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

**1800 PRINTER APPLICATOR
MAINTENANCE**

&

SERVICE MANUAL

(REVISION 1800-1b1.x)

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(STANDARD 1800)

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INTRODUCTION

The 1800-PA printer applicator is a cost effective labeler used to thermally print and apply pressure sensitive labels to moving products. A thermal transfer printer is integrated into an applicator to form a self-contained unit that will print variable data onto a label. The printer/applicator can be mounted in almost any position adjacent to product flow to apply labels to top, sides or bottom of products as they pass by.

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

The applicator can work in two different modes:

Normal Tamp Blow

Inverted Tamp Blow

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

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

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

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

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

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

Environment: Operating temperature range is 50 to 95°F (10 to 35°C).
Operating humidity range is 20 to 85% RH, non-condensing.

Note: The model 1800-PA is not intended to be operated in an environment where flammable or explosive gases are present. The model 1800-PA MUST not be used in direct contact with food products.

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

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

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

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

FOLLOW ALL SAFETY INSTRUCTIONS. The 1800-PA has been provided with a number of safety features. Observe all safety warning and under no circumstances attempt to remove or defeat safeguards or operate the machine in a manner contrary to the instructions.

MACHINE TERMS

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

Air Assist Tube: A small diameter tube with small 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.

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

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

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

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.

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

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

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

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

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

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

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

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

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

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

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

LED: Light Emitting Diode

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

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

Peel Edge: A 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.

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

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

Tamp/Swing Extend Time: This is the time allowed for the tamp slide to fully extend.

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

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

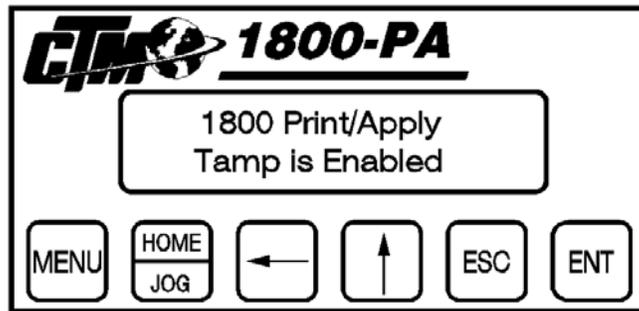
Unwind: This is the rotating mandrel where the roll of labels are placed to be printed and applied.

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

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

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

APPLICATOR DISPLAY PANEL



On power-up, the display will scroll the software version screen for 10 seconds. This will allow time for the printer to go through its diagnostics. The applicator can be switched from Normal Tamp mode to Inverted Tamp Mode through the display. See the applicator setup section on how to do this.

The following is a list of the keys on the display and what they do:

Menu

This key will allow the operator to scroll through the following sub-menus:

- **Label Rate** - Displays the rate in which labels have been applied per minute. After 61 seconds passes by with no apply signal 0 labels/min is displayed.
- **Label Placement** - Time from when the product detect sensor turns on until the labeling sequence starts. Aid for putting the label in the right position on the product.
- **Tamp Extend Time** - Time allowed for the tamp slide to extend before continuing with the labeling sequence.
- **Tamp Retract Time** - Time allowed for the tamp slide to return to receive a label from the extended position.
- **Air Blast Time** - Time the air blast valve will stay on.
- **Extended Air Assist** - The air assist is on as long as the applicator is printing a label. Extended air assist is the time after the printing stops until the assist turns off. This can be useful in placing a label on the label pad.
- **Detector Lockout** - Used when receiving more than one product detect signal from a product. The detector lockout timer starts with the product detect and will ignore other signals until the timer has timed out.
- **Product Counter** - Pressing the Home key while within the Detector Lockout screen will access this screen. Pressing Ent will reset the counter.

Home/Jog

When scrolling through sub-menus, pressing “Home” will take you back to the main menu. If you’re at the main menu, pressing the “Home/Jog” jog will cycle the applicator.

Arrow Keys

Menus that have a numeric input (i.e. Label Placement menu) use the arrow keys to change values. On the main menu, the arrow keys “↑” “←” “ are used to toggle the tamp enable/disable functions. See “Changing Variable Fields” in this section.

Esc

This key will stop the editing procedure and put the values back where they were.

Ent

Enter key is used to confirm a change or to clear current values so new values can be entered.

Changing Variable Fields

After the power-up procedure the display will go to the main. This menu will have two lines. The first shows the type of applicator and the second will tell whether the tamp is enabled or not. When disabled, the tamp will not move. This is helpful when setting up the applicator (getting the tamp pad in the right position). Also, when the tamp is disabled the product detect input does not work, only the “Jog” key works. This can be used to stop the applicator from applying labels when in production. To disable tamp, press “Ent”. The “Tamp Is Enabled” line should start to flash. Use the arrow keys to toggle the line so it says ”Tamp Is Disabled”. Press “Ent” when the line matches what the applicator is to do.

Note: Short cuts to enable and disable the tamp are as follows:

Pressing “←” will disable tamp.

Pressing “↑” will enable tamp.

To change numeric data, go to the menu to be changed (i.e. Label Placement) using the “menu” key. Press “Ent” and the timer data will set itself to zero and start to flash. Only the right most column will be changed using the “↑” key. Pressing the “←” will move the character just changed to the left. When you have the value you want, Press “Ent” to set it as current. If a mistake is made, press ”Ent” to start again; this will clear the data and let you start over. Note: If the “Ent” key is not pressed after data entry or data is not entered, the timer will default to the previous setting after 10 seconds.

Example: Set Label Placement to “0.115” (115 ms)

- Press “Menu” until the Label Placement menu is displayed.
- Press ”Ent” to clear timer data (flashing zero).
- Press “↑” until “1” is displayed in the right column.
- Press “←” one time so the “1” will move to the left by one position.
- Press “↑” until “1” is displayed in the right column.
- Press “←” one time so the “11” will move to the left by one position.
- Press “↑” until “5” is displayed in the right column.
- Press “Ent” when the value matches the desired value. If not, press “Esc” and start over.

Note: Each pressing of the “↑” arrow key will increase the time value by 1 millisecond (ms).

Alarm Screens

The operator interface will display alarm screens for the following alarms:

- **Low Label** - signal from sensor mounted on the unwind of the applicator.
- **Low Ribbon** - signal from the printer.
- **No Label/Ribbon** - signal from the printer.
- **End of Web** - signal from sensor looking for the end of the label stock.
- **Too Many Reprints** - signal from the Label Reprint counter triggered when more labels have been pulled off the pad than the preset amount.

ELECTRICAL ENCLOSURE

The electrical enclosure mounted on the backside of the applicator faceplate, contains control components for the printer applicator. Some items include the PLC, display, power supply and terminals for connection points. Also part of the enclosure, are a number of connectors and exiting cords. The following will serve as an explanation of these connectors.

CORDS

There are two cords coming from the enclosure and both are for the print engine. One is the AC power and the other is the interface cable. Both will have to be connected for the printer to work with the applicator.

CONNECTORS

Valve: Valve banks come with a short cable and a plug. That plug connects into the valve connector.

Alarm: The alarm connector will drive up to a three stack light stack (one light for printer ready, one light for warning and one for critical alarms).

Product: This where the product detect sensor plugs in.

Low Label: This is where the low label sensor plugs in. On a standard applicator, this connector is plugged. When the low label option is purchased, the connector will be provided.

Aux: This connector is for custom applications and for end of web. On a standard applicator, this connector is plugged. When an option is purchased that would use this connector, the connector will be provided.

I/O: This connector can be used for integrators to monitor applicator alarms and functions. On a standard applicator, this connector is plugged. A connector or harness can be provided when integrating the applicator into a system

Note: No communication port is provided but instead, the customer will connect directly to the print engine.

1800 I/O Port Functions (OPTIONAL)

The following is a list of the 1800 functions of the optional I/O port. If other functions are needed (i.e. tamp home switch), they can easily be added. All outputs are NPN (sinking) with 100 ma load. Inputs are also for sinking devices.

- **Pin #1** (DC Power): 0 VDC
- **Pin #2** (DC Power): 24 VDC at 200ma
- **Pin #3** (System Ready): If there are no critical alarms, the tamp is enabled, inhibit input off, and the printer is online, the ready output is on.
- **Pin #4** (Warning Alarm): This output will turn on when the applicator receives a low label or low ribbon signal. The signal will stay low until the alarm is reset.
- **Pin #5** (Critical Alarm): This output will turn on when the applicator receives a no labels or no ribbon signal from the printer or if the end of web sensor is made. The signal will stay low until the alarm is reset.
- **Pin #6** (Spare)
- **Pin #7** (Tamp Home): The output turns on when ever the tamp home switch is made or the tamp retract timer times out.

Note: Tamp home switch is an option and is purchased separately

- **Pin #8** (Label on Pad): After a label has finished printing, the controller will look at the output of a vacuum switch to see if the label is on the pad. If so, the output turns on.

Note: Vacuum switch is an option and is purchased separately

- **Pin #11** (Product Detect): Taking this input low will start the labeling sequence of the applicator.
- **Pin #12** (Inhibit): This input will stop the applicator from applying labels.

APPLICATOR SETUP

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

Unwind Assembly

The unwind assembly mounts to the applicator by fastening the two unwind mounting plates to the unwind and to the back of the applicator faceplate. The two plates are held together using four flat head screws. The end the unwind bolts to uses three flat head screws and the entire assembly is bolted to the backside of the applicator faceplate with four flat heads.

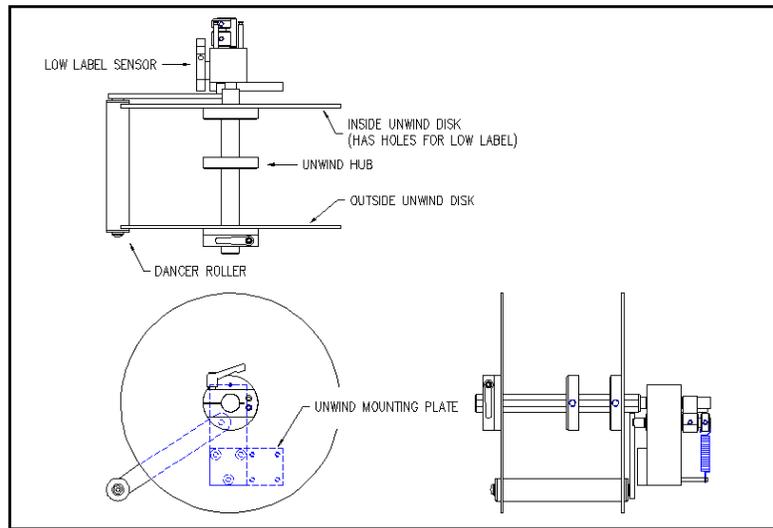


Figure 1 (unwind assembly)

Unwind disks

There will be two unwind disk assemblies per unwind. The inside unwind disk include a Lexan disk and hub screwed together. The inboard assembly will also have two holes in the disk for the low label sensor. The outboard assembly will have a solid disk and hub assembly that includes a ratchet handle for locking it in place. Place the inboard assembly so that the inside face of the disk is approximately 1/2" from the applicator face. This should match the web path of the print engine. When fastening the disk assembly to the unwind shaft, make sure the set screw is engaging against the flat of the shaft. Position the loose hub just short of the label width. This hub is for supporting the outboard end of the roll of labels. The outboard disk assembly will slide onto the shaft against the roll of labels and will lock in place by tightening down the ratchet handle.

Air Filter Installation

When the applicator is shipped, the air filter is off. The filter is sent with two 2” nipples and an elbow. The attitude of the machine will determine how the filter should be plumbed. Note: In all cases it is important to have the filter bowl pointing down.

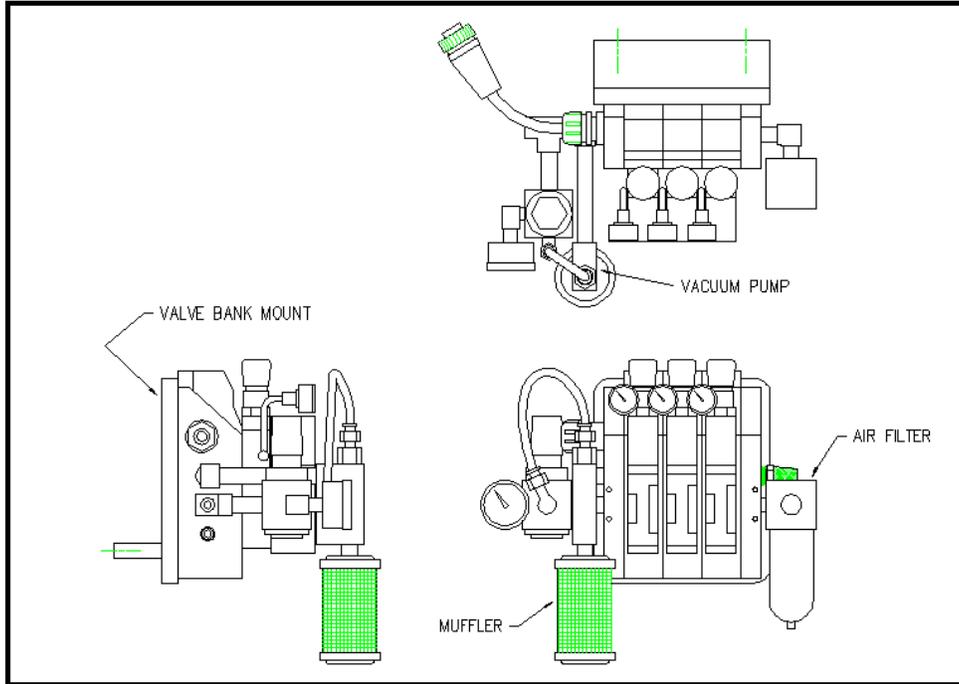


Figure 2 (Numatic valve bank)

Numatic Valve Bank

The figure above illustrates a Numatic brand valve bank. CTM equipped 1800 printer applicators with this particular valve bank prior to Spring 2007. The valve bank is mounted in the side of the applicator as the applicator nose. Mount the valve bank by putting four #8 shcs. through the four clearance holes on the end plates of the valve bank and bolting it to the side of the electrical enclosure. Run the air lines directly into the appropriate actuator or pneumatic device.

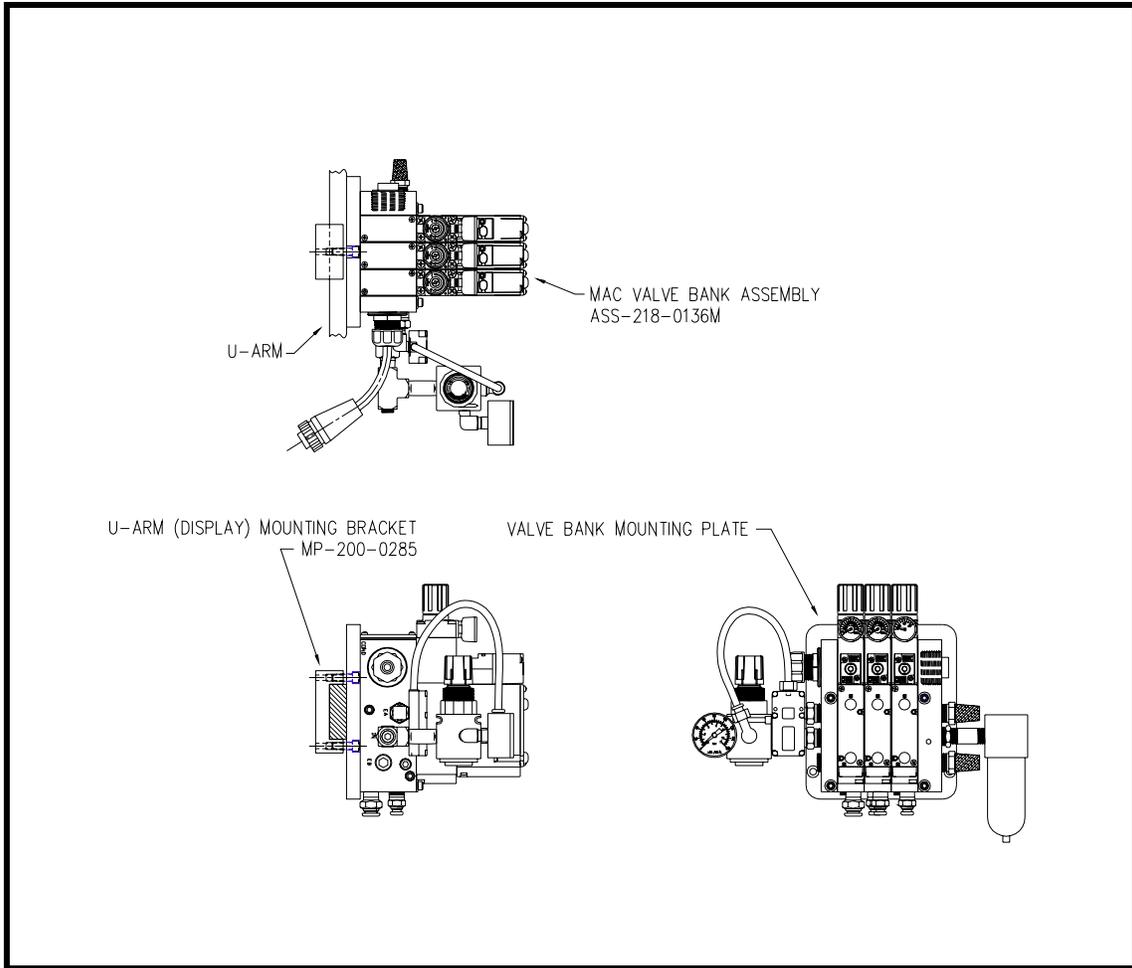


Figure 3 (Mac valve bank)

MAC Valve Bank

The figure above illustrates a MAC brand valve bank. CTM started equipping 1800 printer applicators with this particular valve bank in the Spring of 2007. The valve bank is mounted on the same side of the applicator as the applicator nose. Mount the valve bank mounting plate to the u-arm by putting two 1/4-20 shcs. through the two clearance holes on the mounting plate threading them into the tapped holes on the u-arm mounting bracket. Then mount the valve bank to the valve bank mounting plate using (4) #10-32 x 2 1/2 " long shcs. with flat washers. Run the air lines directly into the appropriate connections on the actuator or pneumatic device.

Standard Tamp Assembly

Although it is unlikely that this will be removed for shipping, it will, however, have to be adjusted. The assembly is held onto the faceplate by two ¼ shcs. marked as in/out adjustment in figure 3. These same two bolts will allow the label pad to be moved closer to the printer peel edge. To raise or lower the label pad, loosen two ¼ shcs. in the slide body (marked as up/down adjustment in figure 3). The label pad and manifold can be moved side to side using the four #10 shcs. in the manifold.

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

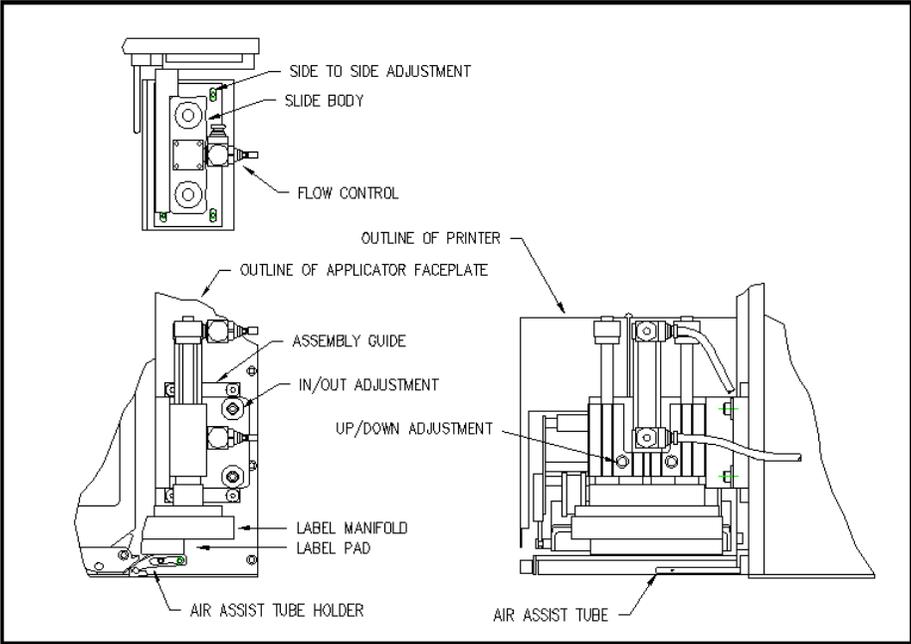


Figure 4 (standard tamp assembly)

Ribbon Loading

- 1- At the main menu, disable the tamp.
- 2- Open the printer cover.
- 3- Refer to the printer manual for ribbon loading instructions.

Label Loading

- 1- At the main menu, disable the tamp. Loosen the ratchet handle that locks the outer unwind disk in place and remove disk.
- 2- Load a roll of labels onto the hubs on the unwind shaft. Make sure the labels are against the inner disk and are right side up.
- 3- Remove the first three feet of labels from the liner.
- 4- Thread the label stock around the dancer and guide rollers into the printer. Refer to Figure below for the web path from the unwind to the printer. Refer to the printer manual as to how to thread the print engine. Make sure the liner passes between the peel edge and the air assist tube.

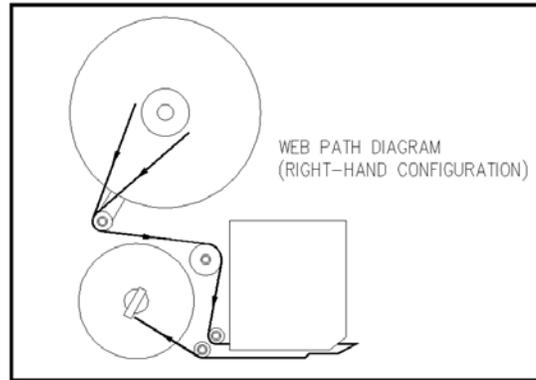


Figure 5 (web path)

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

General Setup Procedures

(refer to “Installation of Applicator Nose” section for the location of the adjustments.)

- 1- Disable tamp (refer to Display Panel section). This way adjustments can be made without the fear of the tamp actuating and injuring someone. Also load label formats into the printer.
- 2- The label stop must be properly set for the applicator to work successfully. This is done through the printer and will be referred to as “Offset”, “Top of Form”, “Pitch Offset”, or other terms dependant on the printer model.
 - a) With printing information in the buffer and the tamp disabled, press “jog” to dispense a label.
 - b) If the label stop is correct, the label should feed off the liner. If the next label out is flagged past the peel edge, the label stop must be decreased. If the label doesn’t dispense completely off, then increase label stop. Refer to printer manual as to how to change label stop
- 3- Tamp height needs to be set so a label feeds out in contact with the label pad. If the pad is too high, the label will not land consistently on the pad. If the label pad is too low, the label will dispense into the back of the pad and jam. The label pad is usually set one label thickness above the peel edge. This is only a starting point and should be adjusted according to label stock and adhesives.
- 4- The inboard edge of the label pad must match the inboard side of the label. Refer to the side to side adjustments to move the pad.
- 5- Position the air assist tube so the hole or holes are centered on the label and pointing approximately ¼”in from the label pad. The air pressure should be set at 20-30 P.S.I. Press “Jog” to dispense a label. If the label doesn’t feed out against the label pad and the vacuum doesn’t capture it, try increasing the air pressure. Continue until the vacuum captures the label.

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

- 6- Air pressure for the tamp slide should start at 40 P.S.I., for the air blast at 40-60 P.S.I., and for the vacuum pump at 20-40 P.S.I.
- 7- Air blast time is set through the display and should be set long enough to apply a label firmly to the product. Setting the time too high will result in less labels/min. Start at .03 seconds.

Tamp Setup

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

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

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

Changing Tamp Modes

The applicator can work in two different modes:

Normal Tamp Blow

Inverted Tamp Blow (ITB)

See the “Configuration Menus” section on how to select tamp mode.

Label Static Test

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

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

- 1- Make sure the labels are consistently stopping in the same place on the label pad. If this is OK go to step 7; if not, go to step 2.
- 2- Check label stop. One label should be completely dispensed off the liner while the next label should be 1/32" away from the peel edge. If this varies more than 1/32" with each cycle, refer to the printer manual to correct. When this is corrected, go back and try the static test again. If this was OK, go to step 3.
- 3- Make sure the label pad surface is clean. If clean, go to step 4 and if not, clean and try static test again.
- 4- Make sure the vacuum is set right. If the label flutters when feeding across the pad then the vacuum is too high. If the label falls off or moves after the label has left the liner, then it's not high enough. If the label feed looks smooth go to the next step.
- 5- Work with the air pressure and the position of the air assist tube until the label feeds more consistent onto the pad. Re-try the static test. If the results are still not good enough, go to step 6 but if they-re OK, go to 7.
- 6- Make sure you are working with good label stock. Try another roll of labels and see if you get the same results.
- 7- Check the distance from the label pad to the product. If the distance is too large, the labels may float too much. Try lowering the machine so the label pad just clears the product (within 1/8").
- 8- Is the label pad made for the label you're using? Look to see if the labels are laying down flat and stacking well. If the hole pattern does not match the label, results will be uncertain.

Configuration Menus

The Configuration Menu can be entered two different ways. One way is to power the applicator on and press the “↑” key after the software screen appears. The second way is to disable the tamp and go to the detector lockout screen and press the “↑” key. The menu that comes up on the display will be the start of a series of menus that gives the operator access to turn different options on or off. The following is a list of the menus and their function.

Note: The operator must disable the tamp before attempting to enter the configuration menu through the detector lockout screen.

Tamp Mode

The applicator can work in two different modes:

Normal Tamp Blow

Inverted Tamp Blow (ITB)

In the Normal Tamp Blow mode, the label is printed, dispensed out onto the label pad and held there by vacuum. When the product detect sensor is made, the label and label pad is moved toward the product using a pneumatic slide. When the slide is extended, an air blast will blow the label off the pad and onto the product. In the Inverted Tamp Blow mode, the label is printed, dispensed onto the label pad and the slide extends. The applicator will wait in this position until the product sensor is made. The label is then blown off the pad onto the product. The ITB mode should be more accurate.

To change from one mode to the other, press “ENT” and the last word on the second line should start to flash. Use the arrow keys to toggle between ‘Normal’ and ‘ITB’. When you get what you want, press “ENT”. Press “MENU” to go to the next screen.

Input 3 Configuration

This option allows you to configure input 3 of the PLC to either be an inhibit input or external print input. The inhibit when turned on, will stop the applicator from applying labels and if done at the right time, stop the printer from printing. The external print option will inhibit the printing of a label until the external print input is turned on but will not effect the function of the applicator which means it will still apply a label if one is on the pad.

To toggle this option on, press “ENT” and the last line on the display should start to flash. Use the arrow keys to select between the two. When you get what you want, press “ENT”. Press “MENU” to go to the next screen.

Label on Pad

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

Note: Vacuum switch is an option and is purchased separately along with the necessary wiring.

Vacuum Switch Setup

The vacuum switch is mounted off the vacuum/blow line. Put air to the machine, reconnect the power and turn the applicator on. With no label on the label pad turn the screw on the back of the sensor so the light in the sensor turns on. With the light on, turn the screw the opposite direction until the light goes out. Repeat the process to make sure the light is just going out when you stop turning the screw. Now put a label or a piece of paper on the label pad (make sure to cover all the holes on the pad). The sensor light should be on. If not, repeat the setup procedure until the light is on with a label on the pad and is off with no label on the pad.

Turn the power off to the applicator and replace the stainless cover. Make sure the “Label on Pad” option is turned on in the configuration menu.

To turn this option on, press “ENT” and the last word on the second line should start to flash. Use the arrow keys to toggle between ‘On” and “Off”. When you get what you want, press “ENT”. Press “MENU” to go to the next screen.

Vacuum-Off Option

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

To turn this option on, press “ENT” and the last word on the second line should start to flash. Use the arrow keys to toggle between ‘On” and “Off”. When you get what you want, press “ENT”. Press “MENU” to go to the next screen.

Note: The logic is provided for this option but there is still some hardware and wiring needed to make this option work (i.e. valve bank). The option is best factory installed.

Tamp Enabled/Disabled on Power-up

This option lets the operator chose whether the tamp is enabled or disabled on power-up. To turn this option on, press “ENT” and the first line will begin to flash. Use the arrow keys to toggle between “Tamp is Disabled” or “Tamp is Enabled”. When you get what you want, press “ENT”.

Disable Tamp on Pause

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

Rewind Delay On and Delay Off Timers

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

Note: Factory default values are:

Delay On: 0 seconds

Delay Off: 1 second

To change timer variables, see the “Changing Variable Fields” of the “Applicator Display” section.

Label Reissue Option

Label Reissue is a separate option than Label Reprint. This screen comes up right after the rewind off delay screen in the configuration menu. When the Label Reissue option is turned on it allows the applicator to reprint the last label format sent to the printer until another label format is received. To get this option to work with the SatoLT408 printer you must enable “External Reprint” in the Advanced Mode settings of the print engine.

Label Reprint Option

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

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

The logic is provided for this option but there is still some hardware and wiring needed to make this option work (i.e. vacuum switch). This option is best factory installed.

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PRODUCT SETUP

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

Applicator Attitudes

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

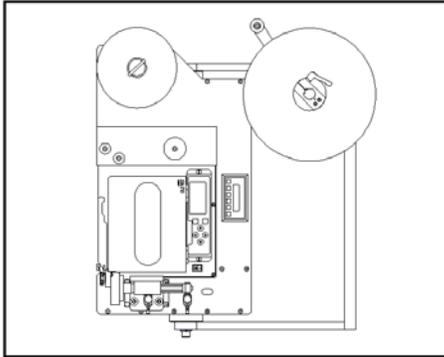


Figure 6 (nose-down)

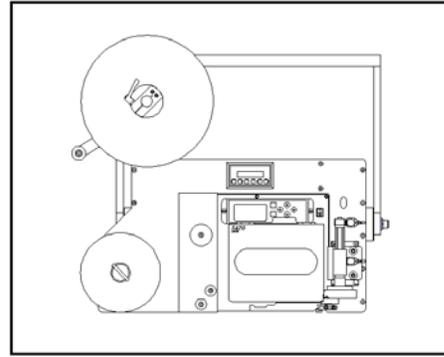


Figure 7 (upright and above)

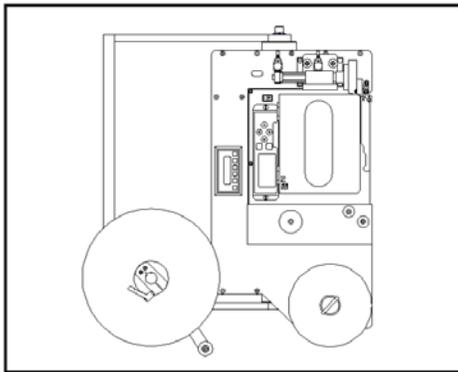


Figure 8 (nose-up)

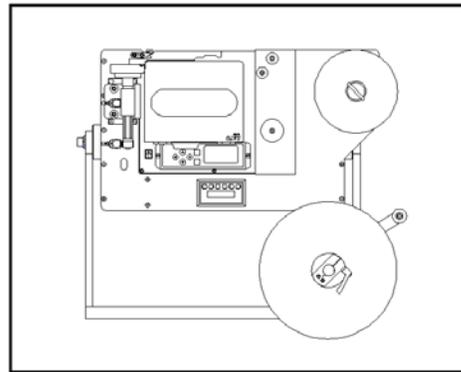


Figure 9 (bottom-up)

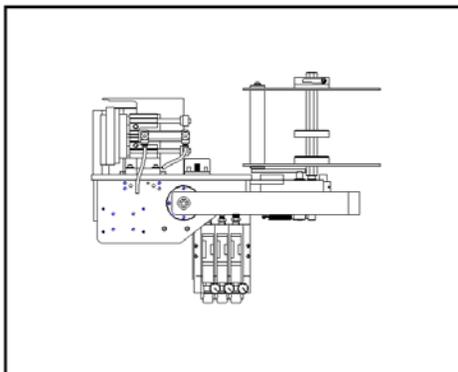


Figure 10 (reels-up)

Positioning the Applicator

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

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

Make sure the applicator is powered off and the air is removed. Now push the tamp slide out so it is fully extended. Move a product in front of the applicator on the same path as it will run down the line. Move the applicator so the label pad is within 1/8” from the product. Also make sure nothing is in the way of the moving parts.

