

Ink Jet Base System



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M 081604Rev.A

Table of Contents

Table of Contents

Section I

Ink Jet / Dryer Base Installation Page 4
Floor Plan and Machine Requirements Page 6
Leveling the Ink Jet Base Page 8
Positioning the Components Page 9
Electrical Cables Page 10

Section II

Safety Features and Warning Page 12
Safety Locks and Warning Stickers Page 13
Safety Precautions Page 14
Machine Lock Out Procedure Page 16

Section III

General Set Up Page 19
Feeder Set Up Page 20
Paper Sensor Adjustment Page 24
Control Panel and Switch Operation Page 28
Shingle Conveyor Set Up Page 32
Setting and Adjusting Run Speed Page 34

Section IV

Ink Jet Base General Service Page 35
Ink Jet Base Maintenance Page 36
General Cleaning Page 36
Cleaning Transport Belts Page 37
Ink Jet Base Material Transport Belt Replacement Page 38
Ink Jet Base Shaft Replacement Page 52
Dryer Base Material Transport Belt Replacement Page 70
Dryer Base Material Transport Belt Replacement Page 76
Shingle Conveyor Belt Replacement Page 82

Section V

Ink Jet Base Electrical Components Page 91

Section VI

Ink Jet Base Wiring Diagrams Page 97

Section VII

Trouble Shooting Page 137

Special Note:

Some pictures and illustrations may have color, hue and contrast graphically altered for clarity when printing in black and white and may not necessarily reflect the actual color of the product when viewed on compact disk.

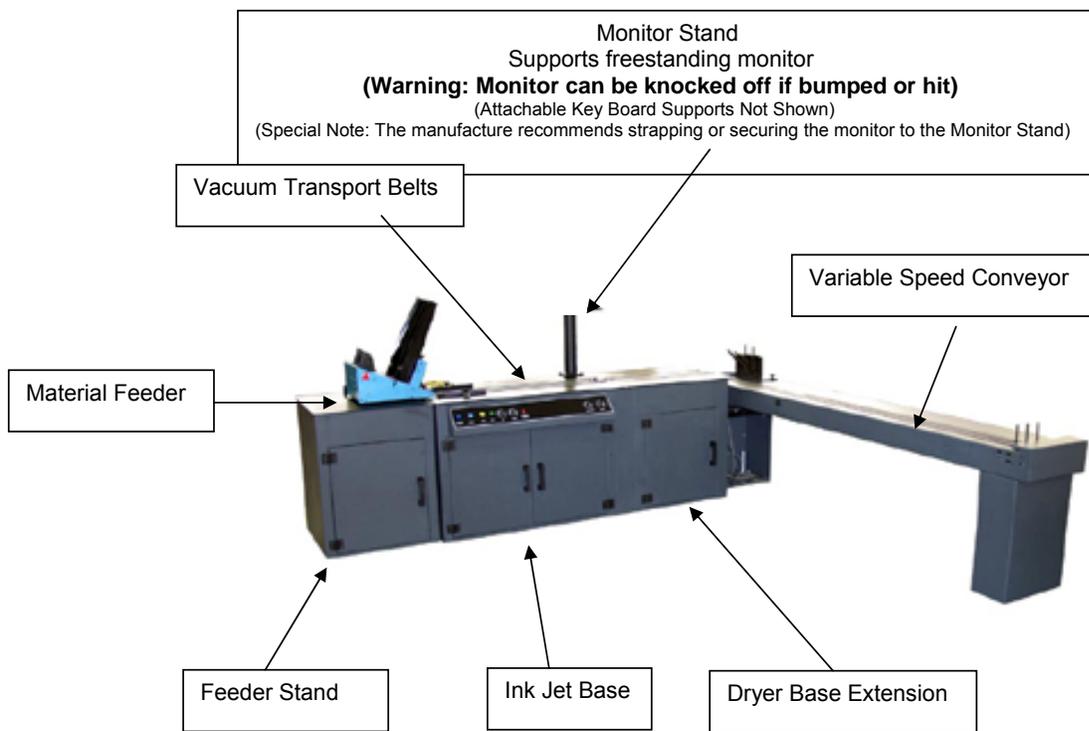
Section I

Installation of the

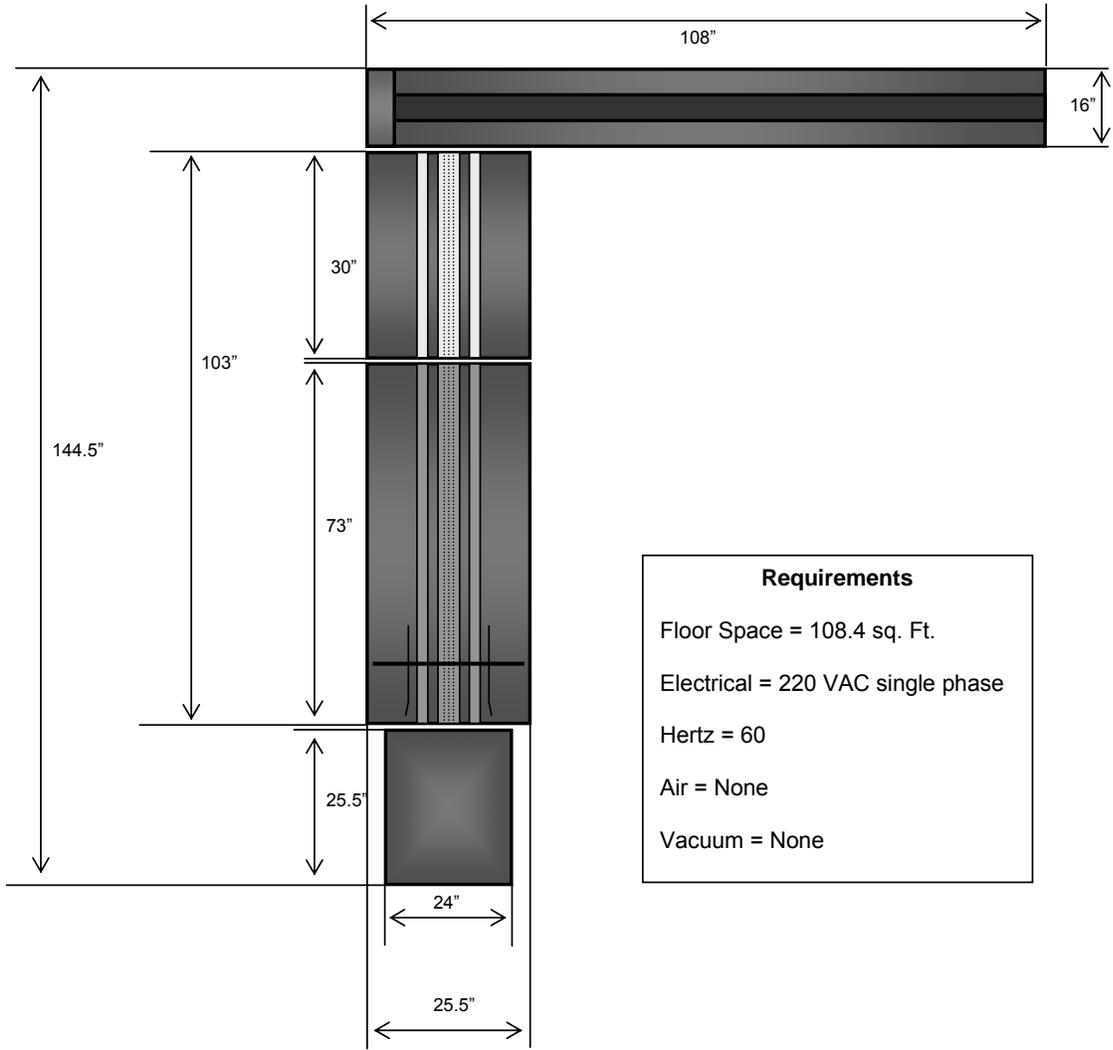
Ink Jet base

Dryer base





**Ink Jet / Dryer Base Layout
(Shown with Feeder Stand and Conveyor)**



Requirements

Floor Space = 108.4 sq. Ft.

Electrical = 220 VAC single phase

Hertz = 60

Air = None

Vacuum = None

Environment:

Deleted: ¶

The installation of the ink jet / dryer base is intended for operation in a specific environment. See Operating Environment Table below for details.

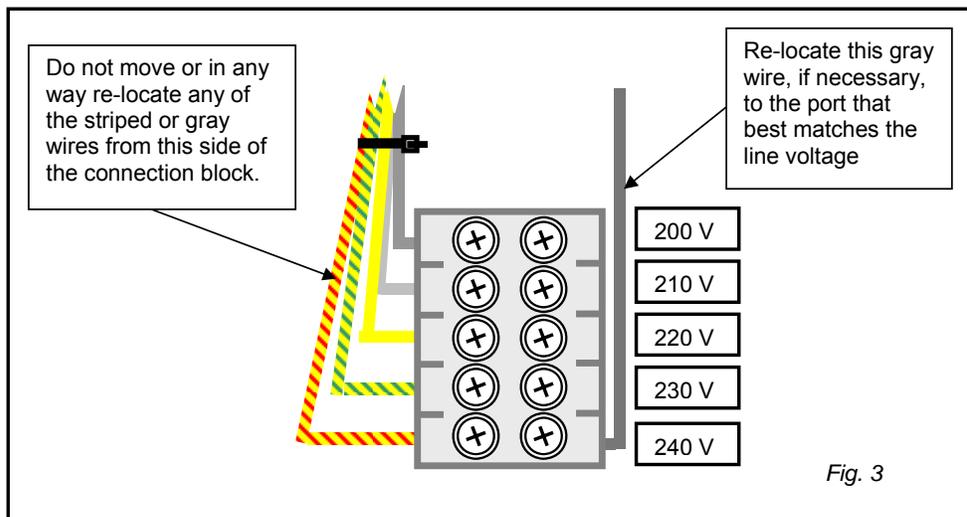
Operating Environment Table	
Item	Specifications
Place	Indoor
Ambient Temperature	+40 to '+90° F or '+13 to '+30° C
Relative Humidity	5 to 95% RH no condensation allowed
Atmosphere	Must not be exposed to; corrosive gas inflammable gas, oil mist, vapor or water. There must be no water condensation due to sudden changes in temperature
Altitude	3300 feet or 1000m or less Air Pressure 86 kPa to 106 kPa
Vibration	Not Applicable
Radiation	Should not exceed tolerable levels other than associated with UV dryer lamps

Installation:

Once the ink jet base / dryer base has been removed from the shipping container, perform the following:

1. Inspect the location where the machine is to be set up.
(Note: The manufacture recommends that the area be a relatively flat and smooth concert or hard wood surface, similar substrates are acceptable. The area should be free of holes, divots, loose floorboards, etc. and not subject to retaining moisture from water seepage.) (Warning: In the event the floor does not meet the recommended requirements, seek an alternate location or reschedule the installation after repairs to the floor have been completed)
2. Inspect the line current at the point where the power cable of the machine is to be plugged in. (Note: Conventional wall sockets, ceiling line drops and D-Boxes should be free of cracks, rust, visible signs of heat stress and flash marks.) (Special Note: For installations in Europe check the condition of the voltage converter box or other voltage reducing device that may be in use. In the event of a line voltage inspection failure, report your findings to the person or persons in charge of the building and postpone the installation until corrections are made.)
3. Check the line voltage to ensure that the minimum and maximum requirements are present.
4. Check to see what volt value the transformer is pinned out to at the voltage selection block, see figure 2. If the volt value is different from the line voltage you checked in step 3, the transformer will need to be re-pinned to match.
This can be done by:

- a. Using a medium tip Philips head screwdriver, loosen the retaining screw in the connection block that the “Dark Gray Voltage Select Wire” is currently connected to, see figure 3.
- Caution:** The “Dark Gray Voltage Select Wire” is located on the side of the connect block next to the “Volt Value Labels”. It is the only wire that occupies this side of the block. Do not move or in any way re-locate any of the stripped or gray wires from the side of the connect block opposite the “Volt Value Labels”.



- b. Insert the “Dark Gray Voltage Select Wire” in the connection port that is labeled for the best match for the line voltage discovered in step 3, see figure 4. Secure by tightening the retaining screw using a medium tip Philips head screwdriver.
- Caution:** Do not over tighten.

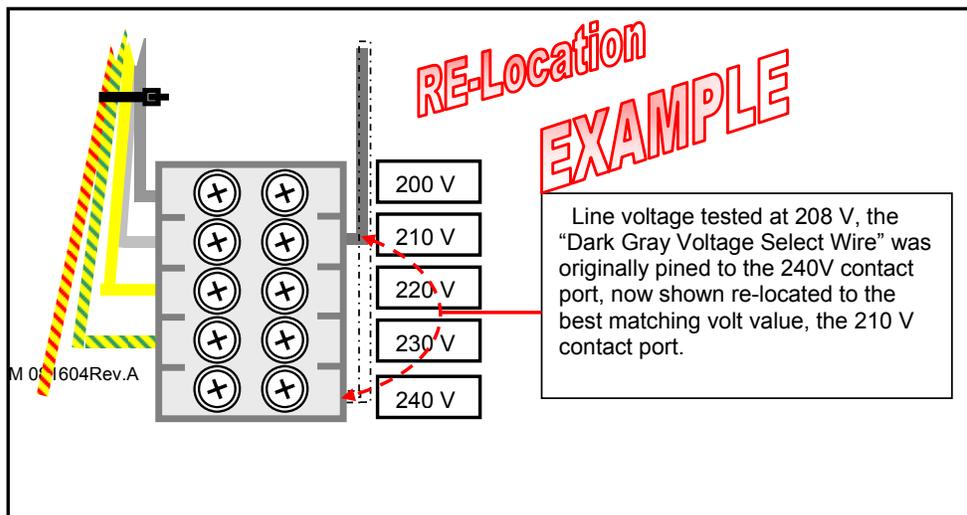
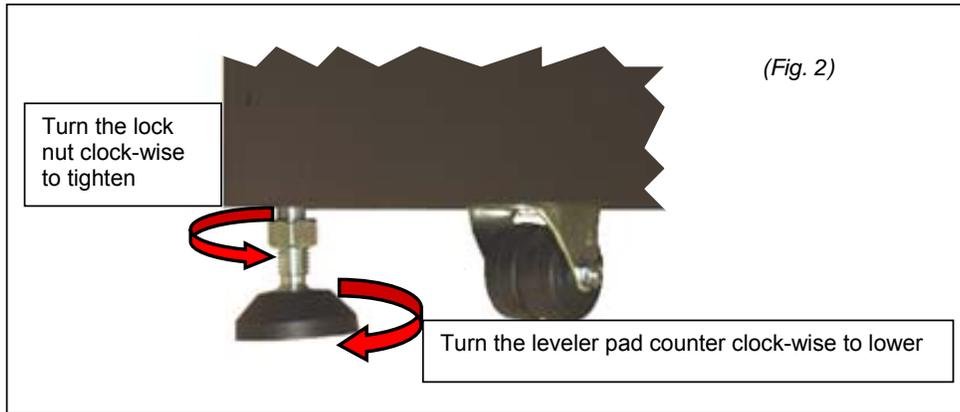


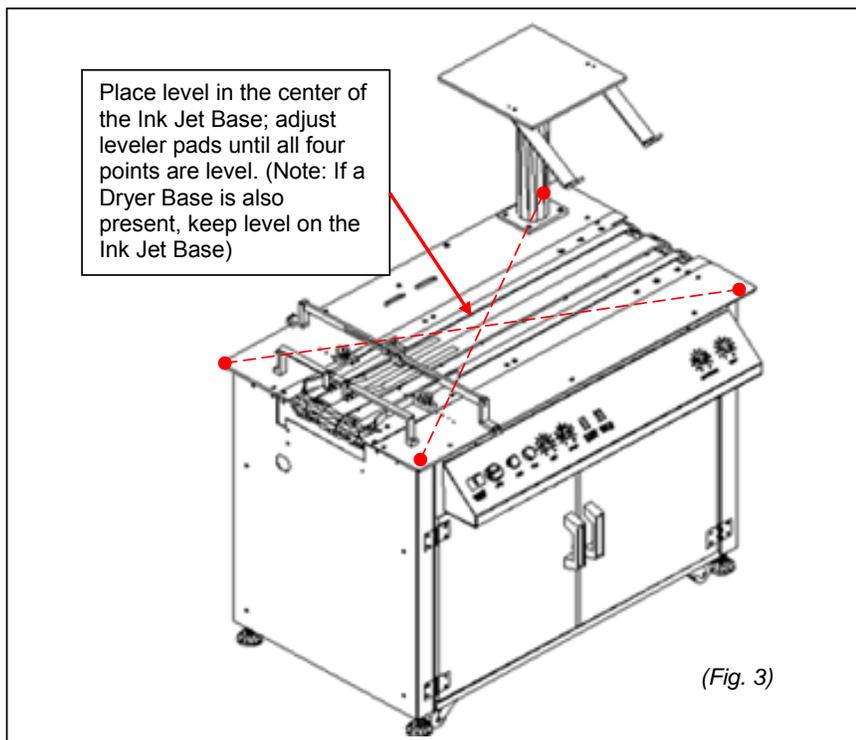


Fig. 4

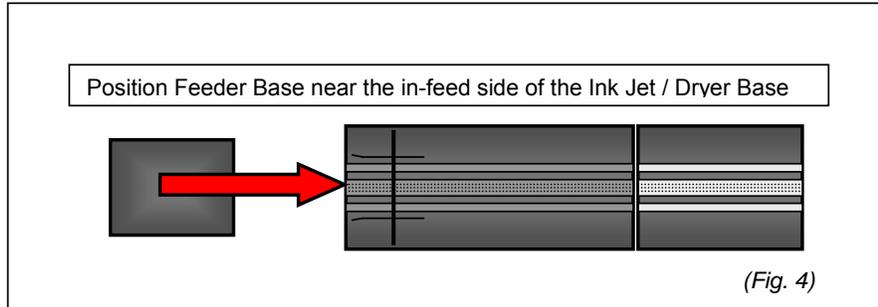
5. Position the ink jet / dryer base in the designated location then lower the leveler pads to raise the base to a comfortable operating height, see figure 2.



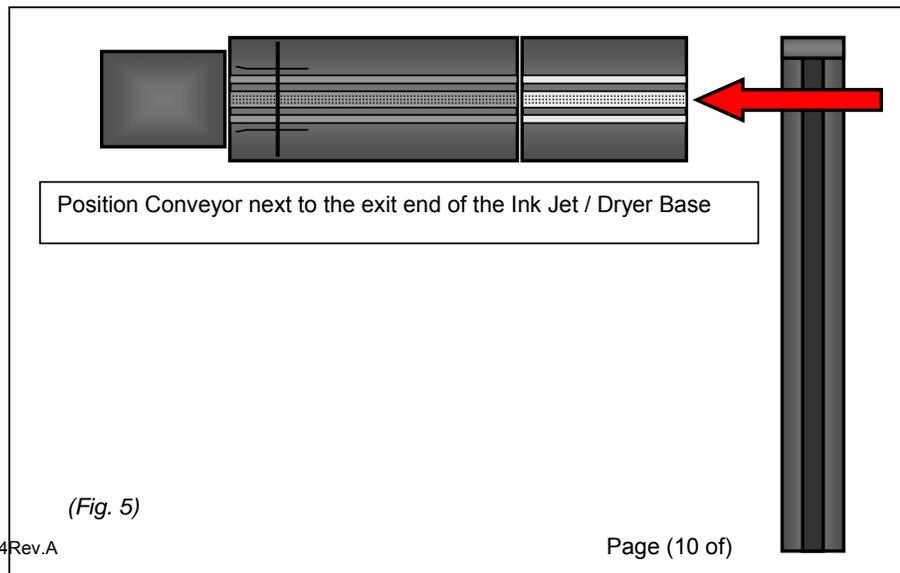
6. Place a level in the center of the ink jet / dryer base and adjust the leveler pads as needed to level the machine at the desired height. Once the machine has been leveled, tighten the leveler pad lock nuts, see figure 3.



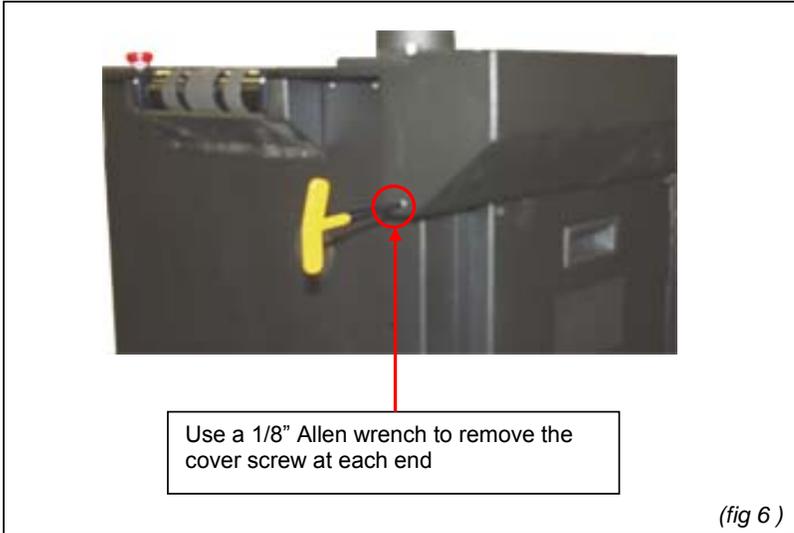
7. Place the feeder stand near the in-feed side of the ink jet / dryer base, with the service door facing the same direction as the service doors on the ink jet / dryer base and lower the leveler pads until the height of the feeder stand is approximately the same as the ink jet / dryer base, see figure 4.



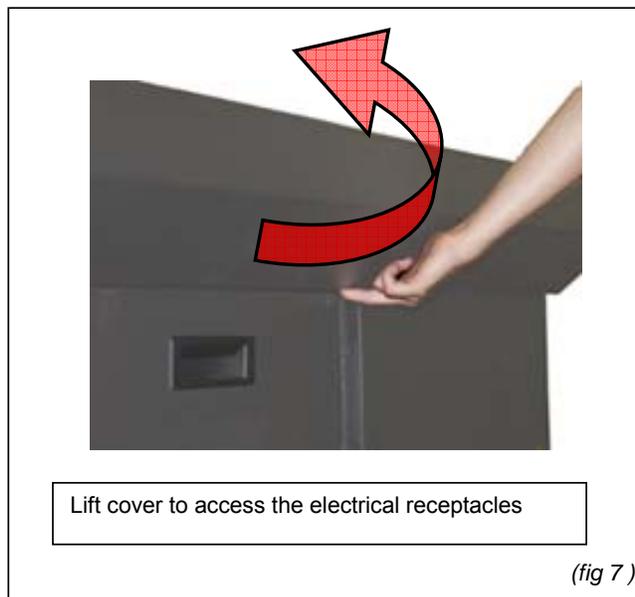
8. Place a level in the center of the feeder stand and adjust the leveler pads in the same manner as described in step #5.
9. Place the feeder on the feeder stand with the exit end of the feeder overhanging the ink jet base vacuum belt by approximately 1" and the center of the feeder with the vacuum belt.
10. Place the conveyor next to the exit end of the ink jet / dryer base, see figure 5 then lower the leveler pads to raise the conveyor bed surface until it is approximately 4 to 8" below the deck surface of the ink jet / dryer base. Once the desired height has been obtained, tighten the leveler pad lock nuts. (Note: The optimum height of the conveyor may vary depending on the size and weight of the product being run.)



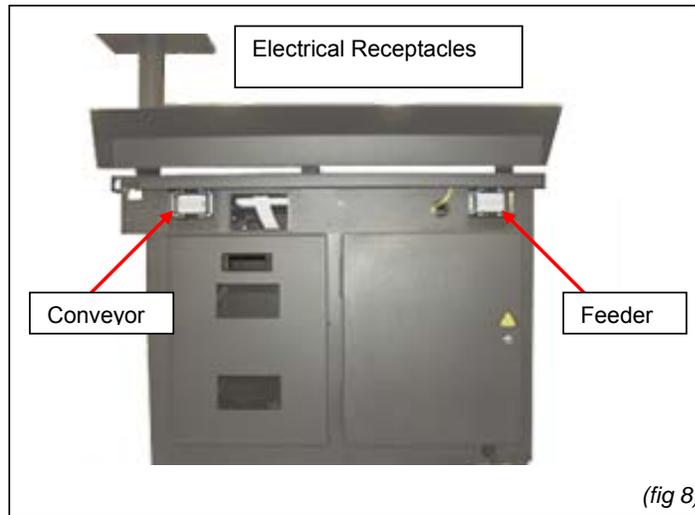
11. Open the back Plug Cover by removing the button head Allen screw located at each end of the cover, see figure 6.



12. Open the cover by lifting upward from the center, see figure 7.



13. Plug the feeder cable into the receptacle located on the back, upper right corner of the ink jet base cabinet, flip up the retaining clips to secure the plug in the receptacle, see figure 8.



14. Plug the conveyor cable into the receptacle located on the back upper left corner of the ink jet / dryer base, flip up the retaining clips to secure the plug in the receptacle, see figure 8.

 **(Warning:** To avoid possible damage to the machine and prevent possible injury, keep the work area free of all packing material and other debris.)

Section II

Safety Features & Warnings



Safety Features:

All ink jet bases and dryer bases have been designed with safety locks on all doors to cabinets containing moving parts as well as caution or warning labels or stickers to safeguard persons operating and or working on or around this equipment. These are as follows:

All doors to cabinets containing moving parts are equipped with a mechanical lock that requires the use of a flat blade screwdriver to open.

The main power or electrical box door is equipped with a safety lock that requires a specific key to open.

<p>General Warning Symbol indicating possible safety hazards. Found posted on the left front service door of the Ink Jet Base and Dryer Base above the door lock</p>	
<p>(Fig.9)</p>	<p><i>Label shown at actual size</i></p>

<p>Shock Hazard Symbol indicating possible shock hazard. Found posted above the lock of the service door on the Electrical box mounted on the backside of the Ink Jet Base and / or Dryer base.</p>	
<p>(Fig.10)</p>	<p><i>Label shown at actual size</i></p>

<p>Mechanical Warning Symbol indicating pinch hazard. Found posted on the mounting plate of the vacuum belt, drive motor.</p>	
<p>(Fig.11)</p>	<p><i>Label shown at actual size</i></p>

Note: This symbol  appears as a visual alert in the text of this manual next to written warnings regarding possible safety issues and or possible machine damage that may occur as a direct result of failure to follow specific instructions as written.

(Note: The safety devices, door locks, warning labels and stickers are installed by the manufacture to safeguard all persons operating and or working on or around the Ink Jet base and / or Dryer base. Removing, altering or disabling any of these items will void any and all warranties, either real or implied, purchased or offered with the Ink Jet base or Dryer base. All companies connected with the manufacturing, promotion and sale of the Ink Jet base or Dryer base shall be held harmless for any and all injuries and damage in the event the safety devices, door locks, warning labels and stickers are removed, altered or disabled)

In addition to the safety devices and warnings installed on the Ink Jet base or Dryer base by the manufacture, the following recommendations for safe operation and maintenance of the Ink Jet base or Dryer base are as follows:



- Any persons designated to operate, work on or near the Ink Jet base or Dryer base must be fully trained by a factory-authorized representative.
- Do not operate or perform any type of maintenance on the Ink Jet base or Dryer base while under the influence of drugs or alcohol.
- Do not operate or perform any type of maintenance on the Ink Jet base or Dryer base in or around freestanding water.
- Do not wear loose or baggie fitting shirts, shirts with billowing sleeves, bracelets, rings, necklaces, neckties or other loose apparel that may come into close proximity with moving parts of the machine.
- Do not place any items near or over the “Emergency Stop Switches” that might inhibit or obstruct line of sight or access to the Emergency Stop Switches. The “Emergency Stop Switches” must be clearly visible and accessible at all times.
- Wear protective safety eyeglasses or goggles and use a particle mask or similar device when cleaning off the Ink Jet base or Dryer base with compressed air. Alert all other persons in the area to stand a minimum of thirty (30) feet from the area where compressed air is put to such use.
- Hearing protection is not required for safe operation of the Ink Jet or Dryer base. Typically, decibel levels have been found to be less than 85 decibels in machines properly maintained and in good operating condition.
- All persons having hair greater than shoulder length who operate, work on or near the Ink Jet base or Dryer base should keep their hair pulled back in ponytail fashion then pinned up or otherwise contained to the top of their head or confined under the back of their shirt.

- Turn off the main power to the Ink Jet base or Dryer base before opening any of the service doors for general cleaning and or general maintenance. Follow the “Lock Out Procedures” as stated on page 16 for extensive repairs involving disassembly of the machine either in whole or in part or replacing any of the electrical components.
- Any persons working near any of the electrical motors or pump motors of the Ink Jet base or Dryer base should use caution. Electrical motors give off heat, contact with or exposure to bare skin may result in burns.
- The Ink Jet base or Dryer base was designed to feed and transport paper only. Do not attempt to feed and / or run materials made of or containing glass, metal, wood, plastics, liquids, foods, powders, gasses, explosives or toxic and hazardous chemicals on the Ink Jet base or Dryer base. (Note: The manufacture recognizes and acknowledges that the Ink Jet base or Dryer base is capable of successfully running and / or transporting compact disk and audio cassettes inserted into paper envelopes, however the manufacture and other companies connected with the promotion and sale of the Ink Jet base or Dryer base do not assume any responsibility for any damage to the Ink Jet base or Dryer base or product and shall be held harmless for any damages and or injuries resulting in this practice.)

Special Advisement:

The manufacture and other companies connected with the promotion and sale of the Ink Jet base or Dryer base shall be held harmless for any and all injuries sustained to any person or persons as a result of failure to comply with the recommendations for safe operation and maintenance of the Ink Jet base or Dryer base as shown and / or described herein.

Lock Out Procedure

Before beginning extensive repairs involving disassembly of the machine either in whole or in part, performing general maintenance or replacing any of the electrical components, the machine must be locked out of service to ensure that power will not be restored to the machine while the work is being performed. To lock a machine out of service, perform the following:

 **Warning:** The following procedure is published herein for the expressed purpose of providing a safe work environment conducive to persons performing repairs and or maintenance and or general cleaning of the Ink Jet Base and or Dryer Base and or any other components connected to or associated with the Ink Jet Base and or Dryer Base. This procedure must be followed without exception to ensure the safety of any person or persons performing the previous stated task.

The manufacture and other companies connected with the promotion and sale of the Ink Jet base or Dryer base shall be held harmless for any and all injuries sustained to any person or

persons and or damage to the Ink Jet Base and or Dryer Base and or any other components connected to or associated with the Ink Jet Base and or Dryer Base as a result of failure to comply with the "Lock Out Procedure".

1. Turn the main power switch to the off position.
2. Disconnect the power cable from its source by performing the following:
 - a. Follow the main power line from the machine back to the receptacle or source of supplied power and disconnect it at the source.
 - b. Place the plug connector close to the machine in such a position that will remain in your field of vision while repairs or maintenance is being performed.
3. Notify all other persons in the area where the work is being performed that the machine will be out of service, especially if the work you are performing requires you to be crouched behind or beside the machine or in some other way obscured from the sight of other persons in the area.
4. When the work has been completed reconnect the plug to the power source and then test cycle the machine to ensure that power has properly restored and the machine is fully functional.
5. Notify all other persons in the area that the machine is fully operational and that the drive motors will become enabled when the power switch is placed in the on position.

The following are some suggested devices specifically designed to provide a greater degree of safety when locking out the power supply to a machine. These devices can be purchased from most safety equipment suppliers and vendors.

Lock Box designed for power cord plug connectors, commonly used in combination with a key style padlock.



Note: Appearance of Lock-Out devices may vary depending on vendor

(Fig. 12)

Breaker Lock designed for use inside electrical breaker boxes, commonly used in combination with a key style padlock.



Note: Appearance of Lock-Out devices may vary depending on vendor

(Fig. 13)

Warning Alert tags, commonly used in combination with all lock out devices.

Front View of Lock Out Tag



Back View of Lock Out Tag



(Fig. 14)

Section III

Ink Jet Base General Set-Up



This Ink Jet base system is designed to run off line or in line with most inserters, folders or tabbers.

Operating The Ink Jet Base

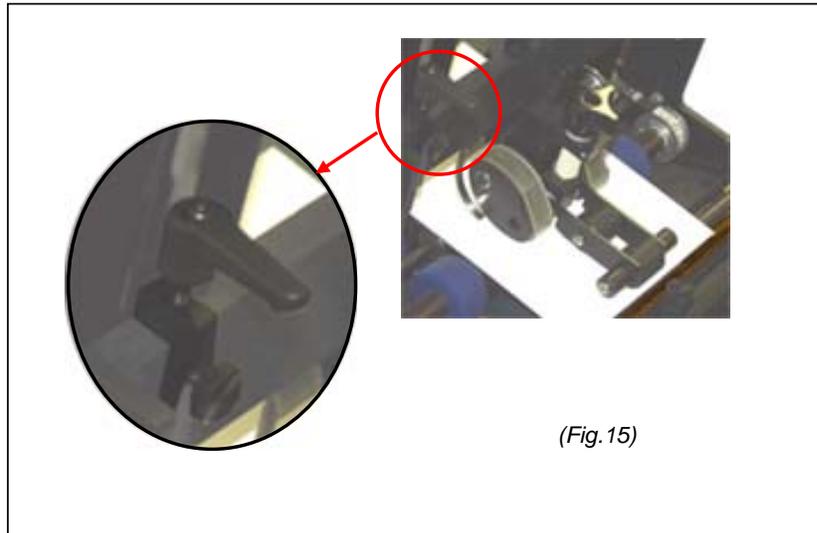
Section - I

Power:

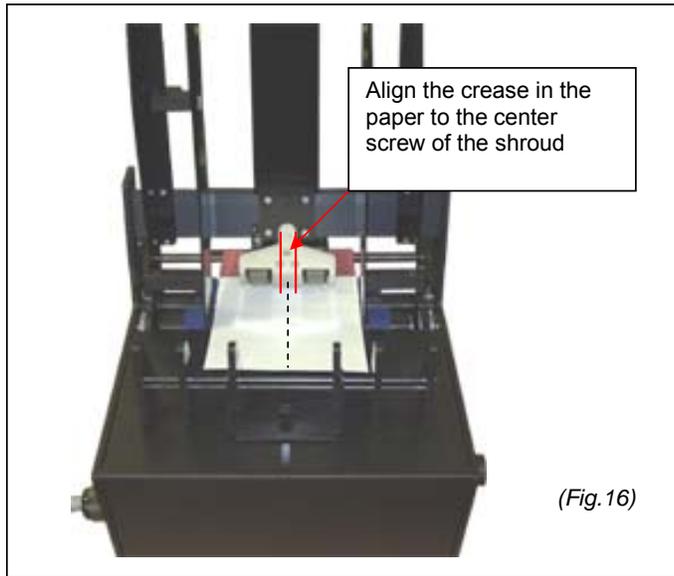
1. Turn power to the machine on by turning the red power switch, located on the back panel, in a clock-wise direction.
2. Turn the vacuum pump motor on by toggling the red switch in a downward direction until it lights up, see page 28, figure 24.

Feeder Set-Up

1. Fold one (1) piece of material in half to establish a center crease
2. Loosen the ratchet handles and the thumb lock knob, found on each of the material side guides (The ratchet handle at the top of the clamp, aligns the side guide vertically, the thumb lock knob at the back of the clamp, aligns the side guide horizontally. See figure 15.

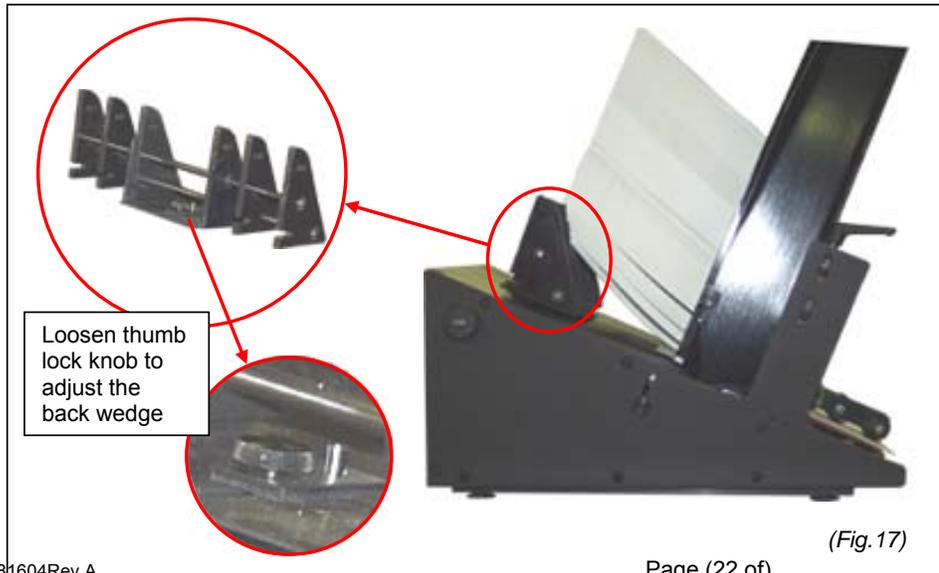


3. Place the creased piece on the feeder friction belt, see figure 16.
4. Align the crease with the Phillips head screws located on the metal shroud, on the material separator, see figure 16.



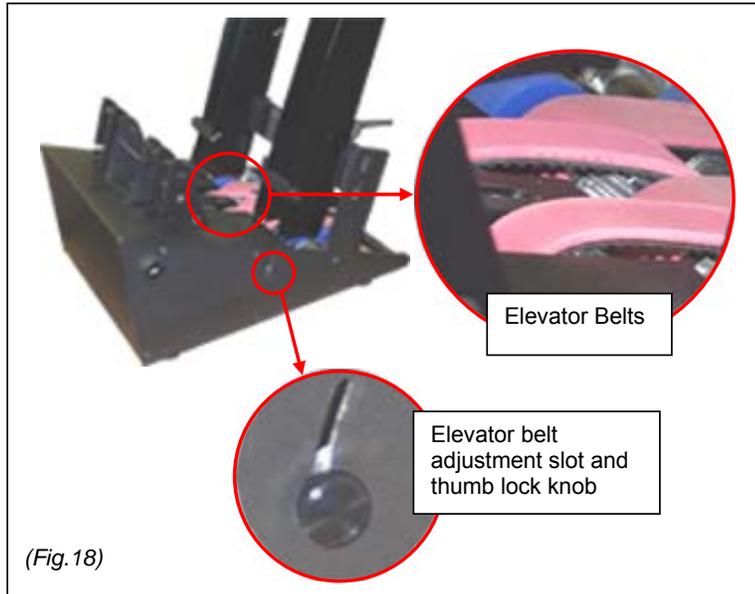
(Fig. 16)

5. Set the side guides of the feeder, to the width of the material to be run. Allow approximately 1/8" of space between the material and the material side guides to enable the material can slide freely to the friction belts of the feeder.
6. Set the "Wedge" under the material to obtain the proper stack angle for feeding, see figure 17. The variables of this setting are dependent on the characteristics of the material. (Helpful Tip: The more the wedge is pushed under the material, the less critical the material separator setting becomes. If the wedge is placed out from the material, the separator setting will become more critical)

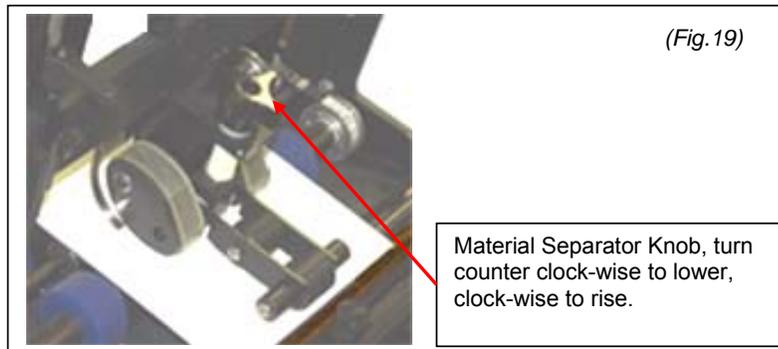


(Fig. 17)

(Note: If large material is being run; i.e.: catalogs, flat size letters, etc... raise the elevator belts by loosening the both of thumb lock knobs, located on either side of the feeder, and manually lifting the elevator belt shaft until the elevator belts make contact with the material, see figure 18.



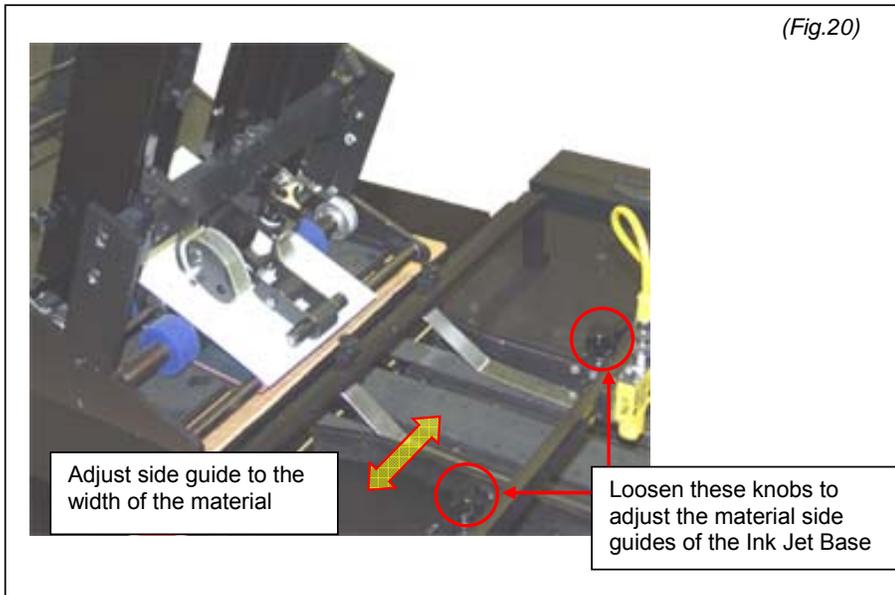
7. Set the height of the "Material Separator" to allow the thickness of one (1) piece of material to pass under it. To do this, turn the adjustment knob clock wise to raise the separator, counter clock wise to lower the separator, see figure 19. (Note: There should be a little resistance felt by hand, when the material is directly under the material separator, when this is properly set) (Helpful Tip: The thinner the material is, the more critical this setting is.)



8. Fill the feeder with material. The feeders are designed to hold a stack of material up to eighteen (18) inches in height or fifteen (15) pounds in weight, depending on the characteristics of the material.

Test the set up by pressing the blue feeder button located at the left end of the control panel to activate the feeder. Then press the yellow "Jog" button, found on the control panel to advance one piece at a time. Check the pieces as they feed to ensure proper separation has taken place.

9. Press the yellow Jog button located on the control panel, jog the machine forward until one (1) piece of material has been fed onto the material vacuum transport belts of the ink jet base, see page 27, figure 24.
10. Set the width of the material guides located on the transport deck by turning the retaining knobs in a counter clock-wise direction to loosen, clock-wise direction to tighten. Adjust the material guides to center the material being run onto the vacuum belts, see figure 20. (Note: Arrange the guides approximately 1/16" from the top and bottom edge of the material to prevent restricting the material on the transport belt.)

