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

MAINTENANCE & SERVICE MANUAL

REVISION 3600st-2a.1.x.xx

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INTRODUCTION

The 3600 servo tamp printer applicator is a high-speed labeler used to thermally print and apply pressure sensitive labels to moving products that have varying heights and still hold label placement. A thermal transfer printer is integrated into an applicator to form a self-contained unit that will print variable data onto a label. It is primarily designed to label the top of products but can also handle side labeling.

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 print engine printing the entire label.

The applicator will support two different types of label pads. The first style is the "Vac-Blow" style where compressed air is used to create vacuum to hold the label and an air blast to blow the label off without contacting the product. The second style is the "E-Tamp" which uses a fan to create vacuum to hold the label and the pad must contact the product to release the label. Along with the different label pad configurations come different labeling sequences or modes:

Normal Tamp
Inverted Tamp
Auto Tamp 1
Auto Tamp 2

In the Normal Tamp mode, the label is printed, dispensed out onto the label pad and held there by vacuum. When the product detect sensor is made, the label and label pad are moved toward the product using a servo driven slide. When the slide is extended, an air blast will blow the label off the pad and onto the product if the vac-blow style pad is used. Otherwise the label pad will contact the product and return home. The tamp length is programmable through the operator interface.

In the Inverted Tamp mode, the label is printed, dispensed onto the label pad and the slide extends. The applicator will wait in this position until the product sensor is made. The label is then blown off the pad onto the product, the label pad returns home and the process starts again. Only the vac-blow label pad will work with this tamp mode.

The Auto Tamp 1 mode is for when the products being labeled have varying heights and you are using the vac-blow style label pad. The tamp will start in the home position with a label on the pad. When the product sensor is made, another sensor will capture the product height. This usually is an ultrasonic sensor with a 0-10 volt analog output. The tamp will now move to a position just above the top of the product and will wait for the label placement distance. Once the product is in position, the label will be blown onto the product and the tamp returns home. Another label is feed out and the process starts again.

Auto Tamp 2 mode is for both vac-blow and e-tamp pads and is also for varying height products. As with the Auto Tamp1, the tamp will start in the home position with a label on the pad and will move to a position just above the product when the product detect sensor turns on. The height is calculated from a 0 to 10 volt signal from the height sensor. The applicator will wait for the label placement distance and once the product is in position, the label pad moves down and comes in contact with the product. The label pad then returns home, another label is feed out and the process starts again.

Note: If using the vac-blow label pad, the applicator can be setup so the label pad extends to a position above the product but when it extends again to apply the label it does not hit the product but instead blows the label off. This will cause the label to stay a little farther out of the way just before labeling.

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

ELECTRICAL SUPPLY: 108 - 132 Volts, 7 Amps, 50 - 60 Hertz, Single-Phase

A three-meter long, three-wire cable with 16 AWG (1.00mm ^{2}) conductors rated at 10 amperes (in accordance with CENELEC HD-21) is provided for the electrical connection to the IEC 320 receptacle of the applicator. The end of the power cord is terminated with a NEMA5-15 plug.

AIR SUPPLY: Clean, dry air @ 90 – 100 PSI at 4* SCFM per applicator.
Note: The E-Tamp does not use compressed air

ENVIRONMENT: Operating temperature: 40 – 104 degrees F
Humidity: 20 - 95% RH, non-condensing

NOTE: THE 3600-ST SERVO TAMP IS NOT INTENDED TO BE OPERATED IN AN ENVIRONMENT WHERE FLAMMABLE OR EXPLOSIVE GASSES ARE PRESENT. THE 3600 SERVO TAMP IS NOT TO BE USED IN DIRECT CONTACT WITH FOOD PRODUCTS.

READ THE INSTRUCTIONS CAREFULLY AND COMPLETELY. This manual includes all of the information needed to setup the applicator under normal operating conditions. The instructions include important safety precautions that 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 IT UP AGAIN. Although an applicator malfunction is possible, most problems happen because the applicator is not setup correctly. If the applicator doesn't operate correctly, back up and start over.

FOLLOW ALL SAFETY INSTRUCTIONS. The CTM 3600-ST Servo Tamp applicator has been provided with a number of safety features. Observe all safety warnings and under no circumstances attempt to remove or defeat safeguards or operate the machine in a manner contrary to the instructions.

GUARDING IS REQUIRED!

Even though there are parameters that can be set so the slide reverses when it hits something, they are not safety rated. At the slide speeds necessary to hit the labeling rate, personal injury could occur if a person got caught in the label pad.

DEFINITION OF MACHINE TERMS

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

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

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

Air 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.

Belt Drive: This is the linear module that drives the tamp slide up and down. It is usually powered by a servo motor.

Critical Alarm: This is an alarm that will stop the applicator from applying labels. Some 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 and to be back in the start position, beginning with 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.

Detector Lockout: Time span after the applicator starts the labeling sequence that will cause the applicator to ignore any additional product signals. This is useful if a product triggers the product detect sensor more than once.

E-Tamp Pad: This pad and manifold arrangement uses a multi-speed fan to create the vacuum needed to hold the label on the pad. There is no blow-off so the assembly must contact the product to release it. Labels should be tested before using this type of label pad. It does not work well with film labels and a ratio between the label feed and width larger than 2 to 1 may have problems. The minimum label feed is 3 inches.

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.

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/or the air blast are channeled through it to the pad.

Label Pad: Mounted under the manifold and is usually made from white delrin or aluminum. This part supports the label before application. There are two styles of label pad and manifolds for this applicator. The vac-blow style uses compressed air to hold and release the label from the pad. The e-tamp style uses a fan to hold the label and the label will contact the product to release it from the pad.

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

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

Long Tamp Length: In Normal and Inverted Tamp modes, this is the distance the tamp slide will travel to apply the label. In Auto Tamp mode, this is the tamp stroke for the shortest product.

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 sharpened part just before the label pad that when the liner is wrapped around it, the label is transferred off the liner to the pad. This is located in the print engine.

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

Short Tamp Length: In Normal and Inverted Tamp modes, this variable is ignored. In Auto Tamp mode, this is the tamp stroke for the tallest product.

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

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

Tamp OverSpeed: In Auto Mode, the tamp slide will travel down to the product at the product speed. Setting the variable to something higher than 100% will change the ratio between product and tamp speeds causing the tamp to extend faster.

Tamp Speed: This is how fast the tamp will travel during the labeling sequence in Normal and Invert Tamp modes. In Auto Tamp, this is the speed the tamp slide returns home.

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

Vac-Blow Pad: This is the label pad and manifold used when a label is blown off. This arrangement uses compressed air to create vacuum and the blow-off pressure.

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

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.

3600 SERVO TAMP DISPLAY

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

TYPES OF KEYS


or

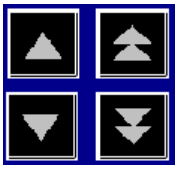

are “go to” keys and will move the operator to another screen. Buttons may come in other colors but will be labeled with a destination.


This key is for jogging the applicator or as an alarm reset. Sometimes it will take you to and from the setup sections. Color of keys will vary depending on application.

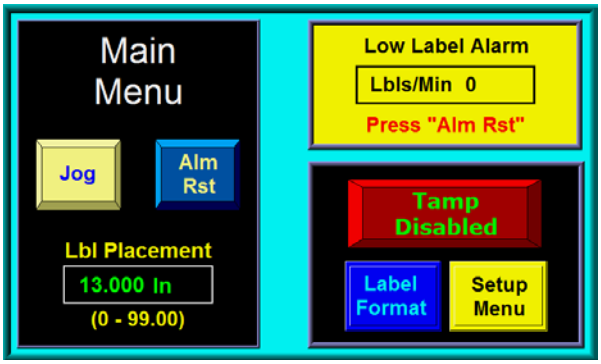
This key is for enabling the tamp slide. When disabled, it will be as shown to the left but when the tamp is enabled, it will be green with red letters.


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

This key will take you to the main menu even if you are in a setup screen.


These keys are in the manual motion popup under the tamp stroke menu and are used to manually move the tamp slide up and down. The single arrows mean slow motion while the double arrows are fast motion.

ALARMS



Warning Alarm Status Box

Critical Alarm Screen

The two types of alarms generated in the 3600 Servo Tamp applicator:

Warning Alarm
Critical Alarm

ALARMS (cont'd)

Warning alarms will appear in the upper right hand corner of the main menu in the status box. These alarms are not serious and in most cases the applicator will not stop applying labels. If the applicator has an alarm light, the amber light will turn on and the green light will remain on if the tamp is enabled. *Printer Not Ready* and *Inhibit* will appear in the status box like a warning alarm. The difference with these alarms is that the ready light goes out and there is no amber light. The applicator will also stop labeling until either the inhibit signal (mode 1, see options) turns off or the printer is back online.

Critical alarms will stop the applicator (disable the tamp) and turn the red light on in the light stack (if provided). The alarm screen will cover the current screen explaining the alarm type with an alarm reset button at the bottom of the page to clear the alarm.

Warning Alarms

The following are some of the warning alarms monitored by the applicator:

Low Label –Low label sensor detects the unwind roll is getting too small.

Low Ribbon –If the printer sends a low ribbon signal to the controller.

Printer Not Ready –The printer is offline or in pause and will not print.

Conveyor Too Fast –In the auto tamp modes, when the tamp cannot get into position to label before the product has traveled the label placement distance.

Product Height Warning –If a product goes through the height station and is out of range between the short and long tamp analog values, the product will not be labeled and the alarm turns on.

Product Rate Warning –There are three rate warnings that can occur; none stop the labeling process:

- Label Applied But Late –This will occur if labeling sequence is too long compared to product rate. Label placement, compensation, scan distance and print speed all play into this.
- Height Scan Occurred Too Soon –A product made the product detect sensor before the product being labeled was far enough along in the labeling process. Product was not labeled.
- Past Labeling Position –The product passed the labeling position before a label was out on the tamp pad. Operator needs to shorten the labeling sequence or slow the product rate. Product was not labeled.

Critical Alarms

The following are some of the critical alarms:

No Media Alarm –If the printer cannot find labels or ribbon.

End Of Web –If the end of web sensor detects a break in the web.

Too Many Reprints –If the label reprint option is turned on and too many reprints occur in a row.

Software Limits –If the tamp goes outside the programmed or soft limits.

Limit Switch –This occurs if the tamp slide hits a hardware limit.

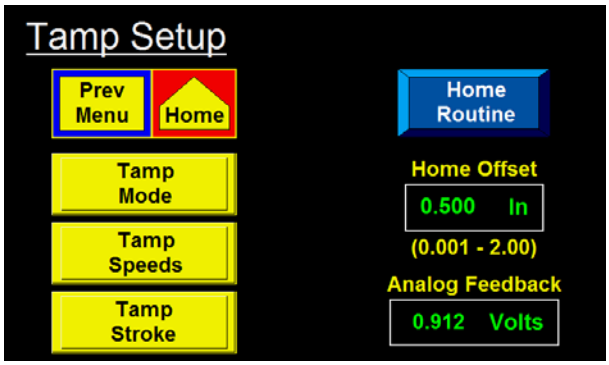
Operator Interface Cleared –This will occur if the display is disconnected from the applicator.

Read or Write Errors –If the applicator has trouble communicating with the display, one of these alarms may occur. Depending whether the connection is intermittent will determine whether the alarm is displayed or not.

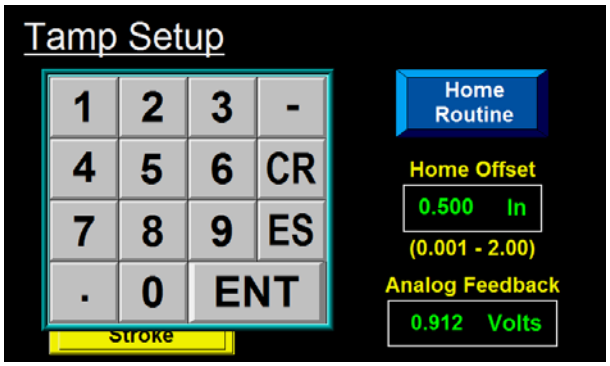
Beginning with program 3600st-2a.1.1.20, the Warning To Critical Option was added to the Special Options Menu. If this option is enabled, the Height Scan Occurred Too Soon and Past Labeling Position of the Product Rate Warnings and the Product Height Warning will be Critical Alarms. For more information regarding the Warning to Critical Option, please refer to the Special Options Menu section of this manual (pg 3-17).

CHANGING VALUES

Values that can be changed are in boxes that display the current value.



In the example at the left, home offset is shown to have a value of 0.500". To change this value, the operator will touch the screen on the home offset field and a keypad will appear to the side of the variable being changed.



The figure to the left shows what the display should look like after touching the variable field. You can see a cursor has moved over the rightmost digit. Also the numeric keypad has appeared to the left of the variable. As you touch numbers on the keypad, the variable is zeroed and the new value is inputted to the variable box. Pressing "ENT" will finish the process. Pressing "ES" will allow you to escape without changing and "CR" will clear the value you're changing.

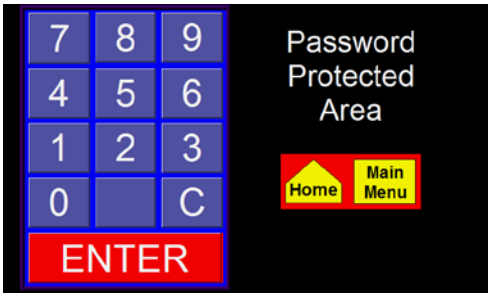
Note: If you enter a value that is out of the limits, in most cases there is no warning message. The variable will return to the original value after you press "ENT".

PASSWORD

The setup area of the display is password protected. The standard password is "1800". When you go to the setup menu, a screen will appear similar to the one below.

This screen notifies the operator that the area is password protected. Here the operator can chose to go back to the main menu or by touching within the box to the left, a keypad will appear to enter the password.

When you touch a number on the keypad, it will highlight. This will be the only verification that a key was pressed since the password is not displayed. If you know you entered a wrong number you can press "C", which clears what you have, and start again. "ENT" finishes the process.

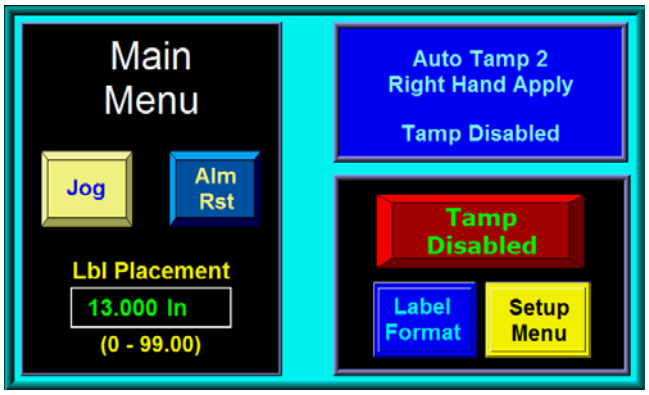


PASSWORD (cont'd)

If the password was entered wrong, the screen to the left will appear. If the operator wants to try again, he can press the "Try Again" key. If he does not know the password, he can press the other key and get back to the main menu or previous screen.

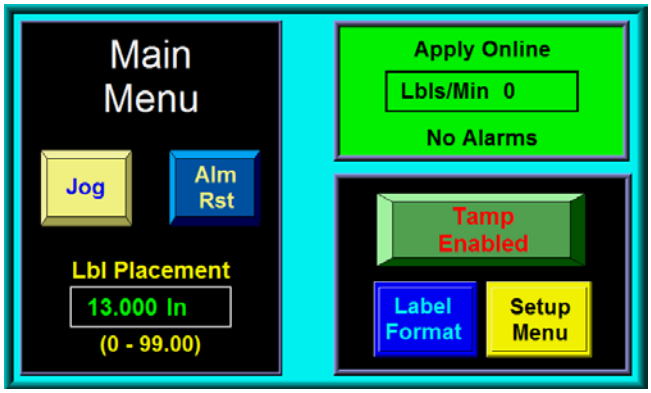
MAIN MENU

After the power-up sequence, the main menu will come up. Here there are several boxes with information or functions for the operator to use. The following is an explanation of each section:



(Tamp Disabled)

The upper right corner is a status box. The purpose of this box is to inform the operator the status of the applicator. If the tamp is disabled, you will see a status box similar to the one on the left. If the tamp is enabled and no alarms, it will have a green background showing the label rate. If a warning alarm occurs, the background will change colors and it will inform the operator what the alarm is. The warning alarms were previously discussed. The status box will also list the reason that the tamp was forced back to the home position due to the Tamp Return Option, please refer to page 3-15 for more information regarding the Tamp Return Option.



(Tamp Enabled)

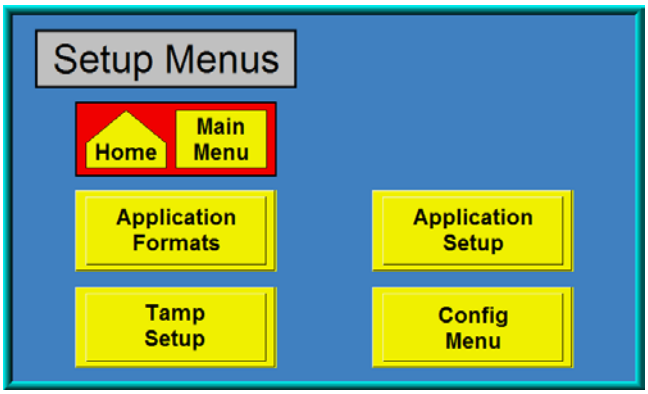
The left side of the screen gives access to the jog and alarm reset keys and access to label placement.

The lower right corner has buttons to enable and disable the tamp and keys to take you to the format and setup menus. Enabling the tamp arms the applicator for labeling as long as the printer is ready to print labels. The format key gives access to the operator to load a saved format. The operator cannot change or erase formats from here. The setup key takes the operator to a password-protected area to make changes to the operation of the applicator.

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 bring the display backlight on. 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 MENUS

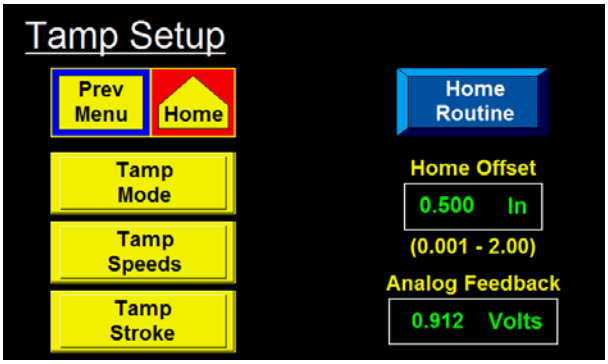
Pressing the setup key at the main menu will cause a password screen to come up. Entering “1800” in this screen will take you to the setup menu where the operator will have access to tamp and apply setups. Also this is where the configuration menus and label formats can be reached.



Note: The tamp must be disabled to enter this section

TAMP SETUP MENU

The parameters needed to change the function, speed, or position of the tamp slide are here.



The following are changeable in this section:

Home Offset
Tamp Mode
Short and Long Tamp Lengths
Short and Long Tamp Analog
Tamp Speed
Tamp OverSpeed

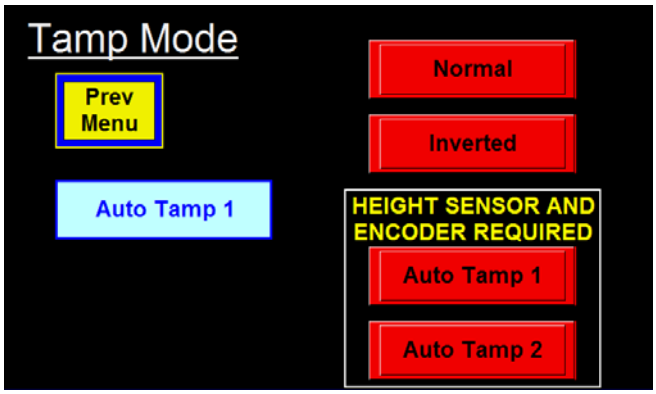
Home Offset –This is the parameter that puts the label pad at the correct height to feed the label out onto the pad. When doing a home routine, the tamp slide will move up until it hits the home prox. When the prox switch turns on, the slide will reverse direction until the prox turns back off and will continue moving the home offset distance. Once the tamp slide stops, this will be the new home position for the label pad.

Home Routine –This will cause the applicator to do a home routine. On power-up the operator will be forced to do a home routine. The home button here is for setting/checking the home offset and for bringing the tamp home after a manual move.

Analog Feedback –This shows the analog value coming from the height sensor. This is used more as a troubleshooting tool in this screen. This variable will also appear in the *Tamp Stroke* section.

TAMP MODE

This allows the operator to chose the type of tamp action he wants. Pressing the keys for the different modes will cause the display window on the left side of the screen to change showing the current mode of operation.



Normal –This puts the applicator into *Normal Tamp* mode. In this mode, the applicator will get a product detect signal, wait the label placement time/distance, then tamps toward the product. At the end of the long tamp length the label will be blown off the pad if equipped with the vac-blow pad. At the same time the tamp slide will return home for another label.

ITB –*Inverted Tamp* mode will have the tamp slide extended, when the tamp is enabled, to the *long tamp length* waiting for a product detect signal. Once received and label placement is satisfied, the label is blown off the pad and the slide returns home.

Auto Tamp 1 and 2 –In auto tamp modes, the applicator will make adjustments for different height products. The applicator will wait for a product detect signal with the tamp slide sitting in the home position. Once received the label pad will move to a position that will be just above the product at a speed that is in relation to the encoder speed. The calculation of the product height will start when the product detect input turns on and will end once the product has traveled the scan distance. At that time the slide will move to the labeling position where the applicator will wait for the label placement distance to finish. If Auto Tamp 1 is used, the label is blown off the pad but if Auto Tamp 2 then label pad moves down to contact the product. At the end of either sequence, the slide returns home to receive another label.

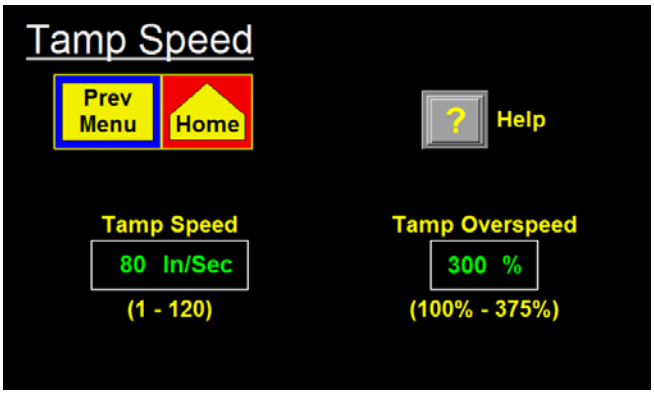
Note: An encoder is required for the auto tamp modes to work. On the other modes, the encoder is optional.

TAMP SPEED

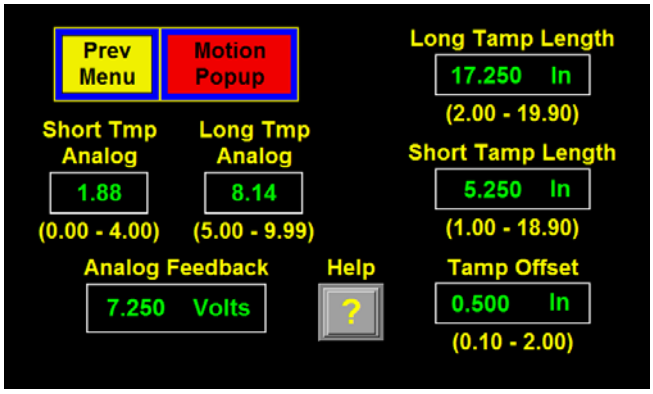
This screen sets the speed of the tamp slide

Tamp Speed –In normal and inverted tamp modes, this is the speed the tamp travels to its position. In the auto modes, this is the speed the tamp when traveling home and jogging.

Tamp OverSpeed - This is for the auto tamp modes and is described with the max product speed parameter in the *Encoder Menu* of this section.



TAMP STROKE
These are motion parameters that determine tamp positions.



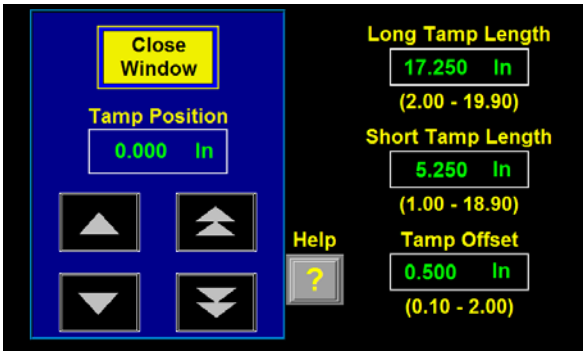
Long Tamp Length –This is position the tamp moves to when it tamps down in normal and inverted modes. In the auto modes this is the tamp position for the shortest product.
Note: Long tamp cannot exceed software limits.

Short Tamp Length –In the auto tamp modes, this is the tamp position for the tallest product.
Note: Short tamp has to be at least 1 inch less than long tamp.

Tamp Offset –In the auto modes, it's the distance off the product the label pad stops just before applying labels.

Short Tamp and Long Tamp Analog - This is for the auto tamp modes and the controller uses it to calculate the product height. The short tamp analog (St Tmp Analog) value should be the analog feedback of the product used to determine the short tamp length. The long tamp analog (Lg Tmp Analog) should be the analog feedback of the product used for the long tamp length. The analog feedback will fluctuate a little but enter the average value for each.

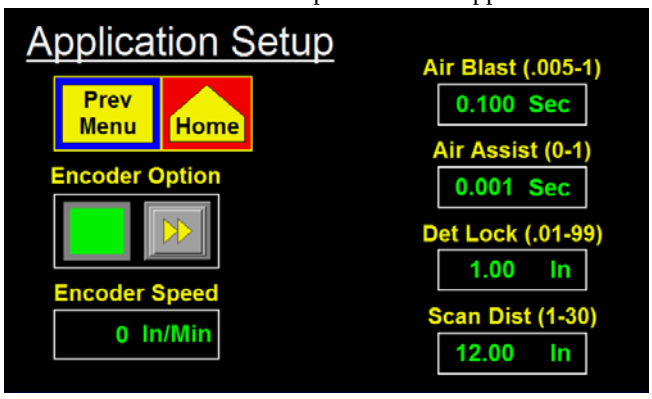
Note: Refer to setup section for an explanation of how these work.



Motion Popup – This is for manually moving the side up or down. There are both fast and slow movement keys that will be used to set the applicator up. The tamp position window shows the current slide position.

APPLICATION SETUP MENU

Variables in this section pertain to the application of the label.



The following are changeable in this section:
Extended Air Assist
Air Blast Time
Detector Lockout
Encoder On/Off
Pulse Length
Compensation
Max Product Speed
Scan Distance

Air Blast –This is how long the air blow valve is on to get the label off the label pad.

Air Assist –The air assist valve is on as long as the printer is moving labels through it. The *air assist* time is the time the valve will stay on after the printer stops.

APPLICATION SETUP MENU (cont'd)

Det Lockout *–Detector lockout* is for filtering out stray product detect signals that may occur with some products. With this kind of applicator, the need for it will be rare but if you need it, it's available. When the applicator sees the leading edge of a product it starts the label placement sequence. At the same time, the *detector lockout* is started. The applicator will ignore any additional signal from the product detect until the timer has finished timing out.

Scan Dist–Scan distance is the distance the product travels while the height sensor looks at the product. Right after the scan distance, the height is calculated and the tamp slide moves to the labeling position. This variable only appears if the tamp mode is set to one of the auto modes.

Encoder Speed –This box will display the conveyor speed based on encoder resolution, rotational speed and pulse length.

ENCODER MENU

The applicator has a differential quadrature incremental encoder interface with times four interpolation built into the controller board. The encoder connector located on the rear panel has +5V and ground to power the sensor and the A and B channel interface. The encoder wiring diagram and pin-out information appear in the Drawings section in this manual and should be consulted for user supplied encoders. Factory encoders generate 2500 pulses per revolution.

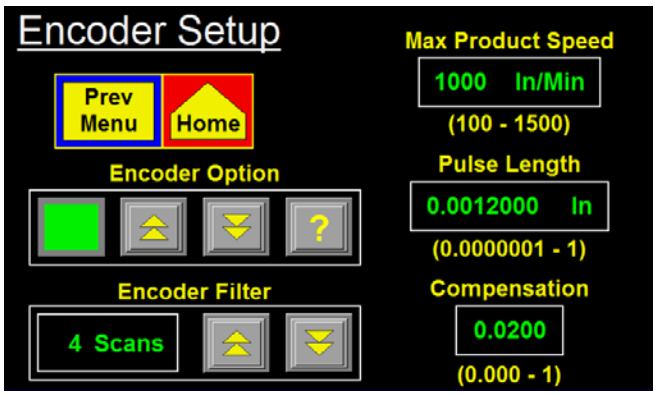
Notes: Label placement units with the encoder option on are in inches; not seconds.

Encoder Mounting -The method of coupling the encoder to the conveying system is an important consideration because 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 which 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. Since the encoder output signal is rotation direction sensitive, it may be necessary to reverse the A+ & A- wires going to TB21 and TB22 in the applicator.

WARNING: Change wires with the power disconnected from the machine.

This screen allows the operator to setup the encoder parameters.



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

Pulse Length = (Distance Product Moves / Rev) / ((Encoder Pulses / Rev) x 4)

EXAMPLE: An encoder is mounted to a conveyor drive pulley and the circumference of that pulley is 18.75". Therefore, with one revolution of the encoder, the product on the conveyor will travel 18.75". The encoder is a factory encoder that generates 2500 pulses per revolution.

Pulse length = 18.75" / (2500 x 4)
Pulse length = 18.75" / 10000
Pulse length = 0.001875 in/pulse

ENCODER MENU (cont'd)

Compensation –Compensation is a number that functions within a formula that adjusts the *label placement* value based on the encoder velocity. The faster the product is moving, the lower the *label placement* needs to be to compensate for the natural delay in getting the label out onto the product.

When selecting a value for rate compensation, start at 0.050 for auto tamp and with inverted tamp, use .025. The normal tamp sequence does not compensate for speed changes very well but if you have to use it, start with a compensation value of 0.10. 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 labels move back the faster you go, **INCREASE RATE COMPENSATION**. If the labels move forward, **DECREASE THE RATE COMPENSATION.** Whenever the rate compensation value is adjusted, re-run the products at a slower and a faster speed to make sure that the labels are applied in the same position.

Max Prod Speed –In the auto tamp modes, the extend speed of the tamp slide will be based on the product or encoder speed. The reason for this is if the product conveyor quits moving we don't want to tamp down onto a labeled product that may be under the applicator. The speed that is generated from the encoder works with the *max product speed* to come up with a ratio of max speed. This is the speed the tamp slide travels. The top speed can be altered by changing the *tamp over-speed* number. The over-speed number is a percentage of the calculated tamp speed. If the tamp over-speed is set at 100% then the controller will look at the encoder speed and compare it with the *max product speed* and run the tamp at the calculated ratio of max speed. If the tamp over-speed is jumped to 200%, the calculated tamp speed is doubled.

The high limit for *max product speed* is 3000 in/min but the fastest the tamp slide can go is 120 in/sec or 7200 in/min. When *tamp over-speed* is set higher than 240%, the potential for the tamp slide to exceed 120 in/sec is there. In order to stop this, we lower the *max product speed* so when both are multiplied together, it won't go over 120 in/sec. High limits for both parameters are updated on the display as either change. If you still enter a value that is out of range, the display will warn you and reset the value back to where it was before you changed it.

Even though this parameter seems unnecessary it is not. It is important to set the *max product speed* equal to or greater than the actual fastest speed of the product. The better the setup here, the more responsive the tamp slide will be.

Encoder Filter –In some applications, the encoder speed varies significantly around some average value. This is especially problematic with low-resolution encoders and low conveyor speeds where fewer encoder pulses are captured during the velocity calculation interval. The Encoder Filter function allows the operator to average the encoder speed over 1 to 10 scans to produce a smoother slide motion. As with all filters, the response of the applicator to the change in encoder speed is proportional to the number of scans. The lower scan numbers are more responsive to speed changes while the higher number produces a smoother application.

LABEL FORMATS

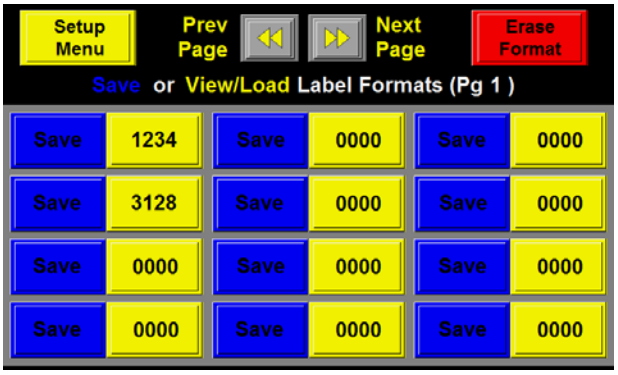
This section allows the operator to save and load different setups for different products and labels. This is useful if a customer is running several different products or labels but runs them over and over.
Note: The label format key at the main menu only allows the operator to only load formats.

Saving a format saves the following information:
(partial list)

Label Placement	Encoder Option
Detector Lockout	Pulse Length
Air Blast Time	Compensation
Air Assist Time	Tamp Over-Speed
Tamp Speed	Home Offset
Long Tamp Length	Standard Accel
Short Tamp Length	Auto Mode Accel
Max Product Speed	Tamp Mode

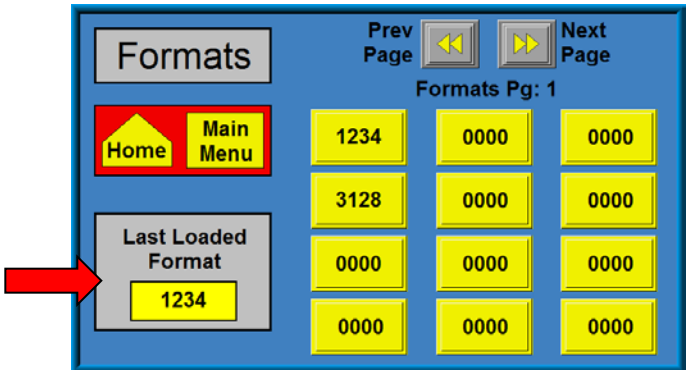
Consult factory for a complete list of parameters saved.

Software limits are not saved



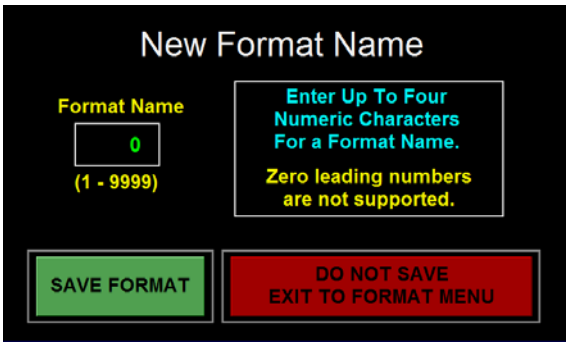
Main Format Screen

This screen shows the last format loaded. If no formats had been loaded, the value in the box would be "0000".



Main Menu Format Screen

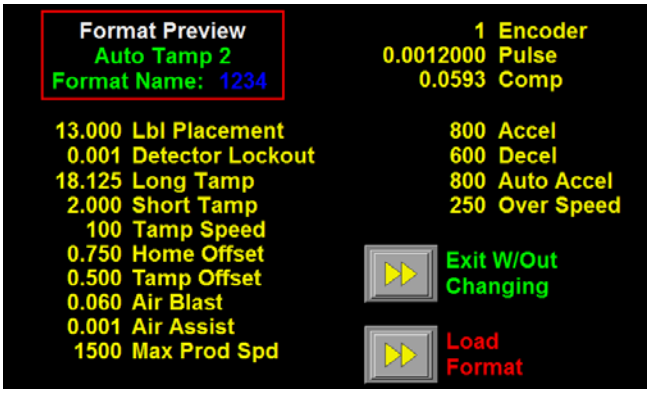
Saving a Format



If the current setup in the applicator is doing what you want it to and you want to save it, press "*Save*". When a "*Save*" key is pressed, the applicator will check to see if a format already exists. If not, the operator will be asked to enter up to four digits for a format name. After entering a name and pressing the green save key, the format will be saved. Pressing the red exit key on the screen will allow the operator to exit without saving. If a format already exists, the operator will be prompted whether to overwrite it or not.

Loading/Viewing a Format

When the operator wants to load a file, he will press the yellow key. The number on the key refers to the format name. If the number is "0000", no format was saved.



When the operator wants to view/load a format file, press the yellow portion of the key associated with the desired format name. If the number is "0000", no format was saved in that location. Selecting a "0000" format causes a screen to appear with a "No File Found" message.

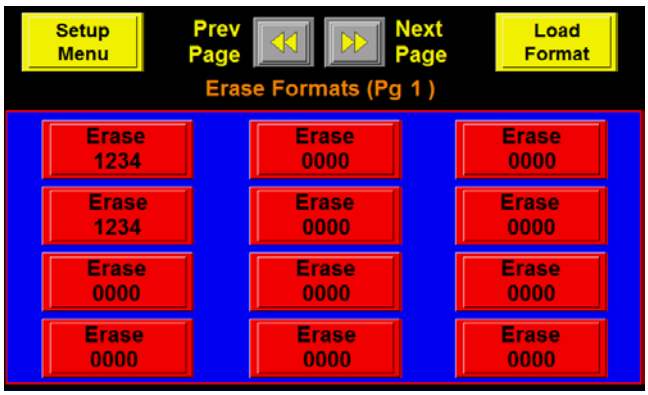
Pressing the view/load key will not immediately load the format but will allow the operator to view the values within that format. After reviewing the values, the operator may press "Load Format" to load the format. If the wrong format was selected, press the "Exit W/Out Changing" key.

Note: When loading a format, if the home offset has changed, the display will force a home routine. If the long tamp value is greater than the software limits, a warning screen appears and the long tamp is changed to the software limits.

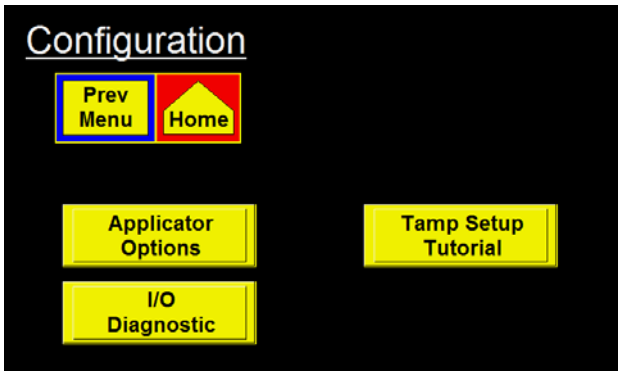
Deleting a Format

When the operator wants to delete a format that currently exists, he will press "*Erase Format*" on the format menu. The screen to the right will appear. Pressing any of the boxes will cause that format to be erased.

Note: There is no second step to this operation. Once you press the format box, the format will be erased.

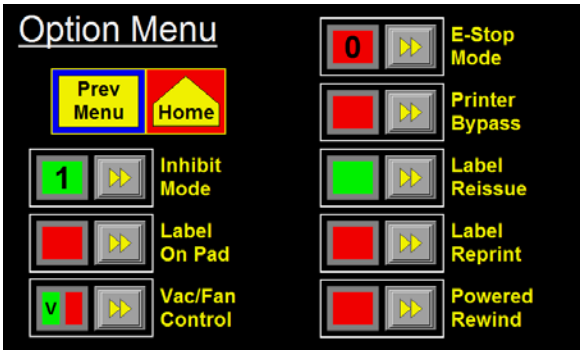


CONFIGURATION SETUP



This section will allow the operator to turn options on and off and also to access the I/O diagnostics.

OPTION MENU
It is here that an operator can look to see if an option is turned on or not. Pressing the key will take you into the option menu so you can toggle it on, off or set specific parameters pertaining to the option.



Inhibit Mode –The inhibit circuit of the applicator has two different modes of operation:
Mode 1: This is the standard inhibit mode where turning this input on will cause the applicator to stop applying labels.
Mode 2: In mode 2 the print engine will not print until this input is on.

Label On Pad –This option will require a label presence sensor to be integrated. When setup, it will provide an output for the customer to use when the label is on the pad. The period of time the applicator will provide this output is right after the label feed until the label is blown off the pad. The applicator will not take any actions if the label falls off, instead only turns the *label on pad* output off. It is up to the customer to integrate the signal.

Printer Bypass –This is more of a setup tool for when you want the applicator to cycle through the application without applying labels. In this mode, signals to and from the print engine are ignored.

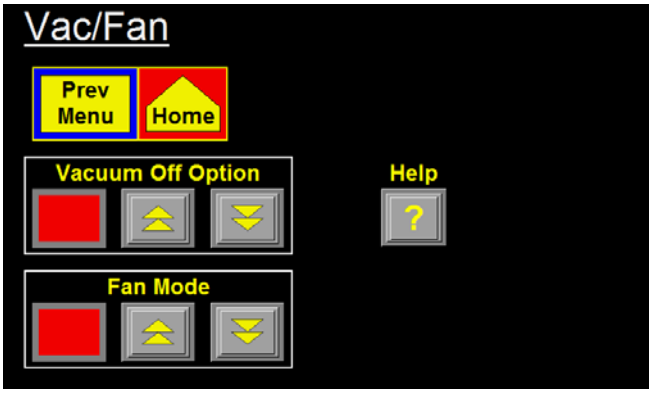
Label Reissue –With this option on, the operator can send one label format down and the applicator will have the printer reprint it every time it needs a label. There is no extra hardware needed to make this work.

Label Reprint –This option requires a vacuum switch or some kind of sensor to detect the label on the pad. The purpose is if while the label pad is home, someone removes or the label falls off, another one is fed out. If too many reprints occur in a row, an alarm appears. The number of allowed reprints in a row is adjustable from 1 to 20.

Powered Rewind –This option is for the bigger servo tamp and when on, provides logic to run the powered rewind.

E-Stop Mode –There are three modes of operation as to how the applicator will react to the e-stop input.
0 –Will ignore the input
1 –An e-stop alarm occurs when the input is active (N/O operation)
2 –An e-stop alarm occurs when the input is not active (N/C operation)
How the applicator reacts to an e-stop alarm will depend whether the tamp is in the home position or not. If in the home position, the tamp is disabled, the red light on the alarm stack is turned while the green light is turned off, and the display will show an e-stop alarm screen. The applicator will stay in this state until the e-stop input is corrected. At that time, the applicator will return to the main menu.
Note: With this type of e-stop alarm, the operator can jog labels from the print engine.
If the tamp slide is not at home (like in the ITB position) or is moving and the e-stop input becomes active, the slide will stop where it's at, the red light on the alarm stack is turned on while the green light is turned off, and the display will show an e-stop alarm screen. Once the e-stop input has been cleared, the display will prompt the operator to home the tamp slide.

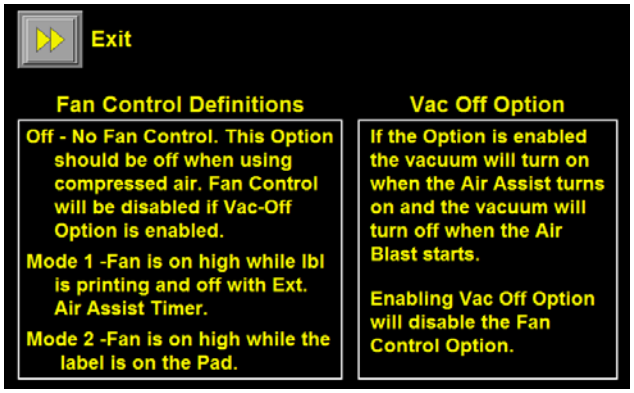
OPTION MENU (cont'd)



Vac/Fan –This screen controls how the fan will operate when using the E-Tamp pad and turning the Vacuum Off option on and off. Each option shares the same output on the controller so both cannot be on at the same time.

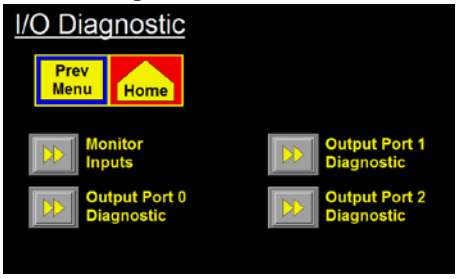
If you are using the vac-blow pad and you have an application where the applicator will sit long periods of time without a label on the pad and you don't want the vacuum pump using air, then turn this option on. When on, vacuum to the label pad is turned on when the printer starts to feed out a label and is turned off at the air blast. There is hardware to buy to use this option.

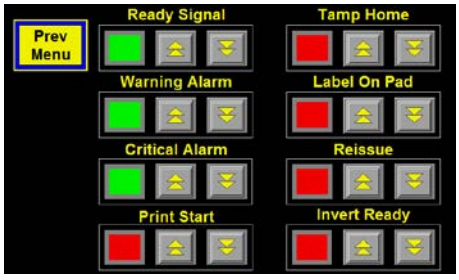
If using the e-tamp pad, you can select a fan mode that best handles the label while dispensing out onto the label pad.
Mode 0 –In this mode, the fan stays at low speed.
Mode 1 –In this mode the fan follows the air assist sequence. This means it will go to high when the print engine starts printing a label. At the end of the print cycle, the extend air assist time starts. At the end of the air assist time, the fan goes back to low.
Mode 2 –The fan is at high speed from the start of the print cycle until the label is applied to the product.



Vac/Fan Help

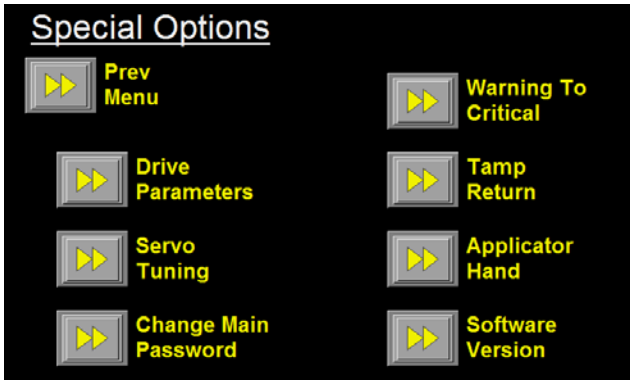
I/O DIAGNOSTICS
This section allows the operator to monitor inputs and to manually turn outputs on and off. This serves only as a diagnostic tool for a technician.





TAMP SETUP TUTORIAL
This key will take an operator step by step through setting the tamp up for one of the auto modes. The Software Limits and the Height Sensor are required to be setup before entering the Tutorial.

SPECIAL OPTION SECTION



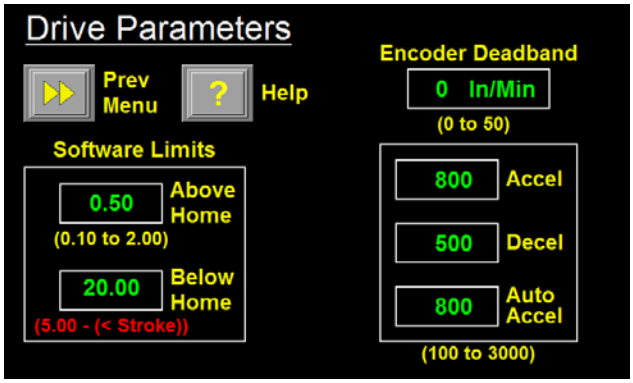
This section is for changing the parameters that you don't want everyone to have access to. To get to this section, touch the upper right hand corner of the display while in the *configuration* menu. A password menu will come up. This password is different from any other section and is "5115". Program versions prior to 3600st-2a.1.1.20 will not be able to access the Warning To Critical Menu at the Special Options Menu.

CHANGE MAIN PASSWORD –Here an operator can setup his own password and it will work in the setup area of the display but not in special options. The password from the factory is "1800" but the new password can be anything from 1 to 9999.

If the password has been changed and no one can remember what it is, on power-up, the operator can touch the upper right hand corner of the software screen and the factory default screen will come up. Pressing the "Restore Password" key will reset the password by entering "5115" at the password screen.

SOFTWARE VERSION –This screen will tell the operator what the software version is if they missed it on power-up, program changes and also some additional information if the program is custom.

DRIVE PARAMETERS
In this section, an operator can change the accel/decel rates of the tamp slide and software limits.



Accel –This is the accel value used when the tamp is ramping up to speed. The higher the value the faster it will come up to speed but a value that is too high may cause the slide to be unstable.

Decel –This is the value used when slowing or braking the slide.

Auto Accel – This is the accel/decel value used when the tamp is extending in the *auto tamp* modes.

Encoder Deadband - Some encoders at idle will send pulses to the applicator due to vibration at the encoder. This gives the operator the ability to set a value that if the velocity is equal to or less than, the applicator will ignore it.

Software Limits –Most slides will not have limit switches installed to limit motion so it will be important to set the software limits correctly so the slide will not extend or retract too far. The below home and above home limits will be set at the factory based on the slide length. Once online, the below home limit can be shortened to avoid hitting an obstacle.

Note: If you change the below home limits to a value less than the long tamp value, a warning will appear and the long tamp will be changed to (software limit value – 0.100").

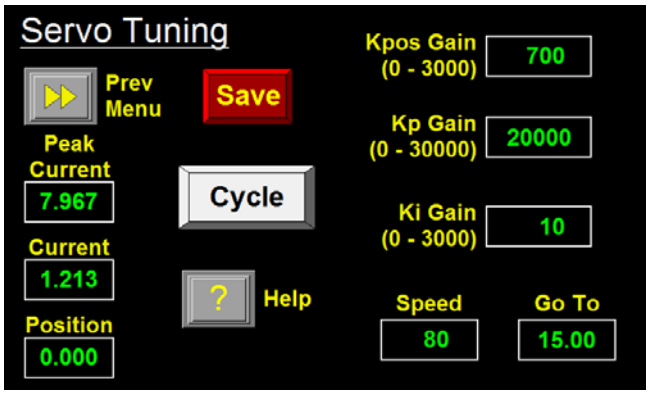
The Below Home allowed values are between 5.00 inches and something less than the stroke length of the slide assembly (length should be labeled on slide)

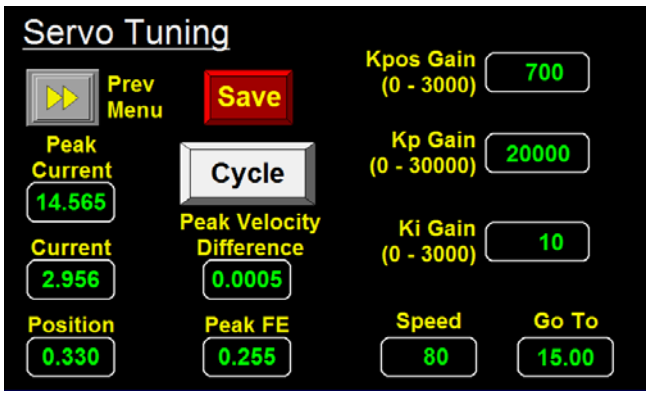
SPECIAL OPTION SECTION (cont'd)

SERVO TUNING

Sometimes changing something on the linear module or a motor will cause the need to change the tuning parameters. It is in this menu you can adjust these parameters. The Servo Tuning Menu for programs prior to program 3600st-2a.1.1.20 is shown to the right.

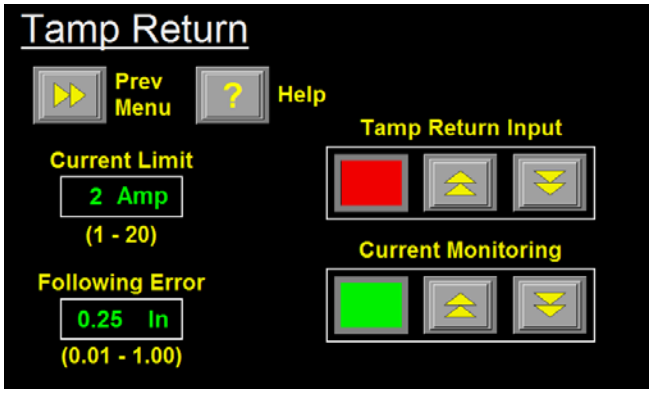
The only time these parameters should be changed is after a phone call is made to the factory. It is the factory that should make suggestions as to what needs changed.





The Servo Tuning Menu was changed with the release of program version 3600st-2a.1.1.20. The menu now displays more information that was gathered during the tamp cycle. This additional information includes Peak Velocity Difference and Peak FE (Peak Following Error). Taking note of these values after the tamp has been cycled can assist with the setup of the Following Error and Velocity Error variables within the Tamp Return Menu. The Servo Tuning Menu for programs 3600st-2a.1.1.20 and newer is shown to the left.

TAMP RETURN



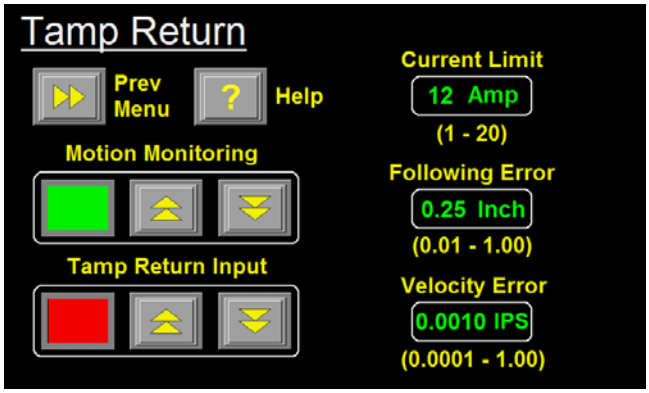
There are two methods to reverse the direction of the tamp if a product is hit. These are not tools designed to purposely allow the label pad to contact the product but rather if a product is out of position and the label pad runs into it.

Neither method is to be used as a safety procedure since the force of either will be substantial before the slide reverses.

Tamp Return Input –When this input turns on and the slide is moving toward the product, the tamp assembly will stop, blow the label off and return the label pad to the home position. The tamp return device can be a switch, prox or a photoelectric sensor.

Current Monitoring –When this is on, the applicator will monitor the variables to the left of the screen. When the slide is moving forward toward the product, if the current draw and the following error exceed the displayed values, the slide will stop, blow the label off the label pad and return home.

TAMP RETURN (cont'd)



The Tamp Return Menu was changed on program version 3600st-2a.1.1.20. The prior versions of the program had a Tamp Return Menu that is as described on the previous page. Program version 3600st-2a.1.1.20 introduced the Motion Monitoring which replaced the Current Monitoring that was present in the previous programs. The Tamp Return Menu for program versions 3600st-2a.1.1.20 and newer is shown to the left.

Motion Monitoring – When this is on, the applicator will monitor the three variables on the right side of the screen. If the Current Limit, Following Error or Velocity Error exceed the settings at this menu, the applicator will stop the slide motion, blow the label off and then return the slide to the home position.

Current Limit – This is the maximum current draw allowed by the servo motor while the slide moves toward the product. If the current draw from the servo motor becomes greater than this limit, a Current Limit Alarm will be generated.

Following Error – The controller compares the commanded position of the servo motor verses the actual position. The Following Error Alarm will be generated if the difference between these two values becomes greater than the setting entered.

Velocity Error – The controller will compare the commanded velocity verses the actual velocity of the servo motor while the slide is moving toward the product. If the difference between the two values becomes greater than the variable entered by the operator, the Velocity Error Alarm will be generated.

If the slide is returned to the home position prematurely based on a setting in the Tamp Return Menu, the status box at the Main Menu of the display will notify the operator of the reason. The status boxes below show what the operator would see when the slide is returned to the home position based on settings of the Tamp Return Menu.

Tamp Return Input

Current Limit

Following Error

Velocity Error

REAR PANEL

The following is a description of the connectors on the rear panel.

PARALLEL/ETHERNET and SERIAL
Both connectors go directly to the print engine and are for sending label formats to the print engine. Depending on the type of communications the printer is setup for will determine which connector is used and which will have a blank.

I/O
This connector is pre-wired so the applicator could be wired into a system. The following is a list of I/O and pin numbers

Pin 1 –0 VDC
Pin 2 –24 VDC
Pin 3 –Ready Signal
Pin 4 –Warning Signal
Pin 5 –Critical Alarm
Pin 7 –Tamp Home
Pin 8 – Label On Pad
Pin 9 – Air Blast Valve
Pin 10 –Air Assist Valve
Pin 11 –Product Detect Signal
Pin 12 –Inhibit Input
Pin 15 –E-Stop Input

ALARM
This connector is for an alarm light. The alarm light can be up to a three stack light where a red light is for critical alarms, amber light for warning alarms and a green light for when the applicator is ready to label.

VALVE
This plug is used to power the valves and will drive up to 3 valves with the standard harness.

PRODUCT
This is where the product detect sensor is connected.

LOW LABEL
When the low label option is used, the sensor is connected here.

EOW
End of web sensor plugs in here.

HEIGHT
This is for the height sensor. This device can be different things but should have a 0-10 VDC analog output. There is also a pin for the height trigger sensor. The pin configuration is as follows:

Pin 1 –24 VDC
Pin 2 –Height Trigger Input (24 VDC NPN) **NOT USED**
Pin 3 –0 VDC
Pin 5 –0 to 10 VDC Analog Input

ENCODER
The encoder is connected to this plug. The encoder is enabled through the *application setup* menu.

DISPLAY
This port is for connecting the display to the applicator.

3600 SERVO TAMP

SETUP

PROCEDURES

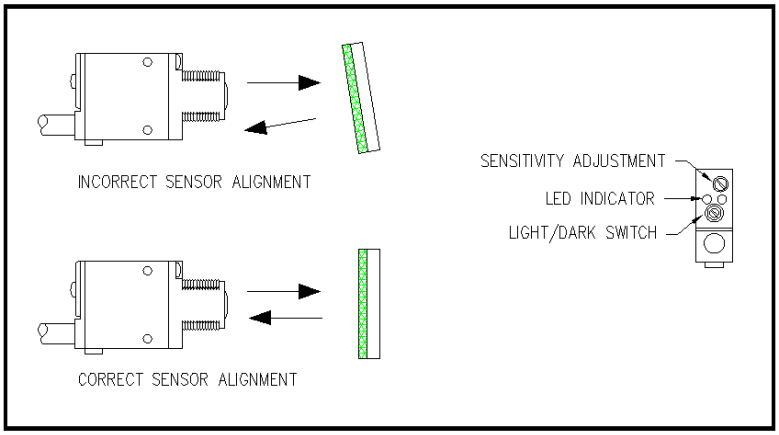
GUARDING IS REQUIRED!

Even though there are parameters that can be set so the slide reverses when it hits something, they are not safety rated. At the slide speeds necessary to hit the labeling rate, personal injury could occur if a person got caught in the label pad.

PRODUCT SENSOR SETUP

Standard Product Sensor Setup (Banner SM312LV)

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

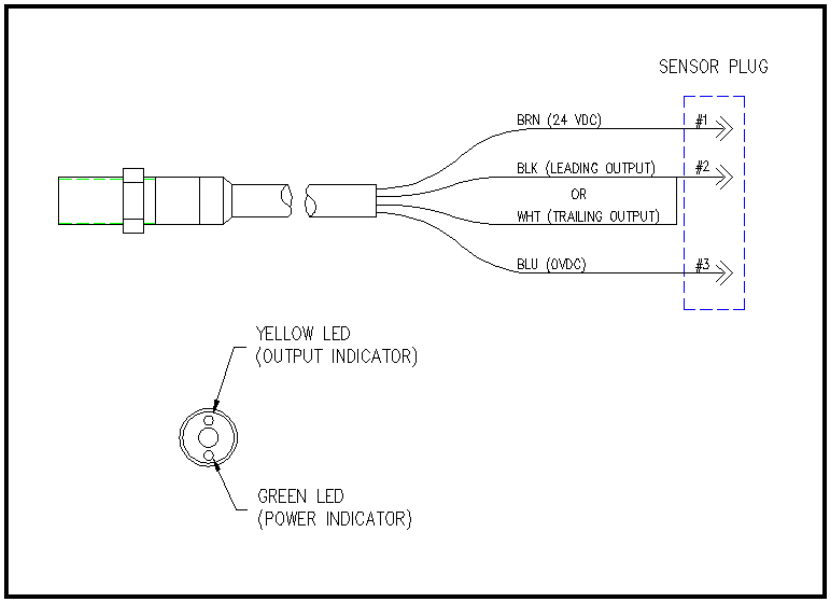


(standard product detect)

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

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

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



(optional product detect)

SERVO TAMP SETUP

The tamp slide consists of a belt drive support block, aluminum extrusion and a servo motor. All this is mounted to the side plates of the applicator. Because the slide is motorized, the tamp positions and speed must be set. This is covered in the display section of this manual under tamp setups.

NOTE: Before proceeding, make sure you've selected the tamp mode under "TAMP SETUP" on the display. Choose one of the following types of tamping action:

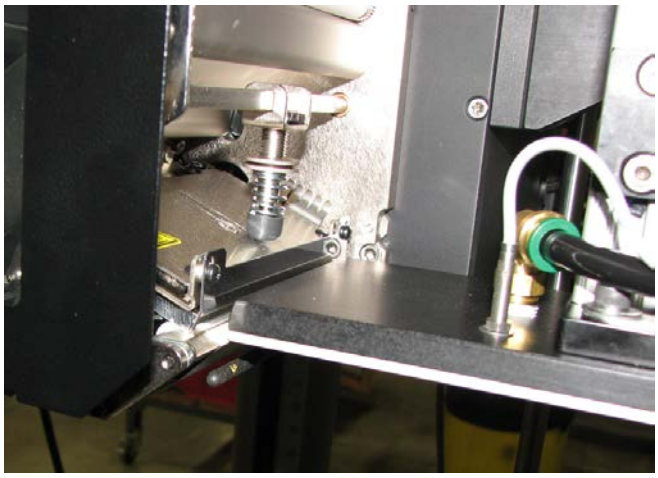
NORMAL TAMP: A label feeds out onto the label pad and the labeler will wait for a product detect signal. It now waits for the *label placement* time/distance then extends the tamp slide to the *long tamp length* at *tamp speed* and blows the label off. After applying the label, the tamp pad returns home to receive another label.

ITB TAMP: A label feeds out onto the label pad and the tamp slide extends to the *long tamp length* position at *tamp speed*. The applicator will wait for a product detect signal and *label placement* before blowing off the label and returning home to receive another.

AUTO TAMP : In either auto tamp mode, the applicator has a sensor or feedback device that will send a 0 to 10 VDC signal to the applicator based on the product height. The applicator will wait for the product detect signal with the tamp slide home and a label on the pad. On the leading edge of the signal, the applicator will look at the height sensor and calculate the stroke length of the tamp to get to the product surface. It then moves the label pad to the product in proportion to the speed of the encoder. Once in position, the applicator will wait for *label placement.* If in mode 1 the label is blown off and the slide return home but if in mode 2, the label pad moves down, contacts the product and returns home at *tamp speed*.

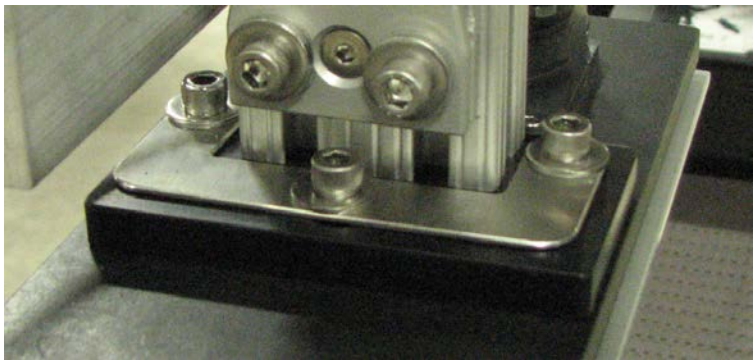
LABEL PAD ALIGNMENT

1) Turn the power on. After the power-up screen is done, the display will prompt you to do a home routine. After the home routine, look at where the label pad is at compared to the peel edge of the print engine. On this part of the setup we will be setting the height but it is important to make sure the pad is not hitting the peel edge. If it is, skip to part two of this setup then come back.



The label pad should start about the same level as the peel edge so when the label feeds out, it flows smoothly onto the pad without a lot of dive. Depending on the print engine or the type of label pad (vac-blow or e-tamp), you may need to move up or down to get the label to land consistently on the pad. Determine how much you think the label pad needs to move and go to the setup menus. Once in the setup menu go to *tamp setup*. Here add or subtract the amount the label pad has to move to the *home offset*. The lower the home offset, the higher the label pad. Now do a home routine and feed a label out onto the pad using the feed button on the printer. If still not correct, do the process again.

2) The label pad should be between 1/16 and 1/8 inch away from the peel edge and parallel to it. If not, go the tamp setup menu then manual motion and using the keys, lower the tamp. Loosen the three screws on top of the manifold and move the manifold to the position you think you need. After tightening the screws, manually move the label pad back up making sure you don't run into the peel edge. Continue to make adjustments until correct.



TAMP VACUUM

For the vac-blow pad and manifold, the tamp vacuum is generated by a vacuum venturi located on the applicator. This vacuum is used to hold the label on the label pad until the air blast releases it. Too much or too little vacuum can affect label placement on the pad. The amount of vacuum may be changed by adjusting the air pressure to the vacuum regulator feeding the venturi. A setting of 20 PSI is typical but it may be changed as needed.

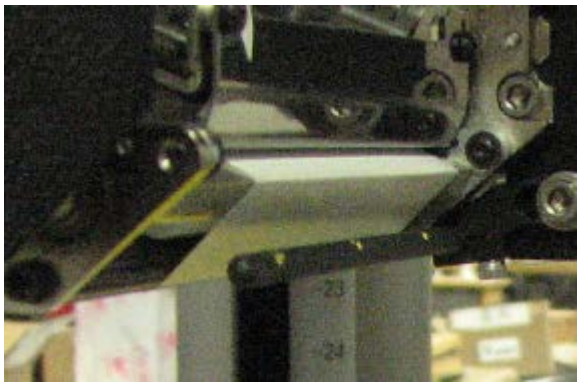
WARNING: It is important to match label size with the label pad size so that no holes are uncovered when the label is on the pad. This may result in losing vacuum.

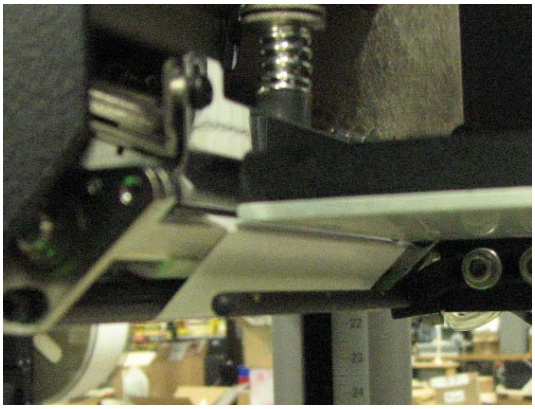
If using the e-tamp pad and manifold the vacuum is generated by a two speed fan. Under the display section, read about fan modes to select the correct mode of operation.

TAMP AIR ASSIST

(only for the vac-blow pad and manifold)

The air assist is only used when using the vac-blow pad and manifold. The air assist tube blows a stream of air onto the label to force it up against the tamp pad during the label feed. The air assist starts to blow when the web starts to move and stops when the label is on the pad. The *air assist* time allows the air assist to blow after the label feed to help stabilize the label.





1) Adjust the air assist tube so it's blowing in the center of label. Ensure that the label feeds out against the label pad.

2) The regulator for the air assist is on the valve bank and should be set between 30 and 40 PSI. This is a typical setting but it may be changed as needed.

3) If a longer air assist is needed to help position the label, press add more time to the assist value in the apply setup section.

TAMP AIR BLAST

(only for the vac-blow pad and manifold)

The air blast transfers the label from the label pad to the product and is a function of time and air pressure.

1) The regulator for the air blast is on the valve bank and would typically be set between 40-50 PSI.

2) The air blast time is changed in the application setup menu and allowed values are between .010 and 1 second.

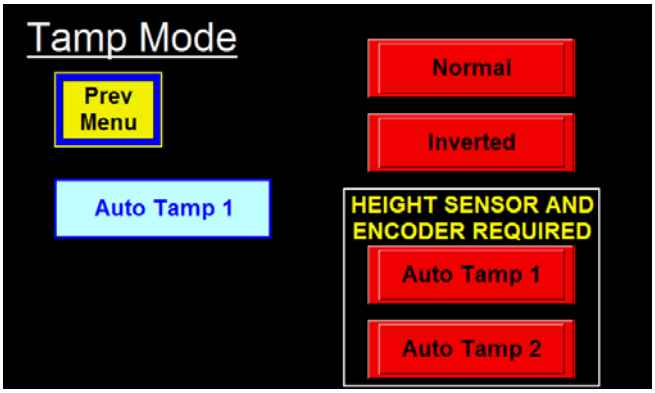
LABEL STATIC TEST

It's important to know if the applicator can consistently place labels in the same place over and over on the product. Without knowing this, you will not know whether label placement problems that occur on the line are due to the machine or to the product being labeled. When the setup on the nose assembly (section 7) is finished, run through the following steps to verify your setup is complete.

1) Make sure the labels are consistently stopping in the same place on the label pad or grid. If this is OK go to step 6; if not, go to step 2.
2) Make sure the label pad surface is clean and the pad matches the label. If OK, go to step 3. If not, clean and re-try the static test again.
3) Make sure the vacuum is set right. If the label flutters when feeding across the pad, the vacuum is too high. If the label falls off or moves after the label has left the liner, the vacuum is too low. If the label feed looks smooth, go to the next step.
4) Work with the air pressure and the position of the air assist tube until the label feeds more consistently onto the pad. Re-try the static test. If the results are still not good enough, go to step 6. Otherwise go to 6.
5) Make sure you are working with good label stock. Try another roll of labels and see if you get the same results.
6) Next you need to cycle the applicator to see if the label will stack on the product. The easiest way to do that is to set the tamp mode to normal tamp. If you are using a vac-blow type pad and manifold set the long tamp length so the label pad is about a ¼ inch above the product. If you are using an e-tamp pad, set the long tamp length so you barely hit the product. With the product under the tamp, use the jog key to cycle the tamp slide. Apply three or four labels on top of each other and check to see how well the labels stack. If good you are done. If not and you are using the vac-blow pad, change either the blow distance or air blast pressure and retest until you get a good stack of labels.

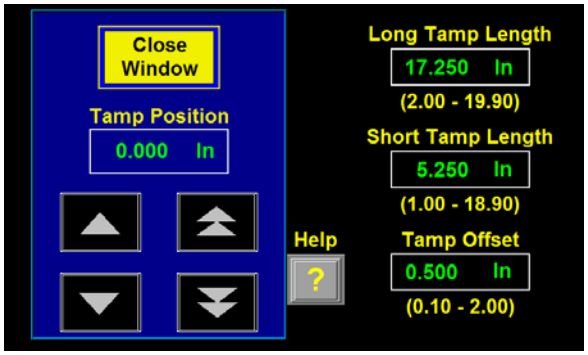
TAMP MODE SETUP

The following will describe the setup procedure for each of the four types of tamp actions. Before starting through this part of the setup, make sure the label pad is in the right position and the labels feed out correctly onto the pad.



NORMAL AND INVERTED TAMP

In *normal mode*, the applicator will get a product detect signal and wait the label placement time/distance. It then tamps toward the product. At the end of the *long tamp length* the label will be blown off the pad. At the same time the tamp slide will return home for another label. The *inverted mode* will receive the label from the printer and extend the tamp slide to the *long tamp position*. From there the applicator will wait for the product detect to blow the label and return home for the next label.



Long Tamp Length –This is the position the label pad will move to apply the labels. The position is relative to the tamp home position which is at the peel edge. To find the position, put the product you are labeling under the label pad. From the display, go to the *tamp setup* menu and select *tamp stroke* and then *motion popup*. Press and hold the fast or slow down key until the label pad is between 1/8 and ¼ above the product. Be careful not to hit the product with the pad because it will cause an amp fault.

In the tamp position window is the position of the tamp. Transfer this value to the *long tamp length* box in the tamp variables section.

NOTE: The *Long Tamp Length* will be used during jog cycle

Now set the tamp speed high enough so you can keep up with label rate. If the tamp length is short, keeping the tamp speed on the low side will help smooth out the operation.

NOTE: When finished with the tamp length setup, do a home routine.

From here run the product through the system at product speed with the tamp enabled. Adjust the *label placement* value until the label is positioned where you want it.

Encoder Use

Using an encoder with the inverted mode works well. The applicator will adjust to the speed changes of the product and will apply the label in the same position on the product if the compensation is properly setup. If the tamp mode is normal, the applicator will not compensate for product speed changes very well because the compensation has to be too high to allow for the tamp action but if the product is running at a consistent speed, the label placement becomes more user friendly because placement units are in inches.

