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

**3600a-CE
PRINTER APPLICATOR
MAINTENANCE
&
SERVICE MANUAL**

(REVISION 3600a-3a2.xx)

EC DECLARATION OF CONFORMITY

Declaration: The listed product fulfils all the relevant provisions of the following Directive:
Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on the approximation of the laws of the Member States relating to Machinery

Manufacturer: CTM LABELING SYSTEMS
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Machine Name: 3600a PA Series Label Applicator

Model Number: 3600a

Serial Number: 360a-CE-0101-1701

Drawing Identification: ASS-238aCE-0401, 1 Sheet, Rev. 0, Dated; 03-Oct-2016

Standards Used:

- EN ISO 12100:2010 Safety of machinery - General principles for design - Risk assessment and risk reduction
- EN ISO 14120:2015 Safety of machinery – Guards – General requirements for the design and construction of fixed and movable guards
- EN 1037:1995 Safety of Machinery – Prevention of unexpected startup
- +A1:2008
- EN ISO 13849-1:2015 Safety of machinery - Safety related parts of control systems – Part 1: General principles for design
- EN ISO 13850:2008 Safety of Machinery – Emergency stop equipment, functional aspects – Principles for design
- EN ISO 13857:2015 Safety of Machinery – Safety distances to prevent danger zones from being reached by upper and lower limbs
- EN ISO 14119:2013 Safety of machinery - Interlocking devices associated with guards - Principles for design and selection
- EN 60204-1:2006 Safety of machinery – Electrical equipment of machines, Part 1: General requirements
- +A1:2009

Means of Conformity: Technical File (TF): MS4582

Compiler of TF: Safenet Ltd., UK Notified Body Number 1674, Denford Garage, Denford, Kettering, Northants., NN14 4EQ United Kingdom

Other Directives met: Directive 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility (recast)

Signature: _____



Date: _____

4/17/17

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Testing Procedures

The 3600a-CE applicator was tested as a straight tamp with the product detect sensor and display attached. Because of the many configurations and options that are available for this model, there was no way to test all configurations. The only issue with the different noses will be machine safety. The integration of an applicator into a product line may cause pinch points or other dangerous situations that will need guarded. The responsibility for guarding lies with the integrator.

Safety Related Issues to Ensure Compliance

- End user is responsible for meeting the final protective ground requirements.
- The power inlet on the back of the applicator is the AC power disconnect. The end user is responsible for determining and providing a supply disconnect for the system.
- The end user must provide protection concerning power interruptions/restoration, if needed.
- The end user must provide earth ground fault current protection, if required.
- The end user will provide any guarding needed after integration of the applicator.
- Because there is a pinch point between the label pad and the print engine and because of the different types of actuators used, it is necessary to fabricate a guard after the integration of the applicator. This responsibility falls on the integrator.
- The end user is responsible for not over-pressurizing the incoming air.

Emergency Stop Actuators

Depending on the type of applicator nose used and how it is integrated into a system will result in how great the risk assessment is. This is something that needs to be determined by the integrator and it will be their responsibility to take the appropriate actions.

When the applicator is integrated into an e-stop circuit, the e-stop actuator should be located close to the applicator. The e-stop circuit should remove electrical power and air to the 3600a system, thus removing all power to its actuators.

Acoustic Emissions Data

A-weighted emission sound pressure levels are as follows:

Location	Level (dB)A
M1	72.7
M2	69.7
M3	70.6
M4	76.4

A-weighted sound power levels measured are as follows:

Location	Level (dB)A
M1	90.5
M2	87.5
M3	88.4
M4	94.2

Measurement Locations:

- M1 –In front of label spindle
- M2 –Operator’s position when using the HMI
- M3 –Rear of machine frame
- M4 –Side of machine by pneumatic valves

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INTRODUCTION

The 3600a-PA 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.

It is assumed that the reader of this manual has some experience with printer/applicators or has some factory training. Since this manual covers the standard 3600a, the dual action tamp and the corner wrap, some of the setup descriptions will be too general for an inexperienced technician. The following are descriptions of some of the labeling sequences:

In **Normal Tamp, Normal Swing Only** (DAT) or **Normal Side Only** (DAT) modes, the label is printed, dispensed out onto the label pad and held there by vacuum. When the product detect sensor turns on, the label pad moves toward the product using a pneumatic slide or rotary actuator. When the actuator is extended, an air blast will blow the label off the pad and onto the product.

In the **Inverted Tamp, Inverted Swing Only** (DAT) and **Inverted Side Only** (DAT) modes, the label is printed, dispensed onto the label pad and the actuator extends. The applicator will wait in this position until the product sensor turns on. The label is then blown off the pad onto the product.

The **Corner Wrap** applicator has a dedicated sequence and starts with a label on the pad. When the product detect sensor turns on, the label pad swings out under high pressure. Once the swing extend time is finished, the swing arm goes to a lower pressure so the product can push through it. When the tamp return sensor turns on, the label pad swings home under high pressure. Depending on how the valve bank is plumbed, there may be an air blast or the vacuum will turn off when the swing extend time is finished.

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: 230 Volts, 1KW, 50-60 Hertz, Single phase

Air Supply: Clean and dry compressed air must be provided at pressures between 6.2 and 6.9 bar (90 to 100 P.S.I.) with a minimum flow rate of 113.3 L/min (4 S.C.F.M.)

Note: An increase in venturi vacuum pressure may lead to higher L/min requirements.

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

Note: The model 3600a-PA is not intended to be operated in an environment where flammable or explosive gases are present.

The model 3600a-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 3600-PA 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 holes 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 Blast: A blast of compressed air that moves the label from the label pad to the product. The duration of the blast is controlled by the Air Blast time accessible through the applicator display.

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

Applicator Type: The 3600a supports a number of different applicator noses. With each nose assembly, the applicator can change the sequence of labeling which is referred to as an applicator type. The different applicator types are described in the display section of this manual.

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.

Product Clearance: This is the time or distance traveled after the last label in the sequence has been applied until the applicator will react to the product detect sensor. This is used to filter out multiple product detect signals from a single product. This was Detector Lockout in the 3600.

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.

Extended Peel Edge: An applicator nose assembly that adds a peel edge that moves with label flow. This will enable the back feed option to be turned off to the printer so higher labeling rates can be obtained.

Inverted Tamp Blow (ITB): A mode of operation in which the tamp pad is in the extended position waiting for the product detect signal to start the labeling sequence.

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 Sensor: The sensor that detects the leading or trailing edge of the label.

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.

LED: Light Emitting Diode

Normal Tamp Blow: A mode of operation where a label is dispensed onto the label pad and the applicator waits for the product detect sensor to turn on before starting the labeling sequence.

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.

Static Stack: When labels are applied to a stationary target on top of each other to check repeatability of the applicator.

Tamp/Swing Extend Time: The time allowed for the tamp slide or rotary actuator to fully extend.

Tamp/Swing Retract Time: The time allowed for the tamp slide or rotary actuator to return from its extended position to its 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.

3600a TOUCH SCREEN 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. It will cover most of the standard 3600a, the dual action tamp and most of the corner wrap.

TYPES OF KEYS



This key is for enabling and disabling the applicator. When enabled, the applicator will be ready to apply labels. Depending on the screen, either the center of the button will be green if enabled or just the frame.



This type of button is used to turn options on and off. The label on the button will change to explain what is on.



This type of key is usually a “go to” button where it will take you to another screen. It also can be used for other functions such as “jog” or “alarm reset”. Colors will change with function.



Pressing this key will take you back to the previous screen.



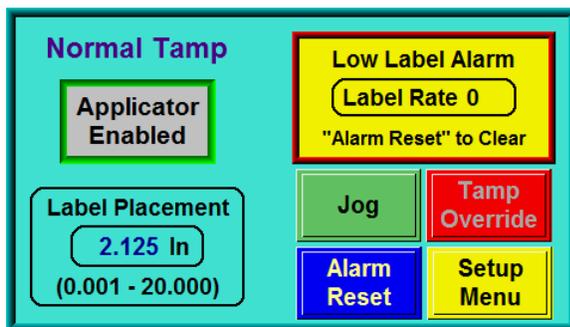
This button takes you back to the main menu.

ALARMS

There are two types of alarms generated in the 3600a applicator:

Warning Alarm

Critical Alarm



Warning Alarm Status Box

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 with the exception of an inhibit warning. During a warning alarm, the amber light on the light-stack (if provided) will be turned on.

Critical Alarm Screen

Critical alarms will stop the applicator (disable mode) and turn a red light on in 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:

Inhibit – This alarm occurs when an external device inhibits the applicator from dispensing a label by activating the inhibit input on I/O connector pin C2-12.

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 applicator receives a signal from the print engine that the ribbon supply is low. If running direct thermal, this alarm should not occur.

Printer Not Ready – Will occur if the print engine is taken offline or is paused.

Comp Warning – This is a compensation alarm and occurs only when using an encoder. The PLC will calculate the encoder velocity and make adjustments to the label placement value based on that velocity. The faster the encoder speed, more is subtracted from the label placement. If label placement gets to a negative number, this warning occurs telling the operator to increase the label placement value or slow the conveyor speed.

Rate Alarm – This alarm occurs only in a dual action tamp applicator and will come up if the applicator is not ready to apply the second label by the time the second label placement value is complete. The problem can be corrected by increasing the print speed, lowering the actuator times for the first label application, or increasing the second label placement value.

Bad Label on Pad – This warning occurs when using RFID option and jogging a label onto the label pad while the applicator is disabled. It will notify the operator the label just printed was bad.

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 the print engine runs out of labels or ribbon and sends a signal to the applicator PLC.

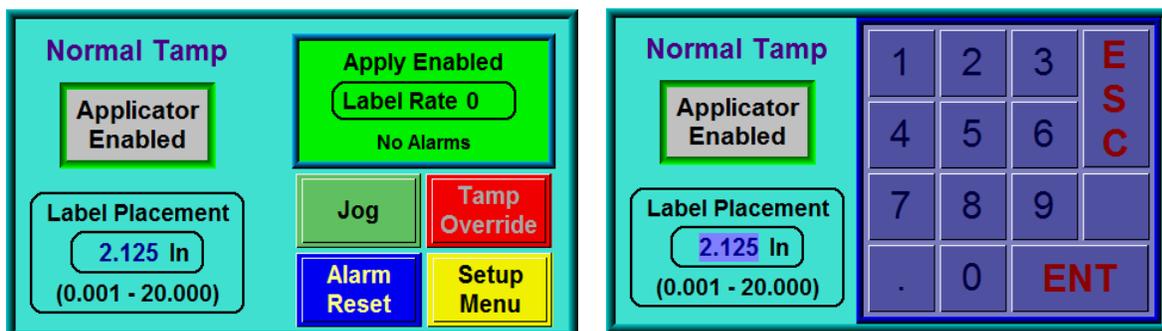
Too Many Ejects in a Row – This alarm occurs when using RFID option and the number of ejects in a row passes the *Eject Alarm Count* value.

Ejected Label Stack Too High – This occurs when in RFID mode and the label count for the eject paddle is greater than the *Eject Stack Preset* value.

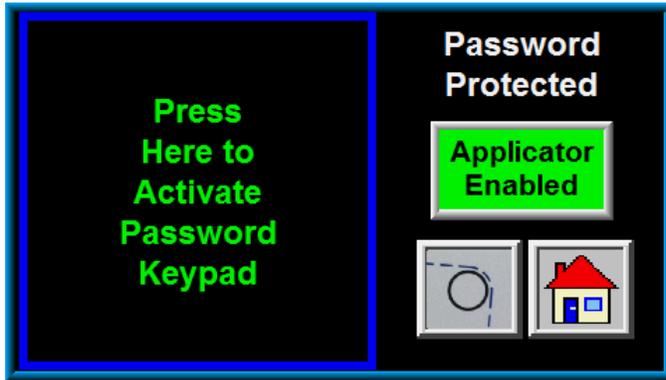
CHANGING VALUES

Values that may be changed are shown in boxes displaying the current value. In the example below, label placement is shown to have a value of 2.125". To change this value, the operator will touch the screen in the label placement field and a keypad will appear to the side of the variable. The figure to the right shows what the display should look like after touching the variable field. You can see the field that is being changed is highlighted. Also the numeric keypad has appeared to the right of the variable. As you touch numbers on the keypad, the new value is input to the variable box. Pressing "ENT" will finish the process and pressing "ESC" will allow you to escape without changing the value.

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".

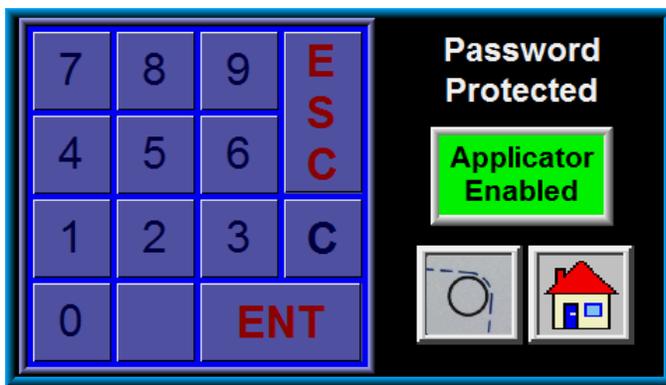


PASSWORD

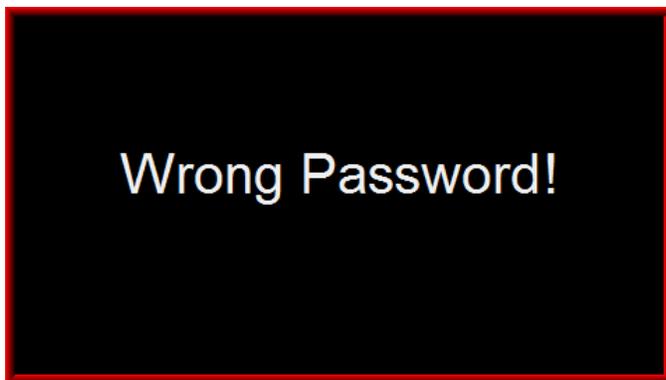


The Setup Section of the display is password protected. The standard 3600a password is “1800”. Pressing the setup key at the main menu will cause the screen to the left to appear.

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 password entry by touching within the box on the left to activate the keypad



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.

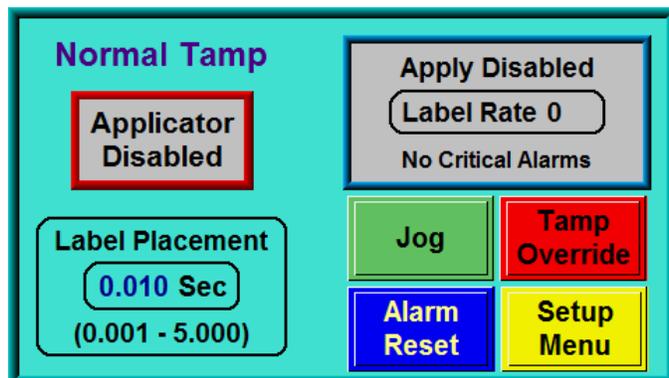


If the wrong password was entered, the screen to the left appears. The screen will appear for three second and then return to the first password screen.



Pressing this key will display web paths for both right and left hand applicators as well as a threading diagram for Sato, Zebra and Datamax print engines. This key is not enabled if the applicator is enabled. There is more information on this key in the Applicator Setup section.

MAIN MENU



The main menu is divided into four sections. The upper right corner of the display is a status window. The purpose of this box is to inform the operator of the state of the applicator. The screen shown to the left 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. 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 upper left side of the screen will change based on application type or whether the certain options are on. The line of text above the enable/disable button describes the apply type or sequence so the operator knows how it is setup. The enable/disable button will be shown as above if External Print or Blank Label options are not on. If these options are on, the button above will be replaced with the following:



The  was added because these options can add behavior that would not normally be expected. Pressing this key will take you to a help screens to describe the option that is on and explain some of the issues you may be seeing.

The lower left corner is for label placement and this will change depending on applicator type and whether the encoder is on or off. If the encoder option is on the units will be in inches but if off the units are in seconds. If this was for a dual action tamp it will display placement for swing and side placement in the order they occur in the labeling sequence. If this was a corner wrap, there would be no placement.

The lower right corner has buttons that gives access to important functions and variables needed to operate the applicator. These buttons are consistent between the different 3600a applicator types.

Jog –If the applicator is enabled, the jog will cycle the applicator just like it was applying a label to a product. If the applicator was disabled, it would just blow and print another label.

Note: The jog button on a DAT only works when the applicator is disabled

Tamp Override –When on, the tamp slide will extend which helps with setups and changing labels.

Note: Not active while the applicator is enabled.

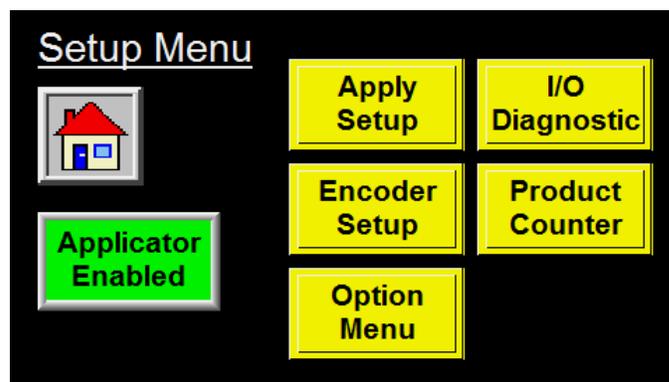
Alarm Reset –Resets warning alarms.

Setup Menu –Gives access to the setup parameters

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

SETUP MENU

Because the setup menus are password-protected, pressing the setup key at the main menu will cause a password screen to appear. Entering the correct password will cause the setup menu to come up. From here the operator can go to the different setup sections. The operator can also bring the applicator online while he changes the setups.

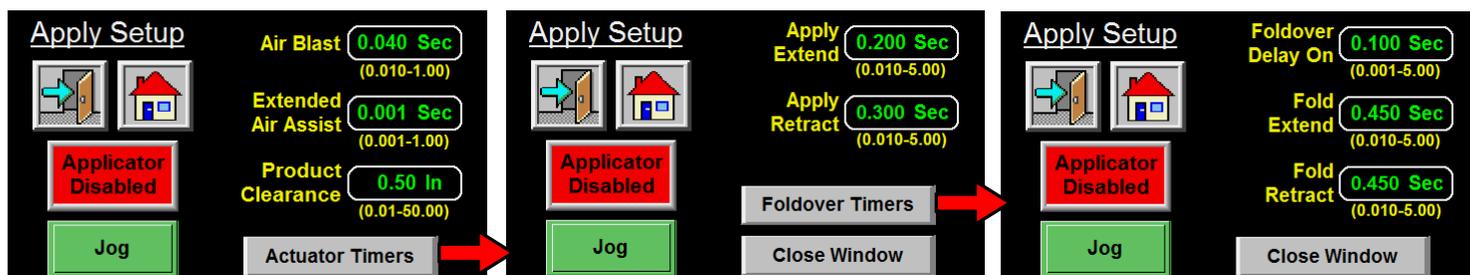


APPLY SETUP

The apply setup menu is accessed from the setup menu by pressing the apply setup key. The apply setup section gives the operator access to variables on the applicator that pertain to the applying a label.

The following items may be changed in this section:

Air Blast	Product Clearance	Apply Retract
Extended Air Assist	Apply Extend	Foldover Timers
RFID Variables		



Air Blast -The air blast time is the interval of time that the air blast valve is turned on. Allowed values are .010 - 1 second.

Extended Air Assist -The extended air assist time is the interval of time after the print is complete until the air assist is turned off. It is used to help get the label in place on the label pad prior to being blown onto the product. Allowed values are between .001 - 1 sec.

Product Clearance -This is the time or distance traveled after the last label in the sequence has been applied until the applicator will react to the product detect sensor. This is used to filter out multiple product detect signals from a single product.

Extend Time -Extend timer will have different names based on the type of applicator but is the allowed time for the actuator (rotary or linear) driving the label pad toward the product to get into position. If this was a DAT, then there would be one for the rotary actuator and one for the linear slide.

Retract Time -As with the extend timer, there will be different names but is the allowed time for the label pad to get home before a label is printed. If this was a DAT, then there would be one for the rotary actuator and one for the linear slide.

Foldover Timers -This option is only in the standard applicator and the timer values only appear when the foldover option is enabled. The foldover timer descriptions are in the option menu in the display section of the manual.

RFID Variables -This option is only available in the standard applicator and will appear only if the RFID option is turned on. The RFID variable descriptions are in the option menu in the display section of the manual.

ENCODER SETUP

The encoder option is useful when the velocity of the product varies or you want to be able to setup label placement in inches verses trying to figure out the time value. The applicator uses three of the four signals from an encoder for speed calculations and to verify the encoder is turning the correct direction.

Encoder Direction –The block beside the home button will tell you whether the encoder is spinning in the correct direct. If reversed, switch the A+ and A- wires inside the applicator or remount the encoder so it is spinning in correct direction.

Encoder Option –The encoder option button is for turning this option on and off. If the option is on, the button will be green and the verbiage on the button will say it is on.

Pulse Length -The distance the product travels per pulse of the encoder. The pulse length may be calculated using the following formula:

$$\text{Pulse Length} = (\text{Distance Product Moves} / \text{Encoder Pulses} / \text{Rev})$$

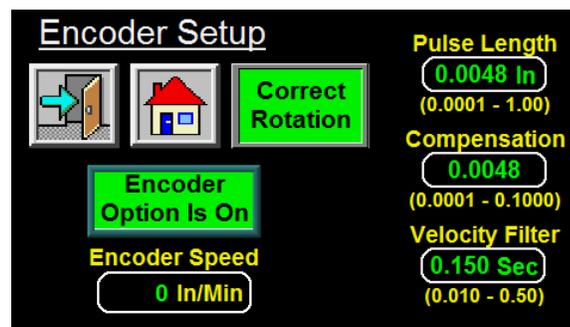
EXAMPLE: An encoder is mounted to a conveyor drive pulley and the circumference of that pulley is 12.00". Therefore, with one revolution of the encoder, the product on the conveyor will travel 12.00". The encoder is a factory-installed encoder generating 2500 pulses per revolution.

$$\begin{aligned} \text{Pulse length} &= 12.00'' / 2500 \\ \text{Pulse length} &= 0.0048 \text{ in/pulse} \end{aligned}$$

Velocity Filter – Velocity filter is the time the PLC takes to average the velocity of the encoder before acting on it and in most cases, should not be changed from factory set values. The higher the number, the more stable velocity is displayed but the reaction to a speed change will be slower. The lower the value, the faster the applicator will respond but the displayed value will be erratic. Look for a balance if you feel you have to change it.

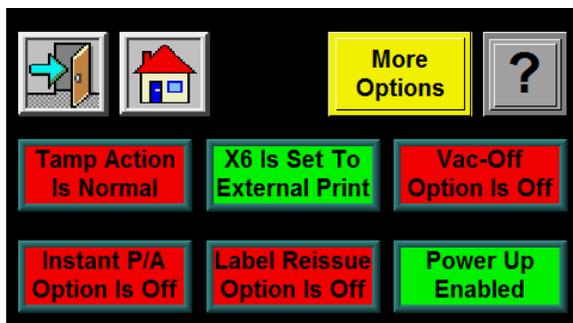
Compensation - Compensation is a number that functions within a formula to reduce the label placement value based on the encoder velocity. When products move faster on the conveyor, the label application must begin sooner to compensate for the static times of the apply cycle. When selecting a value for rate compensation, start at 0.0048. Apply labels to the product at a slower speed. Then run the product at production speeds or faster. If the labels are applied in the same position, the compensation is correct. If the labels move back at higher speeds, **INCREASE THE COMPENSATION**. If the labels move forward, **DECREASE THE COMPENSATION**. Whenever the rate compensation value is adjusted, it is advisable to re-run the product at various speeds to make sure that the labels are applied in the same position.

- Notes:**
- 1) Label placement units with the encoder option on are in inches, not seconds.
 - 2) The encoder option will not be accurate with a normal tamp labeling sequence (should be inverted).
 - 3) It's important to make sure that the applicator is setup properly so labels are dispensed consistently.
 - 4) If product speeds are too fast causing the compensated label placement to lag behind the current label placement, a warning will be given to raise the label placement value.

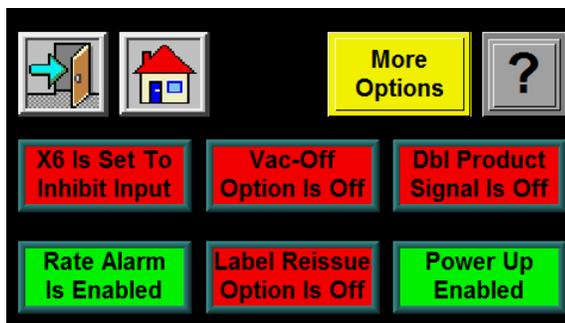


OPTION MENU

Here an operator can turn options on and off and if there are variables tied to the options, they can be changed. Option screens will be different between the standard, dual action and corner wrap versions.

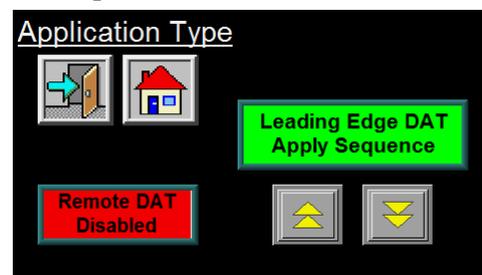


3600a Standard



3600a Dual Action Tamp

Tamp Action – Depending on whether the applicator is standard or dual action will determine how many different apply sequences are available and how to change them. If the applicator was a dual action tamp, the tamp action would be changed from its own screen that looks like the screen to the right. The standard only has two choices and is changed with the Tamp Action button. The following is a list of the different apply types and their sequences:



Normal Tamp Action (*Side Apply Only/Swing Only on DAT are the same*)

Apply Signal >>> Label Placement >>> Extend Actuator >>> Blow and Retract Actuator
>>> Print Label

Inverted Tamp Action (*Inverted Side Apply Only/Inverted Swing Only on DAT are the same*)

Print Label >>> Extend Actuator >>> Apply Signal >>> Label Placement
>>> Blow and Retract Actuator >>> Print Label

Leading Edge DAT

Apply Signal >>> First Label Placement >>> Swing Label Pad >>> Blow and Retract Swing
>>> Print Label >>> Second Label Placement >>> Tamp Label Pad >>> Blow and Retract Tamp
>>> Print Label

Trailing Edge DAT

Apply Signal >>> First Label Placement >>> Tamp Label Pad >>> Blow and Retract Tamp
>>> Print Label >>> Second Label Placement >>> Swing Label Pad >>> Blow and Retract Swing
>>> Print Label

Inverted DAT

Print Label >>> Extend Swing >>> Apply Signal >>> First Label Placement
>>> Blow and Retract Swing >>> Print Label >>> Second Label Placement >>> Tamp Label Pad
>>> Blow and Retract Tamp >>> Print Label

Corner Wrap (*only one choice*)

Apply Signal >>> Swing Pad Out >>> Go To Low Pressure >>> Tamp Return Product Sensor
>>> Swing Pad Home >>> Print Label

Instant P/A Option – This is only available on the standard 3600a setup for normal tamp action. With this option on, no labels will be printed until the product detect input turns on. The applicator then prints the label and applies it to the product. This option will be useful when the applicator is integrated into a workstation.

Rate Alarm –In a dual action tamp, if this option is on and the second label placement becomes true before there is a label on the pad to be applied, a rate alarm will be generated. If off, there will be no alarm.

X6 Set To Inhibit/External Print – The inhibit input on the applicator can be setup to inhibit the start of an apply cycle or it can be used to hold the printing of the label until a specific moment. If inhibiting the applicator, it is important to know that once a sequence starts, it will finish. It will not stop mid-apply. With it set to external print, the applicator will not print a label until this input is on. External print option is used with the vac-off option many times to save air.

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. To use this option with a Zebra printer the operator must enable the reprint option in the Zebra menu. With the Zebra printer, the label reissue option will continue to reissue the original format sent to the printer until this format is manually cancelled with label software and a new format is sent down.

To use this option with an M8400 series Sato printer the operator must turn DSW 3-8 on. If using S8400 series Sato print engines, the operator has to enable External Reprint in the Advanced Mode settings of the print engine. With all Sato printers, the label reissue option will print the last format sent until a new format is received.

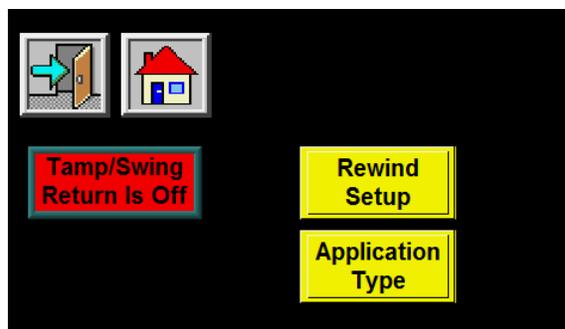
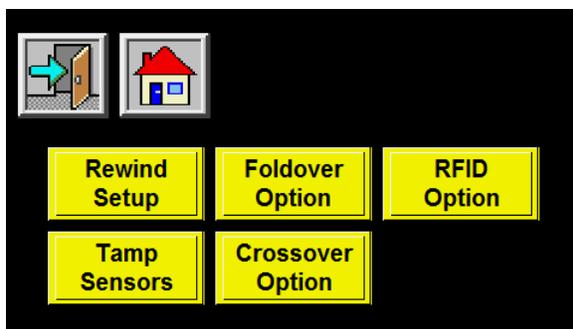
Vac-Off - This option is used to turn the vacuum to the label pad on and off to save air and to keep particles from entering the pad when there is no label available. When the option is on, the vacuum will turn on when the air assist is on and turns off at the beginning of the air blast.

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.

Power Up Disabled/Enabled - This option lets the operator chose whether the applicator is enabled or disabled on power-up.

More Options

Again there is a difference between the standard and dual action tamp menus. In the DAT, the applicator type has been discussed.

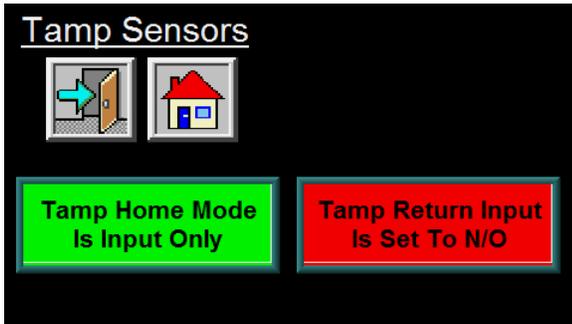
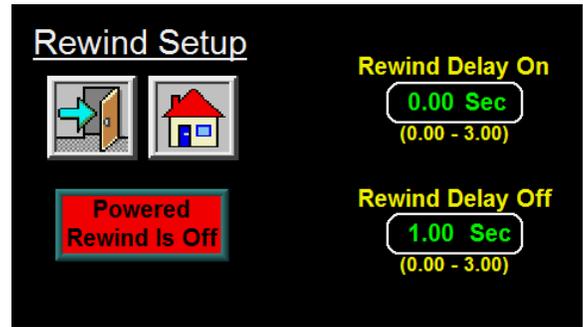


Tamp/Swing Return –This is only for the dual action tamp applicator, it will enable one of the encoder inputs to act as a tamp return input. When using this, the encoder option will be turned off. It is also important not to plug an encoder into the encoder connector.

Rewind Setup –The screen to the right shows the rewind setup for a standard 3600a. The dual action tamp version does not have the powered rewind option.

Powered Rewind –This is for the high capacity rewind that is installed when using the 16 inch unwind. Because the rewind sequence is different, this must be turned on if the large rewind is installed on the applicator.

Delay On/Delay Off –When using the standard rewind, the delay on time starts when the print engine starts to move. After the delay on time, the rewind motor turns on. The delay off timer starts when the print engine stops moving and when complete, the rewind motor is turned off. The best setup is “0.00” for delay on and “1.00” for delay off.



Tamp Sensors –This is only in the standard 3600a.

Tamp Home Mode –With the tamp home mode off, the applicator will look at both the retract time and the tamp home sensor to turn the tamp home output on and to start printing another label. If the option is on, then the applicator only looks at the tamp home sensor. This is helpful when reaching into a machine to label and knowing when the label pad is home and out of the way is important.

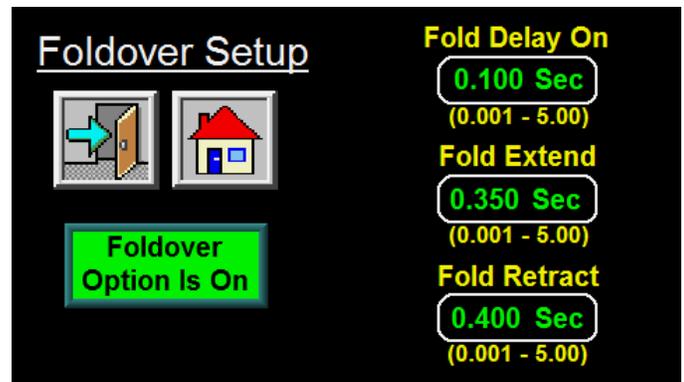
Tamp Return Input –By default the applicator treats the tamp return input as if the sensor or switch is normally open. For those times when the logic is reversed, you can set the input to normally closed.

Foldover Option –The standard 3600a can control a foldover station. The foldover has a dedicated input to start the sequence so it will run independent of the labeling operation.

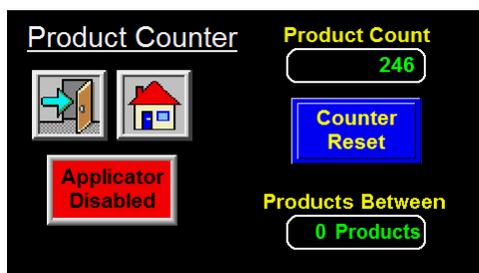
Fold delay On –This is the time from the fold product detect until the fold valve turns on.

Fold Extend –This is how long the fold valve is on.

Fold Retract –This is how long the applicator will wait before acting on another fold product signal.



Crossover Option –The standard 3600a supports a crossover sequence. Crossover is when two applicators are installed on a line where the applicator farthest upstream is setup as the primary applicator. It will attempt to label every product that goes by. The other applicator is mounted downstream and is setup to be the secondary head. It will start labeling when the primary is disabled or has a critical alarm. In this sequence, the secondary does all the work. The applicators are tied together with a crossover cable and the secondary monitors the primary's product detect and ready signals.



If the crossover option is enabled the product counter screen will display the number of products between the two heads (only in the secondary head). When setting the crossover up, it will be a good idea to monitor this screen to verify the sensors are not double triggering.

Note: Disabling and enabling will reset the Products Between count.

Sequence of Operation

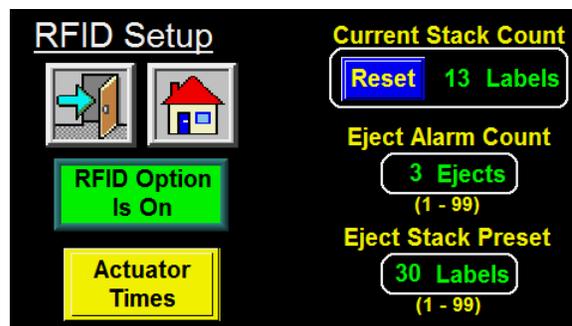
Before starting the crossover, make sure both applicators are setup to apply labels in the correct location on the product. It does not matter for the primary but you might have to turn the crossover off so the secondary can be run to verify the label position.

With nothing in between the primary and secondary applicators enable both. Have the secondary display set to the *Product Counter* screen. Start the products down the conveyor. As each product turns the primary's product sensor on you should see the *Products Between* counter increment by one. As products travel to the secondary when its product sensor turns on you should see the *Products Between* counter decrement by one. Doing this the secondary head always knows how many products are between and whether they are labeled or not. When the primary head is disabled or goes into a critical alarm, the primary's ready signal is turned off. The secondary will push the *Products Between* count into an *On Delay* counter and decrement it every time the secondary product sensor turns on. When this counter is less than zero, the secondary will start labeling. If while the secondary is labeling and the primary is enabled again, the primary starts labeling and the secondary will push the *Products Between* count into an *Off Delay* counter. This counter will be decremented every time the secondary product sensor turns on. When this counter is less than zero, the secondary applicator will stop labeling.

Setup Tips

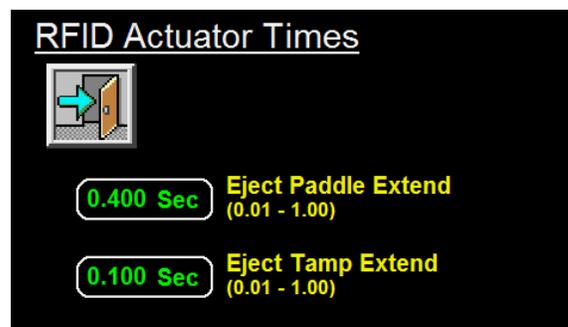
- 1) Make sure the product detect sensors for both the primary and secondary do not trigger multiple times on one product. This is important so the *Products Between* count is always correct. If the *Products Between* count is a negative number then either the secondary product sensor is triggering more than once or the primary product sensor is missing products. If the count is too high then the primary product sensor is triggering too many times or the secondary sensor is missing products.
- 2) When disabling the primary head while it's in production, do it right after you hear it blow a label on to the product. This is about the same time a critical alarm would occur.
- 3) When enabling the primary head while the secondary is labeling, try to enable when there are no products in front of the primary product sensor.
- 4) If the primary is disabled, do not enable again until the secondary has started labeling. In the same way if the primary is enabled while the secondary is labeling, do not disable the primary until the secondary stops labeling. It is important for all transfers to be completed before another transfer occurs.
- 5) This only works when labels are batch printed. Not for on-demand printing.

RFID Option –The standard 3600a will support an eject mechanism to get rid of labels the printer has deemed bad. When this option is on the applicator will monitor the *Bad Read* input on the PLC during the printing of the label. If the input turns on, the eject sequence starts. If too many ejects occur in a row, the applicator will go into a “Too Many Ejects” alarm. The applicator also keeps track of the number of labels on the eject paddle and if the number gets too high the applicator goes into a “Stack Height Too High” alarm.



Eject Sequence

The applicator gets an apply signal and applies the label on the pad. When the label pad returns home and a signal is sent to the printer to print another label, the applicator controller will start to monitor the *Bad Read* input. If the input turns on, the applicator will turn the eject valve on for the *Eject Extend Time*. Once the timer has finished the applicator waits for the label to finish printing. When finished, the tamp valve turns on and will stay on until the prox on the slide cylinder turns on. When this occurs the tamp valve turns off and the label is blown off the label pad. Once the label pad returns home another label is printed. Again the applicator will be monitoring the *Bad Read* input.



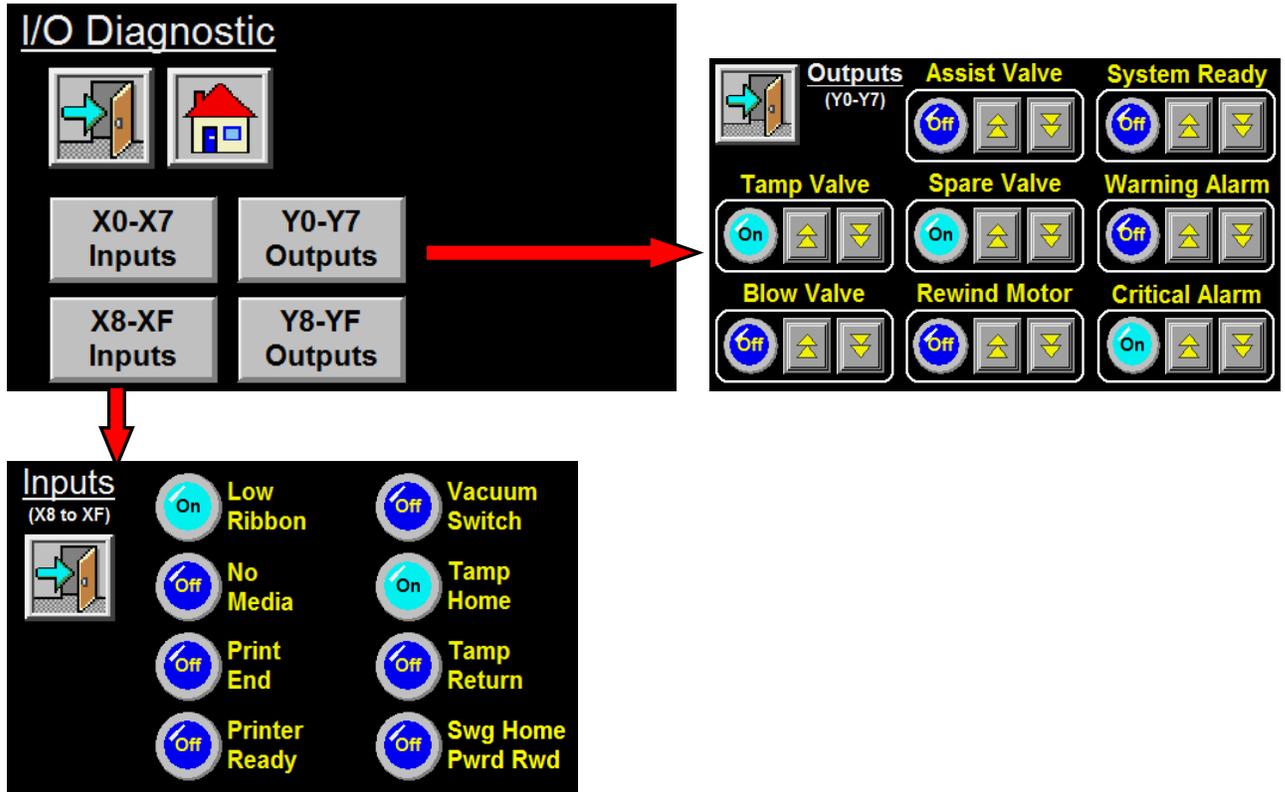
Setup

In the I/O diagnostics, turn the Spare Valve on. This will cause the eject paddle to extend. Now lower the pressure to the tamp slide to about 20 lbs using the regulators on the tamp valve. Push down on the label pad and pay attention when the cylinder prox turns on. It should turn on about 1-1/2 inches above the eject paddle. If not move the prox up or down on the cylinder to get it. Once done, exit out of I/O Diagnostics and go to the RFID option screen in the option menu. Set the *Paddle Extend* time to 0.500 seconds and the *Eject Tamp Extend* time to 0.100 seconds. These are starter values and can be adjusted later. Now exit out to the Main Menu and enable the applicator. You will need to create some bad labels by destroying a few label tags just before they enter the print engine. Send label formats to the printer, enable the applicator and press jog. Continue pressing the jog key until the bad tag reaches the pad and pay attention to the eject sequence. Make sure the paddle is out before the tamp slide starts moving down but not too much time where it slows the eject sequence. The *Eject Tamp Extend* is an override timer in case the applicator does not see the cylinder prox turn on so it will be hard to determine if it's too high. If too small the prox will not turn on before the slide returns home. Take notice how high the label pad was when the label was blown off. This should be about one inch and is determined by the position of the prox. You can move the prox up or down the cylinder to get the correct position.

There are two more parameters that can be set and they are *Eject Alarm Count* and *Eject Stack Preset*. *Eject Alarm Count* is the number of ejects in a row that will cause a *Too Many Ejects* alarm. This is here so if there are a string of bad tags, the applicator does not continue to eject labels for a long period of time. The *Eject Stack Preset* is here to define how many labels you want on the eject paddle before going into an *Ejected Label Stack Too High* alarm. This alarm will remind an operator to clean off the paddle. If the paddle is cleaned off before the alarm, the stack count can be reset through the *RFID Option* menu or in the *Apply Setup* screen.

I/O DIAGNOSTICS

This section allows the operator to monitor inputs and to manually turn outputs on and off. This section will serve as a diagnostic tool for the technician but be aware that some of the I/O names will change between the different applicator types.

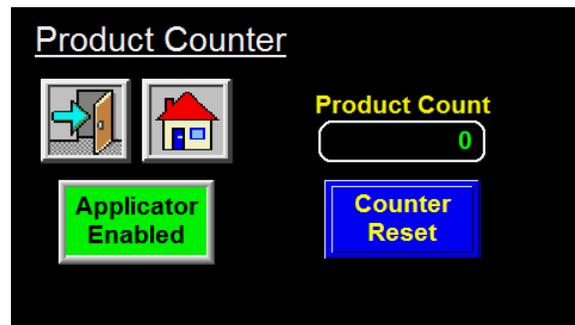


PRODUCT COUNTER

There is a product counter that acts like a totalizing counter. It will count every label cycle that was initiated by the product detect sensor but will not count jog sequences. The counter is saved and will be restored after a power cycle. It is only reset by using the counter reset key.