Move the product and applicator so the label pad is over the application point. Now position the product detect sensor slightly upstream of the leading edge of the product. When everything seems good, apply power and air to the applicator. Now go to the product sensor setup that matches your sensor and follow directions.

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.

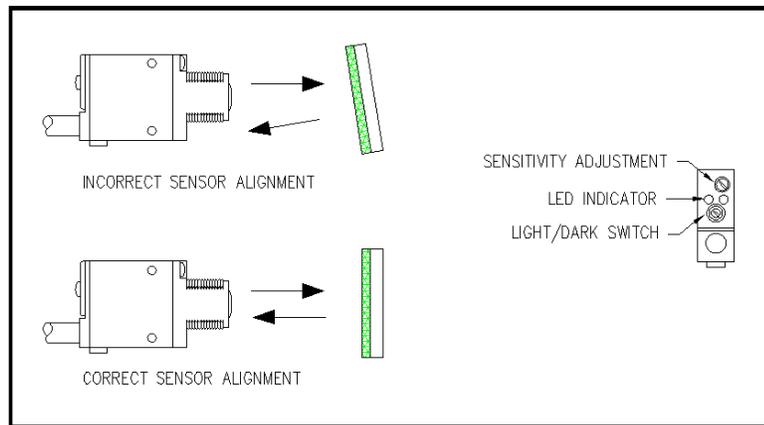


Figure 11 (standard product detect)

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

Optional Product Sensor Setup (Banner S18SN6FF50)

This sensor is a 18mm barrel type with a 50mm far limit cut-off. This means it will see objects that are less than 2” away and ignore the rest. There is nothing to adjust on the sensor except the physical position.

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

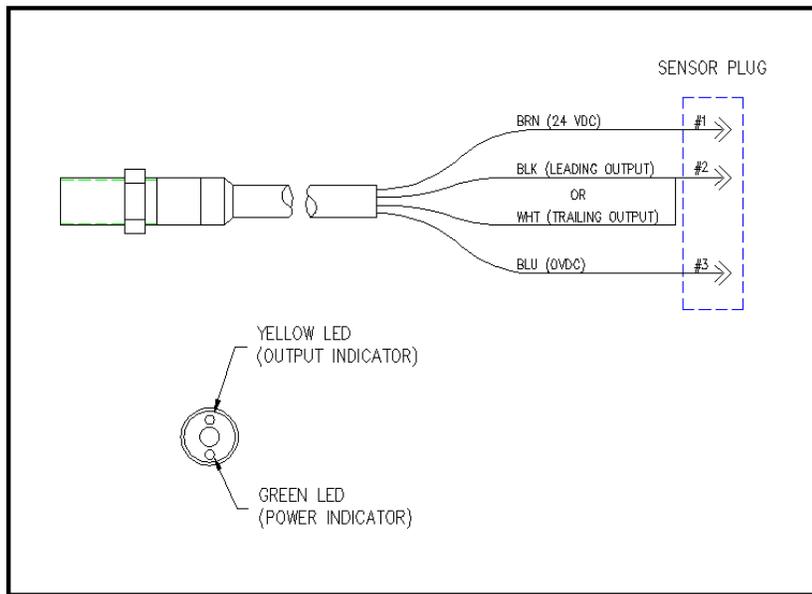


Figure 12 (optional product detect)

Label Placement

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

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

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APPLICATOR ALARMS

The 1800-PA is equipped with two alarms: Warning and Critical. Both alarms are wired to the alarm port. The alarm port will support two lights that flash and the display will show the type of alarm.

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

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

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

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

Alarm Light

The alarm light stack is usually a two stack light with amber and red lights. The red light is for critical alarms and the amber for warning alarms. The alarm signal is a steady on output. The flashing of the lights are a function of the light modules. One light (red) can be used by wiring both alarm signals into the light. The display will still show the type of alarm.

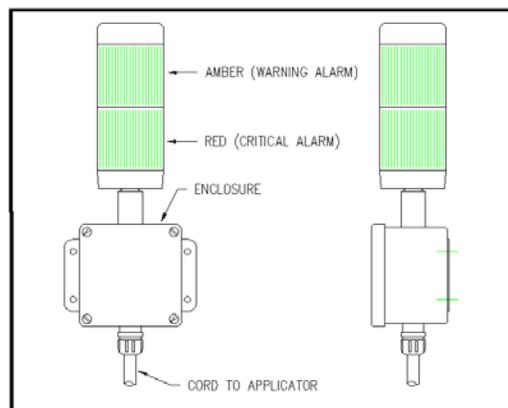


Figure 13 (alarm light)

System Ready Output

If the applicator is not in a critical alarm state, the tamp is enabled, printer online and the inhibit input is not on, then the system ready output is on. This output is also wired to the alarm connector. A green light can be added to the light stack to display this condition.

Adjusting the Low Label Sensor Mount

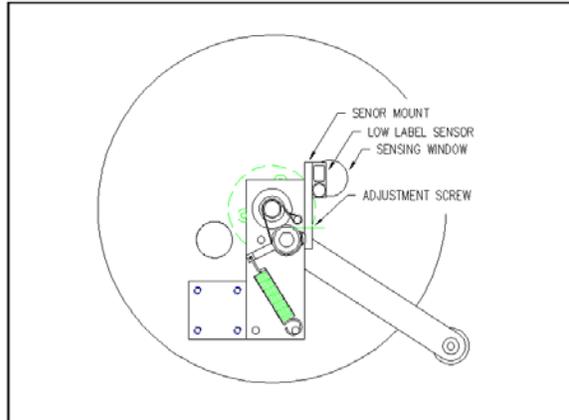


Figure 14 (unwind/low label)

- 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- Look at the red dot shining from the sensor to the unwind disk. The red dot shows what the diameter of the roll will be when the alarm turns on. To turn the alarm on sooner, move the sensor up so that it is farther away from the core. To turn the alarm on later, move the sensor down closer to the core.

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

- 5- Replace back cover of sensor.

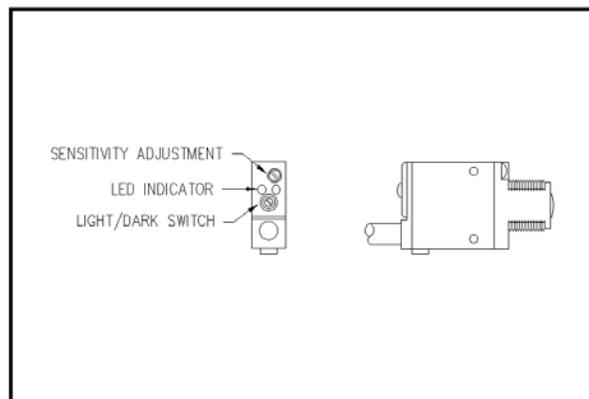


Figure 15 (low label sensor adjustment)

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MAINTENANCE

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

General Maintenance

Daily Maintenance

- 1- Clean the 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- On extended peel edge noses, check the uhmw tape on the peel edge for wear or nicks. Change if needed.

Semi-Annual

- 1- Replace filters.
- 2- Check vacuum pump for an accumulation of debris. Replace if necessary.
- 3- Examine pulleys, belts and rewind clutch for wear.

Dancer Arm Adjustment

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.

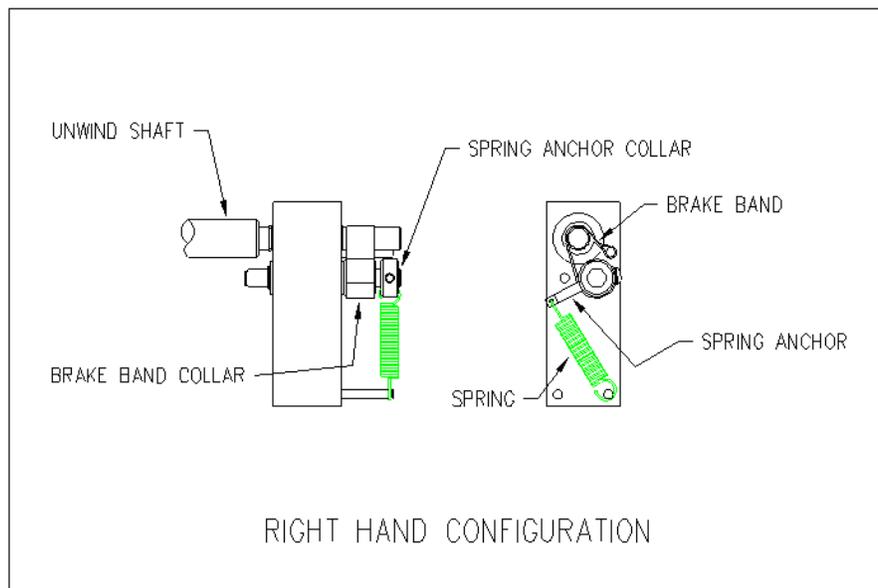


Figure 16 (adjusting brake band)

Rewind Clutch Adjustment

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

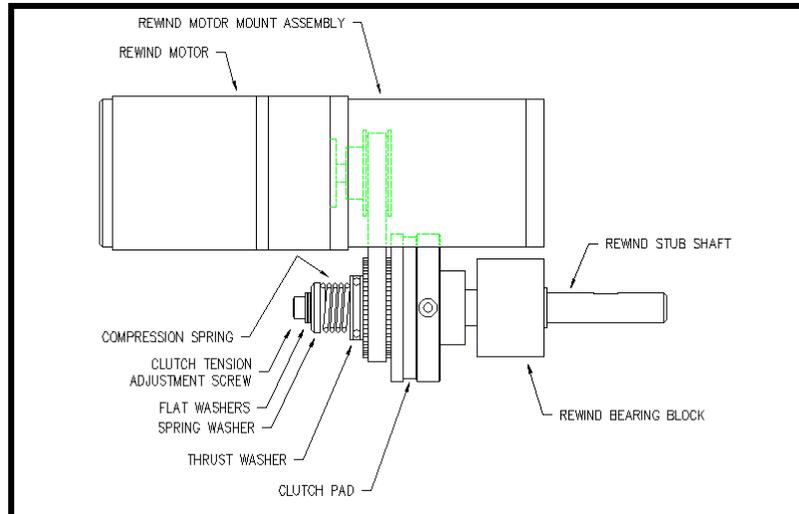


Figure 17 (rewind/clutch assembly)

- 1- Remove power and air to the machine.
- 2- Remove the lower stainless cover.
- 3- CAREFULLY remove the tension adjustment screw and all washers (NOTE: the spring is under compression load). Keep track of how many flat washers are on the outboard and inboard sides of the "spring washer".
- 4- If the rewind tension was too tight, move one or two of the flat washers from the outboard side of the "spring washer" to the inboard side (nested inside the compression spring). This will relieve the pressure on the clutch pad.
If the tension was too loose, move one or two flat washers from inside the compression spring to the outboard side of the "spring washer". This will increase pressure on the clutch pad.
- 5- Carefully re-apply the power and air to the machine and test. Re-adjust if necessary.
- 6- Remove power and air and replace the cover on the machine if everything tests OK.

Changing Clutch Pads

- 1- Remove power and air to the machine.
- 2- Remove the rewind stainless cover.
- 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 rewind stainless cover.
- 3- Proper Tension: ¼" Belt Deflection.
- 4- Loosen the two ¼" socket head cap screws that bolt through the side of the rewind motor mount assembly to the faceplate of the applicator.
- 5- Push the rewind motor assembly up and re-tighten the two ¼" socket head cap screws.
- 6- Replace stainless cover.

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TROUBLESHOOTING

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

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

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

PROBLEM	POSSIBLE CAUSE	SOLUTION
Compressed print on labels.	Applicator unwind brake is too tight creating too much pull through the printer.	Loosen unwind tension.
	Worn or damaged platen roller.	Replace the printer platen roller.
Printing registration is early.	Applicator unwind is not properly tensioned.	Adjust unwind tension.
Elongated print on labels.	Rewind has too much tension on it.	Re-adjust slip clutch.
Printing registration is late.	Rewind tension is too tight, not allowing a complete back feed.	Re-adjust slip clutch.
Poor print quality	Printer problem	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.

PRINTER SETTINGS

Setting the parameters for this printer is done through the display and operator's manual should be consulted to learn where the parameters are at and how to change them. The following are parameters that have to be set in order for the applicator to work.

Advance Mode Settings

Printer Type = Dispenser

External Signal = Type 4

Service Mode Settings

Ext 9 Pin Select = Mode 2

1800 PRINTER APPLICATOR SPARE PARTS LIST
When ordering parts, present Serial Number of 1800

1800 SERIES CORE UNIT SPARE PARTS LIST		
RECOMMENDED TOOL		
Part Number	Recommended Qty	Description
PE-TE6000	1	ENTRELEC WIRING TOOL
RECOMMENDED SPARE PARTS		
Part Number	Recommended Qty	Description
PE-PS1076	1	24VDC POWER SUPPLY
PE-FU2090	1	6.3 AMP FUSE
EXTENDED SPARE PARTS		
Part Number	Recommended Qty	Description
ASS-200-0427	1	PRODUCT DETECT SENSOR ** JOB SPECIFIC **
PE-RT1000	1	1"W X 6"L REFLECTIVE TAPE
PE-CO1018	1	POWER CORD
ASS-IN1055	1	3600 OPER INTERFACE DISPLAY (Program specific)
MPPLC1015	1	PLC (Program specific)
PE-RE1063	1	MOTOR RELAY

1800 PRINTER APPLICATOR SPARE PARTS LIST
When ordering parts, present Serial Number of 1800

NON-POWERED UNWIND ASSEMBLY SPARE PARTS LIST		
WEAR ITEMS (12" UNWIND ASSEMBLY)		
Part Number	Recommended Qty	Description
PM-BB1030	1	UNWIND BRAKE BAND
RECOMMENDED SPARE PARTS (12" UNWIND ASSEMBLY)		
Part Number	Recommended Qty	Description
SAS-238-0137	1	5" DANCER ROLLER ASSEMBLY w/o SHAFT
PM-FASP30434	1	TENSION SPRING
ASS-238-0180L or	1	LH UNWIND BEARING BLOCK ASSEMBLY
ASS-238-0180R	1	RH UNWIND BEARING BLOCK ASSEMBLY

STANDARD REWIND ASSEMBLY SPARE PARTS LIST		
WEAR ITEMS (REWIND ASSEMBLY)		
Part Number	Recommended Qty	Description
PM-BELT1015	1	REWIND BELT
MP-238-0274	1	3" CLUTCH PAD
ASS-200-0143	1	SLIP CLUTCH ASSEMBLY
EXTENDED SPARE PARTS (REWIND ASSEMBLY)		
Part Number	Recommended Qty	Description
PM-BE1232	1	REWIND CLUTCH THRUST BEARING
PM-FASP30540	1	REWIND CLUTCH SPRING, MED DUTY
ASS-238-0428	1	REWIND GEAR MOTOR

1800 PRINTER APPLICATOR SPARE PARTS LIST

When ordering parts, present Serial Number of 1800

TAMP SPARE PARTS LIST		
WEAR ITEMS		
Part Number	Recommended Qty	Description
PM-T1010 or	1	UMHW TAPE FOR 5" PEEL EDGE (6" Wide x 4" Lg.)
PM-T1015 or	1	UHMW TAPE FOR 7.5" PEEL EDGE (8" Wide x 4" Lg.)
PM-T1010	1	UHMW TAPE FOR 10" PEEL EDGE (6" Wide x 11" Lg.)
RECOMMENDED SPARE PARTS		
Part Number	Recommended Qty	Description
MP-211-0217-7	1	AIR ASSIST TUBE **THIS IS JOB SPECIFIC**
EXTENDED SPARE PARTS		
Part Number	Recommended Qty	Description
PM-FIL1010	1	WATTS FILTER
PM-VA2395M	1	5.4 WATT DC SOLENOID
PM-VA2396M	1	60 PSI AIR ASSIST REGULATOR
PM-VA2397M	1	120 PSI TAMP/BLOW REGULATOR
ASS-214-0105M	1	TAMP 3-STATION VALVE BANK ASSEMBLY
SLIDE ASSEMBLIES		
Part Number	Recommended Qty	Description
ASS-214-0108-1 or	1	1" SLIDE ASSEMBLY
ASS-214-0108-2 or	1	2" SLIDE ASSEMBLY
ASS-214-0108-3 or	1	3" SLIDE ASSEMBLY
ASS-214-0108-4 or	1	4" SLIDE ASSEMBLY
ASS-214-0108-6 or	1	6" SLIDE ASSEMBLY
ASS-214-0108-8 or	1	8" SLIDE ASSEMBLY
ASS-214-0108-10 or	1	10" SLIDE ASSEMBLY
ASS-214-0108-12	1	12" SLIDE ASSEMBLY

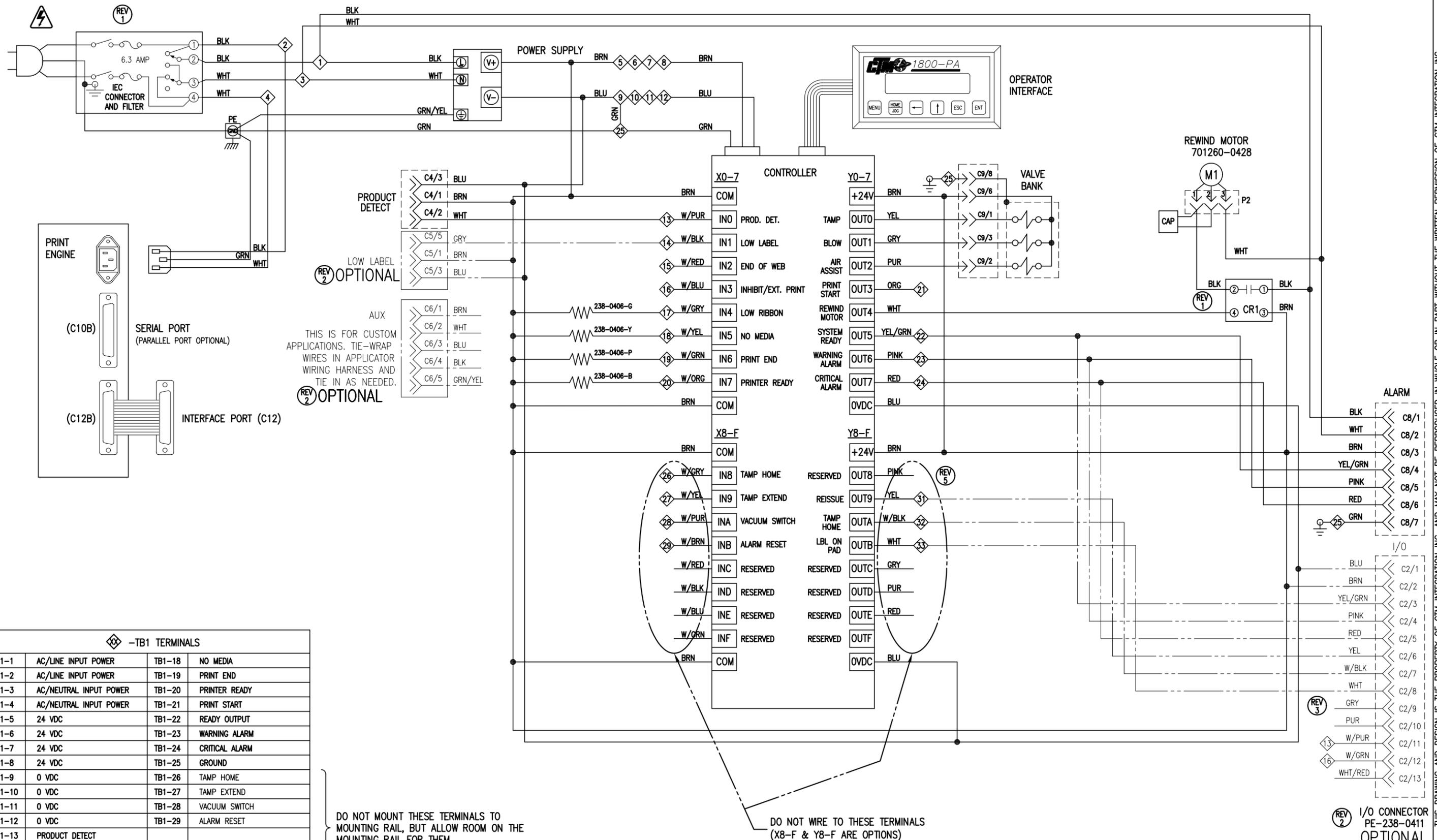
1800 APPLICATOR SPARE PARTS LIST

When ordering parts, present Serial Number of 1800

1800 OPTIONS SPARE PARTS LIST		
NOTE FOR THESE OPTIONS, THE APPLICATOR MUST HAVE AN I/O INTERFACE HARNESS		
OPTIONS: RECOMMENDED SPARE PARTS (LOW LABEL, WEB BREAK ALARMS)		
Part Number	Recommended Qty	Description
ASS-218-0139	1	I/O INTERFACE HARNESS
PE-LI1088	1	RED,YELLOW,GREEN LED ALARM LIGHT (BANNER)
ASS-200-0422	1	LOW LABEL SENSOR (w/o BRACKET)
ASS-200-0423	1	END OF WEB SENSOR (w/o BRACKET)
OPTIONS: RECOMMENDED SPARE PARTS (TAMP HOME SENSOR)		
Part Number	Recommended Qty	Description
ASS-218-0139	1	I/O INTERFACE HARNESS
ASS-238-0433	1	TAMP HOME SENSOR (w/o BRACKET)
** CYLINDER MUST BE DESIGNATED WITH AN "E"***		
OPTIONS: RECOMMENDED SPARE PARTS (SMART TAMP - PHOTOEYE)		
Part Number	Recommended Qty	Description
ASS-218-0139	1	I/O INTERFACE HARNESS
PE-SE0985	1	SM312W-QD SENSOR ** JOB SPECIFIC **
OPTIONS: RECOMMENDED SPARE PARTS (SMART TAMP - MECHANICAL)		
Part Number	Recommended Qty	Description
ASS-218-0139	1	I/O INTERFACE HARNESS
PE-SW1110 or	1	OMRON LIMIT SWITCH (ARM STYLE)
PE-SW1105 or	1	OMRON LIMIT SWITCH (BUTTON ROLLER STYLE)
PE-SW1100	1	OMRON LIMIT SWITCH (BUTTON STYLE)
OPTIONS: RECOMMENDED SPARE PARTS (VACUUM OFF OPTION)		
Part Number	Recommended Qty	Description
ASS-218-0139	1	I/O INTERFACE HARNESS
ASS-200-0459	1	VACUUM SWITCH ASSEMBLY
OPTIONS: RECOMMENDED SPARE PARTS (QUICK DISCONNECT PAD & MANIFOLD)		
Part Number	Recommended Qty	Description
PM-FASSBP11000	4	BALL PLUNGERS
MP-238-0270	1	QUICK CHANGE SLIDE TRANSITION PLATE

1800 PRINTER APPLICATOR SPARE PARTS LIST
When ordering parts, present Serial Number of 1800

SPARE PARTS LIST FOR RETIRED ASSEMBLIES		
OPTIONS: RECOMMENDED SPARE PARTS (AC INCANDESCENT ALARM LIGHT - ALLEN-BRADLEY)		
Part Number	Recommended Qty	Description
PE-LI2070	1	LAMP (FOR ALARM LIGHT)
PE-RE1001	1	RELAY (FOR ALARM LIGHT)



-TB1 TERMINALS

TB1-1	AC/LINE INPUT POWER	TB1-18	NO MEDIA
TB1-2	AC/LINE INPUT POWER	TB1-19	PRINT END
TB1-3	AC/NEUTRAL INPUT POWER	TB1-20	PRINTER READY
TB1-4	AC/NEUTRAL INPUT POWER	TB1-21	PRINT START
TB1-5	24 VDC	TB1-22	READY OUTPUT
TB1-6	24 VDC	TB1-23	WARNING ALARM
TB1-7	24 VDC	TB1-24	CRITICAL ALARM
TB1-8	24 VDC	TB1-25	GROUND
TB1-9	0 VDC	TB1-26	TAMP HOME
TB1-10	0 VDC	TB1-27	TAMP EXTEND
TB1-11	0 VDC	TB1-28	VACUUM SWITCH
TB1-12	0 VDC	TB1-29	ALARM RESET
TB1-13	PRODUCT DETECT		
TB1-14	LOW LABEL	TB1-31	REISSUE
TB1-15	END OF WEB	TB1-32	TAMP HOME
TB1-16	INHIBIT	TB1-33	LABEL ON PAD
TB1-17	LOW RIBBON	TB1-34	0 VDC

DO NOT MOUNT THESE TERMINALS TO MOUNTING RAIL, BUT ALLOW ROOM ON THE MOUNTING RAIL FOR THEM

DO NOT WIRE TO THESE TERMINALS (X8-F & Y8-F ARE OPTIONS)

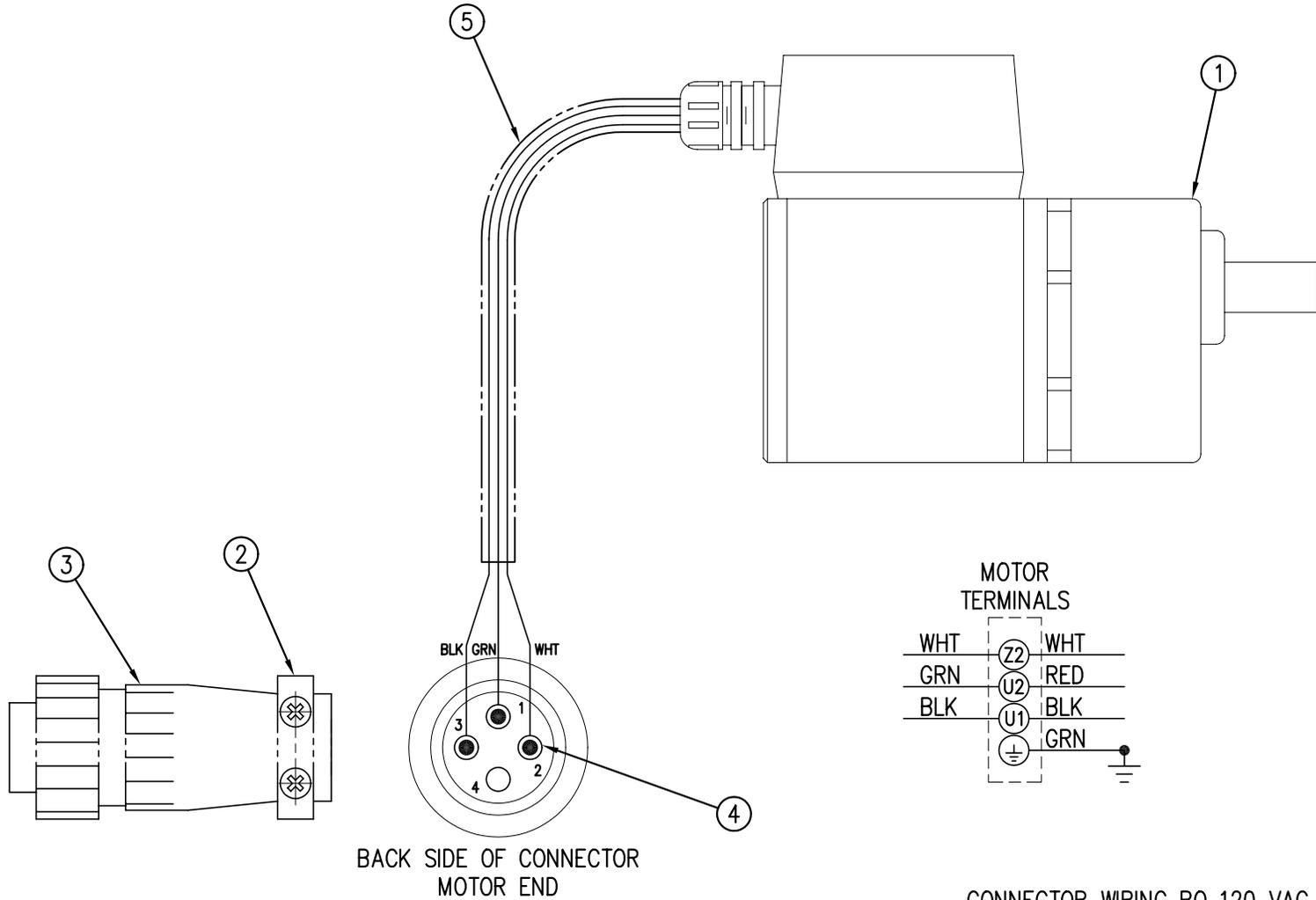
I/O CONNECTOR PE-238-0411 OPTIONAL

BILL OF MATERIAL

SOLD

ASS-218-0428

ASSEMBLY		ASS-218-0428		.
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER	
①	1	REWIND INDUCTION GEARMOTOR	PE-MO1128	.
②	1	CLAMP, CABLE PLUG	PE-CC1040	.
③	1	4-PIN, REVERSE SEX PLUG	PE-CON2019	.
④	3	MALE PIN	PE-CON7051	.
⑤	1	16/3 SJO CORD x 20" Lg.	PE-CO3050	.



