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Designers and Manufacturers of Pressure Sensitive Labeling Equipment and Custom Product Handling

3600AB PRINTER APPLICATOR MAINTENANCE & SERVICE MANUAL

(REVISION 3600AB-2b5.x)

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(STANDARD 3600AB)

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INTRODUCTION

The 3600AB printer applicator is a high-speed labeler used to thermally print and apply pressure sensitive labels to moving products. A thermal transfer printer is integrated into an applicator to form a self-contained unit that will print variable data onto a label. The printer/applicator can be mounted in almost any position adjacent to product flow to apply labels to top, sides or bottom of products as they pass by.

Labels are supplied on rolls that consist of a liner on which the labels are held with adhesive. The labels may be preprinted with the variable information added by the printer or blank labels with the printer printing the entire label.

The applicator can work in two different modes:

Normal Tamp Blow
Inverted Tamp Blow

In the Normal Tamp Blow mode, the label is printed, dispensed out onto the label pad and held there by vacuum. When the product detect sensor is made, the label and label pad are moved toward the product using a pneumatic slide. When the slide is extended, an air blast will blow the label off the pad and onto the product.

In the Inverted Tamp Blow mode, the label is printed, dispensed onto the label pad and the slide extends. The applicator will wait in this position until the product sensor is made. The label is then blown off the pad onto the product.

For safe and trouble free operation, the instructions in this manual must be followed carefully during the set-up, operation, media changes, cleaning and maintenance. Also the specified environmental conditions must be maintained.

Electrical Supply: 108-132 Volts, 5 Amps, 50-60 Hertz, Single phase

A three-meter long, three wire cable with 1.00mm conductors rated at 10 amperes (in accordance with CENELEC HD-21) is provided for the electrical connection to the IEC 320 receptacle of the applicator. The end of the power cord is terminated with a NEMA 5-15 plug.

Air Supply: Clean and dry compressed air must be provided at pressures 90 to 100 P.S.I. with a minimum flow rate of 4 S.C.F.M.

Environment: Operating temperature range is 40 to 95°F (5 to 35°C). Operating humidity range is 20 to 85% RH, non-condensing.

Note: The model 3600-PA is not intended to be operated in an environment where flammable or explosive gases are present. The model 3600-PA MUST not be used in direct contact with food products.

READ THE INSTRUCTIONS CAREFULLY AND COMPLETELY. This manual includes all of the information that you'll need to set up the applicator under normal operating conditions. The instructions include important safety precautions, which must not be ignored.

READ THE INSTRUCTIONS IN ORDER. The instructions are written as numbered steps that will take you safely and efficiently through the setup process. Any steps performed out of sequence may result in a hazard and the applicator may not operate properly.

WORK CAREFULLY. Although setting up the applicator is not difficult, it does take time. Do not rush through the process. Careful work will produce good results.

IF SOMETHING DOES NOT WORK PROPERLY TRY SETTING UP AGAIN. Although applicator malfunction is possible, most problems happen because the applicator was not setup correctly. If the applicator doesn't operate correctly, back-up and start over.

FOLLOW ALL SAFETY INSTRUCTIONS. The 3600AB has been provided with a number of safety features. Observe all safety warning and under no circumstances attempt to remove or defeat safeguards or operate the machine in a manner contrary to the instructions.

MACHINE TERMS

Adhesive Strings: Label adhesive that attaches to the label and liner while the label is dispensing onto the label pad. They can cause the label position on the label pad to become inconsistent.

Air Assist Tube: A small diameter tube with small hole in it mounted under the peel edge. The purpose is to direct a stream of air to help the label onto the label pad.

Air Assist: The stream of air from the Air Assist Tube.

Air Filter: A device on the inlet of the air supply that removes debris from the air supply.

Critical Alarm: An alarm that will stop the applicator from applying labels. Critical alarms include end of web, out of labels (from printer) and no ribbon (from printer).

Cycle Time: The amount of time it takes for the applicator to print and apply a label to a product, starting from the product detect signal.

Dancer Arm: The function of the dancer arm is to release the brake on the unwind when labels are being printed and to stop the unwind mandrel when printing stops.

Extended Air Assist: The air assist is always on while the label is being printed (dispensed). Extended air assist allows the air assist to stay on longer to aid in putting the label on the pad.

Label Feed: The moving of the label stock through the machine.

Label Liner: The backing material that supports the labels before dispensing.

Label Manifold: The aluminum block mounted under the tamp slide. The label pad is mounted to it. Vacuum and the air blast are channeled through it to the pad.

Label Pad: Mounted under the manifold and is usually made from white delrin. This part supports the label before application.

Label Placement: The time from when the product sensor is made to when the labeling sequence starts.

Label Size: The width and length (or feed) of a label. Length equals the distance from the leading edge of the label to its trailing edge. Width is the distance across the label.

Leading Edge: Refers to the signal sent from a sensor when the first edge of a product or label is detected..

Parity: A data bit that provides a means of checking for errors in the data stream.

Peel Edge: A machined part just before the label pad used to transfer the label onto the pad as the liner is pulled around the part.

Rewind: This is the rotating mandrel that takes up the liner after the labels have been removed.

Tamp Extend Time: The time allowed for the tamp slide to fully extend.

Tamp Retract Time: The time allowed for the tamp slide to return from it's extended position to it's retracted position.

Trailing Edge: Refers to the signal sent from a sensor when the last edge of a product or a label is detected.

Unwind: The rotating mandrel where the roll of labels is placed to be printed and applied.

Valve Bank: The typical valve bank for a tamp has three valves in it. Each valve has a built in regulator and gauge. The assembly is made to be bolted on either side of the applicator.

Warning Alarm: This alarm serves as a warning that the applicator is low on labels or ribbon.

Web Path: The path the label liner follows leading from the unwind, through the printer and ends at the rewind.

STANDARD 3600AB DISPLAY

The following description provides general information about the display and will tell the operator how to change values, explain the meaning of different screens, and describe the different options and how to set them up.

TYPES OF KEYS

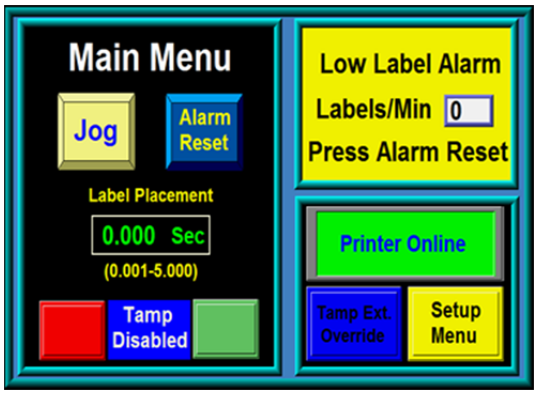
This arrow key usually is a “go to” key and will move the operator to another screen.

This key is for setting something like an applicator type, jog or used as an alarm reset key. Color of keys will vary depending on application.

This key set is for Enabling/Disabling the tamp slide. To disable the tamp slide, press the red key to the left. In the middle is a status box displaying the condition of the tamp slide. To enable the tamp slide, press the green key to the right.

This block of keys usually turns something on or off. If the option is on, the lamp to the left of the keys will be green; otherwise it will be red.

ALARMS



Main Menu Screen with Low Label Warning

End of Web Critical Alarm Screen

There are two types of alarms generated in the 3600AB Printer Applicator:

Warning Alarm
Critical Alarm

Warning alarms will appear in the upper right hand corner of the main menu in the status box. Since these alarms are not serious, the applicator will not be stopped. During a warning alarm, the amber light on the light stack (if provided) will turn on.

Critical alarms will stop the applicator (take it offline) and turn on a red light on the light stack (if provided). The alarm screen will cover the current screen explaining the alarm type. An alarm reset button appears at the bottom of the page to clear the alarm.

Warning Alarms
The following are warning alarms monitored by the applicator:

Low Label – This alarm occurs when the Low Label sensor detects that the unwind roll is nearly out of labels.

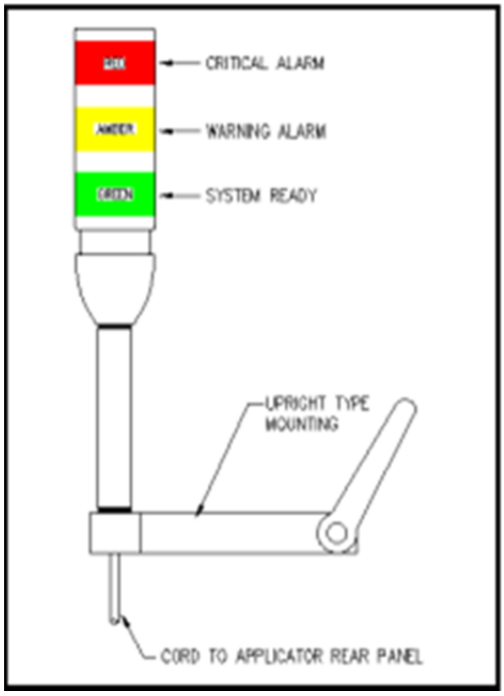
Low Ribbon – This alarm occurs when the print engine detects that the ribbon roll is getting low.

Critical Alarms
The following are the critical alarms monitored by the applicator:

End Of Web – This alarm occurs when the end of web sensor detects a break in the web.

No Media – This alarm occurs when there is no ribbon or label stock detected in the print engine.

Alarm Light
The triple light stack consists of green, amber and red lights. The green light indicates the system ready output is on. The amber light is for warning alarms and the red for critical alarms. The alarm signals are a steady on output. The display will indicate the type of alarm.



PASSWORD

Some areas of the display are password protected. The standard 3600AB password is “1800”. When you press the yellow “Setup” key in the lower right hand corner of the Main Menu, a screen similar to the one shown below will appear.

This screen notifies the operator that the area is password protected. Here the operator can choose to go back to the main menu or continue with the password entry by touching within the box to the left to invoke the keypad.

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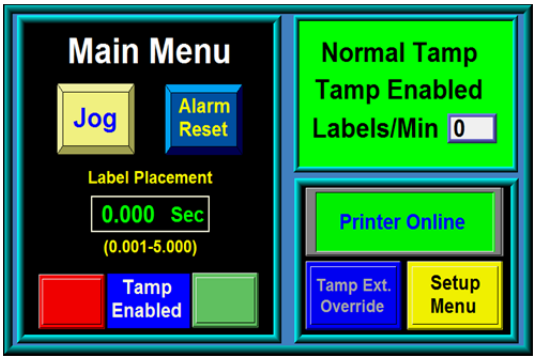
When you touch a number on the keypad, it will highlight. This is the only indication that a key was pressed since the password is not displayed. If you know you’ve entered a wrong number, press “C” to clear what you have and start again. “ENT” finishes the process.

If the wrong password was entered, this screen appears. If the operator wants to try again, press the “Prev Menu” key. If you do not know the password, press the other key to go to the main menu.

MAIN MENU

After the start up screen has timed out the Main Menu screen will come up. The main menu is divided into three sections. The upper right corner of the display is a status window. The purpose of this box is to inform the operator of the status of the applicator. The display screen shown below appears immediately after going offline. If the applicator is online with no alarms, the status window will have a green background with the label rate displayed. The Label Rate is the rate in which labels have been applied per minute. After 60 seconds passes by with no apply signal 0 labels/min is displayed. If a warning alarm occurs, the background changes color and a message will appear, indicating the nature of the alarm. Specific warning alarms were discussed previously.



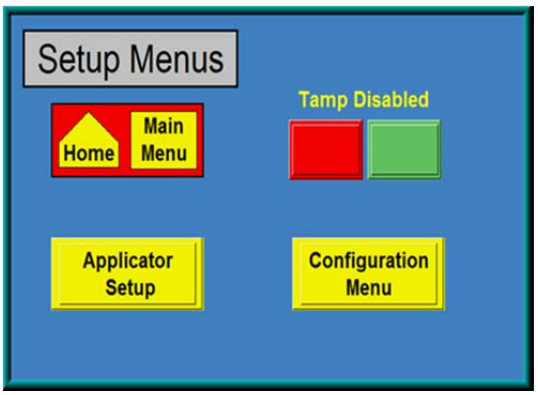
The left side of the screen will remain the same. There will always be jog, alarm reset keys and keys to allow the operator to enable and disable the tamp. When the tamp slide is disabled it will not move and inputs from the jog switch or product detect sensor are ignored. The label placement time can also be adjusted from the main screen.

The lower right corner has buttons to gain access to the Setup Menu. When the operator presses the Setup Menu button the display goes to the password screen which was discussed in the Password Section. The Tamp Ext Override button allows access to the Tamp Extend Override feature. This allows the operator to extend the main tamp cylinder to aid in setups. The Tamp must be disabled, and any obstructions removed to prevent damage to the tamp wrap nose assembly before attempting to use this feature. There is a Printer Status Box above the Tamp Ext. Override and Setup Menu buttons. This displays to the operator whether or not the printer is online or offline.

The display is equipped with a backlight saver function that automatically turns off the backlight after 60 min of inactivity. Pressing any part of the display will bring the display backlight on. Also, the applicator will initiate a backlight wake-up in response to any alarm condition. The later feature insures that the operator has a visual indication of a warning or critical alarm condition in systems without a light-stack assembly.

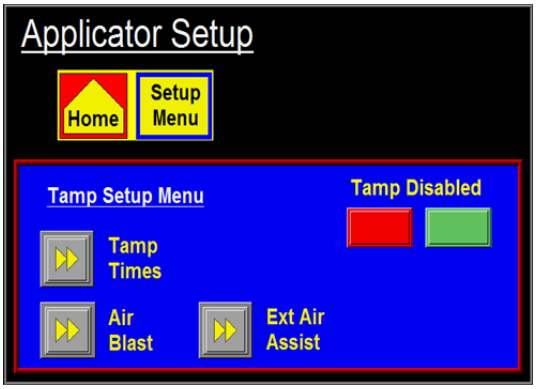
SETUP MENUS

The Setup Menu will appear after the correct password (1800) is entered at the password screen.



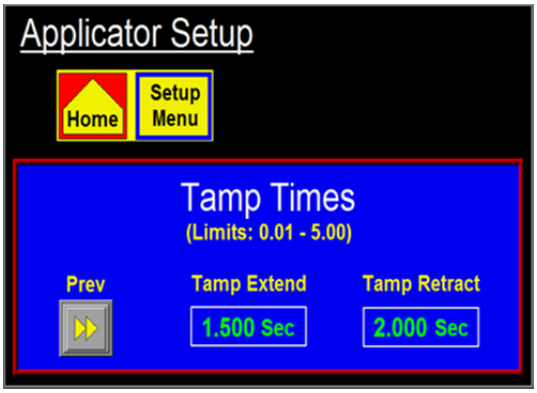
In this screen the operator has two choices. The Applicator Setup Menu screen or the Configuration Menu screen. To access the Configuration Menu the operator must first disable the tamp slide. The buttons to do this are conveniently located above the Configuration Menu button. If this is not done a screen will appear reminding the operator to do so.

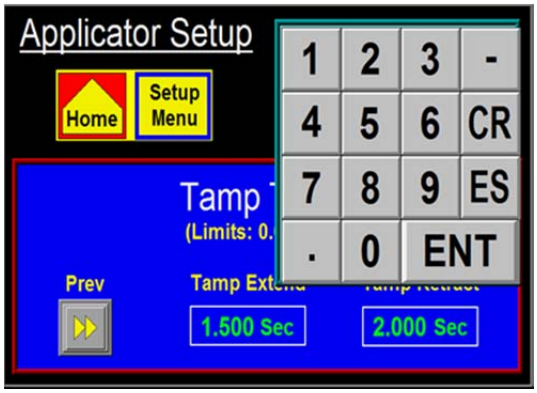
APPLICATOR SETUP



In the Applicator Setup Menu screen the operator can adjust the Tamp Times and add Air Assist Time if needed. The Tamp Time is divided into two parts, Tamp Extend Time is the time allowed for the tamp slide to extend before continuing with the labeling sequence. Tamp Retract Time is the time allowed for the tamp slide to return to receive the next label.

Extended Air Assist is the time after the printing stops until the air assist valve turns off. This feature allows more time to be added on than it takes to print/feed a label. It can be useful in placing long labels onto the label pad.

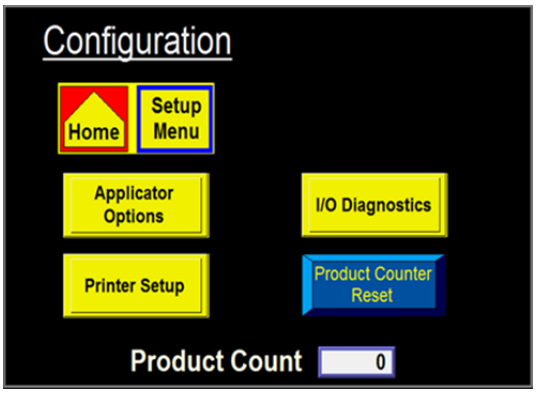




CHANGING VALUES

Values that may be changed are shown in the outlined boxes displaying the current value. In the example above left, the Tamp Extend Time is shown to have a value of 1.500 sec. To change this value, the operator will touch the screen in the Tamp Extend Time outlined box field and a keypad will appear to the side of the variable being changed. The figure to the above right shows what the display should look like after touching the variable field. You can see a cursor has moved over the rightmost digit. Also the numeric keypad has appeared to the left of the variable. As you touch numbers on the keypad, the variable is zeroed and the new value is input to the variable box. Pressing "ENT" will finish the process. Pressing "ES" will allow you to escape without changing the value and "CR" will clear the value you're changing. **Note: In most cases, an out-of-range value will not produce a warning message but the variable will return to the original value after pressing "ENT".**

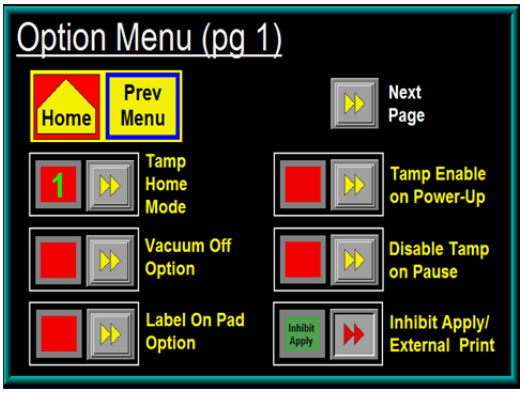
CONFIGURATION MENU

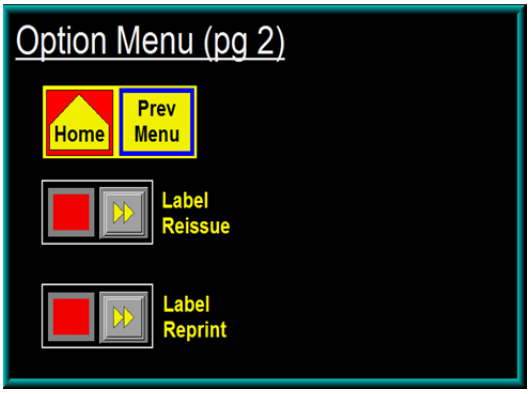


In the Configuration Menu screen the operator can go to Applicator Options, Printer Setup, I/O Diagnostics or reset the Product Counter. The Product Count is the number of times the apply sequence has been initiated by the opto-touch switches.

APPLICATOR OPTIONS

Pressing the Applicator Options button will bring the Option Menu screen up. Here the operator can turn on or off the Options displayed below.





Tamp Home Mode - This Option was added to determine the Tamp Home output by the Tamp Retract Time or Tamp Home switch. When the Tamp Home Option is selected as “Tamp Retract Time” the next label will print /feed out onto the pad when the Tamp Retract time has timed out or the Tamp Home sensor input is made, whichever occurs first. If the Tamp Home option is selected as “Tamp Home Sensor” the label will not feed/print out onto the pad until the Tamp Home Sensor is made.

Vacuum Off Option - This option is used to turn the vacuum to the label pad on and off to save air and to keep particles from entering the pad when there is no label available. When the option is on, the vacuum will turn on when the air assist is on and turns off at the beginning of the air blast. To turn this option on, press “ENT” and the last word on the second line should start to flash. Use the arrow keys to toggle between ‘On” and “Off”. When you get what you want, press “ENT”. Press “MENU” to go to the next screen.

Note: The applicators are pre-wired and logic is provided for this option but there is still some hardware items needed to make this option work (i.e. valve bank). Please consult your distributor for the necessary items when installing this option in the field.

APPLICATOR OPTIONS continued…

Label on Pad – When the Label On Pad option on, the controller will look for an input from a vacuum switch after the air assist shuts off and the label on pad filter times out. If the vacuum switch is on then that means there is a label on the pad and the label on pad output turns on. The output will stay on until the air blast valve turns on. If the label falls off the pad anytime between when it first turned on and the air blast valve, the output will turn off. An integrator will be able to monitor the air assist valve, air blast valve and the label on pad output and determine if a label has been removed from the pad.

Note: Vacuum switch is an option and is purchased separately

Vacuum Switch Setup CTM # PE-SW1074

Set-up of threshold value:
With the back cover removed, labels sent down to printer and a label on the pad, take the printer "offline" or on "pause". Make note of the "value" on the pressure switch's main "L.E.D. display. For example, we will say the value is –2.0. Next, remove the label from the label pad. Make note of the pressure switch's main display "L.E.D." value – example: -0.5. Add these two values together: -2.0 + -.5 = -2.5, then divide by 2 = -1.2. This value (-1.2) is your "threshold value. Enter this value in the sub display by the "up and down" arrow keys.

Note: If the vacuum pressure is increased or decreased, you may have to adjust the "threshold" value per above example.

Tamp Enable on Power Up - This option lets the operator chose whether the tamp slide is enabled or disabled on power-up.