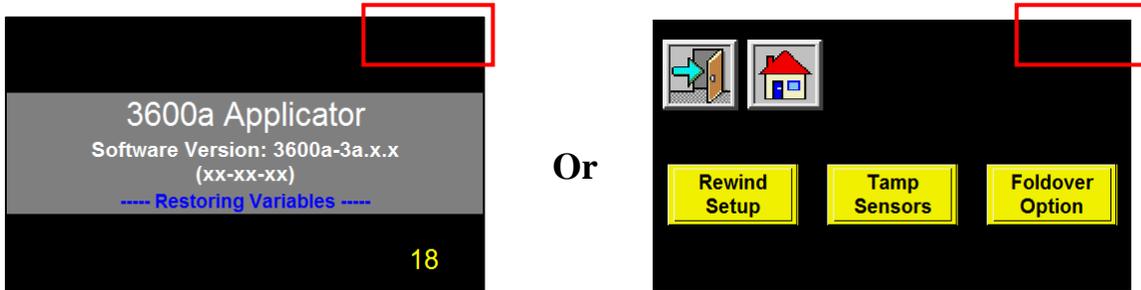
Note: This is not a preset counter where there is some logic tied to the counter value.

Products Between count will appear if crossover is enabled

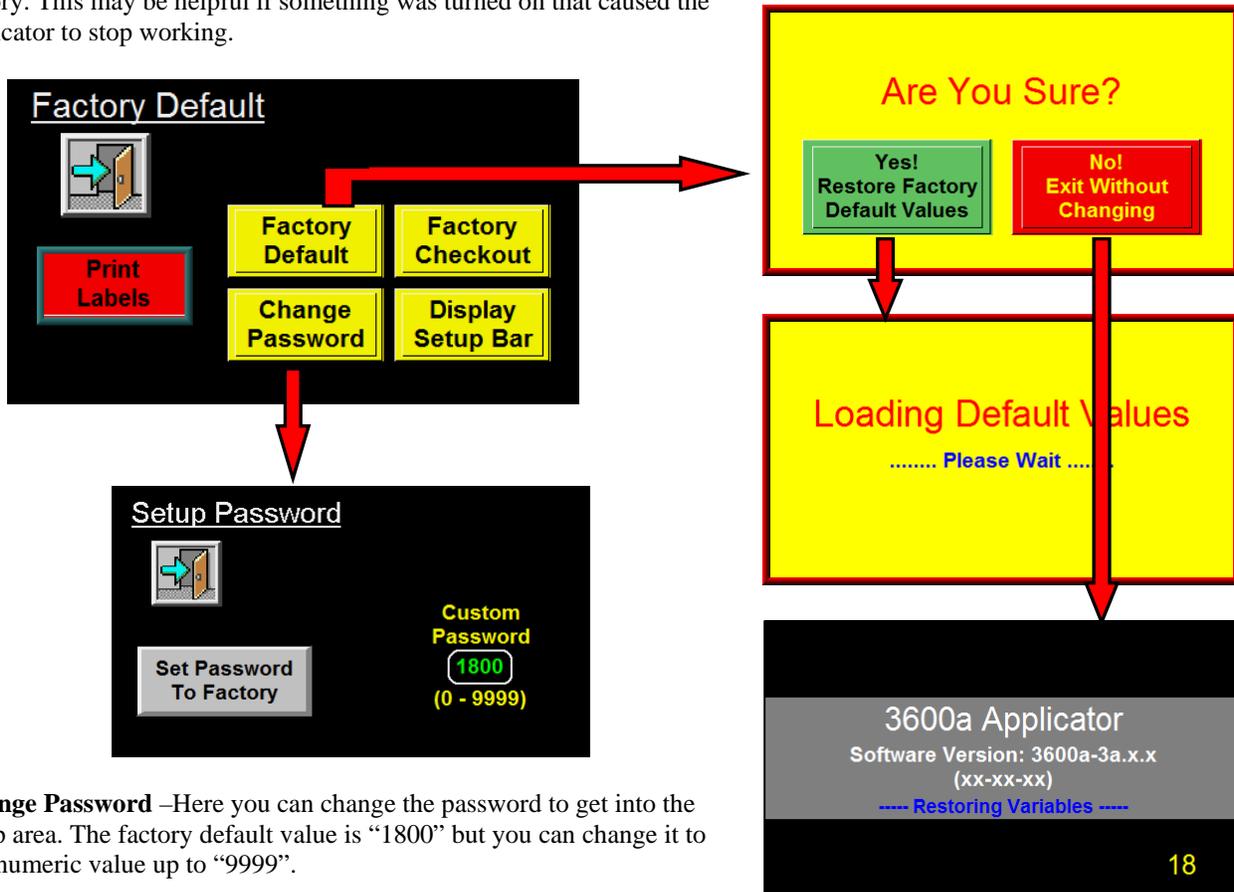


FACTORY DEFAULT

There are two places where touching the screen will cause the factory default screen to come up. One is on the software screen which appears on power up and one is on the last page of the option's menu. This is a password protected area and the password is "5115".



Pressing the factory default key will restore values that worked at the factory. This may be helpful if something was turned on that caused the applicator to stop working.



Change Password –Here you can change the password to get into the setup area. The factory default value is "1800" but you can change it to any numeric value up to "9999".

Print Labels –Toggling this switches from printing labels to feeding blank labels. When on, you cannot send label formats.

FACTORY CHECKOUT AND DISPLAY SETUP BAR IS ONLY FOR FACTORY USE.

REAR PANEL



CONNECTORS ARE INSTALLED AS ORDERED

CONNECTOR DESCRIPTIONS

VALVE: Valve bank connection. Valve banks are factory supplied and the current wiring will support up to a four station valve bank.

ALARM: Alarm light connection is optional. Alarm lights are factory supplied and the current wiring will support up to three lights and on audible station.

PRODUCT: Product detect sensor connection.

LOW LBL: Low label sensor connection is optional.

EOW: End of Web sensor connection is optional.

COM: Communication port of the printer and can be serial, parallel, Ethernet or USB.

DISPLAY: For the display connection.

ENCODER: The encoder is optional but this is where it would plug into. There is 24 VDC at the connection to power the encoder.

I/O: This connector can be used for integrators to monitor applicator alarms and functions. It is important to remember that inputs to the 3600a are wired for 24 VDC NPN devices. This means when the device signal goes to 0 VDC, the applicator input will turn on. All outputs are 24 VDC NPN which means when they turn on, the applicator signal goes to 0 VDC.

Note: *The max current for all the applicator outputs are 80ma. There are multiple outlets for some of the outputs so it is important to total the current draw of all devices using a certain output.*

EXAMPLE: The applicator has an alarm light that uses 45ma and it is tied to the critical alarm output. A customer wants to monitor the critical alarm output and ties a relay through the I/O port that draws 50ma. The two devices together can cause the critical alarm output to burn out.

This connector is optional and is only supplied when ordered.

I/O Port Pin Definitions

The following is a list of the pre-wired functions of the I/O port. If other functions are needed (i.e. tamp home switch), they can easily be added. All outputs are NPN (sinking) with 80 ma load. Inputs are also for sinking devices.

- **Pin #1** (DC Power): 0 VDC
- **Pin #2** (DC Power): 24 VDC at 200ma
- **Pin #3** (System Ready): If there is no critical alarms, the tamp is enabled, inhibit input off, and the printer is online, the ready output is on. (24 VDC sinking output at 80ma)
- **Pin #4** (Warning Alarm): This output will turn on when the applicator receives a low label or low ribbon signal. The signal will stay low until the alarm is reset. (24 VDC sinking output at 80ma)
- **Pin #5** (Critical Alarm): This output will turn on when the applicator receives a no labels or no ribbon signal from the printer or if the end of web sensor is made. The signal will stay low until the alarm is reset. (24 VDC sinking output at 80ma)
- **Pin #6** (Tamp Valve): This output parallels the tamp valve and can be used for monitoring a sequence. (24 VDC sinking output at 40ma)
- **Pin #7** (Tamp Home): The output turns on whenever the tamp home switch is made or the tamp retract timer times out. (24 VDC sinking output at 80ma)
Note: Tamp home switch is an option and is purchased separately
- **Pin #8** (Label on Pad): After a label has finished printing, the controller will look at the output of a vacuum switch to see if the label is on the pad. If so, the output turns on. (24 VDC sinking output at 80ma)
Note: Vacuum switch is an option and is purchased separately
- **Pin #9** (Air Blow Valve): This output is on when the air blow valve is on and can be used for monitoring a sequence. (24 VDC sinking output at 40ma)
- **Pin #10** (Air Assist Valve): This output is on when the air assist valve is on and can be used for monitoring a sequence. (24 VDC sinking output at 40ma)
- **Pin #11** (Product Detect): Taking this input low will start the labeling sequence of the applicator.
- **Pin #12** (Inhibit/External Print): This input will either stop the applicator from applying labels or will enable the print engine to print depending on how the input is configured.
- **Pin #15** (Ground): This connects to the applicator ground.

APPLICATOR SETUP

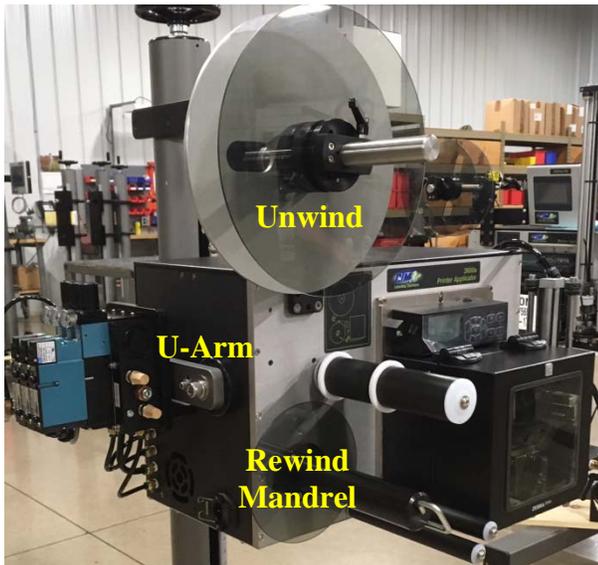
When an applicator is shipped, it may be necessary to remove some assemblies in order to fit in the box. The following section will show different assemblies to aid in putting the applicator back together so it can be set up.



DISCONNECT THE AIR AND POWER FROM THE MACHINE BEFORE YOU PROCEED!

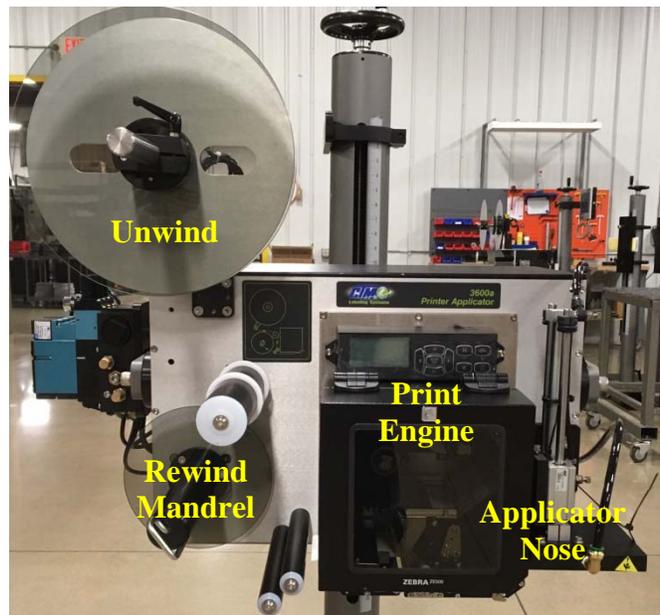
Moving the Applicator

The applicator is made to be mounted from its U-arm. The U-arm is a “U” shaped welded steel bar that is attached to both sides of the applicator. Removing the (2) ¼ SHCS that help lock the applicator in place and loosening the (2) ½ SHCS will allow the U-arm to swing over top the applicator. Most moving of the applicator is done by hand but if a crane is used then rotating the U-arm over the applicator and attaching to it is the preferred method.



Moving by hand will take at least two people. The U-arm should be rotated down in the position shown to the left. Have a person on each side of the applicator with the one on the applicator nose side lifting only off the U-arm. The one on the unwind side (shown in the picture) will lift with one hand on the U-arm and one on the unwind shaft. This will provide enough leverage so the applicator will not tumble out of the hands of the movers.

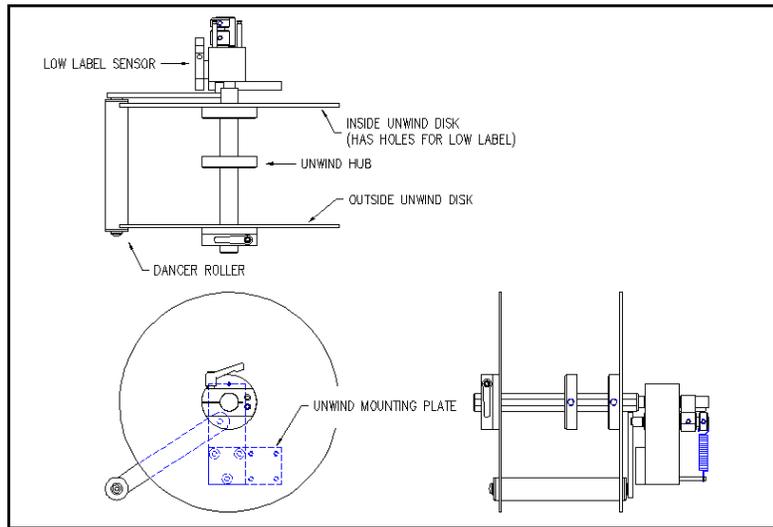
If more leverage is need or a third person is added they can use the rewind mandrel or the applicator nose assembly to hold onto. Still most of the lifting should be done from the U-arm.



Note: Do not lift off the housing rollers or the print engine!

Unwind Assembly

The unwind assembly mounts to the applicator by fastening the two unwind mounting plates to the unwind assembly and to the applicator face in alternate positions to suit various orientation and clearance requirements. The two plates are held together using four flat head screws. One end of the two mounting plates fasten to the unwind bearing block with three flat head screws, and the other end fastens to the applicator face with four screws. The mounting plates can be configured so the unwind can be positioned in different locations to aid in certain applications.



(unwind assembly)

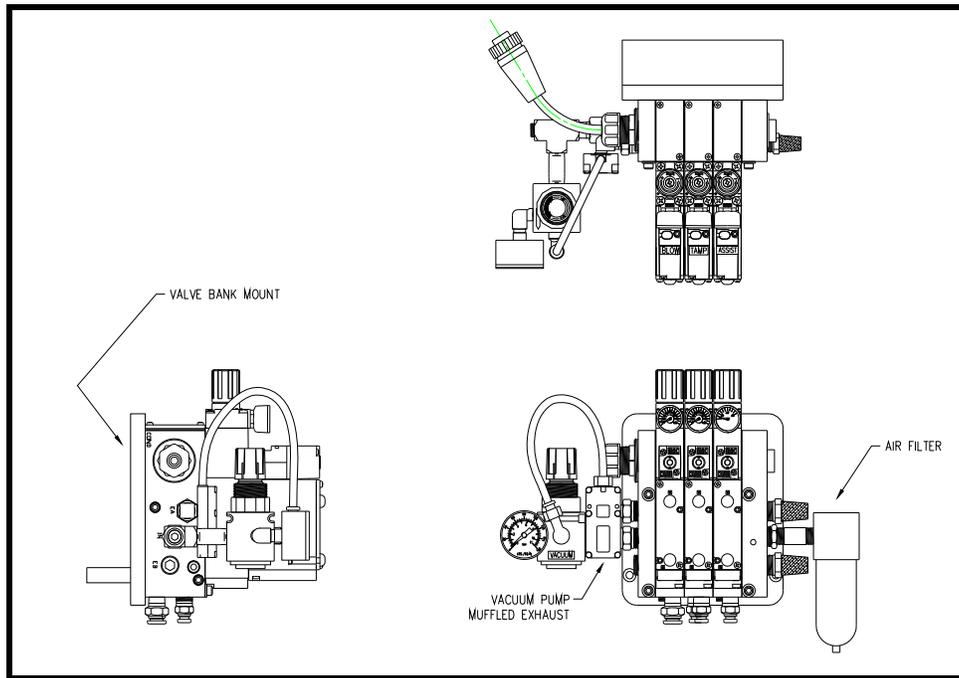
Unwind disks

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.

Note: *When the applicator is in the reels-up position, an aluminum inside disk will be provided*

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 machine will determine how the filter should be plumbed.



(Valve Bank)

Note: *In all cases it is important to have the filter bowl pointing down.*

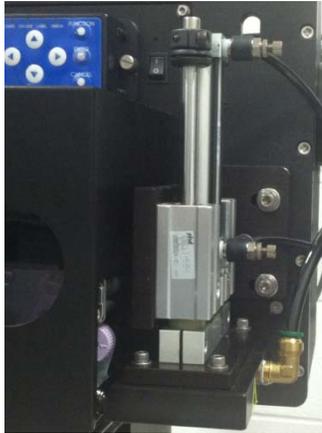
Valve Bank

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 1/4 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.

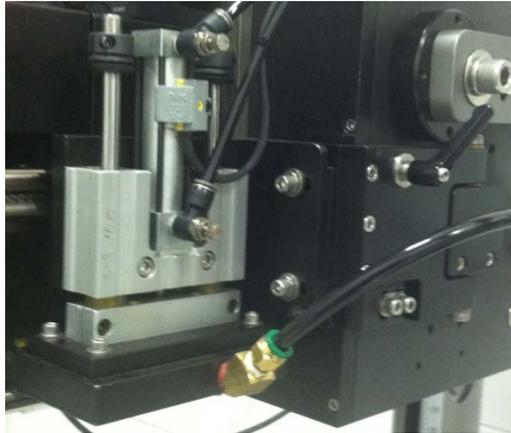
Note: *If there is special mounting for the valve bank, there should be factory drawings that come with the applicator showing it. If there are any questions, call the factory for help.*

Standard Tamp Assembly

There are two types of standard tamp assemblies but they mount the same. One is a swing-away style to aid in print head maintenance while the other is stationary. It would be rare that either style would be removed before shipping but even so they will have to be adjusted.



Stationary Standard Tamp Assembly

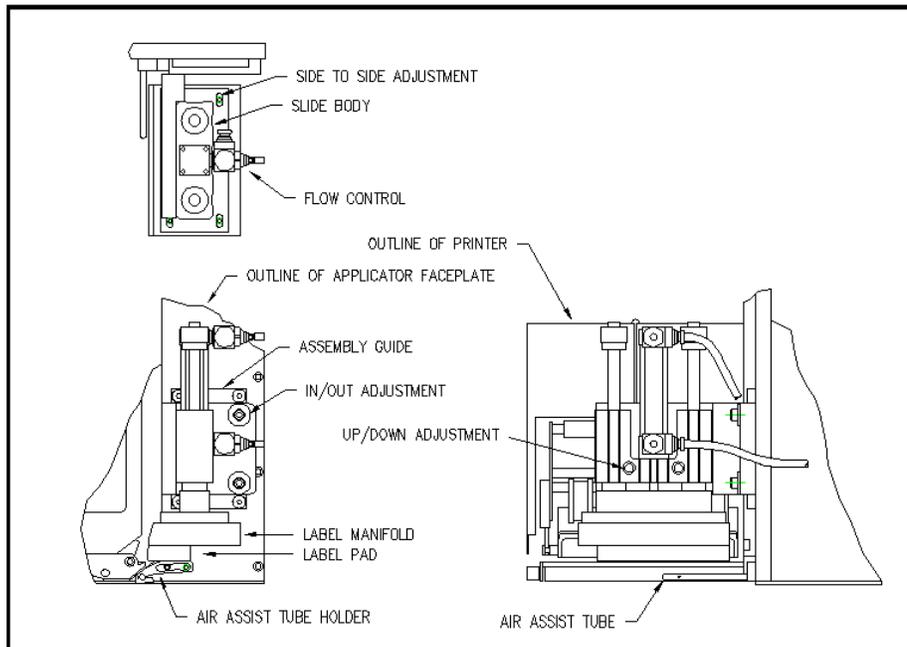


Swing-Away Tamp Assembly

The assembly is held on by two 1/4 shcs. marked as in/out adjustment in the figure below. These same two bolts will allow the label pad to be moved closer to the printer peel edge. To raise or lower the label pad, loosen two 1/4 shcs. in the slide body (marked as up/down adjustment in the figure below). The label pad and manifold can be moved side to side using the four #10 shcs. in the manifold. The position will change slightly between the Sato and Zebra printers.

Run the air line from the “A” port of the tamp valve to the top cylinder port, and the “B” port of the valve to the bottom cylinder port. The label manifold is plumbed to the “A” port of the air blast valve. The “A” port of the air assist valve is connected to the assist tube inside the machine.

Note: If the valve bank is mounted opposite the applicator nose, it will be plumbed into the manifold on the side of the machine.

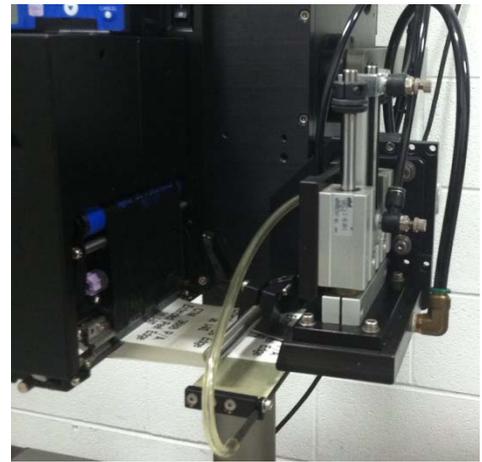


(standard tamp assembly)

Extended Peel Edge Assembly

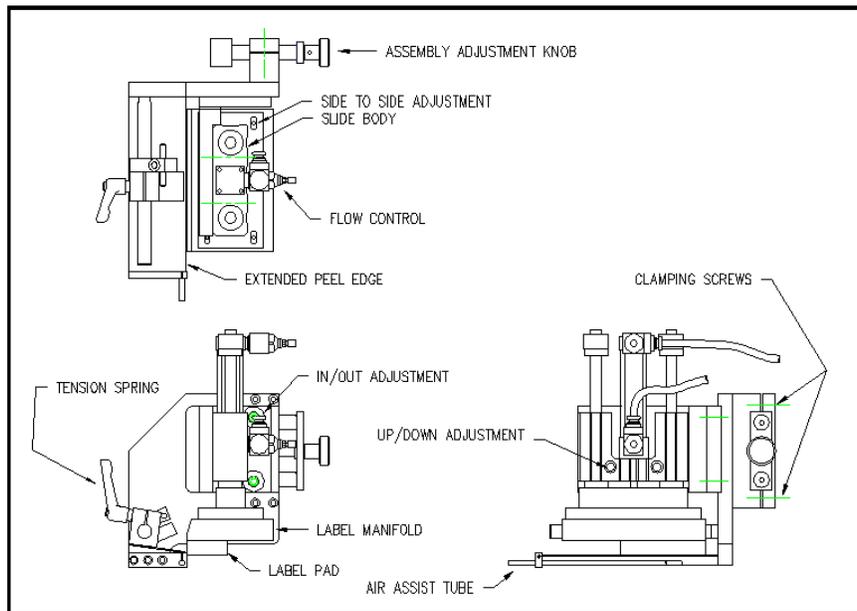
This nose assembly is used when it is desired to disable the backfeed option on the applicator to gain more labels per minute. With the backfeed off, the leading edge of labels will stop in different places with different length labels. To overcome this, the print engine is set to stop the label with the label leading edge under the print line of the print-head, and the tamp assembly is adjusted to where the label stops at the extended peel edge for proper dispensing.

Note: With this type of arrangement, there will always be one or more labels between the print-head and the extended peel edge.



The extended peel edge assembly is mounted on the label feed side of the applicator using four 1/4 shcs. and two 3/16 dowel pins. There are also two 1/4 shcs. used to mount the two guide rods to the side of the machine. To move the label pad closer to the peel edge, loosen the two 1/4 shcs. marked as tamp in/out adjustment in the figure below. When the label pad is in position, re-tighten the screws. To raise or lower the label pad to the peel edge, loosen the two 1/4 shcs. in the slide body (marked as up/down adjustment). The label pad can be moved side to side using the four #10 shcs. in the manifold. To move the whole assembly in or out so the peel edge lines up with the leading edge of the label, loosen the clamping screws on the guide rods and turn the assembly adjustment knob. Tighten all screws when finished.

The plumbing will be the same as the standard tamp assembly except for the air assist. Instead of it plumbing into the air assist tube from inside the housing, the air assist will mount opposite the faceplate on the peel edge and air will be plumbed at the mounted bracket (see picture above).

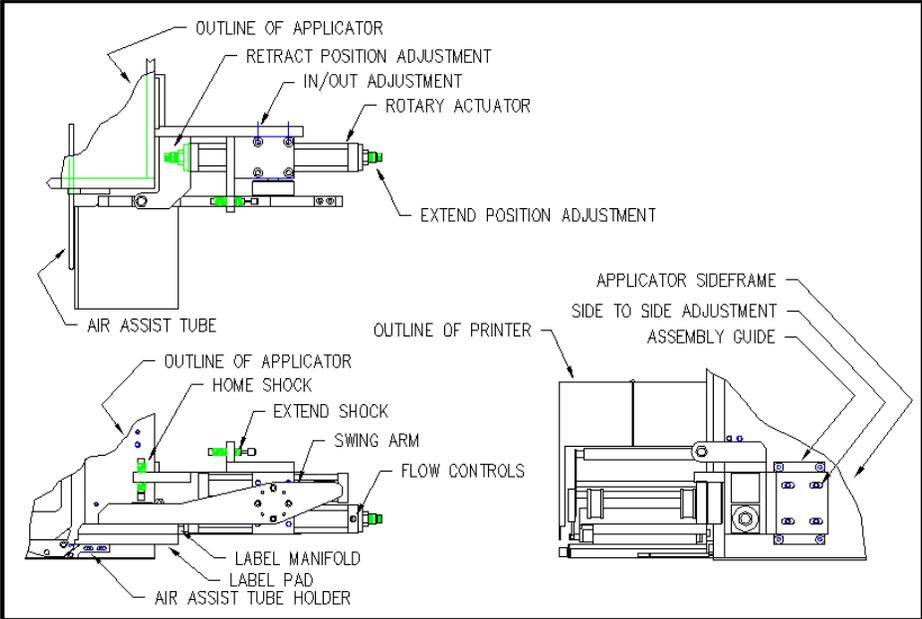


(extended peel edge assembly)

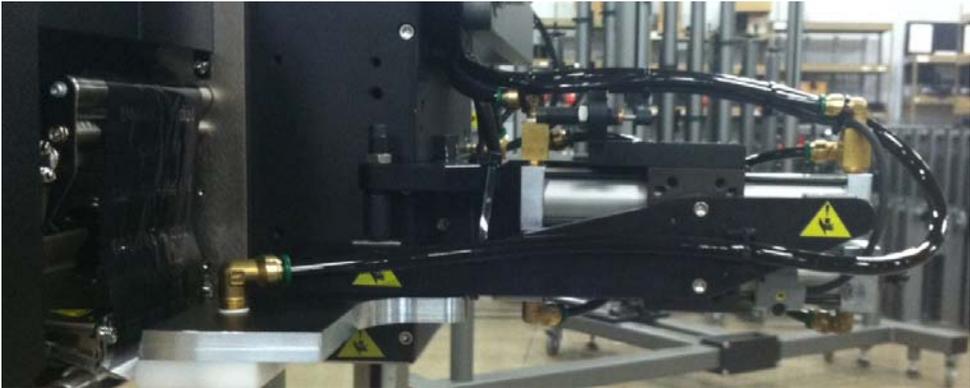
Swing Tamp Assembly

This assembly is used to apply labels to the leading or trailing edge of products. The assembly is held on to the side frame by four ¼ shcs. marked as side to side adjustment in the drawing below. These same four bolts will allow the assembly to move across web path to line the label to the pad. To raise or lower the label pad, turn the retract position adjustment screw on the rotary actuator. Moving the label pad closer to the peel edge is done by loosening the in/out adjustment screws. These also hold the actuator to the mounting bracket.

When plumbing the actuator, air that enters on a side on the top rack must also enter the lower rack on the opposite end. The “A” port on the tamp valve needs to connect to the top rack port farthest away from the applicator body and the lower rack port closest to the body. The “B” port will provide air to the other two actuator ports. The air blast and air assist valves plumb the same as the standard tamp.

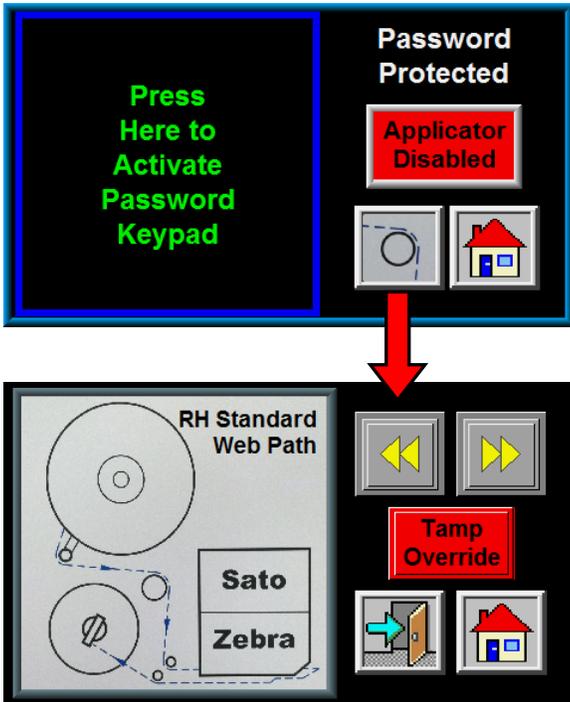


(swing tamp assembly)

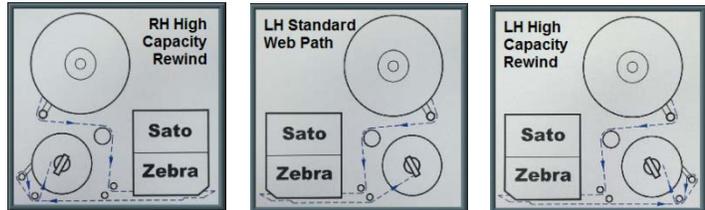


Media Loading

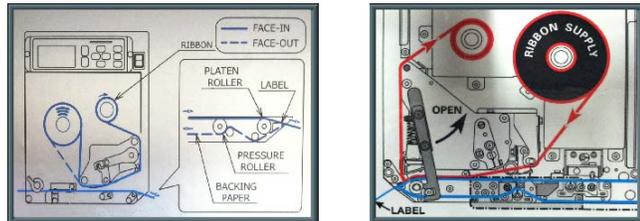
The following are tips for loading labels and ribbon on the applicator. If there are questions about how the media wraps around rollers or how it goes through the print engine, there is a key at the setup password screen that will display the different web paths for both the applicator and print engine. To access the screens, press the setup key at the main menu.



Pressing the key with the roller on it will bring up the screen shown below. You can use the arrow keys to scroll through different configurations until you find one that matches your applicator.



You can also touch the Sato or Zebra part of the print engine in the web path drawing and a screen will show the ribbon and label paths.



Ribbon Loading

- 1- Press the tamp override key at either the main menu or on the web path screen (refer to the display section of this manual). 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 or a swing-away mount, disabling the applicator is acceptable.
- 2- Open the printer cover.
- 3- Refer to the printer manual for ribbon loading instructions.

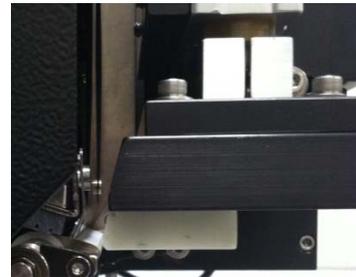
Label Loading

- 1- Press the tamp override key at either the main menu or on the web path screen (refer to the display section of this manual). 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 or a swing-away mount, disabling the applicator 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 the figure above 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.
- 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 the applicator (refer to display section of this manual). This way, adjustments can be made without the fear of the tamp slide actuating and injuring someone. Also load label formats into the print engine.
- 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 depending on the printer model.
 - a) With printing information in the buffer and the applicator disabled, press “  ” 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 the 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 “1/4” in from the front edge of the label pad. The air pressure should be set at 20-30 P.S.I. Press the jog key 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., 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 lower label rate. Start at .03 seconds.

Actuator Setup

Go to the display and enable the applicator. Press the jog key and observe the tamp action. The tamp slide should move smoothly. If the action is fast and slams into its stops, adjust the flow controls so the action slows. To slow down the extend speed, turn the bottom flow control (standard tamp) clockwise. The retract flow control is on top. By turning counter-clockwise, the slide will move faster.

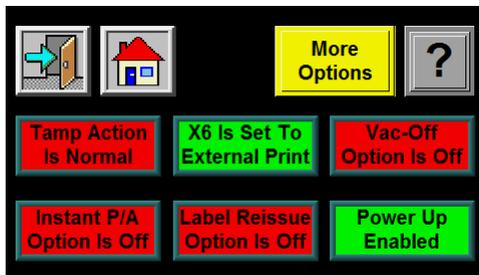
Note: The flow controls on the swing tamp are integrated into the rotary actuator

Actuator extend and retract times are changed through the applicator display. Refer to the display section of this manual as to where these menus are and how to change them. Tamp extend time needs to be set so the slide fully extends before the air blast turns on. If the blow off occurs too soon, the label application will not be accurate. If the time is too long, it adds to cycle time and will slow label rate. Tamp return time is the time allowed for the slide to return home before printing another label. If this time is too short, the label will dispense into the back of the label pad. If too long it will add to the cycle time of the machine.

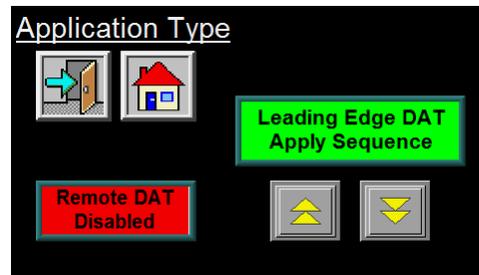
Note: If tamp switches are added, the tamp extend and retract times should be left high since the switches will over-ride time values.

Changing Tamp Sequences

Changing to the different tamp sequences (tamp action) was discussed in the display section of this manual. Accessing the difference choices is done in the options menu of the display. The dual action applicator has seven different modes, the standard has two while the corner wrap applicator is dedicated to one sequence.



(from the standard applicator)



(from the dual action tamp)

A short summary of all the modes:

- Normal Tamp Action*
- Inverted Tamp Action*
- Leading Edge DAT*
- Trailing Edge DAT*
- Inverted DAT*
- DAT Swing Only*
- DAT Inverted Swing Only*
- DAT Side Only*
- DAT Inverted Side Only*
- Corner Wrap*

See the Display section/Options menu for more information.

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, 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 not be touching it. If the label stop 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 assist 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.

Note: Static testing the labels is best done with a standard 3600. If you have a dual action tamp, it can be set to side only to do the test. The corner wrap applicator cannot do the static test.

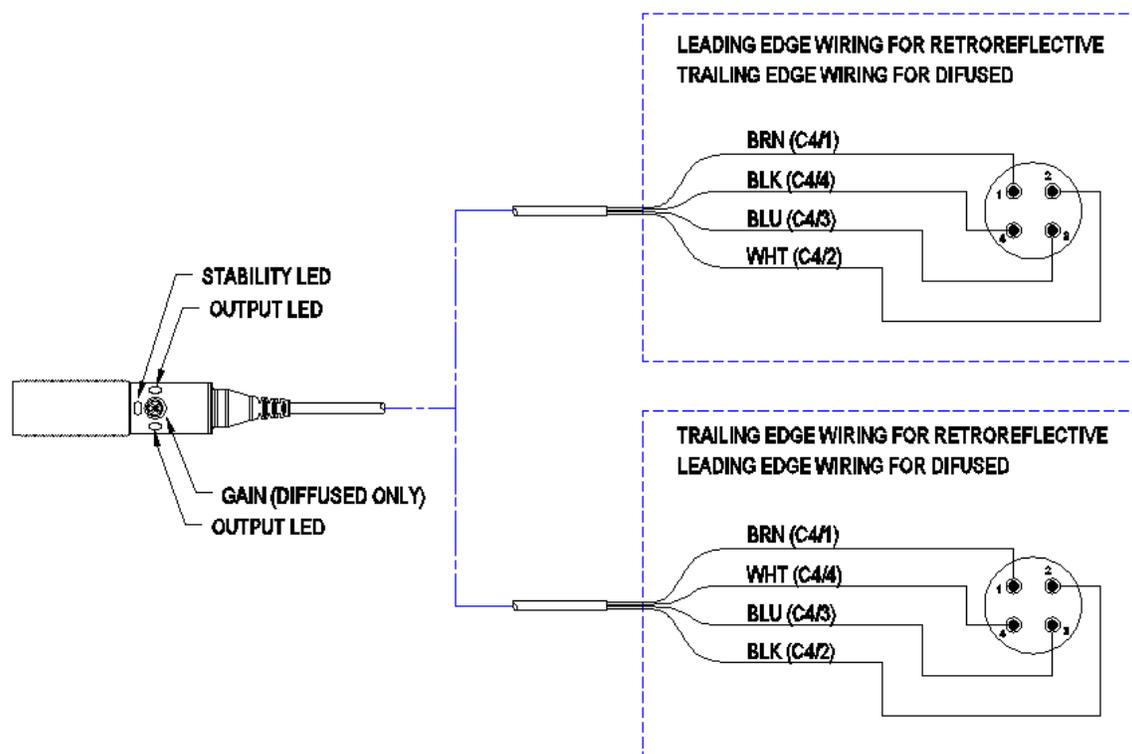
PRODUCT SETUP

The applicator should be setup and have successfully passed the static test before continuing with 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 while fixing the problem.

Regardless of which type of applicator nose you are using, it is important to control the product prior to labeling. If you do not present the product to the applicator in the same position at uniform speed, label positioning may not be consistent on the product. If necessary, install guide rails to insure products follow the same path along the conveyor.

STANDARD PRODUCT SENSORS

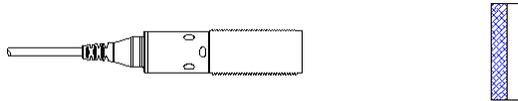
The standard product detect sensors are barrel-type sensors that can be retro-reflective, diffused or a background suppression. The picture to the right is the diffused sensor but the retro-reflective is the same except there is no potentiometer to adjust the gain. The background suppression is a barrel-style but from a different model series. It will wire the same as the diffused when changing from light to dark or dark to light operated.



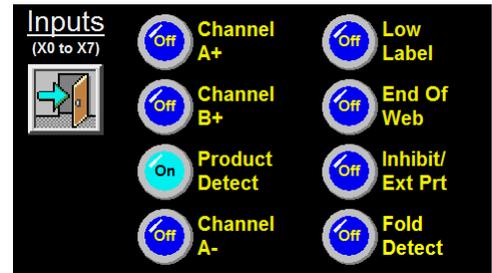
Note: The previous standard sensors had a rotary switch on the back of the sensor to change from Light Operate/Dark operate. The new sensors must have wires moved inside the hood of the sensor connector.

RETRO-REFLECTIVE SENSOR

- 1) Position the sensor and the reflector across from each other.
(make sure the sensor is mounted slightly upstream of the label application point)
- 2) Plug the sensor into the back of the applicator.
- 3) Power the applicator on.
- 4) Make sure the stability light is steady. If not, move the reflector until it is.



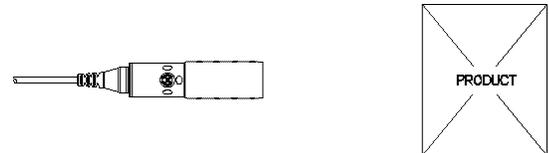
5) Go to the I/O diagnostic and the X0 to X7 input page and put a product between the sensor and the reflector. If the product input turns on in the display, then the sensor is set to leading edge apply; if not trailing edge apply. If the sensor is not looking at the correct edge, reverse the wires on pins 2 and 4 on the connector that plugs into the applicator connector plate.



DIFFUSED SENSOR

This sensor does not have a reflector but will follow a similar setup as the retro-reflective sensor.

- 1) Position the sensor slightly upstream of the label application point.
- 2) Plug the sensor into the back of the applicator.
- 3) Power the applicator on.
- 4) Put a product in front of the sensor and make sure the stability light is on. If it is not on or is blinking, turn the potentiometer until it is. Make sure the sensor does not see things in the background when the product is not in place. This can cause unwanted apply signals to the applicator.



5) Go to the I/O diagnostic and the X0 to X7 input page and put a product in front of the sensor. If the product input turns on in the display, then the sensor is set to leading edge apply; if not trailing edge apply. If the sensor is not looking at the correct edge, reverse the wires on pins 2 and 4 on the connector that plugs into the applicator connector plate.

BACKGROUND SUPPRESSION

This sensor has a 50mm far limit cut-off. This means it will see objects that are less than 2” away and ignore the rest. The setup for this sensor is the same as the diffused except it does not have stability light or a potentiometer.

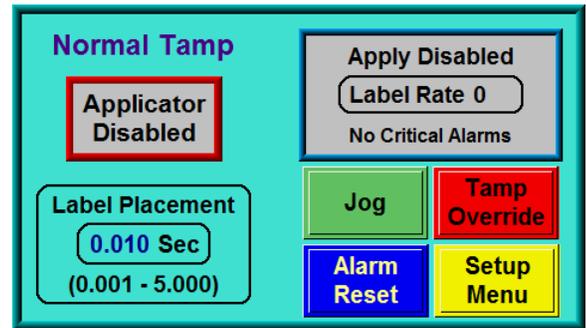
APPLICATOR LABELING VARIABLES

LABEL PLACEMENT

When a product detect signal is received, the product must travel the label placement time or distance before the applicator will apply a label. Label placement value gives you the ability to adjust where the label is applied on the product.

More Label Placement = label moves back on the product
Less Label Placement = label moves forward on the product

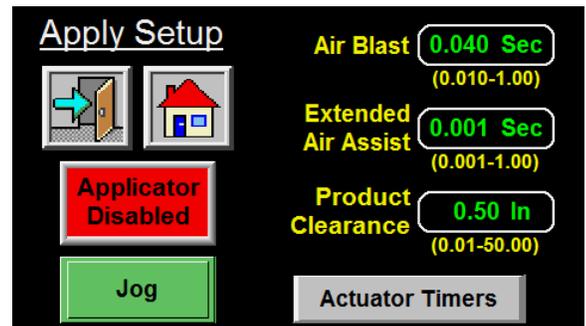
Label placement can only be changed from the main menu.



PRODUCT CLEARANCE

The product clearance function is used if more than one apply signal is generated per product. If the encoder is on, product clearance is in inches; if no encoder then it is in seconds. The clearance starts at the application of the last label applied. For a standard 3600a that would be when the air blast starts. For a dual action tamp, it will be the second air blast of the labeling sequence and for the corner wrap, it is the leading edge of the swing return. Once the product clearance starts, the applicator will ignore any product detect signals it receives until completed.

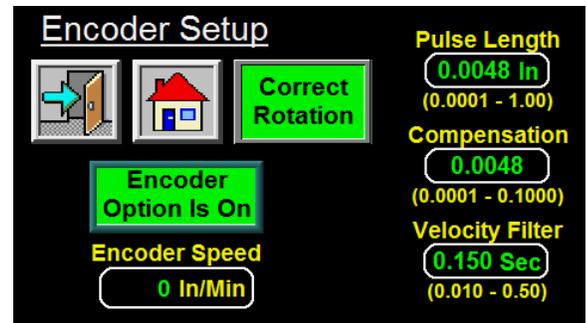
Product clearance can be set in the apply setup menu. More details of this function are in the display section of this manual.



ENCODER SETUP

If the applicator can be run in an inverted mode and product speeds are varying then adding an encoder to the applicator is a good way to stabilize label placement. If setup properly, the applicator will compensate the label placement position at different speeds.

There is a good description of this option in the display section of this manual. It discusses the meaning of the different variables as well as how to set them up.

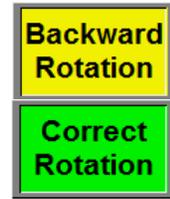


- Notes:**
- 1) Label placement units with the encoder option on are in inches, not seconds.
 - 2) The encoder option will not be accurate with a normal tamp applicator (should be inverted).
 - 3) It's important to make sure that the applicator is setup properly so labels are dispensed consistently.
 - 4) If product speeds are too fast causing the compensated label placement to lag behind the current label placement, a warning will be given to raise the label placement value.

Even though it is stated that applicators set to normal tamp will not be accurate with speed changes, the encoder will certainly help. What the encoder cannot compensate for is the extend time of the slide. If the product speed stays relatively consistent, the big advantage of the encoder is the fact placement is in inches which make it easy to determine how much to change the placement value to put the label in the correct position.

Encoder Direction

In the encoder menu, the block beside the home button will tell you whether the encoder is spinning in the correct direction. Turn the conveyor on that the encoder is mounted to and if the encoder is turning the wrong direction the block will turn yellow and say “Backward Rotation”. If it is OK, the block will be green and say “Correct Direction”. If you need to change the direction of the encoder you can remount so the spin direction is opposite or switch the A+ and A- wires inside the applicator.