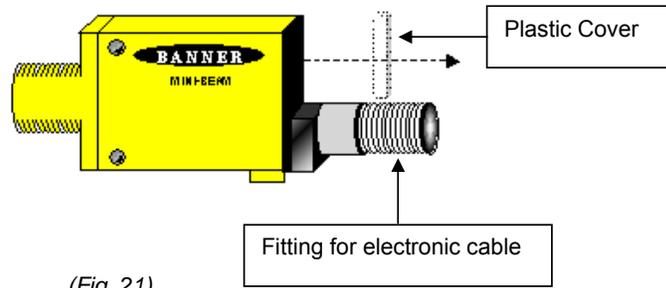


Paper Sensor Adjustment

The paper sensor is located at the “In-Feed” end of the ink jet base, over the center vacuum belt. This sensor is set to detect and confirm the presence of paper before passing under the ink jet heads. This sensor does not normally need to be adjusted for each job, once the setting has been made, it should remain set unless otherwise disrupted. In the event the settings have been disrupted, perform the following:

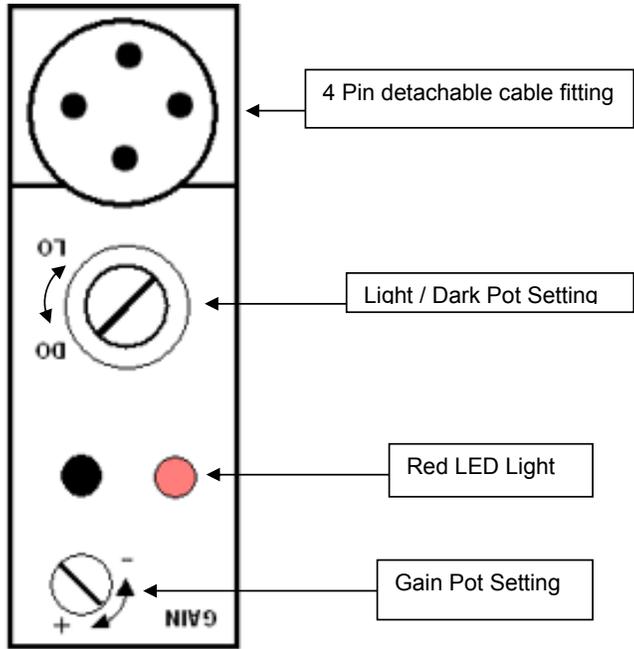
1. Position the sensor directly over the center of the middle vacuum belt by turning the thumbscrew in the sensor mounting block in a counter clock-wise direction and sliding the sensor assembly across the sensor support bar. Once the desired position is acquired, tighten the thumbscrew in the sensor mounting block in a counter clock-wise direction.
2. Place a blank piece of white paper on the vacuum belt directly under the paper sensor.
3. Using a small flat blade screwdriver, remove the pan head screw in the plastic cover located on the sensor next to the electronic cable connection, see figure 21. (Note: Depending on the ink jet bases model, this sensor may have a detachable screw type cable connection or may have a hard wire cable connection. The sensitivity adjustments for both models are identical.)
4. Set the “Light / Dark” pot setting; using a small flat blade screw driver, slowly and very carefully turn the pot setting, located next to the electronic cable connection, in a counter clock-wise direction until full range of motion is felt, see figure 22. (Note: If this adjustment is performed correctly, the screw driver slot in the pot setting should be pointing towards the “DO” in the range scale next to the pot setting.)
 **(Warning:** The stop point of this pot setting can be damaged if excessive force is applied.)
5. Set the “Gain” pot setting by performing the following;
 - A. Using a small flat blade screw driver, slowly and carefully turn the pot setting located furthest from the electronic cable connection, in a counter clock-wise direction until full range of motion is felt, see figure 22. (The red LED indicator light should be off at this point.)
 - B. Using a small flat blade screw driver, slowly and carefully turn the pot setting located furthest from the electronic cable connection, in a clock-wise direction until the red LED light comes on, continue turning the pot setting in a clock-wise direction another half turn.
6. Return the plastic cover, removed in step (3) to its original position.

Remove the plastic cover from the sensor to gain access to the pot settings.
(Sensor shown has detachable electrical cable fitting)

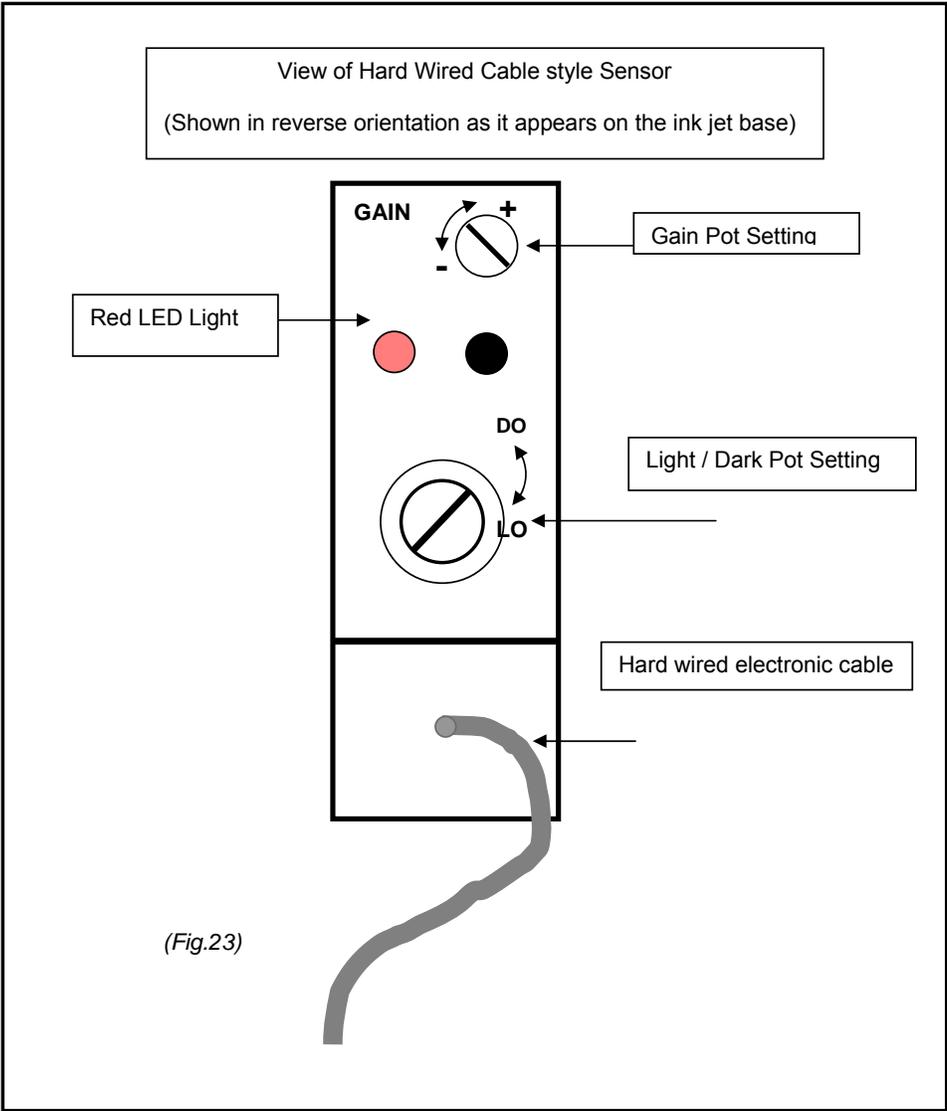


(Fig. 21)

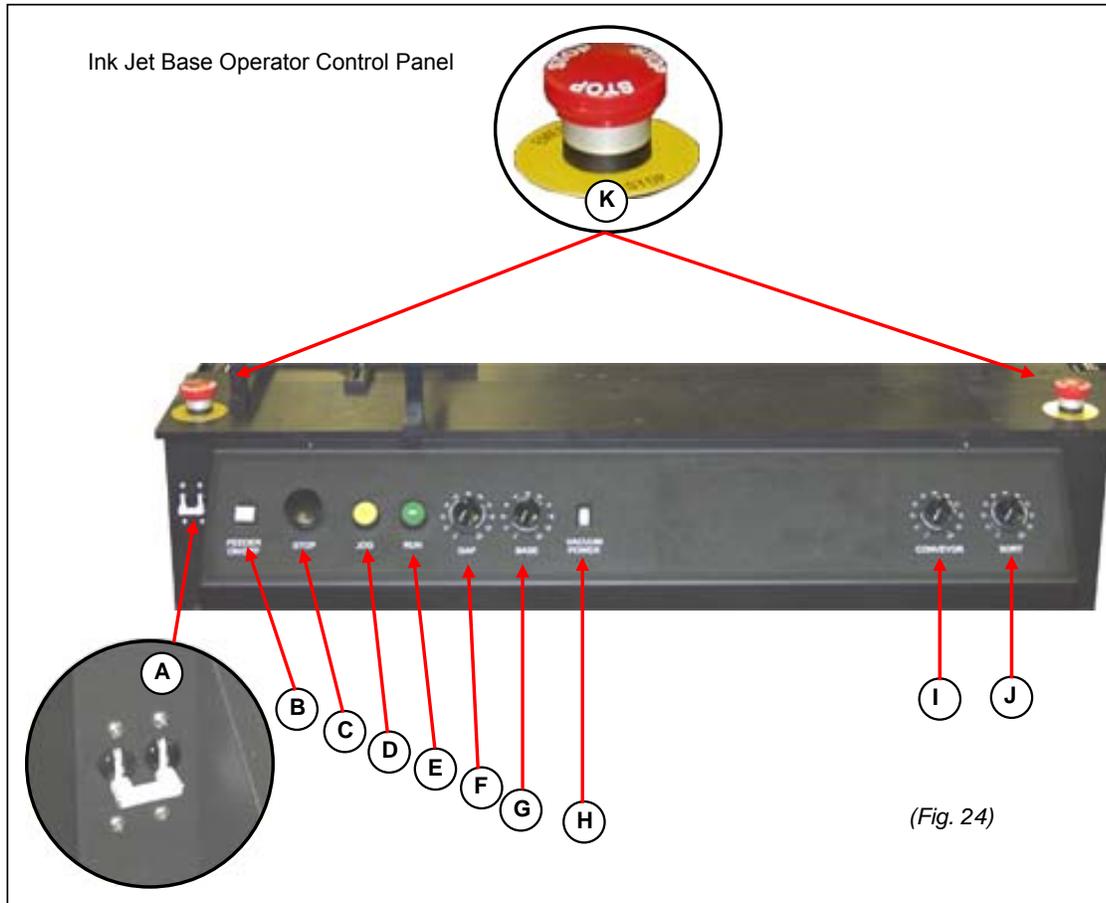
View of Detachable Cable style Sensor
(Shown in actual orientation as it appears on the ink jet base)



(Fig. 22)

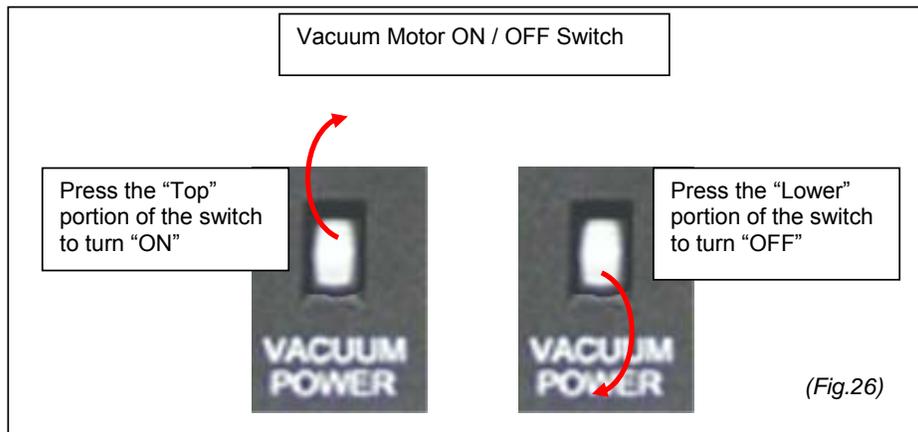
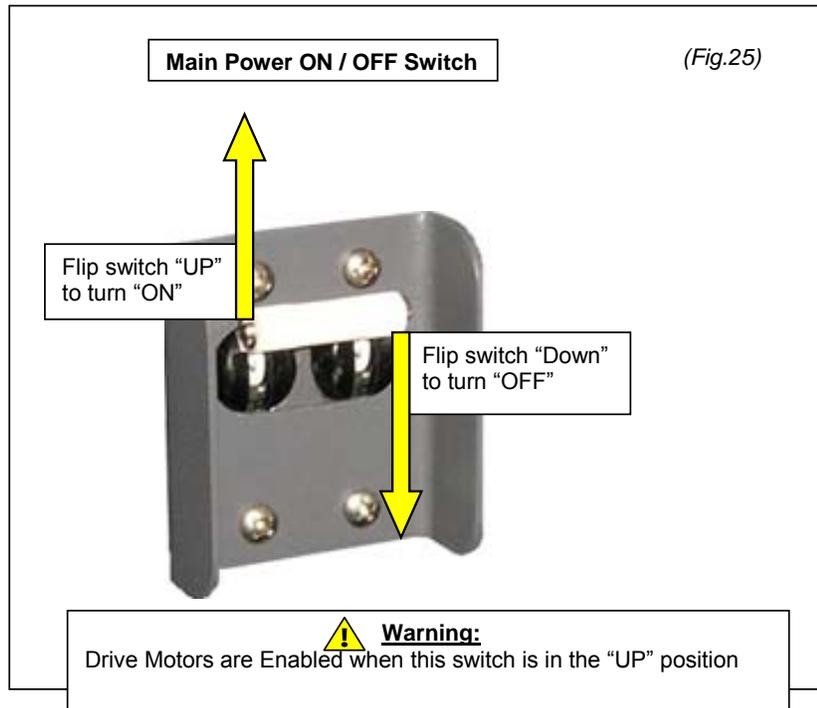


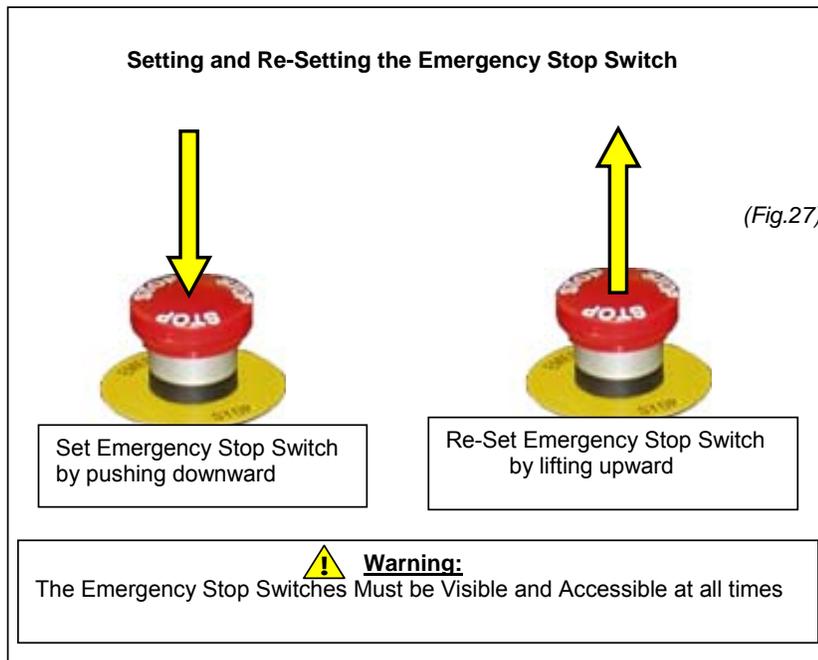
Control Panel and Switch Operation



Item	Description	Function
A	Main Power Switch	Engages power to machine
B	Feeder Switch	Engages power to feeder
C	Stop Switch	Interrupts power to all components of the machine
D	Jog Button	Cycles all components of the machine
E	Run Button	Cycles machine continuously
F	Gap Control Dial	Increases and decreases speed of feeder
G	Base Control Dial	Increases and decreases speed of base
H	Vacuum Power	Engages power to the vacuum pump
I	Conveyor Control Dial	Increases and decreases speed of conveyor
J	Sort Control Dial	** Governs rate of acceleration of "Speed Sort Conveyor" **
K	Emergency Stop Switch	Interrupts power to all components of the machine

** Optional "Speed Sort Conveyor" Shows sort breaks automatically. See you local dealer for details





Special Note: Pursuant to Community Legislation on Machinery, Comments on Directive 98/37/EC 1.2. Controls and 1.2.1 Safety and reliability of control systems

The “E-Stop” button / buttons found on the Ink Jet Base are by design in compliance to meet and / or exceed the mandates and requirements as stated in the Community Legislation on Machinery, Comments on Directive 98/37/EC.

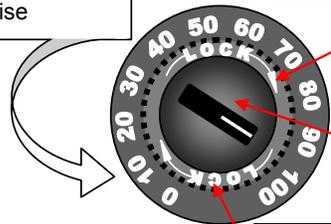
By manufacture design the E-Stop buttons are to be used in the event of an emergency, once the E-Stop button has been depressed a delay of 5 to 7 seconds must elapse before the E-Stop button can be re-set. Once the E-Stop button has been re-set another delay of 5 to 7 seconds must elapse before normal machine operation can be resumed. In the event the delays are not strictly observed before attempting to resume normal machine operation, a conflict in the logic program may result causing an operator to power down the system and re-boot to clear the conflict before resuming normal machine operation.

For a selective stop to interrupt normal machine operation, depress the “Black” control Stop button. The machine can be re-started without delay at the operator’s discretion.

Setting Control Dials

Loosen Lock Ring
by turning counter
clock-wise

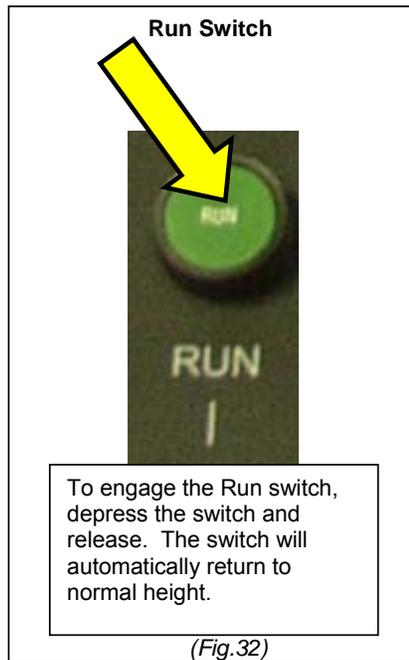
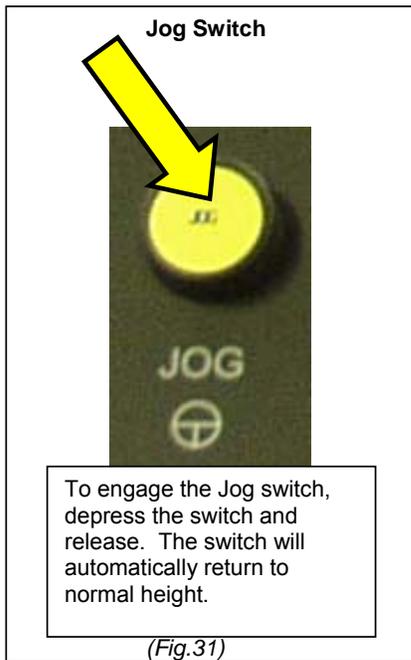
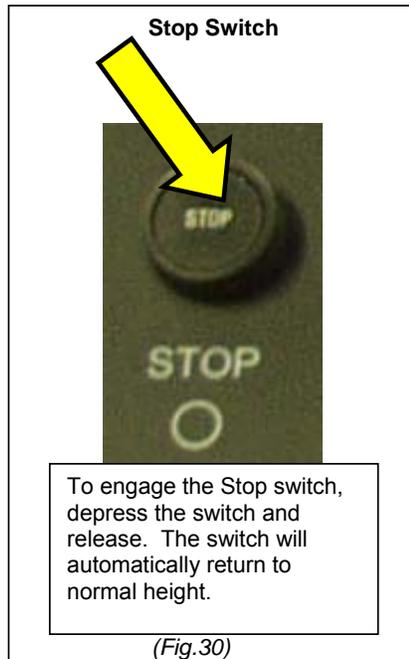
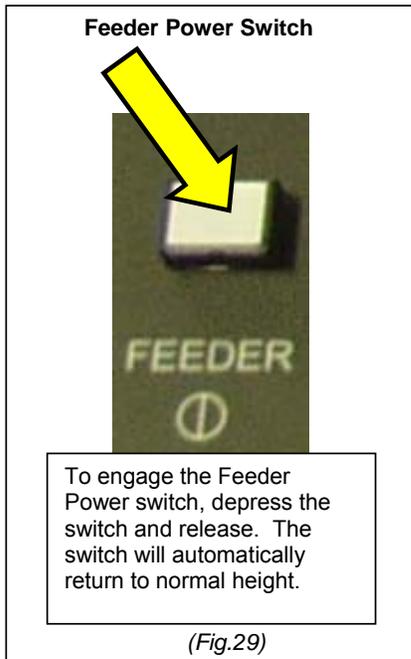
Loosen "Lock Ring" before
adjusting the Control Dial



Turn the center knob to
the desired setting

Tighten Lock Ring by turning
clock-wise

(Fig.28)



Print Heads

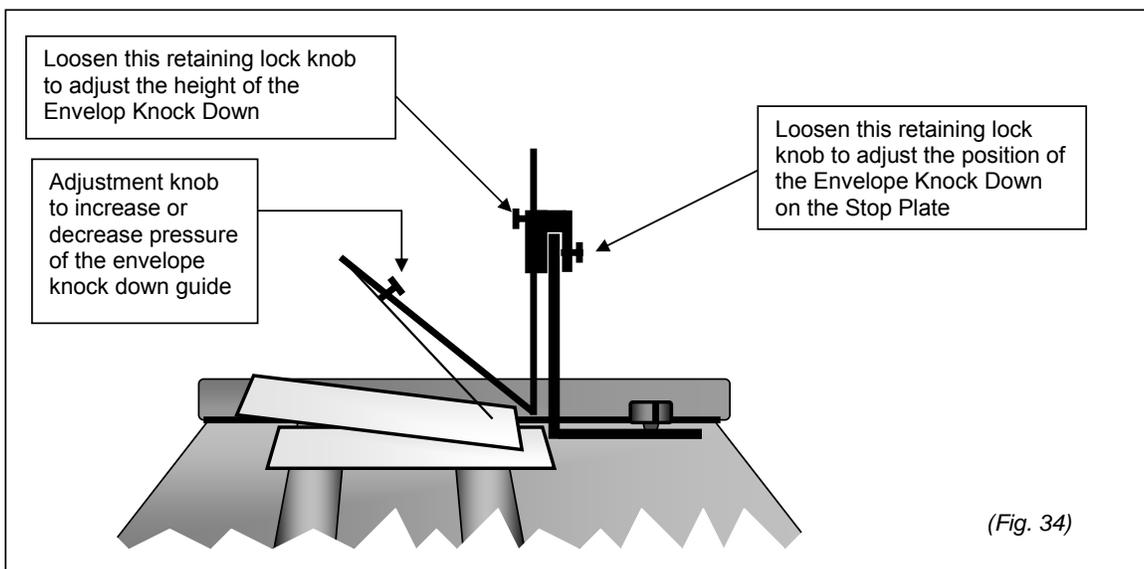
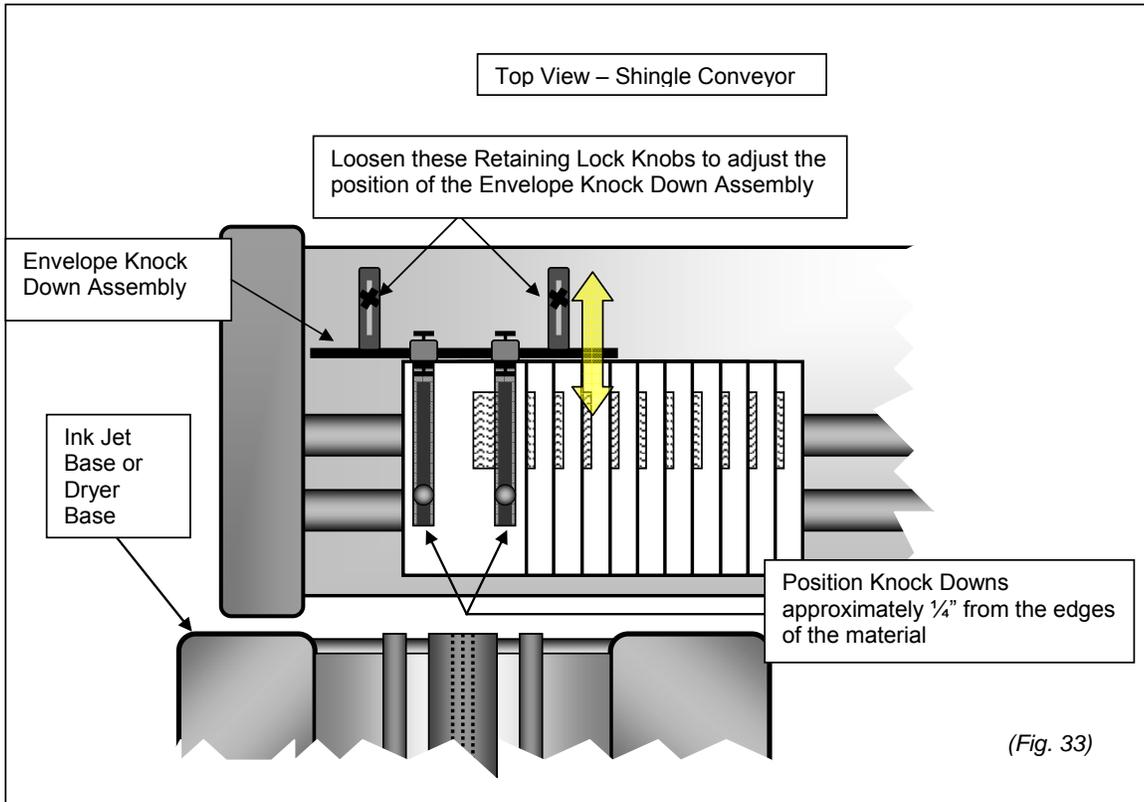
Set up the print heads in accordance with the manufactures specification.

Shingle Conveyor

The Shingle Conveyor is controlled by three factors, the software running the data base, the speed control on the ink jet base and the sort control also located on the ink jet base. The speed control regulates the constant running speed of the shingle conveyor during operation. The sort control regulates the speed at which the shingle conveyor speeds up to accommodate a mailing sort break. The software running the database signals the ink jet base when a sort break occurs, this activates the sort feature accelerating the shingle conveyor for a duration determined by the soft ware. To set up the shingle conveyor and features, perform the following:

1. Position the edge of the shingle conveyor approximately three (*3) inches from exit end of the ink jet base / dryer base also aligning the center of the envelope knock down assembly with the center material transport belt of the ink jet base / dryer base, see figure 33. (Note: (*3) inches stated in this step is a starting reference point for the approximate distance when running a 1-ounce, #10 envelope. The size and weight of the material as well as the selected running speed of the ink jet has a direct bearing on the distance between the shingle conveyor and the exit end of the ink jet base / dryer base. Increasing or decreasing this distance may be required to accommodate the material your running.)
2. Remove both the envelope knock downs by turning the retaining lock knob, located on the envelope knock down mounting clamp, in a counter clock-wise direction, then lift each mounting clamp free from the stop plate, see figure 33.
3. Cycle the inkjet base at regular running speed and depress the feeder start button located on the left side of the inkjet base control panel. (Note: Depress the feeder start button a second time to stop the feeder after 5 to 6 pieces have traveled [Un-Printed] to the shingle conveyor.)
4. Observe the material at the exit end of the ink jet base / dryer base as it lands on the shingle conveyor, the material should lightly strike the stop plate of the envelope knock down assembly near the surface of the conveyor bed, see figure 34. (Note: If the material is landing on the conveyor bed or striking the stop plate too high above the conveyor bed, you may need to adjust the position of the stop plate or the position of the conveyor as described in step #1 or position and adjust the envelope knock downs previously removed in step #2.)
5. Return both of the envelope knock downs (removed in step #2), to the stop plate. Position each envelope knock down approximately 1/4 " from the top and bottom edge of the material, and tighten the retaining lock knob by turning it in a clock-wise direction, see figure 34.
6. Adjust the knock down straps. Once the job has been started and running speed has been established, watch the finished product as it lands on the shingle conveyor and look for these occurrences:
 - A. The material strikes the stop plate so hard that it bounces back before landing on the conveyor. Adjust the knock down straps to apply greater resistance to the material, (slowing it down) before it strikes the stop plate. Do this by turning the adjustment knobs, on both envelope knock downs, in a clock-wise direction.
 - B. The material lands on the conveyor before reaching the stop plate. Adjust the knock down straps to apply less resistance to the material, (allowing it to maintain speed) to

reach the strikes the stop plate. Do this by turning the adjustment knobs; on both envelopes knock downs, in a counter clock-wise direction.



Setting Run Speed

1. Once the material is running, adjust the speed of the ink jet base by turning the Base Speed Control Knob in a clock-wise to increase the speed or counter clock-wise to decrease the speed, see page 28, figure 24. (Note: Set the speed to best accommodate the material and fonts being run.)
2. Set the feeder gap by adjusting the Gap Control knob in a clock-wise direction to shorten the gap between each piece of material as it feeds or counter clock-wise to increase the gap between each piece of material as it runs, see page 28, figure 24.
3. Adjust the conveyor speed by turning the Conveyor knob in a clock-wise direction to increase the speed or counter clock-wise to decrease the speed, see page 28, figure 24.

Note: The Gap Control knob, controls the rate of acceleration of the shingle conveyor for a sort break. Increasing the sort speed put a greater gap between sort breaks on the conveyor. The actual sort feature is controlled by the data base software.

Section IV

Ink Jet Base General Service



Section - IV

Ink Jet Base Maintenance:

The general maintenance of the ink jet / dryer base is limited due to the design and materials used in manufacturing. The frequency of general cleaning required for the ink jet / dryer base is dependent on the amount of running time put on the machine.

General Cleaning:

Blowing off the machine with compressed air.

1. Acquire and use eye protection, safety goggles or safety glasses with side guards. Also use respiratory protection, a simple disposable cloth or paper style particle mask is sufficient.
2. Alert all other people in the area to stand clear of the work area a minimum of 30 feet, (7.7 meters) where compressed air is being used to blow off machines.
3. Turn off the machine and disconnect the power line.  **(Warning:** To prevent accidental injury, refer to "The Lock Out / Tag Out Procedure" on page 16.)
4. Remove any loose items from the surfaces of the machine, i.e. Ballpoint pens, pencils, tape dispensers, paper clips rubber bands etc.
5. Open all service doors located on the front side of the machine and remove any loose items that might have been left inside, i.e.; spare parts, tools, personal effects such as purses car keys etc. **(Note:** After a complete visual inspection has been completed and loose items removed, leave the service doors open.)
6. Remove the keyboard and monitor from the stand or cover them with plastic to prevent air borne particles from getting into them. **(Note:** if the inkjet base cabinet is being used to house a computer, remove the computer from the cabinet.)
7. Remove all ink cartridges from the carriage. **(Note:** If a continuous feed ink system is in use, cover the spray orifices with plastic to prevent air borne particles from getting into them.)
8. Hold the air nozzle firmly at arms length and blow off the machine beginning with the top surfaces then work your way down.
 **(Warning:** Be sure to keep the direction of compressed air blowing away from you.)

(Note: High volume businesses running three (3) shifts five (5) days a week should plan this function once a week. Businesses producing light to moderate volume should plan this function once a month.)

Cleaning Friction Belts, Vacuum Belts and Conveyor Belts:

1. Acquire and use eye protection, safety goggles or safety glasses with side guards.
2. Turn off the machine and disconnect the power line
3. Clean the following material belts;
 - ✓ Red Gum Friction Belts of the material Feeder
 - ✓ Vacuum Transport Belts of the Ink Jet / Dryer Base
 - ✓ Transport Belt of the Shingle Conveyor or Speed Sort Conveyor

Apply a liberal amount of "Simple Green" general-purpose cleaner or ("Isopropyl Alcohol", 70% by volume see warning below) to a soft cloth and wipe down the belt you wish to clean. Advance the belt being cleaned by hand until the entire belt surface has been cleaned.

 **(Warning:** Do not spray or pour Simple Green general-purpose cleaner or Isopropyl Alcohol directly onto the belts, free flowing liquids may seep into some electronic components and cause damage)

(Note: "Simple Green" general-purpose cleaner and / or "Isopropyl Alcohol" can be purchased at most local grocery stores and drug stores.)

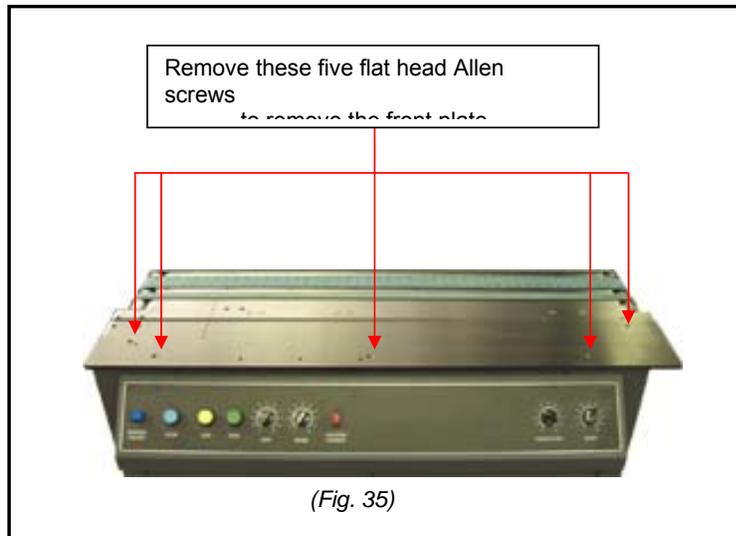
 **(Warning: Isopropyl Alcohol is FLAMABLE, do not use near an open flame or any other source or device that gives off heat.)**

Ink Jet Base Material Transport Belt Replacement

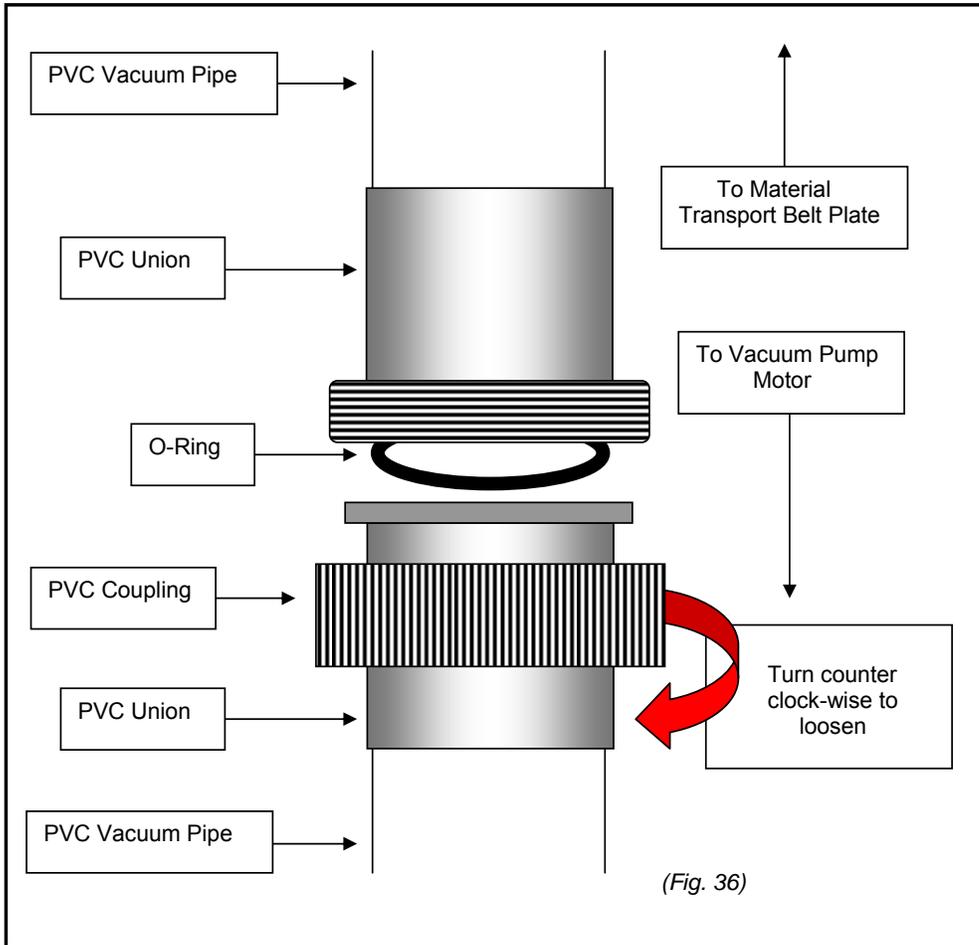
Prepare the work area, clear off the top surface of the ink jet base, place a utility cart or table near the ink jet base to place the material transport belt plate on, once removed. If a utility cart or table is not available, cover the out feed shingle conveyor with cardboard and use it to place the material transport belt plate on.

1. Remove the top plate located over the control panel. This can be accomplished in the following manner:
 - A. Using an 5/32" Allen wrench, remove the button head Allen screw found in the mounting block at each end of the material hold down bar, then remove the material hold down bar and mounting blocks.

Using a 1/8" Allen wrench, remove the five (5) flat hex head Allen screws shown in figure 35.

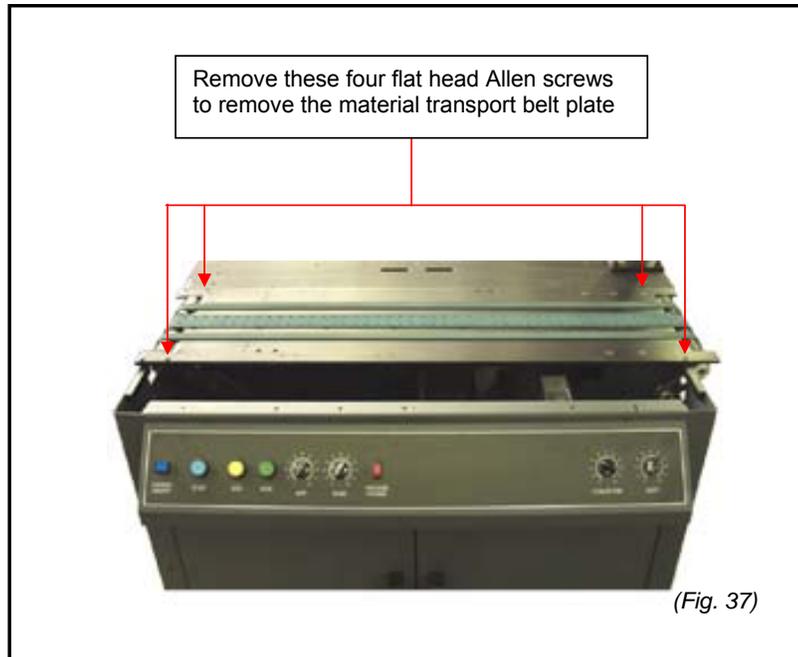


- B. Lift the front plate off of the ink jet base and set it aside.
2. Remove the material transport belt plate. This can be accomplished in the following manner:
 - (a) Open the left front door of the inkjet base and loosen the coupling on the PVC vacuum pipe located between the vacuum pump motor and the material transport belt plate. The coupling will slide down the PVC pipe towards the vacuum pump motor, see figure 36. (Note: There is an O-Ring inside the PVC union, use care not to loose it.)



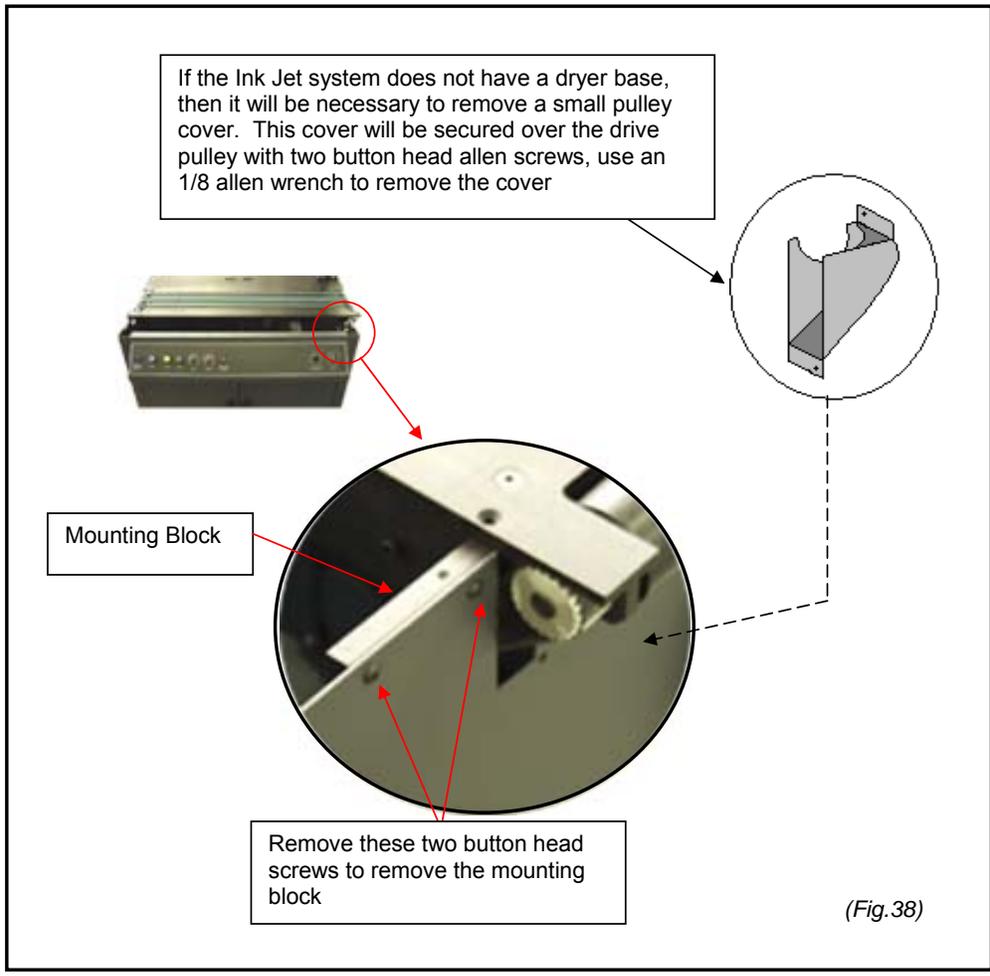
- (b) Unplug the material transport belt drive motor. The connecting plug is located on the right side of the electrical box inside the base cabinet and is easily accessible through the front left door.

- (c) Using an 1/8" Allen wrench, remove four (4) flat head Allen screws from the material transport belt plate, see figure 37.



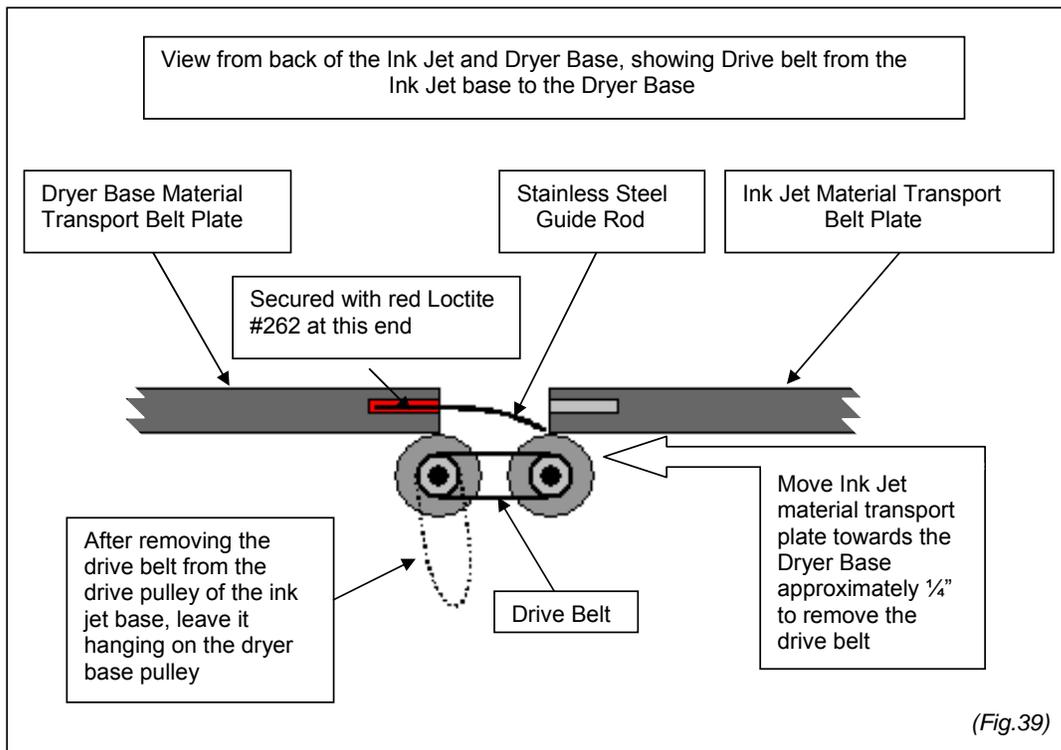
- (d) Using an 1/8" Allen wrench, remove the two (2) button head Allen screws located in the mounting block of the material transport belt plate at the discharge end of the ink jet base, then remove the mount block, see figure 38.