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TITLE: 1800-PA SERIES APPLICATOR: ELECTRICAL BOX PART: REWIND MOTOR with CONNECTOR Dept. Code 70

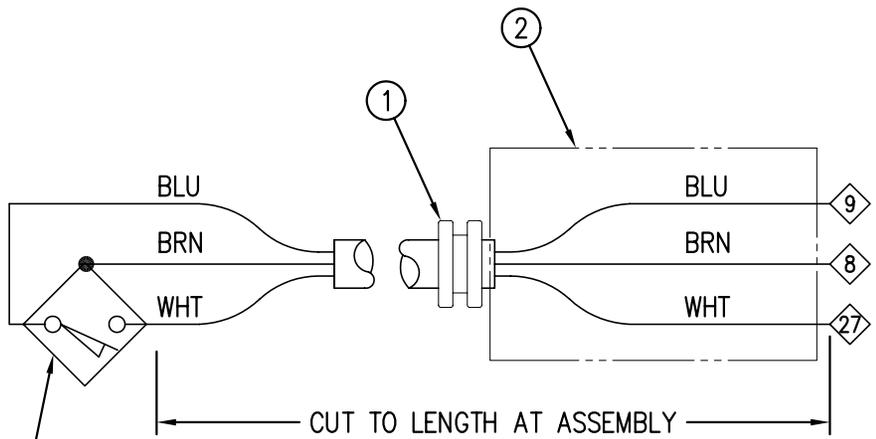
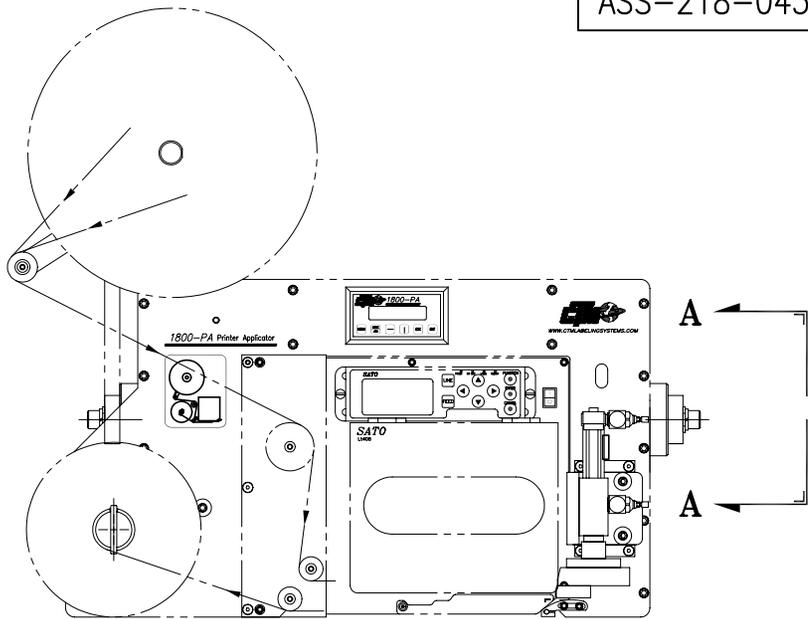
REV. 0	REV. DESCRIPTION -	REV. DATE -	REV. BY: XXX	Scale: 1=2	Date: 10/05/05	DRAWN BY: BMW	F:\Engineering\Standard Parts\System Components: 1800\ASS-218-0428
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ASS-218-0431

BILL OF MATERIAL

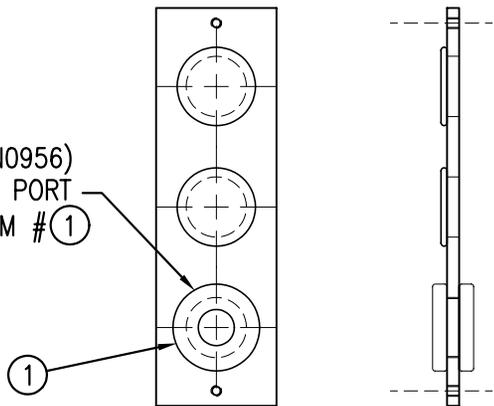
SOLD

ASSEMBLY		ASS-218-0431		S
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER	
①	1	GROMMET, 5/16" ID, 3/4" OD, 1/8" Thick	PE-C02019	.
②	1	I/O CONNECTOR OPTION	ASS-218-0139	.



NOTHING IS LISTED FOR THE TAMP RETURN SENSOR ITSELF SINCE IT WILL BE JOB SPECIFIC. REFER TO THE JOB BILL OF MATERIAL FOR SENSOR TYPE.

REMOVE PLUG (PE-EN0956) FROM AUX. PORT AND ADD ITEM # ①



VIEW A-A
PORT CONNECTOR STRIP
(4X SCALE)

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TITLE: 1800-PA SERIES APPLICATOR

PART: PHOTOELECTRIC TAMP RETURN SENSOR WIRING

Dept. Code 70

REV. 0	REV. DESCRIPTION -	REV. DATE -	REV. BY: XXX	Scale: 1=8	Date: 10/16/08	DRAWN BY: BMW	F:\Engineering\Standard Parts\System Components: 1800\ASS-218-0431
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PE-218-0420

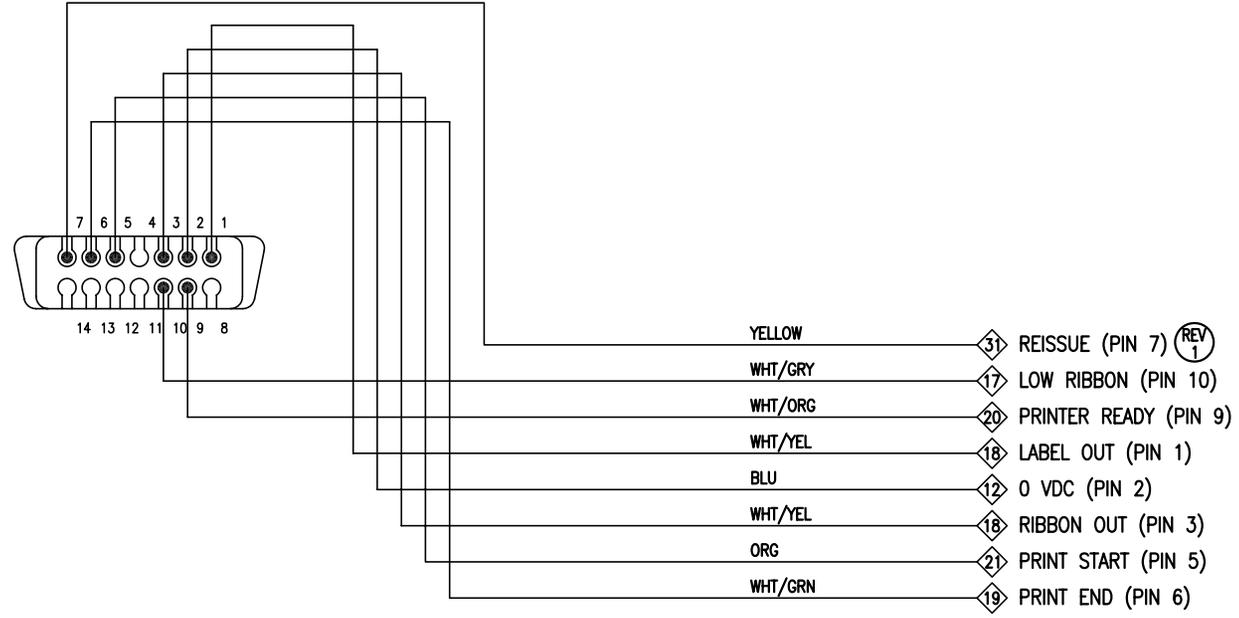
BILL OF MATERIAL

SOLD

ASSEMBLY		PE-218-0420		.
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER	
①	1	SATO I/F PLUG	PE-PL1100	.
	1	WHT/GRY (AWG 22) WIRE x 24" LONG	PE-W1048	.
	1	WHT/ORG (AWG 22) WIRE x 24" LONG	PE-W1047	.
	2	WHT/YEL (AWG 22) WIRE x 24" LONG	PE-W1044	.
	1	BLUE (AWG 22) WIRE x 24" LG.	PE-W1036	.
	1	ORG (AWG 22) WIRE x 24" LG.	PE-W1038	.
	1	WHT/GRN (AWG 22) WIRE x 24" LONG	PE-W1043	.
	1	YELLOW (AWG 22) WIRE x 24" LONG	PE-W1035	.
	7	3/32" x 3/8" Lg. SHRINK TUBE	PE-ST1000	.
	1	1/4" x 14" Lg. SHRINK TUBE	PE-ST1015	.
	2	1/4" x 3/4" Lg. SHRINK TUBE	PE-ST1015	.
	1	3/8" x 1" Lg. SHRINK TUBE	PE-ST1020	.

- SOLDER WIRES INTO CONNECTOR.
- SLIDE 3/32" X 3/8" LONG SHRINK TUBE OVER SOLDER CONNECTIONS OF EACH WIRE.
- TWIST THE WIRE TO MAKE A SMOOTH BUNDLE AND APPLY 1/4" X 14" LONG SHRINK TUBE OVER ALL THE WIRES LEAVING A 1/8" GAP BETWEEN THE 3/32" AND 1/4" TUBE.
- SLIDE 1/4" X 3/4" LONG SHRINK TUBE OVER 1/4" X 14" LONG SHRINK TUBE WITH THE ENDS FLUSH AT THE CONNECTOR END. REPEAT THIS STEP TO MAKE A THIRD LAYER.
- SLIDE 3/8" X 1" LONG SHRINK TUBE OVER THESE THREE LAYERS TO MAKE A FORTH LAYER.
- COMPLETE ASSEMBLY.

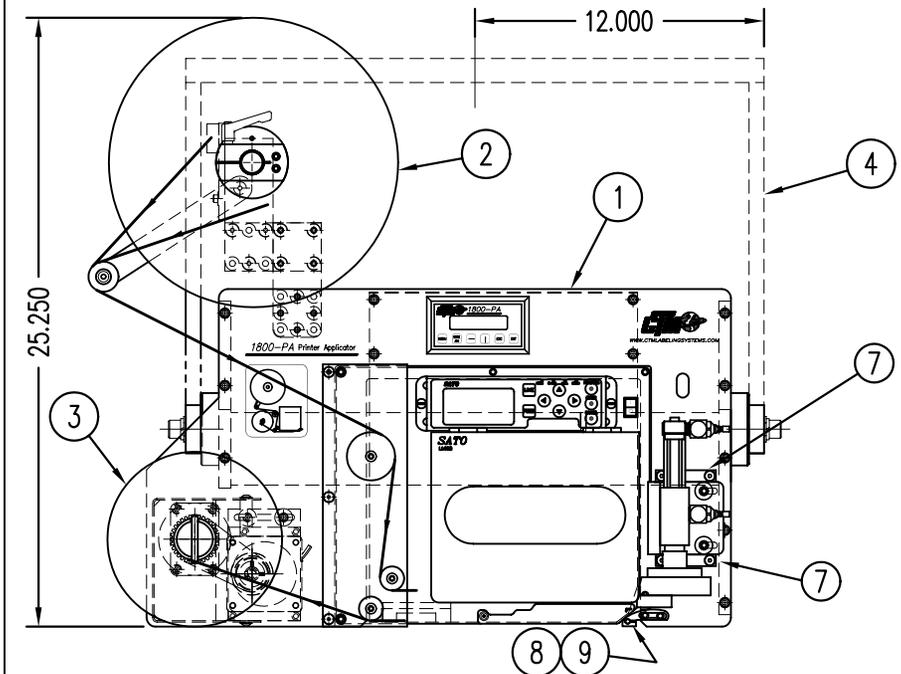
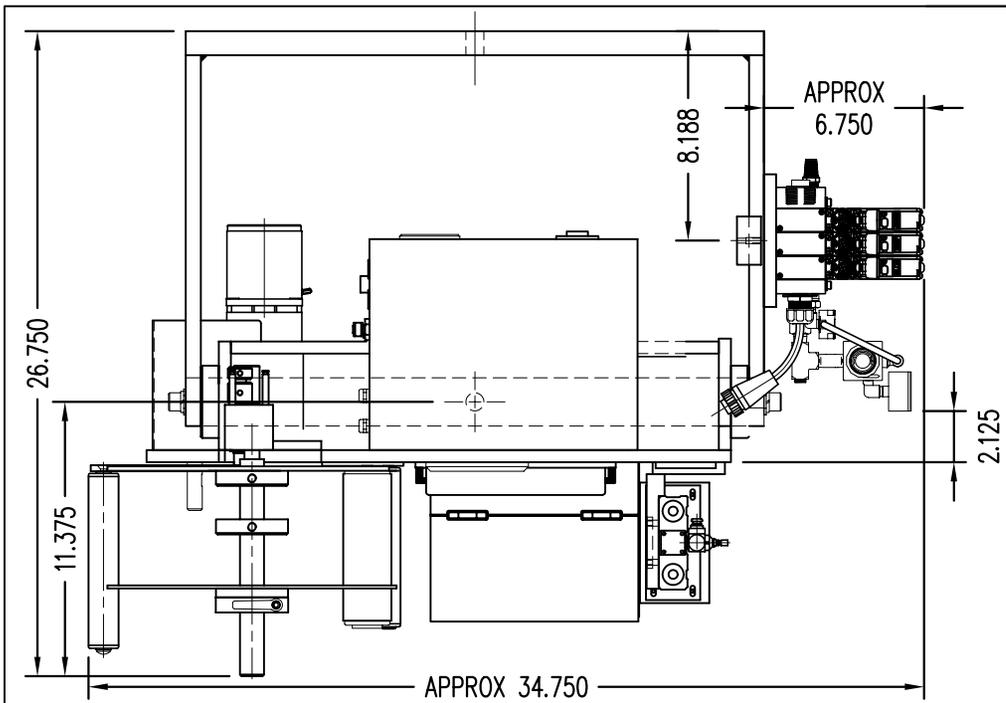
BACK SIDE OF PLUG C12
 -@ SATO SE INTERFACE PLUG-



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TITLE: 1800-PA SERIES APPLICATOR: ELECTRICAL BOX PART: APPLICATOR TO SATO SE INTERFACE HARNESS Dept. Code 70

REV. 1	REV. DESCRIPTION PROGRAM UPDATE, PIN 7 (FOR REISSUE OPTION) IS NOW USED	REV. DATE 07/11/07	REV. BY: ES	Scale: 1=2	Date: 10/05/05	DRAWN BY: BMW	F:\Engineering\Standard Parts\System Components: 1800\PE-218-0420
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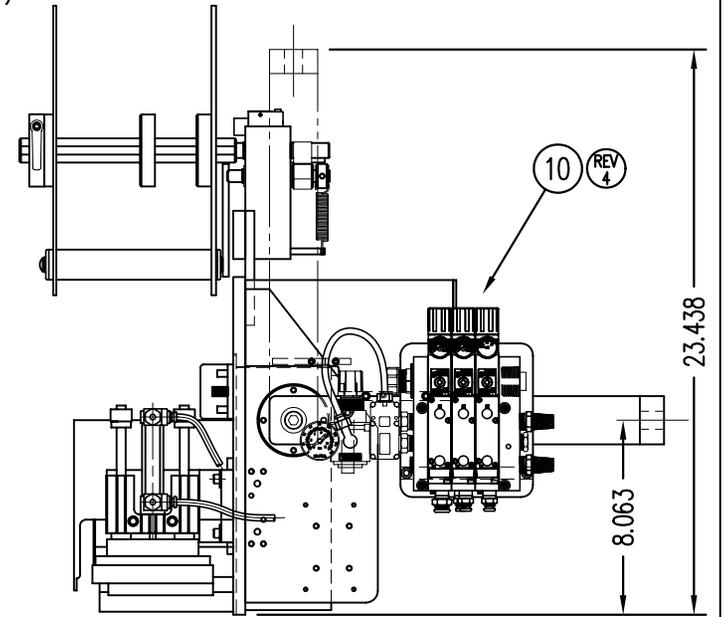


BILL OF MATERIAL			SOLD	
CTM-218-0124XR-12X				
ASSEMBLY	QTY	ITEM DESCRIPTION	CTM PART NUMBER	
①	1	RH APPLICATOR CORE UNIT	ASS-218-0123R	.
②	1	12" UNWIND ASSEMBLY	MOD-238-0122R	.
	1	12" UNWIND ASSEMBLY (Reels-Up)	MOD-238-0122AR	.
③	1	REWIND SPINDLE w/ DISK	ASS-238-0144-12	.
	1	FILM REWIND ASSEMBLY	ASS-200-2137	.
④	1	U-ARM ASSEMBLY	WAS-238-0130	.
⑤	1	SATO L140B PRINT ENGINE	PE-WLT-408	.
⑥	1	APPLICATOR to SATO SE INTERFACE	PE-218-0420	.
TAMP NOSE MODULE -consisting of the following-				
⑦	2	TAMP GUIDE	MP-238-0241	.
⑧	1	AIR ASSIST TUBE HOLDER	MP-238-0242	.
⑨	1	AIR ASSIST TUBE	MP-211-0217-5	.
⑩	1	3-STATION MAC VALVE BANK ASSEMBLY	ASS-218-0136M	.
11	1	AIR ASSIST TUBING x 15 Lg.	PM-AH1000	.
12	1	1/4 OD TUBING x 66" Lg.	PM-PT1070	.
13	1	3/8 OD TUBING x 33" Lg.	PM-PT1080	.

CTM-218-0124XR-12X

-0124R-12S
-0124R-12F
-0124AR-12S
-0124AR-12F

SLIDE STROKE LENGTH IS JOB SPECIFIC
ORDER SLIDE & MTG. NUT ASS'Y SEPARATELY
(REFER TO CTM #ASS-218-0103-XX)
LABEL PAD AND MANIFOLD ORDER SEPARATELY
(JOB SPECIFIC) *USES SAME AS 3600-PA*



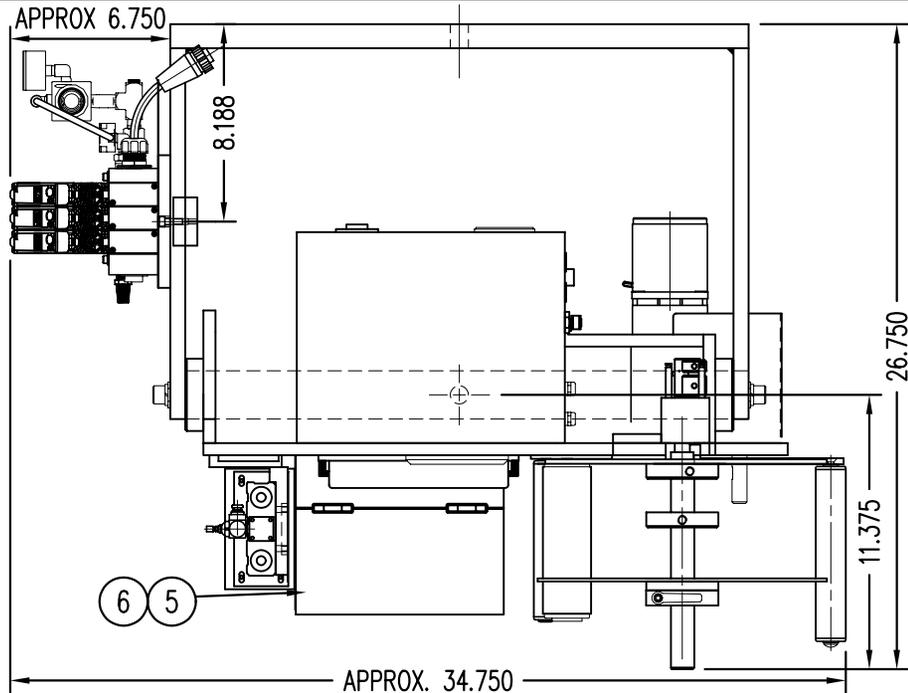
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TITLE: 1800-PA SERIES APPLICATOR PART: 12" UNWIND STANDARD RH TAMP CTM ASSEMBLY Dept. Code 70

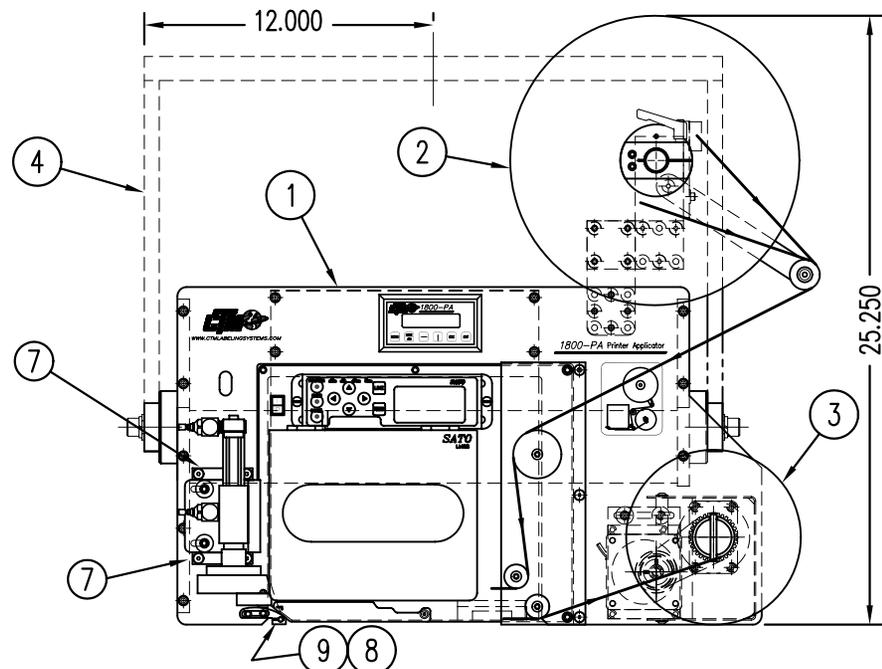
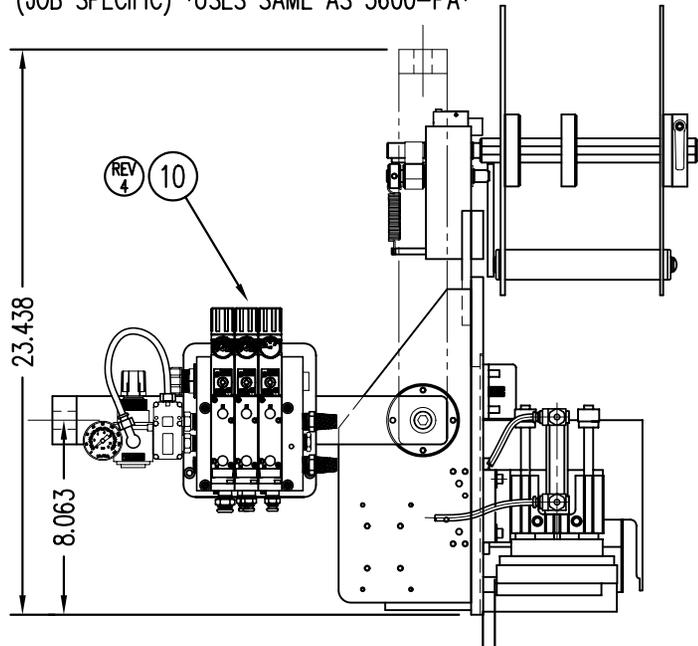
REV. 4	REV. DESCRIPTION U-ARM MOUNTED MAC VALVE BANK REPLACES NUMATIC TYPE	REV. DATE 06/18/07	REV. BY: ES	Scale: 1=8	Date: 07/07/06	DRAWN BY: Tracy Rhodes	F:\Engineering\Standard Parts\System Components: 1800\CTM-218-0124XR-12X
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BILL OF MATERIAL				SOLD
CTM-218-0124XL-12X				.
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER	
①	1	LH APPLICATOR CORE UNIT	ASS-218-0123L	.
②	1	12" UNWIND ASSEMBLY	MOD-238-0122L	.
	1	12" UNWIND ASSEMBLY (Reels-Up)	MOD-238-0122AL	.
③	1	REWIND SPINDLE w/ DISK	ASS-238-0144-12	.
④	1	FILM REWIND ASSEMBLY	ASS-200-2137	.
④	1	U-ARM ASSEMBLY	WAS-238-0130	.
⑤	1	SATO Lt408 PRINT ENGINE	PE-WLT-408	.
⑥	1	APPLICATOR to SATO SE INTERFACE	PE-218-0420	.
TAMP NOSE MODULE				
-consisting of the following-				
⑦	2	TAMP GUIDE	MP-238-0241	.
⑧	1	AIR ASSIST TUBE HOLDER	MP-238-0242	.
⑨	1	AIR ASSIST TUBE	MP-211-0217-5	.
⑩	1	3-STATION VALVE BANK ASSEMBLY	ASS-218-0136M	.
11	1	AIR ASSIST TUBING x 15 Lg.	PM-AH1000	.
12	1	1/4 OD TUBING x 66" Lg.	PM-PT1070	.
13	1	3/8 OD TUBING x 33" Lg.	PM-PT1080	.

SLIDE STROKE LENGTH IS JOB SPECIFIC
 ORDER SLIDE & MTG. NUT ASS'Y SEPARATELY
 (REFER TO CTM #ASS-218-0103-XX)
 LABEL PAD AND MANIFOLD ORDER SEPARATELY
 (JOB SPECIFIC) *USES SAME AS 3600-PA*



CTM-218-0124XL-12X
-0124L-12S
-0124L-12F
-0124AL-12S
-0124AL-12F



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TITLE: 1800-PA SERIES APPLICATOR

PART: 12" UNWIND STANDARD LH TAMP CTM ASSEMBLY

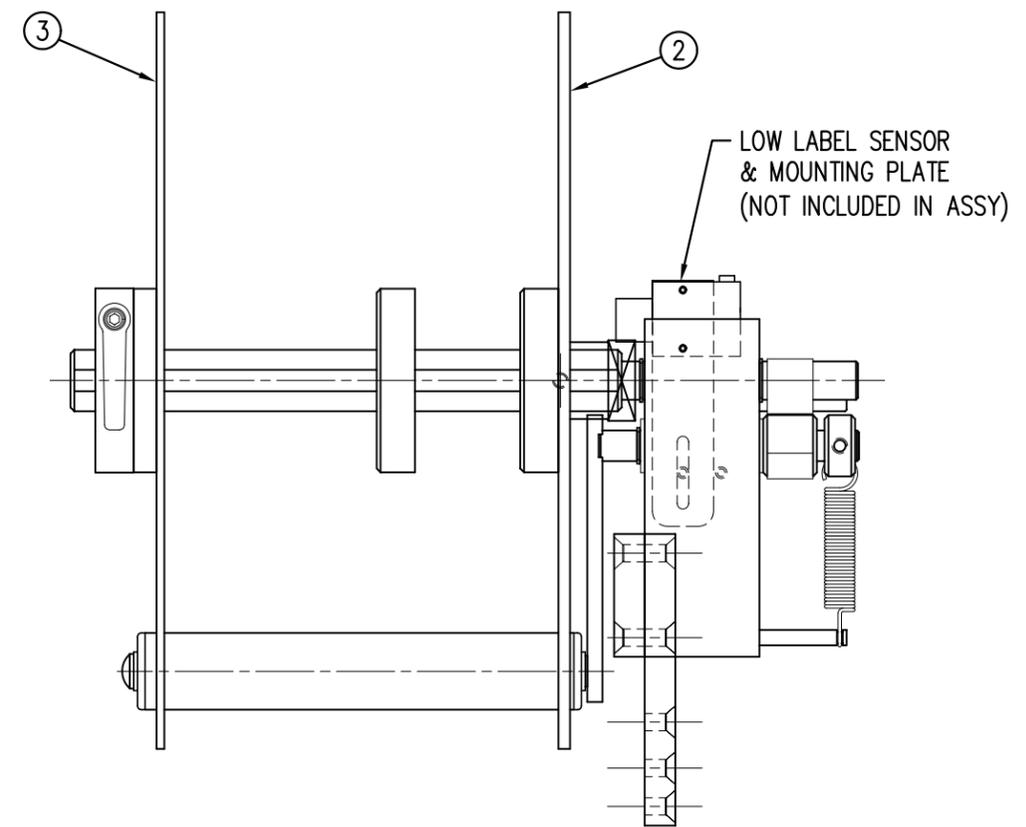
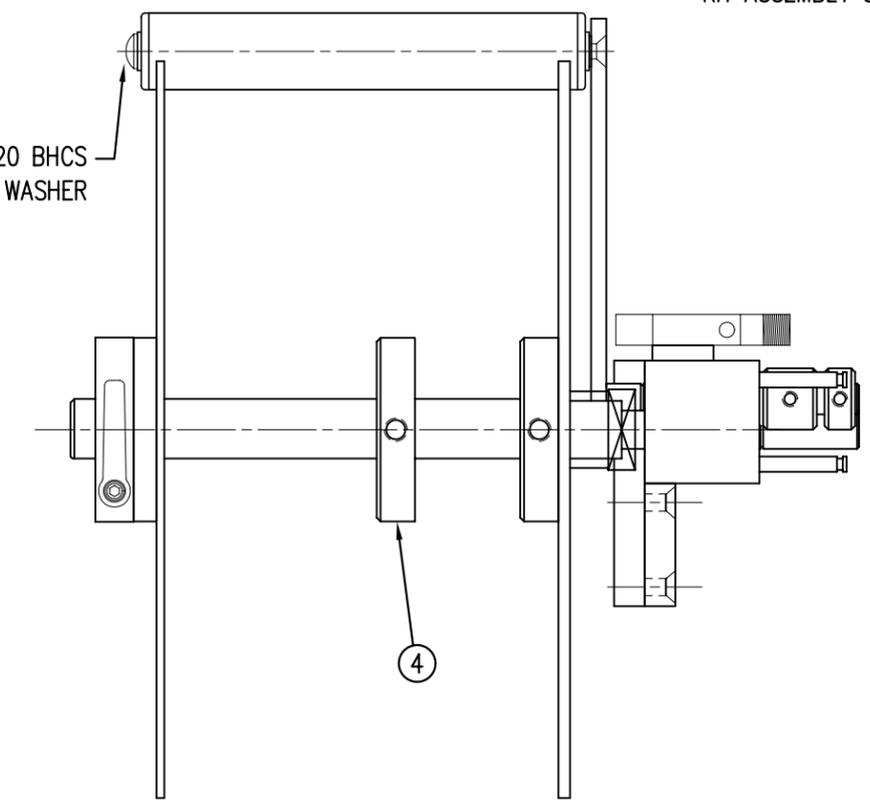
Dept. Code
70

REV. 4	REV. DESCRIPTION U-ARM MOUNTED MAC VALVE BANK REPLACES NUMATIC TYPE	REV. DATE 06/18/07	REV. BY: ES	Scale: 1=8	Date: 07/07/06	DRAWN BY: Tracy Rhodes	F:\Engineering\Standard Parts\System Components: 1800\CTM-218-0124XL-12X
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BILL OF MATERIAL				SOLD
ASSEMBLY	MOD-218-0122R/LX			S
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER	
①	1	UNWIND ASSEMBLY	SAS-238-0122R/L	.
②	1	12" INSIDE UNWIND DISK ASSEMBLY	ASS-200-0132	S STANDARD
	1	12" ALUMINUM INSIDE UNWIND DISK ASSY	ASS-200-0132A	S REELS UP
③	1	12" OUTSIDE UNWIND DISK ASSEMBLY	ASS-200-0133	S
④	1	CORE SUPPORT	MP-200-0267CS	.
⑤	1	MOUNTING PLATE	MP-238-0236	.
⑥	1	5/8" ID STAINLESS STL LOCK COLLAR	PM-C01015	. REELS UP ONLY
⑦	1	1" ID x 5/8" Lg. BRONZE BUSHING	PM-BU1475	.
	4	FHCS, 1/4-20 x 3/4" LG.	NONE	.

RH & LH ASSEMBLIES AVAILABLE
-RH ASSEMBLY SHOWN-
MOD-218-0122R/LX

1/4-20 BHCS
w/ FLAT WASHER



LOW LABEL SENSOR
& MOUNTING PLATE
(NOT INCLUDED IN ASSY)

#10-32 X 5/8"
SHCS w/ F.W.

1/4-20 x 3/4 LG. FHCS
(4) PLCS.

1/4-20 x 3/4 LG. FHCS
FOR MOUNTING (4) PLCS.