WARNING: CHANGE (A+) and (A-) WITH THE APPLICATOR POWERED OFF AND THE POWER CORD DISCONNECTED FROM THE APPLICATOR.

Compensation - Compensation is a number that functions within a formula to reduce the label placement value based on the encoder velocity. When products move faster on the conveyor, the label application must begin sooner to compensate for the static times of the application. When selecting a value for rate compensation, start at 0.0048. Apply labels to the product at a slower speed. Then run the product at production speeds or faster. If the labels are applied in the same place, the compensation is correct. If the labels move back at higher speeds, **INCREASE THE COMPENSATION**. If the labels move forward, **DECREASE THE COMPENSATION**. Whenever the rate compensation value is adjusted, it is advisable to re-run the product at various speeds to make sure that the labels are applied in the same position.

Encoder Mounting

The method of coupling the encoder to the conveying system is an important consideration since errors or stress can be introduced to the system. If the encoder is coupled to a drive shaft, motor, etc., a flexible coupling should be used to compensate for any misalignment between the shaft and the encoder. This compensation is required because the smallest misalignment can result in high radial loads that may induce premature bearing failure. If the encoder is connected to the machine using belts and pulleys, be careful not to over tighten the belts.

An optional mounting kit may be purchased that has a rubber-coated wheel on the encoder shaft. The kit comes with a mounting plate and a spring loaded pivot plate to hold the wheel against the conveyor surface.

APPLICATOR INSTALLATION NOTES

In this section are some miscellaneous notes that can be used when installing an applicator to a production line. It will not step you through every detail of an installation because every installation is different but instead, it will give some things to look out for. We are also assuming that the person installing the applicator is familiar with print/apply applicators or has been trained by the factory.

The applicator should have been setup, printing and applying labels statically before you start with this section. This includes setting the correct extend and retract times for the actuators.

STANDARD 3600a

The standard 3600a is the easiest to setup because the tamp action is straight forward. First put the applicator in the correct orientation. Move the product to the applicator making sure it is guided in the same path and position as during a production run. Extend the label pad using the tamp override button on the display. Now move the applicator up and down/in and out so the label pad is 1/8 to 1/4 inch from the product surface and at the correct height if it is a straight tamp. If it is a swing tamp labeling the leading edge of a product, make sure the pad is moved in far enough so the label is blown in the correct position. To get the flow direction placement of the label, change the label placement value or move the product detect sensor.

Make sure the product detect sensor is mounted upstream of the application point. Try to position it so label placement is low. A high label placement value can slow label rate to the point you will start labeling every other product.

DUAL ACTION TAMP (DAT)

This discussion will be about the leading edge DAT labeling sequence. The information here will help with trailing edge and inverted DAT as long as you understand the sequence of all. Make sure all the extend and retract actuator times have been setup before starting the installation.

Move the applicator to the line in the correct orientation. Most orientations for this type of machine are reels-up, nose-up or nose-down. Put a product on the conveyor in the path it would travel in during a product run. Now go to the I/O diagnostics and extend the swing tamp. Move the applicator in or out/up or down until the label pad is in the correct position to apply the label. Lock the applicator in position and turn off the swing valve. Now we want to set the side apply position so it is 1/8 to 1/4 inch from the side of the product. Without the product in front of the applicator, turn on the side valve. If the label pad extends too far, you will have to move the stop collars on the slide to inhibit the stroke length. Measure how much the label pad needs to move and slide one of the stop collars down that much. Now extend the slide again but this time move the product into labeling position. If the position looks good, then move the second collar down while the slide is extended. If not, make adjustments.

With the applicator in position and the slide adjusted, set the product detect sensor upstream of the first application point. Set the label placement to a small value and run the product at production speed. When the product sensor turns on the label placement starts. After the first placement the rotary actuator will start to extend and start the swing extend time. At the end of the extend time, the label is blown off the pad and will start to retract. The goal is not to have the label pad hit the product so placement will have to be set so the product is close enough to blow and stick the label while having enough room to retract and get out of the way of the moving product. The placement value may have to be changed or the flow controls may have to be adjusted to get more rotational speeds.

Once the leading edge application is done, adjust the second label placement so the second label is in the correct position. You can turn the rate alarm on if you want to make sure the applicator is keeping up with the settings. If the label position for the second label is too far back and you cannot get it to move forward, you may have to increase the print speed, lower the extend and retract times of the first label application or slow the conveyor. If you slow down the conveyor, you will have to make some adjustments to the first label placement.

CORNER WRAP

Standard Corner Wrap Apply Sequence

The applicator is waiting with a label on the pad and label formats in the print buffer. When the product triggers the product detect sensor, the swing arm extends out into the product flow. At the same time, the swing extend timer will start. At the end of the swing extend timer, the swing arm pressure will lower to what was set on the low pressure regulator. This will cause the swing arm to act like it is spring-loaded. At same time the pressure is dropped to the swing arm, the blow valve is turned on and remains on during the apply cycle. This reduces the amount of label drag during the apply cycle. There could be a slight air blast to aid in getting the label onto the product, if required. The air blast pressure is factory set to 0 psi. When the product activates the swing back sensor, the blow valve turns off, vacuum resumes to the label pad, the valve switches to high pressure, and the swing arm returns to the home position. At the end of the swing retract timer, if formats are in the print buffer another label is printed and fed out onto the pad. The sequence is now ready to be repeated.

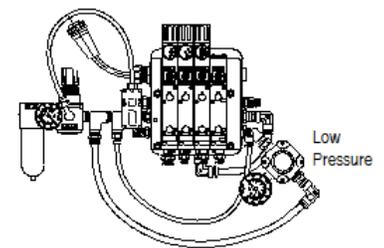
Vacuum Off Apply Sequence

The vacuum off option can be useful in conserving air between label applications if only one format is sent to the printer for each product being labeled because the vacuum will remain off until the next label is printed and fed out onto the pad. This option also keeps dirt particles from entering the pad, which over time will affect labeling performance. The applicator is waiting with a label on the tamp pad and label formats in the print buffer. When the product triggers the product detect sensor, the swing arm will extend out into the product flow. At the same time, the swing extend timer will start. At the end of the swing extend timer, the swing arm pressure will lower to what was set on the precision regulator. This will cause the swing arm to act like it is spring-loaded. As the pressure is dropped to the swing arm, the vacuum is turned off to the pad. The product will travel into the label pad splitting the label so half will be applied to the front of the product and the rest is wiped down the side. When the product activates the swing back sensor, the valve switches to high pressure, the swing retract timer starts and the label pad returns home. If there are formats in the print buffer at the end of the swing retract timer, the vacuum to the label pad will turn back on as another label is printed and fed out onto the pad. The sequence is now ready to be repeated.

Setup Tips

Make sure all the extend and retract times have been setup before starting the installation. The position of the applicator is usually reels-up. Extend the label pad using the tamp override button on the display and move the applicator in or out/up or down so the leading edge position of the label is in the correct position on the product. Make sure the label pad is square to the product so when the label is wiped down the side, the label is parallel to the top and bottom of the product.

Now jog the conveyor so the product pushes through the label pad. If there is too much force for the product to push through, lower the air pressure to the LP valve. If there is not enough force then raise the pressure. The low pressure regulator is mounted on the valve bank assembly and is a large precision regulator externally plumbed into the LP valve. Getting this pressure correct helps when labeling lighter products.



The product detect sensor, which should always be set to leading edge detection, will have to be positioned so the applicator will have enough time to swing out in front of the product. After the extend time, the tamp/swing pressure will be reduced so the product will drive through the swing arm and the air blast/vacuum valve will turn on. The swing arm will stay extended to fold the label around the product until the swing back sensor sees the product. This sensor should be positioned so the swing arm stays in contact to the product until the label is finished being applied.

Note: There is no label placement timer for this application type.

MAINTENANCE



DISCONNECT THE AIR AND POWER FROM THE MACHINE BEFORE YOU PROCEED!

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.



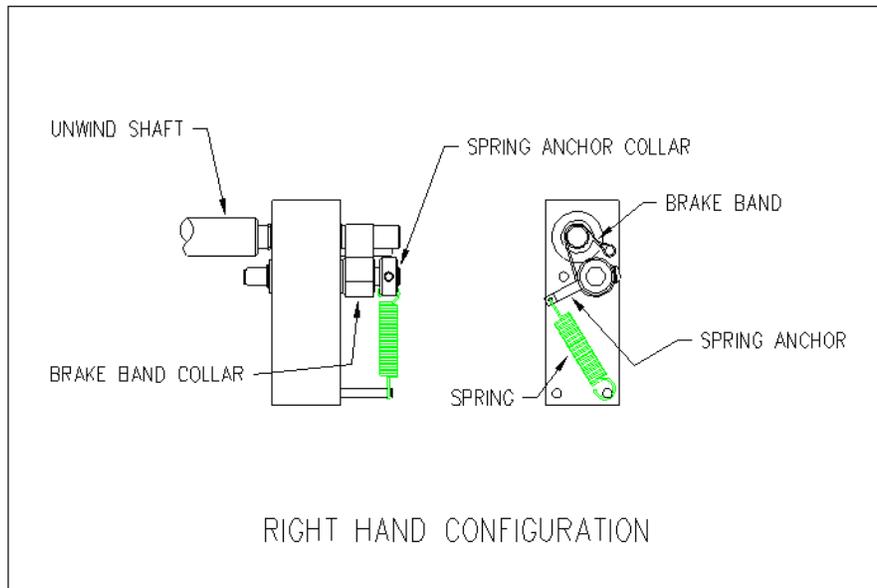
DISCONNECT THE AIR AND POWER FROM THE MACHINE BEFORE YOU PROCEED!

DANCER ARM ADJUSTMENT

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 as this may 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.



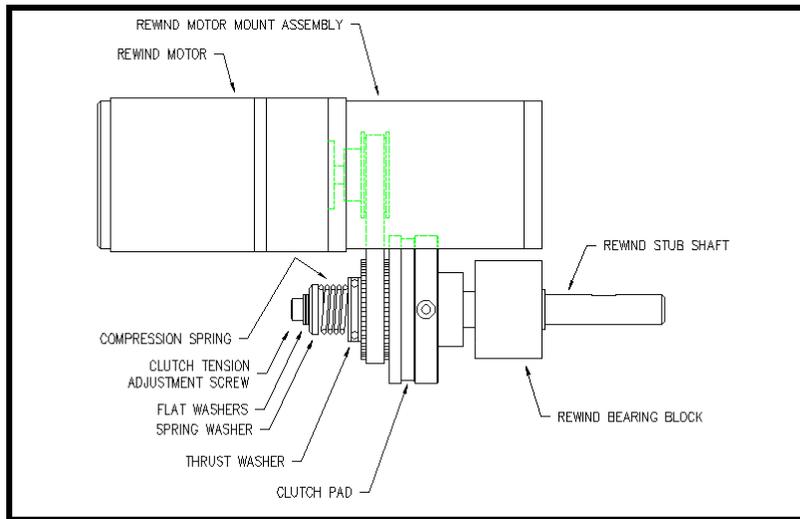
(adjusting brake band)



DISCONNECT THE AIR AND POWER FROM THE MACHINE BEFORE YOU PROCEED!

REWIND CLUTCH ADJUSTMENT

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.



(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 1/4" 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 1/4" 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.	Bad power supply.	Check power supply.
	Cables are not plugged into 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 too 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 applicator is disabled	Enable applicator
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.
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.	Turn printer on.
	The problem was not fixed before telling the applicator to reset.	Correct the problem at the source of the alarm signal.
“No Response From PLC” message on display.	Display cable is disconnected.	Check cable connections.
	Bad display cable.	Replace cable.

PRINTER SETTINGS

There are a number of settings and functions in these print engines that can be turned on or off. The following are lists of items for several printers that have to be set in order for the applicator control to interface with the print engine. Options like backfeed, direct or thermal transfer, etc. will be up to the operator to decide how to set.

An applicator coming from the factory will have these options already turned on. If a print engine is installed from another source, use the printer manual to navigate the printer menu.

ZEBRA PAX & ZE 500 PRINTER SETTINGS

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

DATAMAX “A” CLASS MARK II PRINTER SETTINGS

PARAMETER	SETTING
GPIO Device	Applicator 2
Error on Pause	APP 2

SATO S84ex and S8400 PRINTER SETTINGS

PARAMETER	SETTING
Printer Type	Dispenser
External Signal	Enabled
External Signal	Type 4
Ext. 9 Pin Select	Mode 2

SATO 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.

Dip 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

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.

APPLICATOR DRAWINGS
AND
SPARE PARTS

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

3600a P/A SERIES CORE UNIT SPARE PARTS LIST		
RECOMMENDED TOOL		
Part Number	Recommended Qty	Description
PE-TE6000	1	WIRING TOOL
RECOMMENDED SPARE PARTS LIST		
Part Number	Recommended Qty	Description
ASS-238aCE-0126	1	24VDC POWER SUPPLY ASSEMBLY
PE-FU2090	1	6.3 AMP FUSE
EXTENDED SPARE PARTS LIST		
Part Number	Recommended Qty	Description
ASS-200-0427	1	PRODUCT DETECT W/CONNECTOR
PE-RT1000	1	1"W X 6"L REFLECTIVE TAPE
ASS-238aCE-0125	1	3600a DISPLAY ASSEMBLY (Program specific)
MP-PLC1015	1	PLC (Program specific)
PE-RE1015	1	MOTOR RELAY

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

NON-POWERED UNWIND ASSEMBLY		
WEAR ITEMS (12" UNWIND)		
Part Number	Recommended Qty	Description
ASS-238-0180L or R	1	UNWIND BLOCK ASSY
PM-BB1030	1	UNWIND BRAKE BAND
PM-FASP30434	1	DANCER ARM UNWIND SPRING
REWIND ASSEMBLY		
WEAR ITEMS		
Part Number	Recommended Qty	Description
PM-BELT1015	1	REWIND BELT
MP-238-0274	1	3" CLUTCH PAD
PM-BE1232	1	REWIND CLUTCH THRUST BEARING
PM-FASP30540	1	MEDIUM DUTY REWIND CLUTCH SPRING
16" UNWIND ASSEMBLY w/HIGH CAPACITY REWIND		
RECOMMENDED SPARE PARTS		
Part Number	Recommended Qty	Description
PM-FASP30434	1	DANCER ARM SPRING (REWIND)
PE-SE10108	1	PROXIMITY SWITCH W/ QUICK DISCONNECT
HIGH CAPACITY REWIND ASSEMBLY for 16" UNWIND		
WEAR ITEMS		
Part Number	Recommended Qty	Description
PM-BELT1015	1	REWIND BELT
MP-238-0274	1	3" CLUTCH PAD
PM-BE1232	1	REWIND CLUTCH THRUST BEARING
PM-FASP30431	1	HEAVY DUTY REWIND CLUTCH SPRING

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

TAMP SPARE PARTS LIST		
RECOMMENDED SPARE PARTS (STANDARD TAMP)		
Part Number	Recommended Qty	Description
MP-211-X217-X	1	AIR ASSIST TUBE **JOB SPECIFIC** (SEE DWGS)
RECOMMENDED SPARE PARTS (EXTENDED TAMP ASSEMBLY)		
Part Number	Recommended Qty	Description
PM-T1010	1	PEEL EDGE TAPE (6" WIDE x 4" LONG)
MP-211-X217-X	1	AIR ASSIST TUBE **JOB SPECIFIC** (SEE DWGS)
PM-BEBF0985	1	PEEL EDGE ADJUSTMENT BUSHING
ASS-238-0143	1	ADJUSTMENT KNOB ASSEMBLY
EXTENDED SPARE PARTS (STANDARD & EXTENDED TAMP ASSEMBLY)		
Part Number	Recommended Qty	Description
ASS-238-0129M	1	TAMP 3 STATION MAC VALVE BANK ASSEMBLY
PM-VA2395M	1	5.4 WATT DC SOLENOID
PM-VA2396M	1	30 PSI REGULATOR w/0-60 GUAGE (AIR ASSIST)
PM-VA2397M	1	80 PSI REGULATOR w/0-120 GUAGE (TAMP/BLOW)
SLIDE ASSEMBLIES (STANDARD & EXTENDED TAMP ASSEMBLY)		
Part Number	Recommended Qty	Description
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
ASS-214-0108-8	1	8" SLIDE ASSEMBLY
ASS-214-0108-10	1	10" SLIDE ASSEMBLY
ASS-214-0108-12	1	12" SLIDE ASSEMBLY

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

SWING AWAY TAMP SPARE PARTS LIST		
RECOMMENDED SPARE PARTS		
Part Number	Recommended Qty	Description
PM-INS1010	1	THREADED INSERT
PM-FANU30375	1	CAPTURE WASHER
PM-LL1002	1	LOCK LEVER
EXTENDED SPARE PARTS		
Part Number	Recommended Qty	Description
MP-238-0338	1	SS HEAVY WASHER
PM-BEBT1008	2	THRUST WASHER
PM-BEBF1070	2	FLANGE BUSHING
PM-FASB10045	2	SHOULDER BOLT
MP-238-0335	1	LOCATOR BLOCK

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

SWING TAMP SPARE PARTS LIST		
RECOMMENDED SPARE PARTS (ROTARY SWING TAMP)		
Part Number	Recommended Qty	Description
PM-SA0990	1	SHOCK ABSORBER (HOME)
PM-SA1000	1	SHOCK ABSORBER (EXTEND)
RECOMMENDED SPARE PARTS (ROTARY SWING TAMP/CORNER WRAP)		
Part Number	Recommended Qty	Description
PM-SA0990	1	SHOCK ABSORBER (HOME)
PM-SA1000	1	SHOCK ABSORBER (EXTEND)
ROTARY ACTUATOR		
Part Number	Recommended Qty	Description
PM-AC1250	1	STANDARD DUTY ROTARY ACTUATOR **NOTE** CONTACT SALES DEPARTMENT FOR HEAVY DUTY ROTARY ACTUATOR

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

DUAL ACTION TAMP (DAT) SPARE PARTS LIST		
RECOMMENDED SPARE PARTS (DUAL ACTION TAMP)		
Part Number	Recommended Qty	Description
PM-SA0950	2	SHOCK ABSORBER
PM-SA0990	1	SHOCK ABSORBER (HOME)
PM-SA1000	1	SHOCK ABSORBER (EXTEND)
PM-BELT1039	1	TIMING BELT (NOT REQ'D FOR INLINE DAT)
SLIDE ASSEMBLIES		
Part Number	Recommended Qty	Description
PM-AC1237 or	1	3" SLIDE ASSEMBLY
PM-AC1239 or	1	6" SLIDE ASSEMBLY
PM-AC1241	1	8" SLIDE ASSEMBLY
ROTARY ACTUATOR		
Part Number	Recommended Qty	Description
PM-AC1248	1	ROTARY ACTUATOR

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

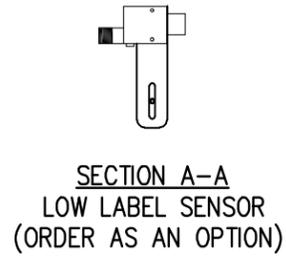
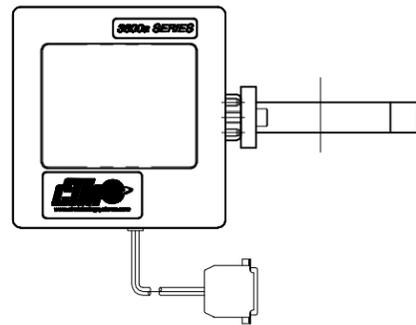
3600a P/A OPTIONS SPARE PARTS LIST		
OPTIONS: RECOMMENDED SPARE PARTS (LOW LABEL, WEB BREAK ALARMS)		
Part Number	Recommended Qty	Description
PE-LI1088	1	RED,YELLOW,GREEN LED ALARM LIGHT (BANNER)
ASS-200-0422	1	LOW LABEL SENSOR (w/o BRACKET)
ASS-200-0423	1	END OF WEB SENSOR (w/o BRACKET)
OPTIONS: RECOMMENDED SPARE PARTS (TAMP HOME SENSOR)		
Part Number	Recommended Qty	Description
ASS-238-0433	1	TAMP HOME SENSOR (w/o BRACKET)
** CYLINDER MUST BE DESIGNATED WITH AN "E"***		
OPTIONS: RECOMMENDED SPARE PARTS (TOUCH-AND-GO (TAG) - PROX)		
Part Number	Recommended Qty	Description
PE-SE1148	1	M8 INDUCTIVE PROXIMITY SWITCH
OPTIONS: RECOMMENDED SPARE PARTS (VACUUM OFF OPTION)		
Part Number	Recommended Qty	Description
ASS-200-0459	1	VACUUM SWITCH ASSEMBLY
OPTIONS: RECOMMENDED SPARE PARTS (QUICK DISCONNECT PAD & MANIFOLD)		
Part Number	Recommended Qty	Description
PM-FASSBP11000	4	BALL PLUNGERS
MP-238-0270	1	QUICK CHANGE SLIDE TRANSITION PLATE

BILL OF MATERIAL

CTM-238aCEL-TXS-12S-XX

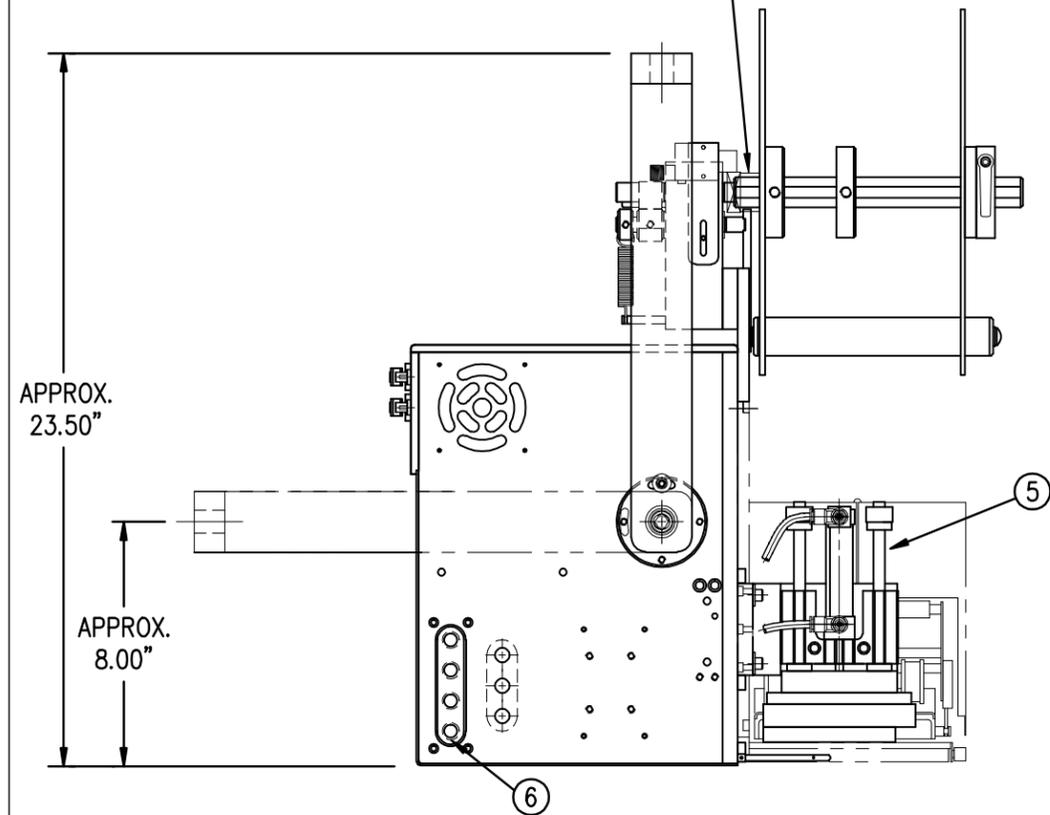
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①	1	CTM-238aCE-0123L	3600aCE CORE UNIT & HOUSING ASSEMBLY - LH
②	1	MOD-238-0122L	UNWIND MODULE with 12" DISKS - LH
③	1	MOD-238-0122AL	UNWIND MODULE with ALUMINUM DISK for "REELS UP" - LH
④	1	MOD-238-0124L	LH TAMP NOSE ASSEMBLY with VALVE BANK
⑤	1	ASS-238-0144-12	REWIND ASSEMBLY FOR 12" UNWIND
⑥	1	ASS-214-0103L-XN	SLIDE ASSEMBLY FOR 3600-PA APPLICATOR - LH
⑥	1	SAS-238a-0124	AIR MANIFOLD ASSEMBLY

DISPLAY ASSEMBLY
(LISTED IN CORE UNIT BOM)



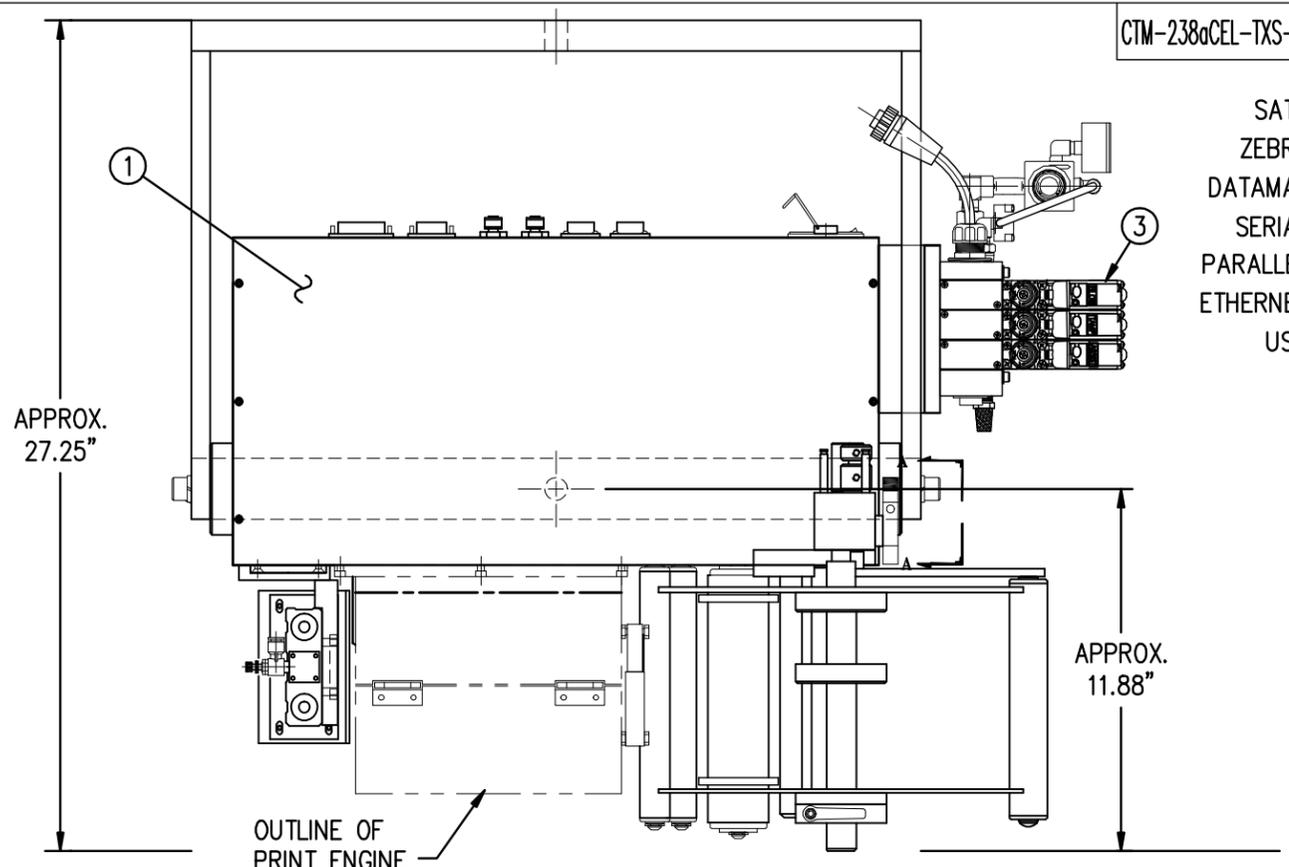
SECTION A-A
LOW LABEL SENSOR
(ORDER AS AN OPTION)

BUSHING & LOCK COLLAR
ONLY USED FOR REELS UP
ORIENTATION

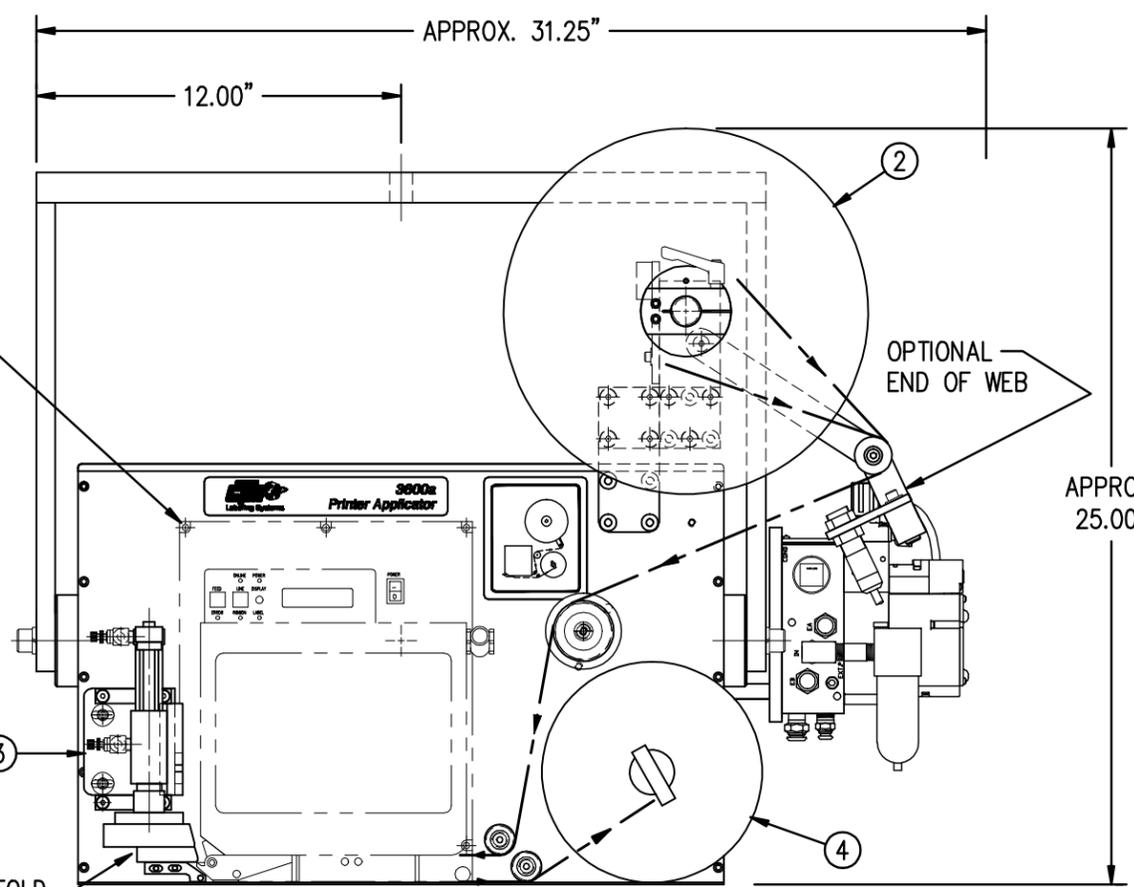


PRINT ENGINE AND CORRESPONDING WIRING
HARNESS TO BE ORDERED SEPARATELY
SEE CHART ON CORE UNIT DRAWING
(JOB SPECIFIC)

LABEL PAD AND MANIFOLD
ORDER SEPARATELY
(JOB SPECIFIC)



- SATO -SX
- ZEBRA -ZX
- DATAMAX -DX
- SERIAL -XS
- PARALLEL -XP
- ETHERNET -XE
- USB -XU



THIS DRAWING AND DESIGN IS THE PROPERTY OF CTM INTEGRATION INC. AND MAY NOT BE REPRODUCED IN WHOLE OR IN PART WITHOUT THE WRITTEN PERMISSION OF CTM INTEGRATION INC.
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 APPLICATOR WIDTH(S): N/A
 REV. DATE: 1/5/17
 REV. BY: JLG
 SCALE: 1=6
 DATE: 1/3/17
 DRAWN BY: J. Greeneisen
 TITLE: LH 3600aCE ADVANCED PRINTER APPLICATOR w/ STANDARD TAMP
 GROUP: 3600aCE ADVANCED PRINTER APPLICATOR
 DEPT. CODE: 70
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 O NEW DRAWING

BILL OF MATERIAL			
CTM-238aCER-TXS-12S-XX			
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	CTM-238aCE-0123R	3600aCE CORE UNIT & HOUSING ASSEMBLY - RH
②	1	MOD-238-0122R	UNWIND MODULE with 12" DISKS - RH
	1	MOD-238-0122AR	UNWIND MODULE with ALUMINUM DISK for "REELS UP" - RH
③	1	MOD-238-0124R	RH TAMP NOSE ASSEMBLY with VALVE BANK
④	1	ASS-238-0144-12	REWIND ASSEMBLY FOR 12" UNWIND
⑤	1	ASS-214-0103R-XN	SLIDE ASSEMBLY FOR 3600-PA APPLICATOR - RH
⑥	1	SAS-238a-0124	AIR MANIFOLD ASSEMBLY

CTM-238aCER-TXS-12S-XX

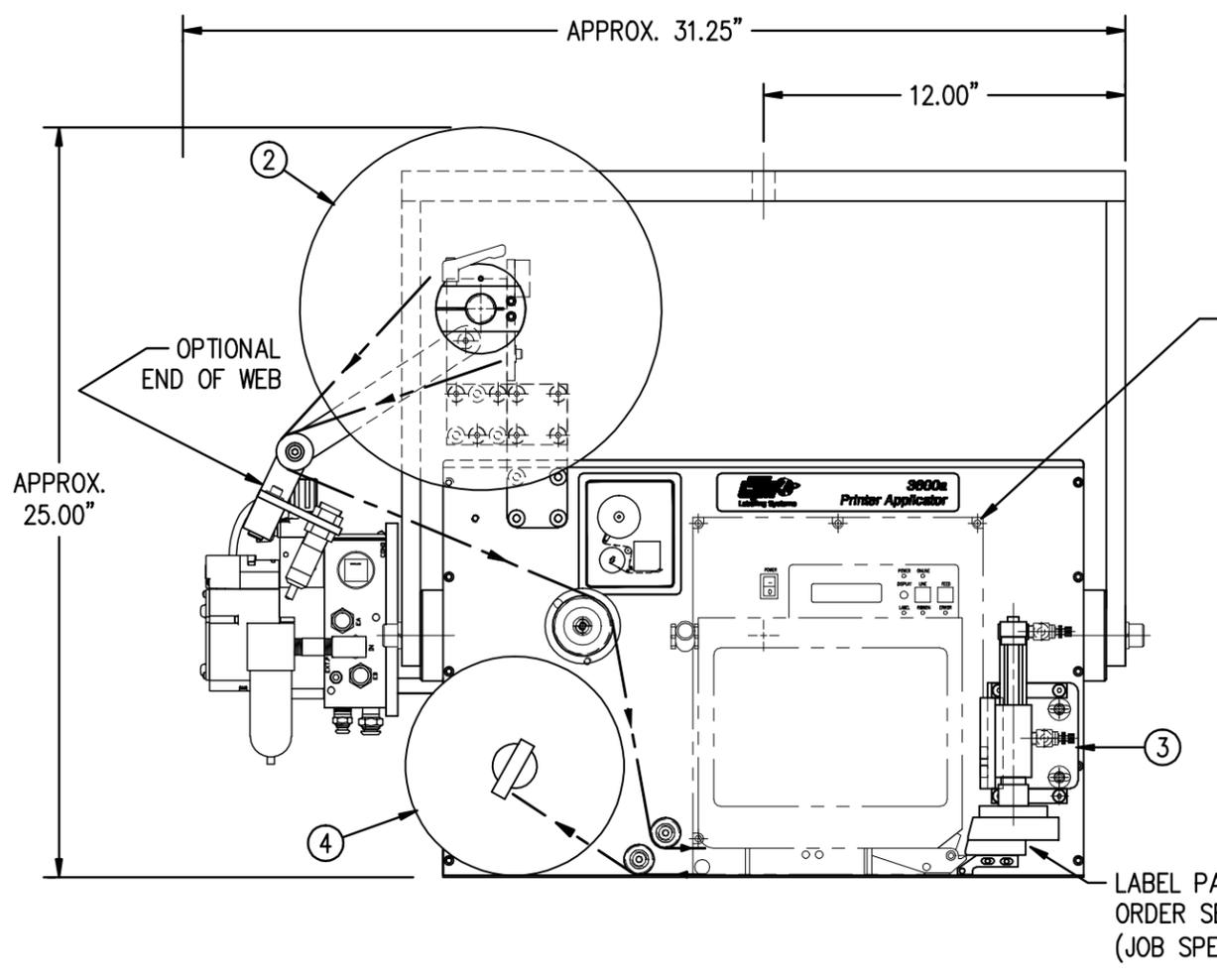
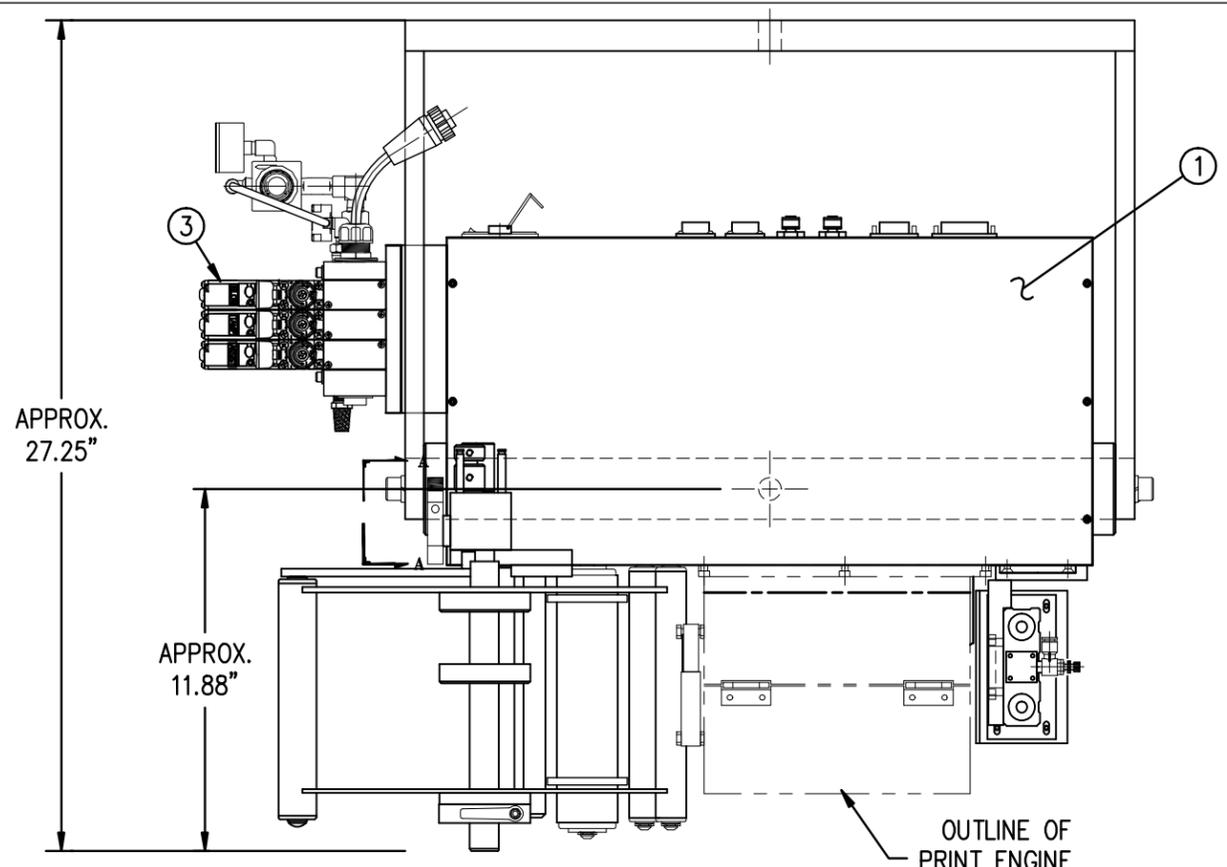
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 ZEBRA -ZX
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 SERIAL -XS
 PARALLEL -XP
 ETHERNET -XE
 USB -XU

Dept. Code
70

STANDARD TAMP

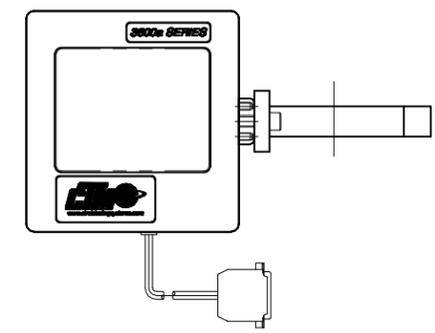
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3600aCE\CTM-238aR-TXS-12S-XX

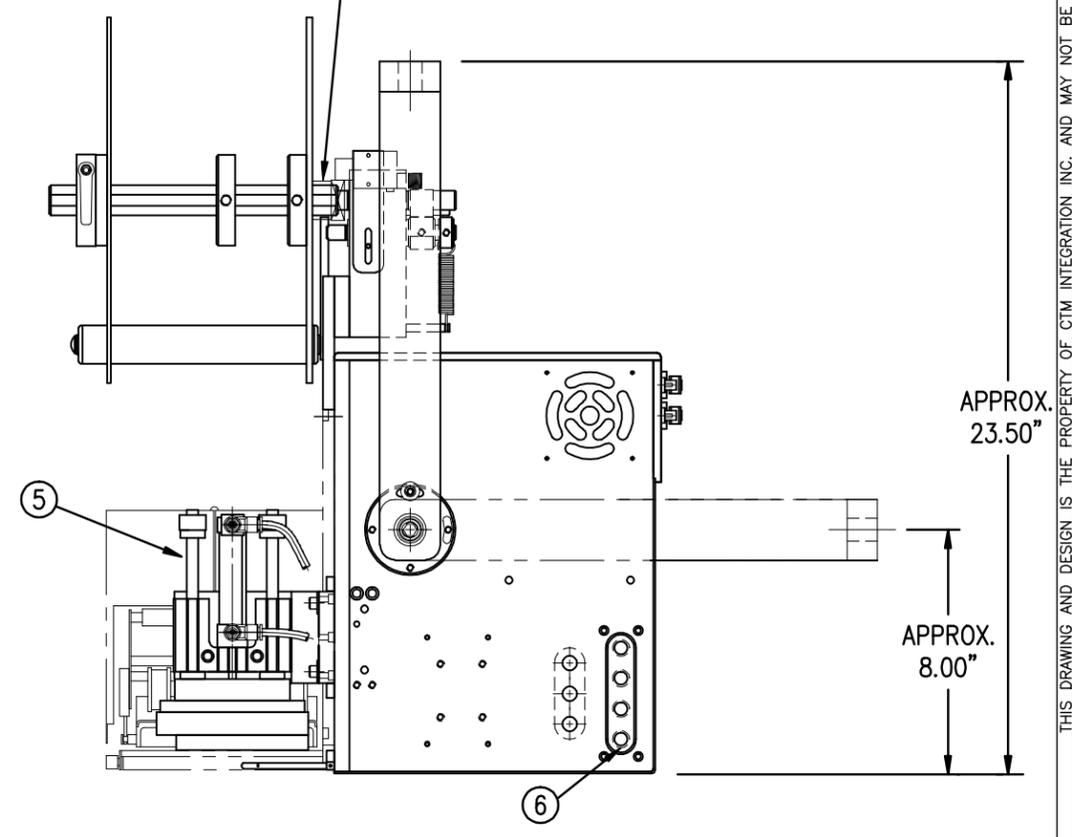


SECTION A-A
 LOW LABEL SENSOR
 (ORDER AS AN OPTION)

DISPLAY ASSEMBLY
 (LISTED IN CORE UNIT BOM)



BUSHING & LOCK COLLAR
 ONLY USED FOR REELS UP
 ORIENTATION



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APPLICATOR SERIES: 3600g SERIES