 **(Warning:** This mounting block is positioned between the bottom surface of the material transport belt plate and the top of a drive belt, failure to remove the mounting block may result in damage to the drive belt when the plate is lifted from the base.)

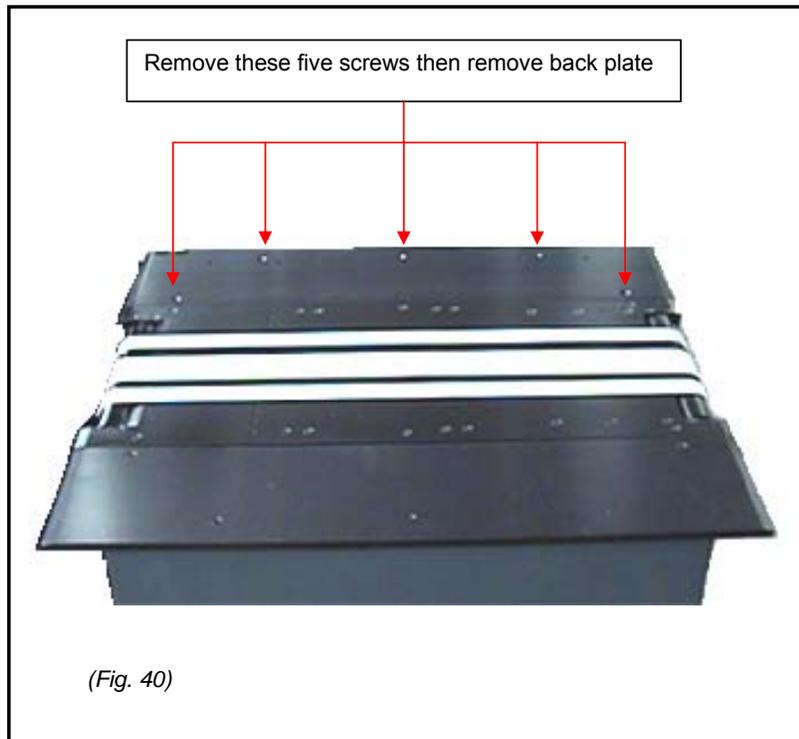


- (e) If your Ink Jet Base does not have a dryer unit on it, skip down step I, otherwise continue by: Removing the two (2) stainless steel guide rods from the Dryer Base located on the in feed end of the Dryer transport belt plate, see figure 39. (Note: These guide rods over hang the drive roller assembly of the inkjet base and must be removed before the transport belt plate of the ink jet base can be lifted out.) To remove these guide rods, perform the following:

- (f) Use a liberal amount of electricians tape and pad jaws of a needle nose pliers or narrow vice grips. (Note: This is to prevent scarring the guide rods while removing them.)
- (g) Using needle nose pliers or narrow vice grips, grasp the center of one of the guide rods and pull straight towards the ink jet base. (Helpful Tip: These guides are held in place with "Red Loctite # 262", make a twisting motion while pulling the guide rods to break them free.



- (h) Using a 1/8 Allen wrench remove the five (5) flat head Allen screws in the back top plate located on the dryer transport base, then remove, see figure 40.

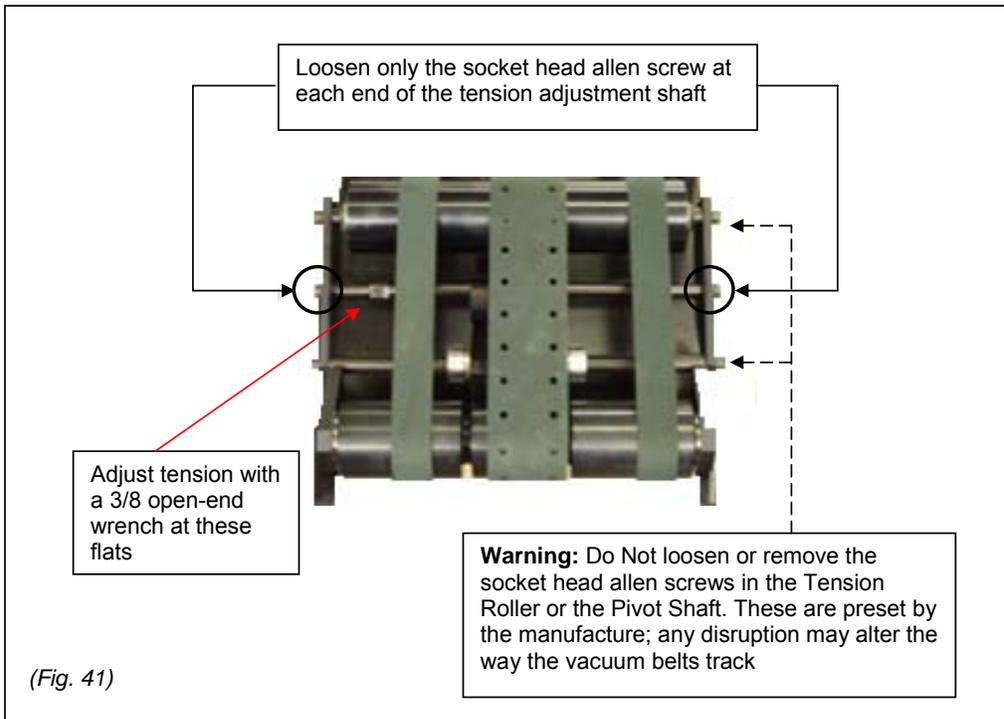


- (i) Slide the Ink Jet Base, material transport belt plate, approximately one 1/2" to the right. (Towards the shingle conveyor)
- (j) Remove the drive belt off of the pulley located on the back end of the drive roller assembly, leaving the drive belt to hang on the dryer base drive pulley, see figure 39.
- (k) Lift the material transport belt plate assembly up, then away from the ink jet base. Place the material transport belt plate assembly with the drive motor facing up on the prepared work surface as discussed at the beginning of this section.

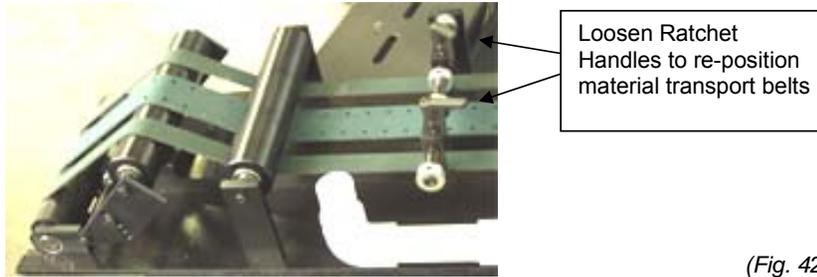


(Warning: This assembly weighs 72 pounds, practice safe lifting techniques or ask for assistance with lifting to avoid injury.)

3. Remove the material transport belts by:
 - (a) Loosen the tension of the material transport belts by performing the following.
 - (a)-1 Using a 5/32 Allen wrench, loosen the socket head Allen screw located at each end of the tension shaft, see figure 41.
 - (a)-2 Place a 3/8 open-end wrench on the flats of the located at either end of the tension shaft, then turn the tension shaft in a counter clock-wise direction to loosen the tension from the material transport belts, see figure 41.

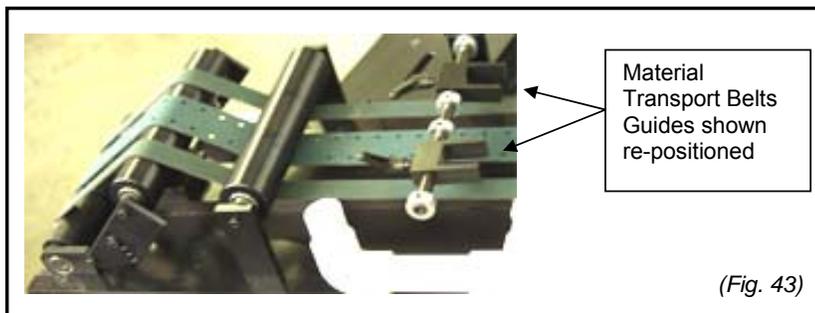


- (b) Loosen the ratchet handle adjustment of the material transport belt guides by turning them in a counter clock-wise direction, see figure 42.



(Fig. 42)

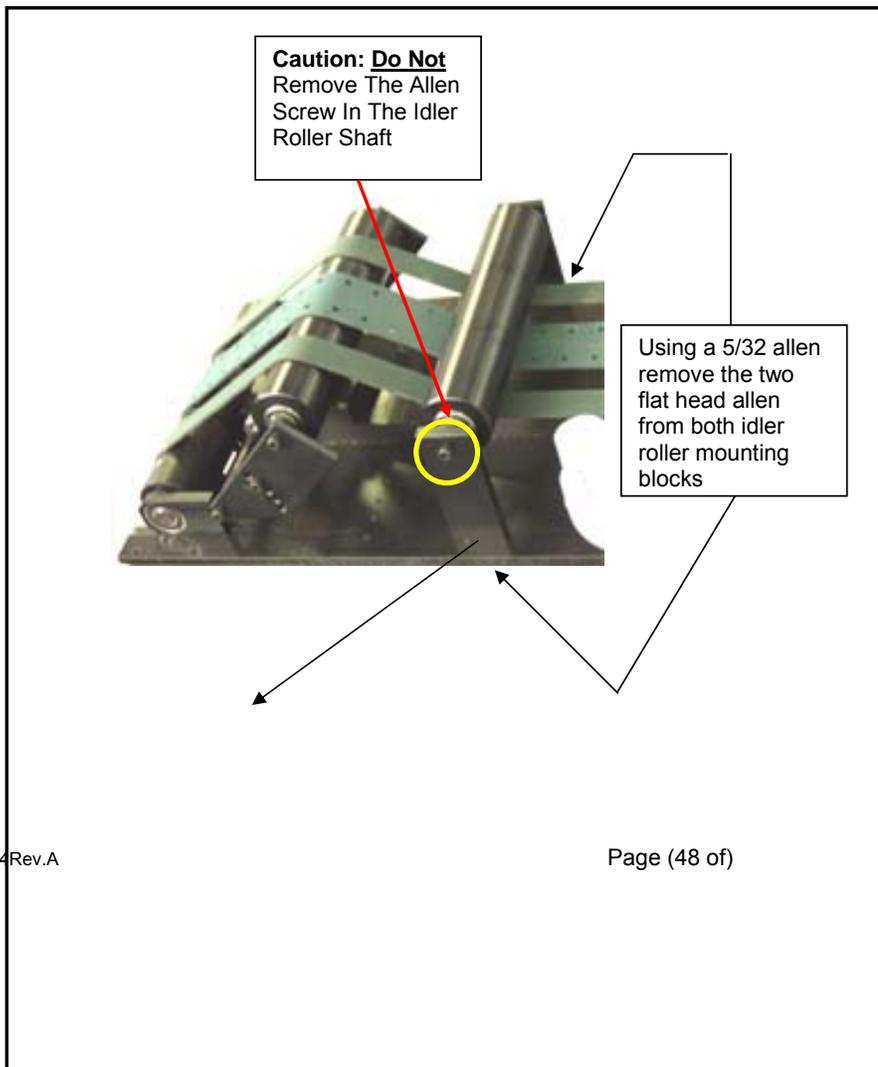
- (c) Turn both of the material transport belts guides to the right or left until the guides no longer capture the belts, see figure 43.

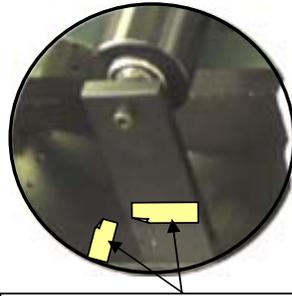


(Fig. 43)

- (d) Remove the idler roller assembly by performing the following:
 - (d)-1 Mark one of the idler roller mounting blocks and the material transport belts plate next to the selected mounting block with chalk or masking tape, see figure 44. (Note: This is essential because the idler shaft and mounting blocks are fitted and trued by the manufacture. Changing mounting blocks from side to side or changing the direction the idler roller has normally been running may alter the way the vacuum belts track and cause possible damage to the vacuum belts.)
 - (d)-2 Tip the material transport belt plate up on one edge.

- (d)-3 Remove the two (2) flat head Allen screws from both mounting blocks of the idler roller assembly. (Note: Use caution to prevent the idler shaft assembly from falling.)
- (d)-4 Set the idler shaft assembly aside and lay the material transport belt plate flat on the work surface.

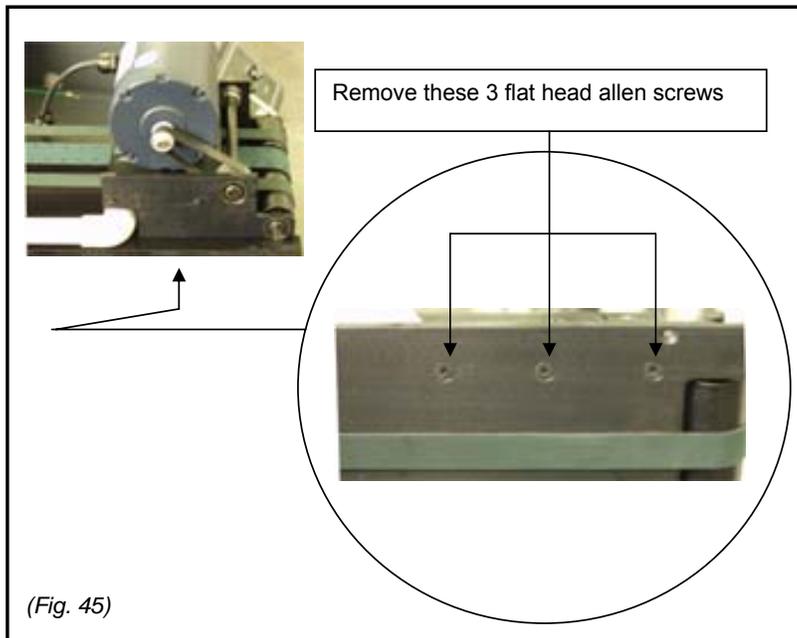




Reference marks (chalk or masking tape), essential for returning the idler roller assembly to the exact factory set position

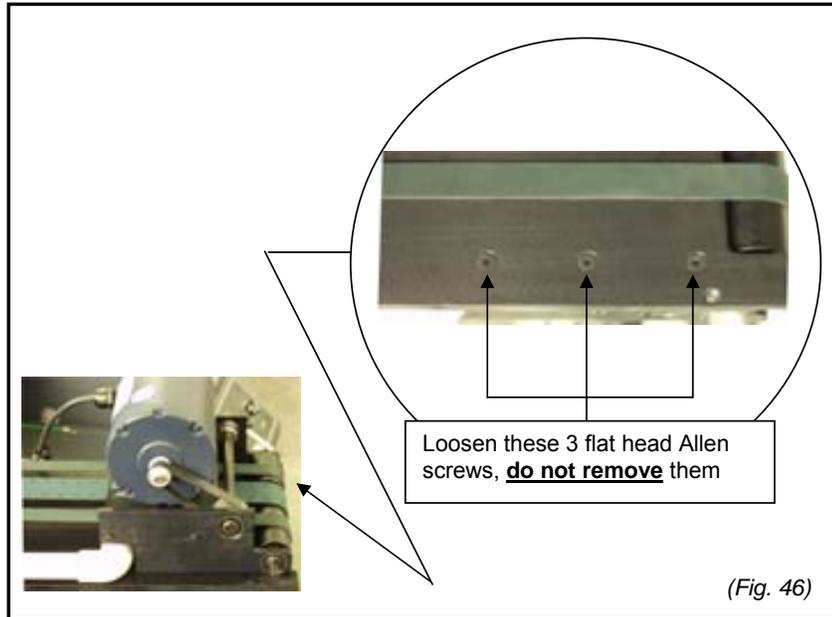
(Fig.44)

- (e) Tip the material transport belt plate up on one edge with the motor drive pulley facing up.
- (f) Using a 5/32 Allen wrench remove the three (3) flat head Allen screws located in the motor mount plate, supporting the drive pulley side of the motor, see figure 45.

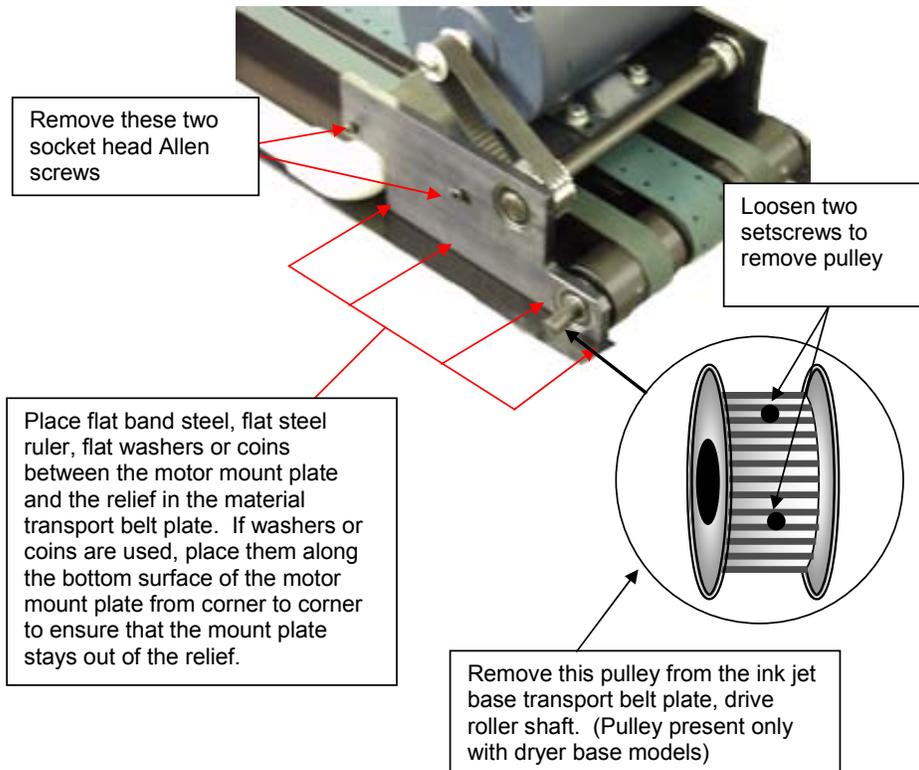


(Fig. 45)

- (g) Using a 5/32 Allen wrench, loosen (Do not remove) the three (3) flat head Allen screws located at the back motor support, see figure 46.

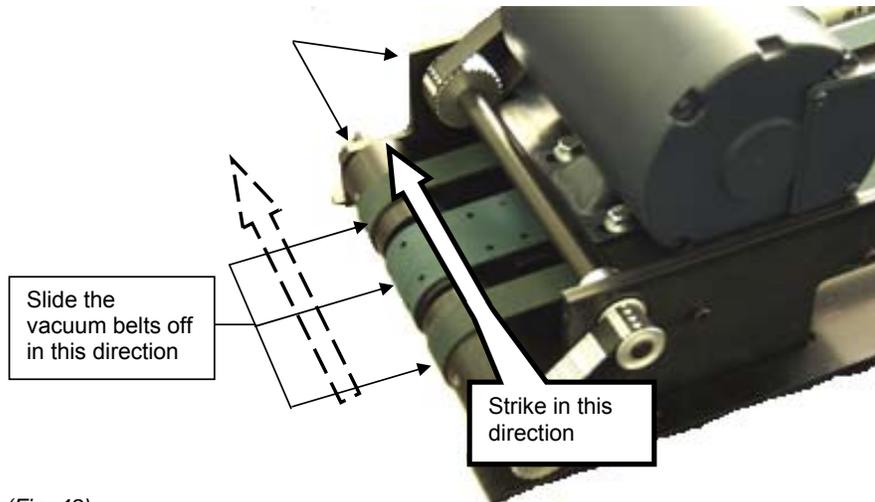


- (h) Place the material transport belt plate flat on the work surface, then lift the motor mount plate at the drive pulley end of motor, up just enough to clear the relief in the material transport belt plate that the mount plate fits into.
- (i) Place one of the following; flat band steel, flat steel ruler, flat washers or coins, between the motor mount plate and the relief in the material transport belt plate, see figure 47. (Note: The motor mount plate must be out of the relief before continuing with steps J and K.)
- (j) Using a 5/32 Allen wrench, remove the two (2) socket head Allen screws from the side of the motor mount plate, see figure 47. (Note: If the machine you're working on has a dryer base with it, it will be necessary to remove the dryer base drive pulley at this time.)



(Fig. 47)

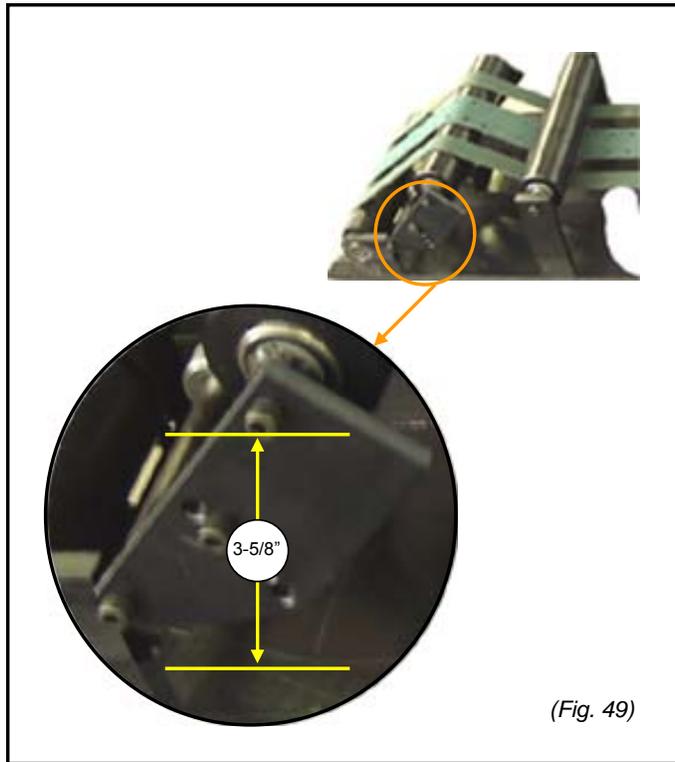
- (k) Hold a wood block or similar item, on the inside of the loosened motor mount plate, next to the motor, over the two outer corners, see figure 48. Using a hammer or mallet, strike the woodblock with moderate force to drive the mount plate off of the shafts. (**Warning:** The mount plate must be completely out of the relief in the material transport belt plate as stated in step H before striking, to prevent damage from occurring.) (Note: The bearings are set to the shafts with Green Loctite # 620, then pressed into the mount plate. Do not attempt to drive the bearings off of the shaft with the mount plate, the bearings should stay on the shafts.)
- (l) Remove the old vacuum belts from the material transport belt plate assembly by sliding them, one at a time, through the open space where the motor mount plate was removed.



(Fig. 48)

1. Install the new Material Transport Belts on the ink jet base by performing the following:
 - (a) Slide the new vacuum belts back on the material transport belt plate in the reverse order that the old belts came off.
 - (b) Align the motor mount plate with the bearings of the drive shaft and the drive roller shaft, then using light to moderate force, tap the plate back onto the bearings, with a rubber mallet or nylon mallet, until the retaining ring of the bearing is flush against the motor mount plate. (Note: Do not attempt to set the motor mount plate into the relief in the material transport belt plate before the bearings are seated in the motor mount plate.)
 - (c) Once the bearings are seated back into the motor mount plate and the plate is resting in the relief in the material transport belt plate secure the motor mount plate side screws as shown in figure 47. (Note: **Do not tighten completely at this time.**)
 - (d) Tip the material transport belt plate up on one side and secure the flat head Allen screws through the material transport belt plate, into the motor mount plate and tighten using moderate force. Then tighten the socket head screws in the side of the motor mount plate using moderate force.
 - (e) Return the idler roller assembly to the factory set position as marked in "Step 6 (a)", then secure the idler assembly to the material transport belt plate, using a 5/32 Allen wrench, tighten the flat head Allen screws with moderate force, see figure 44.
 - (f) Position the wide vacuum belt to the center of the material transport belt plate, position the narrow belts approximately 1 inch from each side of the wide vacuum belt.

- (g) Using a 3/8 open end wrench, adjust the tension adjustment shaft until the center of the socket head Allen screw in the tension roller measures 3-5/8" from the bottom surface of the material transport belt plate, see figure 49.

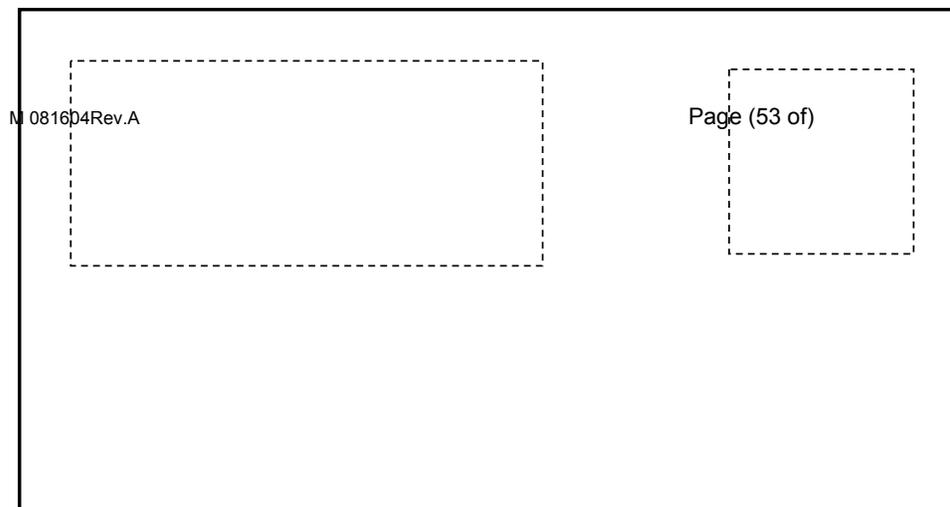


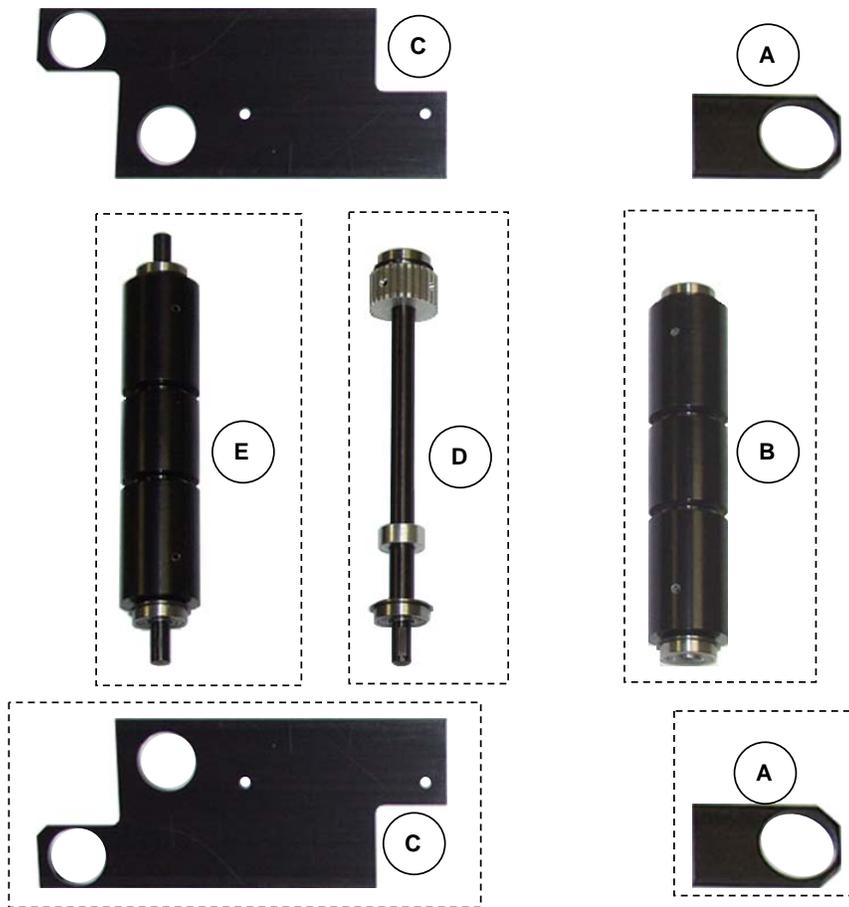
2. Reassemble the machine by following steps 2 – A through 2 – H in reverse order, then follow steps 1 – A through 1 – C in reverse order.

Ink Jet base Roller and Shaft Replacement Kit

The Ink Jet base Roller and Shaft Replacement kit contains some pre-assembled components and mounting blocks that have been re-designed to enhance durability and longevity. Although the physical appearance of these parts may look the same as the old parts being removed, the tolerances used in the machining and manufacturing of these parts is different. For this reason the manufacture strongly recommends that the old parts, once removed be discarded.

⚠ (Warning: Using old parts in conjunction with new replacement parts may be damaging.)





(Fig.50)

Replacement Roller Shaft & Bearing Kit

Item	Part Number	Description	Quantity
A	16007-002	Block, Bearing	2
B*	16004-028	Shaft, Idler (Stub)	2
B*	16006-020	Pulley, Drive	1
B*	99003-006	Bearing Sealed, 5/8X1-3/8	2

B*	99003-021	Washer, Nylon, 5/8X1/16	2
C	16011-004	Side Plate, Motor MTG. Support	2
D*	16004-010	Shaft, Intermediate	1
D*	16006-007	Pulley 28XLO75, 1/2 Bore	1
D*	99003-006	Bearing Sealed, 5/8X1-3/8	2
D*	99003-021	Washer, Nylon, 5/8X1/16	2
D*	99017-005	Collar, Set, 5/8	1
E*	16006-020	Roller, Pulley Drive	1
E*	16004-027	Shaft, Idler (Stub)	2
E*	99003-006	Bearing Sealed, 5/8X1-3/8	2
E*	99003-021	Washer, Nylon, 5/8X1/16	2

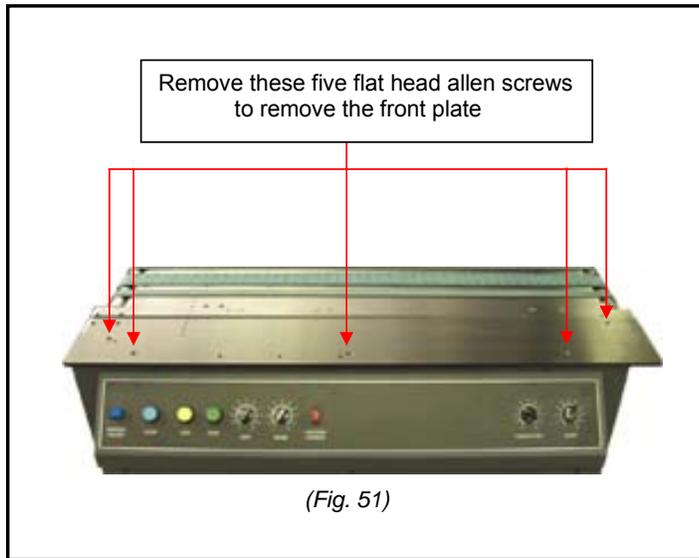
Note: An * indicates the parts will come pre-assembled
Bearings are "Press" fit to the shafts and "Slip" fit to the mount plates. Do not attempt to remove the bearings from the shafts; hand fit bearings and shafts together, into the mount plates.

Ink Jet Base Roller and Shaft Replacement

1. Turn the machine power off.

Prepare the work area, clear off the top surface of the ink jet base, place a utility cart or table near the ink jet base to place the material transport belt plate on, once removed. If a utility cart or table is not available, cover the out feed shingle conveyor with cardboard and use it to place the material transport belt plate on.

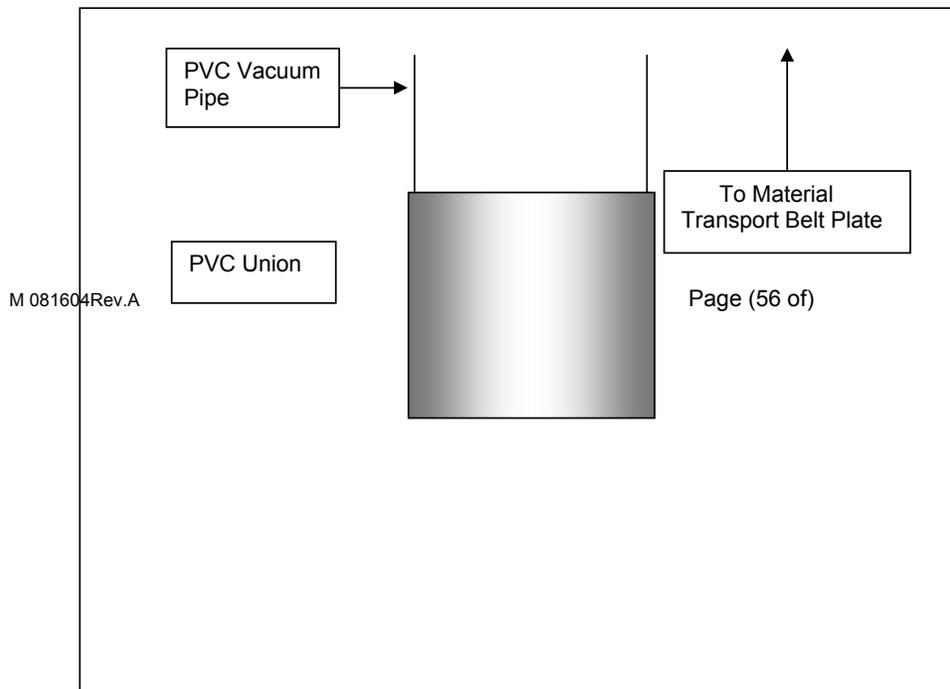
2. Remove the top plate located over the control panel. This can be accomplished in the following manner:
 - (a) Using an 5/32" Allen wrench, remove the button head Allen screw found in the mounting block at each end of the material hold down bar, then remove the material hold down bar and mounting blocks.
 - (b) Using an 1/8" Allen wrench, remove the five (5) flat hex head Allen screws shown in figure 51.

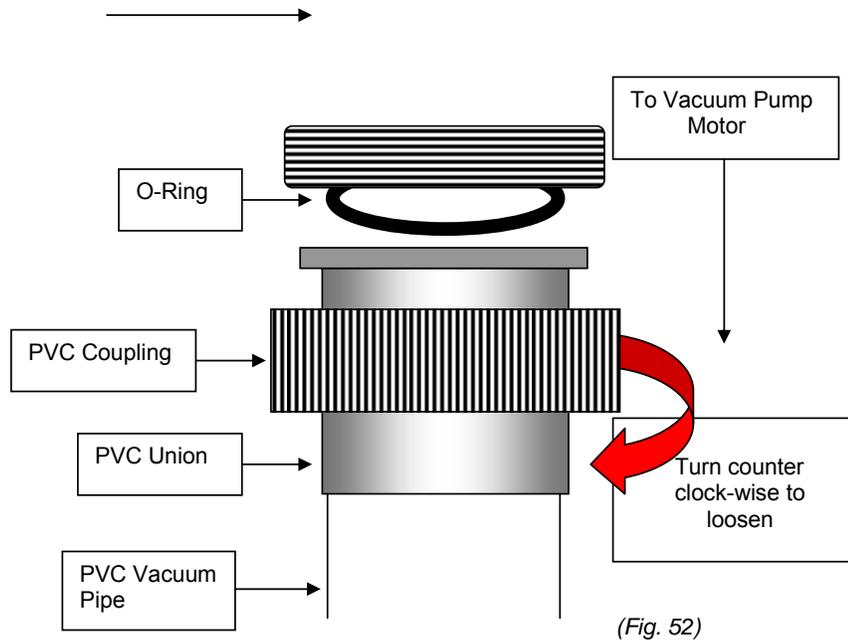


(c) Lift the front plate off of the ink jet base and set it aside.

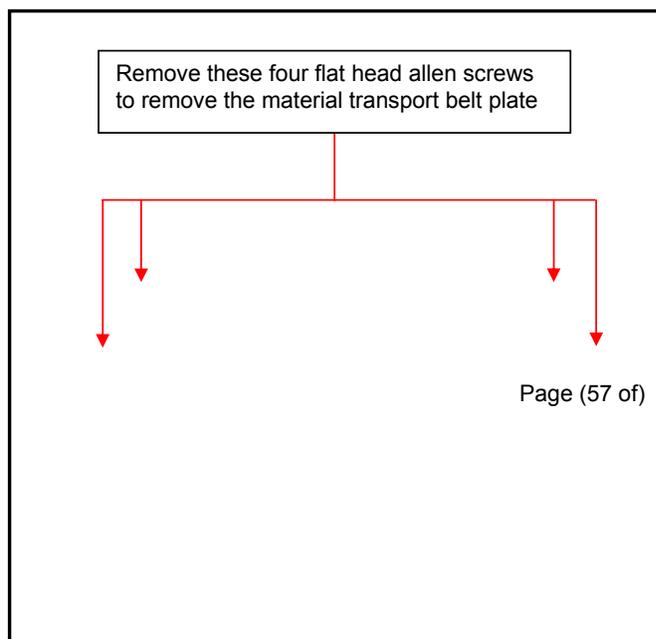
3. Remove the material transport belt plate. This can be accomplished in the following manner:

- (a) Open the left front door of the inkjet base and loosen the coupling on the PVC vacuum pipe located between the vacuum pump motor and the material transport belt plate. The coupling will slide down the PVC pipe towards the vacuum pump motor, see figure 52. (Note: There is an O-Ring inside the PVC union, use care not to loose it.)





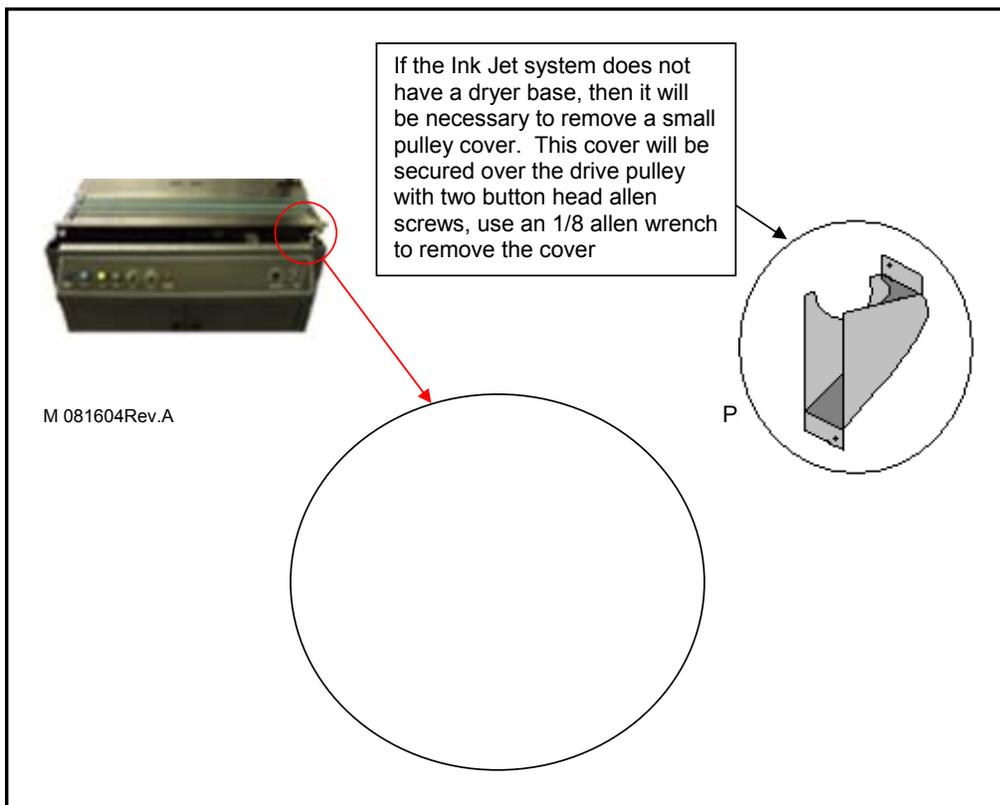
- (b) Unplug the material transport belt drive motor. The connecting plug is located on the right side of the electrical box inside the base cabinet and is easily accessible through the front left door.
- (c) Using an 1/8" Allen wrench, remove four (4) flat head Allen screws from the material transport belt plate, see figure 53.

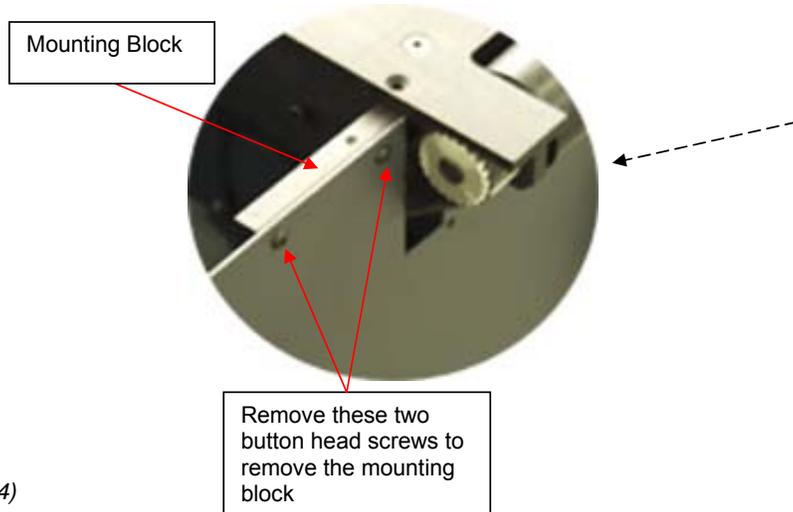




(Fig. 53)

- (d) Using an 1/8" Allen wrench, remove the two (2) button head Allen screws located in the mounting block of the material transport belt plate at the discharge end of the ink jet base, then remove the mount block, see figure 54. (Note: This mounting block is positioned between the bottom surface of the material transport belt plate and the top of a drive belt, failure to remove the mounting block may result in damage to the drive belt when the plate is lifted from the base.)