AUTO TAMP MODES

The purpose for this mode is to label different height products and still hold label placement on the product. There is a height sensor that provides a 0-10 VDC signal to the applicator in proportion to the height of the product. When the product detect sensor turns on, the applicator will look at the height sensor and calculate where the label pad should be. It then starts moving to that position at a speed that is portioned to the encoder speed (see max product speed explanation in the display section). Once in position the applicator will wait for the *label placement* distance to be traveled and then blows or tamps the label onto the product. The label pad then moves home at tamp speed.

Banner T30UUNAQ8 Ultrasonic Sensor Setup

One measuring device is the Banner U-Gage and the following is the setup procedure. When setting the sensor we will be pressing the analog button and monitoring the power and analog LEDs. Also this description is for looking down on products to determine height.

This sensor has a range of 4 inches to 39 inches from the face of the sensor. When setting the height of the sensor from the conveyor, it is important to allow extra room for the highest product to grow a bit. Setting the sensor 8 to 10 inches above the highest product is a good idea if the conveyor is still less than 39 inches away.

When teaching the sensor, you will need a flat target like an 8” x 8” piece of cardboard. Remove all products and objects from the sensor’s view so it’s looking at an empty conveyor. Press and hold the “analog” button on the back of the sensor until the power LED goes out and the analog LED turns on steady. Hold the piece of cardboard about 5 inches from the face of the sensor, press and hold the analog button for ½ second and wait for the analog LED to start to flash. Remove the target from under the sensor so you are looking at the conveyor, press and hold the analog button for another ½ second and wait for the power LED to turn back on. The sensor is now setup and ready to setup the tamp parameters.

Banner T30UXUAQ8 Ultrasonic Sensor Setup

This sensor has the same specifications as the above sensor except it has temperature compensation. The sensor is also taught the same as the one above using the analog button. The sensor works best when the sensor mode is set to slow.

Sick UM30-213113 Ultrasonic Sensor Setup

Another height sensor used is the UM30-2 ultrasonic sensor from Sick. The minimum distance on this sensor is 8 inches while the maximum is 51 inches.

When setting this sensor we will be using two buttons just below the display and outside of the D1 and D2 LED:

T1-Decrease Value
T2-Increase Value

Before you start, make sure the sensor is positioned far enough away from the tallest product to be in range. With the sensor looking down at an empty conveyor surface, remember the reading on the sensor display. We will need that value when setting the max distance in the sensor.

Press the **T1** and **T2** buttons at the same time and hold until “Pro” appears in the display. Let go of the keys and wait for “IU” to appear.

Press both **T1** and **T2** at the same time and release. The screen that will now appear is the minimum scan distance. Set the value to 200 which is the minimum for this sensor. The **T1** button will decrease the value while **T2** increases.

Press both **T1** and **T2** at the same time again and release. The new value in the display is the maximum scan distance and should be set a bit higher than what the value was when looking at the conveyor. We started with a value of 657 and now will use the T1 and T2 keys to set it to 680. This could have been set anywhere from 660 to 700.

Press both **T1** and **T2** at the same time again and release. In this part we set the rise/fall characteristic of the analog signal. Toggle **T2** to change the rise/fall so it looks like the display to the right.

Press both **T1** and **T2** at the same time and release. The word “End” should appear and when it does press both **T1** and **T2** again to finish the process.

There are additional parameters in the sensor that where changed if the sensor came from the factory. If the sensor was purchased directly from the manufacturer, the A6 parameter should be set to F01 and the A7 parameter to P01. Follow sensor instructions to get to these parameters.

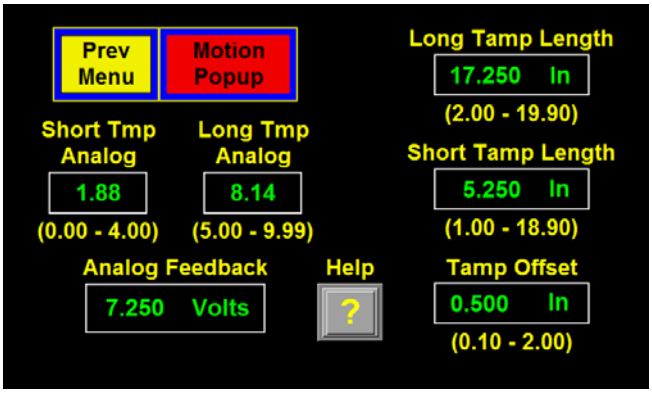
Tamp Parameters

The short and long tamp analog values combined with the long and short tamp lengths are used by the controller to come up with the product height. It is important to input these values correctly and accurately.

Note: The easiest way to set the following variables is to use the Tamp Setup Tutorial in the configuration menu. The description before is in the *tamp setup* under the *tamp stroke* menu.

Before starting this procedure, make sure the software limits have been set. See the Special Option description of the display section of this manual.

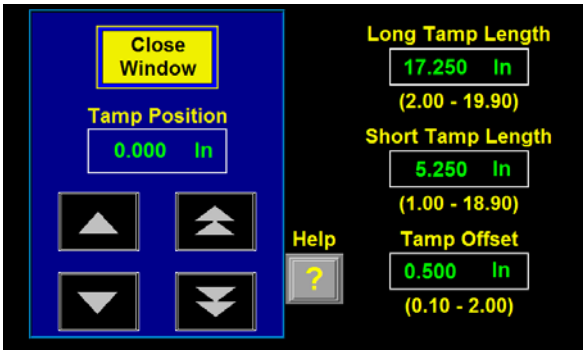
Short and Long Analog Parameters



Before starting the setup process, find a target that is ½ to 1 inch shorter than the shortest product. Also find a spacer to add to the top of the highest product that will raise the height by ½ to 1 inch. Move the target for the shortest product under the analog sensor. It should be positioned so the height sensor is looking at the main body of the product and not an edge. The *Analog Feedback* window on the display will show the analog value of the product and will be jumping around a bit. Input the average value into the *Long Tmp Analog* parameter. Now move the tallest product plus the height spacer into the same position and input the analog feedback into the *Short Tmp Analog.*

Short and Long Tamp Lengths

Move the highest product plus spacer under the tamp pad. Use the fast and slow keys in the motion popup to move the label pad down to the product so the pad is 0.060 above or just barely touching it. If you hit the product too hard, an amp fault will occur.



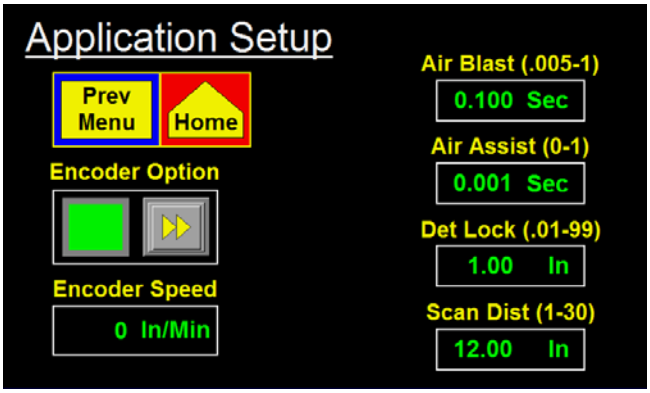
Once in position, enter the displayed tamp position into the short tamp length. Replace the tallest product with the target used for the short product and lower the label pad so it is 0.060 above or just barely touching it. Enter the tamp position into the long tamp length parameter. When finished, send the label pad home using the tamp home key.

NOTE: The *Short Tamp Length* will be used during jog cycle

Tamp Offset

The tamp offset is the distance you want the label pad to hover over the product before applying. The Auto Tamp 1 mode, the label will be blown off so you will want the label pad at a distance to where it is out of the way of the product but still blows the label flat. Start with about 0.250. If auto mode 2 where the label pad hits the product, you will want the pad to come down to where it is out of the way of the product and when in position, the tamp moves down to the product height and returns. Keeping the offset reasonably low will keep the label pad from building a lot of speed before it has to reverse direction. For this mode, I would start with 0.250 and raise it from there.

Scan Distance

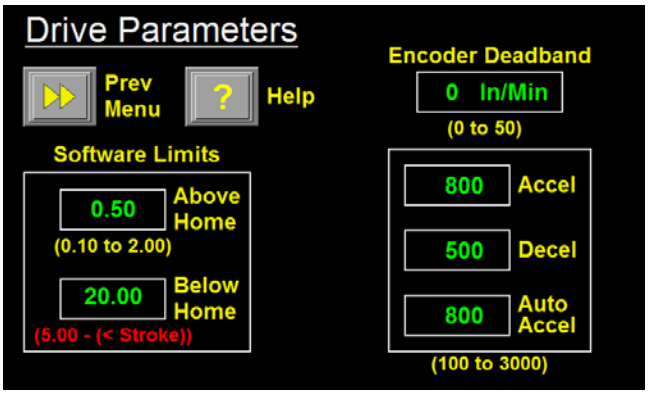


Scan distance is in the application setup menu and is the distance the height sensor will look at the product before calculating the height. If the product has an irregular shape, it is a good idea to set the distance to that of the product. If the product has a regular shape, the scan distance can be shorter.

Remember when setting the scan distance that the application does not start until the product has traveled the distance. This means scan distance can impact product rate.

SETTING SOFTWARE LIMITS

The applicator is now setup ready to apply labels which means the applicator is in position and will not be moved. Before you start labeling, setup the software limits so the tamp will not accidentally be jogged into something it shouldn't.



Go to the Drive Parameters menu in the Special Options section. See the display section of this manual as to how to get there. Measure the distance from the bottom of the label pad (in the home position) to the farthest object you do not want to hit. In most cases this would be the conveyor. Take into account the length of the tamp slide. If the distance to the conveyor is 22 inches and the tamp slide is 20 then set the below home limit to 19.75 or less. If the slide is plenty long enough and the conveyor is 22 inches away then set the limit at 21.50 inches so the label pad will not crash into the conveyor.

The above home limit is usually not needed since most applicators come with a retract limit which is used for homing. This will be used later as the product is developed but for now leave the value higher than 1 inch.

PRINTER SETTINGS

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

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

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

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

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

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

Parallel port is always on regardless of switch settings.

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

RS232 Transmit/Receive Switches

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

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

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

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

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

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

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

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

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

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

Printer Set-Up Switches

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

DSW2-1	SETTING
Off	Therm Xfr
On	Direct Thrm

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

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

DSW2-2	SETTING
Off	Gap
On	Eye-Mark

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

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

DSW2-3	SETTING
Off	Disabled
On	Enabled

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

DSW2-4	SETTING
Off	Disabled
On	Enabled

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

DSW2-5	SETTING
Off	Single Job
On	Multi Job

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

DSW2-7	SETTING
Off	Standard
On	Non-Std

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

DSW2-8	SETTING
Off	Disable
On	Enable

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

DSW3-1	SETTING
Off	Before
On	After

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

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

DSW3-3	SETTING
Off	Sensor Used
On	Not Used

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

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

DSW3-4	SETTING
Off	Enable
On	Disable

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

External Signal Interface Switches

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

DSW3-5	SETTING
Off	Enable
On	Disable

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

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

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

Note: Use Type 4 for use with the applicator.

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

DSW3-8	SETTING
Off	Enable
On	Disable

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

Sato Printers: S-8400 Series

Advanced Mode

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

Print Method → Transfer / Direct

External Signal → Enable
External Signal → Type 4

Service Mode

Ext. 9 Pin Select – Mode 2

ZEBRA PAX PRINTER SETTINGS

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

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

PARAMETER	SETTING
Print Mode	Applicator (required)
Media Type	Non-continuous (required)
Sensor Type	Web (required)
Applicator Port	Mode 2 (required)
Start Print Signal	Pulse Mode (required)
Resync Mode	Feed Mode (required)

DATAMAX "A" CLASS MARK II PRINTER SETTINGS

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

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

3600 SERVO TAMP

GENERAL

MAINTENANCE

PROCEDURES

!!CAUTION!! DISCONNECT THE AIR AND POWER FROM THE MACHINE BEFORE DOING THE FOLLOWING PROCEDURES. FAILURE TO FOLLOW THIS PRECAUTION COULD RESULT IN INJURIES FROM MOVING PARTS OR ELECTRICAL SHOCK.

DAILY MAINTENANCE

1- Clean the printhead 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- Clean belt drive. Manually extend the slide using the motion buttons in the tamp setup section of the display. Once the slide has been extended, remove power to the applicator. Open the stainless guard covering the roller assembly and blow out the dust and wipe down the aluminum extrusion to remove any residue. When finished, turn power back on to the applicator and do a home routine when prompted to bring the label pad back to the peel edge.

SEMI-ANNUAL MAINTENANCE

1- Replace filters.

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

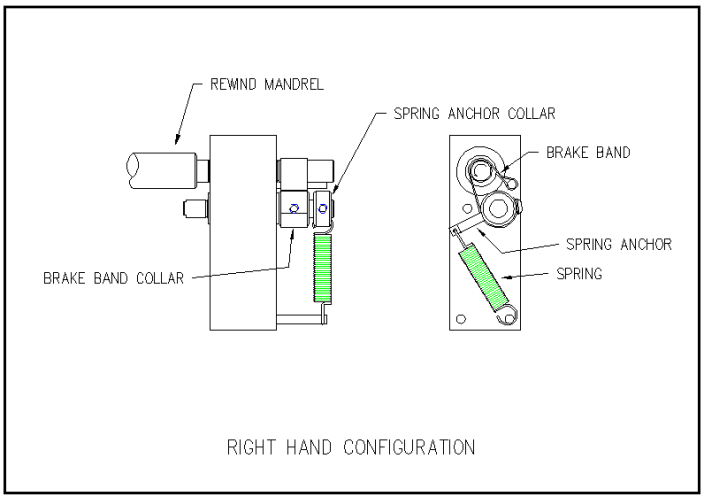
3- Examine pulleys, belts and rewind clutch for wear.

DANCER ARM ADJUSTMENT

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

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

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

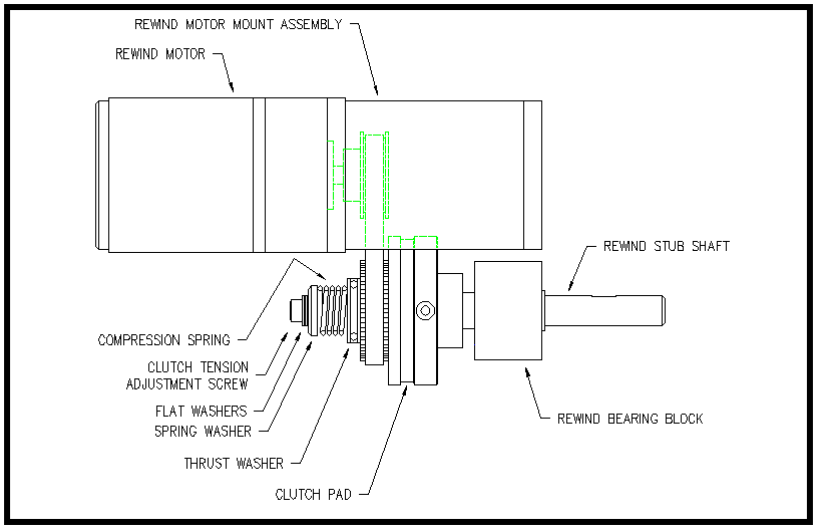


(adjusting brake band)

REWIND SLIP CLUTCH ADJUSTMENT

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

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



(rewind/clutch assembly)

Rewind Slip Clutch Adjustment

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

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

5- Replace stainless cover.

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 the display.	Make sure cable is plugged in.
Power switch on, display is lit and working; printer not on.	Printer turned off.	Turn the printer on.
	Power cord going to the printer is disconnected.	Inside the applicator, plug the printer power cord in.
Label liner breaking.	Labels are not threaded correctly.	Re-thread labels.
	Unwind/rewind disks or guide collar not aligned with printer.	Adjust disks and collars so the labels flow through the printer.
	Adhesive build-up.	Clean as necessary.
	Label jammed in printer.	Clear jam.
	Bad roll of labels.	Replace label roll.
Labels are not consistently stopping on label pad.	Vacuum pump not working.	Clean or replace pump.
	Too little or too much vacuum.	Adjust vacuum pressure.
	Air assist too high or too low.	Adjust air pressure.
	Tamp pad not positioned correctly to the peel edge.	Check with the applicator setup section on how to position the label pad.
	Air assist tube not positioned correctly.	Adjust the position of the air assist tube.
	Adhesive build-up on the pad.	Clean label pad.

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

PROBLEM	POSSIBLE CAUSE	SOLUTION
Machine will not cycle.	No label formats in print buffer.	Send label format. Check printer manual for parameters.
	No product detect signal.	Verify that that the product detect sensor works. Replace if necessary.
	Printer I/O cable not plugged in.	Reconnect cable.
	Printer fault.	Correct the printer problem.
	The tamp is disabled	Enable tamp
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 assist, tamp speed too slow.	Go through the setup procedure for proper setting.
	The label print and apply cycle may be too long for the product rate.	Slow product rate.
Applicator cycles at random.	Loose or vibrating product detect sensor.	Check and correct.
	Product detector alignment is marginal.	Refer to product setup on how to set sensor.
	Loose wiring connections.	Check cables and wiring harnesses inside applicator.
	R.F. interference.	Isolate and correct.
No label feed.	Printer is not configured correctly.	Refer to printer manual.
	No label data in print buffer.	Send label data to printer.
	No external print signal sent.	Investigate and correct.

PROBLEM	POSSIBLE CAUSE	SOLUTION
Compressed print on labels.	Applicator unwind brake is too tight creating too much pull through the printer.	Loosen unwind tension.
	Worm 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.

DISPLAY FAULTS

The operator interface will display warnings and alarms that pertain to the application. The following are screens that will help diagnose a drive or display problem that is more serious than the standard alarm.

DRIVE FAULT
The drive fault screen will list six things that will stop the applicator from running but without this screen, it would be impossible to know why it stopped.

Overcurrent –This fault should not occur but if it does, the drive current has exceeded its configured value. Call factory if this continues.

Amp Fault –If this occurs, there has been a failure on the drive or the label pad is pressing into a product. The factory should be consulted if this occurs.

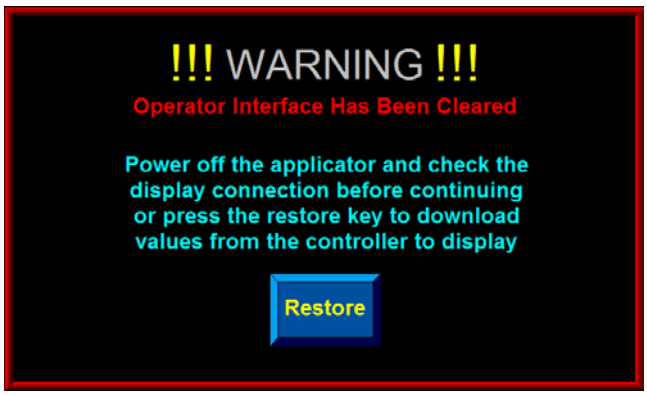
E-Stop –This is for future use. If this circuit was enabled and open, this fault would occur.
For now, this is not enabled.

Task Fault –This is a programming issue. Call the factory if this occurs.

Motor Temp –This alarm turns on if the motor temperature goes too high. The current motor does not support this but if the alarm occurs, call the factory.

Amp Temp –If the amplifier/drive gets too hot, this alarm will occur. Make sure the cooling fan is running if this occurs.

CLEARED DISPLAY VARIABLES
On power up, the applicator controller will send all system variables to the display. From then on until the applicator is powered off, the controller will look at the display to see if any of the variables have been changed. If for some reason, the applicator control sees the variables have been reset to zero, it will send this screen to warn the operator the display has lost its variables. Pressing the "*Restore*" key has the same effect as powering the unit off and restarting it.



There are several things that can cause this situation but the most common is the display cable was unplugged.

DISPLAY WRITE ERROR

The applicator controller will try to write to the display or read from the display ten times. If it gets no response at the end of the attempts, it will call this screen up. If this occurs, it likely is a programming problem and the factory should be contacted.

SOFTWARE MISMATCH ERROR

If the program on the display does not match the program in the drive, this screen appears warning the operator that some screens or functions may not be supported by both devices. This can happen if the drive program is updated and not the display or vise versa.

ACCESSORIES

The following is only a partial list of accessories available for the 3600 Servo Tamp.

LOW LABEL DETECTION
The Low Label Detection accessory is a sensor that generates a signal when the unwind is low on labels. The applicator will display an alarm screen and activate the amber light on the alarm light stack (if purchased) to inform the operator that the unwind is about to run out of labels. This option can be field installed.

WEB BREAK DETECTION
The Web Break Detection accessory is a sensor that generates a signal when there is a break in the web. The applicator will display an alarm screen and turn on the red light on the alarm light stack (if purchased) to inform the operator that the label web is broken.

ALARM LIGHT STACK
The 3600 Servo Tamp can handle up to 3 alarm lights
Red –Critical Alarm (steady)
Amber –Warning Alarm (steady)
Green –Ready Signal (steady)

LINE RATE COMPENSATION
This kit includes encoder and cable. Splitter cables can be purchased so one encoder will drive up to five applicators.

VACUUM OFF
The code for this option is already on the applicator but a special valve bank is needed to control the air going to the vacuum pump.

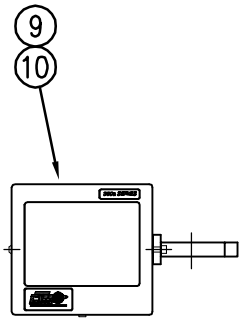
3600 SER O TAMP PRINTER APPLICATOR SPARE PARTS LIST
When ordering parts, present Serial Number of 3600st

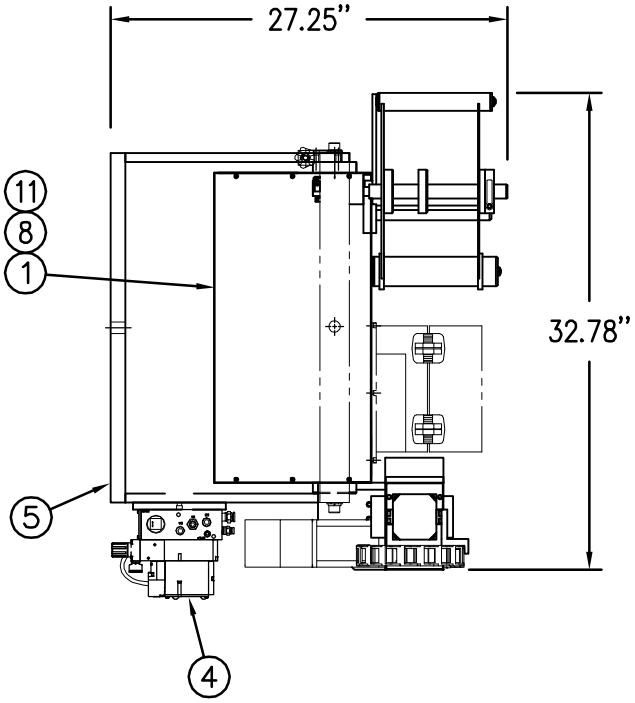
Part Number	Recommended Qty	Description
RECOMMENDED TOOL		
PE-TE6000	1	WIRING TOOL required for insertion/extraction @ terminal strip
WEAR ITEMS		
PE-FI1050	1	REPLACEMENT FILTER
PM-BELT1015	1	REWIND BELT
MP-238-0274	1	3" CLUTCH PAD
PM-BB1030	1	UNWIND BRAKE BAND
PM-FASP30434	1	DANCER ARM UNWIND SPRING
CP-BELT1058-XX	1	29"/39"/49" LINEAR MODULE BELT
RECOMMENDED SPARE PARTS LIST		
MP-DR1005	1	DRIVE BOARD
ASS-200ST-0126		APPLICATOR DISPLAY
PE-MO1082	1	SERVO MOTOR w/BRAKE
ASS-238-0428	1	REWIND GEAR MOTOR
MP-PS1024 (Vac/Blow Style)	1	24 VDC POWER SUPPLY
PE-PS1007 (Fan Style)		
PE-FU2078	1	10 AMP FUSE
ASS-200-0427	1	SM312LV PRODUCT DETECT SENSOR ASSEMLY
PM-BE1232	1	REWIND CLUTCH THRUST BEARING
PM-FASP30540	1	REWIND CLUTCH SPRING, MED DUTY (STD REW)
PM-FASP30431	1	REWIND CLUTCH SPRING, HEAVY DUTY (PWRD REW)
MP-211-0217-7	1	AIR ASSIST TUBE
TAMP MODULE		
ASS-238ST-0130M	1	TAMP 3 STATION MAC VALVE ASSEMBLY w/FILTER
PM-VA2395M	1	24V DC VALVE LESS BASE for MAC VALVE
PM-VA2396M	1	0-30 PSI REGULATOR with 0-60 GAUGE for MAC VALVE
PM-VA2397M	1	0-120 PSI REGULATOR with 0-160 GAUGE for MAC VALVE
ASS-238ST-0102	2	ROLLER ASSEMBLY
ASS-238ST-0103	2	ROLLER ASSEMBLY
ASS-238ST-0104	2	ROLLER ASSEMBLY
PM-BE1210	1	ER 12 BEARING

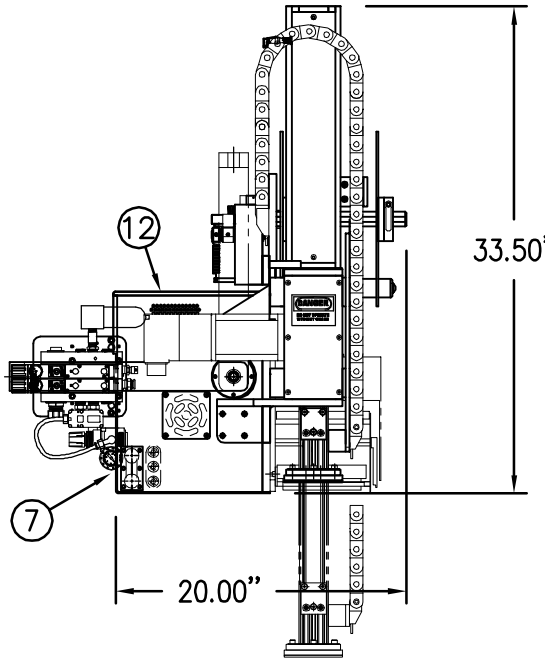
3600 SERVO TAMP

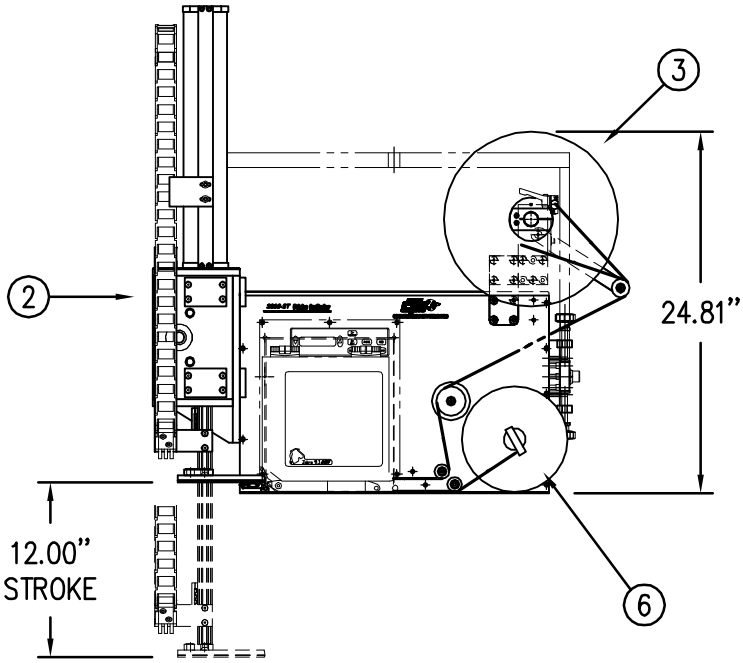
DRAWINGS

CTM-238STL-12S-12S-A-XX	
XS	SERIAL
XP	PARALLEL
XE	ETHERNET
SX	SATO
ZX	ZEBRA
DX	DATAMAX









BILL OF MATERIAL

CTM-238STL-12S-12S-A-XX

	ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
	①	1	ASS-238ST-0123L-A	LH 3600ST VAC/BLOW APPLY TYPE CORE UNIT
	②	1	ASS-238ST-0101L-12	12" LH SERVO TAMP NOSE ASSEMBLY
	③	1	MOD-238-0122L	UNWIND MODULE with 12" DISKS - LH
		1	MOD-238-0122AL	UNWIND MODULE with ALUMINUM DISK for "REELS UP" - LH
REV 4	④	1	ASS-238ST-0129M	VALVE BANK ASSEMBLY W/ FILTER FOR 3600-ST & 360a-ST
	⑤	1	WAS-238-0130	U-ARM WELDMENT for 3600 APPLICATOR
	⑥	1	ASS-238-0144-12	REWIND SPINDLE ASSEMBLY for 12" UNWIND
	⑦	1	ASS-238-0228	HOUSING COVER DEBURRED
	⑧	1	MP-DR1005	DRIVE CONTROL BOARD
REV 3	⑨	1	ASS-200ST-0126	DISPLAY UNIT
	⑩	1	ASS-200-0138	DISPLAY UNIT to UPRIGHT MOUNTING BRACKET
	⑪	1	PE-C01018	SELF-LOCKING APPLICATOR POWER CORD
	⑫	1	MP-238-0221	ELECTRIC TOP COVER
	⑬	2	ASS-238-0134	1" ROLLER ASS'Y w/ SHAFT
	⑭	1	ASS-238-0135	2" ROLLER ASS'Y w/ SHAFT
	⑮	2	MP-238-0247	2" DIA. GUIDE COLLARS
	⑯	1	MP-211-0217-1	AIR ASSIST TUBE
	⑰	1	MP-238-0242	AIR ASSIST TUBE HOLDER
	⑱	15"	PM-AH1000	AIR ASSIST TUBING
	⑲	1	MP-238ST-0246	TAMP TO MANIFOLD TRANSITION PLATE
	⑳	1	PM-238ST-0201	TAMP TO MANIFOLD TRANSITION PL. WASHER PL
SERIAL	㉑	1	ASS-238a-0405-9	SERIAL ADAPTER ASSEMBLY - 9 Ppin
PARALLEL	㉒	1	PE-CA2500	PARALLEL CABLE
PARALLEL	㉓	1	PE-CC1070	PARALLEL PORT CLIP KIT
PARALLEL	㉔	1	PE-PA1040	FLAT RIBBON CLIP
ETHERNET	㉕	1	ASS-238-0460	PARALLEL TO ETHERNET ADAPTER ASSEMBLY
USB	㉖	1	ASS-238-0465	PARALLEL TO USB ADAPTER ASSEMBLY
	27	1	SEE TABLE BELOW	PRINT ENGINE INTERFACE HARNESS (NOT SHOWN)

㉗ 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

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APPLICATOR SERIES: 3600-ST | APPLICATOR WIDTH(S): N/A | GROUP: 3600 SERVO TAMP

TITLE: CTM ASSEMBLY FOR LH 3600ST, 12" SERVO TAMP, 12" UNWIND & VACUUM BLOW STYLE APPLY

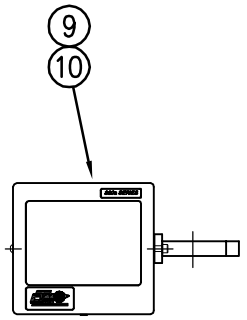
Dept. Code: 70

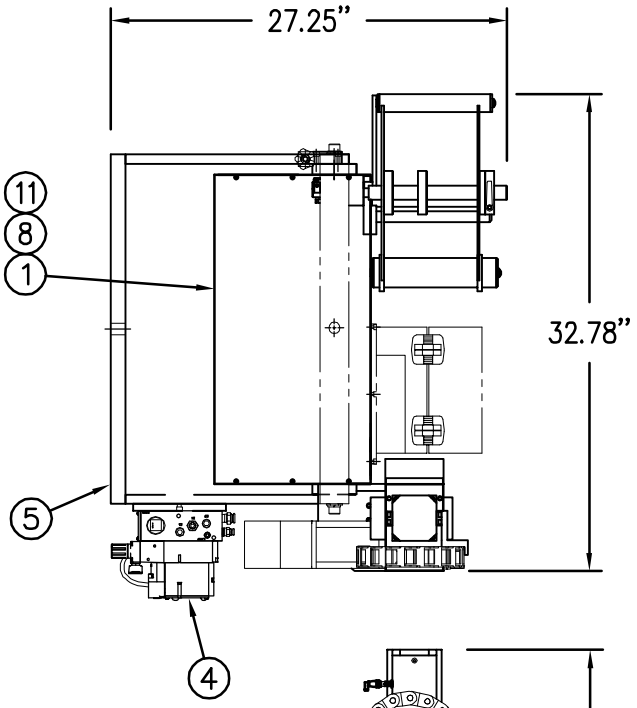
REV. BY: TK | Scale: 1=14 | Date: 10/01/2012 | DRAWN BY: ERIC SANOR

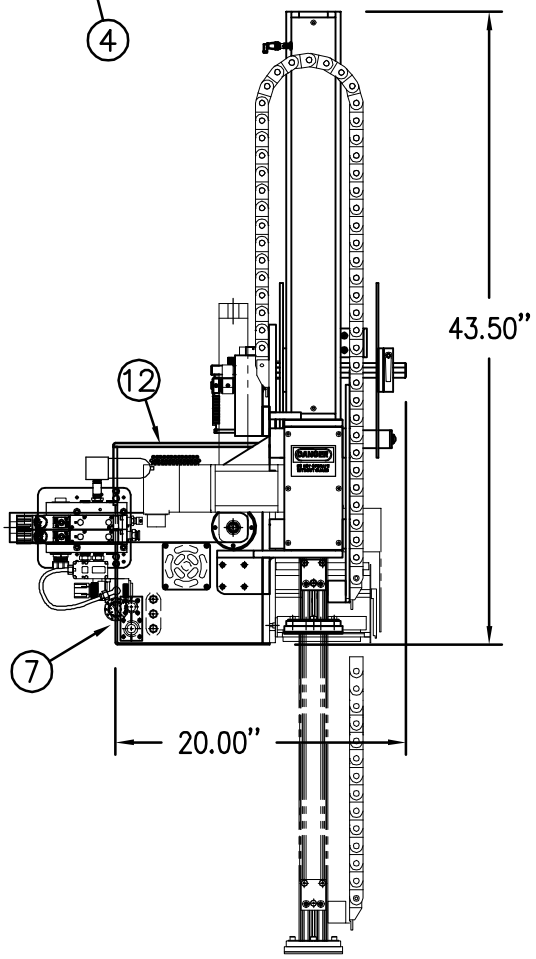
F:\Engineering\Standard Parts\Applicator\3600-ST\3600-ST\CTM-238STL-12S-12S-A-XX

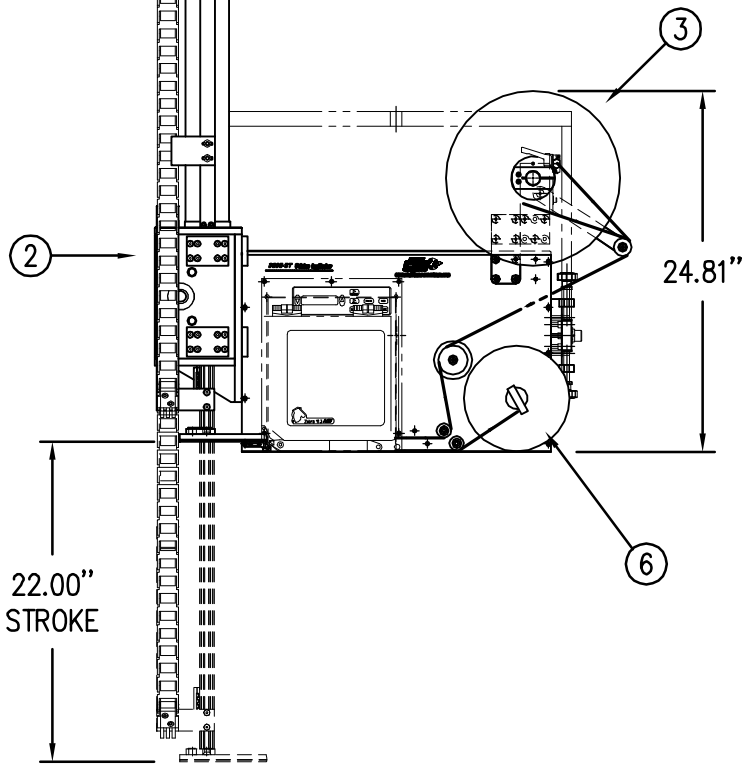
REV.	REV. DESCRIPTION	REV. DATE
5	ADD ITEMS 12 thru 27 THAT WERE IN E2 BOM	10/12/17

CTM-238STL-22S-12S-A-XX	
-XS	SERIAL
-XP	PARALLEL
-XE	ETHERNET
-SX	SATO
-ZX	ZEBRA
-DX	DATAMAX









BILL OF MATERIAL

CTM-238STL-22S-12S-A-XX

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
1	1	ASS-238ST-0123L-A	LH 3600ST VAC/BLOW APPLY TYPE CORE UNIT
2	1	ASS-238ST-0101L-22	22" LH SERVO TAMP NOSE ASSEMBLY
3	1	MOD-238-0122L	UNWIND MODULE with 12" DISKS - LH
	1	MOD-238-0122AL	UNWIND MODULE with ALUMINUM DISK for "REELS UP" - LH
REV 4 / 4	1	ASS-238ST-0129M	VALVE BANK ASSEMBLY W/ FILTER FOR 3600-ST & 360a-ST
5	1	WAS-238-0130	U-ARM WELDMENT for 3600 APPLICATOR
6	1	ASS-238-0144-12	REWIND SPINDLE ASSEMBLY for 12" UNWIND
7	1	ASS-238-0228	HOUSING COVER DEBURRED
8	1	MP-DR1005	DRIVE CONTROL BOARD
REV 3 / 9	1	ASS-200ST-0126	DISPLAY UNIT
10	1	ASS-200-0138	DISPLAY UNIT to UPRIGHT MOUNTING BRACKET
11	1	PE-C01018	SELF-LOCKING APPLICATOR POWER CORD
12	1	MP-238-0221	ELECTRIC TOP COVER
13	2	ASS-238-0134	1" ROLLER ASS'Y w/ SHAFT
14	1	ASS-238-0135	2" ROLLER ASS'Y w/ SHAFT
15	2	MP-238-0247	2" DIA. GUIDE COLLARS
16	1	MP-211-0217-1	AIR ASSIST TUBE
17	1	MP-238-0242	AIR ASSIST TUBE HOLDER
18	15"	PM-AH1000	AIR ASSIST TUBING
19	1	MP-238ST-0246	TAMP TO MANIFOLD TRANSITION PLATE
20	1	PM-238ST-0201	TAMP TO MANIFOLD TRANSITION PL. WASHER PL
SERIAL	21	1	ASS-238a-0405-9	SERIAL ADAPTER ASSEMBLY - 9 Ppin
PARALLEL	22	1	PE-CA2500	PARALLEL CABLE
PARALLEL	23	1	PE-CC1070	PARALLEL PORT CLIP KIT
PARALLEL	24	1	PE-PA1040	FLAT RIBBON CLIP
ETHERNET	25	1	ASS-238-0460	PARALLEL TO ETHERNET ADAPTER ASSEMBLY
USB	26	1	ASS-238-0465	PARALLEL TO USB ADAPTER ASSEMBLY
	27	1	SEE TABLE BELOW	PRINT ENGINE INTERFACE HARNESS (NOT SHOWN)

27	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

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APPLICATOR SERIES: 3600-ST | APPLICATOR WIDTH(S): N/A | GROUP: 3600 SERVO TAMP

REV. | REV. DESCRIPTION | REV. DATE
5 | ADD ITEMS 12 thru 27 THAT WERE IN E2 BOM | 10/12/17

TITLE: CTM ASSEMBLY FOR LH 3600ST, 22" SERVO TAMP, 12" UNWIND & VACUUM BLOW STYLE APPLY

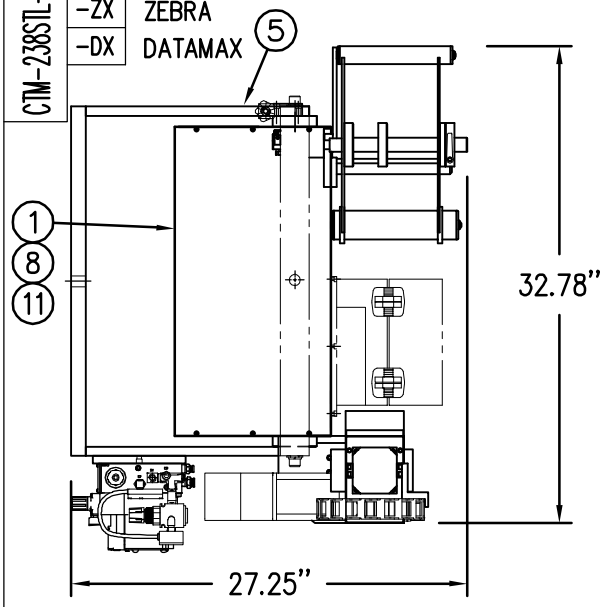
REV. BY: TK | Scale: 1=14 | Date: 10/08/2012 | DRAWN BY: ERIC SANOR

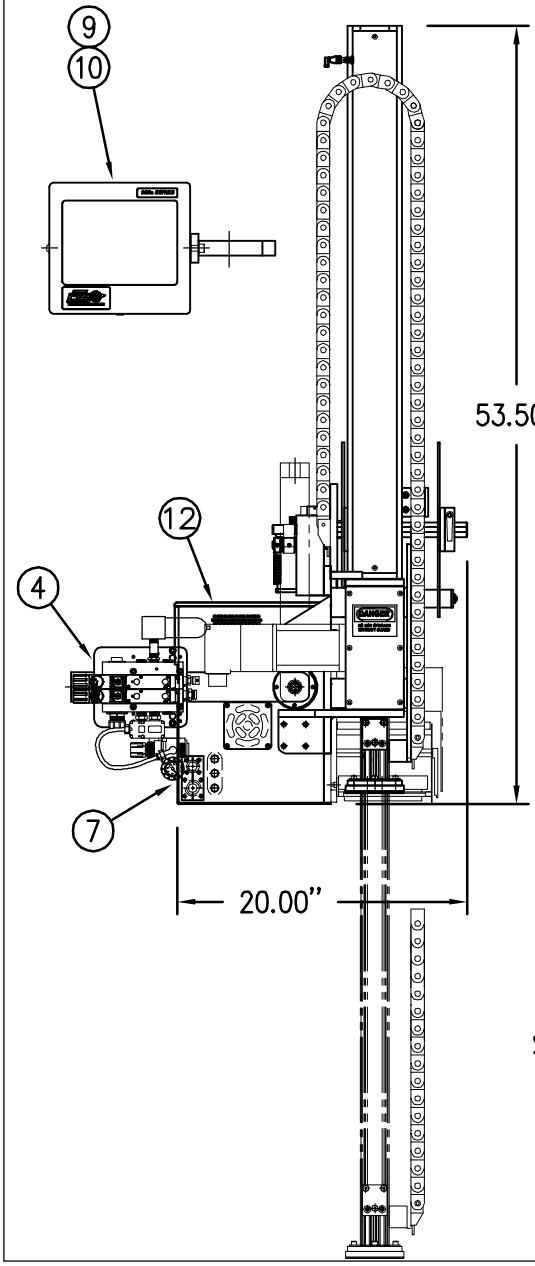
Dept. Code 70

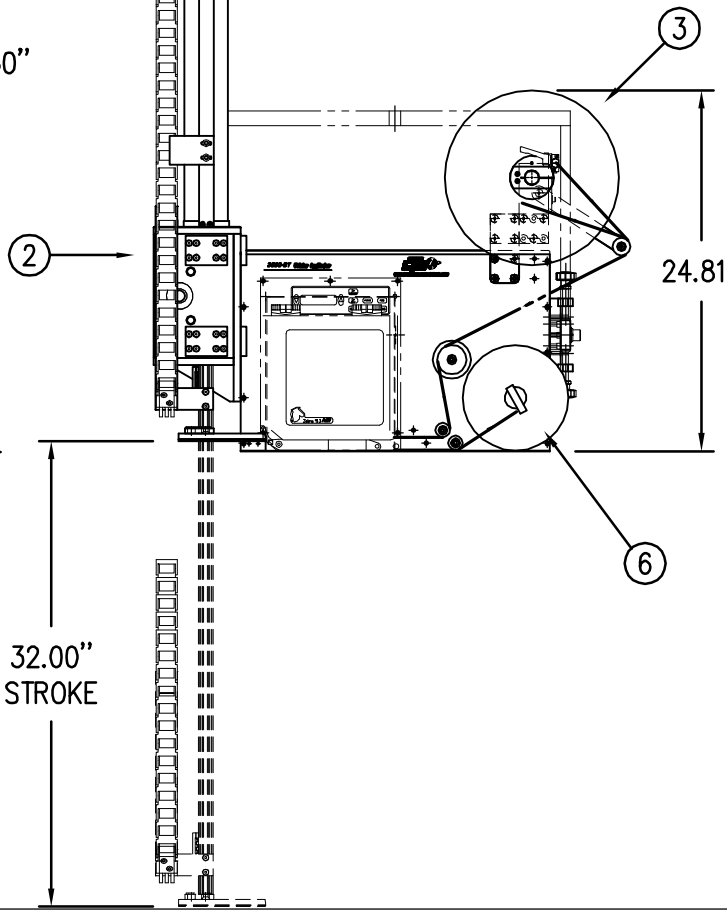
F:\Engineering\Standard Parts\Applicator\3600-ST\3600-ST\CTM-238STL-22S-12S-A-XX

CTM-238STL-32S-12S-A-XX

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







BILL OF MATERIAL

CTM-238STL-32S-12S-A-XX

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
1	1	ASS-238ST-0123L-A	LH 3600ST VAC/BLOW APPLY TYPE CORE UNIT
2	1	ASS-238ST-0101L-32	32" LH SERVO TAMP NOSE ASSEMBLY
3	1	MOD-238-0122L	UNWIND MODULE with 12" DISKS - LH
	1	MOD-238-0122AL	UNWIND MODULE with ALUMINUM DISK for "REELS UP" - LH
REV 4	1	ASS-238ST-0129M	VALVE BANK ASSEMBLY W/ FILTER FOR 3600-ST & 360a-ST
5	1	WAS-238-0130	U-ARM WELDMENT for 3600 APPLICATOR
6	1	ASS-238-0144-12	REWIND SPINDLE ASSEMBLY for 12" UNWIND
7	1	ASS-238-0228	HOUSING COVER DEBURRED
8	1	MP-DR1005	DRIVE CONTROL BOARD
REV 3	1	ASS-200ST-0126	DISPLAY UNIT
10	1	ASS-200-0138	DISPLAY UNIT to UPRIGHT MOUNTING BRACKET
11	1	PE-C01018	SELF-LOCKING APPLICATOR POWER CORD
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13	2	ASS-238-0134	1" ROLLER ASS'Y w/ SHAFT
14	1	ASS-238-0135	2" ROLLER ASS'Y w/ SHAFT
15	2	MP-238-0247	2" DIA. GUIDE COLLARS
16	1	MP-211-0217-1	AIR ASSIST TUBE
17	1	MP-238-0242	AIR ASSIST TUBE HOLDER
18	15"	PM-AH1000	AIR ASSIST TUBING
19	1	MP-238ST-0246	TAMP TO MANIFOLD TRANSITION PLATE
20	1	PM-238ST-0201	TAMP TO MANIFOLD TRANSITION PL. WASHER PL
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)

SERIAL
PARALLEL
PARALLEL
PARALLEL
ETHERNET
USB

27	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

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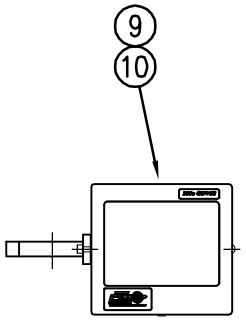
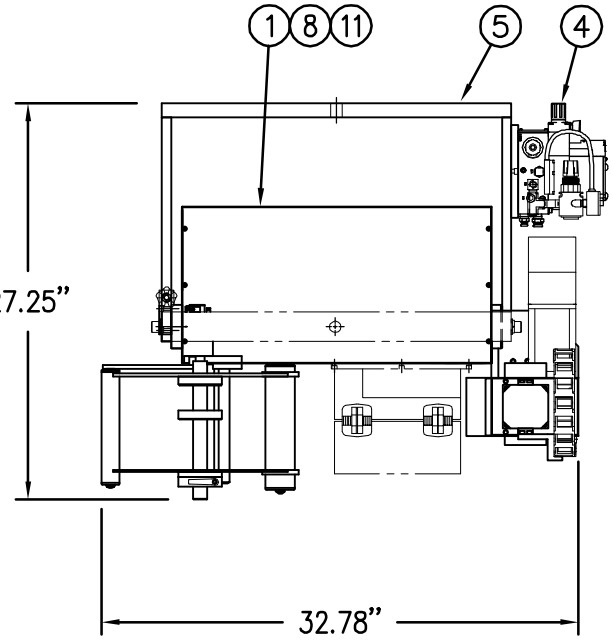
APPLICATOR SERIES: 3600-ST
APPLICATOR WIDTH(S): N/A
GROUP: 3600 SERVO TAMP

REV. | REV. DESCRIPTION | REV. DATE
5 | ADD ITEMS 12 thru 27 THAT WERE IN E2 BOM | 10/12/17

TITLE: CTM ASSEMBLY FOR LH 3600ST, 32" SERVO TAMP, 12" UNWIND & VACUUM BLOW STYLE APPLY
REV. BY: TK
Scale: 1=14
Date: 10/08/2012
DRAWN BY: ERIC SANOR
Dept. Code 70
F:\Engineering\Standard Parts\Applicator\3600-ST\3600-ST\CTM-238STL-32S-12S-A-XX

CTM-238STR-12S-12S-A-XX	
-XS	SERIAL
-XP	PARALLEL
-XE	ETHERNET
-SX	SATO
-ZX	ZEBRA
-DX	DATAMAX



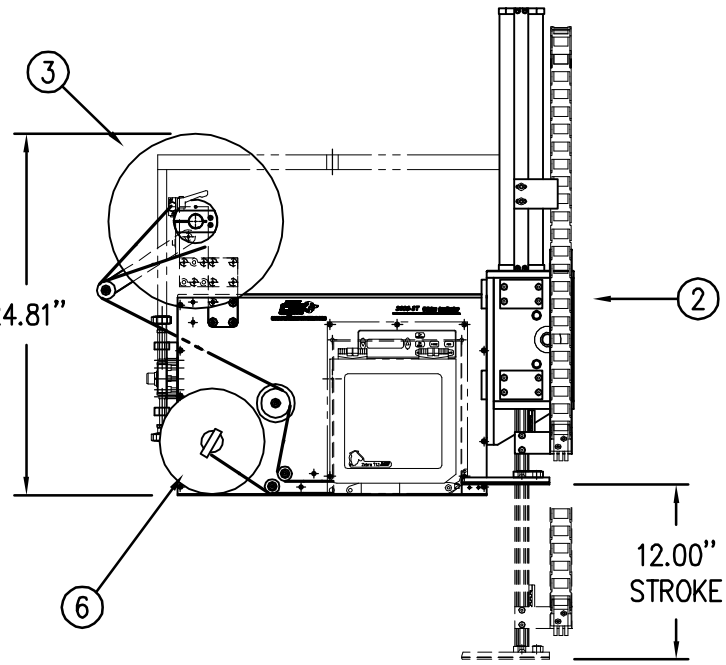


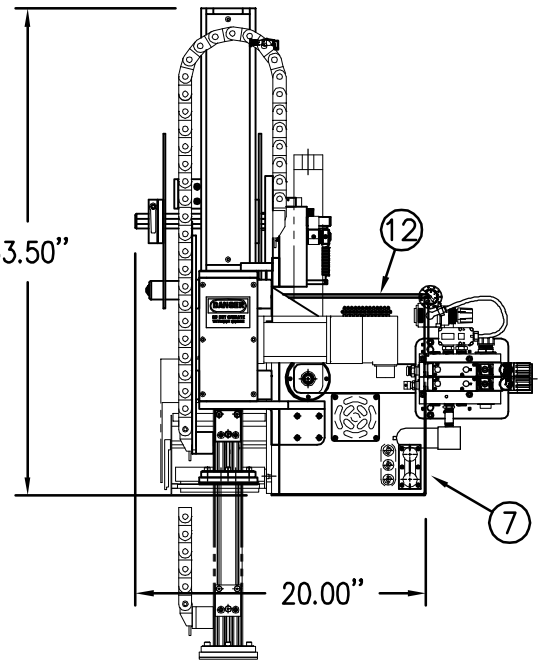
BILL OF MATERIAL

CTM-238STR-12S-12S-A-XX

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	ASS-238ST-0123R-A	RH 3600ST VAC/BLOW APPLY TYPE CORE UNIT
②	1	ASS-238ST-0101R-12	12" RH SERVO TAMP NOSE ASSEMBLY
③	1	MOD-238-0122R	UNWIND MODULE with 12" DISKS - RH
	1	MOD-238-0122AR	UNWIND MODULE with ALUMINUM DISK for "REELS UP" - RH
REV 3 ④	1	ASS-238ST-0129M	VALVE BANK ASSEMBLY W/ FILTER FOR 3600-ST & 360a-ST
⑤	1	WAS-238-0130	U-ARM WELDMENT for 3600 APPLICATOR
⑥	1	ASS-238-0144-12	REWIND SPINDLE ASSEMBLY for 12" UNWIND
⑦	1	ASS-238-0228	HOUSING COVER DEBURRED
⑧	1	MP-DR1005	DRIVE CONTROL BOARD
REV 2 ⑨	1	ASS-200ST-0126	DISPLAY UNIT
⑩	1	ASS-200-0138	DISPLAY UNIT to UPRIGHT MOUNTING BRACKET
⑪	1	PE-C01018	SELF-LOCKING APPLICATOR POWER CORD
⑫	1	MP-238-0221	ELECTRIC TOP COVER
⑬	2	ASS-238-0134	1" ROLLER ASS'Y w/ SHAFT
⑭	1	ASS-238-0135	2" ROLLER ASS'Y w/ SHAFT
⑮	2	MP-238-0247	2" DIA. GUIDE COLLARS
⑯	1	MP-211-0217-1	AIR ASSIST TUBE
⑰	1	MP-238-0242	AIR ASSIST TUBE HOLDER
⑱	15"	PM-AH1000	AIR ASSIST TUBING
⑲	1	MP-238ST-0246	TAMP TO MANIFOLD TRANSITION PLATE
⑳	1	PM-238ST-0201	TAMP TO MANIFOLD TRANSITION PL. WASHER PL
SERIAL ㉑	1	ASS-238a-0405-9	SERIAL ADAPTER ASSEMBLY - 9 Ppin
PARALLEL ㉒	1	PE-CA2500	PARALLEL CABLE
PARALLEL ㉓	1	PE-CC1070	PARALLEL PORT CLIP KIT
PARALLEL ㉔	1	PE-PA1040	FLAT RIBBON CLIP
ETHERNET ㉕	1	ASS-238-0460	PARALLEL TO ETHERNET ADAPTER ASSEMBLY
USB ㉖	1	ASS-238-0465	PARALLEL TO USB ADAPTER ASSEMBLY
	27	SEE TABLE BELOW	PRINT ENGINE INTERFACE HARNESS (NOT SHOWN)

㉗ 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





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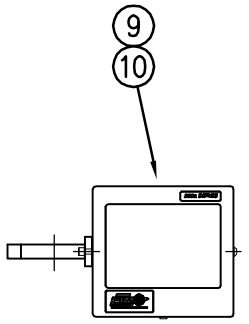
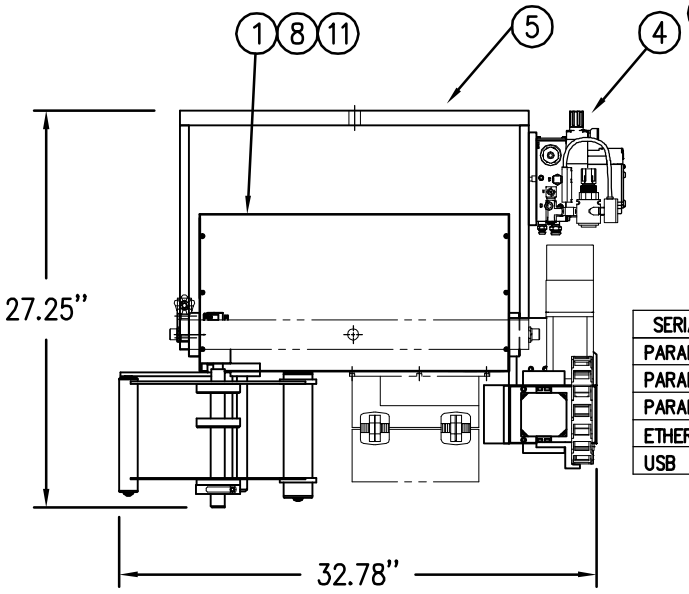
APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	REV. BY:	Scale:	Date:	DRAWN BY:	Dept. Code
3600-ST	N/A	3600 SERVO TAMP	CTM ASSEMBLY FOR RH 3600ST, 12" SERVO TAMP, 12" UNWIND & VACUUM BLOW STYLE APPLY	TK	1=14	10/01/2012	ERIC SANOR	70

REV.	REV. DESCRIPTION	REV. DATE	F:\Engineering\Standard Parts\Applicator\3600-ST
4	ADD ITEMS 12 thru 27 THAT WERE IN E2 BOM	10/12/17	3600-ST\CTM-238STR-12S-12S-A-XX

CTM-238STR-22S-12S-A-XX	
-XS	SERIAL
-XP	PARALLEL
-XE	ETHERNET
-SX	SATO
-ZX	ZEBRA
-DX	DATAMAX



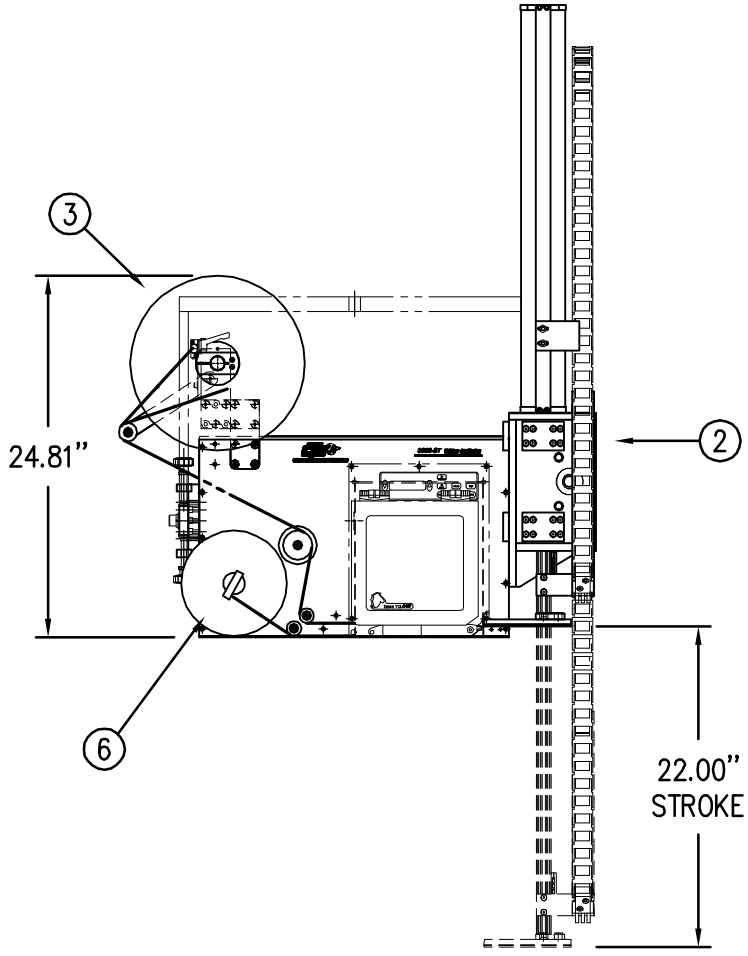


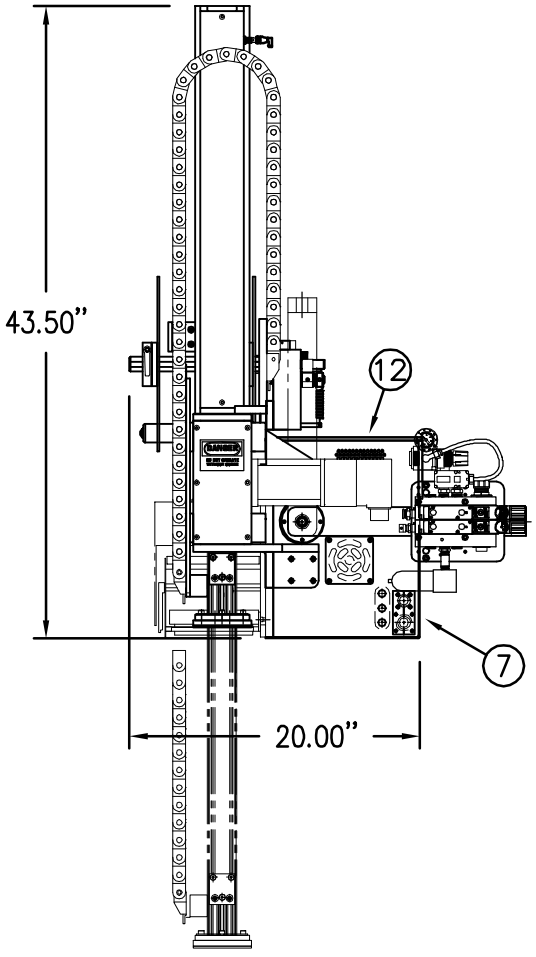
BILL OF MATERIAL

CTM-238STR-22S-12S-A-XX

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	ASS-238ST-0123R-A	RH 3600ST VAC/BLOW APPLY TYPE CORE UNIT
②	1	ASS-238ST-0101R-22	22" RH SERVO TAMP NOSE ASSEMBLY
③	1	MOD-238-0122R	UNWIND MODULE with 12" DISKS - RH
	1	MOD-238-0122AR	UNWIND MODULE with ALUMINUM DISK for "REELS UP" - RH
④ REV 4	1	ASS-238ST-0129M	VALVE BANK ASSEMBLY W/ FILTER FOR 3600-ST & 360a-ST
⑤	1	WAS-238-0130	U-ARM WELDMENT for 3600 APPLICATOR
⑥	1	ASS-238-0144-12	REWIND SPINDLE ASSEMBLY for 12" UNWIND
⑦	1	ASS-238-0228	HOUSING COVER DEBURRED
⑧	1	MP-DR1005	DRIVE CONTROL BOARD
⑨ REV 3	1	ASS-200ST-0126	DISPLAY UNIT
⑩	1	ASS-200-0138	DISPLAY UNIT to UPRIGHT MOUNTING BRACKET
⑪	1	PE-C01018	SELF-LOCKING APPLICATOR POWER CORD
⑫	1	MP-238-0221	ELECTRIC TOP COVER
⑬	2	ASS-238-0134	1" ROLLER ASS'Y w/ SHAFT
⑭	1	ASS-238-0135	2" ROLLER ASS'Y w/ SHAFT
⑮	2	MP-238-0247	2" DIA. GUIDE COLLARS
⑯	1	MP-211-0217-1	AIR ASSIST TUBE
⑰	1	MP-238-0242	AIR ASSIST TUBE HOLDER
⑱	15"	PM-AH1000	AIR ASSIST TUBING
⑲	1	MP-238ST-0246	TAMP TO MANIFOLD TRANSITION PLATE
⑳	1	PM-238ST-0201	TAMP TO MANIFOLD TRANSITION PL. WASHER PL
SERIAL ㉑	1	ASS-238a-0405-9	SERIAL ADAPTER ASSEMBLY - 9 Ppin
PARALLEL ㉒	1	PE-CA2500	PARALLEL CABLE
PARALLEL ㉓	1	PE-CC1070	PARALLEL PORT CLIP KIT
PARALLEL ㉔	1	PE-PA1040	FLAT RIBBON CLIP
ETHERNET ㉕	1	ASS-238-0460	PARALLEL TO ETHERNET ADAPTER ASSEMBLY
USB ㉖	1	ASS-238-0465	PARALLEL TO USB ADAPTER ASSEMBLY
27	1	SEE TABLE BELOW	PRINT ENGINE INTERFACE HARNESS (NOT SHOWN)

㉗ 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





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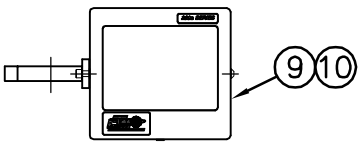
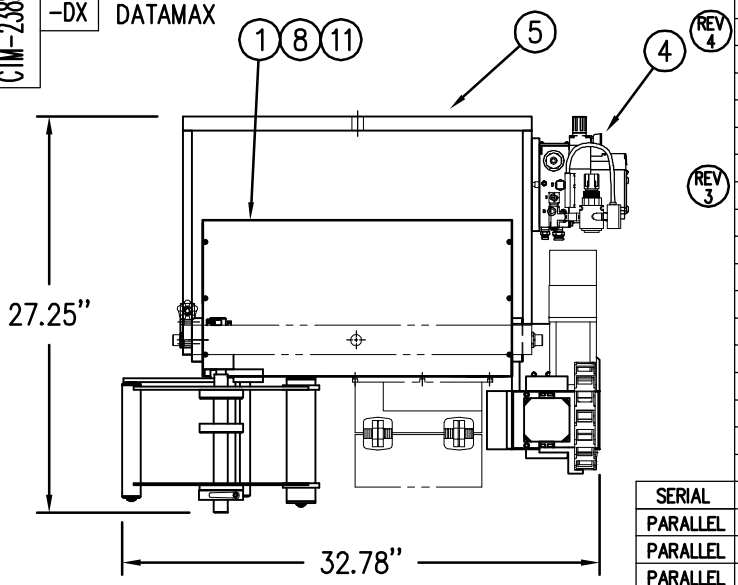
APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	REV. BY:	Scale:	Date:	DRAWN BY:	Dept. Code
3600-ST	N/A	3600 SERVO TAMP	CTM ASSEMBLY FOR RH 3600ST, 22" SERVO TAMP, 12" UNWIND & VACUUM BLOW STYLE APPLY	TK	1=14	06/28/2012	ERIC SANOR	70

F:\Engineering\Standard Parts\Applicator\3600-ST\3600-ST\CTM-238STR-22S-12S-A-XX

REV.	REV. DESCRIPTION	REV. DATE
5	ADD ITEMS 12 thru 27 THAT WERE IN E2 BOM	10/12/17

CTM-238STR-32S-12S-A-XX	
-XS	SERIAL
-XP	PARALLEL
-XE	ETHERNET
-SX	SATO
-ZX	ZEBRA
-DX	DATAMAX





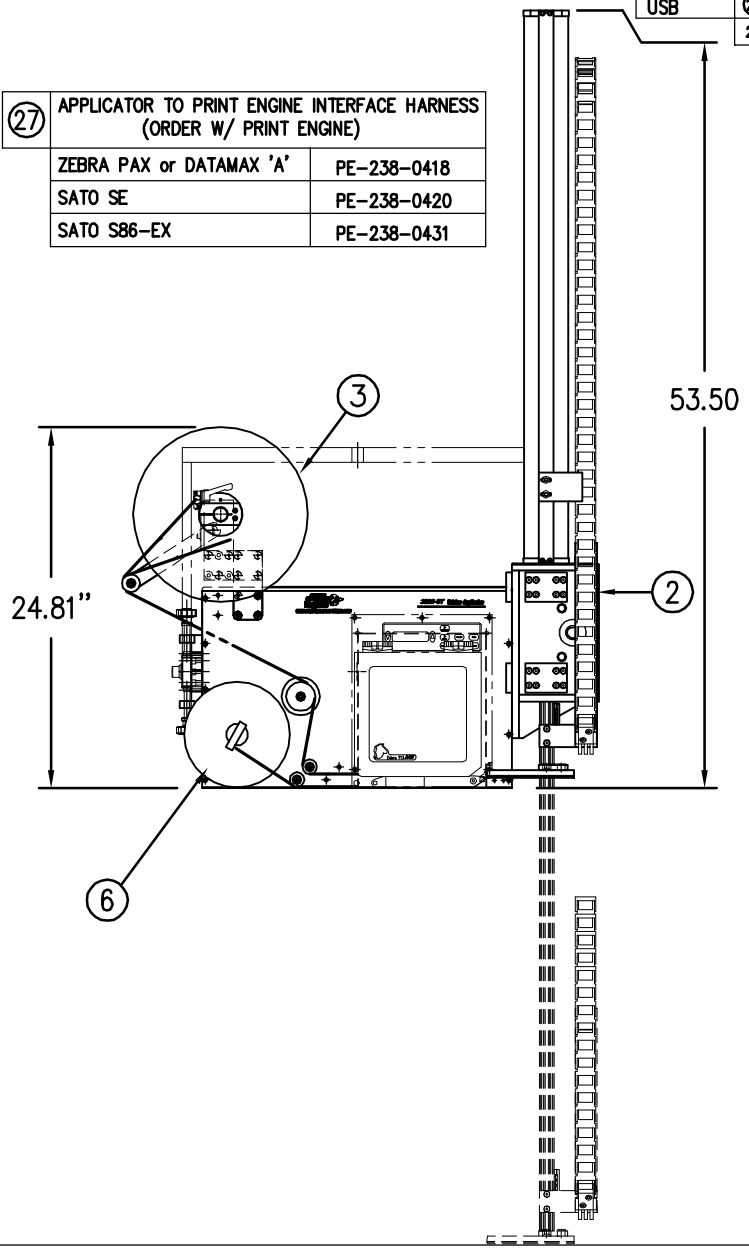
BILL OF MATERIAL

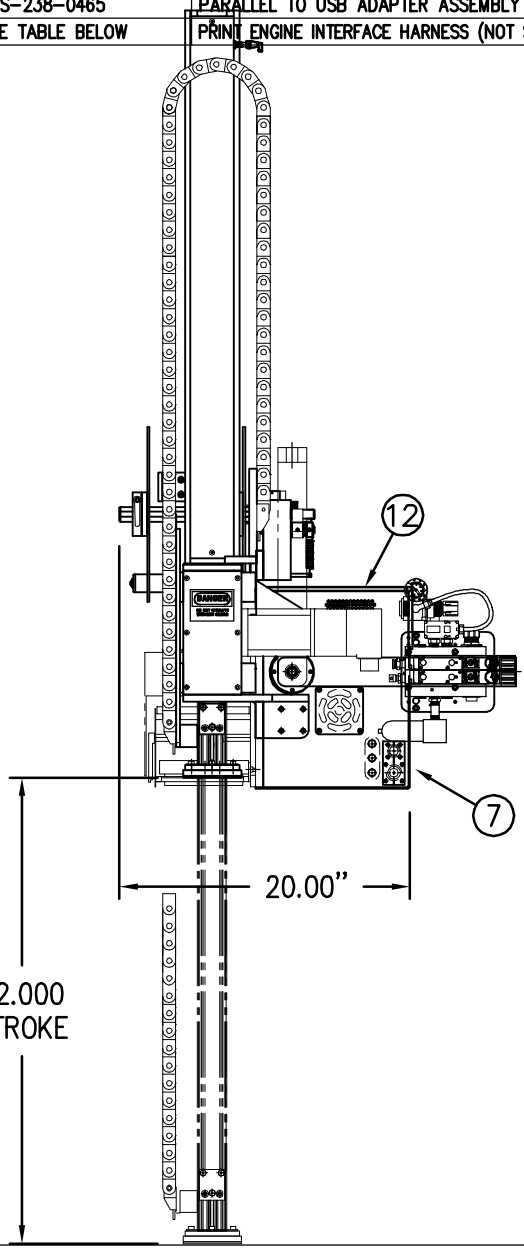
CTM-238STR-32S-12S-A-XX

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
1	1	ASS-238ST-0123R-A	RH 3600ST VAC/BLOW APPLY TYPE CORE UNIT
2	1	ASS-238ST-0101R-32	32" RH SERVO TAMP NOSE ASSEMBLY
3	1	MOD-238-0122R	UNWIND MODULE with 12" DISKS - RH
	1	MOD-238-0122AR	UNWIND MODULE with ALUMINUM DISK for "REELS UP" - RH
4	1	ASS-238ST-0129M	VALVE BANK ASSEMBLY W/ FILTER FOR 3600-ST & 360a-ST
5	1	WAS-238-0130	U-ARM WELDMENT for 3600 APPLICATOR
6	1	ASS-238-0144-12	REWIND SPINDLE ASSEMBLY for 12" UNWIND
7	1	ASS-238-0228	HOUSING COVER DEBURRED
8	1	MP-DR1005	DRIVE CONTROL BOARD
9	1	ASS-200ST-0126	DISPLAY UNIT
10	1	ASS-200-0138	DISPLAY UNIT to UPRIGHT MOUNTING BRACKET
11	1	PE-C01018	SELF-LOCKING APPLICATOR POWER CORD
12	1	MP-238-0221	ELECTRIC TOP COVER
13	2	ASS-238-0134	1" ROLLER ASS'Y w/ SHAFT
14	1	ASS-238-0135	2" ROLLER ASS'Y w/ SHAFT
15	2	MP-238-0247	2" DIA. GUIDE COLLARS
16	1	MP-211-0217-1	AIR ASSIST TUBE
17	1	MP-238-0242	AIR ASSIST TUBE HOLDER
18	15"	PM-AH1000	AIR ASSIST TUBING
19	1	MP-238ST-0246	TAMP TO MANIFOLD TRANSITION PLATE
20	1	PM-238ST-0201	TAMP TO MANIFOLD TRANSITION PL. WASHER PL
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)

SERIAL	21
PARALLEL	22
PARALLEL	23
PARALLEL	24
ETHERNET	25
USB	26

27	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





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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	REV. BY:	Scale:	Date:	DRAWN BY:	Dept. Code
3600-ST	N/A	3600 SERVO TAMP	CTM ASSEMBLY FOR RH 3600ST, 32" SERVO TAMP, 12" UNWIND & VACUUM BLOW STYLE APPLY	TK	1=14	10/01/2012	ERIC SANOR	70

REV.	REV. DESCRIPTION	REV. DATE	F:\Engineering\Standard Parts\Applicator\3600-ST
5	ADD ITEMS 12 thru 27 THAT WERE IN E2 BOM	10/12/17	3600-ST\CTM-238STR-32S-12S-A-XX

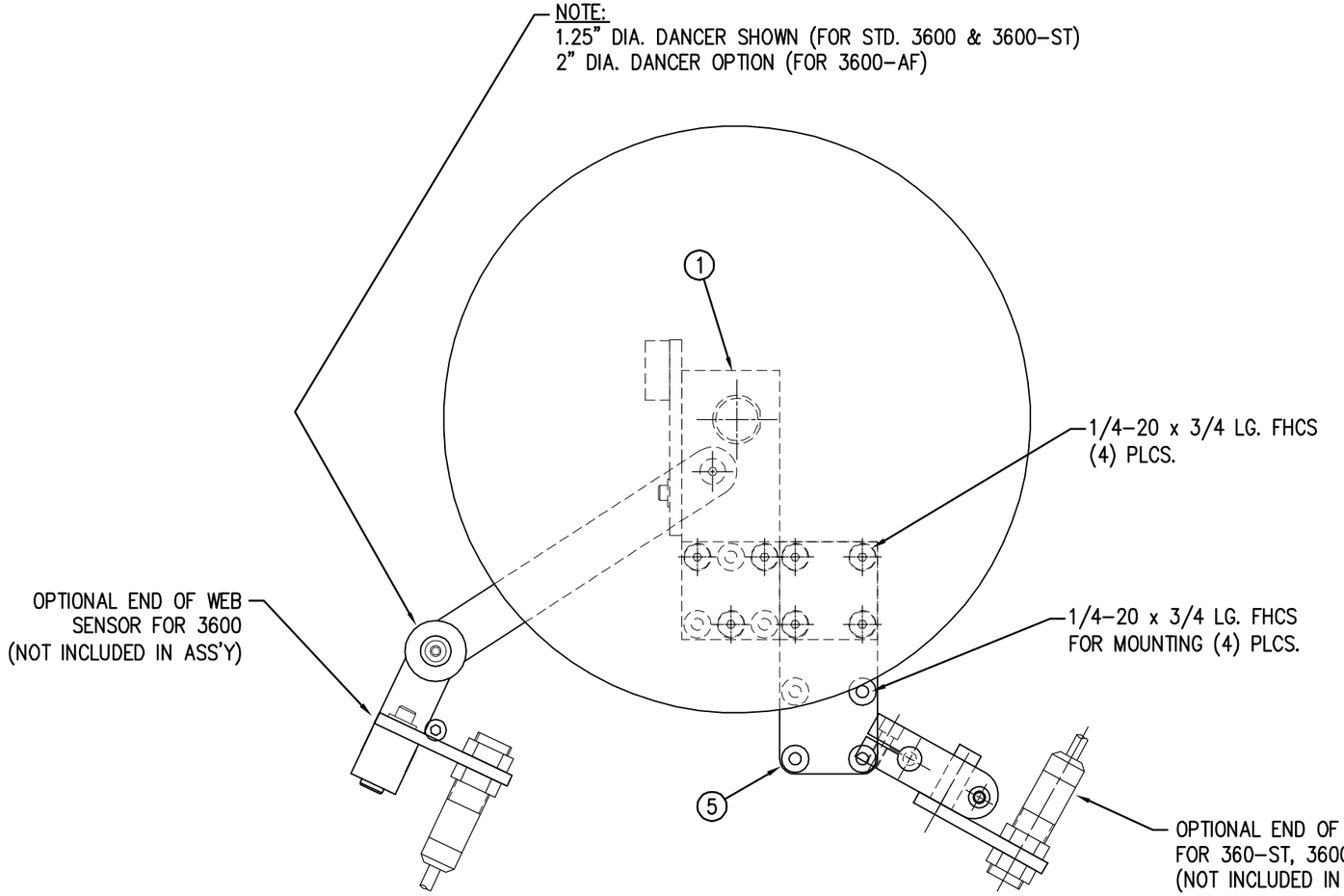
BILL OF MATERIAL

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.	