APPLICATOR WIDTH(S): N/A

REV. DESCRIPTION: 0 NEW DRAWING

TITLE: RH 3600aCE ADVANCED PRINTER APPLICATOR

REV. DATE: 1/4/17

REV. BY: JLG

Scale: 1=6

Date: 1/3/17

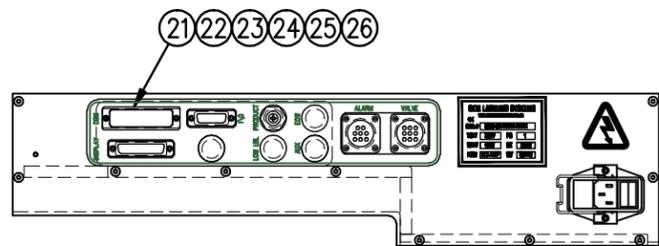
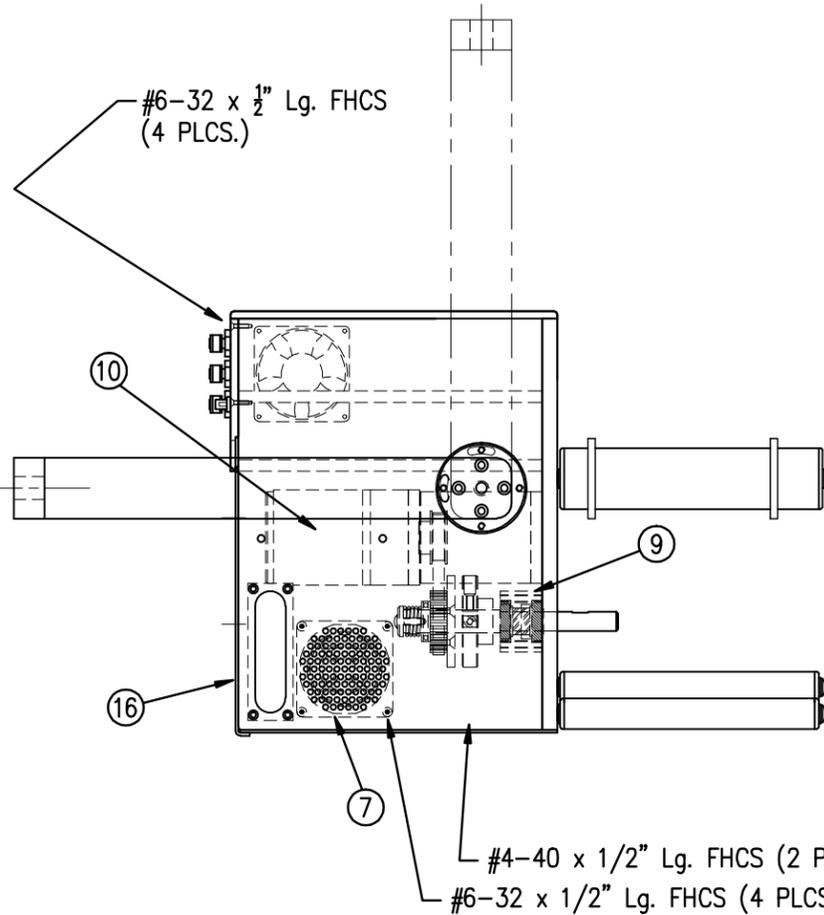
DRAWN BY: J. Greeneisen

BILL OF MATERIAL			
CTM-238aCE-0123R/L-XX			
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
	1	SAS-238a-0123R/L	ADVANCED APPLICATOR HOUSING (SHELF ASS'Y)
12	1	ASS-238aCE-0125	DISPLAY UNIT FOR 3600a
13	1	ASS-200-0138	DISPLAY UNIT MOUNT (CLAMPS to UPRIGHT)
14	1	MP-238-0221	TOP COVER
15	1	PM-238-0228-2	STAINLESS STEEL HOUSING COVER
16	1	MP-238aCE-0228R-1	STAINLESS STEEL HOUSING COVER -RH
16	1	MP-238aCE-0228L-1	STAINLESS STEEL HOUSING COVER -LH
17	1	ASS-238-0135	2" DIA. DANCER ROLLER
18	2	MP-238-0247	2" DIA. GUIDE COLLAR w/ SET SCREW
19	2	ASS-238-0134	1" DIA. ROLLER
20	1	WAS-238-0130	U-ARM WELDMENT
21	1	ASS-238a-0405-9	SERIAL ADAPTER ASSEMBLY - 9 Ppin
22	1	PE-CA2500	PARALLEL CABLE
23	1	PE-CC1070	PARALLEL PORT CLIP KIT
24	1	PE-PA1040	FLAT RIBBON CLIP
25	1	ASS-238-0460	PARALLEL TO ETHERNET ADAPTER ASSEMBLY
26	1	ASS-238-0465	PARALLEL TO USB ADAPTER ASSEMBLY
27	1	SEE TABLE BELOW	PRINT ENGINE INTERFACE HARNESS (NOT SHOWN)
28	1	PM-WL1045	WARNING LABEL (NOT SHOWN)
29	1	PE-C01032	POWER CORD

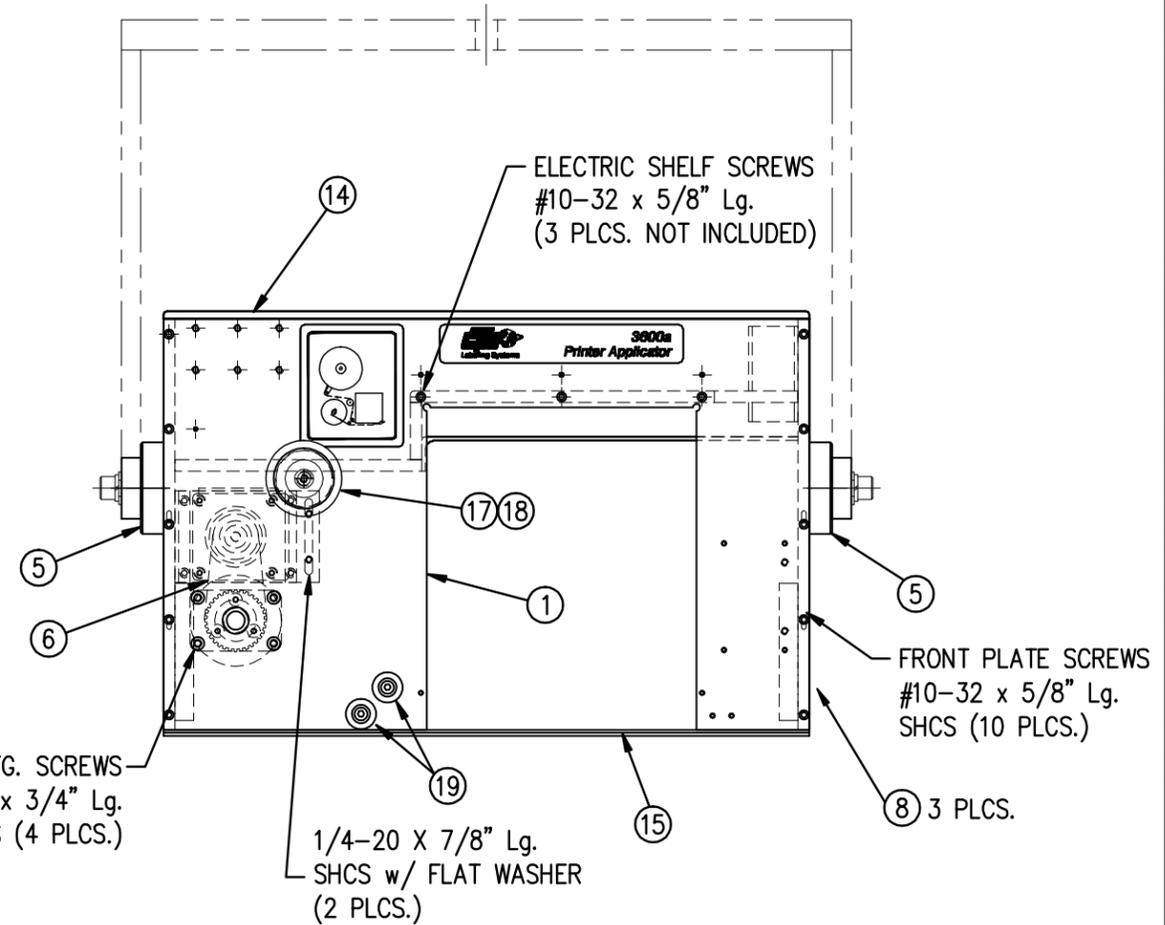
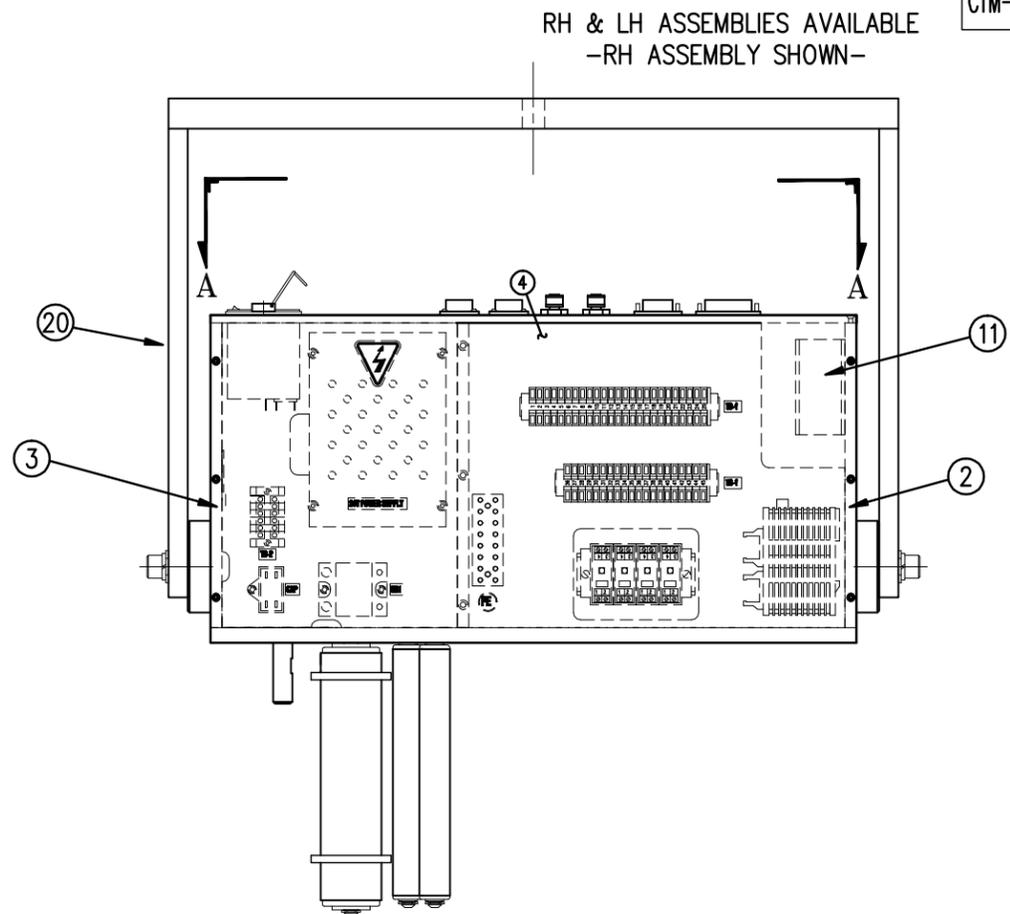
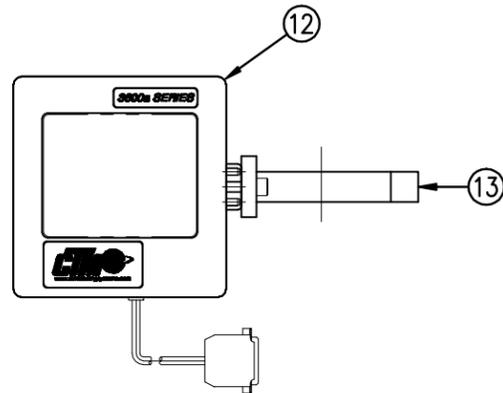
SERIAL	
PARALLEL	
PARALLEL	
PARALLEL	
ETHERNET	
USB	

29	APPLICATOR TO PRINT ENGINE INTERFACE HARNESS (ORDER W/ PRINT ENGINE)
ZEBRA PAX or DATAMAX 'A'	PE-238-0418
SATO SE	PE-238-0420
SATO S86-EX	PE-238-0431

BILL OF MATERIAL			
SAS-238aCE-0123R/L			
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
1	1	MP-238a-0226R/L	ADVANCED HOUSING FACEPLATE - RH/LH
2	1	MP-238CE-0224R/L	CE HOUSING SIDEFAME (NOSE SIDE) - RH/LH
3	1	MP-238CE-0225R/L	CE HOUSING SIDEFAME (UNWIND SIDE) - RH/LH
4	1	ASS-238aCE-0127R/L	3600aCE ELECTRIC SHELF ASSY - RH/LH
5	2	MP-200-0273	U-ARM / APPLICATOR PIVOT MOUNT
6	1	PM-BELT1015	REWIND TIMING BELT
7	1	PE-FAN1130	FAN FILTER KIT
8	3	PE-EN9055	1/2" HOLE PLUG
9	1	ASS-238-0120C	REWIND CLUTCH ASSEMBLY
10	1	ASS-238CE-0133r	REWIND MOTOR & PULLEY ASSEMBLY
11	1	PE-FAN1046	AXIAL FAN
8	PE-PA1080	WHITE STICKY PAD	
3	PM-PA1050	1/4" ADHESIVE CABLE CLAMP	
1	PM-PT1070	1/4" O.D. SMC TUBING x 54.5" Lg.	
1	PM-PT1080	3/8" O.D. SMC TUBING x 19" Lg.	
18	PE-PA1060	WHITE WIRE TIE	
1	PM-LB1025	CTM LOGO	
1	PM-LB1027 or 1029	RH / LH WEB PATH LABEL	



SECTION A-A
CONNECTOR FACEPLATE

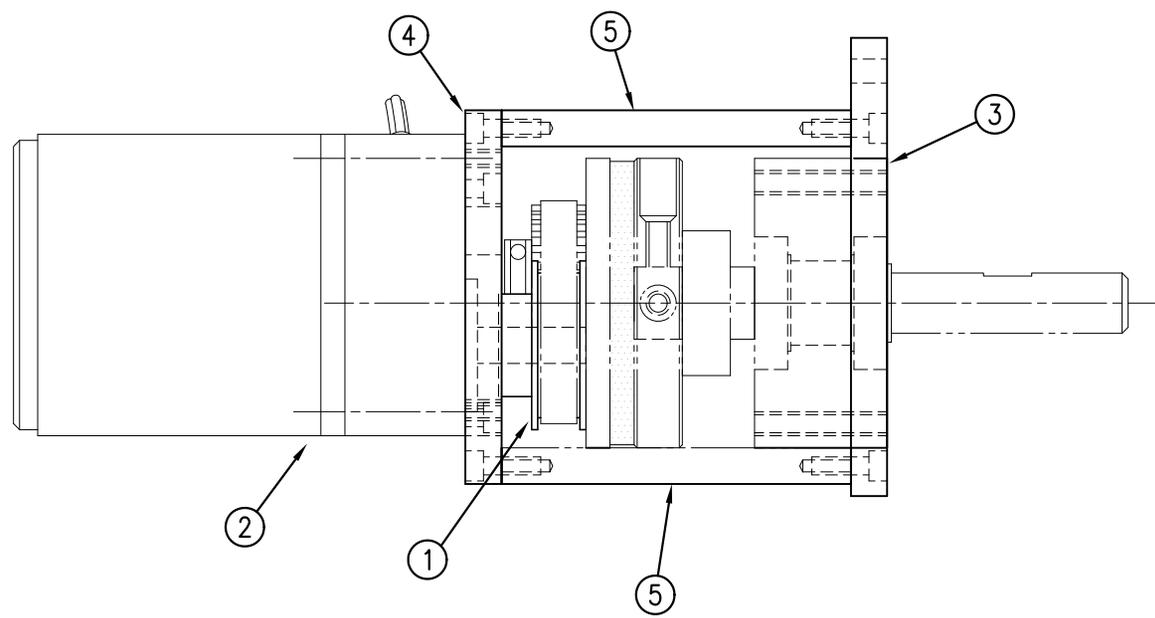


CTM-238aCE-0123R/L-XX

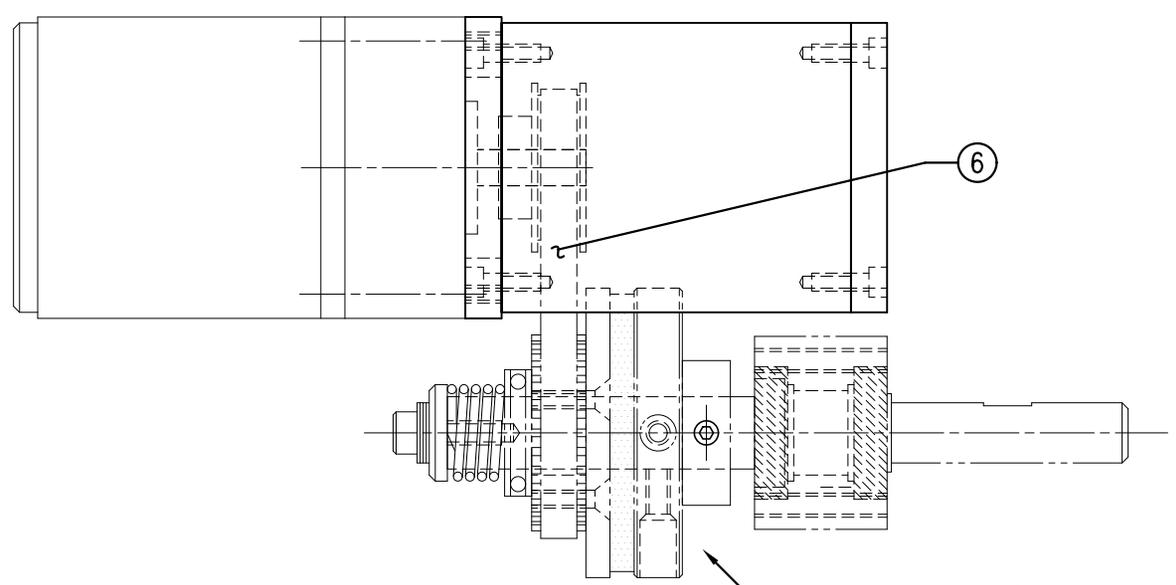
- SATO -SX
- ZEBRA -ZX
- DATAMAX -DX
- SERIAL -XS
- PARALLEL -XP
- ETHERNET -XE
- USB -XU

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 APPLICATOR SERIES: 3600a CE SERIES
 TITLE: 3600a-CE P/A ADVANCED SERIES CORE UNIT w/ PROGRAM
 REV. DATE: 9/26/16
 REV. BY: JLG
 SCALE: 1=6
 DATE: 01/05/2017
 DRAWN BY: J. Greeneisen
 DEPT. CODE: 70
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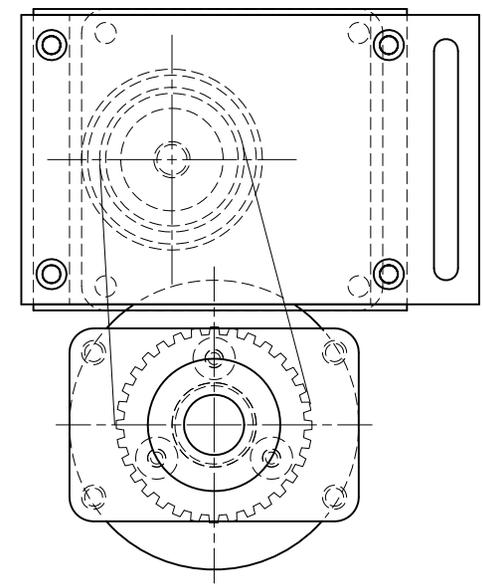
ASS-238CE-0133R



BILL OF MATERIAL			
ASS-238CE-0133R			
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PM-238-0273	MOTOR PULLEY
②	1	ASS-238CE-0428	REWIND MOTOR
③	1	MP-238-0201	MOUNT PLATE
④	1	MP-238-0272	REWIND MOTOR MOUNT PLATE
⑤	2	MP-238-0204	MOTOR SIDEFRAME
⑥	1	PM-BELT1015	REWIND BELT



REFER TO DWG. ASS-238-0120C
FOR REWIND CLUTCH ASSEMBLY



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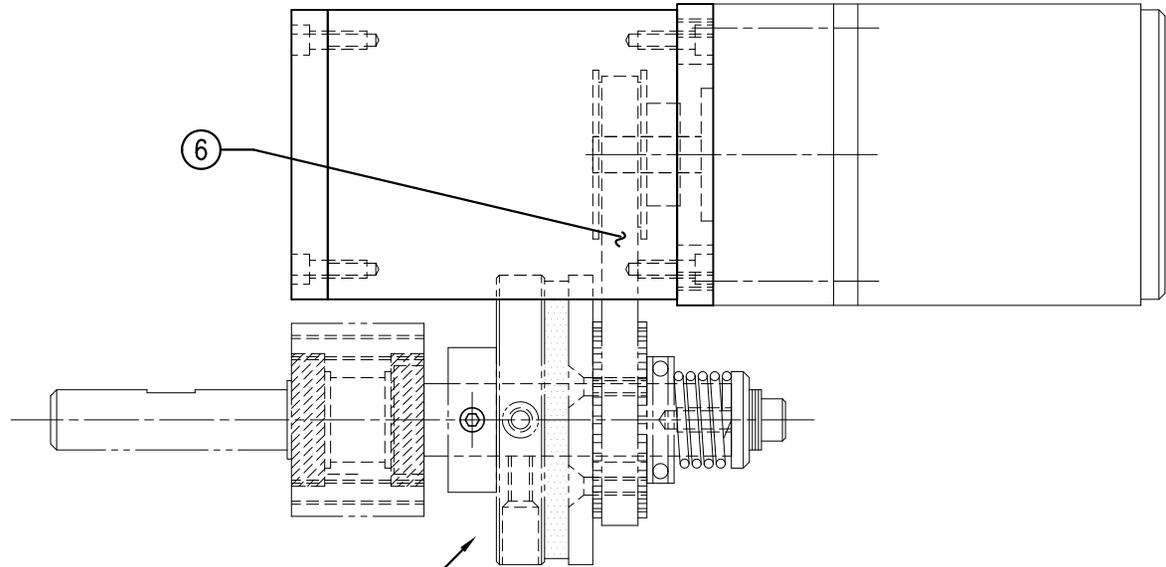
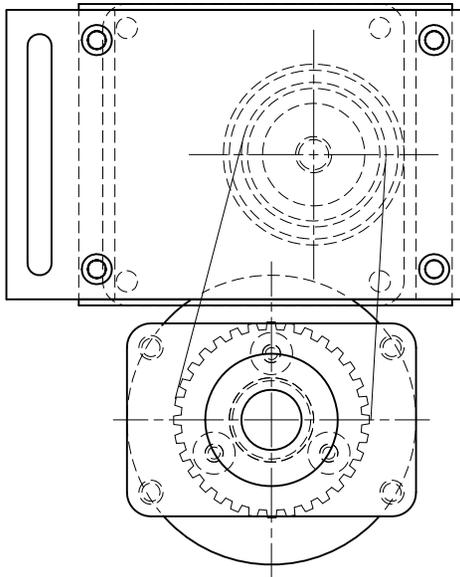
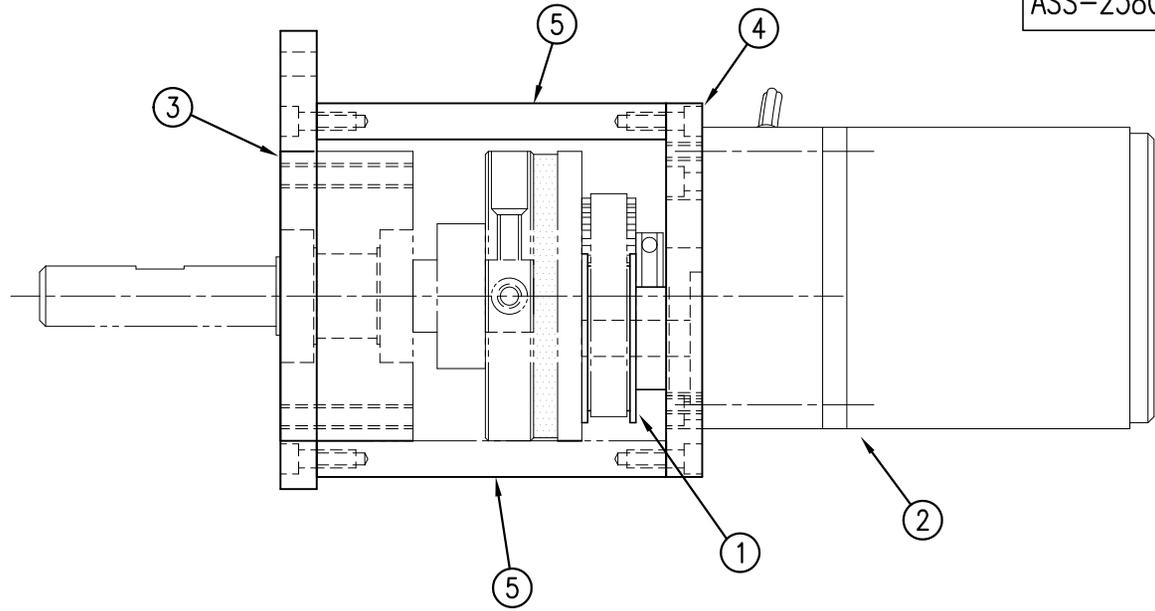
APPLICATOR SERIES: 3600-CE	APPLICATOR WIDTH(S): 7.5"	GROUP: HOUSING	TITLE: 220 VAC REWIND MOTOR ASSEMBLY	Dept. Code 70
REV. 0	REV. DESCRIPTION -	REV. DATE -	REV. BY: XXX	Scale: 1=2
			Date: 10-28-08	DRAWN BY: DKM
			F:\Engineering\Standard Parts\Aplicator\ 3600-CE\ASS-238CE-0133R	

BILL OF MATERIAL

ASS-238CE-0133L

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PM-238-0273	MOTOR PULLEY
②	1	ASS-238CE-0428	REWIND MOTOR
③	1	MP-238-0201	MOUNT PLATE
④	1	MP-238-0272	REWIND MOTOR MOUNT PLATE
⑤	2	MP-238-0204	MOTOR SIDEFRAME
⑥	1	PM-BELT1015	REWIND BELT

ASS-238CE-0133L



REFER TO DWG. ASS-238-0120C
FOR REWIND CLUTCH ASSEMBLY

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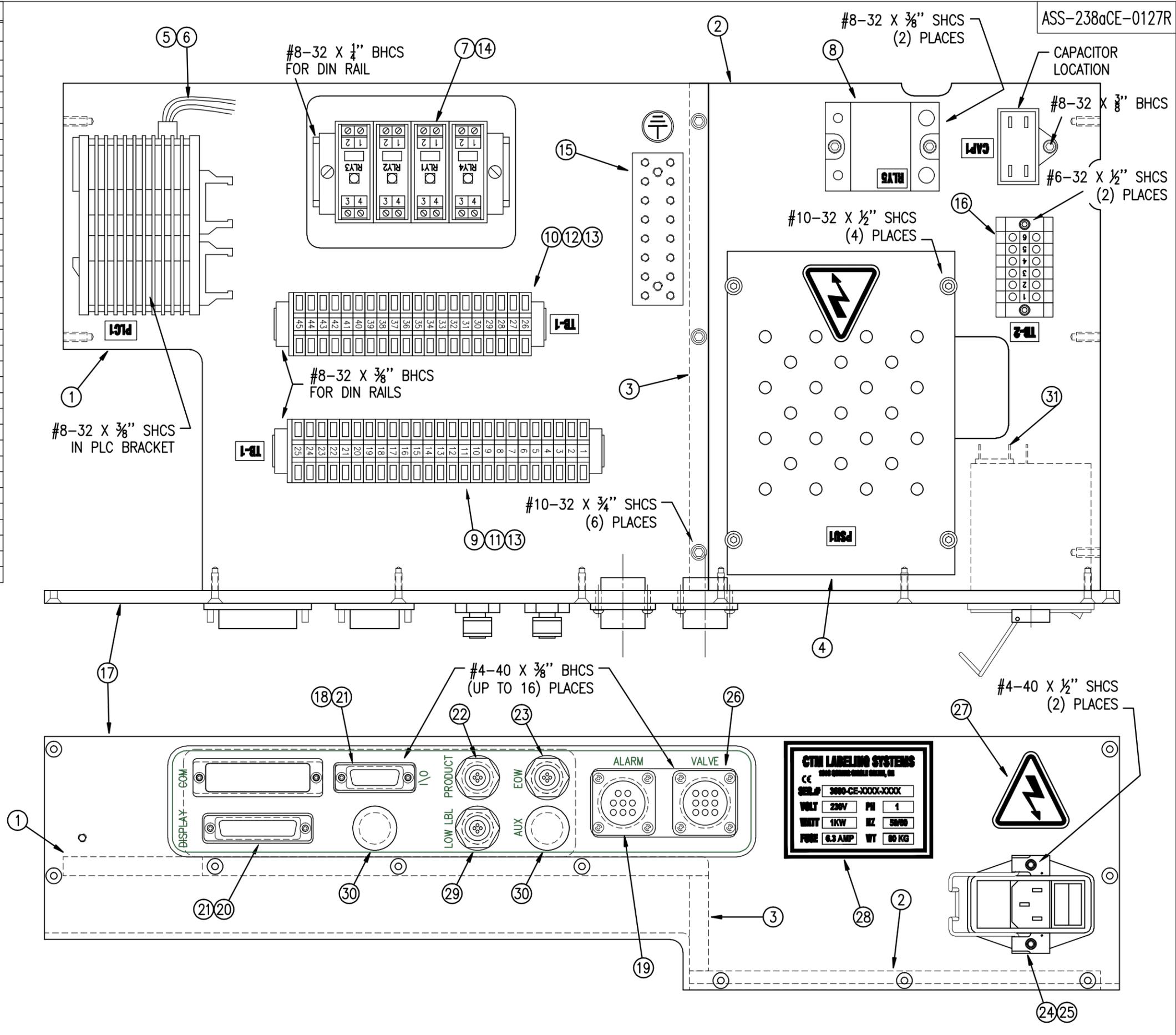
APPLICATOR SERIES: 3600-CE	APPLICATOR WIDTH(S): 7.5"	GROUP: HOUSING	TITLE: 220 VAC REWIND MOTOR ASSEMBLY				Dept. Code 70
REV. 0	REV. DESCRIPTION -	REV. DATE -	REV. BY: XXX	Scale: 1=2	Date: 10-28-08	DRAWN BY: DKM	F:\Engineering\Standard Parts\Applicator\ 3600-CE\ASS-238CE-0133L

BILL OF MATERIAL

ASS-238aCE-0127R

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	MP-238CE-0220	UPPER ELECTRIC SHELF
②	1	MP-238CE-0221	LOWER ELECTRIC SHELF
③	1	MP-238CE-0222	ELECTRIC SHELF RISER
④	1	ASS-238aCE-0126	24 VDC POWER SUPPLY
⑤	1	PE-PLC1046	FPOR PANASONIC PLC w/ POWER SUPPLY HARNESS
⑥	1	PE-CL1016	PLC MOUNTING BASE
⑦	1	ASS-238aCE-0419R	RH VALVE RELAY ASSEMBLY
⑧	1	PE-RE1015	5-24 VDC RELAY FOR REWIND MOTOR
⑨	1	ASS-238CE-TE4133	TERMINAL BLOCK ASSEMBLY (#1-#25)
⑩	1	ASS-238CE-TE4152	TERMINAL BLOCK ASSEMBLY (#26-#45)
⑪	1	CP-200-0279	DIN RAIL (FOR 25 TERMINALS)
⑫	1	CP-200CE-0213	DIN RAIL (FOR 20 TERMINALS)
⑬	4	PE-TE4020	END STOP
⑭	2	PE-RE1053	IDEC RELAY STOP CLIP
⑮	1	MP-200CE-0215	GROUNDING BAR
⑯	1	ASS-238CE-0423	3600CE TB2 TERMINAL STRIP ASSEMBLY
⑰	1	MP-238aCE-0223R	CONNECTOR PLATE
⑱	1	*ASS-238a CE-0411	3600a CE I/O HARNESS
⑲	1	*ASS-238a CE-0410	3600a CE APPLICATOR ALARM CONNECTOR HARNESS
⑳	1	ASS-238CE-0425	DISPLAY CONNECTOR HARNESS
㉑	4	PE-S01028	JACK SCREW, JAM NUT & LOCK WASHER
㉒	1	MP-CON1019	PRODUCT DETECT PORT
㉓	1	*MP-CON1025	EOW PORT
㉔	1	ASS-238CE-0412	AC RECEPTACLE ASSEMBLY
㉕	1	ASS-200-0148	POWER CORD CLIP
㉖	1	ASS-C01025	PRINT ENGINE POWER CORD
㉗	1	ASS-238aCE-0409	VALVE PORT
㉘	1	PM-WL1057	WARNING LABEL
㉙	1	MP-238CE-0227	NAME PLATE LABEL
㉚	1	*MP-CON1020	LOW LABEL PORT
㉛	2	PE-EN9056	5/8 HOLE PLUG
㉜	1	ASS-238aCE-0429	REWIND MOTOR WIRING HARNESS
㉝	2	PE-REC2050	FAST ON RECEPTACLE

* OPTIONAL COMPONENTS THAT MUST BE ADDED TO THE BOM WHEN SPECIFIED



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APPLICATOR SERIES: 3600g-CE
 APPLICATOR WIDTH(S): 7.5"
 REV. DESCRIPTION: 1 CHANGED HARNESES TO OPTIONAL

TITLE: RH ELECTRICAL SHELF ASSEMBLY w/ CONNECTOR PLATE
 DRAWN BY: JLG
 DATE: 11/15/16
 SCALE: 1=2

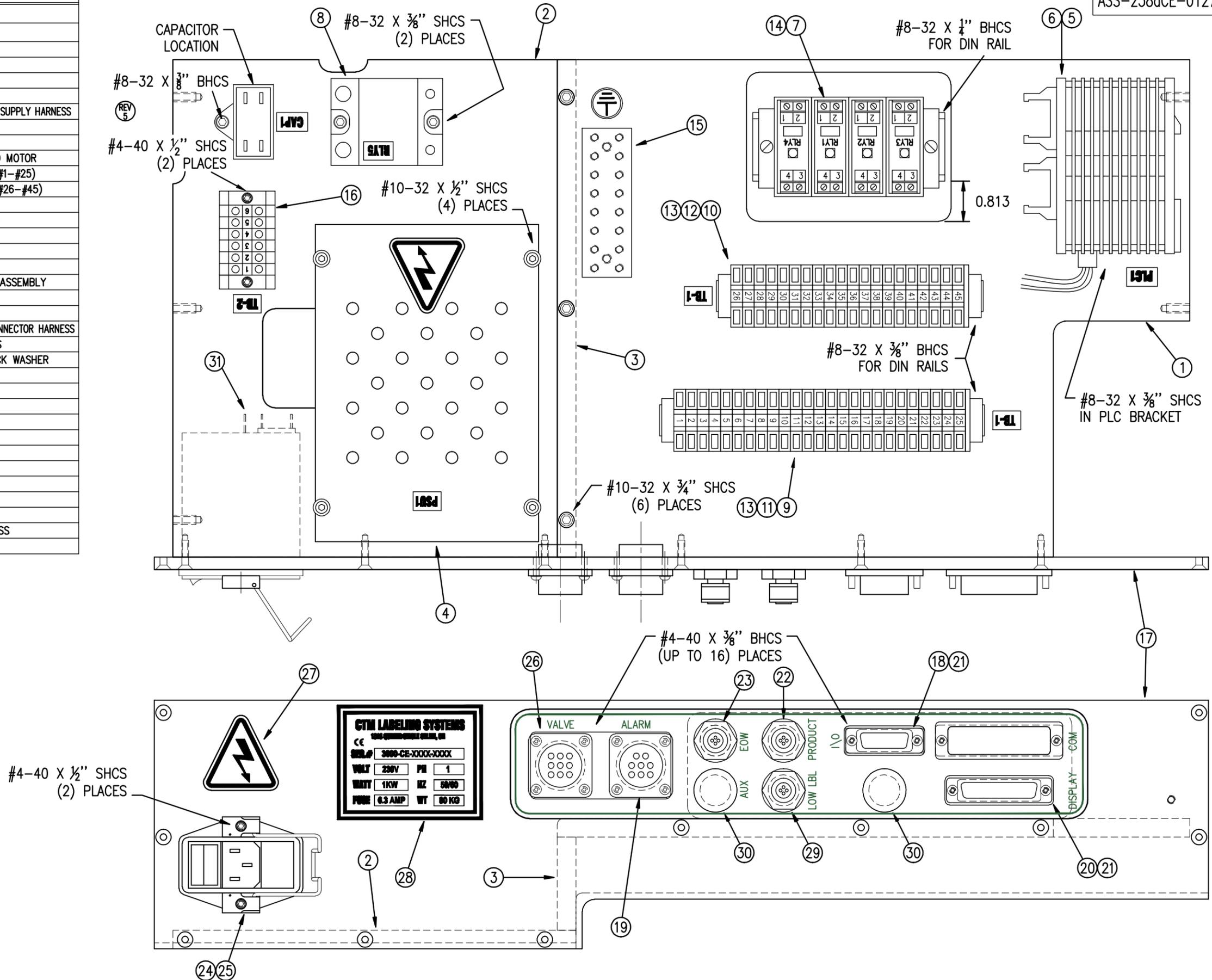
Dept. Code: 70
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BILL OF MATERIAL

ASS-238aCE-0127L

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	MP-238CE-0220	UPPER ELECTRIC SHELF
②	1	MP-238CE-0221	LOWER ELECTRIC SHELF
③	1	MP-238CE-0222	ELECTRIC SHELF RISER
④	1	ASS-238aCE-0126	24 VDC POWER SUPPLY
⑤	1	PE-PLC1046	FPOR PANASONIC PLC w/ POWER SUPPLY HARNESS
⑥	1	PE-CL1016	PLC MOUNTING BASE
⑦	1	ASS-238aCE-0419L	LH VALVE RELAY ASSEMBLY
⑧	1	PE-RE1015	5-24 VDC RELAY FOR REWIND MOTOR
⑨	1	ASS-238CE-TE4133	TERMINAL BLOCK ASSEMBLY (#1-#25)
⑩	1	ASS-238CE-TE4152	TERMINAL BLOCK ASSEMBLY (#26-#45)
⑪	1	CP-200-0279	DIN RAIL (FOR 25 TERMINALS)
⑫	1	CP-200CE-0213	DIN RAIL (FOR 20 TERMINALS)
⑬	4	PE-TE4020	END STOP
⑭	2	PE-RE1053	IDEC RELAY STOP CLIP
⑮	1	MP-200CE-0215	GROUNDING BAR
⑯	1	ASS-238CE-0423	3600CE TB2 TERMINAL STRIP ASSEMBLY
⑰	1	MP-238aCE-0223I	CONNECTOR PLATE
⑱	1	*ASS-238a CE-0411	3600a CE I/O HARNESS
⑲	1	*ASS-238a CE-0410	3600a CE APPLICATOR ALARM CONNECTOR HARNESS
⑳	1	ASS-238CE-0425	DISPLAY CONNECTOR HARNESS
㉑	4	PE-S01028	JACK SCREW, JAM NUT & LOCK WASHER
㉒	1	MP-CON1019	PRODUCT DETECT PORT
㉓	1	*MP-CON1025	EOW PORT
㉔	1	ASS-238CE-0412	AC RECEPTACLE ASSEMBLY
㉕	1	ASS-200-0148	POWER CORD CLIP
㉖	1	ASS-C01025	PRINT ENGINE POWER CORD
㉗	1	ASS-238aCE-0409	VALVE PORT
㉘	1	PM-WL1057	WARNING LABEL
㉙	1	MP-238CE-0227	NAME PLATE LABEL
㉚	1	*MP-CON1020	LOW LABEL PORT
㉛	2	PE-EN9056	5/8 HOLE PLUG
㉜	1	ASS-238aCE-0429	REWIND MOTOR WIRING HARNESS
㉝	2	PE-REC2050	FAST ON RECEPTACLE

* OPTIONAL COMPONENTS THAT MUST BE ADDED TO THE BOM WHEN SPECIFIED



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APPLICATOR SERIES: 3600g-CE
 REV. DESCRIPTION: 0 NEW DRAWING

TITLE: LH ELECTRICAL SHELF ASSEMBLY w/ CONNECTOR PLATE
 SCALE: 7.5"

REV. DATE: 11/15/16
 REV. BY: JLG
 DATE: 11/15/16
 SCALE: 1=2
 DRAWN BY: JLG

Dept. Code: 70
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BILL OF MATERIAL

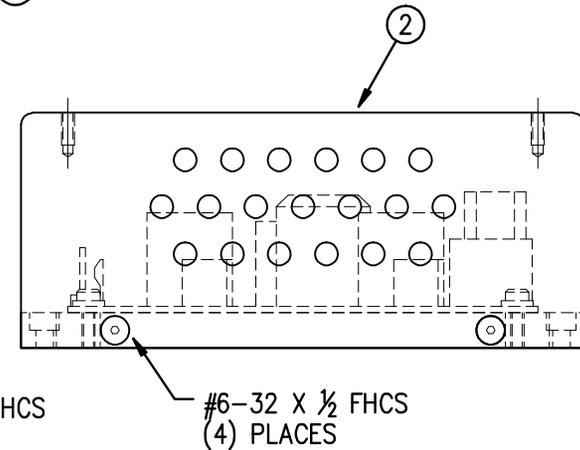
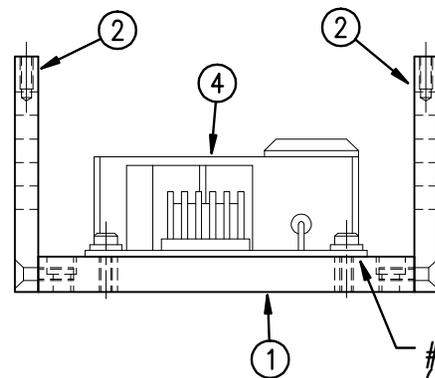
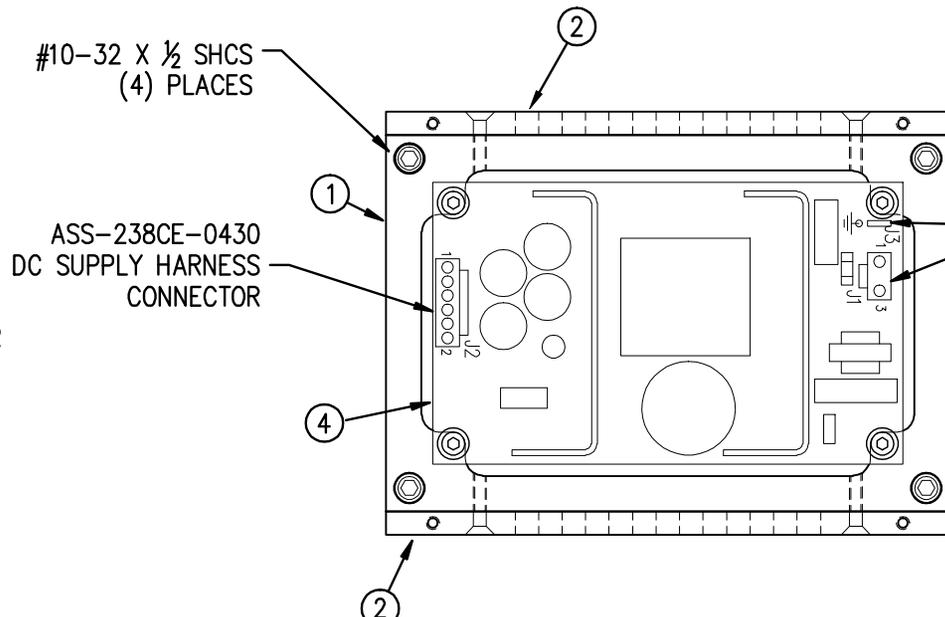
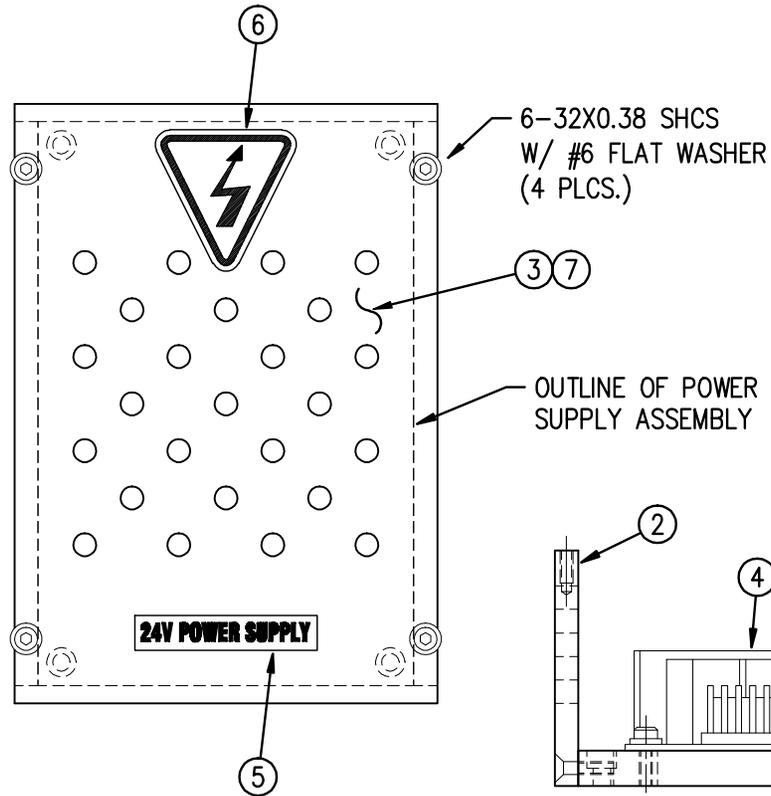
ASS-238aCE-0126