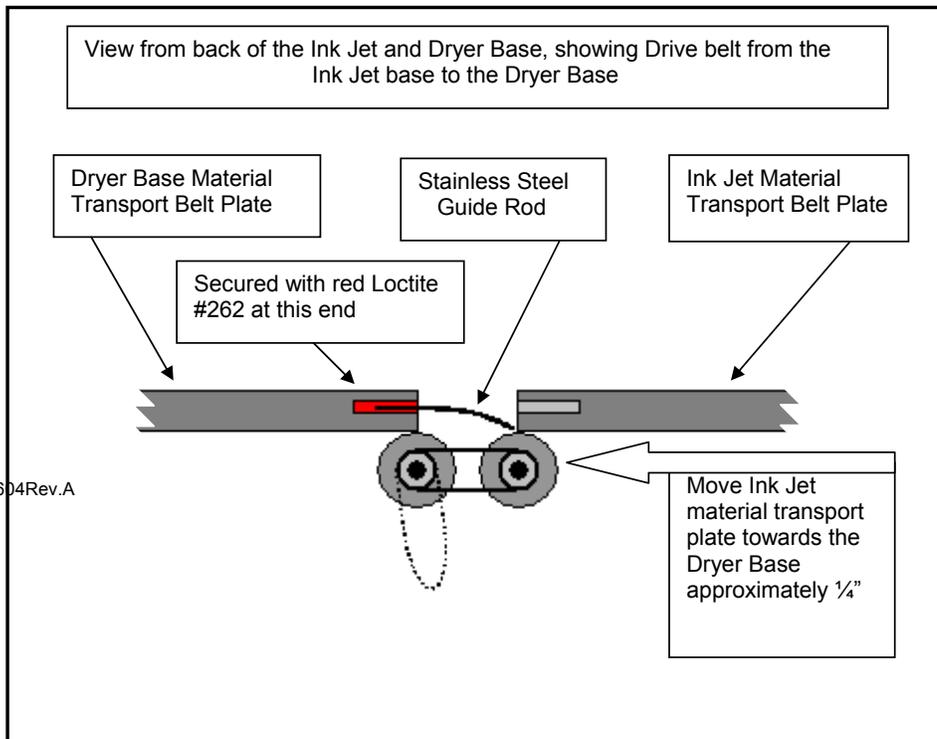




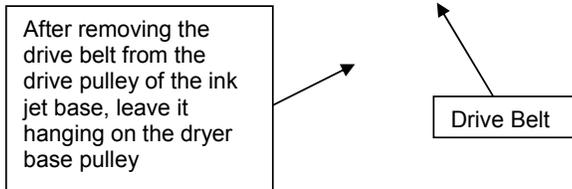
(Fig. 54)

Remove these two button head screws to remove the mounting block

- (e) If your Ink Jet Base does not have a dryer unit on it, skip down step I, otherwise continue by: Removing the two (2) stainless steel guide rods from the Dryer Base located on the in feed end of the Dryer transport belt plate, see figure 55. (Note: These guide rods over hang the drive roller assembly of the inkjet base and must be removed before the transport belt plate of the ink jet base can be lifted out.) To remove these guide rods, perform the following:
- (e)-1 Use a liberal amount of electricians tape and pad jaws of a needle nose pliers or narrow vice grips. (Note: This is to prevent scarring the guide rods while removing them.)
 - (e)-2 Using needle nose pliers or narrow vice grips, grasp the center of one of the guide rods and pull straight towards the ink jet base. (Helpful Tip: These guides are held in place with "Red Loctite # 262", make a twisting motion while pulling the guide rods to break them free.

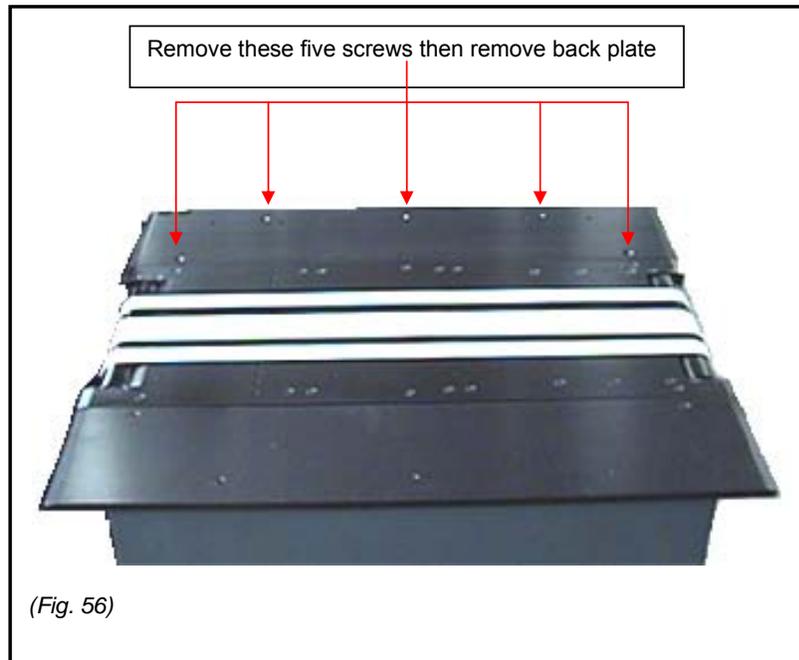


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(Fig. 55)

- (f) Using a 1/8 Allen wrench remove the five (5) flat head Allen screws in the back top plate located on the dryer transport base, then remove, see figure 56.



(Fig. 56)

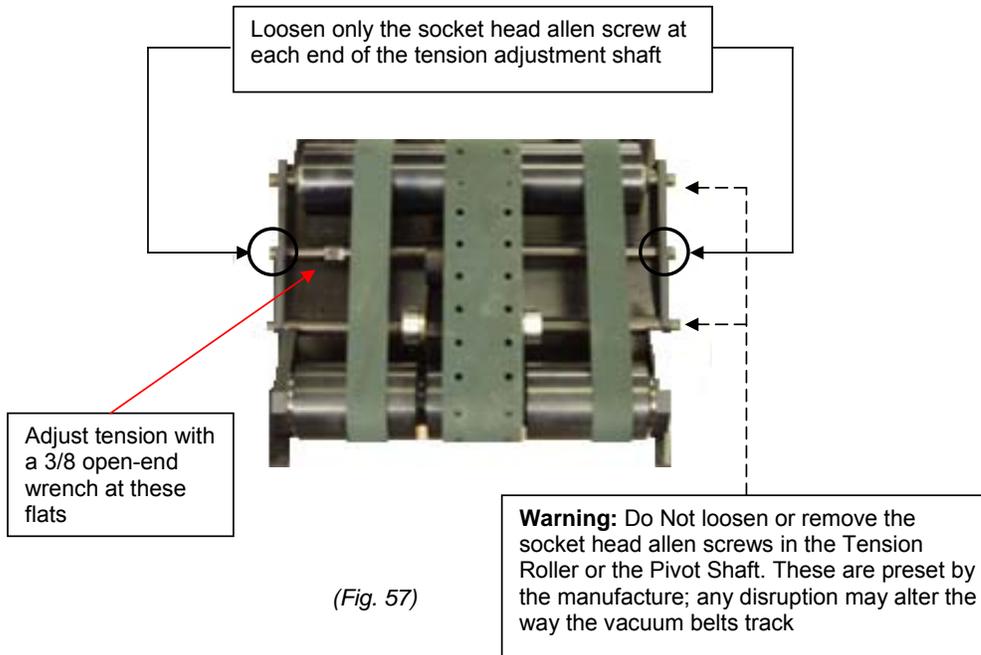
- (g) Slide the Ink Jet Base, material transport belt plate, approximately one 1/2" to the right. (Towards the shingle conveyor)
- (h) Remove the drive belt off of the pulley located on the back end of the drive roller assembly, leaving the drive belt to hang on the dryer base drive pulley, see figure 55.
- (i) Lift the material transport belt plate assembly up, then away from the ink jet base. Place the material transport belt plate assembly with the drive motor facing up on the prepared work surface as discussed at the beginning of this section.



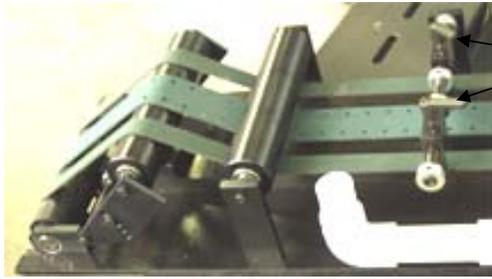
(Warning: This assembly weighs 72 pounds, practice safe lifting techniques or ask for assistance with lifting to avoid injury)

4. Loosen the tension of the material transport belts by performing the following:

- (a) Using a 5/32 Allen wrench, loosen the socket head Allen screw located at each end of the tension shaft, see figure 57.
- (b) Place a 3/8 open-end wrench on the flats of the located at either end of the tension shaft, then turn the tension shaft in a counter clock-wise direction to loosen the tension from the material transport belts, see figure 57.



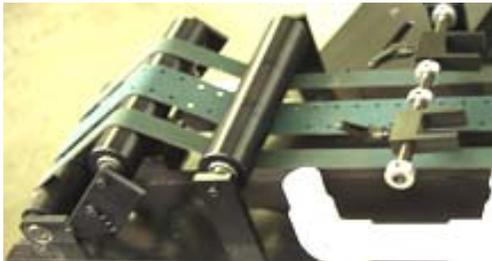
5. Loosen the ratchet handle adjustment of the material transport belt guides by turning them in a counter clock-wise direction, see figure 58.



Loosen Ratchet Handles
to re-position material
transport belts

(Fig. 58)

6. Turn both of the material transport belts guides to the right or left until the guides no longer capture the belts, see figure 59. (Note: It is important to have these guides repositioned to avoid damage to the material transport belts during the re-assembly process)



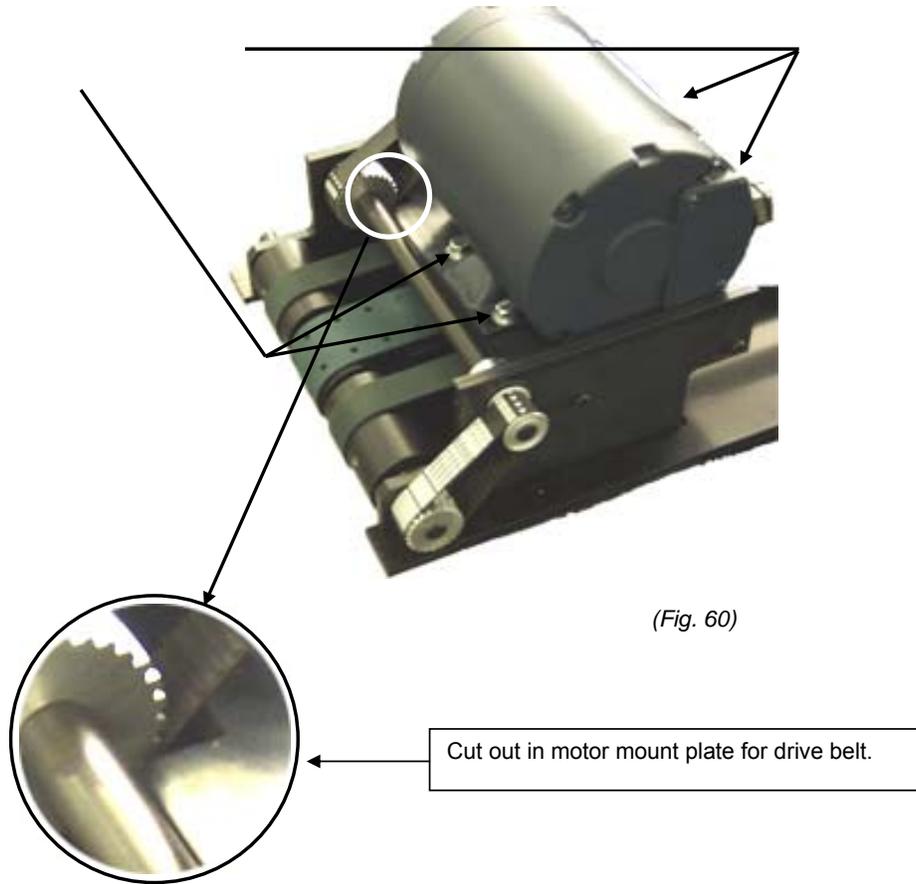
Material Transport Belts
Guides shown re-positioned

(Fig. 59)

7. Using a $\frac{1}{2}$ " open end wrench, remove the four (4) retaining bolts at the base of the motor and release the tension from the drive belt, see figure 60.

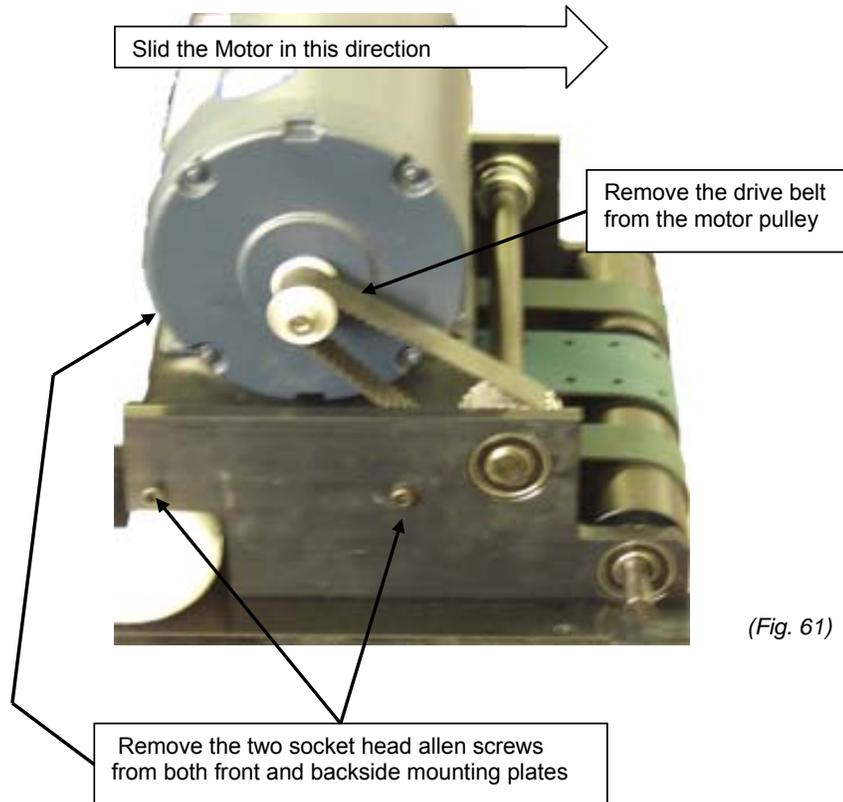
Remove these two bolts
from each side to
remove the motor

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(Fig. 60)

8. Slid the motor towards the drive shaft and remove the drive belt from the drive motor pulley, then lift the motor off of the mounting plate and set it aside, see figure 61.



9. Using a 5/32 Allen wrench, remove the two (2) socket head Allen screws from each end of the motor mount plate, then lift the mount plate out from between the drive shaft bearing mount blocks and set it aside, see figure 61.
10. Tip the material transport belt plate up on one edge with the motor drive pulley facing up.

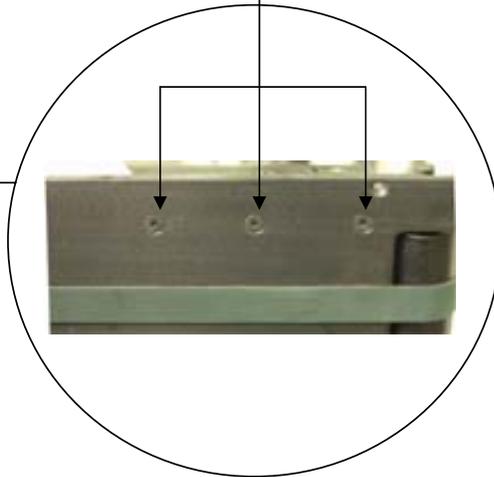
⚠ (Warning: This assembly weighs 72 pounds with the motor, practice safe lifting techniques or ask for assistance with lifting and holding this assembly to avoid injury.)

11. Using a 5/32 Allen wrench remove the three (3) flat head Allen screws located in the motor mount plate, supporting the drive pulley side of the motor, see figure 62.



(Fig. 62)

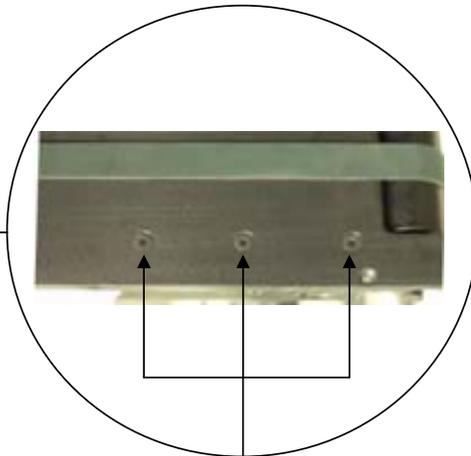
Remove these 3 flat head allen screws



12. Using a 5/32 Allen wrench, loosen (Do not remove at this time) the three (3) flat head Allen screws located at the back motor support, see figure 63. (Note: If these screws are removed, it may not be possible to perform step O.)



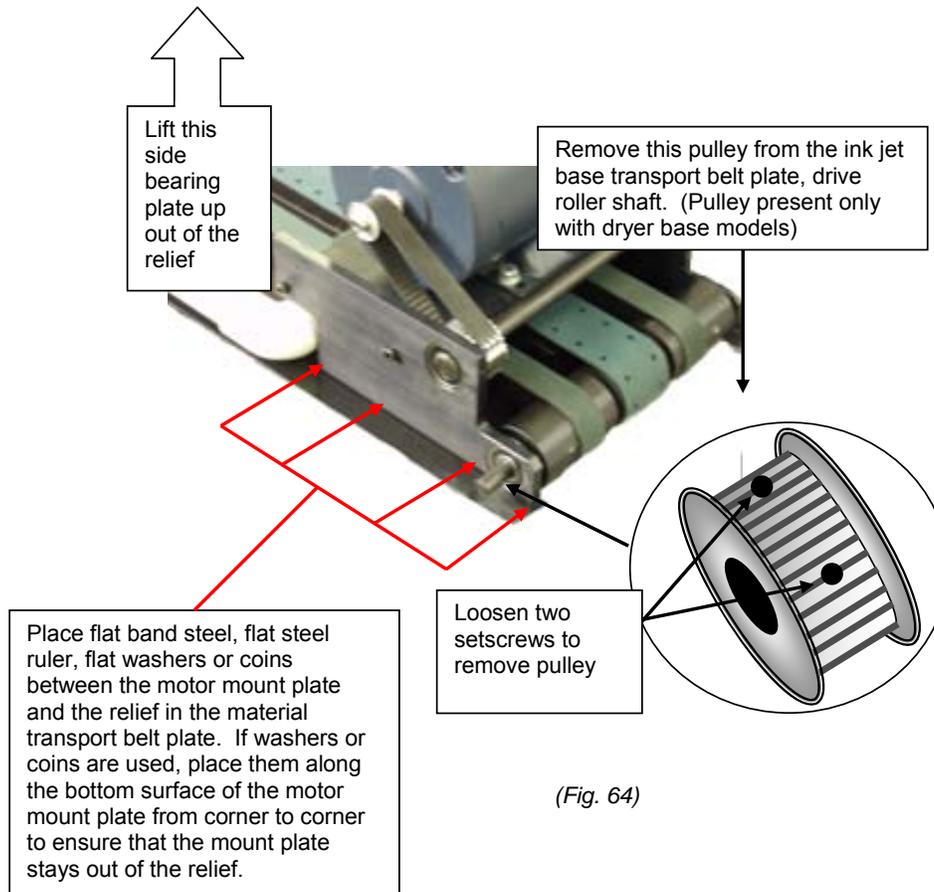
(Fig. 63)



Loosen these 3 flat head allen screws, **do not remove** them

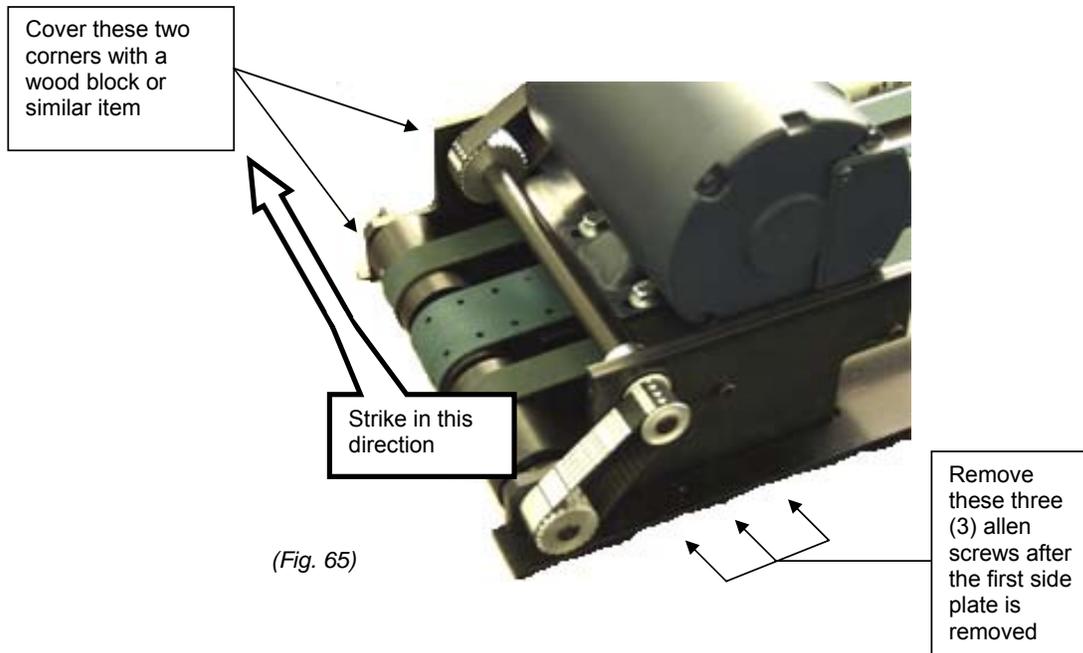
13. If the machine you're working on is a dryer base, remove the dryer base drive pulley at this time, see figure 64.
14. Place the material transport belt plate flat on the work surface, then lift the motor mount plate at the drive pulley end of motor, up just enough to clear the relief in the material transport belt plate that the mount plate fits into.

- Place one of the following; flat band steel, flat steel ruler, flat washers or coins, between the motor mount plate and the relief in the material transport belt plate, see figure 64. (Note: The motor mount plate must be out of the relief before continuing with steps N.)



- Hold a wood block or similar item, on the inside of the loosened motor mount plate, next to the motor, over the two outer corners, see figure 65. Using a hammer or mallet, strike the wood block with moderate force to drive the mount plate off of the shafts.

Warning: The mount plate must be completely out of the relief in the material transport belt plate as stated in step 21 before striking, to prevent damage from occurring.) (Note: The bearings are set to the shafts with Green Loctite # 620, then pressed into the mount plate. Do not attempt to drive the bearings off of the shaft with the mount plate, the bearings should stay on the shafts.) (Note: No Loctite will be used during re-assembly)



17. Once the first side plate is off, remove the three (3) remaining flat head Allen screws, loosened in step 12, then remove the remaining side plate containing the roller drive shaft assembly and the intermediate drive shaft, see figure 16. (Note: Use caution to ensure the material transport belts do not get snagged or damaged during this process.)
18. Remove the motor drive belt from the large pulley on the intermediate drive shaft and set it aside for latter use, see figure 65.
19. Remove the intermediate drive belt from the small pulley located at the end of the intermediate drive shaft still seated in the side plate last removed, set this belt aside for latter use, see figure 16. (Note: You should be able to obtain enough play in the two shafts to get the belt off with little effort.)
20. Remove the pulleys from the ends of the intermediate drive shaft and the roller drive shaft and set them aside with the drive belt removed in step D for latter use.

Installing the Replacement Parts

1. Install one of the new side plates (figure 50, item C, page 52), to the deck location of the last side plate removed in step 23.

2. Tip the material transport belt plate up on one side and thread the flat head Allen screws through the material transport belt plate, into the bearing mount side plate loosely, (Note: Do not tighten at this time).
3. Slide the new roller shaft assembly (figure 50, Item E shown on page 52) under the three green material transport belts and then seat the bearing into the end position of the bearing mount side plate, press by hand until bearing is seated. (Note: The snap ring on the bearing has a flat spot machined in it, place the flat spot flush to the deck surface, see figure 66.)



Seat bearing into side plate with the flat spot in the snap ring flush against the deck surface

(Fig. 66)

4. Install the intermediate shaft in the center position of the bearing mount side plate.
5. Slide the small pulley, (removed in step 26), onto the intermediate shaft, then slide the open pulley, (also removed in step 26) onto the roller shaft. Align the setscrews of these pulleys to the flat of each shaft. (Note: Do not tighten the set screws at this time)
6. Slide the intermediate drive belt, (removed in step 25) onto the pulleys, adjust the position of the pulleys until the intermediate drive belt is approximately 1/16 from the side plate, then tighten the setscrews in the pulleys.
7. Slide the motor drive belt, (removed in step 24) onto the large pulley on the intermediate drive shaft.
8. Place one of the following; flat band steel, flat steel ruler, flat washers or coins, between the motor mount plate and the relief in the material transport belt plate.
9. Slide the opposing bearing mount side plate (figure 50, item C, page 52) up to the shaft bearings, then press by hand until the bearings are seated into

the plate, then remove the flat band steel, flat steel ruler, washer, etc. from under the first side plate installed. (Note: Both side plates should seat flush inside the deck reliefs.)

10. Tip the material transport belt plate up on one edge and thread the three (3) flat head Allen screws through the material deck into the side plate. Using a 5/32 Allen tighten the Allen screws with moderate force, then tighten the flat head Allen screws in the opposing side plate in the same manner.

 **(Caution: This cumbersome task, practice safe lifting techniques and ask for assistance with lifting and holding loose components to avoid personal injury and damage to parts.)**

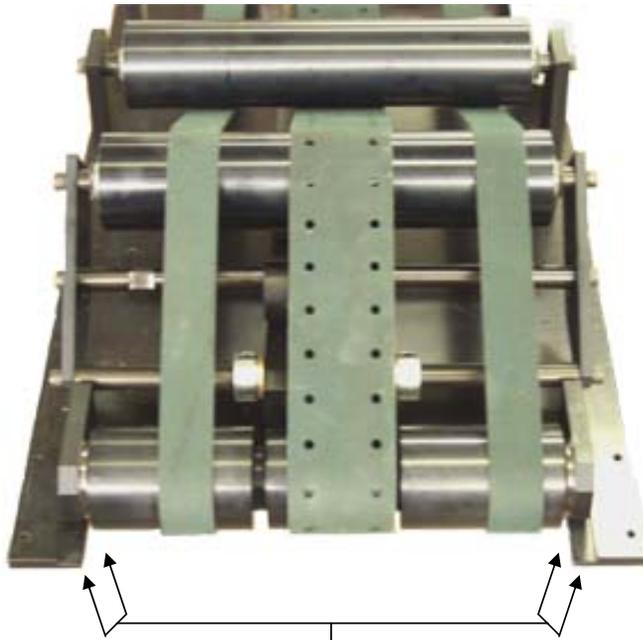
11. Slide the motor mount plate, (removed in step 15), in between the two side plates, align the holes of the mount plate with the holes in the side plates and bolt into place using the socket head Allen screws, (also remove in step 15). Tighten using moderate force. (Note: There is a cut out in this plate for the drive belt. Make sure this cut out is facing the large pulley on the intermediate drive shaft.)
12. Place the drive motor back onto the motor mount plate, align the threaded holes of the mount plate to the slots in the motor base, then thread the 1/2" bolts, (removed in step 7) back into the mount plate through the slots in the motor base. (Note: Do not tighten at this time)
13. Slide the drive belt, currently hanging loosely around the large pulley on the intermediate drive shaft, over the drive pulley located on the motor shaft.
14. Tension the drive belt by pushing the motor away from the intermediate drive shaft, then tighten the retaining bolts located in the motor base, using a 1/2" open end wrench. (Helpful Tip: Get some assistance to hold the material transport deck still while the motor drive belt is being tightened.)

Front Idler Roller Shaft Assembly Removal

1. Tip the material transport belt plate up on one edge.

 **(Warning: This assembly weighs 72 pounds, practice safe lifting techniques or ask for assistance with lifting and holding this assembly to avoid injury.)**

2. Using an 1/8" Allen wrench, remove the two flat head Allen screws from the bearing mount blocks at each end of the idler roller shaft assembly.
3. Lift the idler roller assembly with the bearings blocks, up out of the reliefs in the transport deck and remove the assembly. (Note: Use caution to prevent snagging or damaging the material transport belts during this process.)
4. Discard the idler shaft and bearing mount blocks once they are removed. (Note: Do not keep the old idler roller assembly as a spare. Although the outward appearance is very similar to the new replacement parts the machine specifications and tolerances are significantly different.)

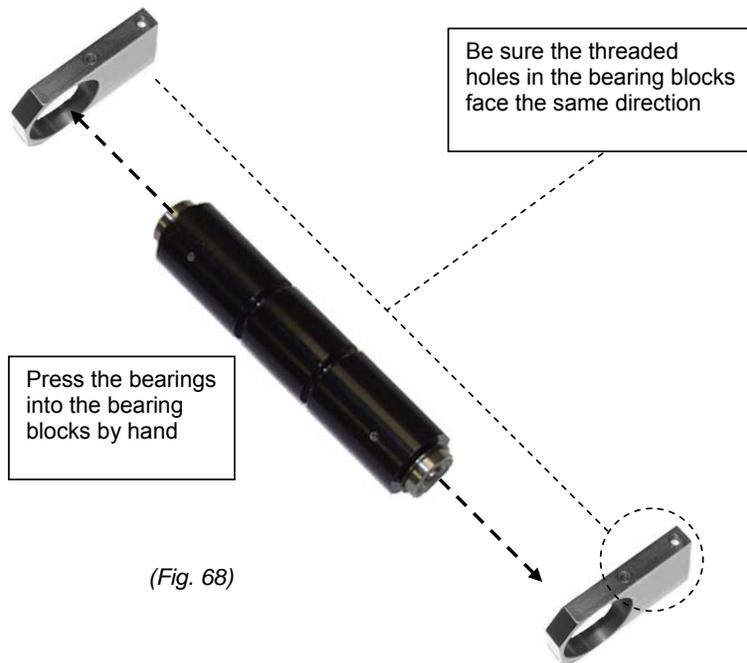


(Fig. 67)

Remove two (2) flat head allen screws from each bearing mount block.

5. Hand press the new bearing blocks, (shown as item A on page 51) onto the idler roller shaft assembly (shown as item B on page 51), see figure 68.





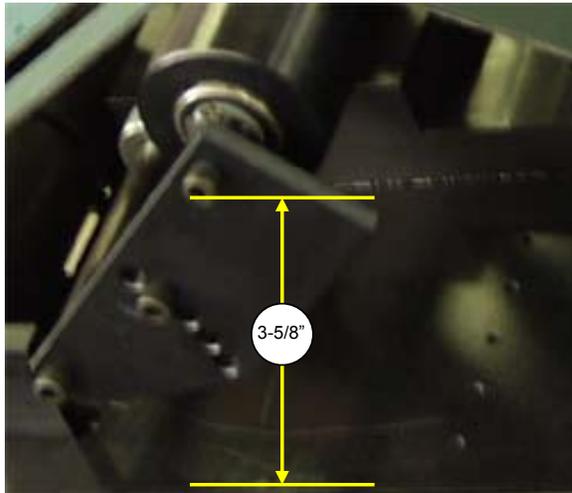
(Fig. 68)

6. Place the new idler roller assembly under the material transport belts, back on the transport deck and seat the bearing mount blocks, threaded holes down, into the deck reliefs. (Note: Use caution to prevent snagging or damaging the material transport belts during this process.)
7. Return the flat head Allen screws removed in step 2 of this section to their original position and tighten using moderate force.

Re-Assemble the Ink Jet Base

1. Position the wide vacuum belt to the center of the material transport belt plate; position the narrow belts approximately 1 inch from each side of the wide vacuum belt.
2. Using a 3/8 open end wrench, adjust the tension adjustment shaft until the center of the socket head Allen screw in the tension roller measures 3-5/8" from the bottom surface of the material transport belt plate, see figure 69.





(Fig. 69)

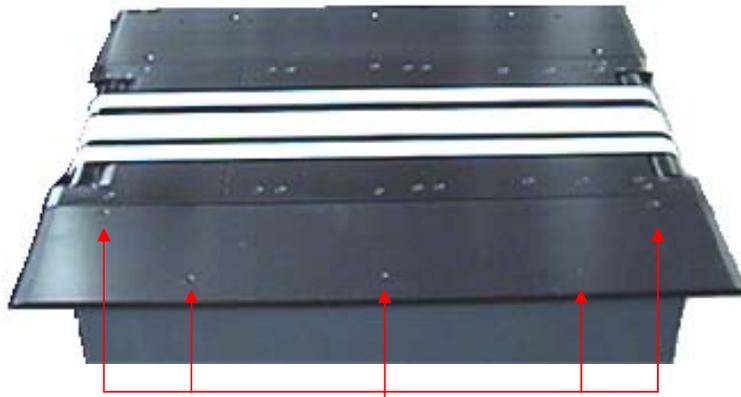
3. Reassemble the machine by following steps 3 – A through 3 – I of Section -I in reverse order, then follow steps 2 – A through 2 – C in reverse order.

Section - IV

Dryer Base Material Transport Belt Replacement

Prepare the work area, clear off the top surface of the ink jet base, place a utility cart or table near the ink jet base to place the material transport belt plate on, once removed. If a utility cart or table is not available, cover the out feed shingle conveyor with cardboard and use it to place the material transport belt plate on.

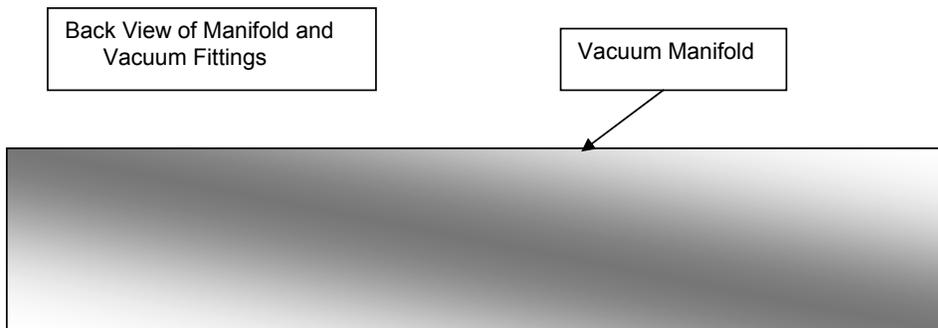
1. Remove the top plate located over the front door. This can be accomplished in the following manner:
2. Using an 5/32" Allen wrench, remove the button head Allen screw found in the mounting block at each end of the material hold down bar, then remove the material hold down bar and mounting blocks.
3. Using an 1/8" Allen wrench, remove the five (5) flat hex head Allen screws shown in figure 70.

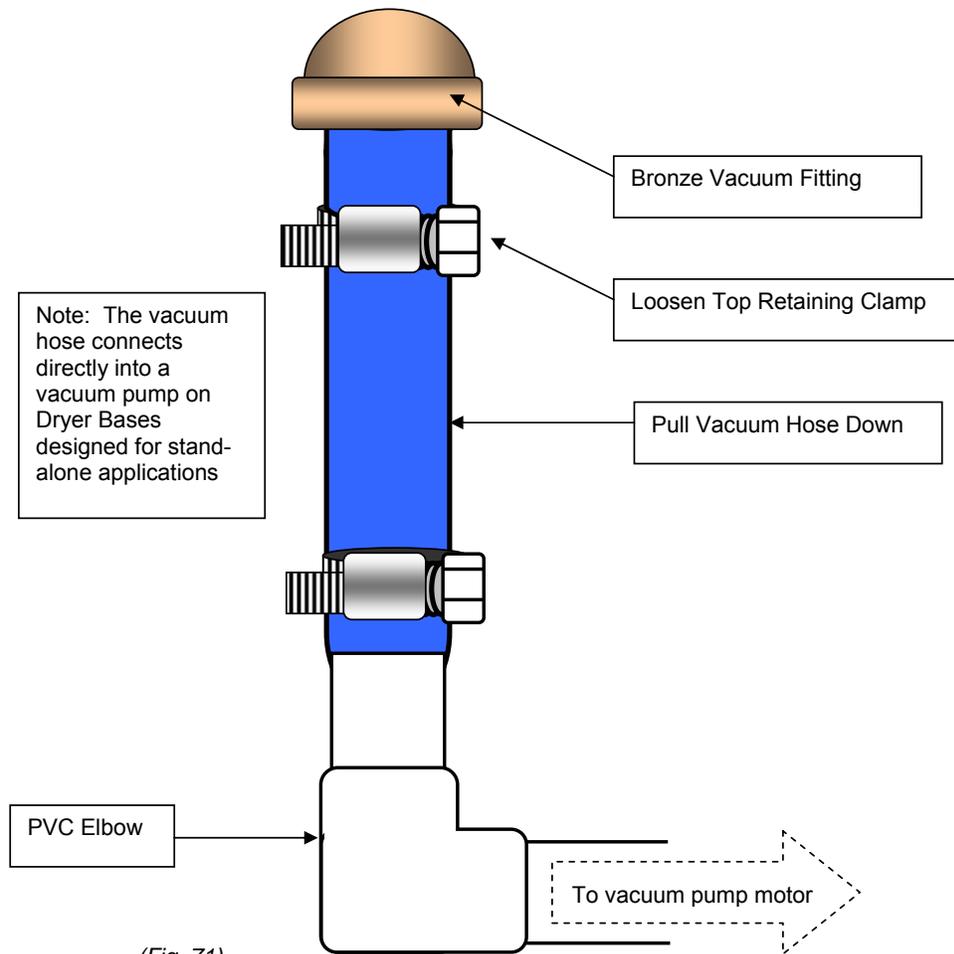


(Fig. 70)

Remove these five flat hex head screws to remove the top plate

4. Lift the top plate straight up and place it out of the way.
5. Remove the material transport belt plate. This can be accomplished in the following manner:
 - (a) Open the front door of the dryer base and loosen the top retaining clamp on the blue vacuum hose located between the bronze vacuum fitting in the manifold of the material transport belt plate and the PCV elbow from the vacuum pump motor. Pull the hose down from the bronze vacuum fitting, see figure 71.

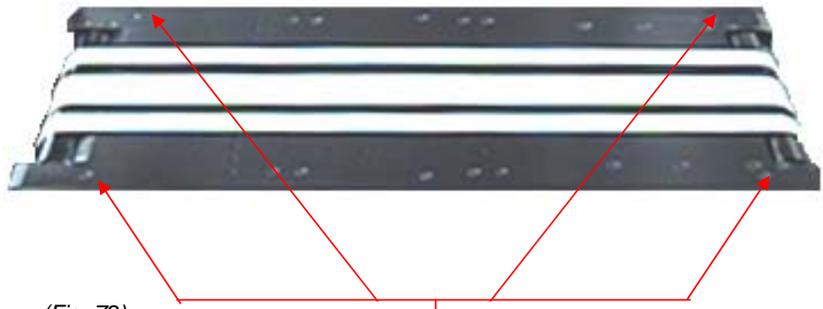




(Fig. 71)

(Note: For dryer bases not inline with an ink jet base, unplug the material transport belt drive motor. The connecting plug is located on the right side of the electrical box inside the base cabinet and is easily accessible through the front door.)

- (b) Using an 1/8" Allen wrench, remove four (4) flat head Allen screws from the material transport belt plate, see figure 72.



(Fig. 72)

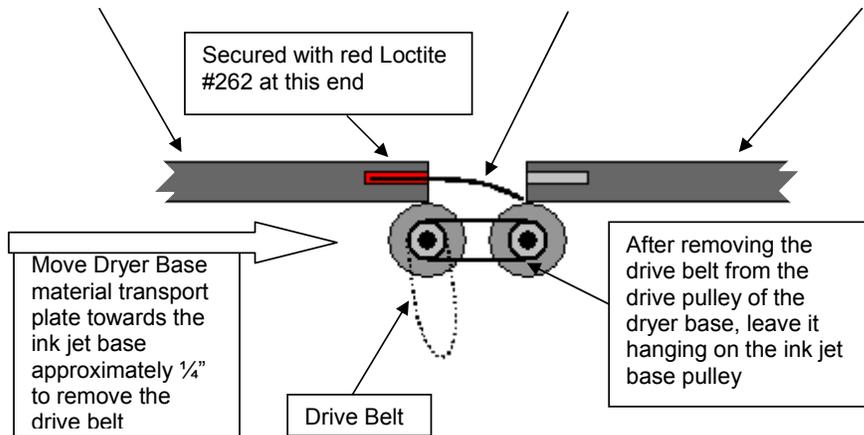
Remove these screws to remove the material transport belt plate.

- (c) If your Dryer Base is not in line with an ink jet continue by, using a ½” open end wrench remove one (1) of the two (2) drive motor mounting bolts found inside the base cabinet on the right hand side. Loosen the remaining drive motor mounting bolt to allow the drive motor to pivot.
- (d) Pivot the drive pulley end of the drive motor up and remove the drive belt from the drive motor pulley.
- (e) If your Dryer Base is not in line with an ink jet, skip down step I. If your Dryer Base is in line with an ink jet and has a serial number starting with “0211” or higher, skip down to step “H”, otherwise continue by: Removing the two (2) stainless steel guide rods from the Dryer Base located on the in feed end of the Dryer transport belt plate. (Note: These guide rods over hang the drive roller assembly of the inkjet base and must be removed before the transport belt plate of the ink jet base can be lifted out, see figure 73.) To remove these guide rods, perform the following:
 - (e)-1 Use a liberal amount of electricians tape and pad jaws of a needle nose pliers or narrow vice grips. (Note: This is to prevent scarring the guide rods while removing them.)
 - (e)-2 Using needle nose pliers or narrow vice grips, grasp the center of one of the guide rods and pull straight towards the ink jet base. (Helpful Tip: These guides are held in place with “Red Loctite # 262”, make a twisting motion while pulling the guide rods to break them free.)

Dryer Base Material Transport Belt Plate

Stainless Steel Guide Rod

Ink Jet Material Transport Belt Plate



(Fig. 73)

View from back of the Ink Jet and Dryer Base, showing Drive belt from the Ink Jet base to the Dryer Base

- (f) Using a 1/8 Allen wrench remove the five (5) flat head Allen screws in the back top plate located on the dryer transport base, then slide the back plate to the right a few inches.
- (g) Slide the Ink Jet Base, material transport belt plate, approximately one 1/2" to the right. (Towards the shingle conveyor)
- (h) Remove the drive belt off of the pulley located on the back end of the drive roller assembly, leaving the drive belt to hang on the dryer base drive pulley.
- (i) For machines with serial numbers starting with "0211" or higher, it will not be necessary to perform steps "E" through "F". Once the Ink Jet material transport belt plate is loosened from the base, slide the plate to the right, towards the dryer base, approximately 1/4", then remove the drive belt from the pulley located on the back end of the drive roller assembly, leaving the drive belt to hang on the dryer base drive pulley.
- (j) Loosen the tension of the material transport belts by performing the following:
 - (k) Using a 5/32 Allen wrench, loosen the socket head Allen screw located at each end of the tension shaft.
 - (l) Place a 3/8 open-end wrench on the flats of the located at either end of the tension shaft, then turn the tension shaft in a counter clock-wise direction to loosen the tension from the material transport belts.