Disable Tamp on Pause - This option will disable the tamp slide when the printer goes offline or into pause. To turn this option on, press "ENT" and the last word on the second line should start to flash. Use the arrow keys to toggle between 'On" and "Off". When you get what you want, press "ENT". Press "MENU" to go to the next screen.

Inhibit Apply / External Print - This is an option that will inhibit the printing of a label until the external print input is turned on.

Note: You cannot have both the External Print Option and the Label Reprint Option on at the same time. If you turn one on, the other will automatically be turned off.

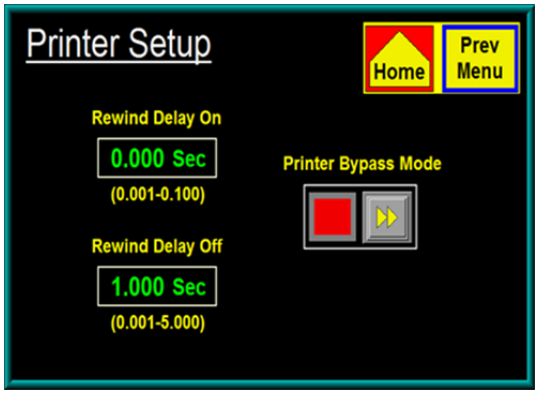
Label Reissue - When the Label Reissue option is turned on it allows the applicator to reprint the last label format sent to the printer until another label format is received. The print engine must be configured to allow this option to work. Refer to the Printer Settings section of this manual.

Label Reprint Option - With this option is turned on and a vacuum switch installed, the applicator will dispense another label when the label is removed from the label pad. This option is useful when an extra label is needed on line but you do not want to actuate the applicator to replace the label you took from the label pad. You simply pull the label off the pad and another label is printed and dispensed. The "Number of Reprints" screen will appear after the Label Reprint screen only if Label Reprint was turned on. Here the number of reprints can be preset up to 99 labels.

Note: You cannot have both the Label Reprint Option and the Label on Pad Option on at the same time. If you turn one on, the other will automatically be turned off. Label Reprint is not available while the applicator is set to ITB (Inverted Tamp)

CONFIGURATION MENU CONTINUED

PRINTER SETUP



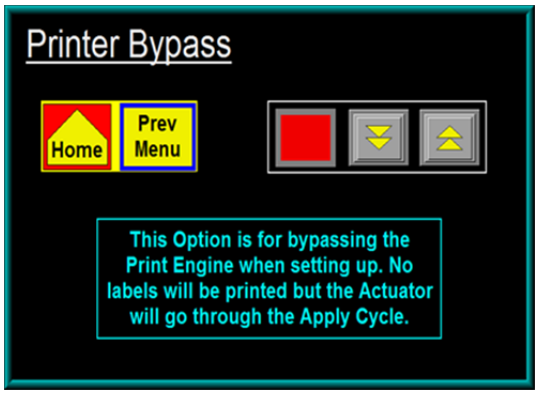
Pressing the Printer Setup button in the Configuration Menu screen will bring up the Printer Setup screen. Here the operator can adjust the Rewind On and Off Delay Times and Turn on the Printer Bypass Mode.

Rewind Delay On and Delay Off Timers

Timers were added to change how soon the rewind motor will turn on after the printer starts to print and how long it will run after the printing is finished. In some cases where label stop varies, this can help control it. These values should only be changed after consulting with the factory. The rewind delay on timer controls when the rewind motor will turn on compared to when the print engine starts to print a label. Putting a delay will cause the motor to wait that amount of time before turning on. On narrow labels where label stop can be a problem, this will keep the rewind motor from putting tension on the web until the backfeed is finished or until you're sure the labels are moving forward through the printer. The delay off time will determine how long the rewind motor stays on after the printer is finished printing. This timer can be decreased to keep the pull on the web to the minimum.

Note: Factory default values are: Delay On = 0 seconds, Delay Off = 1 second

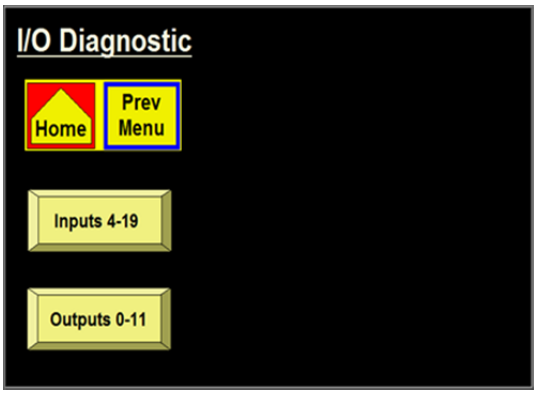
Printer Bypass Mode



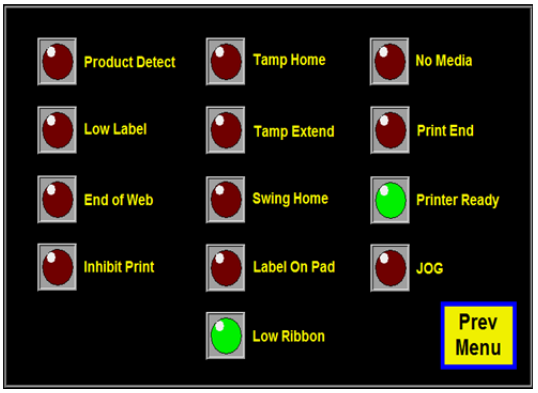
Pressing the Printer Bypass Mode In the Printer Setup Menu screen will bring up the Printer Bypass screen. Here the operator can turn Printer Bypass On or Off. The Printer Bypass Mode is useful during setup where the print engine is not required to cycle the applicator.

CONFIGURATION MENU CONTINUED

I/O DIAGNOSTICS

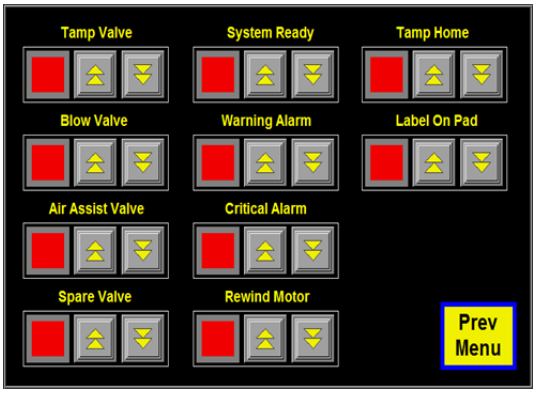


Pressing the I/O Diagnostic button in the Configuration Menu will bring up the I/O Diagnostic screen
This section allows the operator to monitor inputs and to manually turn outputs on and off. This serves as a useful diagnostics tool for a technician.



Inputs Section

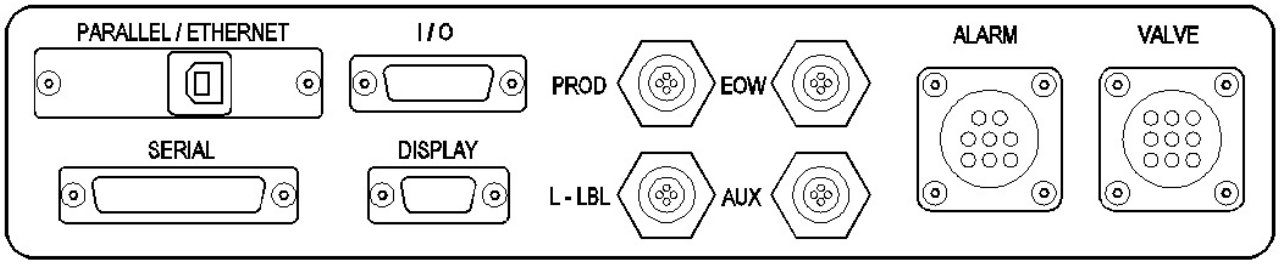
Note: The Input Signals from the print engine are inverted.



Outputs Section

The Outputs can be turned on and off here. When the operator leaves this screen, any outputs they may have turned on will be automatically turned off.

REAR PANEL



Connector Descriptions

VALVE: Valve bank connection. Valve banks come with a short cable and a plug.

ALARM: Alarm light connection. This will allow for a triple light stack.
(one light for printer ready, one light for warning, and one for critical alarms)

PRODUCT: Product Detect Sensor connection.

LOW LBL: Low label sensor connection.

AUX: Used for End of Web sensor connection or custom applications.

PARALLEL: Wired to the parallel port of the printer for data transfer.

ETHERNET: In place of parallel port. Used to transfer data to ethernet equipped print engines.

SERIAL: Wired to the serial port of the printer for data transfer.

I/O: This connector is being used with the integration of the opto-touch switches and light curtain

APPLICATOR SETUP

When an applicator is shipped, it may be necessary to for some disassembly. The following section will show different assemblies to aid in putting the applicator back together so it can be set up.

Unwind Assembly

The unwind assembly mounts to the applicator by fastening the unwind mounting plates (2) to the unwind and to the applicator face in alternate positions to suit various orientation and clearance requirements (refer to drawing # ASS-238-0123, MP-238-0236). The two plates are held together using four flat head screws; one end fastens to the unwind bearing block with three (3) flat head screws, and the other end fastens to the applicator face with four (4) screws. The mounting plates can be configured so the unwind can be positioned in different locations to aid in certain applications.

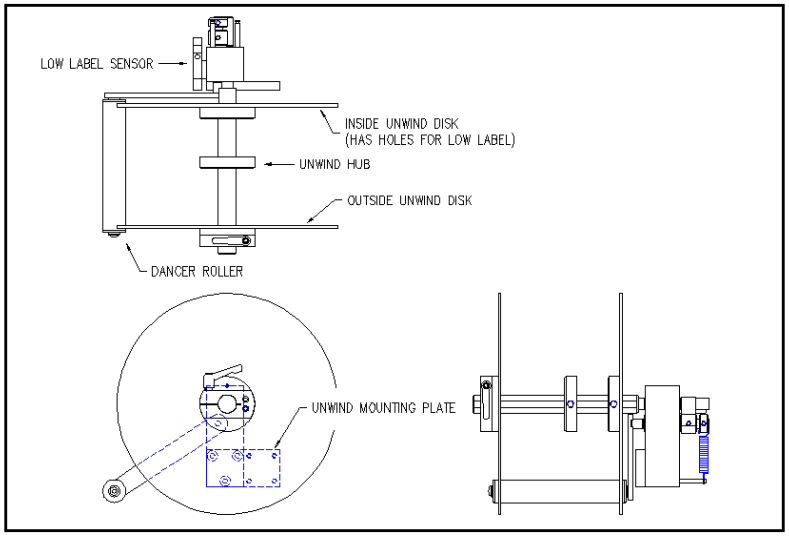
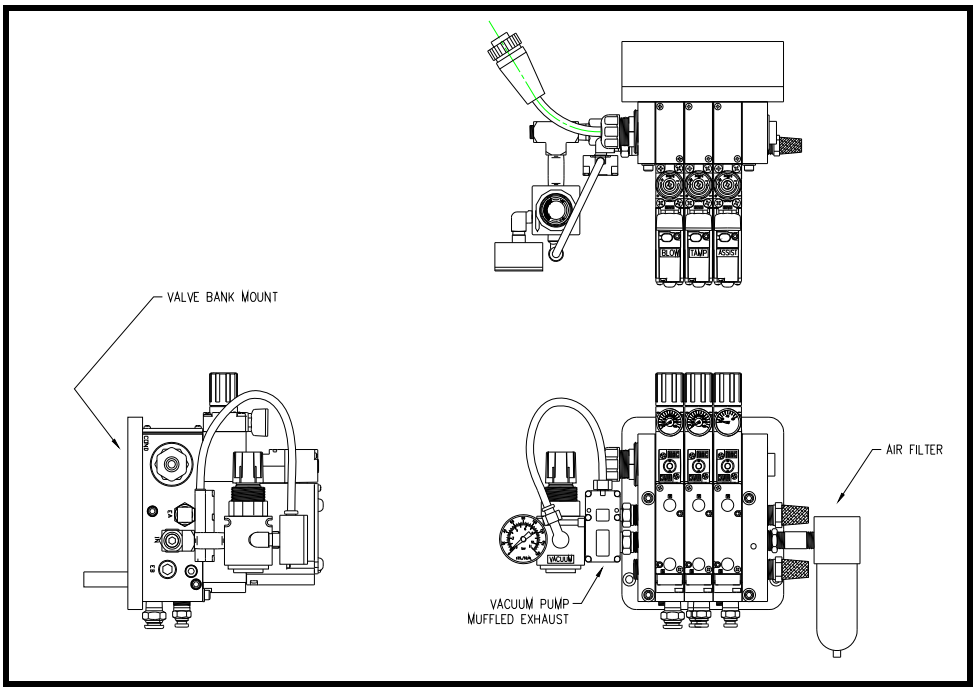


Figure 1 (unwind assembly)

Unwind disks

The unwind disks include a Lexan disk and hub screwed together. The inboard assembly will have two holes in the disk for the low label sensor. The outboard assembly will have a solid disk and hub assembly that includes a ratchet handle for locking it in place. Place the inboard assembly so that the inside face of the disk is approximately 7/8" from the applicator face. This should match the web path of the printer. When fastening the disk assembly to the unwind shaft, make sure the set screw is engaging against the flat of the shaft. Position the loose hub just short of the label width. This hub is for supporting the outboard end of the roll of labels. The outboard disk assembly will slide onto the shaft against the roll of labels and will lock in place by tightening down the ratchet handle.



Valve Bank

Valve Bank

The valve bank assembly is shown above. If the valve bank was removed and needs to be re-mounted, decide on which side of the applicator the valves should be mounted. Normally, the valves are mounted on the opposite side from the applicator nose. In a nose up application, it may be best to position the valves on the same side as the applicator nose. Mount the valve bank by putting two ¼ shcs. through the two clearance holes on the side of the labeler housing. The bolts then screw into the valve bank mounting plate. Run the air lines into the manifold below the valve bank or directly into the applicator nose if the valves are mounted on the side as the applicator nose.

Ribbon Loading

1- At the main menu, press the “Home/Tamp” key (refer to the applicator display section). This will extend the tamp slide so the pad and manifold will not be in the way of opening the print-head. If using the extended peel edge, disabling the tamp is acceptable.
2- Open the printer cover.
3- Refer to the printer manual for ribbon loading instructions.

Label Loading

1- At the main menu, press the “Home/Tamp” key (refer to the applicator display section). This will extend the tamp slide so the pad and manifold will not be in the way of opening the print-head. If using the extended peel edge, disabling tamp is acceptable. Loosen the ratchet handle that locks the outer unwind disk in place and remove disk.
2- Load a roll of labels onto the hubs on the unwind shaft. Make sure the labels are against the inner disk and are right side up.
3- Remove the first three feet of labels from the liner.
4- Thread the label stock around the dancer and guide rollers into the printer. Refer to Figure 6 for the web path from the unwind to the printer. Refer to the printer manual as to how to thread the printer. Make sure the liner passes between the peel edge and the air assist tube.

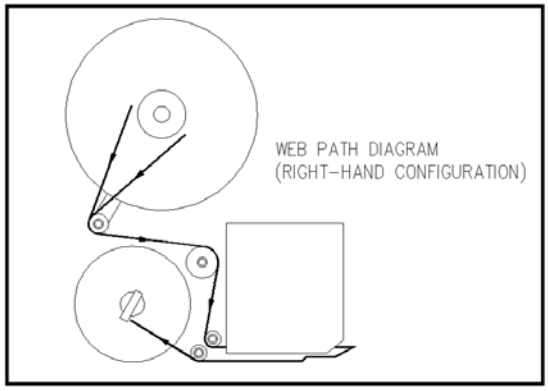


Figure 6 (web path)

5- Remove the rewind pin and wrap the liner over the rewind mandrel. Replace the rewind pin and rotate the rewind mandrel to take the slack out between the rewind and printer.
6- Make sure the labels track straight from the unwind into the printer. Adjust the inner unwind hub if necessary.
7- Bring the guide collars within 1/64” of the liner.
8- Make sure the print head and any other latches are closed within the printer. Close the printer cover.

Applicator Nose Setup

1- Disable tamp (refer to Display Panel section). This way adjustments can be made without the fear of the tamp actuating and injuring someone. Also load label formats into the printer.

2- The label stop must be properly set for the applicator to work successfully. This is done through the printer and will be referred to as "Offset", "Top of Form", "Pitch Offset", or other terms dependant on the printer model.

   a) With printing information in the buffer and the tamp disabled, press "jog" to dispense a label.

   b) If the label stop is correct, the label should feed off the liner. If the next label out is flagged past the peel edge, the label stop must be decreased. If the label doesn't dispense completely off, then increase label stop. Refer to printer manual as to how to change label stop

3- Tamp height needs to be set so a label feeds out in contact with the label pad. If the pad is too high, the label will not land consistently on the pad and the trailing edge of the label could come into contact with the peel bar of the printer when the tamp slide extends. If the label pad is too low, the label will dispense into the back of the pad and jam.

4- The inboard edge of the label pad must match the inboard side of the label. Refer to the side to side adjustments to move the pad.

5- Position the air assist tube so the hole or holes are centered on the label and pointing approximately ¼"in from the label pad. The air pressure should be set at 20-30 P.S.I. Press "Jog" to dispense a label. If the label doesn't feed out against the label pad and the vacuum doesn't capture it, try increasing the air pressure. Continue until the vacuum captures the label.

   Warning: There are other factors that can keep the label from staying on label pad. You may need more vacuum, increased or decreased label dive, or the air assist tube may need to be rotated.

6- Air pressure for the tamp slide should start at 40 P.S.I., and for the vacuum pump at 20-40 P.S.I.

PRODUCT SETUP

The applicator should be setup and have successfully passed the static test before going on in this section. If you have skipped the applicator setup section and have trouble with the application here, it will leave you with more areas to troubleshoot to fix the problem.

Applicator Attitudes

The applicator can be positioned in a number of positions. Below applicators are shown in different attitudes with the proper name under it.

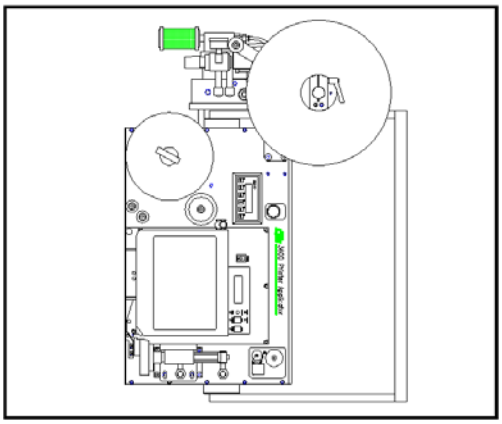


Figure 7 (nose down)

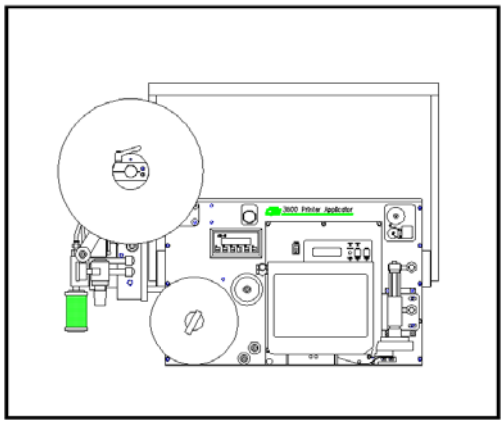


Figure 8 (upright and above)

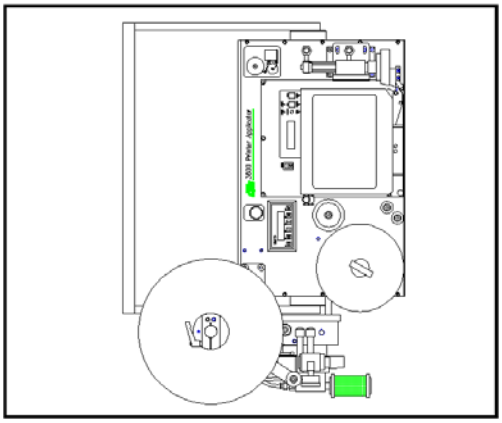


Figure 9 (nose up)

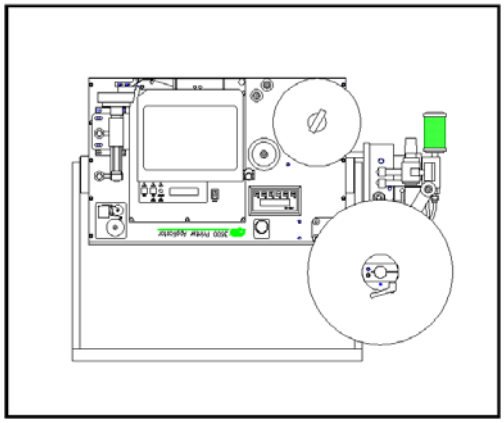


Figure 10 (bottom up)

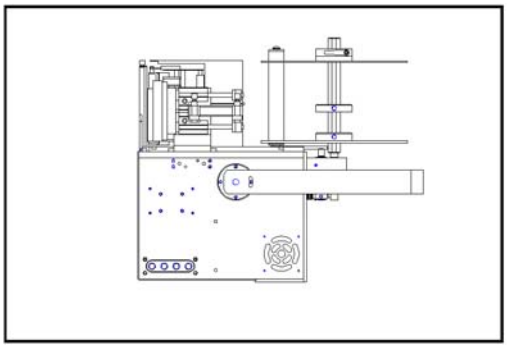


Figure 11 (reels up)

Positioning the Applicator
The product must be presented to the applicator in a consistent manner. Label accuracy cannot be maintained if the surface being labeled changes speed or distance relative to the label pad.

Note: The following directions are for conventional tamps and do not include swing tamps.

Extend the tamp slide by pressing "Home/Tamp" key on the display. Move a product in front of the applicator on the same path as it will run down the line. Move the applicator so the label pad is within 1/8" from the product. Also make sure nothing is in the way of the moving parts.