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	MP-200CE-0206	MOUNT PLATE FOR POWER SUPPLY
②	2	MP-200CE-0207	POWER SUPPLY SIDE GUARD
③	1	PM-200CE-0208	POWER SUPPLY TOP GUARD
④	1	PE-PS1024	LINEAR and SWITCHING POWER SUPPLY, (TDK LAMBDA SCS4024)
⑤	1	MP-200CE-0214-C	POWER SUPPLY LABEL
⑥	1	PM-WL1057	WARNING LABEL
⑦	2	PM-RU3030	EDGE TRIM x 3.5" LG.
	1	ASS-238aCE-0430	INTERNAL WIRE HARNESS: DC SUPPLY
	1	ASS-238CE-0434	AC POWER SUPPLY WIRING

ASS-238aCE-0126

WORK THIS DRAWING WITH ASS-200CE-0430

ASS-238CE-0434
AC POWER SUPPLY
WIRING CONNECTION POINTS



FOR ASSEMBLY DWG. REFER TO:
ASS-238CE-0127R/L

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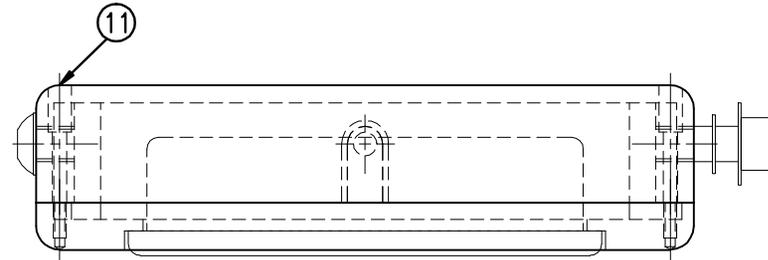
APPLICATOR SERIES: 3600a-CE	APPLICATOR WIDTH(S): 7.5"	GROUP: HOUSING: ELECTRICAL	TITLE: 3600aCE 24 VDC POWER SUPPLY ASSEMBLY	Dept. Code 70
REV. 0	REV. DESCRIPTION -	REV. DATE -	REV. BY: xxx	Scale: 1=2
			Date: 11/10/16	DRAWN BY: JWS
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BILL OF MATERIAL

ASS-238aCE-0125

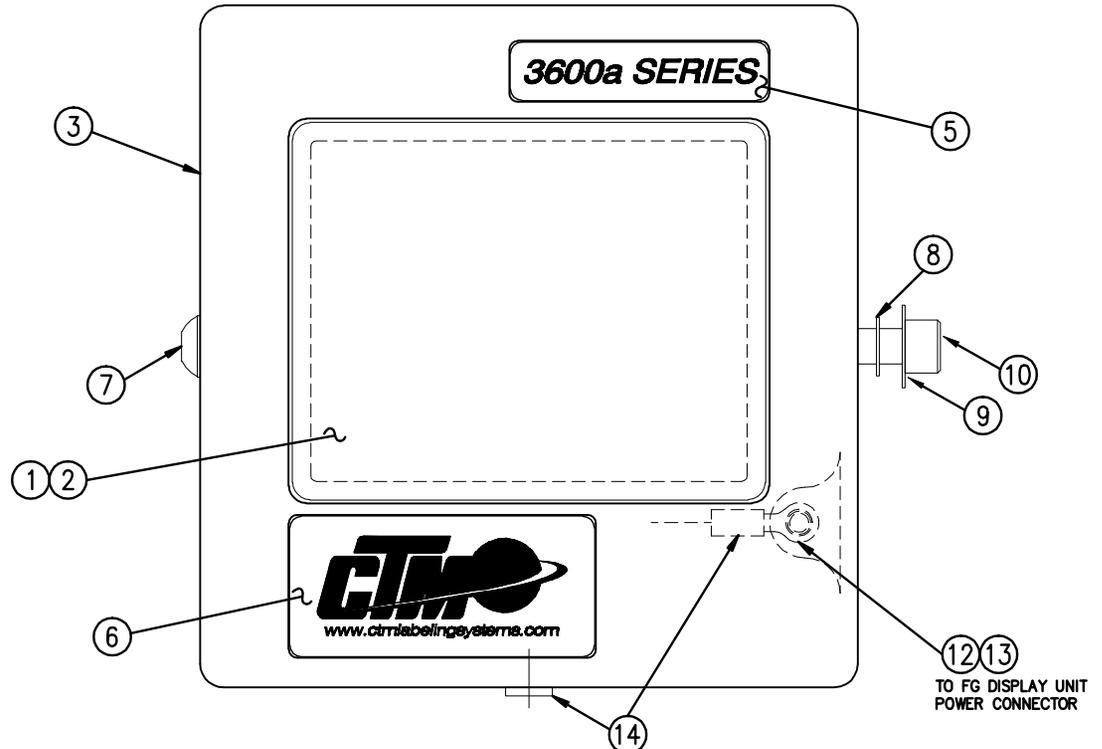
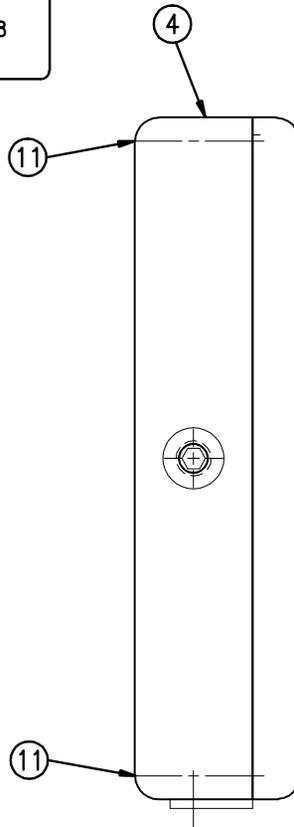
ASS-238aCE-0125

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	MP-IN1118	MAPLE DISPLAY INTERFACE (TOUCH SCREEN)
②	4	PM-FAPH10522	M4 X 16mm SS PAN HEAD PHILLIPS
③	1	MP-238a-0263	HMI 5070LB DISPLAY FACE PLATE
④	1	MP-238a-0264	HMI 5070LB DISPLAY BACK COVER
⑤	1	PM-LB1019	3600a SERIES LABEL
⑥	1	PM-LB1021	CTM LABEL
⑦	1	PM-FABH3550	3/8-16 X 1/2 Lg. SS BHCS
⑧	1	PM-FAW32500	3/8 BLACK NYLON WASHER
⑨	1	PM-FAW30285	3/8" SS WASHER
⑩	1	PM-FASH430194	3/8"-16 x 1" LG. SS SHCS
⑪	4	PM-FASH428006	6-32 X 1" Lg SS SHCS
⑫	1	PM-FABH35500	1/4-20 X 1/2" Lg SS BHCS
⑬	2	PM-FAW30685	LOCK WASHER 1/4 EXTERNAL-TOOTH STN STL
⑭	1	ASS-238aCE-0405	APPLICATOR TO DISPLAY CABLE



MOUNTING BRACKET NOT INCLUDED IN ASSEMBLY:

STANDARD UPRIGHT MOUNT ~ #ASS-200-0138
 OPTIONAL U-ARM MOUNT ~ #ASS-200-0146



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APPLICATOR SERIES: 3600a-CE APPLICATOR WIDTH(S): 7.5" GROUP: 3600aCE SERIES APPLICATOR

TITLE: MAPLE DISPLAY UNIT ASSEMBLY

Dept. Code 70

REV. 0 REV. DESCRIPTION -

REV. DATE -

REV. BY: XXX

Scale: 1=2

Date: 11/4/16

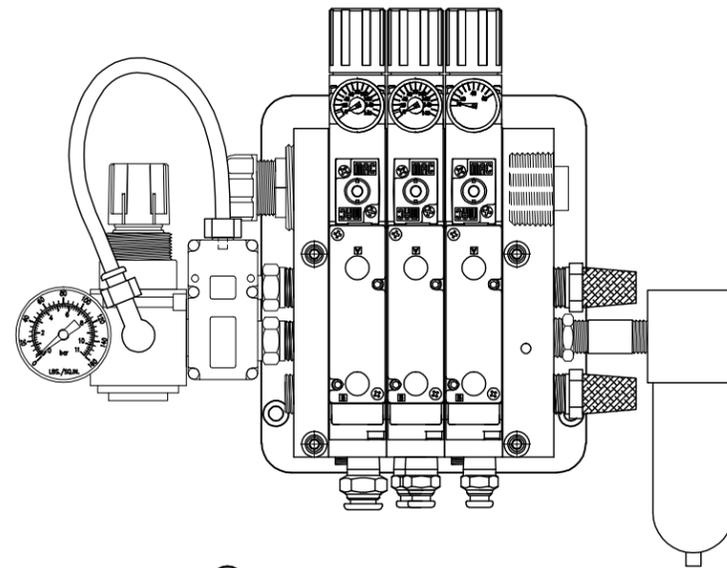
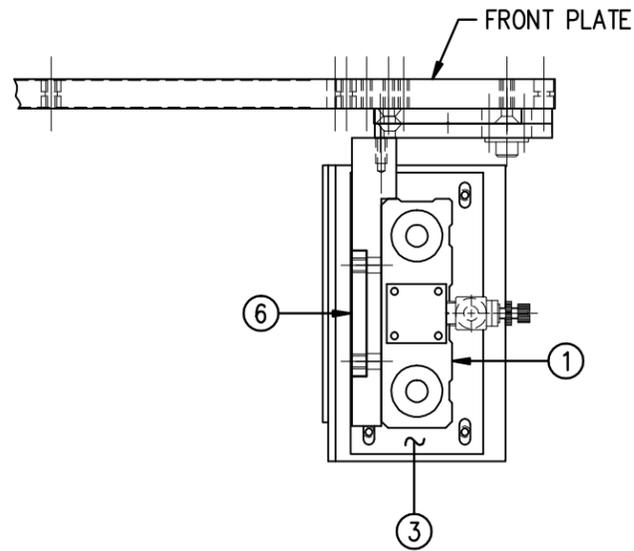
DRAWN BY: JWS

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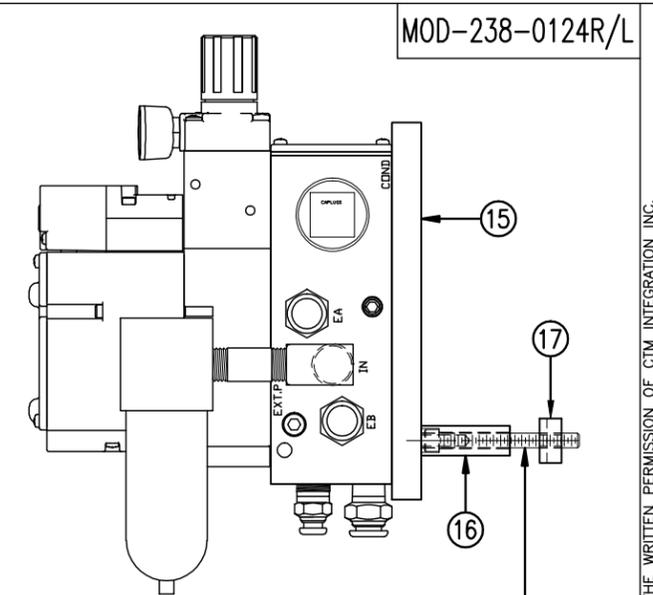
BILL OF MATERIAL			
MOD-238-0124R/L			
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
10	2	MP-238-0241	TAMP GUIDES
11	1	MP-238-0242	AIR ASSIST TUBE HOLDER
12	1	MP-211-0217-7	AIR ASSIST TUBE
13	1	PM-AH1000	15" OF AIR ASSIST TUBING
14	1	ASS-238-0129M	3 STATION VALVE BANK ASSEMBLY (TAMP)
15	1	MP-214-0206	VALVE MOUNTING PLATE
16	1	MP-238-0238	VALVE FASTENING PLATE
17	1	MP-238-0239	VALVE NUT PLATE
18	2	PM-PF1020	PRESTOLOK FITTING, 3/8" TUBE to 1/4" MALE NPTF
19	3	PM-PF1010	PRESTOLOK FITTING, 1/4" TUBE to 1/4" MALE NPTF
20	2	PM-PF1035	PRESTOLOK FITTING, 90deg. ELBOW SWIVEL, 1/4" TUBE to 1/4" MALE NPTF
21	1	PM-PF1145	PIPE FITTING, NIPPLE, 1/4" NPT X 2" LG.
22	1	PM-PF1175	PIPE FITTING, 90deg. ELBOW, 1/4" NPT female to 1/4" NPT female
23	1	PM-FT1200	< 1/4" SOCKET HEAD PLATED PLUG
24	4	PM-FAFH50611	#10-32 X .50" LG SS FHCS
○	1	PM-PT1070	1/4" O.D. SMC TUBING x 60" LG. (CUT TO SUIT)
○	1	PM-PT1080	3/8" OD SMC TUBING X 33" LG. (CUT TO SUIT)

ASS-214-0103R/L-XN (SHOWN FOR AN ASSEMBLY REFERENCE ONLY)			
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
1	1	ASS-214-0108-X	X" LG. TAMP SLIDE ASSEMBLY
2	1	MP-238-0244R/L	SLIDE MOUNT ANGLE PLATE
3	1	MP-238-0245	SLIDE TO MANIFOLD TRANSITION PLATE
4	2	PM-PF2060	FLOW CONTROLS - 1/4" TUBE W/ 1/8" NPT
5	1	MP-238-0243	SLIDE MOUNT PLATE
6	1	MP-238-0240	SLIDE NUT PLATE
7	1	MP-238-0240E	H/D SLIDE NUT PLATE
8	2	PM-FASH40330	SHCS, 1/4"-20 x 1-1/4" LG. SS
9	2	PM-FAW30297	1/4" HEAVY FLAT WASHER
9	2	PM-FAW30690	1/4" LOCK WASHER

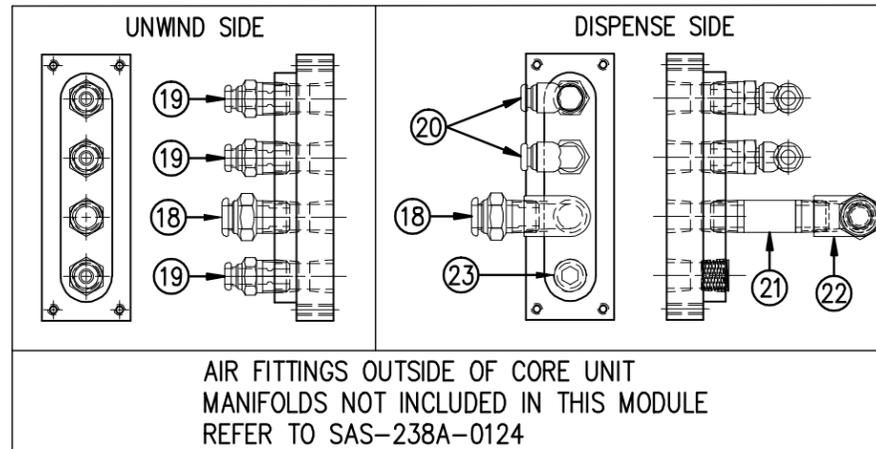
RH & LH CONFIGURATIONS AVAILABLE
-RH CONFIGURATIONS SHOWN-



14 VALVE BANK ASS-238-0129M

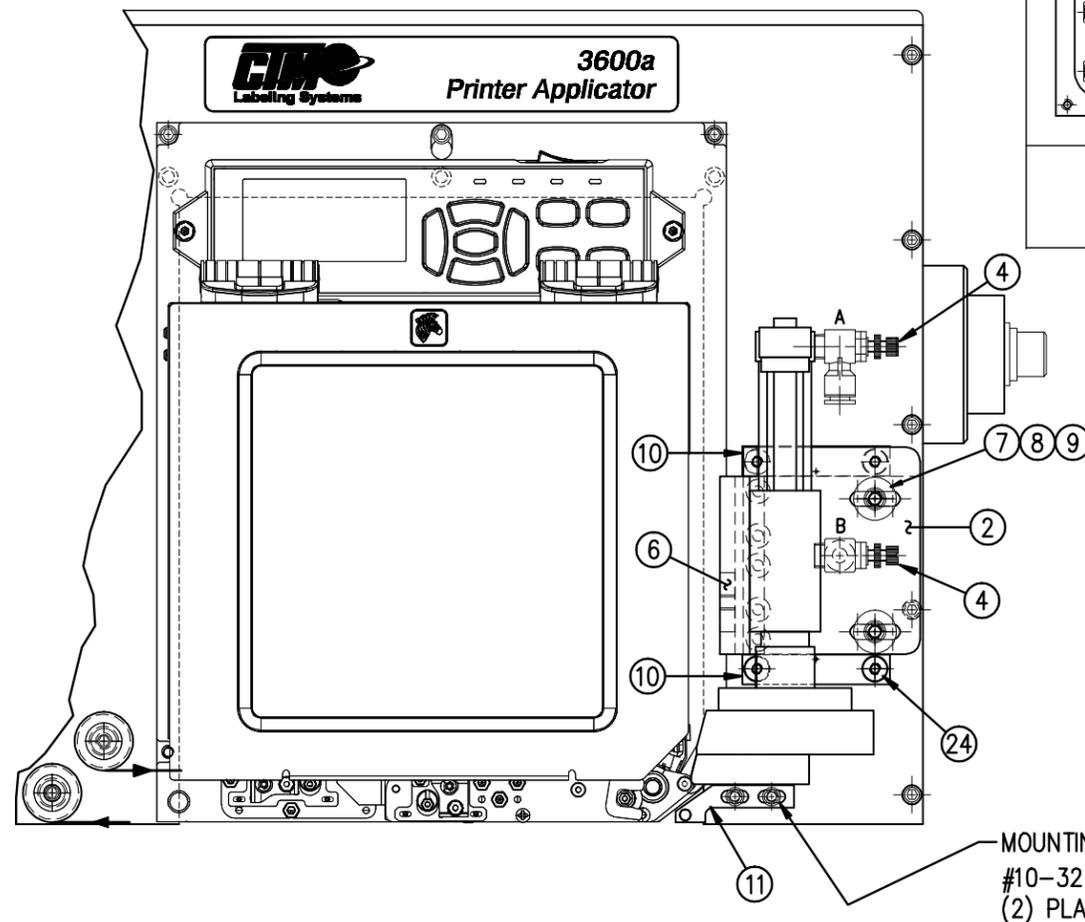


MOUNTING FASTENERS
(2) 1/4"-20 x 2-3/8" LG. SHCS

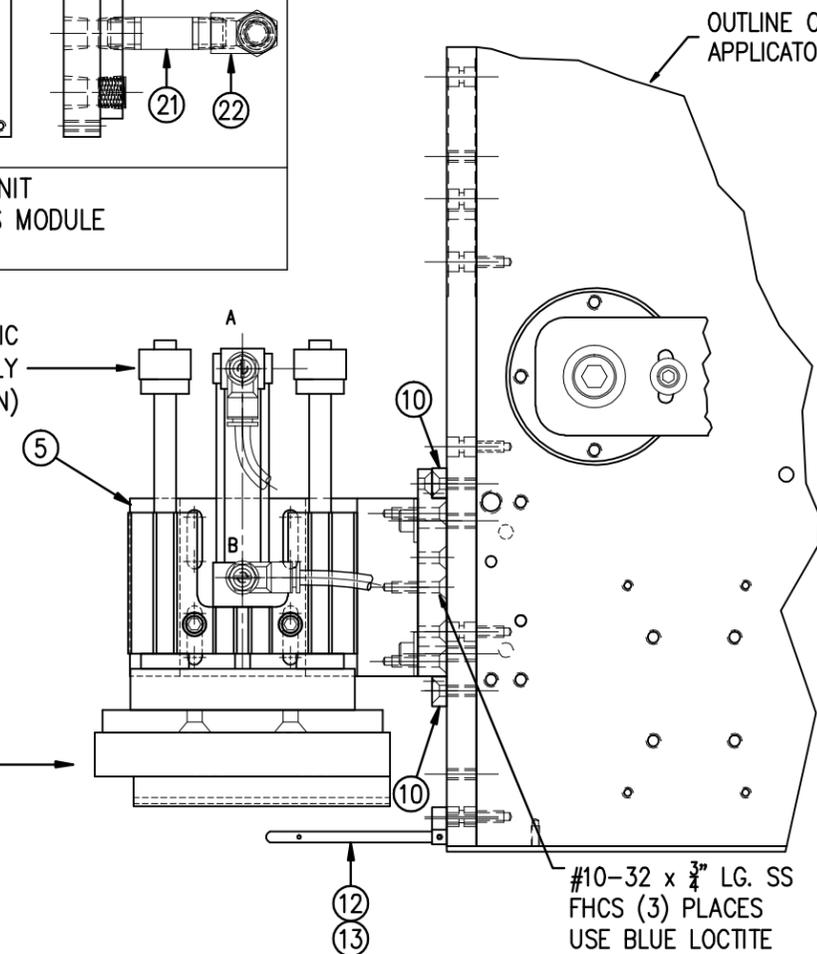


TAMP SLIDE STROKE LENGTH IS JOB SPECIFIC
ORDER SLIDE & MTG. NUT ASS'Y SEPARATELY
(REFER TO CTM #ASS-214-0103-XN)

PADS & MANIFOLDS ARE JOB SPECIFIC
ORDER THEM SEPARATELY.
(REFER TO CTM #MP-238-0246-X FOR
MANIFOLD BLANK DETAIL)



MOUNTING FASTENERS
#10-32 x 3/8" LG. SS SHCS
(2) PLACES



#10-32 x 3/8" LG. SS
FHCS (3) PLACES
USE BLUE LOCTITE

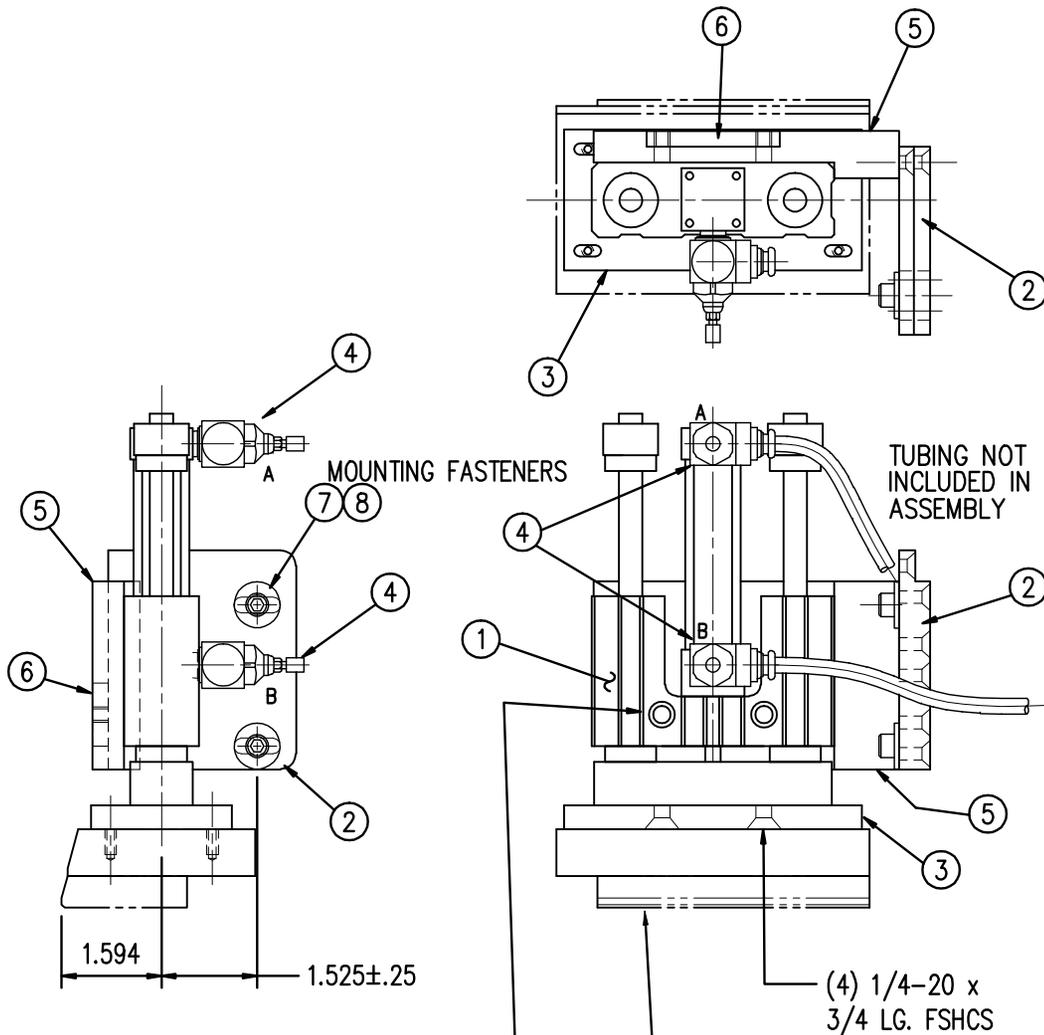
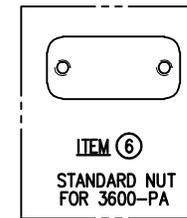
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 APPLICATOR SERIES: 3600/3600a
 APPLICATOR WIDTH(S): 7.50"
 GROUP: 12" UNWIND 3600/3600a TAMP
 REV. DESCRIPTION: 7 DRAWING SCALED UP AND RE-DRAWN TO SHOW MORE DETAIL & LATEST E2 BOM 12/15/2016
 REV. DATE: ES
 REV. BY: ES
 Scales: 1=3
 Date: 04/03/00
 DRAWN BY: BOB S.
 TITLE: 3600-PA SERIES APPLICATOR: TAMP MODULE
 F:\Engineering\Standard Parts\Applicator\3600\238\MOD-238-0124R/L
 Dept. Code: 70

RH & LH MOUNTING AVAILABLE
(BOTH HANDS USE SAME PARTS)
-RH MOUNTING SHOWN-

ASS-214-0103R/L-XX

1" STROKE	-0103R/L-1N
2" STROKE	-0103R/L-2N
3" STROKE	-0103R/L-3N
4" STROKE	-0103R/L-4N
6" STROKE	-0103R/L-6N
EXT PE: 1" STROKE	-0103R/L-1E
EXT PE: 2" STROKE	-0103R/L-2E
EXT PE: 3" STROKE	-0103R/L-3E
EXT PE: 4" STROKE	-0103R/L-4E
EXT PE: 6" STROKE	-0103R/L-6E

NOTE:
USE HEAVY DUTY SLIDE
FOR 8", 10" & 12" STROKES
SEE SHEET 2



(2) 1/4-20 x 1-1/2 Lg. SHCS, SS
w/ HIGH COLLAR LOCK WASHER
(INCLUDED WITH STANDARD SLIDE)

ORDER SEPARATELY
PAD & MANIFOLD (JOB SPECIFIC)
FOR MANIFOLD BLANKS SEE
MP-238-0246-X

3600-PA BILL OF MATERIAL

ASSEMBLY				ASS-214-0103R/L-XX	SOLD
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER		
①	1	TAMP SLIDE ("X" STROKE LENGTH)	ASS-214-0108-X	S	
STD.	②	1 SLIDE MOUNT ANGLE PLATE	MP-238-0244R/L	.	
EXT. P.E.	②	1 SLIDE MOUNT ANGLE PLATE FOR EXT. P.E.	MP-238-0255R/L	.	
	③	1 SLIDE TO MANIFOLD TRANSITION PLATE	MP-238-0245	.	
	④	2 FLOW CONTROL	PM-PF2060	S	
STD.	⑤	1 SLIDE MOUNT PLATE	MP-238-0243	.	
EXT. P.E.	⑤	1 SLIDE MOUNT PLATE FOR EXT. P.E.	MP-238-0254	.	
	⑥	1 SLIDE NUT FOR STANDARD CYLINDER	MP-238-0240	.	
STD.	⑦	2 SHCS, 1/4-20 x 1-1/4 Lg. SS	PM-FASH40330		
	⑧	2 1/4 HEAVY FLAT WASHER	PM-FAW30297		
	⑨	2 1/4 LOCK WASHER	PM-FAW30690		
EXT. P.E.	⑦	2 SHCS, 1/4-20 x 1 Lg. SS	PM-FASH40320		
	⑧	2 1/4 FLAT WASHER	PM-FAW30275		
	⑨	2 1/4 LOCK WASHER	PM-FAW30690		

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TITLE: 3600-PA SERIES APPLICATOR: TAMP ASSEMBLY (SHEET 1 of 2)

PART: STANDARD SLIDE ASSEMBLY FOR 3600-PA APPLICATOR

Dept. Code
70

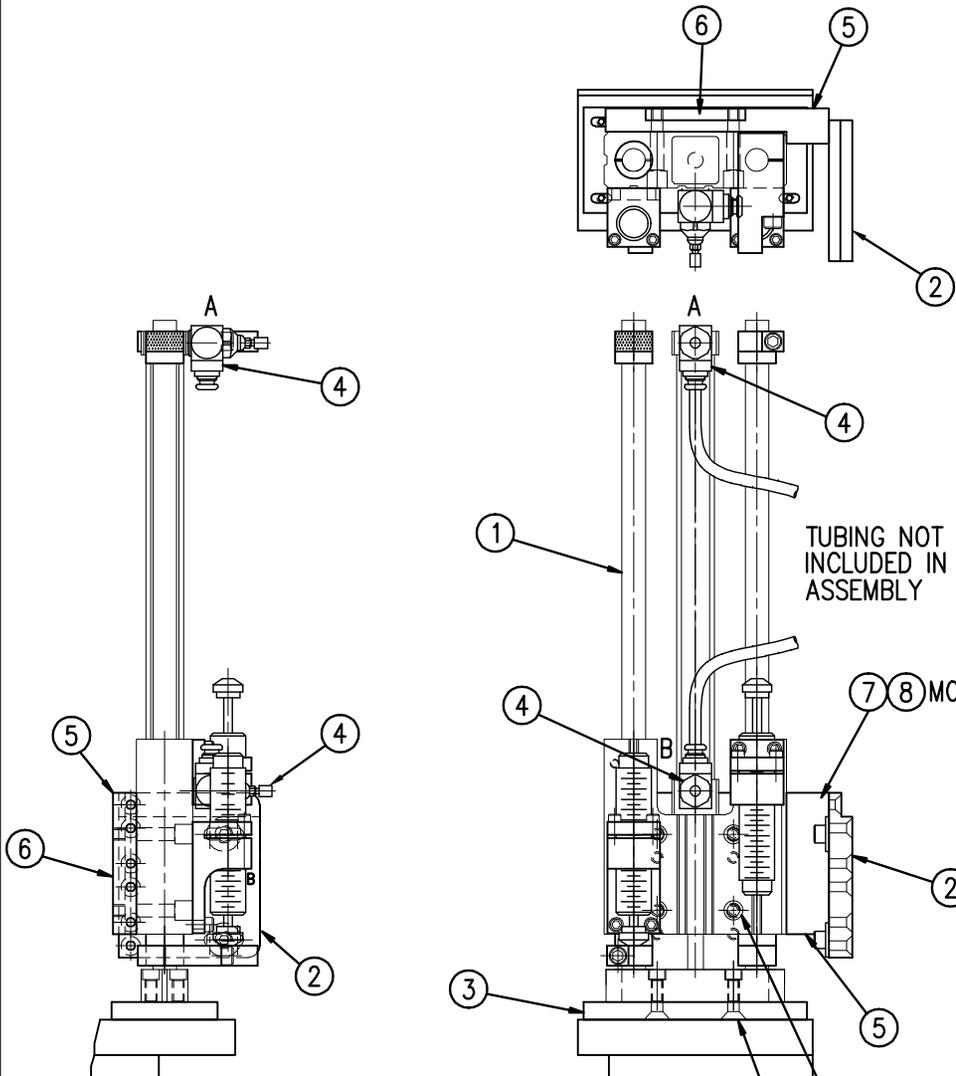
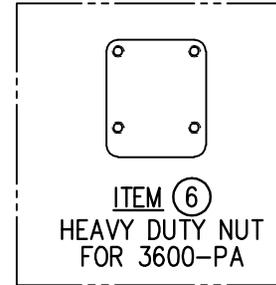
REV. 9	REV. DESCRIPTION FIXED SLIDE MOUNTING PLATE; WAS DRAWN WRONG LENGTH	REV. DATE 04/29/16	REV. BY: TDR	Scale: 1=3	Date: 02/21/98	DRAWN BY: BOB S.	F:\Engineering\Standard Parts\Applicator\360 214\ASS-214-0103RL-XXs1
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RH & LH MOUNTING AVAILABLE
(BOTH HANDS USE SAME PARTS)
-RH MOUNTING SHOWN-

ASS-214-0103R/L-XX

8" STROKE	-0103R/L-8N
10" STROKE	-0103R/L-10N
12" STROKE	-0103R/L-12N
EXT PE: 8" STROKE	-0103R/L-8E
EXT PE: 10" STROKE	-0103R/L-10E
EXT PE: 12" STROKE	-0103R/L-12E

NOTE:
USE STANDARD DUTY SLIDE
FOR 1", 2", 3", 4" & 6" STROKES
(SEE SHEET 1)



TUBING NOT INCLUDED IN ASSEMBLY

⑦ ⑧ MOUNTING FASTENERS

(4) 1/4-20 x 3/4 Lg.FSHCS
(4) 1/4-20 X 1-1/2 Lg. SHCS w/ HIGH COLLAR LOCK WASHER (INCLUDED w/HEAVY DUTY SLIDE)

ORDER SEPARATELY
PAD & MANIFOLD (JOB SPECIFIC)
FOR MANIFOLD BLANKS SEE
MP-238-0246-X

3600-PA BILL OF MATERIAL

3600-PA BILL OF MATERIAL				SOLD
ASSEMBLY ASS-214-0103R/L-XX				S
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER	
①	1	TAMP SLIDE ("X" STROKE LENGTH)	ASS-214-0108-X	S
STD.	②	1 SLIDE MOUNT ANGLE PLATE	MP-238-0244R/L	.
EXT. P.E.	1	1 SLIDE MOUNT ANGLE PLATE FOR EXT. P.E.	MP-238-0255R/L	.
	③	1 SLIDE TO MANIFOLD TRANSITION PLATE	MP-238-0245	.
	④	2 FLOW CONTROL	PM-PF2060	S
STD.	⑤	1 SLIDE MOUNT PLATE	MP-238-0243	.
EXT. P.E.	1	1 SLIDE MOUNT PLATE FOR EXT. P.E.	MP-238-0254	.
	⑥	1 SLIDE NUT FOR HEAVY DUTY CYLINDER	MP-238-0240E	.
STD.	⑦	2 SHCS, 1/4-20 x 1-1/4 Lg. SS	PM-FASH40330	
	⑧	2 1/4 HEAVY FLAT WASHER	PM-FAW30297	
	⑨	2 1/4 LOCK WASHER	PM-FAW30690	
EXT. P.E.	⑦	2 SHCS, 1/4-20 x 1 Lg. SS	PM-FASH40320	
	⑧	2 1/4 FLAT WASHER	PM-FAW30275	
	⑨	2 1/4 LOCK WASHER	PM-FAW30690	

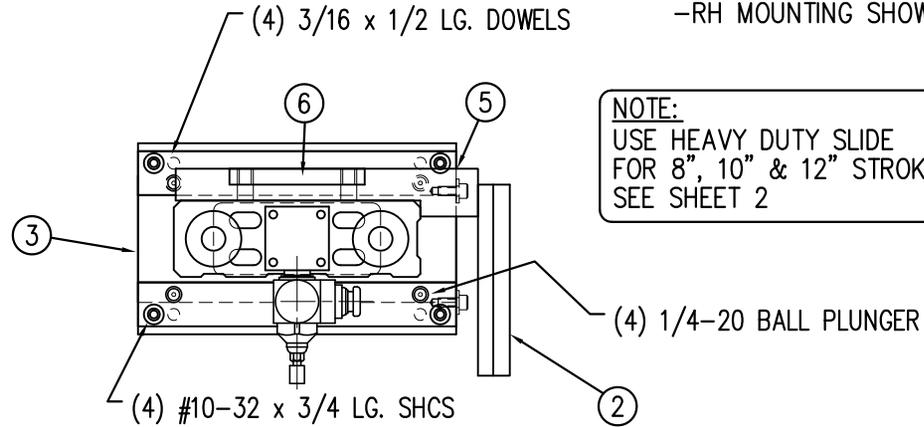
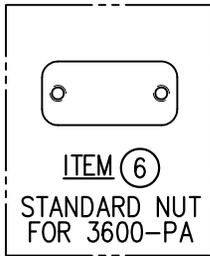
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TITLE: 3600-PA SERIES APPLICATOR: TAMP ASSEMBLY (SHEET 2 of 2) PART: HEAVY DUTY SLIDE ASSEMBLY FOR 3600-PA APPLICATOR Dept. Code 70

REV. 3 REV. DESCRIPTION: MOVED ITEM #5 TO TOP HOLES ON ITEM #2 REV. DATE: 04/09/07 REV. BY: TDR Scale: 1=4 Date: 02/21/98 DRAWN BY: BOB S. F:\Engineering\Standard Parts\Appliator\360 214\ASS-214-0103RL-XXs2

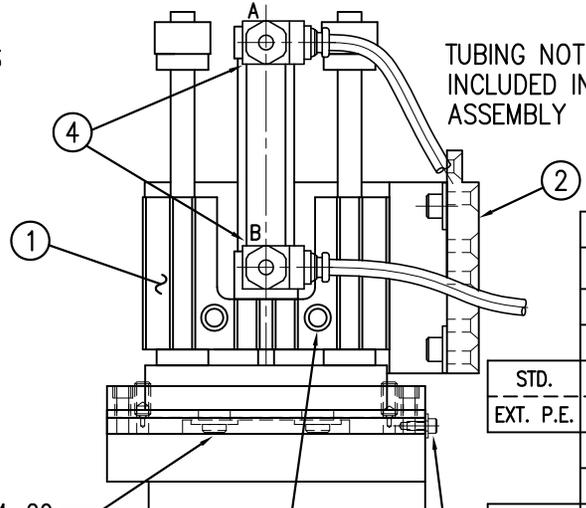
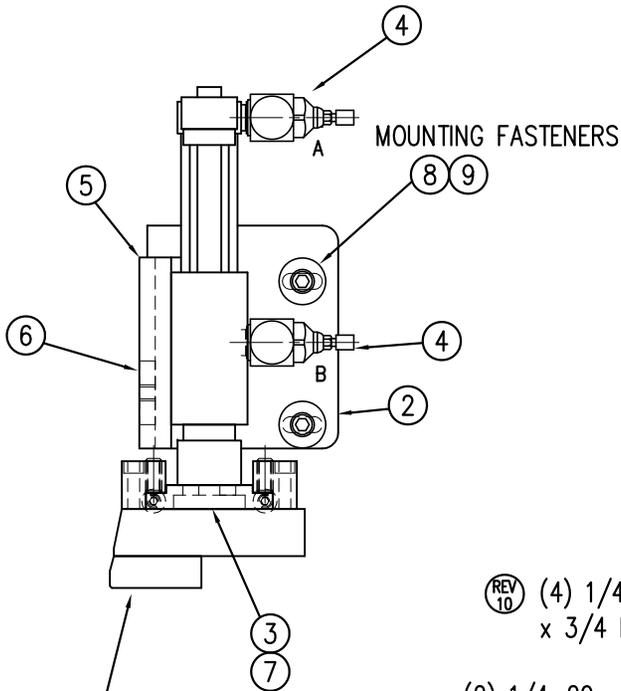
RH & LH MOUNTING AVAILABLE
-RH MOUNTING SHOWN-

ASS-214-0103R/L-XXQ



NOTE:
USE HEAVY DUTY SLIDE
FOR 8", 10" & 12" STROKES
SEE SHEET 2

1" STROKE	-0103R/L-1NQ
2" STROKE	-0103R/L-2NQ
3" STROKE	-0103R/L-3NQ
4" STROKE	-0103R/L-4NQ
6" STROKE	-0103R/L-6NQ
EXT PE: 1" STROKE	-0103R/L-1EQ
EXT PE: 2" STROKE	-0103R/L-2EQ
EXT PE: 3" STROKE	-0103R/L-3EQ
EXT PE: 4" STROKE	-0103R/L-4EQ
EXT PE: 6" STROKE	-0103R/L-6EQ



- ④ 1/4-20 x 3/4 LG. LSHCS
- ② 1/4-20 x 1-3/8 Lg. SHCS, SS w/ HIGH COLLAR LOCK WASHER (INCLUDED WITH STANDARD CYLINDER)
- ② 6-32 x 3/8 LG. SHCS w/FLAT WASHER

ORDER SEPARATELY
PAD & MANIFOLD (JOB SPECIFIC)
& CLAMPS & BALL PLUNGERS
(ASS-214-0119)

3600-PA BILL OF MATERIAL

3600-PA BILL OF MATERIAL				SOLD
ASSEMBLY ASS-214-0103R/L-XNQ, -XEQ				S
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER	
①	1	TAMP SLIDE ("X" STROKE LENGTH)	ASS-214-0108-X	S
STD. ②	1	SLIDE MOUNT ANGLE PLATE	MP-238-0244R/L	.
EXT. P.E. ②	1	SLIDE MOUNT ANGLE PLATE FOR EXT. P.E.	MP-238-0255R/L	.
③	1	SLIDE TO MANIFOLD TRANSITION PLATE	MP-238-0270	.
④	2	FLOW CONTROL	PM-PF2060	S
STD. ⑤	1	SLIDE MOUNT PLATE	MP-238-0243	.
EXT. P.E. ⑤	1	SLIDE MOUNT PLATE FOR EXT. P.E.	MP-238-0254	.
⑥	1	SLIDE NUT FOR STANDARD CYLINDER	MP-238-0240	.
⑦	1	QUICK CHANGE NUT PLATE	PM-238-0271	.
STD. ⑧	2	SHCS, 1/4-20 x 1-1/4 Lg. SS	PM-FASH40330	
⑨	2	1/4 HEAVY FLAT WASHER	PM-FAW30297	
⑩	2	1/4 LOCK WASHER	PM-FAW30690	
EXT. P.E. ⑧	2	SHCS, 1/4-20 x 1 Lg. SS	PM-FASH40320	
⑨	2	1/4 FLAT WASHER	PM-FAW30275	
⑩	2	1/4 LOCK WASHER	PM-FAW30690	

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TITLE: 3600-PA SERIES APPLICATOR: TAMP ASSEMBLY (SHEET 1 of 2)

PART: STANDARD SLIDE ASS'Y FOR 3600-PA APPLICATOR w/QUICK CHANGE PAD

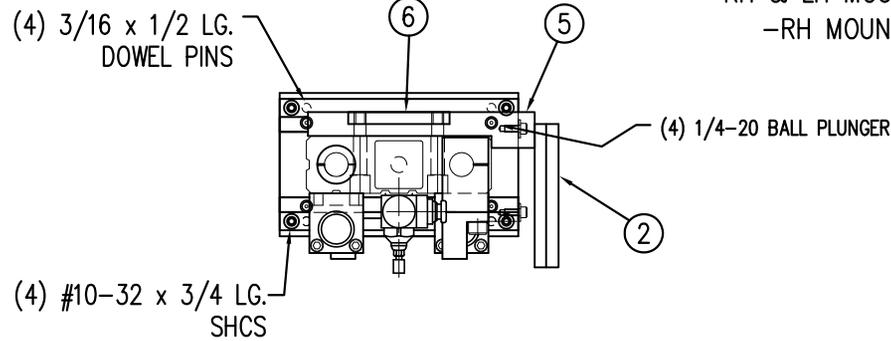
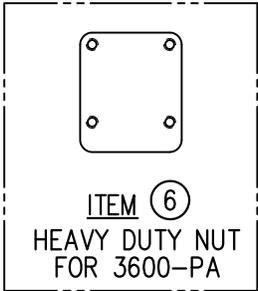
Dept. Code
70

REV. 11	REV. DESCRIPTION SHOWED #6-32 SHCS (QC STOPS) IN CORRECT LOCATION	REV. DATE 03/23/10	REV. BY: TDR	Scale: 1=3	Date: 02/21/98	DRAWN BY: BOB S.	F:\Engineering\Standard Parts\Applicator\3600 214\ASS-214-0103RL-XXQs1
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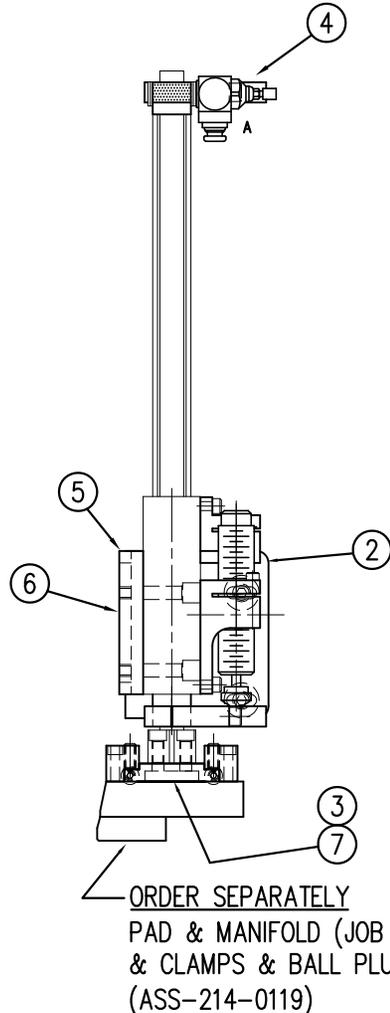
RH & LH MOUNTING AVAILABLE
-RH MOUNTING SHOWN-

ASS-214-0103R/L-XXQ

8" STROKE	-0103R/L-8NQ
10" STROKE	-0103R/L-10NQ
12" STROKE	-0103R/L-12NQ
EXT PE: 8" STROKE	-0103R/L-8EQ
EXT PE: 10" STROKE	-0103R/L-10EQ
EXT PE: 12" STROKE	-0103R/L-12EQ



NOTE:
USE STANDARD SLIDE
FOR 1", 2", 3", 4" & 6" STROKES
(SEE SHEET 1)



(2) 1/4-20 x 1-3/8 Lg. SHCS
W/ HIGH COLLAR LOCK WASHER
(INCLUDED WITH STD CYLINDER)

REV 5 (4) 1/4-20
x 3/4 LG. LSHCS

REV 2 REV 6 (2) #6-32 x 3/8 LG.
SHCS w/FLAT WASHER

TUBING NOT
INCLUDED IN
ASSEMBLY

(8) (9) MTG. FASTENERS

3600-PA BILL OF MATERIAL				SOLD	
ASS-214-0103R/L-XNQ, XEQ				S	
ASSEMBLY	ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER	
	1	1	TAMP SLIDE ("X" STROKE LENGTH)	ASS-214-0108-X	S
STD.	2	1	SLIDE MOUNT ANGLE PLATE	MP-238-0244R/L	.
EXT. P.E.	2	1	SLIDE MOUNT ANGLE PLATE FOR EXT. P.E.	MP-238-0255R/L	.
	3	1	SLIDE TO MANIFOLD TRANSITION PLATE	MP-238-0270	.
	4	2	FLOW CONTROL	PM-PF2060	S
STD.	5	1	SLIDE MOUNT PLATE	MP-238-0243	.
EXT. P.E.	5	1	SLIDE MOUNT PLATE FOR EXT. P.E.	MP-238-0254	.
	6	1	SLIDE NUT FOR HEAVY DUTY CYLINDER	MP-238-0240E	.
	7	1	QUICK CHANGE NUT PLATE	PM-238-0271	.
STD.	8	2	SHCS, 1/4-20 x 1-1/4 Lg. SS	PM-FASH40330	
	9	2	1/4 HEAVY FLAT WASHER	PM-FAW30297	
	10	2	1/4 LOCK WASHER	PM-FAW30690	
EXT. P.E.	8	2	SHCS, 1/4-20 x 1 Lg. SS	PM-FASH40320	
	9	2	1/4 FLAT WASHER	PM-FAW30275	
	10	2	1/4 LOCK WASHER	PM-FAW30690	

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TITLE: 3600-PA SERIES APPLICATOR: TAMP ASSEMBLY (SHEET 2 of 2)

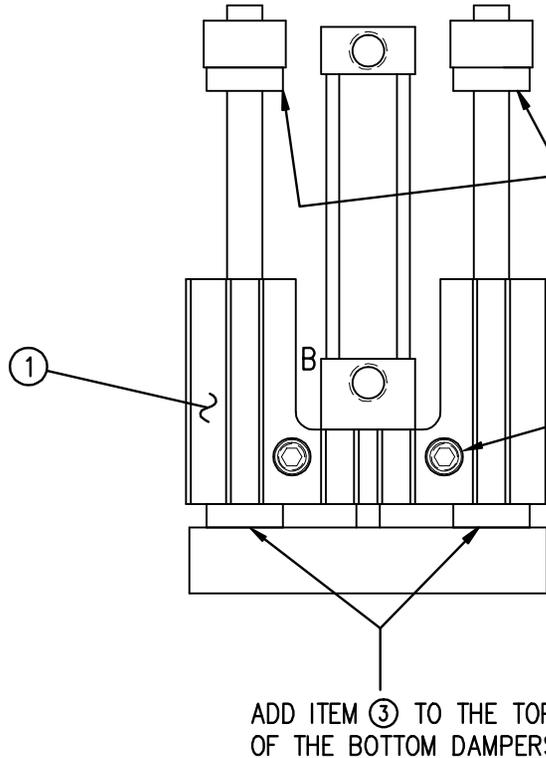
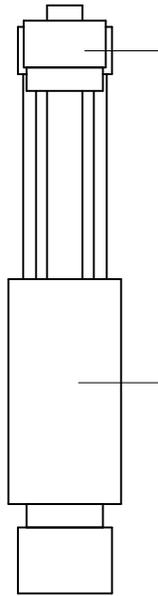
PART: HEAVY DUTY SLIDE ASS'Y FOR 3600-PA APPLICATOR w/QUICK CHANGE PAD

Dept. Code
70

REV. 6	REV. DESCRIPTION SHOWED #6-32 SHCS (QC STOPS) IN CORRECT LOCATION	REV. DATE 03/23/10	REV. BY: TDR	Scale: 1=4	Date: 02/21/98	DRAWN BY: BOB S.	F:\Engineering\Standard Parts\Applicator\360 214\ASS-214-0103RL-XXQs2
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ASS-214-0108-X

1" STROKE	-0108-1
2" STROKE	-0108-2
3" STROKE	-0108-3
4" STROKE	-0108-4
6" STROKE	-0108-6



REMOVE HARD RUBBER DAMPERS
& REPLACE w/ ITEM ②
(2 PLCS. - TOP ONLY)

NOTE:
USE HEAVY DUTY SLIDE
FOR 8", 10" & 12" STROKES
(SEE SHEET 2)

④ ⑤ MOUNTING FASTENERS

ADD ITEM ③ TO THE TOP
OF THE BOTTOM DAMPERS.