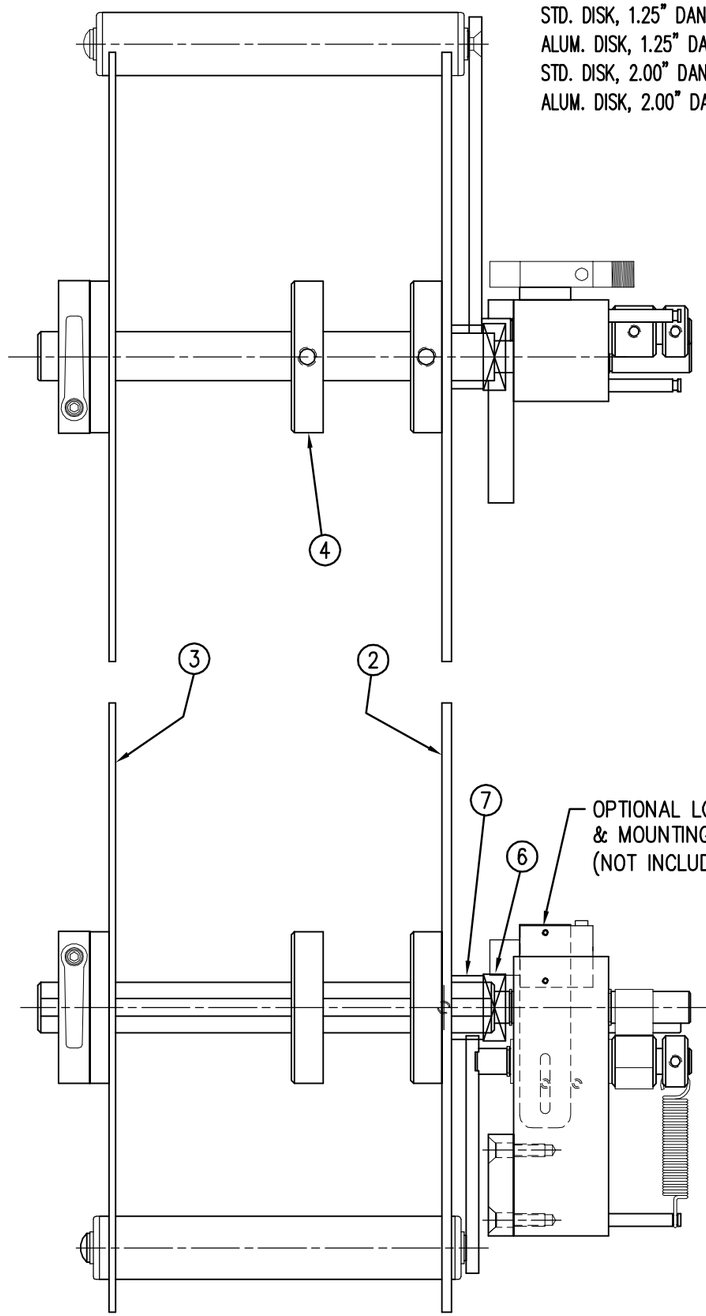
RH & LH ASSEMBLIES AVAILABLE
-RH ASSEMBLY SHOWN-

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



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



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APPLICATOR SERIES: 3600	APPLICATOR WIDTH(S): N/A	GROUP: UNWIND ASSEMBLY	TITLE: 12" UNWIND ASSEMBLY w/ UNWIND DISK MODULES		Dept. Code 70
REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale: 1=3	Date: 12/09/13
5	ADD EOW OPTION FOR 360-ST, 3600-ST & 3600-AF	02/06/14	TK		DRAWN BY: T. KELLY

F:\Engineering\Standard Parts\Applicator\3600-AF\MOD-238-0122XRL\
3600-AF

BILL OF MATERIAL

SAS-238-0122R/L-X

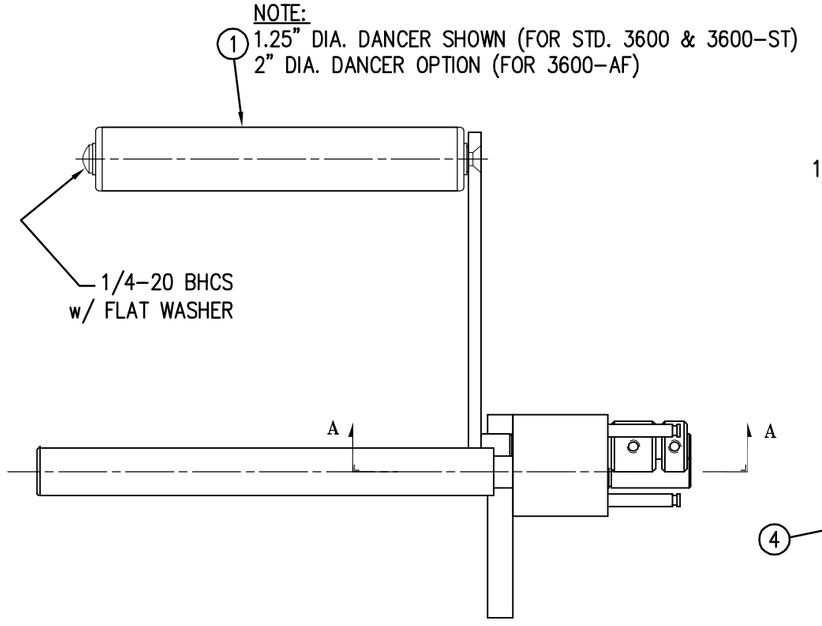
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION	
①	1	ASS-238-0137	1.25" DIA. DANCER ROLL	OMIT (3600 & 3600-ST)
	1	ASS-200-0131	2" DIA. DANCER ROLL	-2 (3600-AF)
②	1	ASS-238-0180	UNWIND BLOCK ASSEMBLY	
③	1	MP-238-0210	MOUNT ARM	
④	1	MP-238-0218	DANCER ARM	
⑤	1	MP-238-0219	UNWIND HUB SHAFT	
⑥	1	MP-238-0212	UNWIND STUD SHAFT	
⑦	2	PM-FASR1010	5/8" DIA. SNAP RING	
⑧	1	MP-238-0217	DANCER ARM SHAFT	
⑨	1	PM-FASR1005	1/2" DIA. SNAP RING	
⑩	1	MP-238-0215	INNER COLLAR	
⑪	1	MP-238-0216	OUTER HUB	
⑫	1	MP-238-0213	UNWIND BELT PIN	
⑬	1	MP-238-0214	UNWIND SPRING PIN	
⑭	1	PM-FASP30434	TENSION SPRING	
⑮	1	PM-FASP30500	SPRING ANCHOR	
⑯	1	PM-BB1030	BELT	

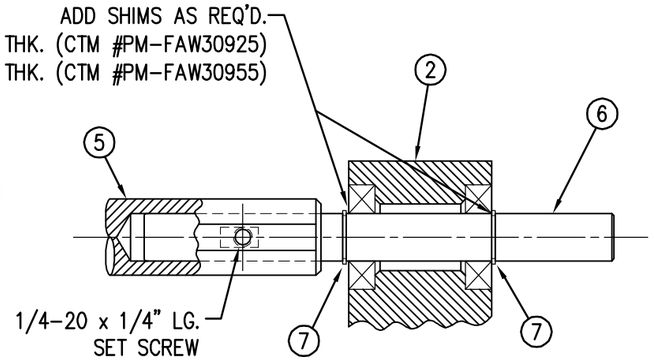
SAS-238-0122R/L-X

1.25" DIA. DANCER	-0122R/L
2.00" DIA. DANCER	-0122R/L-2

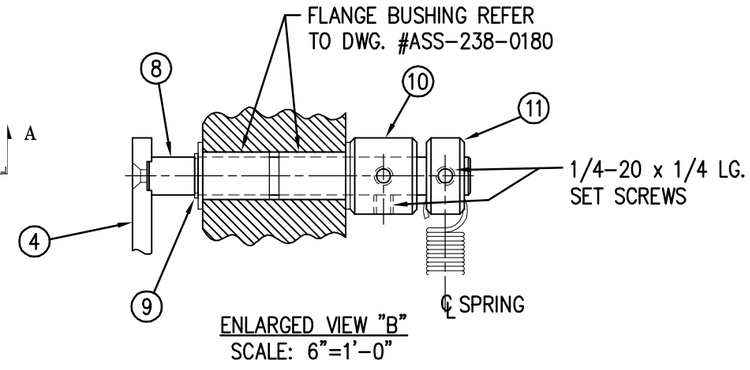
RH & LH ASSEMBLIES AVAILABLE
-RH ASSEMBLY SHOWN-

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

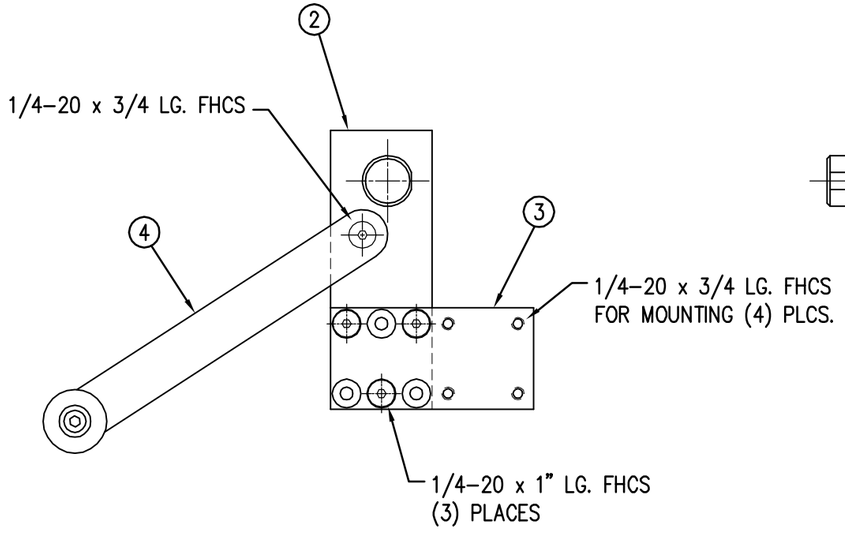


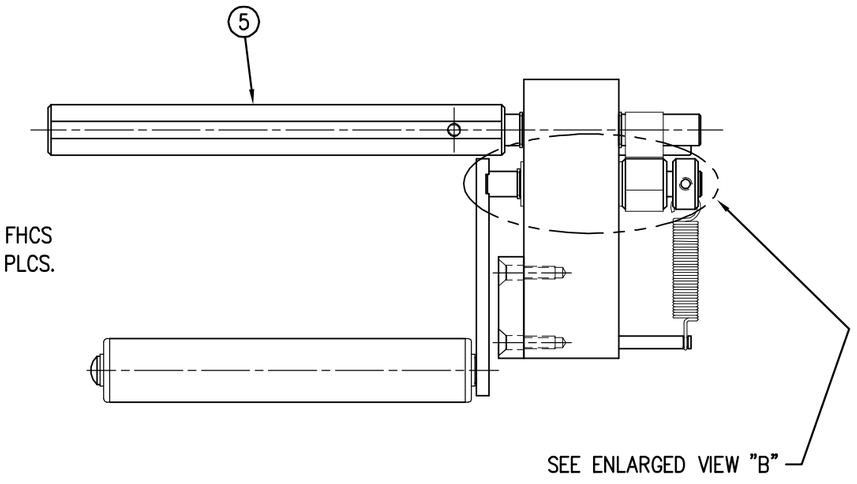


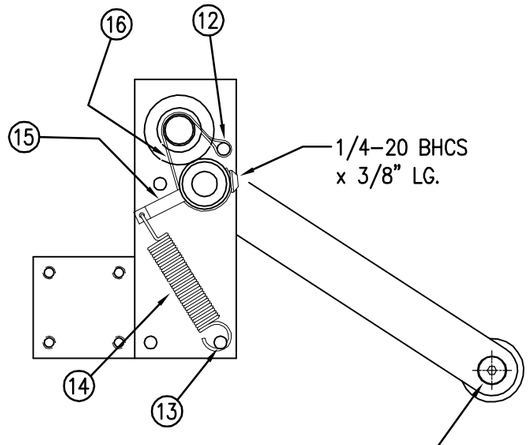
ENLARGED SECTIONAL VIEW "A-A"
SCALE: 6"=1'-0"



ENLARGED VIEW "B"
SCALE: 6"=1'-0"







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APPLICATOR SERIES: 3600
APPLICATOR WIDTH(S): 7.5"
GROUP: UNWIND
TITLE:

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:
1	ADD DANCER ROLL TABULATION FOR AUTO FOLD, UPDATED TITLEBLOCK	12/10/13	TK

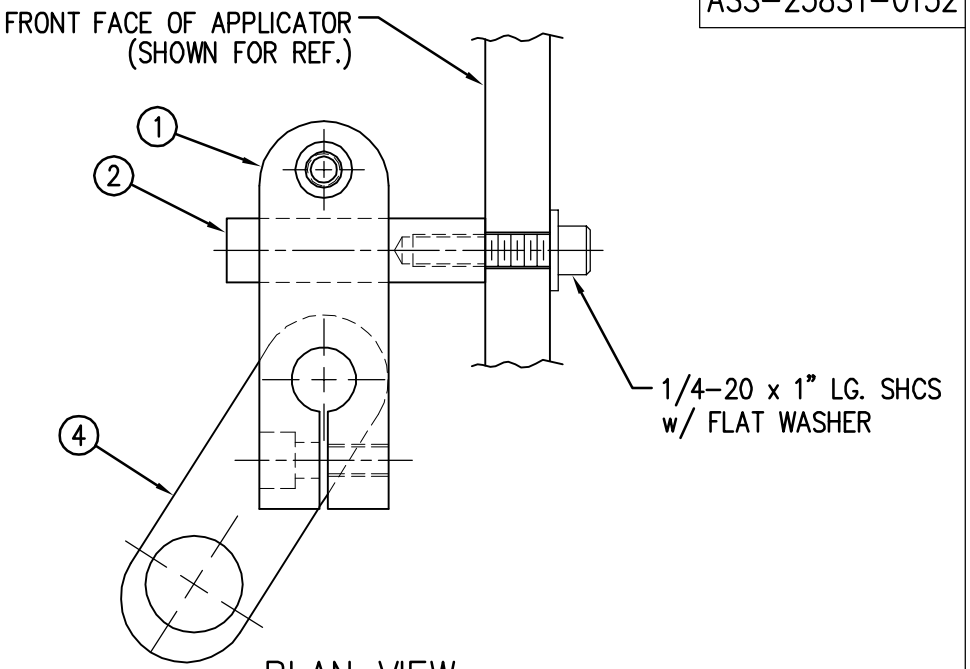
Scale: 1=3
Date: 12/09/13
DRAWN BY: T. KELLY
F:\Engineering\Standard Parts\Applicator\3600\3600\SAS-238-0122RL-X
Dept. Code 70

ASS-238ST-0132

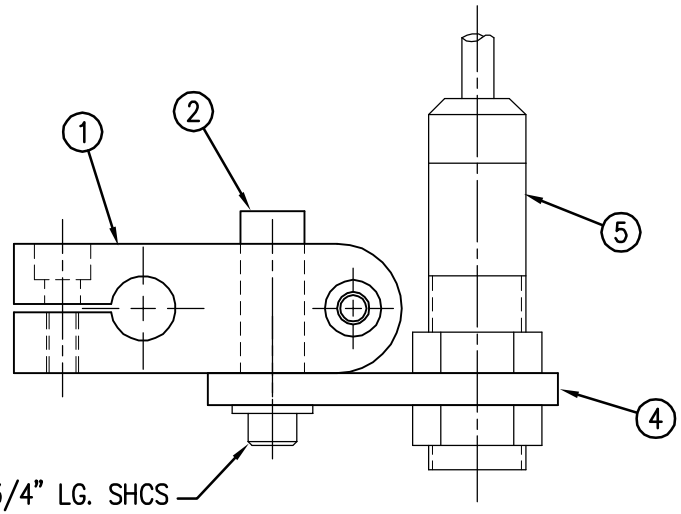
BILL OF MATERIAL

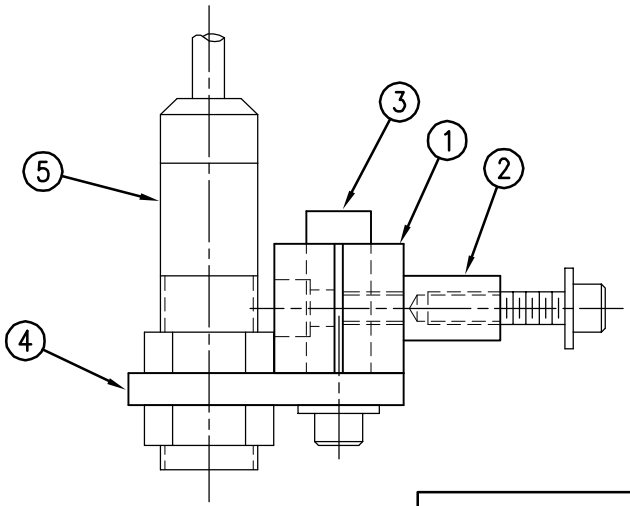
ASS-238ST-0132

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	MP-CL1010	3" LG. CLAMP BLOCK ~ LH
②	1	MP-PD2020-2	2" LG. SENSOR MOUNT SHAFT
③	1	MP-238-0279	END OF WEB MOUNTING SHAFT
④	1	MP-200-3303	3" SENSOR MOUNT for 18mm SENSOR
⑤	1	ASS-200-0423	END OF WEB SENSOR ASSEMBLY



PLAN VIEW





NOTE: SEND FASTENERS TO BOLT ASSEMBLY TO THE APPLICATOR IF FIELD KIT.

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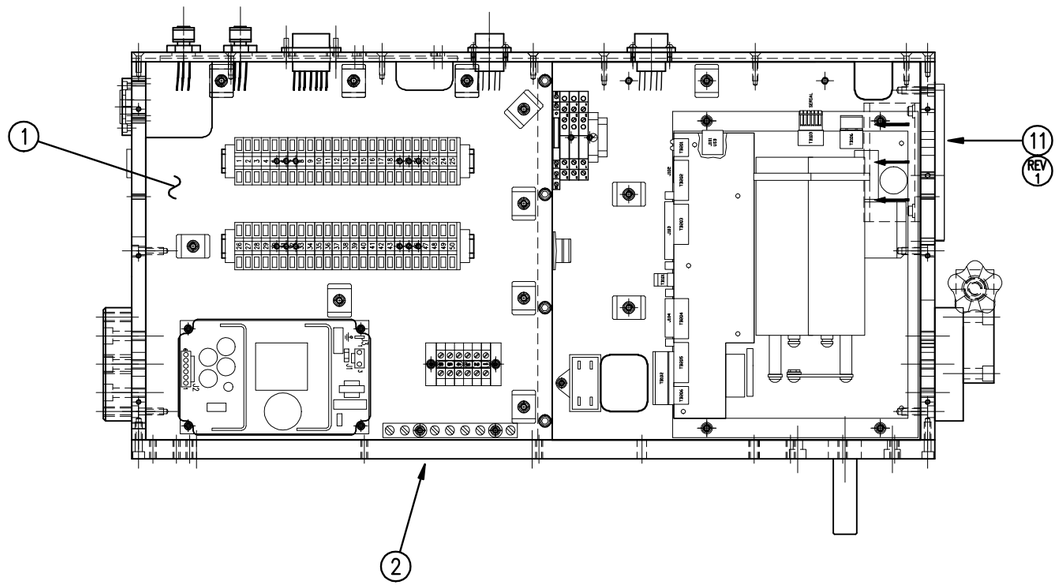
APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
360ST, 3600ST/AF	5.0"/7.5"	SERVO TAMP APPLICATOR: SENSORS	END OF WEB SENSOR ASSEMBLY w/ MOUNTING BRACKETRY	70

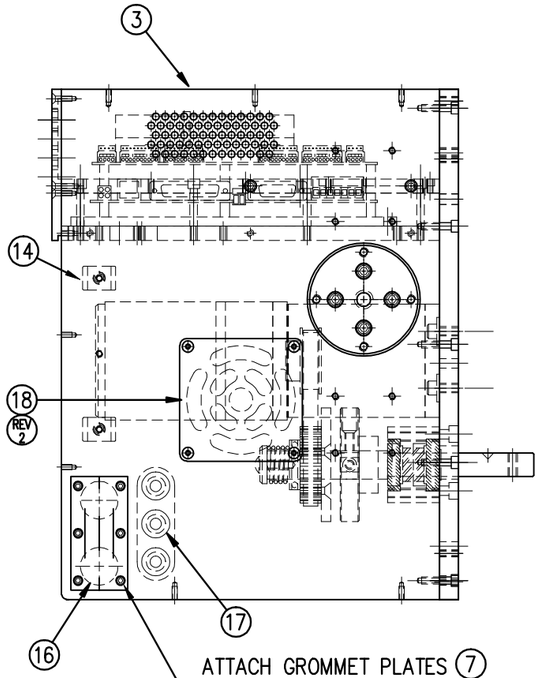
REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\3600-ST
0	NEW RELEASE for 360-ST, 3600-ST & 3600-AF	02/06/14	TK	1=1	02/06/14	T. KELLY	3600-ST\ASS-238ST-0132

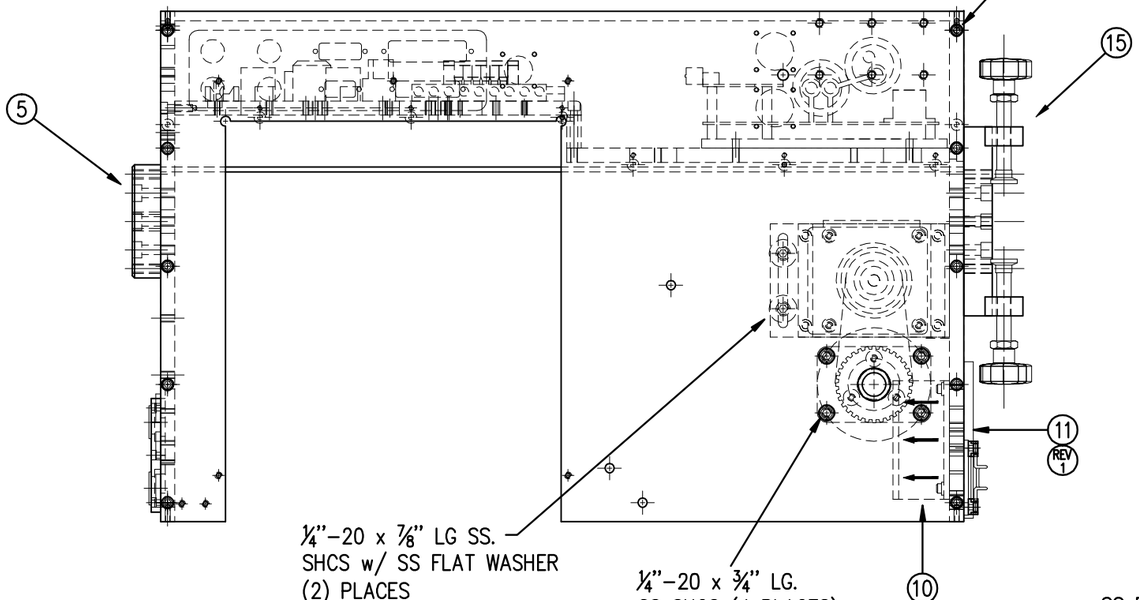
BILL OF MATERIAL

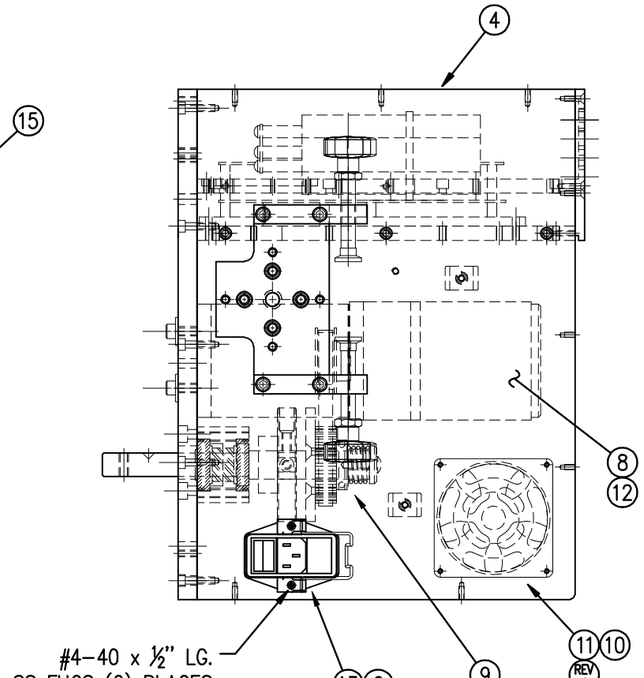
ASS-238ST-0123L-X

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	ASS-238ST-0127L-A	WIRED BOARD ASSEMBLY FOR VAC BLOW STYLE-LH
	1	ASS-238ST-0127L-B	WIRED BOARD ASSEMBLY FOR FAN STYLE-LH
②	1	MP-238ST-0201L	SERVO TAMP PRINTER APPLICATOR FACEPLATE - LH
③	1	MP-238ST-0202L	LEFT HAND HOUSING SIDE FRAME- DISPENSE SIDE
④	1	MP-238ST-0203L	LEFT HAND HOUSING SIDE FRAME- UNWIND SIDE
⑤	1	MP-200-0273	U-ARM / APPLICATOR PIVOT MOUNT
⑥	1	ASS-238ST-0407	AC POWER HARNESS & FILTER ASSEMBLY
⑦	2	MP-238ST-0247	GROMMET PLATE (FOR SERVO MOTOR CABLES)
⑧	1	ASS-238-0133	REWIND MOTOR & PULLEY ASSEMBLY
⑨	1	ASS-238-0120C	REWIND CLUTCH ASSEMBLY
⑩	1	ASS-238ST-0429	FAN ASSEMBLY
⑪	1	PE-FAN1130	FAN FILTER KIT
⑫	1	PE-238-0429	REWIND MOTOR WIRING HARNESS
⑬	1	ASS-200-0148	POWER CORD CLIP ASSEMBLY
⑭	4	PE-PA1083	BOLT ON MOUNT (BLACK)
⑮	1	ASS-200-0149	PIVOT MICRO-ADJUST ASSEMBLY
⑯	2	PE-C02018	RUBBER GROMMET
⑰	3	PE-C02019	RUBBER GROMMET
⑱	1	MP-238ST-0255	COVER PLATE
19	1	PE-238ST-0405	SERVO DRIVE ENCODER FEEDBACK CABLE
20	1	PE-238ST-0406	SERVO MOTOR POWER TO TB102 DRIVE CABLE
21	1	ASS-C01025	POWER CORD FOR PRINT ENGINE (not shown)









ASS-238ST-0123L-X

VACUUM BLOW STYLE -A

FAN STYLE -B

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APPLICATOR SERIES: 3600ST | APPLICATOR WIDTH(S): 7.5" | GROUP: SERVO TAMP APPLICATOR: HOUSING | TITLE: 3600 SERVO TAMP PRINTER APPLICATOR CORE UNIT - LH | Dept. Code 70 | Scale: 1=4 | Date: 07/25/2012 | DRAWN BY: ERIC SANOR | F:\Engineering\Standard Parts\Applicator\3600ST\3600-ST\ASS-238ST-0123L-X

REV. 2 | REV. DESCRIPTION: ADDED ITEM #18 MP-238ST-0255 (COVER PLATE) | REV. DATE 10/11/2016 | REV. BY: ES

BILL OF MATERIAL

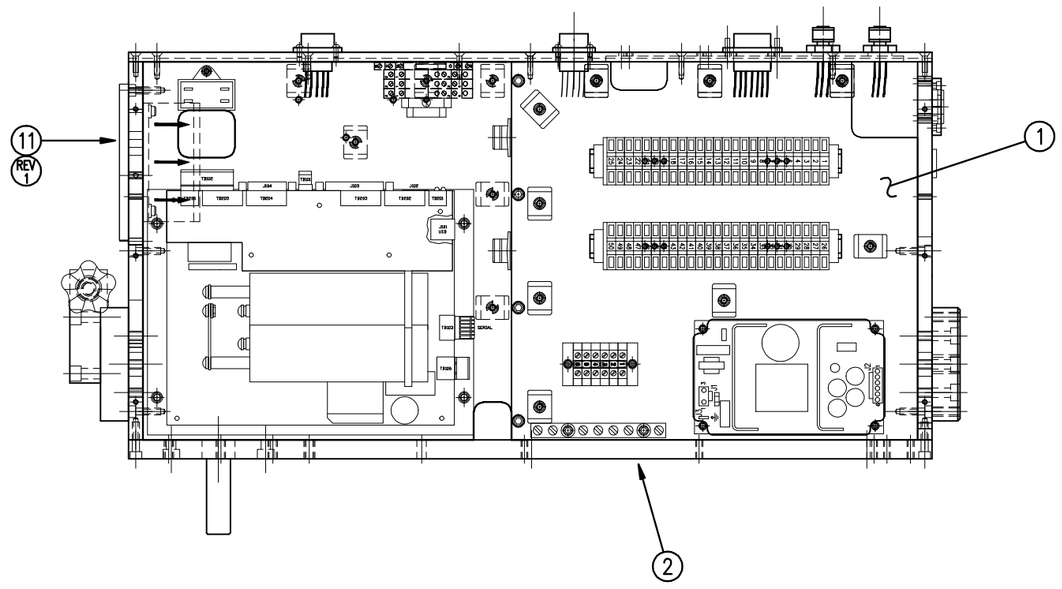
ASS-238ST-0123R-X

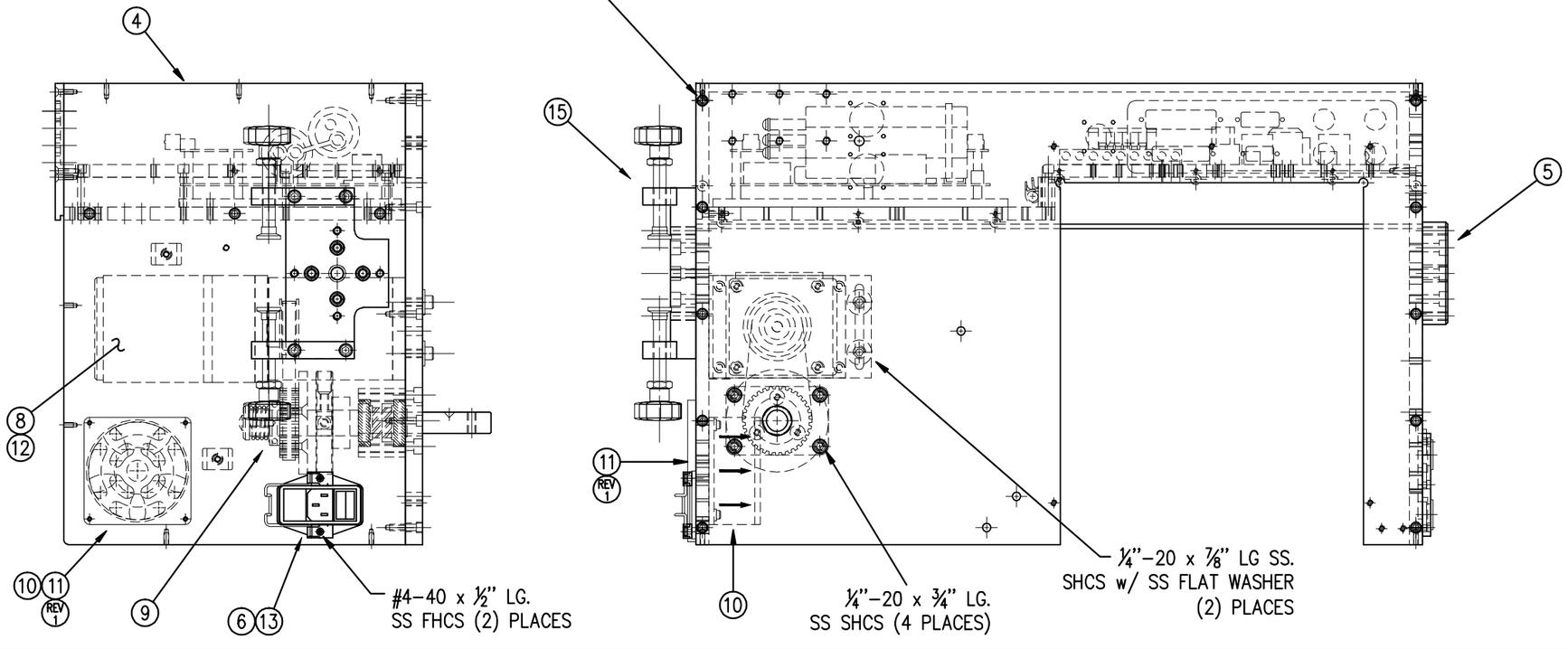
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	ASS-238ST-0127R-A	WIRED BOARD ASSEMBLY FOR VAC BLOW STYLE-RH
	1	ASS-238ST-0127R-B	WIRED BOARD ASSEMBLY FOR FAN STYLE-RH
②	1	MP-238ST-0201R	SERVO TAMP PRINTER APPLICATOR FACEPLATE - RH
③	1	MP-238ST-0202R	RIGHT HAND HOUSING SIDE FRAME- DISPENSE SIDE
④	1	MP-238ST-0203R	RIGHT HAND HOUSING SIDE FRAME- UNWIND SIDE
⑤	1	MP-200-0273	U-ARM / APPLICATOR PIVOT MOUNT
⑥	1	ASS-238ST-0407	AC POWER HARNESS & FILTER ASSEMBLY
⑦	2	MP-238ST-0247	GROMMET PLATE (FOR SERVO MOTOR CABLES)
⑧	1	ASS-238-0133	REWIND MOTOR & PULLEY ASSEMBLY
⑨	1	ASS-238-0120C	REWIND CLUTCH ASSEMBLY
⑩	1	ASS-238ST-0429	FAN ASSEMBLY
⑪	1	PE-FAN1130	FAN FILTER KIT
⑫	1	PE-238-0429	REWIND MOTOR WIRING HARNESS
⑬	1	ASS-200-0148	POWER CORD CLIP ASSEMBLY
⑭	4	PE-PA1083	BOLT ON MOUNT (BLACK)
⑮	1	ASS-200-0149	PIVOT MICRO-ADJUST ASSEMBLY
⑯	2	PE-C02018	RUBBER GROMMET
⑰	3	PE-C02019	RUBBER GROMMET
⑱	1	MP-238ST-0255	COVER PLATE
19	1	PE-238ST-0405	SERVO DRIVE ENCODER FEEDBACK CABLE
20	1	PE-238ST-0406	SERVO MOTOR POWER TO TB102 DRIVE CABLE
21	1	ASS-C01025	POWER CORD FOR PRINT ENGINE (not shown)

ASS-238ST-0123R-X

VACUUM BLOW STYLE -A

-B





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APPLICATOR SERIES: 3600ST	APPLICATOR WIDTH(S): 7.5"	GROUP: SERVO TAMP APPLICATOR: HOUSING	TITLE: 3600 SERVO TAMP PRINTER APPPLICATOR CORE UNIT - RH
Scale: 1=4	Date: 05/01/2012	DRAWN BY: ERIC SANOR	Dept. Code 70
F:\Engineering\Standard Parts\Applicator\3600ST\ASS-238ST-0123R-X			

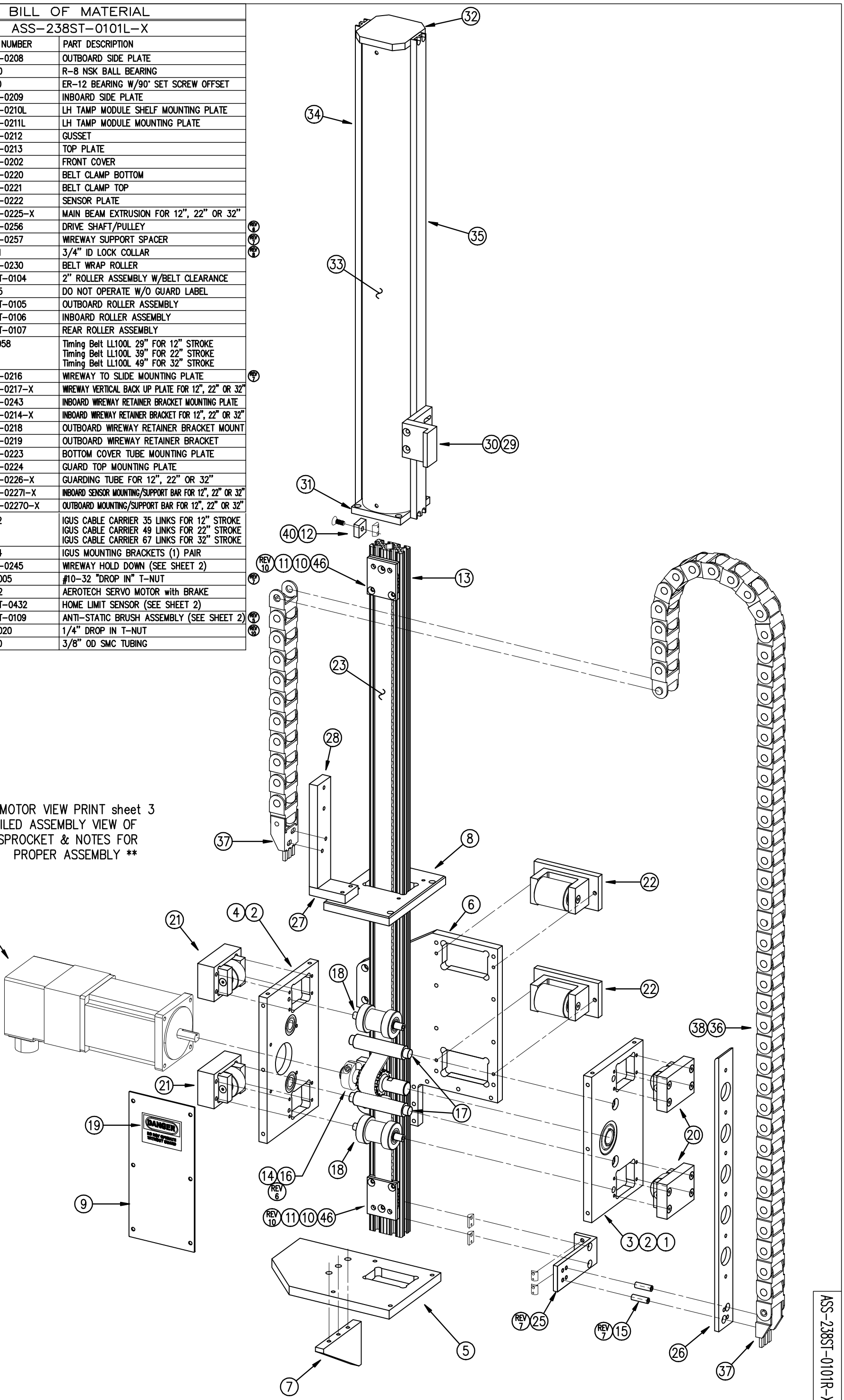
REV.	REV. DESCRIPTION	REV. DATE	REV. BY:
3	ADDED ITEM #18 MP-238ST-0255 (COVER PLATE)	10/11/2016	ES

BILL OF MATERIAL

ASS-238ST-0101L-X

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	MP-238ST-0208	OUTBOARD SIDE PLATE
②	4	PM-BE1250	R-8 NSK BALL BEARING
③	1	PM-BE1210	ER-12 BEARING W/90° SET SCREW OFFSET
④	1	MP-238ST-0209	INBOARD SIDE PLATE
⑤	1	MP-238ST-0210L	LH TAMP MODULE SHELF MOUNTING PLATE
⑥	1	MP-238ST-0211L	LH TAMP MODULE MOUNTING PLATE
⑦	1	MP-238ST-0212	GUSSET
⑧	1	MP-238ST-0213	TOP PLATE
⑨	1	PM-238ST-0202	FRONT COVER
⑩	2	MP-238ST-0220	BELT CLAMP BOTTOM
⑪	2	MP-238ST-0221	BELT CLAMP TOP
⑫	1	MP-238ST-0222	SENSOR PLATE
⑬	1	MP-238ST-0225-X	MAIN BEAM EXTRUSION FOR 12", 22" OR 32"
⑭	1	MP-238ST-0256	DRIVE SHAFT/PULLEY (REV 6)
⑮	2	MP-238ST-0257	WIREWAY SUPPORT SPACER (REV 7)
⑯	1	PM-C01021	3/4" ID LOCK COLLAR (REV 8)
⑰	2	MP-238ST-0230	BELT WRAP ROLLER
⑱	2	ASS-238ST-0104	2" ROLLER ASSEMBLY W/BELT CLEARANCE
⑲	1	PM-WL1025	DO NOT OPERATE W/O GUARD LABEL
⑳	2	ASS-238ST-0105	OUTBOARD ROLLER ASSEMBLY
㉑	2	ASS-238ST-0106	INBOARD ROLLER ASSEMBLY
㉒	2	ASS-238ST-0107	REAR ROLLER ASSEMBLY
㉓	XX"	PM-BELT1058	Timing Belt LL100L 29" FOR 12" STROKE Timing Belt LL100L 39" FOR 22" STROKE Timing Belt LL100L 49" FOR 32" STROKE
㉕	1	MP-238ST-0216	WIREWAY TO SLIDE MOUNTING PLATE (REV 7)
㉖	1	MP-238ST-0217-X	WIREWAY VERTICAL BACK UP PLATE FOR 12", 22" OR 32"
㉗	1	MP-238ST-0243	INBOARD WIREWAY RETAINER BRACKET MOUNTING PLATE
㉘	1	MP-238ST-0214-X	INBOARD WIREWAY RETAINER BRACKET FOR 12", 22" OR 32"
㉙	1	MP-238ST-0218	OUTBOARD WIREWAY RETAINER BRACKET MOUNT
㉚	1	MP-238ST-0219	OUTBOARD WIREWAY RETAINER BRACKET
㉛	1	MP-238ST-0223	BOTTOM COVER TUBE MOUNTING PLATE
㉜	1	MP-238ST-0224	GUARD TOP MOUNTING PLATE
㉝	1	MP-238ST-0226-X	GUARDING TUBE FOR 12", 22" OR 32"
㉞	1	MP-238ST-0227I-X	INBOARD SENSOR MOUNTING/SUPPORT BAR FOR 12", 22" OR 32"
㉟	1	MP-238ST-0227O-X	OUTBOARD MOUNTING/SUPPORT BAR FOR 12", 22" OR 32"
㊱	XX	PE-CA1032	IGUS CABLE CARRIER 35 LINKS FOR 12" STROKE IGUS CABLE CARRIER 49 LINKS FOR 22" STROKE IGUS CABLE CARRIER 67 LINKS FOR 32" STROKE
㊲	1	PE-CA1034	IGUS MOUNTING BRACKETS (1) PAIR
㊳	2	MP-238ST-0245	WIREWAY HOLD DOWN (SEE SHEET 2)
㊵	7	PM-FATN1005	#10-32 "DROP IN" T-NUT
㊶	1	PE-MO1082	AEROTECH SERVO MOTOR with BRAKE
㊸	1	ASS-238ST-0432	HOME LIMIT SENSOR (SEE SHEET 2)
㊺	1	ASS-238ST-0109	ANTI-STATIC BRUSH ASSEMBLY (SEE SHEET 2) (REV 5, REV 10)
㊻	4	PM-FATN1020	1/4" DROP IN T-NUT
○	96"	PM-PT1080	3/8" OD SMC TUBING

** REFER TO MOTOR VIEW PRINT sheet 3 FOR DETAILED ASSEMBLY VIEW OF SHAFT, SPROCKET & NOTES FOR PROPER ASSEMBLY **



ASS-238ST-0101R-Xs1

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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	N/A	SERVO TAMP	LH 3600 SERVO TAMP ASSEMBLY sheet 1	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\3600-ST
10	ADDED (4) PM-FATN1020 DROP IN T-NUTS TO BOM	10/27/2014	ES	NTS	05/25/2012	ERIC SANOR	3600-ST\ASS-238ST-0101L-Xs1

ATTACH SENSOR PLATE W/ #10–32 X ½" FHCS & DROP IN T–NUT

¼"–20 X ¾" LG. LHCS W/ HEAVY FLATWASHER & DROP IN T–NUT (2) PLACES

(32)

(43)

APPROX. 3MM

ATTACH TUBE TO MOUNTING PLATES WITH (4) #6–32 X ¼" BHCS & FLATWASHERS

(REV 1) 1"

½"

SENSOR PLATE & T–NUT (40)(12)

INBOARD & OUTBOARD MOUNTING/SUPPORT BARS ATTACH TO TOP & BOTTOM MOUNTING PLATES WITH (8) #10–32 X ⅜" SHCS

(34)

(35)

NOTE: FRONT COVER, BELT & GUARDING DETAILS REMOVED FROM THIS VIEW FOR CLARITY OF INTERNAL DETAILS

NOTE: GUARDING TUBE REMOVED AND MAIN BEAM EXTRUSION SHOWN AT A PARTIALLY EXTENDED POSITION FOR CLARITY OF ATTACHED DETAILS

GUARDING TUBE REMOVED

ATTACH WIREWAY MOUNTING PLATE (REV 1) W/ (2) #10–32 X ¾" SHCS,

ATTACH WIREWAY RETAINER BRACKET MOUNT W/ (2) #10–32 X ½" SHCS & FLATWASHERS (38)

ATTACH HOLD DOWN (REV 1) (MP–238ST–0245) W/#10–32 X ½" BHCS & FLATWASHER

(2) #10–32 X ¾" FHCS

ATTACH BOTTOM TUBE MOUNTING PLATE W/ (4) #10–32 X ½" SHCS

ATTACH IGUS BRACKET W/ (2) #10–32 X ½" SHCS & (REV 1) FLATWASHERS

ATTACH HOLD DOWN (REV 1) (MP–238ST–0245) W/#10–32 X ½" BHCS & FLATWASHER

ATTACH REAR ROLLER ASSYS. W/ (2)#10–32 X ½" SHCS & BLUE LOCTITE

ATTACH WIREWAY RETAINER BRACKET TO MTG. PLATE W/ (2) #10–32 X ¾" SHCS

ATTACH FRONT COVER W/ (6) #10–32 X ⅜" SHCS & FLATWASHERS APPLY WARNING LABEL PE–WL1025

ATTACH MOTOR ASSEMBLY W/ (4) #10–32 SHCS & LOCK WASHERS

ATTACH FRONT ROLLER SHAFT TO SIDE PLATES W/#10–32 X ¾" FHCS (REV 1) & BLUE LOCTITE

(14) (REV 3)

ATTACH OUTBOARD ROLLER ASSEMBLIES W/ (4) #10–32 x 1.00" FHCS & BLUE LOCTITE

ATTACH INBOARD ROLLER ASSEMBLIES W/ (4) #10–32 X 1.00" SHCS & BLUE LOCTITE

(15) (REV 2)

ITEM (45) (REV 1) ANTI–STATIC BRUSH ASSY.

¼"–20 X ¾" LG. SHCS W/ HEAVY FLATWASHER & ¼" DROP IN T–NUT (2) PLACES

APPROX. 1 ¼"

ATTACH WIREWAY VERTICAL BACK UP PLATE W/ (2) #10–32 X ½" FHCS

ATTACH IGUS BRACKET W/ (2) #10–32 X ¾" SHCS (REV 1) & FLATWASHERS

1⅜"

(REV 2) #10–32 X ½" FHCS & DROP IN T–NUT (4) PLACES EACH

ASS–238ST–0101L–Xs2

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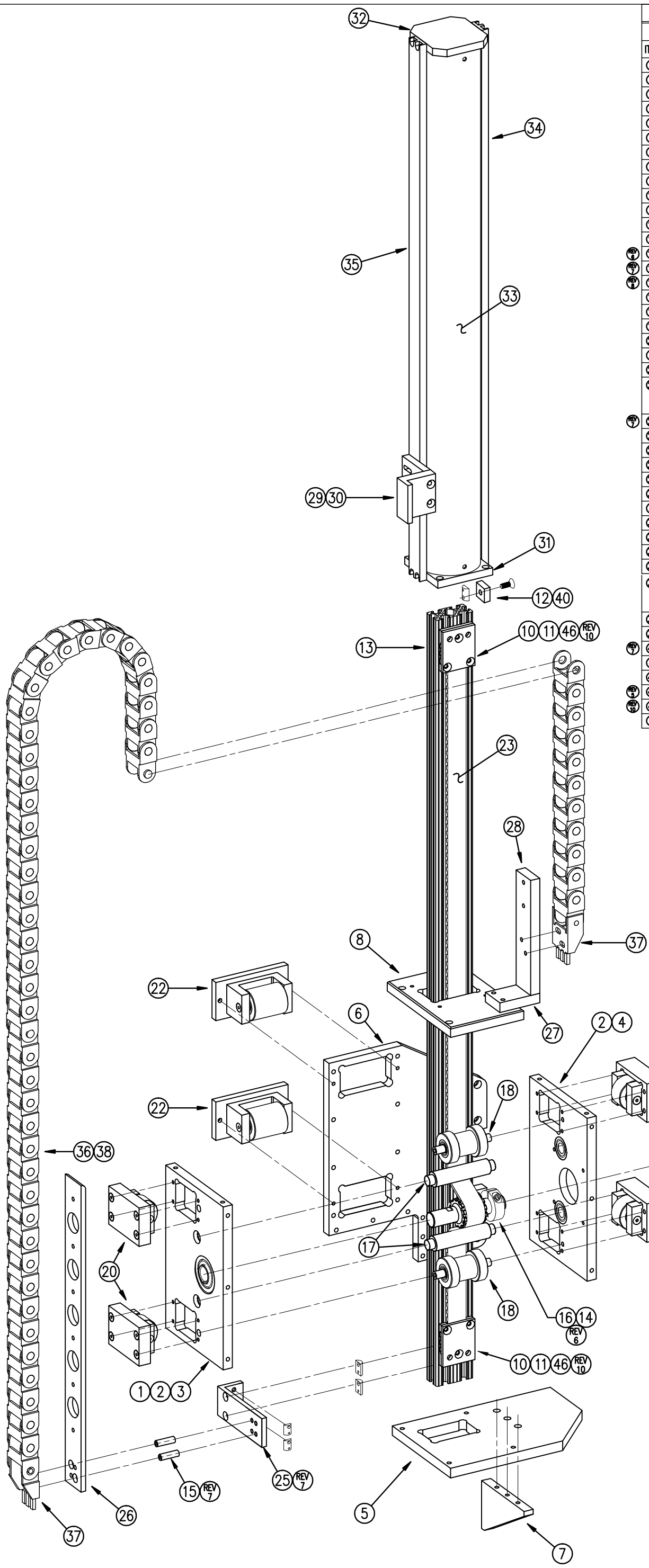
APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600–ST	N/A	SERVO TAMP	LH 3600 SERVO TAMP ASSEMBLY SHEET 2	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\3600–ST
4	REMOVED ITEMS 42 & 44. TAMP TRANSITION & WASHER PLATE	10/15/2014	ES	1=3	10/01/2012	ERIC SANOR	3600–ST\ASS–238ST–0101L–Xs2



BILL OF MATERIAL

ASS-238ST-0101R-X

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
1	1	MP-238ST-0208	OUTBOARD SIDE PLATE
2	4	PM-BE1250	R-8 NSK BALL BEARING
3	1	PM-BE1210	ER-12 BEARING W/90° SET SCREW OFFSET
4	1	MP-238ST-0209	INBOARD SIDE PLATE
5	1	MP-238ST-0210R	RH TAMP MODULE SHELF MOUNTING PLATE
6	1	MP-238ST-0211R	RH TAMP MODULE MOUNTING PLATE
7	1	MP-238ST-0212	GUSSET
8	1	MP-238ST-0213	TOP PLATE
9	1	PM-238ST-0202	FRONT COVER
10	2	MP-238ST-0220	BELT CLAMP BOTTOM
11	2	MP-238ST-0221	BELT CLAMP TOP
12	1	MP-238ST-0222	SENSOR PLATE
13	1	MP-238ST-0225-X	MAIN BEAM EXTRUSION FOR 12", 22" OR 32"
REV 4 14	1	MP-238ST-0256	DRIVE SHAFT/PULLEY
REV 7 15	2	MP-238ST-0257	WIREWAY SUPPORT SPACER
REV 4 16	1	PM-C01021	3/4" ID LOCK COLLAR
17	2	MP-238ST-0230	BELT WRAP ROLLER
18	2	ASS-238ST-0104	2" ROLLER ASSEMBLY W/BELT CLEARANCE
19	1	PM-WL1025	DO NOT OPERATE W/O GUARD LABEL
20	2	ASS-238ST-0105	OUTBOARD ROLLER ASSEMBLY
21	2	ASS-238ST-0106	INBOARD ROLLER ASSEMBLY
22	2	ASS-238ST-0107	REAR ROLLER ASSEMBLY
23	XX"	PM-BELT1058	Timing Belt LL100L 29" FOR 12" STROKE Timing Belt LL100L 39" FOR 22" STROKE Timing Belt LL100L 49" FOR 32" STROKE
REV 7 25	1	MP-238ST-0216	WIREWAY TO SLIDE MOUNTING PLATE
26	1	MP-238ST-0217-X	WIREWAY VERTICAL BACK UP PLATE FOR 12", 22" OR 32"
27	1	MP-238ST-0243	INBOARD WIREWAY RETAINER BRACKET MOUNTING PLATE
28	1	MP-238ST-0214-X	INBOARD WIREWAY RETAINER BRACKET FOR 12", 22" OR 32"
29	1	MP-238ST-0218	OUTBOARD WIREWAY RETAINER BRACKET MOUNT
30	1	MP-238ST-0219	OUTBOARD WIREWAY RETAINER BRACKET
31	1	MP-238ST-0223	BOTTOM COVER TUBE MOUNTING PLATE
32	1	MP-238ST-0224	GUARD TOP MOUNTING PLATE
33	1	MP-238ST-0226-X	GUARDING TUBE FOR 12", 22" OR 32"
34	1	MP-238ST-0227I-X	INBOARD SENSOR MOUNTING/SUPPORT BAR FOR 12", 22" OR 32"
35	1	MP-238ST-0227O-X	OUTBOARD MOUNTING/SUPPORT BAR FOR 12", 22" OR 32"
36	XX	PE-CA1032	IGUS CABLE CARRIER 35 LINKS FOR 12" STROKE IGUS CABLE CARRIER 49 LINKS FOR 22" STROKE IGUS CABLE CARRIER 67 LINKS FOR 32" STROKE
37	1	PE-CA1034	IGUS MOUNTING BRACKETS (1) PAIR
38	2	MP-238ST-0245	WIREWAY HOLD DOWN (SEE SHEET 2)
REV 7 40	7	PM-FATN1005	#10-32 "DROP IN" T-NUT
41	1	PE-MO1082	AEROTECH SERVO MOTOR with BRAKE
43	1	ASS-238ST-0432	HOME LIMIT SENSOR (SEE SHEET 2)
REV 5 45	1	ASS-238ST-0109	ANTI-STATIC BRUSH ASSEMBLY (SEE SHEET 2)
REV 10 46	4	PM-FATN1020	1/4" DROP IN T-NUT
○	96"	PM-PT1080	3/8" OD SMC TUBING

** REFER TO MOTOR VIEW PRINT sheet 3 FOR DETAILED ASSEMBLY VIEW OF SHAFT, SPROCKET & NOTES FOR PROPER ASSEMBLY **

ASS-238ST-0101R-Xs1

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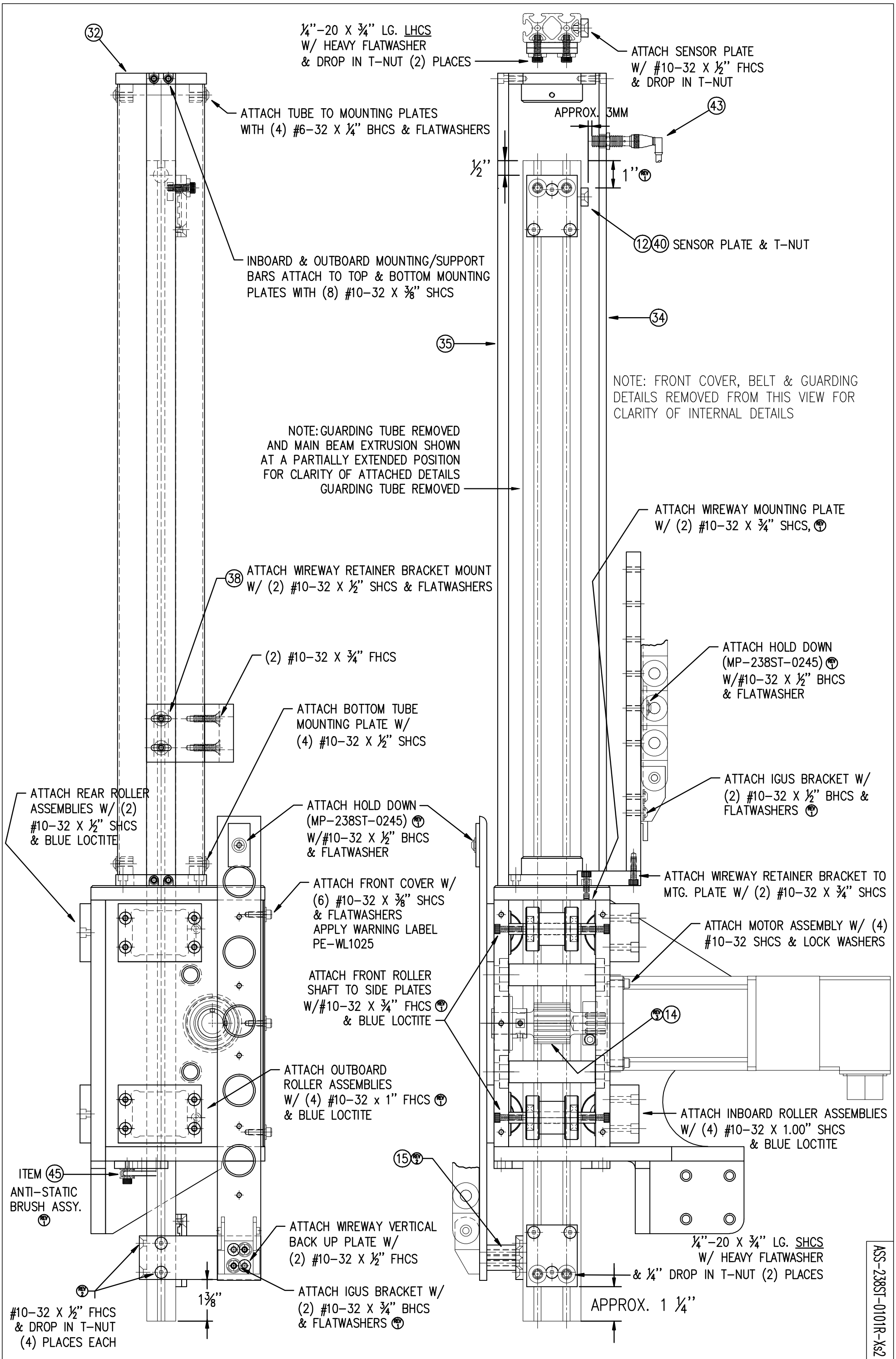
APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	N/A	SERVO TAMP	RH 3600 SERVO TAMP ASSEMBLY sheet 1	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\3600-ST
10	ADDED (4) PM-FATN1020 DROP IN T-NUTS TO BOM	10/27/2014	ES	NTS	03/10/2012	ERIC SANOR	3600-ST\ASS-238ST-0101R-Xs1



ASS–238ST–0101R–Xs2

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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600–ST	N/A	SERVO TAMP	RH 3600 SERVO TAMP ASSEMBLY SHEET 2	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\3600–ST
4	REMOVED ITEMS 42 & 44. TAMP TRANSITION & WASHER PLATE	10/15/2014	ES	1=3	04/10/2012	ERIC SANOR	3600–ST\ASS–238ST–0101R–Xs2

ASS-238ST-0101s3

VIEW PRINT

(REV 2)(REV 3)(REV 4) SECTION BB ENLARGED 1.5X

(REV 9) KEY NOW OPPOSITE LOCK COLLAR SCREW

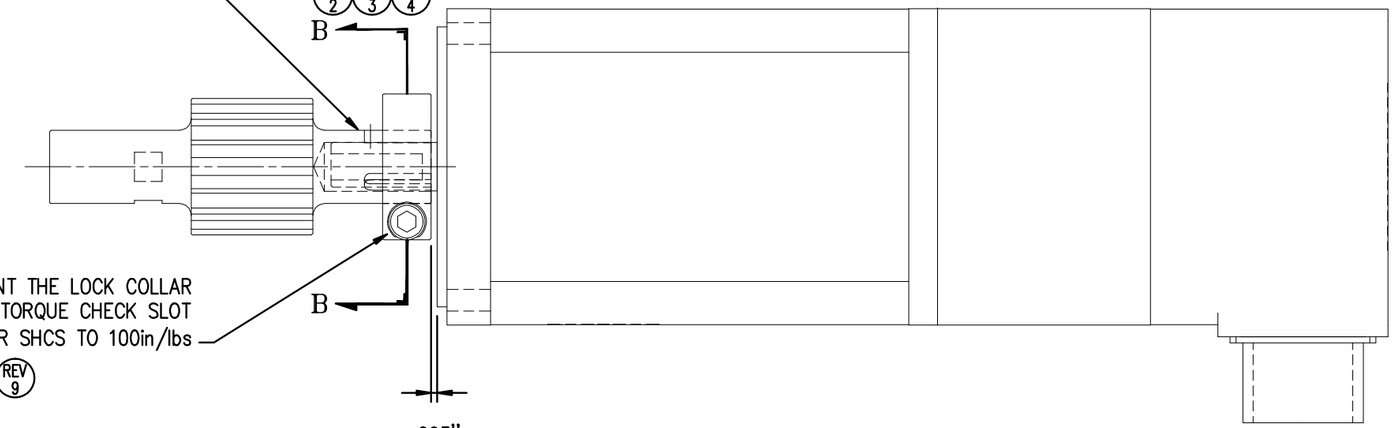
(REV 8) NEW MOTOR KEY DIMENSIONS
⅛"(W) X 3⁄16"HIGH X ½" LG.
(REF. MP-238ST-0244)
(REV 12)

(REV 11) PM-C01021 LOCK COLLAR

(REV 7) MP-238ST-0256 DRIVE SHAFT

MOTOR SHAFT

(REV 9) FEELER GAUGE LOCK COLLAR GAP .010" OR LESS REQUIRED

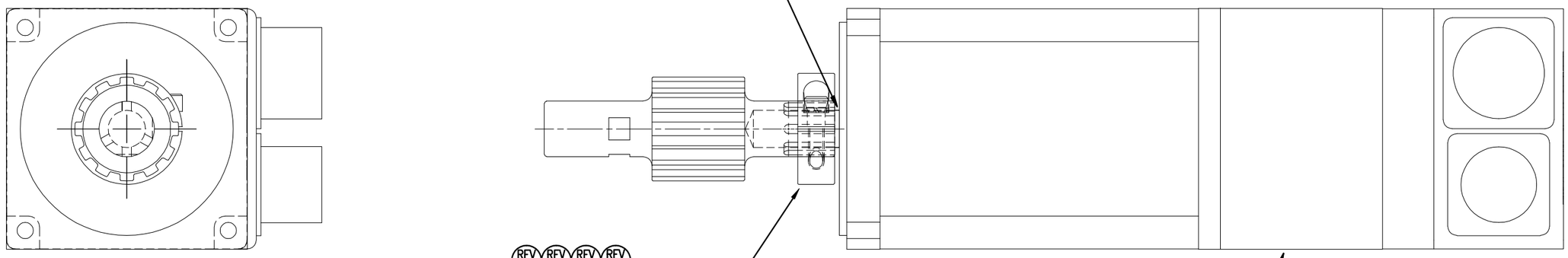


IMPORTANT NOTE: ORIENT THE LOCK COLLAR THIS WAY FOR TORQUE CHECK SLOT
TORQUE LOCK COLLAR SHCS TO 100in/lbs
(REV 8)(REV 9)

.063"
NOTE: USE A .063" THICK SPACER TO SET A CONSISTENT GAP BETWEEN THE SHAFT AND THE MOTOR FLANGE FACE.

REPLACE LOCK COLLAR SHCS w/ ¼"-28 x ¾" LG. BLK. SHCS (PM-FASH30690HC)
ADD ¼" HIGH LOCKWASHER (PM-FAW30690HC) TO ABOVE MENTIONED SHCS
BLUE LOCTITE THE SCREW THREADS (REV 8)(REV 9)

COAT MOTOR SHAFT WITH C5-A ANTI-SEIZE LUBRICANT BEFORE ASSEMBLING DRIVE SHAFT ONTO IT.