Move the product and applicator so the label pad is over the application point. Now position the product detect sensor slightly upstream of the leading edge of the product. Now go to the product sensor setup that matches your sensor and follow directions.

Standard Product Sensor Setup (Banner SM312LV --- 4"- 15' range)

1- Plug the sensor into the back of the machine.
2- Turn the power on and disable the tamp.
3- Remove the back cover of the sensor and set the light/dark switch to DO by turning the switch counter-clockwise.
4- Make sure the sensor is pointing at the reflector (tape). When the LED indicator is flashing at the fastest rate, the two are at the best alignment.

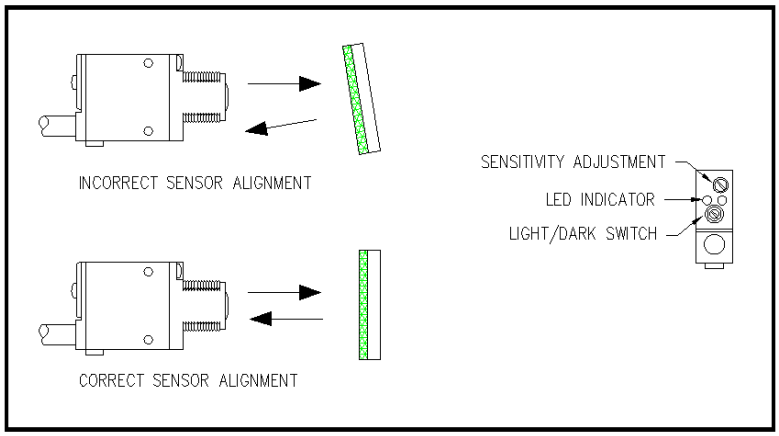


Figure 12 (standard product detect)

5- Place a product between the sensor and the reflector. The LED indicator should go out.
   a) On translucent products, the sensitivity may have to be turned back so not to burn through.
6- Replace back cover of sensor.

Optional Product Sensor Setup (Banner S18SN6FF50)
This sensor is a 18mm barrel type with a 50mm far limit cut-off. This means it will see objects that are less than 2" away and ignore the rest. There is nothing to adjust on the sensor except the physical position.

Sensor wiring determines whether the product detect will be setup for leading or trailing edge. The #2 terminal in the product detect plug at the end of the sensor cable is for the output of the sensor. The black wire is for leading edge and the white wire for trailing edge.

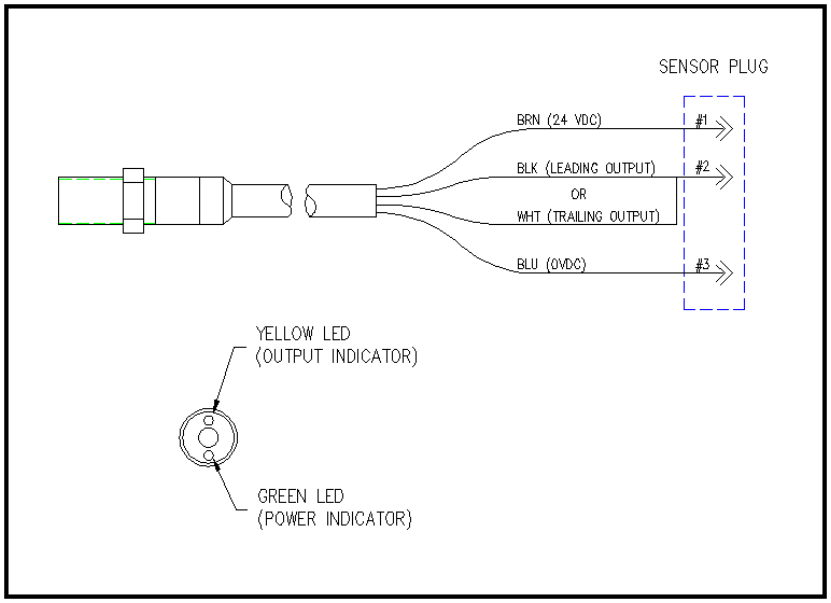


Figure 13 (optional product detect)

Label Placement
Moving the label to the correct position to flow is best accomplished by moving the product detect. For fine adjustments or to adjust while the line is running, the operator can change the label placement value in the display. The higher the value the farther back the label will be placed. The lower the value, the label will move forward. See the "Applicator Display" for more details.

Note: The higher the label placement values, the slower the label rate.

APPLICATOR ALARMS

The 3600AB is equipped with 3 signals, System Ready, Warning, and Critical, wired to the alarm and I/O ports. See the Display Section of the manual for corresponding Alarm screens that will appear on the applicator display.

System Ready Output
If the applicator is not in a critical alarm state, the tamp slide is enabled, printer online, and the inhibit input is not on, then the system ready output is on.

Warning Alarm Output
The warning alarm will activate on the following conditions: Low Label and Low Ribbon. The low label signal comes from a photoelectric sensor mounted on the side of the unwind bearing block. This sensor can be adjusted to turn on at different roll diameters. The low ribbon signal comes from the printer (Consult the printer manual). On a warning alarm the applicator will continue to apply labels.

Critical Alarm Output
The critical alarm includes: Out of Labels, Out of Ribbon, and End of Web. Label and ribbon alarms come from the printer and you should consult the printer manual as to how the signals are set. The end of web signal comes from a sensor mounted to look for the label supply to end before entering the printer. On a critical alarm, the applicator will stop applying labels.

To reset the alarms, the display will instruct the operator to press the “ENT” key. Before clearing the alarm, make sure the problem has been corrected. If out of labels, replace with new label roll on the unwind; if out of ribbon, replace with new roll of ribbon. If the problem is not corrected before pressing “ENT”, the alarm will come back on again.

Warning: False alarms may occur if the printer is off while the applicator is on!

Alarm Light
The triple light stack consists of green, amber and red lights. The green light indicates the system ready output is on. The amber light is for warning alarms and the red for critical alarms. The alarm signals are a steady on output. The display will indicate the type of alarm.

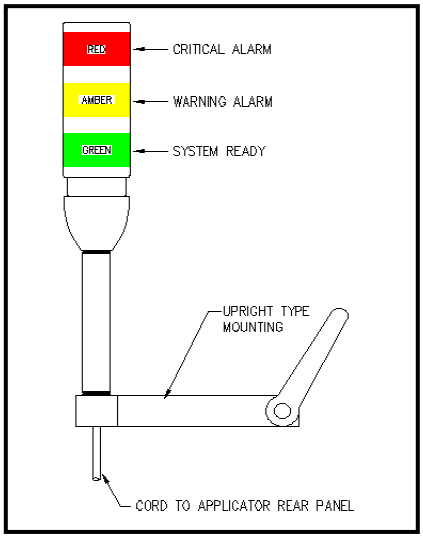


Figure 14 (alarm lights)

Alarms and the I/O Port

The alarm signals from the applicator can be monitored through the I/O port. This is helpful if the applicator is being integrated into a packaging line and the system plc needs these signals as inputs. Check the rear panel section for an explanation of the I/O pins.

Adjusting the Low Label Sensor Mount

1- Plug the sensor into the back of the machine.
2- Turn the power on and disable the tamp slide.
3- Remove the back cover of the sensor and set the light/dark switch to DO by turning the switch counter-clockwise.
4- Look at the red dot shining from the sensor to the unwind disk. The red dot shows what the diameter of the roll will be when the alarm turns on. To turn the alarm on sooner, move the sensor up so that it is farther away from the core. To turn the alarm on later, move the sensor down closer to the core.

Note: The sensing range on the sensor is only 7/8". Try to stay close to this distance away from the inside disk to the end of the sensor.

5- Replace back cover of sensor.

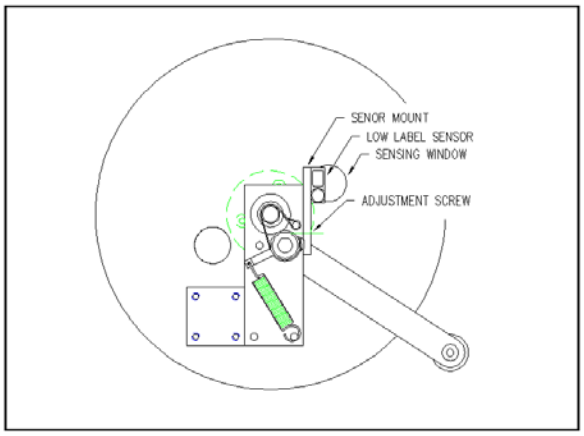


Figure 15 (unwind/low label)

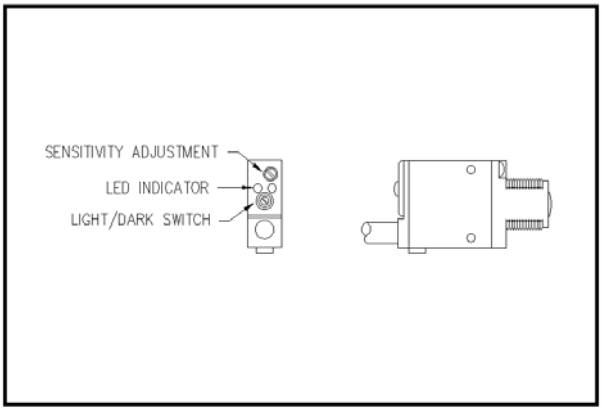


Figure 16 (low label sensor adjustment)

MAINTENANCE

CAUTION: DISCONNECT AIR AND POWER TO THE APPLICATOR BEFORE PERFORMING THE FOLLOWING PROCEDURES. INJURY FROM MOVING PARTS AND/OR ELECTRICAL SHOCK MAY OCCUR.

General Maintenance

Daily Maintenance

1- Clean the print head and platen roller each time you change ribbon. Refer to the printer manual for the correct procedure and additional daily checks.

2- Examine the air filter for water or oil collection. Drain if necessary.

3- Examine the tamp pad and the rollers used to guide the web for adhesive build up. Clean if needed with alcohol or similar solvent.

4- Look for loose screws, rollers, etc.

Weekly Maintenance

1- Clean peeler bar, rollers, and tamp pad.

2- Examine machine for air leaks.

3- Wipe down the outside of the applicator and product detect lens.

4- On extended peel edge noses, check the uhmw tape on the peel edge for wear or nicks. Replace if needed.

Semi-Annual

1- Replace filters.

2- Check vacuum pump for an accumulation of debris. Replace if necessary.

3- Examine pulleys, belts and rewind clutch for wear.

Dancer Arm Adjustment

CAUTION: DISCONNECT AIR AND POWER TO THE APPLICATOR BEFORE PERFORMING THE FOLLOWING PROCEDURES. INJURY FROM MOVING PARTS AND/OR ELECTRICAL SHOCK MAY OCCUR.

The figure below shows the layout of the unwind brake band. It's important that the brake stops the unwind from turning but if it's too tight the printer will have a hard time pulling the web off when the label roll nears the end.

Note: Even if the unwind brake is adjusted properly, it will be of little value if the core of the label roll slips on the unwind hubs. Making sure the unwind disks are tight against the roll of labels will help.

1- Hold the dancer arm in the position it should be when the brake is on. Loosen the collar that the brake band is anchored to, rotate it so the band is tight and tighten back down. Make sure the brake band is wound in the right direction.
2- Loosen the collar with the spring anchor and tighten so the dancer arm is held up with enough tension to stop the unwind from turning. It should not be so tight as to create too much pull off force when the printer is running. This may cause the printer motor to stall or cause print registration problems.
3- Check the performance of the unwind with a full roll of labels and a small diameter roll. Make adjustments as necessary.

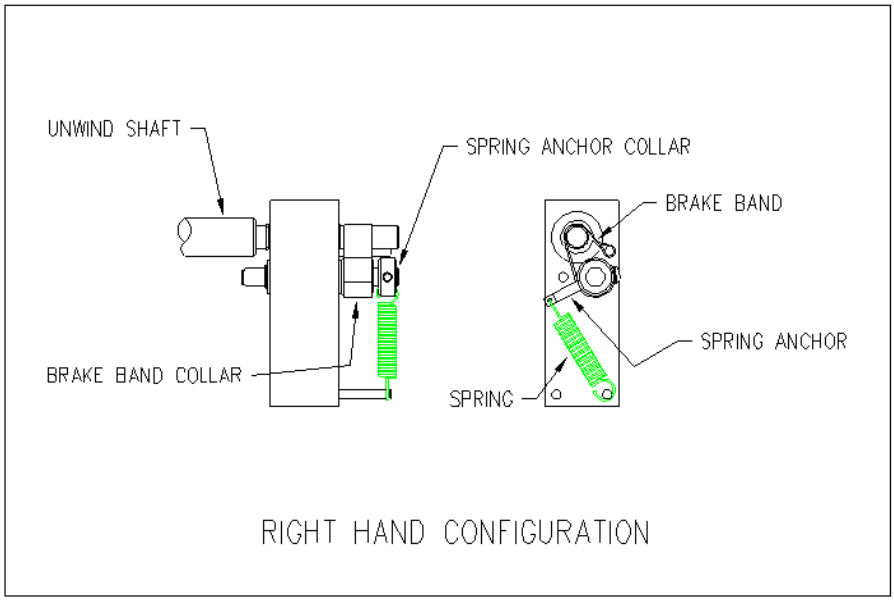


Figure 17 (adjusting brake band)

Rewind Clutch Adjustment

CAUTION: DISCONNECT AIR AND POWER TO THE APPLICATOR BEFORE PERFORMING THE FOLLOWING PROCEDURES. INJURY FROM MOVING PARTS AND/OR ELECTRICAL SHOCK MAY OCCUR.

The rewind is used to take-up the liner leaving the printer (after the labels have been dispensed). It's important to set the rewind tension so the liner is taken up even at the end of a roll when the rewind is full. Also, the tension should not be too high so the labels are being pulled through the print head. This will cause poor print quality and label stop will not be consistent.

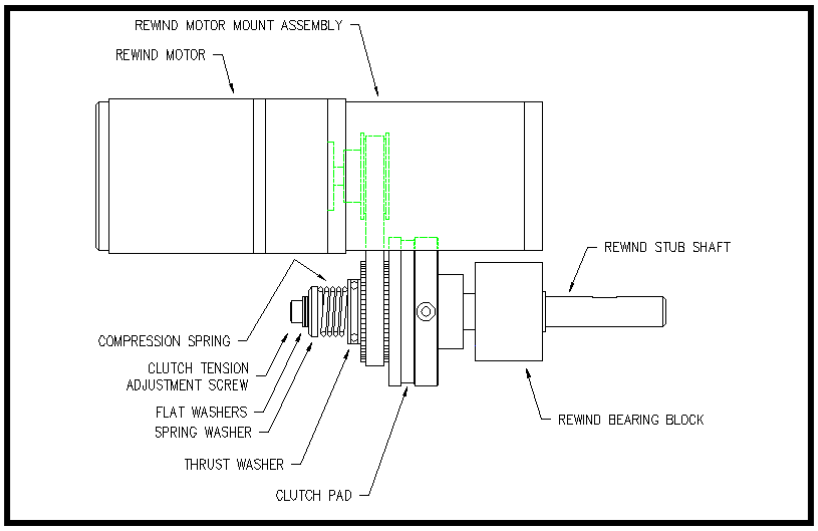


Figure 18 (rewind/clutch assembly)

1- Remove power and air to the machine.

2- Remove the lower stainless cover.

3- CAREFULLY remove the tension adjustment screw and all washers (NOTE: the spring is under compression load). Keep track of how many flat washers are on the outboard and inboard sides of the "spring washer".

4- If the rewind tension was too tight, move one or two of the flat washers from the outboard side of the "spring washer" to the inboard side (nested inside the compression spring). This will relieve the pressure on the clutch pad.
If the tension was too loose, move one or two flat washers from inside the compression spring to the outboard side of the "spring washer". This will increase pressure on the clutch pad.

5- Carefully re-apply the power and air to the machine and test. Re-adjust if necessary.

6- Remove power and air and replace the cover on the machine if everything tests OK.

Changing Clutch Pads

1- Remove power and air to the machine.

2- Remove the stainless cover on the back of the machine.

3- Carefully remove the tension adjustment screw, flat washers, spring washer, spring and thrush washer. NOTE: Keep track of how many flat washers are on the outboard and inboard sides of the “spring washer” to maintain the same pressure on the clutch pad when re-assembled.

4- Work the belt off the pulley/pressure plate and slip off the pressure plate.

5- Replace the clutch pad.

6- Re-assemble and adjust the tension for the new clutch pad.

Belt Tension

1- Remove power and air to the machine.

2- Remove the stainless cover on the back of the applicator.

3- Proper Tension: 1/4”- 3/8 ” Belt Deflection.

4- Loosen the two ¼” socket head cap screws that bolt through the side of the rewind motor mount assembly to the faceplate of the applicator.

5- Push the rewind motor assembly up and re-tighten the two ¼” socket head cap screws.

6- Replace stainless cover.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Nothing works.	Power cord is loose, defective or not plugged in.	Inspect the cord to find the problem.
	A.C. line fuse blown.	Find the cause of the electrical short and correct.
Power switch on, printer is on, no display.	PLC is off.	Check power supply.
	Cables are not plugged in on PLC or display.	Make sure cables are plugged in.
Power switch on, display is lit and working; printer not on.	Printer turned off.	Turn the printer on.
	Power cord going to the printer is disconnected.	Inside the applicator, plug the printer power cord in.
Label liner breaking.	Labels are not threaded correctly.	Re-thread labels.
	Unwind/rewind disks or guide collar not aligned with printer.	Adjust disks and collars so the labels flow through the printer.
	Adhesive build-up.	Clean as necessary.
	Label jammed in printer.	Clear jam.
	Bad roll of labels.	Replace label roll.
Labels are not consistently stopping on label pad.	Vacuum pump not working.	Clean or replace pump.
	Too little or too much vacuum.	Adjust vacuum pressure.
	Air assist too high or too low.	Adjust air pressure.
	Tamp pad not positioned correctly to the peel edge.	Check with the applicator setup section on how to position the label pad.
	Air assist tube not positioned correctly.	Adjust the position of the air assist tube.
	Adhesive build-up on the pad.	Clean label pad.

PROBLEM	POSSIBLE CAUSE	SOLUTION
Labels are consistent on the label pad, but not on product.	Product is not consistently presented to the applicator.	Make sure product speed is consistent. Make sure the product is the same distance from the label pad every time.
	Air blast is too high or too low.	Adjust the air pressure.
	Product detect sensitivity or position.	Move and adjust the product detect sensor so it is repeatable.
	Labels are blown off before tamp is fully extended.	Enter a higher value for the tamp extend time.
	Label pad does not match the label.	Install the right label pad.
Valves do not turn on.	Air pressure is too low.	Turn air pressure above 20 psi and try again. The air assist valve is different and can operate at a lower pressure.
	Valve bank plug is not connected to the applicator.	Connect the valve bank plug.
	Valve spool is stuck.	Consult factory for the procedure to remove spool.
	Bad solenoid.	Replace solenoid.
	Dwell times to short.	Increase dwell times through the applicator display.
Tamp valve turns on but the slide does not extend.	Air pressure is too low.	Increase air pressure.
	Flow controls are closed too much.	Open flow controls.
	Slide guide rods are bent.	Replace slide.

PROBLEM	POSSIBLE CAUSE	SOLUTION
Machine will not cycle.	No label formats in print buffer.	Send label format. Check printer manual for parameters.
	No product detect signal.	Verify that that the product detect sensor works. Replace if necessary.
	Printer I/O cable not plugged in.	Reconnect cable.
	Printer fault.	Correct the printer problem.
	The tamp is disabled	Enable tamp (see Appl. Setup)
Label application rate is too fast for the applicator to keep up.	Printer is taking too long to process data or to print label.	Check software and compiling time; increase print speed.
	Excessive dwell times for air blast, tamp extend/retract, or air assist.	Go through the setup procedure for proper setting.
	The label print and apply cycle may be too long for the product rate.	Slow product rate.
Applicator cycles at random.	Loose or vibrating product detect sensor.	Check and correct.
	Product detector alignment is marginal.	Refer to product setup on how to set sensor.
	Loose wiring connections.	Check cables and wiring harnesses inside applicator.
	R.F. interference.	Isolate and correct.
No label feed.	Printer is not configured correctly.	Refer to printer manual.
	No label data in print buffer.	Send label data to printer.
	No external print signal sent.	Investigate and correct.

PROBLEM	POSSIBLE CAUSE	SOLUTION
Compressed print on labels.	Applicator unwind brake is too tight creating too much pull through the printer.	Loosen unwind tension.
	Worn or damaged platen roller.	Replace the printer platen roller.
Printing registration is early.	Applicator unwind is not properly tensioned.	Adjust unwind tension.
Elongated print on labels.	Rewind has too much tension on it.	Re-adjust slip clutch.
Printing registration is late.	Rewind tension is too tight, not allowing a complete back feed.	Re-adjust slip clutch.
Poor print quality		Refer to printer manual.
Labels print continuously without being applied.	Printer configuration is wrong.	Check printer settings.
	Print end signal was not received from printer.	Call factory for help.
	Lost 24 vdc power supply.	
Alarm messages will not clear.	Printer turned off. The problem was not fixed before telling the applicator to reset.	Turn printer on. Correct the problem at the source of the alarm signal.

PRINTER SETTINGS

Sato Printers: M-8485SE/M-8490SE/M-8459SE/M-8460SE

Note: Pin 9 has to be defined in the service mode. It should be set to "Mode 2". Resetting the printer to factory default values will change this to "Mode 1" and the applicator will malfunction.

These printers use dipswitches to setup the operating parameters. The dipswitch settings are read on power up. Therefore any changes in the switch settings will not take effect until the printer is shut off and powered back on.