BILL OF MATERIAL				SOLD
ASSEMBLY	ASS-214-0108-1,-2,-3,-4,-6			S
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER	
①	1	TAMP SLIDE ("X" STROKE LENGTH)	PM-AC2000-X	S
②	2	3/8" I.D. RUBBER GROMMET	PE-C02018	S
③	4	O-RING (BUNA-N)	PM-OR1021	S
④	2	SHCS, 1/4-20 x 1.375 Lg. SS	PM-FASH430098	.
⑤	2	1/4" HIGH COLLAR SS LOCK WASHER	PM-FAW30690HC	.

SLIDE PROPERTIES
 LINEAR BALL BUSHINGS
 3/8" ϕ OVERSIZE SHAFTS
 3/4" ϕ CYLINDER BORE
 HALL EFFECT MAGNETIC POSITIONING
 TRAVEL ADJUSTMENT & SHOCK PADS ON EXTENSION
 SHOCK PADS ON RETRACTION

BILL OF MATERIAL

ASS-214-0108-8, -10, -12, -14, -18

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PM-AC2010-X	8", 10", & 12" STROKE TAMP SLIDES
	1	PM-AC1184	14" STROKE TAMP SLIDE
	1	PM-AC1289	18" STROKE TAMP SLIDE
②	1	MP-238-0314	SHOCK ABSORBER MTG BRACKET-HOME
③	1	MP-238-0315	SHOCK ABSORBER MTG BRKT-EXTENDED
④	2	PM-SA0950	SLIDE SHOCK ABSORBER
⑤	4	PM-FASH430098	SHCS, 1/4"-20 x 1.375" Lg.
⑥	4	PM-FAW30690HC	1/4" HIGH COLLAR SS LOCK WASHER

NOTE: HEAVY DUTY SLIDE w/10" STROKE SHOWN

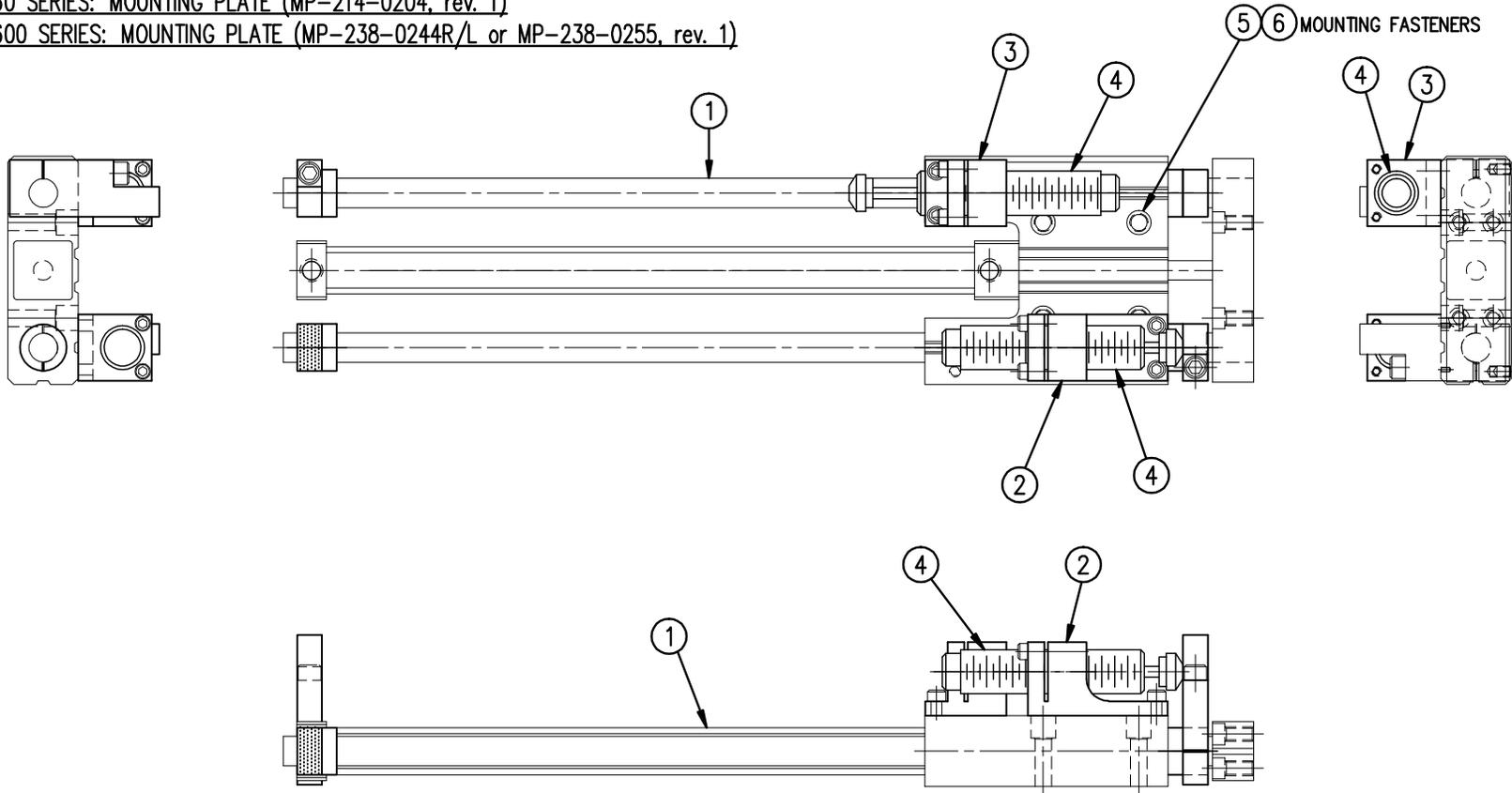
ASS-214-0108-X

SLIDE PROPERTIES
 TC COMPOSITE BUSHINGS
 1/2"Ø OVERSIZE SHAFTS
 3/4"Ø CYLINDER BORE
 HALL EFFECT MAGNETIC POSITIONING
 SHOCK ABSORBERS READY ON EXTENSION & RETRACTION
 SHOCK PADS ON EXTENSION
 SHOCK PADS ON RETRACTION

8" STROKE	-0108-8
10" STROKE	-0108-10
12" STROKE	-0108-12
14" STROKE	-0108-14
18" STROKE	-0108-18

NOTE:
 USE STANDARD SLIDE
 FOR 1", 2", 3", 4" & 6" STROKES
 (SEE SHEET 1)

NOTE: SLIDE WITH SHOCK ABSORBERS TO BE USED IN CONJUNCTION WITH
 360 SERIES: MOUNTING PLATE (MP-214-0204, rev. 1)
 3600 SERIES: MOUNTING PLATE (MP-238-0244R/L or MP-238-0255, rev. 1)



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TITLE: 360/3600-PA SERIES APPLICATOR: TAMP ASSEMBLY (SHEET 2 of 2)		PART: HEAVY DUTY TAMP SLIDE (FOR 360 & 3600-PA STD & EXT. TAMP)		Dept. Code 70
REV. 2	REV. DESCRIPTION ADDED 14" AND 18" LENGTH SLIDES	REV. DATE 02/24/2016	REV. BY: ES	Scale: 1=3 Date: 02/21/98 DRAWN BY: BOB S.
			F:\Engineering\Standard Parts\Applicator\360 214\ASS-214-0108-Xs2	

BILL OF MATERIAL

MOD-238-0122XR/L-X

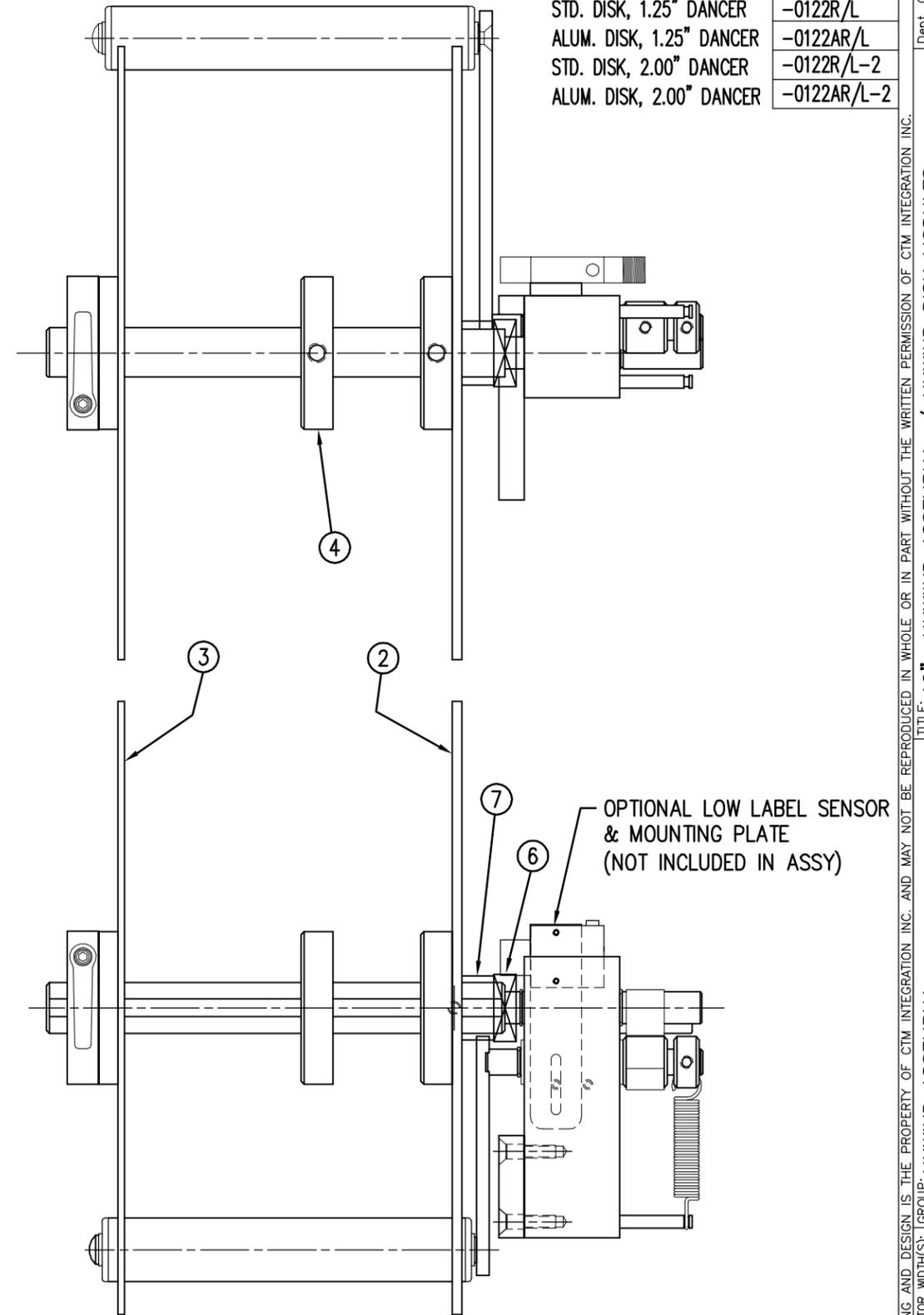
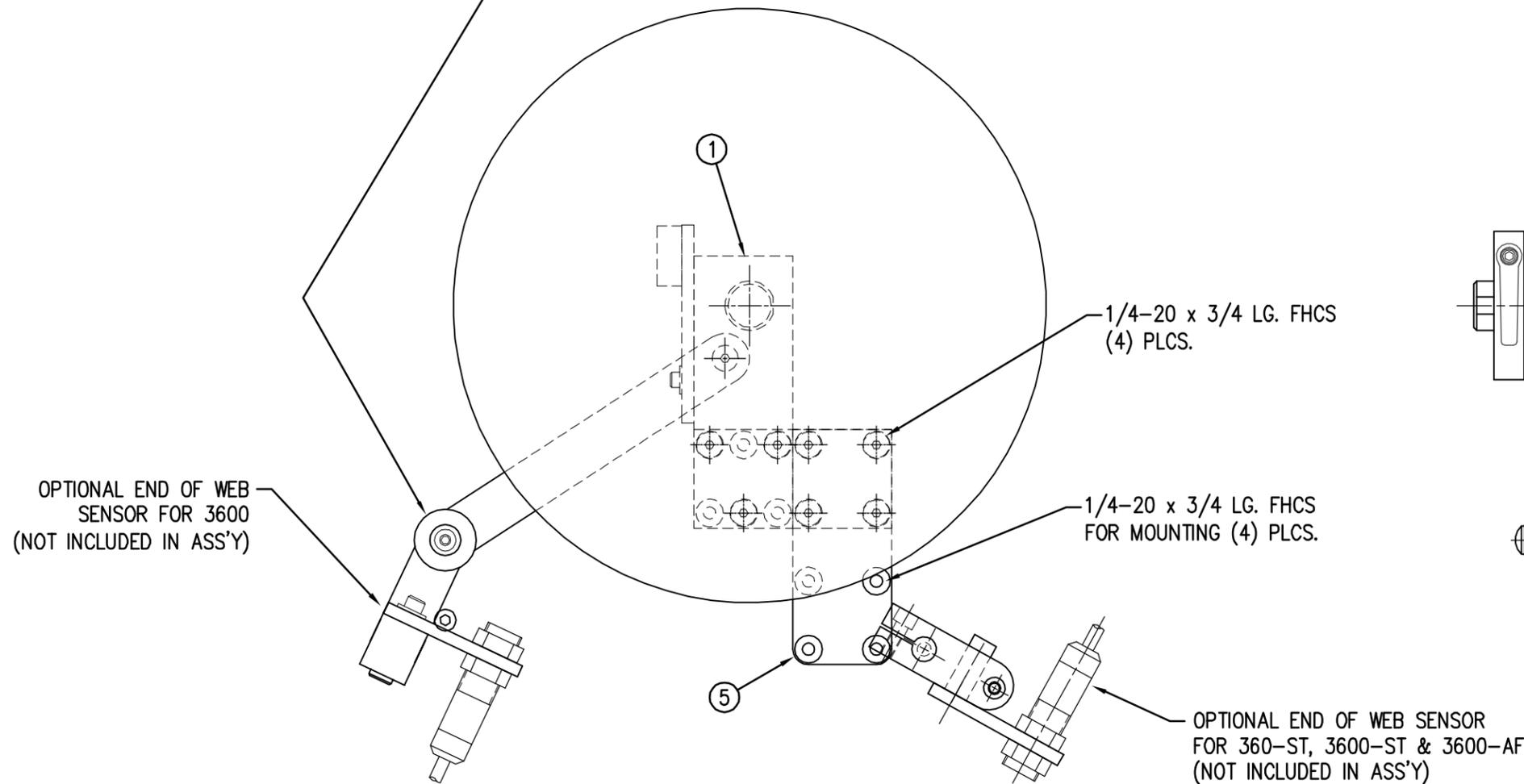
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION	
①	1	SAS-238-0122R/L	UNWIND SHELF ASS'Y w/ 1.25" DIA. DANCER	3600 & 3600-ST
	1	SAS-238-0122R/L-2	UNWIND SHELF ASS'Y w/ 2" DIA. DANCER	3600-AF
②	1	ASS-200-0132	12" INSIDE UNWIND DISK ASS'Y	STD.
	1	ASS-200-0132A	12" ALUMINUM INSIDE UNWIND DISK ASS'Y	REELS UP
③	1	ASS-200-0133	OUTSIDE UNWIND DISK ASS'Y	
④	1	MP-200-0267CS	CORE SUPPORT	
⑤	1	MP-238-0236	MOUNTING PLATE	
⑥	1	PM-C01015	5/8" I.D. STAINLESS STEEL LOCK COLLAR	REELS UP ONLY
⑦	1	PM-BU1475	1" I.D. x 5/8" LG. BRONZE BUSHING	
	4	PM-FAFH50619	FHCS, 1/4"-20 UNC x 3/4" Lg. S.S.	

MOD-238-0122XR/L-X

STD. DISK, 1.25" DANCER	-0122R/L
ALUM. DISK, 1.25" DANCER	-0122AR/L
STD. DISK, 2.00" DANCER	-0122R/L-2
ALUM. DISK, 2.00" DANCER	-0122AR/L-2

RH & LH ASSEMBLIES AVAILABLE
-RH ASSEMBLY SHOWN-

NOTE:
1.25" DIA. DANCER SHOWN (FOR STD. 3600 & 3600-ST)
2" DIA. DANCER OPTION (FOR 3600-AF)



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APPLICATOR SERIES: 3600

REV. DESCRIPTION: 5 ADD EOW OPTION FOR 360-ST, 3600-ST & 3600-AF

GROUP: UNWIND ASSEMBLY

REV. DATE: 02/06/14

REV. BY: TK

Scale: 1=3

Date: 12/09/13

DRAWN BY: T. KELLY

F:\Engineering\Standard Parts\Appliator\3600-AF\

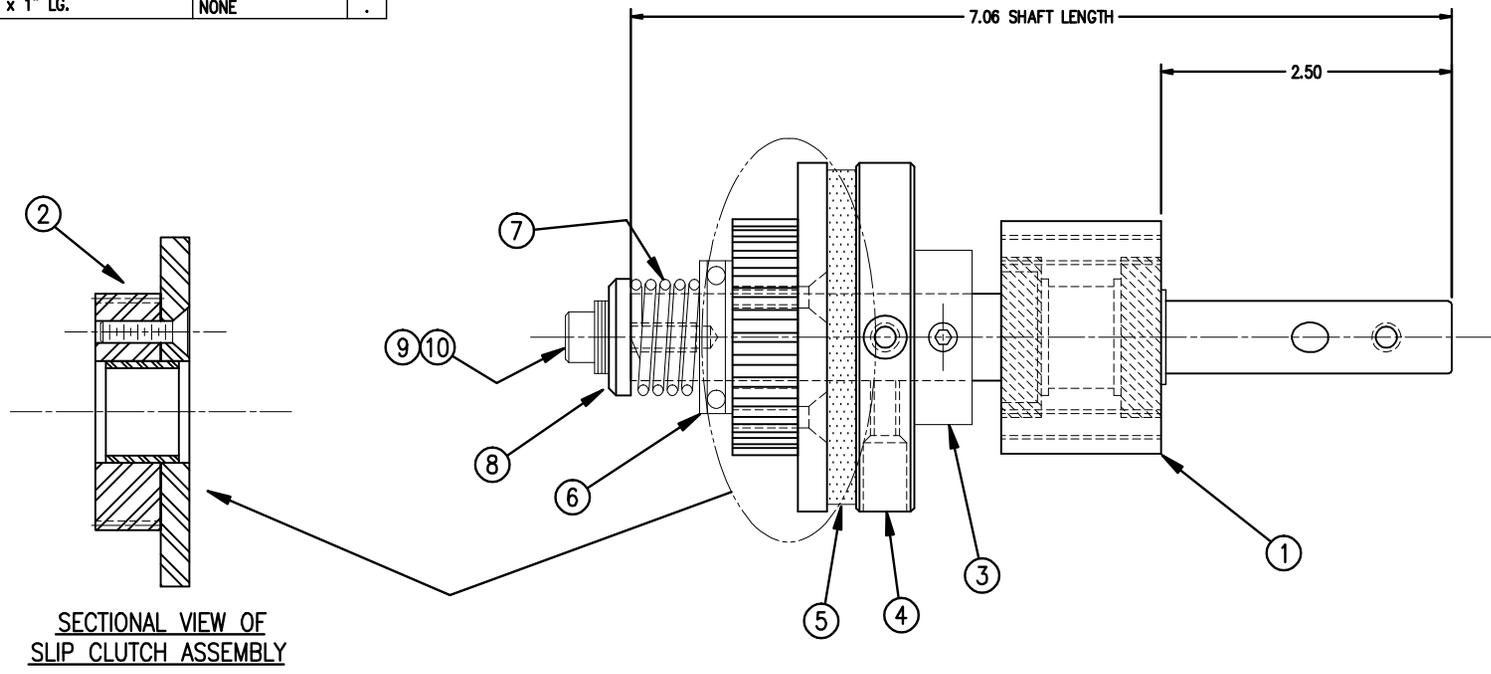
3600-AF MOD-238-0122XR/L

TITLE: 12" UNWIND ASSEMBLY w/ UNWIND DISK MODULES

Dept. Code: 70

BILL OF MATERIAL				SOLD
ASSEMBLY	ASS-238-0120C			.
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER	
①	1	REWIND BRG. BLOCK w/SHAFT	ASS-238-0121	S
②	1	SLIP CLUTCH ASSEMBLY	ASS-200-0143	S
③	1	LOCK COLLAR	PM-C01020	.
④	1	SLIP CLUTCH	MP-238-0202	.
⑤	1	CLUTCH PAD	MP-238-0274	S
⑥	1	THRUST BEARING	PM-BE1232	S
⑦	1	COMPRESSION SPRING (MEDIUM DUTY)	PM-FASP30540	S
⑧	1	CLUTCH SPRING KEEPER	MP-200-0229	.
⑨	10	FLAT WASHER, 1/4 NOM.	NONE	.
⑩	1	SHCS, 1/4-20 x 1" LG.	NONE	.

ASS-238-0120C



REV 1
REV 2

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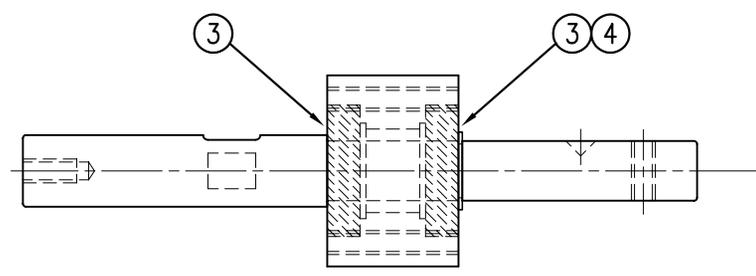
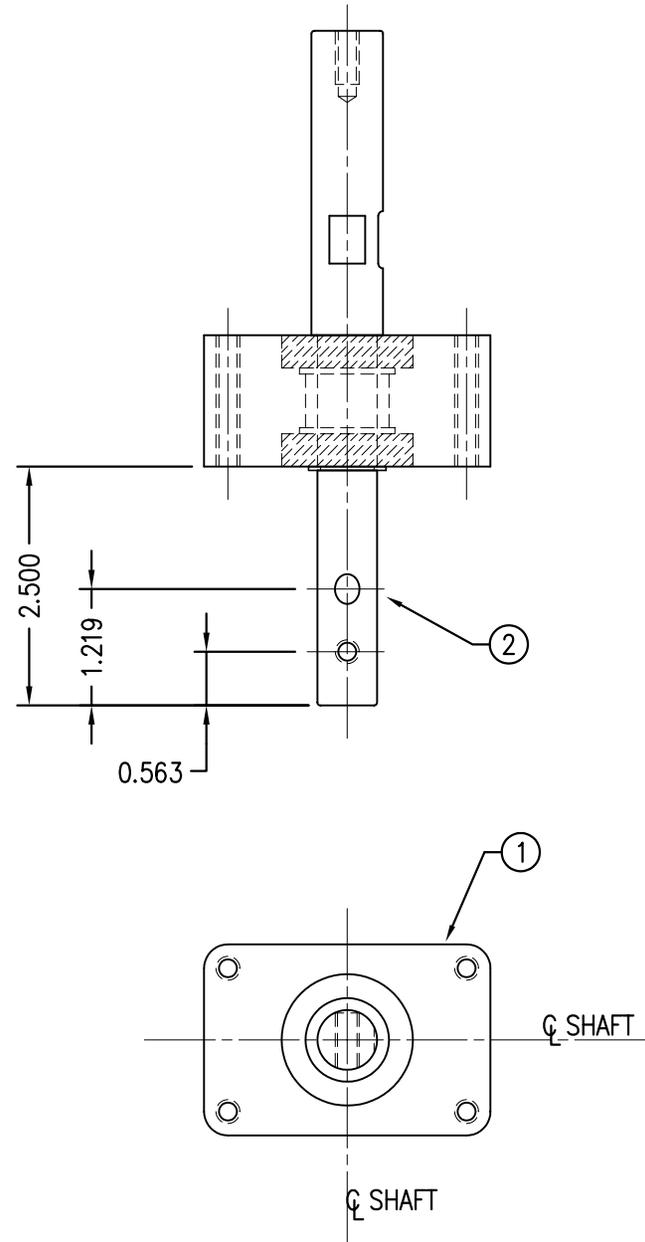
TITLE: 3600-PA SERIES APPLICATOR: REWIND: SHELF ASSEMBLY
 REV. DESCRIPTION: 3 FIXED SHAFT TO SHOW DMOT & TAPPED HOLE ON 2.50" LG. END
 REV. DATE: 12/20/06
 REV. BY: TDK
 SCALE: 1=1
 DATE: 03/24/00
 DRAWN BY: BOB S.
 PART: REWIND CLUTCH ASSEMBLY
 Dept. Code: 70
 F: Engineering Standard Part Vapilator 3600
 238 ASS-238-0120C

BILL OF MATERIAL

SOLD

ASS-238-0121

ASSEMBLY		ASS-238-0121		S
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER	
①	1	REWIND BEARING BLOCK	MP-200-0216	.
②	1	REWIND SHAFT	MP-238-0205	.
③	2	#R10 BALL BEARING	PM-BE1260	.
④	1	SNAP RING	PM-FASR1010	.
	4	FHCS, 1/4"-20 UNC x 3/4" LG.	NONE	.



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TITLE: 3600-PA SERIES APPLICATOR: REWIND ASSEMBLY		PART: REWIND BEARING BLOCK w/SHAFT			Dept. Code 70
REV. 0	REV. DESCRIPTION ADDED SHAFT TO DWG. AND UPDATED TITLEBLOCK	REV. DATE 11/19/03	REV. BY: TDR	Scale: 1=2	Date: 03/29/00
		DRAWN BY: BOB S.		F:\Engineering\Standard Parts\Applicator\3600 238\ASS-238-0121	

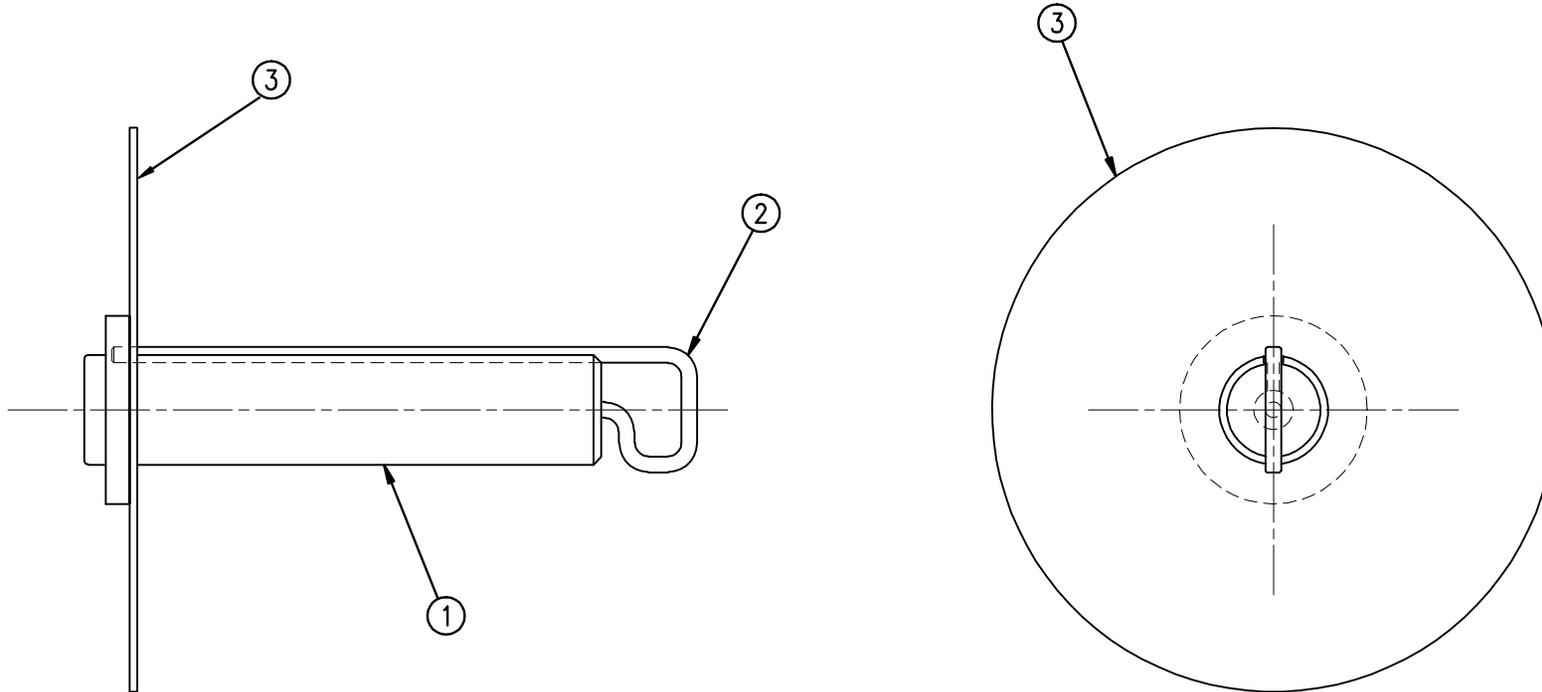
BILL OF MATERIAL

ASS-238-0144-X

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	MP-238-0206	REWIND SPINDLE
②	1	PF-238-0207	REWIND PIN
③	1	ASS-200-0127	REWIND DISK ASS'Y (FOR 12" UNWIND)
	1	ASS-200-3158-16	REWIND DISK ASS'Y (FOR 16" UNWIND)
	1	ASS-238-0168	REWIND DISK ASS'Y (FOR 16" P.UNWIND)

ASS-238-0144-X

FOR 12" UNWIND	-0144-12
FOR 16" UNWIND	-0144-16
FOR 16" POWERED UNWIND	-0144-16PU



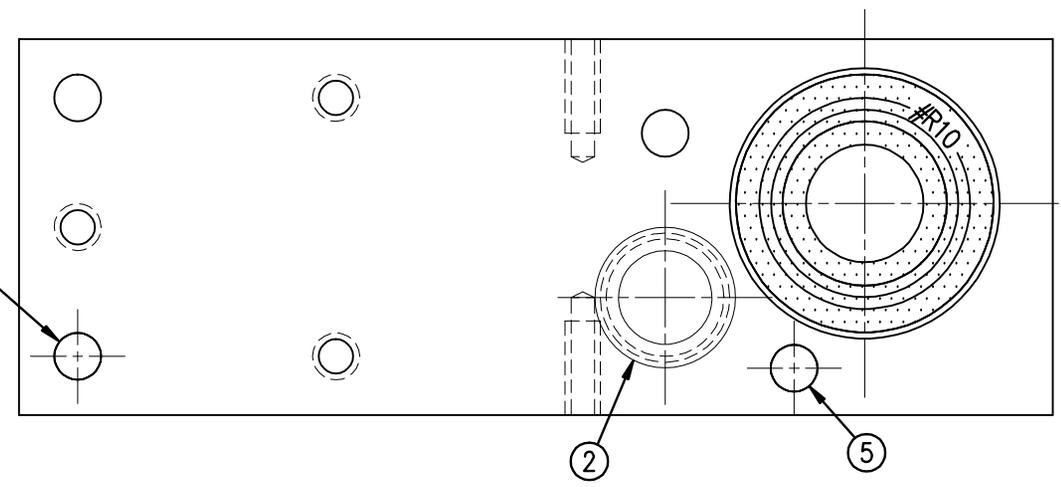
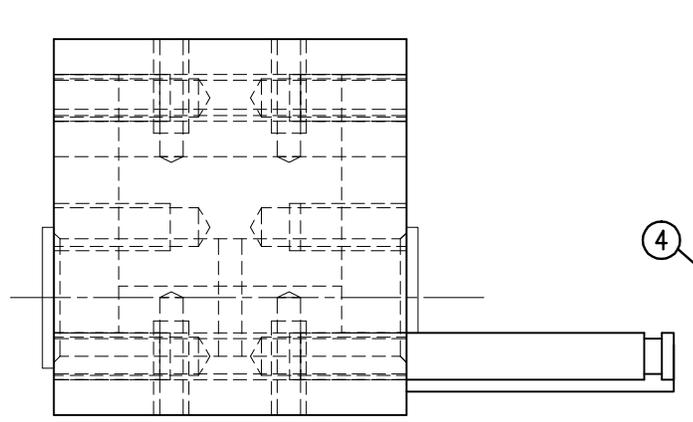
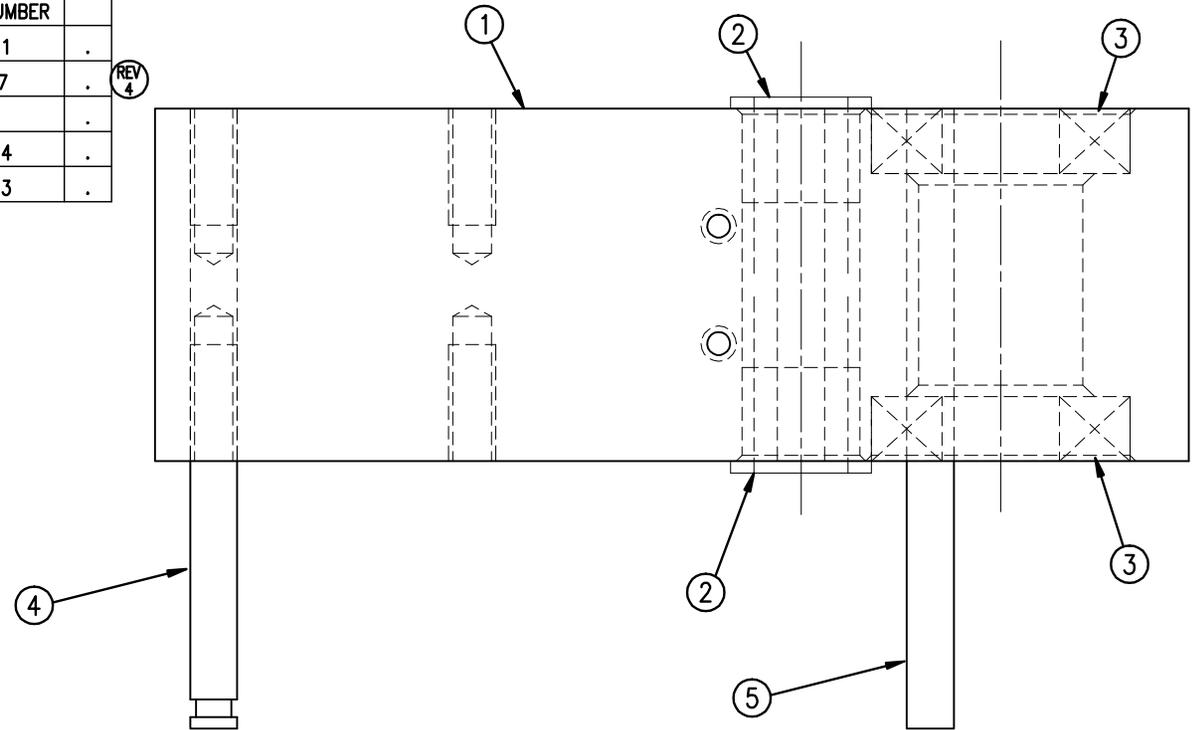
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APPLICATOR SERIES: 3600	APPLICATOR WIDTH(S): 7.5"	GROUP: REWIND ASSEMBLY	TITLE: STANDARD REWIND SPINDLE (FOR 12" & 16" UNWIND)	Dept. Code 70
REV. 1	REV. DESCRIPTION TABULATED FOR 16" POWERED UNWIND	REV. DATE 06/01/07	REV. BY: TDR	Scale: 1=3
			Date: 01/14/04	DRAWN BY: DKM
				F:\Engineering\Standard Parts\Appliator\3600 REWIND\ASS-238-0144-X

BILL OF MATERIAL				SOLD
ASSEMBLY	ASS-238-0180R/L			S
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER	
①	1	UNWIND BLOCK	MP-238-0211	.
②	2	FLANGE BUSHING, 1/2" ID x 5/8" OD	PM-BEBF1017	.
③	2	#R10 BEARING	PM-BE1260	.
④	1	UNWIND SPRING PIN	MP-238-0214	.
⑤	1	UNWIND BELT PIN	MP-238-0213	.