(REV 2)(REV 3)(REV 4)(REV 11)
LOCK COLLAR (PM-C01021)
THE ASSEMBLER IS TO INSTALL THE LOCK COLLAR SO THAT IT IS EVEN WITH THE END OF THE DRIVE SHAFT AND ROTATED IN POSITION TO CORRESPOND WITH SECTION BB

SERVO MOTOR & BRAKE

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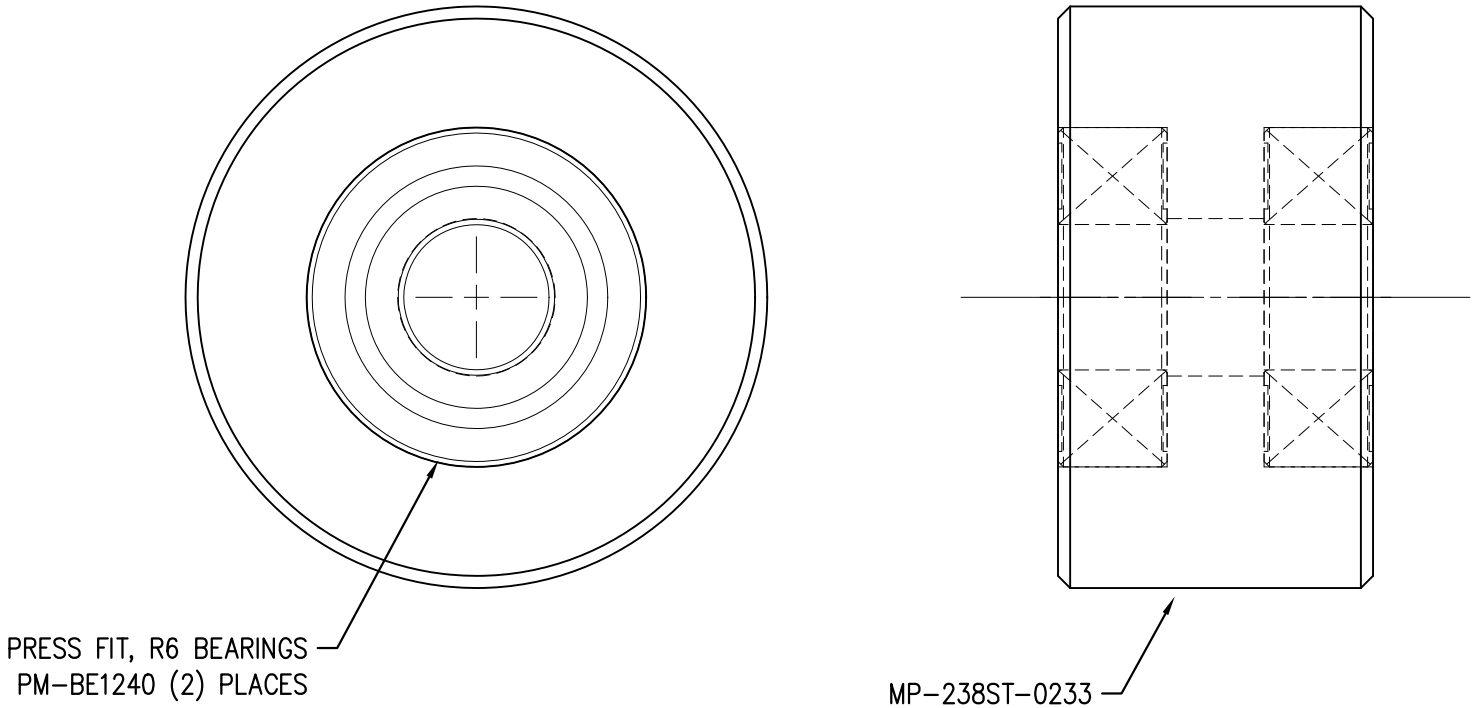
TITLE: 3600 SERVO TAMP ASSEMBLY SHEET 3 MOTOR AND SHAFT DETAIL
Dept. Code 70
Scale: NTS
Date: 04/09/2012
DRAWN BY: ERIC SANOR
F:\Engineering\Standard Parts\Applicator\3600-ST\3600-ST\ASS-238ST-0101s3
REV. BY: ES
REV. DATE 12/07/2015

APPLICATOR SERIES: 3600-ST
APPLICATOR WIDTH(S): N/A
GROUP: SERVO TAMP

REV. 12 | REV. DESCRIPTION | KEY HAS A SPECIFIC PART NUMBER NOW

ASS-238ST-0102

(4) ASSEMBLIES REQUIRED PER TAMP MODULE



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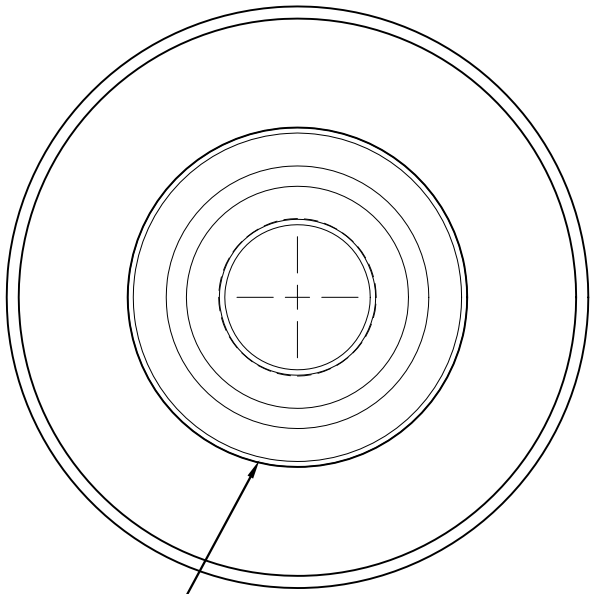
APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	N/A	SERVO TAMP	1'' ROLLER ASSEMBLY	70

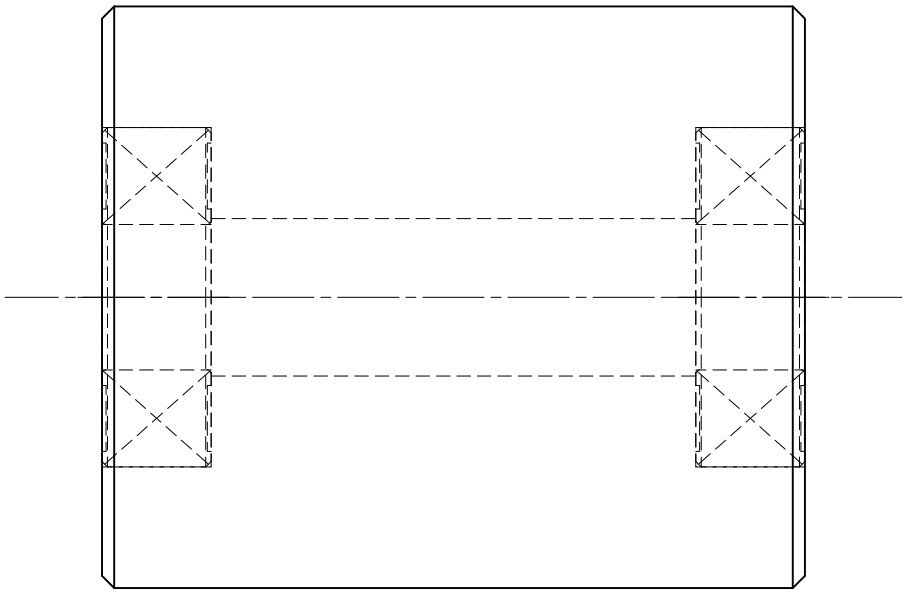
REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\360\
0	-	-	XXX	2=1	01/13/2012	ERIC SANOR	3600-ST\ASS-238ST-0102

ASS-238ST-0103

(2) ASSEMBLIES REQUIRED PER TAMP MODULE



PRESS FIT, R6 BEARINGS
PM-BE1240 (2) PLACES



MP-238ST-0234

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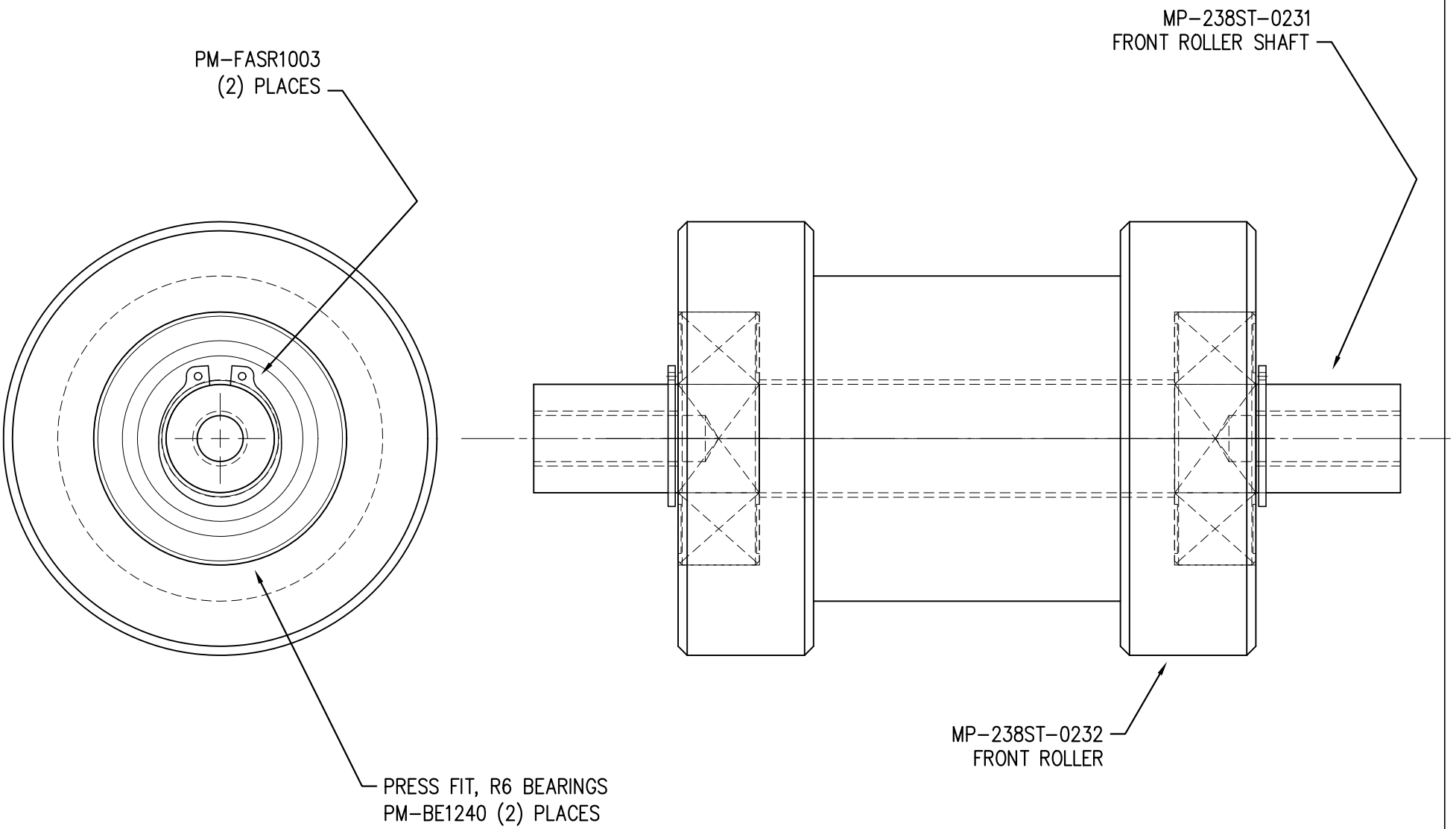
APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	N/A	SERVO TAMP	2'' ROLLER ASSEMBLY	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\360\
0	-	-	XXX	2=1	01/13/2012	ERIC SANOR	3600-ST\ASS-238ST-0103

ASS-238ST-0104

(2) ASSEMBLIES REQUIRED PER TAMP MODULE



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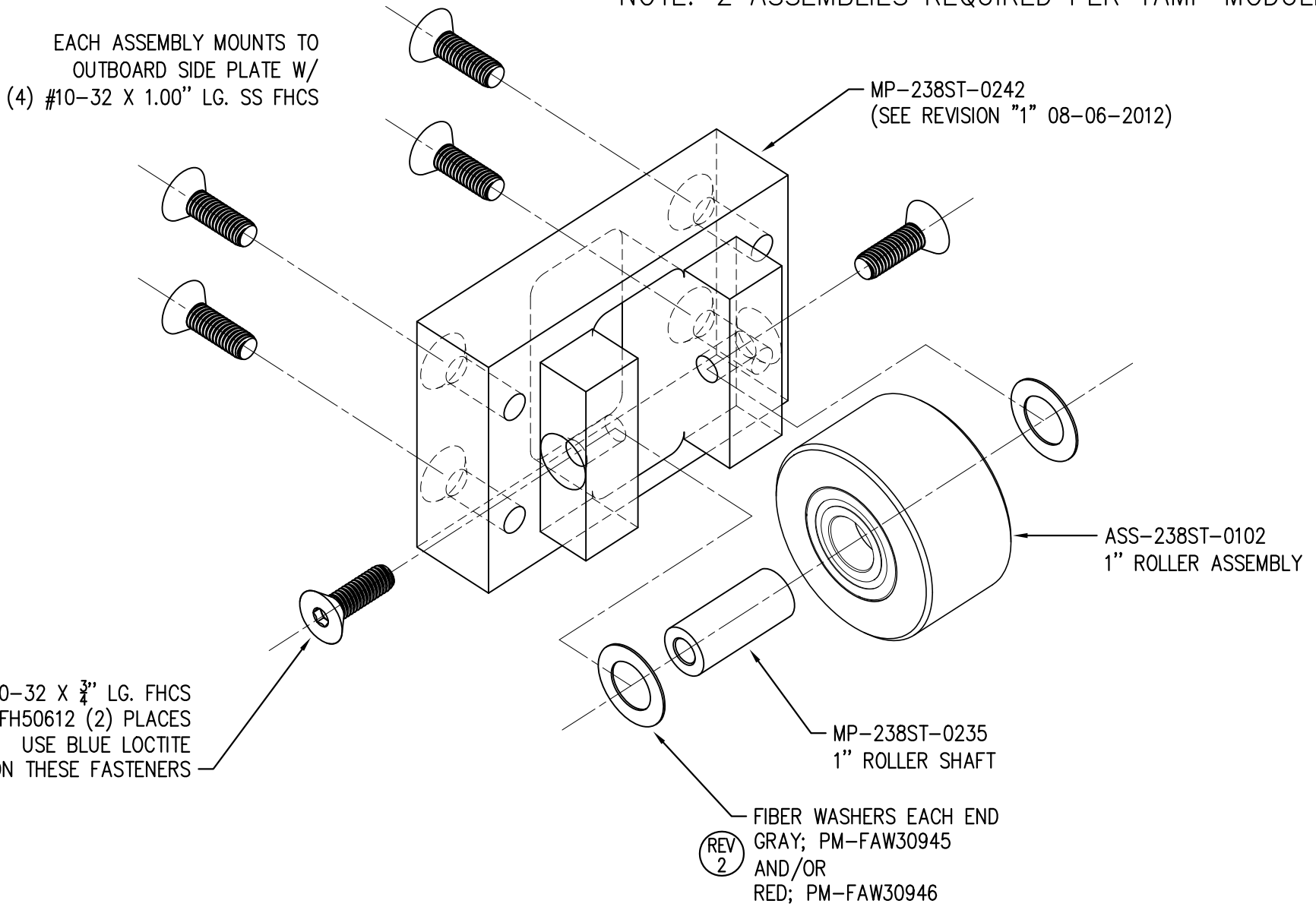
APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	N/A	SERVO TAMP	2'' ROLLER ASSEMBLY W/BELT CLEARANCE	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\360\
1	ADDED SHAFT AND SNAP RINGS TO ASSEMBLY	06/04/2012	ES	2=1	01/13/2012	ERIC SANOR	3600-ST\ASS-238ST-0104

ASS-238ST-0105

NOTE: 2 ASSEMBLIES REQUIRED PER TAMP MODULE



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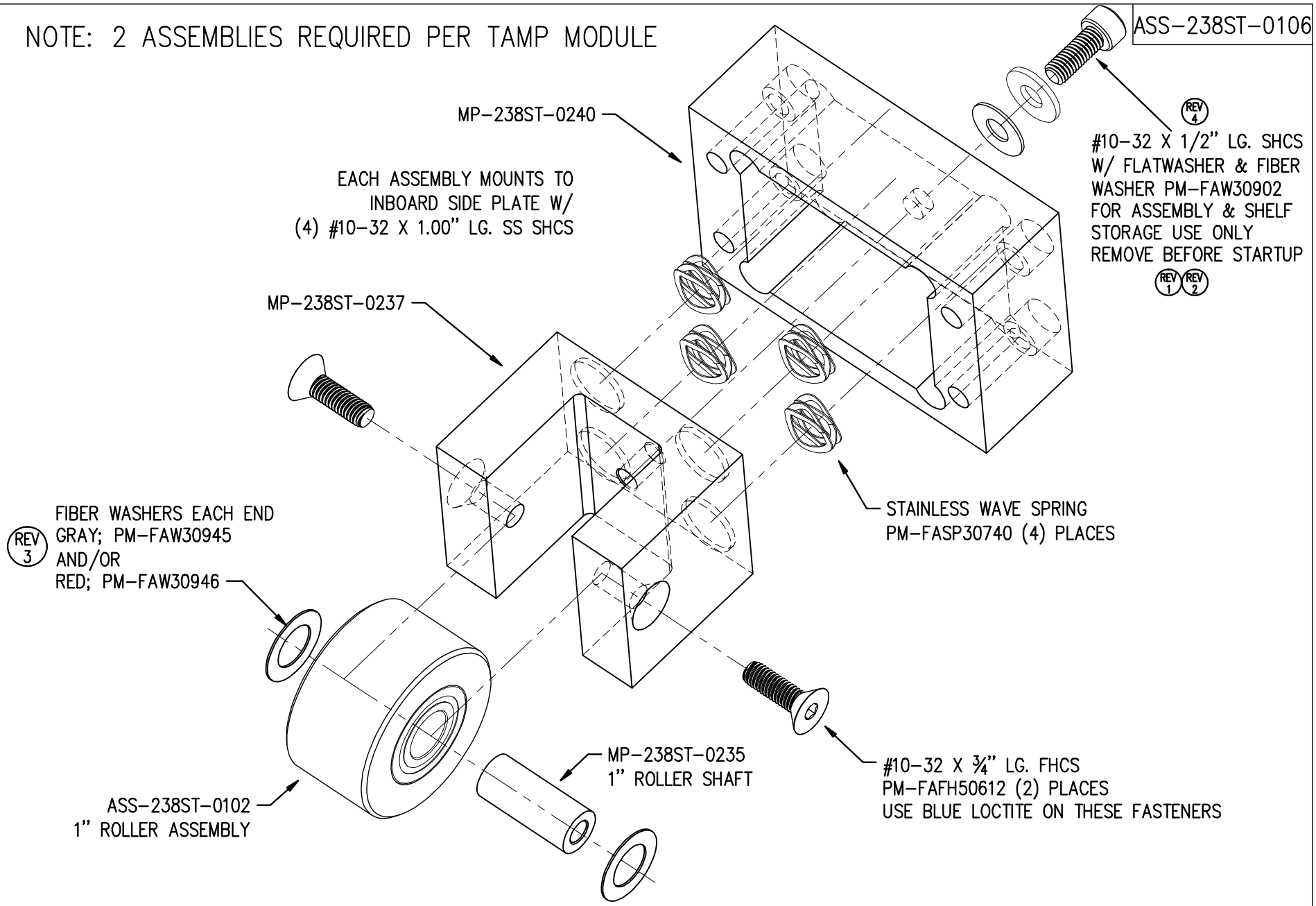
APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	N/A	SERVO TAMP	OUTBOARD ROLLER ASSEMBLY	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	
2	CHANGED NOTE ABOUT FIBER WASHERS PER LATEST ASSEMBLY METHOD	03/05/2013	ES	1=1	01/13/2012	ERIC SANOR	F:\Engineering\Standard Parts\Applicator\360\3600-ST\ASS-238ST-0105

NOTE: 2 ASSEMBLIES REQUIRED PER TAMP MODULE

ASS-238ST-0106



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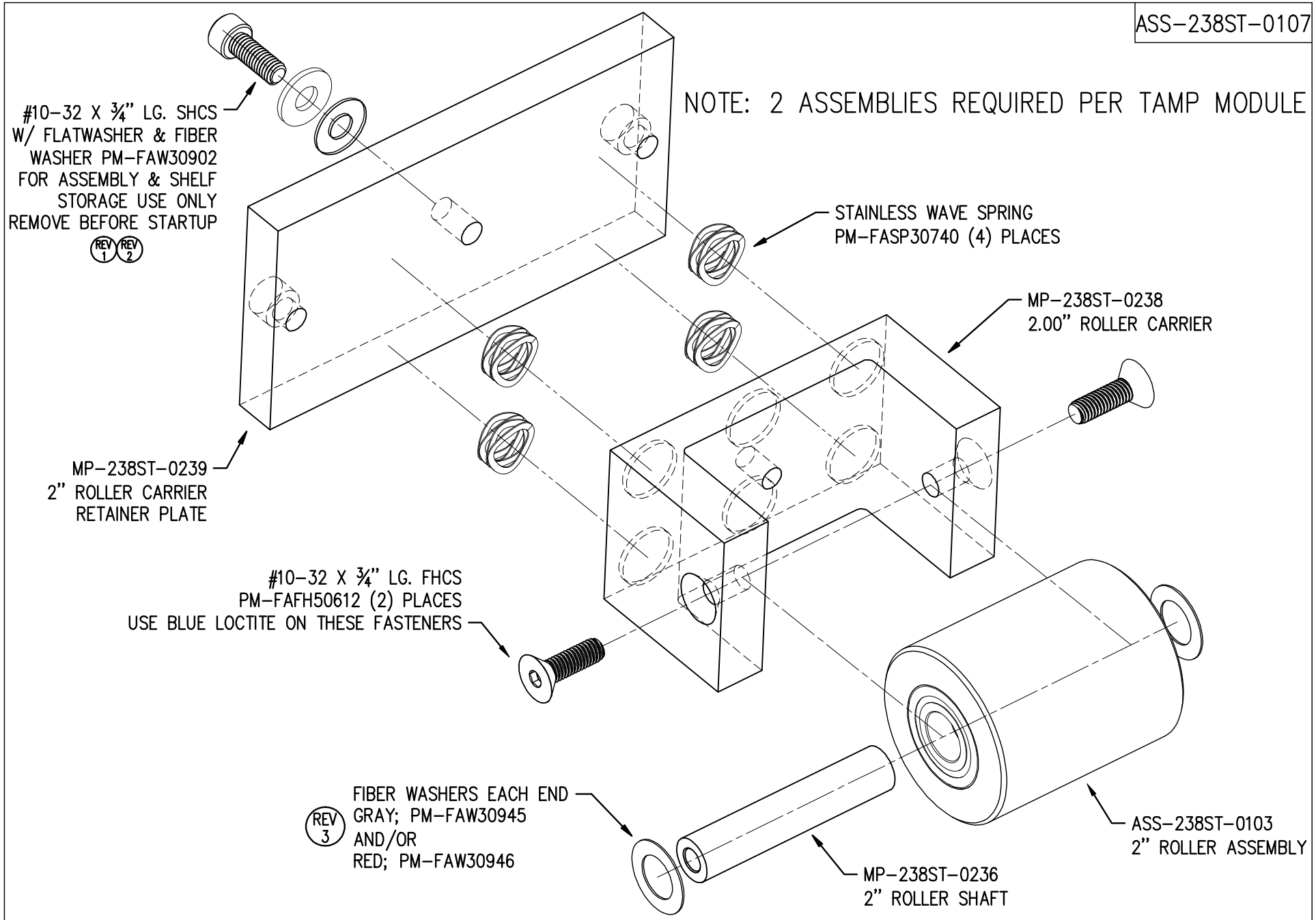
APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	N/A	SERVO TAMP	INBOARD ROLLER ASSEMBLY	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\3600-ST
4	CHANGED SHCS FOR ASSEMBLY REMOVAL TO 1/2" LG. INSTEAD OF 3/4"	09/08/2015	ES	1=1	01/13/2012	ERIC SANOR	3600EA\ASS-238ST-0106

ASS-238ST-0107



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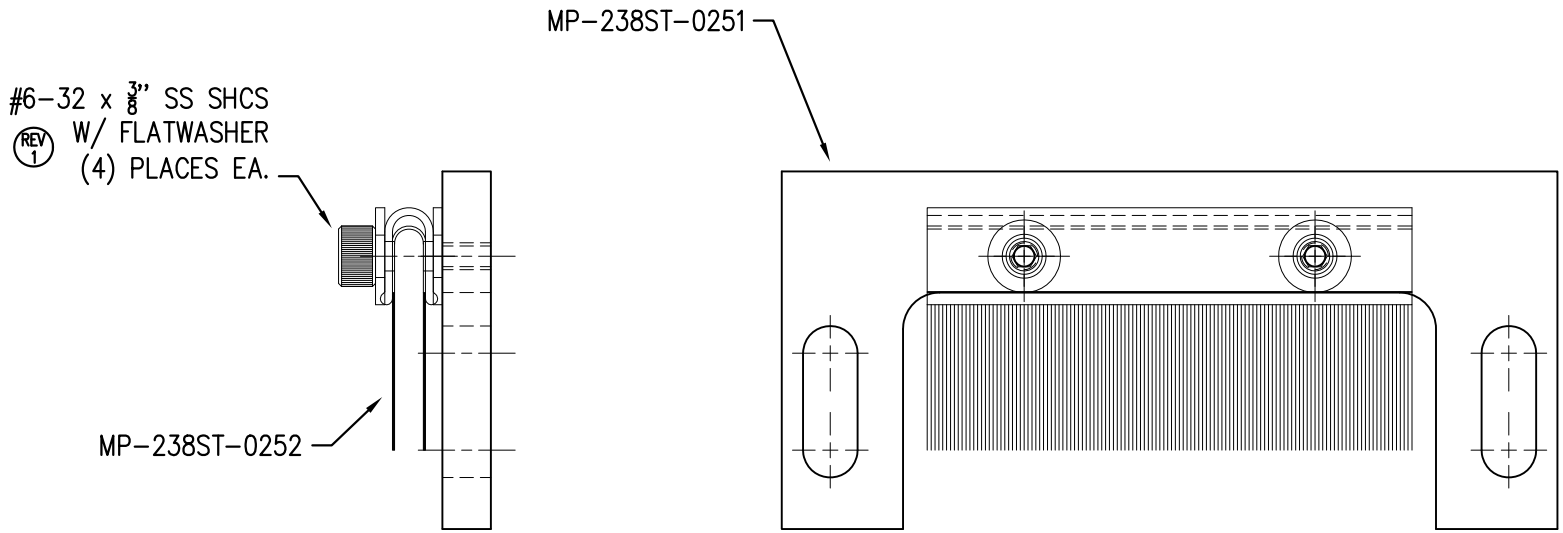
APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	N/A	SERVO TAMP	REAR ROLLER ASSEMBLY	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\3600-ST
3	CHANGED NOTE ABOUT FIBER WASHERS PER LATEST ASSEMBLY METHOD	03/05/2013	ES	1=1	01/13/2012	ERIC SANOR	3600-ST\ASS-238ST-0107

ASS-238ST-0109



NOTE: WHEN REQUIRED THIS BRUSH ASSEMBLY WILL MOUNT TO THE BOTTOM OF THE SHELF PLATE (MP-238ST-0210R/L WITH (2) 1/4"-20 x 1/2" SS SHCS AND FLATWASHERS

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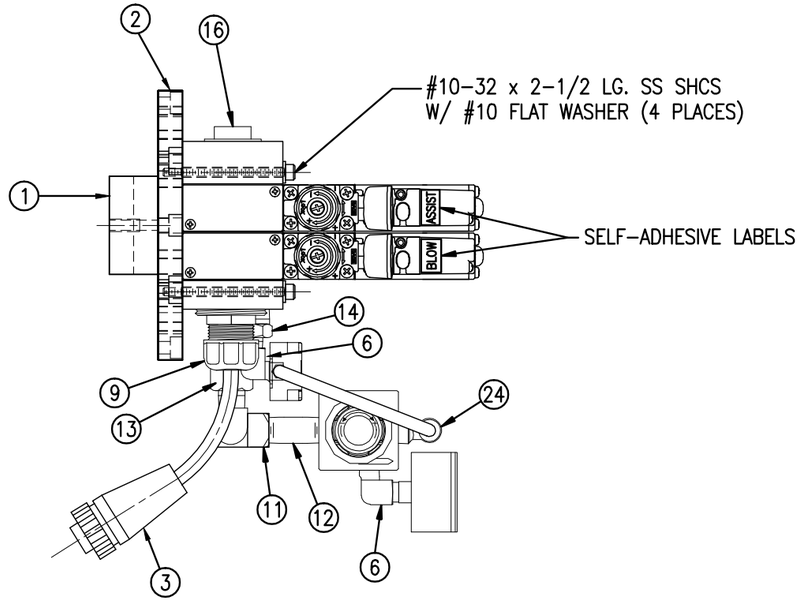
APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	N/A	SERVO TAMP	ANTI-STATIC BRUSH ASSEMBLY	70

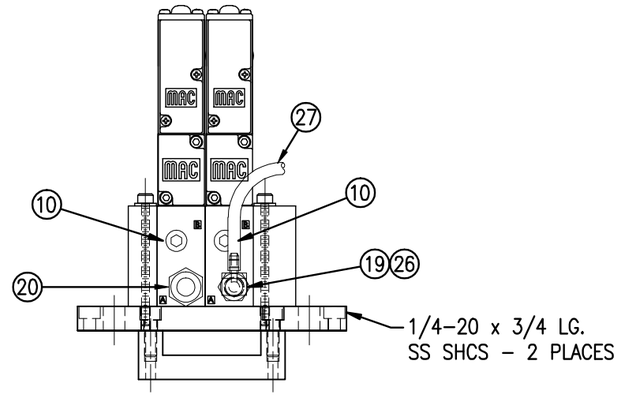
REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\360\
1	ADDED ANOTHER FLATWASHER BETWEEN BRUSH AND MOUNTING BRACKET	03/06/2013	ES	1=1	11/21/2012	ERIC SANOR	3600-ST\ASS-238ST-0109

BILL OF MATERIAL

ASS–238ST–0129M

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	MP–200–0285	DISPLAY UNIT (U–ARM) MOUNTING BRACKET
②	1	MP–214–0206	VALVE MOUNTING PLATE
③	1	ASS–200–0452M	VALVE CABLE
④	1	PM–REG1500	REGULATOR
⑤	1	PM–VA2384	0–160 PSI PRESSURE GUAGE
⑥	2	PM–PF1180	NPT 90° STREET ELBOW 1/8" FEMALE TO 1/8" MALE
⑦	1	PM–PUMP1010	VACUUM PUMP, 55 PSI FEED PRESSURE, MUFFLED EXHAUST
⑧	1	PM–VA2358M	2 STATION MAC VALVE BANK
⑨	1	PE–CO2000	CORD GRIP
⑩	3	PM–FT1200	1/4" NPT SOCKET HEAD PLUG
⑪	1	PM–PF1200	TEE 1/4" NPT FEMALE 3 ENDS
⑫	1	PM–PF1143	NIPPLE, 1/4" NPT X 1 1/2" LG.
⑬	1	PM–PF1220	ADAPTOR, 3/8" NPT FEMALE TO 1/4" NPT MALE
⑭	1	PM–PF1157	REDUCER, 3/8" NPT TO 1/8" NPT
⑮	1	PM–PF1159	FITTING, 3/8" NPT MALE BOTH ENDS
⑯	1	PE–EN9125	1 1/4" BLACK PLASTIC THREADED PLUG
⑰	1	PE–COND1084	STEEL REDUCER
⑱	1	PM–PF1110	BUSHING, 1/4" NPT FEMALE TO 3/8" NPT MALE
⑲	1	PM–PF1105	BUSHING, 1/8" NPT female to 1/4" NPT male
⑳	1	PM–PF1020	FITTING, 3/8" TUBE w/ 1/4" NPT STRT
㉑	3	PM–PF1167	3/8" NPT SOCKET HEAD PLUG
㉒	10.5"	PM–PT1070	1/4" OD TUBING
㉓	1	ASS–214–0106	AIR FILTER
㉔	1	PM–PF1055	90° ELBOW 1/4" TUBE TO 1/4" NPT MALE
㉕	1	PM–PF1185	90° STREET ELBOW, 1/4" NPT
㉖	1	PM–PF1169	HOSE BARB ELBOW, 1/4" TUBE to 1/8" NPT MALE
㉗	36"	PM–AH1000	AIR ASSIST TUBING
◯	2	PM–FASH430079	1/4"–20 UNC x 7/8" LG. SS SHCS
◯	2	PM–FAW30275	1/4" SS FLAT WASHER
◯	2	PM–FASH430078	1/4"–20 UNC x 3/4" LG. SS SHCS
◯	4	PM–FASH429088	10–32 X 2 1/2" LG. SS SHCS
◯	4	PM–FAW30265	#10 SS FLAT WASHER

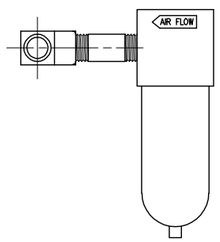




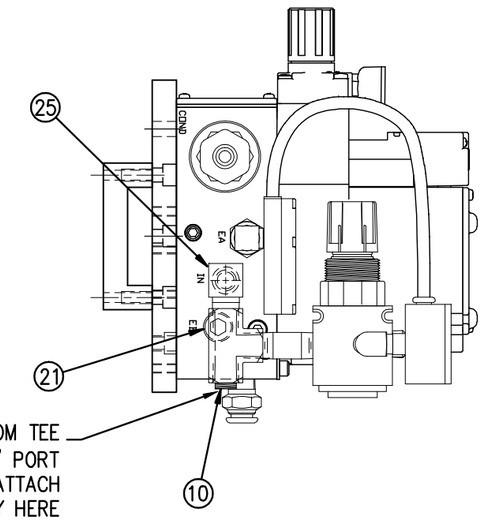
VIEW "A"
(VALVE BANK & MTG. ONLY)

GENERAL VALVE BANK SPARE PARTS:

SOLENOID: #PM–VA2395M
AIR ASSIST REGULATOR W/GUAGE: #PM–VA2396M
BLOW/TAMP/IMPRINTER REGULATORS W/GUAGE: #PM–VA2397M
AIR ASSIST REGULATOR GUAGE: #PM–VA2382M
BLOW/TAMP/IMPRINTER REGULATOR GUAGES: #PM–VA2380M



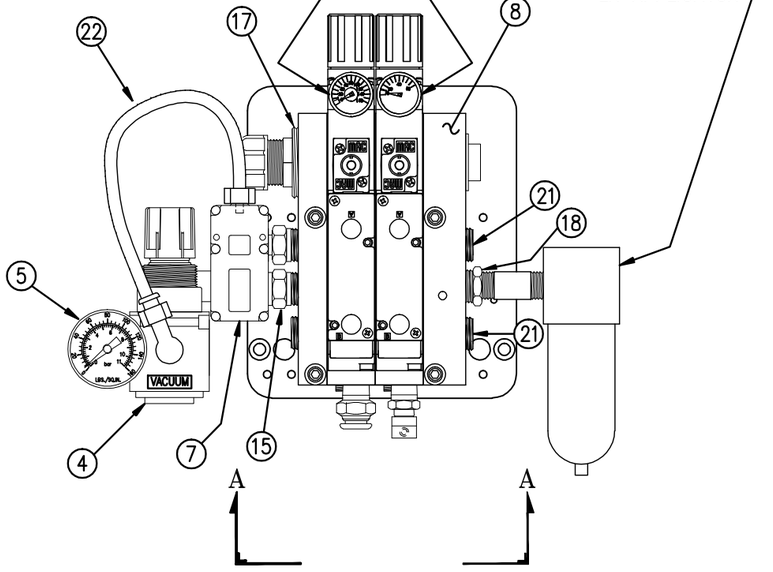
㉓ AIR FILTER
SHIP LOOSE
–CUSTOMER TO INSTALL –



MOVE PLUG FROM TEE
ON THIS SIDE TO "IN" PORT
ON OPPOSITE SIDE & ATTACH
AIR FILTER ASSEMBLY HERE
(TO TEE) FOR RH APPLICATORS

BLOW VALVE:
PRESSURE GAUGE – 0–160 PSI
AIR ASSIST VALVE:
PRESSURE GAUGE – 0–60 PSI

AIR FILTER SHOWN IN
TYPICAL LOCATION FOR
LH APPLICATOR



ASS–238ST–0129M

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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:
3600–ST/360a–ST	7.5"	VALVE BANKS	VALVE BANK ASSEMBLY with FILTER FOR 3600–ST OR 360a–ST

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:
0	–	–	xxx	1=3

Date:	DRAWN BY:	Dept. Code
11/15/2016	ES	70

F:\Engineering\Standard Parts\Applicator\3600ST\ASS–238ST–0129M

BILL OF MATERIAL

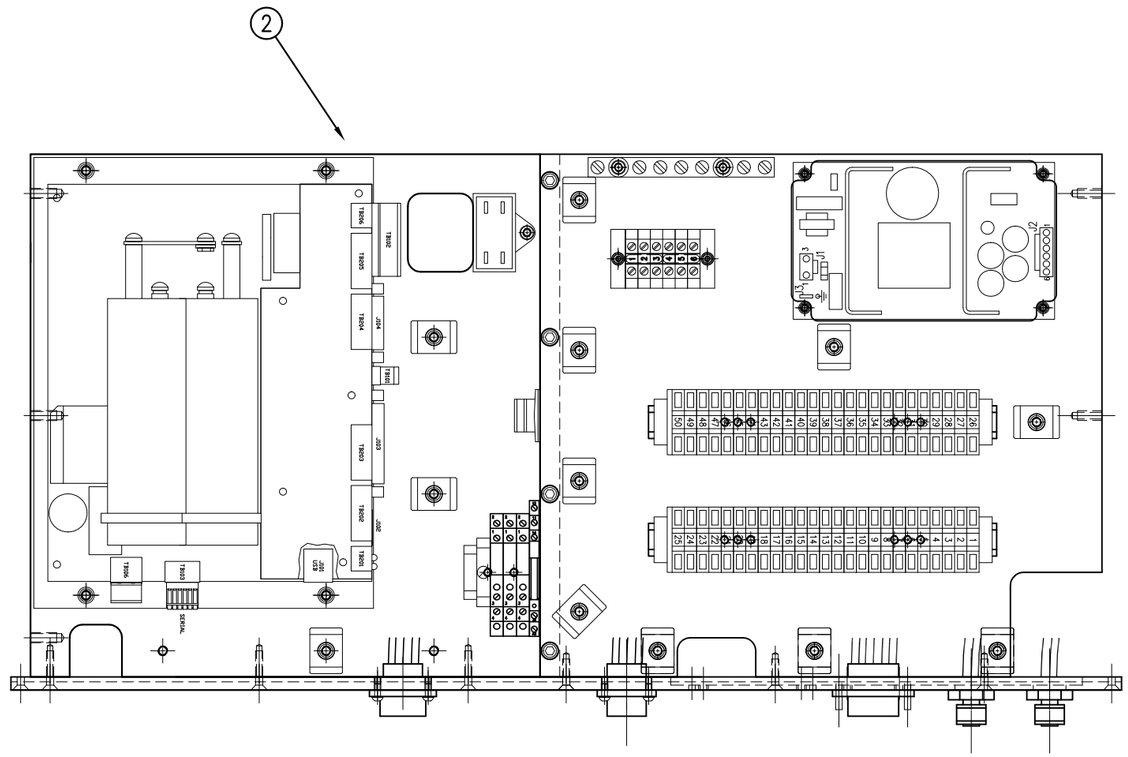
ASS-238ST-0127L-X

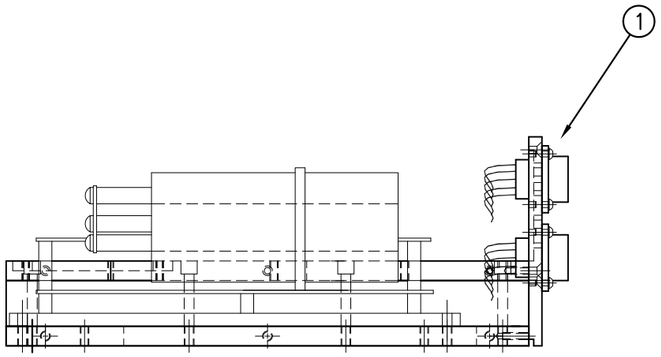
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION	
①	1	SAS-238ST-0127aL	CONNECTOR PLATE SHELF ASSEMBLY - LH	
②	1	SAS-238ST-0127bL-A	ELECTRIC SHELF ASSEMBLY FOR VAC BLOW STYLE-LH	
	1	SAS-238ST-0127bL-B	ELECTRIC SHELF ASSEMBLY FOR FAN STYLE-LH	
③	1	PE-238-0405	SERIAL PRINTER PORT	SERIAL
	0			PARALLEL
	0			ETHERNET
④	0	MP-238-0277	SERIAL PORT BLANK	SERIAL
	1			PARALLEL
	1			ETHERNET
⑤	0	PE-CA2500	PARALLEL CABLE	SERIAL
	1			PARALLEL
	0			ETHERNET
⑥	0	PE-CC1070	PARALLEL PORT CLIP KIT	SERIAL
	1			PARALLEL
	0			ETHERNET
⑦	0	PE-PA1040	FLAT RIBBON CLIP	SERIAL
	1			PARALLEL
	0			ETHERNET
⑧	1	MP-238-0276	PARALLEL PORT BLANK	SERIAL
	0			PARALLEL
	0			ETHERNET
⑨	0	ASS-238-0460	PARALLEL TO ETHERNET ADAPTER ASSEMBLY	SERIAL
	0			PARALLEL
	1			ETHERNET
	10	PM-FAFH50110	FHCS, #6-32 x 1/2" Lg.	

ASS-238ST-0127L-X

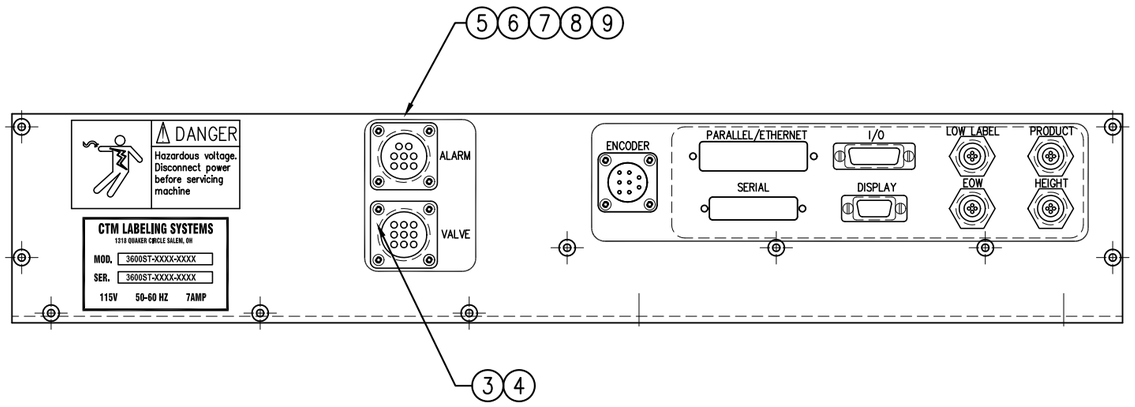
VACUUM BLOW STYLE -A

FAN STYLE -B





NOTE: TERMINAL STRIPS & POWER SUPPLY
AND RELAYS OMITTED FROM THIS VIEW



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APPLICATOR SERIES: 3600ST	APPLICATOR WIDTH(S): 7.5"	GROUP: SERVO TAMP APPLICATOR: HOUSING	REV. DATE -
REV. 0	REV. DESCRIPTION -	TITLE: 3600 SERVO TAMP TYPE: WIRED BOARD ASSEMBLY - LH	REV. BY: XXX
		Scale: 1=3	Date: 07/25/2012
		DRAWN BY: ERIC SANOR	F:\Engineering\Standard Parts\Applicator\3600ST\3600-ST\ASS-238ST-0127L-X
		Dept. Code 70	

BILL OF MATERIAL

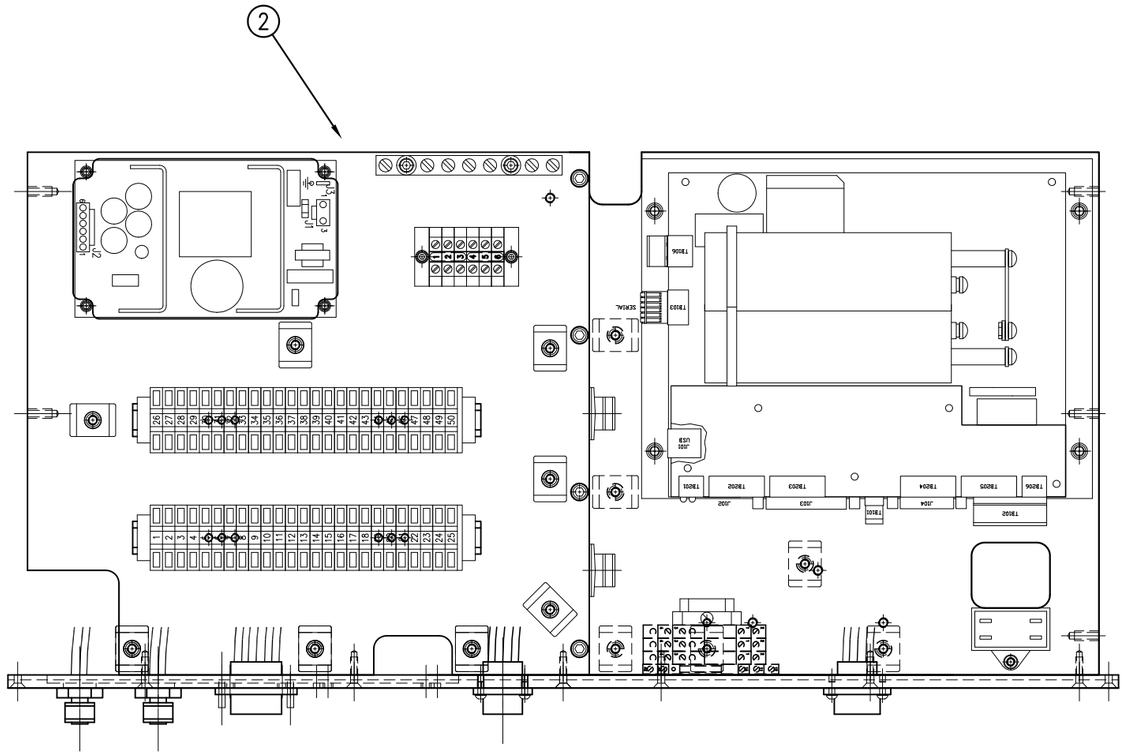
ASS-238ST-0127R-X

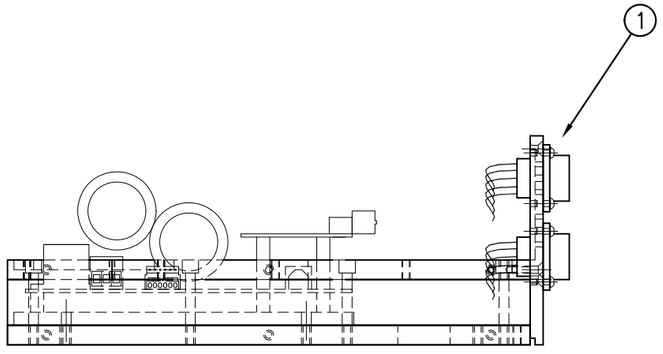
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION	
①	1	SAS-238ST-0127aR	CONNECTOR PLATE SHELF ASSEMBLY	
②	1	SAS-238ST-0127bR-A	ELECTRIC SHELF ASSEMBLY FOR VAC BLOW STYLE	
	1	SAS-238ST-0127bR-B	ELECTRIC SHELF ASSEMBLY FOR FAN STYLE	
③	1	PE-238-0405	SERIAL PRINTER PORT	SERIAL
	0			PARALLEL
	0			ETHERNET
④	0	MP-238-0277	SERIAL PORT BLANK	SERIAL
	1			PARALLEL
	1			ETHERNET
⑤	0	PE-CA2500	PARALLEL CABLE	SERIAL
	1			PARALLEL
	0			ETHERNET
⑥	0	PE-CC1070	PARALLEL PORT CLIP KIT	SERIAL
	1			PARALLEL
	0			ETHERNET
⑦	0	PE-PA1040	FLAT RIBBON CLIP	SERIAL
	1			PARALLEL
	0			ETHERNET
⑧	1	MP-238-0276	PARALLEL PORT BLANK	SERIAL
	0			PARALLEL
	0			ETHERNET
⑨	0	ASS-238-0460	PARALLEL TO ETHERNET ADAPTER ASSEMBLY	SERIAL
	0			PARALLEL
	1			ETHERNET
	10	PM-FAFH50110	FHCS, #6-32 x 1/2" Lg.	

ASS-238ST-0127R-X

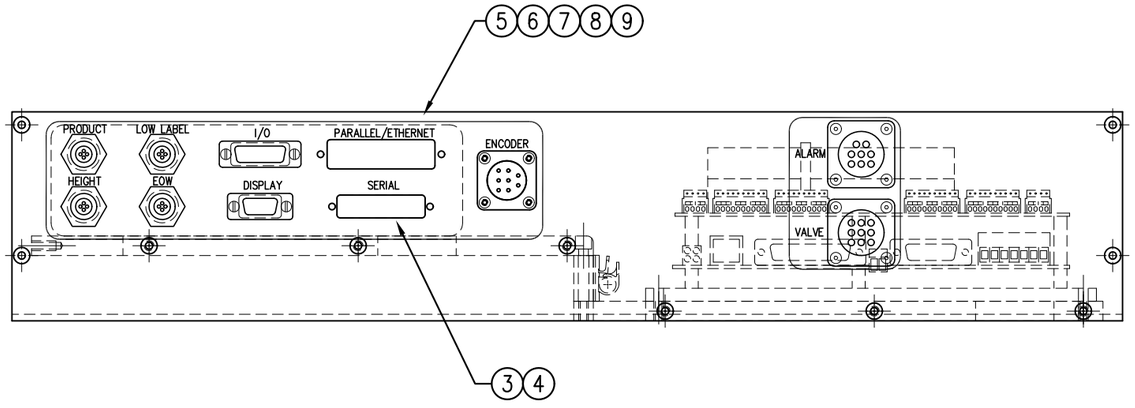
VACUUM BLOW STYLE -A

FAN STYLE -B





NOTE: TERMINAL STRIPS & POWER SUPPLY
AND RELAYS OMITTED FROM THIS VIEW



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APPLICATOR SERIES: 3600ST | APPLICATOR WIDTH(S): 7.5" | GROUP: SERVO TAMP APPLICATOR: HOUSING | TITLE: 3600 SERVO TAMP TYPE: WIRED BOARD ASSEMBLY - RH

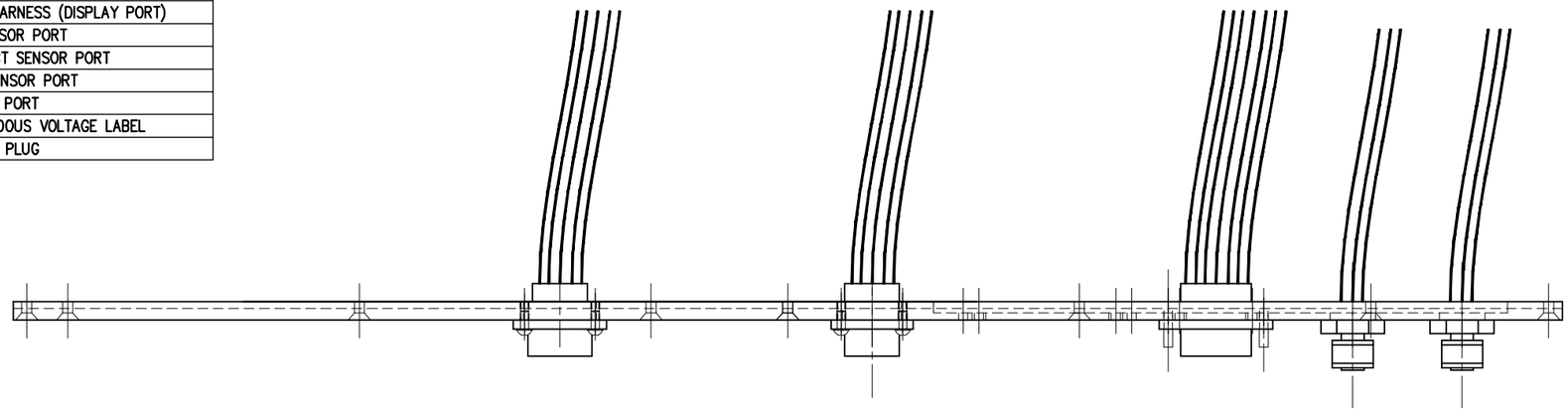
REV. 0 | REV. DESCRIPTION – | REV. DATE – | REV. BY: XXX | Scale: 1=3 | Date: 04/30/2012 | DRAWN BY: ERIC SANOR | Dept. Code 70

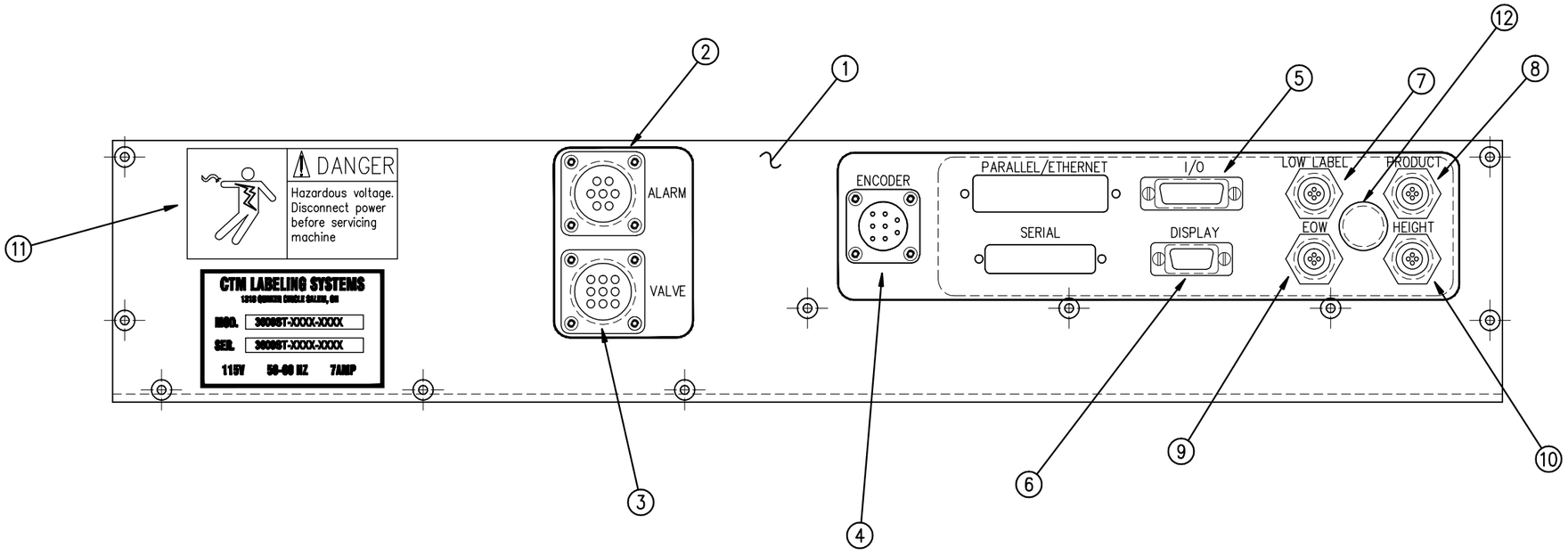
F:\Engineering\Standard Parts\Applicator\3600ST\3600-ST\ASS-238ST-0127R-X

BILL OF MATERIAL

SAS-238ST-0127aL

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	MP-238ST-0204L	SERVO TAMP CONNECTOR FACEPLATE-LH
②	1	ASS-238ST-0415	ALARM CONNECTOR HARNESS
③	1	ASS-238ST-0414	VALVE CONNECTOR HARNESS
④	1	ASS-238ST-0417	DRIVER TO ENCODER PORT HARNESS
⑤	1	ASS-238ST-0419	I/O HARNESS
⑥	1	ASS-238ST-0416	TB103 WIRING HARNESS (DISPLAY PORT)
⑦	1	ASS-238ST-0422	LOW LABEL SENSOR PORT
⑧	1	ASS-238ST-0424	PRODUCT DETECT SENSOR PORT
⑨	1	ASS-238ST-0421	END OF WEB SENSOR PORT
⑩	1	ASS-238ST-0423	HEIGHT SENSOR PORT
⑪	1	PM-WL1055	DANGER HAZARDOUS VOLTAGE LABEL
⑫	1	PE-EN9056	5/8" DIA. HOLE PLUG





SAS-238ST-0127aL

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APPLICATOR SERIES: 3600ST | APPLICATOR WIDTH(S): 7.5" | GROUP: SERVO TAMP APPLICATOR: HOUSING | TITLE: CONNECTOR PLATE SHELF ASSEMBLY - LH | Dept. Code 70

REV. | REV. DESCRIPTION | REV. DATE | REV. BY:
1 | ADDED ITEM 12, DUE TO PLATE REVISION | 03/08/2014 | ES

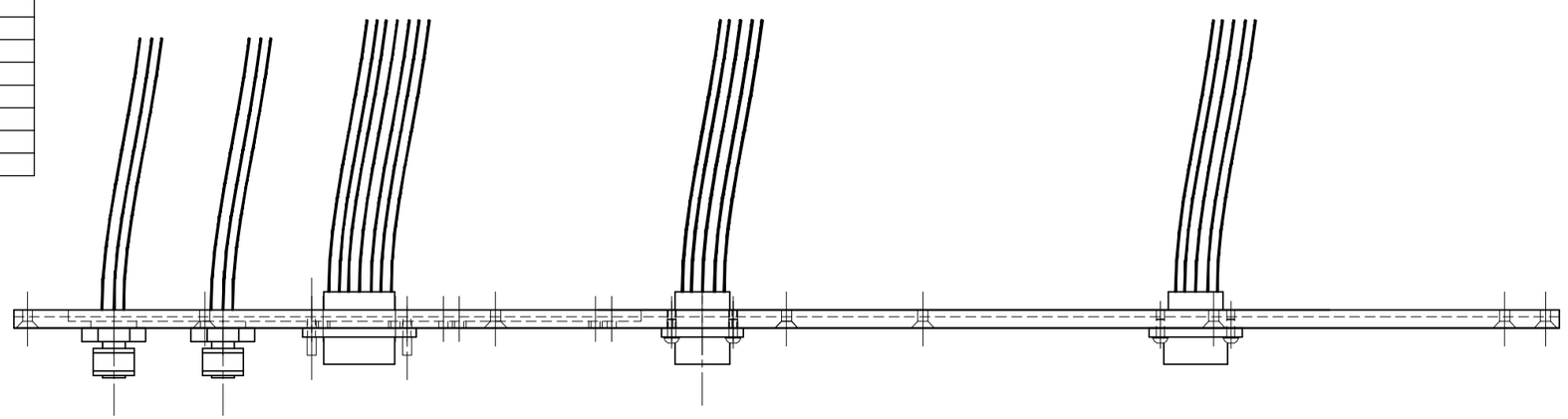
Scale: 1=2 | Date: 05/07/2012 | DRAWN BY: ERIC SANOR | F:\Engineering\Standard Parts\Applicator\3600-ST\SAS-238ST-0127aL

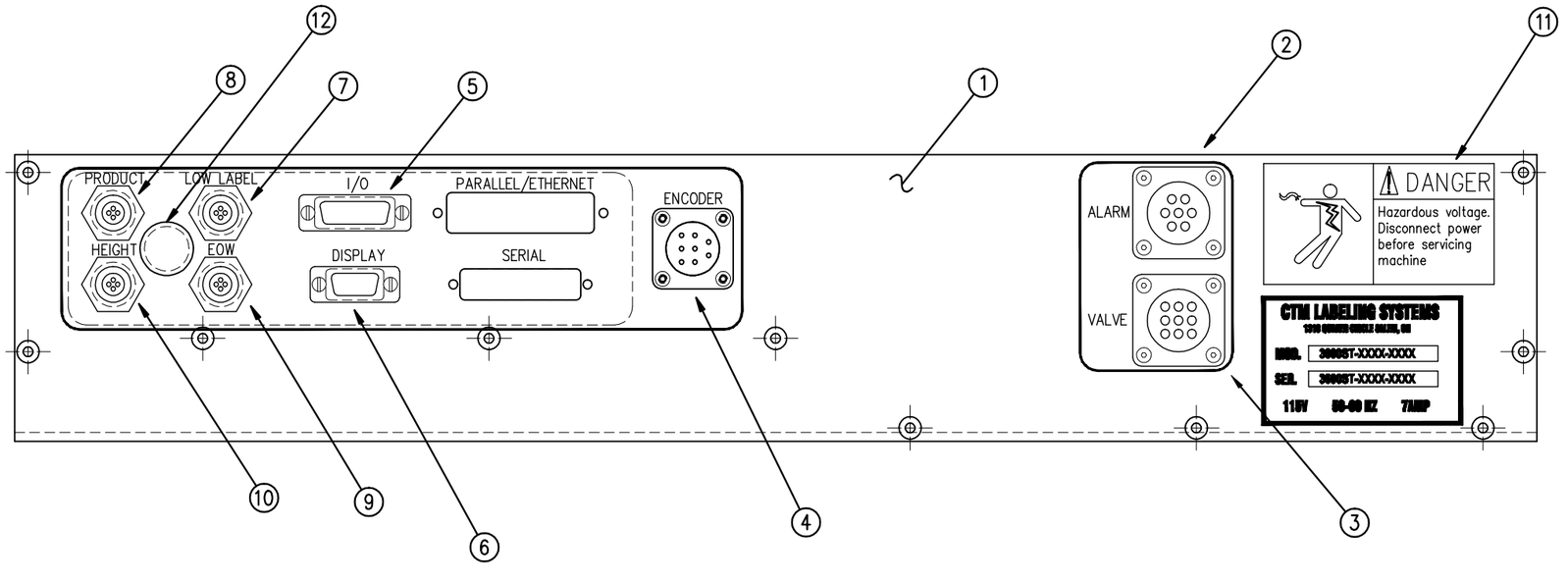
BILL OF MATERIAL

SAS-238ST-0127aR

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	MP-238ST-0204R	SERVO TAMP CONNECTOR FACEPLATE-RH
②	1	ASS-238ST-0415	ALARM CONNECTOR HARNESS
③	1	ASS-238ST-0414	VALVE CONNECTOR HARNESS
④	1	ASS-238ST-0417	DRIVER TO ENCODER PORT HARNESS
⑤	1	ASS-238ST-0419	I/O HARNESS
⑥	1	ASS-238ST-0416	TB103 WIRING HARNESS (DISPLAY PORT)
⑦	1	ASS-238ST-0422	LOW LABEL SENSOR PORT
⑧	1	ASS-238ST-0424	PRODUCT DETECT SENSOR PORT
⑨	1	ASS-238ST-0421	END OF WEB SENSOR PORT
⑩	1	ASS-238ST-0423	HEIGHT SENSOR PORT
⑪	1	PM-WL1055	DANGER HAZARDOUS VOLTAGE LABEL
⑫	1	PE-EN9056	5/8" DIA. HOLE PLUG

SAS-238ST-0127aR





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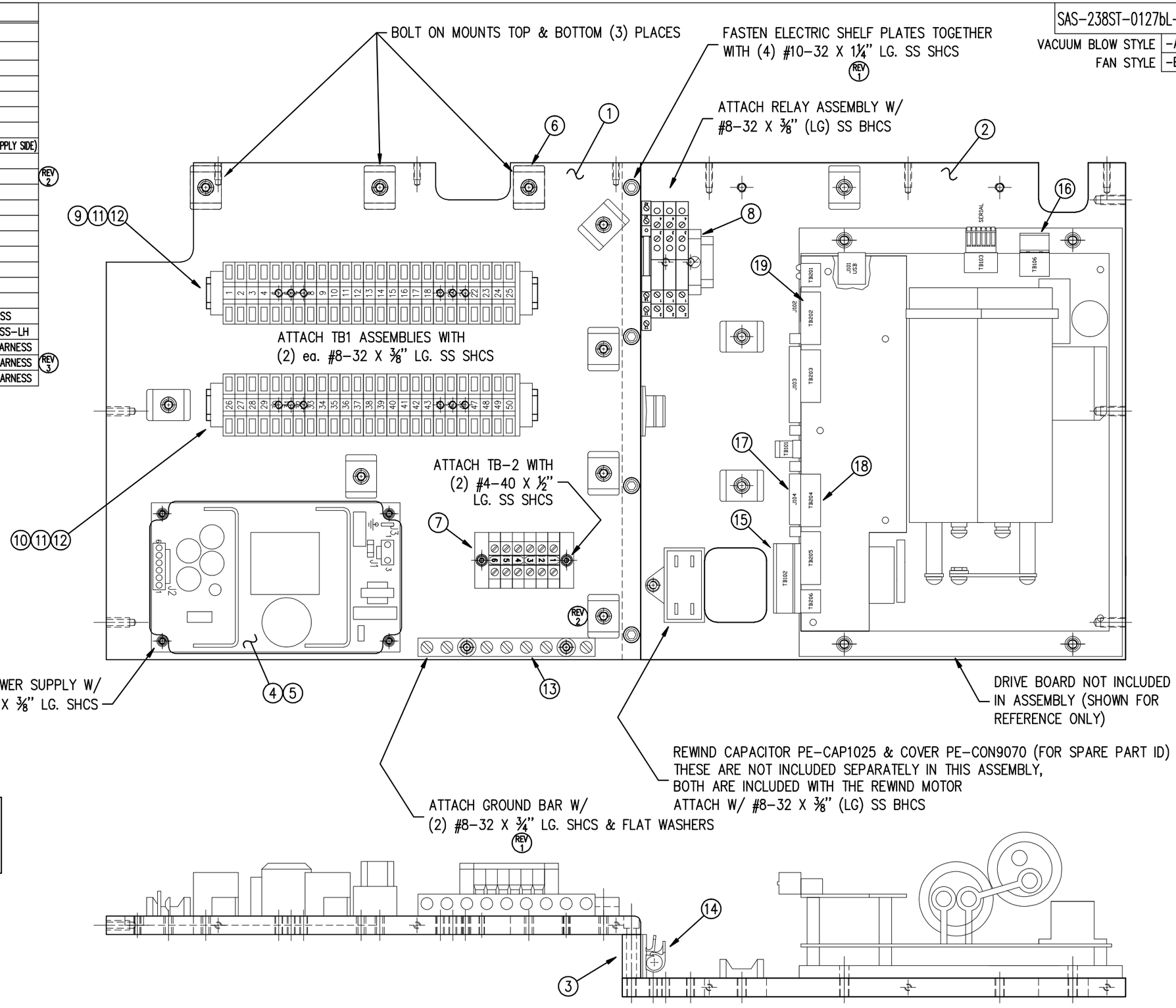
APPLICATOR SERIES: 3600ST	APPLICATOR WIDTH(S): 7.5"	GROUP: SERVO TAMP APPLICATOR: HOUSING	TITLE: CONNECTOR PLATE SHELF ASSEMBLY -RH	Dept. Code 70	
REV. 1	REV. DESCRIPTION ADDED ITEM 12, DUE TO PLATE REVISION	REV. DATE 03/08/2014	REV. BY: ES	Scale: 1=2	Date: 04/26/2012
				DRAWN BY: ERIC SANOR	F:\Engineering\Standard Parts\Applicator\3600-ST\SAS-238ST-0127aR

BILL OF MATERIAL

SAS-238ST-0127bL-X

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION	
①	1	MP-238ST-0206L	UPPER ELECTRIC SHELF - LH	
②	1	MP-238ST-0205L	LOWER ELECTRIC SHELF - LH	
③	1	MP-238ST-0207	ELECTRIC SHELF TIE PLATE	
④	1	MP-PS1024	POWER SUPPLY FOR VAC/BLOW STYLE	
	1	PE-PS1007	POWER SUPPLY FOR FAN STYLE	
⑤	1	ASS-238ST-0410	WIRE HARNESS: 24 VDC POWER SUPPLY (POWER SUPPLY SIDE)	
⑥	19	PE-PA1083	BOLT ON MOUNT (BLACK)	
⑦	1	ASS-238ST-0428	TB2 TERMINAL STRIP	REV 2
⑧	1	ASS-238ST-0430-A	VAC/BLOW STYLE RELAY ASSEMBLY	
	1	ASS-238ST-0430-B	FAN STYLE RELAY ASSEMBLY	
⑨	1	ASS-238ST-0426	TB1 TERMINAL STRIP (#1-#25)	
⑩	1	ASS-238ST-0427	TB1 TERMINAL STRIP (#26-#50)	
⑪	1	CP-200-0279	DIN RAIL (FOR 25 TERMINALS)	
⑫	4	PE-TE4020	END STOP	
⑬	1	PE-PA1110	GROUND BAR	
⑭	2	PE-PA1050	1/4" ADHSV CABLE CLAMP	
⑮	1	ASS-238ST-0408	TB102 WIRING HARNESS/POWER HARNESS	
⑯	1	ASS-238ST-0409L	AUXILLIARY POWER CONNECTOR HARNESS-LH	
⑰	1	PE-200A-1410	INTERNAL WIRE HARNESS: J104 WIRING HARNESS	
⑱	1	ASS-238ST-0412	INTERNAL WIRE HARNESS: TB204 WIRING HARNESS	REV 3
⑲	1	ASS-238ST-0413	INTERNAL WIRE HARNESS: TB202 WIRING HARNESS	



DRIVE BOARD ADDED AT CTM LEVEL
APPLY HEAT SINK PASTE UNDER DRIVE BOARD
& ATTACH WITH (4) #10-32 x 1/2" Lg. SS SHCS

SAS-238ST-0127bL-X

VACUUM BLOW STYLE	-A
FAN STYLE	-B

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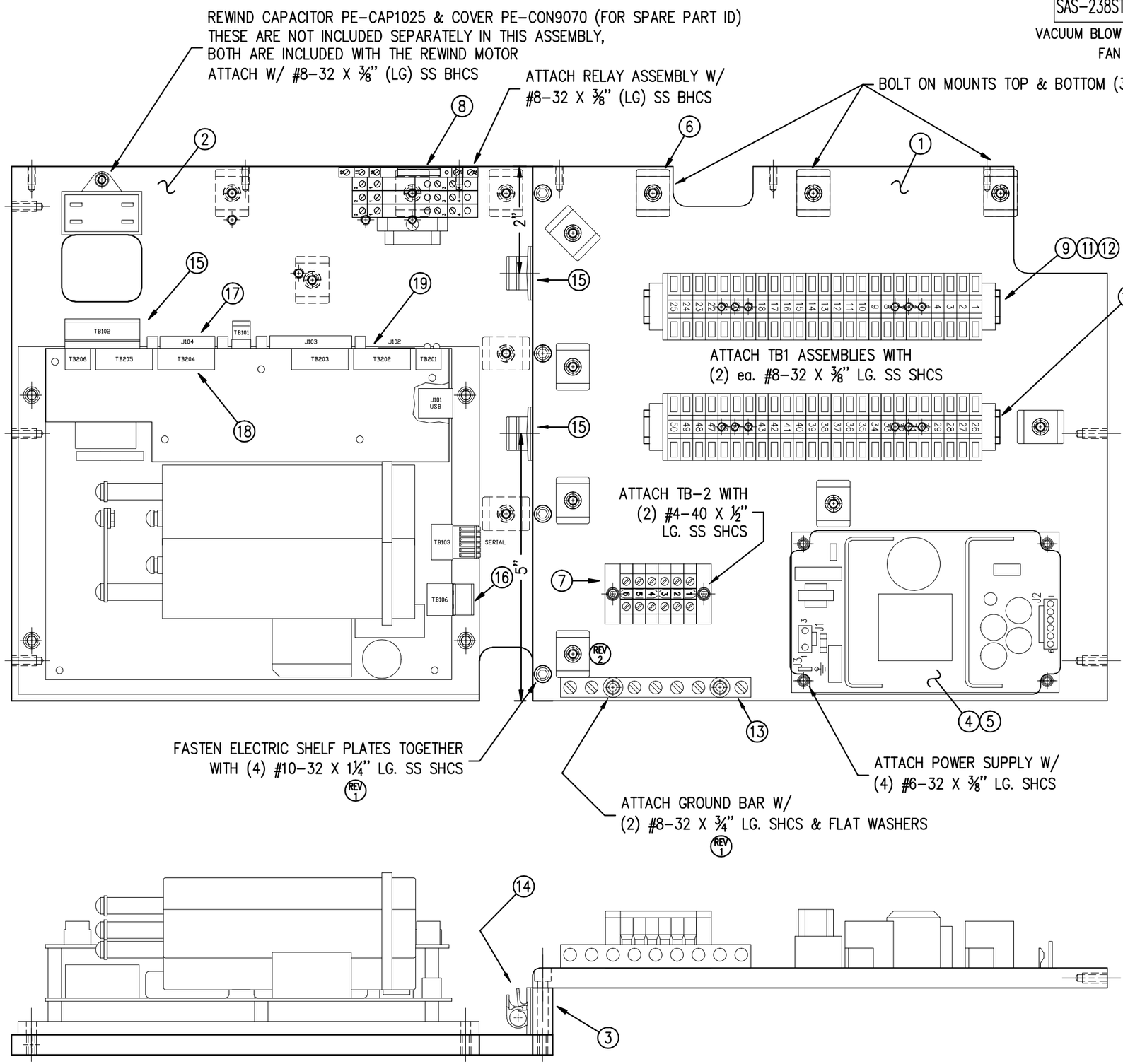
APPLICATOR SERIES: 3600ST	APPLICATOR WIDTH(S): 7.5"	GROUP: SERVO TAMP APPLICATOR: HOUSING	TITLE: ELECTRIC SHELF ASSEMBLY - LH
REV.: 4	REV. DESCRIPTION: REMOVED DRIVE CONTROL BOARD	REV. DATE: 03/27/15	REV. BY: TDR
Dept. Code: 70	Date: 05/09/2012	DRAWN BY: ERIC SANOR	F:\Engineering\Standard Parts\Applicator\3600ST\3600-ST\SAS-238ST-0127bL-X

BILL OF MATERIAL

SAS-238ST-0127bR-X

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	MP-238ST-0206R	UPPER ELECTRIC SHELF - RH
②	1	MP-238ST-0205R	LOWER ELECTRIC SHELF - RH
③	1	MP-238ST-0207	ELECTRIC SHELF TIE PLATE
④	1	MP-PS1024	POWER SUPPLY FOR VAC/BLOW STYLE
	1	PE-PS1007	POWER SUPPLY FOR FAN STYLE
⑤	1	ASS-238ST-0410	WIRE HARNESS: 24 VDC POWER SUPPLY (POWER SUPPLY SIDE)
⑥	19	PE-PA1083	BOLT ON MOUNT (BLACK)
⑦	1	ASS-238ST-0428	TB2 TERMINAL STRIP (REV 2)
⑧	1	ASS-238ST-0430-A	VAC/BLOW STYLE RELAY ASSEMBLY
	1	ASS-238ST-0430-B	FAN STYLE RELAY ASSEMBLY
⑨	1	ASS-238ST-0426	TB1 TERMINAL STRIP (#1-#25)
⑩	1	ASS-238ST-0427	TB1 TERMINAL STRIP (#26-#50)
⑪	1	CP-200-0279	DIN RAIL (FOR 25 TERMINALS)
⑫	4	PE-TE4020	END STOP
⑬	1	PE-PA1110	GROUND BAR
⑭	2	PE-PA1050	1/4" ADHSV CABLE CLAMP
⑮	1	ASS-238ST-0408	TB102 WIRING HARNESS/POWER HARNESS
⑯	1	ASS-238ST-0409R	AUXILLIARY POWER CONNECTOR HARNESS-RH
⑰	1	PE-200A-1410	INTERNAL WIRE HARNESS: J104 WIRING HARNESS (REV 3)
⑱	1	ASS-238ST-0412	INTERNAL WIRE HARNESS: TB204 WIRING HARNESS
⑲	1	ASS-238ST-0413	INTERNAL WIRE HARNESS: TB202 WIRING HARNESS