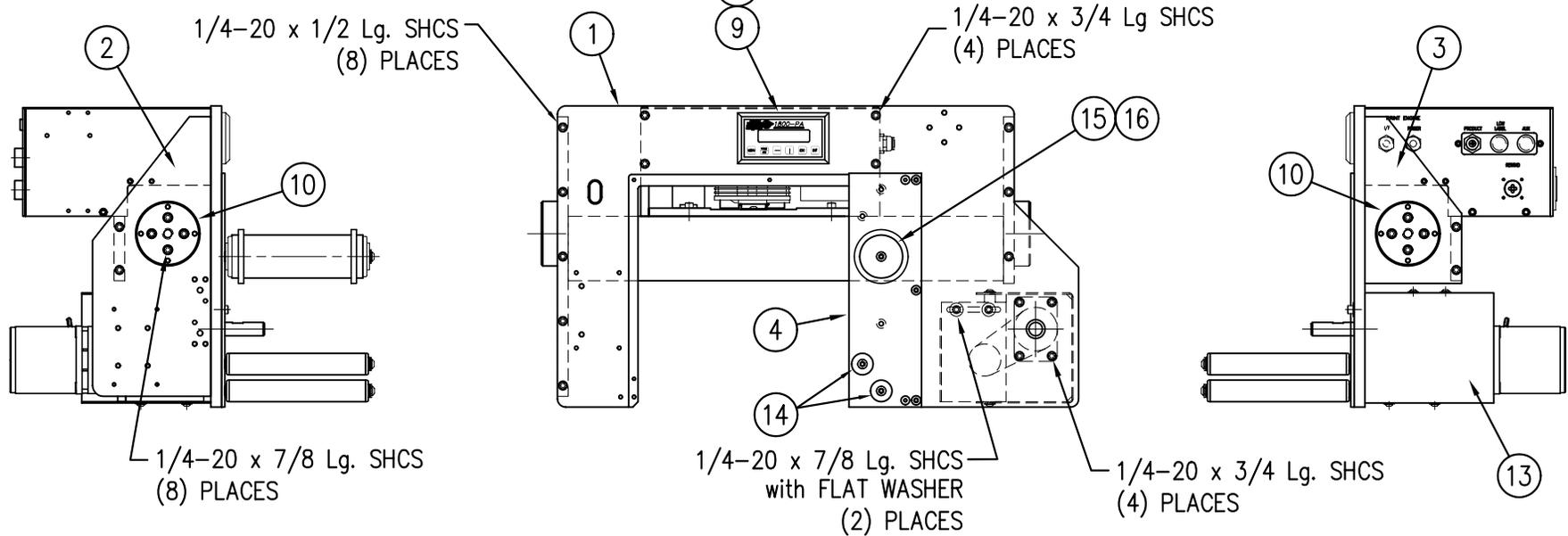
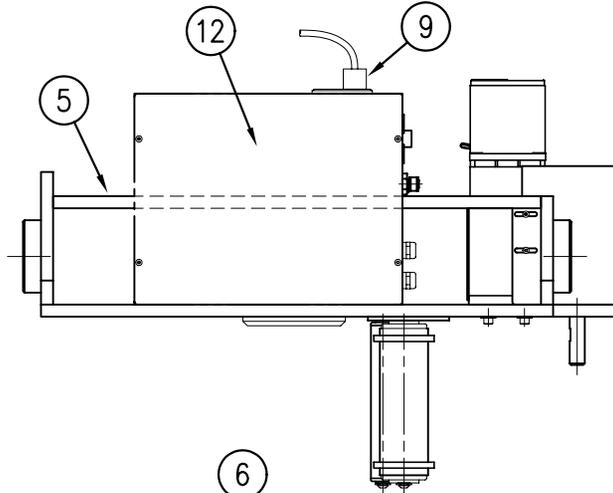
OPTIONAL END OF WEB
(NOT INCLUDED IN ASS'Y)

FRONT VIEW SHOWN w/o
UNWIND DISK ASSEMBLIES

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 TITLE: 1800-PA SERIES APPLICATOR: UNWIND ASSEMBLY
 REV. 1 CHANGED ITEM #5 ORIENTATION
 REV. DATE 09/28/06
 REV. BY TDR
 SCALE 1=3
 DATE 10/18/05
 DRAWN BY Tracy Rhodes
 DEPT. CODE 70
 F:\Engineering\Standard Parts\System Components\1800\MOD-218-0122RLX

ASS-218-0123L

BILL OF MATERIAL			SOLD
ASSEMBLY	ASS-218-0123L		.
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER
①	1	LH APPLICATOR FACEPLATE	MP-218-0201L
②	1	NOSE-SIDE SIDEFAME	MP-218-0202
③	1	MOTOR-SIDE SIDEFAME	MP-218-0203
④	1	ROLLER MOUNTING PLATE	MP-218-0204
⑤	1	CROSSBAR	MP-218-0205
⑥	1	OPERATOR INTERFACE	MP-IN1055
⑦	2	DISPLAY MOUNT	MP-238-0248
⑧	1	1800 DISPLAY LABEL (OVERLAY)	PE-DMC1210
⑨	1	FLANGE GASKET	PM-GA1000
⑩	2	U-ARM/APPLICATOR PIVOT MOUNT	MP-200-0273
⑪	1	APPLICATOR POWER CORD	PE-C01020
⑫	1	ELECTRICAL BOX ASSEMBLY	ASS-218-0127L
⑬	1	REWIND MOTOR ASSEMBLY	ASS-218-0133L
⑭	2	1.00" DIA. GUIDE ROLLER ASSEMBLY	ASS-218-0134
⑮	1	2.00" DIA. GUIDE ROLLER ASSEMBLY	ASS-218-0135
⑯	2	2.00" DIA. GUIDE COLLAR	MP-238-0247



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TITLE: 1800-PA SERIES APPLICATOR

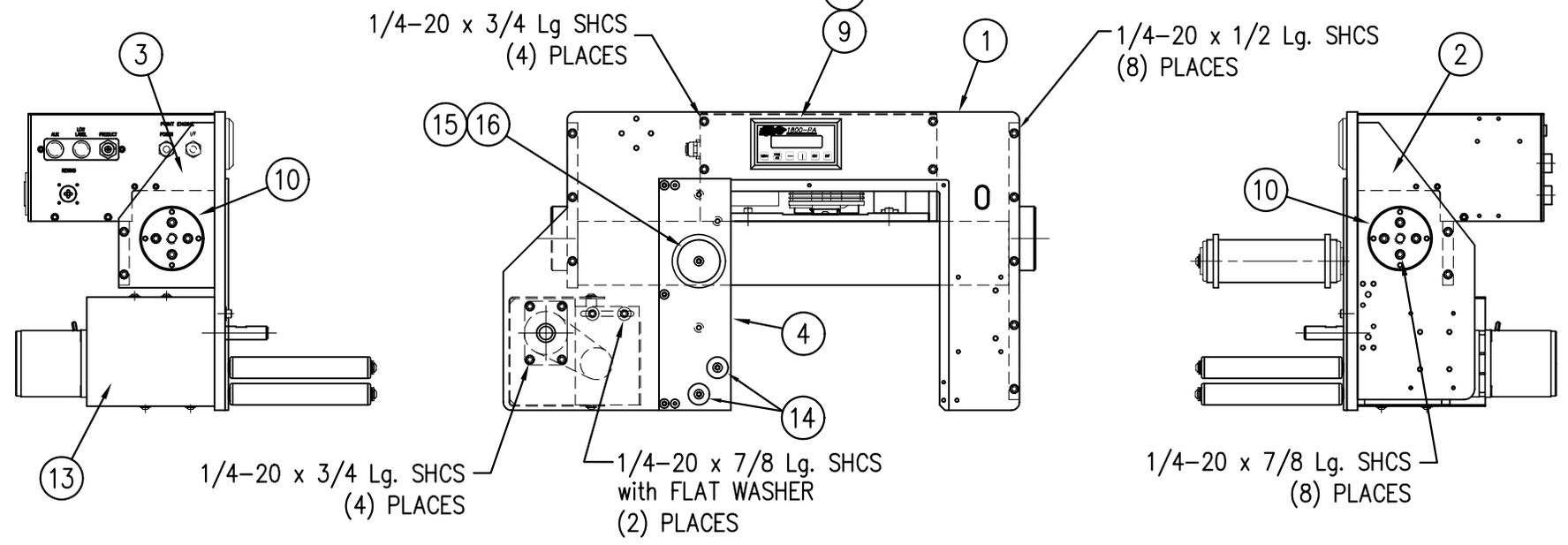
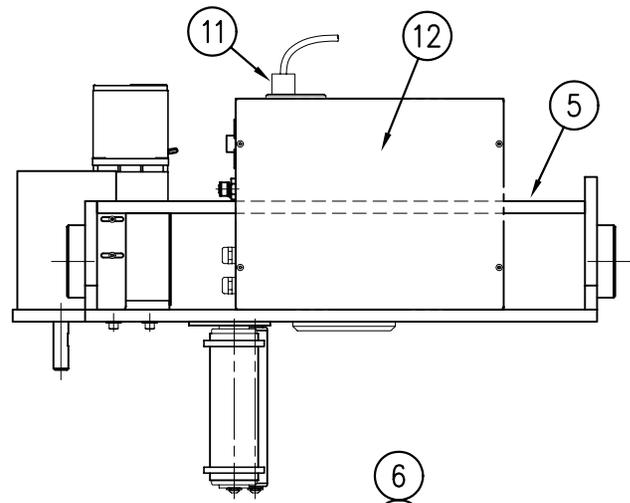
PART: LH APPLICATOR CORE UNIT ASSEMBLY

Dept. Code
70

REV. 0	REV. DESCRIPTION -	REV. DATE -	REV. BY: xxx	Scale: 1=8	Date: 07/07/06	DRAWN BY: Tracy Rhodes	F:\Engineering\Standard Parts\System Components: 1800\ASS-218-0123L
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ASS-218-0123R

BILL OF MATERIAL			SOLD
ASSEMBLY ASS-218-0123R			
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER
①	1	RH APPLICATOR FACEPLATE	MP-218-0201R
②	1	NOSE-SIDE SIDEFRAME	MP-218-0202
③	1	MOTOR-SIDE SIDEFRAME	MP-218-0203
④	1	ROLLER MOUNTING PLATE	MP-218-0204
⑤	1	CROSSBAR	MP-218-0205
⑥	1	OPERATOR INTERFACE	MP-IN1055
⑦	2	DISPLAY MOUNT	MP-238-0248
⑧	1	1800 DISPLAY LABEL (OVERLAY)	PE-DMC1210
⑨	1	FLANGE GASKET	PM-GA1000
⑩	2	U-ARM/APPLICATOR PIVOT MOUNT	MP-200-0273
⑪	1	APPLICATOR POWER CORD	PE-C01020
⑫	1	ELECTRICAL BOX ASSEMBLY	ASS-218-0127R
⑬	1	REWIND MOTOR ASSEMBLY	ASS-218-0133R
⑭	2	1.00" DIA. GUIDE ROLLER ASSEMBLY	ASS-218-0134
⑮	1	2.00" DIA. GUIDE ROLLER ASSEMBLY	ASS-218-0135
⑯	2	2.00" DIA. GUIDE COLLAR	MP-238-0247

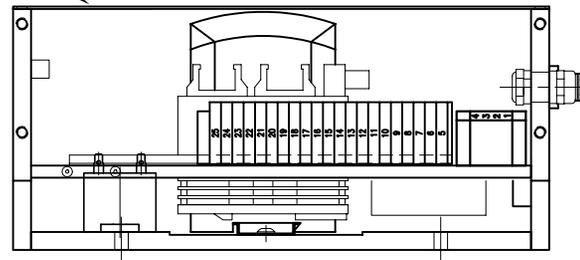
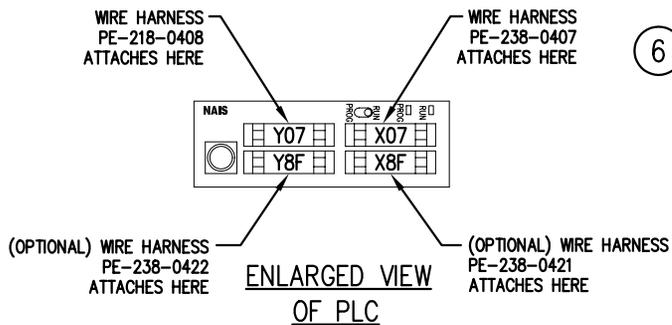
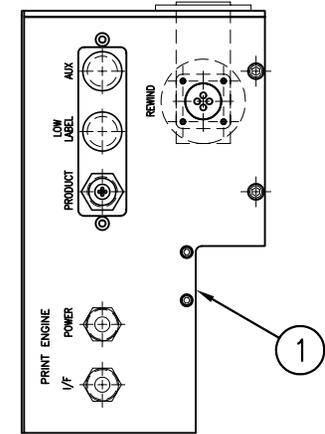
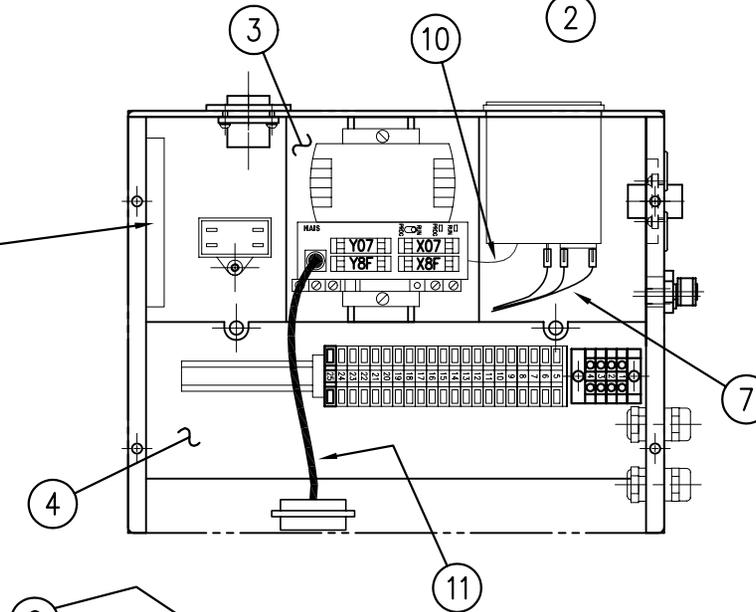
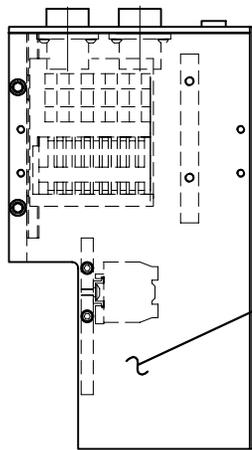
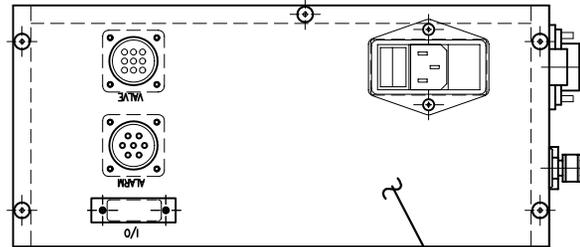


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TITLE: 1800-PA SERIES APPLICATOR PART: RH APPLICATOR CORE UNIT ASSEMBLY Dept. Code 70

REV. 0 REV. DESCRIPTION - REV. DATE - REV. BY: XXX Scale: 1=8 Date: 07/07/06 DRAWN BY: Tracy Rhodes F:\Engineering\Standard Parts\System Components: 1800\ASS-218-0123R

BILL OF MATERIAL			SOLD
ASSEMBLY	QTY	ITEM DESCRIPTION	CTM PART NUMBER
ASS-218-0127L			.
①	1	MOTOR SIDE CONNECTOR PLATE-LH	ASS-218-0128L
②	1	REAR CONNECTOR PLATE-LH	ASS-218-0129L
③	1	ELECTRONIC SHELF-LH	ASS-218-0130L
④	1	TERMINAL STRIP ASSEMBLY-LH	ASS-218-0131L
⑤	1	NOSE-SIDE ELECTRICAL BOX SIDEFRAME	MP-218-0210
⑥	1	ELECTRICAL BOX SAFETY GUARD	PM-218-0225
⑦	1	AC POWER HARNESS	PE-218-0412
⑧	1	GROUND BAR	PE-PA1110
9	1	PLC INPUT X0-7 WIRE HARNESS	PE-238-0407
⑩	1	PLC WIRE HARNESS	SAS-238-PLC1015
⑪	1	DISPLAY CABLE with THUMBSCREWS	PE-238-0425
12	1	PULL UP RESISTOR "LOW RIBBON"	ASS-238-0406-G
13	1	PULL UP RESISTOR "NO MEDIA"	ASS-238-0406-Y
14	1	PULL UP RESISTOR "PRINT END"	ASS-238-0406-P
15	1	PULL UP RESISTOR "PRINTER READY"	ASS-238-0406-B

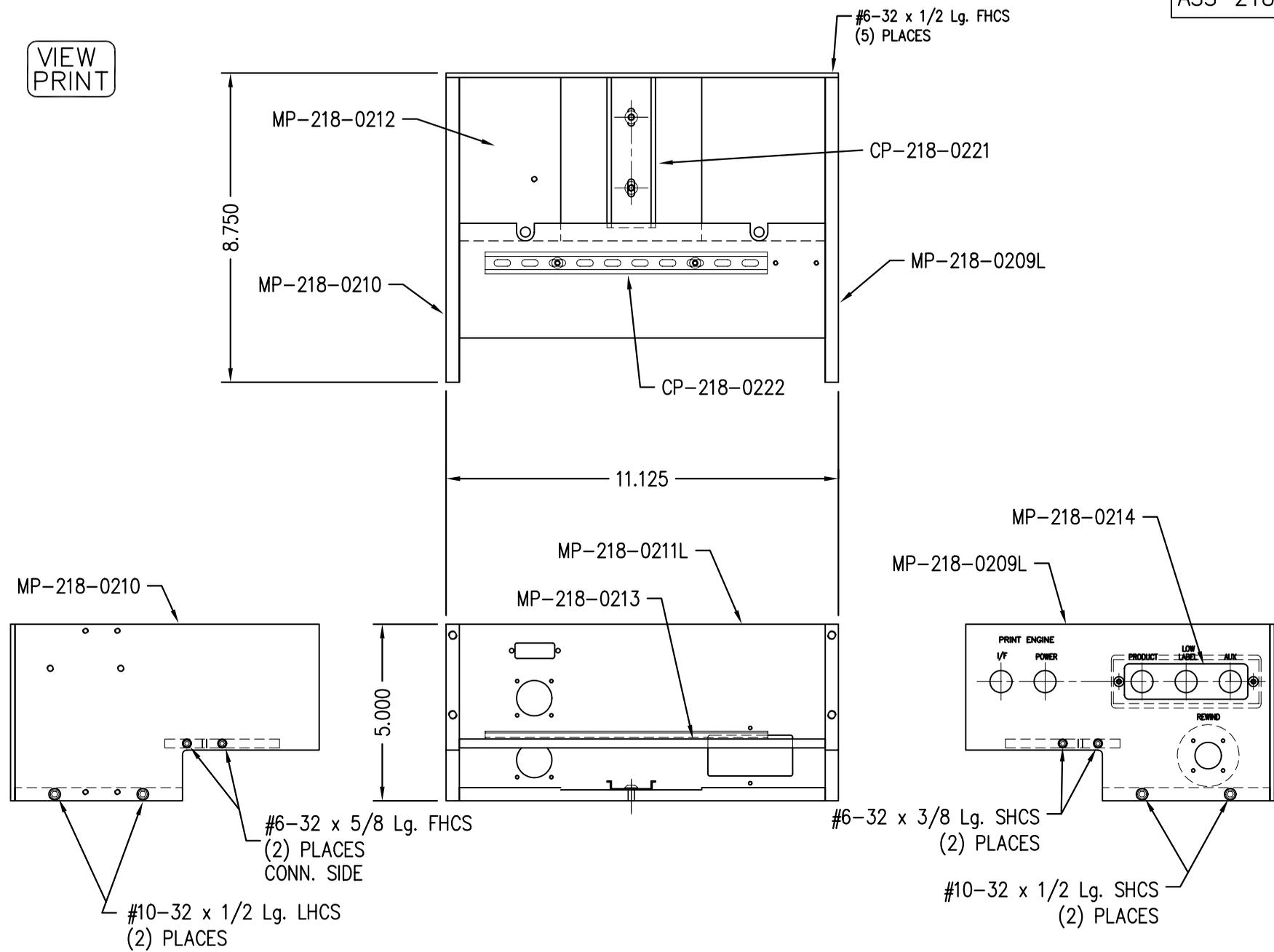


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TITLE: LH 1800-PA SERIES APPLICATOR: ELECTRICAL BOX PART: ELECTRICAL BOX ASSEMBLY (Sheet 1 of 3) Dept. Code 70

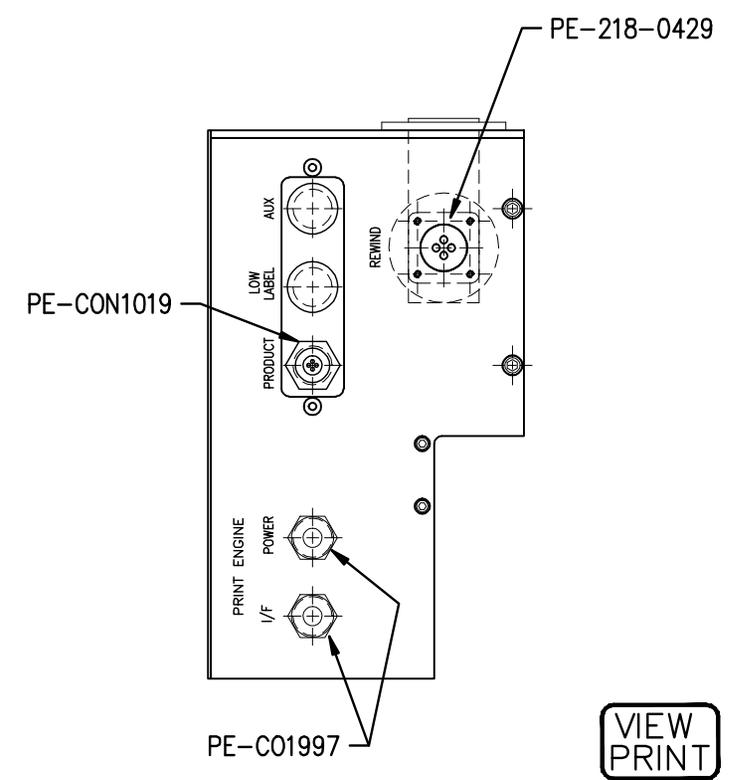
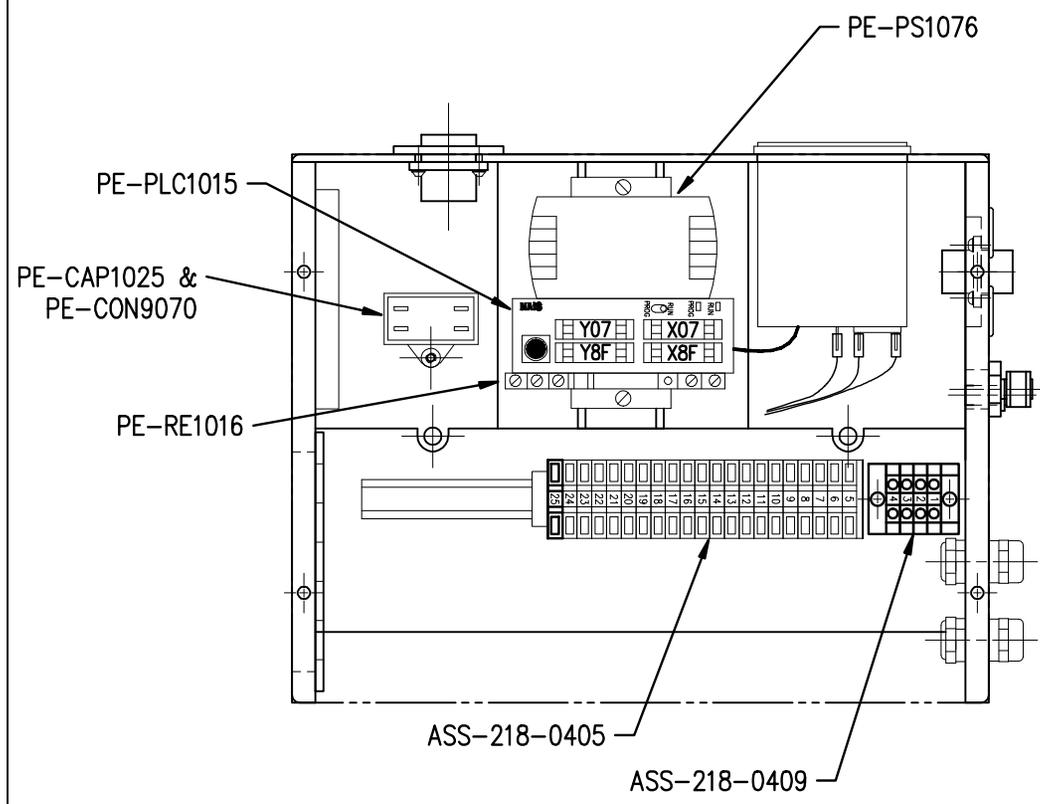
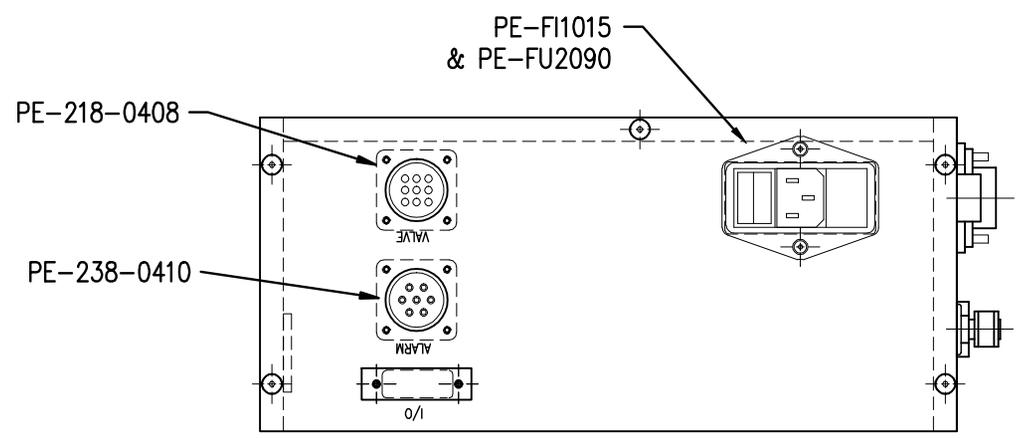
REV. 0 REV. DESCRIPTION - REV. DATE - REV. BY: XXX Scale: 1=4 Date: 02/23/07 DRAWN BY: E. SANOR F:\Engineering\Standard Parts\System Components: 1800\ASS-218-0127Ls1

VIEW
PRINT



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TITLE: LH 1800-PA SERIES APPLICATOR: ELECTRICAL BOX		PART: ELECTRICAL BOX (Sheet 2 of 3)			Dept. Code 70	
REV. 0	REV. DESCRIPTION -	REV. DATE -	REV. BY: XXX	Scale: 1=4	Date: 02/23/07	DRAWN BY: E. SANOR
				F:\Engineering\Standard Parts\System Components: 1800\ASS-218-0127Ls2		



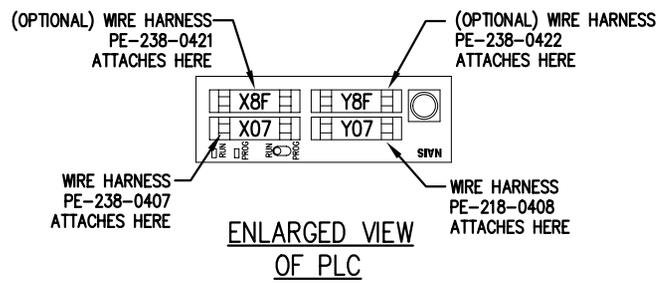
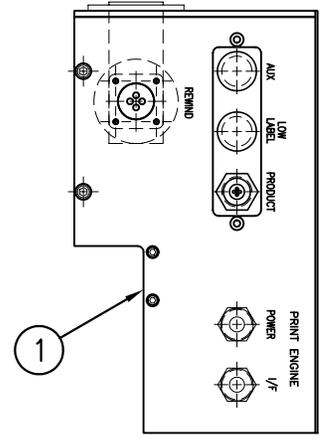
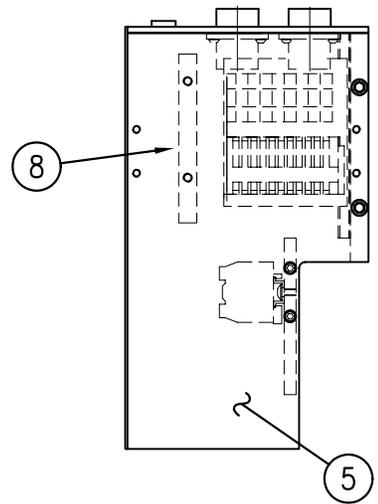
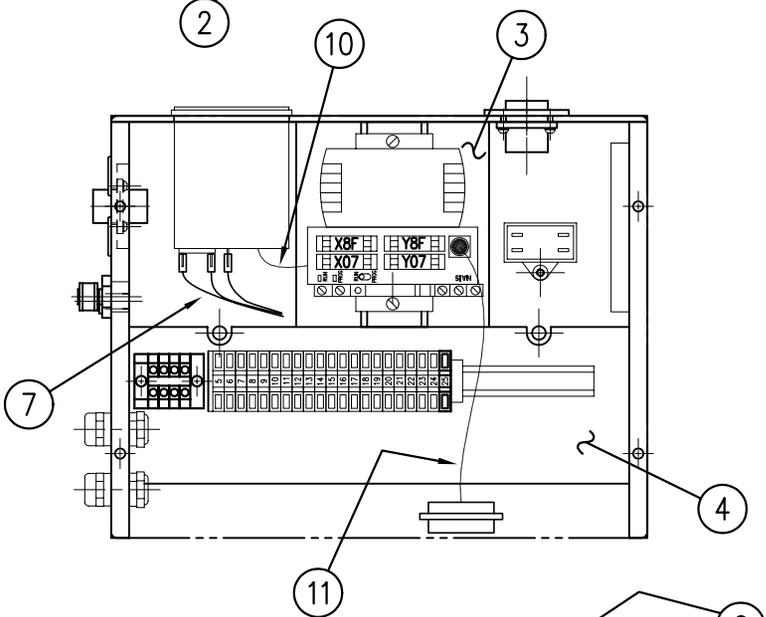
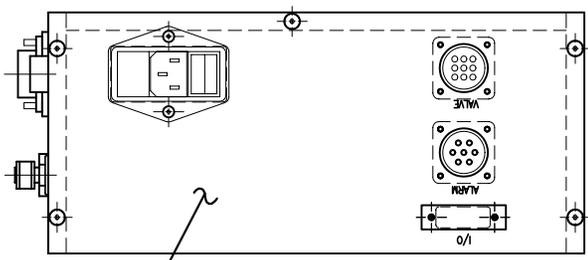
VIEW
PRINT

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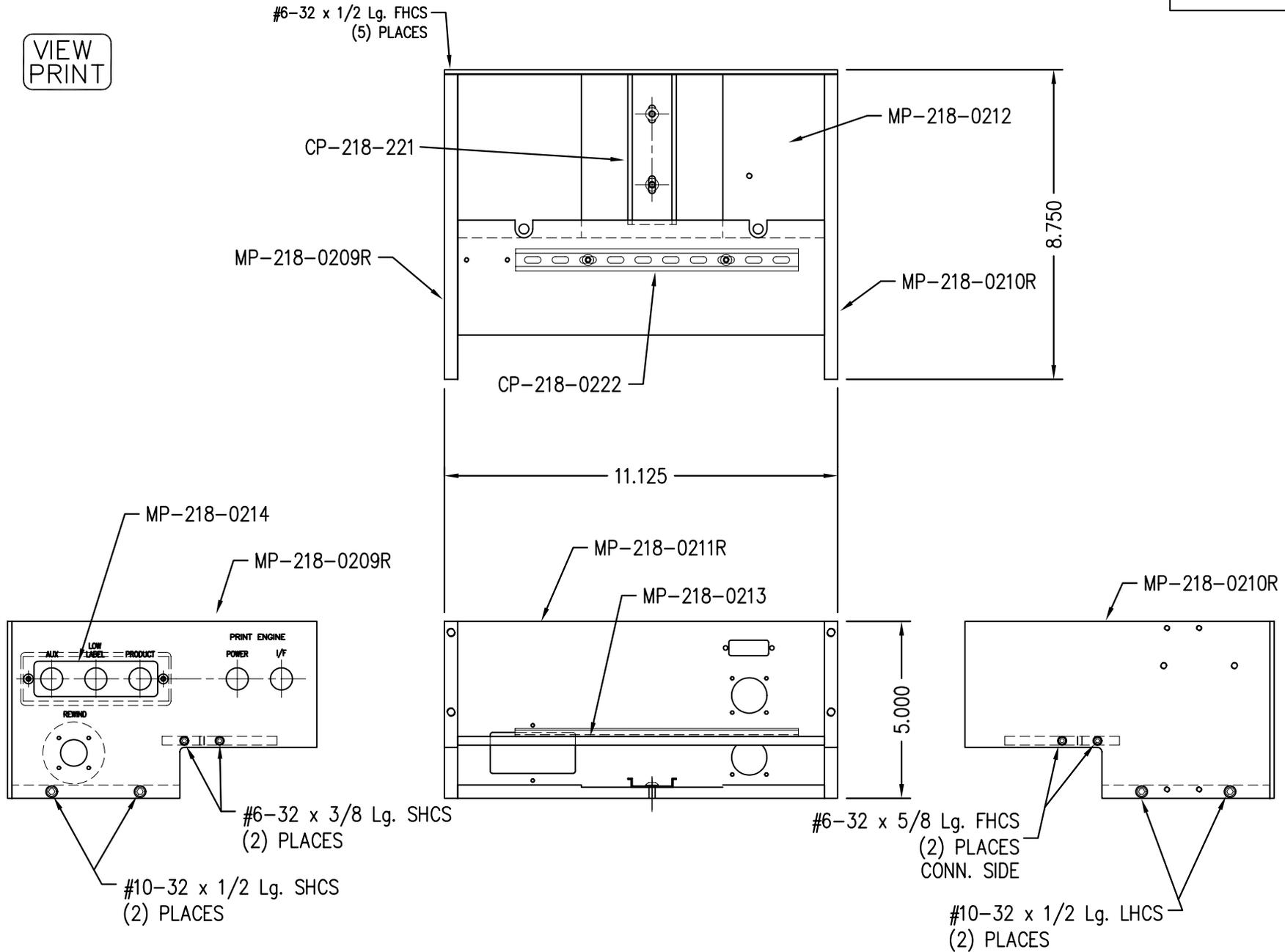
TITLE: LH 1800-PA SERIES APPLICATOR: ELECTRICAL BOX				PART: ELECTRICAL BOX COMPONENTS (Sheet 3 of 3)				Dept. Code 70	
REV. 0	REV. DESCRIPTION -	REV. DATE -	REV. BY: XXX	Scale: 1=3	Date: 02/23/07	DRAWN BY: E. SANOR	F:\Engineering\Standard Parts\System Components: 1800\ASS-218-0127Ls3		

ASS-218-0127R

BILL OF MATERIAL				SOLD
ASSEMBLY	ASS-218-0127R			.
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER	
①	1	MOTOR SIDE CONNECTOR PLATE	ASS-218-0128R	.
②	1	REAR CONNECTOR PLATE	ASS-218-0129R	.
③	1	ELECTRONIC SHELF	ASS-218-0130R	.
④	1	TERMINAL STRIP ASSEMBLY	ASS-218-0131R	.
⑤	1	NOSE-SIDE ELECTRICAL BOX SIDEFAME	MP-218-0210	.
⑥	1	ELECTRICAL BOX SAFETY GUARD	PM-218-0225	.
⑦	1	AC POWER HARNESS	PE-218-0412	.
⑧	1	GROUND BAR	PE-PA1110	.
9	1	PLC INPUT X0-7 WIRE HARNESS	PE-238-0407	.
⑩	1	PLC WIRE HARNESS	SAS-238-PLC1015	.
⑪	1	DISPLAY CABLE with THUMBSCREWS	PE-238-0425	.
12	1	PULL UP RESISTOR "LOW RIBBON"	ASS-238-0406-G	.
13	1	PULL UP RESISTOR "NO MEDIA"	ASS-238-0406-Y	.
14	1	PULL UP RESISTOR "PRINT END"	ASS-238-0406-P	.
15	1	PULL UP RESISTOR "PRINTER READY"	ASS-238-0406-B	.