There are two dipswitches (DSW2 and DSW3) located inside the cover. These switches are used to set:
-Thermal transfer or direct thermal
-Label sensor enable/disable
-Head check mode
-Hex dump mode
-Single job or multi-job receive buffer
-Operation mode

A third dipswitch is located on the RS232 serial adapter card (back of the printer). This is used to setup the serial communications.

If the switches are down, they are off. Factory settings are that all switches are off.

Parallel port is always on regardless of switch settings.

Note: The older "S" version of this printer (M-8485S) also has three dipswitches. All three switches are mounted inside the cover. DSW1 has some differences with the "SE" model. Checking with the appropriate manual will clarify the differences.

RS232 Transmit/Receive Switches

Data Bit Selection: This switch sets the printer to receive either 7 or 8 bit data for each byte transmitted.

DSW1-1	SETTING
Off	8 data bits
On	7 data bits

Parity Selection: These switches select the type of parity used for error detection.

DSW1-2	DSW1-3	SETTING
Off	Off	Disabled
Off	On	Even
On	Off	Odd
On	On	None

Stop Bit Selection: Selects the number of stop bits to end each byte transmission.

DSW1-4	SETTING
Off	1 Stop Bit
On	2 Stop Bit

Baud Rate Selection: Selects the data rate (bps) for the RS232 port.

DSW1-5	DSW1-6	SETTING
Off	Off	9600
Off	On	19200
On	Off	38400
On	On	57600

Protocol Selection: Selects the flow control and status reporting protocols. See Interface Specification section in the printer manual for more details.

DSW1-7	DSW1-8	SETTING
Off	Off	Rdy/Bsy
Off	On	Xon/Xoff
On	Off	Bi-Com
On	On	Bi-com 4

Printer Set-Up Switches

Print Mode Selection: Selects between direct thermal printing on thermally sensitive paper and thermal transfer printing using a ribbon. This switch is not used on the M-8459.

DSW2-1	SETTING
Off	Therm Xfr
On	Direct Thrm

Note: It is recommended that this be set to "Off".

Sensor Type Selection: Selects between the use of a label gap or a reflective Eye-Mark detector.

DSW2-2	SETTING
Off	Gap
On	Eye-Mark

Note: It is recommended that this be set to "Off".

Head Check Selection: When selected, the printer will check for head elements that are electrically malfunctioning.

DSW2-3	SETTING
Off	Disabled
On	Enabled

Hex Dump Selection: Selects hex dump mode (refer to printer manual).

DSW2-4	SETTING
Off	Disabled
On	Enabled

Receive Buffer Selection: Selects the operating mode of the receive buffer.

DSW2-5	SETTING
Off	Single Job
On	Multi Job

Protocol Code Selection: Selects the command codes used for protocol control.

DSW2-7	SETTING
Off	Standard
On	Non-Std

M8400 Emulation Mode: For emulating special M8400S series software commands. Should be used only if problems are encountered when using existing M8400S software.

DSW2-8	SETTING
Off	Disable
On	Enable

Backfeed Selection: Backfeed is used to correctly position the label for application and then retract the next label to the proper print position. This operation can be performed immediately after a label is printed and used, or immediately prior to printing of the next label.

DSW3-1	SETTING
Off	Before
On	After

Note: It is recommended that this dipswitch be left off for applicator.

Label Sensor Selection: Enables or disables the label sensor. If the sensor is enabled, it will detect the edge of the label and position it automatically. If it is disabled, the positioning must be under software control using line feed commands.

DSW3-3	SETTING
Off	Sensor Used
On	Not Used

Note: It is necessary to leave this switch off for the applicator to work.

Backfeed Selection: When backfeed is enabled, the printer will position the last printed label for dispensing and retract it before printing the next label. The amount of backfeed offset is adjustable. See printer manual for details.

DSW3-4	SETTING
Off	Enable
On	Disable

Note: When using the extended peel edge assembly, the backfeed option should be disabled. In most other applications, it should be left on. Backfeed will slow label rate.

External Signal Interface Switches

External Print Signal Selection: Allows an external device to initiate a label print for synchronization with the applicator.

DSW3-5	SETTING
Off	Enable
On	Disable

Note: It is necessary to leave this switch off for the applicator to work.

External Signal Type Selection: Both the polarity and signal type (level or pulse) of the external print signal synchronizing signal can be selected.

DSW3-6	DSW3-7	SETTING
Off	Off	Type 4
Off	On	Type 3
On	Off	Type 2
On	On	Type1

Note: Use Type 4 for use with the applicator.

Repeat via External Signal: Allows the applicator to reprint the current label in the print buffer.

DSW3-8	SETTING
Off	Enable
On	Disable

Note: This has become a standard option called “Reissue” with Software Revision 2b5.0.

Sato Printers: S-8400 Series

Advanced Mode

Printer Type → Dispenser → Back Feed Motion → Before / None / After

Print Method → Transfer / Direct

External Signal → Enable
External Signal → Type 4

Service Mode

Ext. 9 Pin Select – Mode 2

ZEBRA PAX & ZE 500 PRINTER SETTINGS

Below is a list of the printer parameters that affect the printer/applicator interface. They will be marked as required or recommended. The ones marked as required must be set as shown. The recommended parameters are for convenience of setup but will not stop the applicator portion from working.

There are other parameters that may need to be set that are not discussed in the chart below. Refer to the printer manual for the total list.

PARAMETER	**SETTING**
Print Mode	Applicator (required)
Media Type	Non-continuous (required)
Sensor Type	Web (required)
Applicator Port	Mode 2 (required)
Start Print Signal	Pulse Mode (required)
Ribbon Low Output	Active High

DATAMAX "A" CLASS MARK II PRINTER SETTINGS

PARAMETER	**SETTING**
GPIO Device	Applicator 2 (required)
Error on Pause	APP 2 (required)

There are other parameters that may need to be set that are not discussed in the chart below. Refer to the printer manual for the total list.

3600AB PRINTER APPLICATOR SPARE PARTS LIST
When ordering parts, present Serial Number of 3600AB

Part Number	Recommended Qty	Description
WEAR ITEMS		
PE-FI1050	1	REPLACEMENT FILTER
PM-BELT1015	1	REWIND BELT
MP-238-0274	1	3" CLUTCH PAD
PM-BB1030	1	UNWIND BRAKE BAND
PM-FASP30434	1	DANCER ARM UNWIND SPRING
RECOMMENDED SPARE PARTS LIST		
ASS-200-0427	1	SM312LV PRODUCT DETECT W/CONNECTOR
PE-RT1000	1	1"W X 6"L REFLECTIVE TAPE
PE-TE6000	1	WIRING TOOL required for insertion/extraction @ terminal strip
MP-PS1024	1	24VDC POWER SUPPLY
ASS-238-0428	1	REWIND GEAR MOTOR
PE-FU2090	1	6.3 AMP FUSE
MP-IN1012	1	MAPLE DISPLAY **(Program specific)**
C-PE-PLC1043	1	MICROLOGIX 1400 PLC **(Program specific)**
PE-RE1015	1	MOTOR RELAY
PM-BE1232	1	REWIND CLUTCH THRUST BEARING
PM-FASP30540	1	REWIND CLUTCH SPRING, MED DUTY
ASS-238-0129M	1	TAMP 3 STATION MAC VALVE BANK ASSY
ASS-238-0130M	1	TAMP 4 STATION MAC VALVE BANK ASSY (VACUUM-OFF)
PM-VA2395M	1	DC SOLENOID FOR MAC VALVE
PM-VA2396M	1	0-30 PSI REG W/0-60 GUAGE FOR MAC VALVE
PM-VA2397M	1	0-120 PSI REG W/0-160 GUAGE FOR MAC VALVE
MP-211-0217-X	1	AIR ASSIST TUBE ****JOB SPECIFIC** (SEE DWGS)**
SLIDE ASSEMBLIES		
ASS-214-0108-1	1	1" SLIDE ASSEMBLY
ASS-214-0108-2	1	2" SLIDE ASSEMBLY
ASS-214-0108-3	1	3" SLIDE ASSEMBLY
ASS-214-0108-4	1	4" SLIDE ASSEMBLY
ASS-214-0108-6	1	6" SLIDE ASSEMBLY

3600AB PRINTER APPLICATOR SPARE PARTS LIST
When ordering parts, present Serial Number of 3600AB

Part Number	Recommended Qty	Description
RECOMMENDED SPARE PARTS FOR EXTENDED PEEL BAR		
PM-T1010	1	PEEL EDGE TAPE (6" WIDE x 4" LONG)
MP-211-XXXX-X	1	AIR ASSIST TUBE ****JOB SPECIFIC** SEE DWGS**
PM-BEBF0985	1	PEEL EDGE ADJUSTMENT BUSHING
ASS-238-0143	1	ADJUSTMENT KNOB ASSEMBLY
RECOMMENDED SPARE PARTS FOR ROTARY SWING TAMP		
PM-AC1250	1	ROTARY ACTUATOR
PM-SA0990	1	SHOCK ABSORBER (HOME)
PM-SA1000	1	SHOCK ABSORBER (EXTEND)
RECOMMENDED SPARE PARTS FOR DUAL ACTION TAMP		
ASS-238-0142M	1	DAT 4 STATION MAC VALVE BANK ASSY
PM-AC1248	1	ROTARY ACTUATOR
PM-SA0990	1	SHOCK ABSORBER (HOME)
PM-SA1000	1	SHOCK ABSORBER (EXTEND)
PM-BELT1039	1	TIMING BELT (NOT REQ'D FOR INLINE DAT)
PM-AC1237 **or**	1	3" SLIDE ASSEMBLY
PM-AC1239 **or**	1	6" SLIDE ASSEMBLY
PM-AC1241	1	8" SLIDE ASSEMBLY

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3600AB DUAL ACTION TAMP PRINTER APPLICATOR MAINTENANCE & SERVICE MANUAL

(REVISION 3600AB-DAT-2b5.x)

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(3600AB-DAT)

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PRODUCT SETUP ……..……b4

INTRODUCTION

The 3600AB Dual Action Tamp printer applicator is a high speed labeler used to thermally print and apply pressure sensitive labels to the leading edge and side of moving products. A thermal transfer printer is integrated into the applicator to form a self-contained unit that will print variable data onto a label.

Labels are supplied on rolls that consist of a liner on which the labels are held with adhesive. The labels may be preprinted with the variable information added by the printer or blank labels with the printer printing the entire label.

In program 3600AB-DAT-2b5.6, the applicator can work in four different apply modes. Exceptions to this sequence can be addressed through a custom applicator.

DAT Leading
DAT Trailing
Swing Only
Tamp Only

In the DAT Leading mode, the label is printed, dispensed out onto the label pad, and held there by vacuum. When the product detect sensor is made, the swing label placement timer starts. At the end of the swing label placement time, the label and label pad are moved toward the product by the rotary actuator. When the swing arm is extended, an air blast will blow the label off the pad and onto the leading edge of the product. The swing arm returns to the home position and the next label is dispensed out onto the label pad. After the second label is dispensed, the tamp label placement timer starts. At the end of the tamp label placement time, the label and label pad are moved toward the side of the passing product by the tamp slide. When the tamp slide is extended, an air blast will blow the label off the pad and onto the passing side of the product. The tamp slide returns to the home position and the next label is dispensed out onto the label pad. The sequence is ready to be repeated.

In the DAT Trailing mode, the label is printed, dispensed out onto the label pad, and held there by vacuum. When the product detect sensor is made, the tamp label placement timer starts. At the end of the tamp label placement time, the label and label pad are moved toward the product by the tamp slide. When the tamp slide is extended, an air blast will blow the label off the pad and onto the passing side of the product. The tamp slide returns to the home position and the next label is dispensed out onto the label pad. After the second label is dispensed, the swing label placement timer starts. At the end of the swing label placement time, the label and label pad are moved toward the trailing edge product by the rotary actuator. When the swing arm is extended, an air blast will blow the label off the pad and onto the trailing of the product. The rotary actuator returns to the home position and the next label is dispensed out onto the label pad. The sequence is ready to be repeated.

In the Swing only mode, the label is printed, dispensed onto the label pad by vacuum. When the product detect sensor is made, the swing label placement timer starts. At the end of the swing label placement time, the label and label pad are moved toward the product by the rotary actuator. When the swing arm is extended, an air blast will blow the label off the pad and onto the product. The swing arm returns to the home position and the next label is dispensed out onto the label pad.

In the Tamp only mode, the label is printed, dispensed onto the label pad by vacuum. When the product detect sensor is made, the tamp label placement timer starts. At the end of the tamp label placement time, the label and label pad are moved toward the product by the tamp slide. When the tamp slide is extended, an air blast will blow the label off the pad and onto the product. The tamp slide returns to the home position and the next label is dispensed out onto the label pad.

For safe and trouble free operation, the instructions in this manual must be followed carefully during the set-up, operation, media changes, cleaning and maintenance. Also the specified environmental conditions must be maintained.

Electrical Supply: 108-132 Volts, 5 Amps, 50-60 Hertz, Single phase

A three meter long, three wire cable with 1.00mm conductors Rated at 10 amperes (in accordance with CENELEC HD-21) is provided for the electrical connection to the IEC 320 receptacle of the applicator. The end of the power cord is terminated with a NEMA 5-15 plug.

Air Supply: Clean and dry compressed air must be provided at pressures 90 to 100 P.S.I. with a minimum flow rate of 4 S.C.F.M.

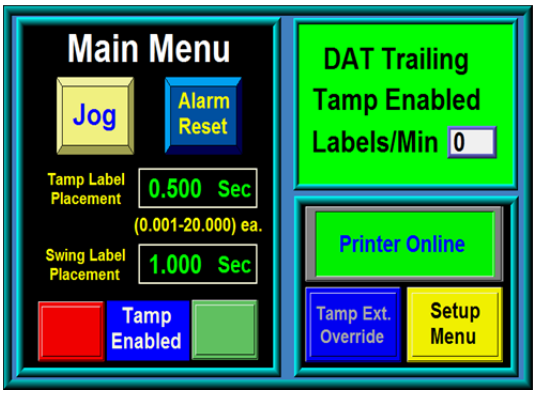
Environment: Operating temperature range is 40 to 95°F (5 to 35°C). Operating humidity range is 20 to 85% RH, non-condensing.

Note: The model 3600AB Printer Applicator is not intended to be operated in an environment where flammable or explosive gases are present. The model 3600-PA MUST not be used in direct contact with food products.

The following section for dual action tamp applicators will discuss items that pertain only to this applicator type. Items not covered here will be covered in the standard 3600 section of this manual.

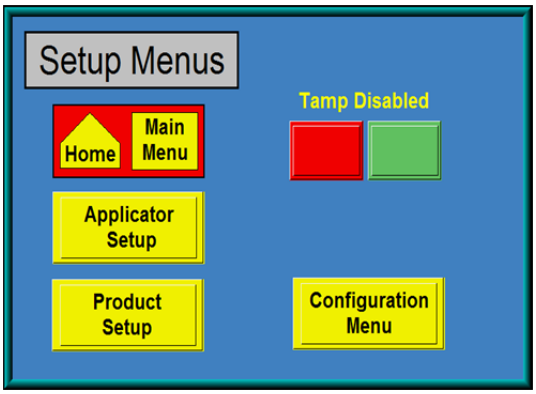
3600AB DAT DISPLAY

MAIN MENU



The 3600AB-DAT Main Menu is similar to the Standard 3600AB Main Menu with the exception of the actuator specific label placements for the Tamp and Swing actuators.

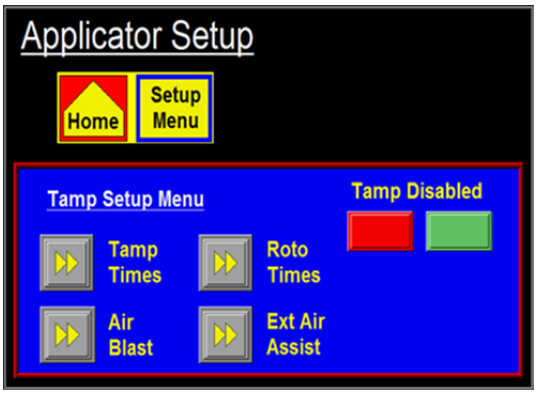
SETUP MENUS



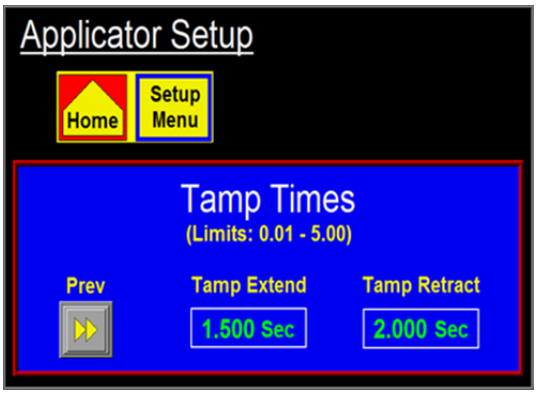
The Setup Menu will appear after the correct password (1800) is entered at the password screen.

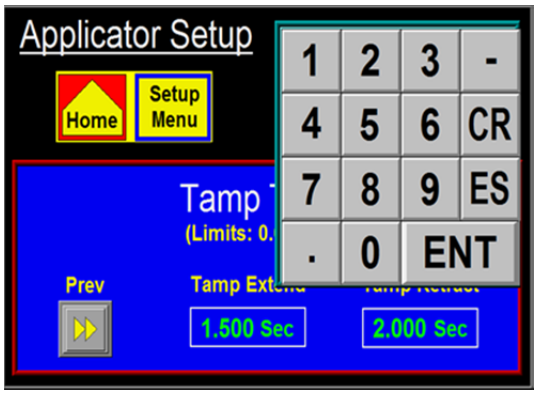
In this screen the operator has three choices. The Applicator Setup Menu, Product Setup or the Configuration Menu screen. To access the Configuration Menu the operator must first disable the tamp slide. The button to do this is conveniently located above the Configuration Menu button. If this is not done a screen will appear reminding the operator to do so.

APPLICATOR SETUP



In the Applicator Setup Menu screen the operator can adjust the Tamp, Rotary Actuator and add Air Assist Times as needed. The Tamp and Roto Times are divided into two parts, Tamp Extend Time is the time allowed for the tamp slide to extend before continuing with the labeling sequence. Tamp Retract Time is the time allowed for the tamp slide to return to receive the next label.
Extended Air Assist is the time after the printing stops until the air assist valve turns off. This feature allows more time to be added on than it takes to print/feed a label. It can be useful in placing long labels onto the label pad.

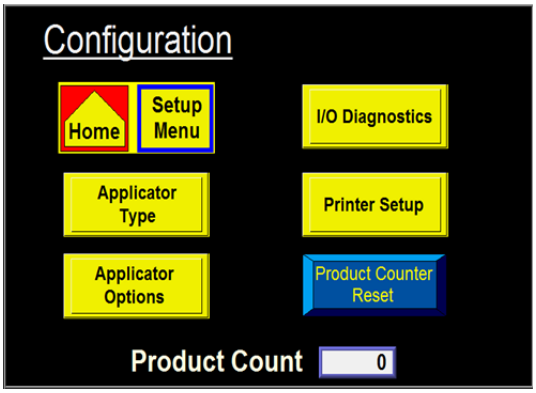




CHANGING VALUES

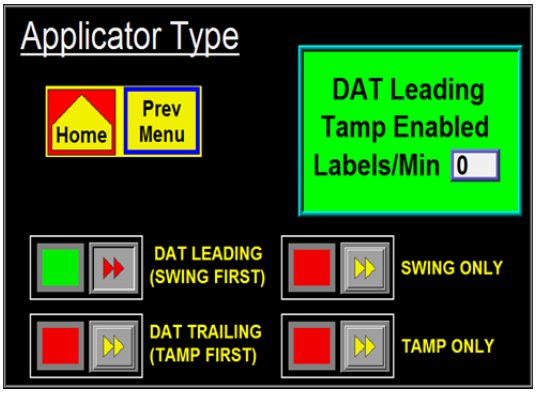
Values that may be changed are shown in the outlined boxes displaying the current value. In the example above left, the Tamp Extend Time is shown to have a value of 1.500 sec. To change this value, the operator will touch the screen in the Tamp Extend Time outlined box field and a keypad will appear to the side of the variable being changed. The figure to the above right shows what the display should look like after touching the variable field. You can see a cursor has moved over the rightmost digit. Also the numeric keypad has appeared to the left of the variable. As you touch numbers on the keypad, the variable is zeroed and the new value is input to the variable box. Pressing "ENT" will finish the process. Pressing "ES" will allow you to escape without changing the value and "CR" will clear the value you're changing. **Note: In most cases, an out-of-range value will not produce a warning message but the variable will return to the original value after pressing "ENT".**

CONFIGURATION MENU



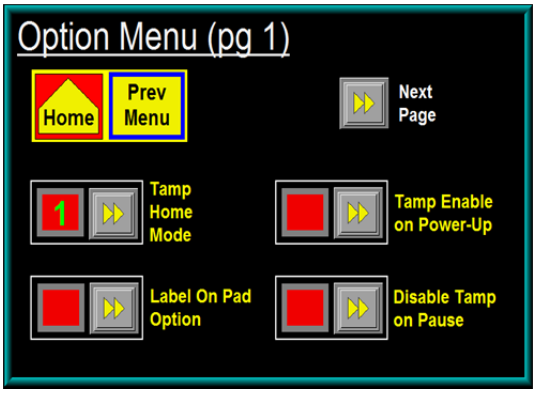
In the 3600AB-DAT Configuration Menu screen the operator can go to Applicator Type, Applicator Options, I/O Diagnostics, Printer Setup, or reset the Product Counter. The Product Count is the number of times the apply sequence has been initiated by the product detect sensor.