DRIVE BOARD ADDED AT CTM LEVEL
APPLY HEAT SINK PASTE UNDER DRIVE BOARD
& ATTACH WITH (4) #10-32 x 1/2" Lg. SS SHCS



SAS-238ST-0127bR-X

VACUUM BLOW STYLE	-A
FAN STYLE	-B

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TITLE: ELECTRIC SHELF ASSEMBLY - RH		Dept. Code 70	
APPLICATOR SERIES: 3600ST	APPLICATOR WIDTH(S): 7.5"	GROUP: SERVO TAMP APPLICATOR: HOUSING	F:\Engineering\Standard Parts\Applicator\3600ST\3600-ST\SAS-238ST-0127bR-X
REV. BY: TDR	Scale: 1=2	Date: 04/26/2012	DRAWN BY: ERIC SANOR
REV. 4	REV. DESCRIPTION: REMOVED DRIVE CONTROL BOARD	REV. DATE: 03/27/15	REV. 5

ASS-238ST-0401

10 AMP
IEC CONNECTOR AND FILTER
COOLING FAN
GRN
WHT
BLK
24 VDC POWER SUPPLY

MOTOR CABLE (ASS-238ST-0406)
GRN
BLK
RED
WHT

TB102 AC POWER
GRD AC2 AC1
SERVO MOTOR (C-PE-M01082)

AUX POWER

FEEDBACK CABLE (ASS-238ST-0405)

PRODUCT DETECT (C4 CON)
BRN
BLU
WHT

LOW LABEL (C5 CON)
BRN
BLU
GRY

END OF WEB (C6 CON)
BRN
BLU
WHT

ONLY ONE RELAY
FOR VACUUM FAN
FAN
OR
SPARE

SPARE VALVE OUTPUT
USE PE-RE1063 FOR FAN
USE PE-RE1013 FOR VALVE

VALVE (C9 CON)
VALVE BANK
BLOW
ASSIST

REF. PE-238ST-0408
CAP
RWND
ORG
BLK
WHT
TB102-AC1
TB102-AC2
REV 05

ENCODER (C7 CON)
twist
PINK
W/PUR
GRN
W/RED
RED
BLU
YEL/GRN
REV 04

P2
M1
REWIND MOTOR (ASS-238-0428)

J	1	1	SHIELD		
H	3	3	ENC 5V		
M	5	5	HB		
F	6	6	MKR−		
E	7	7	MKR+		
K	10	10	HA		
P	11	11	HC		
T	13	13	BRK−		
A	14	14	COS+		
B	15	15	COS−		
C	17	17	SIN+		
D	18	18	SIN−		
G	21	21	ENC COM		
S	25	25	BRK+		
14 YEL	12	12	CW LMT		
13 PINK	20	20	COM LMT		
16 GRY	22	22	HOME LMT		
15 PUR	24	24	CCW LMT		
7 W/BRN	4	4	PD SIGNAL		(din 0,4)
8 W/BLU	17	17	LOW LBL		(din 0,0)
9 W/YEL	18	18	END OF WEB		(din 0,1)
10 W/BLK	25	25	JOG		(din 0,2)
11 W/GRN	26	26	INHIBIT		(din 0,3)
12 W/GRY	6	6	LBL ON PAD IN		(din 0,5)
37 YEL	7	7	SPARE VALVE		(dout 0,0)
38 GRY	8	8	BLOW VALVE		(dout 0,1)
39 PUR	9	9	ASSIST VALVE		(dout 0,2)
40 ORG	16	16	REWIND MOTOR		(dout 0,3)
19 YEL/GRN	13	13	ANALOG IN (+)		
20 W/ORG	22	22	ANALOG OUT		
21 PINK	1	1	A+ CHANNEL	J104 PRIMARY I/O	
22 W/PUR	2	2	A− CHANNEL		
23 GRN	10	10	B+ CHANNEL		
24 W/RED	11	11	B− CHANNEL		
25 RED	12	12	5 VDC		
BRN	5	5	24 VDC		
BRN	3	3	24 VDC		
BLU	23	23	0 VDC		
BLU	21	21	0 VDC		
BLU	15	15	OUTPUT COM		
BLU	14	14	ANALOG IN (−)		
BRN	24	24	INPUT COM		

J103 FEEDBACK

TB202
24 VDC	1	1	BRN
0 VDC	2	2	BLU
SYSTEM READY	3	3	YEL/GRN 48
WARNING ALARM	4	4	PINK 49
CRITICAL ALARM	5	5	RED 50
PRINT START	6	6	ORG 36
TAMP HOME	7	7	YEL 47
LBL ON PAD	8	8	PUR 46
REISSUE	9	9	GRY 45
INVERT READY	10	10	

TB203
24 VDC	1	1
0 VDC	2	2
(8) SPARE OUTPUTS		
	10	10

REV 3

TB204
24 VDC	1	1	BRN
TAMP RETURN	2	2	W/RED 17
REWIND PROX	3	3	W/ORG 18
PRINTER READY	4	4	W/BRN 30
PRINT END	5	5	W/PUR 31
LOW RIBBON	6	6	W/GRY 32
NO MEDIA	7	7	W/YEL 33
BAD READ	8	8	W/GRN 34
SPARE INPUT	9	9	W/BLU 35
	10	10	

ASS-238-0406x (B, P, G, Y)

TB205
24 VDC	1	1	BRN
REMOTE RESET	2	2	
E-STOP	3	3	W/ORG 41
(6) SPARE INPUTS			
5 VDC	10	10	

TB103
RS-232 TXD	2	2
RS-232 RXD	3	3
SIGNAL COM	4	4
(−) BRAKE INPUT	5	5
(+) BRAKE INPUT	6	6

ALARM (C8 CON)
GRN 7 GRD
BRN 3 24 VDC
YEL/GRN 4 READY
PINK 5 WARNING
RED 6 CRITICAL

I/O (C2 CON)
BLU 1 0 VDC
BRN 2 24 VDC
YEL/GRN 48 3 READY SIGNAL
PINK 49 4 WARNING ALARM
RED 50 5 CRITICAL ALARM
YEL 47 7 TAMP HOME
PUR 46 8 LABEL ON PAD
GRY 38 9 BLOW VALVE
PUR 39 10 ASSIST VALVE
W/BRN 7 11 PD SIGNAL
W/GRN 11 12 INHIBIT
REV 3
W/ORG 41 15 E-STOP
REV 3

BLU
BRN
BLK
REWIND PROX

HEIGHT (C3 CON)
BRN 1
YEL/GRN 19 5
BLU 3
BLK 4
GRD BAR
REV 02

DISPLAY (C1 CON)
BLU 9
BRN 7
RED 2
WHT 3
BLK 5
GRN 1
REV 01
REV 04
REV 01

PRINT ENGINE
SERIAL PORT (C10) (ASS-238-0405) (C10B)
PARALLEL PORT (C11) (EY244-MF) (C11B)
INTERFACE PORT (C12) (C12B)

XX −TB2 TERMINALS

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

XX −TB1 TERMINALS

TB1-1	24 VDC	TB1-26	24 VDC
TB1-2	24 VDC	TB1-27	24 VDC
TB1-3	24 VDC	TB1-28	0 VDC
TB1-4	0 VDC	TB1-29	0 VDC
TB1-5	0 VDC	TB1-30	PRINTER READY
TB1-6	0 VDC	TB1-31	PRINT END
TB1-7	PD SIGNAL	TB1-32	LOW RIBBON
TB1-8	LOW LABEL	TB1-33	NO MEDIA
TB1-9	END OF WEB	TB1-34	BAD READ
TB1-10	JOG	TB1-35	SPARE INPUT
TB1-11	INHIBIT/EXTERNAL PRINT	TB1-36	PRINT START
TB1-12	LABEL ON PAD INPUT	TB1-37	HI/LO FAN
TB1-13	LIMIT COM	TB1-38	BLOW VALVE
TB1-14	CW LIMIT	TB1-39	ASSIST VALVE
TB1-15	CCW LIMIT	TB1-40	REWIND MOTOR
TB1-16	HOME PROX (NOT USED)	TB1-41	ESTOP INPUT
TB1-17	TAMP RETURN	TB1-42	N/C
TB1-18	REWIND ON INPUT	TB1-43	N/C
TB1-19	ANALOG INPUT	TB1-44	FAN OR VALVE CONTROL
TB1-20	ANALOG OUTPUT	TB1-45	REISSUE OUTPUT
TB1-21	(A+) CHANNEL	TB1-46	LABEL ON PAD OUTPUT
TB1-22	(A−) CHANNEL	TB1-47	TAMP HOME
TB1-23	(B+) CHANNEL	TB1-48	READY SIGNAL
TB1-24	(B−) CHANNEL	TB1-49	WARNING SIGNAL
TB1-25	5 VDC	TB1-50	CRITICAL SIGNAL

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TITLE: 3600 SERVO/ELECTRIC TAMP W/ AEROTECH MOTOR
PART: GENERAL SCHEMATICS FOR 3600 SERVO/ELECTRIC TAMP

REV.	REV. DESCRIPTION	REV. BY:	REV. DATE
5	REVISED REWIND RELAY TERMINALS & HARNESS NUMBER	SES	03/29/16

Scale:
Date: 06-05-12
DRAWN BY: dkm
F:\Engineering\Standard Parts\Applicator\360 3600-ST\ASS-238ST-0401
Dept. Code 70

BILL OF MATERIAL

PE-238ST-0405

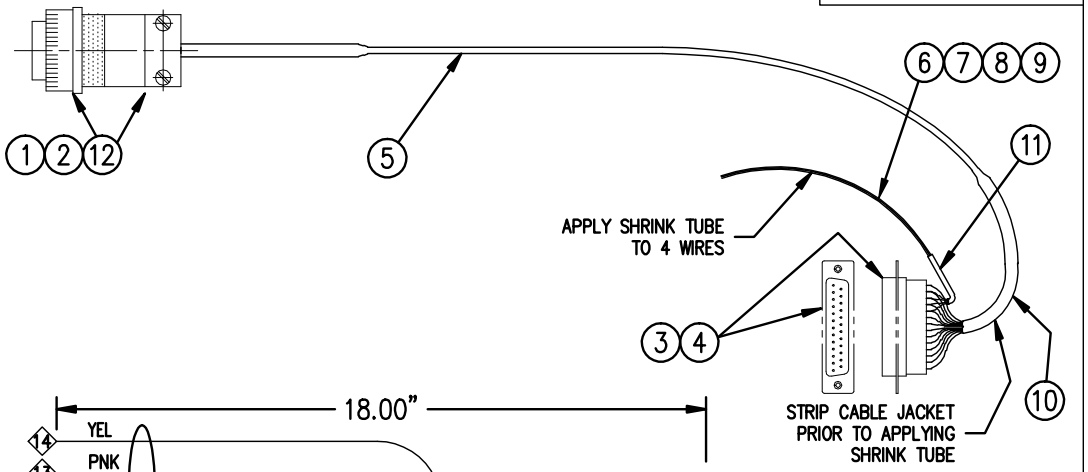
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PE-CON0996	17-POLE AMPHENOL PLUG, SIZE 20
②	1	PE-CON0994	AMPHENOL SIZE 20, CABLE CLAMP
③	1	PE-CON2058	DB-25 PIN MALE CONNECTOR
④	18	PE-CON7055	MALE PIN, DB (22-26 AWG)
⑤	1	PE-CA1105	25-CONDUCTOR CABLE 40"
⑥	1	PE-W1035	YELLOW (AWG 22) WIRE x 18.00" Lg.
⑦	1	PE-W1060	PINK (AWG 22) WIRE x 18.00" Lg.
⑧	1	PE-W1039	GRAY (AWG 22) WIRE x 18.00" Lg.
⑨	1	PE-W1040	PURPLE (AWG 22) WIRE x 18.00" Lg.
⑩	1	PE-ST1025	1/2"ø SHRINK TUBE x 2.00" Lg.
⑪	1	PE-ST1015	1/4"ø SHRINK TUBE x 6.00" Lg.
⑫	1	PE-CON1023	AMPHENOL REDUCING/EXTENDING BUSHING, SIZE 20/22

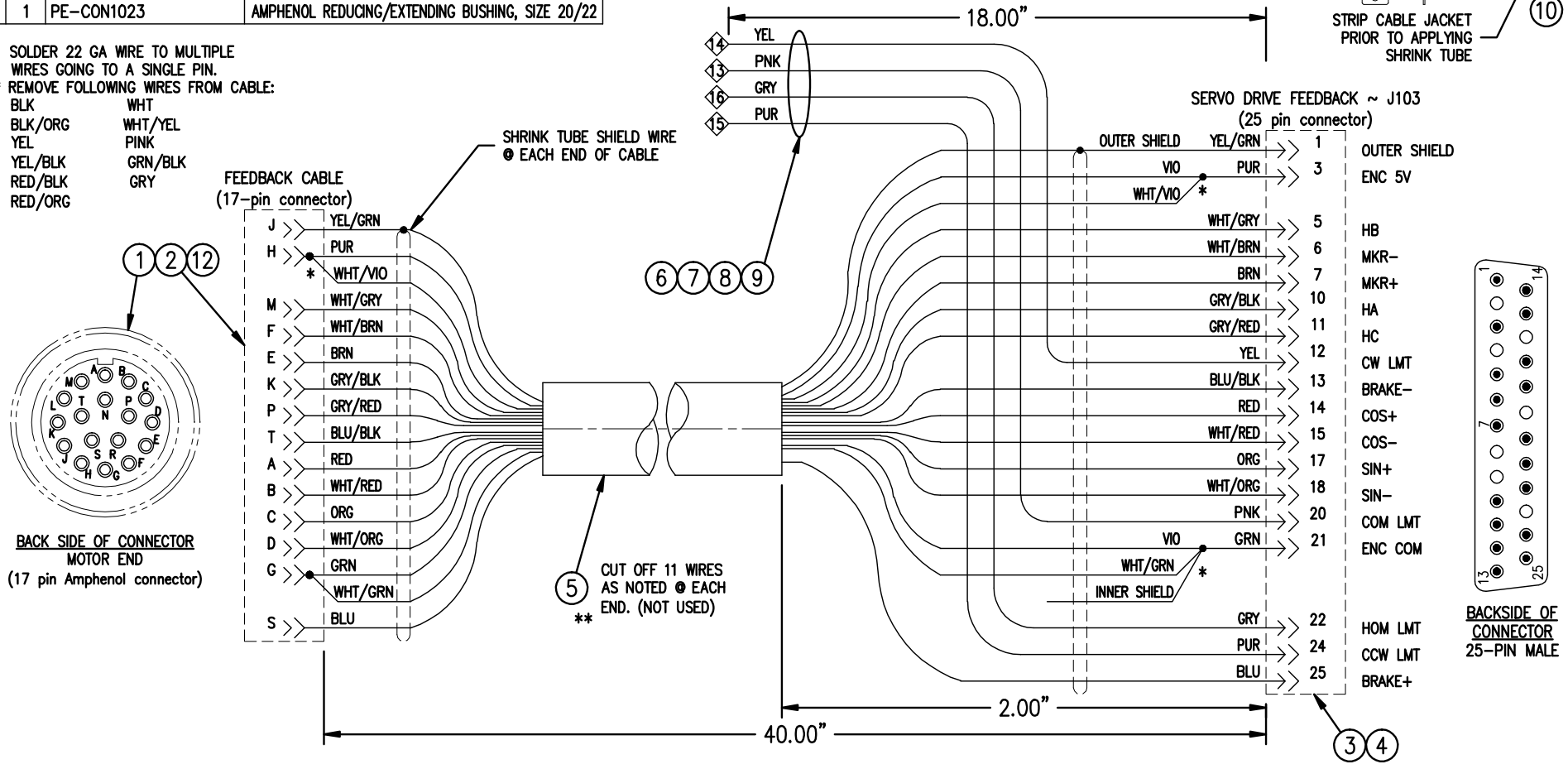
PE-238ST-0405

* SOLDER 22 GA WIRE TO MULTIPLE WIRES GOING TO A SINGLE PIN.

** REMOVE FOLLOWING WIRES FROM CABLE:

BLK	WHT
BLK/ORG	WHT/YEL
YEL	PINK
YEL/BLK	GRN/BLK
RED/BLK	GRY
RED/ORG	





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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	7.5"	SERVO TAMP APPLICATOR: ELECTRICAL	SERVO DRIVE J103 ENCODER FEEDBACK CABLE	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\
0	–	–	XXX	1=1.5	01/30/14	DLM	3600-ST\PE-238ST-0405

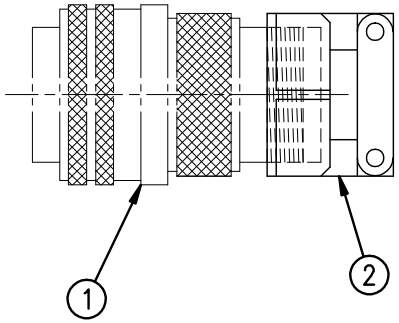
PE-238ST-0406

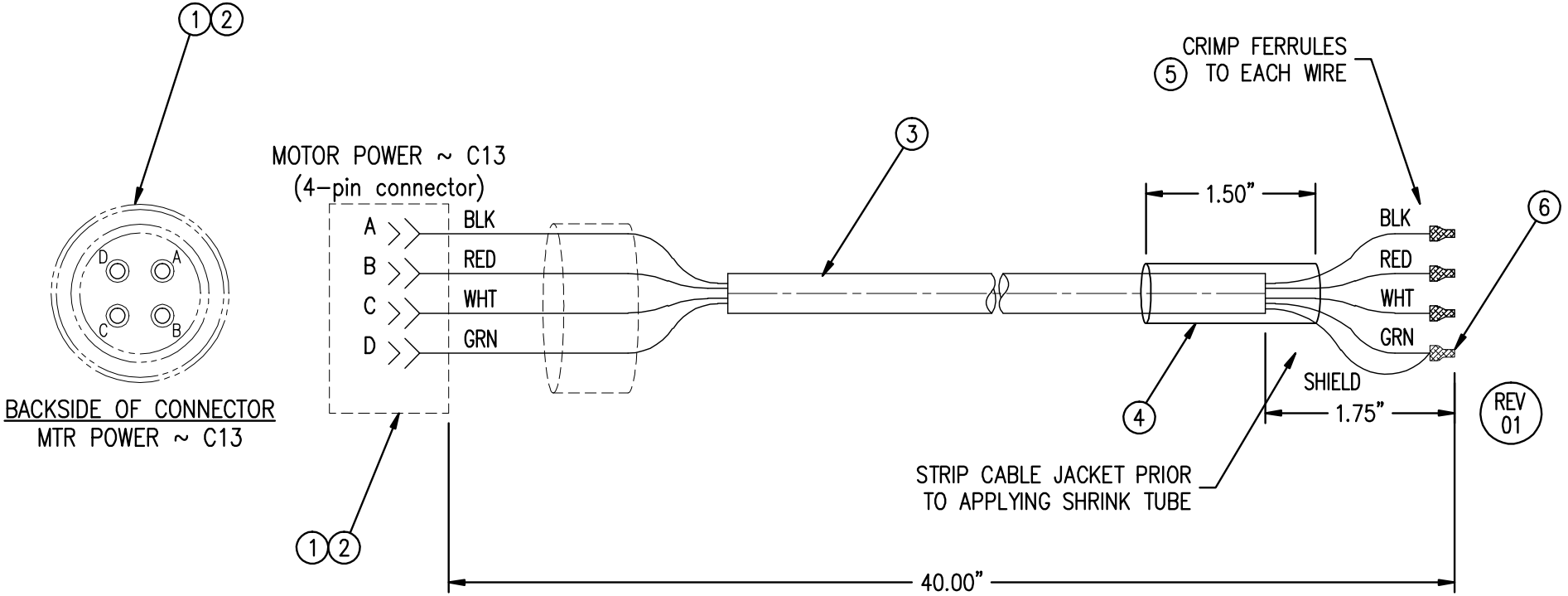
BILL OF MATERIAL

PE-238ST-0406

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PE-CON0998	4-POLE AMPHENOL PLUG, SIZE 18
②	1	PE-CON0992	AMPHENOL SIZE 18, CABLE CLAMP
③	1	PE-CA1100	4-CONDUCTOR POWER CABLE 40" LONG
④	1	PE-ST1020	3/8"ø SHRINK TUBE x 1.50" Lg.
⑤	3	PE-CON1354	14 AWG FERRULE (YELLOW)
⑥	1	PE-CON1353	12 AWG FERRULE (GREY)

REV 02





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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	7.5"	SERVO TAMP APPLICATOR: ELECTRICAL	SERVO MOTOR POWER TO TB102 DRIVE CABLE	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\
02	PE-W1050 REMOVED, PE-CON1353 ADDED	05/29/14	DLM	1=1	01/30/14	DLM	3600-ST\PE-238ST-0406

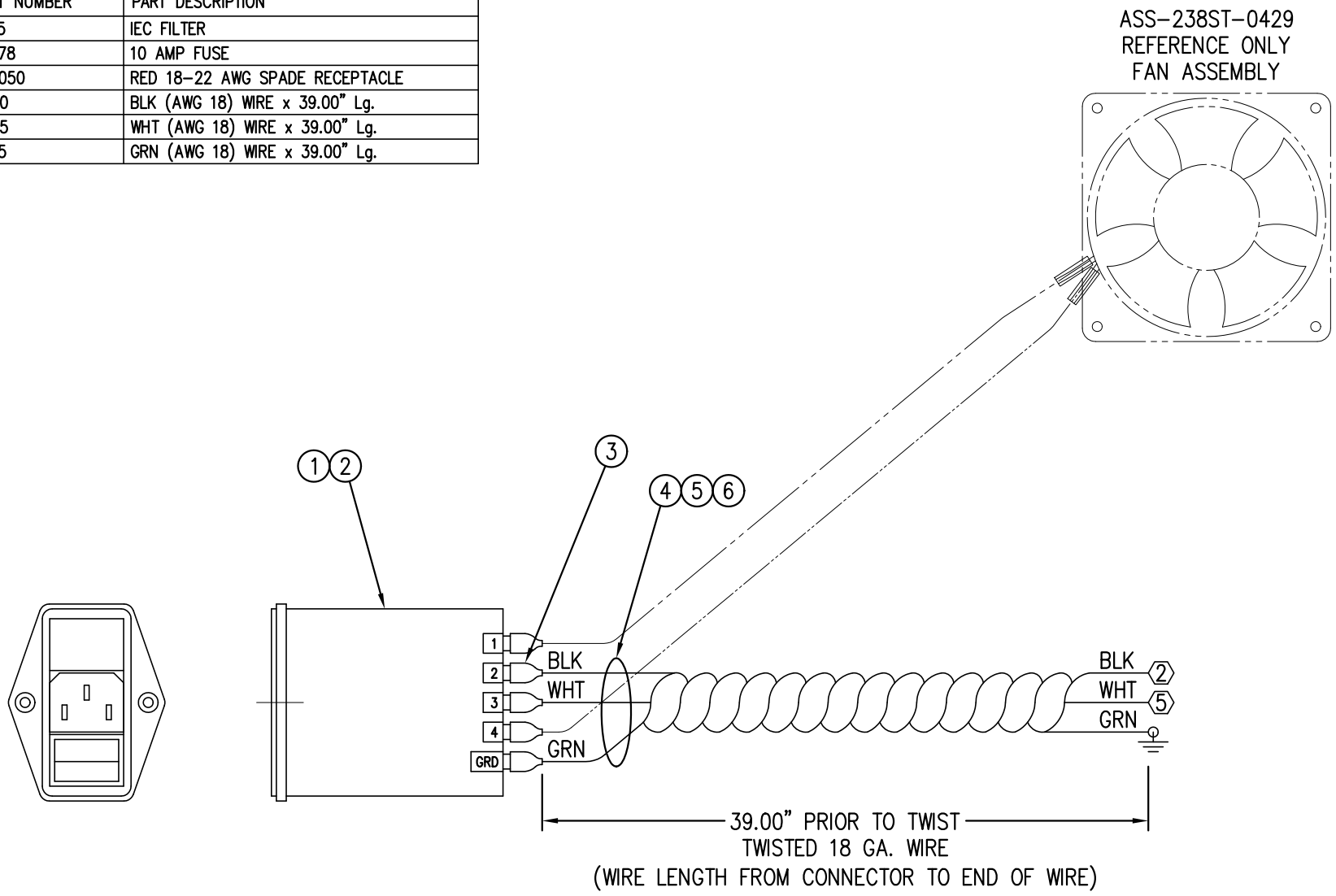
BILL OF MATERIAL

ASS-238ST-0407

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PE-FI1015	IEC FILTER
②	2	PE-FU2078	10 AMP FUSE
③	3	PE-REC2050	RED 18-22 AWG SPADE RECEPTACLE
④	1	PE-W2000	BLK (AWG 18) WIRE x 39.00" Lg.
⑤	1	PE-W2005	WHT (AWG 18) WIRE x 39.00" Lg.
⑥	1	PE-W2015	GRN (AWG 18) WIRE x 39.00" Lg.

ASS-238ST-0407

ASS-238ST-0429
REFERENCE ONLY
FAN ASSEMBLY



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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	7.5"	SERVO TAMP APPLICATOR: ELECTRICAL	AC POWER HARNESS & FILTER ASSEMBLY	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\
0	–	–	xxx	1=1	02/07/12	BMW	3600-ST\ASS-238ST-0407

ASS-238ST-0408

BILL OF MATERIAL

ASS-238ST-0408

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PE-W2000	BLK (AWG 18) WIRE x 28.00" Lg.
②	1	PE-W2005	WHT (AWG 18) WIRE x 28.00" Lg.
③	1	PE-W2015	GRN (AWG 18) WIRE x 28.00" Lg.
④	1	PE-W1032	BLACK (AWG 22) WIRE x 10.00" Lg.

REV 01

PE-238-0429
REWIND MOTOR
WIRING HARNESS
(REFERENCE ONLY)

REWIND MOTOR CONNECTOR
1 2 3
WHT
BLK
BLK GRY

REWIND RELAY
(A-B TYPE)
REV 02

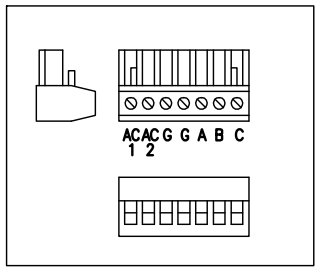
④
BLK
WHT

TB102
AC1
AC2
G

1 2 3
BLK ②
WHT ⑤
GRN

28.00" PRIOR TO TWIST
TWISTED 18 GA. WIRE
(WIRE LENGTH FROM CONNECTOR TO END OF WIRE)

TB102 CONNECTOR DRAWING



G GRN
A BLK
B RED
C WHT

ASS-238ST-0406
(REFERENCE ONLY)

GRN 1
BLK 2
RED 3
WHT 4

MOTOR POWER ~ C13

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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	7.5"	SERVO TAMP APPLICATOR: ELECTRICAL	TB102 WIRING HARNESS/POWER HARNESS	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\
02	CHANGED RELAY WIRING	03/29/16	SES	1=1	02/03/12	BMW	3600-ST\ASS-238ST-0408

BILL OF MATERIAL

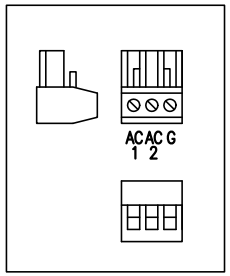
ASS-238ST-0409R/L

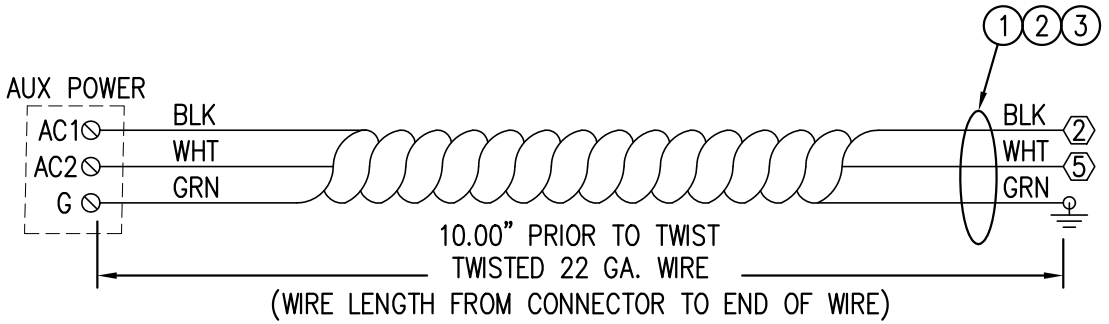
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION	
①	1	PE-W1032	BLK (AWG 22) WIRE x 36.00" Lg.	RH
	1	PE-W1032	BLK (AWG 22) WIRE x 10.00" Lg.	LH
②	1	PE-W1031	WHT (AWG 22) WIRE x 36.00" Lg.	RH
	1	PE-W1031	WHT (AWG 22) WIRE x 36.00" Lg.	LH
③	1	PE-W1034	GRN (AWG 22) WIRE x 10.00" Lg.	RH
	1	PE-W1034	GRN (AWG 22) WIRE x 36.00" Lg.	LH

ASS-238ST-0409R/L

– RH ASSEMBLY SHOWN –

AUX POWER CONNECTOR DRAWING





NOTE: SEE BOM FOR LH ASSEMBY WIRE LENGTHS

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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	7.5"	SERVO TAMP APPLICATOR: ELECTRICAL	AUXILIARY POWER CONNECTOR HARNESS	70

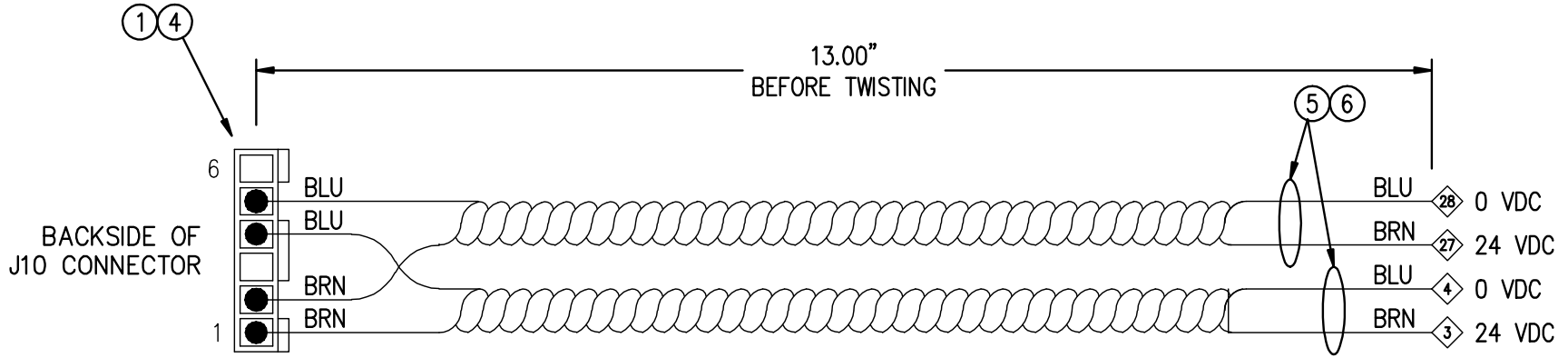
REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\
1	ADD 36" LENGTH LH ASSEMBLY	06/26/12	BMW	1=1	02/02/12	BMW	3600-ST\ASS-238ST-0409RL

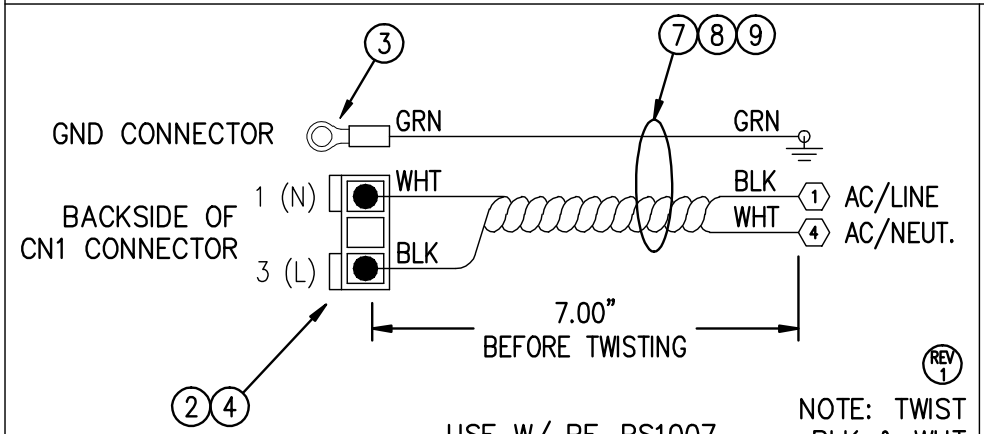
ASS-238ST-0410

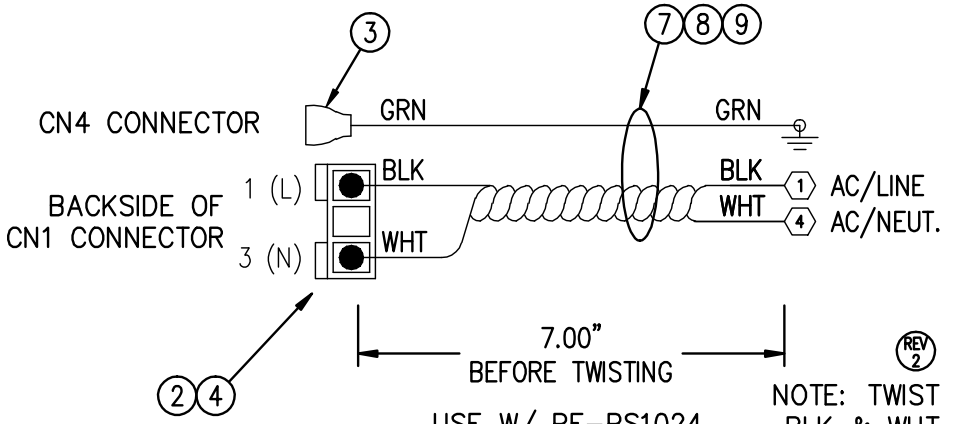
BILL OF MATERIAL

ASS-238ST-0410

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION	
①	1	PE-CON7064	DC CONNECTOR HOUSING	
②	1	PE-CON7062	DC CONNECTOR HOUSING	
③	1	PE-REC2050	GROUND CONNECTOR	W/ TAMP
	1	PE-WC1004	STUD RING TERMINAL, #8, (18-22 AWG)	W/ FAN
④	6	PE-CON7066	PINS FOR HOUSING	
⑤	2	PE-W1036	BLU (AWG 22) WIRE x 13.00" Lg.	
⑥	2	PE-W1037	BRN (AWG 22) WIRE x 13.00" Lg.	
⑦	1	PE-W1031	WHT (AWG 22) WIRE x 7.00" Lg.	
⑧	1	PE-W1034	GRN (AWG 22) WIRE x 7.00" Lg.	
⑨	1	PE-W1032	BLK (AWG 22) WIRE x 7.00" Lg.	







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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	7.5"	SERVO TAMP APPLICATOR: ELECTRICAL	WIRE HARNESS: 24 VDC POWER SUPPLY (POWER SUPPLY SIDE)	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	
2	TWIST BLK & WHT VAC WIRES ONLY	10/23/14	DLM	1=1	02/06/12	BMW	F:\Engineering\Standard Parts\Applicator\3600-ST\ASS-238ST-0410

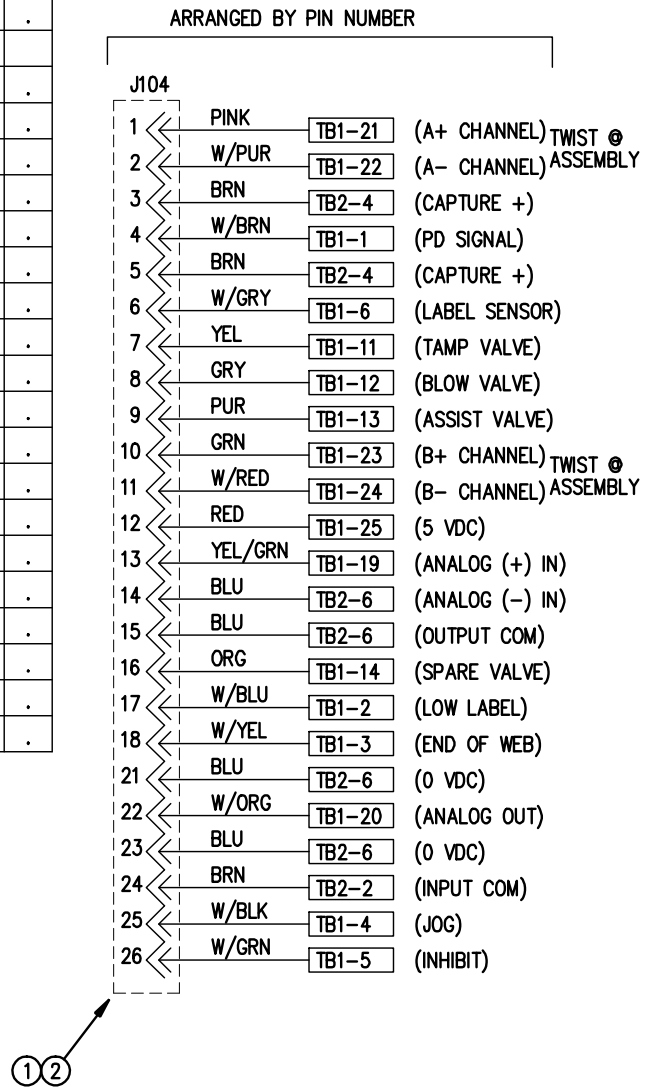
ASS-200a-1410

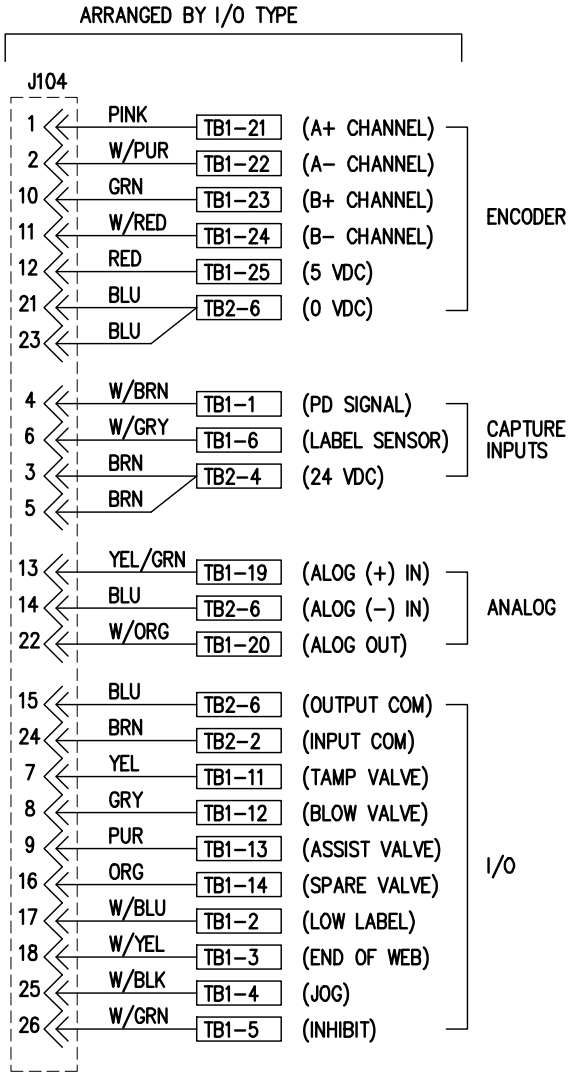
BILL OF MATERIAL

ASSEMBLY	ASS-200a-1410		SOLD
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER	
(1)	1	26 PIN HIGH DENSITY HOUSING	PE-CON7063	.
(2)	24	MALE PINS	PE-CON9045	.
	1	22 GA. PINK WIRE x 19" LONG	PE-W1060	.
	1	22 GA. WHT/PURPLE WIRE x 19" LONG	PE-W1049	.
	1	22 GA. RED WIRE x 19" LONG	PE-W1033	.
	1	22 GA. WHT/BROWN WIRE x 19" LONG	PE-W1046	.
	1	22 GA. WHT/GRAY WIRE x 19" LONG	PE-W1048	.
	1	22 GA. YELLOW WIRE x 19" LONG	PE-W1035	.
	1	22 GA. GRAY WIRE x 19" LONG	PE-W1039	.
	1	22 GA. PURPLE WIRE x 19" LONG	PE-W1040	.
	1	22 GA. GREEN WIRE x 19" LONG	PE-W1034	.
	1	22 GA. WHT/RED WIRE x 19" LONG	PE-W1042	.
	1	22 GA. YEL/GREEN WIRE x 19" LONG	PE-W1050	.
	4	22 GA. BLUE WIRE x 19" LONG	PE-W1036	.
	1	22 GA. ORANGE WIRE x 19" LONG	PE-W1038	.
	1	22 GA. WHT/BLUE WIRE x 19" LONG	PE-W1045	.
	1	22 GA. WHT/YELLOW WIRE x 19" LONG	PE-W1044	.
	1	22 GA. WHT/ORANGE WIRE x 19" LONG	PE-W1047	.
	3	22 GA. BROWN WIRE x 19" LONG	PE-W1037	.
	1	22 GA. WHT/BLACK WIRE x 19" LONG	PE-W1041	.
	1	22 GA. WHT/GREEN WIRE x 19" LONG	PE-W1043	.

REV 01

**NOTE: SOLDER WIRE CONNECTIONS TO J104 CONNECTOR





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TITLE: 360a SERIES APPLICATOR: ELECTRICAL	PART: INTERNAL WIRE HARNESS: J104 WIRING HARNESS	Dept. Code 70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\360
01	CHANGED LENGTHS OF WIRE TO 19" LG.	10/23/14	DLM	1=2	01-05-07	dkm	200a\ASS-200a-1410

ASS-238ST-0412

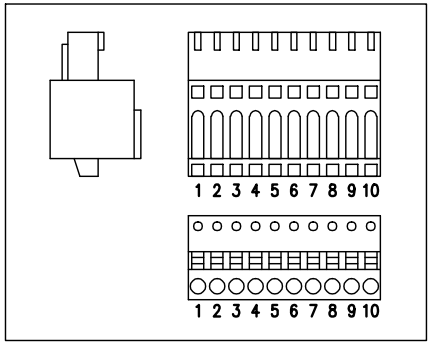
BILL OF MATERIAL

ASS-238ST-0412

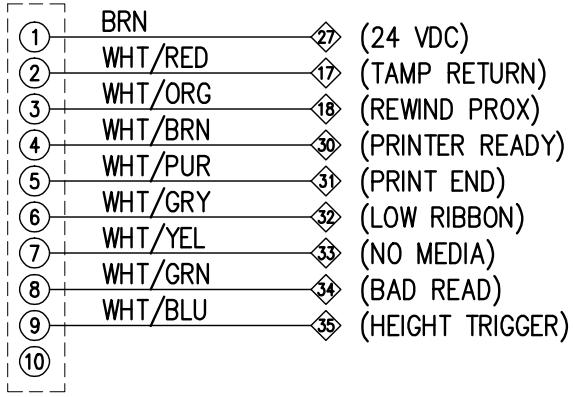
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
	1	PE-W1037	22 AWG (BROWN) x 24" LONG
	1	PE-W1042	22 AWG (WHT/RED) x 24" LONG
	1	PE-W1047	22 AWG (WHT/ORG) x 24" LONG
	1	PE-W1046	22 AWG (WHT/BRN) x 24" LONG
	1	PE-W1049	22 AWG (WHT/PUR) x 24" LONG
	1	PE-W1048	22 AWG (WHT/GRY) x 24" LONG
	1	PE-W1044	22 AWG (WHT/YEL) x 24" LONG
	1	PE-W1043	22 AWG (WHT/GRN) x 24" LONG
	1	PE-W1045	22 AWG (WHT/BLU) x 24" LONG

REV 01

TB204 CONNECTOR DRAWING



STEPPER DRIVE
TB204



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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	7.5"	SERVO TAMP APPLICATOR: ELECTRICAL	INTERNAL WIRE HARNESS: TB204 WIRING HARNESS	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\
01	CHANGED BOM TO WHT/BLU WIRE	10/23/14	DLM	1=1	02/08/12	BMW	3600-ST\ASS-238ST-0412

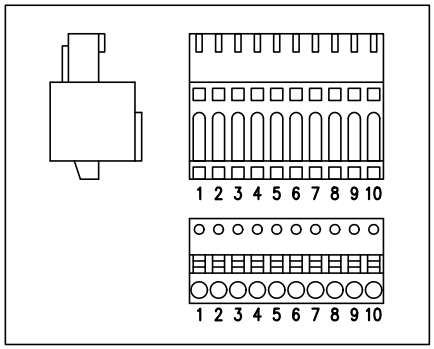
ASS-238ST-0413

BILL OF MATERIAL

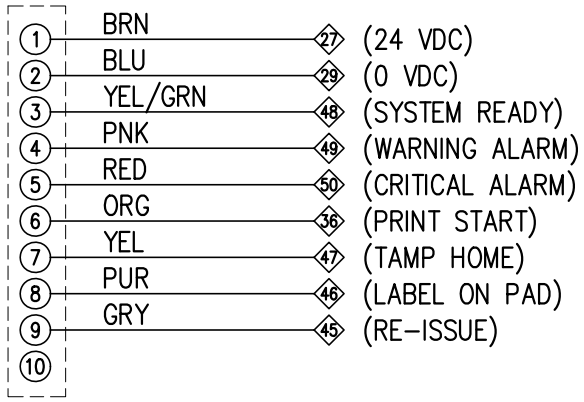
ASS-238ST-0413

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
	1	PE-W1037	22 AWG (BROWN) x 17" LONG
	1	PE-W1036	22 AWG (BLUE) x 17" LONG
	1	PE-W1050	22 AWG (YEL/GRN) x 17" LONG
	1	PE-W1060	22 AWG (PINK) x 17" LONG
	1	PE-W1033	22 AWG (RED) x 17" LONG
	1	PE-W1038	22 AWG (ORANGE) x 17" LONG
	1	PE-W1035	22 AWG (YELLOW) x 17" LONG
	1	PE-W1040	22 AWG (PURPLE) x 17" LONG
	1	PE-W1039	22 AWG (GRAY) x 17" LONG

TB202 CONNECTOR DRAWING



STEPPER DRIVE
TB202



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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	7.5"	SERVO TAMP APPLICATOR: ELECTRICAL	INTERNAL WIRE HARNESS: TB202 WIRING HARNESS	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\
0	–	–	XXX	1=1	02/08/12	BMW	3600-ST\ASS-238ST-0413

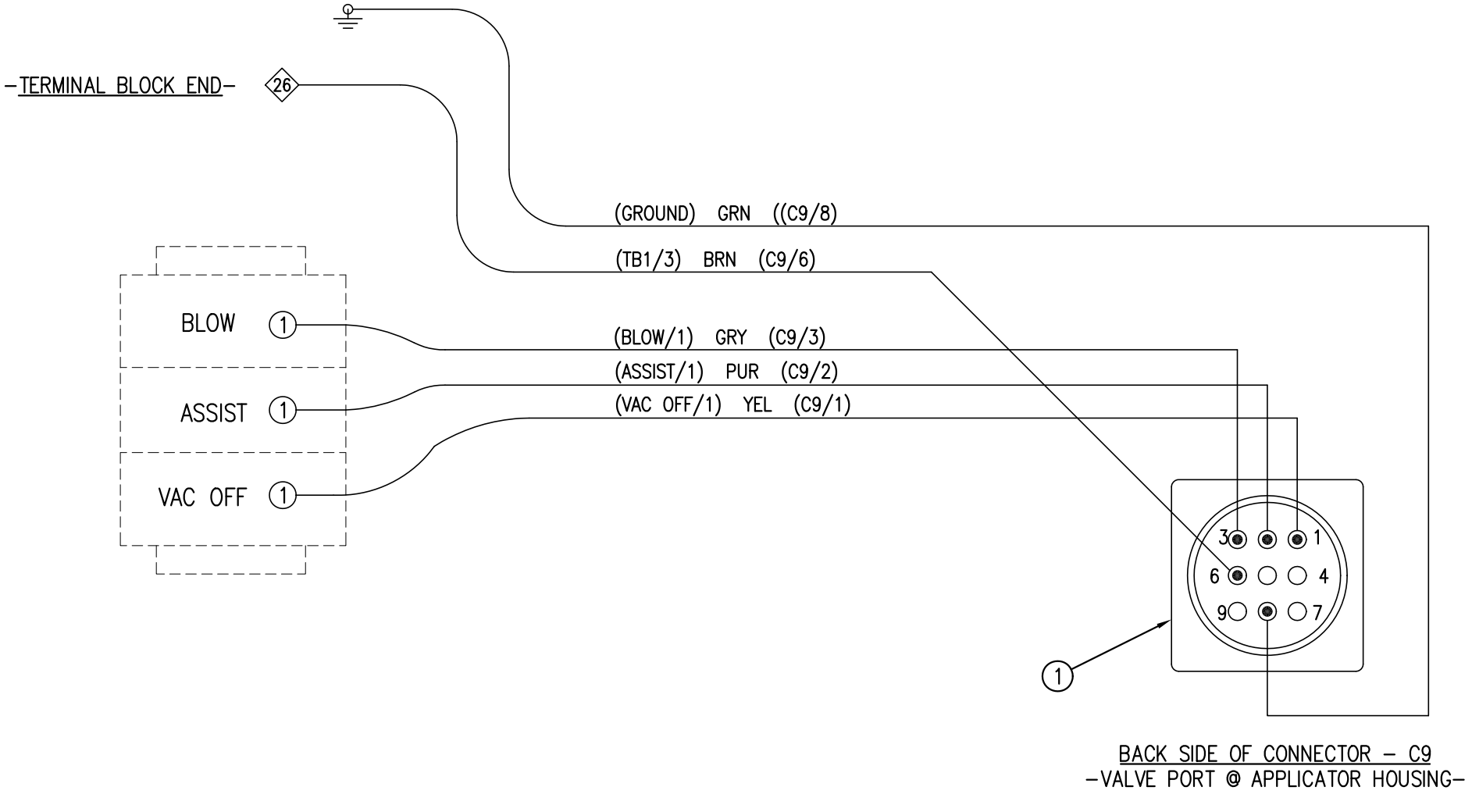
ASS-238ST-0414

BILL OF MATERIAL

ASS-238ST-0414

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PE-200-0415	VALVE PORT TO RELAY HARNESS
	1	PE-W1037	22 AWG (BROWN) WIRE x 20" LONG
	1	PE-W1034	22 AWG (GRN) WIRE x 20" LONG
	1	PE-W1039	22 AWG (GRAY) WIRE x 7" LONG
	1	PE-W1040	22 AWG (PURPLE) WIRE x 7" LONG
	1	PE-W1035	22 AWG (YELLOW) WIRE x 7" LONG

NOTE: REMOVE ORANGE WIRE
CUT REMAINING WIRES TO LENGTH AS SHOWN



BACK SIDE OF CONNECTOR - C9
-VALVE PORT @ APPLICATOR HOUSING-

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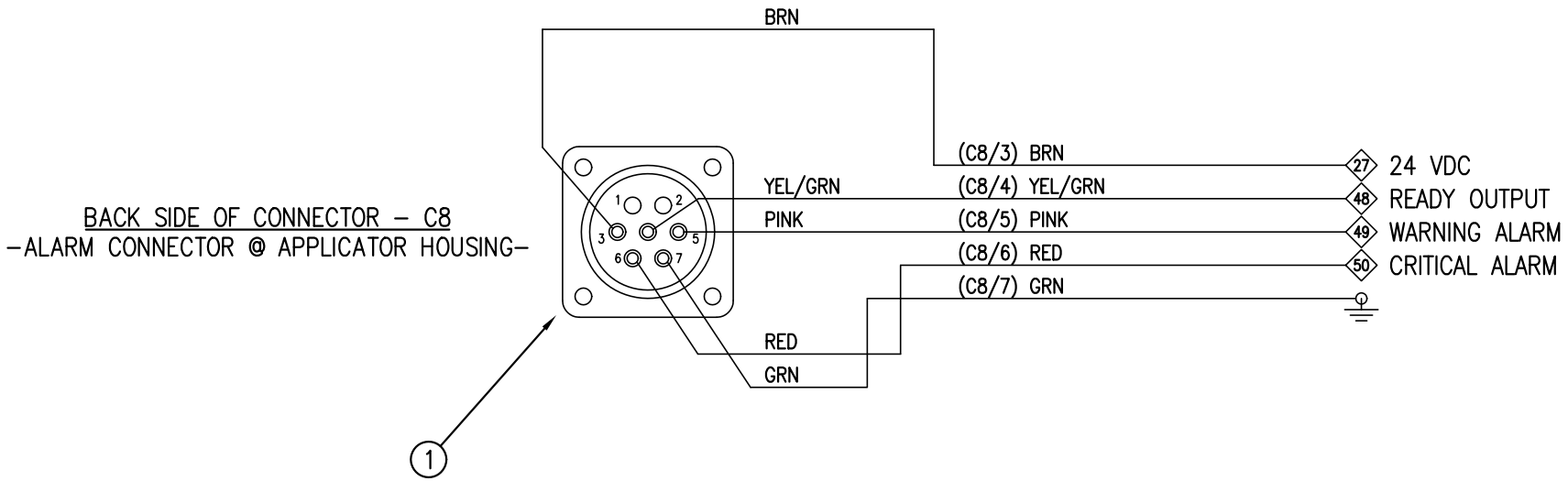
APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	7.5"	SERVO TAMP APPLICATOR: ELECTRICAL	VALVE TO APPLICATOR CONNECTOR HARNESS	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\
1	CHANGE GRY, PUR, & YEL WIRE LENGTHS TO 7" LG.	06/26/12	BMW	1=1	02/08/12	BMW	3600-ST\ASS-238ST-0414

BILL OF MATERIAL			
ASS-238ST-0415			
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PE-238-0410	APPLICATOR ALARM CONNECTOR HARNESS

ASS-238ST-0415

NOTE: REMOVE WHITE AND BLACK WIRES



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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	7.5"	SERVO TAMP APPLICATOR: ELECTRICAL	APPLICATOR ALARM CONNECTOR HARNESS	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\
0	–	–	XXX	1=1	02/08/12	BMW	3600-ST\ASS-238ST-0415

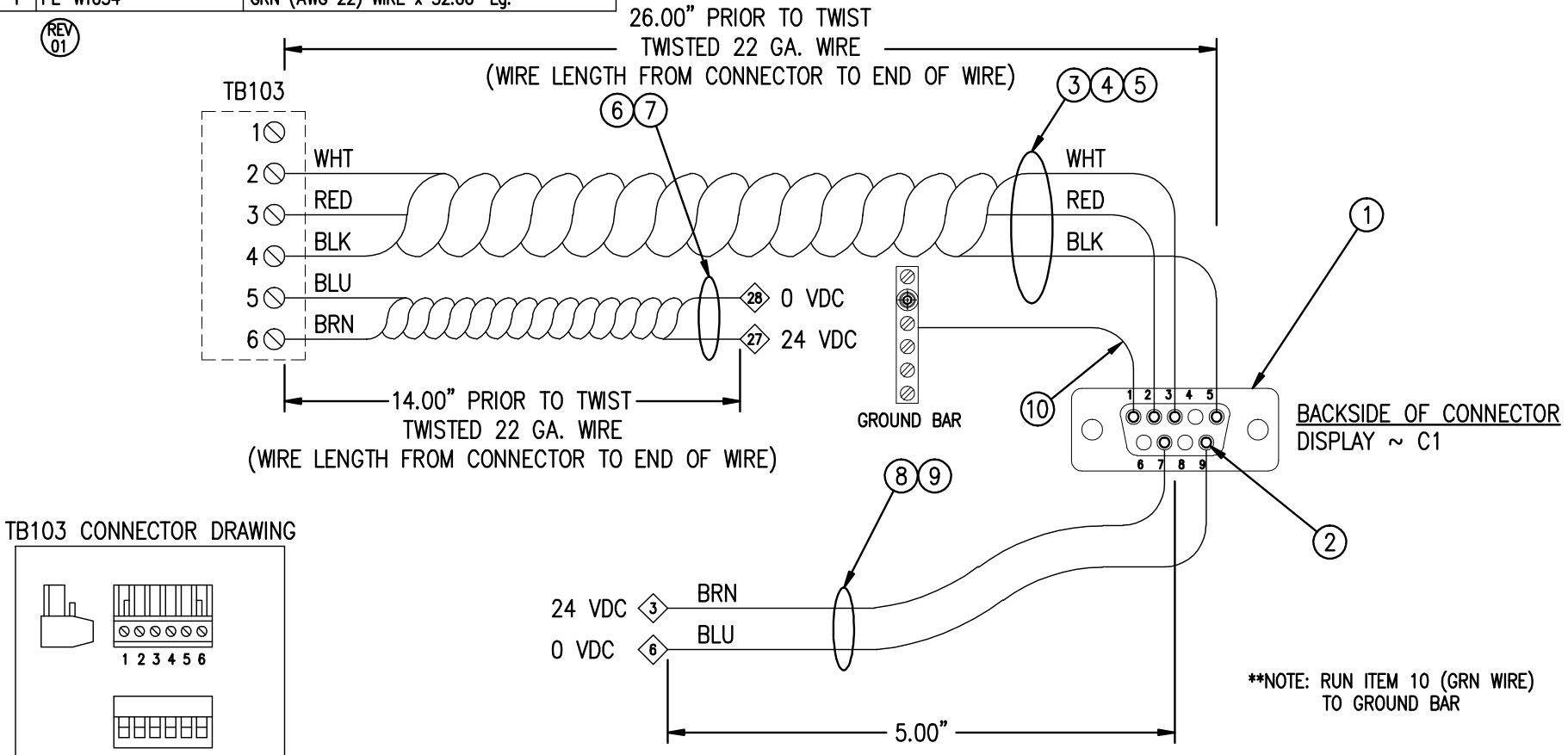
ASS-238ST-0416

BILL OF MATERIAL

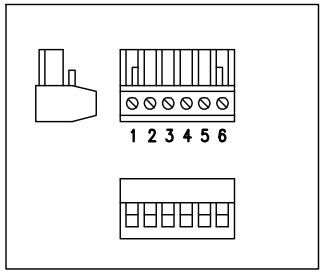
ASS-238ST-0416

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PE-CON2040	FEMALE (SOCKET) CONNECTOR ~ 9 PIN
②	6	PE-CON7057	FEMALE/SOCKET
③	1	PE-W1033	RED (AWG 22) WIRE x 26.00" Lg.
④	1	PE-W1031	WHT (AWG 22) WIRE x 26.00" Lg.
⑤	1	PE-W1032	BLK (AWG 22) WIRE x 26.00" Lg.
⑥	1	PE-W1036	BLU (AWG 22) WIRE x 14.00" Lg.
⑦	1	PE-W1037	BRN (AWG 22) WIRE x 14.00" Lg.
⑧	1	PE-W1036	BLU (AWG 22) WIRE x 5.00" Lg.
⑨	1	PE-W1037	BRN (AWG 22) WIRE x 5.00" Lg.
⑩	1	PE-W1034	GRN (AWG 22) WIRE x 32.00" Lg.

REV 01



TB103 CONNECTOR DRAWING



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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	7.5"	SERVO TAMP APPLICATOR: ELECTRICAL	INTERNAL WIRING HARNESS: TB103 WIRING HARNESS	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\
01	ADDED GREEN WIRE FOR GROUNDING	10/24/14	DLM	1=1	02/08/12	BMW	3600-ST\ASS-238ST-0416

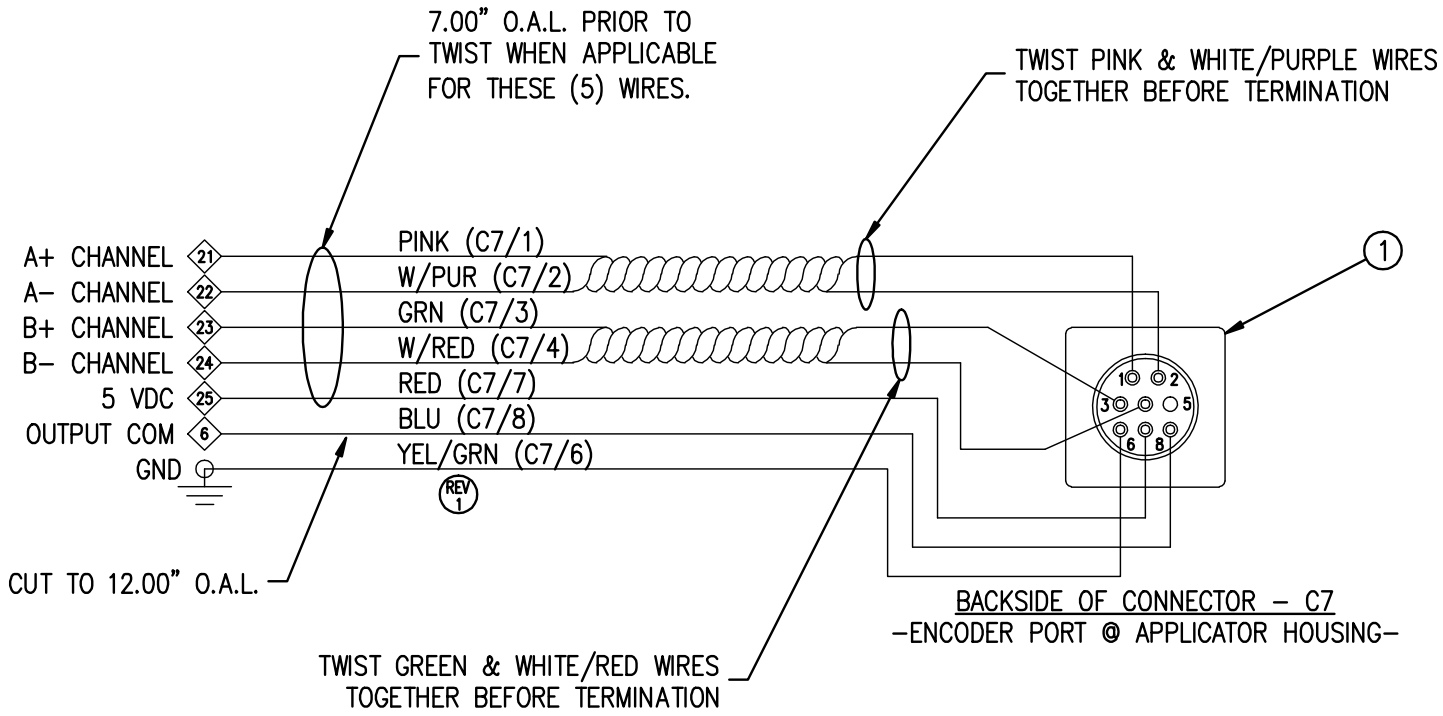
ASS-238ST-0417

BILL OF MATERIAL

ASS-238ST-0417

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	ASS-200a-0418	INTERNAL WIRE HARNESS: DRIVER TO ENCODER PORT
	1	PE-W1060	22 AWG (PINK) WIRE x 7" LONG
	1	PE-W1049	22 AWG (W/PUR) WIRE x 7" LONG
	1	PE-W1034	22 AWG (GRN) WIRE x 7" LONG
	1	PE-W1042	22 AWG (W/RED) WIRE x 7" LONG
	1	PE-W1033	22 AWG (RED) WIRE x 7" LONG
	1	PE-W1036	22 AWG (BLUE) WIRE x 12" LONG
	1	PE-W1050	22 AWG (YEL/GRN) WIRE x 17" LONG

NOTE: CUT REMAINING WIRES TO LENGTH AS SHOWN



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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	7.5"	SERVO TAMP APPLICATOR: ELECTRICAL	INTERNAL WIRE HARNESS: DRIVER TO ENCODER PORT	70

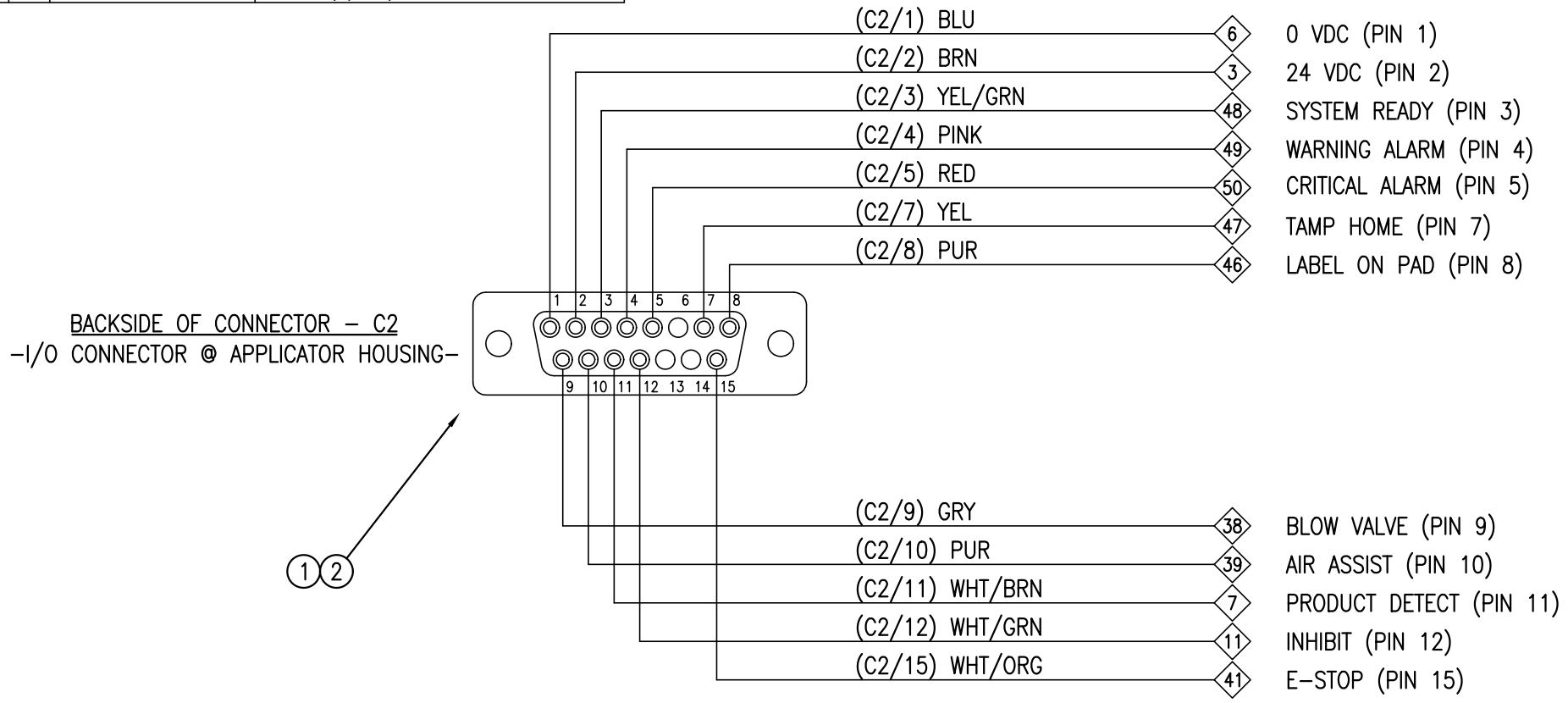
REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\
1	ADDED GROUND WIRE TO PIN 6	12/16/15	SES	1=1	02/08/12	BMW	3600-ST\ASS-238ST-0417

ASS-238ST-0419

BILL OF MATERIAL

ASS-238ST-0419

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PE-CON2050	FEMALE (SOCKET) CONNECTOR
②	11	PE-CON7057	FEMALE/SOCKET
	1	PE-W1036	22 AWG (BLUE) WIRE x 18" LONG
	1	PE-W1037	22 AWG (BRN) WIRE x 18" LONG
	1	PE-W1050	22 AWG (YEL/GRN) WIRE x 18" LONG
	1	PE-W1060	22 AWG (PINK) WIRE x 18" LONG
	1	PE-W1033	22 AWG (RED) WIRE x 18" LONG
	1	PE-W1035	22 AWG (YEL) WIRE x 18" LONG
	2	PE-W1040	22 AWG (PUR) WIRE x 18" LONG
	1	PE-W1039	22 AWG (GREY) WIRE x 18" LONG
	1	PE-W1046	22 AWG (W/BRN) WIRE x 18" LONG
	1	PE-W1043	22 AWG (W/GRN) WIRE x 18" LONG
	1	PE-W1047	22 AWG (W/ORG) WIRE x 18" LONG



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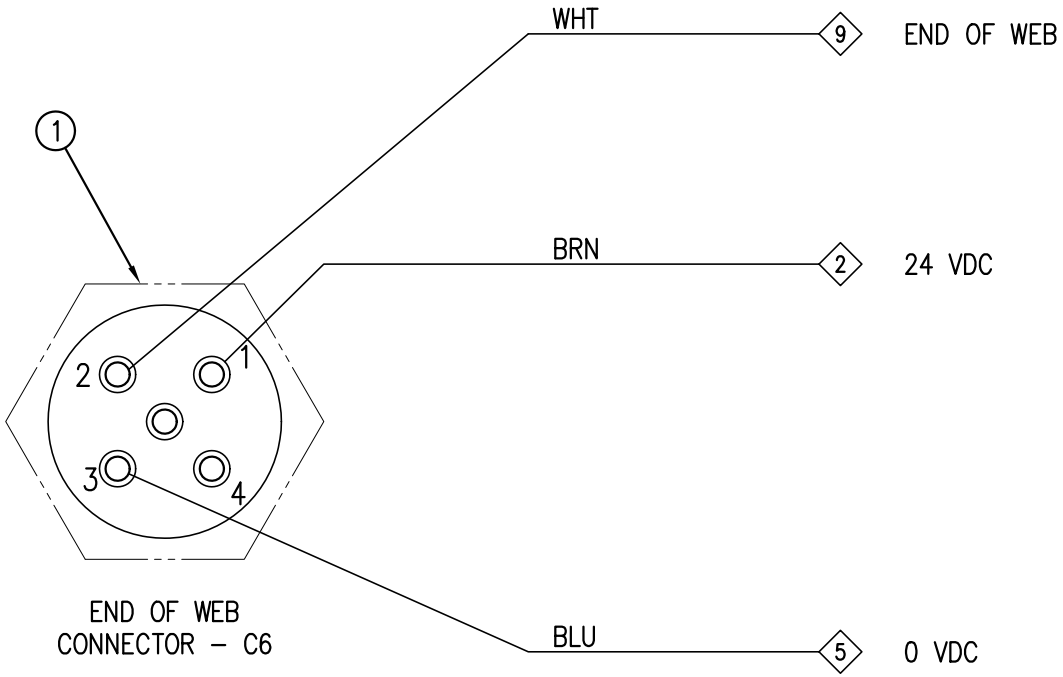
APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	7.5"	SERVO TAMP APPLICATOR: ELECTRICAL	INTERNAL WIRE HARNESS: APPLICATOR I/O CONNECTOR HARNESS	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\
0	–	–	XXX	1=1	02/08/12	BMW	3600-ST\ASS-238ST-0419

BILL OF MATERIAL			
ASS-238ST-0421			
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	MP-CON1025	MODIFIED EUROFAST 5-PIN REVERSE KEY FEMALE RECEPTACLE