VIEW
PRINT



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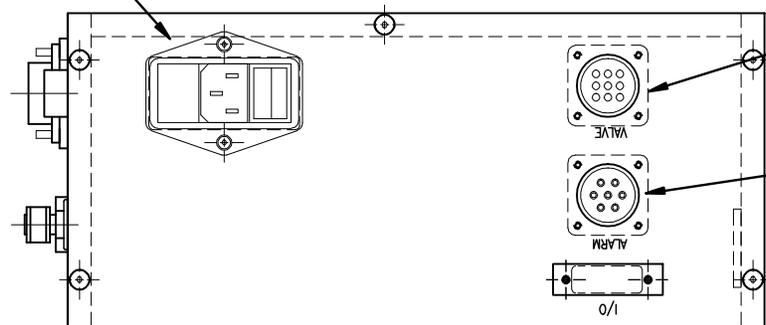
TITLE: 1800-PA SERIES APPLICATOR: ELECTRICAL BOX

PART: ELECTRICAL BOX (Sheet 2 of 3)

Dept. Code
70

REV. 0	REV. DESCRIPTION -	REV. DATE -	REV. BY: XXX	Scale: 1=4	Date: 01/31/06	DRAWN BY: Tracy Rhodes	F:\Engineering\Standard Parts\System Components: 1800\ASS-218-0127Rs2
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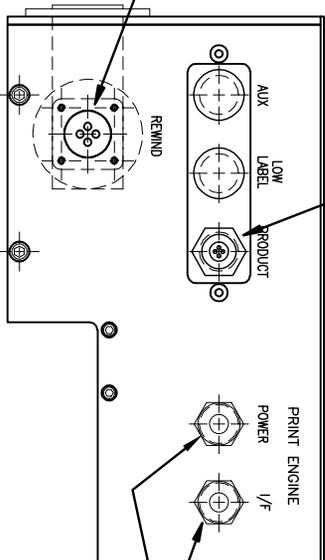
PE-FI1015
& PE-FU2090



PE-218-0408

PE-238-0410

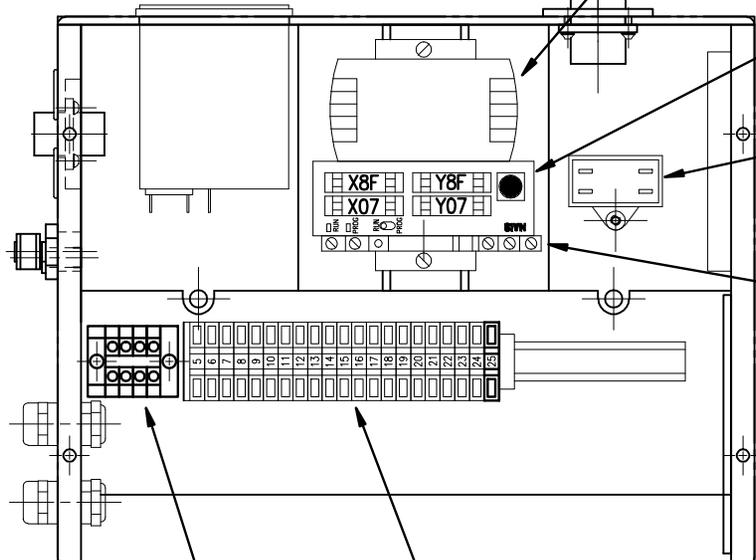
PE-218-0429



PE-CON1019

PE-C0197

PE-PS1076



PE-PLC1015

PE-CAP1025 &
PE-CON9070

PE-RE1016

ASS-218-0405

ASS-218-0409

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TITLE: 1800-PA SERIES APPLICATOR: ELECTRICAL BOX

PART: ELECTRICAL BOX COMPONENTS (Sheet 3 of 3)

Dept. Code
70

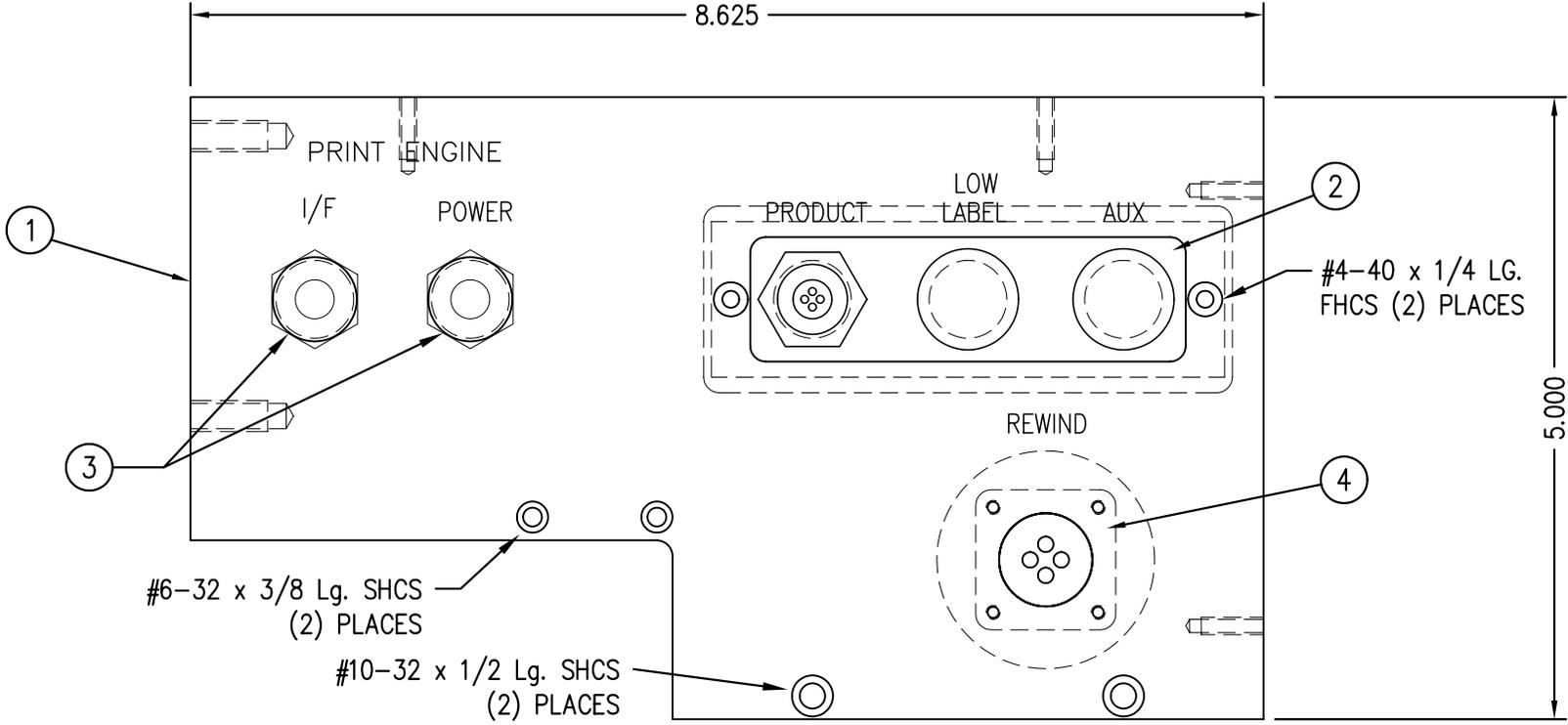
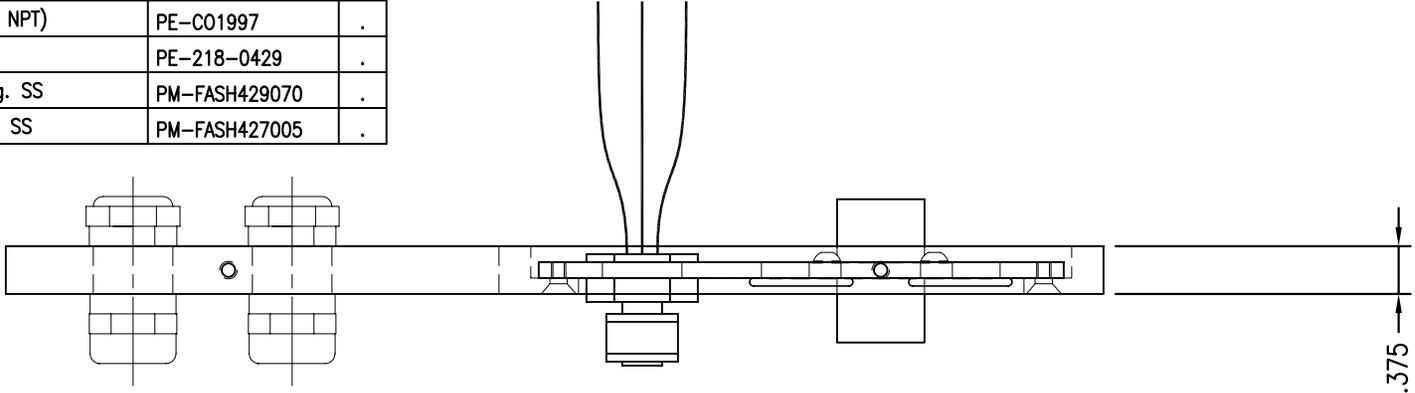
REV. 1	REV. DESCRIPTION FIXED PLC DRAWING	REV. DATE 09/25/06	REV. BY: TDR	Scale: 1=3	Date: 01/31/06	DRAWN BY: Tracy Rhodes	F:\Engineering\Standard Parts\System Components: 1800\ASS-218-0127R3
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ASS-218-0128L

BILL OF MATERIAL

SOLD

ASSEMBLY		ASS-218-0128L		.
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER	
①	1	MOTOR SIDE ELEC. BOX SIDEFRAME-LH	MP-218-0209L	.
②	1	PORT CONNECTOR STRIP	ASS-218-0132	.
③	2	CORD GRIP FITTING (3/8 NPT)	PE-C01997	.
④	1	REWIND CONNECTOR	PE-218-0429	.
	2	SHCS, #10-32 x 1/2 Lg. SS	PM-FASH429070	.
	2	SHCS, #6-32 x 3/8 Lg. SS	PM-FASH427005	.



#6-32 x 3/8 Lg. SHCS (2) PLACES
 #10-32 x 1/2 Lg. SHCS (2) PLACES

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TITLE: 1800-PA SERIES APPLICATOR: ELECTRICAL BOX PART: MOTOR SIDE CONNECTOR PLATE - LH Dept. Code 70

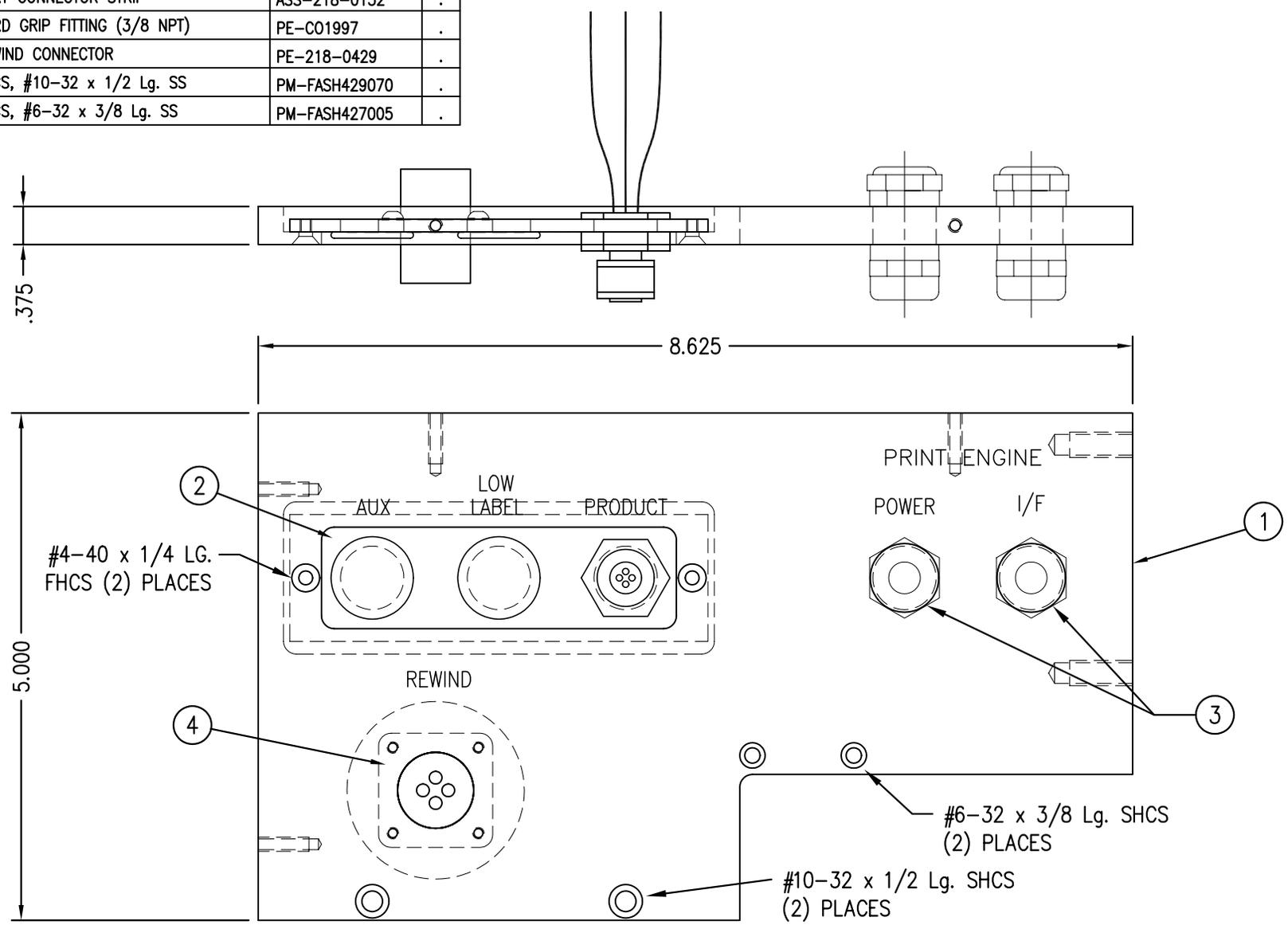
REV. 0	REV. DESCRIPTION -	REV. DATE -	REV. BY: XXX	Scale: 1=1.5	Date: 07/07/06	DRAWN BY: Tracy Rhodes	F:\Engineering\Standard Parts\System Components: 1800\ASS-218-0128L
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ASS-218-0128R

BILL OF MATERIAL

SOLD

ASSEMBLY		ASS-218-0128R		.
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER	
①	1	MOTOR SIDE ELEC. BOX SIDEFRAE-RH	MP-218-0209R	.
②	1	PORT CONNECTOR STRIP	ASS-218-0132	.
③	2	CORD GRIP FITTING (3/8 NPT)	PE-C01997	.
④	1	REWIND CONNECTOR	PE-218-0429	.
	2	SHCS, #10-32 x 1/2 Lg. SS	PM-FASH429070	.
	2	SHCS, #6-32 x 3/8 Lg. SS	PM-FASH427005	.



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TITLE: 1800-PA SERIES APPLICATOR: ELECTRICAL BOX PART: MOTOR SIDE CONNECTOR PLATE - RH Dept. Code 70

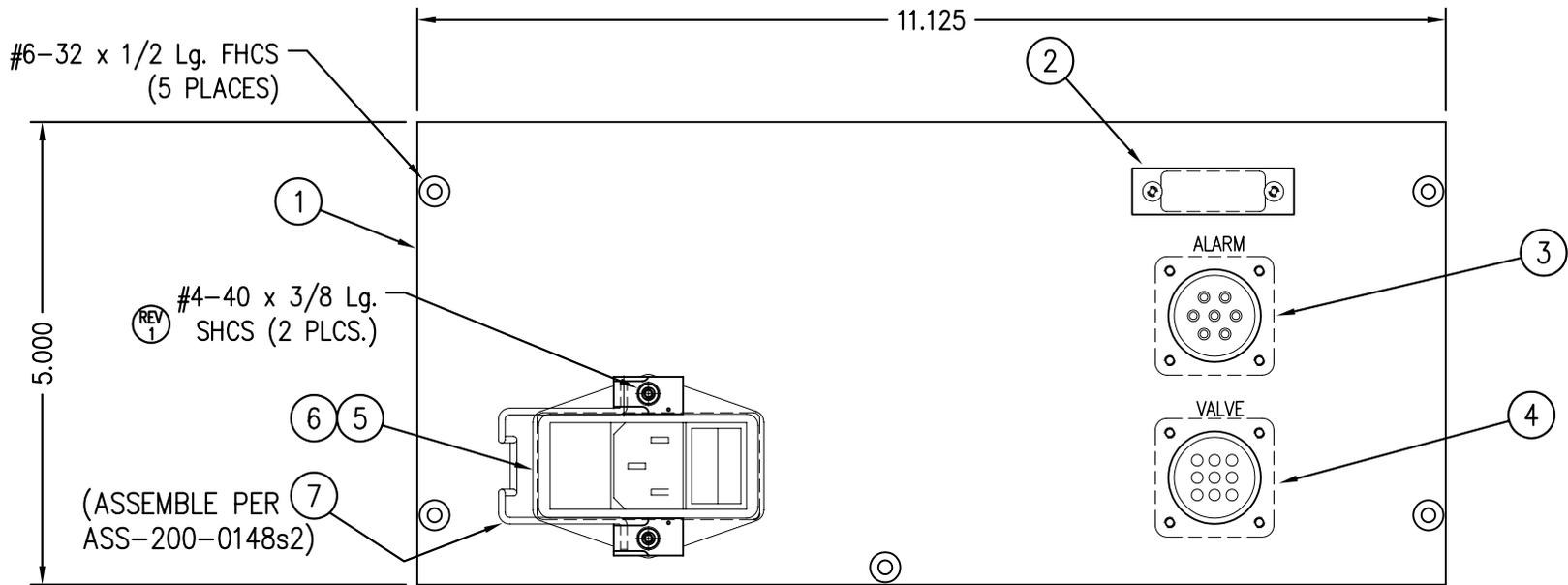
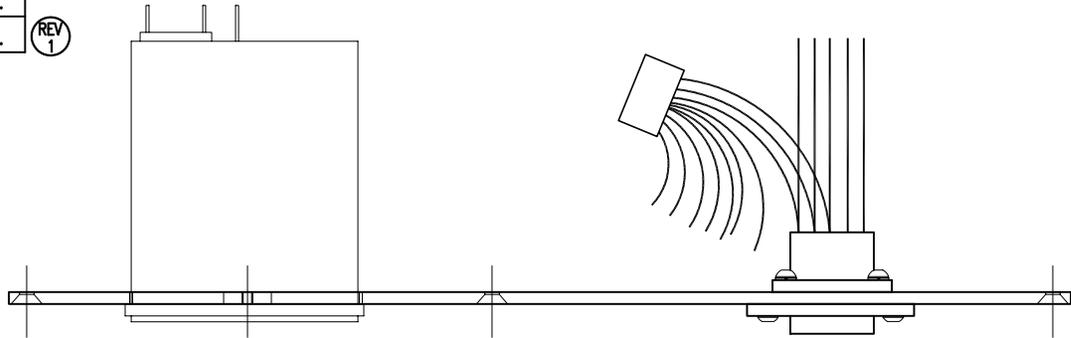
REV. 0	REV. DESCRIPTION -	REV. DATE -	REV. BY: XXX	Scale: 1=1.5	Date: 07/07/06	DRAWN BY: Tracy Rhodes	F:\Engineering\Standard Parts\System Components: 1800\ASS-218-0128R
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ASS-218-0129L

BILL OF MATERIAL

SOLD

ASSEMBLY		ASS-218-0129L		.
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER	
①	1	ELECTRICAL BOX BACKPLATE - LH	MP-218-0211L	.
②	1	I/O PORT BLANK	MP-218-0215	.
③	1	ALARM CONNECTOR HARNESS	PE-238-0410	REV 2
④	1	VALVE CONNECTOR & PLC OUTPUT Y0-7	PE-218-0408	.
⑤	1	IEC FILTER	PE-FI1015	.
⑥	2	FUSE	PE-FU2090	.
⑦	1	POWER CORD CLIP ASSEMBLY	ASS-200-0148	.
	5	FHCS, #6-32 x 1/2 Lg. SS	PM-FAFH50592	REV 1



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TITLE: 1800-PA SERIES APPLICATOR: ELECTRICAL BOX

PART: REAR CONNECTOR PLATE - LH

Dept. Code
70

REV. 2 REV. DESCRIPTION
ITEM #3 WAS PE-218-0410

REV. DATE
01/07/09

REV. BY:
TDR

Scale:
1=2

Date:
07/07/06

DRAWN BY:
Tracy Rhodes

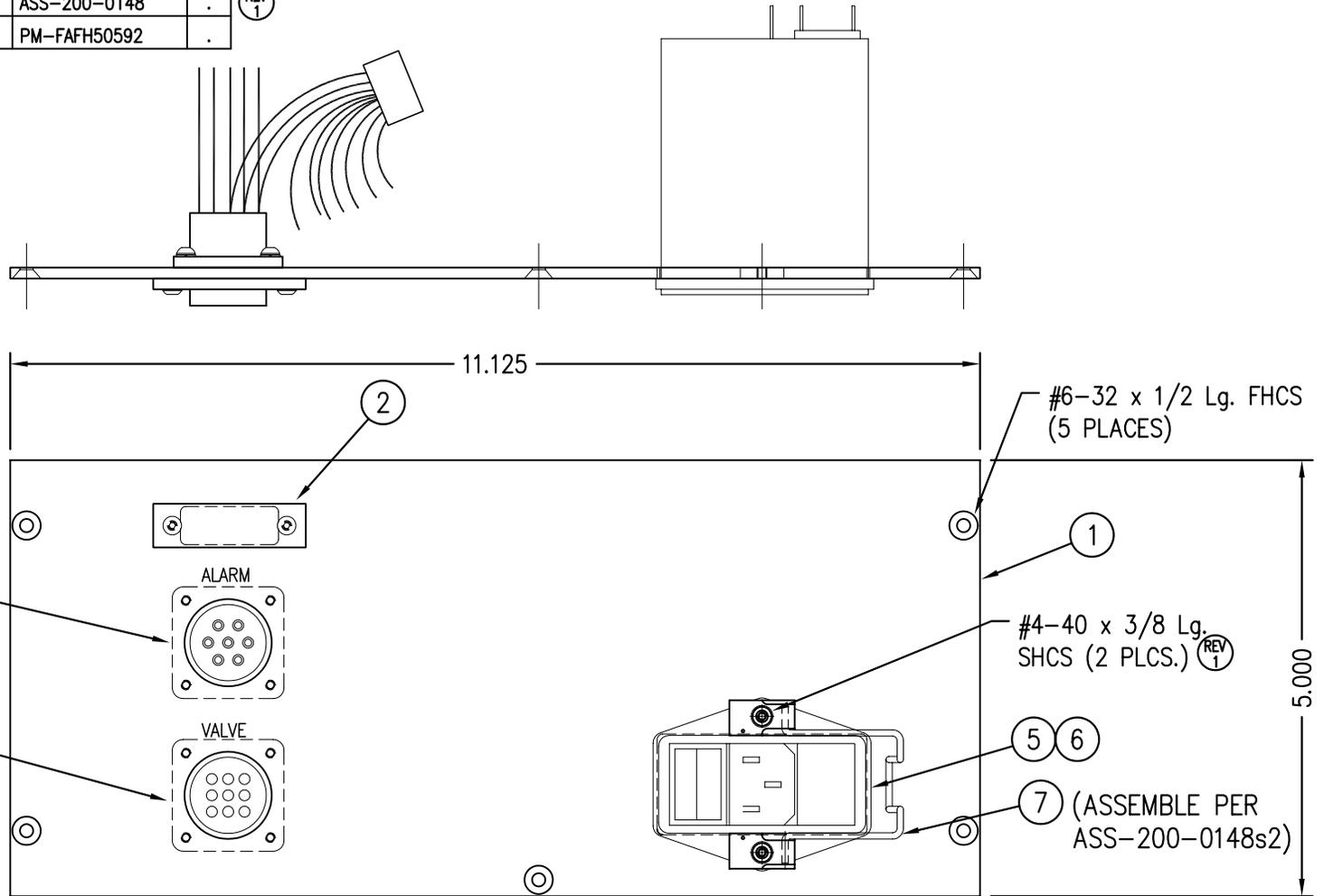
F:\Engineering\Standard Parts\System Components:
1800\ASS-218-0129L

BILL OF MATERIAL

SOLD

ASS-218-0129R

ASSEMBLY	ASS-218-0129R		
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER
①	1	ELECTRICAL BOX BACKPLATE - RH	MP-218-0211R
②	1	I/O PORT BLANK	MP-218-0215
③	1	ALARM CONNECTOR HARNESS	PE-238-0410
④	1	VALVE CONNECTOR & PLC OUTPUT Y0-7	PE-218-0408
⑤	1	IEC FILTER	PE-FI1015
⑥	2	FUSE	PE-FU2090
⑦	1	POWER CORD CLIP ASSEMBLY	ASS-200-0148
	5	FHCS, #6-32 x 1/2 Lg. SS	PM-FAFH50592



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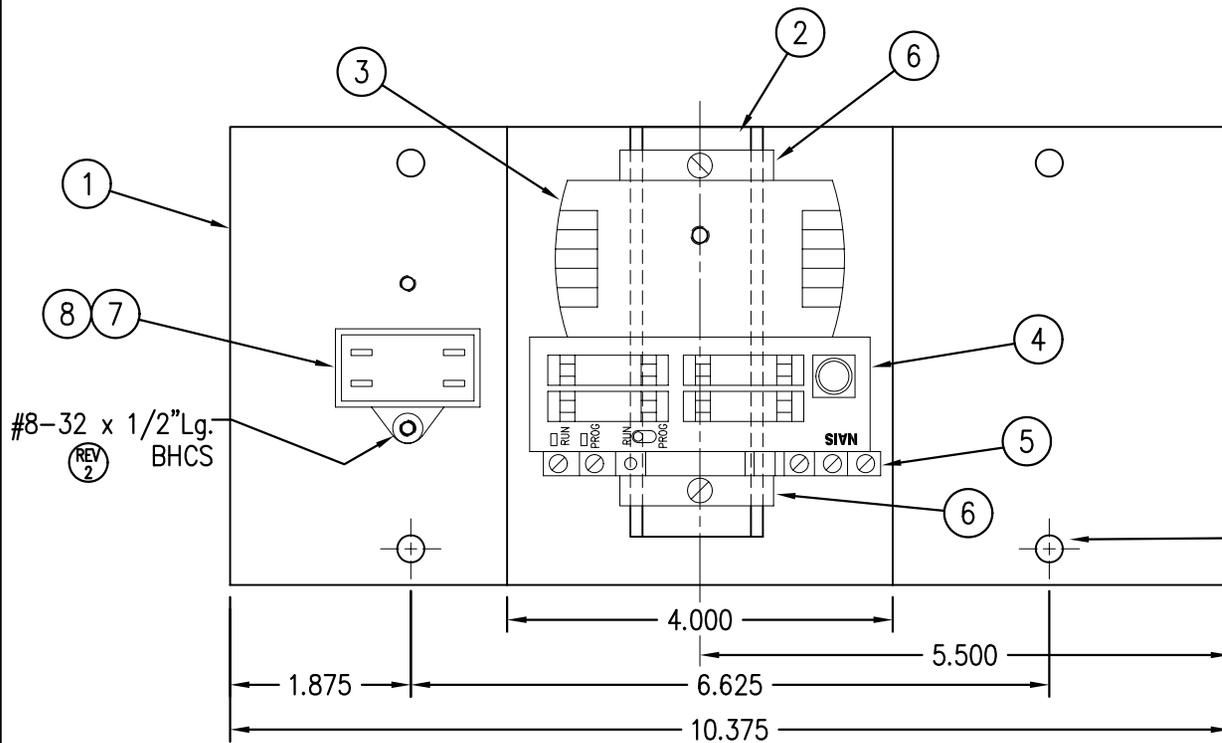
TITLE: 1800-PA SERIES APPLICATOR: ELECTRICAL BOX

PART: REAR CONNECTOR PLATE - RH

Dept. Code
70

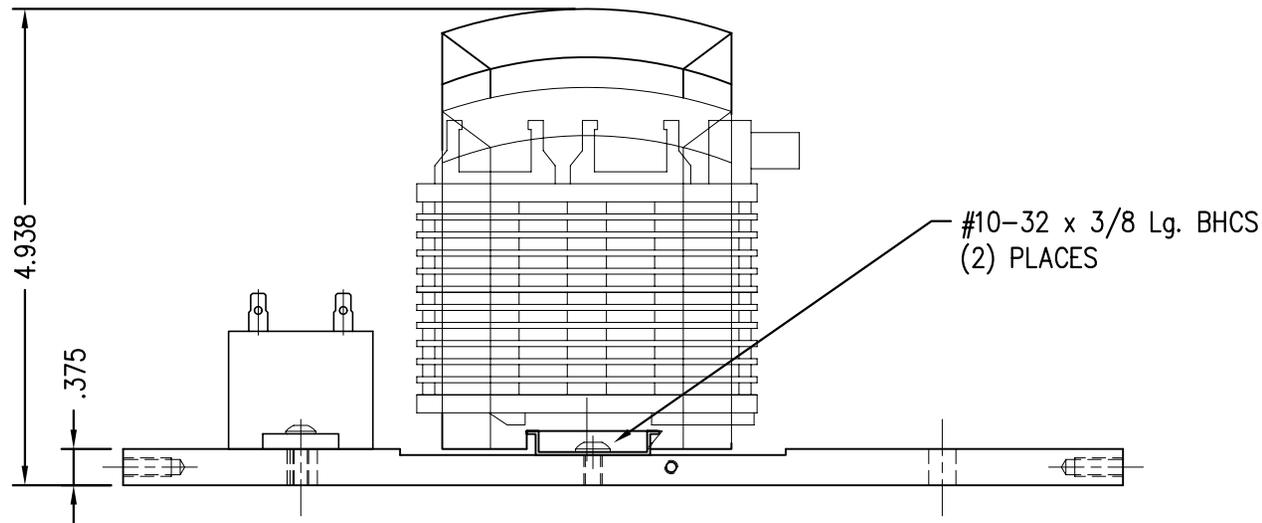
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ASS-218-0130L



BILL OF MATERIAL				SOLD
ASSEMBLY				ASS-218-0130R
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER	
①	1	ELECTRICAL BOX BASE PLATE	MP-218-0212	.
②	1	DIN RAIL for POWER SUPPLY; PLC	CP-218-0221	.
③	1	POWER SUPPLY	PE-PS1076	.
④	1	PLC	PE-PLC1015	.
⑤	1	RELAY	PE-RE1016	.
⑥	2	STOP CLIP	PE-RE1053	.
⑦	1	CAPACITOR	PE-CAP1025	.
⑧	1	CAPACITOR COVER	PE-CON9070	.
	2	SHCS, #6-32 x 3/8 Lg. SS	PM-FASH427005	.