RH & LH ASSEMBLIES AVAILABLE
RH ASSEMBLY SHOWN ^{REV 3}

ASS-238-0180R/L



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TITLE: 3600-PA SERIES APPLICATOR: UNWIND ASSEMBLY					PART: RH / LH UNWIND BLOCK ASSEMBLY					Dept. Code 70
REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\3600			
4	CHANGED BUSHING to BEBF1017 from 1016 - LENGTH	4/28/17	KSM	1=1	04/11/00	DKM	238\ASS-238-0180RL			

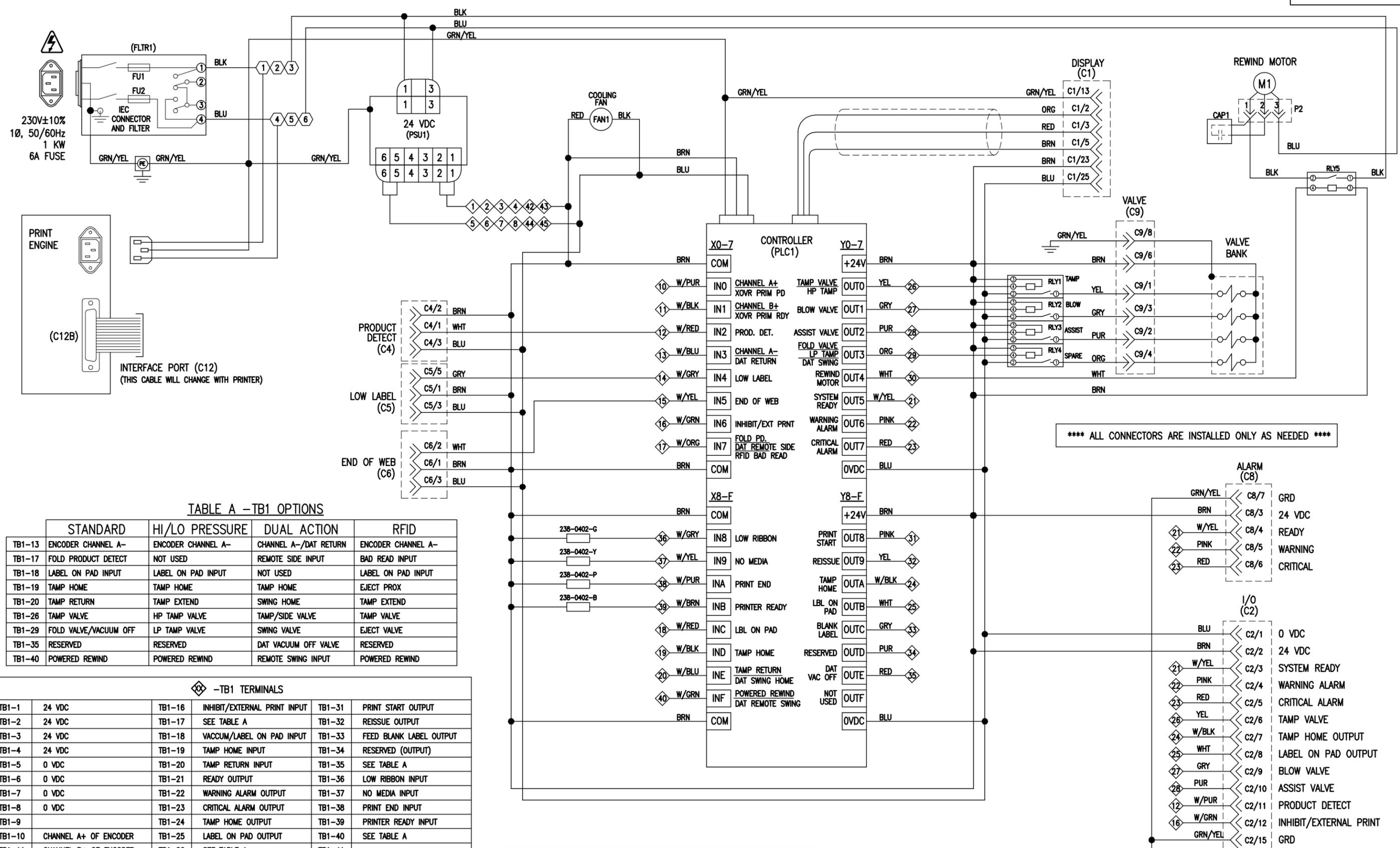


TABLE A - TB1 OPTIONS

	STANDARD	HI/LO PRESSURE	DUAL ACTION	RFID
TB1-13	ENCODER CHANNEL A-	ENCODER CHANNEL A-	CHANNEL A-/DAT RETURN	ENCODER CHANNEL A-
TB1-17	FOLD PRODUCT DETECT	NOT USED	REMOTE SIDE INPUT	BAD READ INPUT
TB1-18	LABEL ON PAD INPUT	LABEL ON PAD INPUT	NOT USED	LABEL ON PAD INPUT
TB1-19	TAMP HOME	TAMP HOME	TAMP HOME	EJECT PROX
TB1-20	TAMP RETURN	TAMP EXTEND	SWING HOME	TAMP EXTEND
TB1-26	TAMP VALVE	HP TAMP VALVE	TAMP/SIDE VALVE	TAMP VALVE
TB1-29	FOLD VALVE/VACUUM OFF	LP TAMP VALVE	SWING VALVE	EJECT VALVE
TB1-35	RESERVED	RESERVED	DAT VACUUM OFF VALVE	RESERVED
TB1-40	POWERED REWIND	POWERED REWIND	REMOTE SWING INPUT	POWERED REWIND

◇ -TB1 TERMINALS

TB1-1	TB1-2	TB1-3	TB1-4	TB1-5	TB1-6	TB1-7	TB1-8	TB1-9	TB1-10	TB1-11	TB1-12	TB1-13	TB1-14	TB1-15	TB1-16	TB1-17	TB1-18	TB1-19	TB1-20	TB1-21	TB1-22	TB1-23	TB1-24	TB1-25	TB1-26	TB1-27	TB1-28	TB1-29	TB1-30	TB1-31	TB1-32	TB1-33	TB1-34	TB1-35	TB1-36	TB1-37	TB1-38	TB1-39	TB1-40	TB1-41	TB1-42	TB1-43	TB1-44	TB1-45
24 VDC	24 VDC	24 VDC	24 VDC	0 VDC	CHANNEL A+ OF ENCODER	CHANNEL B+ OF ENCODER	PRODUCT DETECT INPUT	SEE TABLE A	LOW LABEL INPUT	END OF WEB INPUT	INHIBIT/EXTERNAL PRINT INPUT	SEE TABLE A	VACCUM/LABEL ON PAD INPUT	TAMP HOME INPUT	TAMP RETURN INPUT	READY OUTPUT	WARNING ALARM OUTPUT	CRITICAL ALARM OUTPUT	TAMP HOME OUTPUT	LABEL ON PAD OUTPUT	SEE TABLE A	BLOW VALVE	AIR ASSIST VALVE	SEE TABLE A	REWIND MOTOR	PRINT START OUTPUT	REISSUE OUTPUT	FEED BLANK LABEL OUTPUT	RESERVED (OUTPUT)	SEE TABLE A	LOW RIBBON INPUT	NO MEDIA INPUT	PRINT END INPUT	PRINTER READY INPUT	SEE TABLE A	24 VDC	24 VDC	0 VDC	0 VDC					

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

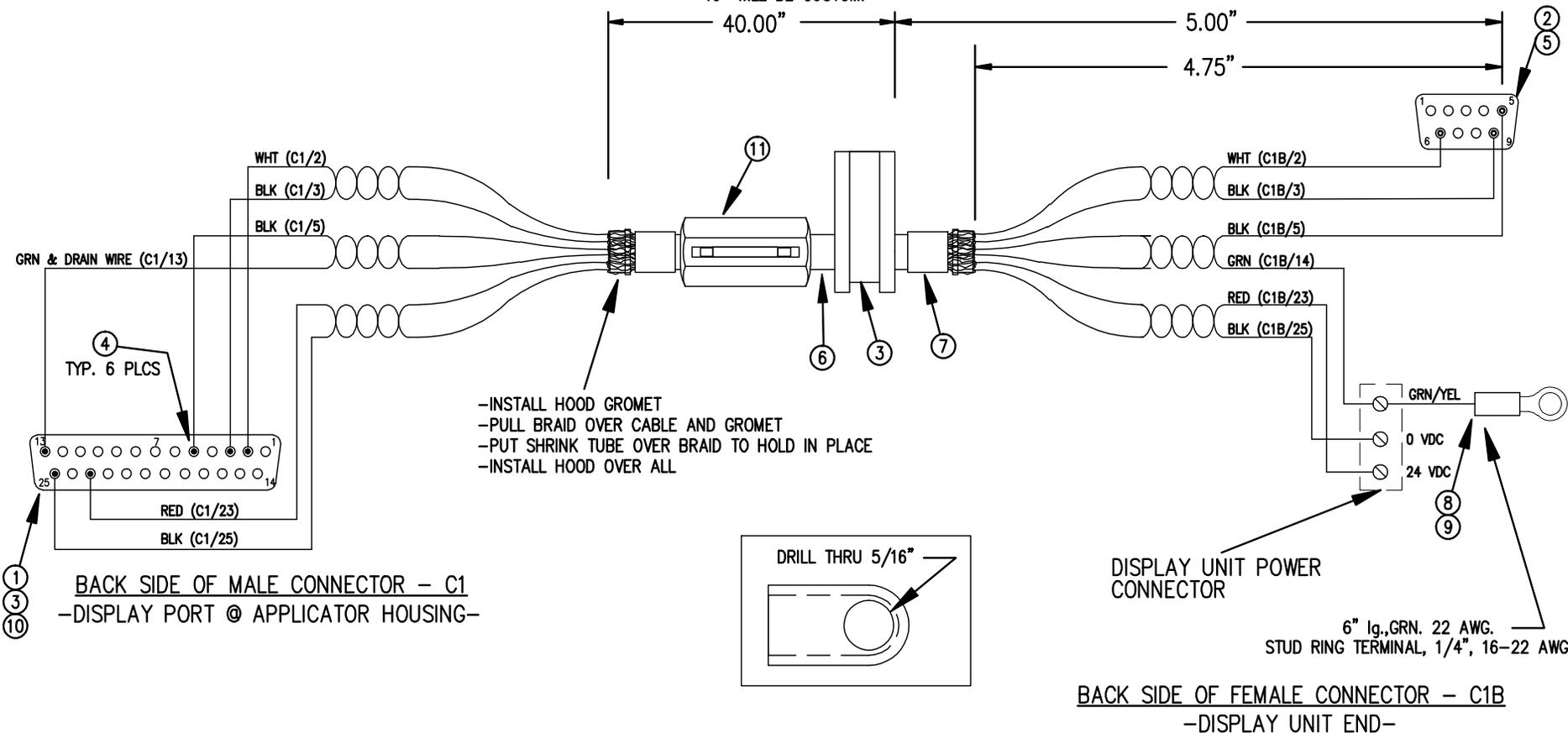
BILL OF MATERIAL

ASS-238aCE-0405

ASS-238aCE-0405

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PE-CON2058	MALE (PLUG) CONNECTOR ~ 25 PIN
②	1	PE-CON2040	FEMALE (SOCKET) CONNECTOR ~ 9 PIN
③	1	PE-C01005	GROMMET (MODIFIED)
④	6	PE-CON7055	MALE PIN (APPLICATOR END)
⑤	3	PE-CON7057	FEMALE (SOCKET) DISPLAY UNIT END
⑥	40"	PE-CA1037	4 PR/24 AWG CABLE
⑦	2	PE-ST1025	1/2" SHRINK TUBE
⑧	1	PE-WC1007	STUD RING TERMINAL
⑨	1	PE-W1050	22 AWG (GRN-YEL) X 6"
⑩	1	PE-CON3005	25-PIN HOOD HOUSING
⑪	1	PE-CA1008	FERRITE CABLE SUPPRESSOR

NOTE: ANYTHING LONGER THAN 40" WILL BE CUSTOM.



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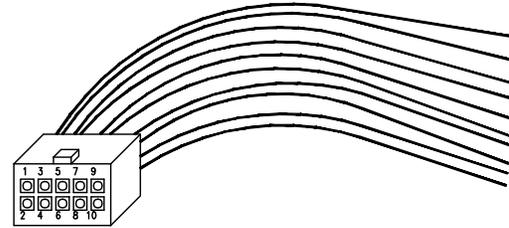
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REV. 0	REV. DESCRIPTION -	REV. DATE -	REV. BY: xxx Scale: 1=2 Date: 11/4/16	DRAWN BY: JWS F:\Engineering\Standard Parts\Appliator\3600-CE\ 3600a-CE\ASS-238CE-0405

BILL OF MATERIAL

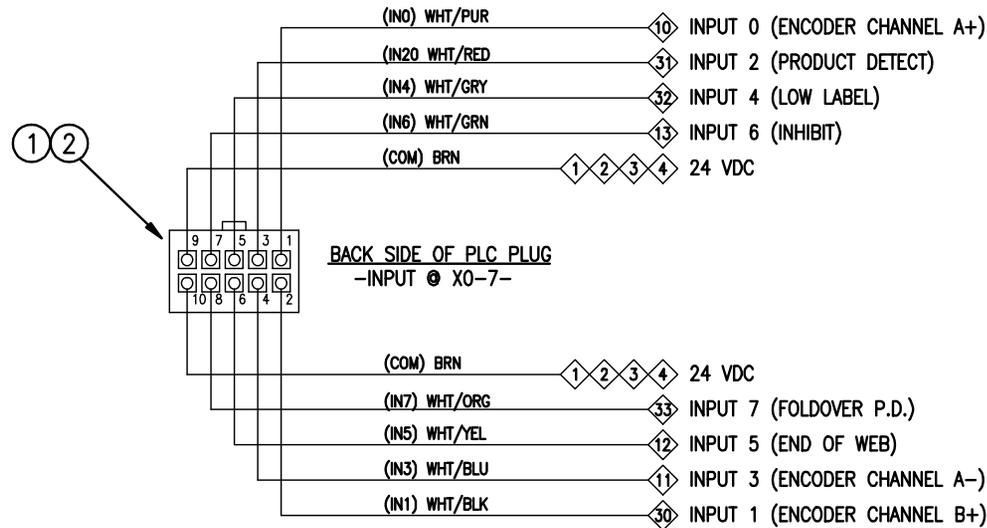
ASS-238aCE-0407

ASS-238aCE-0407

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PE-CON9053	PLUG HOUSING
②	10	PE-CON9055	FEMALE / SOCKET
	1	PE-W1049	WHT/PUR (AWG 22) WIRE x 18" LONG
	1	PE-W1042	WHT/RED (AWG 22) WIRE x 18" LONG
	1	PE-W1048020	WHT/GRY (AWG 22) WIRE x 18" LONG
	1	PE-W1043	WHT/GRN (AWG 22) WIRE x 18" LONG
	2	PE-W1037090	BRN (AWG 22) WIRE x 18" LONG
	1	PE-W1047020	WHT/ORG (AWG 22) WIRE x 18" LONG
	1	PE-W1044	WHT/YEL (AWG 22) WIRE x 18" LONG
	1	PE-W1045	WHT/BLU (AWG 22) WIRE x 18" LONG
	1	PE-W1041	WHT/BLK (AWG 22) WIRE x 18" LONG



LOOKING @ FRONT
SIDE OF CONNECTOR



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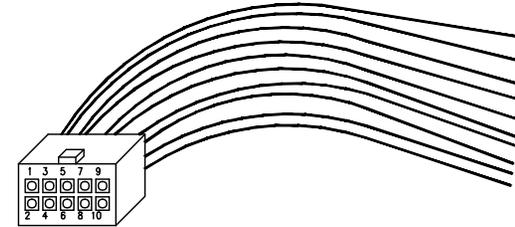
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REV. 0	REV. DESCRIPTION -	REV. DATE -	REV. BY: xxx	Scale: 1=2
			Date: 11/4/16	DRAWN BY: JWS
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BILL OF MATERIAL

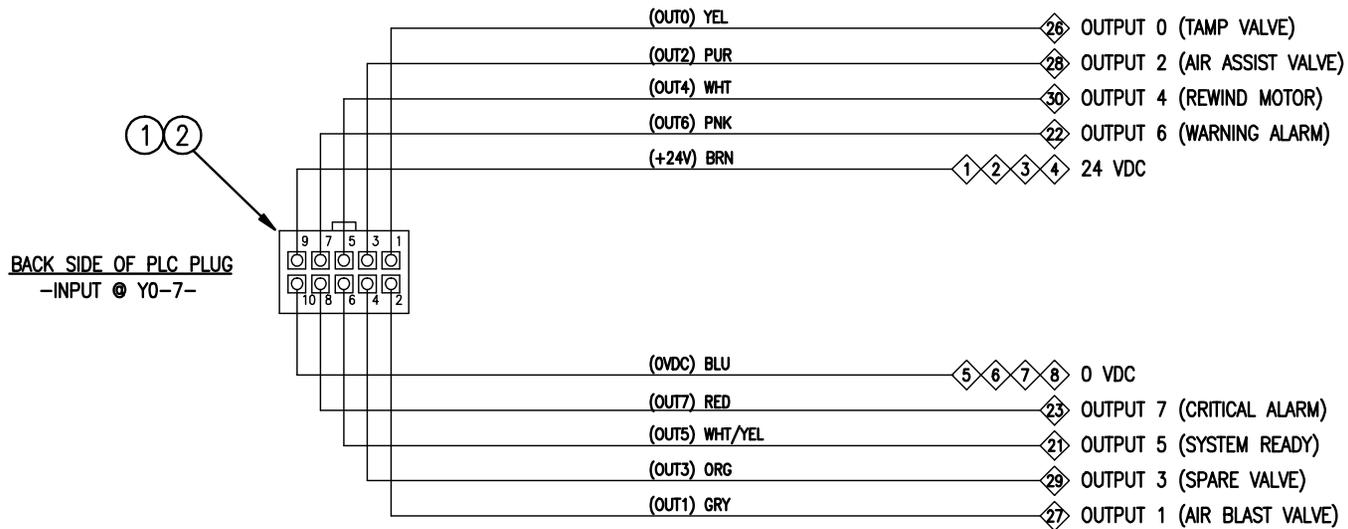
ASS-238aCE-0408

ASS-238aCE-0408

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PE-CON9053	PLUG HOUSING
②	10	PE-CON9055	FEMALE / SOCKET
	1	PE-W1035	YELLOW (AWG 22) WIRE x 15" LONG
	1	PE-W1040	PURPLE (AWG 22) WIRE x 15" LONG
	1	PE-W1031	WHITE (AWG 22) WIRE x 15" LONG
	1	PE-W1060	PINK (AWG 22) WIRE x 15" LONG
	1	PE-W1037	BROWN (AWG 22) WIRE x 15" LONG
	1	PE-W1036	BLUE (AWG 22) WIRE x 15" LONG
	1	PE-W1033	RED (AWG 22) WIRE x 15" LONG
	1	PE-W1044	WHT/YEL (AWG 22) WIRE x 15" LONG
	1	PE-W1038	ORANGE (AWG 22) WIRE x 15" LONG
	1	PE-W1039	GRAY (AWG 22) WIRE x 15" LONG



LOOKING @ FRONT
SIDE OF CONNECTOR



BACK SIDE OF PLC PLUG
-INPUT @ Y0-7-

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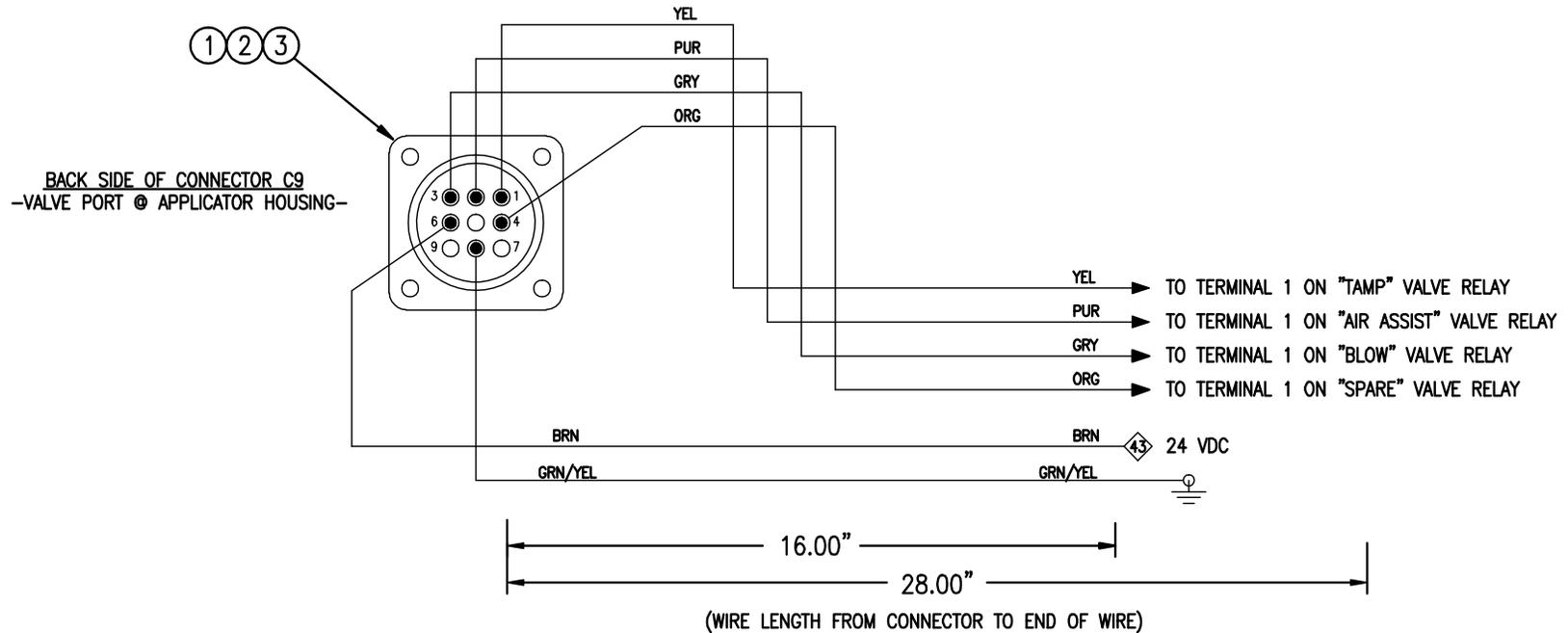
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REV. 0	REV. DESCRIPTION -	REV. DATE -	REV. BY: XXX Scale: 1=2 Date: 11/4/16	DRAWN BY: JWS F:\Engineering\Standard Parts\Appliator\3600CE 3600a-CE\ASS-238aCE-0408

BILL OF MATERIAL

ASS-238aCE-0409

ASS-238aCE-0409

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PE-CON2015	VALVE CONNECTOR
②	6	PE-CON7050	MALE PIN
③	1	PE-CON7000	CONNECTOR CAP
	1	PE-W1035050	YELLOW (AWG 22) WIRE x 28" LONG
	1	PE-W1040040	PURPLE (AWG 22) WIRE x 28" LONG
	1	PE-W1039030	GRAY (AWG 22) WIRE x 28" LONG
	1	PE-W1038040	ORANGE (AWG 22) WIRE x 28" LONG
	1	PE-W1037	BROWN (AWG 22) WIRE x 16" LONG
	1	PE-W1050	GRN/YEL (AWG 22) WIRE x 16" LONG



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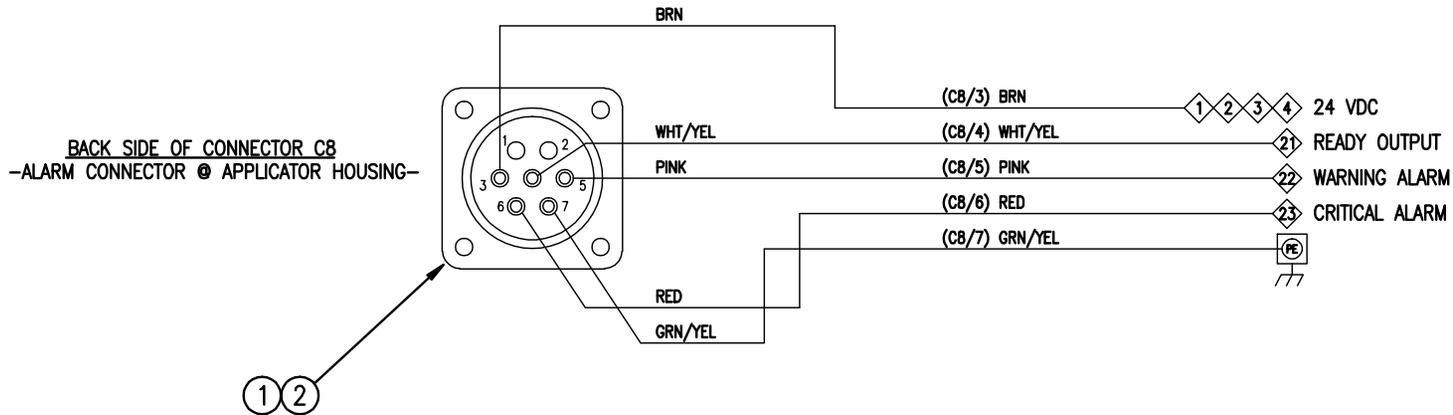
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			Date: 11/4/16	DRAWN BY: JWS
				F:\Engineering\Standard Parts\Appliator\3600CE 3600a-CE\ASS-238aCE-0409

BILL OF MATERIAL

ASS-238aCE-0410

ASS-238aCE-0410

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PE-CON2021	ALARM CONNECTOR
②	7	PE-CON7048	FEMALE PIN
	1	PE-W1037	BROWN (AWG 22) WIRE x 22" LONG
	1	PE-W1044	WHT/YEL (AWG 22) WIRE x 22" LONG
	1	PE-W1060	PINK (AWG 22) WIRE x 22" LONG
	1	PE-W1033	RED (AWG 22) WIRE x 22" LONG
	1	PE-W1050	YEL/GREEN (AWG 22) WIRE x 22" LONG



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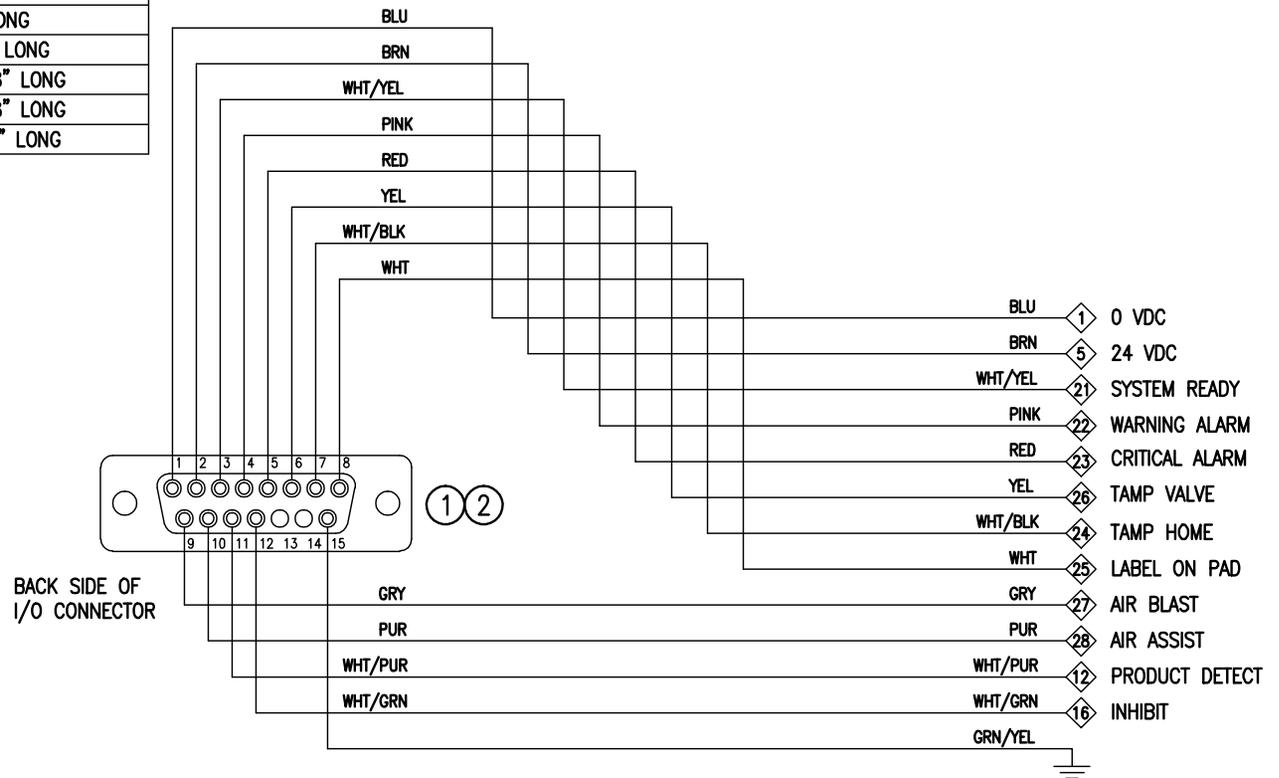
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REV. 0	REV. DESCRIPTION -	REV. DATE -	REV. BY: XXX	Scale: 1=2	Date: 11/4/16	DRAWN BY: JWS	F:\Engineering\Standard Parts\Applicator\3600CE 3600a-CE\ASS-238aCE-0410

BILL OF MATERIAL

ASS-238aCE-0411

ASS-238aCE-0411

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PE-CON2050	I/O SOCKET (HOUSING)
②	12	PE-CON7057	FEMALE / SOCKET
	1	PE-W1036090	BLUE (AWG 22) WIRE x 18" LONG
	1	PE-W1037090	BROWN (AWG 22) WIRE x 18" LONG
	1	PE-W1044	WHT/YEL (AWG 22) WIRE x 18" LONG
	1	PE-W1060	PINK (AWG 22) WIRE x 18" LONG
	1	PE-W1033	RED (AWG 22) WIRE x 18" LONG
	1	PE-W1041	WHT/BLK (AWG 22) WIRE x 18" LONG
	1	PE-W1031	WHITE (AWG 22) WIRE x 18" LONG
	1	PE-W1039	GRAY (AWG 22) WIRE x 18" LONG
	1	PE-W1040	PURPLE (AWG 22) WIRE x 18" LONG
	1	PE-W1049	WHT/PUR (AWG 22) WIRE x 18" LONG
	1	PE-W1043	WHT/GRN (AWG 22) WIRE x 18" LONG
	1	PE-W1050	GRN/YEL (AWG 22) WIRE x 18" LONG



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APPLICATOR SERIES: 3600a-CE	APPLICATOR WIDTH(S): 7.5"	GROUP: HOUSING: ELECTRICAL	TITLE: 3600a CE I/O HARNESS	Dept. Code 70			
REV. 1	REV. DESCRIPTION Added ground wire	REV. DATE 01-30-17	REV. BY: dkm	Scale: 1=2	Date: 11/4/16	DRAWN BY: JWS	F:\Engineering\Standard Parts\Appliator\3600CE 3600a-CE\ASS-238aCE-0411

BILL OF MATERIAL

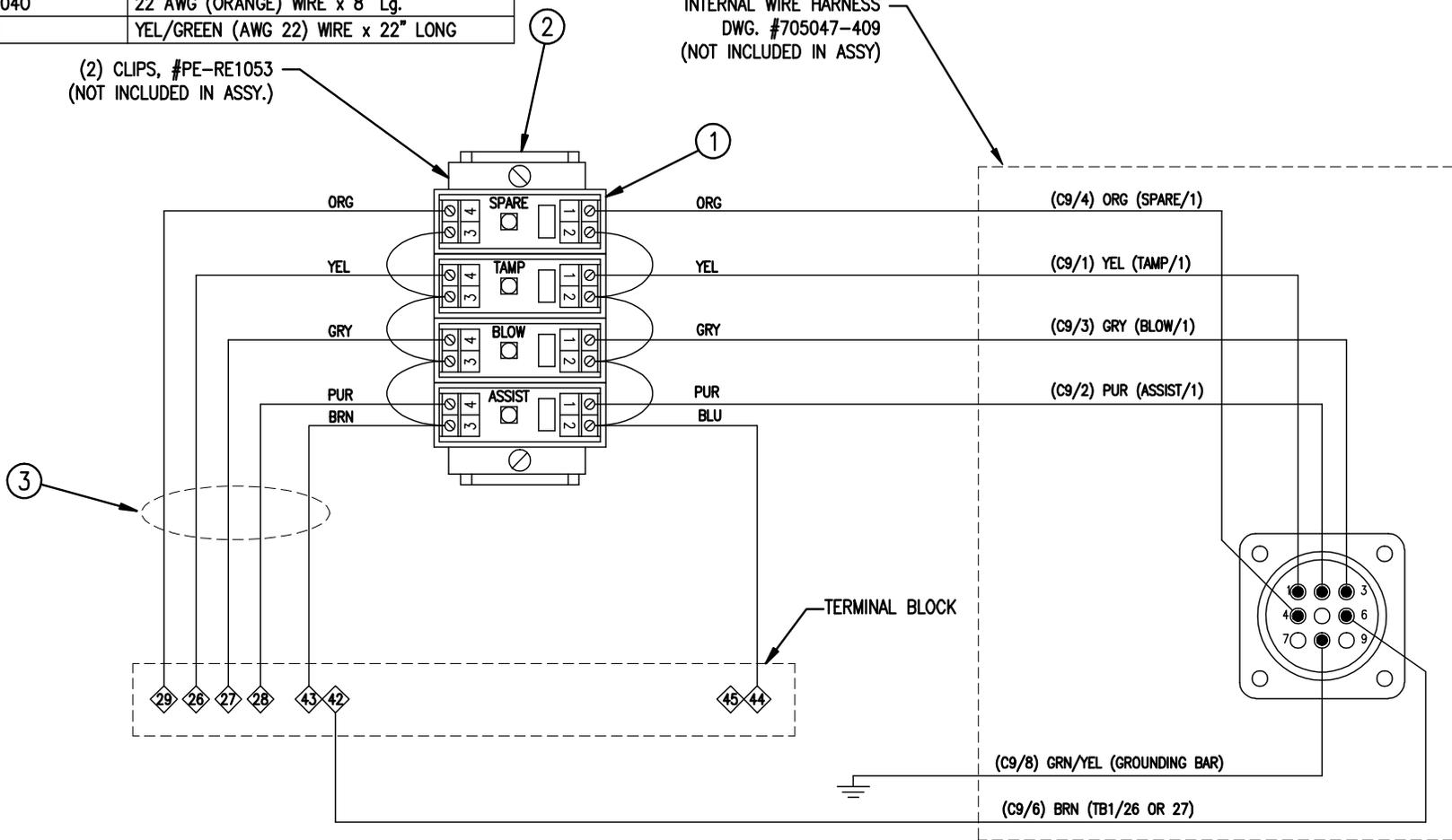
ASS-238aCE-0419L

ASS-238aCE-0419L

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	4	PE-RE1012	SOLID STATE RELAY
②	1	CP-200-0283	DIN MOUNTING RAIL (3.875" Lg.)
③	1	PE-PA1060	4" CLEAR WIRE TIE
	3	PE-W103602B	22 AWG (BLUE) JUMPER x 2-1/4" Lg.
	3	PE-W103701B	22 AWG (BROWN) JUMPER x 2-1/4" Lg.
	1	PE-W1036110	22 AWG (BLUE) WIRE x 8" Lg.
	1	PE-W1037100	22 AWG (BROWN) WIRE x 8" Lg.
	1	PE-W1040040	22 AWG (PURPLE) WIRE x 8" Lg.
	1	PE-W1039030	22 AWG (GRAY) WIRE x 8" Lg.
	1	PE-W1035050	22 AWG (YELLOW) WIRE x 8" Lg.
	1	PE-W1038040	22 AWG (ORANGE) WIRE x 8" Lg.
	1	PE-W1050	YEL/GREEN (AWG 22) WIRE x 22" LONG

(2) CLIPS, #PE-RE1053
(NOT INCLUDED IN ASSY.)

INTERNAL WIRE HARNESS
DWG. #705047-409
(NOT INCLUDED IN ASSY.)



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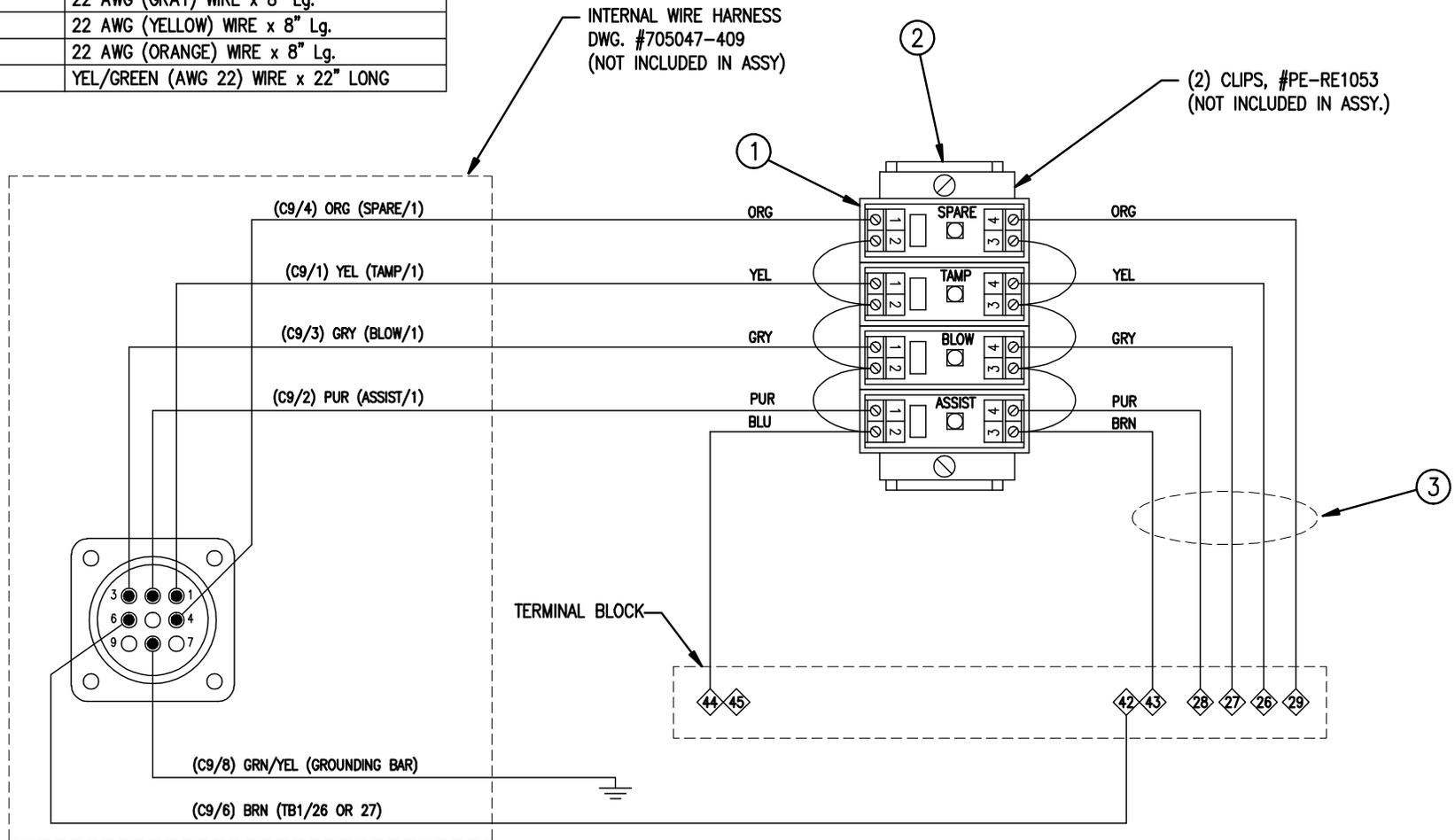
APPLICATOR SERIES: 3600a-CE	APPLICATOR WIDTH(S): 7.5"	GROUP: HOUSING: ELECTRICAL	TITLE: LH VALVE RELAYS w/ WIRING HARNESS	Dept. Code 70
REV. 1	REV. DESCRIPTION Change ground wire color	REV. DATE 01-30-17	REV. BY: dkm	Scale: 1=2
			Date: 11/4/16	DRAWN BY: JWS
				F:\Engineering\Standard Parts\Appliator\3600CE 3600a-CE\ASS-238aCE-0419L

BILL OF MATERIAL

ASS-238aCE-0419R

ASS-238aCE-0419R

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	4	PE-RE1012	SOLID STATE RELAY
②	1	CP-200-0283	DIN MOUNTING RAIL (3.875" Lg.)
③	1	PE-PA1060	4" CLEAR WIRE TIE
	3	PE-W103602B	22 AWG (BLUE) JUMPER x 2-1/4" Lg.
	3	PE-W103701B	22 AWG (BROWN) JUMPER x 2-1/4" Lg.
	1	PE-W1036110	22 AWG (BLUE) WIRE x 8" Lg.
	1	PE-W1037100	22 AWG (BROWN) WIRE x 8" Lg.
	1	PE-W1040040	22 AWG (PURPLE) WIRE x 8" Lg.
	1	PE-W1039030	22 AWG (GRAY) WIRE x 8" Lg.
	1	PE-W1035050	22 AWG (YELLOW) WIRE x 8" Lg.
	1	PE-W1038040	22 AWG (ORANGE) WIRE x 8" Lg.
	1	PE-W1050	YEL/GREEN (AWG 22) WIRE x 22" LONG



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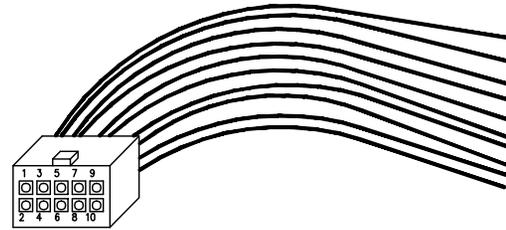
APPLICATOR SERIES: 3600a-CE	APPLICATOR WIDTH(S): 7.5"	GROUP: HOUSING: ELECTRICAL	TITLE: RH VALVE RELAYS w/ WIRING HARNESS	Dept. Code 70
REV. 1	REV. DESCRIPTION Changed ground wire color	REV. DATE 01-30-17	REV. BY: dkm	Scale: 1=2
			Date: 11/4/16	DRAWN BY: JWS
				F:\Engineering\Standard Parts\Appliator\3600CE 3600a-CE\ASS-238aCE-0419R

BILL OF MATERIAL

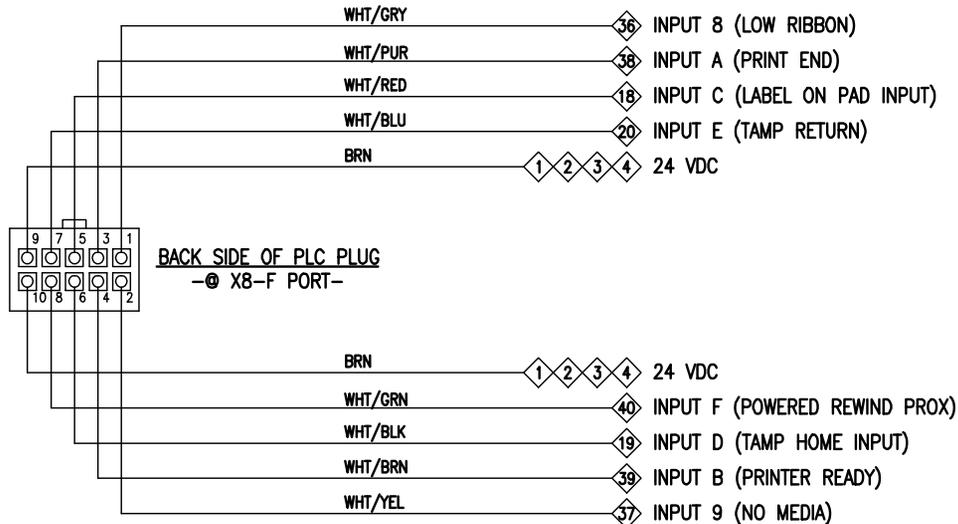
ASS-238aCE-0421

ASS-238aCE-0421

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PE-CON9053	CONNECTOR HOUSING
②	10	PE-CON9055	FEMALE/SOCKET
	1	PE-W1048	WHT/GRY (22 AWG) WIRE x 16" Lg.
	1	PE-W1049	WHT/PUR (22 AWG) WIRE x 16" Lg.
	1	PE-W1042	WHT/RED (AWG 22) WIRE x 16" Lg.
	1	PE-W1045	WHT/BLU (AWG 22) WIRE x 16" Lg.
	2	PE-W1037	BROWN (AWG 22) WIRE x 16" LONG
	1	PE-W1043	WHT/GRN (AWG 22) WIRE x 16" LONG
	1	PE-W1041	WHT/BLK (AWG 22) WIRE x 16" LONG
	1	PE-W1046	WHT/BRN (AWG 22) WIRE x 16" LONG
	1	PE-W1044	WHT/YEL (AWG 22) WIRE x 16" LONG



LOOKING @ FRONT
SIDE OF CONNECTOR



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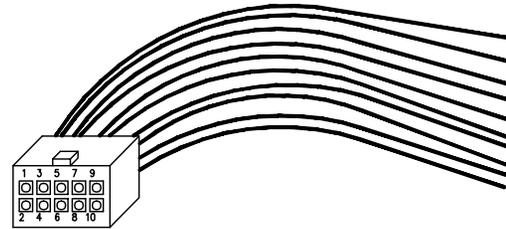
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REV. 0	REV. DESCRIPTION -	REV. DATE -	REV. BY: XXX	Scale: 1=2	Date: 11/4/16	DRAWN BY: JWS	F:\Engineering\Standard Parts\Appliator\3600CE 3600a-CE\ASS-238aCE-0421

BILL OF MATERIAL

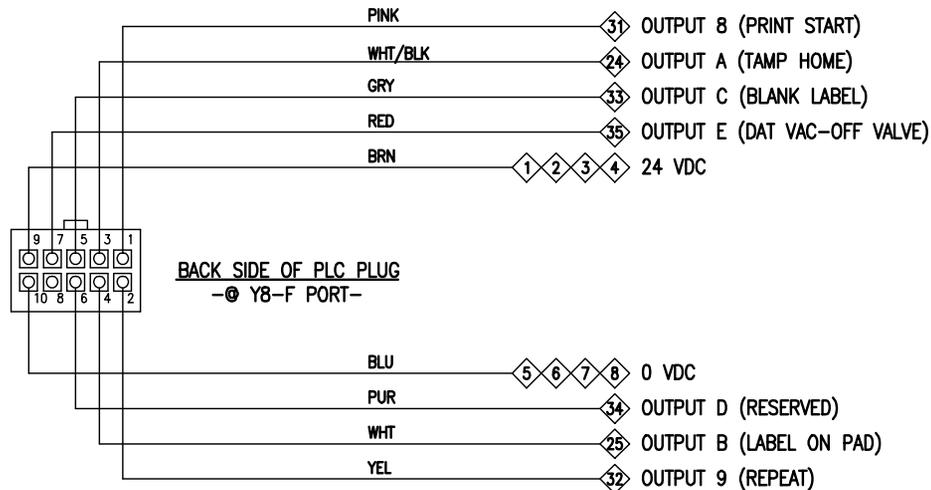
ASS-238aCE-0422

ASS-238aCE-0422

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PE-CON9053	PLUG HOUSING
②	9	PE-CON9055	FEMALE / SOCKET
	1	PE-W1060	PINK (AWG 22) WIRE x 15" Lg.
	1	PE-W1041	WHT/BLK (AWG 22) WIRE x 15" Lg.
	1	PE-W1039	GRAY (AWG 22) WIRE x 15" LONG
	1	PE-W1033	RED (AWG 22) WIRE x 15" LONG
	1	PE-W1037	BROWN (AWG 22) WIRE x 15" Lg.
	1	PE-W1036	BLUE (AWG 22) WIRE x 15" LONG
	1	PE-W1040	PURPLE (AWG 22) WIRE x 15" LONG
	1	PE-W1031	WHITE (AWG 22) WIRE x 15" LONG
	1	PE-W1035	YELLOW (AWG 22) WIRE x 15" LONG



LOOKING @ FRONT
SIDE OF CONNECTOR



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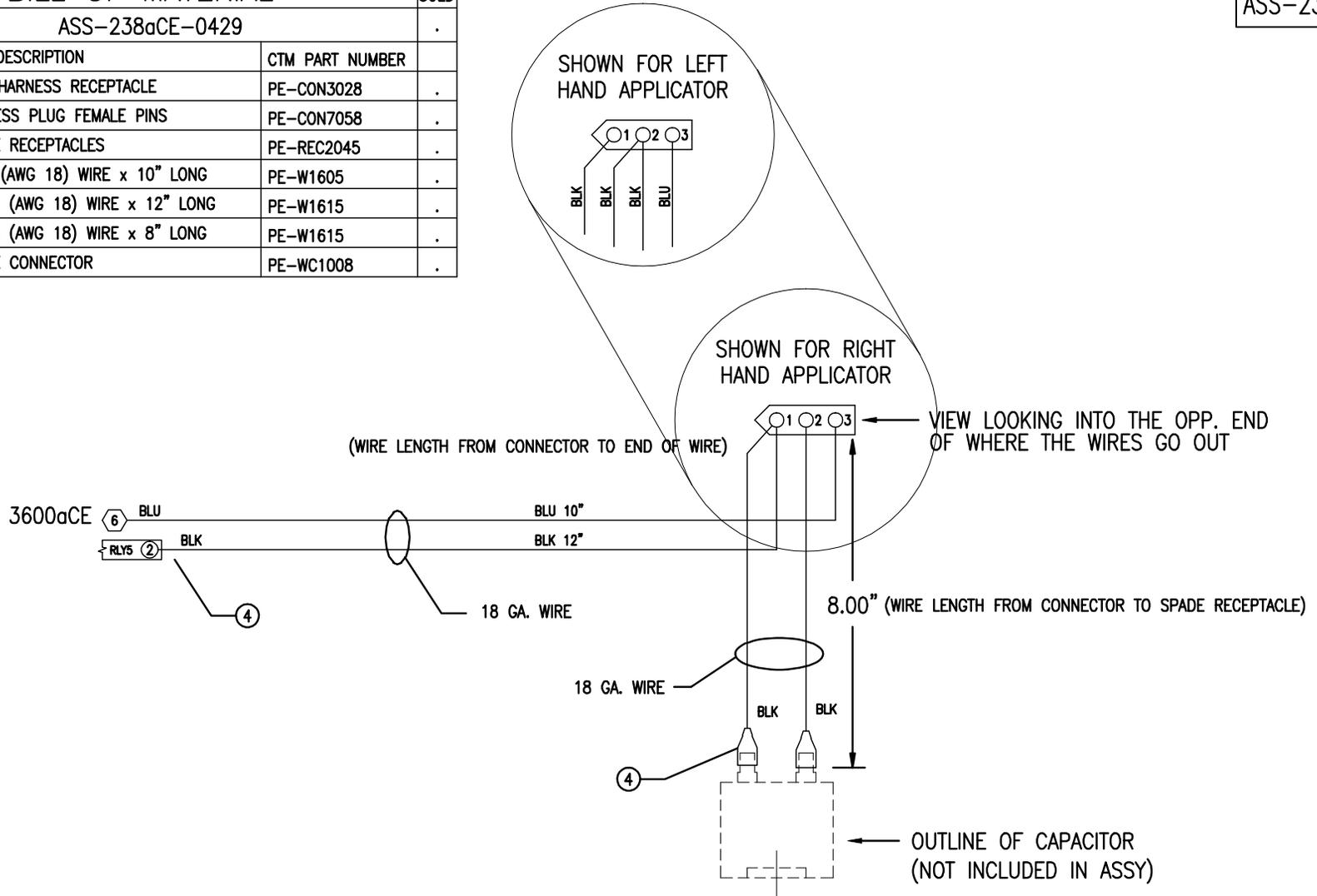
APPLICATOR SERIES: 3600a-CE	APPLICATOR WIDTH(S): 7.5"	GROUP: HOUSING: ELECTRICAL	TITLE: PLC OUTPUT (Y8-F) WIRING HARNESS	Dept. Code 70
REV. 0	REV. DESCRIPTION -	REV. DATE -	REV. BY: XXX	Scale: 1=2
			Date: 11/4/16	DRAWN BY: JWS
				F:\Engineering\Standard Parts\Appliator\3600CE 3600a-CE\ASS-238aCE-0422

BILL OF MATERIAL

SOLD

ASS-238aCE-0429

ASSEMBLY	ASS-238aCE-0429			SOLD
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER	
①	1	WIRE HARNESS RECEPTACLE	PE-CON3028	.
②	3	HARNESS PLUG FEMALE PINS	PE-CON7058	.
③	2	SPADE RECEPTACLES	PE-REC2045	.
	1	BLUE (AWG 18) WIRE x 10" LONG	PE-W1605	.
	1	BLACK (AWG 18) WIRE x 12" LONG	PE-W1615	.
	2	BLACK (AWG 18) WIRE x 8" LONG	PE-W1615	.
④	1	SPADE CONNECTOR	PE-WC1008	.