ASS-238ST-0421

NOTE: PE-CON1025 W/ GRN/YEL AND BLACK WIRES REMOVED



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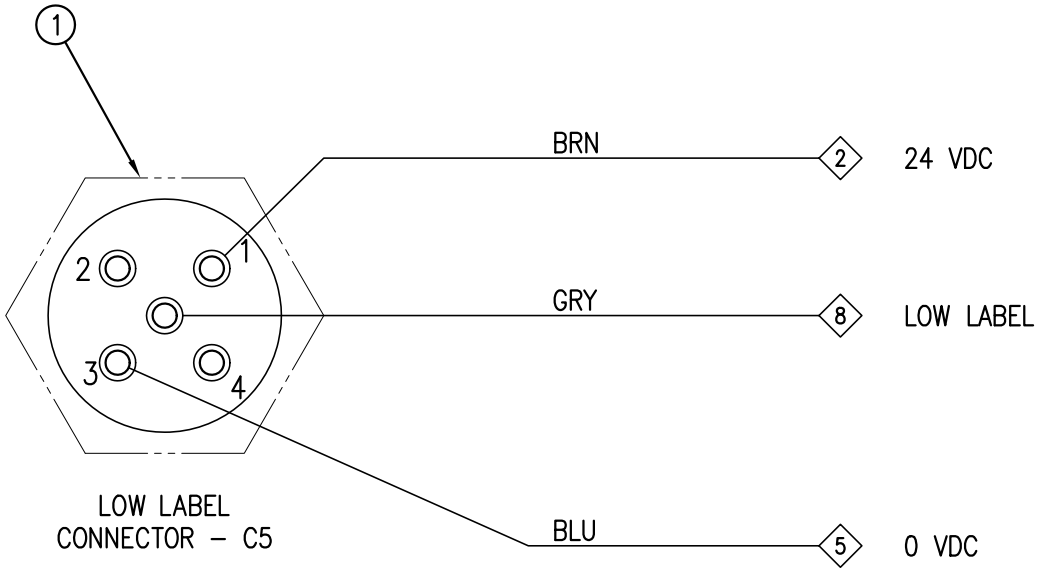
APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	7.5"	SERVO TAMP APPLICATOR: ELECTRICAL	END OF WEB SENSOR PORT	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\
0	–	–	XXX	1=1	02/03/12	BMW	3600-ST\ASS-238ST-0421

BILL OF MATERIAL			
ASS-238ST-0422			
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	MP-CON1020	MODIFIED EUROFAST 5-PIN FEMALE RECEPTACLE

ASS-238ST-0422

NOTE: PE-CON1020 W/ WHT AND BLACK WIRES REMOVED



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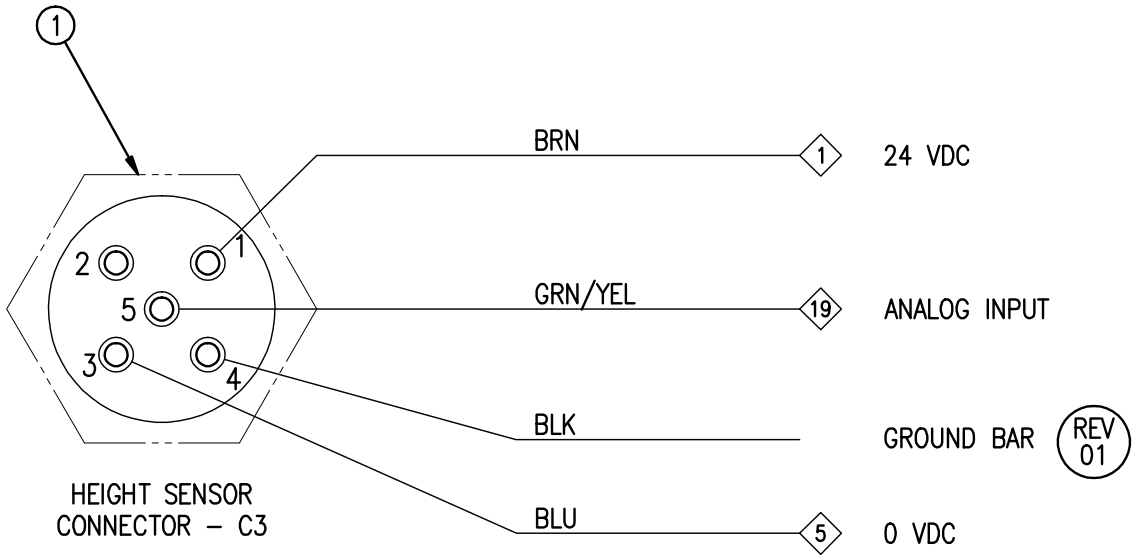
APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	7.5"	SERVO TAMP APPLICATOR: ELECTRICAL	LOW LABEL SENSOR PORT	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\
0	–	–	XXX	1=1	02/08/12	BMW	3600-ST\ASS-238ST-0422

BILL OF MATERIAL			
ASS-238ST-0423			
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PE-CON1025	EUROFAST 5-PIN REVERSE KEY FEMALE RECEPTACLE

ASS-238ST-0423

NOTE: BLACK WIRE TO GROUND BAR



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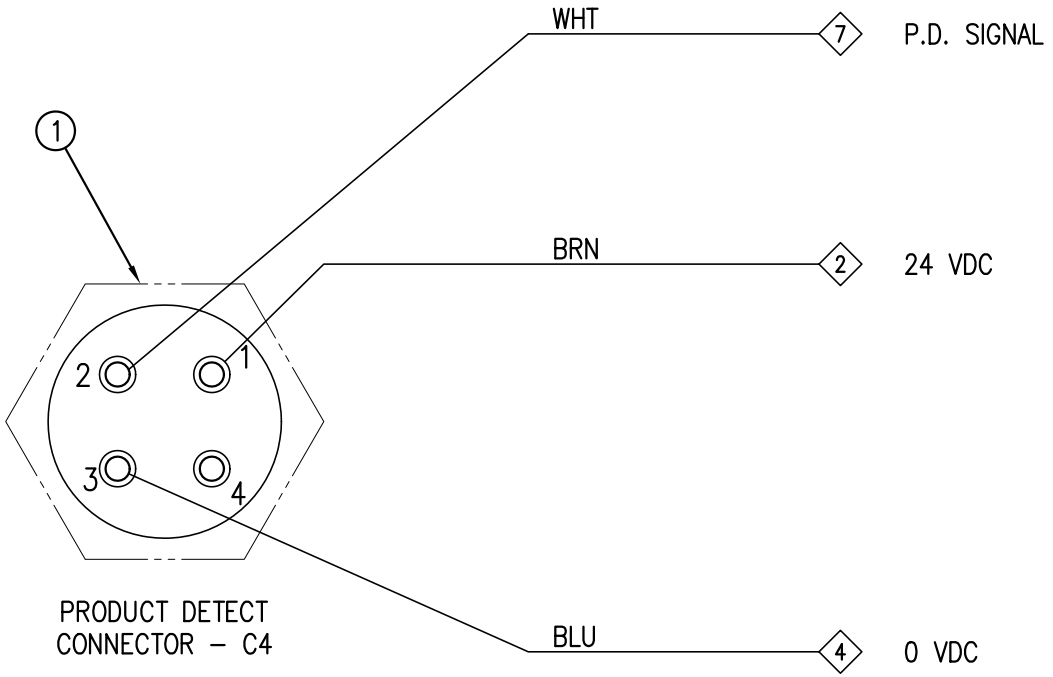
APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	7.5"	SERVO TAMP APPLICATOR: ELECTRICAL	HEIGHT SENSOR PORT	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\
1	ADDED BLK WIRE TO GRD BAR, REMOVED WHT WIRE	11/20/13	DLM	1=1	02/08/12	BMW	3600-ST\ASS-238ST-0423

BILL OF MATERIAL			
ASS-238ST-0424			
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	MP-CON1019	MODIFIED EUROFAST 4-PIN FEMALE RECEPTACLE

ASS-238ST-0424

NOTE: PE-CON1019 W/ BLACK WIRE REMOVED



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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	7.5"	SERVO TAMP APPLICATOR: ELECTRICAL	PRODUCT DETECT SENSOR PORT	70

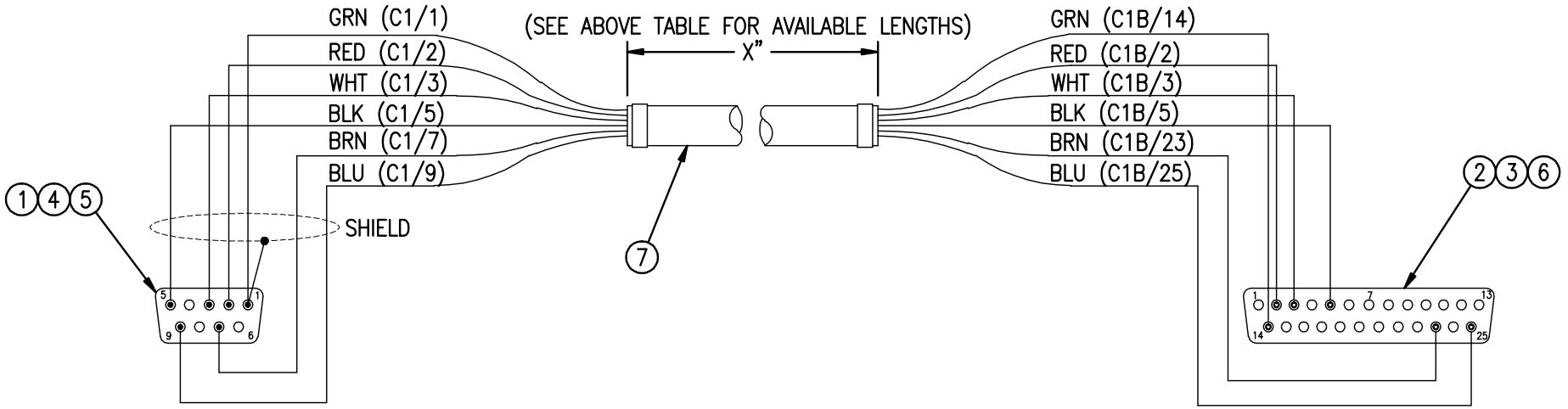
REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\
0	–	–	XXX	1=1	02/08/12	BMW	3600-ST\ASS-238ST-0424

BILL OF MATERIAL

ASS-238ST-0425-X

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PE-CON2039	MALE (PLUG) CONNECTOR ~ 9 PIN
②	1	PE-CON2060	FEMALE (SOCKET) CONNECTOR ~ 25 PIN
③	1	PE-CON3020	CABLE HOOD ~ 25 PIN
④	1	PE-CON3000	CABLE HOOD ~ 9 PIN
⑤	6	PE-CON7055	MALE PIN (APPLICATOR END)
⑥	6	PE-CON7057	FEMALE/SOCKET (DISPLAY UNIT END)
⑦	1	PE-CA2200	8 CONDUCTOR CABLE ~ 24 AWG

5'	ASS-238ST-0425-5
10'	ASS-238ST-0425-10
15'	ASS-238ST-0425-15



BACK SIDE OF MALE CONNECTOR – C1
–DISPLAY PORT @ APPLICATOR HOUSING–

BACK SIDE OF FEMALE CONNECTOR – C1B
–DISPLAY UNIT END–

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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	7.5"	SERVO TAMP APPLICATOR: ELECTRICAL	DISPLAY CABLE	70

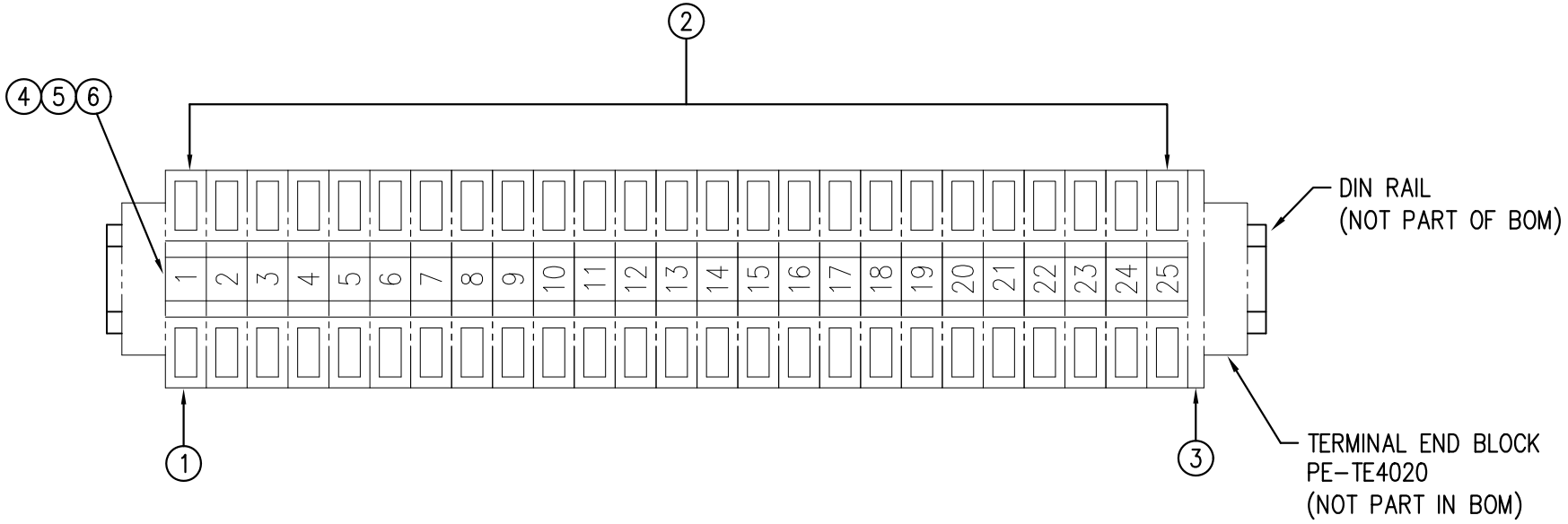
REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\
06	ADDED CUSTOM LENGTH CABLES	10/6/15	JWS	1=1	02/06/12	BMW	3600-ST\ASS-238ST-0425-X

ASS-238ST-0426

BILL OF MATERIAL

ASS-238ST-0426

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	MP-TE4000	#1 TERMINAL END BLOCK (modified)
②	25	PE-TE4000	TERMINAL BLOCK
③	2	PE-TE4030	TERMINAL END BARRIER
④	1	PE-MA1020	#1-10 MARKING TAG
⑤	1	PE-MA1030	#11-20 MARKING TAG
⑥	1	PE-MA1040	#21-30 MARKING TAG (USE ONLY #21-#25)



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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	7.5"	SERVO TAMP APPLICATOR: ELECTRICAL	TB1 TERMINAL STRIP (#1-#25)	70

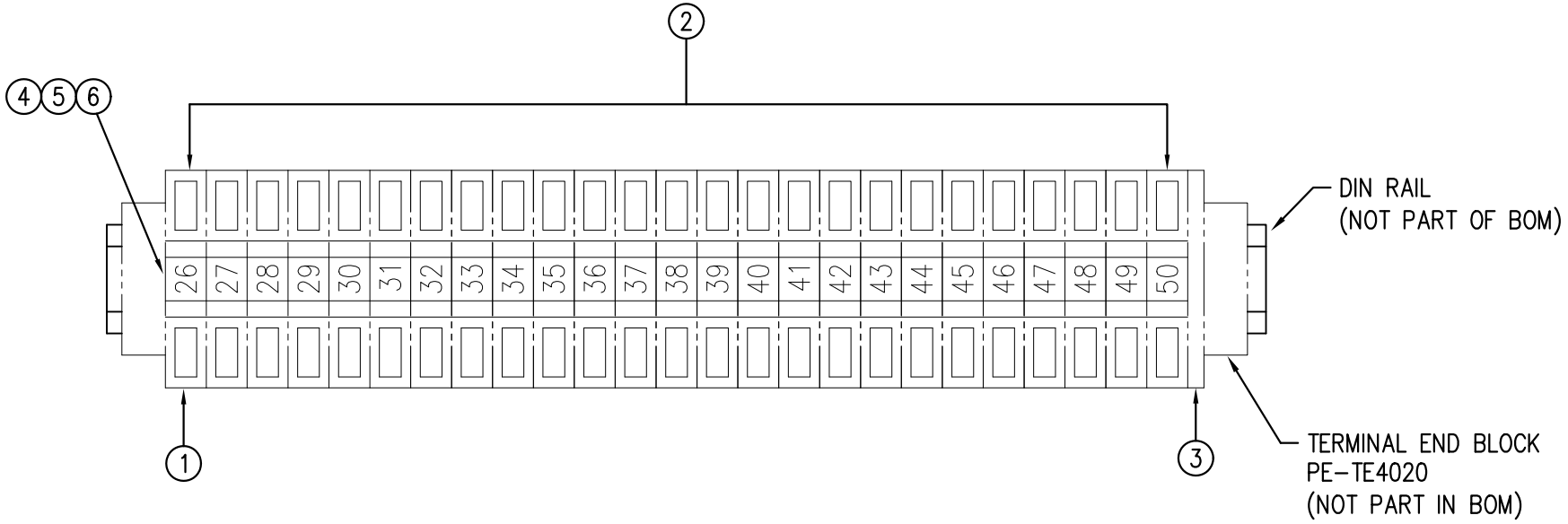
REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\
0	-	-	XXX	1=1	02/06/12	BMW	3600-ST\ASS-238ST-0426

ASS-238ST-0427

BILL OF MATERIAL

ASS-238ST-0427

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	MP-TE4000	#26 TERMINAL END BLOCK (modified)
②	25	PE-TE4000	TERMINAL BLOCK
③	2	PE-TE4030	TERMINAL END BARRIER
④	1	PE-MA1040	#21-30 MARKING TAG
⑤	1	PE-MA1050	#31-40 MARKING TAG
⑥	1	PE-MA1060	#41-50 MARKING TAG



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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	7.5"	SERVO TAMP APPLICATOR: ELECTRICAL	TB1 TERMINAL STRIP (#26-#50)	70

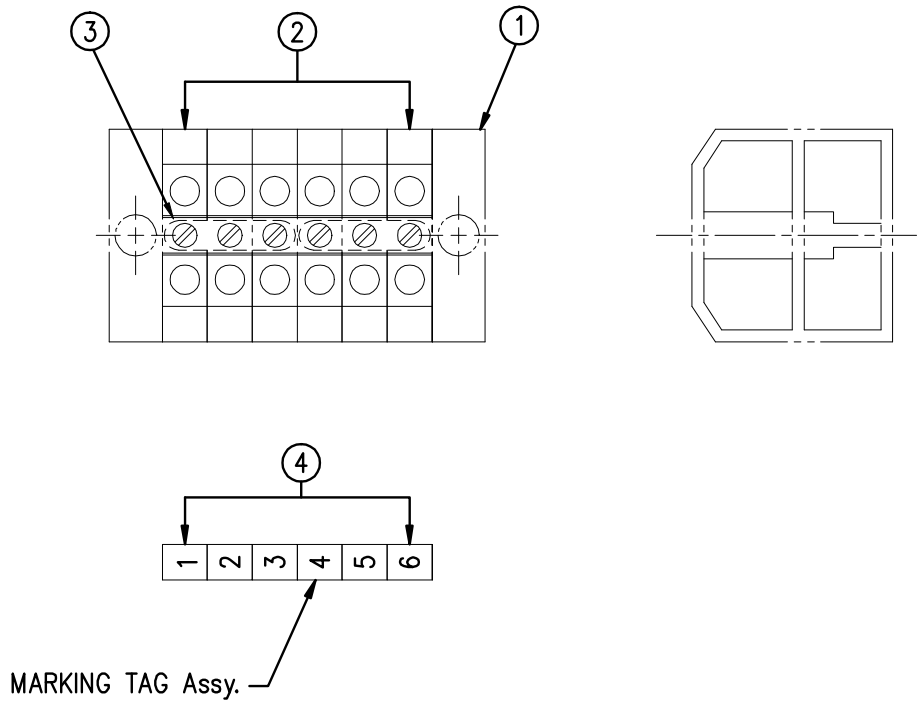
REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\
0	-	-	XXX	1=1	02/06/12	BMW	3600-ST\ASS-238ST-0427

ASS-238ST-0428

BILL OF MATERIAL

ASS-238ST-0428

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	2	PE-TE3110	EPCMB4 TERMINAL BLOCK MOUNTING SECTION
②	6	PE-TE3100	CMB4 TERMINAL BLOCK
③	2	PE-TE3122	3-POLE INTERNAL JUMPER
④	1	PE-MA1020	#1-10 MARKING TAG



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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	7.5"	SERVO TAMP APPLICATOR: ELECTRICAL	TB2 TERMINAL STRIP	70

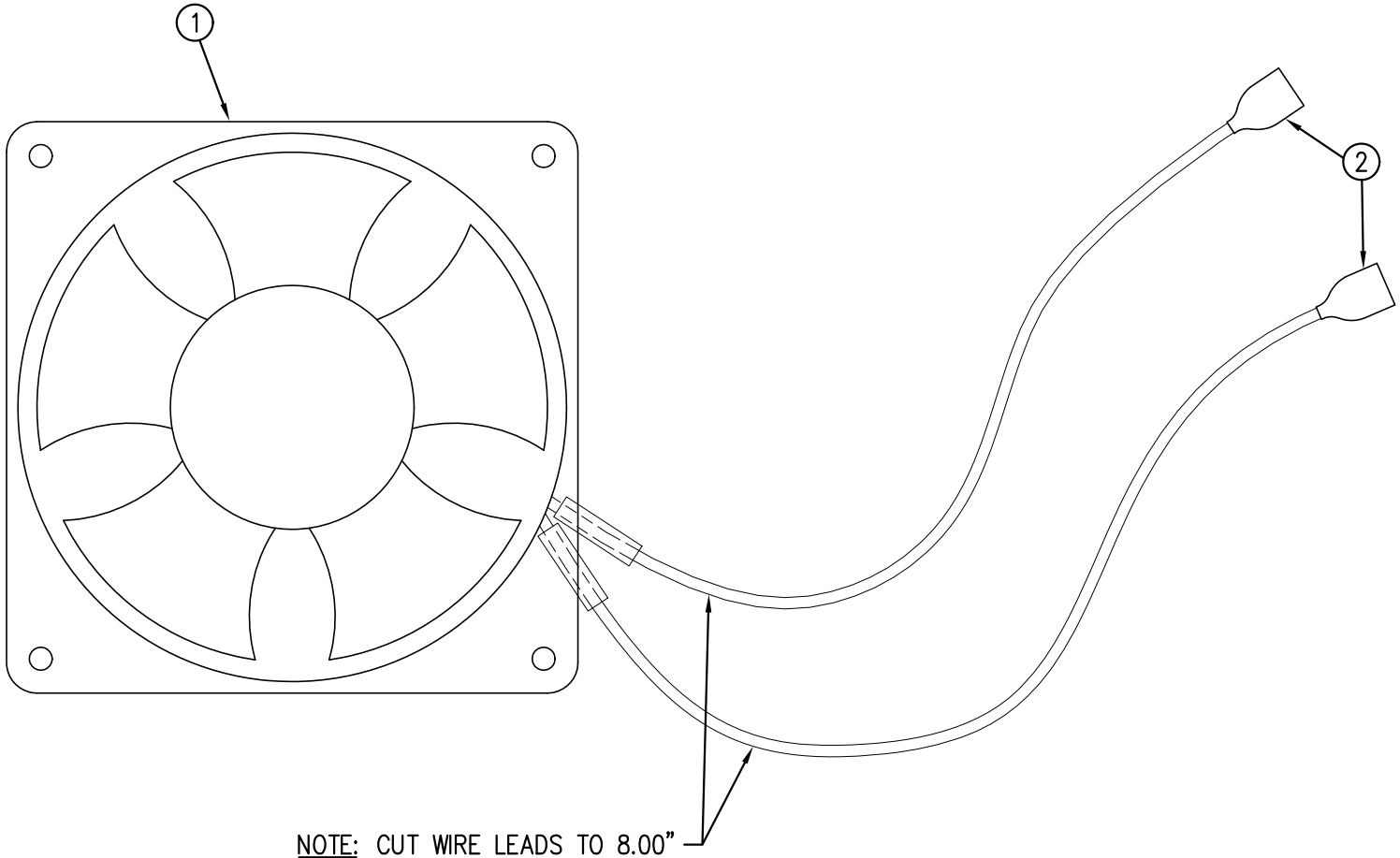
REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\
1	PE-MA1020 was PE-MA1110	5/27/2015	KSM	1=1	02/06/12	BMW	3600-ST\ASS-238ST-0428

ASS-238ST-0429

BILL OF MATERIAL

ASS-238ST-0429

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PE-FAN1103	AXIAL FAN
②	2	PE-REC2050	RED 18-22 AWG SPADE RECEPTACLE



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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	7.5"	SERVO TAMP APPLICATOR: ELECTRICAL	FAN ASSEMBLY	70

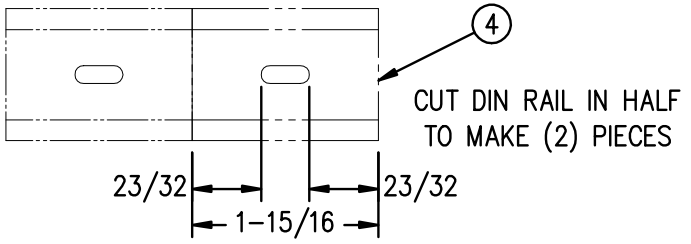
REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\
0	–	–	XXX	1=1	02/06/12	BMW	3600-ST\ASS-238ST-0429

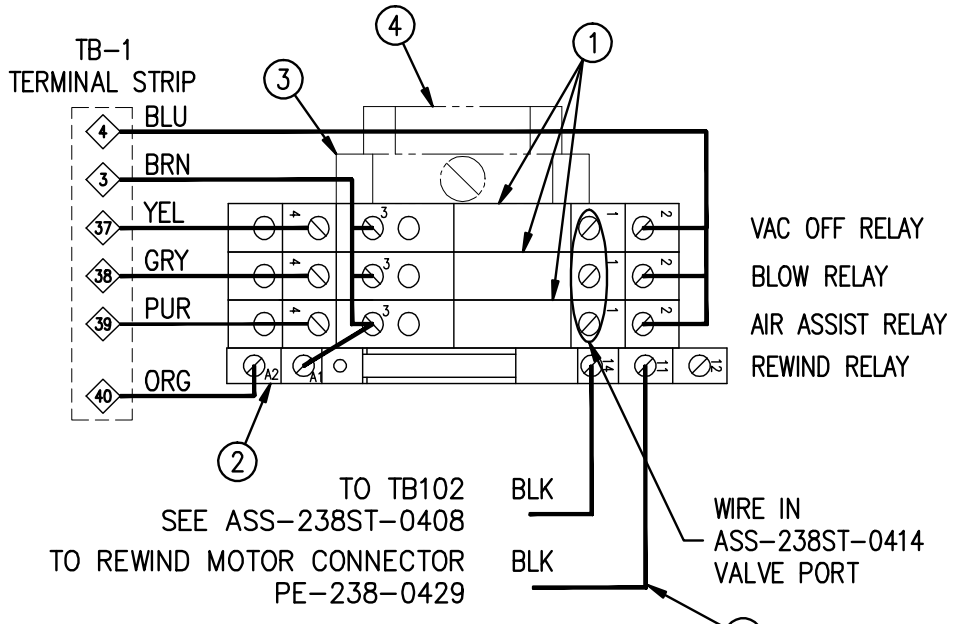
ASS-238ST-0430-X

BILL OF MATERIAL

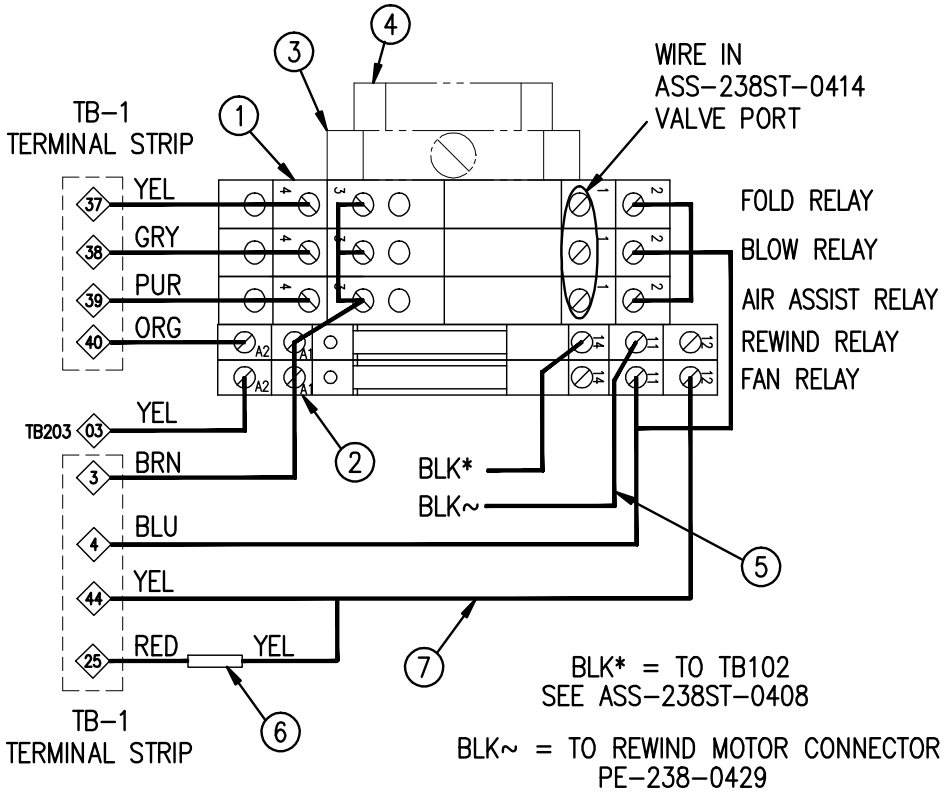
ASS-238ST-0430-X

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION	
①	3	PE-RE1013	CONTINENTAL SOLID STATE RELAY	
②	1	PE-RE1063	A-B STYLE RELAY	W/ TAMP
	2	PE-RE1063	A-B STYLE RELAY	W/ FAN
③	1	PE-RE1053	DIN RAIL STOPS	
④	1/2	CP-200-0283	DIN RAIL x 3-7/8 Lg." CUT IN HALF	
⑤	1	PE-W1032	BLK (AWG 22) WIRE x 10.00" Lg.	
⑥	1	PE-RES1040	10k OHM RESISTOR (fan style only)	
⑦	1	PE-W1035	YEL (AWG 22) WIRE x 18.00" Lg.	
	2	PE-W103602B	BLU (AWG 22) JUMPER x 2" LONG	
	3	PE-W103701B	BRN (AWG 22) JUMPER x 2" LONG	
	1	PE-W1036	BLU (AWG 22) WIRE x 18" LONG	
	1	PE-W1037	BRN (AWG 22) WIRE x 16" LONG	
	1	PE-W1038	ORG (AWG 22) WIRE x 16" LONG	
	1	PE-W1039	GRY (AWG 22) WIRE x 16" LONG	
	1	PE-W1040	PUR (AWG 22) WIRE x 16" LONG	
	1	PE-W1035	YEL (AWG 22) WIRE x 16" LONG	





ASS-238ST-0430-A
VAC BLOW STYLE



ASS-238ST-0430-B
FAN STYLE

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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	7.5"	SERVO TAMP APPLICATOR: ELECTRICAL	VALVE RELAY ASSEMBLY	70

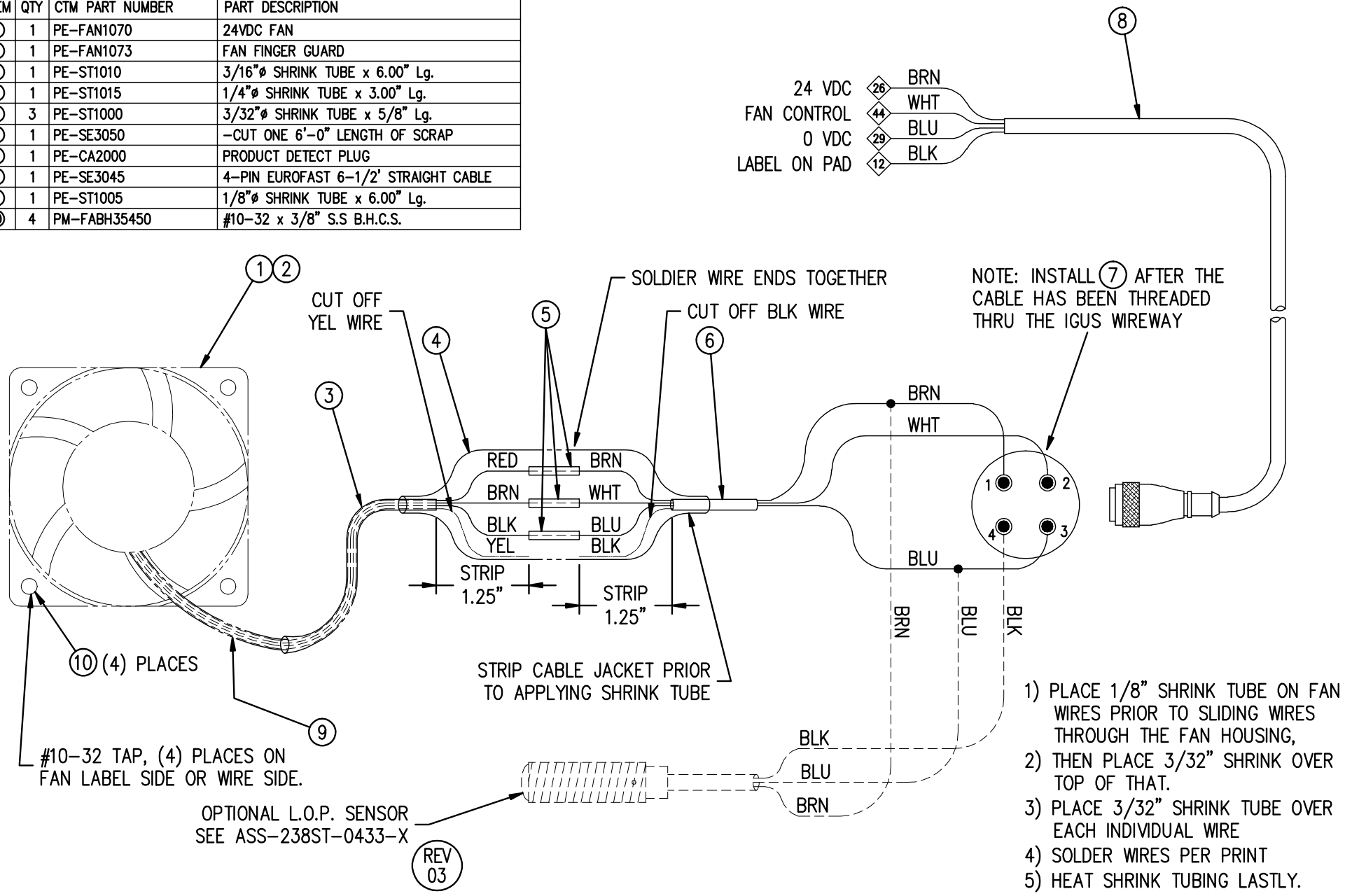
REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	
0	-	-	xxx	1=1	11/11/13	DLM	F:\Engineering\Standard Parts\Applicator\3600-ST\ASS-238ST-0430-X

ASS-238ST-0431

BILL OF MATERIAL

ASS-238ST-0431

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PE-FAN1070	24VDC FAN
②	1	PE-FAN1073	FAN FINGER GUARD
③	1	PE-ST1010	3/16"ø SHRINK TUBE x 6.00" Lg.
④	1	PE-ST1015	1/4"ø SHRINK TUBE x 3.00" Lg.
⑤	3	PE-ST1000	3/32"ø SHRINK TUBE x 5/8" Lg.
⑥	1	PE-SE3050	-CUT ONE 6'-0" LENGTH OF SCRAP
⑦	1	PE-CA2000	PRODUCT DETECT PLUG
⑧	1	PE-SE3045	4-PIN EUROFAST 6-1/2' STRAIGHT CABLE
⑨	1	PE-ST1005	1/8"ø SHRINK TUBE x 6.00" Lg.
⑩	4	PM-FABH35450	#10-32 x 3/8" S.S B.H.C.S.



1) PLACE 1/8" SHRINK TUBE ON FAN WIRES PRIOR TO SLIDING WIRES THROUGH THE FAN HOUSING,
2) THEN PLACE 3/32" SHRINK OVER TOP OF THAT.
3) PLACE 3/32" SHRINK TUBE OVER EACH INDIVIDUAL WIRE
4) SOLDER WIRES PER PRINT
5) HEAT SHRINK TUBING LASTLY.

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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	7.5"	SERVO TAMP APPLICATOR: ELECTRICAL	VACUUM FAN ASSEMBLY	70

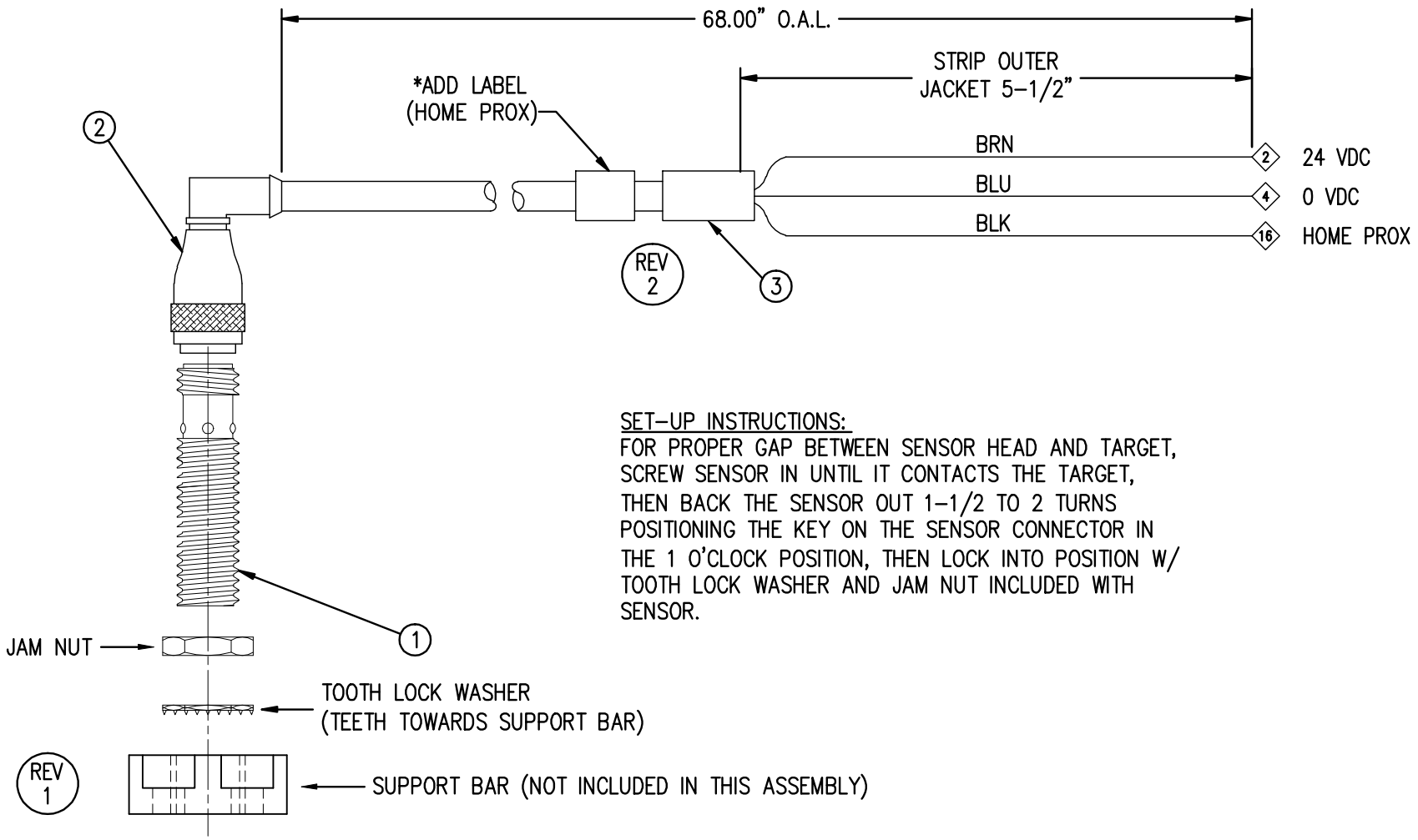
REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	
3	REVISED L.O.P. SENSOR DESCRIPTION	03/06/14	DLM	1=1	02/07/12	BMW	F:\Engineering\Standard Parts\Applicator\ 3600-ST\ASS-238ST-0431

ASS-238ST-0432

BILL OF MATERIAL

ASS-238ST-0432

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PE-SE10108	3 mm Q.D. INDUCTIVE PROX. SENSOR
②	1	PE-SE3053	4-PIN EUROFAST 6-1/2' 90° QD CABLE
③	1	PE-ST1015	1/4" ø SHRINK TUBE X 1" LG.



SET-UP INSTRUCTIONS:
FOR PROPER GAP BETWEEN SENSOR HEAD AND TARGET, SCREW SENSOR IN UNTIL IT CONTACTS THE TARGET, THEN BACK THE SENSOR OUT 1-1/2 TO 2 TURNS POSITIONING THE KEY ON THE SENSOR CONNECTOR IN THE 1 O'CLOCK POSITION, THEN LOCK INTO POSITION W/ TOOTH LOCK WASHER AND JAM NUT INCLUDED WITH SENSOR.

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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	7.5"	SERVO TAMP APPLICATOR: ELECTRICAL	HOME LIMIT SENSOR ASSEMBLY	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\
2	ADDED 1/4" SHRINK TUBE AND LABEL	11/26/13	DLM	1=1	02/09/12	BMW	3600-ST\ASS-238ST-0432

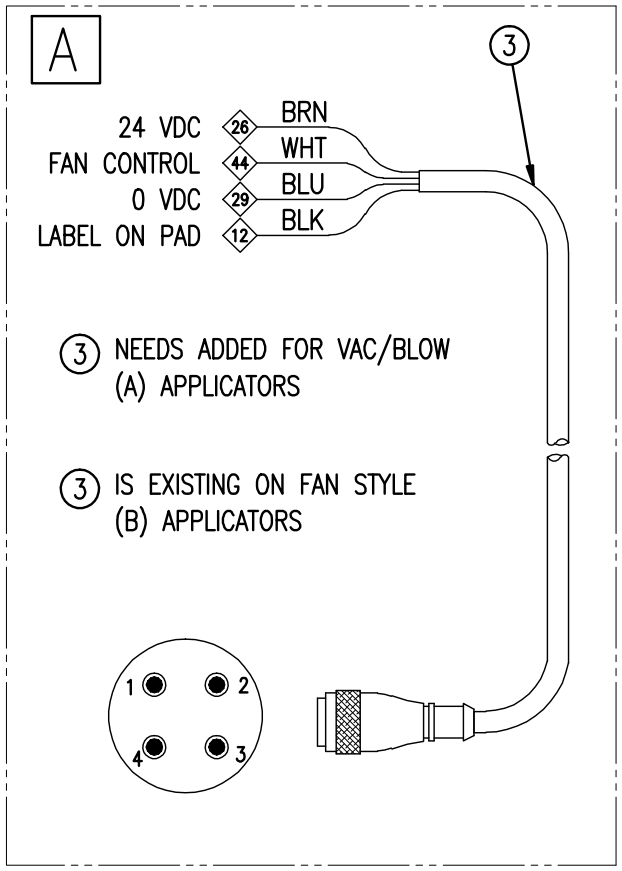
BILL OF MATERIAL			
ASS-238ST-0433-A			
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PE-SE3043	10mm CONVERGENT SS MINI SENSOR
②	1	PE-CA2000	PRODUCT DETECT PLUG
③	1	PE-SE3045	4-PIN EUROFAST 6-1/2' STRAIGHT CABLE
④	1	PE-ST1005	1/8" SHRINK TUBE X 1-1/4" LG
⑤	2	PE-ST1010	3/16" SHRINK TUBE X 1-1/4" LG

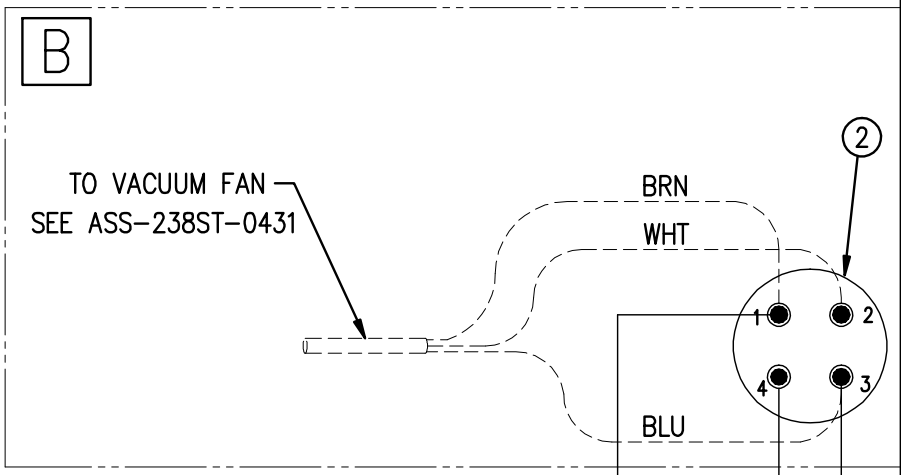
BILL OF MATERIAL			
ASS-238ST-0433-B			
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PE-SE3043	10mm CONVERGENT SS MINI SENSOR
②	1	PE-CA2000	PRODUCT DETECT PLUG
④	1	PE-ST1005	1/8" SHRINK TUBE X 1-1/4" LG
⑤	2	PE-ST1010	3/16" SHRINK TUBE X 1-1/4" LG

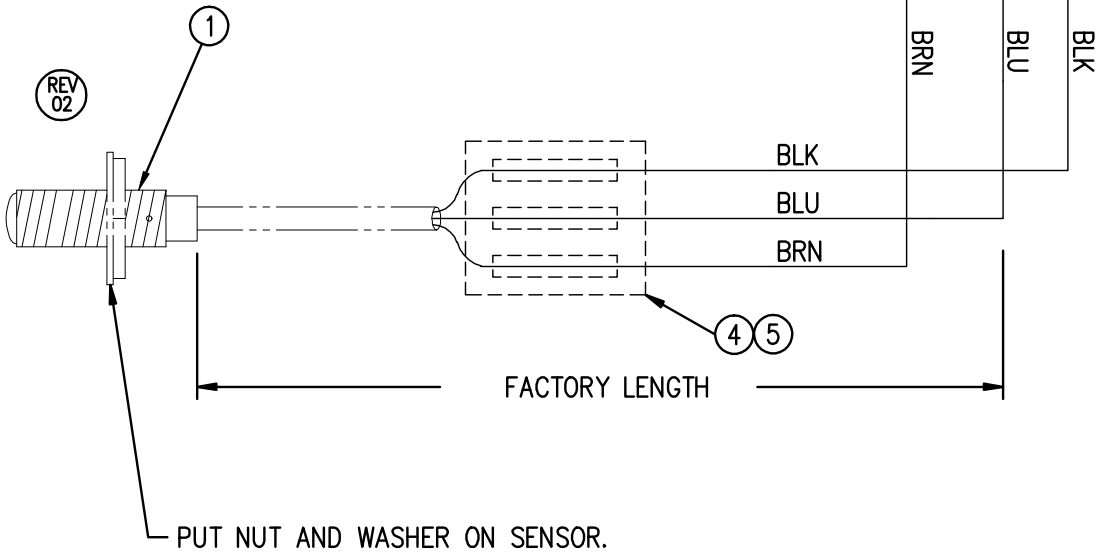
VAC/BLOW STYLE	ASS-238ST-0433-A
FAN STYLE	ASS-238ST-0433-B

WIRE PREPARATION NOTES: REV 01

1) STRIP OUTER JACKET 1-1/2"
2) THEN STRIP 1/2" FROM EACH WIRE. TWIST, FOLD BACK, THEN SOLDER.
3) SHRINK TUBE CABLE TO MAKE CONNECTOR FIT WITH 1 PC OF 1/8" DIA, 2 PC OF 3/16" DIA, BOTH 1-1/4" LG.
4) PUT 1/8" DIA OVER CABLE END, EVEN WITH THE STRIPPED END OF THE OUTER JACKET
5) THEN THE 3/16" OVER 1/8" AND THE OTHER 3/16" OVER BOTH







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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	7.5"	SERVO TAMP APPLICATOR: ELECTRICAL	LABEL ON PAD SENSOR ASSEMBLY	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\
02	CHANGED NUTS AND WASHERS TO 1	01/09/14	DLM	1=1	06/13/13	DLM	3600-ST\ASS-238ST-0433-X

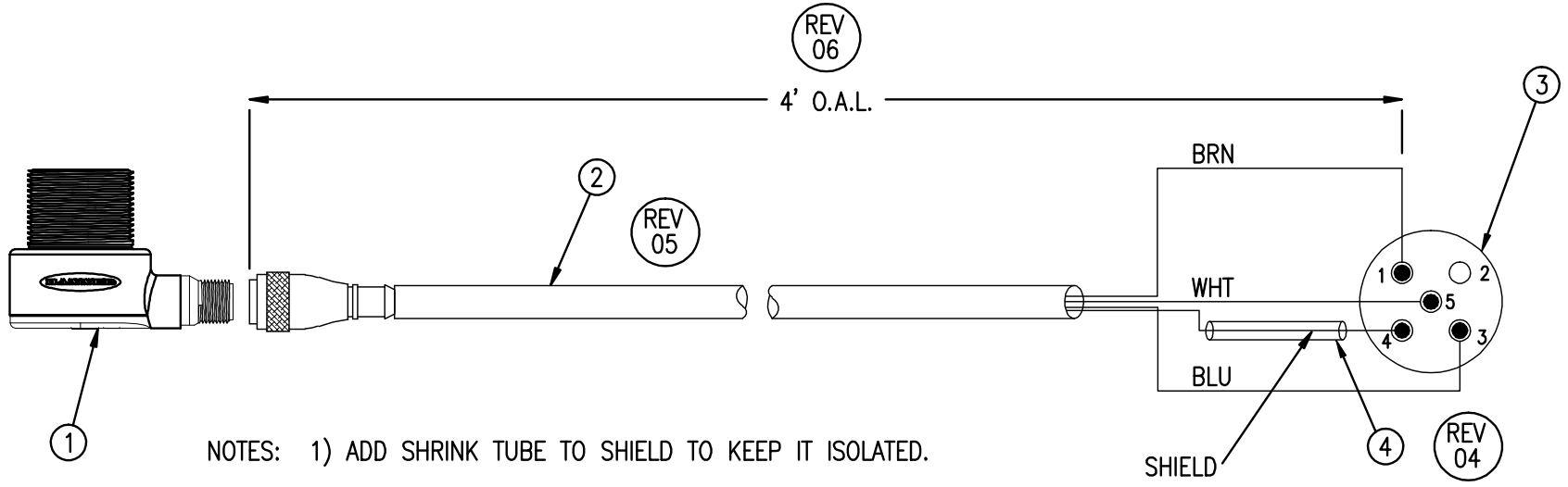
ASS-238ST-0434

BILL OF MATERIAL

ASS-238ST-0434

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PE-SE1034	ULTRASONIC SENSOR
②	1	C-PE-SE1076-6	ULTRASONIC SENSOR CABLE- 6-1/2' LG.
③	1	PE-CA2080	5-PIN EUROFAST REVERSE KEY CONNECTOR
④	1	PE-ST1002	1/16"ø SHRINK TUBE X 1-1/2" LG.

REV 06



NOTES: 1) ADD SHRINK TUBE TO SHIELD TO KEEP IT ISOLATED.

2) CUT BLK WIRE OFF

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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	7.5"	SERVO TAMP APPLICATOR: ELECTRICAL	HEIGHT SENSOR ASSEMBLY	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\
6	ADDED CABLE LENGTH AND CHANGED ITEM 2 ON BOM	02/28/14	DLM	1=1	11/12/13	DLM	3600-ST\ASS-238ST-0434

BILL OF MATERIAL

ASS-238ST-0436-A

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PE-SE1078	3 PIN THREADED PICO-STYLE CORDSET, RT ANGLE, 5m
②	1	PE-SE3044	10mm CONVERGENT SS MINI SENSOR QD
③	1	PE-CA2000	PRODUCT DETECT PLUG
④	1	PE-SE3045	4 PIN EUROFAST 6-1/2' STRAIGHT CABLE

BILL OF MATERIAL

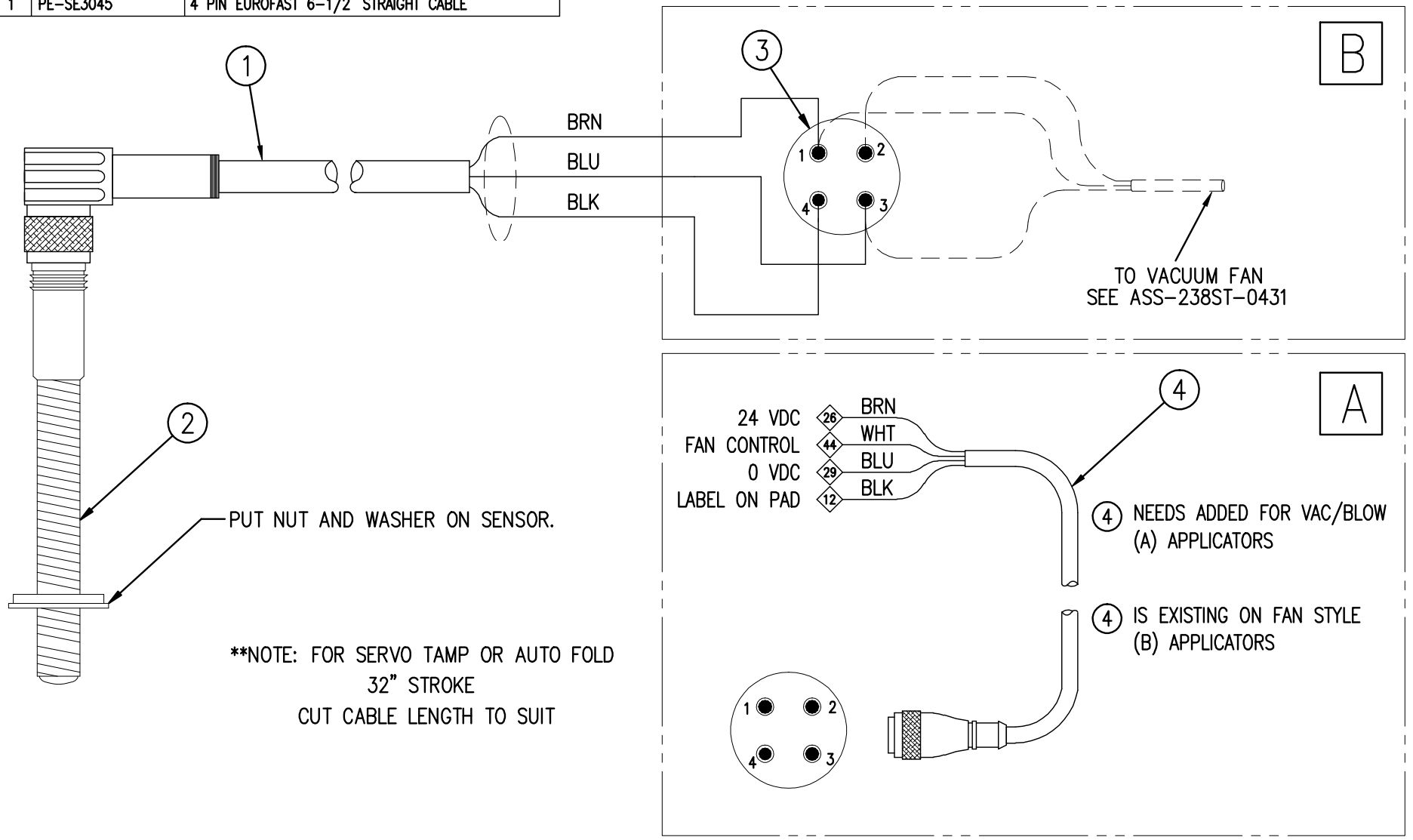
ASS-238ST-0436-B

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PE-SE1078	3 PIN THREADED PICO-STYLE CORDSET, RT ANGLE, 5m
②	1	PE-SE3044	10mm CONVERGENT SS MINI SENSOR QD
③	1	PE-CA2000	PRODUCT DETECT PLUG

ASS-238ST-0436-X

VAC/BLOW STYLE
ASS-238ST-0436-A

FAN STYLE
ASS-238ST-0436-B



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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	7.5"	SERVO TAMP APPLICATOR: ELECTRICAL	LABEL ON PAD SENSOR ASSEMBLY QD	70

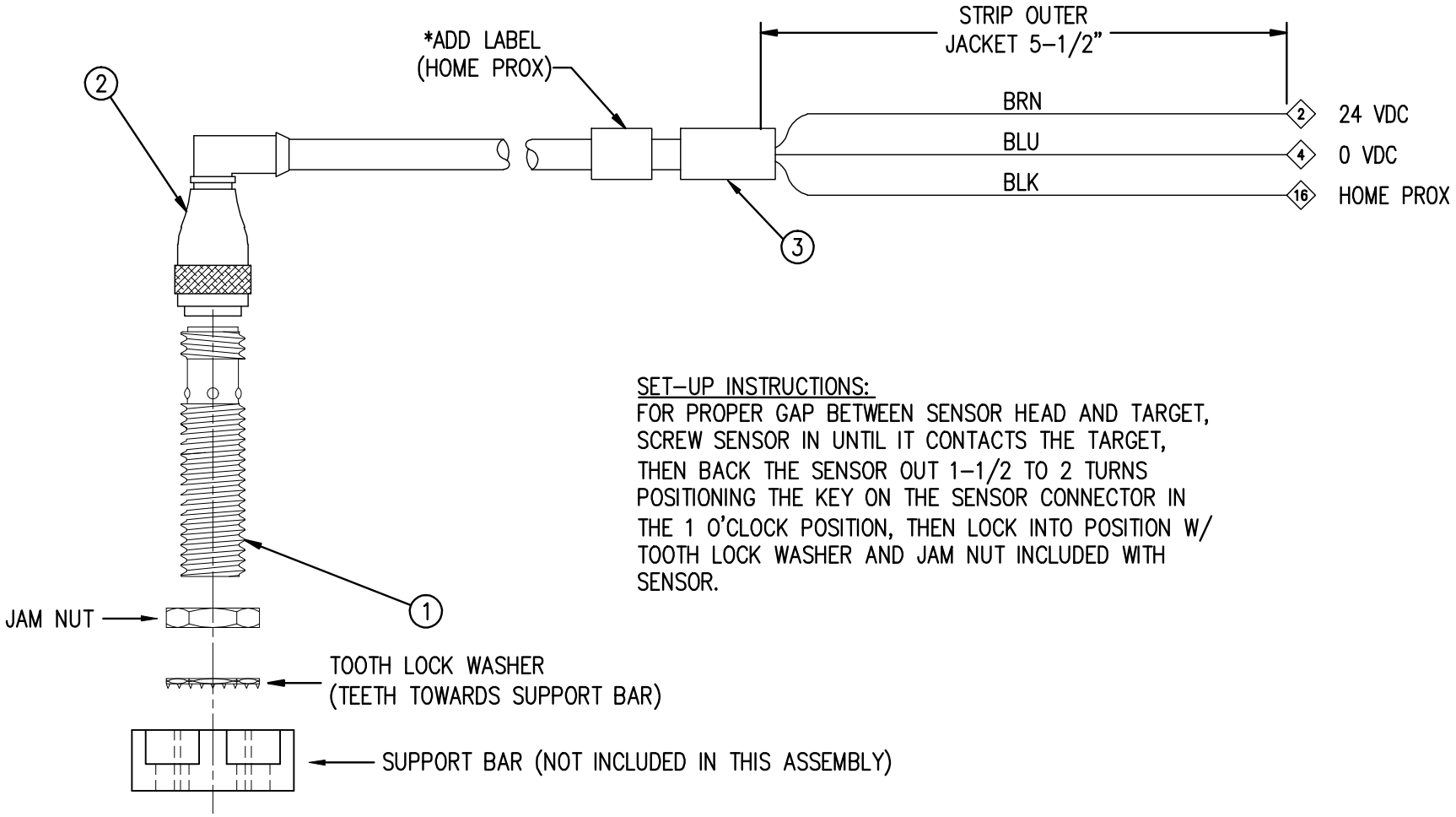
REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\
				1=1	02/19/14	DLM	3600-ST\ASS-238ST-0436-X

ASS-238ST-0437

BILL OF MATERIAL

ASS-238ST-0437

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PE-SE10108	3 mm Q.D. INDUCTIVE PROX. SENSOR
②	1	PE-SE3055	RT ANGLE QD SENSOR CABLE – 15' LG.
③	1	PE-ST1015	1/4" ø SHRINK TUBE X 1" LG.



SET-UP INSTRUCTIONS:
FOR PROPER GAP BETWEEN SENSOR HEAD AND TARGET, SCREW SENSOR IN UNTIL IT CONTACTS THE TARGET, THEN BACK THE SENSOR OUT 1-1/2 TO 2 TURNS POSITIONING THE KEY ON THE SENSOR CONNECTOR IN THE 1 O'CLOCK POSITION, THEN LOCK INTO POSITION W/ TOOTH LOCK WASHER AND JAM NUT INCLUDED WITH SENSOR.

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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	7.5"	SERVO TAMP APPLICATOR: ELECTRICAL	HOME LIMIT SENSOR ASSEMBLY – 15 FT CABLE	70

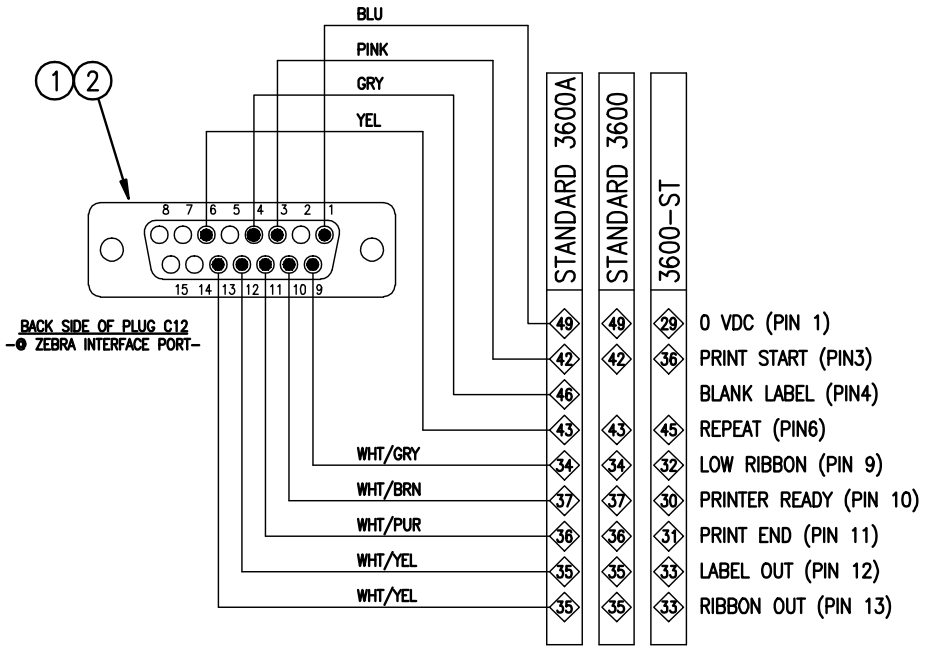
REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\
				1=1	02/09/12	DLM	3600-ST\ASS-238ST-0437

BILL OF MATERIAL				SOLD
ASSEMBLY		PE-238-0418		.
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER	
①	1	ZEBRA I/F PLUG	PE-CON2049	.
②	8	MALE PIN	PE-CON7055	.
	1	BLUE (AWG 22) WIRE x 42" LG.	PE-W1036	.
	1	PINK (AWG 22) WIRE x 42" LG.	PE-W1060	.
	1	YELLOW (AWG 22) WIRE x 42" LG.	PE-W1035	.
	1	WHT/GRY (AWG 22) WIRE x 42" LONG	PE-W1048	.
	1	WHT/BRN (AWG 22) WIRE x 42" LONG	PE-W1046	.
	1	WHT/PUR (AWG 22) WIRE x 42" LONG	PE-W1049	.
	1	GRY (AWG 22) WIRE x 42" LONG	PE-W1039	.
	2	WHT/YEL (AWG 22) WIRE x 42" LONG	PE-W1044	.
	2	DB MALE SCREW RETAINER	PE-CON2002	.

PE-238-0418

NOTE: INSTALL 1/4" X 6" LONG SHRINK TUBE AT TERMINAL END AT ASSEMBLY.

WIRING FOR 3600, 3600a, and 3600-ST



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TITLE: 3600-PA SERIES APPLICATOR: ELECTRICAL	PART: APPLICATOR TO ZEBRA or 'A' CLASS DATAMAX INTERFACE HARNESS	Dept. Code 70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\3600
4	ADDED 3600A TABULATION, ADDED GRAY WIRE	2/23/16	JWS	1=2	01/23/01	BOB S.	238\PE-238-0418

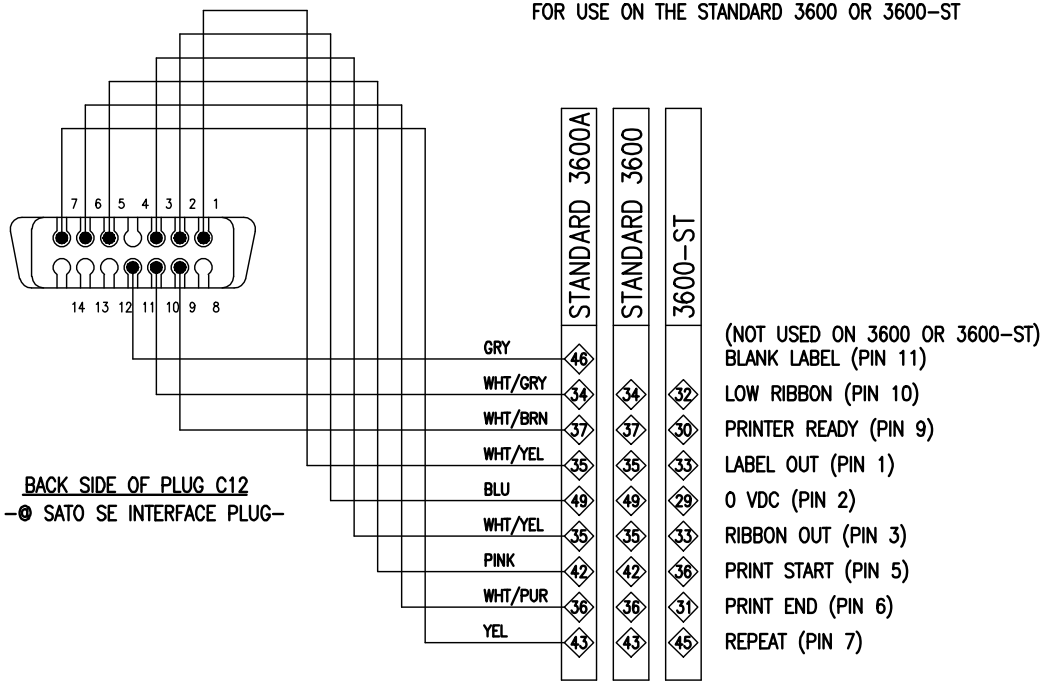
BILL OF MATERIAL				SOLD
ASSEMBLY		PE-238-0420		.
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER	
①	1	SATO I/F PLUG	PE-PL1100	.
	1	WHT/GRY (AWG 22) WIRE x 42" LONG	PE-W1048	.
	1	WHT/BRN (AWG 22) WIRE x 42" LONG	PE-W1046	.
	2	WHT/YEL (AWG 22) WIRE x 42" LONG	PE-W1044	.
	1	BLUE (AWG 22) WIRE x 42" LG.	PE-W1036	.
	1	PINK (AWG 22) WIRE x 42" LG.	PE-W1060	.
	1	WHT/PUR (AWG 22) WIRE x 42" LONG	PE-W1049	.
	1	YELLOW (AWG 22) WIRE x 42" LG.	PE-W1035	.
	1	GRY (AWG 22) WIRE x 42" LG.	PE-W1039	.

PE-238-0420

-SOLDER WIRES INTO CONNECTOR.
-SLIDE 3/32" X 3/8" LONG SHRINK TUBE OVER SOLDER CONNECTIONS OF EACH WIRE.
-APPLY 3/8" X 3" LONG SHRINK TUBE OVER ALL THE WIRES LEAVING A 1/8" GAP BETWEEN THE 3/32" AND 3/8" TUBE.
-REMOVE THE CLAMPS ON THE CONNECTOR HOUSING BY DRILLING THE RIVETS OUT.
-COMPLETE ASSEMBLY.

WIRING FOR 3600a, 3600-PA, 3600-ST

CTM ASSEMBLY
1.) DO NOT CONNECT THE GRAY WIRE FOR USE ON THE STANDARD 3600 OR 3600-ST



BACK SIDE OF PLUG C12
-⓪ SATO SE INTERFACE PLUG-

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TITLE: 3600-PA/ST SERIES APPLICATOR: ELECTRICAL	PART: APPLICATOR TO SATO SE INTERFACE HARNESS	Dept. Code 70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\3600
2	TABULATED FOR 3600A, ADDED GRAY WIRE	2/22/16	JWS	1=2	01/23/01	BOB S.	238\PE-238-0420

1318 QUAKER CIRCLE P.O. BOX 589 SALEM, OHIO 44460

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MAINTENANCE
&
SERVICE MANUAL

REVISION 3600af-2a.1.x.xx

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TABLE OF CONTENTS

INTRODUCTION

The 3600af servo tamp printer applicator is a high-speed labeler used to thermally print and apply pressure sensitive Auto-Fold Labels™ to moving products that have varying heights and still hold label placement. The Auto-Fold Label™ is an all-in-one shipping document complete with a packing slip and shipping label. A thermal transfer printer is integrated into an applicator to form a self-contained unit that will print variable data onto the Auto-Fold Label™; this combination accomplishes duplex printing with a simplex printer. It is primarily designed to label the top of products but can also handle side labeling.

The applicator uses the auto fold label pad assembly to fold the packing list section of the Auto-Fold Label™ under and adheres it to the underside of the shipping information section. A pneumatically driven rotary actuator is used to swing a secondary tamp label pad 180 degrees to perform the fold.

The applicator supports the tamp configuration which uses a fan to create vacuum to hold the label on the pad and the pad must contact the product to release the label. Different labeling sequences or modes as follows:

Normal Tamp
Inverted Tamp
Auto Tamp 2

In the Normal Tamp mode, the label is printed, dispensed out onto the label pad and held there by vacuum generated by a fan. When the product detect sensor is made, the label and label pad are moved toward the product using a servo driven slide. When the slide is extended, the label pad will contact the product and return home. The tamp length is programmable through the operator interface.

In the Inverted Tamp mode, the label is printed, dispensed onto the label pad and the slide extends to the tamp height offset value. The applicator will wait in this position until the product sensor is made and the label placement value has been satisfied. Once this sequence has been completed, the slide will extend making contact with the product and return home - leaving the label on the product and the process starts again.

Auto Tamp 2 mode is used for varying height products. The tamp will start in the home position with a label on the pad and will move to a position just above the product when the product detect sensor turns on. The height is calculated from a 0 to 10 volt signal from the height sensor. The applicator will wait for the label placement distance and once the product is in position, the label pad moves down and comes in contact with the product. The label pad then returns home, another label is feed out and the process starts again.

Note: Encoder is required for this tamp mode.

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

ELECTRICAL SUPPLY: 108 - 132 Volts, 7 Amps, 50 - 60 Hertz, Single-Phase

A three-meter long, three-wire cable with 16 AWG ($1.00mm^2$) conductors rated at 10 amperes (in accordance with CENELEC HD-21) is provided for the electrical connection to the IEC 320 receptacle of the applicator. The end of the power cord is terminated with a NEMA5-15 plug.

AIR SUPPLY: Clean, dry air @ 90 – 100 PSI at 2^* SCFM per applicator.

ENVIRONMENT: Operating temperature: 40 – 104 degrees F
Humidity: 20 - 95% RH, non-condensing

NOTE: THE 3600af SERVO TAMP IS NOT INTENDED TO BE OPERATED IN AN ENVIRONMENT WHERE FLAMMABLE OR EXPLOSIVE GASSES ARE PRESENT. THE 3600af SERVO TAMP IS NOT TO BE USED IN DIRECT CONTACT WITH FOOD PRODUCTS.

READ THE INSTRUCTIONS CAREFULLY AND COMPLETELY. This manual includes all of the information needed to setup the applicator under normal operating conditions. The instructions include important safety precautions that 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 IT UP AGAIN. Although an applicator malfunction is possible, most problems happen because the applicator is not setup correctly. If the applicator doesn't operate correctly, back up and start over.

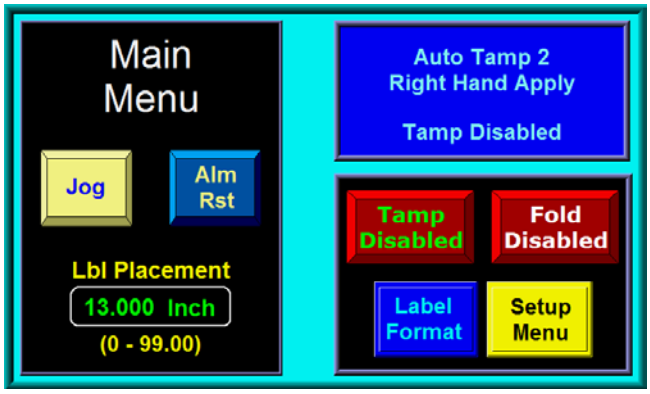
FOLLOW ALL SAFETY INSTRUCTIONS. The CTM 3600af servo tamp applicator has been provided with a number of safety features. Observe all safety warnings and under no circumstances attempt to remove or defeat safeguards or operate the machine in a manner contrary to the instructions.

