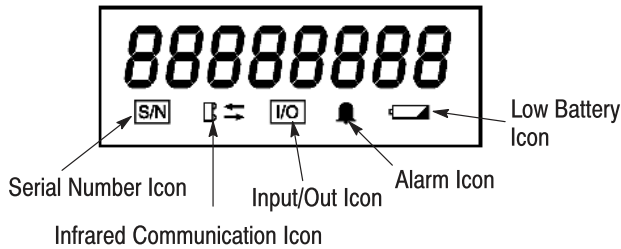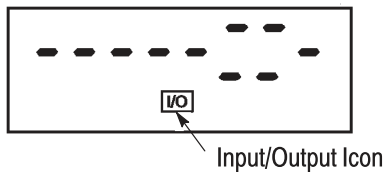

Figure 17

The software version indicates what version of software was programmed into the counter.

4.4. Switch State Mode/Switch Selection Mode

If the pushbutton is pressed a fourth time, the state of the reed switches and the Input/Output icon are displayed (Figure 18).The switch is closed when the ring magnet is in close proximity of the reed switch.

Display Indicates that the Left Reed Switch is Closed, and the Right Reed Switch Is Open.

Figure 18

If the pushbutton is held down for three seconds, the counter is put in the **Switch Selection** mode (Figure 19). The operator uses this mode to select which reed switch to use for sensing the ring magnet.

Display Indicates that the Right Reed Switch is Selected. The Gray Segments Would Be Flashing.

Display Indicates that the Left Reed Switch is Selected. The Gray Segments Would Be Flashing.

Figure 19

Only one switch should be selected. Typically, the left switch is selected for side–feed type mechanical

applicators and the right switch is selected for end–feed type mechanical applicators.

When in the **Switch Selection** mode, the switch state indicators will flash.

Pressing the button will result in the left switch, the right switch, or both switches being selected. After the desired switch has selected, stop pressing the button and the counter will revert back to the **Switch State** mode in 15 seconds.

When in the **Switch State** mode, the counter will return to the **Sleep** mode 15 seconds after the pushbutton is released unless switch activity is detected. It will return to the **Sleep** mode after 60 switch state changes.

If, while in the **Switch State** mode, the button is pressed again, the counter will cycle back to the **Total Count** mode.

NOTE *If the counter detects that the battery is low, the low battery icon will be displayed when the display is turned on. The battery is not replaceable. The counter will need to be replaced.*

NOTE *If the target count for an alarm counter has been exceeded, the alarm icon will be displayed when the display is turned on. Alarm counts are created and target counts are set using the Electronic Applicator Counter Software.*

5. CLEANING

The counter may be submerged for cleaning in up to 12 inches of commercial non–flammable cleaning solvents for 20 minutes.

DANGER *To prevent personal injury, replace the counter immediately if the plastic case becomes cracked. Although the counter has been sealed, cracks or leaks could expose the internal battery to flammable liquid resulting in the possibility of fire, or explosion. DO NOT SUBMERGE THE COUNTER IN A FLAMMABLE LIQUID.*

6. REVISION SUMMARY

Since the previous release of this instruction sheet, the document format was updated and the logo was changed.