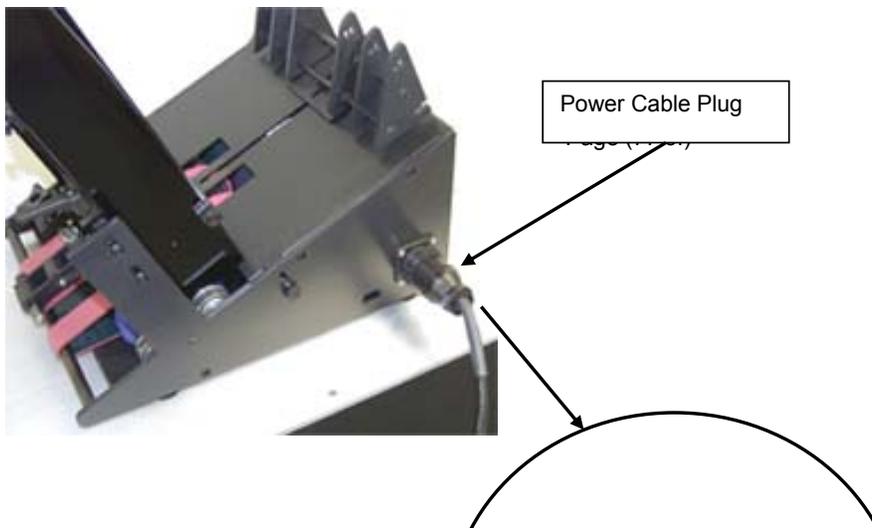
- (m) Lift the material transport belt plate assembly up, then away from the ink jet base. Place the material transport belt plate assembly with the drive motor facing up on the prepared work surface as discussed at the beginning of this section. **(Caution: This assembly weighs 72 pounds, practice safe lifting techniques or ask for assistance with lifting to avoid injury.)**
- (n) Loosen the ratchet handle adjustment of the material transport belt guides by turning them in a counter clock-wise direction.
- (o) Turn both of the material transport belts guides to the right or left until the guides no longer capture the belts.
- (p) Remove the idler roller assembly by performing the following:
 - (p)-1 Mark one of the idler roller mounting blocks and the material transport belts plate next to the selected mounting block with chalk or masking tape. (Note: This is essential because the idler shaft and mounting blocks are fitted and trued by the manufacture. Changing mounting blocks from side to side or changing the direction the idler roller has normally been running may alter the way the vacuum belts track and cause possible damage to the vacuum belts.)
 - (p)-2 Tip the material transport belt plate up on one edge.
 - (p)-3 Remove the two (2) flat head Allen screws from both mounting blocks of the idler roller assembly. (Note: Use caution to prevent the idler shaft assembly from falling.)
 - (P)-4 Set the idler shaft assembly aside and lay the material transport belt plate flat on the work surface.

Feeder Model ECO 1200 – IJ – SA 30

Replacing: Red Gum Belts – Elevator Belts – Nip Rollers

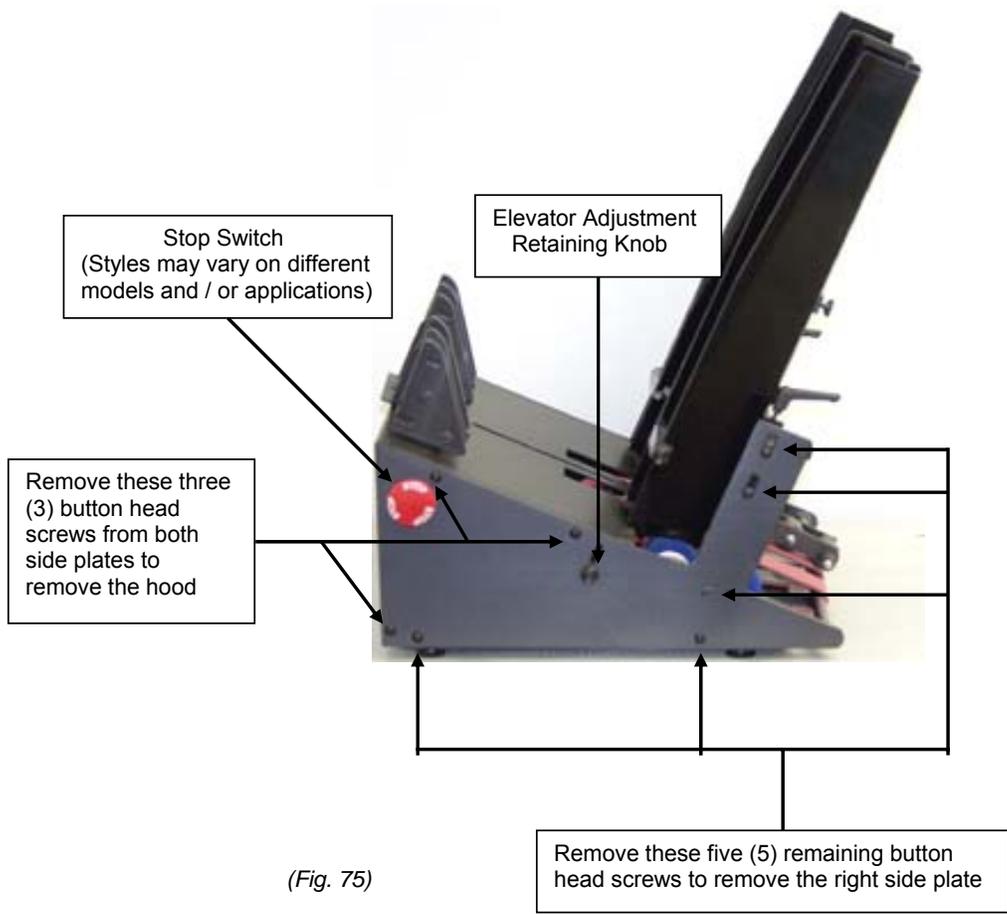
1. Disconnect the power cable from the left side plate feeder by, twisting the plug lock ring in a counter clock-wise direction. Then pull the plug free from the receptacle in the side plate, see figure 74.

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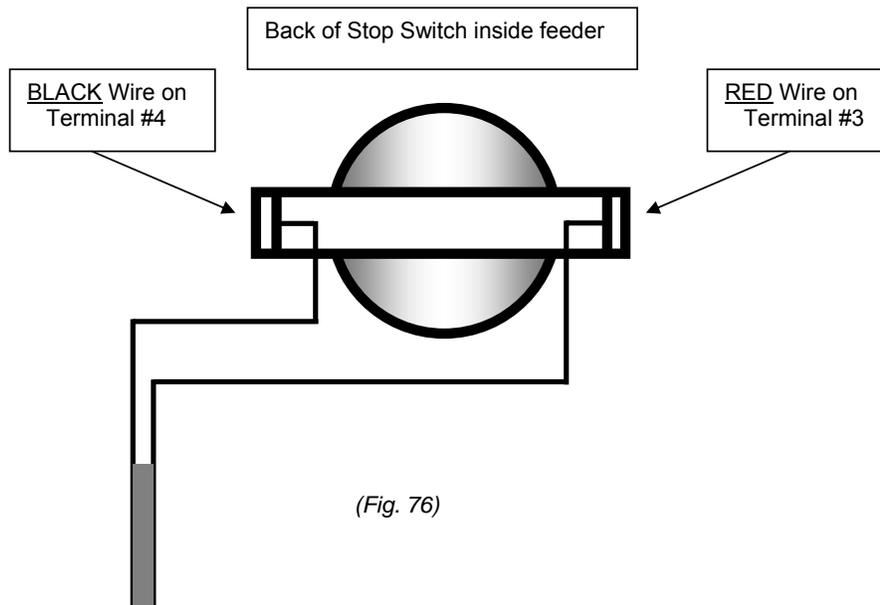


(Fig. 74)

2. Remove Hood:
 - a. Using an 1/8" Allen wrench, remove the three (3) button head screws located at the back and center of each side plate, see figure 75.
 - b. Lift the hood straight up and off of the feeder.

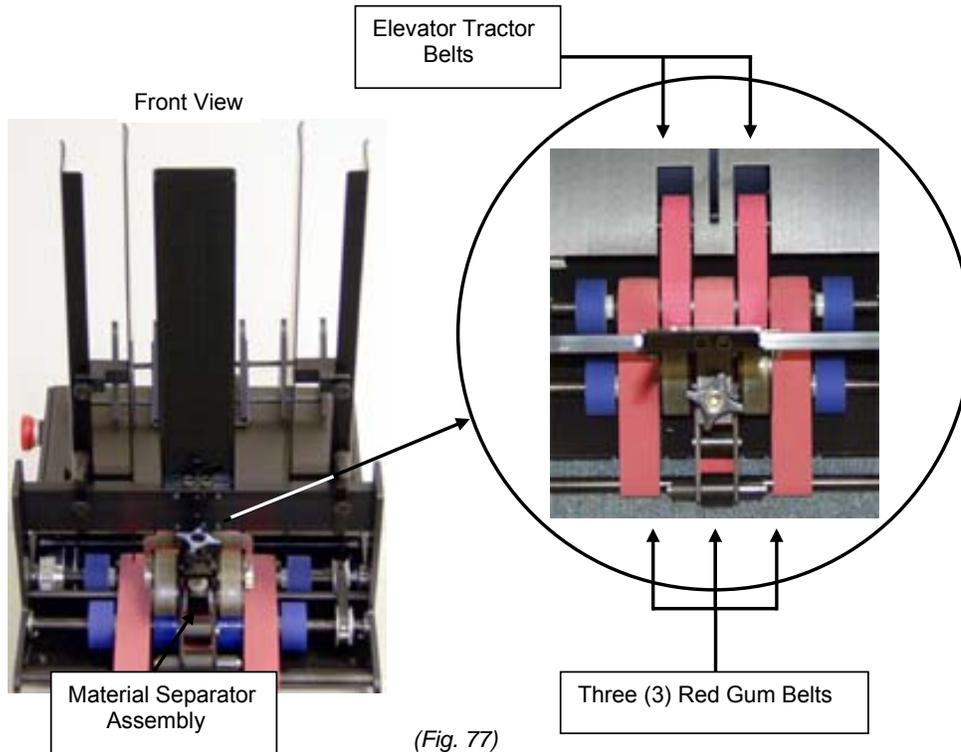


3. Disconnect the wires from the stop switch, located on the right side plate of the feeder, see figure 76.



4. Remove the elevator shaft:
 - a. Remove the two (2) adjustment retaining knobs, located near the center of each side plate, for the elevator shaft.
 - b. Lift the elevator shaft up until each end of the shaft is above the top edge of the side plates.
 - c. Slide the red elevator belts off of the elevator shaft while removing the shaft from the feeder.
5. Flip the feeder over until it is resting on the left side plate. (Side without the stop switch)
6. Using an 1/8" Allen wrench, remove the five (5) remaining button head screws from the right side plate.
7. Carefully lift the side plate away from the feeder shafts. (Caution: Some of the sealed bearings may stick to the shaft.)
8. Return the feeder to its upright position and remove the two (2) button head screws from the other end of the bridge tram bar. Remove bridge tram bar with material separator assembly. (Note: Support the bridge tram bar as the last two (2) screws are removed.)
9. Slid the three (3) red gum belts and the two (2) elevator tractor belts off of the main shaft, see figure 77.

Top View



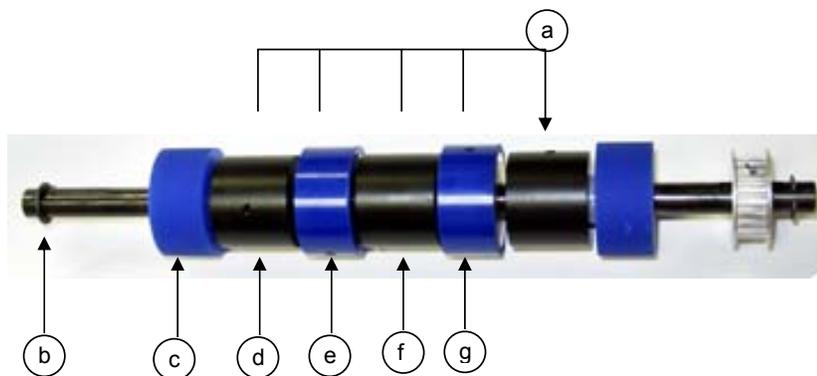
10. Replace the material separator belts while the bridge tram bar is off of the feeder. It may be necessary to remove the silver shroud located on the in-feed side of the material separator assembly. To do this:
 - a. Remove the two (2) Philips head screws found in the center of the silver shroud.
 - b. Remove the material separator belts.
11. Place the new material separator belts on the material separator, make sure the belts fit snugly inside the relief of the material separator.
12. Return the silver shroud to it's original position and secure it with the two (2) Philip head screws removed in step 10-a. Then set this assembly aside for the time being. (Note: Do not over tighten the Philips head screws, this may cause burrs to appear on the screws and inhibit the material stack from sliding smoothly into the feeder separator.)

In most cases the blue nip roller located directly under the separator belts will show signs of ware while the light blue feed rollers, located to the outside of the red gum belts on the same shaft, do not.

13. Removing the nip rollers:
 - a. Measure from one of the setscrews in the black crown roller, closest to the drive pulley, out towards the open end of the shaft. Record the measurement of the nip rollers and the other crown rollers from this point of reference so that the replacement rollers can be installed to the exact same position on the shaft, see figure 78.

- b. Remove the snap ring off of the nip roller shaft.
- c. Slide the light blue rubber feed roller off of the shaft. (Note: There are no set screws in this roller, be sure to collect the nylon spacers between the light blue feed roller and the black crown roller before proceeding to the next step.)
- d. Loosen the setscrews in the black crown pulley, then slide the crown roller off of the shaft.
- e. Loosen the two (2) set screws in the blue nip roller, then slide the nip roller off of the shaft.
- f. Loosen the two (2) setscrews in the next crown roller, then slide this crown roller off of the shaft.
- g. Loosen the two (2) setscrews in the next nip roller, then remove the nip roller from the shaft.

(Note: If the light blue feed rollers are being replaced at this time, use the drive pulley on the shaft as your point of reference to measure from.)



(Fig. 78)

14. Install the new rollers:

- a. Slide one of the new nip rollers onto the shaft. (Note: Do not tighten the setscrews at this time.)
- b. Slide one of the original black crown rollers back onto the shaft. (Note: Do not tighten the setscrews at this time.)
- c. Slide the other new nip rollers onto the shaft. (Note: Do not tighten the setscrews at this time.)
- d. Slide the other original black crown rollers back onto the shaft. (Note: Do not tighten the setscrews at this time.)
- e. Place the nylon washers back on the shaft.
- f. Slide the original / new, light blue feed roller back onto the shaft.
- g. Manually rotate the shaft and / or rollers until all of the setscrews line up to one another.
- h. Adjust the position of each of the rollers to the recorded measurement that was taken in step # 13 – a, moderately tighten one of the set screws in each roller once it is back into the original position, then double check the measurements before tightening the second set screw in each roller.

15. Re-install the bridge tram bar on the side plate still attached to the feeder base with the button head screws removed in step # 8. (Note; Do not tighten the button head screws at this time.)
16. Flip the feeder back onto the side plate that the bridge tram bar was just secured to and the and reinstall the side plate, with the stop switch, using the five button head screws removed in step # 6. (Note: The new red gum belts may cause some of the feeder shafts to draw together on the open end, use care to align the shafts with the sealed bearings in the side plate during this process.)
17. Flip the feeder back into the up-right position and reinstall the elevator shaft by following step # 4 in the reverse order shown, i.e.; c, b, a.
18. Reconnect the stop switch as shown in figure 76.
19. Place the hood back into it's original position and secure it with the button head screw removed in step # 2.
20. Place the two (2) remaining button head screws back through the side plate and into the bridge tram bar. (Note; Do not tighten the button head screws at this time.)

At his point the feeder should be completely reassembled with one exception, the bridge tram bar has not been set to pull material in a straight and precise manner. The next process is referred to as setting the tram or tramping the feeder.

Normally this is a factory setting that does not require adjustment. However, raising the bridge may be required to run thick material and this adjustment may be required. This setting is critical to the performance of the feeder. This will ensure that the separator wheels are level with respect to the nip rollers. To do this:

1. Loosen the bridge mounting screws located at each end of the bridge.
2. Turn the separator adjustment knob counter clock-wise until the material separator wheels are in their lowest position.
3. Cut two (2) strips of 20 # bond or 50 # offset paper, (copier, or printer paper) approximately 1" X 5", typically these measure .004 in thickness. Using the recommended paper will provide uniform thickness and drag friction between the material separators and the red gum belts. (Note: Do not use a textured paper such as Classic Linen or Classic Laid, or any of the slick paper such as Cass Coat or Enamel. These types may not provide you uniform thickness or sufficient friction to set the tram.)
4. Place one (1) strip of paper under each material separators, allowing the full weight of the bridge tram bar to rest on the paper.
5. Tighten one (1) of the two screws at each end of the bridge tram bar.
6. Move the paper strips to feel if the resistance or drag is equal under each separator wheel. If one moves with less resistance than the other, loosen the screw on the side that is tighter and raise that side of the bridge slightly and tighten the screw at that end of the bridge tram bar.

7. Check the resistance or drag under each separator wheel with the paper strips again and adjust accordingly. (Note: It may be necessary to repeat this step # 6 a few times while setting the tram.)
8. Once the tram has been set, tighten the other remaining screws at each end of the bridge tram bar.

This procedure must be followed whenever the bridge tram bar is adjusted up or down, as stated in step 1, for extremely thick materials.

General Cleaning:

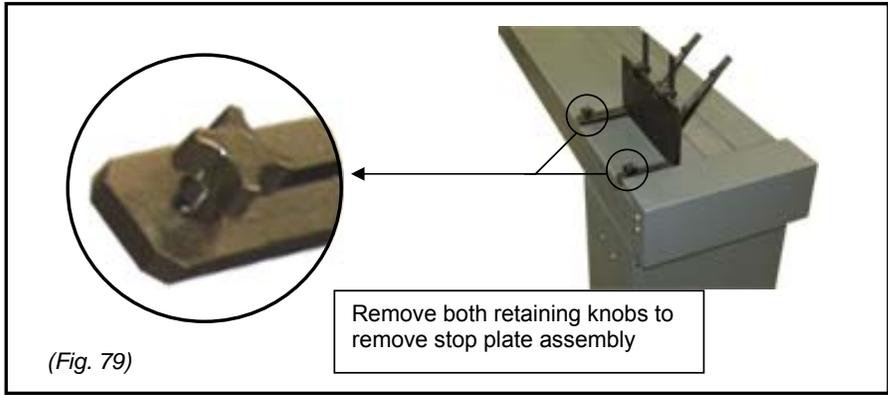
Clean rollers and belts are very important to the performance of the feeder. Use a clean cloth dampened with Isopropyl alcohol, 70% by volume (typically available in most stores) or "Simple Green" all-purpose cleaner to clean belts and rollers. Do not use any other solvents, cleaners, or abrasive cleaners on the rollers or belts as they may damage the rubber.



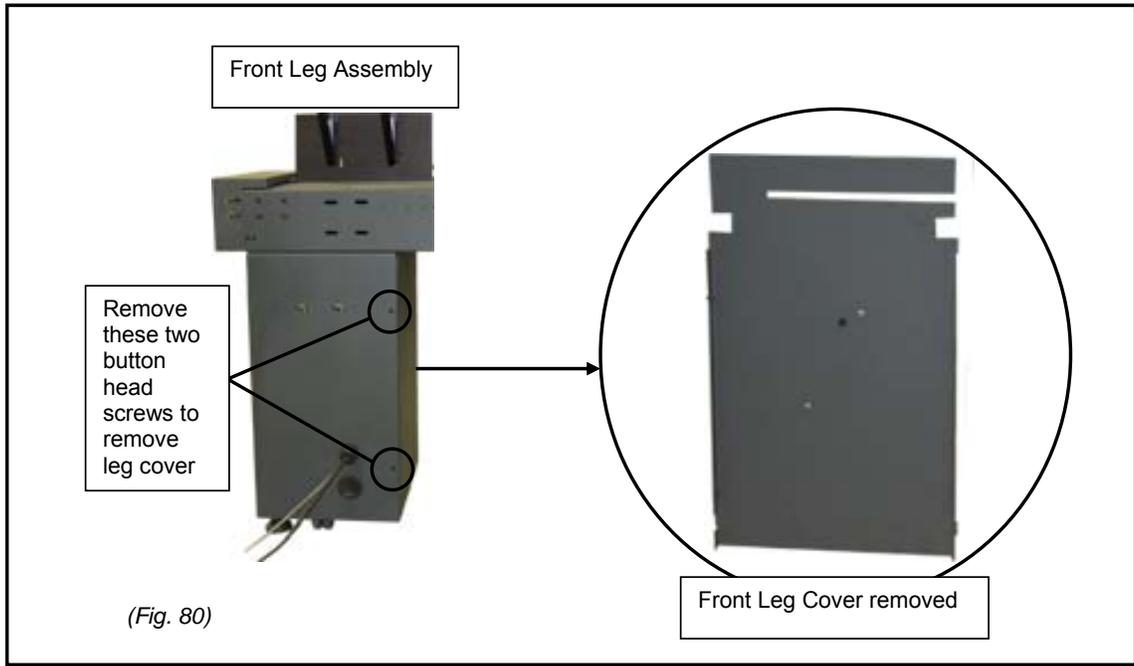
(Warning: Isopropyl alcohol is flammable, avoid using near an open flame, sparks, or any other source of heat. Dispose of used cloths properly in accordance with local city and / or state laws and ordinances.)

Conveyor belt replacement:

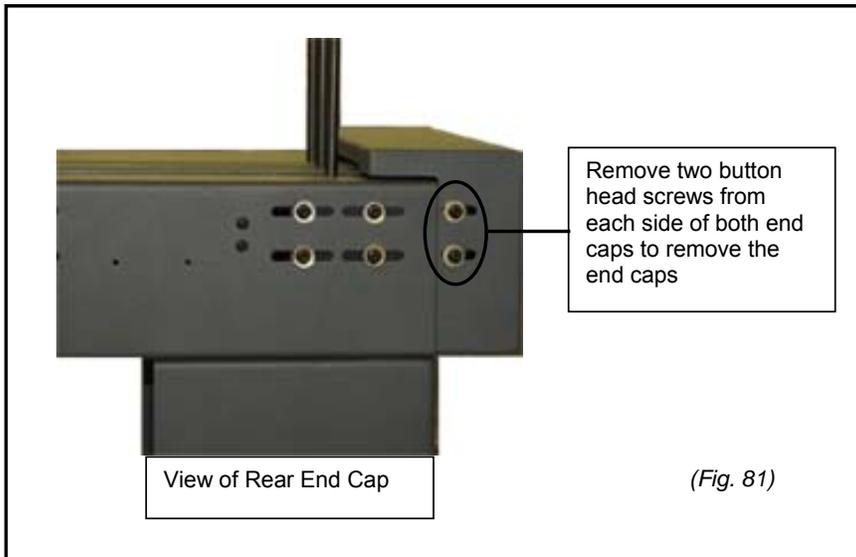
1. Turn off the power to the ink jet base / dryer base.
2. Unplug both the power cable and the communication cable from the shingle conveyor to the ink jet base / dryer base. (Move the single conveyor away from the ink jet base / dryer base in order to provide room to work.)
3. Remove the Envelope Knock Down / Stop Plate assembly:
 - (a) Remove both of the retaining lock knobs by turning them in a counter clockwise direction, see figure 79.
 - (b) Lift the envelope knock down / stop plate assembly off of the conveyor bed and set it aside



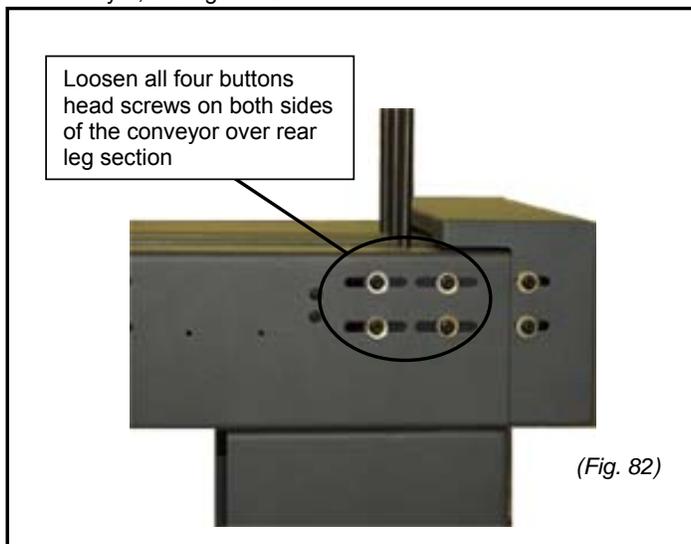
4. Remove the front leg cover:
- (a) Using a 1/8" Allen wrench, remove the two button head Allen screws located on the side of the front leg assembly, see figure 80.
 - (b) Pull the left side [same side as the button head Allen screws removed in step (a)] of the leg cover back to clear the leg assembly, then shift the cover to the left to get the inside screws free of the right side of the leg assembly and continue pulling the cover free of the leg assembly, see figure 80. (Note: the top part of this cover is slotted and fits over the conveyor belts. Use caution when removing this belt to avoid damaging the belts.)



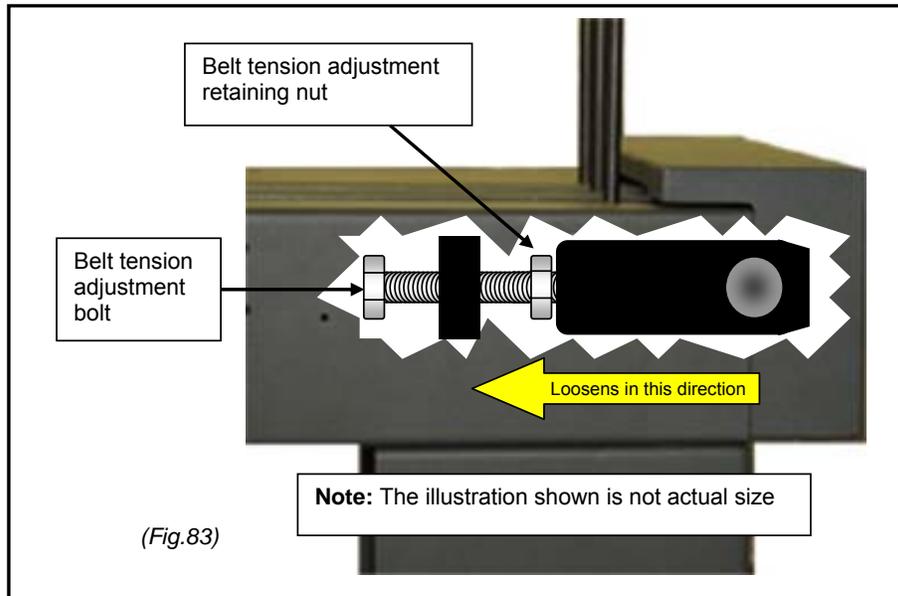
5. Remove both end cap covers from the conveyor:
- (a) Using a 5/32" Allen wrench, remove the two (2) button head Allen screws located at each side of the end cap cover, see figure 80.
 - (b) Pull each end cap straight out from the conveyor.



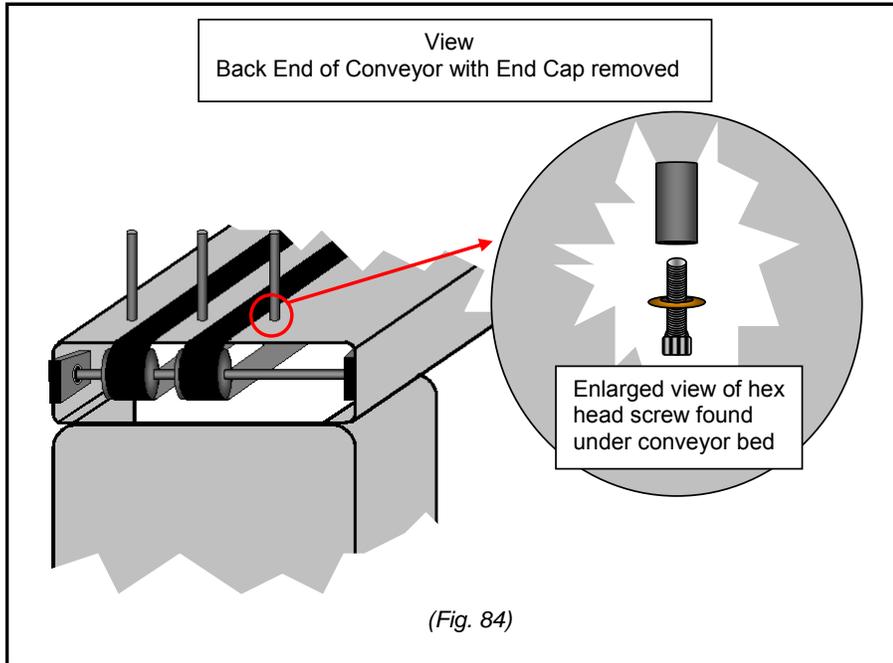
6. Loosen the conveyor belts:
- (a) Using a 5/32" Allen wrench loosen the four (4) button head Allen screws located on each side of the conveyor bed near the material stop post at the rear end of the conveyor, see figure 82.



8. Using a 7/16" open end wrench, loosen the retaining nut located on each of the conveyor belt tensioner found inside the conveyor bed above the rear leg assembly, see figure 83.

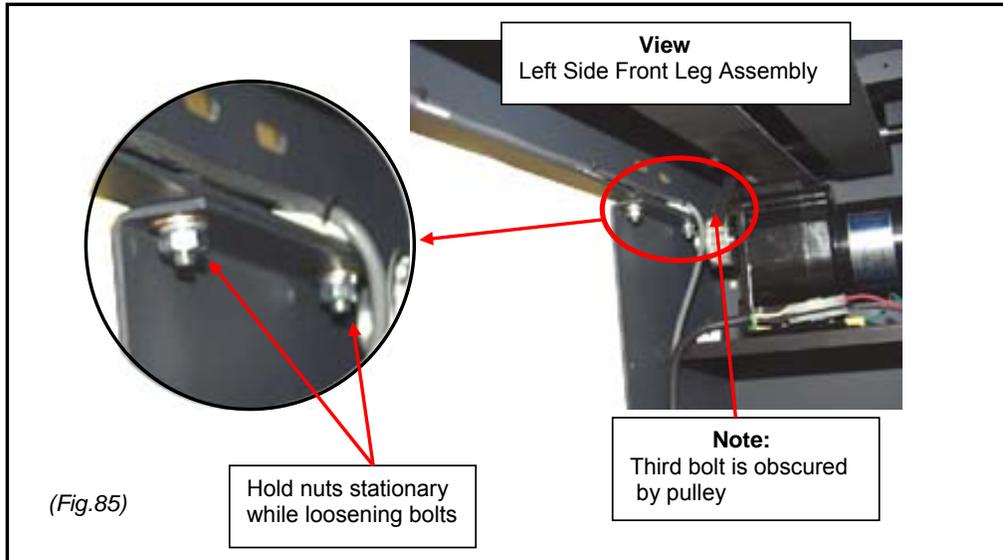


9. Remove the Stop Pins and the end of the conveyor:
- (a) Using a 5/32" Allen wrench remove the hex-head Allen screw and flat washer accessible from under the conveyor bed inside the rear leg section, see figure 84. (Note: Be sure to hold each stop pin firmly by hand when removing the screws.)

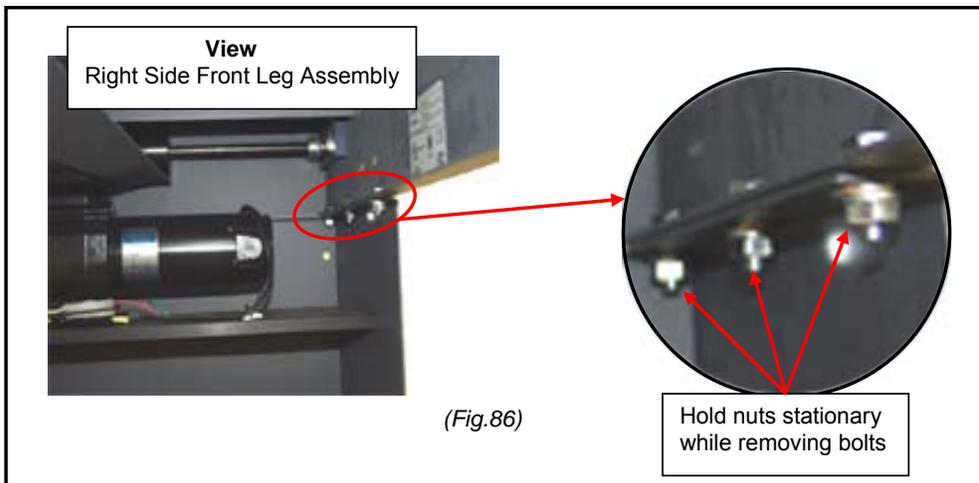


10. Using a 7/16" open end wrench, loosen the conveyor belt tension adjustment bolt by turning it in a counter clock-wise direction, see figure 83.

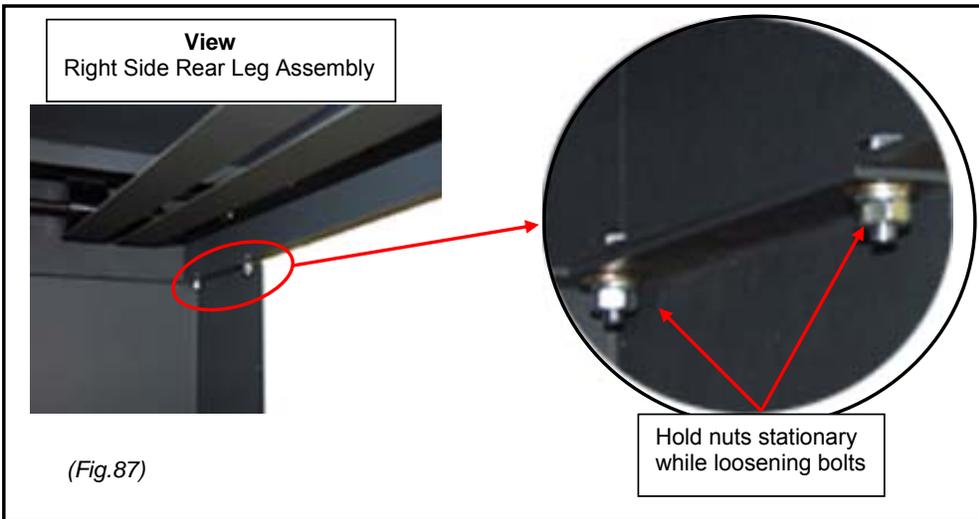
11. Using a 7/16" open end wrench, **loosen** the three (3) hex head bolts located under the conveyor bed, found on the left side [motor side] of the front leg section, see figure 85. (Note: There is a 7/16" retaining nut under each hex head bolt that will need to be held in place in order the loosen the bolts. **Do not** remove these bolts, just loosen them.



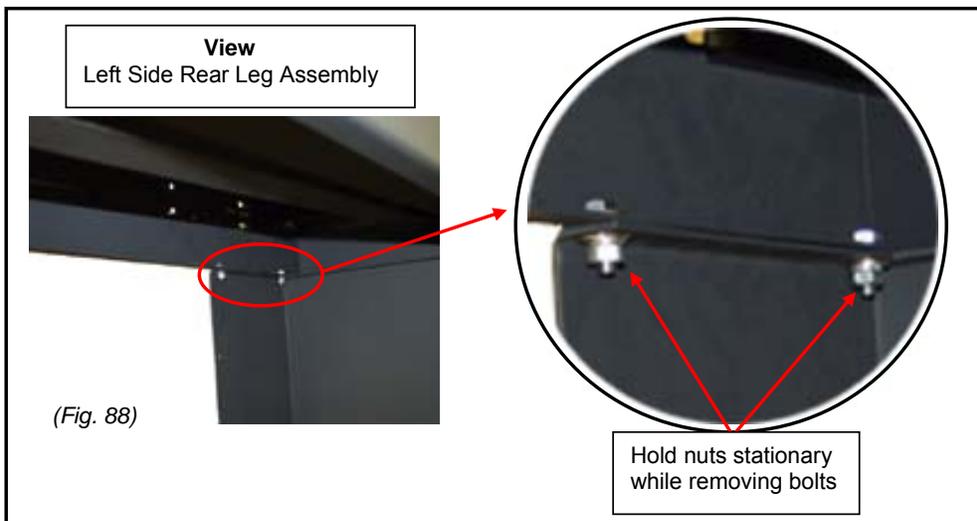
12. Using a 7/16" open end wrench, **remove** the three (3) hex head bolts located under the conveyor bed, found on the right side of the front leg section, see figure 86. (Note: There is a 7/16" retaining nut under each hex head bolt that will need to be held in place in order the loosen the bolts.)



13. Using a 7/16" open end wrench, **loosen** the two (2) hex head bolts located under the conveyor bed, found on the right side of the rear leg section, see figure 87. (Note: There is a 7/16" retaining nut under each hex head bolt that will need to be held in place in order the loosen the bolts. **Do not** remove these bolts, just loosen them.)

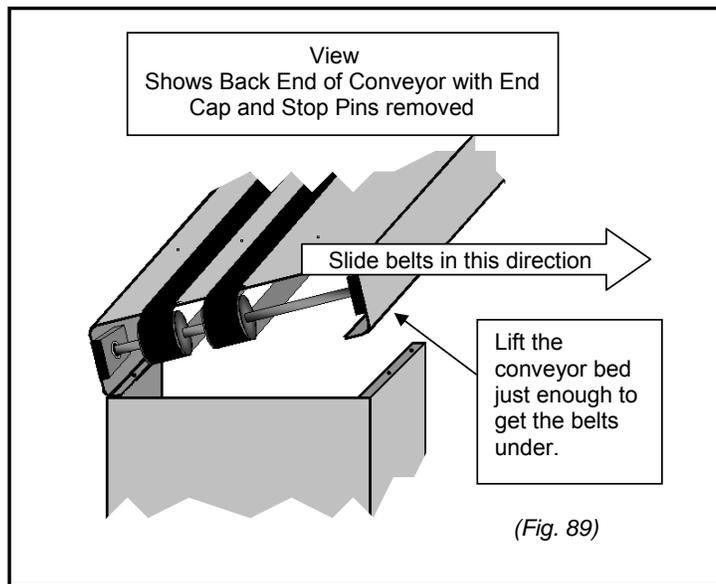


14. Using a 7/16" open end wrench, **remove** the two (2) hex head bolts located under the conveyor bed, found on the left side of the rear leg section, see figure 88. (Note: There is a 7/16" retaining nut under each hex head bolt that will need to be held in place in order the loosen the bolts.)

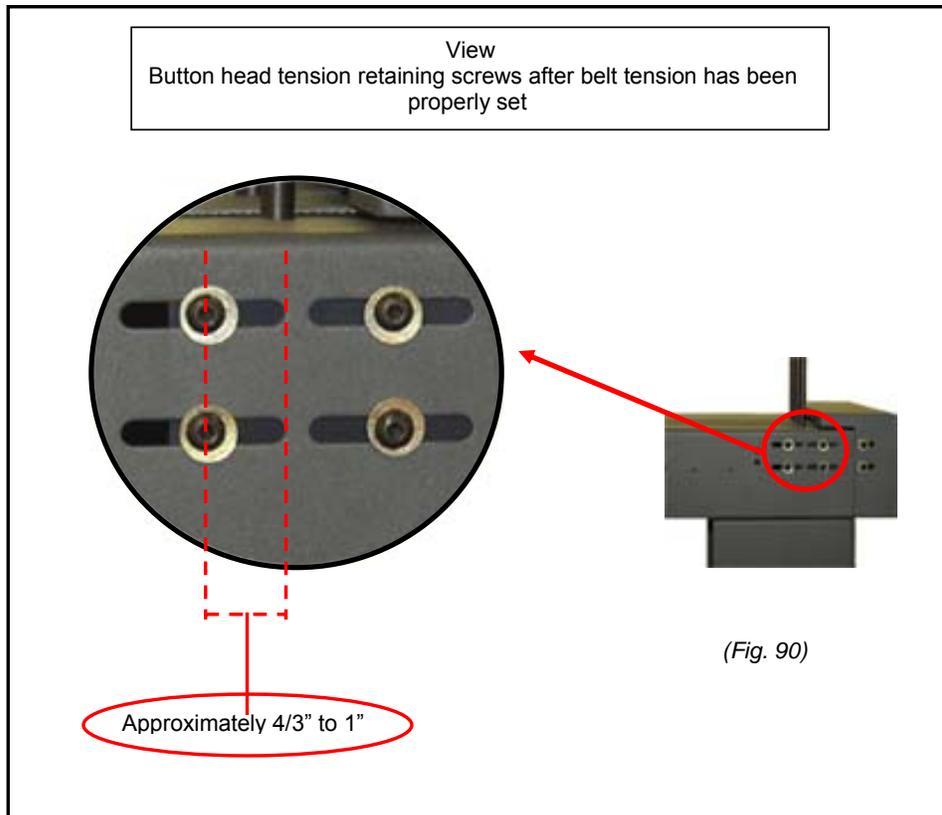


15. Slide the old conveyor belts off of the rollers towards the side of the conveyor that the bolts were removed in steps 12 and 14.

16. Lift the front end of the conveyor bed at the side the bolts were removed in step 12 and slide the belts through the space between the conveyor bed and the leg section.
 ⚠️ **(Warning:** This step may be awkward or cumbersome, acquire assistance for lifting to avoid possible injury.)
17. Lift the rear end of the conveyor bed at the side the bolts were removed in step 14 and slide the belts through the space between the conveyor bed and the leg section, see figure 89.
 ⚠️ **(Warning:** This step may be awkward or cumbersome, acquire assistance for lifting to avoid possible injury.)
18. Place the new belts on the conveyor in the same manner in which the old belts were removed in steps 17, 16 and 15.



19. Tension the new conveyor belts:
 - (a) Using the a 7/16" open-end wrench turn the adjustment bolts, (refer to figure 83) in a clock-wise direction until the center of the button head retaining screws, (loosened in step 6, figure 82) are approximately 3/4" to 1" from the back edge of the adjustment slot, see figure 45.
 ⚠️ **(Warning:** Do not over tighten the conveyor belts. Over tightening the conveyor belts may result in damage to the conveyor drive motor and shafts.)
 - (b) When the adjustment is completed on both sides of the conveyor, tighten the hex head retaining screws using a 5/32" Allen wrench, see figure 83.
 - (c) Using a 7/16" open-end wrench tighten the belt tension adjustment retaining nut, see figure 83.

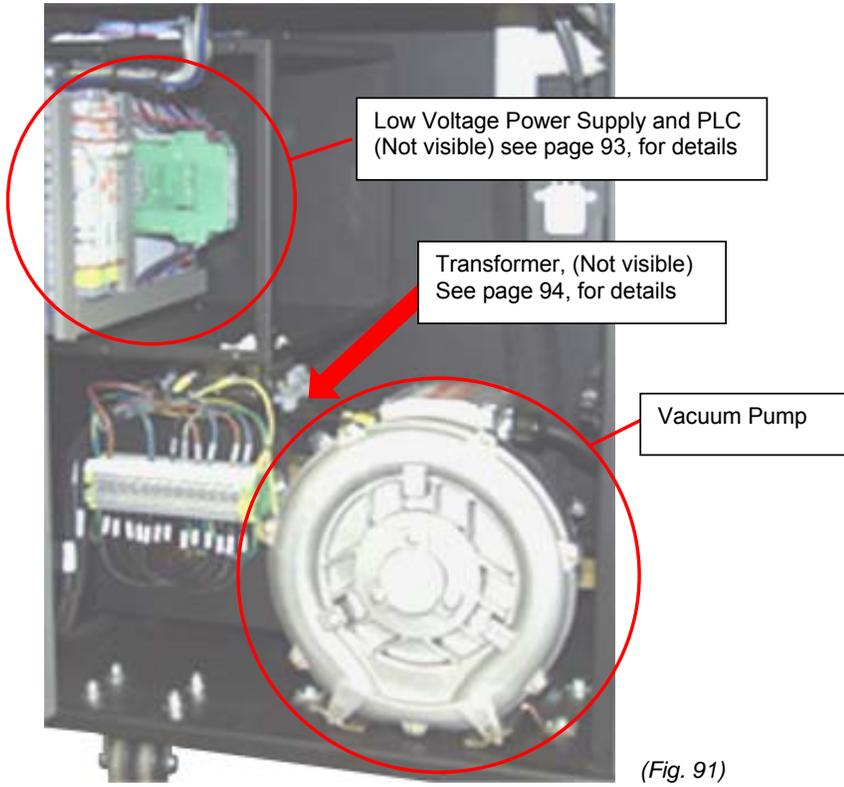
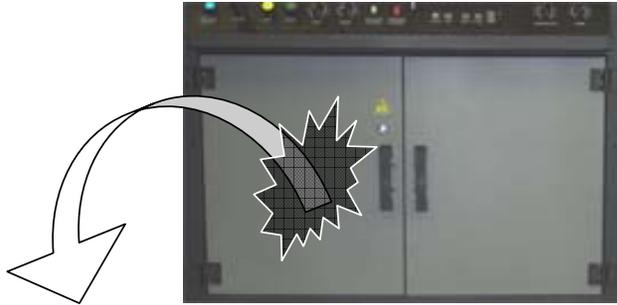


21. Re-attach the conveyor bed to the leg sections, following steps 14 through 11 in reverse order.
22. Return the Stop Pins removed in step 9 to their original position and secure them using the hex head Allen screws and flat washer also removed in this step.
23. Plug the conveyor back into the ink jet / dryer base, refer to step 2.
24. Turn the power "On" to the ink jet / dryer base and run the machine, observe the conveyor belts and the manner they track on the conveyor belt rollers. (Note: If the belts track off of the conveyor rollers, further tension adjustments may be needed, refer to step 19.)
25. Once the conveyor belts have proven to track straight, finish reassembling the conveyor following steps 5 through 3 in reverse order.