3600STAF DISPLAY

The following is general information about the display and will tell you how to change values, explain the meaning of different screens and describe the different options that pertain to the 3600af applicator and how to set them up. For items not covered in this supplement, please refer to the standard 3600st Maintenance & Service Manual.

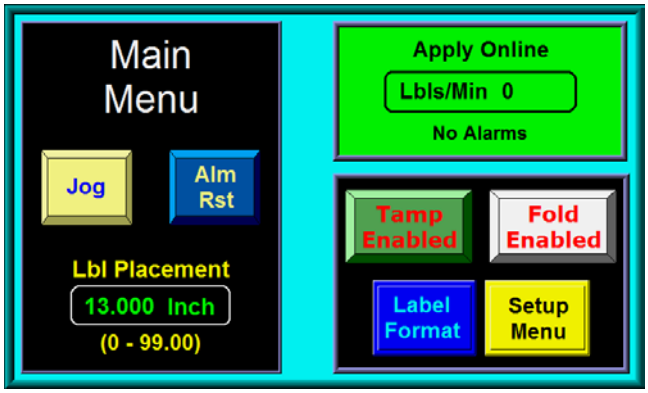
MAIN MENU

After the power-up sequence, the main menu will come up. The main menu of the 3600af applicator is very similar to the 3600st applicator; the difference is the addition of the fold enable/disable key.



(Tamp and Auto Fold Disabled)

The lower right corner of the main menu is where the operator can enable or disable the tamp and the auto fold. The screen to the left shows both the tamp and the auto fold disabled.

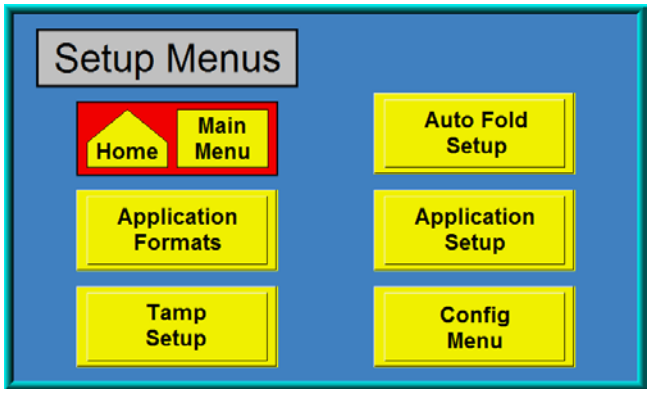


(Tamp and Auto Fold Enabled)

The screen to the left show the tamp and the auto fold enabled. The status box in the upper right hand corner will show the status of the tamp, not the auto fold. The operator has the ability to enable the tamp and auto fold separately. Enabling the auto fold while having the tamp disabled can be helpful while setting up the applicator.

SETUP MENUS

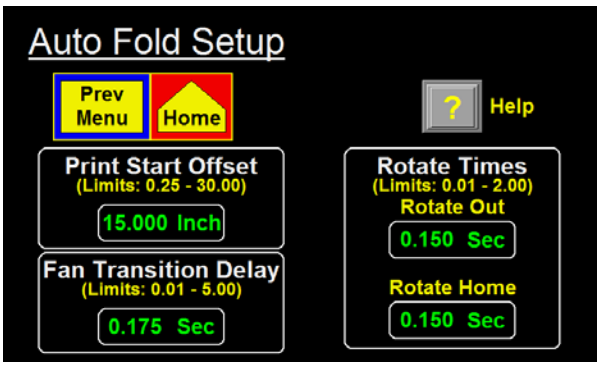
Pressing the setup key at the main menu will cause a password screen to come up. Entering "1800" in this screen will take you to the setup menu. The Auto Fold Setup has been added, at this menu the operator can make changes to the settings pertaining to the auto fold portion of the labeling sequence. For information regarding Application Formats, Tamp Setup, Application Setup and the complete Configuration Menu, refer to the 3600st Maintenance & Service Manual as the menus are identical.



Note: The tamp must be disabled to enter this section

AUTO FOLD SETUP MENU

The parameters used during the auto fold sequence are located within this menu.



The following are changeable in this section:

Print Start Offset
Fan Transition Delay
Rotate Out Time
Rotate Home Time

Print Start Offset – While the tamp assembly is moving back to the home position after applying a label, the applicator monitors the position of the tamp. When the position becomes less than the value entered for the Print Start Offset, the printer is sent the print start signal to begin to print the next label. If the tamp traveled less than the distanced entered in this field, the print start signal will be sent to the printer immediately after applying the label. Setting this value too low can impact the cycle rate of the applicator. A combination of a slow tamp speed and a high Print Start Offset could cause the label to be fed out too far before the tamp pad returns to the home position.

Fan Transition Delay Time–When the air assist valve turns off the vacuum fans change to high speed and Fan Transition Delay time begins. This time allows the fans to ramp up to their high speed before the applicator activates the fold valve which folds the label. Entering too high of a value will lower the cycle rate of the applicator. If the entered value is too low, the fans will not be at high speed when the fold valve activates and the label may not fold correctly. The fans will return to low speed when the Rotate Out Time is complete.

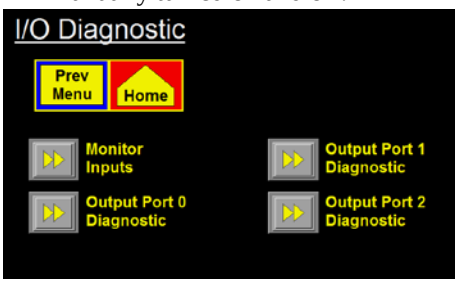
Rotate Out Time – This is the time that is allotted for the fold assembly to rotate out to fold the label. When the Fan Transition Delay Time is complete, the fold valve will turn on and the fold assembly will begin to rotate. The fold valve will stay on for the amount of time entered for the Rotate Out Time. Setting this value too high will create longer cycle times for the applicator. If the time is set too low, the fold assembly will not have enough time to rotate out completely and the label will not be folded correctly.

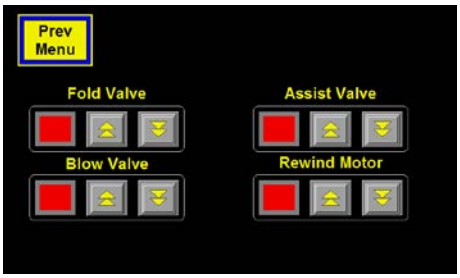
Rotate Home Time – When the fold valve turns off, the Rotate Home Time is started. This is the amount of time allotted for the fold assembly to rotate back to the home position. After this timer is complete, the tamp will begin to move down to the labeling position. If the Rotate Home Time is set too high, the cycle time of the applicator will be increased. Setting this time too low could cause the tamp pad to hit the fold assembly on the downward travel; this could damage the fold assembly and/or the tamp pad.

CONFIGURATION SETUP

I/O DIAGNOSTICS

This section allows the operator to monitor inputs and to manually turn outputs on and off. This serves only as a diagnostic tool for a technician. The Output Port 0 Diagnostic screen is where the fold valve can be manually turned on and off.





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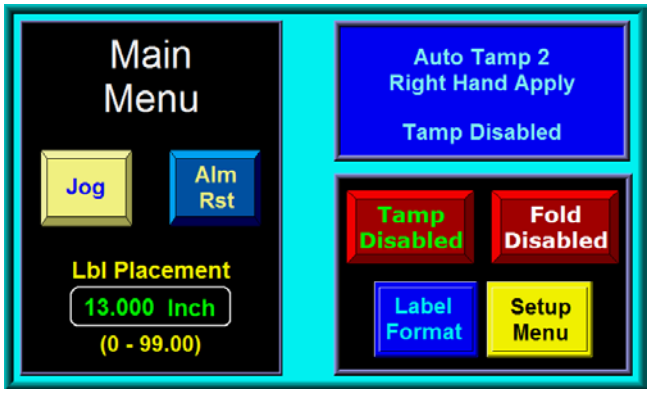

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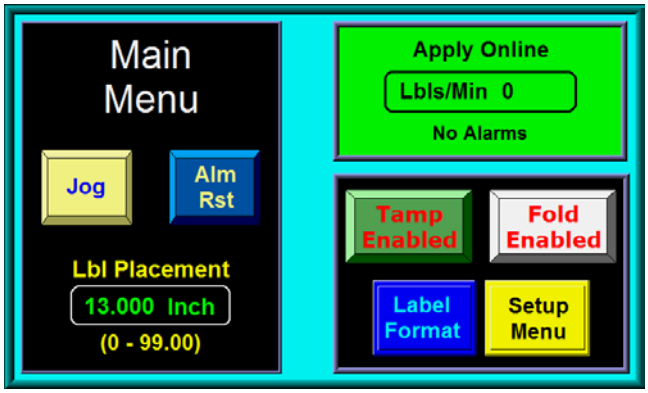

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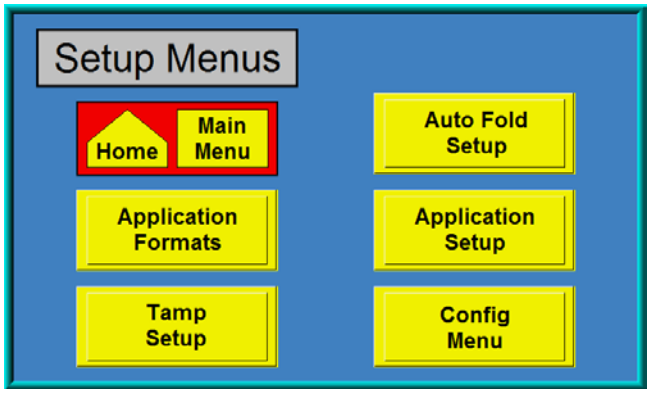
The screen to the left show the tamp and the auto fold enabled. The status box in the upper right hand corner will show the status of the tamp, not the auto fold. The operator has the ability to enable the tamp and auto fold separately. Enabling the auto fold while having the tamp disabled can be helpful while setting up the applicator.

SETUP MENUS

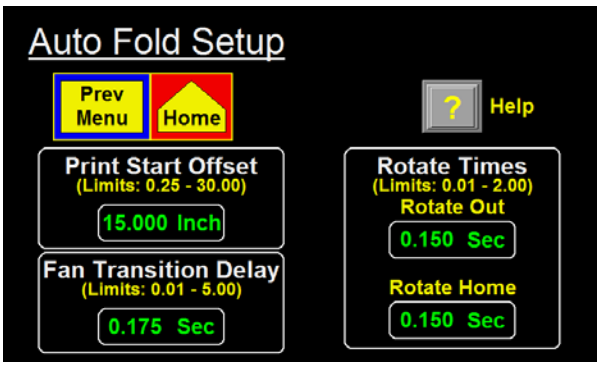
Pressing the setup key at the main menu will cause a password screen to come up. Entering "1800" in this screen will take you to the setup menu. The Auto Fold Setup has been added, at this menu the operator can make changes to the settings pertaining to the auto fold portion of the labeling sequence. For information regarding Application Formats, Tamp Setup, Application Setup and the complete Configuration Menu, refer to the 3600st Maintenance & Service Manual as the menus are identical.



Note: The tamp must be disabled to enter this section

AUTO FOLD SETUP MENU

The parameters used during the auto fold sequence are located within this menu.



The following are changeable in this section:

Print Start Offset
Fan Transition Delay
Rotate Out Time
Rotate Home Time

Print Start Offset – While the tamp assembly is moving back to the home position after applying a label, the applicator monitors the position of the tamp. When the position becomes less than the value entered for the Print Start Offset, the printer is sent the print start signal to begin to print the next label. If the tamp traveled less than the distanced entered in this field, the print start signal will be sent to the printer immediately after applying the label. Setting this value too low can impact the cycle rate of the applicator. A combination of a slow tamp speed and a high Print Start Offset could cause the label to be fed out too far before the tamp pad returns to the home position.

Fan Transition Delay Time–When the air assist valve turns off the vacuum fans change to high speed and Fan Transition Delay time begins. This time allows the fans to ramp up to their high speed before the applicator activates the fold valve which folds the label. Entering too high of a value will lower the cycle rate of the applicator. If the entered value is too low, the fans will not be at high speed when the fold valve activates and the label may not fold correctly. The fans will return to low speed when the Rotate Out Time is complete.

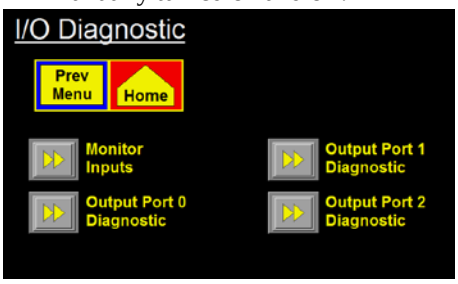
Rotate Out Time – This is the time that is allotted for the fold assembly to rotate out to fold the label. When the Fan Transition Delay Time is complete, the fold valve will turn on and the fold assembly will begin to rotate. The fold valve will stay on for the amount of time entered for the Rotate Out Time. Setting this value too high will create longer cycle times for the applicator. If the time is set too low, the fold assembly will not have enough time to rotate out completely and the label will not be folded correctly.

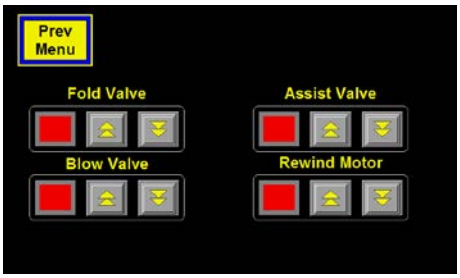
Rotate Home Time – When the fold valve turns off, the Rotate Home Time is started. This is the amount of time allotted for the fold assembly to rotate back to the home position. After this timer is complete, the tamp will begin to move down to the labeling position. If the Rotate Home Time is set too high, the cycle time of the applicator will be increased. Setting this time too low could cause the tamp pad to hit the fold assembly on the downward travel; this could damage the fold assembly and/or the tamp pad.

CONFIGURATION SETUP

I/O DIAGNOSTICS

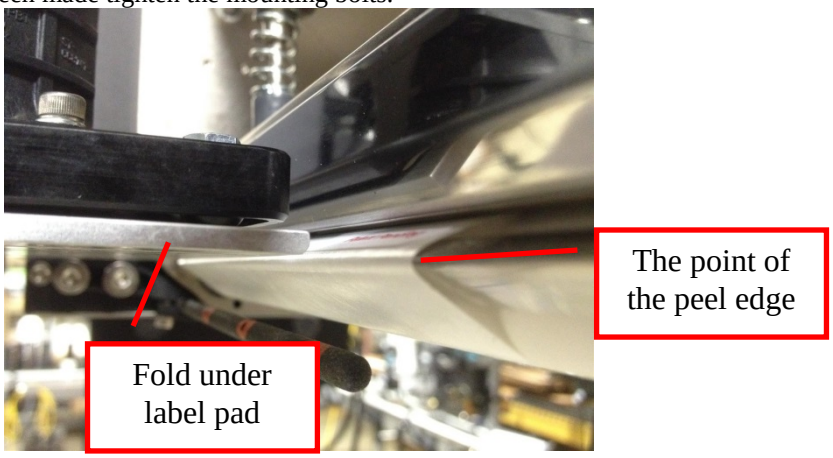
This section allows the operator to monitor inputs and to manually turn outputs on and off. This serves only as a diagnostic tool for a technician. The Output Port 0 Diagnostic screen is where the fold valve can be manually turned on and off.



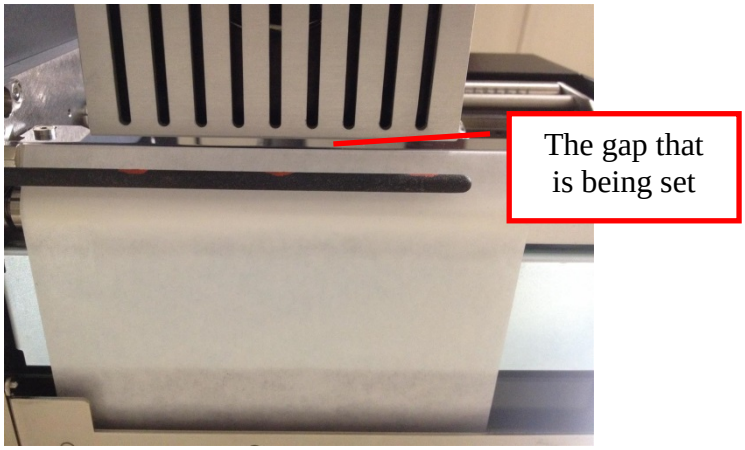


FOLD UNDER LABEL PAD POSITIONING (cont.)

2. After setting the position of the fold under label pad on the rotary actuator shaft, you will need to set the height of the fold under label pad relative to the peel edge of the printer. To do this, loosen the four (4) mounting bolts of the vertical adjustment plate and set the height of the assembly so that the point of the peel edge is equal to the bottom of the fold under label pad. When this adjustment has been made tighten the mounting bolts.



3. Now that the height has been set, loosen the four (4) mounting bolts of the horizontal mounting plate. The distance between the peel edge of the printer and the fold under label pad should be set so that a 3/32” Allen wrench will fit between them but a 7/64” Allen wrench will not. After setting this gap, tighten the mounting bolts.

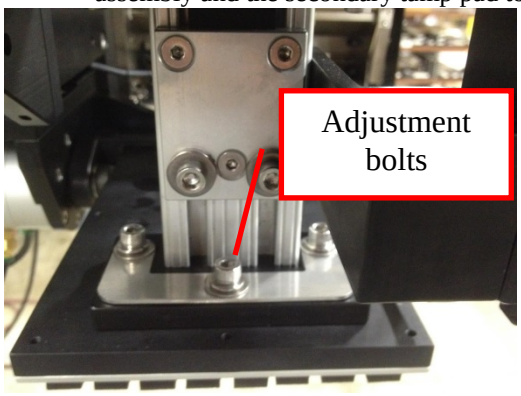


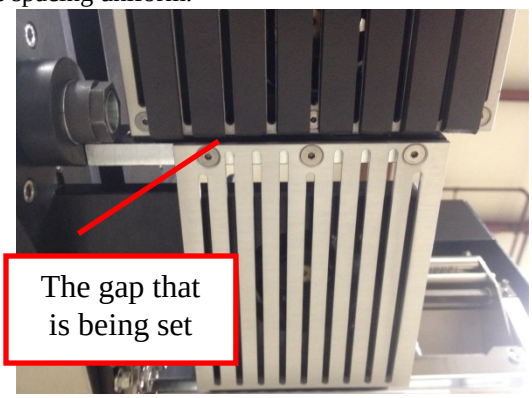
At this point verify that the fold under label pad is close to parallel with the peel edge of the printer. Make the necessary adjustments if it is not.

SECONDARY TAMP PAD POSITIONING

Begin this section by verifying that the valve bank is supplied with air and there is a gap between the fold under swing arm and the secondary tamp pad.

1. After verifying that the secondary tamp pad will not hit the fold under assembly, set the Home Offset so that secondary tamp pad is slightly higher than the fold under label pad, 0.030" is a good value to begin with.
2. Feed out several labels to establish the dispense path. Adjust the position of the secondary tamp pad so that it is centered over the label. While making adjustments to the location of the secondary tamp pad, slide a 1/16" Allen wrench between the swing arm of the fold under assembly and the secondary tamp pad to keep the spacing uniform.





3. When the dispensed label is centered on the secondary tamp pad, the fold under label pad must be centered to the secondary tamp pad.
    a. Remove the air supply to the valve bank and then manually rotate the fold under label pad so it is positioned flat against the secondary tamp pad.
    b. Use the adjustment plates of the fold under assembly to center the fold under label pad under the secondary tamp pad.
    c. It is important that the fold under label pad is relatively parallel to the secondary tamp pad when it is in the fold position. If they are not parallel during this condition, you may have to make adjustments to the mounting brackets of the fold under assembly or the servo module mounting.

Verify that all of the bolts that were loosened to make adjustments have been tighten before proceeding.

ACTUATOR FLOW CONTROLS

The flow controls for the rotary actuator, located at ports A and B of the Fold Valve, need to be set. A good reference point to begin with is turning the screws CW until they stop, then each screw three (3) turns CCW. When fine tuning the flow controls, the I/O Diagnostic Menu or the Fold Valve override can be used to cycle the rotary actuator.

LABEL FOLD STATIC TEST

The applicator must now be tested to see if the Auto Fold setup is correct. To best verify the Auto Fold setup, perform the following test with the Tamp Disabled and the Fold Enabled.

1. With the air supply connected to the valve bank and test labels downloaded to the printer, press the Jog Key on the display.
    a. Watch how the label transitions from the peel edge of the printer to the fold under label pad. This transition should be smooth and the label should not buckle.
        i. If the label dives away from the fold under label pad the following adjustments can be made.
            1. Height of fold under assembly – up or down
            2. Air assist tube angle, a good starting point is to have the air holes pointed ½" out onto the fold over label pad.
            3. Check the Assist pressure at the valve bank, a suggested value would be between 15 – 20 PSI.
    b. Watch how the label transitions from the fold under label pad to the secondary label pad. The label should not buckle when it gets to the secondary label pad. This could be caused by the Home Offset being set too high.
    c. When the label is done feeding, listen for the vacuum fans to ramp up to high speed. You want to make sure that the fans have reached their max speed before the fold under assembly activates.
        i. A sign that the Fan Transition Delay Time is too low is when the label is pushed away from the peel edge as it being folded. This is caused by insufficient vacuum on the label as it begins to fold.
    d. When the label is done feeding, watch how the fold under assembly activates. Does the Rotate Out Time allow the assembly to reach full rotation?
        i. Adjust the Rotate Out Time so that the fold under label pad makes contact with the secondary label pad. A good reference to start with is 0.200 seconds.
        ii. Adjust the flow control for the outward movement to adjust the speed of the swing.
    e. After the label is folded, watch the return motion of the fold assembly. Adjust the flow control for the return movement to change the speed at which it returns.
        i. A starting value of 0.200 seconds for the Rotate Home Time should be close.
2. Remove the folded label from the secondary label pad and look at the folded edge of the label. The fold should be straight across the perforation. The packing list portion of the label should also be pressed flat against the bottom of the shipping information portion of the label.
    a. If the label is "bagging" where the label is to be folded, add 0.030" to the Home Offset value. This will lower the secondary label pad in relation to the fold under label pad. Continue to make small adjustments until the label folds correctly.
3. Continue to jog labels to verify that the settings are resulting in an acceptable label fold.

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

Part Number	Recommended Qty	Description
RECOMMENDED TOOL		
PE-TE6000	1	WIRING TOOL required for insertion/extraction @ terminal strip
WEAR ITEMS		
PE-FI1050	1	REPLACEMENT FILTER
PM-BELT1015	1	REWIND BELT
MP-238-0274	1	3" CLUTCH PAD
PM-BB1030	1	UNWIND BRAKE BAND
PM-FASP30434	1	DANCER ARM UNWIND SPRING
PM-BELT1058	1	39" LINEAR MODULE BELT
PM-FO1025	1	CUT TO SPECIFIED PAD SIZE
RECOMMENDED SPARE PARTS LIST		
MP-DR1005	1	DRIVE BOARD
ASS-200ST-0126		APPLICATOR DISPLAY
PE-MO1082	1	SERVO MOTOR w/BRAKE
ASS-238-0428	1	REWIND GEAR MOTOR
PE-PS1007	1	24 VDC POWER SUPPLY
PE-FU2078	1	10 AMP FUSE
ASS-200-0427	1	SM312LV PRODUCT DETECT SENSOR ASSEMLY
PM-BE1232	1	REWIND CLUTCH THRUST BEARING
PM-FASP30540	1	REWIND CLUTCH SPRING, MED DUTY (STD REW)
PM-FASP30431	1	REWIND CLUTCH SPRING, HEAVY DUTY (PWRD REW)
MP-211-X217-X	1	AIR ASSIST TUBE
PM-RU3025	2	RUBBER BUMPER
PM-BU1340	1	10MM x 22.5MM TRANTORQUE
PM-AC1103	1	ROTARY ACTUATOR
TAMP MODULE		
ASS-211-0106M	1	TAMP 2 STATION MAC VALVE ASSEMBLY w/FILTER
PM-VA2358M	1	24V DC VALVE LESS BASE for MAC VALVE
PM-VA2396M	1	0-30 PSI REGULATOR with 0-60 GAUGE for MAC VALVE
PM-VA2397M	1	0-120 PSI REGULATOR with 0-160 GAUGE for MAC VALVE
ASS-238ST-0102	2	ROLLER ASSEMBLY
ASS-238ST-0103	2	ROLLER ASSEMBLY
ASS-238ST-0104	2	ROLLER ASSEMBLY
PM-BE1210	1	ER 12 BEARING
ASS-238AF-0412	1	FAN ASSEMBLY
ASS-238AF-0413	1	FAN ASSEMBLY

3600 SERVO TAMP AUTO FOLD

DRAWINGS

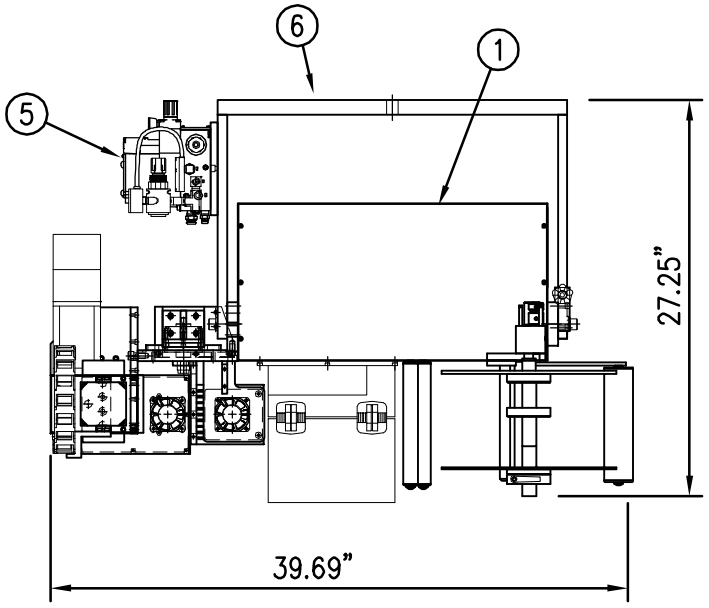
CTM-238AFL-12S-12S-B-C/F-XX

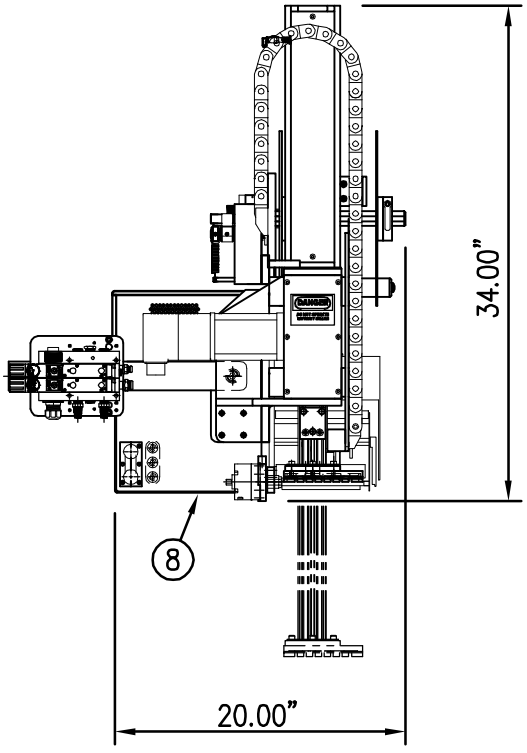
-XS	SERIAL
-XP	PARALLEL
-XE	ETHERNET
-XU	USB
-SX	SATO
-ZX	ZEBRA
-DX	DATAMAX

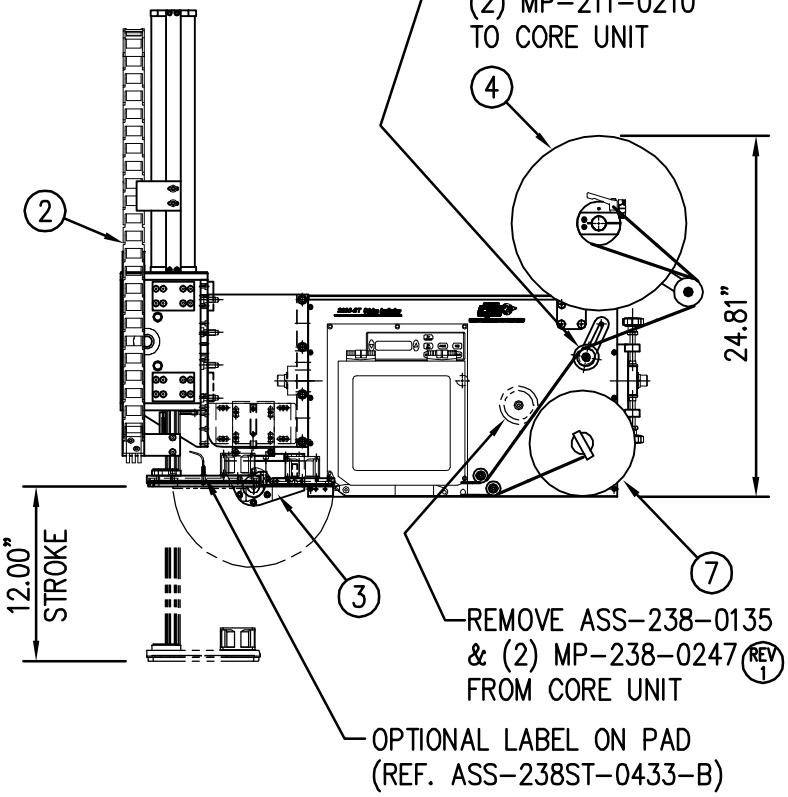
BILL OF MATERIAL

CTM-238AFL-12S-12S-B-C/F-XX

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	ASS-238ST-0123L-B	LH 3600ST FAN STYLE APPLY CORE UNIT
②	1	ASS-238AF-0101L-12	12" LH SERVO TAMP NOSE ASSEMBLY
③	1	ASS-238AF-0102L-C	LH AUTO-FOLD LABEL ASS'Y w/ CONTOURED PAD
	1	ASS-238AF-0102L-F	LH AUTO-FOLD LABEL ASS'Y w/ FLAT PAD
④	1	MOD-238-0122L-2	UNWIND MODULE with 12" DISKS - LH
	1	MOD-238-0122AL-2	UNWIND MODULE with ALUMINUM DISK for "REELS UP" - LH
⑤	1	ASS-238AF-0104M	2 STATION MAC VALVE BANK ASS'Y
⑥	1	WAS-238-0130	U-ARM WELDMENT for 3600 APPLICATOR
⑦	1	ASS-238-0144-12	REWIND SPINDLE ASSEMBLY for 12" UNWIND
⑧	1	MP-238-0228	HOUSING COVER DEBURRED







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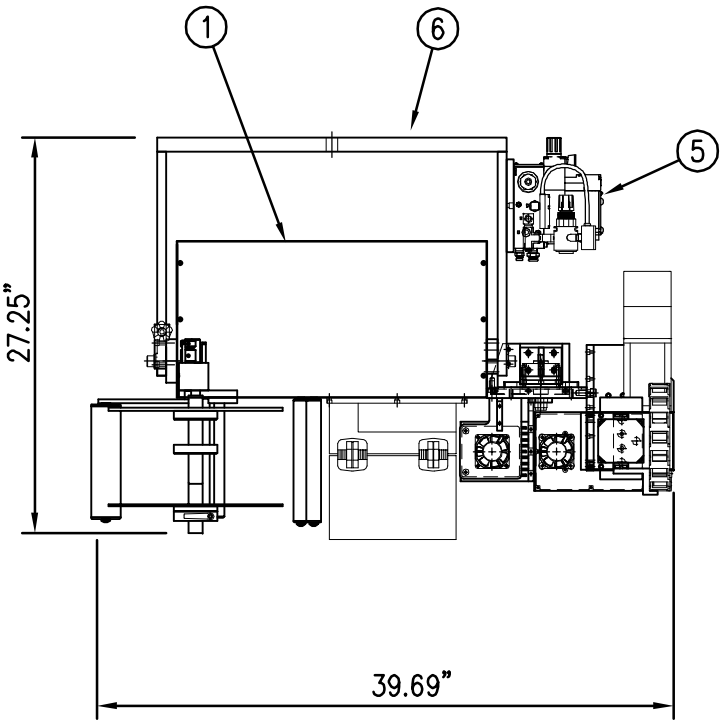
APPLICATOR SERIES: 3600-AF	APPLICATOR WIDTH(S): N/A	GROUP: SERVO TAMP AUTO FOLD	TITLE: LH 3600 SERVO TAMP AUTO FOLD PRINTER/APP., 12" TAMP, 12" UNWIND & FAN STYLE APPLY	REV. BY: TK	Scale: 1=14	Date: 10/21/13	DRAWN BY: T. KELLY	Dept. Code 70
REV. 1	REV. DESCRIPTION ADDED CORE UNIT MODIFICATION NOTES, CHG'D U.W. PART #'s			REV. DATE 12/10/13				F:\Engineering\Standard Parts\Applicator\3600AF\3600-AF\CTM-238AFL-12S-12S-B-C/F-XX

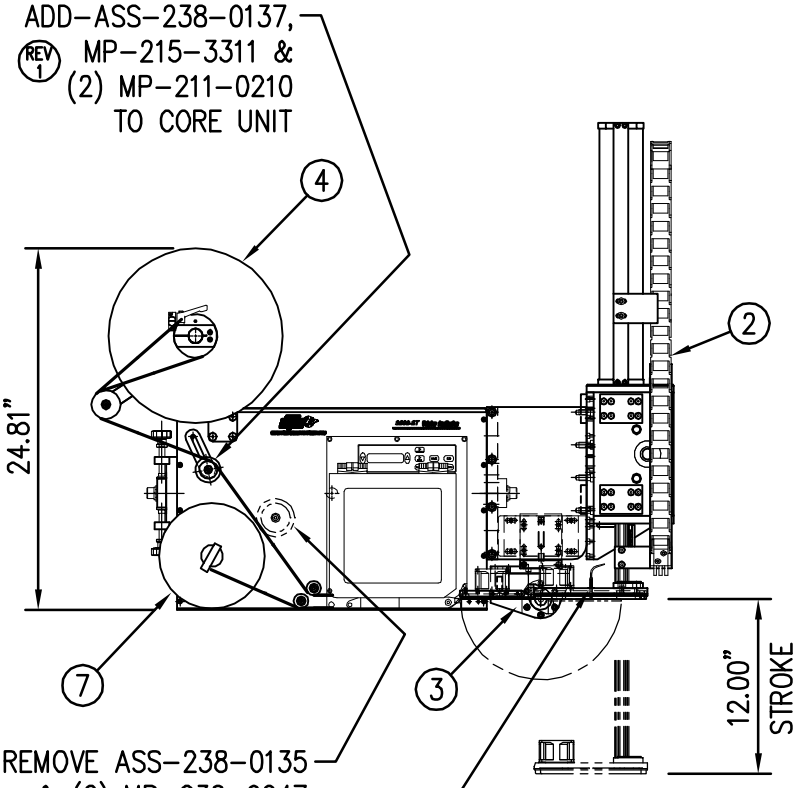
CTM-238AFR-12S-B-C/F-XX	
-XS	SERIAL
-XP	PARALLEL
-XE	ETHERNET
-XU	USB
-SX	SATO
-ZX	ZEBRA
-DX	DATAMAX

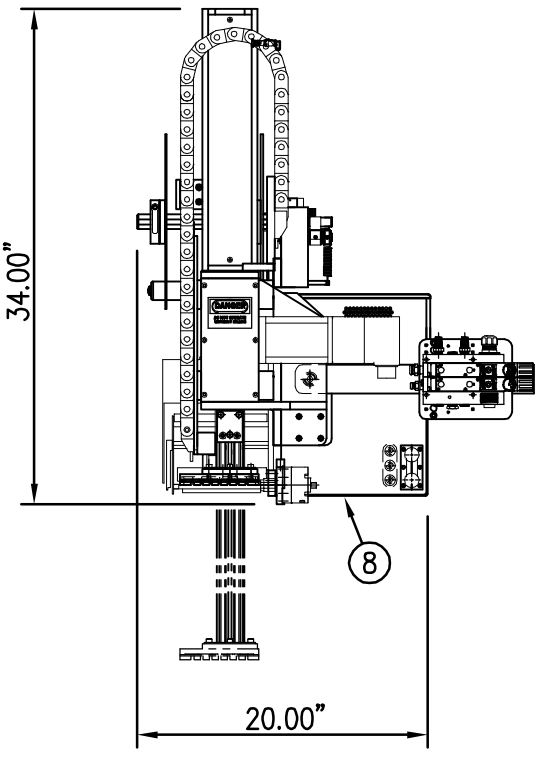
BILL OF MATERIAL

CTM-238AFR-12S-12S-B-C/F-XX

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	ASS-238ST-0123R-B	RH 3600ST FAN STYLE APPLY CORE UNIT
②	1	ASS-238AF-0101R-12	12" RH SERVO TAMP NOSE ASSEMBLY
③	1	ASS-238AF-0102R-C	RH AUTO-FOLD LABEL ASS'Y w/ CONTOURED PAD
	1	ASS-238AF-0102R-F	RH AUTO-FOLD LABEL ASS'Y w/ FLAT PAD
④	1	MOD-238-0122R-2	UNWIND MODULE with 12" DISKS - RH
	1	MOD-238-0122AR-2	UNWIND MODULE with ALUMINUM DISK for "REELS UP" - RH
⑤	1	ASS-238AF-0104M	2 STATION MAC VALVE BANK ASS'Y
⑥	1	WAS-238-0130	U-ARM WELDMENT for 3600 APPLICATOR
⑦	1	ASS-238-0144-12	REWIND SPINDLE ASSEMBLY for 12" UNWIND
⑧	1	MP-238-0228	HOUSING COVER DEBURRED







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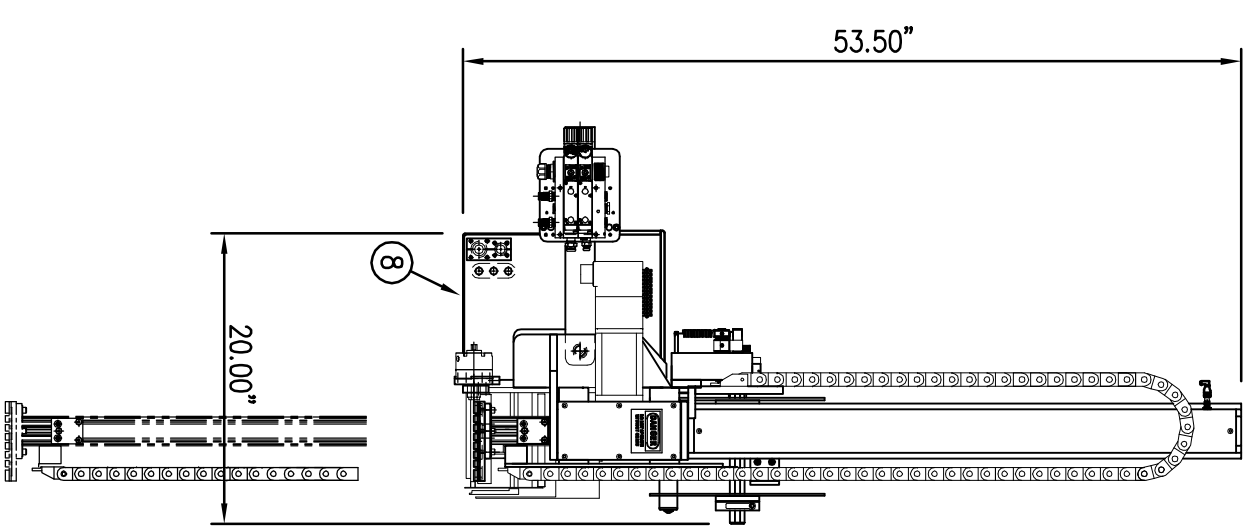
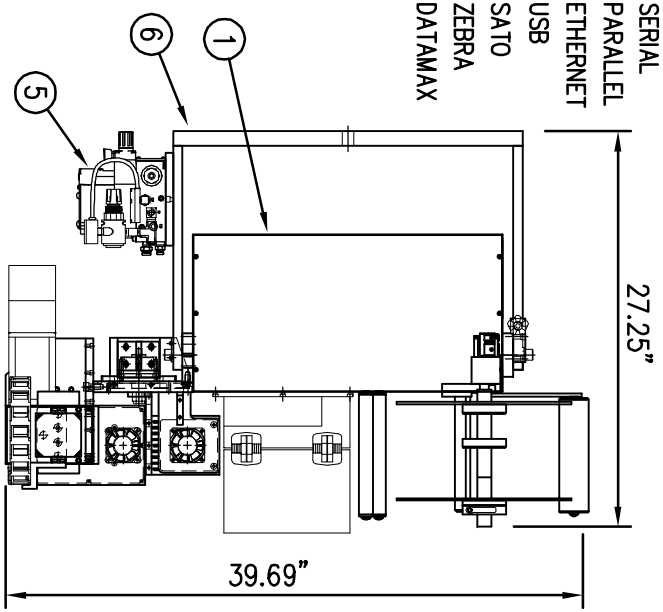
APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	REV. BY:	Scale:	Date:	DRAWN BY:	Dept. Code
3600-AF	N/A	SERVO TAMP AUTO FOLD	RH 3600 SERVO TAMP AUTO FOLD PRINTER/APP., 12" TAMP, 12" UNWIND & FAN STYLE APPLY	TK	1=14	10/21/13	T. KELLY	70

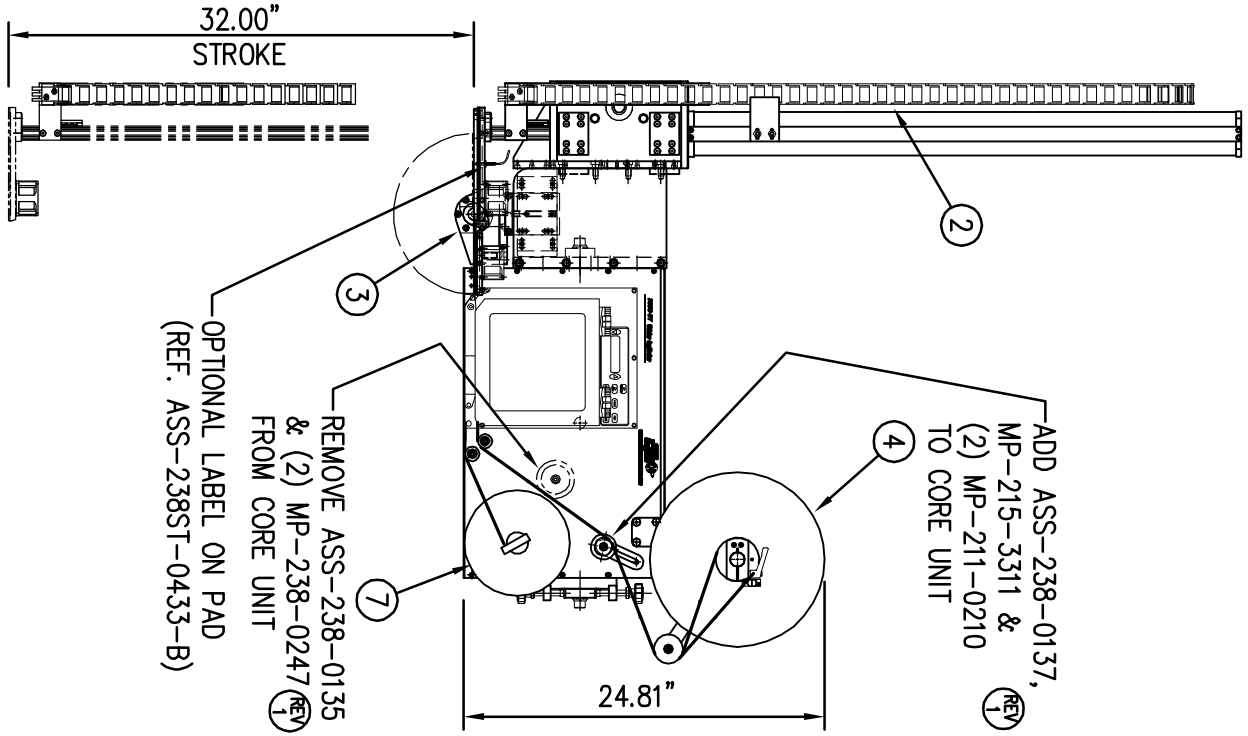
REV.	REV. DESCRIPTION	REV. DATE	F:\Engineering\Standard Parts\Applicator\3600AF\
1	ADDED CORE UNIT MODIFICATION NOTES, CHG'D U.W. PART #'s	12/10/13	3600-AF\CTM-238AFR-12S-12S-B-C/F-XX

CTM-238AFL-32S-12S-B-C/F-XX

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







BILL OF MATERIAL

CTM-238AFL-32S-12S-B-C/F-XX

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	ASS-238ST-0123L-B	LH 3600ST FAN STYLE APPLY CORE UNIT
②	1	ASS-238AF-0101L-32	32" LH SERVO TAMP NOSE ASSEMBLY
③	1	ASS-238AF-0102L-C	LH AUTO-FOLD LABEL ASS'Y w/ CONTOURED PAD
	1	ASS-238AF-0102L-F	LH AUTO-FOLD LABEL ASS'Y w/ FLAT PAD
④	1	MOD-238-0122L-2	UNWIND MODULE with 12" DISKS - LH
	1	MOD-238-0122AL-2	UNWIND MODULE with ALUMINUM DISK for "REELS UP" - LH
⑤	1	ASS-238AF-0104M	2 STATION MAC VALVE BANK ASS'Y
⑥	1	WAS-238-0130	U-ARM WELDMENT for 3600 APPLICATOR
⑦	1	ASS-238-0144-12	REWIND SPINDLE ASSEMBLY for 12" UNWIND
⑧	1	MP-238-0228	HOUSING COVER DEBURRED

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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-AF	N/A	SERVO TAMP AUTO FOLD	LH 3600 SERVO TAMP AUTO FOLD PRINTER/APP., 32" TAMP, 12" UNWIND & FAN STYLE APPLY	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	
1	ADDED CORE UNIT MODIFICATION NOTES, CHG'D U.W. PART #'s	12/10/13	TK	1=14	10/21/13	T. KELLY	F:\Engineering\Standard Parts\Applicator\3600AF\ 3600-AF\CTM-238AFL-32S-12S-B-C/F-XX

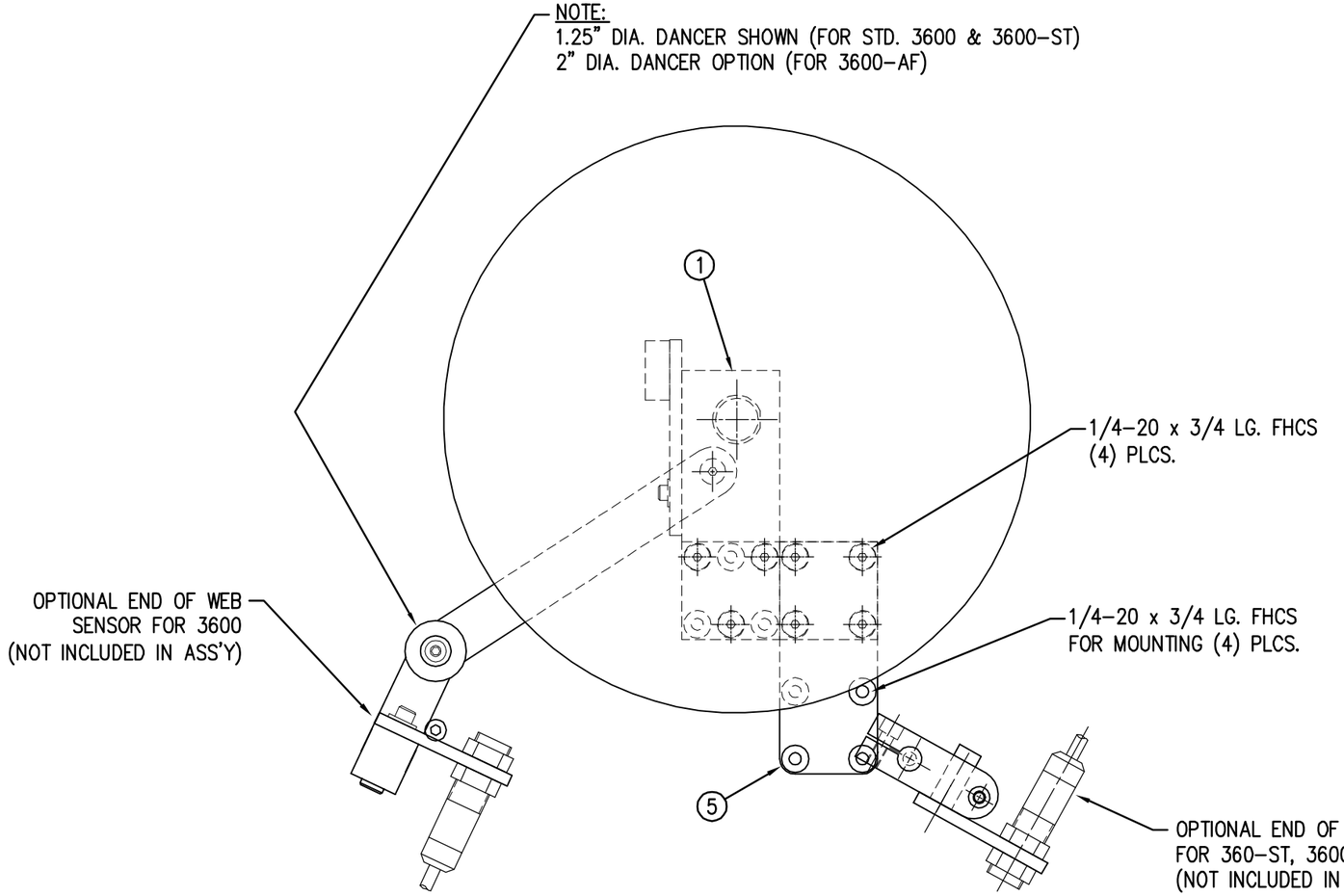
BILL OF MATERIAL

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.	

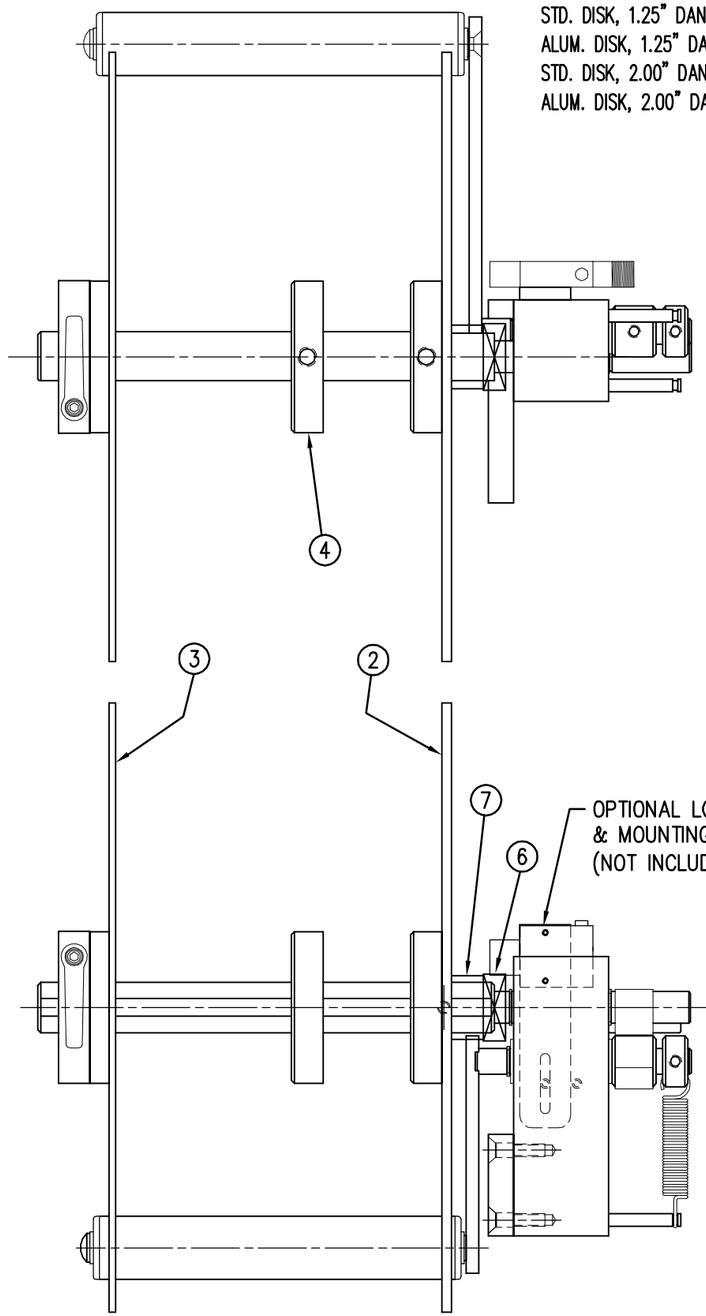
RH & LH ASSEMBLIES AVAILABLE
-RH ASSEMBLY SHOWN-

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



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



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APPLICATOR SERIES: 3600	APPLICATOR WIDTH(S): N/A	GROUP: UNWIND ASSEMBLY	TITLE: 12" UNWIND ASSEMBLY w/ UNWIND DISK MODULES		Dept. Code 70
REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale: 1=3	Date: 12/09/13
5	ADD EOW OPTION FOR 360-ST, 3600-ST & 3600-AF	02/06/14	TK		DRAWN BY: T. KELLY

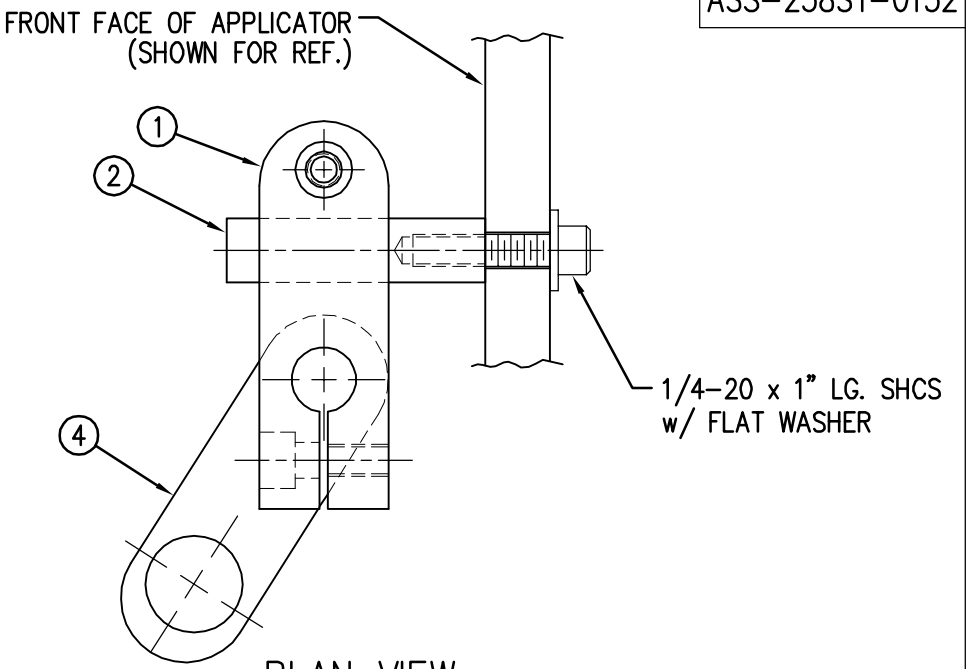
F:\Engineering\Standard Parts\Applicator\3600-AF\MOD-238-0122XRL\
3600-AF

ASS-238ST-0132

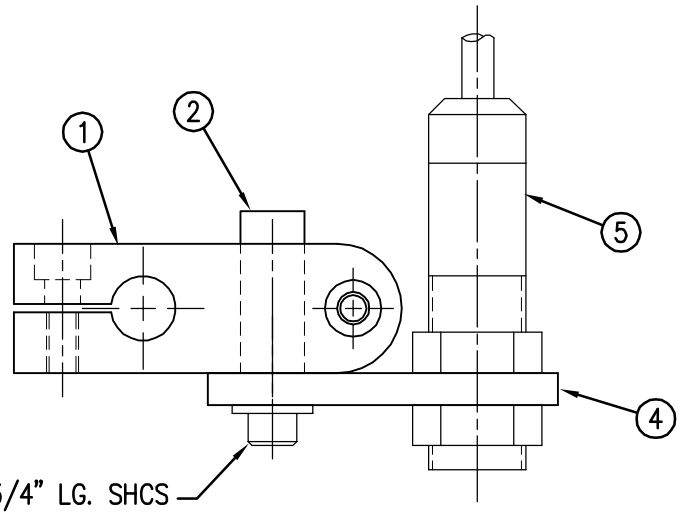
BILL OF MATERIAL

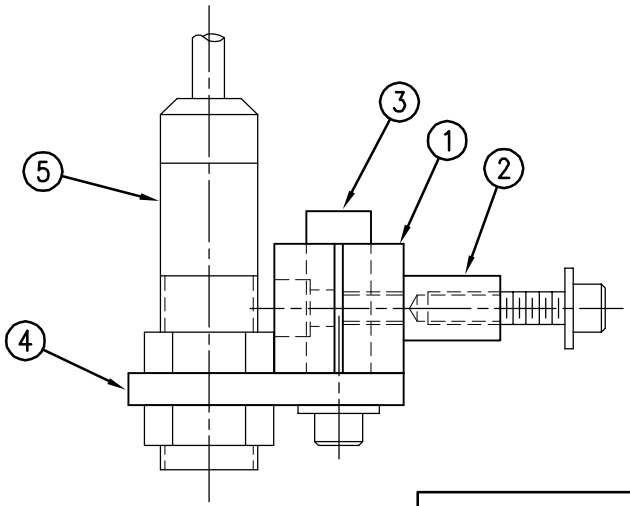
ASS-238ST-0132

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	MP-CL1010	3" LG. CLAMP BLOCK ~ LH
②	1	MP-PD2020-2	2" LG. SENSOR MOUNT SHAFT
③	1	MP-238-0279	END OF WEB MOUNTING SHAFT
④	1	MP-200-3303	3" SENSOR MOUNT for 18mm SENSOR
⑤	1	ASS-200-0423	END OF WEB SENSOR ASSEMBLY



PLAN VIEW





NOTE: SEND FASTENERS TO BOLT ASSEMBLY TO THE APPLICATOR IF FIELD KIT.

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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
360ST, 3600ST/AF	5.0"/7.5"	SERVO TAMP APPLICATOR: SENSORS	END OF WEB SENSOR ASSEMBLY w/ MOUNTING BRACKETRY	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\3600-ST
0	NEW RELEASE for 360-ST, 3600-ST & 3600-AF	02/06/14	TK	1=1	02/06/14	T. KELLY	3600-ST\ASS-238ST-0132

BILL OF MATERIAL

SAS-238-0122R/L-X

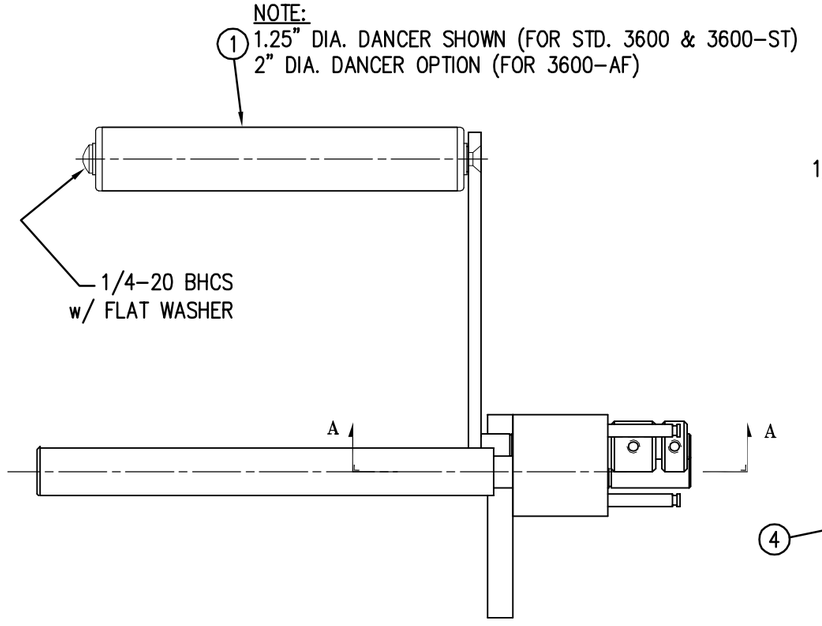
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION	
①	1	ASS-238-0137	1.25" DIA. DANCER ROLL	OMIT (3600 & 3600-ST)
	1	ASS-200-0131	2" DIA. DANCER ROLL	-2 (3600-AF)
②	1	ASS-238-0180	UNWIND BLOCK ASSEMBLY	
③	1	MP-238-0210	MOUNT ARM	
④	1	MP-238-0218	DANCER ARM	
⑤	1	MP-238-0219	UNWIND HUB SHAFT	
⑥	1	MP-238-0212	UNWIND STUD SHAFT	
⑦	2	PM-FASR1010	5/8" DIA. SNAP RING	
⑧	1	MP-238-0217	DANCER ARM SHAFT	
⑨	1	PM-FASR1005	1/2" DIA. SNAP RING	
⑩	1	MP-238-0215	INNER COLLAR	
⑪	1	MP-238-0216	OUTER HUB	
⑫	1	MP-238-0213	UNWIND BELT PIN	
⑬	1	MP-238-0214	UNWIND SPRING PIN	
⑭	1	PM-FASP30434	TENSION SPRING	
⑮	1	PM-FASP30500	SPRING ANCHOR	
⑯	1	PM-BB1030	BELT	

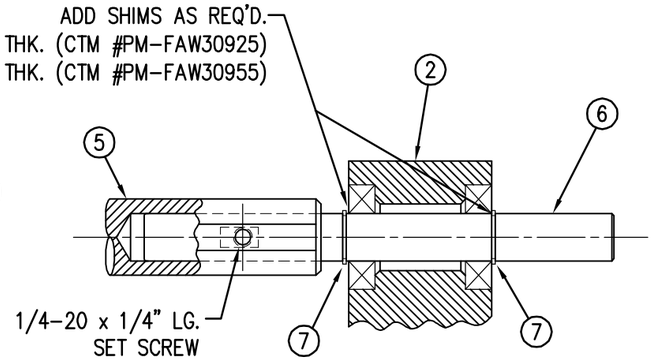
SAS-238-0122R/L-X

1.25" DIA. DANCER	-0122R/L
2.00" DIA. DANCER	-0122R/L-2

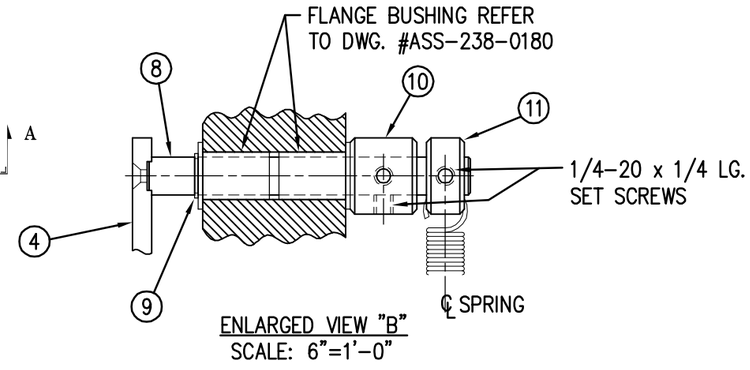
RH & LH ASSEMBLIES AVAILABLE
-RH ASSEMBLY SHOWN-

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

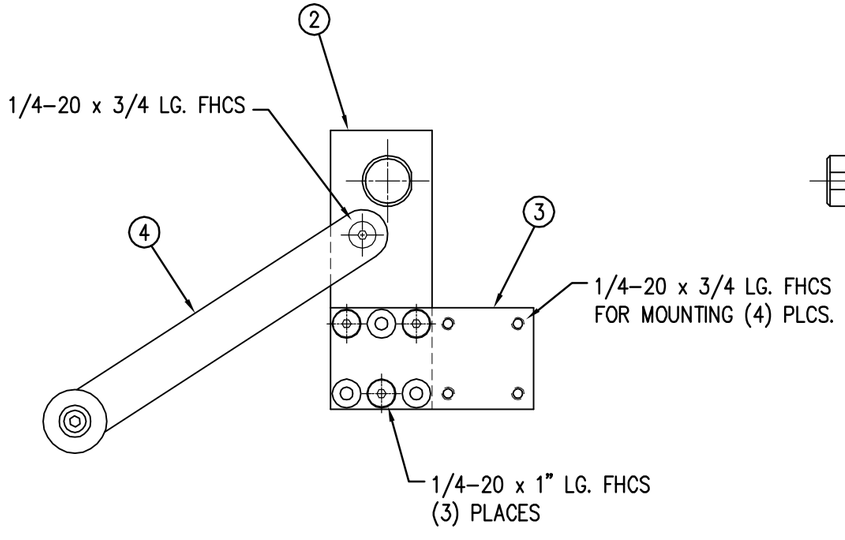


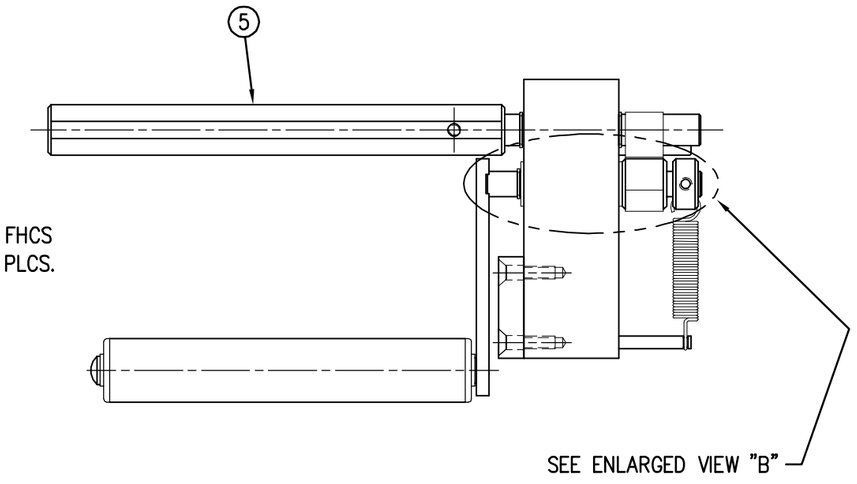


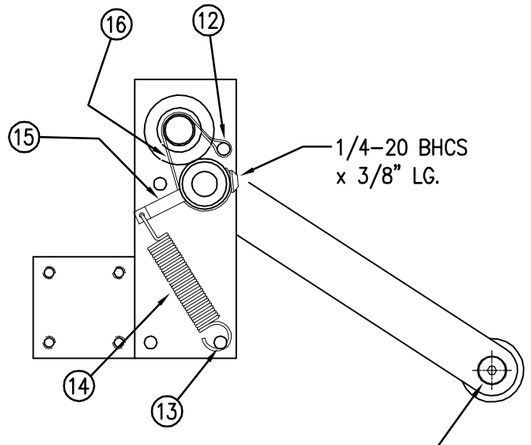
ENLARGED SECTIONAL VIEW "A-A"
SCALE: 6"=1'-0"



ENLARGED VIEW "B"
SCALE: 6"=1'-0"







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APPLICATOR SERIES: 3600
APPLICATOR WIDTH(S): 7.5"
GROUP: UNWIND
TITLE:

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:
1	ADD DANCER ROLL TABULATION FOR AUTO FOLD, UPDATED TITLEBLOCK	12/10/13	TK

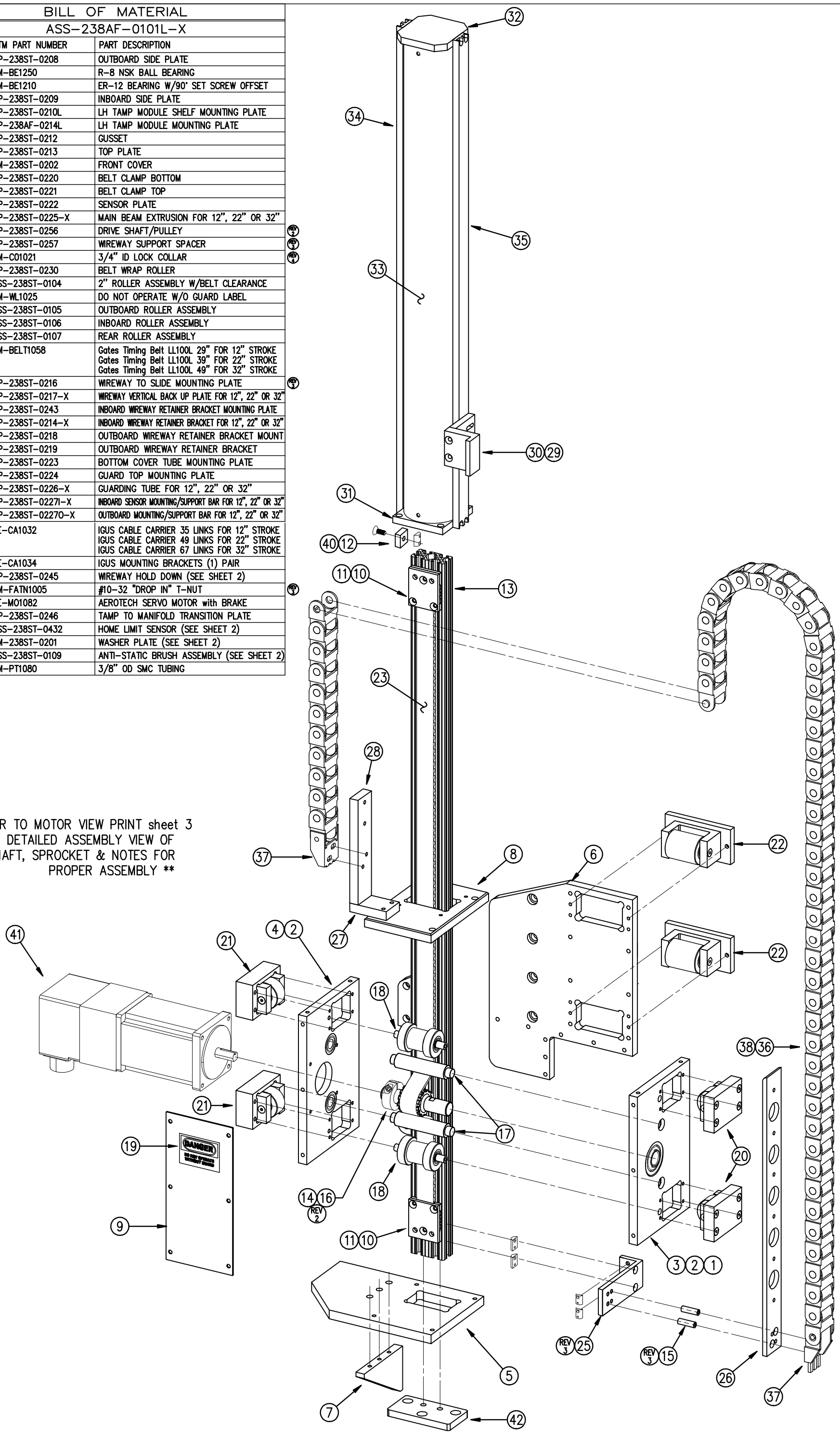
Scale: 1=3
Date: 12/09/13
DRAWN BY: T. KELLY
F:\Engineering\Standard Parts\Applicator\3600\3600\SAS-238-0122RL-X
Dept. Code 70