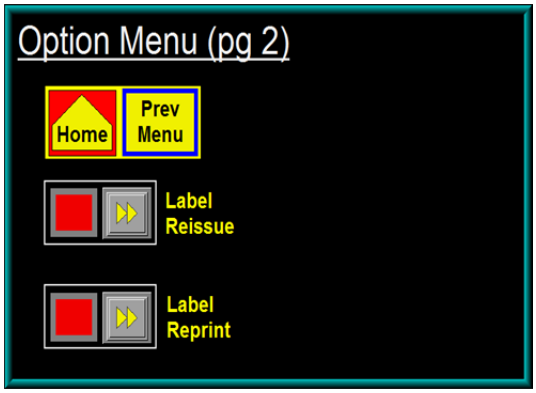
APPLICATOR TYPE



In the Applicator Type screen the operator can select from four apply types. The apply types were described fully in the 3600-DAT-b1 Introduction section. In the upper right corner is a status window for the operator to confirm the apply type selected.

APPLICATOR OPTIONS





Pressing the Applicator Options button will bring the Option Menu screen up. Here the operator can turn on or off the Options displayed below.

APPLICATOR OPTIONS continued

Tamp Home Mode - If the Option is set to Mode 1, the Applicator will turn on the Tamp Home Output when the Tamp Retract Timer is finished or the Tamp Home Sensor (if equipped) is turned on by the Tamp Cylinder. A label will be fed out onto the Pad at this time. If Mode 2 is selected, the Tamp Home Output will only turn on when the Tamp Home Sensor (must be equipped) is turned on by the Tamp Cylinder. A label will only be fed out after this sensor turns on.

At this Menu there is a Help Key that will explain each Mode.

Label on Pad – When the Label On Pad option on, the controller will look for an input from a vacuum switch after the air assist shuts off and the label on pad filter times out. If the vacuum switch is on then that means there is a label on the pad and the label on pad output turns on. The output will stay on until the air blast valve turns on. If the label falls off the pad anytime between when it first turned on and the air blast valve, the output will turn off. An integrator will be able to monitor the air assist valve, air blast valve and the label on pad output and determine if a label has been removed from the pad.

Note: Vacuum switch is an option and is purchased separately

Vacuum Switch Setup CTM # PE-SW1074

Set-up of threshold value:
With the back cover removed, labels sent down to printer and a label on the pad, take the printer "offline" or on "pause". Make note of the "value" on the pressure switch's main "L.E.D. display. For example, we will say the value is –2.0. Next, remove the label from the label pad. Make note of the pressure switch's main display "L.E.D." value – example: -0.5. Add these two values together: -2.0 + -.5 = -2.5, then divide by 2 = -1.2. This value (-1.2) is your "threshold value. Enter this value in the sub display by the "up and down" arrow keys.

Note: If the vacuum pressure is increased or decreased, you may have to adjust the "threshold" value per above example.

Tamp Enable on Power Up - This option lets the operator chose whether the tamp slide is enabled or disabled on power-up.

Disable Tamp on Pause - This option will disable the tamp slide when the printer goes offline or into pause. To turn this option on, press "ENT" and the last word on the second line should start to flash. Use the arrow keys to toggle between 'On" and "Off". When you get what you want, press "ENT". Press "MENU" to go to the next screen.

Inhibit Apply / External Print - This is an option that will inhibit the printing of a label until the external print input is turned on.

Note: You cannot have both the External Print Option and the Label Reprint Option on at the same time. If you turn one on, the other will automatically be turned off.

Label Reissue - When the Label Reissue option is turned on it allows the applicator to reprint the last label format sent to the printer until another label format is received. The print engine must be configured to allow this option to work. Refer to the Printer Settings section of this manual.

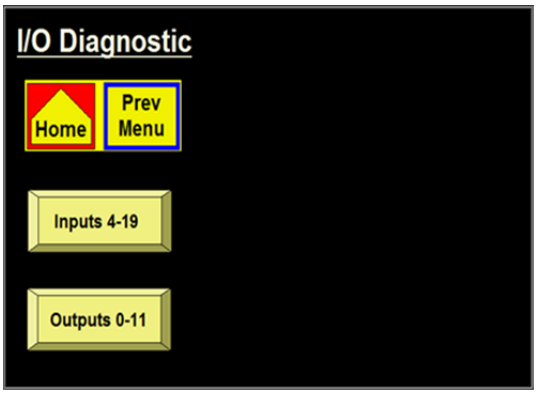
APPLICATOR OPTIONS continued

Label Reprint Option – With this option is turned on and a vacuum switch installed, the applicator will dispense another label when the label is removed from the label pad. This option is useful when an extra label is needed on line but you do not want to actuate the applicator to replace the label you took from the label pad. You simply pull the label off the pad and another label is printed and dispensed. The "Number of Reprints" screen will appear after the Label Reprint screen only if Label Reprint was turned on. Here the number of reprints can be preset up to 99 labels.

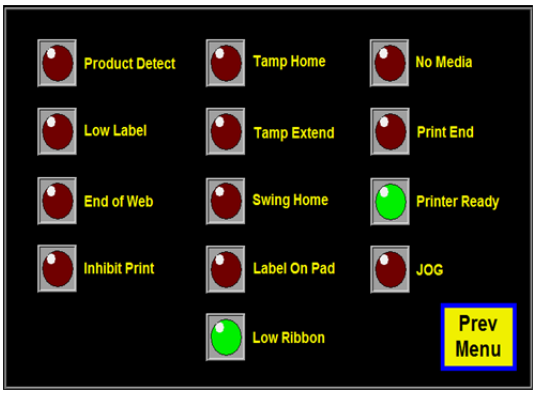
Note: You cannot have both the Label Reprint Option and the Label on Pad Option on at the same time. If you turn one on, the other will automatically be turned off.

CONFIGURATION MENU CONTINUED

I/O DIAGNOSTICS

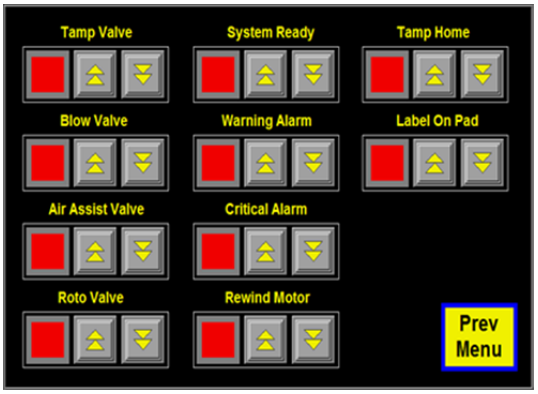


Pressing the I/O Diagnostic button in the Configuration Menu will bring up the I/O Diagnostic screen
This section allows the operator to monitor inputs and to manually turn outputs on and off. This serves as a useful diagnostics tool for a technician.



Inputs Section

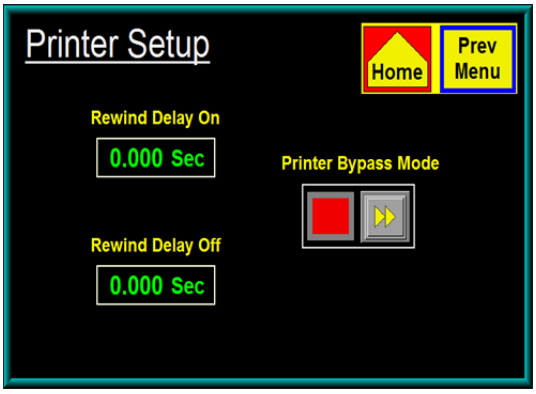
Note: The Input Signals from the print engine are inverted.



Outputs Section

The Outputs can be turned on and off here. When the operator leaves this screen, any outputs they may have turned on will be automatically turned off.

CONFIGURATION MENU CONTINUED



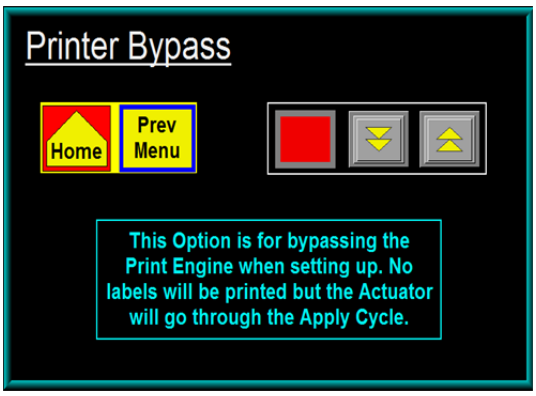
Printer Setup

Pressing the Printer Setup button in the Configuration Menu screen will bring up the Printer Setup screen. Here the operator can adjust the Rewind On and Off Delay Times and Turn on the Printer Bypass Mode.

Rewind Delay On and Delay Off Timers

Timers were added to change how soon the rewind motor will turn on after the printer starts to print and how long it will run after the printing is finished. In some cases where label stop varies, this can help control it. These values should only be changed after consulting with the factory. The rewind delay on timer controls when the rewind motor will turn on compared to when the print engine starts to print a label. Putting a delay will cause the motor to wait that amount of time before turning on. On narrow labels where label stop can be a problem, this will keep the rewind motor from putting tension on the web until the back feed is finished or until you're sure the labels are moving forward through the printer. The delay off time will determine how long the rewind motor stays on after the printer is finished printing. This timer can be decreased to keep the pull on the web to the minimum.

Note: Factory default values are: Delay On = 0 seconds, Delay Off = 1 second



Printer Bypass Mode

Pressing the Printer Bypass Mode in the Printer Setup Menu screen will bring up the Printer Bypass screen. Here the operator can turn Printer Bypass On or Off. The Printer Bypass Mode is useful during setup where the print engine is not required to cycle the applicator.

DUAL ACTION SETUP

When an applicator is shipped, it may be necessary to disassemble some of the applicator. The following section will show different assemblies to aid in putting the applicator back together so it can be set up.

Note: Unwind assembly and ribbon/label loading are covered in the standard 3600AB section.

Air Filter Installation
When the applicator is shipped, the air filter is off. The filter is sent with two 2" nipples and an elbow. The attitude of the valve bank will determine how the filter should be plumbed. Note: In all cases it is important to have the filter bowl pointing down. The filter should enter the valve bank on the opposite side as the vacuum regulator.

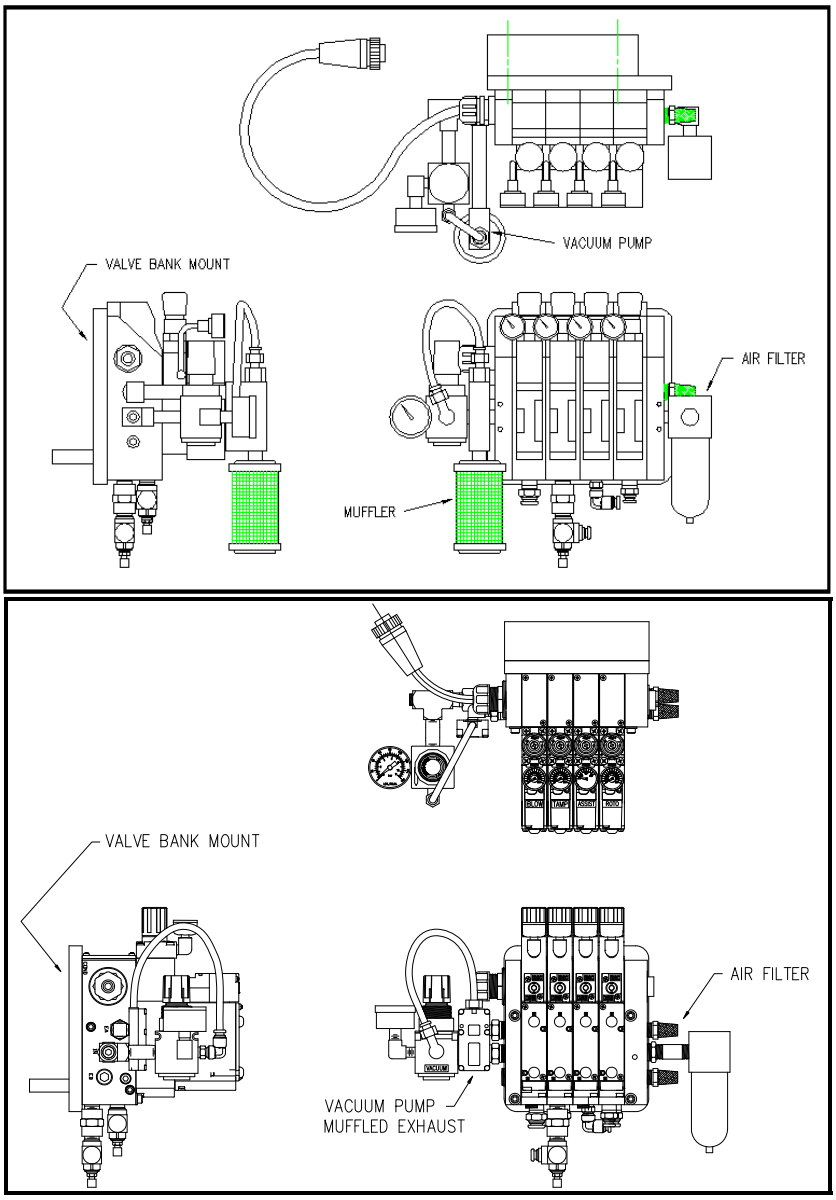


Figure 19 (valve bank)

Applicator Nose Installation

Depending on the length of the swing arm, some applicator noses will be too big to leave on the applicator for shipping. The following instructions will help in re-installing the applicator nose. If the dual action tamp assembly is removed from the applicator in shipping, the mounting arm will still be installed. Remove the applicator and mount on a stand in a nose down attitude. This faceplate is used for mounting the valve bank. The mounting arm that supports the dual action tamp is bolted to the side or what is now the bottom of the applicator and extends out in front of where the label comes out of the printer. There is a ¼" recess in the plate with four ¼" slots. This is where the slide of the dual action tamp is mounted. Take the tamp assembly and set it (slide body) in the recess and used the four ¼" shcs. and the stainless nut plate to secure it in position. These same screws will be later be used for the up and down adjustment of the label pad to the peel edge.

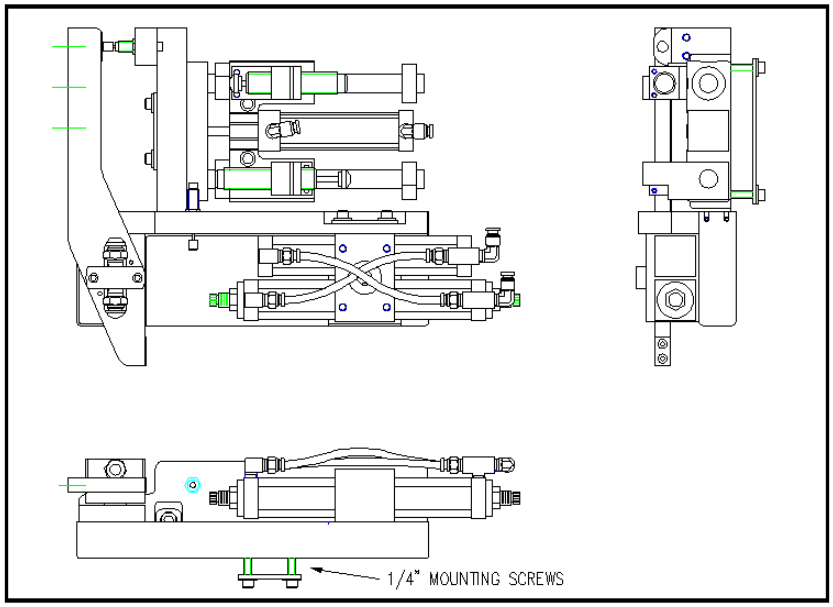


Figure 20 (Perpendicular Standard Dual Action Tamp Assembly)

With everything in place, reconnect the air lines. The air lines should be marked as to where they go. Make sure when routing the lines that they do not hit or rub anything when the assembly actuates. Pay special attention to the 3/8 air blast/vacuum line going to the manifold.

General Setup Procedures

1- Disable the Tamp Slide (refer to the Display section). This way adjustments can be made without the fear of the tamp slide actuating and injuring someone. Also load label formats into the printer.

2- The label stop must be properly set for the applicator to work successfully. This is done through the printer and will be referred to as "Offset", "Top of Form", "Pitch Offset", or other terms dependant on the printer model.
   a) With printer on pause and the tamp slide disabled, press "feed" to dispense a label.
   b) If the label stop is correct, the label should feed off the liner. If the next label out is flagged past the peel edge, the label stop must be decreased. If the label doesn't dispense completely off, then increase label stop. Refer to printer manual as to how to change label stop

3- Tamp height needs to be set so a label feeds out in contact with the label pad. If the pad is too high, the label will not land consistently on the pad and the trailing edge of the label could come into contact with the peel bar of the printer when the tamp slide extends. If the label pad is too low, the label will dispense into the back of the pad and jam.

4- The inboard edge of the label pad must match the inboard side of the label. Refer to the side to side adjustments in the next section to move the pad.

5- Position the air assist tube so the hole or holes are centered on the label and pointing approximately ¼"in from the label pad. The air pressure should be set at 20-30 P.S.I. Press "Jog" to dispense a label. If the label doesn't feed out against the label pad and the vacuum doesn't capture it, try increasing the air pressure. Continue until the vacuum captures the label.

   Warning: There are other factors that can keep the label from staying on label pad. You may need more vacuum, increased or decreased label dive, or the air assist tube may need to be rotated. This will take patience here but will pay big rewards later.

6- Air pressure for the tamp slide and rotary actuator should start at 40 P.S.I., for the air blast at 30-40 P.S.I., and for the vacuum pump at 20-40 P.S.I.

7- Air blast time is set through the display and should be set long enough to apply a label firmly to the product. Setting the time too high will result in less labels/min. Start at .03 seconds. The same air blast time applies to both the swing and tamp sequences.

Dual Action Tamp Setup
(refer to figure 21 for the location of the adjustments.)

The tamp slide should still be disabled from the general setup section. Remove the stainless belt cover on the tamp assembly. Loosen the four ¼" shcs. of adjustment "A" and slide the rotary actuator forward to loosen the belt and remove the belt. You may have to remove the slide extend stop in order to get to all the screws. Now you have access to up and down adjustment of the pad ("E" adjustment). Loosen the two 3/8" low shcs. Swing the label pad in front of the peel edge of the printer and move the assembly away from or closer to the peel edge. There should be about 0.030 clearance between the pad and the peel edge. Re-tighten the bolts when the adjustment is finished. Put air to the valve bank and replace the belt with the swing arm fully retracted. Move the rotary actuator to tighten the belt and secure the screws at the "A" adjustment. With the swing arm in the home position, make sure the pad is parallel with the peel edge. To rotate the label pad parallel, loosen the lock nut on the "D" adjustment (the one closest to the label pad) and turn the set screw in or out. When there is air to the actuator you should see the swing arm rotate. When the pad is parallel, tighten the lock nut. Adjust the swing extend position later. To adjust how high the pad is in relation to the peel edge, loosen the four ¼ shcs. at the "C" adjustment. Move the assembly up or down so the label pad is about the thickness of a label higher than the peel edge. Retighten the screws. Feed several labels out of the printer and watch how they land on the label pad. If the label pad needs moved in or out loosen the screws at adjustment "B" and move the pad. Retighten when the edge of the label matches the label pad.

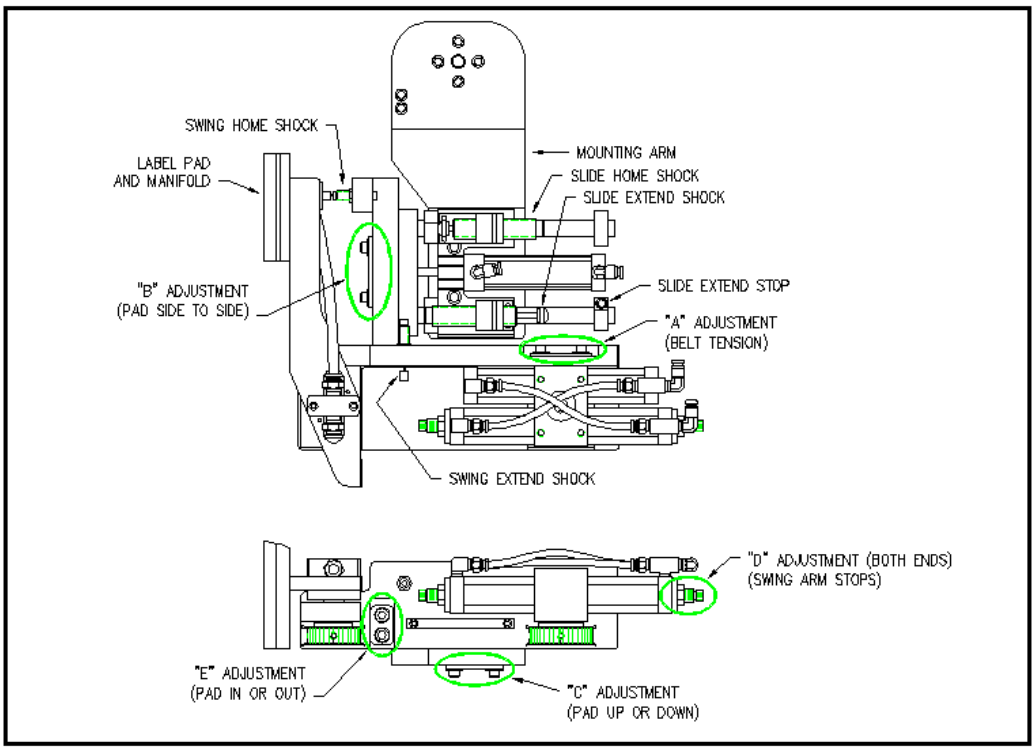


Figure 21 (dual action tamp adjustments)

Dual Action Tamp Shock Absorbers and Flow Controls

Both the linear and rotary actuators have shock absorbers on them and need to be adjusted. Set both swing shock absorbers so they are engaged by 1/8". Press the manual override on the rotary actuator valve and watch the movement of the swing arm. The arm should hit the shock and stop without bouncing. If it bounces too much and moving the shocks in or out doesn't help, slow the actuator down by adjusting the flow controls. The flow controls are integrated into the actuator and are located on each end of the longer cylinders. Turning the screws in with a small screwdriver will slow the speed at which the arm rotates and turning them out will speed it up.