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TITLE: 3600aCE-PA SERIES APPLICATOR: ELECTRICAL

PART: REWIND MOTOR WIRING HARNESS

Dept. Code 70

REV. 0 REV. DESCRIPTION -

REV. DATE -

REV. BY: XXX

Scale: 1=2

Date: 10/27/17

DRAWN BY: JWS

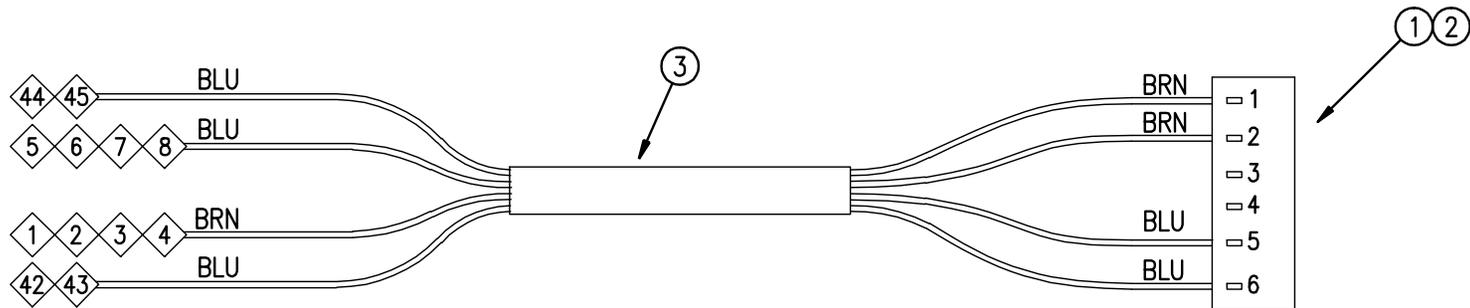
F:\Engineering\Standard Parts\Appliator\3600 238aCE\ASS-238aCE-0429

BILL OF MATERIAL

ASS-238aCE-0430

ASS-238aCE-0430

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PE-CON7064	CONNECTOR HOUSING
②	4	PE-CON7066	FEMALE / SOCKET
③	6	PE-ST1010	3/16"Ø SHRINK TUBE x 6" Lg.
	2	PE-W1036	22 AWG (BLUE) WIRE x 25" LONG
	2	PE-W1037	22 AWG (BROWN) WIRE x 25" LONG



FOR ASSEMBLY DWG. REFER TO:
ASS-238CE-0126

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APPLICATOR SERIES: 3600a-CE		APPLICATOR WIDTH(S): 7.5"	GROUP: HOUSING: ELECTRICAL	TITLE: INTERNAL WIRE HARNESS: DC SUPPLY			Dept. Code: 70
REV. 0	REV. DESCRIPTION: -	REV. DATE: -	REV. BY: xxx	Scale: 1=2	Date: 11/4/16	DRAWN BY: JWS	F:\Engineering\Standard Parts\Applicator\3600CE 3600a-CE\ASS-238aCE-0430

BILL OF MATERIAL

ASS-238aCE-0462

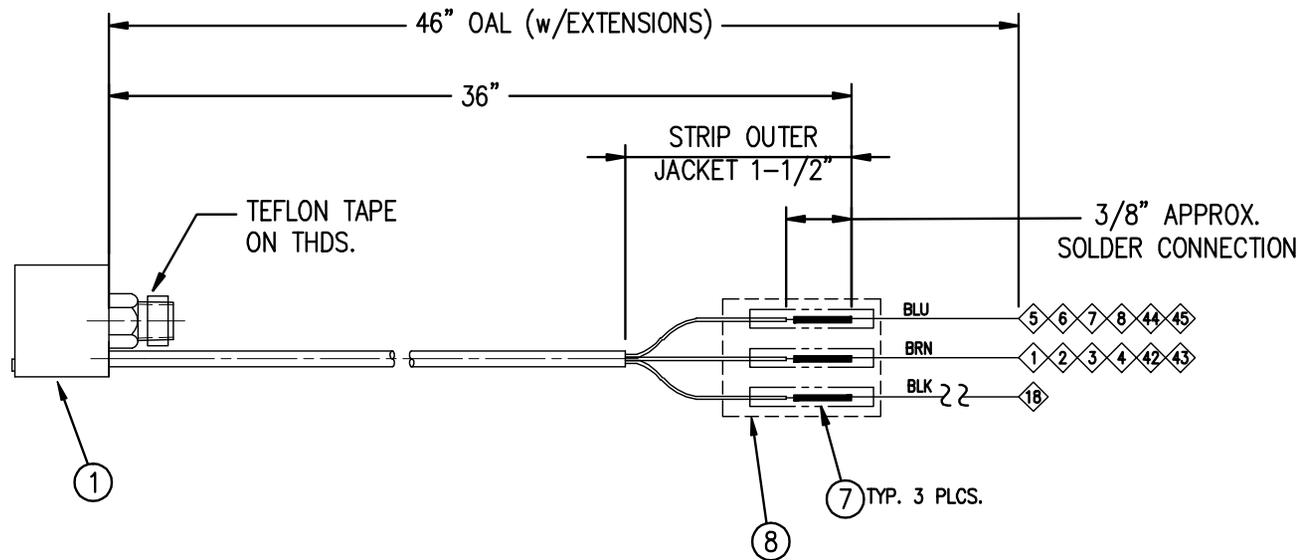
ASS-238aCE-0462

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PE-SW1074	VACUUM SWITCH
②	1	PM-PF1180	1/8 NPT 90° STREET ELBOW
③	1	PM-PF1095	1/4" NPT to 1/8" NPT FEMALE COUPLING
④	1	PM-PF1202	1/4" NPT MALE to (2) 1/4" NPT FEMALE TEE
⑤	1	PM-PF1020	3/8" TUBE to 1/4 NPT MALE CONNECTOR
⑥	1	PM-PF1141	1/4" NPT PIPE NIPPLE x 3-1/2" LG.
⑦	3	PE-ST1000	3/32" Ø SHRINK TUBE x 3/4" Lg.
⑧	1	PE-ST1010	3/16" Ø SHRINK TUBE x 1" Lg.
9	1	PE-W1036	22 AWG (BLUE) WIRE x 10" LONG
10	1	PE-W1037	22 AWG (BROWN) WIRE x 10" LONG
11	1	PE-W1032	22 AWG (BLACK) WIRE x 10" LONG

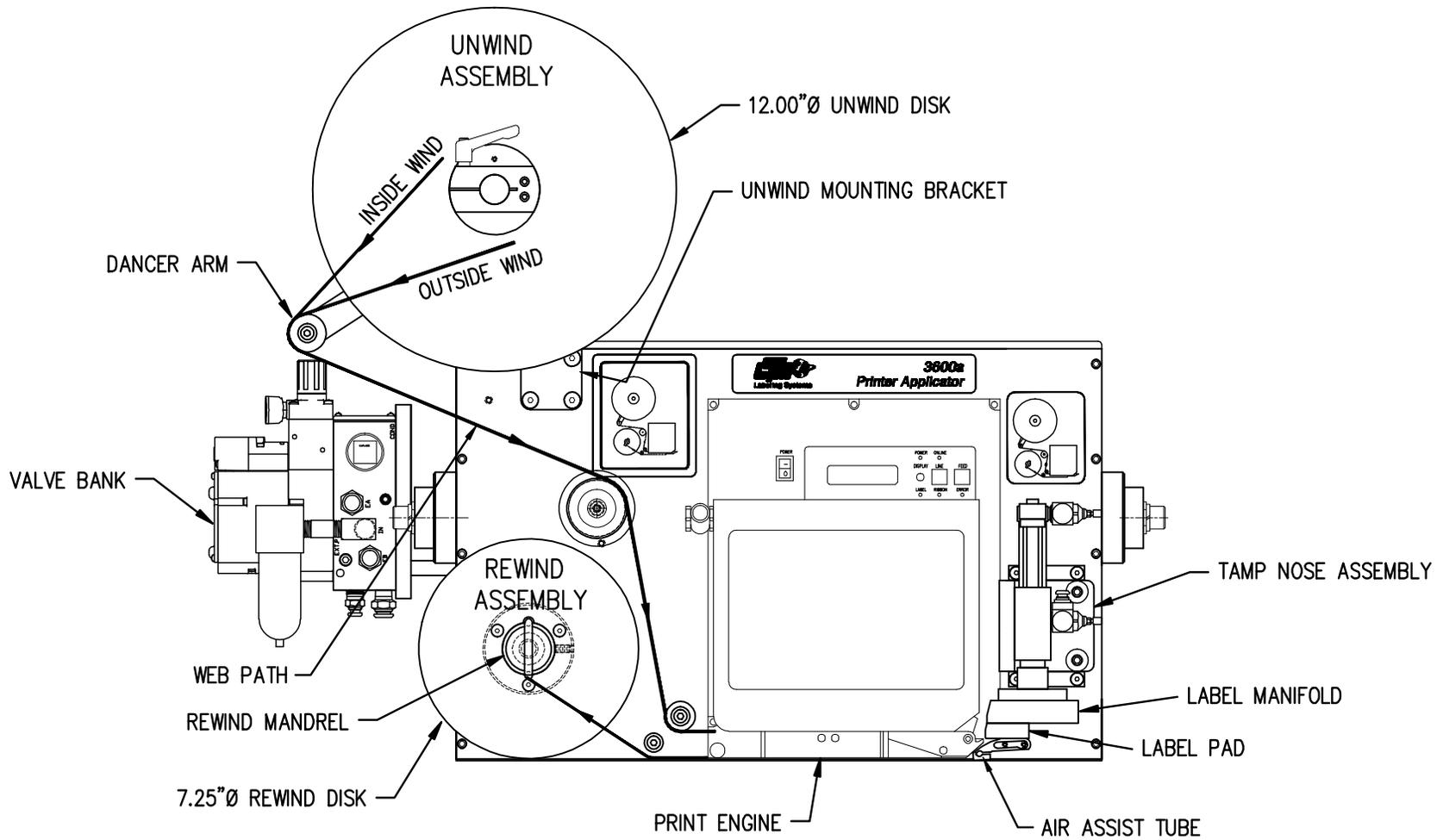
NOTE: THIS SWITCH HAS THE FOLLOWING USES:
 FOR 3600CE: 1) LABEL REPRINT 2) LABEL ON PAD

ASSEMBLY NOTES:
 1) STRIP CABLE OUTER JACKET BACK 1-1/2" TO EXPOSE THREE WIRES.
 2) STRIP EACH OF THE THREE WIRES BACK 3/8".
 3) SOLDER WIRE EXTENSIONS TO THE CABLE WIRES; MATCHING WIRE EXTENSION COLOR WITH SAME COLOR CABLE WIRE.
 4) APPLY ONE PIECE OF 3/32"Ø x 3/4" LONG SHRINK TUBE OVER TOP OF EACH OF THE SOLDERED CONNECTIONS AS SHOWN.
 5) APPLY ONE PIECE OF 3/16"Ø x 1" LONG SHRINK TUBE OVER ALL THREE WIRES COVERING SHRINK TUBE APPLIED IN STEP 4.

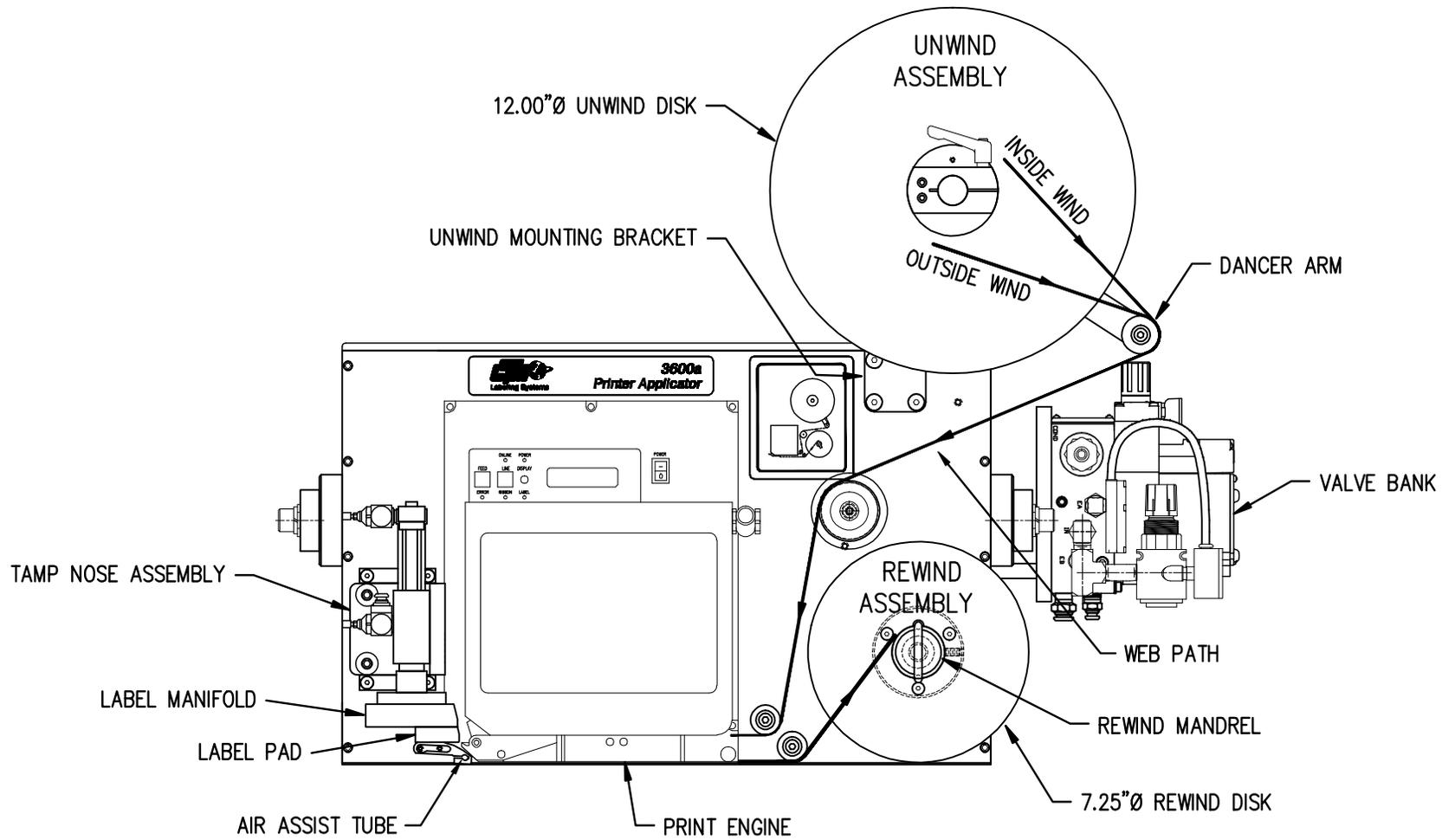
SEE ASS-238CE-0462 (Sheet 2)
 FOR ADDITIONAL PIPING REQUIRED



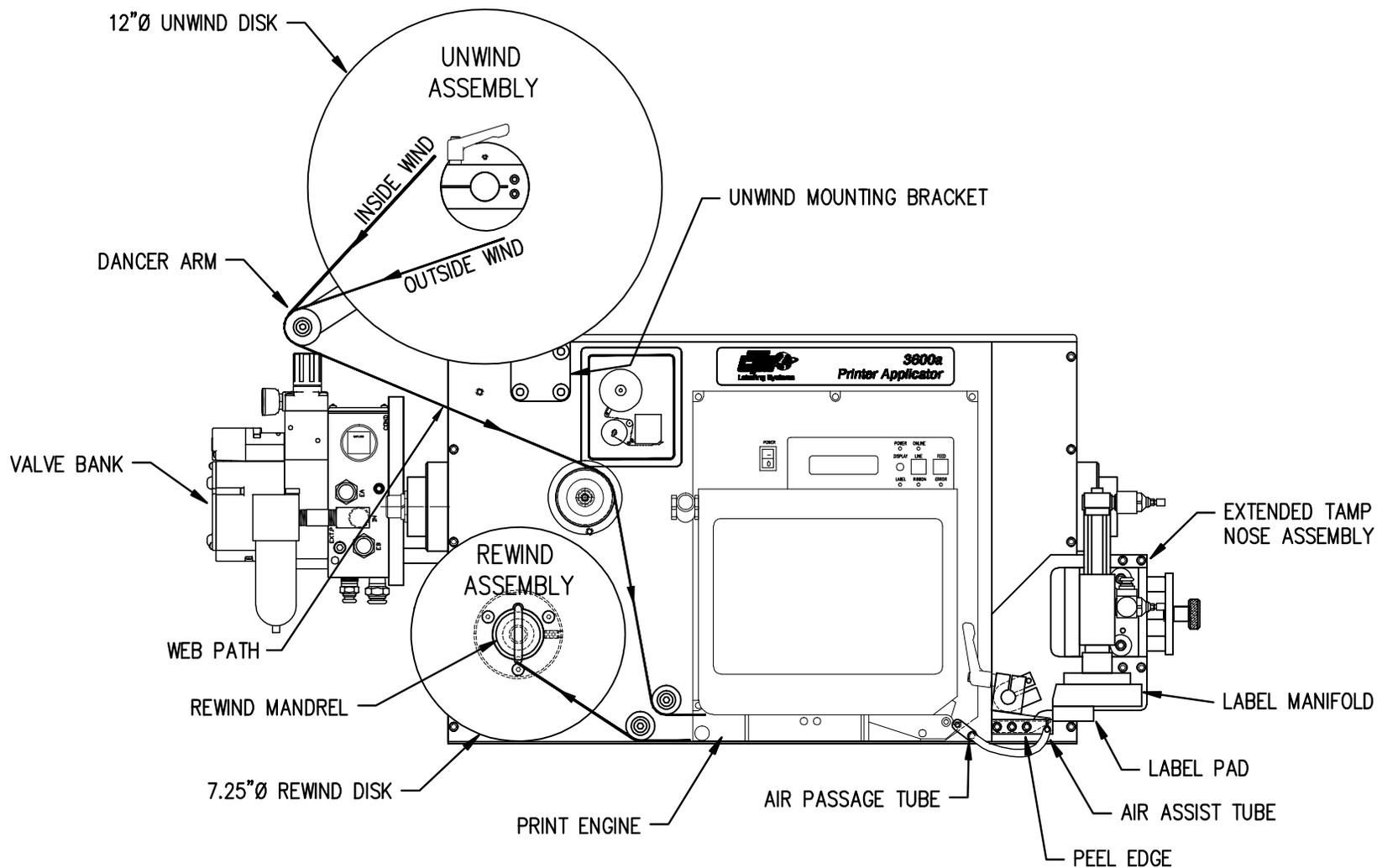
WEB PATH DIAGRAM
3600a-PA SERIES R.H. STANDARD TAMP APPLICATOR
WITH 12" UNWIND



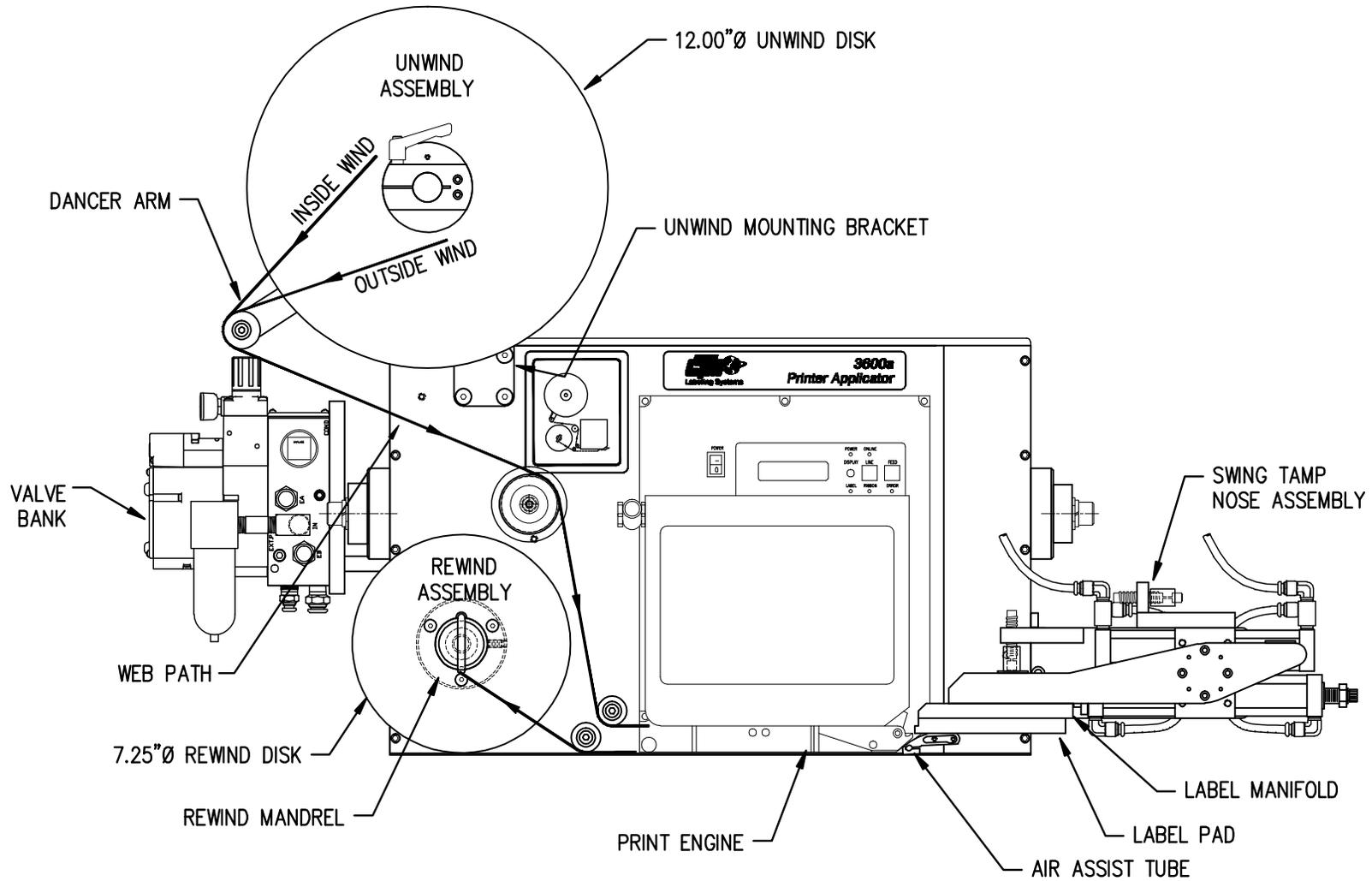
WEB PATH DIAGRAM
3600a-PA SERIES L.H. STANDARD TAMP APPLICATOR
WITH 12" UNWIND



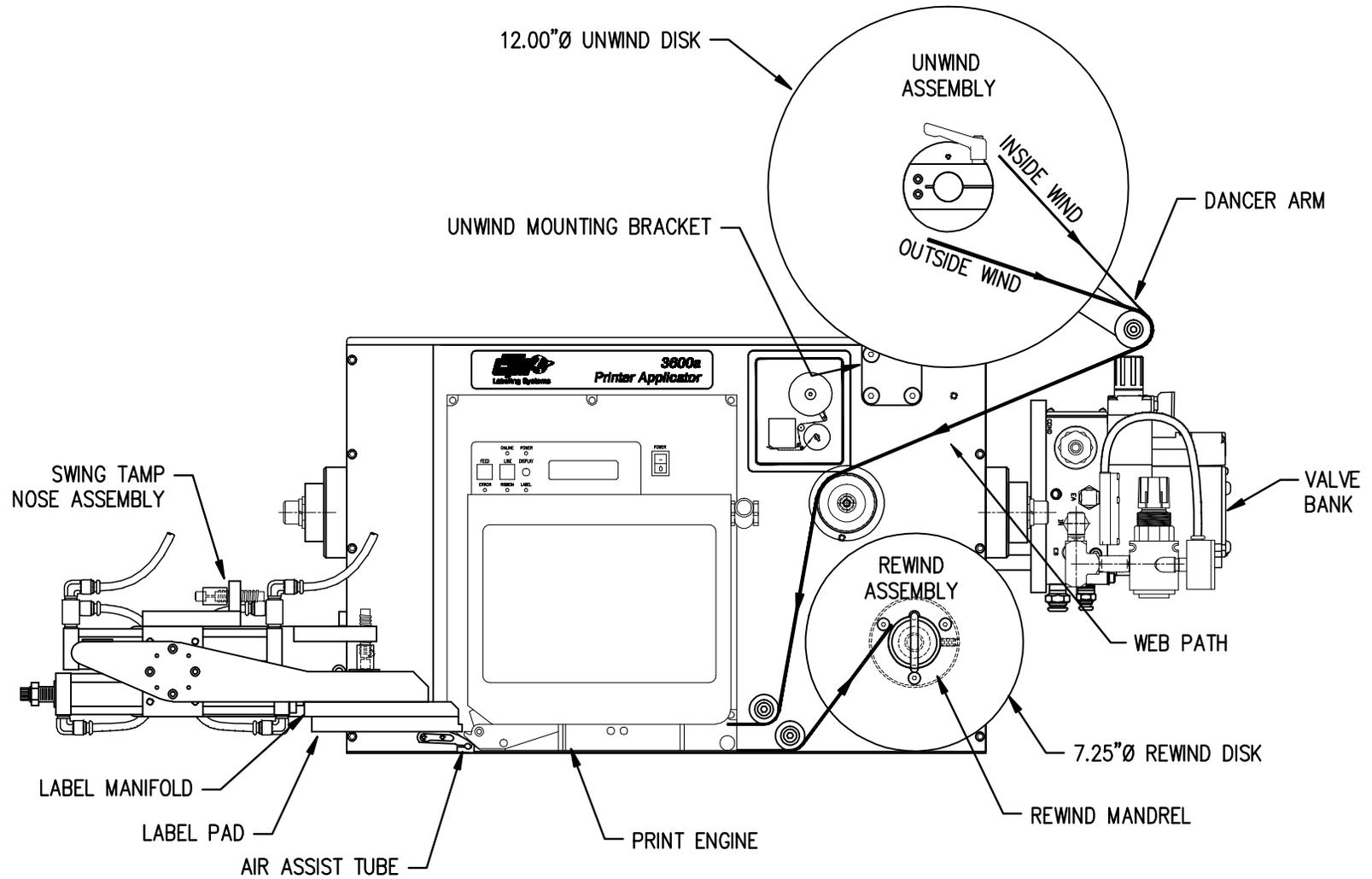
WEB PATH DIAGRAM
3600a-PA SERIES R.H. EXTENDED TAMP APPLICATOR
WITH 12" UNWIND



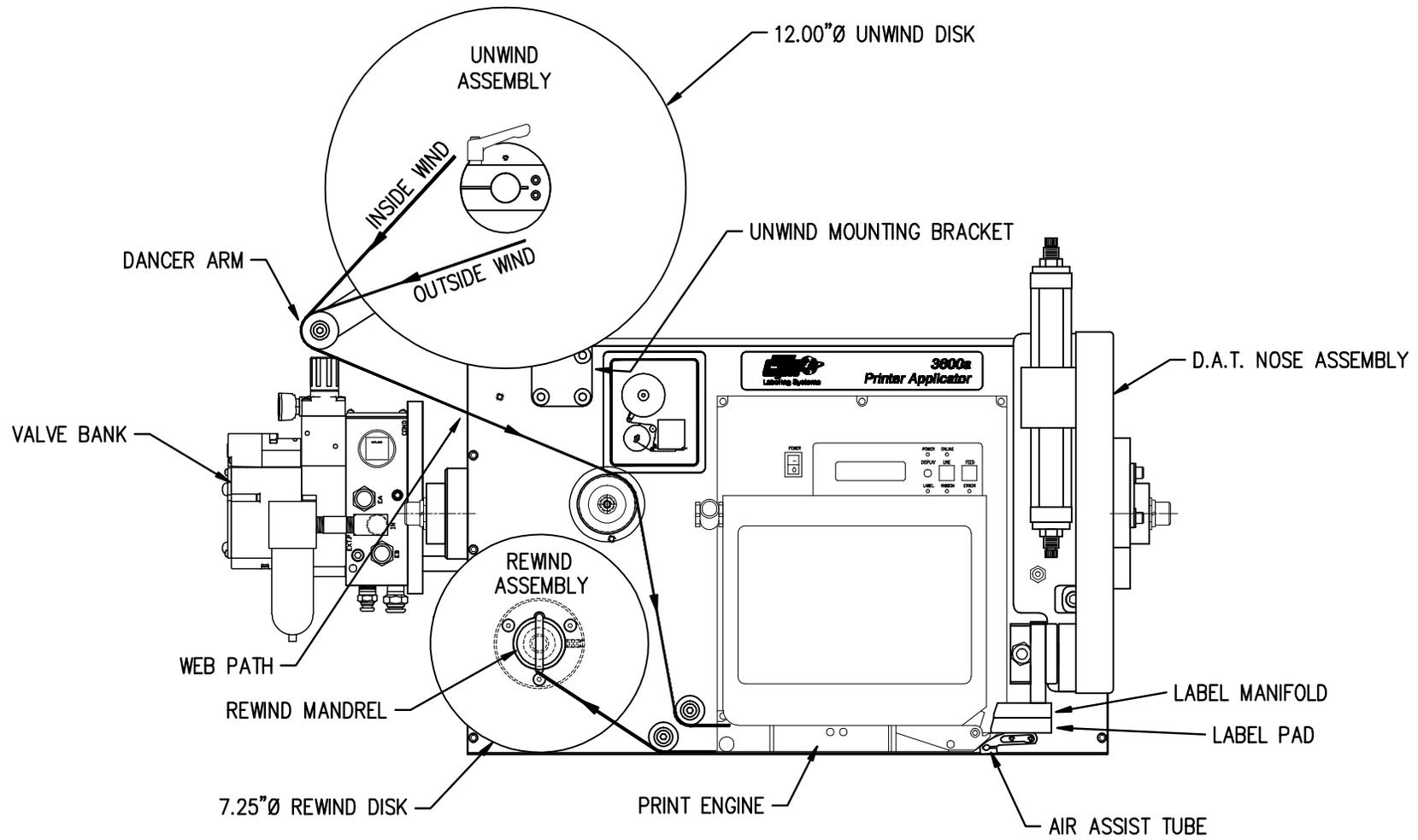
WEB PATH DIAGRAM
3600a-PA SERIES R.H. SWING TAMP APPLICATOR
WITH 12" UNWIND



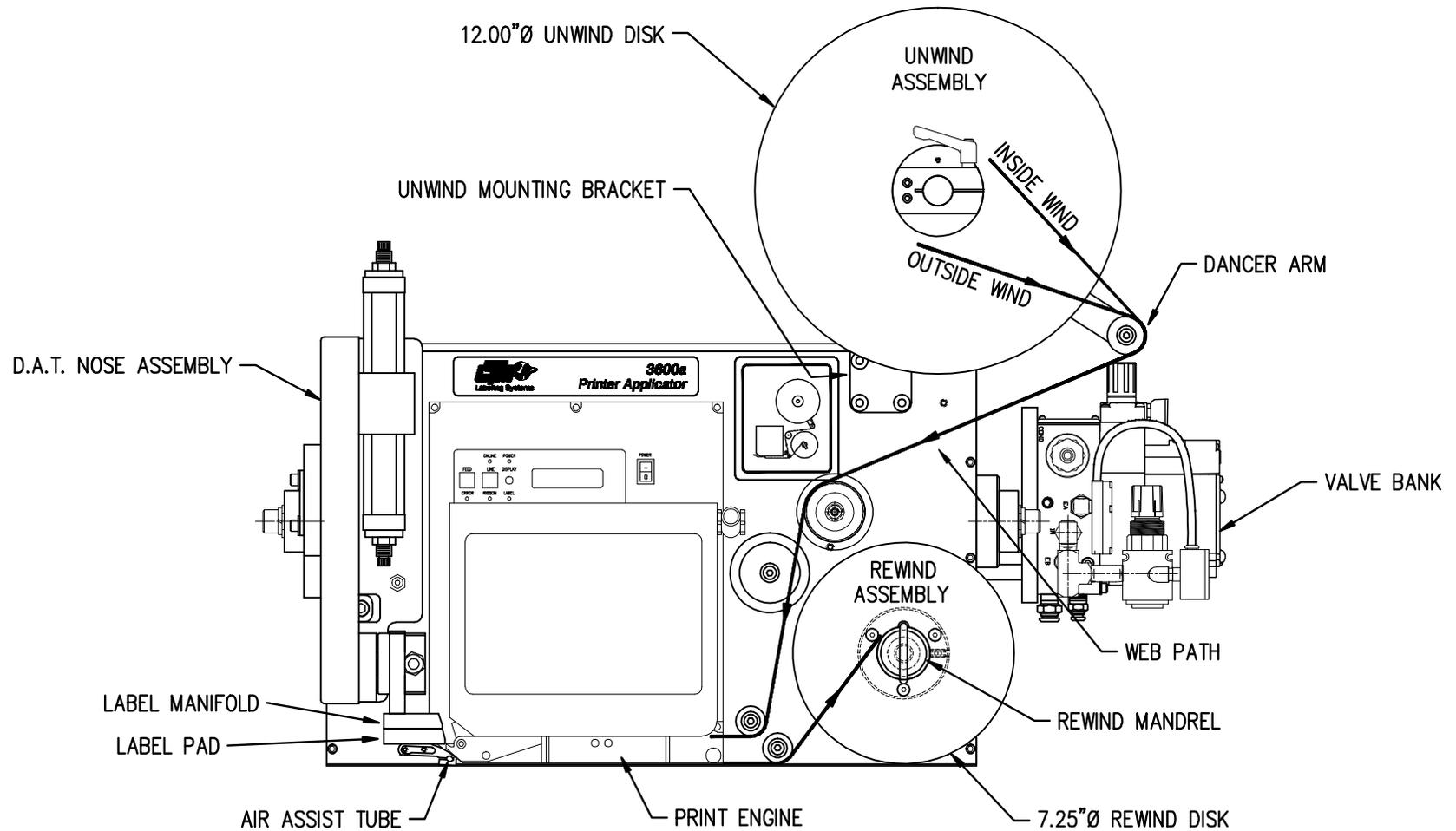
WEB PATH DIAGRAM
3600a-PA SERIES L.H. SWING TAMP APPLICATOR
WITH 12" UNWIND



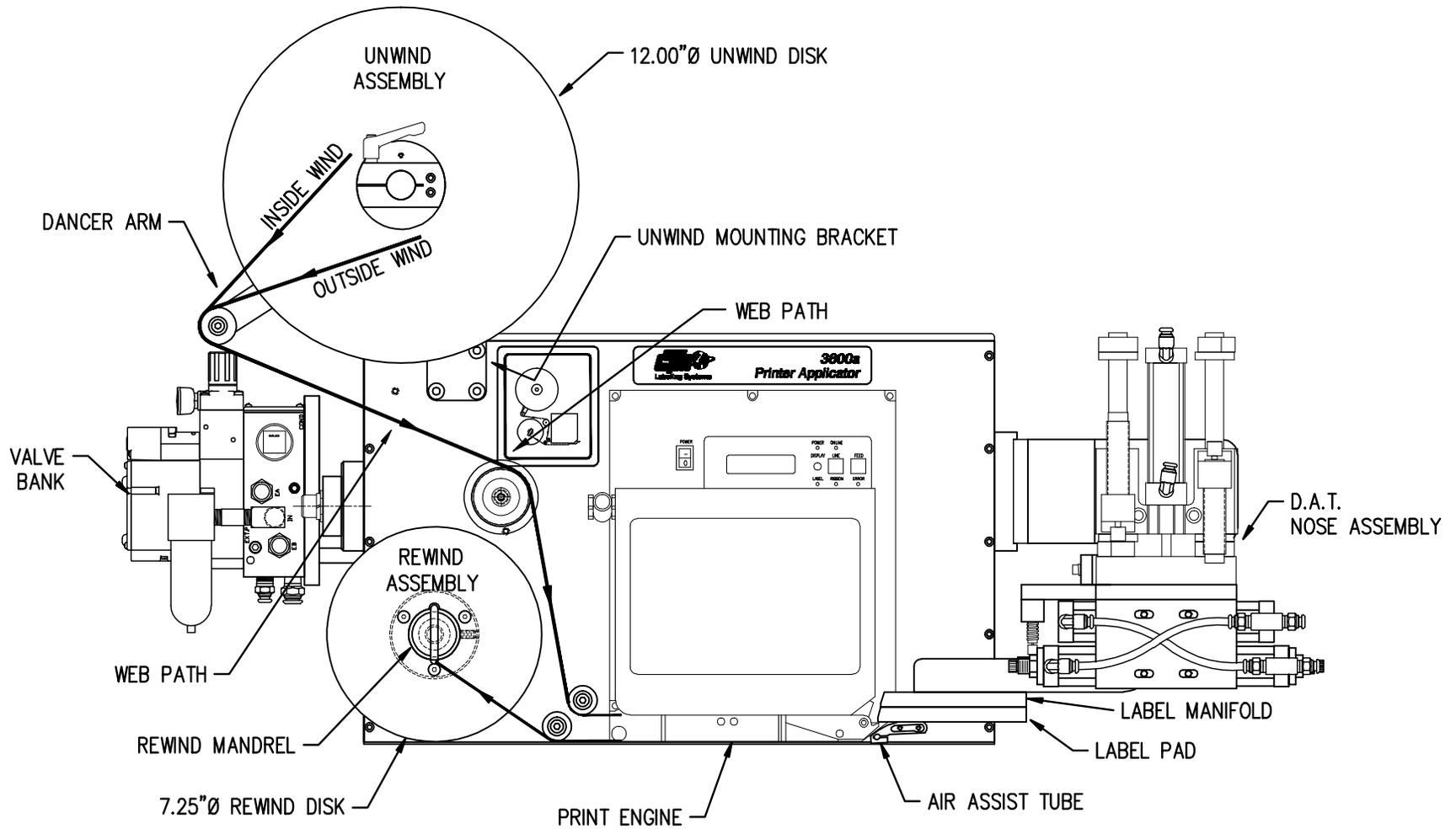
WEB PATH DIAGRAM
3600a-PA SERIES R.H. DUAL ACTION TAMP APPLICATOR
PERPENDICULAR FLOW - WITH 12" UNWIND



WEB PATH DIAGRAM
3600a-PA SERIES L.H. DUAL ACTION TAMP APPLICATOR
PERPENDICULAR FLOW - WITH 12" UNWIND



WEB PATH DIAGRAM
3600a-PA SERIES R.H. DUAL ACTION TAMP APPLICATOR
PARALLEL / IN-LINE FLOW - WITH 12" UNWIND



WEB PATH DIAGRAM
3600a-PA SERIES L.H. DUAL ACTION TAMP APPLICATOR
PARALLEL / IN-LINE FLOW - WITH 12" UNWIND