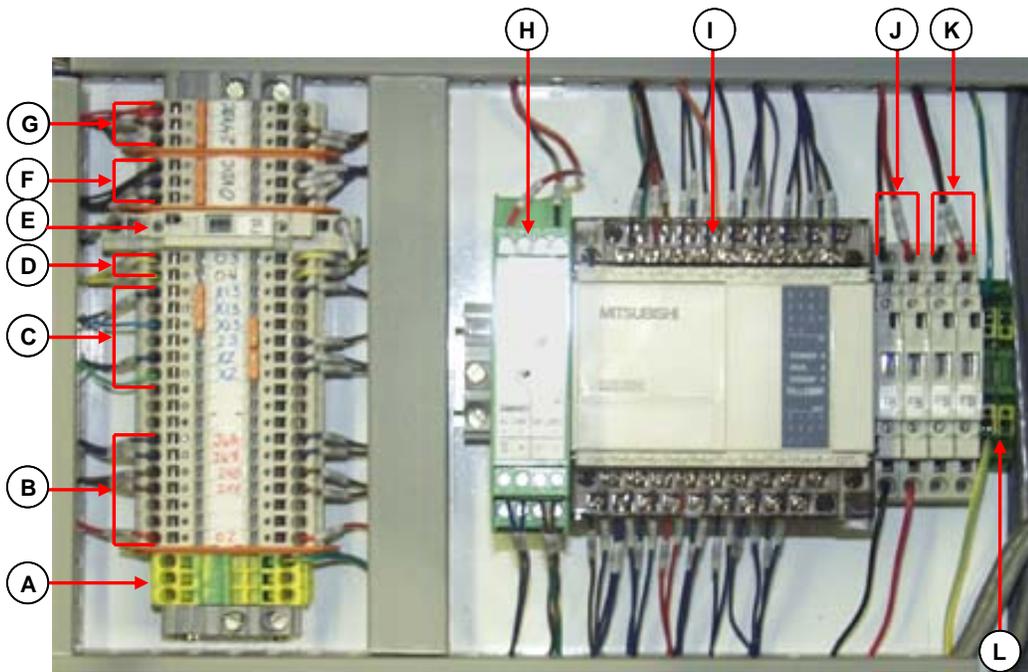
Section V

Ink Jet Base Electrical Components





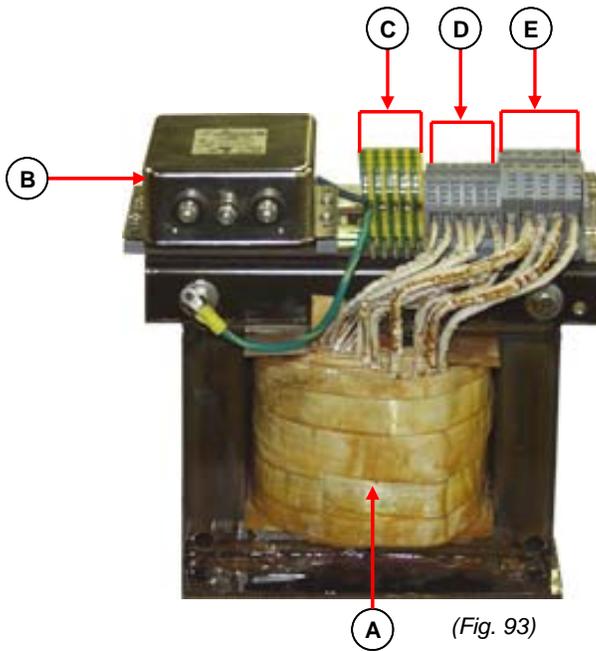
(Fig. 91)



(Fig. 92)

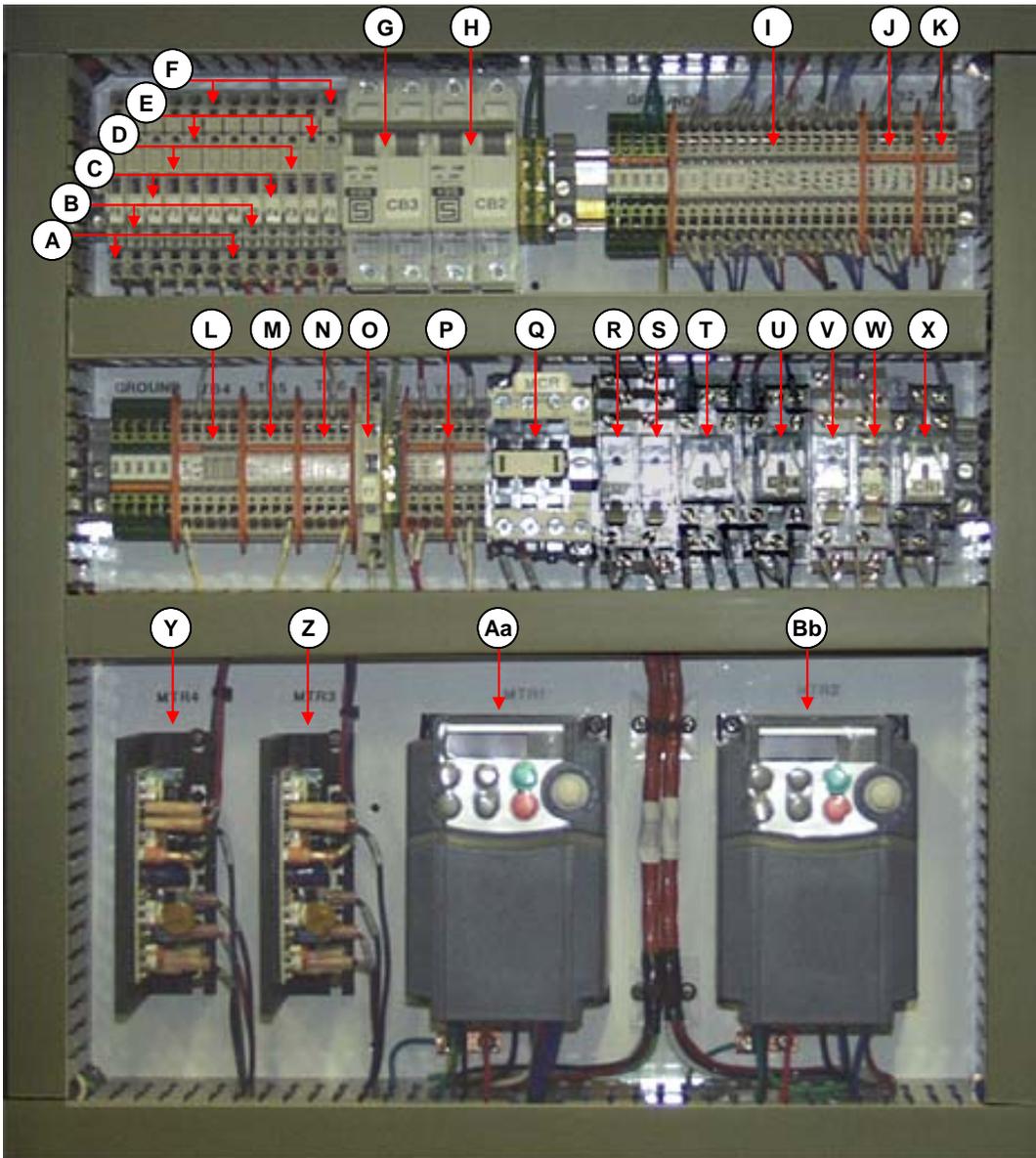
PLC Electrical Box Identification Table

Item	Component	Function
A	Terminal Blocks, Ground	Provides contact point for DC ground
B	Terminal Blocks, 24 VDC	Provides 24 VDC out-put signal from PLC
C	Terminal Blocks 0 Volt	Provides 0 volt in-put signal to PLC
D	Terminal Blocks, 24 VDC	Safety Interlock
E	F-10 1.0 AMP Fuse	24 VDC Primary Fuse
F	Terminal Blocks	0 Volt DC current
G	Terminal Blocks	24 Volt DC current
H	Low Voltage Power Supply	Supplies 24 volt current
I	Mitsubishi PLC	Programmable Logic Control, runs machine programs
J	F-8 1.0 AMP Fuse	Primary Voltage, DC Power Supply
K	F-9 1.0 AMP Fuse	Primary Voltage, PLC
L	Terminal Blocks, Ground	Provides contact point for AC ground



Transformer Identification Table

Item	Component	Function
A	AFP Transformer	Transforms incoming line voltage to specific voltage to machine
B	Line Filter	Reduces electronic noise
C	Terminal Blocks, Ground	Provides contact point to ground
D	Secondary Terminal Blocks	X1 - X2 Supplies 230 VAC at 5 AMP
D	Secondary Terminal Blocks	X3 - X4 Supplies 230 VAC at 10 AMP
D	Secondary Terminal Blocks	X5 - X6 Supplies 24 VAC at 1 AMP
E	Primary Terminal Blocks	H1 - H2 Supplies 200 VAC
E	Primary Terminal Blocks	H1 - H3 Supplies 208 VAC
E	Primary Terminal Blocks	H1 - H4 Supplies 220 VAC
E	Primary Terminal Blocks	H1 - H5 Supplies 230 VAC



(Fig. 94)

Electrical Box Identification Table

Item	Component	Function
A	F-6 6.0 AMP Fuse 250 VAC	Vacuum Motor
B	F-5 2.0 AMP Fuse 250 VAC	MTR 3 Conveyor Drive Motor
C	F-4 2.0 AMP Fuse 250 VAC	Supplies current to Fuses F-8 & F-9
D	F-3 2.0 AMP Fuse 250 VAC	MTR 4 FeedMax Drive Motor
E	F-2 3.15 AMP Fuse 250 VAC	Feeder Drive Fuse
F	F-1 3.15 AMP Fuse 250 VAC	Base Drive Fuse
G	CB 3 7.5 AMP	Circuit Breaker 7.5 AMP Outlet
H	CB 2 7.5 AMP	Circuit Breaker 7.5 AMP High Voltage Cabinet
I	TB-1 Terminal Blocks	In-put / Out-put from PLC
J	TB-2 Terminal Blocks	0 Volt DC current
K	TB-3 Terminal Blocks	24 Volt DC current
L	TB-4 Terminal Blocks	Emergency Stop Circuit
M	TB-5 Terminal Blocks	0 Volt AC current
N	TB-6 Terminal Blocks	24 Volt AC current
O	F-7 1.0 AMP Fuse 250 VAC	24 Volt Primary Fuse
P	TB-7 Terminal Blocks	120 VAC & Neutral (Optional, see your local dealer for details)
Q	MCR	Master Control Relay
R	CR - 7	Control Relay, FeedMax, Start / Stop
S	CR - 6	Control Relay, Parallel to all Stop Buttons from base to conveyor
T	CR - 5	Control Relay, VAC Motor, ON / OFF
U	CR - 4	Control Relay, Ink Jet Base, Start / Stop
V	CR - 3	Control Relay, Conveyor, Sort Signal
W	CR - 2	Control Relay, In-Put, FlowMaster Interface
X	CR - 1	Control Relay, Conveyor, Start / Stop
Y	MTR - 4	FeedMax DC - Control Board
Z	MTR - 3	Conveyor DC - Control Board
Aa	MTR - 1	Ink Jet Base, Variable Frequency Drive (Cover style may vary in appearance)
Bb	MTR - 2	Feeder, Variable Frequency Drive (Cover style may vary in appearance)

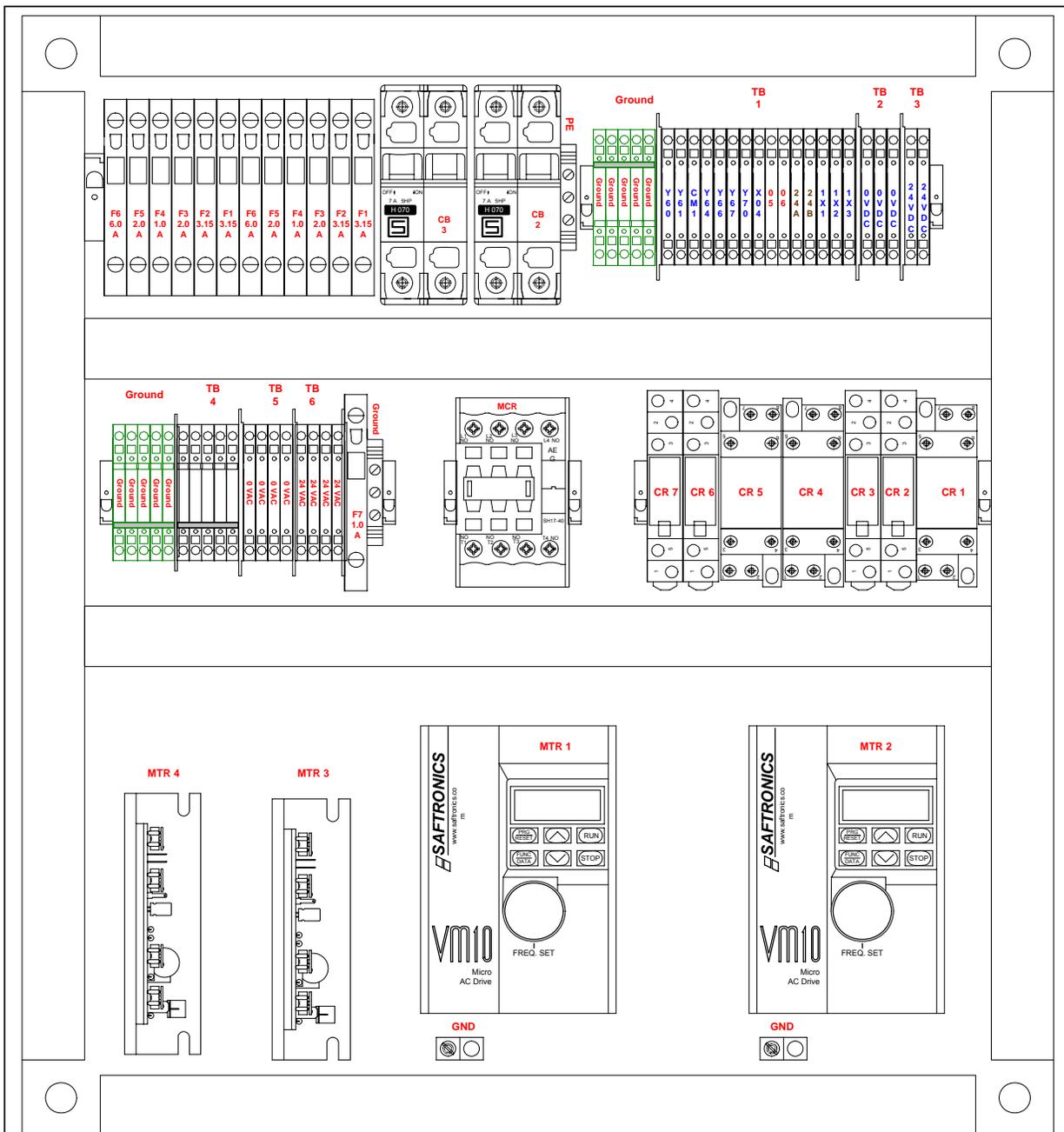
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Section VI

Wiring Diagrams
for

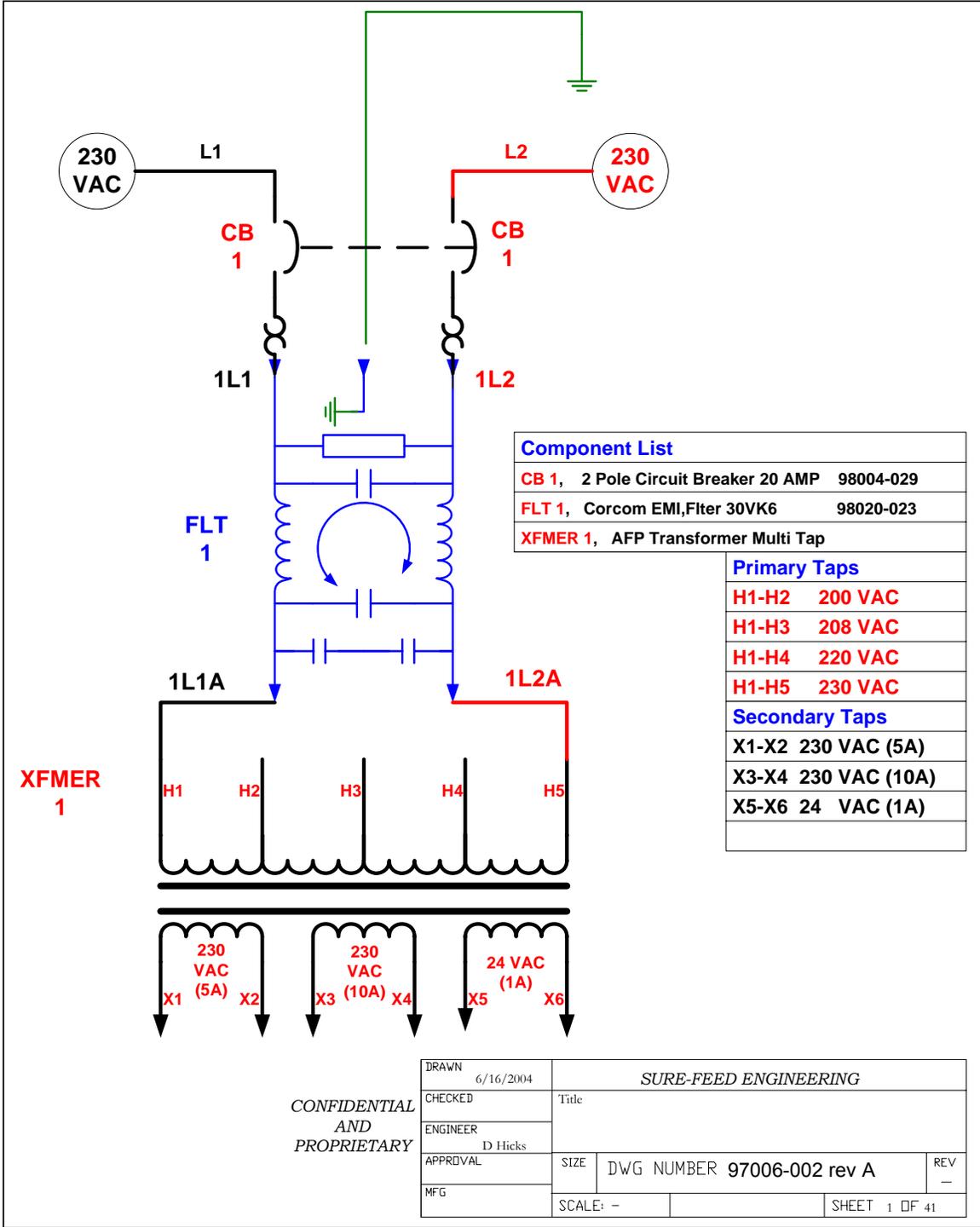
Ink Jet Base

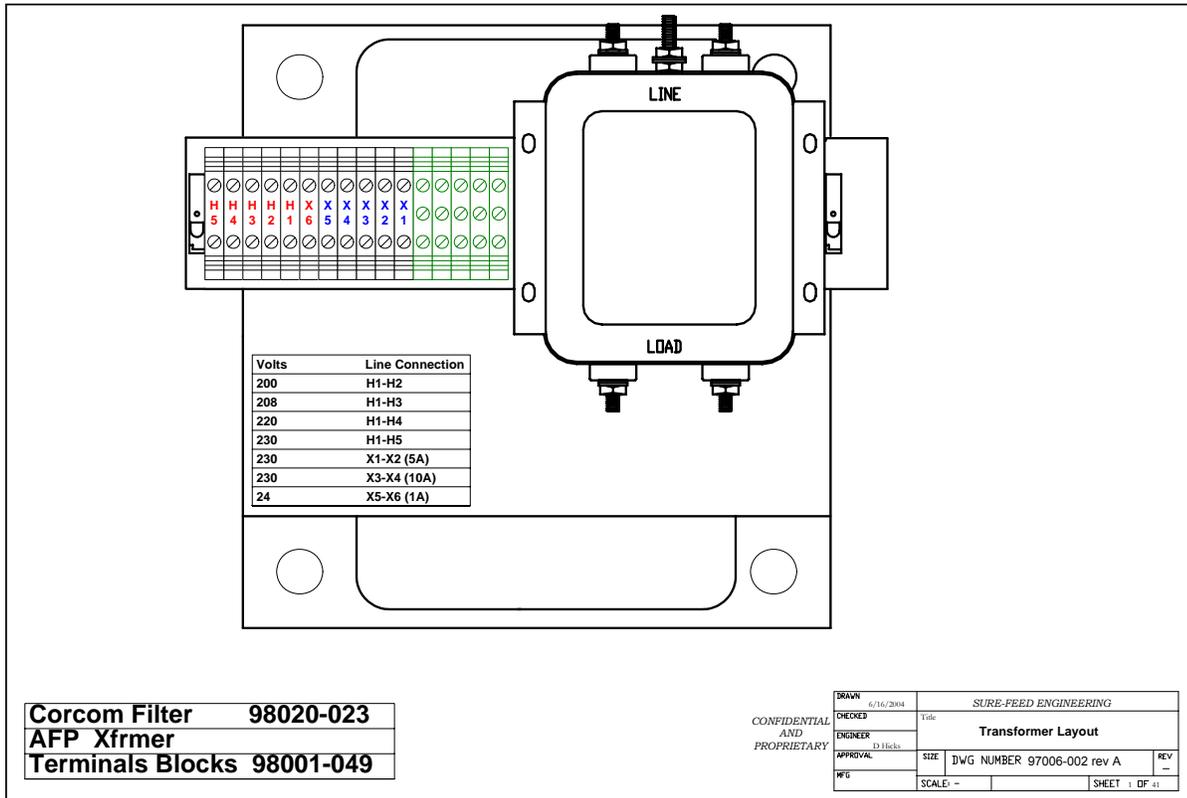




CB 2 Primary Voltage For Fuses F1-F6	98004-030	CR 5 Vacuum Blower	98002-007/005
CB 3 Primary Voltage For OTL 1 (Quadblock)	98004-030	CR 6 Parallel Stop Circuit	98002-011/012
F1 Primary Voltage MTR 1 Safronics	98004-007	CR 7 MTR 4 Inhibit Circuit (Feedmax)	98002-011/012
F2 Primary Voltage MTR 2 Safronics	98004-007	MTR 1 Base Motor Drive	98013-044
F3 Primary Voltage MTR 4 KB DC Board	98004-023	MTR 2 Feeder Motor Drive	98013-044
F4 Primary Voltage PLC Cabinet	98004-023	MTR 3 Conveyor Motor Drive	98005-007
F5 Primary Voltage MTR 3 KB DC Board	98004-023	MTR 4 Feedmax Motor Drive	98005-007
F6 Primary Voltage Blower Motor	98004-007		
F7 24 AC Fusing	98004-017		
MCR Master Control Relay (E-Stop)	98002-032		
CR1 MTR 3 Inhibit Circuit (conveyor)	98002-007/005		
CR2 Flowmaster Stop Interface (J6 Plug)	98002-022/012		
CR3 Conveyor Sort Control	98002-011/012		
CR4 MTR 1 Inhibit Circuit and Dryer Interlock (Base)	98002-007/005		

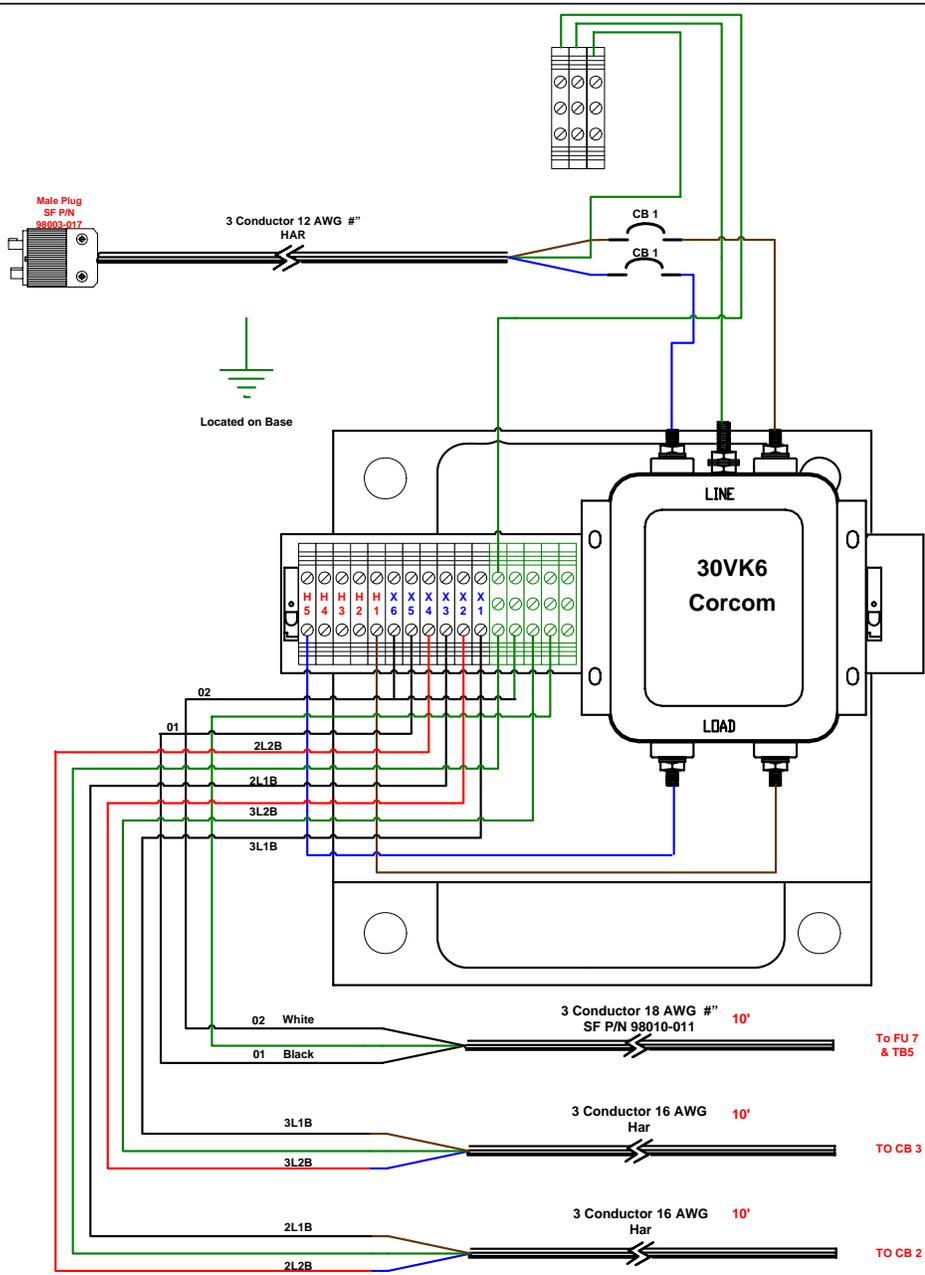
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	APPROVAL	D. Hicks	SIZE	DWG NUMBER 97006-002 rev A
WFG		SCALE		SHEET 1 OF 11





Corcom Filter 98020-023
AFP Xfrmer
Terminals Blocks 98001-049

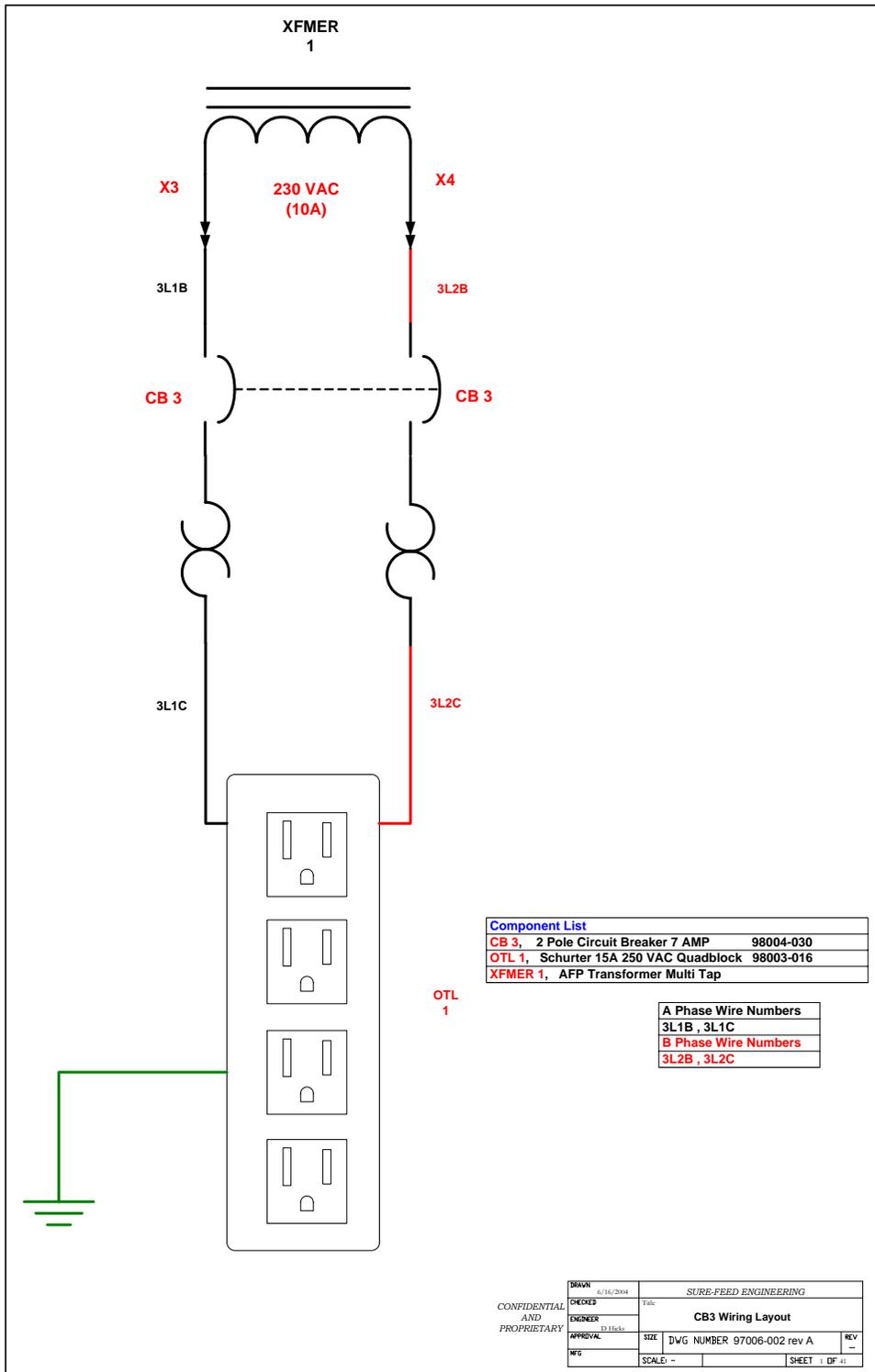
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	APPROVAL D Hicks
	DWG NUMBER 97006-002 rev A SCALE: - SHEET 1 OF 41

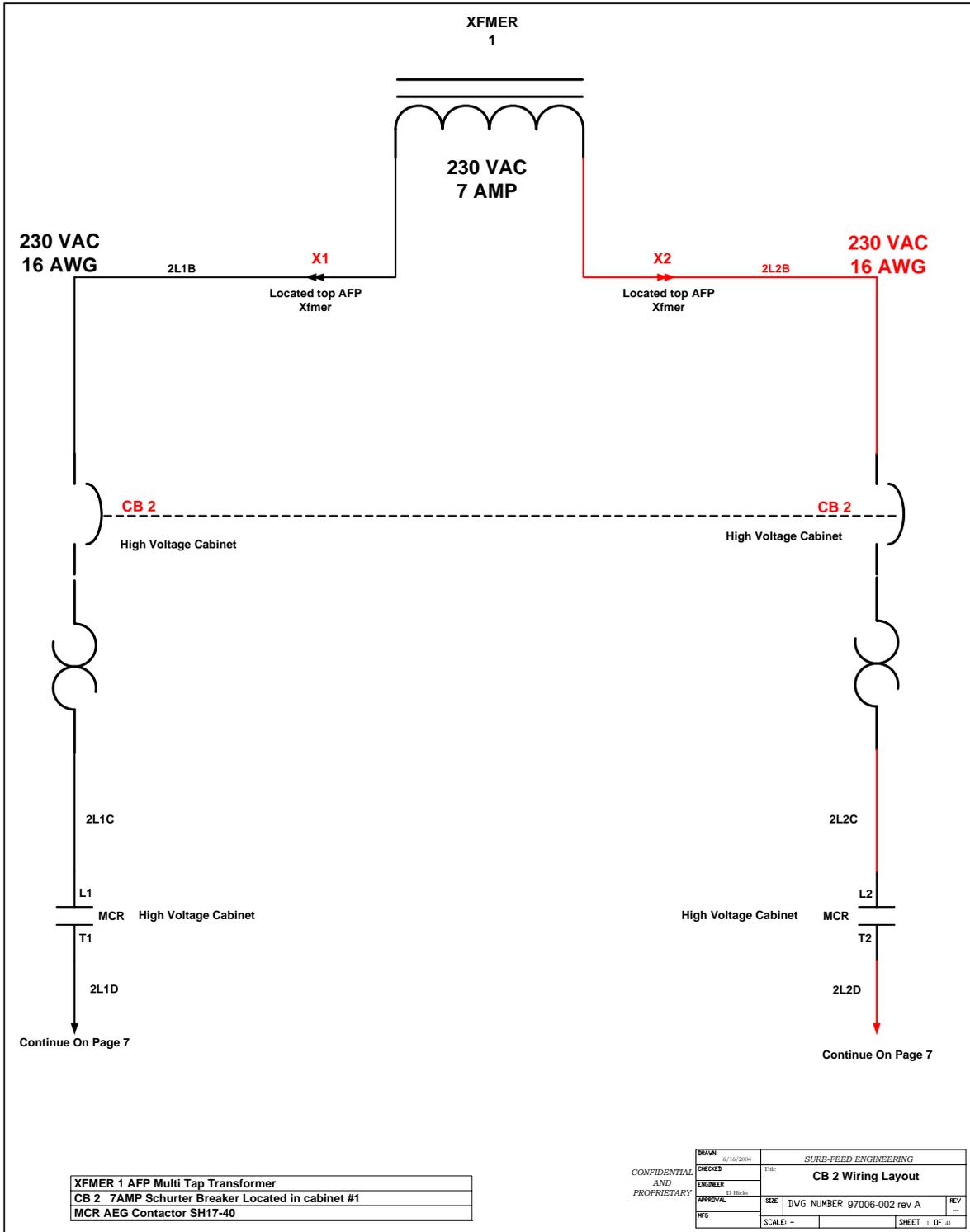


Volts	Line Connection
200	H1-H2
208	H1-H3
220	H1-H4
230	H1-H5
230	X1-X2 (5A)
230	X3-X4 (10A)
24	X5-X6 (1A)

Corcom Filter 98020-023
AFP Xfrmer
Terminals Blocks 98001-049

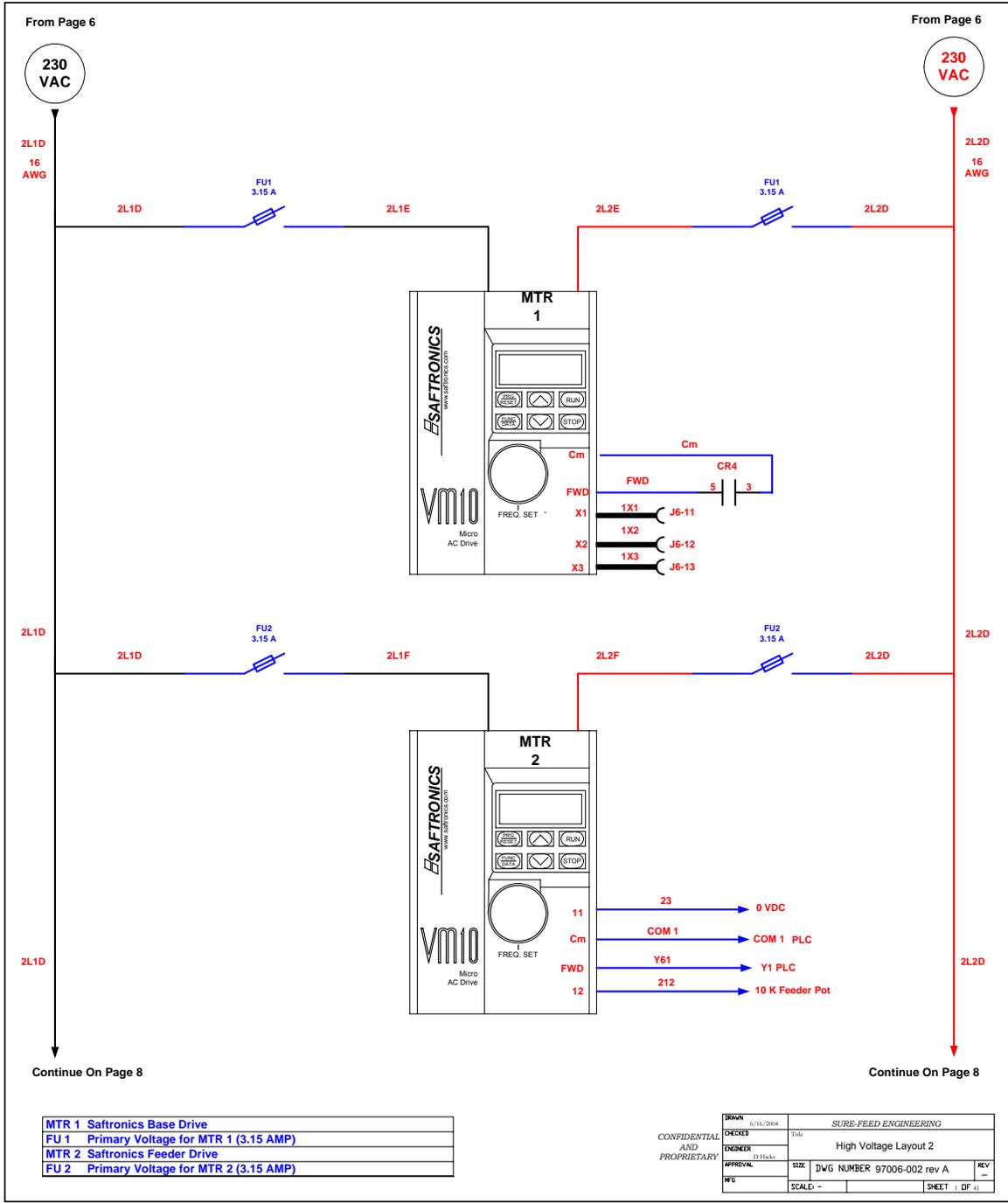
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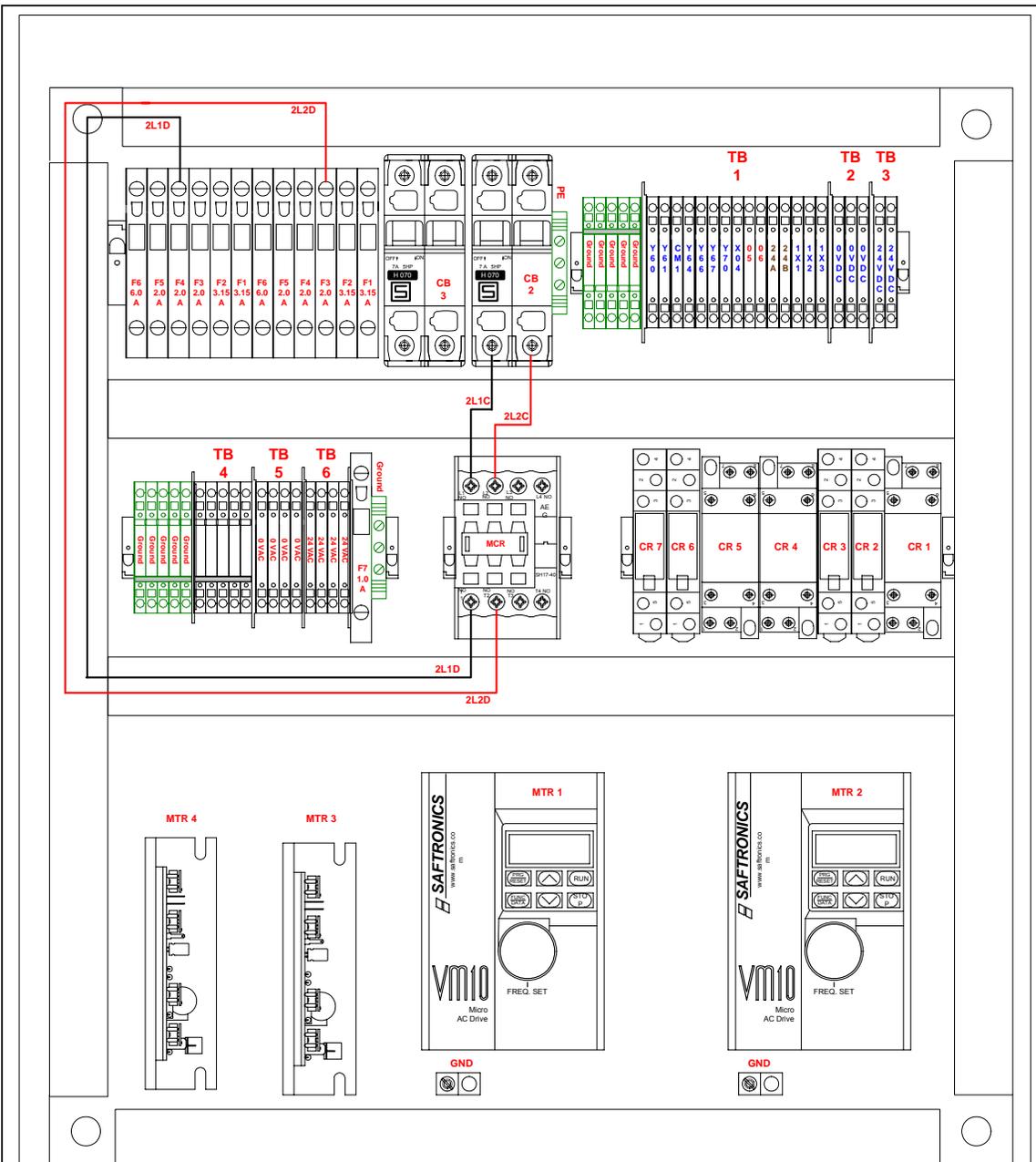