Warning: The shocks on the swing arm are not made to bottom out and doing so will reduce the life of the shock.

The slide shock absorbers are larger with longer strokes so when moving higher loads the stop will be smoother. The shocks should not be adjusted so they bottom out but instead there should be at least an 1/8" more travel available when the slide stop hits the body of the slide. To adjust the shocks, loosen the clamping screws on the shock mounts and screw the shock in or out. When in position, re-tighten the clamp so the shock will stay in position. The flow controls for the slide are mounted on the valve bank. Screwing the knobs in will slow the speed of the slide and turning the knobs out will speed it up.

Note: The slide extend stop will have to be adjusted but this adjustment is discussed in the "Product Setup" section under "Positioning the Applicator",

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Label Static Test

It's important to know if the applicator can repeat putting labels in the same place over and over. Without knowing this, when label placement problems occur on the line, you won't know whether the machine is not repeating or the problem lies with the product.

To test repeatability, configure the applicator for single/side tamp action and position the applicator so when the tamp is extended the label pad is approximately 1/8" away from the product. Jog several labels onto the product. If the label stack is within the tolerances you have to work with go on to the "Product Setup" section. If not go through the following suggestions to help find the problem.

1- Make sure the labels are consistently stopping in the same place on the label pad. If this is OK go to step 7; if not, go to step 2.

2- Check label stop. One label should be completely dispensed off the liner while the next label should be 1/32" away from the peel edge. If this varies more than 1/32" with each cycle, refer to the printer manual to correct. When this is corrected, go back and try the static test again. If this was OK, go to step 3.

3- Make sure the label pad surface is clean. If clean, go to step 4 and if not, clean and try static test again.

4- Make sure the vacuum is set right. If the label flutters when feeding across the pad then the vacuum is too high. If the label falls off or moves after the label has left the liner, then it's not high enough. If the label feed looks smooth go to the next step.

5- Work with the air pressure and the position of the air assist tube until the label feeds more consistent onto the pad. Re-try the static test. If the results are still not good enough, go to step 6 but if they-re OK, go to 7.

6- Make sure you are working with good label stock. Try another roll of labels and see if you get the same results.

7- Check the distance from the label pad to the product. If the distance is too large, the labels may float too much. Try lowering the machine so the label pad just clears the product (within 1/8").

8- Is the label pad made for the label you're using? Look to see if the labels are laying down flat and stacking well. If the hole pattern does not match the label, results will be uncertain.

PRODUCT SETUP

The applicator should be setup and have successfully passed the static test before going on in this section. If you have skipped the applicator setup section and have trouble with the application here, it will leave you with more areas to troubleshoot to fix the problem.

Applicator Attitudes
The applicator can be positioned in other positions but the standard configuration from the factory is nose down. Any other attitudes should be discussed with the factory before ordering.

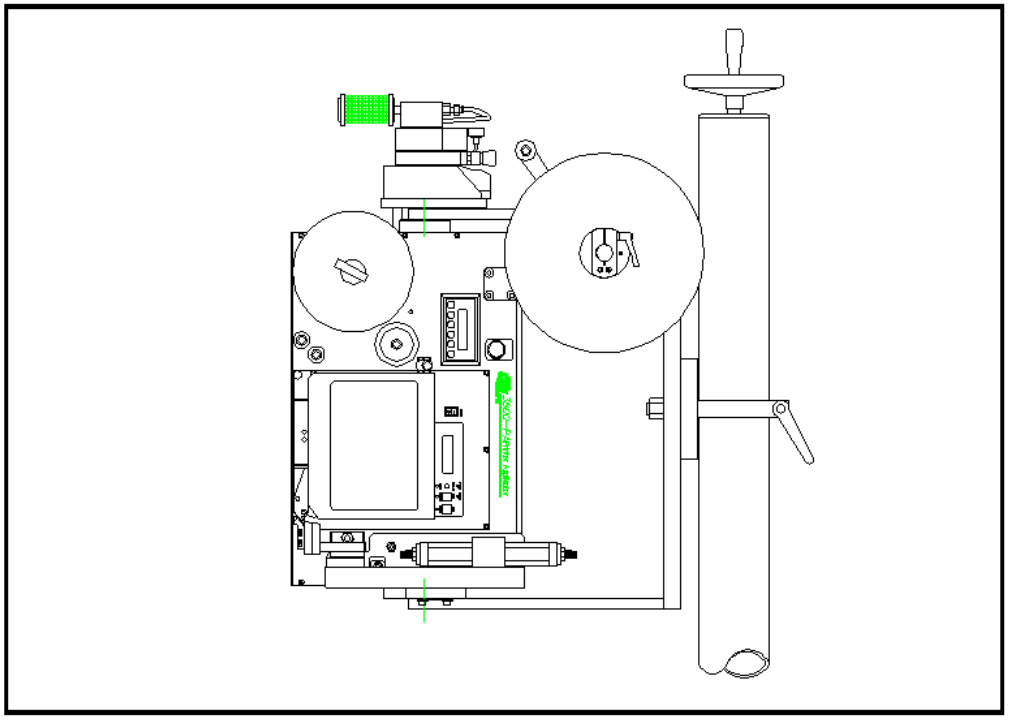


Figure 22 (nose down)

Positioning the Applicator

The product must be presented to the applicator in a consistent manner. Label accuracy cannot be maintained if the surface being labeled changes speed or distance relative to the label pad.

Note: The following directions are for dual action tamp. The single tamp actions are not discussed but you should be able to be interpret their setup from the following instructions.

With the air and power off to the applicator, rotate the swing arm to the extended position. Make sure the slide is fully retracted. Push the product down the conveyor within the guides and stop in front of the label pad. Move the applicator in or out and up or down to position the pad where the label should go. Now retract the swing arm and move the product in front of the applicator. Move the slide forward, making sure the swing arm is retracted, and stop when there is about 1/8" between the product and the label pad. Here you may need to move the slide extend stop (see figure 5). Loosen the clamping screw and slide the stop against the slide body. Some minor changes may have to be done when you start applying labels but this will get you close.

Standard Product Sensor Setup (Banner SM312LV --- 4"- 15' range)

1- Plug the sensor into the back of the machine.
2- Turn the power on and disable the tamp.
3- Remove the back cover of the sensor and set the light/dark switch to DO by turning the switch counter-clockwise.
4- Make sure the sensor is pointing at the reflector (tape). When the LED indicator is flashing at the fastest rate, the two are at the best alignment.

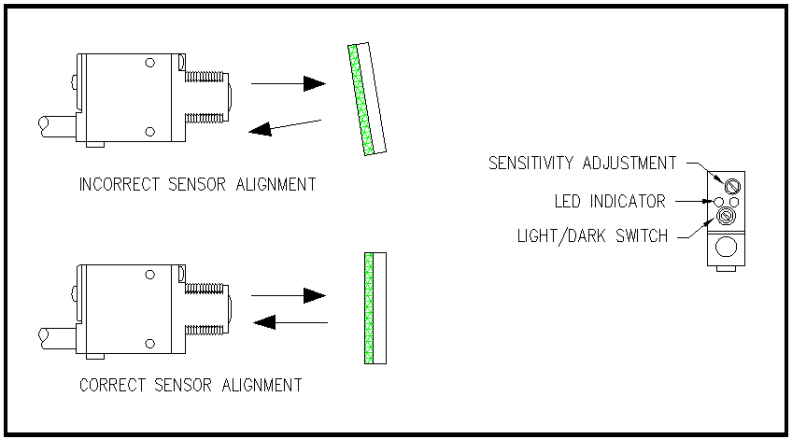


Figure 23 (standard product detect)

5- Place a product between the sensor and the reflector. The LED indicator should go out.
   a) On translucent products, the sensitivity may have to be turned back so not to burn through.
6- Replace back cover of sensor.

Optional Product Sensor Setup (Banner S18SN6FF50)
This sensor is an 18mm barrel type with a 50mm far limit cut-off. This means it will see objects that are less than 2" away and ignore the rest. There is nothing to adjust on the sensor except the physical position.

Sensor wiring determines whether the product detect will be setup for leading or trailing edge. The #2 terminal in the product detect plug at the end of the sensor cable is for the output of the sensor. The black wire is for leading edge and the white wire for trailing edge.

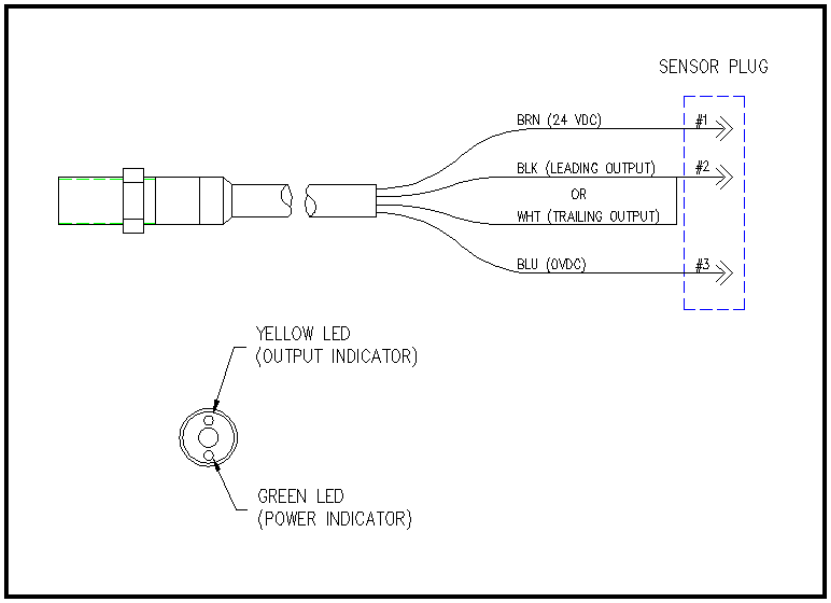


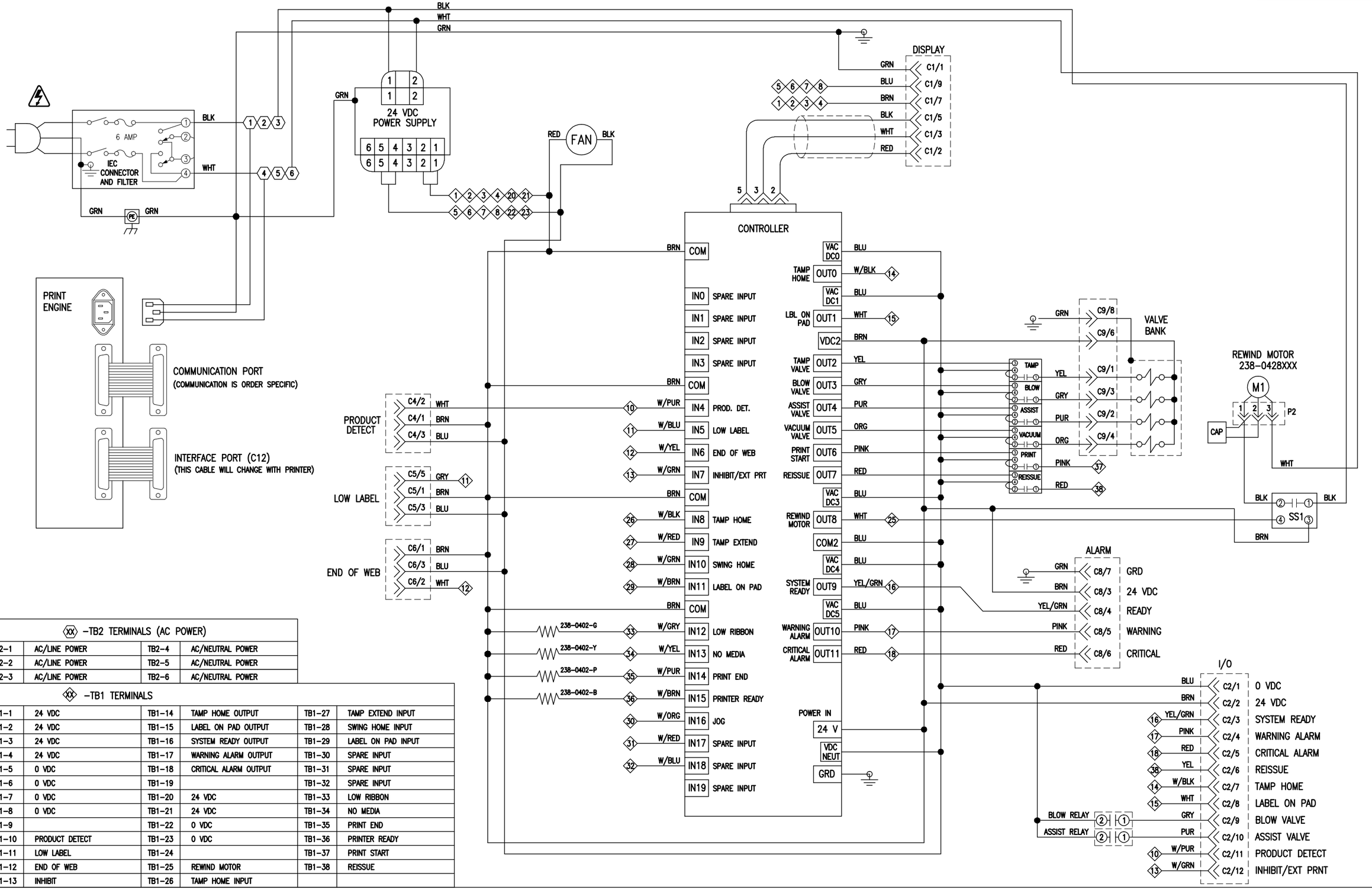
Figure 24 (optional product detect)

Product Detect Sensor Position
Before going through this section. Make sure the extend and retract times properly set up.

Power the applicator up, turn the air on and send label formats to the printer. Position the product detect sensor about 6 inches upstream of the extended swing arm. Set the #1 label placement to 0.000 and turn the conveyor on. Put a product on and watch when the label is blown off the label pad. If the product hit the label pad before it retracted, move the product detect up stream more. If it retracted too soon, move the sensor downstream. Ideally the label will be blown onto the front of the product and retract without ever touching the product.

Now look at the position of the label on the side of the product. If it's be applied too late, decrease the #2 label placement. If it's been applied too early, increase the label placement. If the #2 label placement is too low compare to the cycle time of the first half of the labeling sequence, a warning will be displayed saying "Label Rate Warning". If you can't increase label placement or reduce the time of the first half of the labeling sequence, then slow down the product.

ASS-238AB-0401



⟨XX⟩ –TB2 TERMINALS (AC POWER)

TB2–1	AC/LINE POWER	TB2–4	AC/NEUTRAL POWER
TB2–2	AC/LINE POWER	TB2–5	AC/NEUTRAL POWER
TB2–3	AC/LINE POWER	TB2–6	AC/NEUTRAL POWER

⟨XX⟩ –TB1 TERMINALS

TB1–1	24 VDC	TB1–14	TAMP HOME OUTPUT	TB1–27	TAMP EXTEND INPUT
TB1–2	24 VDC	TB1–15	LABEL ON PAD OUTPUT	TB1–28	SWING HOME INPUT
TB1–3	24 VDC	TB1–16	SYSTEM READY OUTPUT	TB1–29	LABEL ON PAD INPUT
TB1–4	24 VDC	TB1–17	WARNING ALARM OUTPUT	TB1–30	SPARE INPUT
TB1–5	0 VDC	TB1–18	CRITICAL ALARM OUTPUT	TB1–31	SPARE INPUT
TB1–6	0 VDC	TB1–19		TB1–32	SPARE INPUT
TB1–7	0 VDC	TB1–20	24 VDC	TB1–33	LOW RIBBON
TB1–8	0 VDC	TB1–21	24 VDC	TB1–34	NO MEDIA
TB1–9		TB1–22	0 VDC	TB1–35	PRINT END
TB1–10	PRODUCT DETECT	TB1–23	0 VDC	TB1–36	PRINTER READY
TB1–11	LOW LABEL	TB1–24		TB1–37	PRINT START
TB1–12	END OF WEB	TB1–25	REWIND MOTOR	TB1–38	REISSUE
TB1–13	INHIBIT	TB1–26	TAMP HOME INPUT		

Dept. Code 70

TITLE: 3600–AB HOUSING SCHEMATIC

F:\Engineering\Standard Parts\Applicator\3600-AB\ASS-238AB-0401

DRAWN BY: ES

Date: 11/08/2014

Scale: 1=2

REV. BY: JWS

REV. DATE 5/23/16

APPLICATOR SERIES: 3600–AB

APPLICATOR WIDTH(S): 7.5"

GROUP: HOUSING

REV.: 1

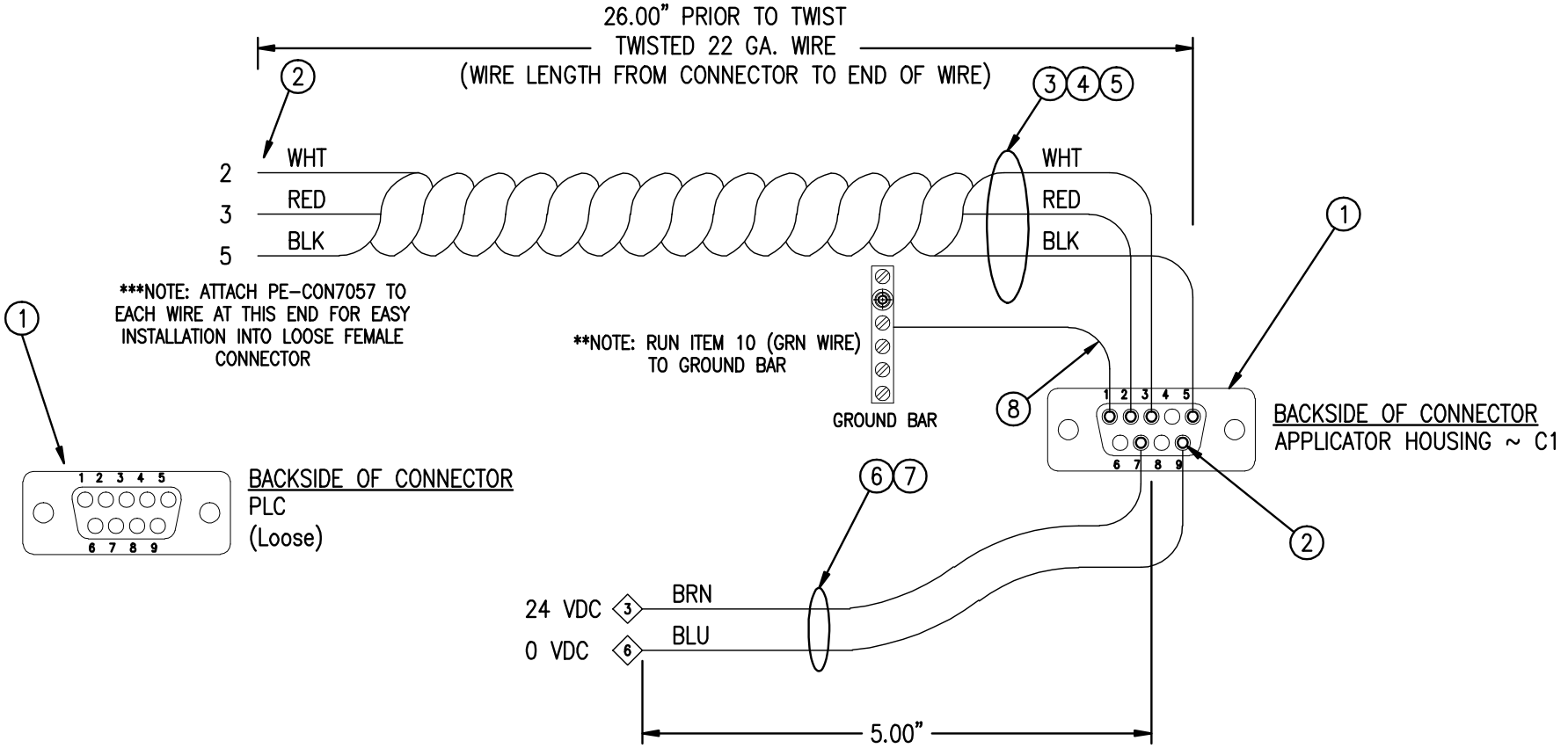
REV. DESCRIPTION: REVISED DISPLAY CONNECTIONS

ASS-238AB-0416

BILL OF MATERIAL

ASS-238AB-0416

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	2	PE-CON2040	FEMALE (SOCKET) CONNECTOR ~ 9 PIN
②	9	PE-CON7057	FEMALE/SOCKET
③	1	PE-W1033	RED (AWG 22) WIRE x 26.00" Lg.
④	1	PE-W1031	WHT (AWG 22) WIRE x 26.00" Lg.
⑤	1	PE-W1032	BLK (AWG 22) WIRE x 26.00" Lg.
⑥	1	PE-W1036	BLU (AWG 22) WIRE x 5.00" Lg.
⑦	1	PE-W1037	BRN (AWG 22) WIRE x 5.00" Lg.
⑧	1	PE-W1034	GRN (AWG 22) WIRE x 32.00" Lg.



APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-AB	7.5"	ALLEN BRADLEY APPLICATOR: ELECTRICAL	INTERNAL WIRING HARNESS: APPLICATOR HOUSING TO PLC	70

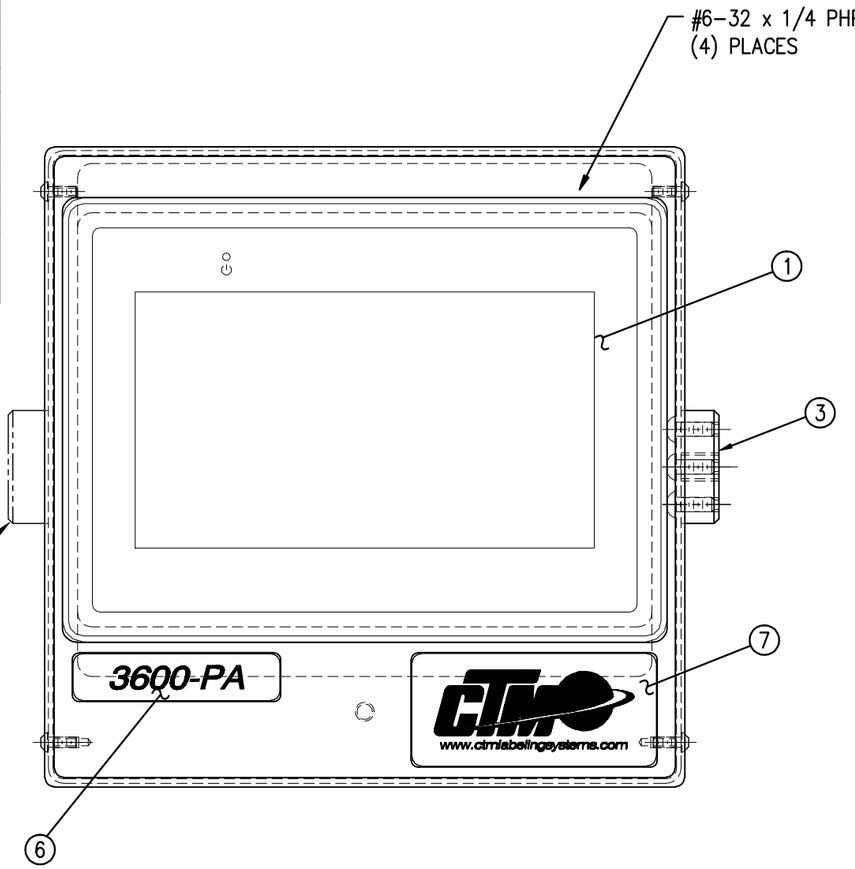
REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\
0	–	–	XXX	1=1	1/5/12	JWS	3600-AB\ASS-238AB-0416

ASS-238AB-0125

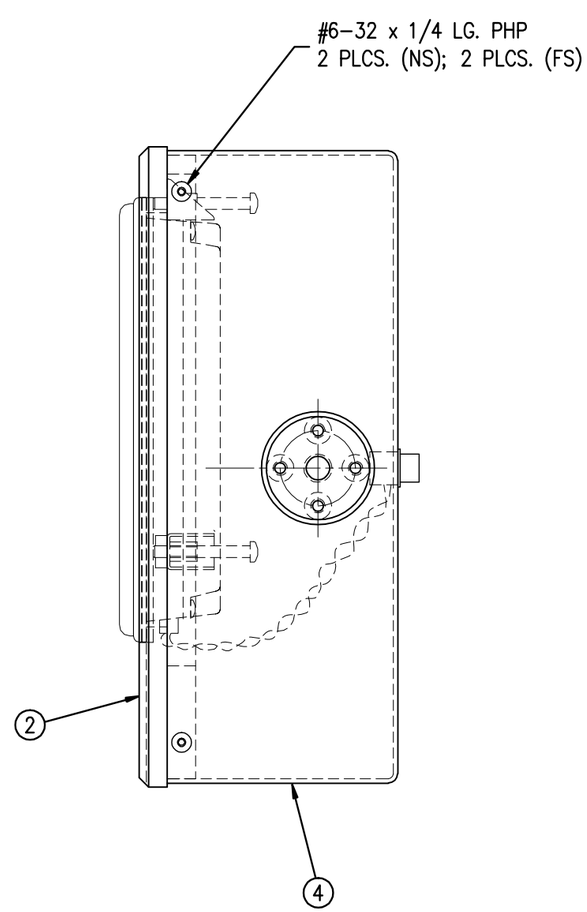
BILL OF MATERIAL

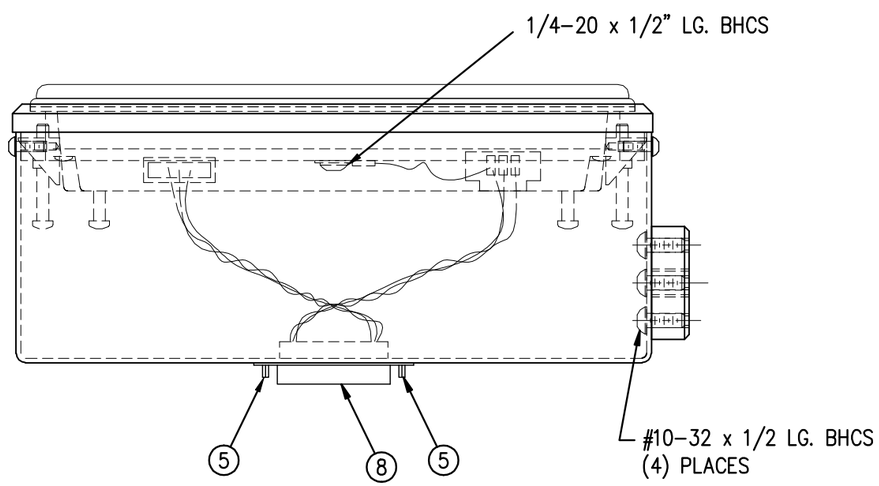
ASS-238AB-0125

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	MP-IN1013	MAPLE DISPLAY INTERFACE (TOUCH SCREEN)
②	1	MP-200A-0265	MAPLE DISPLAY FRONT PLATE
③	1	MP-200-0262	DISPLAY MOUNTING DISK
④	1	PM-200-0264	DISPLAY BACK COVER
⑤	2	PE-S01028	JACK SCREW, L.W., F.W., NUT
⑥	1	PM-LB1018	3600-PA DECAL
⑦	1	PM-LB1020	CTM DECAL
⑧	1	PE-200A-0420	DISPLAY UNIT WIRE HARNESS
⑨	1	ASS-238ST-0425	DISPLAY CABLE (NOT SHOWN)
◯	1	PM-FASH430194	SS SHCS, 3/8"-16 x 1" LG.
◯	1	PM-FAW30285	SS FLAT WASHER, 3/8" NOM.
◯	4	PM-FAPH10150	#6-32 x 1/4 SS PHILIPS PAN HEAD
◯	4	PM-FABH35455	#10-32 x 1/2 SS BHCS
◯	1	PM-FABH35500	#1/4-20 X 1/2 SS BHCS



DISPLAY ASSEMBLY CAN ALSO BE MOUNTED FROM THIS SIDE BY REMOVING (4) #10-32 x 1/2 BHCS & THEN ROTATING DISPLAY COVER (ITEM ④) WITH ATTACHED ITEM ③ & ⑤ 180 DEGREES. THEN SECURE BACK COVER TO DISPLAY FRONT PLATE USING #6 PHP REMOVED PREVIOUSLY.





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APPLICATOR WIDTH(S): 7.5"
GROUP: HOUSING
TITLE: 3600-AB DISPLAY ASSEMBLY
Dept. Code 70
Scale: 1=2
Date: 05/19/15
DRAWN BY: T. KELLY
F:\Engineering\Standard Parts\Applicator\3600-AB\ASS-238AB-0125

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:
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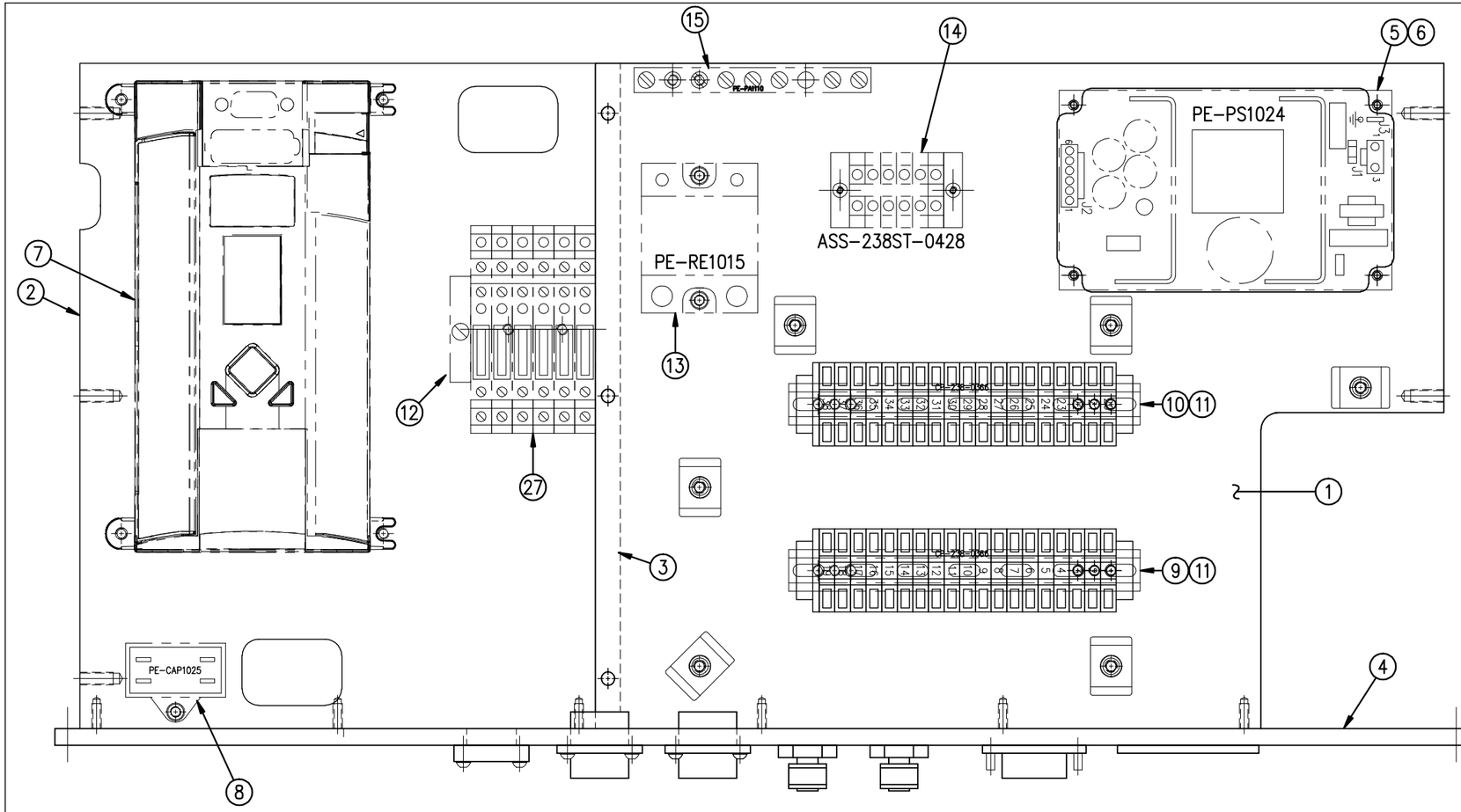
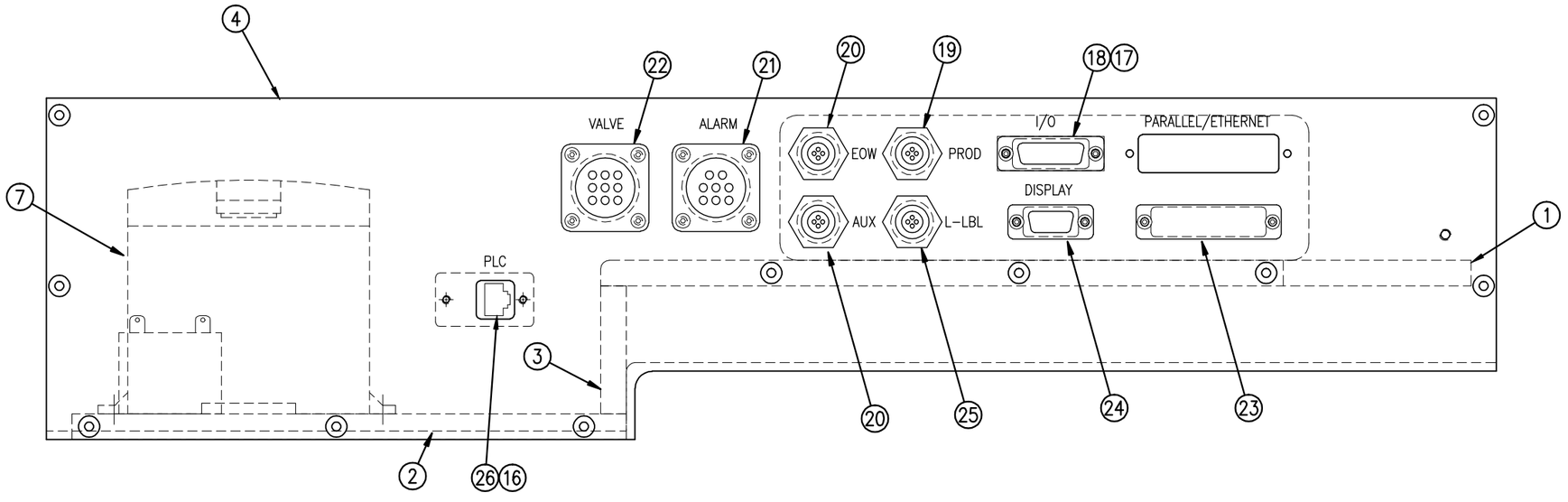
ASS-238AB-0127L





BILL OF MATERIAL

ASS-238AB-0127L

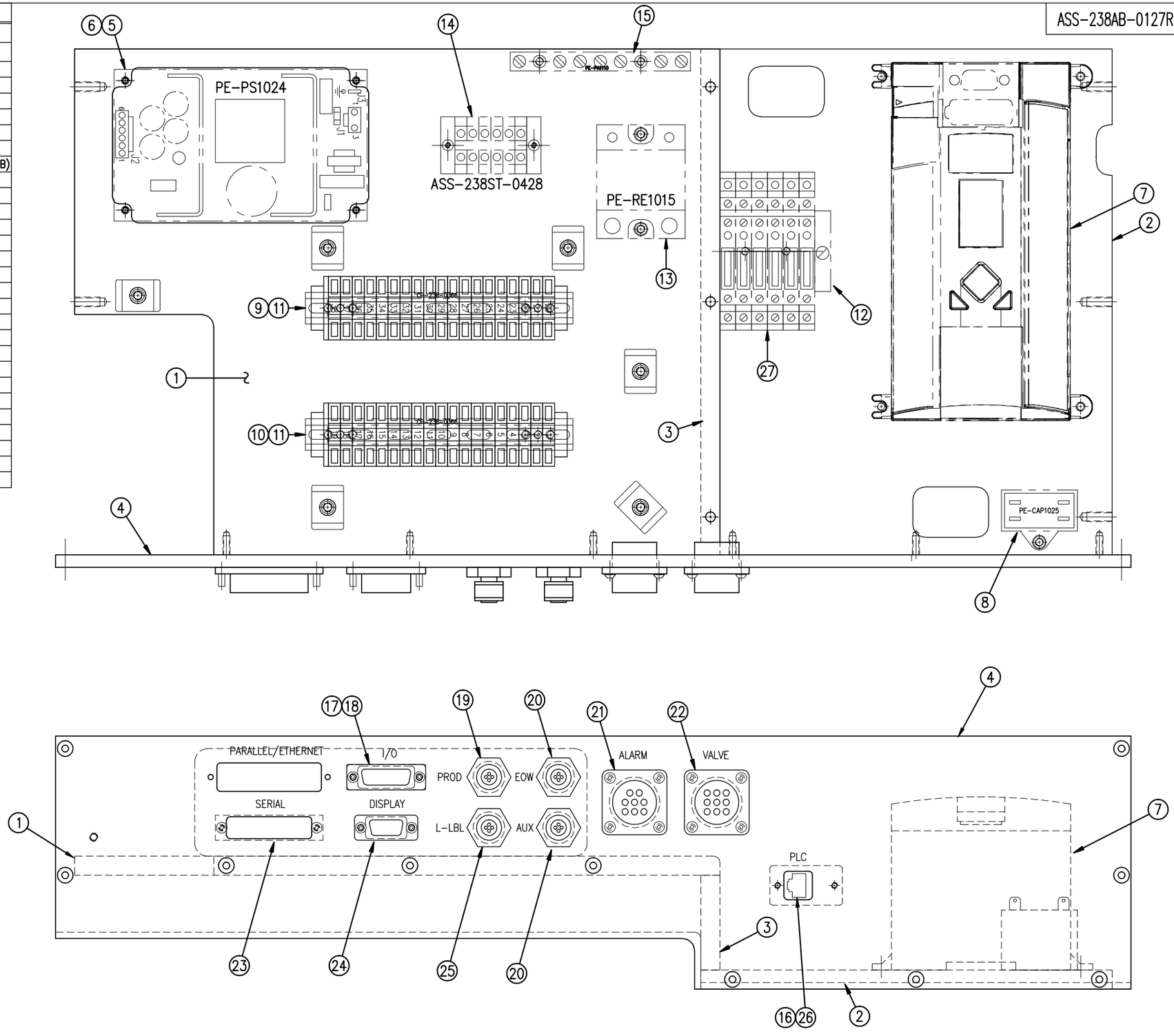
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	MP-238AB-0201L	UPPER ELECTRIC SHELF
②	1	MP-238AB-0202L	LOWER ELECTRIC SHELF
③	1	MP-238CE-0222	ELECTRIC SHELF RISER
④	1	MP-238AB-0203L	CONNECTOR FACEPLATE
⑤	1	MP-PS1024	24 VDC POWER SUPPLY
⑥	1	PE-238ST-0410	WIRE HARNESS: 24 VDC POWER SUPPLY
⑦	1	C-PE-PLC1043	A/B MICROLOGIX 1400 PLC (A-B 1766-L32BXB)
⑧	1	PE-CAP1025	CAPACITOR
⑨	1	ASS-238AB-0402	TERMINAL BLOCK ASSEMBLY (#1-#19)
⑩	1	ASS-238AB-0403	TERMINAL BLOCK ASSEMBLY (#20-#38)
⑪	2	CP-238-0366	DIN RAIL
⑫	1	MP-238AB-0207	MODIFIED DIN RAIL
⑬	1	PE-RE1015	5-24 VDC RELAY FOR REWIND MOTOR
⑭	1	ASS-238ST-0428	TB2 TERMINAL STRIP
⑮	1	PE-PA1110	GROUNDING BAR
⑯	1	PE-CA2470	ETHERNET CABLE
⑰	1	PE-238-0411	I/O CONNECTOR
⑱	4	PE-S01028	JACK SCREW, FW, LW, & NUT
⑲	1	MP-CON1019	PRODUCT DETECT
⑳	2	MP-CON1025A	END OF WEB
㉑	1	PE-238-0410	ALARM CONNECTOR
㉒	1	PE-238-0409	VALVE CONNECTOR
㉓	1	MP-238-0277	SERIAL PORT BLANK
㉔	1	ASS-238AB-0416	DISPLAY PORT TO PLC
㉕	1	MP-CON1020	LOW LABEL
㉖	1	PE-C01050	PLC ETHERNET PORT
㉗	6	PE-RE1013	SOLID STATE RELAY

APPLICATOR SERIES: 3600-AB	APPLICATOR WIDTH(S): 7.5"	GROUP: HOUSING	TITLE: 3600-AB ELECTRIC SHELF & CONNECTOR FACEPLATE ASS'Y for MICROLOGIX PLC ~ LH	Dept. Code 70	
REV: 1	REV. DESCRIPTION: REVISED DISPLAY PORT	REV. DATE: 1/6/15	REV. BY: JWS	Date: 05/19/2015	DRAWN BY: ES
				Scale: 1=2	F:\Engineering\Standard Parts\Applicator\3600-AB\ASS-238AB-0127L

BILL OF MATERIAL

ASS-238AB-0127R

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	MP-238AB-0201R	UPPER ELECTRIC SHELF
②	1	MP-238AB-0202R	LOWER ELECTRIC SHELF
③	1	MP-238CE-0222	ELECTRIC SHELF RISER
④	1	MP-238AB-0203R	CONNECTOR FACEPLATE
⑤	1	MP-PS1024	24 VDC POWER SUPPLY
⑥	1	PE-238ST-0410	WIRE HARNESS: 24 VDC POWER SUPPLY
⑦	1	C-PE-PLC1043	A/B MICROLOGIX 1400 PLC (A-B 1766-L32BXB)
⑧	1	PE-CAP1025	CAPACITOR
⑨	1	ASS-238AB-0402	TERMINAL BLOCK ASSEMBLY (#1-#19)
⑩	1	ASS-238AB-0403	TERMINAL BLOCK ASSEMBLY (#20-#38)
⑪	2	CP-238-0366	DIN RAIL
⑫	1	MP-238AB-0207	MODIFIED DIN RAIL
⑬	1	PE-RE1015	REWIND MOTOR RELAY
⑭	1	ASS-238ST-0428	TB2 TERMINAL STRIP
⑮	1	PE-PA1110	GROUNDING BAR
⑯	1	PE-CA2470	ETHERNET CABLE
⑰	1	PE-238-0411	I/O CONNECTOR
⑱	4	PE-SO1028	JACK SCREW, FW, LW, & NUT
⑲	1	MP-CON1019	PRODUCT DETECT
⑳	2	MP-CON1025A	END OF WEB
㉑	1	PE-238-0410	ALARM CONNECTOR
㉒	1	PE-238-0409	VALVE CONNECTOR
㉓	1	MP-238-0277	SERIAL PORT BLANK
㉔	1	ASS-238AB-0416	DISPLAY PORT TO PLC
㉕	1	MP-CON1020	LOW LABEL
㉖	1	PE-CO1050	PLC ETHERNET PORT
㉗	6	PE-RE1013	SOLID STATE RELAY