BILL OF MATERIAL

ASS-238AF-0101L-X

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	MP-238ST-0208	OUTBOARD SIDE PLATE
②	4	PM-BE1250	R-8 NSK BALL BEARING
③	1	PM-BE1210	ER-12 BEARING W/90° SET SCREW OFFSET
④	1	MP-238ST-0209	INBOARD SIDE PLATE
⑤	1	MP-238ST-0210L	LH TAMP MODULE SHELF MOUNTING PLATE
⑥	1	MP-238AF-0214L	LH TAMP MODULE MOUNTING PLATE
⑦	1	MP-238ST-0212	GUSSET
⑧	1	MP-238ST-0213	TOP PLATE
⑨	1	PM-238ST-0202	FRONT COVER
⑩	2	MP-238ST-0220	BELT CLAMP BOTTOM
⑪	2	MP-238ST-0221	BELT CLAMP TOP
⑫	1	MP-238ST-0222	SENSOR PLATE
⑬	1	MP-238ST-0225-X	MAIN BEAM EXTRUSION FOR 12", 22" OR 32"
⑭	1	MP-238ST-0256	DRIVE SHAFT/PULLEY (REV 2)
⑮	2	MP-238ST-0257	WIREWAY SUPPORT SPACER (REV 3)
⑯	1	PM-C01021	3/4" ID LOCK COLLAR (REV 4)
⑰	2	MP-238ST-0230	BELT WRAP ROLLER
⑱	2	ASS-238ST-0104	2" ROLLER ASSEMBLY W/BELT CLEARANCE
⑲	1	PM-WL1025	DO NOT OPERATE W/O GUARD LABEL
⑳	2	ASS-238ST-0105	OUTBOARD ROLLER ASSEMBLY
㉑	2	ASS-238ST-0106	INBOARD ROLLER ASSEMBLY
㉒	2	ASS-238ST-0107	REAR ROLLER ASSEMBLY
㉓	XX"	PM-BELT1058	Gates Timing Belt LL100L 29" FOR 12" STROKE Gates Timing Belt LL100L 39" FOR 22" STROKE Gates Timing Belt LL100L 49" FOR 32" STROKE
㉕	1	MP-238ST-0216	WIREWAY TO SLIDE MOUNTING PLATE (REV 3)
㉖	1	MP-238ST-0217-X	WIREWAY VERTICAL BACK UP PLATE FOR 12", 22" OR 32"
㉗	1	MP-238ST-0243	INBOARD WIREWAY RETAINER BRACKET MOUNTING PLATE
㉘	1	MP-238ST-0214-X	INBOARD WIREWAY RETAINER BRACKET FOR 12", 22" OR 32"
㉙	1	MP-238ST-0218	OUTBOARD WIREWAY RETAINER BRACKET MOUNT
㉚	1	MP-238ST-0219	OUTBOARD WIREWAY RETAINER BRACKET
㉛	1	MP-238ST-0223	BOTTOM COVER TUBE MOUNTING PLATE
㉜	1	MP-238ST-0224	GUARD TOP MOUNTING PLATE
㉝	1	MP-238ST-0226-X	GUARDING TUBE FOR 12", 22" OR 32"
㉞	1	MP-238ST-0227I-X	INBOARD SENSOR MOUNTING/SUPPORT BAR FOR 12", 22" OR 32"
㉟	1	MP-238ST-0227O-X	OUTBOARD MOUNTING/SUPPORT BAR FOR 12", 22" OR 32"
㊱	XX	PE-CA1032	IGUS CABLE CARRIER 35 LINKS FOR 12" STROKE IGUS CABLE CARRIER 49 LINKS FOR 22" STROKE IGUS CABLE CARRIER 67 LINKS FOR 32" STROKE
㊲	1	PE-CA1034	IGUS MOUNTING BRACKETS (1) PAIR
㊳	2	MP-238ST-0245	WIREWAY HOLD DOWN (SEE SHEET 2)
㊵	9	PM-FATN1005	#10-32 "DROP IN" T-NUT (REV 3)
㊶	1	PE-M01082	AEROTECH SERVO MOTOR with BRAKE
㊷	1	MP-238ST-0246	TAMP TO MANIFOLD TRANSITION PLATE
㊸	1	ASS-238ST-0432	HOME LIMIT SENSOR (SEE SHEET 2)
㊹	1	PM-238ST-0201	WASHER PLATE (SEE SHEET 2)
㊺	1	ASS-238ST-0109	ANTI-STATIC BRUSH ASSEMBLY (SEE SHEET 2)
○	96"	PM-PT1080	3/8" OD SMC TUBING

** REFER TO MOTOR VIEW PRINT sheet 3 FOR DETAILED ASSEMBLY VIEW OF SHAFT, SPROCKET & NOTES FOR PROPER ASSEMBLY **



ASS-238AF-0101L-Xs1

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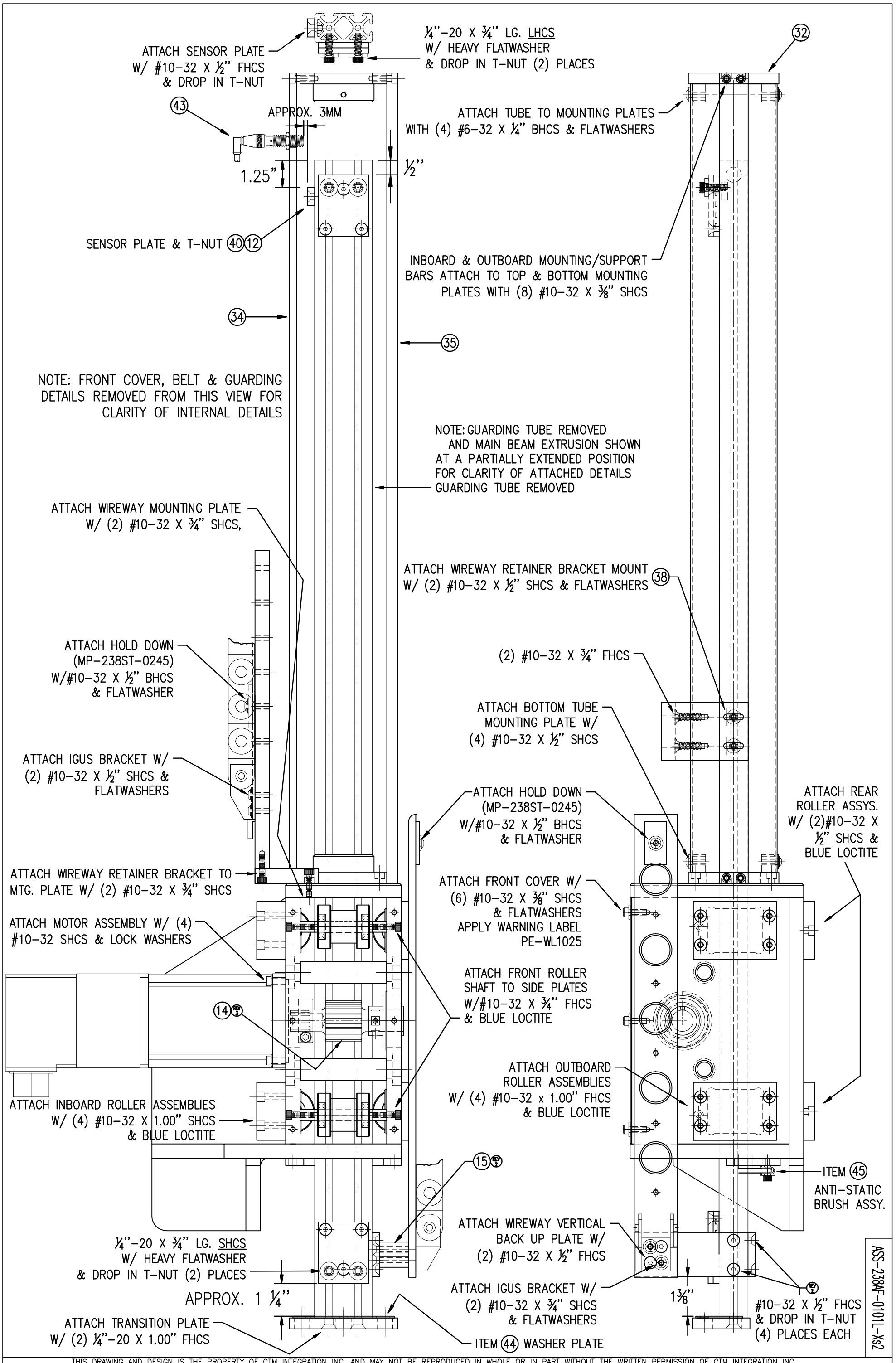
APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-AF	N/A	SERVO TAMP AUTO FOLD	LH 3600 SERVO TAMP ASSEMBLY FOR AUTO-FOLD SHEET 1	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	
4	ITM #16 WAS PM-C01020	9/11/14	KSM	NTS	10/21/13	T. KELLY	F:\Engineering\Standard Parts\Applicator\3600-AF\ASS-238AF-0101L-Xs1



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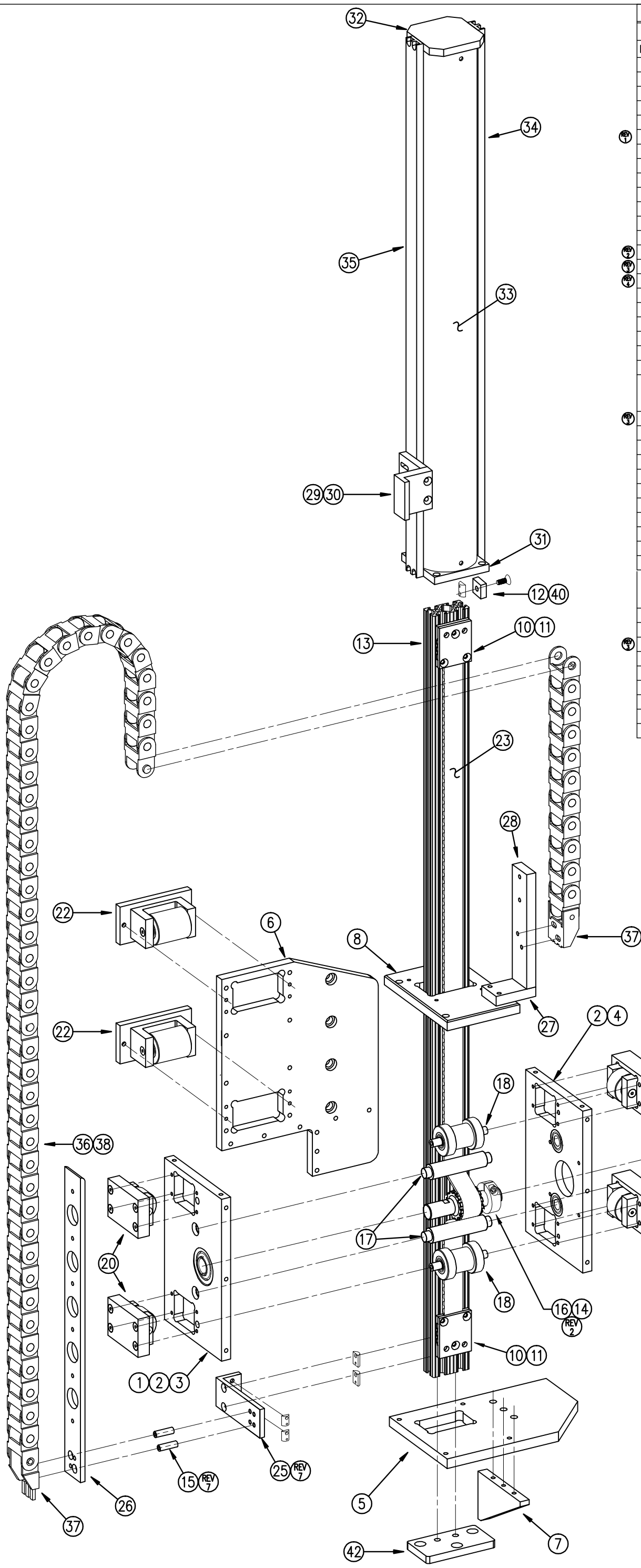
APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600–AF	N/A	SERVO TAMP AUTO FOLD	LH 3600 SERVO TAMP ASSEMBLY SHEET 2	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	
3	NEW ONE PIECE SHAFT & PULLEY MP–238ST–0257 REPLACES, MP–238ST–0244			1=3	10/21/13	T. KELLY	F:\Engineering\Standard Parts\Applicator\3600–AF\3600–AF\ASS–238AF–0101L–Xs2



BILL OF MATERIAL

ASS-238AF-0101R-X

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
1	1	MP-238ST-0208	OUTBOARD SIDE PLATE
2	4	PM-BE1250	R-8 NSK BALL BEARING
3	1	PM-BE1210	ER-12 BEARING W/90° SET SCREW OFFSET
4	1	MP-238ST-0209	INBOARD SIDE PLATE
5	1	MP-238ST-0210R	RH TAMP MODULE SHELF MOUNTING PLATE
REV 1 6	1	MP-238AF-0214R	RH TAMP MODULE MOUNTING PLATE
7	1	MP-238ST-0212	GUSSET
8	1	MP-238ST-0213	TOP PLATE
9	1	PM-238ST-0202	FRONT COVER
10	2	MP-238ST-0220	BELT CLAMP BOTTOM
11	2	MP-238ST-0221	BELT CLAMP TOP
12	1	MP-238ST-0222	SENSOR PLATE
13	1	MP-238ST-0225-X	MAIN BEAM EXTRUSION FOR 12", 22" OR 32"
REV 2 14	1	MP-238ST-0256	DRIVE SHAFT/PULLEY
REV 3 15	2	MP-238ST-0257	WIREWAY SUPPORT SPACER
REV 4 16	1	PM-C01021	3/4" ID LOCK COLLAR
17	2	MP-238ST-0230	BELT WRAP ROLLER
18	2	ASS-238ST-0104	2" ROLLER ASSEMBLY W/BELT CLEARANCE
19	1	PM-WL1025	DO NOT OPERATE W/O GUARD LABEL
20	2	ASS-238ST-0105	OUTBOARD ROLLER ASSEMBLY
21	2	ASS-238ST-0106	INBOARD ROLLER ASSEMBLY
22	2	ASS-238ST-0107	REAR ROLLER ASSEMBLY
23	XX"	PM-BELT1058	Gates Timing Belt LL100L 29" FOR 12" STROKE Gates Timing Belt LL100L 39" FOR 22" STROKE Gates Timing Belt LL100L 49" FOR 32" STROKE
REV 7 25	1	MP-238ST-0216	WIREWAY TO SLIDE MOUNTING PLATE
26	1	MP-238ST-0217-X	WIREWAY VERTICAL BACK UP PLATE FOR 12", 22" OR 32"
27	1	MP-238ST-0243	INBOARD WIREWAY RETAINER BRACKET MOUNTING PLATE
28	1	MP-238ST-0214-X	INBOARD WIREWAY RETAINER BRACKET FOR 12", 22" OR 32"
29	1	MP-238ST-0218	OUTBOARD WIREWAY RETAINER BRACKET MOUNT
30	1	MP-238ST-0219	OUTBOARD WIREWAY RETAINER BRACKET
31	1	MP-238ST-0223	BOTTOM COVER TUBE MOUNTING PLATE
32	1	MP-238ST-0224	GUARD TOP MOUNTING PLATE
33	1	MP-238ST-0226-X	GUARDING TUBE FOR 12", 22" OR 32"
34	1	MP-238ST-0227I-X	INBOARD SENSOR MOUNTING/SUPPORT BAR FOR 12", 22" OR 32"
35	1	MP-238ST-0227O-X	OUTBOARD MOUNTING/SUPPORT BAR FOR 12", 22" OR 32"
36	XX	PE-CA1032	IGUS CABLE CARRIER 35 LINKS FOR 12" STROKE IGUS CABLE CARRIER 49 LINKS FOR 22" STROKE IGUS CABLE CARRIER 67 LINKS FOR 32" STROKE
37	1	PE-CA1034	IGUS MOUNTING BRACKETS (1) PAIR
38	2	MP-238ST-0245	WIREWAY HOLD DOWN (SEE SHEET 2)
REV 4 40	9	PM-FATN1005	#10-32 "DROP IN" T-NUT
41	1	PE-M01082	AEROTECH SERVO MOTOR with BRAKE
42	1	MP-238ST-0246	TAMP TO MANIFOLD TRANSITION PLATE
43	1	ASS-238ST-0432	HOME LIMIT SENSOR (SEE SHEET 2)
44	1	PM-238ST-0201	WASHER PLATE (SEE SHEET 2)
45	1	ASS-238ST-0109	ANTI-STATIC BRUSH ASSEMBLY (SEE SHEET 2)
○	96"	PM-PT1080	3/8" OD SMC TUBING

** REFER TO MOTOR VIEW PRINT sheet 3 FOR DETAILED ASSEMBLY VIEW OF SHAFT, SPROCKET & NOTES FOR PROPER ASSEMBLY **

ASS-238AF-0101R-Xs1

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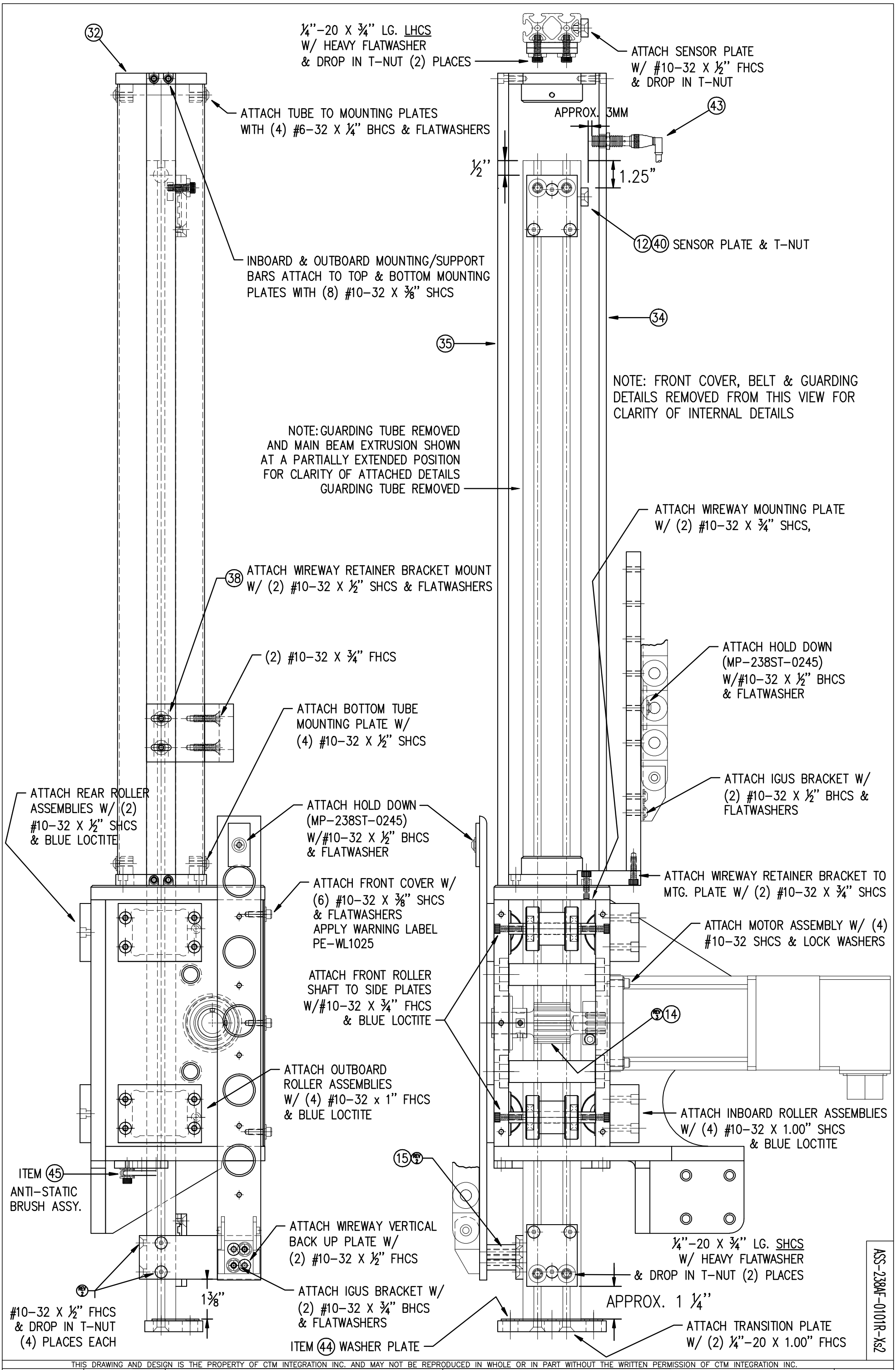
APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-AF	N/A	SERVO TAMP AUTO FOLD	RH 3600 SERVO TAMP ASSEMBLY FOR AUTO-FOLD sheet 1	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	
4	ITM #16 WAS PM-C01020	9/11/14	KSM	NTS	10/21/13	T. KELLY	F:\Engineering\Standard Parts\Applicator\3600-AF\3600-AF\ASS-238AF-0101R-Xs1



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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600–AF	N/A	SERVO TAMP AUTO FOLD	RH 3600 SERVO TAMP ASSEMBLY SHEET 2	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	
3	NEW ONE PIECE SHAFT & PULLEY MP–238ST–0257 REPLACES, MP–238ST–0244			1=3	10/21/13	T. KELLY	F:\Engineering\Standard Parts\Applicator\3600–AF\3600–AF\ASS–238AF–0101R–Xs2

ASS-238ST-0101s3

VIEW PRINT

REV 8
NEW MOTOR KEY DIMENSIONS
⅛"(W) X 3⁄16"HIGH X ½" LG.

REV 2 REV 3 REV 4
SECTION BB
ENLARGED 1.5X

REV 9
KEY NOW OPPOSITE LOCK COLLAR SCREW

REV 11
PM-C01021
LOCK COLLAR

REV 7
MP-238ST-0256
DRIVE SHAFT

MOTOR SHAFT

REV 9
FEELER GAUGE LOCK COLLAR GAP
.010" OR LESS REQUIRED

REV 2 REV 3 REV 4
B

B

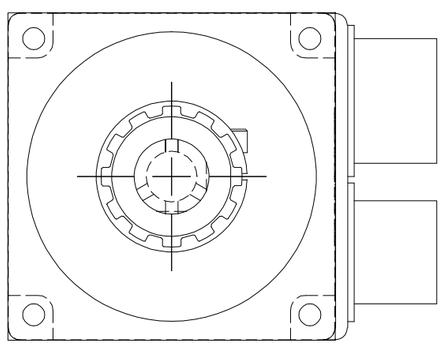
IMPORTANT NOTE: ORIENT THE LOCK COLLAR
THIS WAY FOR TORQUE CHECK SLOT
TORQUE LOCK COLLAR SHCS TO 100in/lbs
REV 8 REV 9

.063"

NOTE: USE A .063" THICK SPACER TO SET A CONSISTENT
GAP BETWEEN THE SHAFT AND THE MOTOR FLANGE FACE.

REPLACE LOCK COLLAR SHCS w/ ¼"-28 x ¾" LG. BLK. SHCS (PM-FASH30690HC)
ADD ¼" HIGH LOCKWASHER (PM-FAW30690HC) TO ABOVE MENTIONED SHCS
BLUE LOCTITE THE SCREW THREADS REV 8 REV 9

COAT MOTOR SHAFT WITH C5-A ANTI-SEIZE LUBRICANT BEFORE ASSEMBLING DRIVE SHAFT ONTO IT.



REV 2 REV 3 REV 4 REV 11
LOCK COLLAR (PM-C01021)
THE ASSEMBLER IS TO INSTALL THE LOCK COLLAR SO THAT
IT IS EVEN WITH THE END OF THE DRIVE SHAFT AND ROTATED
IN POSITION TO CORRESPOND WITH SECTION BB

SERVO MOTOR & BRAKE

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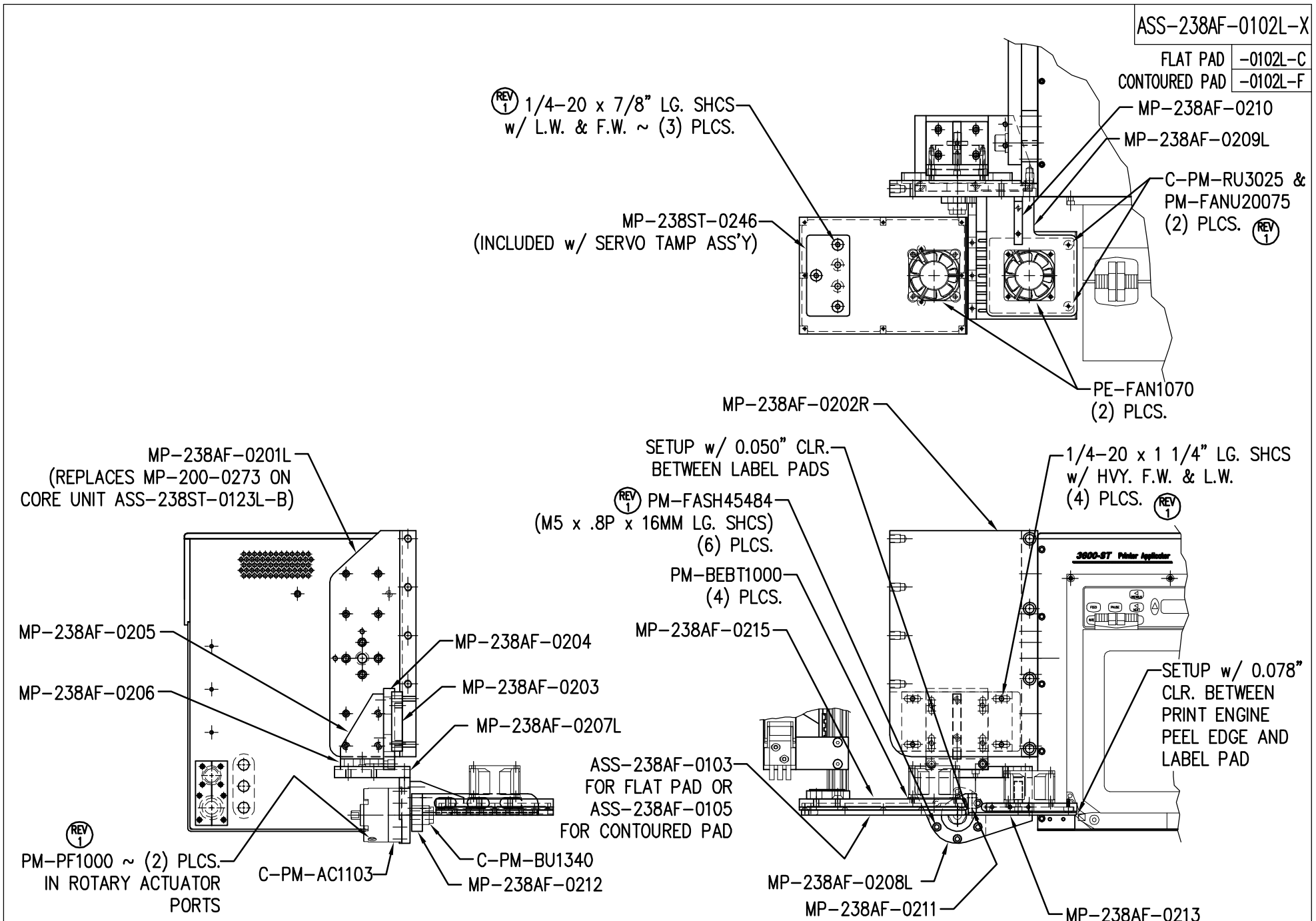
APPLICATOR SERIES: 3600-ST	APPLICATOR WIDTH(S): N/A	GROUP: SERVO TAMP	TITLE: 3600 SERVO TAMP ASSEMBLY SHEET 3 MOTOR AND SHAFT DETAIL		Dept. Code 70
REV: 11	REV. DESCRIPTION: PM-C01021 was PM-C01020	REV. DATE: 9/11/14	REV. BY: KSM	Scale: NTS	Date: 04/09/2012
				DRAWN BY: ERIC SANOR	F:\Engineering\Standard Parts\Applicator\3600-ST\ASS-238ST-0101s3

ASS-238AF-0102L-X

FLAT PAD	-0102L-C
CONTOURED PAD	-0102L-F



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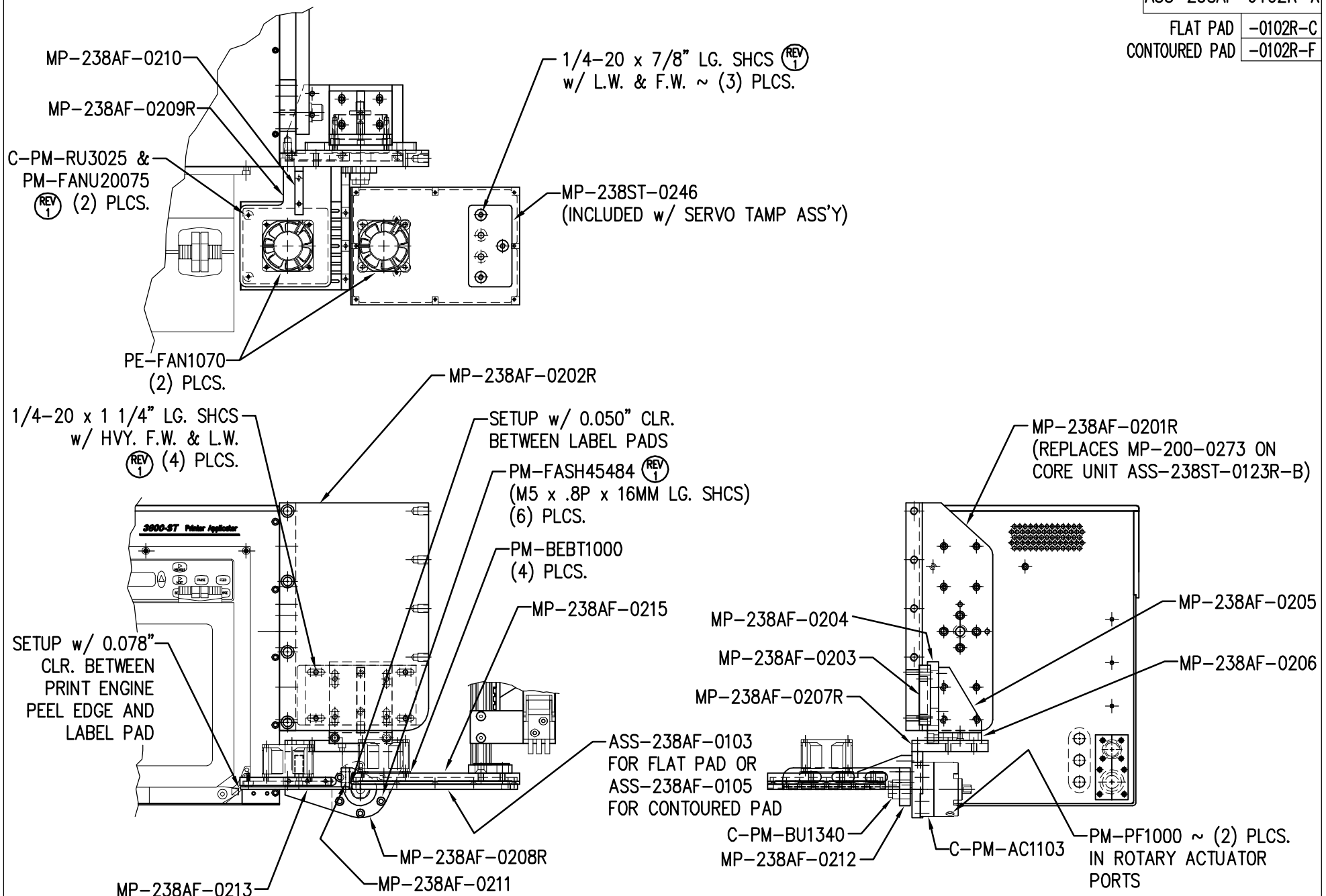
APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-AF	N/A	SERVO TAMP AUTO FOLD	AUTO FOLD LABEL PAD ASSEMBLY ~ LH	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\3600-AF
1	CHG'D FLOW CTRLS TO TUBE FTGS., ADD PAD & BOLT NOTES	12/06/13	TK	1=6	10/17/13	T. KELLY	3600-AF\ASS-238AF-0102L-X

ASS-238AF-0102R-X

FLAT PAD	-0102R-C
CONTOURED PAD	-0102R-F



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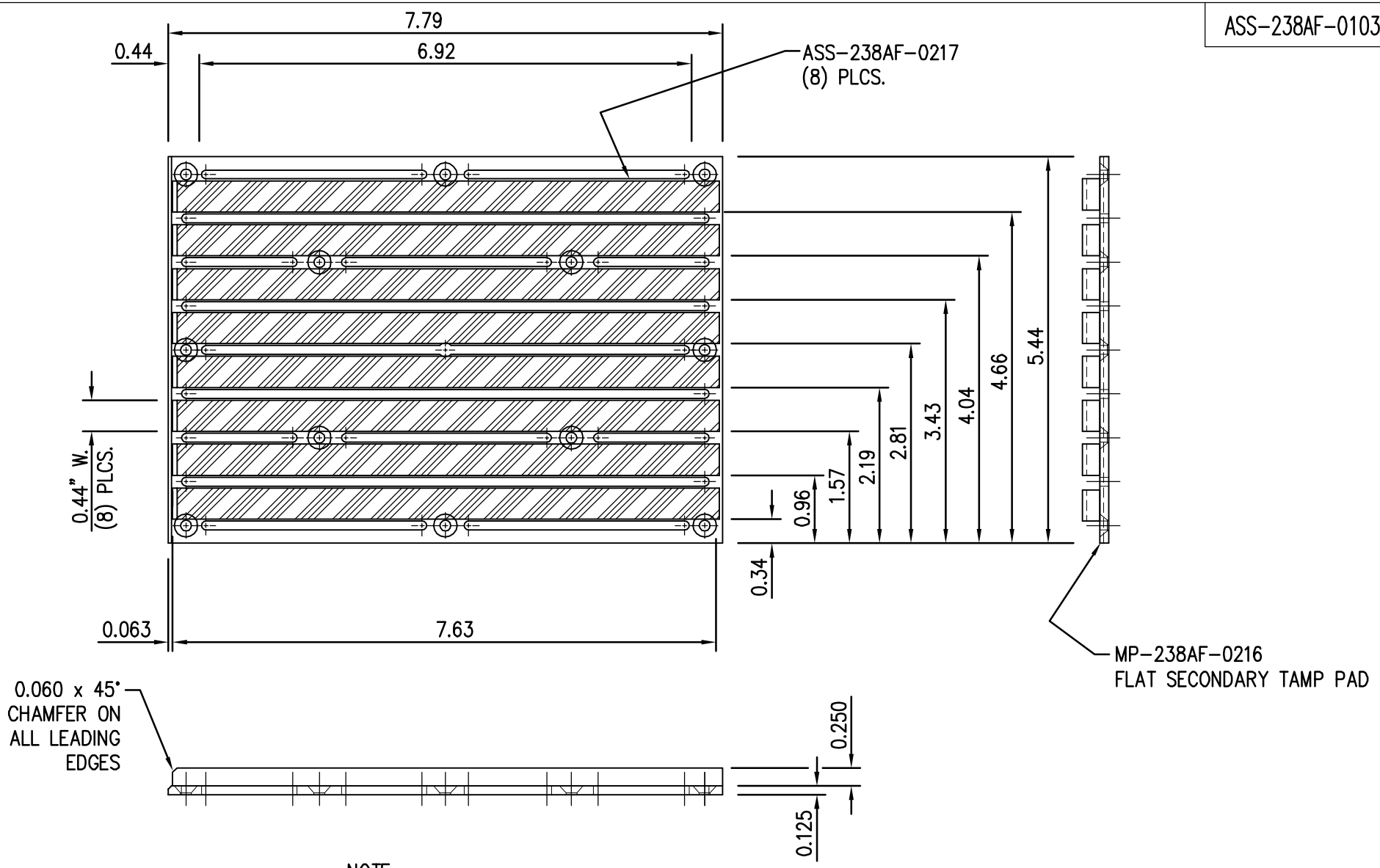
APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-AF	N/A	SERVO TAMP AUTO FOLD	AUTO FOLD LABEL PAD ASSEMBLY ~ RH	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\3600-AF
1	CHG'D FLOW CTRLS TO TUBE FTGS., ADD PAD & BOLT NOTES	12/06/13	TK	1=6	10/17/13	T. KELLY	3600-AF\ASS-238AF-0102R-X

ASS-238AF-0103



NOTE:

1.) ATTACH FOAM STRIPS TO SECONDARY TAMP PAD MP-238AF-0216 AS SHOWN w/ 0.06 x 45° CHAMFERS ON LEADING EDGE

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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-AF	N/A	SERVO TAMP AUTO FOLD	FLAT SECONDARY TAMP PAD FOAM STRIP ASSEMBLY	70

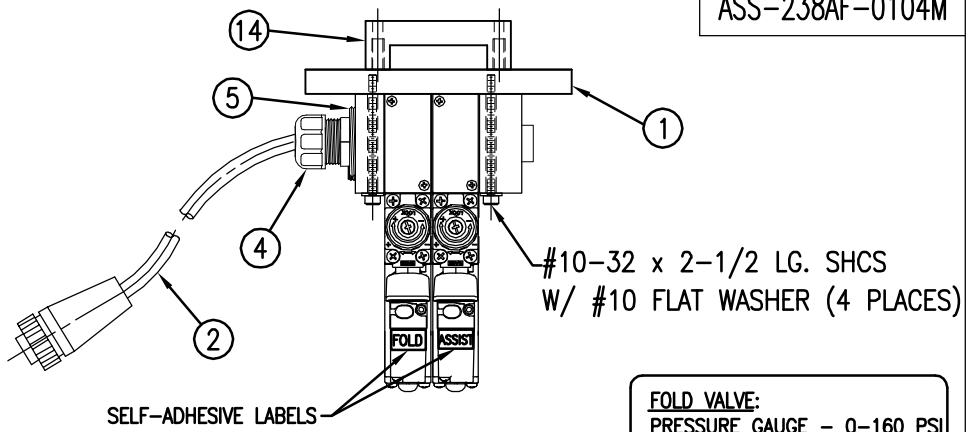
REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\3600-AF
0	–	–	xxx	1=2	10/28/13	T. KELLY	3600-AF\ASS-238AF-0103

BILL OF MATERIAL

ASS-238AF-0104M

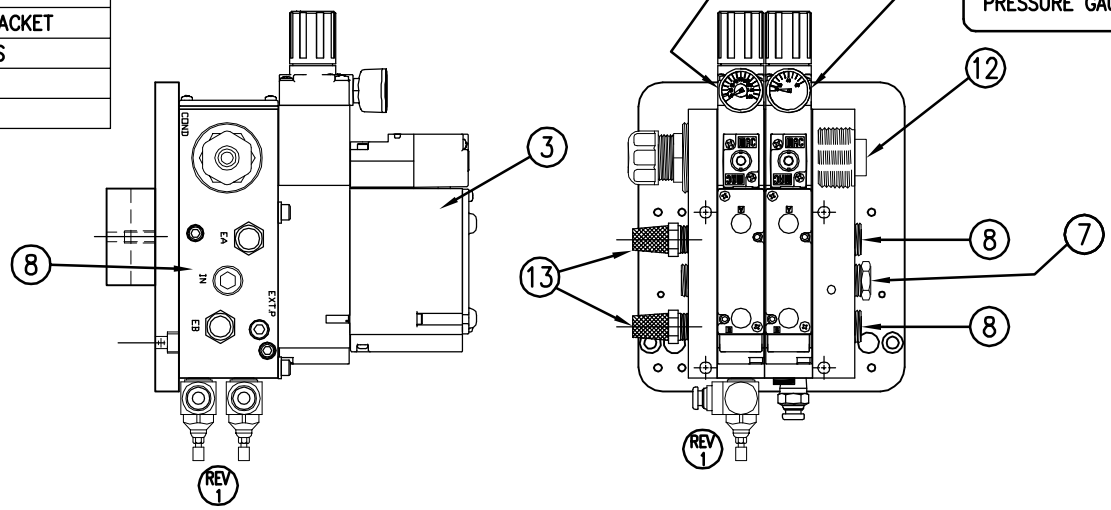
ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	MP-214-0206	VALVE MOUNTING PLATE
②	1	ASS-200-0452M	VALVE CABLE
③	1	PM-VA2358M	2 STATION MAC VALVE BANK
④	1	PE-CO2000	CORD GRIP
⑤	1	PE-COND1084	STEEL REDUCER
⑥	1	PM-FT1200	1/4" NPT PLUG
⑦	1	PM-PF1110	BUSHING, 1/4" NPT FEMALE TO 3/8" NPT MALE
⑧	4	PM-PF1167	3/8" NPT SOCKET HEAD PLUG
⑨	1	PM-PF1010	FITTING, 1/4" TUBE w/ 1/4" NPT STRT
⑩	2	PM-PF2070	FLOW CONTROL, 1/4" TUBE, 1/4" NPT MALE
⑪	1	ASS-214-0106	AIR FILTER ASSEMBLY
⑫	1	PE-EN9125	1 1/4" BLACK PLASTIC THREADED PLUG
⑬	2	PM-MU1027	MUFFLER
⑭	1	MP-200-0285	DISPLAY UNIT (U-ARM) MOUNT BRACKET
◯	2	PM-FASH430078	1/4"-20 UNC x 3/4" LG. SS SHCS
◯	4	PM-FASH429088	10-32 X 2 1/2" LG. SS SHCS
◯	4	PM-FAW30265	#10 SS FLAT WASHER

ASS-238AF-0104M



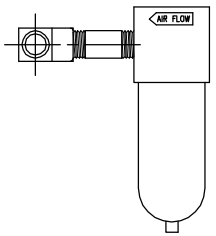
REV 1

FOLD VALVE:
PRESSURE GAUGE - 0-160 PSI
AIR ASSIST VALVE:
PRESSURE GAUGE - 0-60 PSI

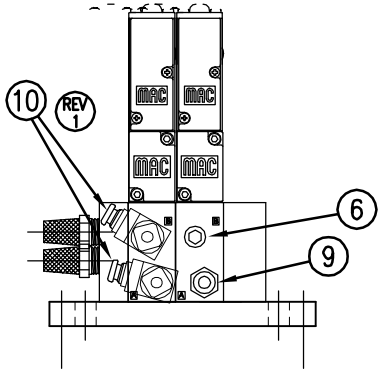


VALVE BANK SPARE PARTS:

SOLENOID: #PM-VA2395M
AIR ASSIST REGULATOR W/GUAGE: #PM-VA2396M
BLOW/TAMP/IMPRINTER REGULATORS W/GUAGE: #PM-VA2397M
AIR ASSIST REGULATOR GUAGE: #PM-VA2382M
BLOW/TAMP/IMPRINTER REGULATOR GUAGES: #PM-VA2380M



⑪ AIR FILTER
SHIP LOOSE
-CUSTOMER TO INSTALL -



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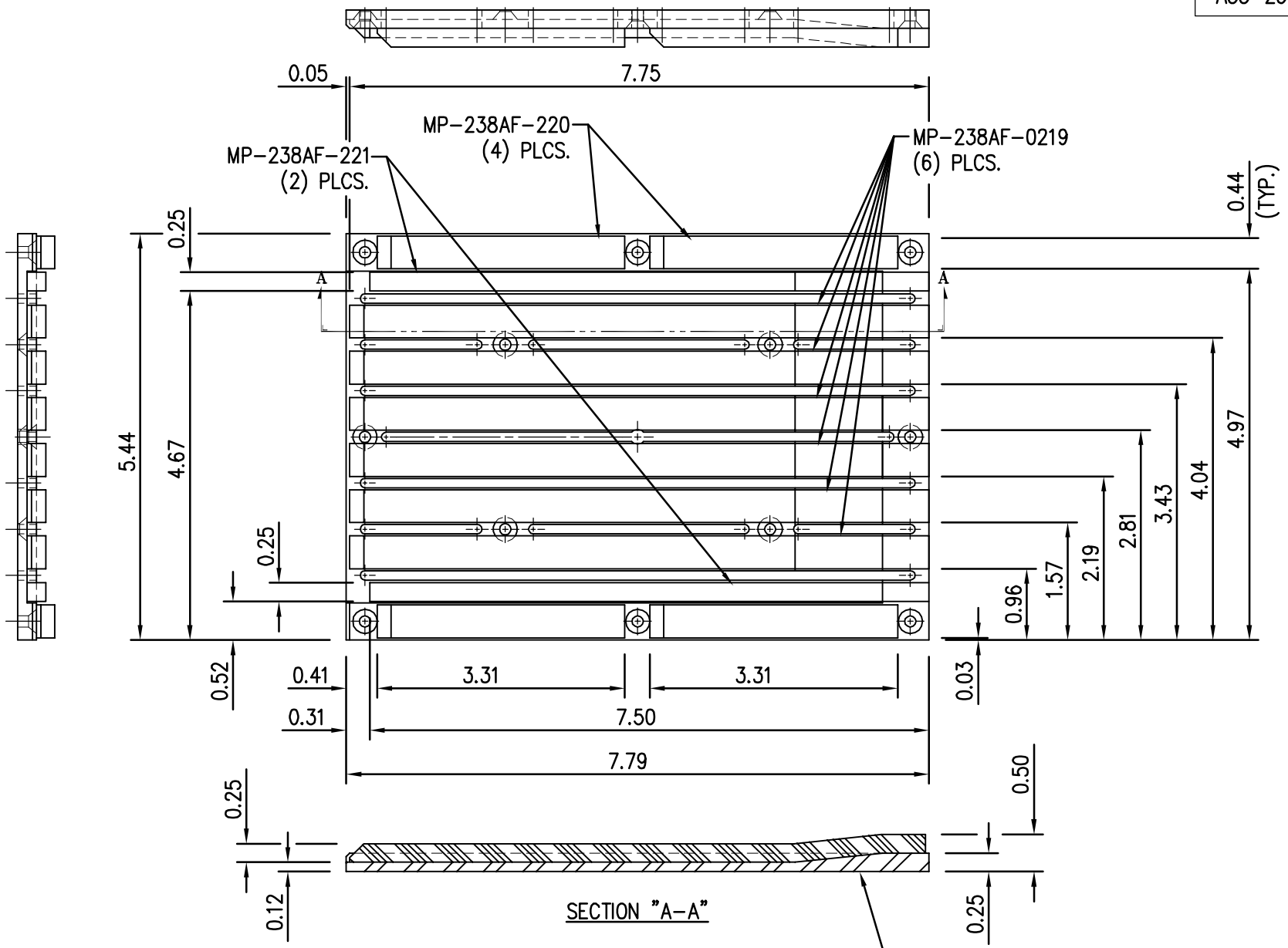
APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-AF	N/A	SERVO TAMP AUTO FOLD	AUTO FOLD 2 STATION VALVE BANK ASSEMBLY with FILTER	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\3600-AF
1	ITEM #10 was PM-PF1020 TUBE FTGS.	12/04/13	TK	1=4	10/28/13	T. KELLY	3600-AF\ASS-238AF-0104M

ASS-238AF-0105



NOTE:

1.) ATTACH FOAM STRIPS TO SECONDARY TAMP PAD MP-238AF-0218 AS SHOWN w/ CHAMFERS TOWARDS LEADING EDGE

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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-AF	N/A	SERVO TAMP AUTO FOLD	CONTOURED SECONDARY TAMP PAD FOAM STRIP ASSEMBLY	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\3600-AF
0	-	-	xxx	1=2	12/10/13	T. KELLY	3600-AF\ASS-238AF-0105

ASS-238AF-0401

10 AMP
IEC CONNECTOR AND FILTER
COOLING FAN
GRN
WHT
BLK
24 VDC POWER SUPPLY

MOTOR CABLE (ASS-238ST-0406)
GRN
BLK
RED
WHT
TB102
GRD
A
B
C
AC POWER
SERVO MOTOR (C-PE-M01082)

FEEDBACK CABLE (ASS-238ST-0405)

J	1	1	SHIELD
H	3	3	ENC 5V
M	5	5	HB
F	6	6	MKR–
E	7	7	MKR+
K	10	10	HA
P	11	11	HC
T	13	13	BRK–
A	14	14	COS+
B	15	15	COS–
C	17	17	SIN+
D	18	18	SIN–
G	21	21	ENC COM
S	25	25	BRK+
14 YEL	12	12	CW LMT
13 PINK	20	20	COM LMT
16 GRY	22	22	HOME LMT
15 PUR	24	24	CCW LMT

J103 FEEDBACK

7 W/BRN	4	4	PD SIGNAL (din 0,4)
8 W/BLU	17	17	LOW LBL (din 0,0)
9 W/YEL	18	18	END OF WEB (din 0,1)
10 W/BLK	25	25	JOG (din 0,2)
11 W/GRN	26	26	INHIBIT (din 0,3)
12 W/GRY	6	6	LBL ON PAD IN (din 0,5)
37 YEL	7	7	FOLD VALVE (dout 0,0)
38 GRY	8	8	BLOW VALVE (dout 0,1)
39 PUR	9	9	ASSIST VALVE (dout 0,2)
40 ORG	16	16	REWIND MOTOR (dout 0,3)
19 YEL/GRN	13	13	ANALOG IN (+)
20 W/ORG	22	22	ANALOG OUT
21 PINK	1	1	A+ CHANNEL
22 W/PUR	2	2	A– CHANNEL
23 GRN	10	10	B+ CHANNEL
24 W/RED	11	11	B– CHANNEL
25 RED	12	12	5 VDC
BRN	5	5	24 VDC
BRN	3	3	24 VDC
BLU	23	23	0 VDC
BLU	21	21	0 VDC
BLU	15	15	OUTPUT COM
BLU	14	14	ANALOG IN (–)
BRN	24	24	INPUT COM

J104 PRIMARY I/O

AUX POWER
GRD AC2 AC1

PRODUCT DETECT (C4 CON): BRN, BLU, WHT
LOW LABEL (C5 CON): BRN, BLU, GRY
END OF WEB (C6 CON): BRN, BLU, WHT

VALVE (C9 CON)
VALVE BANK
PE-RE1013 (2)
FOLD, BLOW, ASSIST

PE-238-0429 WIRING HARNESS
PE-RE1063 RWND
ORG, BLK
TB102-AC1
WHT
TB102-AC2
CAP
P2
ENCODER (C7 CON)
twist
PINK, W/PUR, GRN, W/RED, RED, BLU
M1
REWIND MOTOR (ASS-238-0428)

TB202

24 VDC	1	1	BRN
0 VDC	2	2	BLU
SYSTEM READY	3	3	YEL/GRN 48
WARNING ALARM	4	4	PINK 49
CRITICAL ALARM	5	5	RED 50
PRINT START	6	6	ORG 36
TAMP HOME	7	7	YEL 47
LBL ON PAD	8	8	PUR 46
REISSUE	9	9	GRY 45
INVERT READY	10	10	

TB203

24 VDC	1	1	
0 VDC	2	2	
VACUUM FAN	3	3	
(7) SPARE OUTPUTS			
	10	10	

TB204

24 VDC	1	1	BRN
TAMP RETURN	2	2	W/RED 17
REWIND PROX	3	3	W/ORG 18
PRINTER READY	4	4	W/BRN 30
PRINT END	5	5	W/PUR 31
LOW RIBBON	6	6	W/GRY 32
NO MEDIA	7	7	W/YEL 33
BAD READ	8	8	W/GRN 34
SPARE INPUT	9	9	W/BLU 35
	10	10	

ASS-238-0406x: B, P, G, Y

TB205

24 VDC	1	1	BRN
REMOTE RESET	2	2	
E-STOP	3	3	W/ORG 41
(6) SPARE INPUTS			
5 VDC	10	10	

TB103

RS-232 TXD	2	2	WHT
RS-232 RXD	3	3	RED
SIGNAL COM	4	4	BLK
(–) BRAKE INPUT	5	5	BLU
(+) BRAKE INPUT	6	6	BRN

ALARM (C8 CON)
GRN 7 GRD
BRN 3 24 VDC
YEL/GRN 4 READY
PINK 5 WARNING
RED 6 CRITICAL

PRINT ENGINE

I/O (C2 CON)
BLU 1 0 VDC
BRN 2 24 VDC
48 YEL/GRN 3 READY SIGNAL
49 PINK 4 WARNING ALARM
50 RED 5 CRITICAL ALARM
47 YEL 7 TAMP HOME
46 PUR 8 LABEL ON PAD
38 GRY 9 BLOW VALVE
39 PUR 10 ASSIST VALVE
7 W/BRN 11 PD SIGNAL
11 W/GRN 12 INHIBIT
14 (REV 3)
41 W/ORG 15 E-STOP

FOR VACUUM FAN
PE-RE1063
BLU 3 BLK
BRN 1 RED
YEL 44 WHT 2 BRN
10K 25
FAN

IF NEEDED (REV 02)
BLU
BRN
BLK
REWIND PROX

HEIGHT (C3 CON)
BRN 1
19 YEL/GRN 5
BLU 3
BLK 4
GRD BAR
(REV 01)

DISPLAY (C1 CON)
BLU 9
BRN 7
RED 2
WHT 3
BLK 5

(XX) –TB2 TERMINALS

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

(XX) –TB1 TERMINALS

TB1-1	24 VDC	TB1-26	24 VDC
TB1-2	24 VDC	TB1-27	24 VDC
TB1-3	24 VDC	TB1-28	0 VDC
TB1-4	0 VDC	TB1-29	0 VDC
TB1-5	0 VDC	TB1-30	PRINTER READY
TB1-6	0 VDC	TB1-31	PRINT END
TB1-7	PD SIGNAL	TB1-32	LOW RIBBON
TB1-8	LOW LABEL	TB1-33	NO MEDIA
TB1-9	END OF WEB	TB1-34	BAD READ
TB1-10	JOG	TB1-35	SPARE INPUT
TB1-11	INHIBIT/EXTERNAL PRINT	TB1-36	PRINT START
TB1-12	LABEL ON PAD INPUT	TB1-37	FLIP VALVE
TB1-13	LIMIT COM	TB1-38	BLOW VALVE
TB1-14	CW LIMIT	TB1-39	ASSIST VALVE
TB1-15	CCW LIMIT	TB1-40	REWIND MOTOR
TB1-16	HOME PROX (NOT USED)	TB1-41	ESTOP INPUT
TB1-17	TAMP RETURN	TB1-42	N/C
TB1-18	REWIND ON INPUT	TB1-43	N/C
TB1-19	ANALOG INPUT	TB1-44	HIGH FAN
TB1-20	ANALOG OUTPUT	TB1-45	REISSUE OUTPUT
TB1-21	(A+) CHANNEL	TB1-46	LABEL ON PAD OUTPUT
TB1-22	(A–) CHANNEL	TB1-47	TAMP HOME
TB1-23	(B+) CHANNEL	TB1-48	READY SIGNAL
TB1-24	(B–) CHANNEL	TB1-49	WARNING SIGNAL
TB1-25	5 VDC	TB1-50	CRITICAL SIGNAL

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TITLE: 3600-AF SERVO TAMP AUTO FOLD PRINTER/APPLICATOR
PART: GENERAL SCHEMATICS FOR 3600 SERVO TAMP AUTO FOLD

REV.	REV. DESCRIPTION	REV. BY:	REV. DATE
1	REMOVED INVERT READY FROM I/O (PER MARK-UP FROM GARY D.)	TK	12/06/13

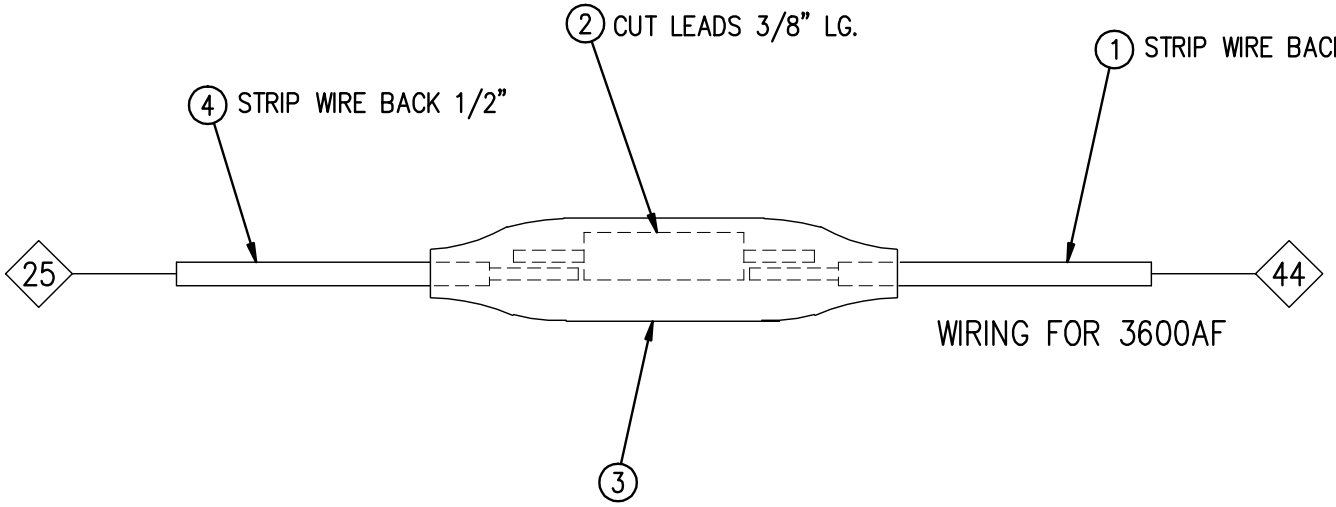
Dept. Code	Scale:	DRAWN BY:	Date:	F:\Engineering\Standard Parts\Applicator\360
70		DKM/TK	10/22/13	3600-AF\ASS-238AF-0401

ASS-238AF-0410

BILL OF MATERIAL

ASS-238AF-0410

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PE-W1035	YEL WIRE (AWG 22) x 2.50" LG.
②	1	PE-RES1040	10k OHM RESISTOR
③	1	PE-ST1000	3/32" x 1.63" LG. SHRINK TUBE
④	1	PE-W1033	RED WIRE (AWG 22) x 2-1/4" LG.



WIRING FOR 3600AF

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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600AF	5"/7.5"/10"	ELECTRICAL	PULL-UP RESISTOR	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\3600AF\
				1=1	11/08/13	DLM	238AF\ASS-238AF-0410

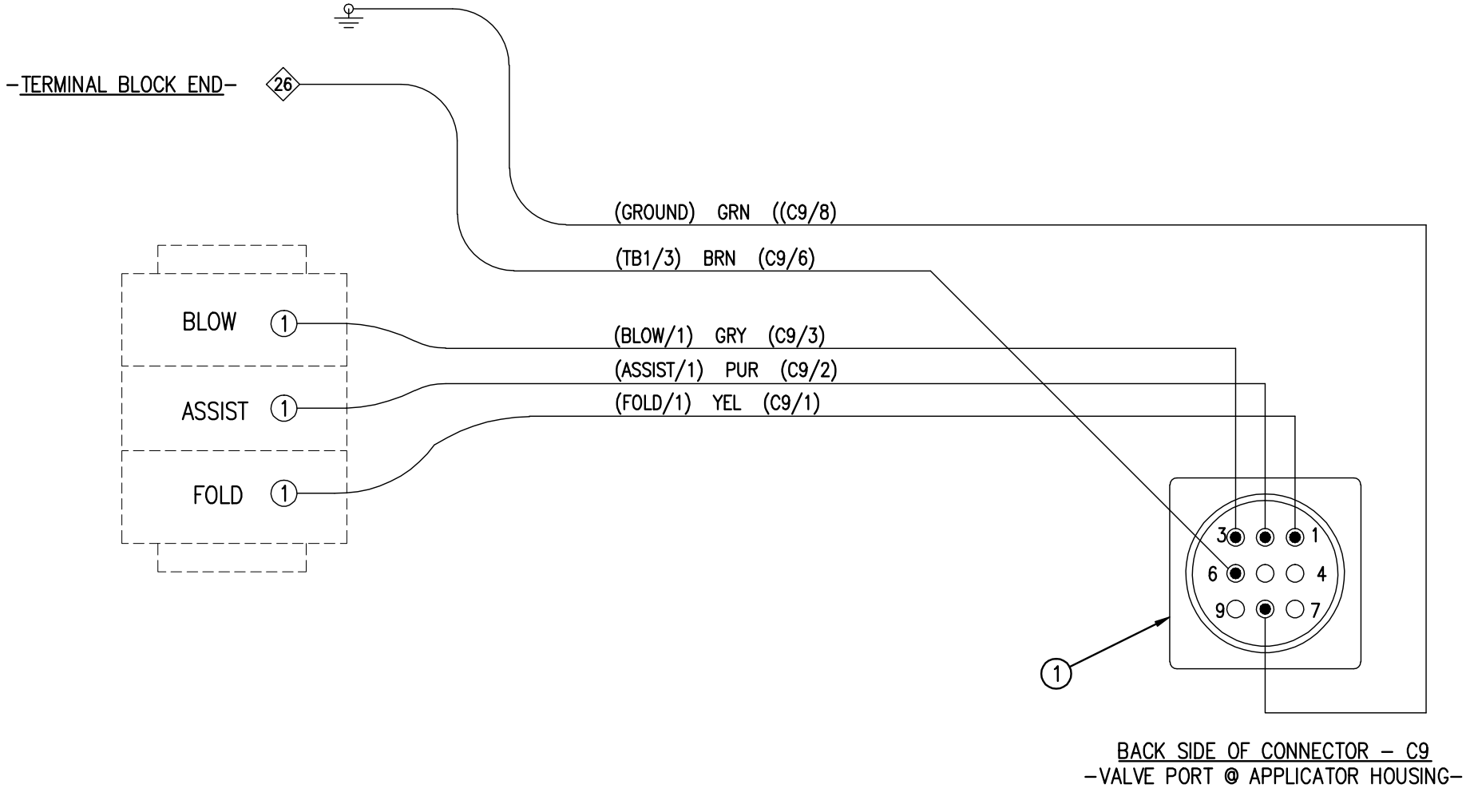
ASS-238AF-0411

BILL OF MATERIAL

ASS-238AF-0411

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PE-200-0415	VALVE PORT TO RELAY HARNESS
	1	PE-W1037	22 AWG (BROWN) WIRE x 20" LONG
	1	PE-W1034	22 AWG (GRN) WIRE x 20" LONG
	1	PE-W1039	22 AWG (GRAY) WIRE x 7" LONG
	1	PE-W1040	22 AWG (PURPLE) WIRE x 7" LONG
	1	PE-W1035	22 AWG (YELLOW) WIRE x 7" LONG

NOTE: REMOVE ORANGE WIRE
CUT REMAINING WIRES TO LENGTH AS SHOWN



BACK SIDE OF CONNECTOR – C9
-VALVE PORT @ APPLICATOR HOUSING-

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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-AF	7.5"	SERVO TAMP APPLICATOR: ELECTRICAL	VALVE TO APPLICATOR CONNECTOR HARNESS	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\
1	CHANGE GRY, PUR, & YEL WIRE LENGTHS TO 7" LG.	06/26/12	BMW	1=1	11/08/13	DLM	3600-AF\ASS-238AF-0411

ASS-238AF-0412

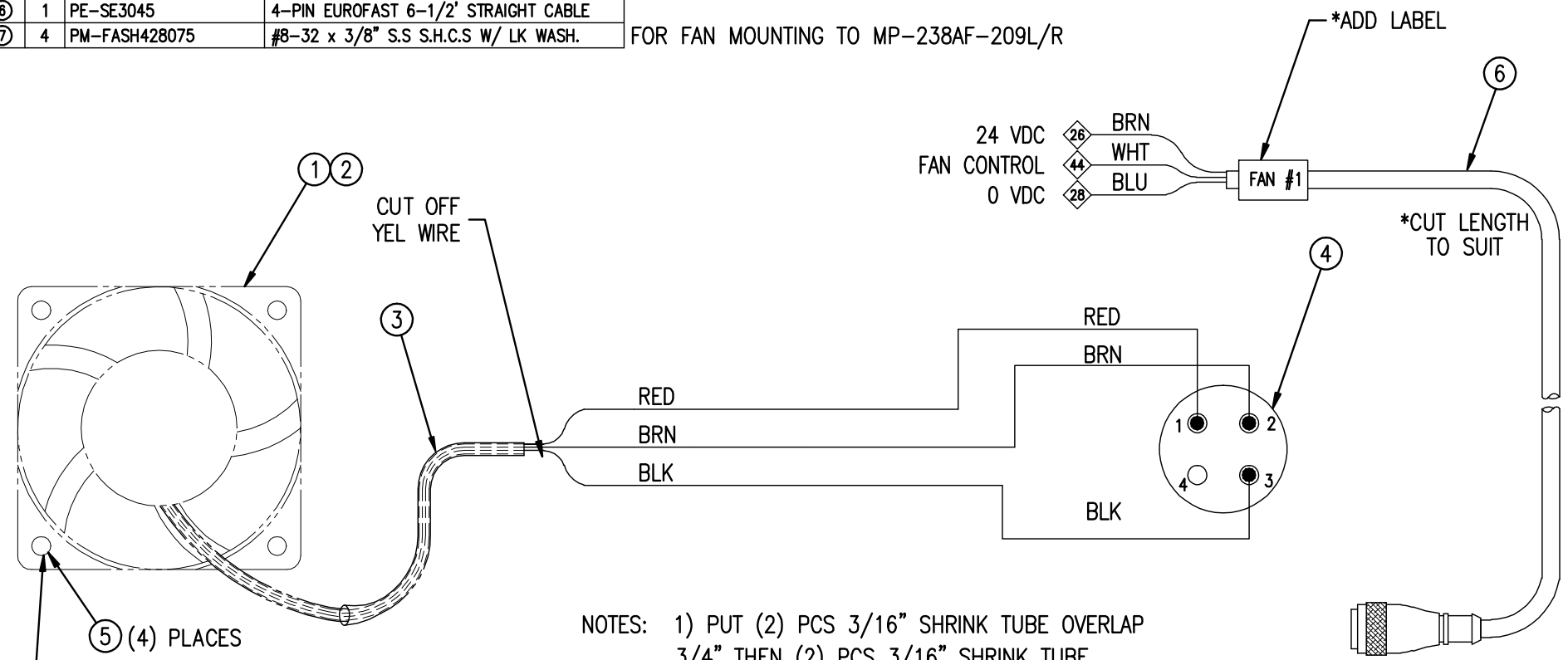
BILL OF MATERIAL

ASS-238AF-0412

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PE-FAN1070	24VDC FAN
②	1	PE-FAN1073	FAN FINGER GUARD
③	4	PE-ST1010	3/16"ø SHRINK TUBE x 6.00" Lg.
④	1	PE-CA2000	PRODUCT DETECT PLUG
⑤	4	PM-FABH35449	#10-32 x 1/4" S.S B.H.C.S.
⑥	1	PE-SE3045	4-PIN EUROFAST 6-1/2' STRAIGHT CABLE
⑦	4	PM-FASH428075	#8-32 x 3/8" S.S S.H.C.S W/ LK WASH.

* FOR FAN CLOSEST TO PRINTER
FAN #1

FOR FAN MOUNTING TO MP-238AF-209L/R



NOTES: 1) PUT (2) PCS 3/16" SHRINK TUBE OVERLAP 3/4" THEN (2) PCS 3/16" SHRINK TUBE OVER TOP OF PREVIOUS
(STOCK WIRE LENGTH LEADS)

**2) ADD LOCTITE 262 TO SHAFT OF FAN (BOTTOM SIDE)

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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-AF	7.5"	SERVO TAMP APPLICATOR: ELECTRICAL	VACUUM FAN ASSEMBLY	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\Applicator\
				1=1	11/11/13	DLM	3600-AF\ASS-238AF-0412

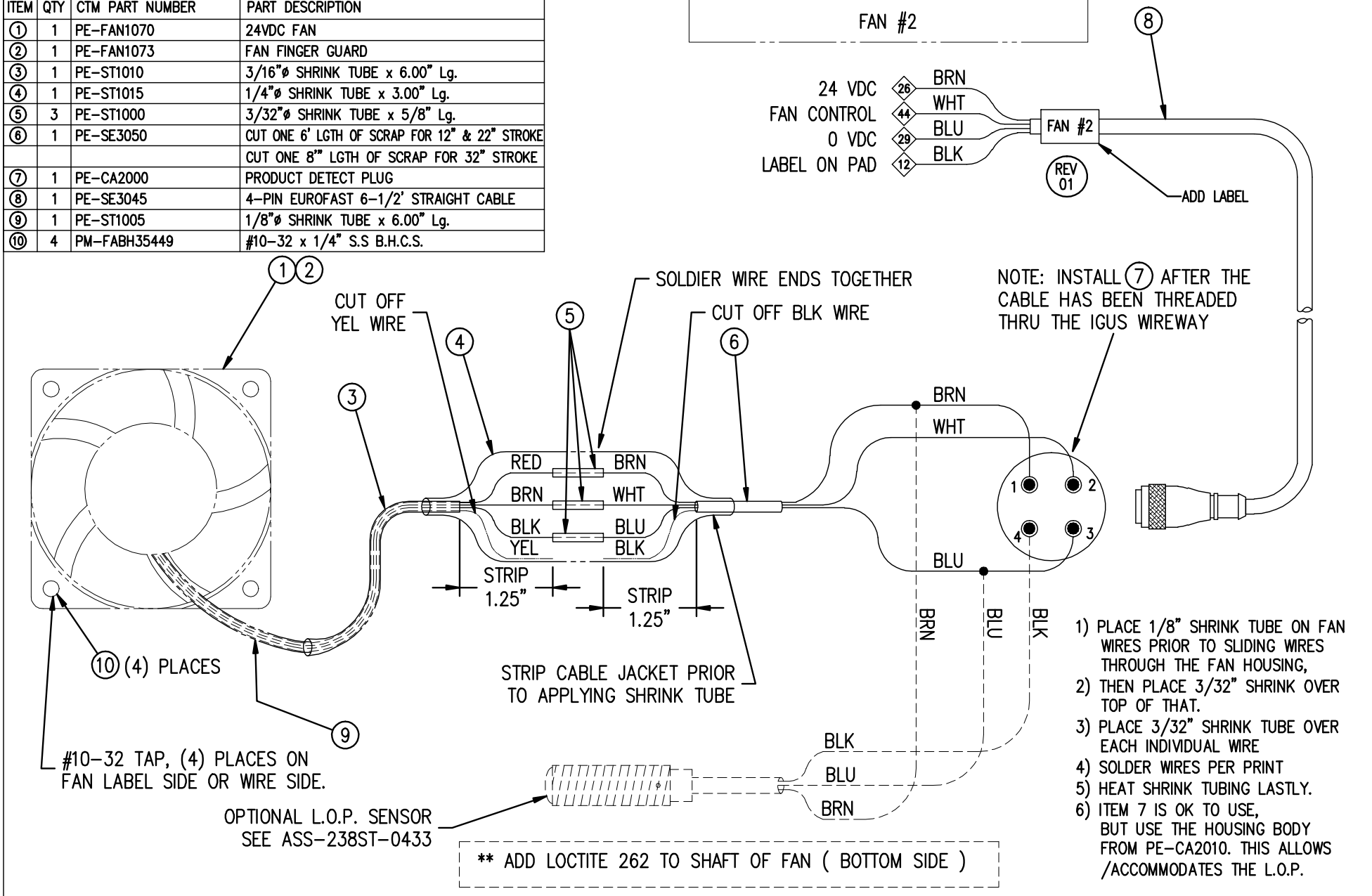
ASS-238AF-0413

BILL OF MATERIAL

ASS-238AF-0413

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	PE-FAN1070	24VDC FAN
②	1	PE-FAN1073	FAN FINGER GUARD
③	1	PE-ST1010	3/16"ø SHRINK TUBE x 6.00" Lg.
④	1	PE-ST1015	1/4"ø SHRINK TUBE x 3.00" Lg.
⑤	3	PE-ST1000	3/32"ø SHRINK TUBE x 5/8" Lg.
⑥	1	PE-SE3050	CUT ONE 6' LGTH OF SCRAP FOR 12" & 22" STROKE
			CUT ONE 8"' LGTH OF SCRAP FOR 32" STROKE
⑦	1	PE-CA2000	PRODUCT DETECT PLUG
⑧	1	PE-SE3045	4-PIN EUROFAST 6-1/2' STRAIGHT CABLE
⑨	1	PE-ST1005	1/8"ø SHRINK TUBE x 6.00" Lg.
⑩	4	PM-FABH35449	#10-32 x 1/4" S.S B.H.C.S.

* FOR FAN AT TAMP MANIFOLD
FAN #2



1) PLACE 1/8" SHRINK TUBE ON FAN WIRES PRIOR TO SLIDING WIRES THROUGH THE FAN HOUSING,
2) THEN PLACE 3/32" SHRINK OVER TOP OF THAT.
3) PLACE 3/32" SHRINK TUBE OVER EACH INDIVIDUAL WIRE
4) SOLDER WIRES PER PRINT
5) HEAT SHRINK TUBING LASTLY.
6) ITEM 7 IS OK TO USE, BUT USE THE HOUSING BODY FROM PE-CA2010. THIS ALLOWS /ACCOMMODATES THE L.O.P.

** ADD LOCTITE 262 TO SHAFT OF FAN (BOTTOM SIDE)

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APPLICATOR SERIES:	APPLICATOR WIDTH(S):	GROUP:	TITLE:	Dept. Code
3600-ST	7.5"	SERVO TAMP APPLICATOR: ELECTRICAL	VACUUM FAN ASSEMBLY	70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	
01	ADDED LABEL TO CABLE, ADDITIONAL NOTES	11/26/13	DLM	1=1	11/11/13	DLM	F:\Engineering\Standard Parts\Applicator\3600-AF\ASS-238AF-0413