MOUNTING FASTENERS
1/4-20 x 3/4 Lg.
SHCS (2 PLACES)



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TITLE: 1800-PA SERIES APPLICATOR: ELECTRICAL BOX

PART: ELECTRONIC SHELF - LH

Dept. Code
70

REV. 2 REV. DESCRIPTION TURNED ITEM #5 180° & ADDED Lg. TO #8-32 SHCS

REV. DATE 03/09/07

REV. BY: TDR

Scale: 1=2

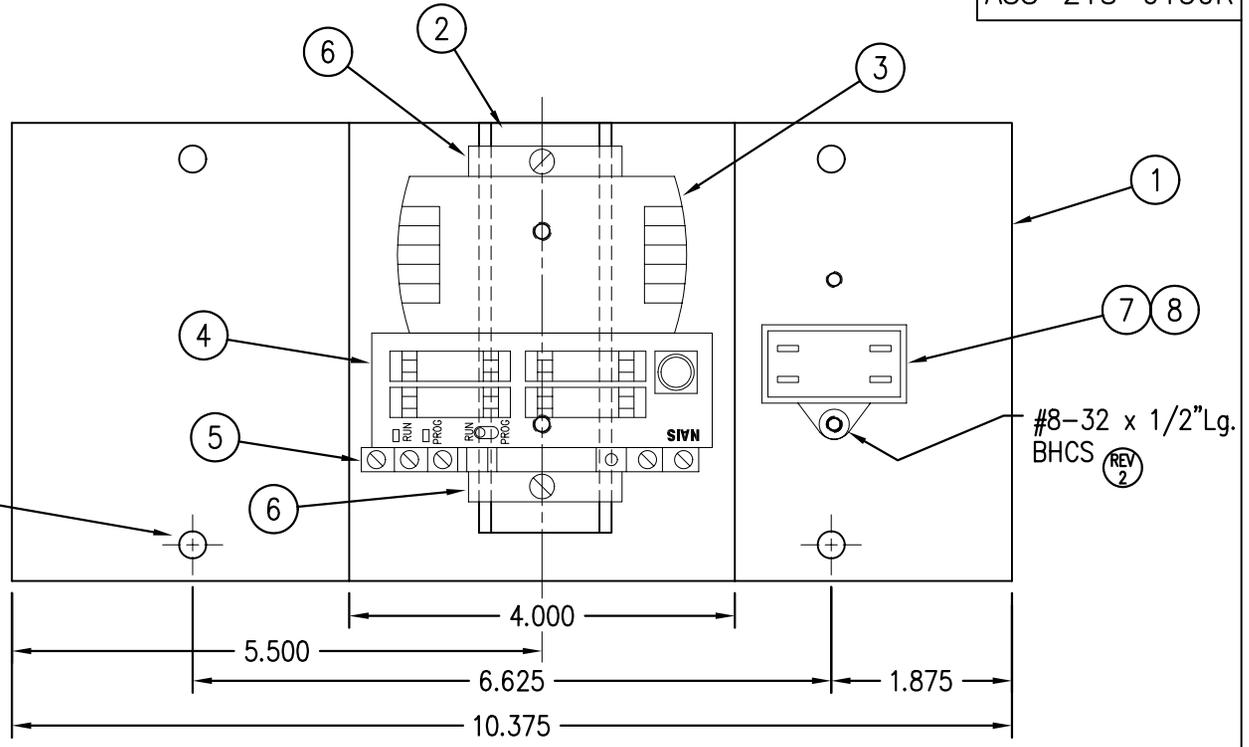
Date: 07/07/06

DRAWN BY: Tracy Rhodes

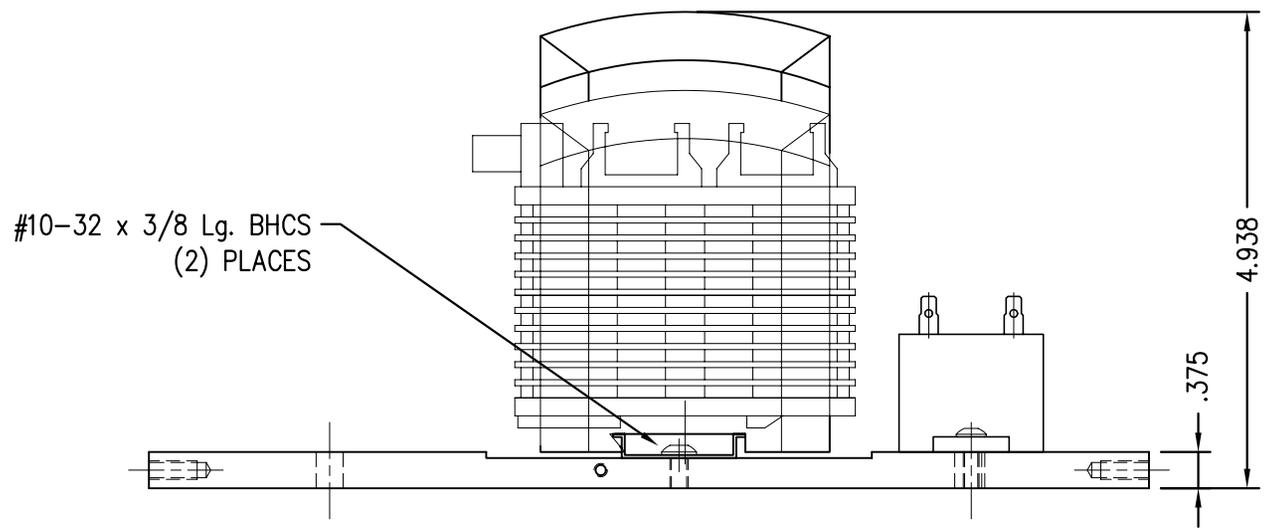
F:\Engineering\Standard Parts\System Components:
1800\ASS-218-0130L

ASS-218-0130R

BILL OF MATERIAL			SOLD
ASSEMBLY	ASS-218-0130R		.
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER
①	1	ELECTRICAL BOX BASE PLATE	MP-218-0212
②	1	DIN RAIL for POWER SUPPLY; PLC	CP-218-0221
③	1	POWER SUPPLY	PE-PS1076
④	1	PLC	PE-PLC1015
⑤	1	RELAY	PE-RE1016
⑥	2	STOP CLIP	PE-RE1053
⑦	1	CAPACITOR	PE-CAP1025
⑧	1	CAPACITOR COVER	PE-CON9070
	2	SHCS, 1/4-20 x 3/4 Lg. SS	PM-FASH430078



MOUNTING FASTENERS
1/4-20 x 3/4 Lg.
SHCS (2 PLACES)



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TITLE: 1800-PA SERIES APPLICATOR: ELECTRICAL BOX PART: ELECTRONIC SHELF - RH Dept. Code 70

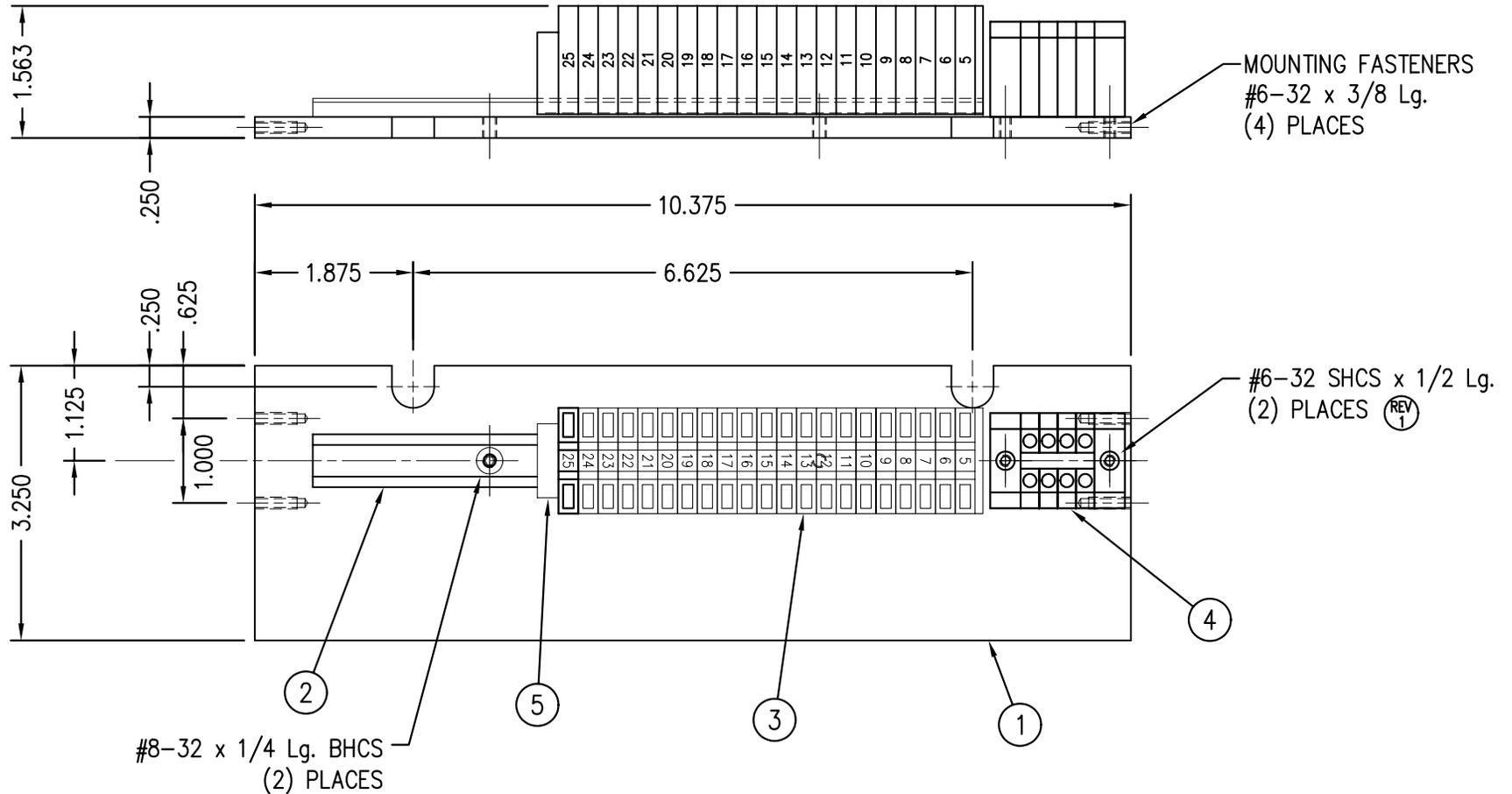
REV. 2	REV. DESCRIPTION TURNED ITEM #5 180° & ADDED Lg. TO #8-32 SHCS	REV. DATE 03/09/07	REV. BY: TDR	Scale: 1=2	Date: 07/07/06	DRAWN BY: Tracy Rhodes	F:\Engineering\Standard Parts\System Components: 1800\ASS-218-0130R
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BILL OF MATERIAL

SOLD

ASS-218-0131L

ASSEMBLY	ASS-218-0131L		SOLD
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER
①	1	ELECTRICAL BOX TERMINAL STRIP MOUNT	MP-218-0213
②	1	DIN RAIL for TERMINAL STRIP	CP-218-0222
③	1	TERMINAL BLOCK ASSY. #5 - #25	ASS-218-0405
④	1	TERMINAL BLOCK ASSY. #1 - #4	ASS-218-0409
⑤	1	TERMINAL END STOP	PE-TE4020
	4	SHCS, #6-32 x 3/8 Lg. SS	PM-FASH428000



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TITLE: 1800-PA SERIES APPLICATOR: ELECTRICAL BOX

PART: LH TERMINAL STRIP ASSEMBLY

Dept. Code
70

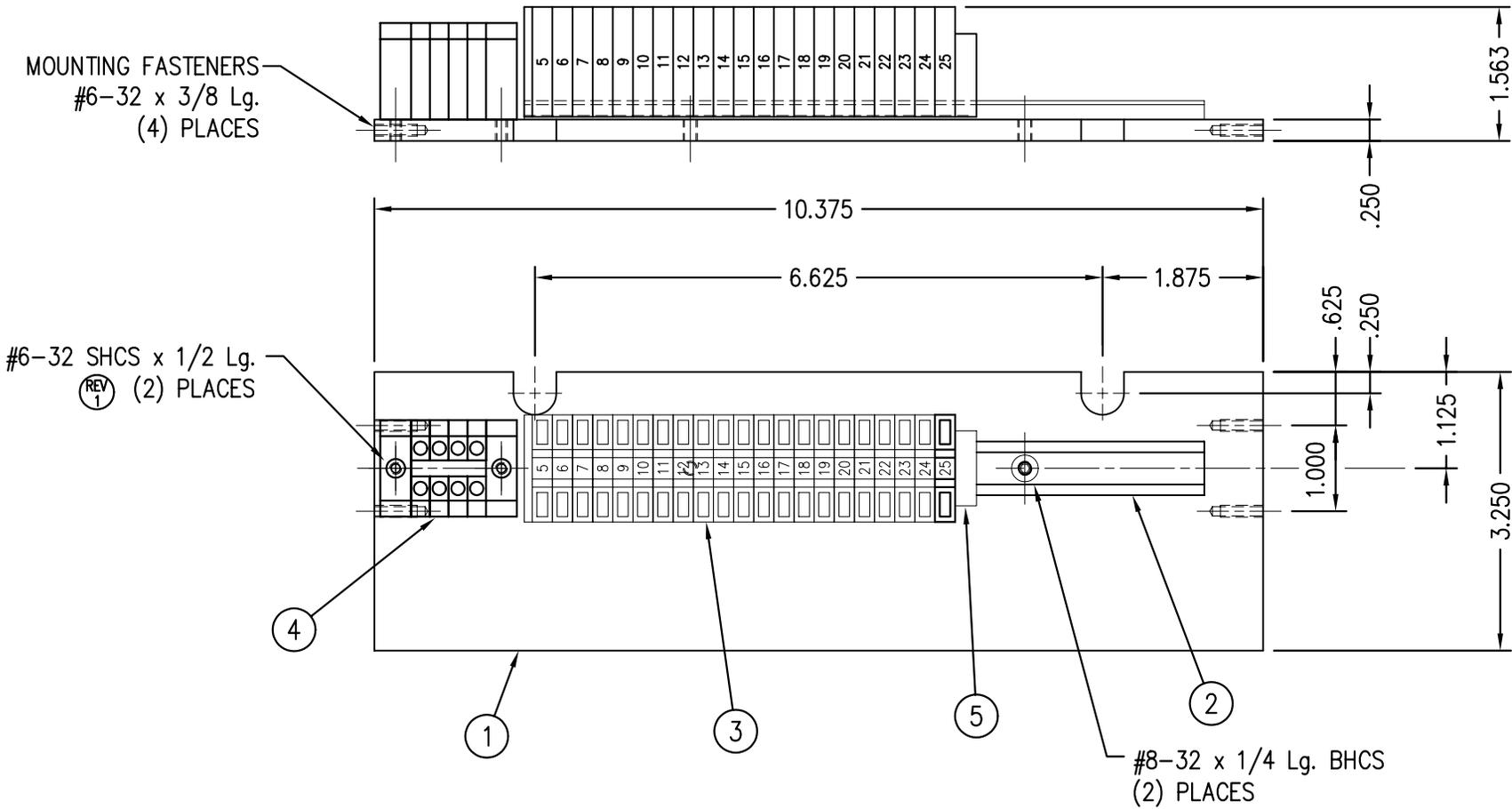
REV. 1	REV. DESCRIPTION ADDED SCREW LENGTH	REV. DATE 01/07/09	REV. BY: TDR	Scale: 1=2	Date: 07/07/06	DRAWN BY: Tracy Rhodes	F:\Engineering\Standard Parts\System Components: 1800\ASS-218-0131L
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BILL OF MATERIAL

SOLD

ASS-218-0131R

ASSEMBLY	ASS-218-0131R		SOLD
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER
①	1	ELECTRICAL BOX TERMINAL STRIP MOUNT	MP-218-0213
②	1	DIN RAIL for TERMINAL STRIP	CP-218-0222
③	1	TERMINAL BLOCK ASSY. #5 - #25	ASS-218-0405
④	1	TERMINAL BLOCK ASSY. #1 - #4	ASS-218-0409
⑤	1	TERMINAL END STOP	PE-TE4020
	4	SHCS, #6-32 x 3/8 Lg. SS	PM-FASH428000



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TITLE: 1800-PA SERIES APPLICATOR: ELECTRICAL BOX

PART: RH TERMINAL STRIP ASSEMBLY

Dept. Code
70

REV. 1 REV. DESCRIPTION
ADDED SCREW LENGTH

REV. DATE
01/07/09

REV. BY:
TDR

Scale:
1=2

Date:
07/07/06

DRAWN BY:
Tracy Rhodes

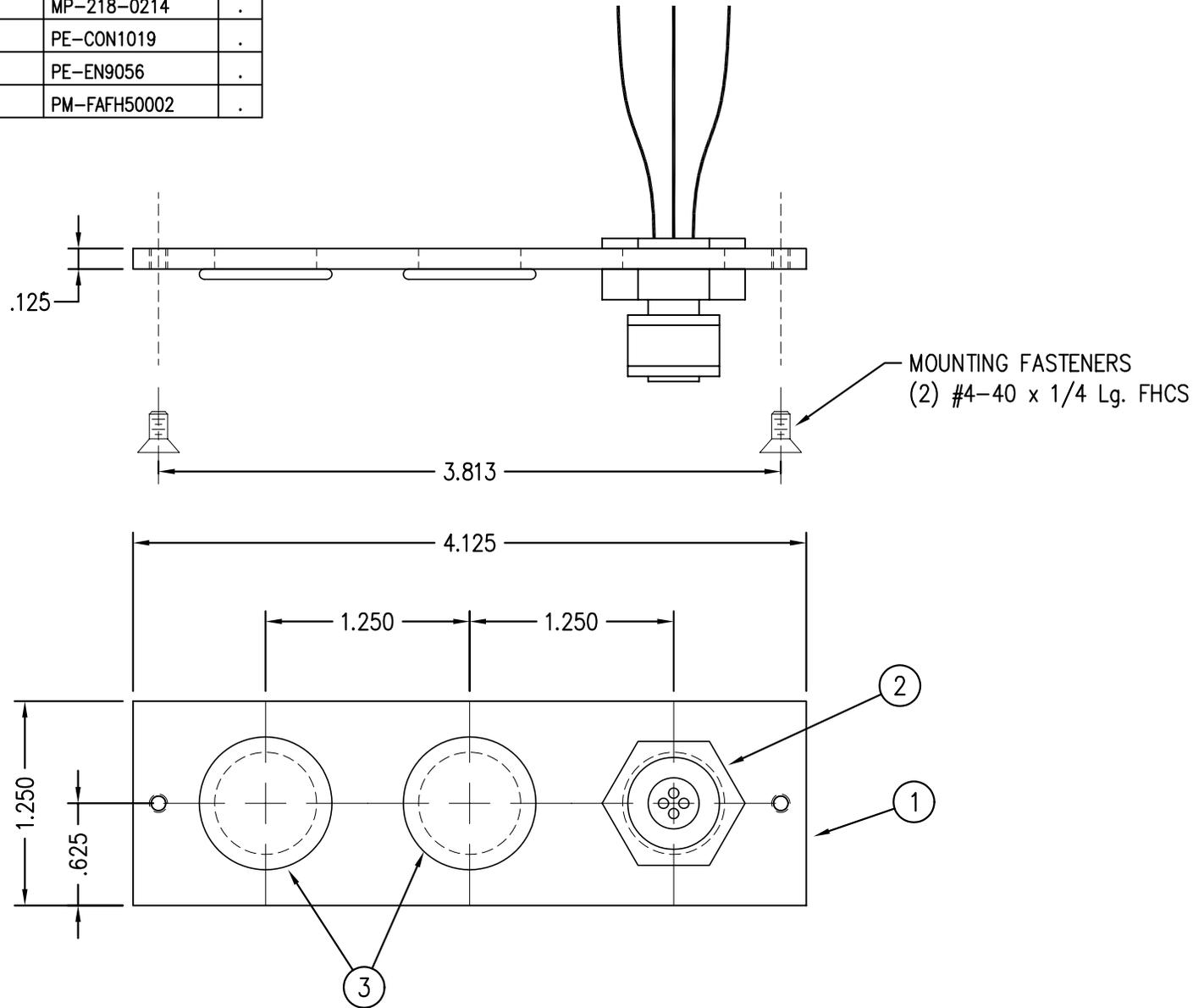
F:\Engineering\Standard Parts\System Components:
1800\ASS-218-0131R

BILL OF MATERIAL

SOLD

ASS-218-0132

ASSEMBLY		ASS-218-0130R		
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER	
①	1	PORT MOUNTING PLATE	MP-218-0214	.
②	1	PRODUCT DETECT	PE-CON1019	.
③	2	PLUG	PE-EN9056	.
	2	FHCS, #4-40 x 1/4 Lg. SS	PM-FAFH50002	.



MOUNTING FASTENERS
(2) #4-40 x 1/4 Lg. FHCS

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TITLE: 1800-PA SERIES APPLICATOR: ELECTRICAL BOX

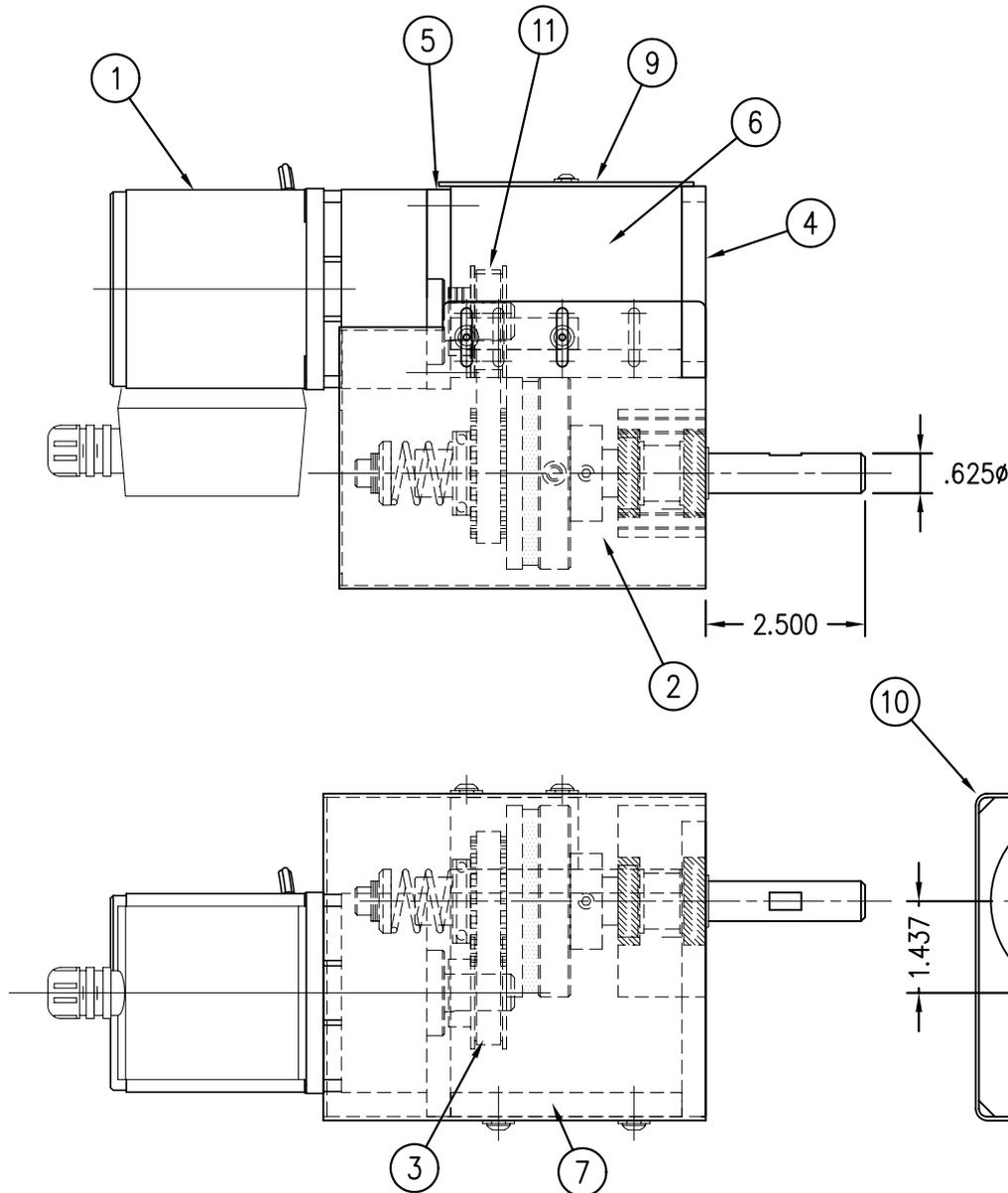
PART: PORT CONNECTOR STRIP

Dept. Code
70

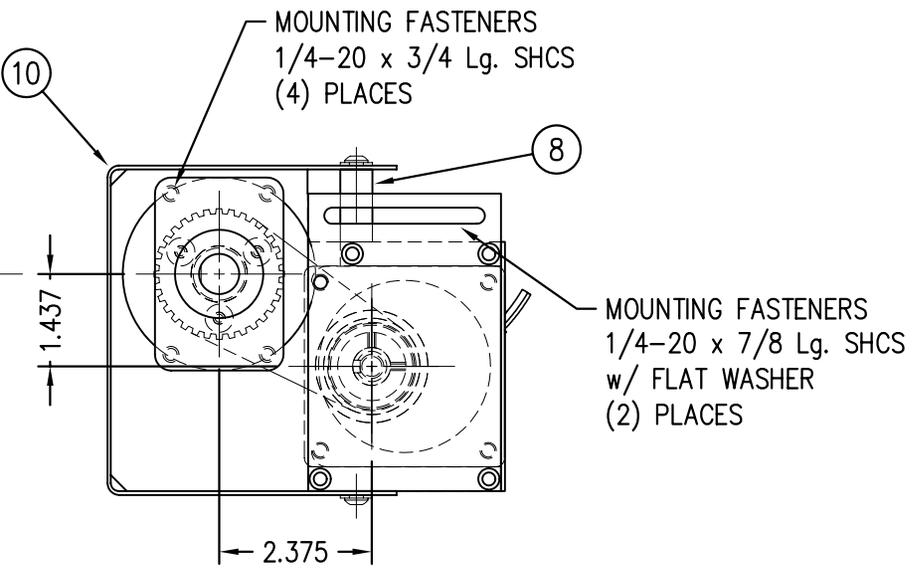
REV. 0	REV. DESCRIPTION -	REV. DATE -	REV. BY: XXX	Scale: 1=1	Date: 07/07/06	DRAWN BY: Tracy Rhodes	F:\Engineering\Standard Parts\System Components: 1800\ASS-218-0132
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RH & LH ASSEMBLIES AVAILABLE
-RH ASSEMBLY SHOWN-

ASS-218-0133R/L



BILL OF MATERIAL				SOLD
ASSEMBLY	ASS-218-0133R/L			.
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER	
①	1	REWIND MOTOR with CONNECTOR	ASS-218-0428	.
②	1	REWIND SLIP CLUTCH ASSEMBLY	ASS-238-0120C	.
③	1	REWIND BELT	PM-BELT1015	.
④	1	MOTOR ADJUSTMENT PLATE	MP-218-0216	.
⑤	1	MOTOR MOUNT PLATE	MP-218-0217R/L	.
⑥	1	MOTOR TOP GUSSET	MP-218-0218	.
⑦	1	MOTOR BOTTOM GUSSET	MP-218-0219	.
⑧	1	SAFETY GUARD SPACER	MP-218-0220	.
⑨	1	MOTOR PULLEY SAFETY GUARD	PM-218-0223	.
⑩	1	REWIND ASSEMBLY SAFETY GUARD	PM-218-0224R/L	.
⑪	1	PULLEY	MP-238-0273	.
	4	SHCS, 1/4-20 x 3/4 Lg. SS	PM-FASH430078	.
	2	SHCS, 1/4-20 x 7/8 Lg. SS	PM-FASH430079	.
	2	1/4 HEAVY FLAT WASHER, SS	PM-FAW30297	.