XFMR 1 AFP Multi Tap Transformer
CB 2 7AMP Schurter Breaker Located in cabinet #1
MCR AEG Contactor SH17-40

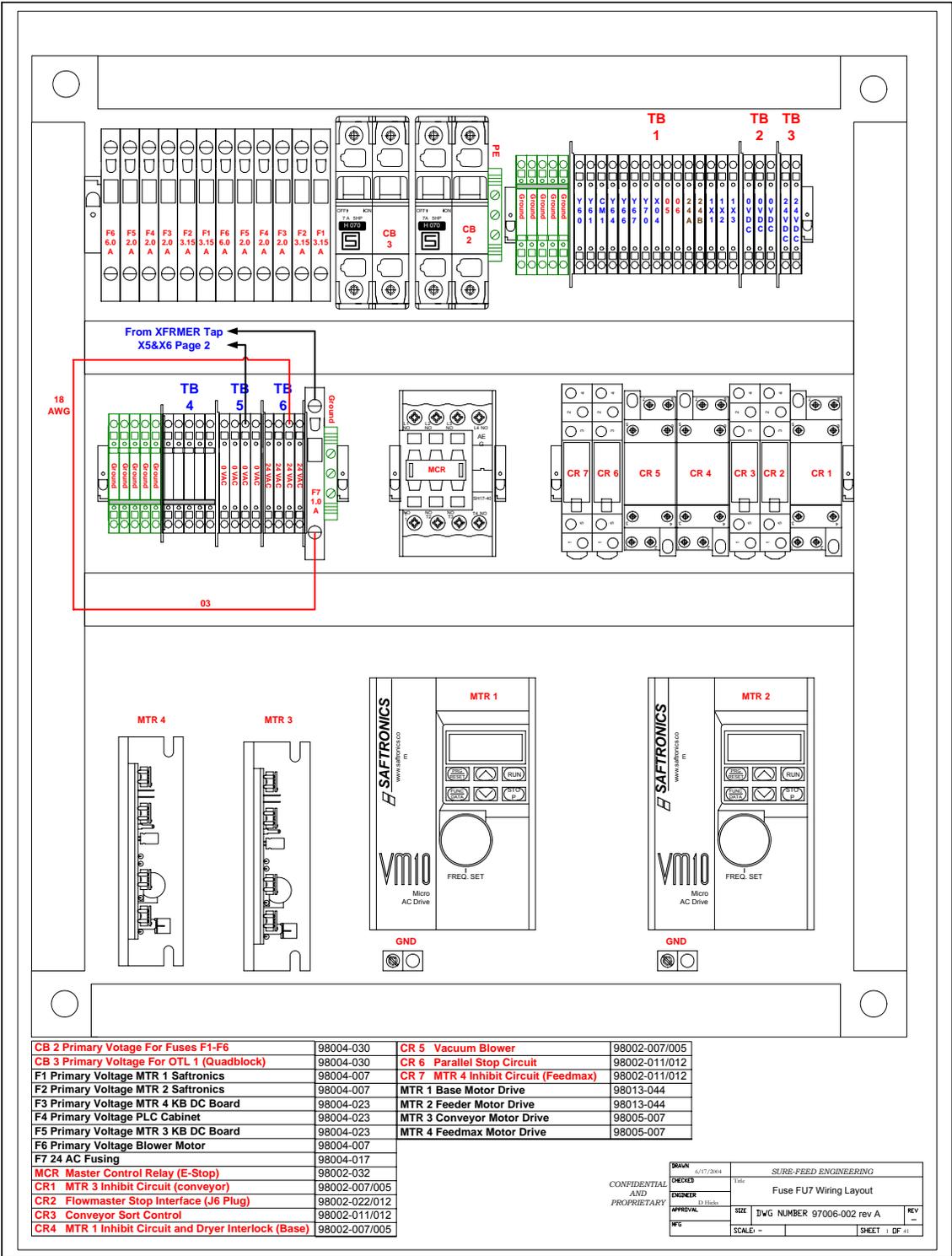
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	CHECKED	Title		
	ENGINEER	CB 2 Wiring Layout		
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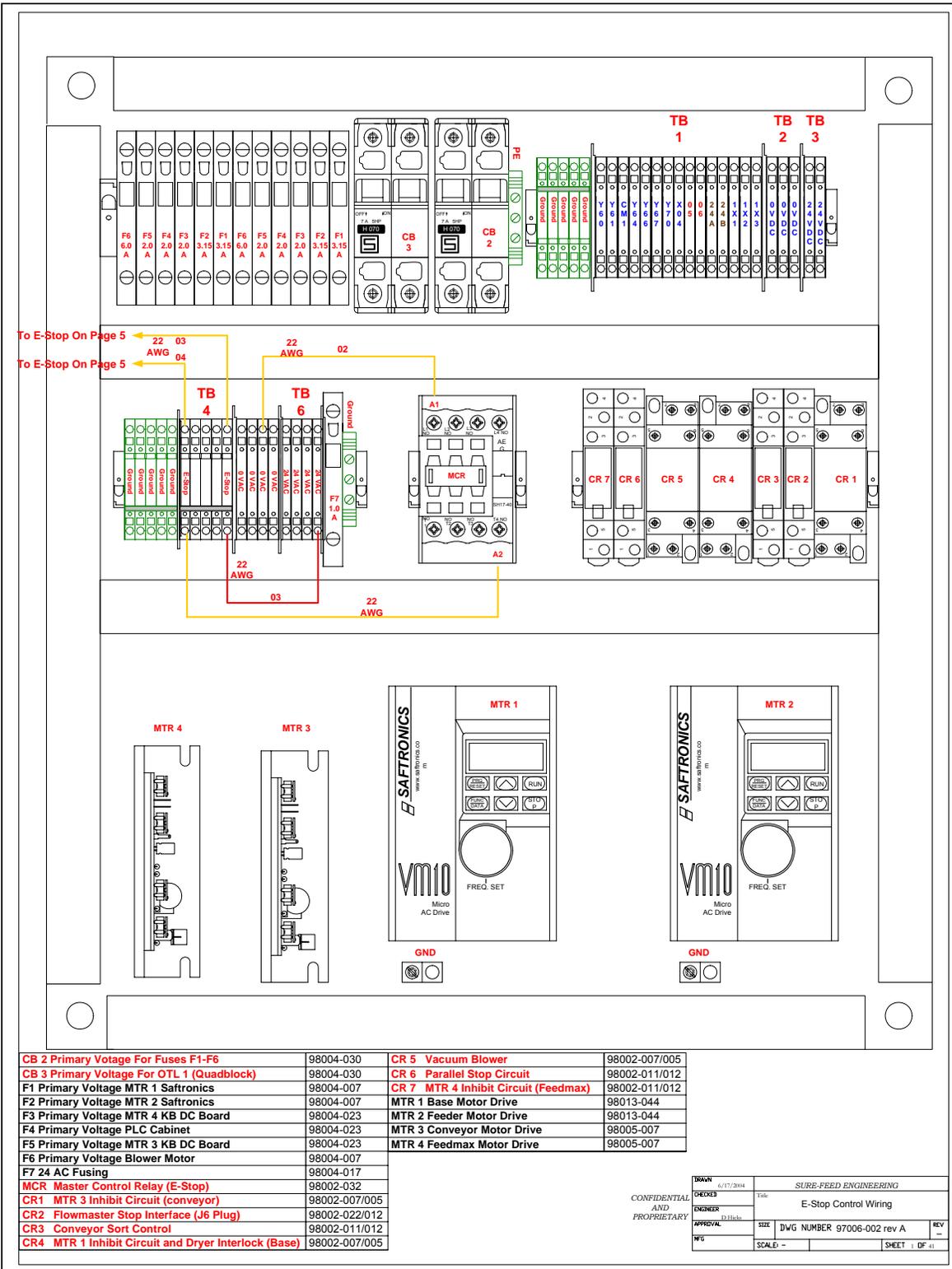




CB 2 Primary Voltage For Fuses F1-F6	98004-030	CR 5 Vacuum Blower	98002-007/005
CB 3 Primary Voltage For OTL 1 (Quadblock)	98004-030	CR 6 Parallel Stop Circuit	98002-011/012
F1 Primary Voltage MTR 1 Saftronics	98004-007	CR 7 MTR 4 Inhibit Circuit (Feedmax)	98002-011/012
F2 Primary Voltage MTR 2 Saftronics	98004-007	MTR 1 Base Motor Drive	98013-044
F3 Primary Voltage MTR 4 KB DC Board	98004-023	MTR 2 Feeder Motor Drive	98013-044
F4 Primary Voltage PLC Cabinet	98004-023	MTR 3 Conveyor Motor Drive	98005-007
F5 Primary Voltage MTR 3 KB DC Board	98004-023	MTR 4 Feedmax Motor Drive	98005-007
F6 Primary Voltage Blower Motor	98004-007		
F7 24 AC Fusing	98004-017		
MCR Master Control Relay (E-Stop)	98002-032		
CR1 MTR 3 Inhibit Circuit (conveyor)	98002-007/005		
CR2 Flowmaster Stop Interface (J6 Plug)	98002-022/012		
CR3 Conveyor Sort Control	98002-011/012		
CR4 MTR 1 Inhibit Circuit and Dryer Interlock (Base)	98002-007/005		

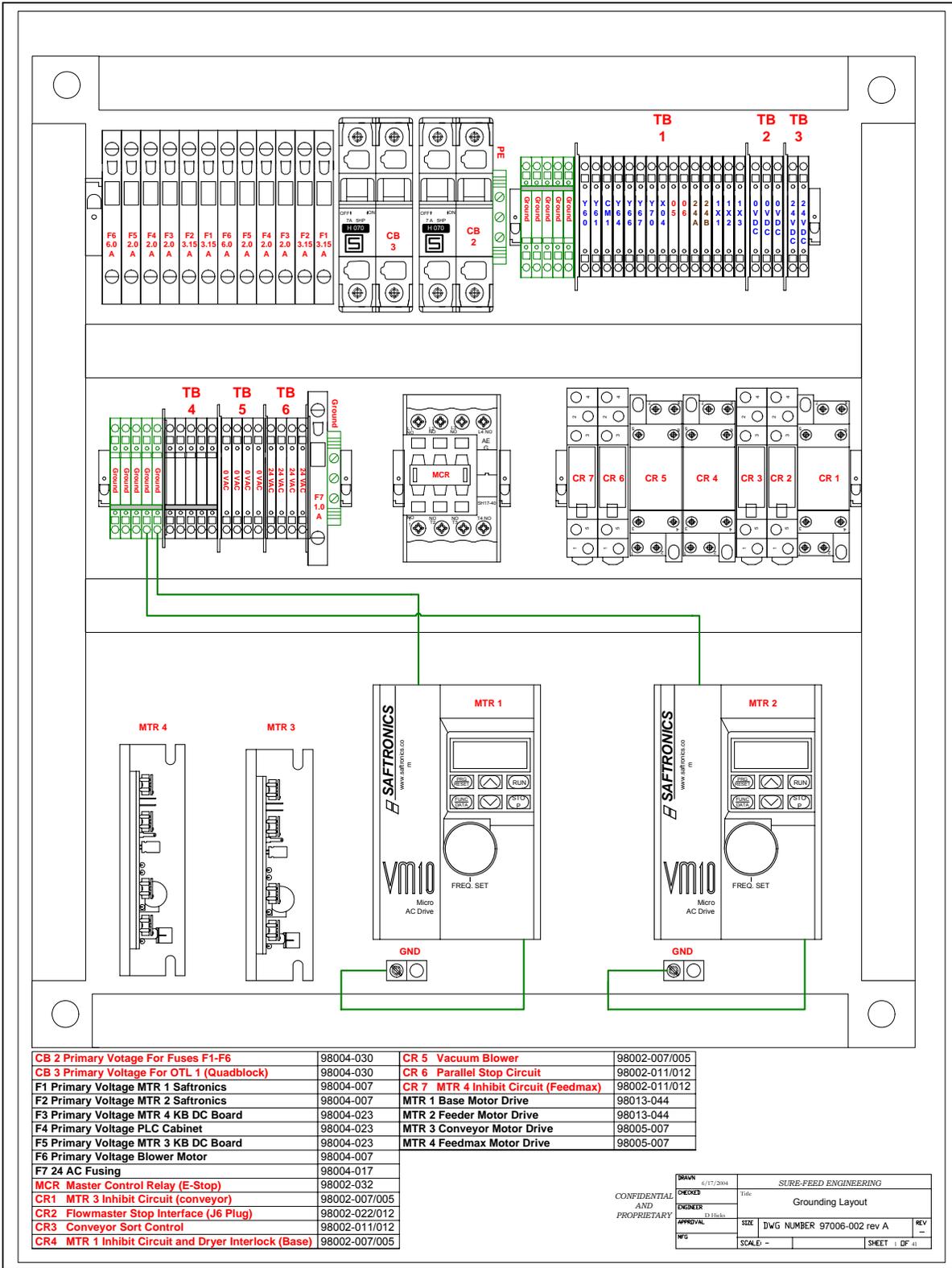
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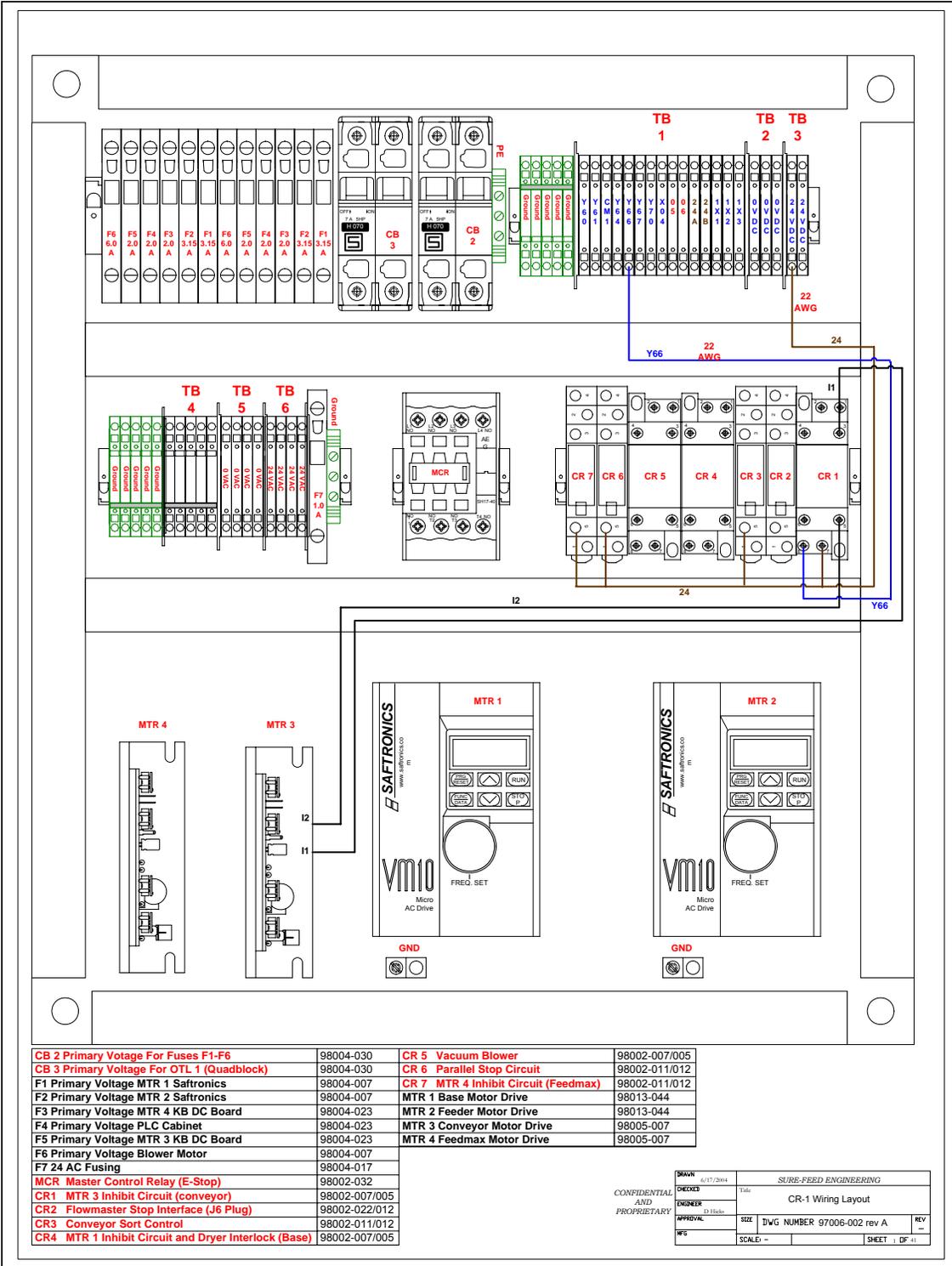


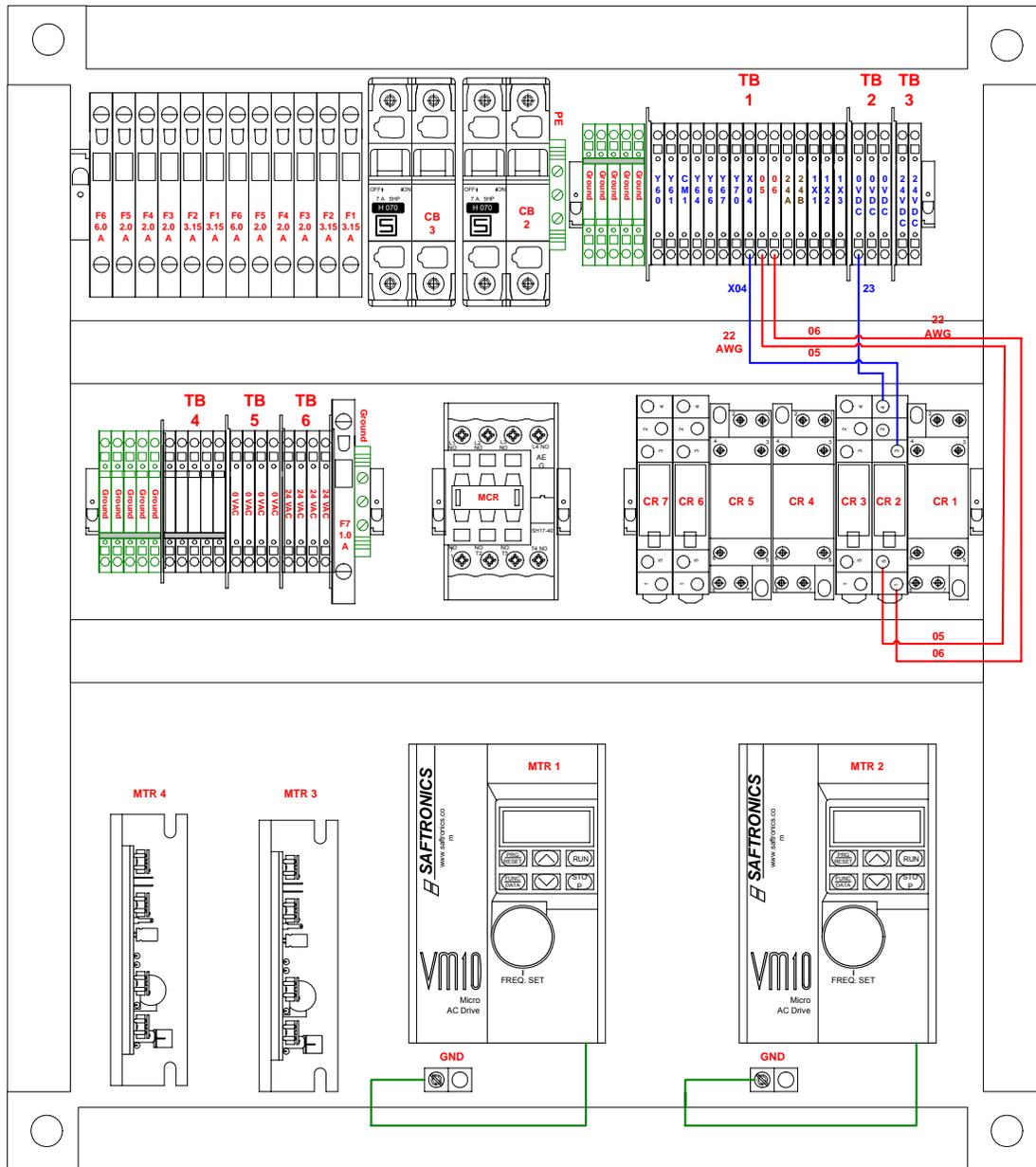


CB 2 Primary Voltage For Fuses F1-F6	98004-030	CR 5 Vacuum Blower	98002-007/005
CB 3 Primary Voltage For OTL 1 (Quadblock)	98004-030	CR 6 Parallel Stop Circuit	98002-011/012
F1 Primary Voltage MTR 1 Safronics	98004-007	CR 7 MTR 4 Inhibit Circuit (Feedmax)	98002-011/012
F2 Primary Voltage MTR 2 Safronics	98004-007	MTR 1 Base Motor Drive	98013-044
F3 Primary Voltage MTR 4 KB DC Board	98004-023	MTR 2 Feeder Motor Drive	98013-044
F4 Primary Voltage PLC Cabinet	98004-023	MTR 3 Conveyor Motor Drive	98005-007
F5 Primary Voltage MTR 3 KB DC Board	98004-023	MTR 4 Feedmax Motor Drive	98005-007
F6 Primary Voltage Blower Motor	98004-007		
F7 24 AC Fusing	98004-017		
MCR Master Control Relay (E-Stop)	98002-032		
CR1 MTR 3 Inhibit Circuit (conveyor)	98002-007/005		
CR2 Flowmaster Stop Interface (J6 Plug)	98002-022/012		
CR3 Conveyor Sort Control	98002-011/012		
CR4 MTR 1 Inhibit Circuit and Dryer Interlock (Base)	98002-007/005		

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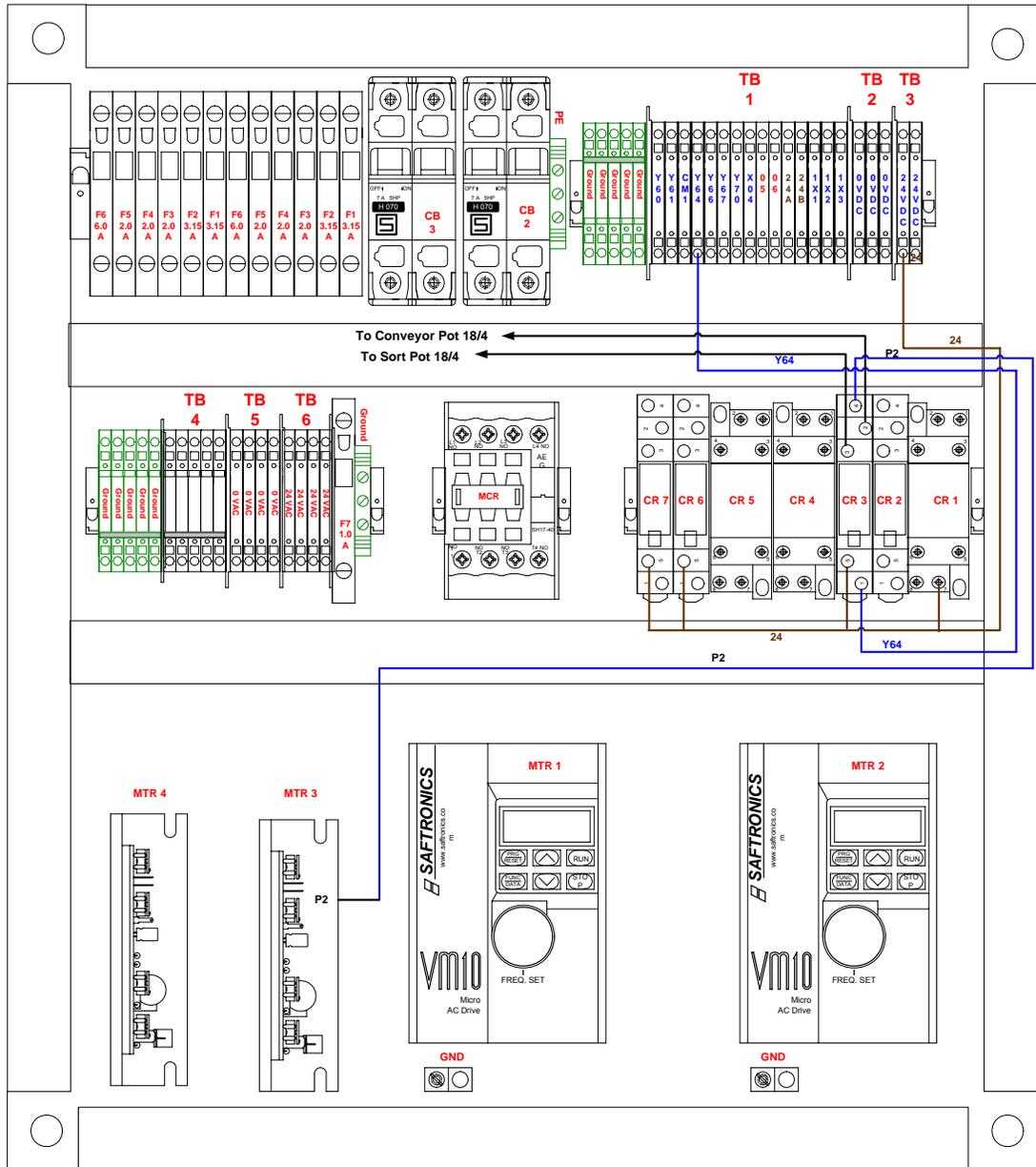






CB 2 Primary Voltage For Fuses F1-F6	98004-030	CR 5 Vacuum Blower	98002-007/005
CB 3 Primary Voltage For OTL 1 (Quadblock)	98004-030	CR 6 Parallel Stop Circuit	98002-011/012
F1 Primary Voltage MTR 1 Safronics	98004-007	CR 7 MTR 4 Inhibit Circuit (Feedmax)	98002-011/012
F2 Primary Voltage MTR 2 Safronics	98004-007	MTR 1 Base Motor Drive	98013-044
F3 Primary Voltage MTR 4 KB DC Board	98004-023	MTR 2 Feeder Motor Drive	98013-044
F4 Primary Voltage PLC Cabinet	98004-023	MTR 3 Conveyor Motor Drive	98005-007
F5 Primary Voltage MTR 3 KB DC Board	98004-023	MTR 4 Feedmax Motor Drive	98005-007
F6 Primary Voltage Blower Motor	98004-007		
F7 24 AC Fusing	98004-017		
MCR Master Control Relay (E-Stop)	98002-032		
CR1 MTR 3 Inhibit Circuit (conveyor)	98002-007/005		
CR2 Flowmaster Stop Interface (J6 Plug)	98002-022/012		
CR3 Conveyor Sort Control	98002-011/012		
CR4 MTR 1 Inhibit Circuit and Dryer Interlock (Base)	98002-007/005		

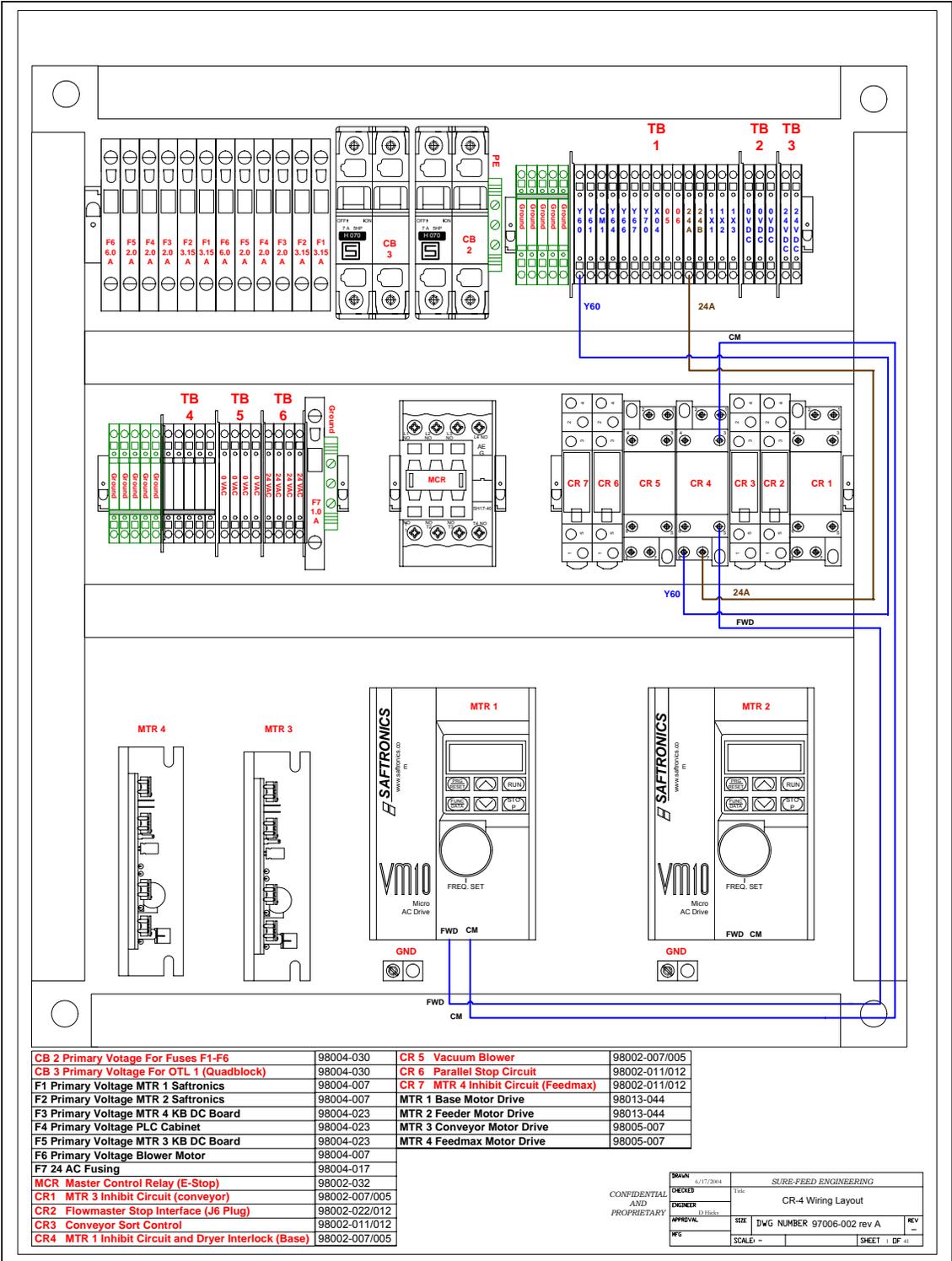
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	Engineer	Size	DWG NUMBER 97006-002 rev A
	Approval	Scale	REV
	WFG	Scale	SHEET 1 OF 43



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CB 3 Primary Voltage For OTL 1 (Quadblock)	98004-030	CR 6 Parallel Stop Circuit	98002-011/012
F1 Primary Voltage MTR 1 Safronics	98004-007	CR 7 MTR 4 Inhibit Circuit (Feedmax)	98002-011/012
F2 Primary Voltage MTR 2 Safronics	98004-007	MTR 1 Base Motor Drive	98013-044
F3 Primary Voltage MTR 4 KB DC Board	98004-023	MTR 2 Feeder Motor Drive	98013-044
F4 Primary Voltage PLC Cabinet	98004-023	MTR 3 Conveyor Motor Drive	98005-007
F5 Primary Voltage MTR 3 KB DC Board	98004-023	MTR 4 Feedmax Motor Drive	98005-007
F6 Primary Voltage Blower Motor	98004-007		
F7 24 AC Fusing	98004-017		
MCR Master Control Relay (E-Stop)	98002-032		
CR1 MTR 3 Inhibit Circuit (conveyor)	98002-007/005		
CR2 Flowmaster Stop Interface (J6 Plug)	98002-022/012		
CR3 Conveyor Sort Control	98002-011/012		
CR4 MTR 1 Inhibit Circuit and Dryer Interlock (Base)	98002-007/005		

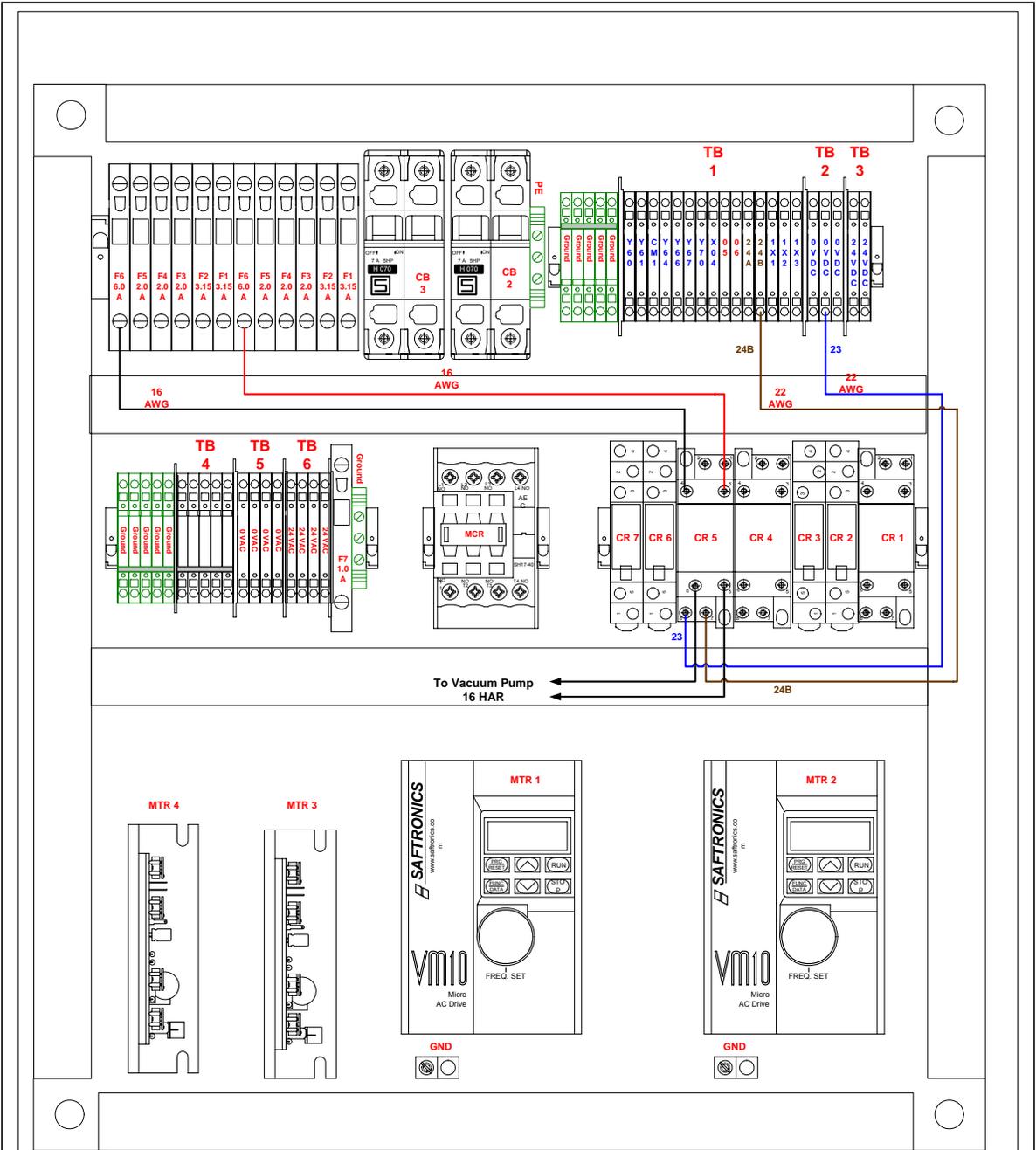
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ENGINEER	D.Hicks	SIZE	DWG NUMBER 97006-002 rev A
APPROVAL		SCALE	SHEET 1 OF 4



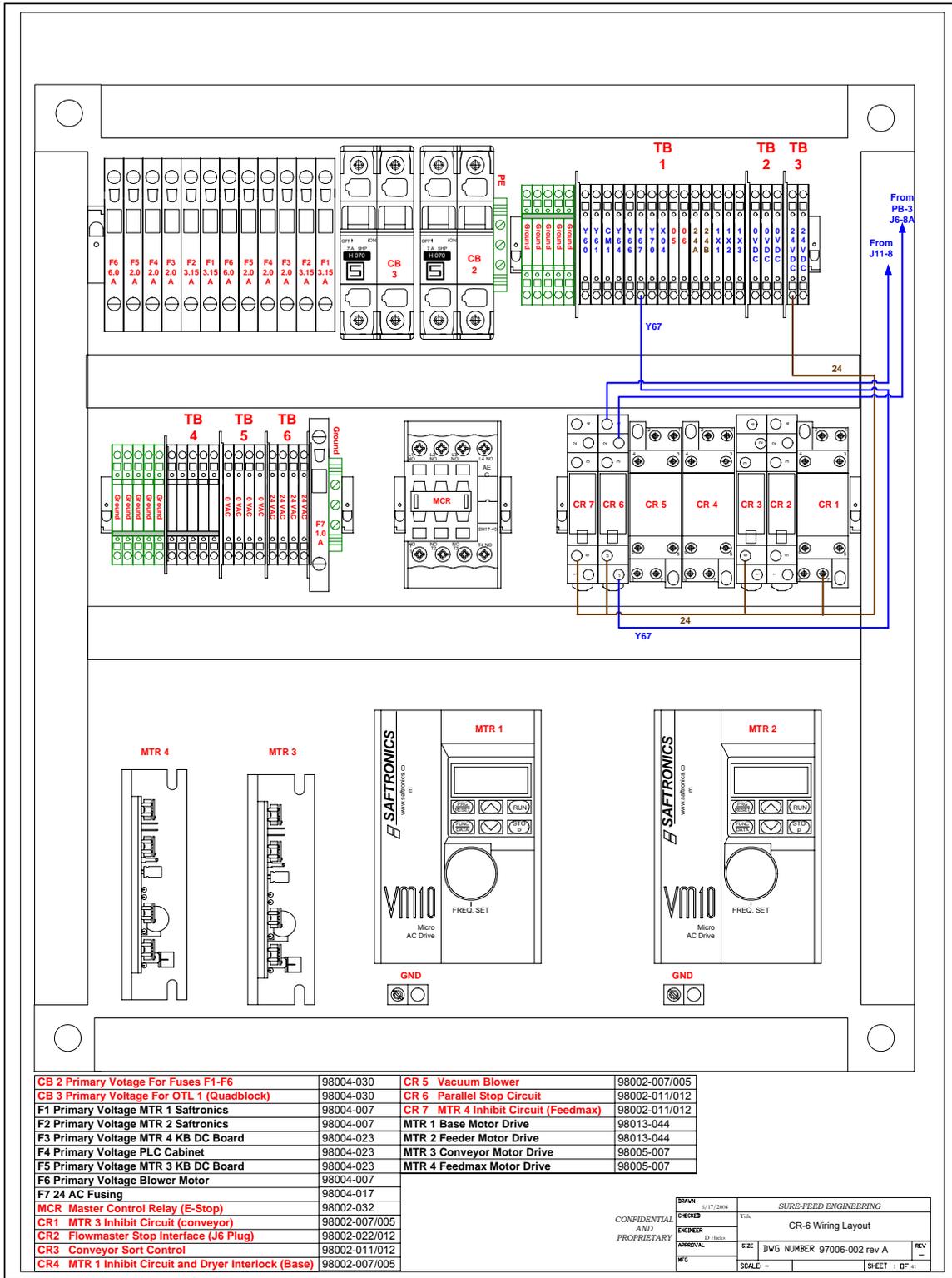
CB 2 Primary Voltage For Fuses F1-F6	98004-030	CR 5 Vacuum Blower	98002-007/005
CB 3 Primary Voltage For OTL 1 (Quadblock)	98004-030	CR 6 Parallel Stop Circuit	98002-011/012
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F3 Primary Voltage MTR 4 KB DC Board	98004-023	MTR 2 Feeder Motor Drive	98013-044
F4 Primary Voltage PLC Cabinet	98004-023	MTR 3 Conveyor Motor Drive	98005-007
F5 Primary Voltage MTR 3 KB DC Board	98004-023	MTR 4 Feedmax Motor Drive	98005-007
F6 Primary Voltage Blower Motor	98004-007		
F7 24 AC Fusing	98004-017		
MCR Master Control Relay (E-Stop)	98002-032		
CR1 MTR 3 Inhibit Circuit (conveyor)	98002-007/005		
CR2 Flowmaster Stop Interface (J6 Plug)	98002-022/012		
CR3 Conveyor Sort Control	98002-011/012		
CR4 MTR 1 Inhibit Circuit and Dryer Interlock (Base)	98002-007/005		

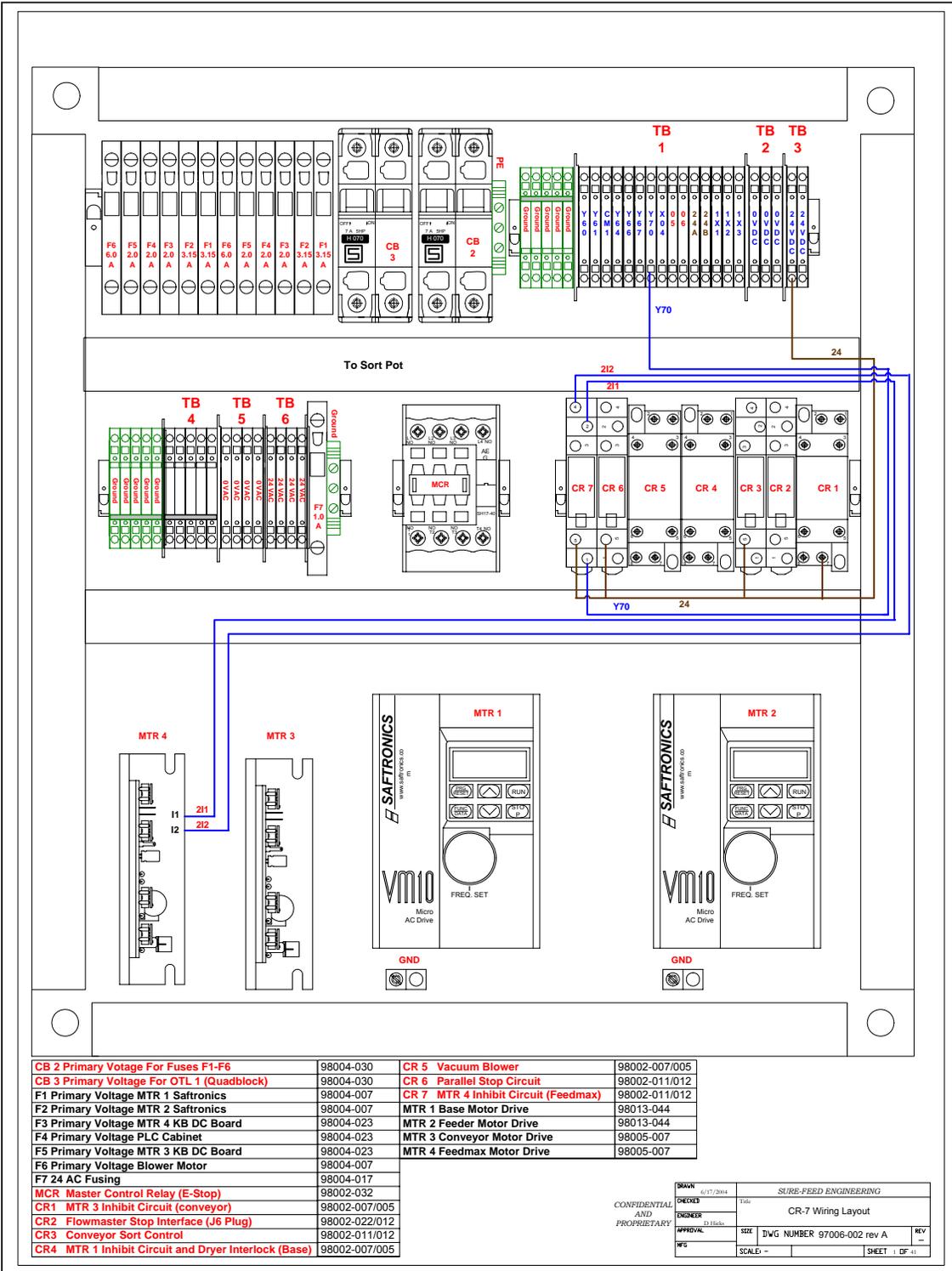
SAVN	6/17/2014	SURE-FEED ENGINEERING	
CHECKED		Title: CR-4 Wiring Layout	
ENGINEER		DATE	REV
APPROVAL		DWG NUMBER	97006-002 rev A
WFO		SCALE	SHEET 1 OF 41