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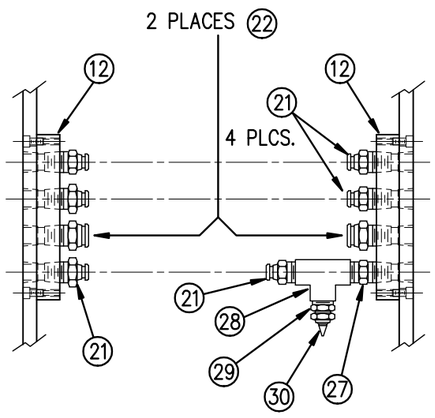
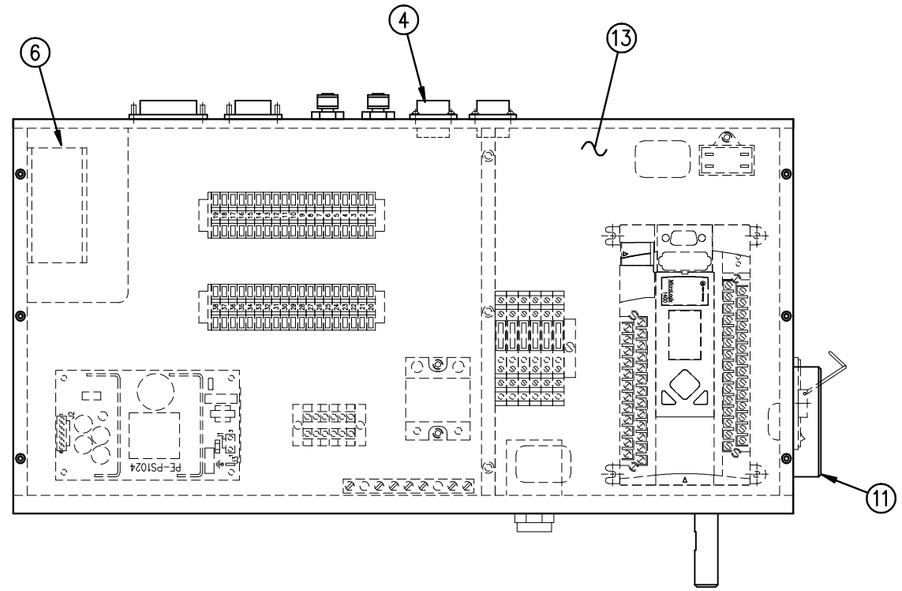
APPLICATOR WIDTH(S):	7.5"
GROUP:	HOUSING
TITLE:	3600-AB ELECTRIC SHELF & CONNECTOR FACEPLATE ASS'Y for MICROLOGIX PLC ~ RH
Dept. Code	70
DRAWN BY:	T. KELLY
Date:	05/19/15
F:\Engineering\Standard Parts\Applicator\	3600-AB\ASS-238AB-0127R
Scale:	1=2
REV. BY:	JWS
REV. DATE	1/6/16
REV.	1
REV. DESCRIPTION	REVISED DISPLAY PORT

ASS-238AB-0123L



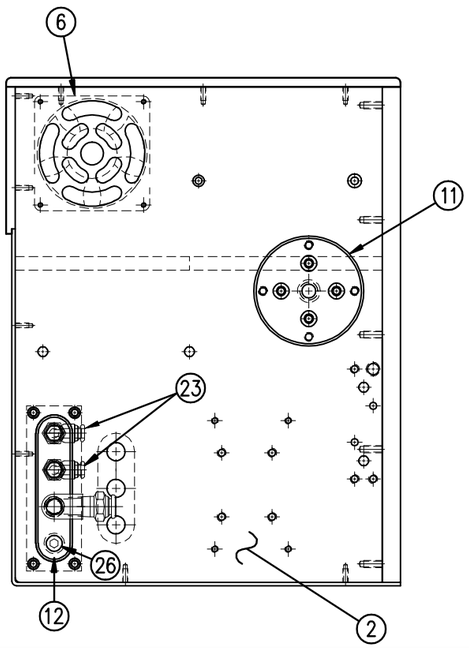
INSIDE FITTINGS SECTION A-A

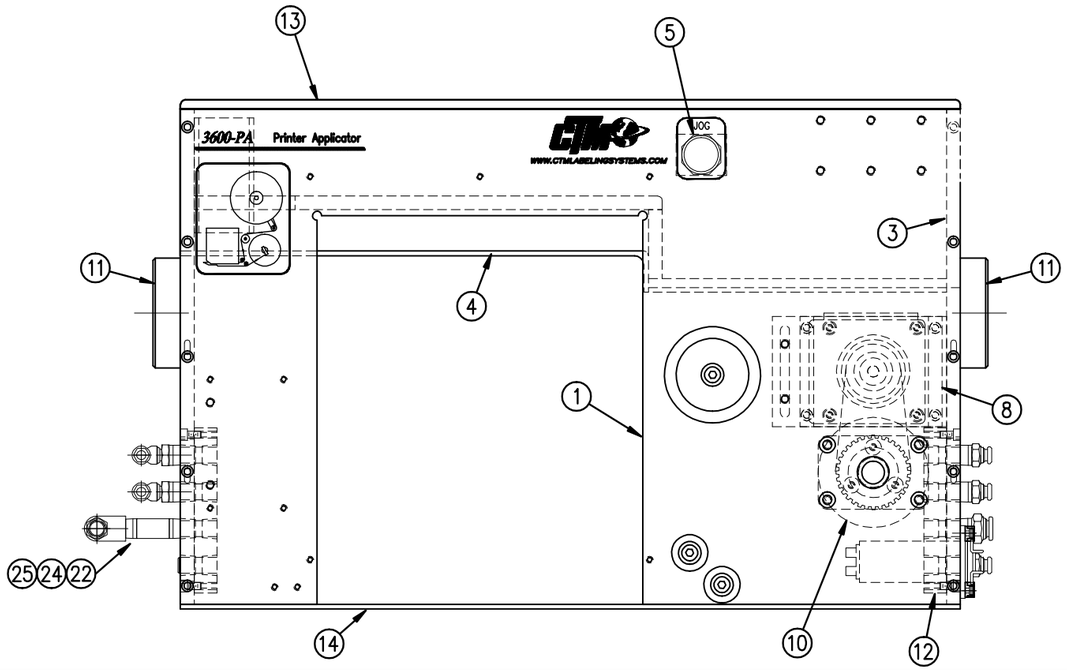


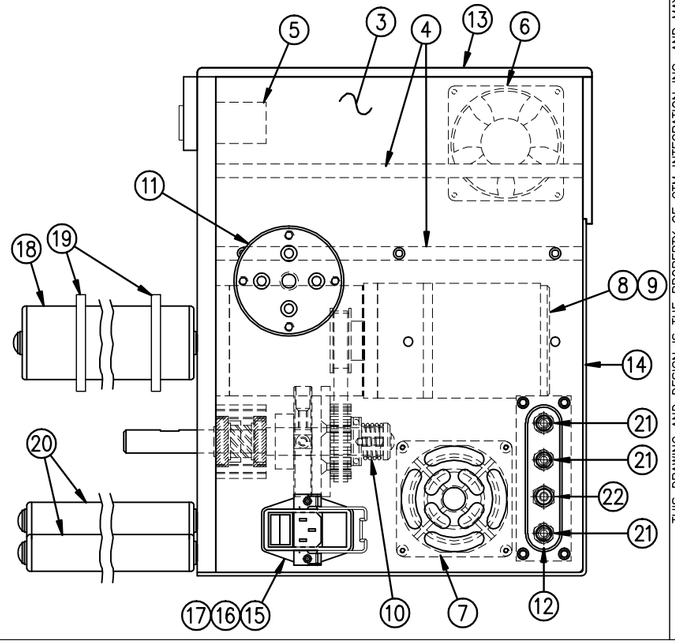
BILL OF MATERIAL

ASS-238AB-0123L

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	MP-238CE-0226L	HOUSING FACEPLATE - LH
②	1	MP-238AB-0205L	NOSE SIDE HOUSING SIDEFRAME - LH
③	1	MP-238AB-0206L	UNWIND SIDE HOUSING SIDEFRAME - LH
④	1	ASS-238AB-0127L	ELECTRIC SHELF & CONN. FACEPLATE ASS'Y
⑤	1	ASS-SW2010	PUSH BUTTON ASSEMBLY
⑥	1	PE-FAN1046	AXIAL FAN ~ 24vdc
⑦	1	PE-FAN1130	FAN FILTER KIT
⑧	1	ASS-238-0133	REWIND MOTOR & PULLEY ASSEMBLY
⑨	1	PE-238-0429	REWIND MOTOR WIRING HARNESS
⑩	1	ASS-238-0120C	REWIND CLUTCH ASSEMBLY
⑪	2	MP-200-0273	U-ARM / APPLICATOR PIVOT MOUNT
⑫	2	MP-200-0250	AIR MANIFOLD (4 HOLE)
⑬	1	MP-238-0221	TOP COVER
⑭	1	MP-238AB-0204L	S.S. HOUSING COVER - LH
⑮	1	PE-238-0412	AC POWER HARNESS & FILTER ASSEMBLY
⑯	1	ASS-200-0148	POWER CORD CLIP ASSEMBLY
⑰	1	PE-C01020	16-3 POWER CORD - 10 FT. (NOT SHOWN)
⑱	1	ASS-238-0135	2" DIA. DANCER ROLLER
⑲	2	MP-238-0247	GUIDE COLLAR
⑳	2	ASS-238-0134	1" DIA. ROLLER
㉑	9	PM-PF1010	FITTING, 1/4 NPT to 1/4 TUBE
㉒	4	PM-PF1020	FITTING, 1/4 NPT to 3/8 TUBE
㉓	2	PM-PF1035	ELBOW SWIVEL, 1/4" TUBE to 1/4" MALE NPTF
㉔	1	PM-PF1145	PIPE FITTING, NIPPLE, 1/4" NPT X 2" LG.
㉕	1	PM-PF1175	90deg. ELBOW, 1/4" NPT female to 1/4" NPT female
㉖	1	PM-FT1200	1/4" NPT SOCKET HEAD PLUG
㉗	1	PM-PF1153	FITTING, 1/4" NPT w 9/16" HEX. BRASS NIPPLE
㉘	1	PM-PF1200	TEE FITTING, 1/4" NPT (FEMALE)
㉙	1	PM-PF1105	FITTING, 1/4" NPT to 1/8" NPT RED. BUSHING
㉚	1	PM-FT1105	HOSE BARB, 1/8" NPT MALE x 1/4" TUBE
	3	PM-PT1070	1/4" DIA. TUBE x 51" Lg. (CUT TO SUIT)
	1	PM-PT1080	3/8" DIA. TUBE x 17.75" Lg. (CUT TO SUIT)







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TITLE: 3600-AB CORE UNIT & HOUSING ASSEMBLY ~ LH

Dept. Code 70

APPLICATOR SERIES: 3600-AB | APPLICATOR WIDTH(S): 7.5" | GROUP: HOUSING

DRAWN BY: ES | Date: 05/27/2015 | Scale: 1=4

F:\Engineering\Standard Parts\Applicator\3600-AB\ASS-238AB-0123L

REV. | REV. DESCRIPTION | REV. DATE | REV. BY:
0 | - | - | XXX

BILL OF MATERIAL

ASS-238AB-0123R

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	MP-238CE-0226R	HOUSING FACEPLATE - RH
②	1	MP-238AB-0205R	NOSE SIDE HOUSING SIDEFRAME - RH
③	1	MP-238AB-0206R	UNWIND SIDE HOUSING SIDEFRAME - RH
④	1	ASS-238AB-0127R	ELECTRIC SHELF & CONN. FACEPLATE ASS'Y
⑤	1	ASS-SW2010	PUSH BUTTON ASSEMBLY
⑥	1	PE-FAN1046	AXIAL FAN ~ 24vdc
⑦	1	PE-FAN1130	FAN FILTER KIT
⑧	1	ASS-238-0133	REWIND MOTOR & PULLEY ASSEMBLY
⑨	1	PE-238-0429	REWIND MOTOR WIRING HARNESS
⑩	1	ASS-238-0120C	REWIND CLUTCH ASSEMBLY
⑪	2	MP-200-0273	U-ARM / APPLICATOR PIVOT MOUNT
⑫	2	MP-200-0250	AIR MANIFOLD (4 HOLE)
⑬	1	MP-238-0221	TOP COVER
⑭	1	MP-238AB-0204R	S.S. HOUSING COVER - RH
⑮	1	PE-238-0412	AC POWER HARNESS & FILTER ASSEMBLY
⑯	1	ASS-200-0148	POWER CORD CLIP ASSEMBLY
⑰	1	PE-C01020	16-3 POWER CORD - 10 FT. (NOT SHOWN)
⑱	1	ASS-238-0135	2" DIA. DANCER ROLLER
⑲	2	MP-238-0247	GUIDE COLLAR
⑳	2	ASS-238-0134	1" DIA. ROLLER
㉑	9	PM-PF1010	FITTING, 1/4 NPT to 1/4 TUBE
㉒	4	PM-PF1020	FITTING, 1/4 NPT to 3/8 TUBE
㉓	2	PM-PF1035	ELBOW SWIVEL, 1/4" TUBE to 1/4" MALE NPTF
㉔	1	PM-PF1145	PIPE FITTING, NIPPLE, 1/4" NPT X 2" LG.
㉕	1	PM-PF1175	90deg. ELBOW, 1/4" NPT female to 1/4" NPT female
㉖	1	PM-FT1200	1/4" NPT SOCKET HEAD PLUG
㉗	1	PM-PF1153	FITTING, 1/4" NPT w 9/16" HEX. BRASS NIPPLE
㉘	1	PM-PF1200	TEE FITTING, 1/4" NPT (FEMALE)
㉙	1	PM-PF1105	FITTING, 1/4" NPT to 1/8" NPT RED. BUSHING
㉚	1	PM-FT1105	HOSE BARB, 1/8" NPT MALE x 1/4" TUBE
	3	PM-PT1070	1/4" DIA. TUBE x 51" Lg. (CUT TO SUIT)
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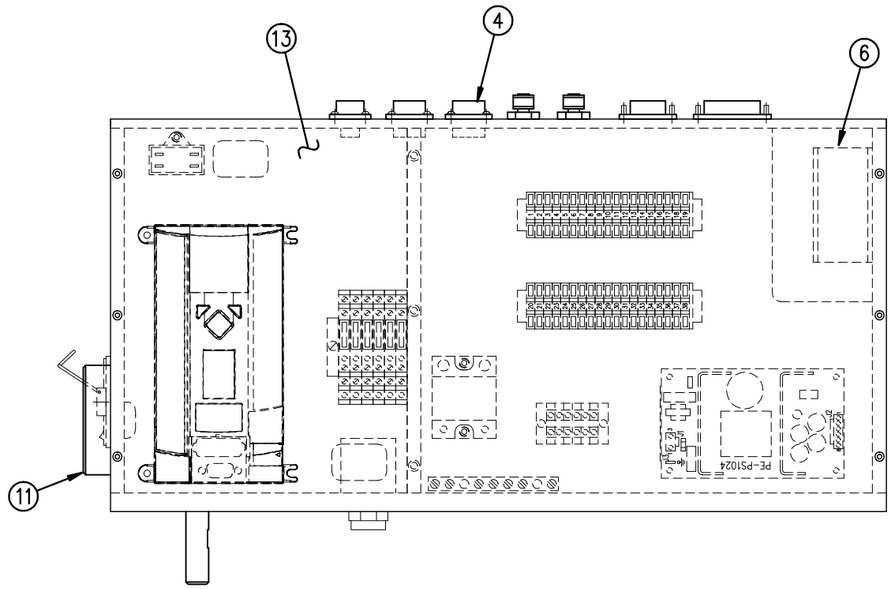
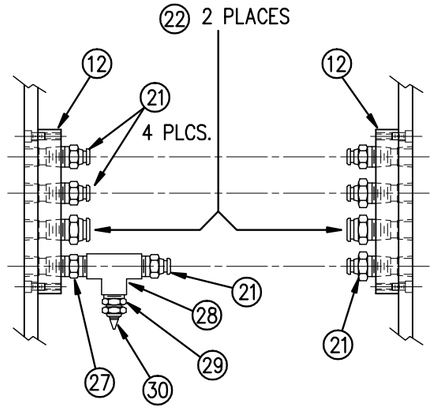
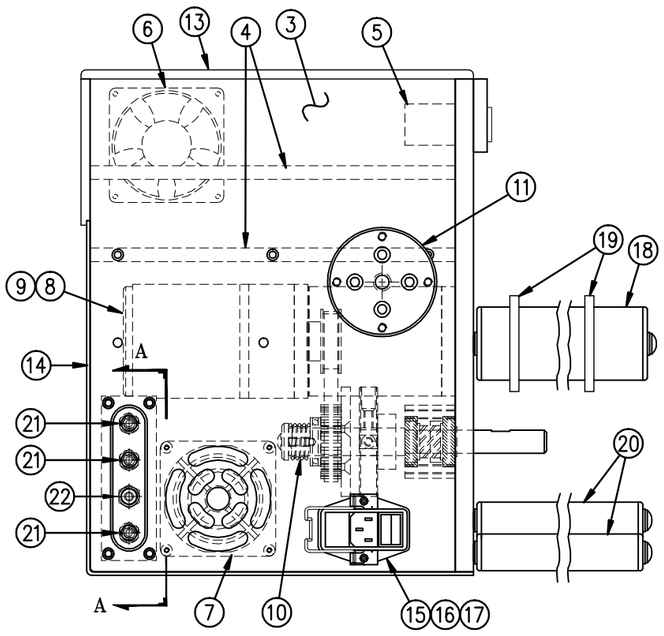
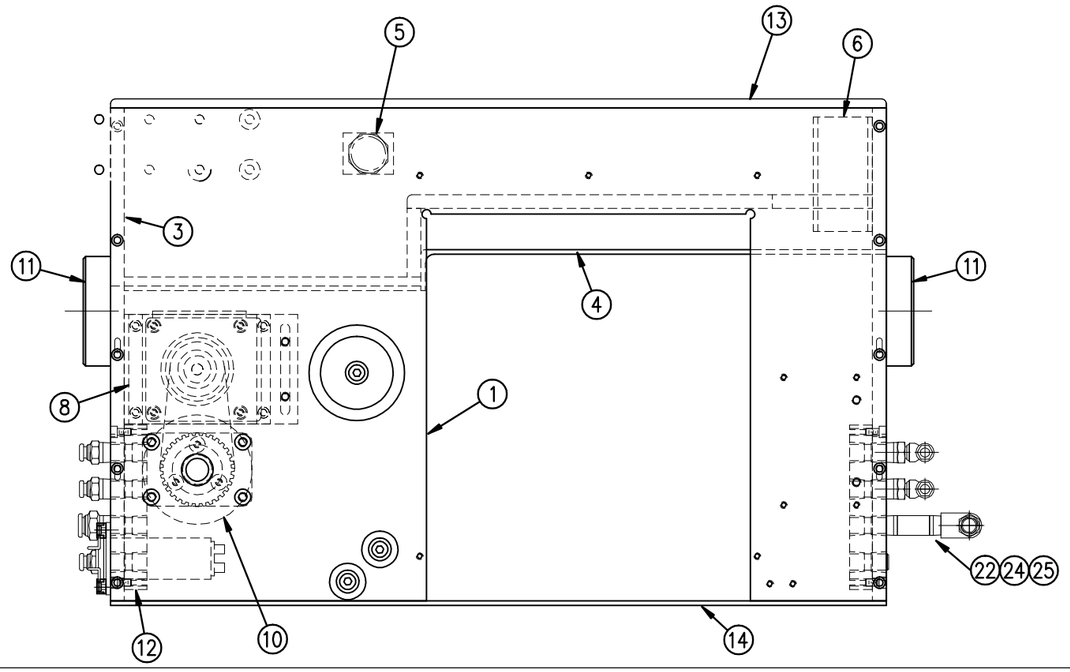
ASS-238AB-0123R

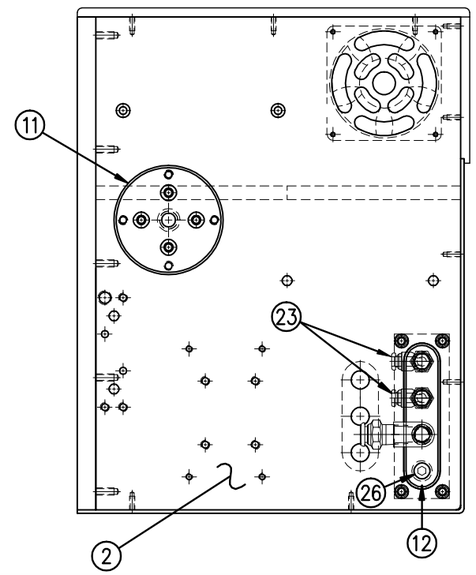




INSIDE FITTINGS SECTION A-A







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TITLE: 3600-AB CORE UNIT & HOUSING ASS'y ~ RH

Dept. Code 70

F:\Engineering\Standard Parts\Applicator\3600-AB\ASS-238AB-0123R

APPLICATOR SERIES: 3600-AB

APPLICATOR WIDTH(S): 7.5"

GROUP: HOUSING

DRAWN BY: T. KELLY

Scale: 1=4

Date: 05/18/15

REV. BY: XXX

REV.	REV. DESCRIPTION	REV. DATE
0	-	-