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TITLE: 1800-PA SERIES APPLICATOR: REWIND ASSEMBLY

PART: REWIND MOTOR ASSEMBLY for RH & LH APPLICATOR

Dept. Code
70

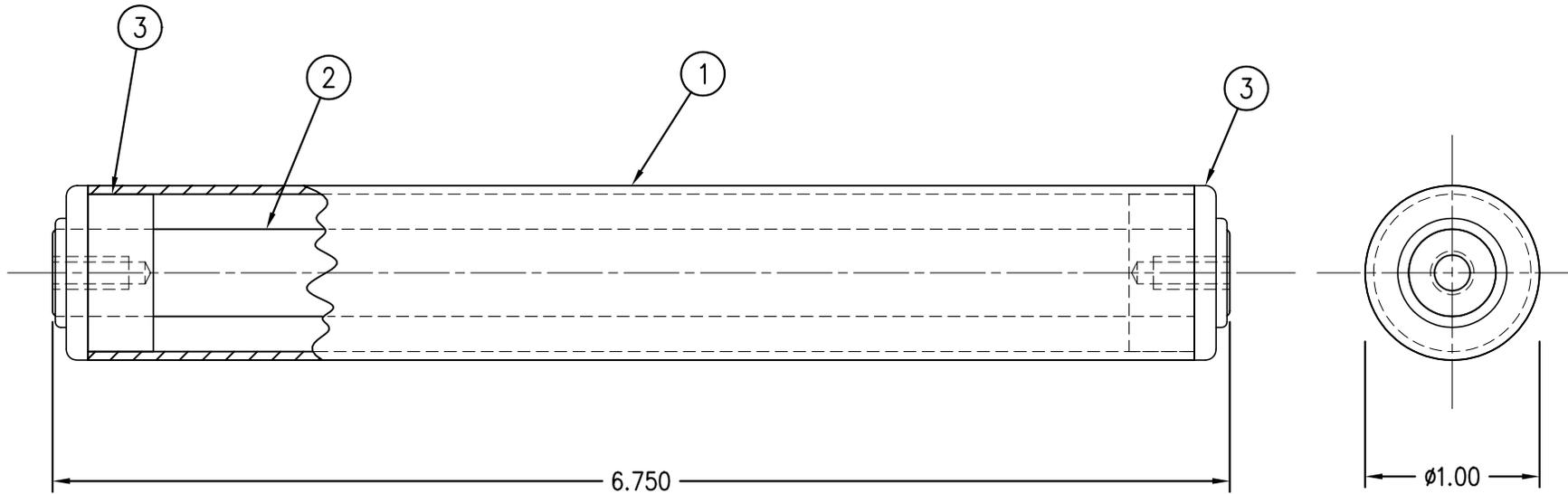
REV. 2	REV. DESCRIPTION ADDED PULLEY (ITEM #11)	REV. DATE 01/02/08	REV. BY: TDR	Scale: 1=3	Date: 01/31/06	DRAWN BY: Tracy Rhodes	F:\Engineering\Standard Parts\System Components: 1800\ASS-218-0133RL
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BILL OF MATERIAL

SOLD

ASS-218-0134

ASSEMBLY		ASS-218-0130R		SOLD
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER	
①	1	1.00" DIA. ROLLER TUBE	MP-218-0206	.
②	1	1.00/2.00 DIA. GUIDE ROLLER SHAFT	MP-218-0207	.
③	2	1.00" DIA. ROLLER INSERT	MP-200-0295-1	.



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TITLE: 1800-PA SERIES APPLICATOR: HOUSING ASSEMBLY

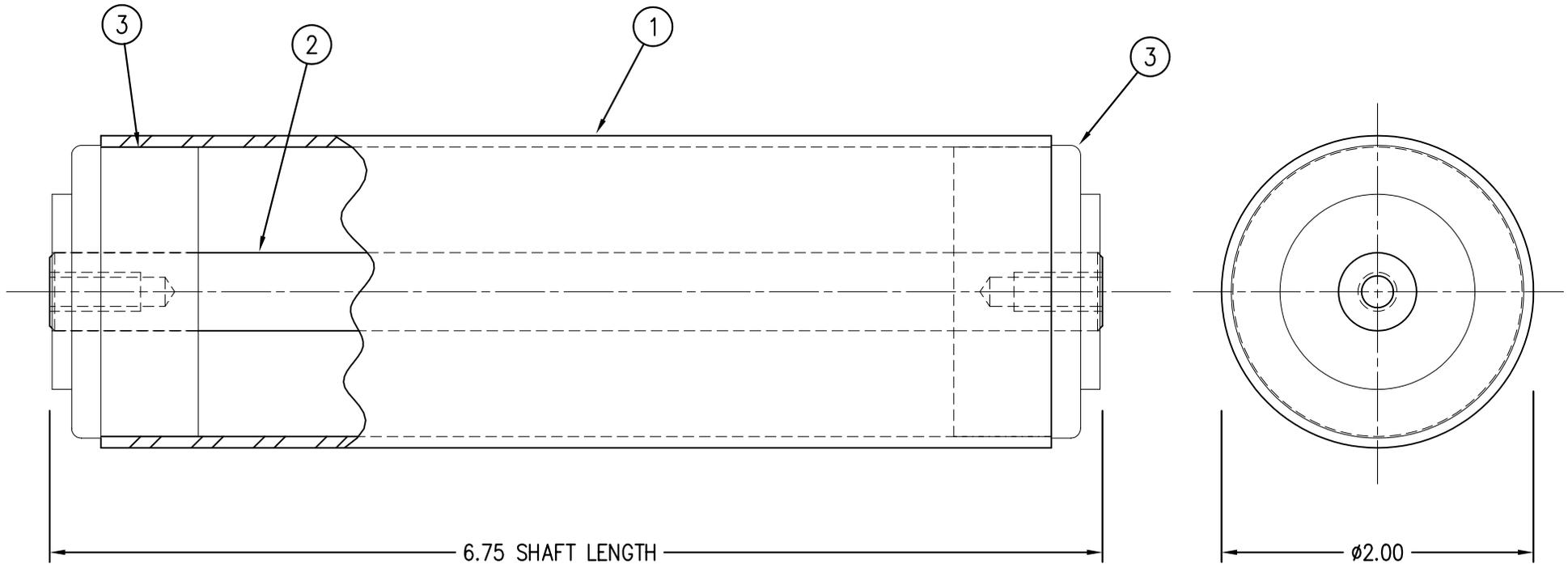
PART: 1.00" DIA. GUIDE ROLLER ASSEMBLY

Dept. Code
70

REV. 0	REV. DESCRIPTION -	REV. DATE -	REV. BY: XXX	Scale: 1=1	Date: 11/18/05	DRAWN BY: Tracy Rhodes	F:\Engineering\Standard Parts\System Components: 1800\ASS-218-0134
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BILL OF MATERIAL				SOLD
ASSEMBLY		ASS-218-0135		.
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER	
①	1	2.00" DIA. GUIDE ROLLER TUBE	MP-218-0208	.
②	1	1.00/2.00 DIA. GUIDE ROLLER SHAFT	MP-218-0207	.
③	2	2.00" DIA. ROLLER INSERT	MP-200-0295-2	.

ASS-218-0135



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TITLE: 1800-PA SERIES APPLICATOR: HOUSING ASSEMBLY

PART: 2.00" DIA. GUIDE ROLLER ASSEMBLY

Dept. Code
70

REV. 0	REV. DESCRIPTION -	REV. DATE -	REV. BY: XXX	Scale: 1=1	Date: 10/18/05	DRAWN BY: Tracy Rhodes	F:\Engineering\Standard Parts\System Components: 1800\ASS-218-0135
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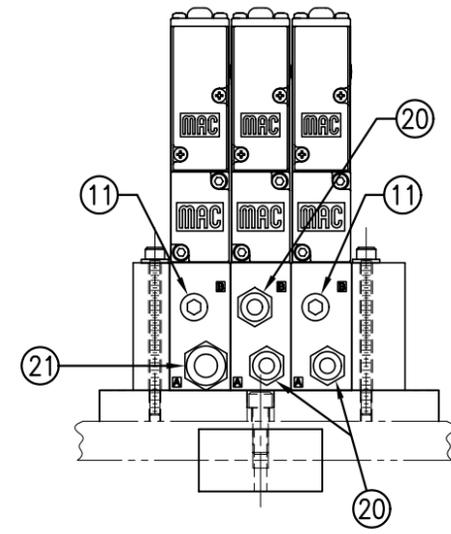
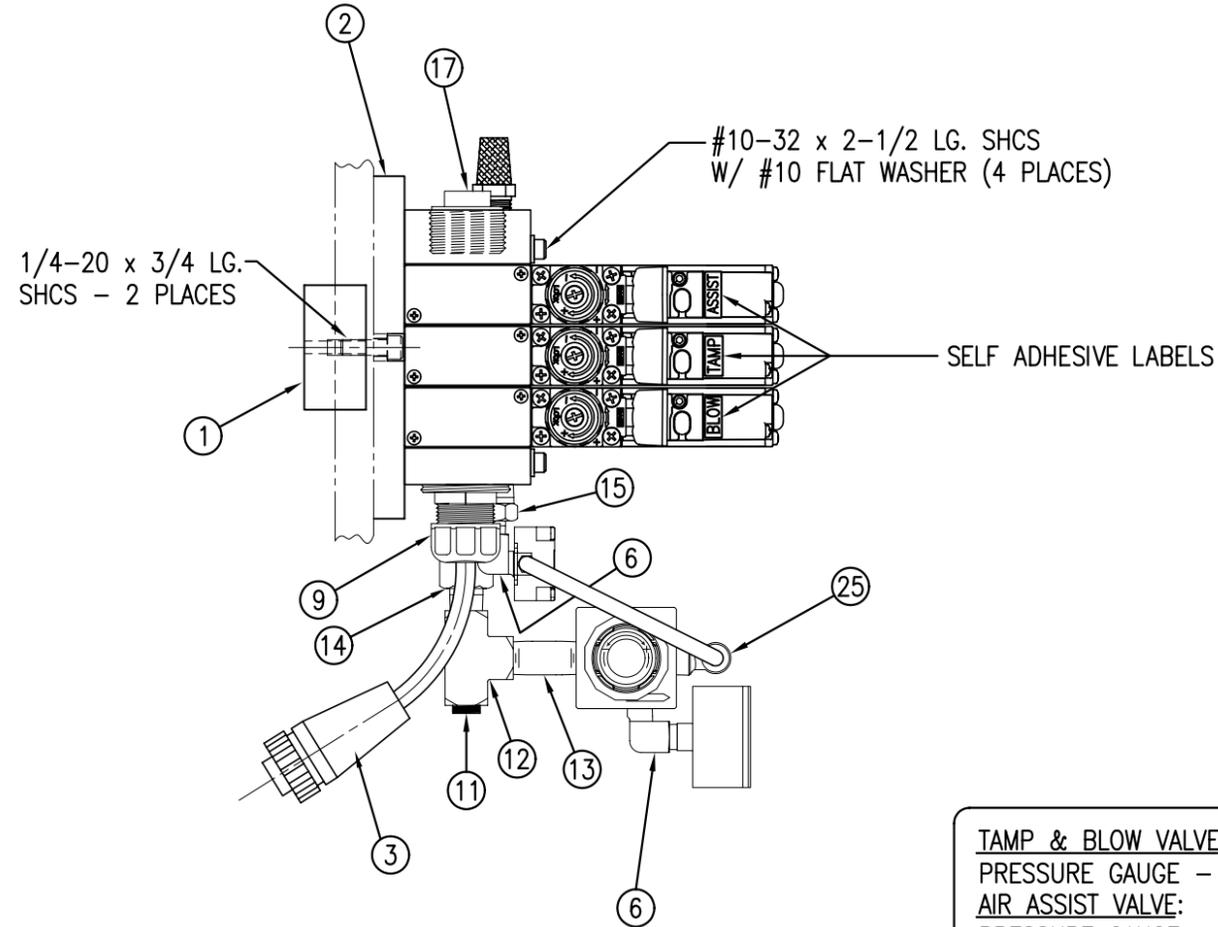
BILL OF MATERIAL

ASS-218-0136M

ITEM	QTY	CTM PART NUMBER	PART DESCRIPTION
①	1	MP-200-0285	DISPLAY MOUNT BRACKET (VALVE MOUNT)
②	1	MP-214-0206	VALVE MOUNTING PLATE
③	1	PE-200-0405	VALVE CABLE
④	1	PM-REG1500	REGULATOR
⑤	1	PM-VA2384	0-160 PSI PRESSURE GAUGE
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-VA2357M	3 STATION MAC VALVE BANK FOR 1800PA
⑨	1	PE-C02000	CORD GRIP
⑩	2	PM-MU1027	3/8" NPT MALE BRONZE EXHAUST MUFFLER
⑪	3	PM-FT1200	1/4" NPT SOCKET HEAD PLUG
⑫	1	PM-PF1200	TEE 1/4" NPT FEMALE 3 ENDS
⑬	1	PM-PF1143	NIPPLE, 1/4" NPT X 1 1/2" LG.
⑭	1	PM-PF1220	ADAPTOR, 3/8" NPT FEMALE TO 1/4" NPT MALE
⑮	1	PM-PF1157	REDUCER, 3/8" NPT TO 1/8" NPT
⑯	1	PM-PF1159	FITTING, 3/8" NPT MALE BOTH ENDS
⑰	1	PE-EN9125	1 1/4" BLACK PLASTIC THREADED PLUG
⑱	1	PE-COND1084	STEEL REDUCER
⑲	1	PM-PF1110	BUSHING, 1/4" NPT FEMALE TO 3/8" NPT MALE
⑳	3	PM-PF1010	FITTING, 1/4" TUBE w/ 1/4" NPT STRT
㉑	1	PM-PF1020	FITTING, 3/8" TUBE w/ 1/4" NPT STRT
㉒	1	PM-PF1167	3/8" NPT SOCKET HEAD PLUG
㉓	10.5"	PM-PT1070	1/4" OD TUBING
㉔	1	ASS-214-0106	AIR FILTER
㉕	1	PM-PF1055	90° ELBOW 1/4" TUBE TO 1/4" NPT MALE
○	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

NOTE: AIR SUPPLY ALWAYS ENTERS FROM BACK OF APPLICATOR - CHANGE PIPING TO SUIT

ASS-218-0136M

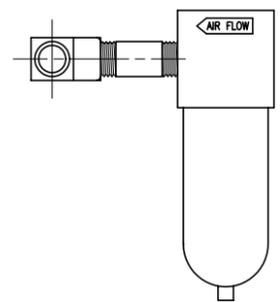


END VIEW "A"
(VALVE BANK & MTG. ONLY)

TAMP & BLOW VALVE:
PRESSURE GAUGE - 0-160 PSI
AIR ASSIST VALVE:
PRESSURE GAUGE - 0-60 PSI

AIR FILTER SHOWN IN
TYPICAL LOCATION FOR
LH APPLICATOR

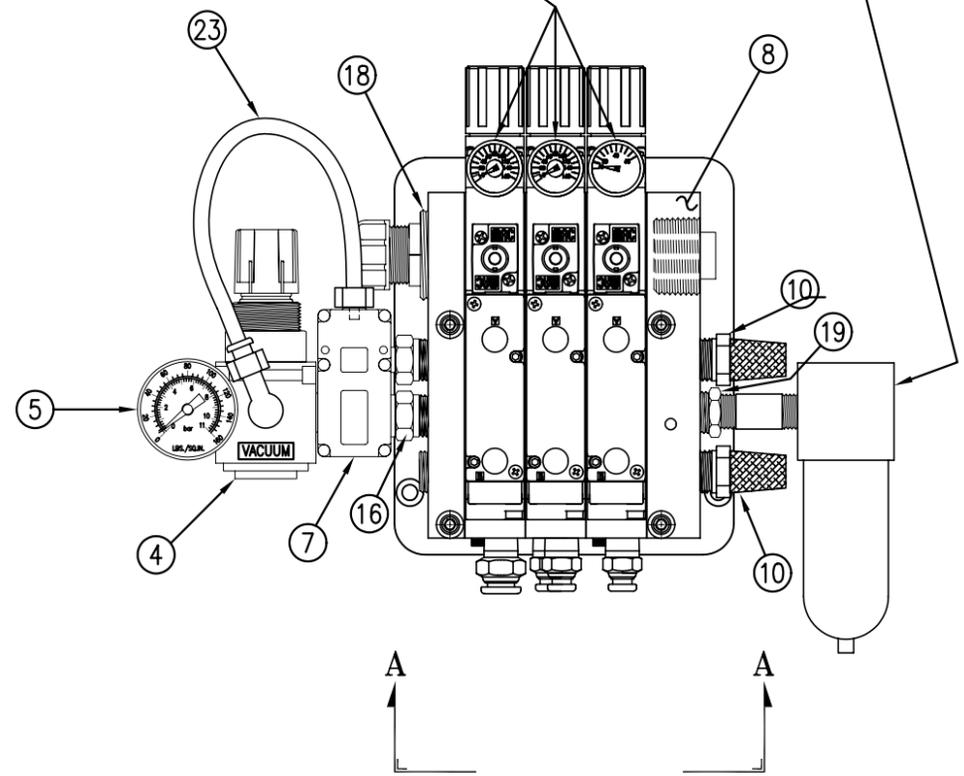
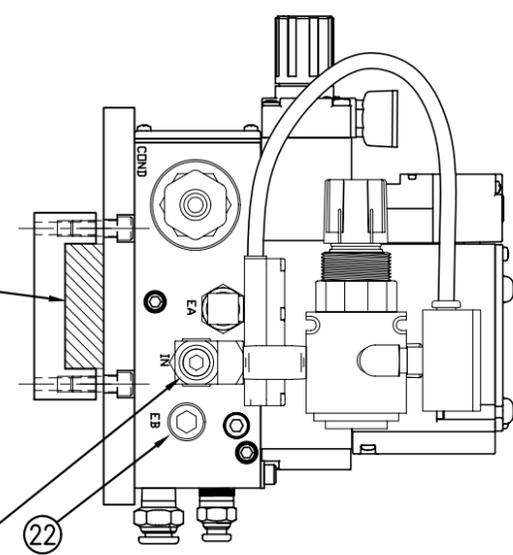
VALVE BANK SPARE PARTS:
SOLENOID: #PM-VA2392M
AIR ASSIST REGULATOR W/GUAGE: #PM-VA2396M
BLOW/TAMP/IMPRINTER REGULATORS W/GUAGE: #PM-VA2397M
AIR ASSIST REGULATOR GAUGE: #PM-VA2382M
BLOW/TAMP/IMPRINTER REGULATOR GAUGES: #PM-VA2380M



②④ AIR FILTER
SHIP LOOSE
-CUSTOMER TO INSTALL -

U-ARM NOT INCLUDED SEE CTM
LEVEL DRAWINGS FOR PLACEMENT
OF VALVE BANK IN RELATION TO U-ARM

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

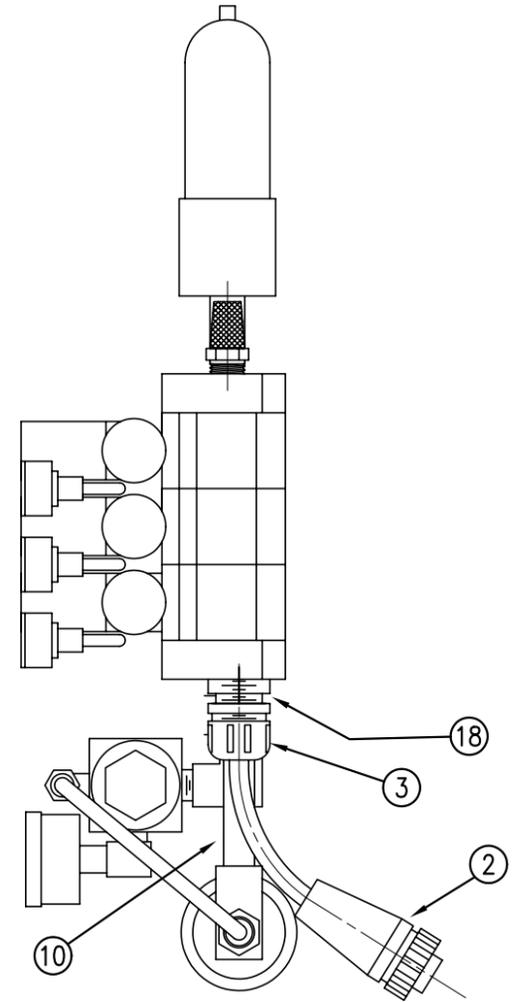
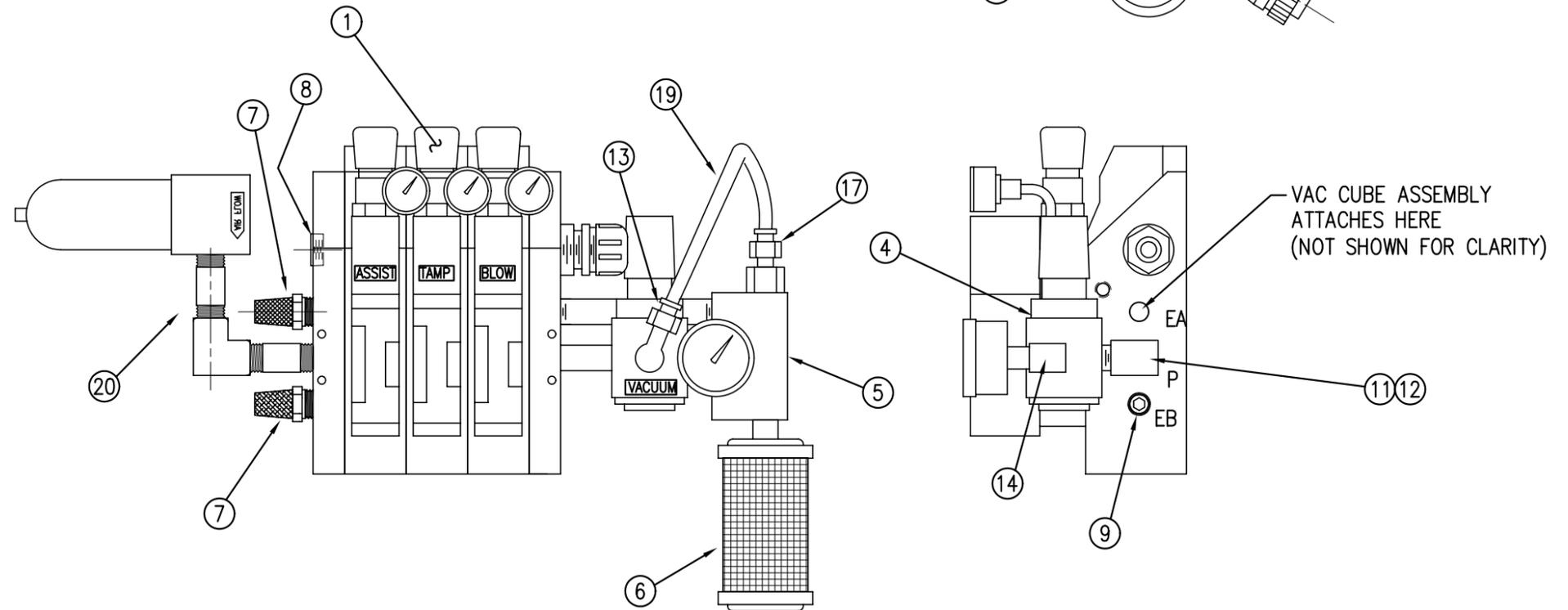
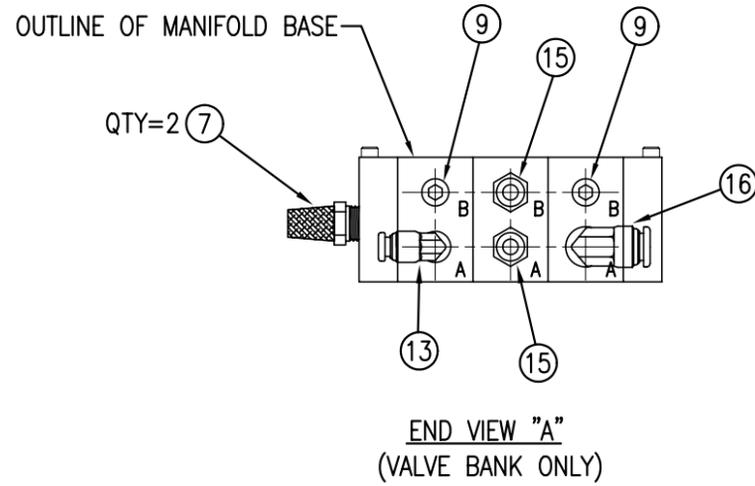
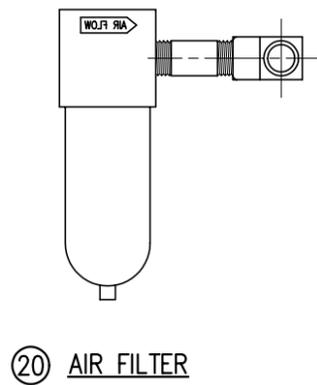


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 APPLICATOR SERIES: 360
 APPLICATOR WIDTH(S): 5" / 7.5" / 10"
 GROUP: VALVE BANKS
 TITLE: 3 STATION MAC VALVE BANK ASSEMBLY (TAMP) FOR 1800PA
 REV. DESCRIPTION: 0
 REV. DATE: -
 REV. BY: XXX
 SCALE: 1=3
 DATE: 06/15/07
 DRAWN BY: E. SANOR
 F:\Engineering\Standard Parts\Applcator\360\ASS-218-0136M
 Dept. Code: 70

ASS-218-0136L

BILL OF MATERIAL				SOLD
ASSEMBLY ASS-218-0136L				S
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER	
①	1	VALVE BANK	PM-VA	.
②	1	VALVE CABLE	PE-200-0405	.
③	1	CORD GRIP	PE-CO2000	.
④	1	REGULATOR/GAUGE	PM-REG1500	.
⑤	1	VACUUM PUMP	PM-PUMP1000	.
⑥	1	EXHAUST MUFFLER	PM-MU1021	.
⑦	2	1/4" BRONZE EXHAUST MUFFLER	PM-MU1025	.
⑧	1	3/4" NPT PLUG	PM-EN9110	.
⑨	3	1/4" NPT PLUG	PM-FT1200	.
⑩	1	1/4" x 3-1/2" LG. NIPPLE	PM-PF1141	.
⑪	1	1/4" x 1-1/2" LG. NIPPLE	PM-PF1143	.
⑫	1	1/4" 90° STREET ELBOW	PM-PF1185	.
⑬	2	FITTING, 1/4" TUBE w/ 1/4" NPT 90°	PM-PF1055	.
⑭	1	1/8" STREET ELBOW	PM-PF1180	.
⑮	2	FITTING, 1/4" TUBE w/ 1/4" NPT STRT	PM-PF1010	.
⑯	1	FITTING, 3/8" TUBE w/ 1/4" NPT 90°	PM-PF1060	.
⑰	1	FITTING, 1/4" TUBE w/ 1/8" NPT STRT	PM-PF1005	.
⑱	1	BUSHING, NPT 3/4" MALE to 1/2" FEMALE	PE-COND1080	.
⑲	1	1/4" O.D. POLYURETHANE TUBING (CUT TO 7" LENGTH)	PM-PT1070	.
⑳	1	AIR FILTER	ASS-214-0106	.

VALVE BANK SPARE PARTS:
 SOLENOID: #PM-VA2395
 AIR ASSIST REGULATOR: #PM-VA2396
 BLOW/TAMP/ROTARY ACTUATOR REGULATORS: #PM-VA2397



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PART: VALVE BANK for LH APPLICATOR

REV. DATE: 02/16/05

REV. BY: TDR

REV. DATE: 10/26/06

SCALE: 1=3

DRAWN BY: Tracy Rhodes

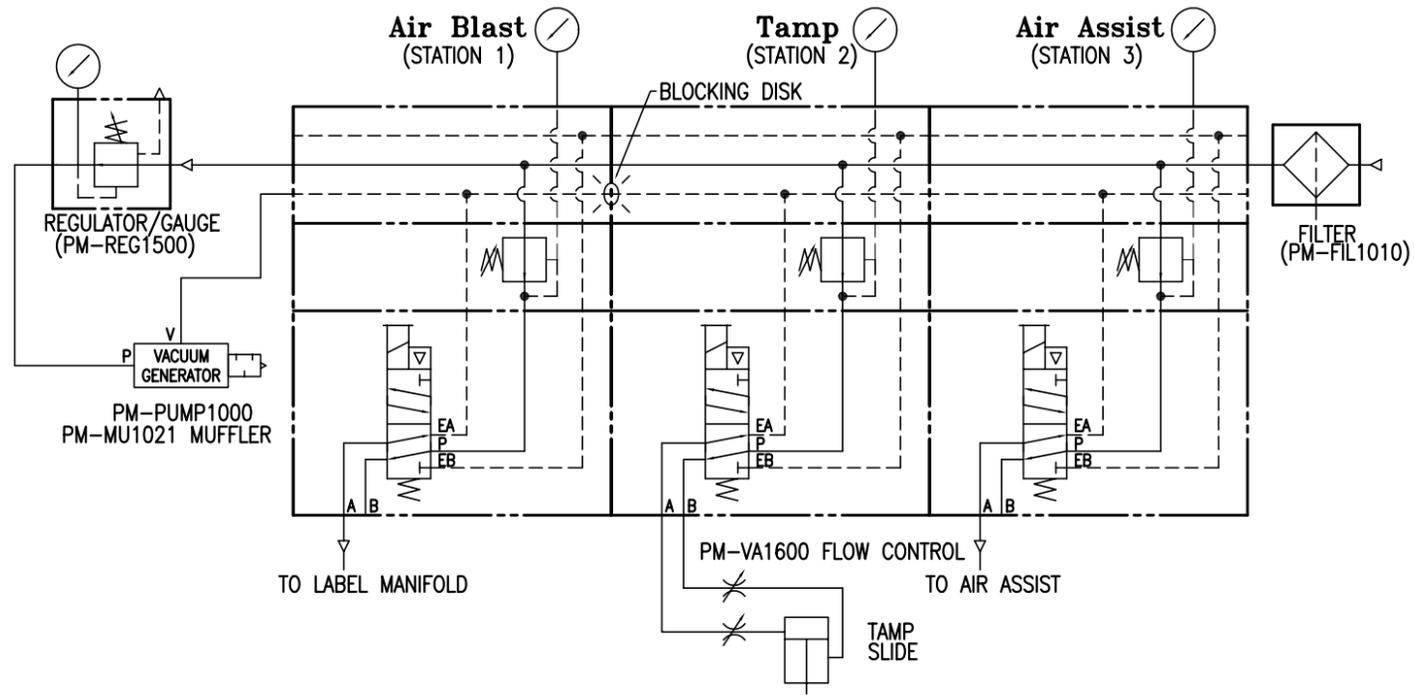
Dept. Code: 70

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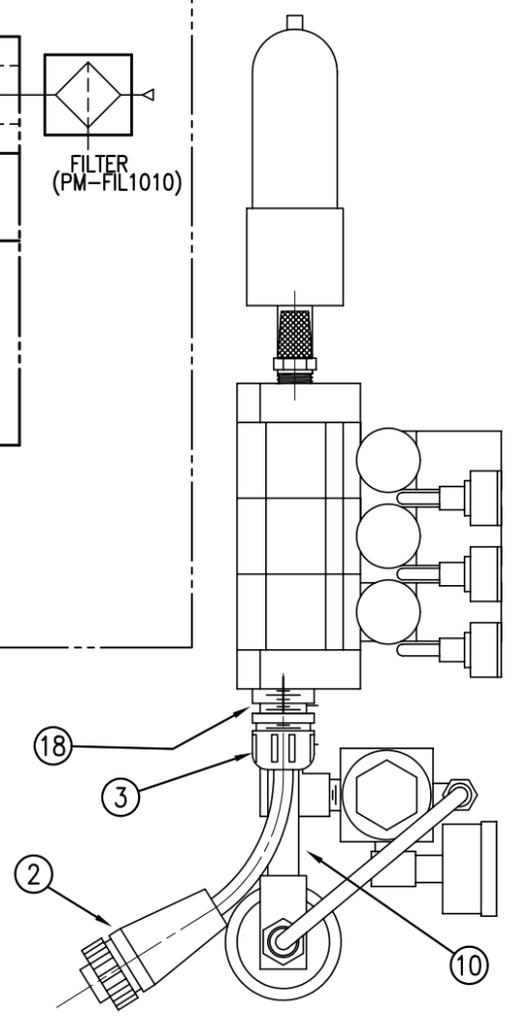
TITLE: 1800-PA SERIES APPLICATOR: TAMP ASSEMBLY

REV. DESCRIPTION: 1 ADDED SPARE PARTS NOTE

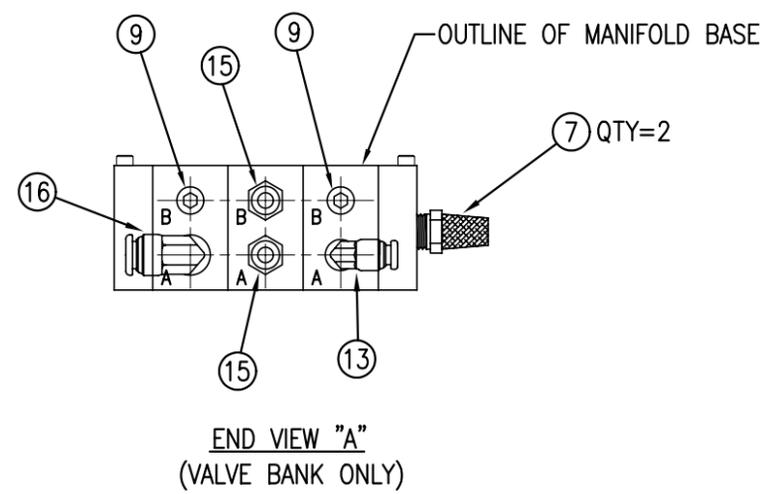
PNEUMATIC SCHEMATIC



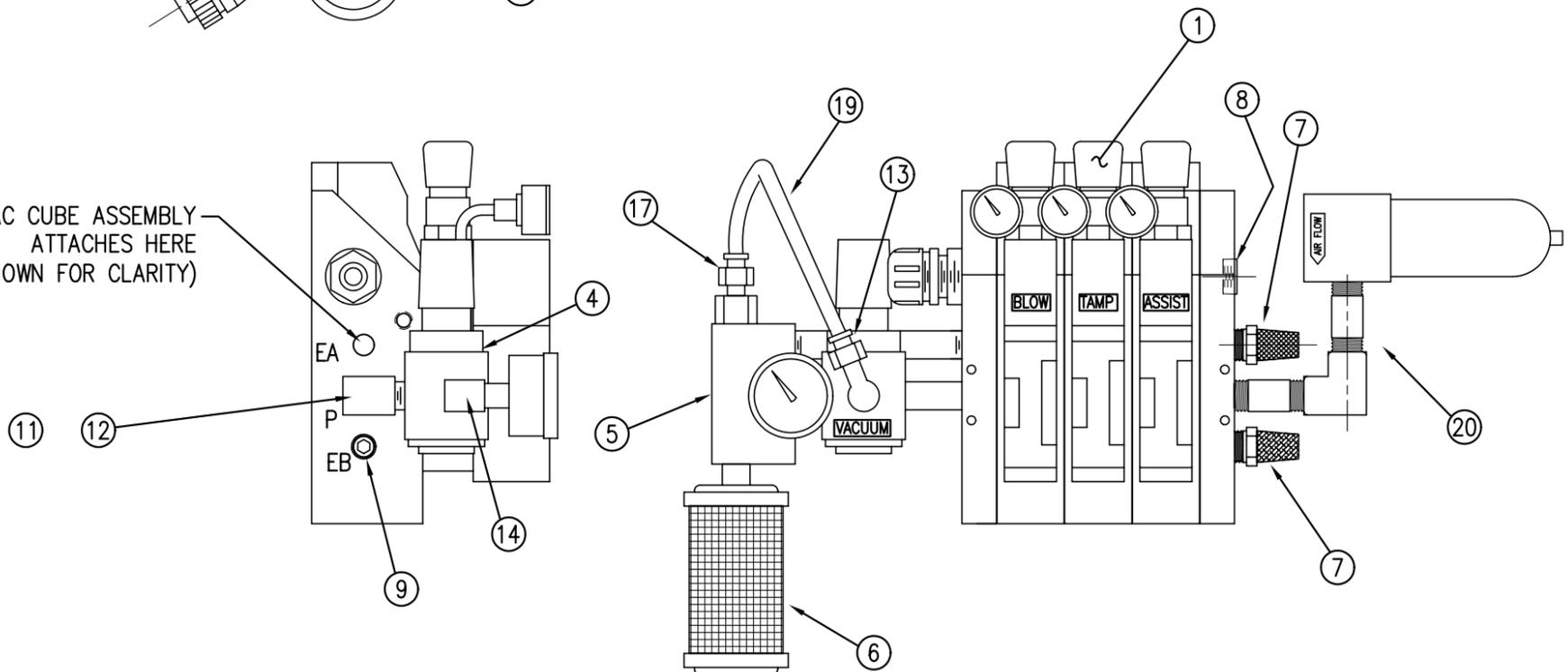
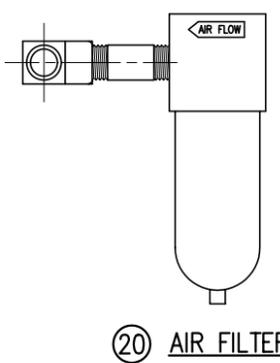
BILL OF MATERIAL				SOLD
ASS-218-0136R				S
ASSEMBLY	QTY	ITEM DESCRIPTION	CTM PART NUMBER	
①	1	VALVE BANK	PM-VA2355	.
②	1	VALVE CABLE	PE-200-0405	.
③	1	CORD GRIP	PE-CO2000	.
④	1	REGULATOR/GAUGE	PM-REG1500	.
⑤	1	VACUUM PUMP	PM-PUMP1000	.
⑥	1	EXHAUST MUFFLER	PM-MU1021	.
⑦	2	1/4" BRONZE EXHAUST MUFFLER	PM-MU1025	.
⑧	1	3/4" NPT PLUG	PM-EN9110	.
⑨	3	1/4" NPT PLUG	PM-FT1200	.
⑩	1	1/4" x 3-1/2" LG. NIPPLE	PM-PF1141	.
⑪	1	1/4" x 1-1/2" LG. NIPPLE	PM-PF1143	.
⑫	1	1/4" 90° STREET ELBOW	PM-PF1185	.
⑬	2	FITTING, 1/4" TUBE w/ 1/4" NPT 90°	PM-PF1055	.
⑭	1	1/8" STREET ELBOW	PM-PF1180	.
⑮	2	FITTING, 1/4" TUBE w/ 1/4" NPT STRT	PM-PF1010	.
⑯	1	FITTING, 3/8" TUBE w/ 1/4" NPT 90°	PM-PF1060	.
⑰	1	FITTING, 1/4" TUBE w/ 1/8" NPT STRT	PM-PF1005	.
⑱	1	BUSHING, NPT 3/4" MALE to 1/2" FEMALE	PE-COND1080	.
⑲	1	1/4" O.D. POLYURETHANE TUBING (CUT TO 7" LENGTH)	PM-PT1070	.
⑳	1	AIR FILTER	ASS-214-0106	.



VALVE BANK SPARE PARTS:
 SOLENOID: #PM-VA2395
 AIR ASSIST REGULATOR: #PM-VA2396
 BLOW/TAMP/ROTARY ACTUATOR REGULATORS: #PM-VA2397



VAC CUBE ASSEMBLY ATTACHES HERE (NOT SHOWN FOR CLARITY)



ASS-218-0136R

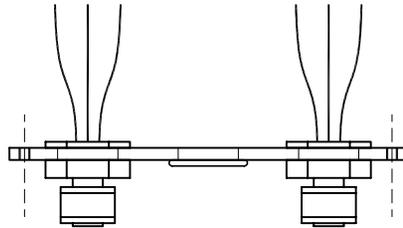
Dept. Code 70
 F:\Engineering\Standard Parts\Applcator\3600
 218\ASS-218-0136R
 PART: VALVE BANK for RH APPLICATOR
 DRAWN BY: Tracy Rhodes
 Date: 08/04/06
 Scale: 1=3
 REV. DATE 02/16/05
 REV. BY: TDR
 TITLE: 1800-PA SERIES APPLICATOR: TAMP ASSEMBLY
 REV. DESCRIPTION 1 ADDED SPARE PARTS NOTE
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BILL OF MATERIAL

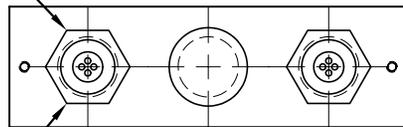
SOLD

ASS-218-0137

ASSEMBLY		ASS-218-0137	
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER
①	1	END OF WEB SENSOR w/ MOUNTING BRACKET	ASS-238-0132
②	1	AUX. PORT	PE-CON1025



REMOVE PLUG (PE-EN0956)
FROM AUX. PORT
AND ADD ITEM # 2



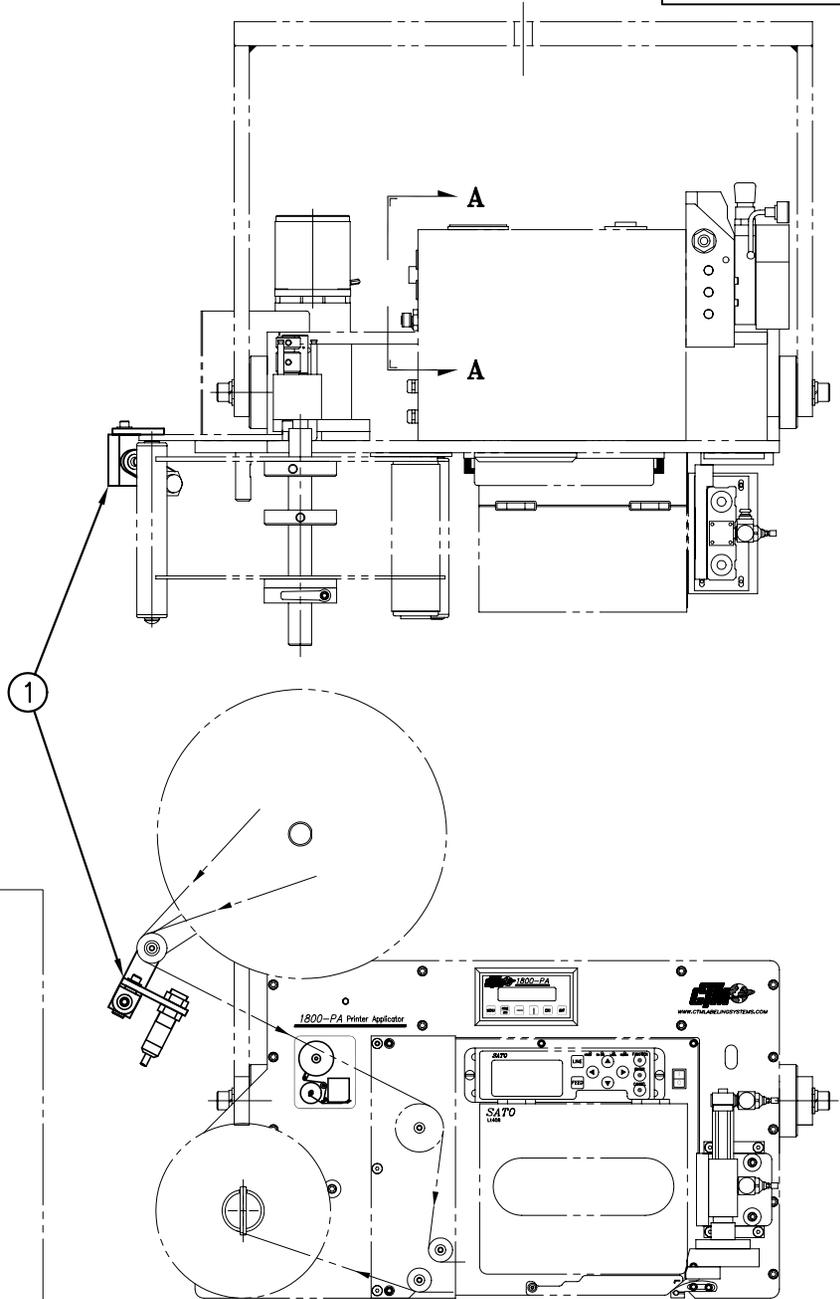
VIEW A-A
PORT CONNECTOR STRIP
(4X SCALE)

②



TERMINAL BLOCK
CONNECTIONS

BACK SIDE OF CONNECTOR
@ PORT CONNECTOR STRIP



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TITLE: 1800-PA SERIES APPLICATOR

PART: END OF WEB SENSOR w/ MOUNTING BRACKET & PORT CONNECTOR

Dept. Code
70

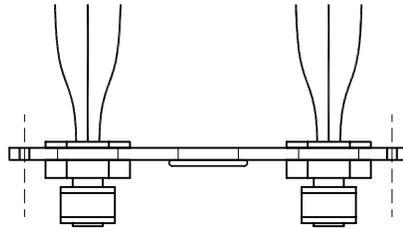
REV. 0	REV. DESCRIPTION -	REV. DATE -	REV. BY: XXX	Scale: 1=1	Date: 09/22/06	DRAWN BY: BMW	F:\Engineering\Standard Parts\System Components: 1800\ASS-218-0137
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BILL OF MATERIAL

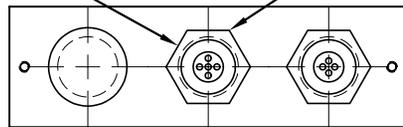
SOLD

ASS-218-0138

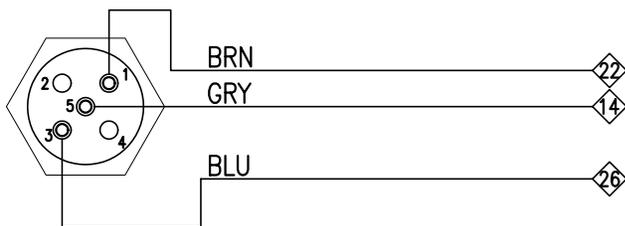
ASSEMBLY		ASS-218-0138	
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER
①	1	LOW LABEL SENSOR w/ MOUNTING BRACKET	ASS-238-0455-B
②	1	LOW LABEL CONNECTOR HARNESS	MP-CON1020



REMOVE PLUG (PE-EN0956)
FROM LOW LABEL PORT
AND ADD ITEM # 2



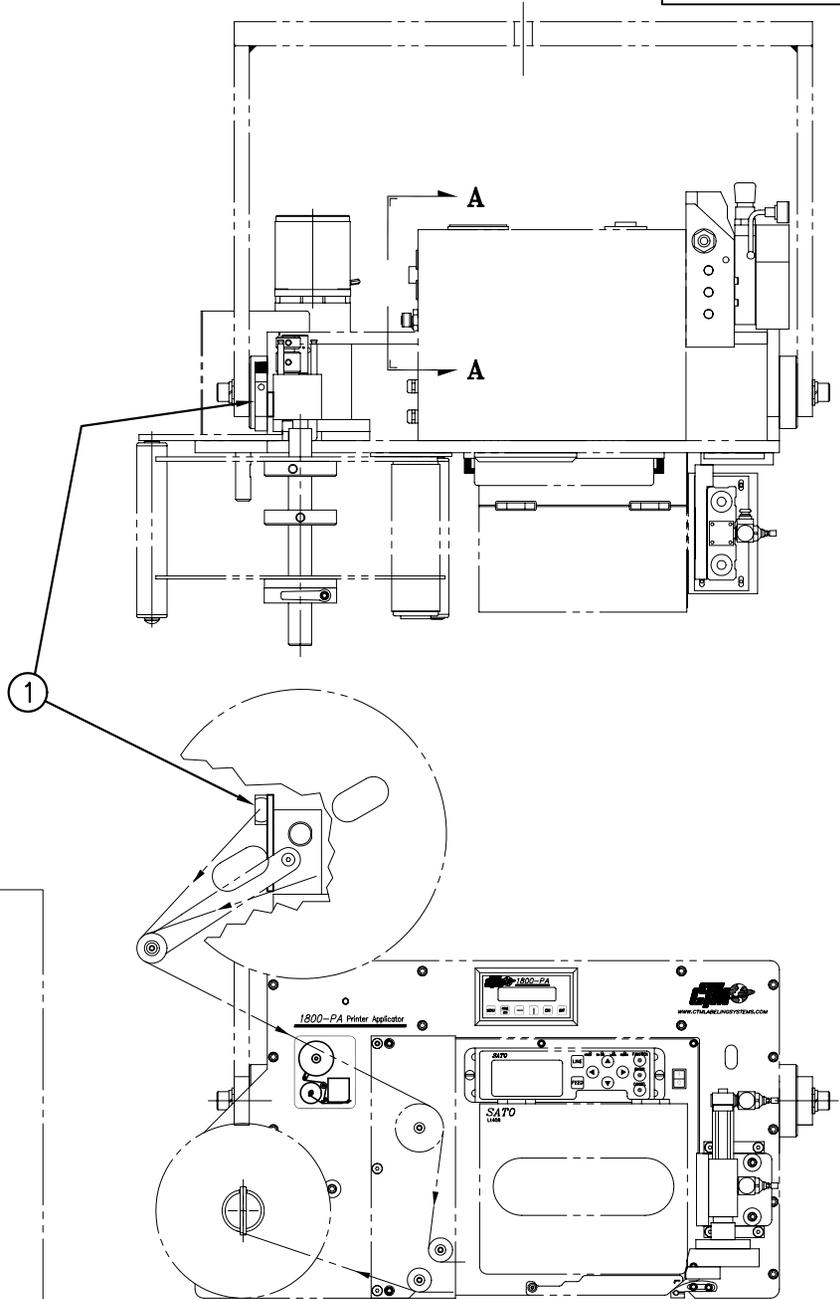
VIEW A-A
PORT CONNECTOR STRIP
(4X SCALE)



TERMINAL BLOCK
CONNECTIONS

BACK SIDE OF CONNECTOR
@ PORT CONNECTOR STRIP

REMOVE WHITE
AND BLACK WIRES



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TITLE: 1800-PA SERIES APPLICATOR

PART: LOW LABEL SENSOR w/ MOUNTING BRACKET & PORT CONNECTOR

Dept. Code
70

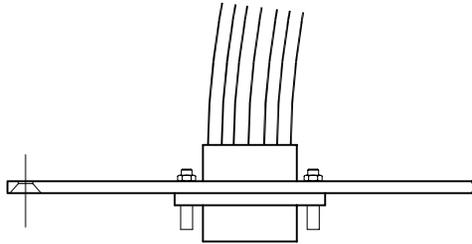
REV. 0	REV. DESCRIPTION -	REV. DATE -	REV. BY: XXX	Scale: 1=1	Date: 09/22/06	DRAWN BY: BMW	F:\Engineering\Standard Parts\System Components: 1800\ASS-218-0138
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BILL OF MATERIAL

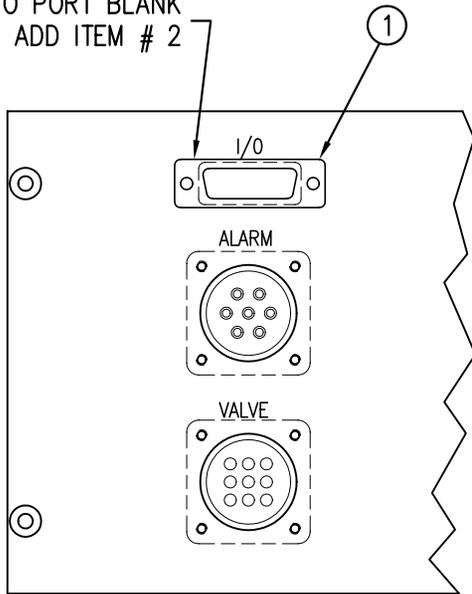
SOLD

ASS-218-0139

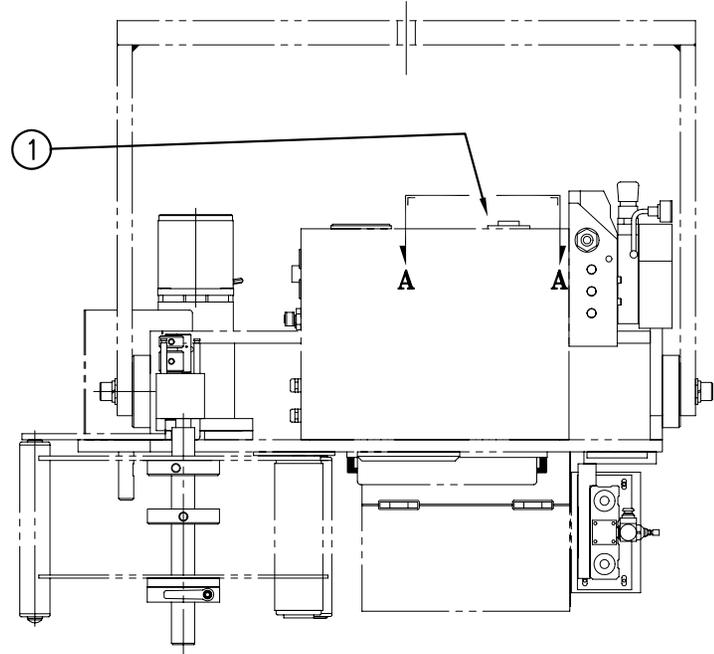
ASSEMBLY		ASS-218-0139	
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER
①	1	I/O CONNECTOR HARNESS	PE-238-0411 .
②	1	I/O CONNECTOR TERMINAL BLOCK ASSEMBLY	ASS-218-0140 .
③	1	PLC INPUT (X8-F) WIRING HARNESS	PE-238-0421 .
④	1	PLC OUTPUT (Y8-F) WIRING HARNESS	PE-238-0422 .



REMOVE I/O PORT BLANK
AND ADD ITEM # 2



VIEW A-A
REAR CONNECTOR PLATE
(4X SCALE)



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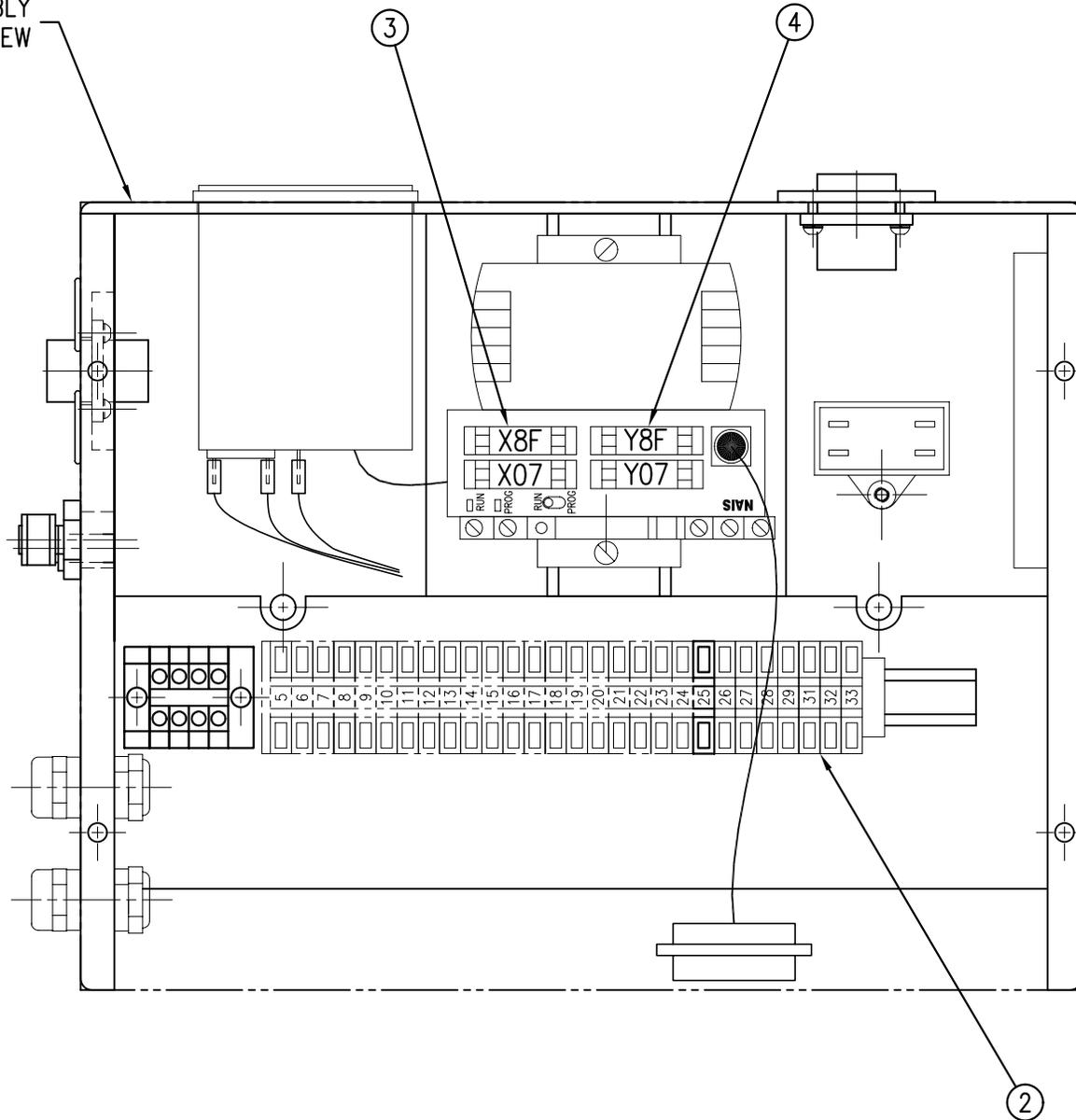
TITLE: 1800-PA SERIES APPLICATOR

PART: I/O CONNECTOR OPTION (Sheet 1 of 2)

Dept. Code
70

REV.	REV. DESCRIPTION	REV. DATE	REV. BY:	Scale:	Date:	DRAWN BY:	F:\Engineering\Standard Parts\System Components:
1	Use PE-238-0411 as I/O harness instead of ASS-218-0411.	11/27/06	BMW	1=8	09/22/06	BMW	1800\ASS-218-0139s1

ELECTRICAL BOX ASSEMBLY
PLAN VIEW



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TITLE: 1800-PA SERIES APPLICATOR

PART: I/O CONNECTOR OPTION (Sheet 2 of 2)

Dept. Code
70

REV. 0	REV. DESCRIPTION -	REV. DATE -	REV. BY: XXX	Scale: 1=2	Date: 09/22/06	DRAWN BY: BMW	F:\Engineering\Standard Parts\System Components: 1800\ASS-218-0139s2
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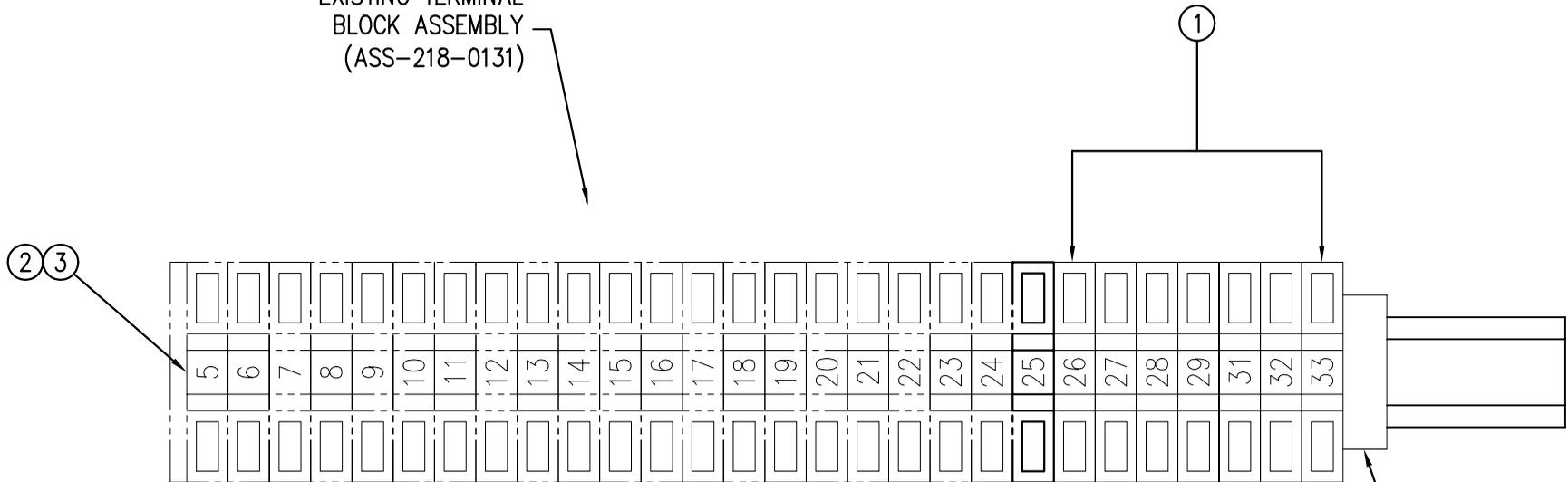
BILL OF MATERIAL

SOLD

ASS-218-0140

ASSEMBLY		ASS-218-0140	
ITEM	QTY	ITEM DESCRIPTION	CTM PART NUMBER
①	7	TERMINAL BLOCK	PE-TE4000
②	1	TERMINAL BLOCK WIRE Nos. (#26-#29)	PE-MA1040
③	1	TERMINAL BLOCK WIRE Nos. (#31-#33)	PE-MA1050

EXISTING TERMINAL
BLOCK ASSEMBLY
(ASS-218-0131)



(1) END STOPS, #PE-TE4020 &
DIN MOUNTING RAIL, CP-218-0221
(NOT INCLUDED IN ASSEMBLY)

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TITLE: 1800-PA SERIES APPLICATOR

PART: I/O CONNECTOR TERMINAL BLOCK ASSEMBLY

Dept. Code
70

REV. 0	REV. DESCRIPTION -	REV. DATE -	REV. BY: XXX	Scale: 1=1	Date: 09/25/06	DRAWN BY: BMW	F:\Engineering\Standard Parts\System Components: 1800\ASS-218-0140
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