CB 2 Primary Voltage For Fuses F1-F6	98004-030	CR 5 Vacuum Blower	98002-007/005
CB 3 Primary Voltage For OTL 1 (Quadblock)	98004-030	CR 6 Parallel Stop Circuit	98002-011/012
F1 Primary Voltage MTR 1 Saftronics	98004-007	CR 7 MTR 4 Inhibit Circuit (Feedmax)	98002-011/012
F2 Primary Voltage MTR 2 Saftronics	98004-007	MTR 1 Base Motor Drive	98013-044
F3 Primary Voltage MTR 4 KB DC Board	98004-023	MTR 2 Feeder Motor Drive	98013-044
F4 Primary Voltage PLC Cabinet	98004-023	MTR 3 Conveyor Motor Drive	98005-007
F5 Primary Voltage MTR 3 KB DC Board	98004-023	MTR 4 Feedmax Motor Drive	98005-007
F6 Primary Voltage Blower Motor	98004-007		
F7 24 AC Fusing	98004-017		
MCR Master Control Relay (E-Stop)	98002-032		
CR1 MTR 3 Inhibit Circuit (conveyor)	98002-007/005		
CR2 Flowmaster Stop Interface (J6 Plug)	98002-022/012		
CR3 Conveyor Sort Control	98002-011/012		
CR4 MTR 1 Inhibit Circuit and Dryer Interlock (Base)	98002-007/005		

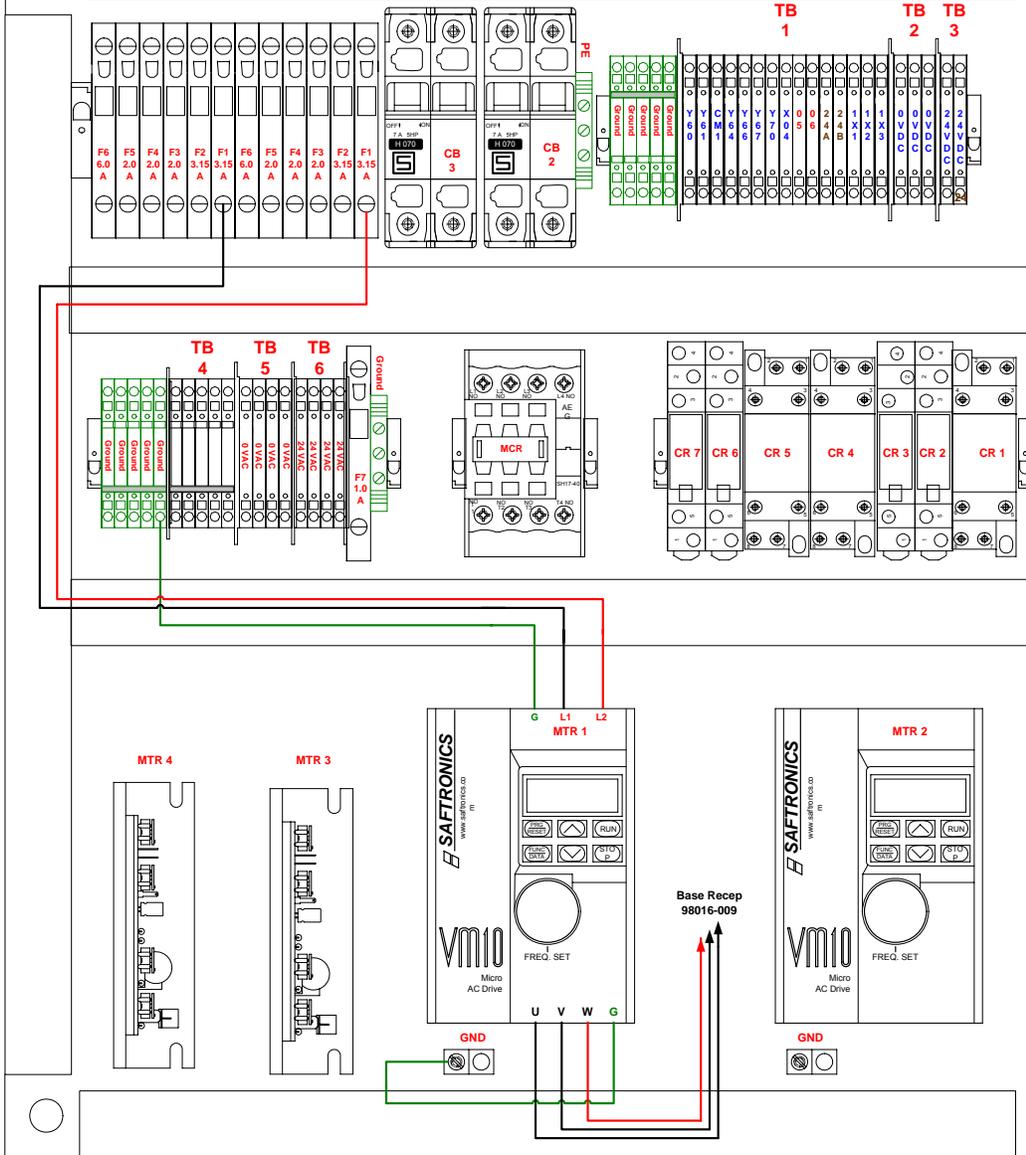
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	CHECKED		Title	CR-5 Wiring Layout
	ENGINEER	D.Hicks	SIZE	DWG NUMBER 97006-002 rev A
	APPROVAL		SCALE	SHEET 1 OF 11





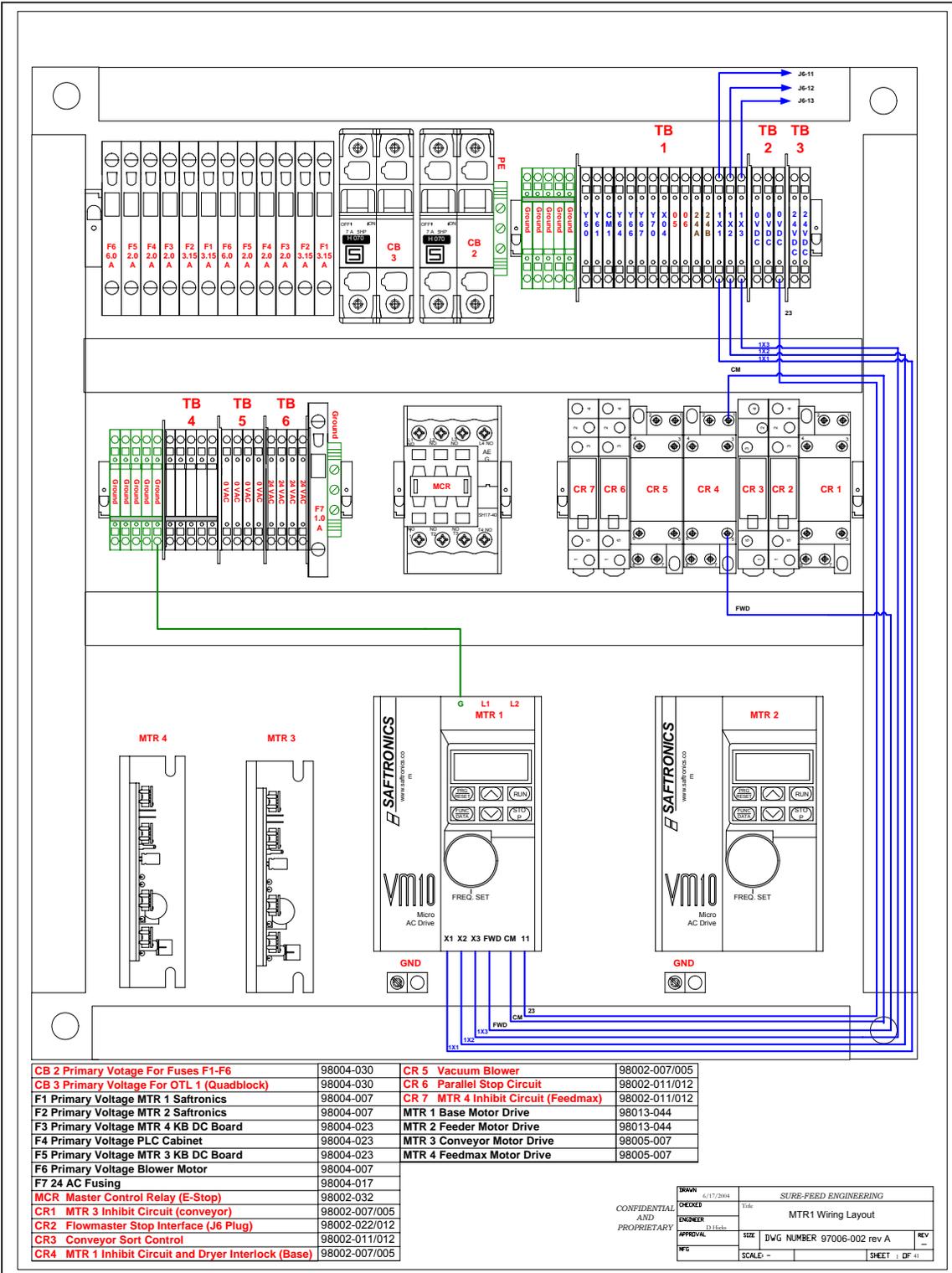
CB 2 Primary Votage For Fuses F1-F6	98004-030	CR 5 Vacuum Blower	98002-007/005
CB 3 Primary Voltage For OTL 1 (Quadblock)	98004-030	CR 6 Parallel Stop Circuit	98002-011/012
F1 Primary Voltage MTR 1 Safronics	98004-007	CR 7 MTR 4 Inhibit Circuit (Feedmax)	98002-011/012
F2 Primary Voltage MTR 2 Safronics	98004-007	MTR 1 Base Motor Drive	98013-044
F3 Primary Voltage MTR 4 KB DC Board	98004-023	MTR 2 Feeder Motor Drive	98013-044
F4 Primary Voltage PLC Cabinet	98004-023	MTR 3 Conveyor Motor Drive	98005-007
F5 Primary Voltage MTR 3 KB DC Board	98004-023	MTR 4 Feedmax Motor Drive	98005-007
F6 Primary Voltage Blower Motor	98004-007		
F7 24 AC Fusing	98004-017		
MCR Master Control Relay (E-Stop)	98002-032		
CR1 MTR 3 Inhibit Circuit (conveyor)	98002-007/005		
CR2 Flowmaster Stop Interface (J6 Plug)	98002-022/012		
CR3 Conveyor Sort Control	98002-011/012		
CR4 MTR 1 Inhibit Circuit and Dryer Interlock (Base)	98002-007/005		

CONFIDENTIAL AND PROPRIETARY	DATE	01/17/2014	TITLE	SURE-FEED ENGINEERING
	CHECKED			
	ENGINEER	D.Hicks		CR-7 Wiring Layout
	APPROVAL		SIZE	DWG NUMBER 97006-002 rev A
REV		SCALE		SHEET 1 OF 4



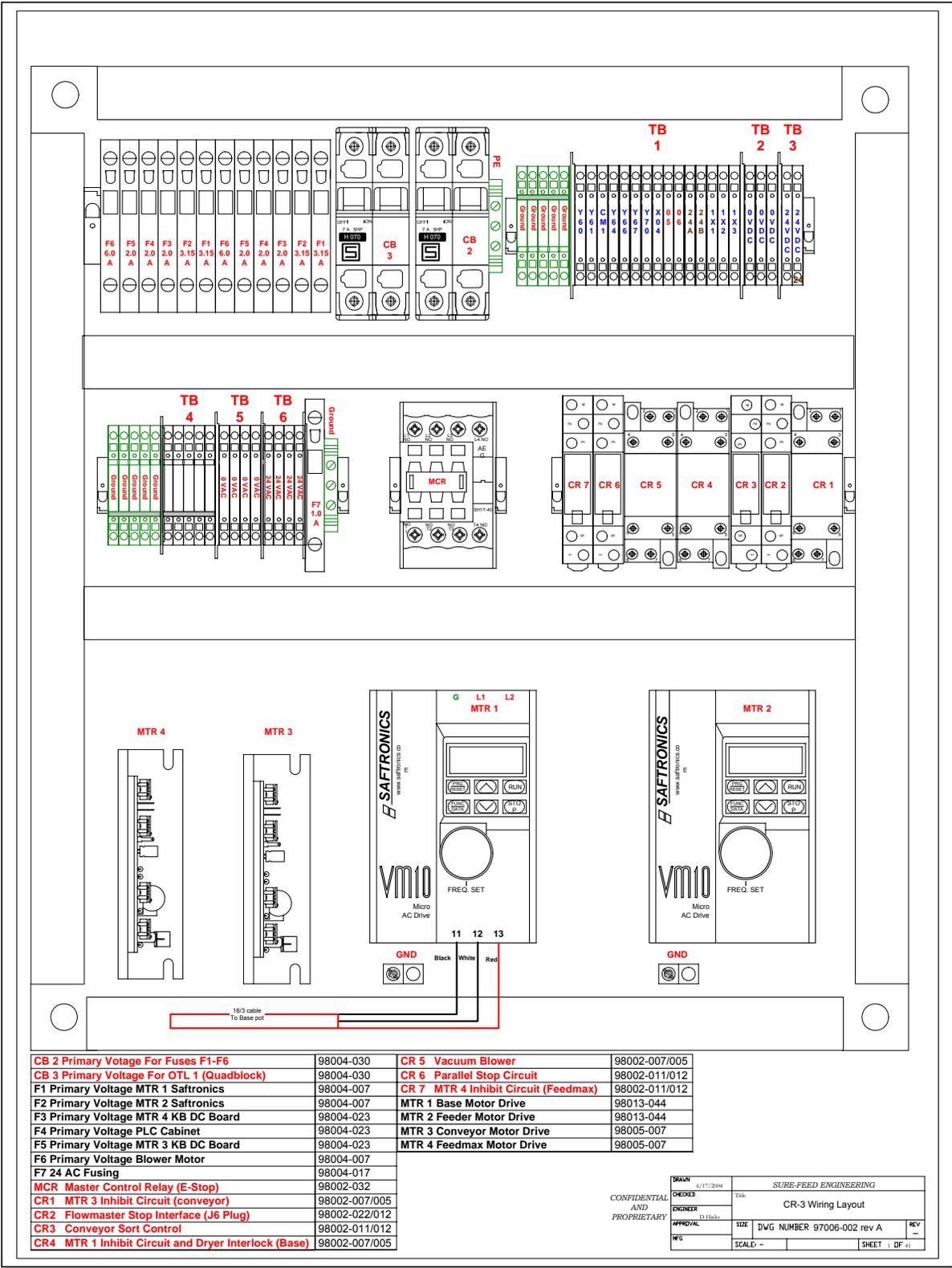
CB 2 Primary Voltage For Fuses F1-F6	98004-030	CR 5 Vacuum Blower	98002-007/005
CB 3 Primary Voltage For OTL 1 (Quadblock)	98004-030	CR 6 Parallel Stop Circuit	98002-011/012
F1 Primary Voltage MTR 1 Saftronics	98004-007	CR 7 MTR 4 Inhibit Circuit (Feedmax)	98002-011/012
F2 Primary Voltage MTR 2 Saftronics	98004-007	MTR 1 Base Motor Drive	98013-044
F3 Primary Voltage MTR 4 KB DC Board	98004-023	MTR 2 Feeder Motor Drive	98013-044
F4 Primary Voltage PLC Cabinet	98004-023	MTR 3 Conveyor Motor Drive	98005-007
F5 Primary Voltage MTR 3 KB DC Board	98004-023	MTR 4 Feedmax Motor Drive	98005-007
F6 Primary Voltage Blower Motor	98004-007		
F7 24 AC Fusing	98004-017		
MCR Master Control Relay (E-Stop)	98002-032		
CR1 MTR 3 Inhibit Circuit (conveyor)	98002-007/005		
CR2 Flowmaster Stop Interface (J6 Plug)	98002-022/012		
CR3 Conveyor Sort Control	98002-011/012		
CR4 MTR 1 Inhibit Circuit and Dryer Interlock (Base)	98002-007/005		

CONFIDENTIAL AND PROPRIETARY	DRAWN	6/17/2014	SURE-FEED ENGINEERING	
	CHECKED		Title: CR-3 Wiring Layout	
	ENGINEER		SIZE	DWG NUMBER 97006-002 rev A
	APPROVAL		SCALE	SHEET 1 OF 1



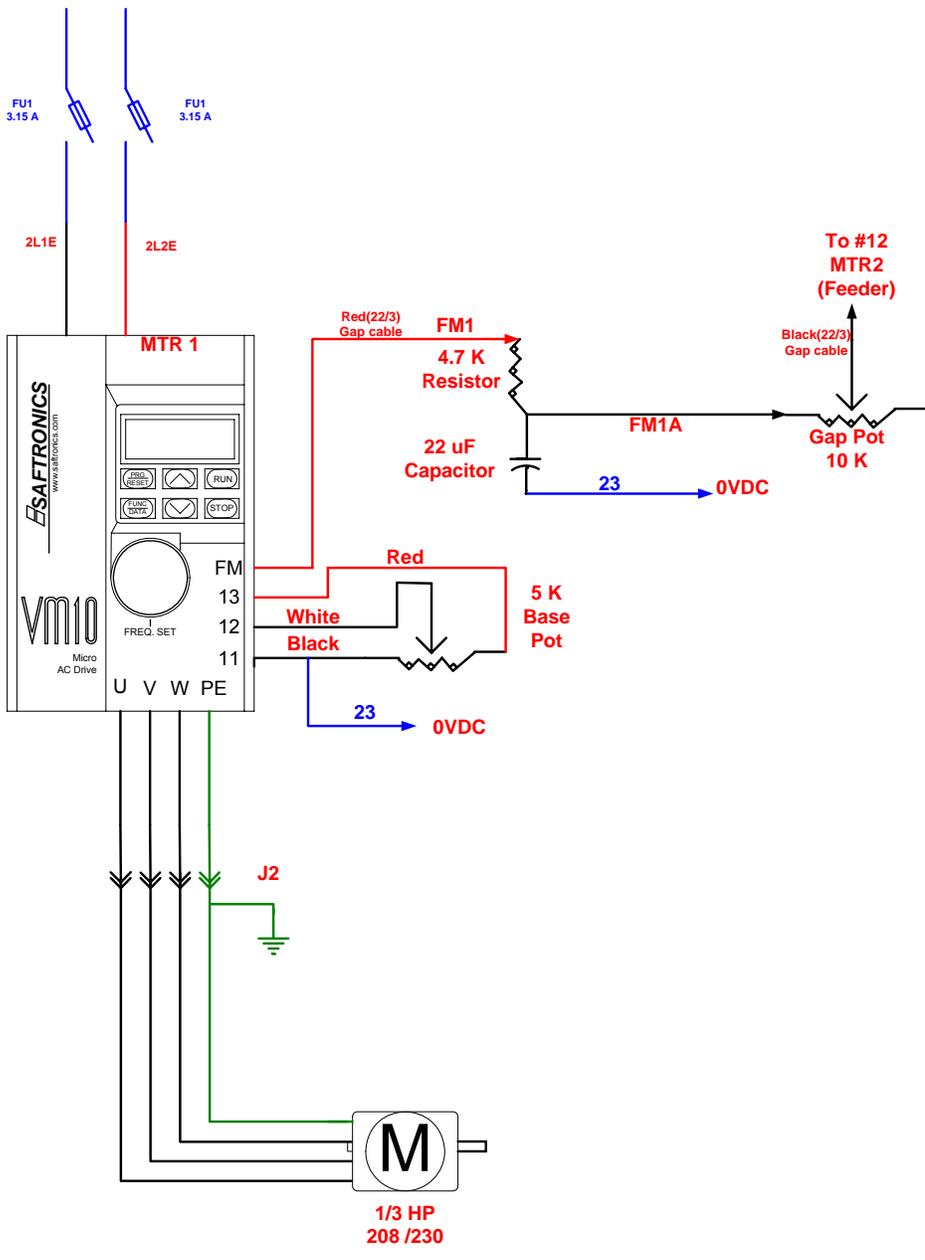
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CB 3 Primary Voltage For OTL 1 (Quadblock)	98004-030	CR 6 Parallel Stop Circuit	98002-011/012
F1 Primary Voltage MTR 1 Safronics	98004-007	CR 7 MTR 4 Inhibit Circuit (Feedmax)	98002-011/012
F2 Primary Voltage MTR 2 Safronics	98004-007	MTR 1 Base Motor Drive	98013-044
F3 Primary Voltage MTR 4 KB DC Board	98004-023	MTR 2 Feeder Motor Drive	98013-044
F4 Primary Voltage PLC Cabinet	98004-023	MTR 3 Conveyor Motor Drive	98005-007
F5 Primary Voltage MTR 3 KB DC Board	98004-023	MTR 4 Feedmax Motor Drive	98005-007
F6 Primary Voltage Blower Motor	98004-007		
F7 24 AC Fusing	98004-017		
MCR Master Control Relay (E-Stop)	98002-032		
CR1 MTR 3 Inhibit Circuit (conveyor)	98002-007/005		
CR2 Flowmaster Stop Interface (J6 Plug)	98002-022/012		
CR3 Conveyor Sort Control	98002-011/012		
CR4 MTR 1 Inhibit Circuit and Dryer Interlock (Base)	98002-007/005		

DRAWN: 8/17/2004 CONFIDENTIAL AND PROPRIETARY	Title: SURE-FEED ENGINEERING MTR1 Wiring Layout
CHECKED: _____ ENGINEER: _____ APPROVAL: _____	DWG NUMBER: 97006-002 rev A SCALE: _____ SHEET: 1 OF 11



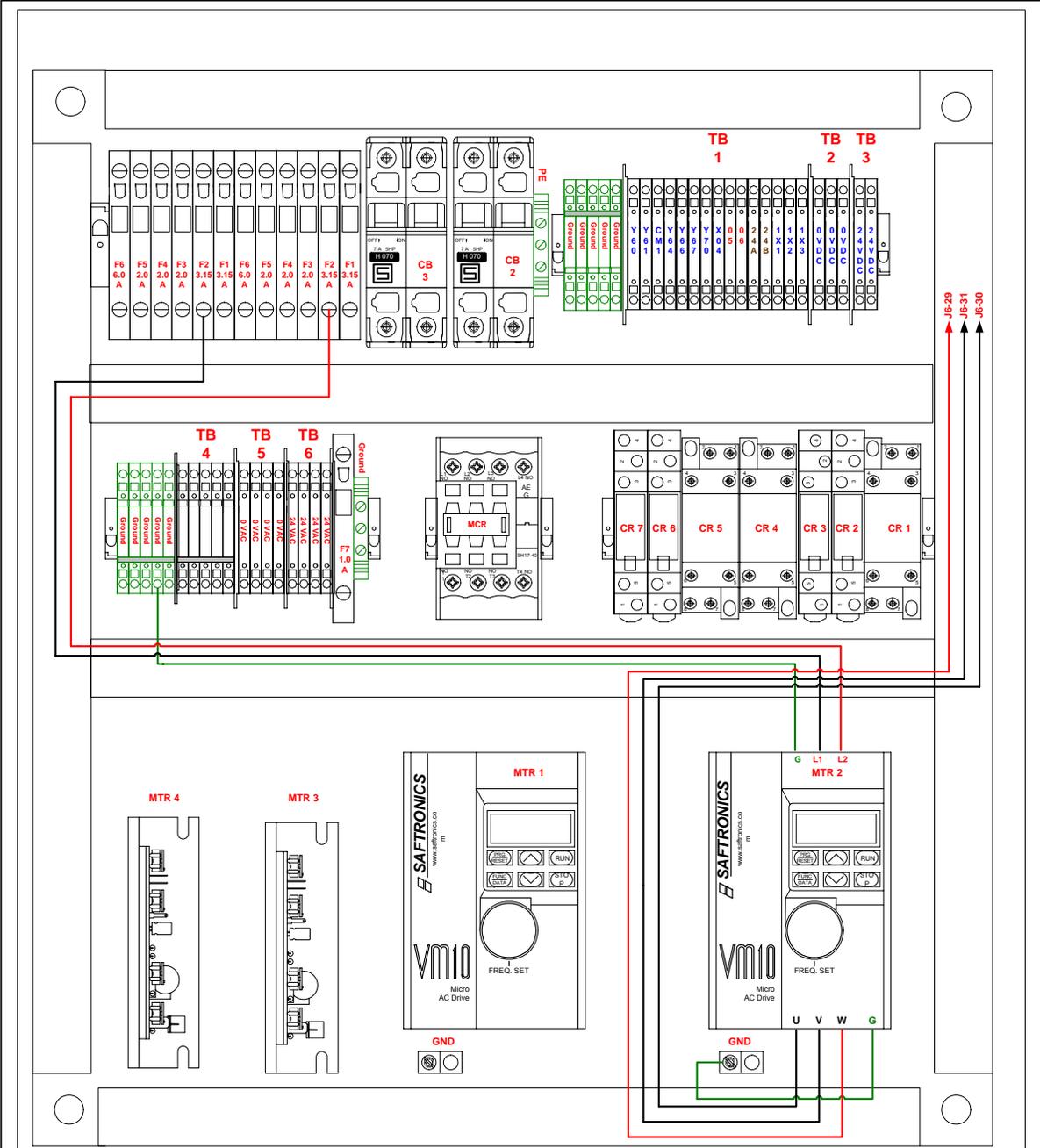
CB 2 Primary Voltage For Fuses F1-F6	98004-030	CR 5 Vacuum Blower	98002-007/005
CB 3 Primary Voltage For OTL 1 (Quadblock)	98004-030	CR 6 Parallel Stop Circuit	98002-011/012
F1 Primary Voltage MTR 1 Safronics	98004-007	CR 7 MTR 4 Inhibit Circuit (Feedmax)	98002-011/012
F2 Primary Voltage MTR 2 Safronics	98004-007	MTR 1 Base Motor Drive	98013-044
F3 Primary Voltage MTR 4 KB DC Board	98004-023	MTR 2 Feeder Motor Drive	98013-044
F4 Primary Voltage PLC Cabinet	98004-023	MTR 3 Conveyor Motor Drive	98005-007
F5 Primary Voltage MTR 3 KB DC Board	98004-023	MTR 4 Feedmax Motor Drive	98005-007
F6 Primary Voltage Blower Motor	98004-007		
F7 24 AC Fusing	98004-017		
MCR Master Control Relay (E-Stop)	98002-032		
CR1 MTR 3 Inhibit Circuit (conveyor)	98002-007/005		
CR2 Flowmaster Stop Interface (J6 Plug)	98002-022/012		
CR3 Conveyor Sort Control	98002-011/012		
CR4 MTR 1 Inhibit Circuit and Dryer Interlock (Base)	98002-007/005		

SAFRONICS	6/17/2004	SURE-FEED ENGINEERING
CHECKED		Title
ENGINEER		CR-3 Wiring Layout
APPROVAL	13 Hacks	SIZE DWG NUMBER 97006-002 rev A
W/G	SCALE: -	SHEET 1 OF 41



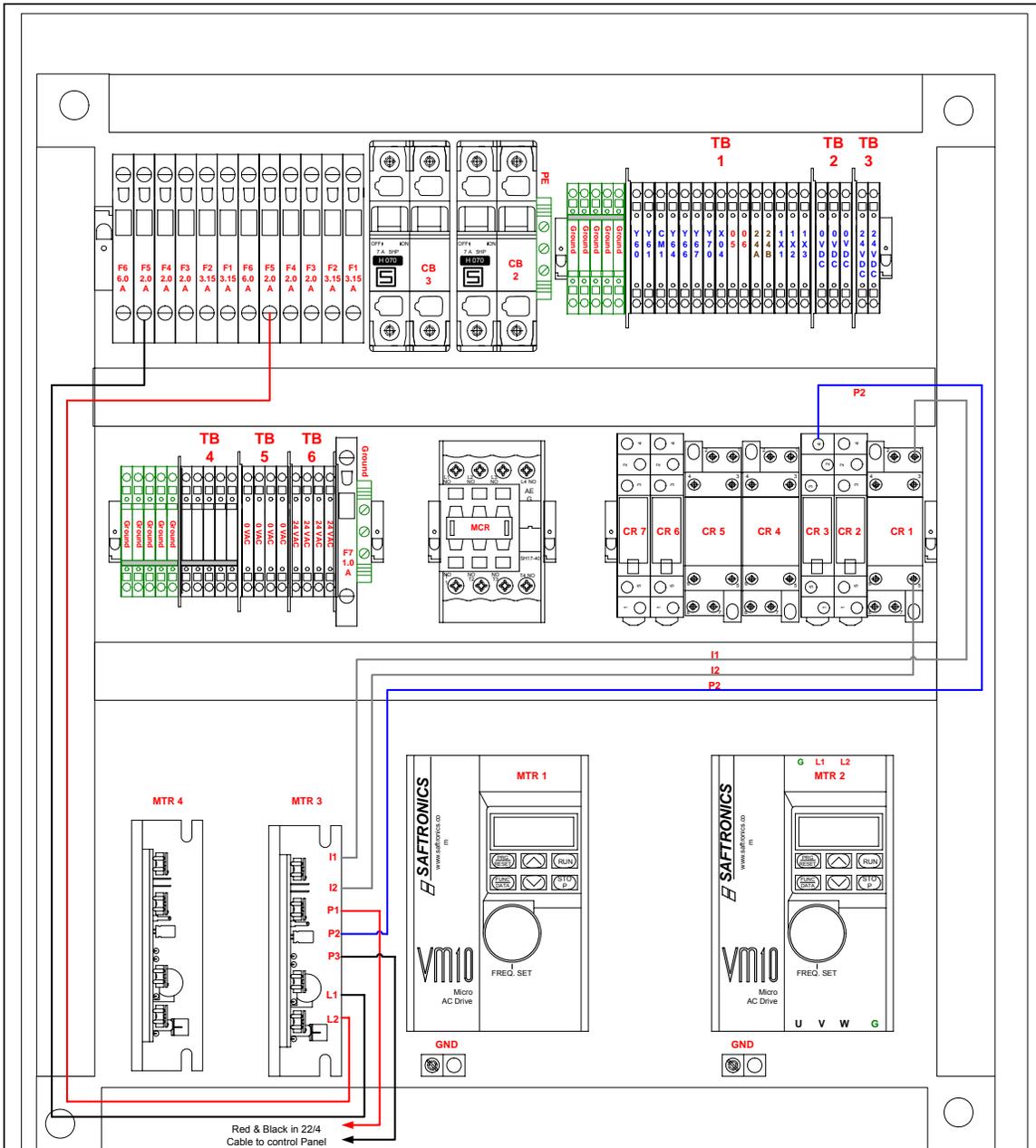
FU1 Primary Voltage For MTR1 (3.15 Amp)
MTR 1 Base Motor Drive (Safronics)
Base Pot 5 K (Located in control Panel)
Base Motor 1/3 Hp 208/230 V-
Gap Pot 10 K (located in Control Panel)

DRAWN	6/16/2004	SURE-FEED ENGINEERING
CHECKED		Title
ENGINEER	D.Hicks	Base Pot & Gap pot Wiring
APPROVAL		SIZE DwG NUMBER 97006-002 rev A
MFG		SCALE: - SHEET 1 DF 41



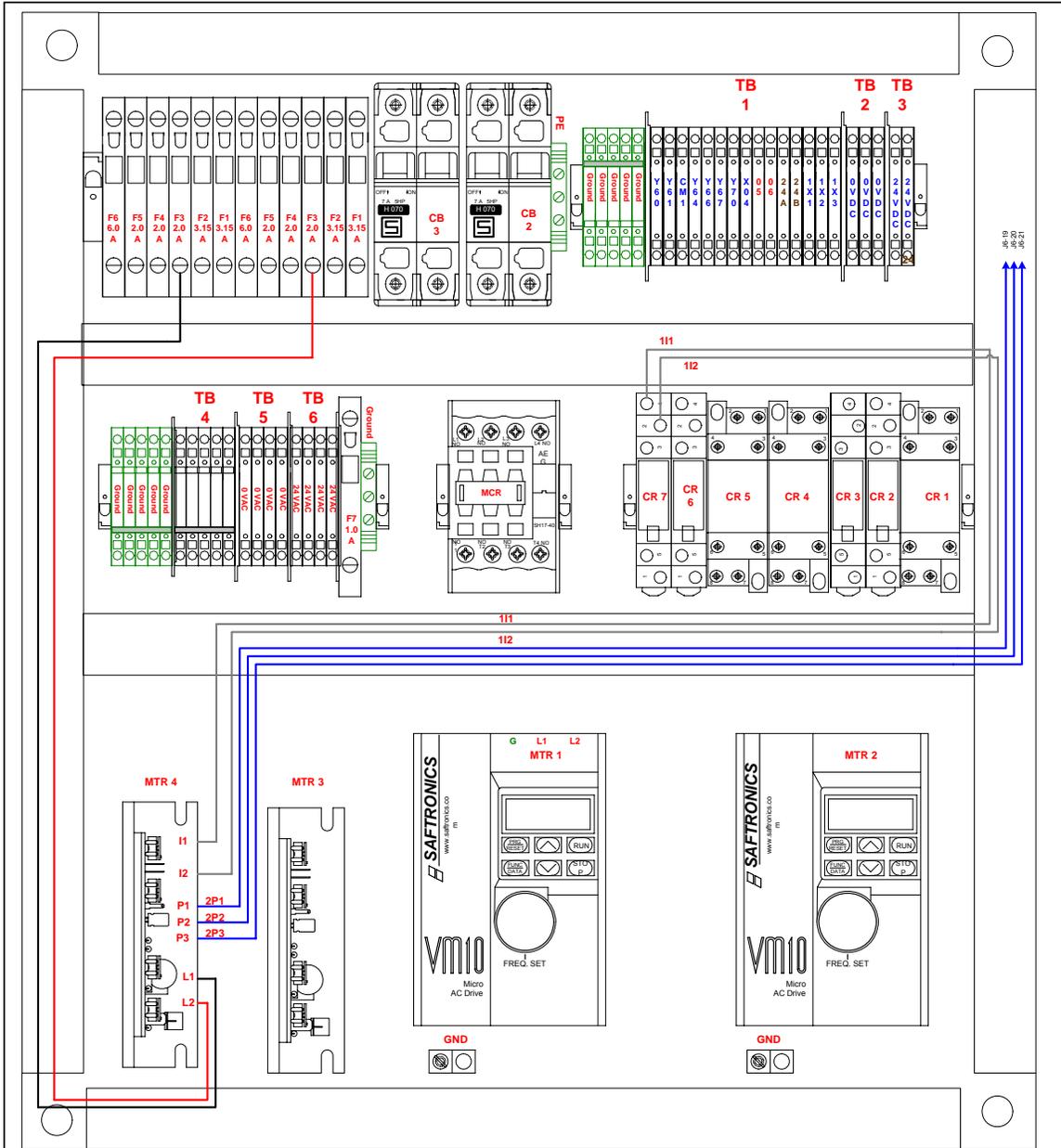
CB 2 Primary Voltage For Fuses F1-F6	98004-030	CR 5 Vacuum Blower	98002-007/005
CB 3 Primary Voltage For OTL 1 (Quadblock)	98004-030	CR 6 Parallel Stop Circuit	98002-011/012
F1 Primary Voltage MTR 1 Saftronics	98004-007	CR 7 MTR 4 Inhibit Circuit (Feedmax)	98002-011/012
F2 Primary Voltage MTR 2 Saftronics	98004-007	MTR 1 Base Motor Drive	98013-044
F3 Primary Voltage MTR 4 KB DC Board	98004-023	MTR 2 Feeder Motor Drive	98013-044
F4 Primary Voltage PLC Cabinet	98004-023	MTR 3 Conveyor Motor Drive	98005-007
F5 Primary Voltage MTR 3 KB DC Board	98004-023	MTR 4 Feedmax Motor Drive	98005-007
F6 Primary Voltage Blower Motor	98004-007		
F7 24 AC Fusing	98004-017		
MCR Master Control Relay (E-Stop)	98002-032		
CR1 MTR 3 Inhibit Circuit (conveyor)	98002-007/005		
CR2 Flowmaster Stop Interface (J6 Plug)	98002-022/012		
CR3 Conveyor Sort Control	98002-011/012		
CR4 MTR 1 Inhibit Circuit and Dryer Interlock (Base)	98002-007/005		

CONFIDENTIAL AND PROPRIETARY	DATE	6/17/2008	DESIGNER	SURE-FEED ENGINEERING
	CHECKED		TITLE	MTR2 Feeder Wiring Layout
	ENGINEER	TJHicks	SIZE	DWG NUMBER 97006-002 rev A
	APPROVAL		SCALE	SHEET 1 OF 11



CB 2 Primary Voltage For Fuses F1-F6	98004-030	CR 5 Vacuum Blower	98002-007/005
CB 3 Primary Voltage For OTL 1 (Quadblock)	98004-030	CR 6 Parallel Stop Circuit	98002-011/012
F1 Primary Voltage MTR 1 Safronics	98004-007	CR 7 MTR 4 Inhibit Circuit (Feedmax)	98002-011/012
F2 Primary Voltage MTR 2 Safronics	98004-007	MTR 1 Base Motor Drive	98013-044
F3 Primary Voltage MTR 4 KB DC Board	98004-023	MTR 2 Feeder Motor Drive	98013-044
F4 Primary Voltage PLC Cabinet	98004-023	MTR 3 Conveyor Motor Drive	98005-007
F5 Primary Voltage MTR 3 KB DC Board	98004-023	MTR 4 Feedmax Motor Drive	98005-007
F6 Primary Voltage Blower Motor	98004-007		
F7 24 AC Fusing	98004-017		
MCR Master Control Relay (E-Stop)	98002-032		
CR1 MTR 3 Inhibit Circuit (conveyor)	98002-007/005		
CR2 Flowmaster Stop Interface (J6 Plug)	98002-022/012		
CR3 Conveyor Sort Control	98002-011/012		
CR4 MTR 1 Inhibit Circuit and Dryer Interlock (Base)	98002-007/005		

CONFIDENTIAL AND PROPRIETARY	DRAWN	01/17/2014	SURE-FEED ENGINEERING	
	CHECKED		Title	MTR3 Wiring Layout
	ENGINEER		SIZE	DWG NUMBER 97006-002 rev A
	APPROVAL		SCALE	SHEET 1 OF 41
	WFS			



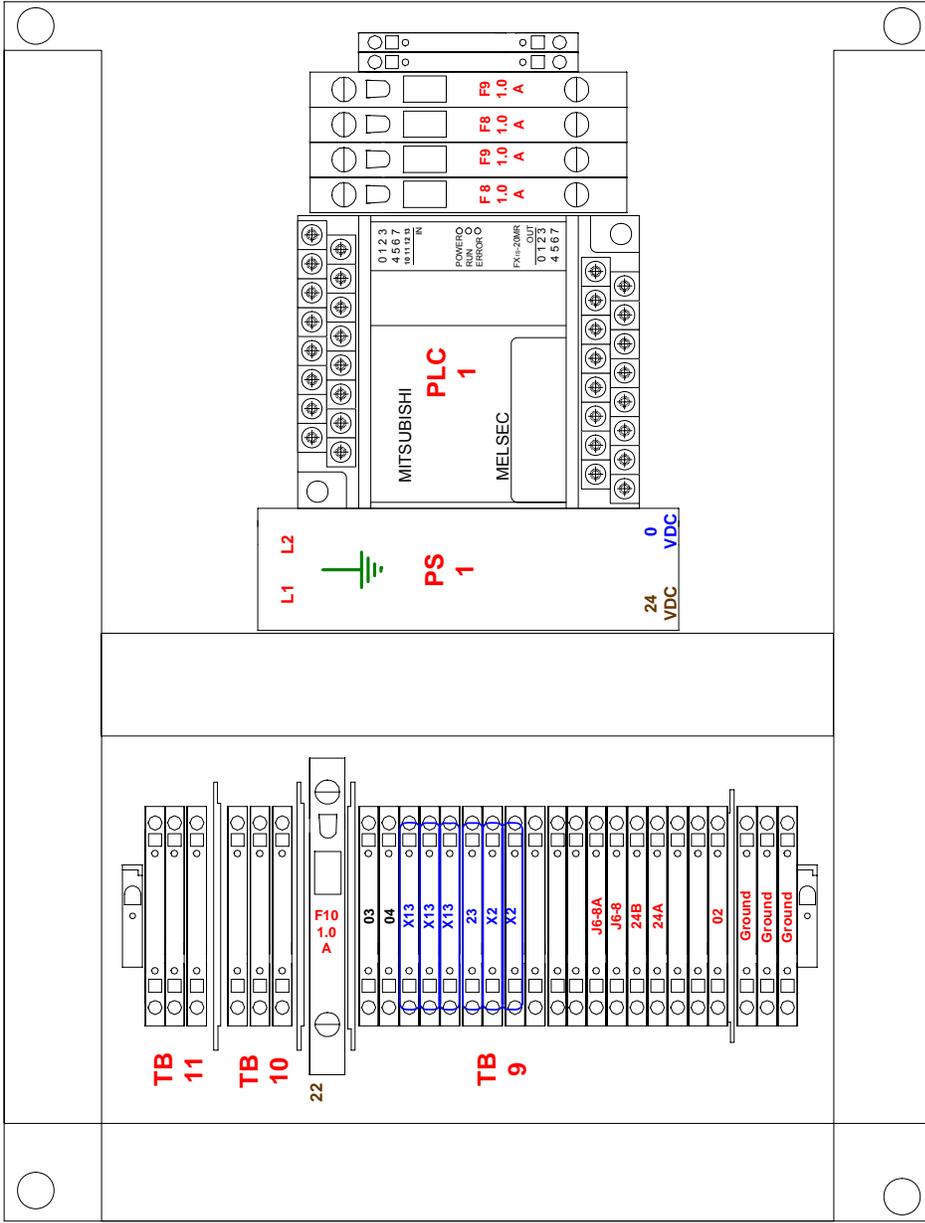
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CB 3 Primary Voltage For OTL 1 (Quadblock)	98004-030	CR 6 Parallel Stop Circuit	98002-011/012
F1 Primary Voltage MTR 1 Safronics	98004-007	CR 7 MTR 4 Inhibit Circuit (Feedmax)	98002-011/012
F2 Primary Voltage MTR 2 Safronics	98004-007	MTR 1 Base Motor Drive	98013-044
F3 Primary Voltage MTR 4 KB DC Board	98004-023	MTR 2 Feeder Motor Drive	98013-044
F4 Primary Voltage PLC Cabinet	98004-023	MTR 3 Conveyor Motor Drive	98005-007
F5 Primary Voltage MTR 3 KB DC Board	98004-023	MTR 4 Feedmax Motor Drive	98005-007
F6 Primary Voltage Blower Motor	98004-007		
F7 24 AC Fusing	98004-017		
MCR Master Control Relay (E-Stop)	98002-032		
CR1 MTR 3 Inhibit Circuit (conveyor)	98002-007/005		
CR2 Flowmaster Stop Interface (J6 Plug)	98002-022/012		
CR3 Conveyor Sort Control	98002-011/012		
CR4 MTR 1 Inhibit Circuit and Dryer Interlock (Base)	98002-007/005		

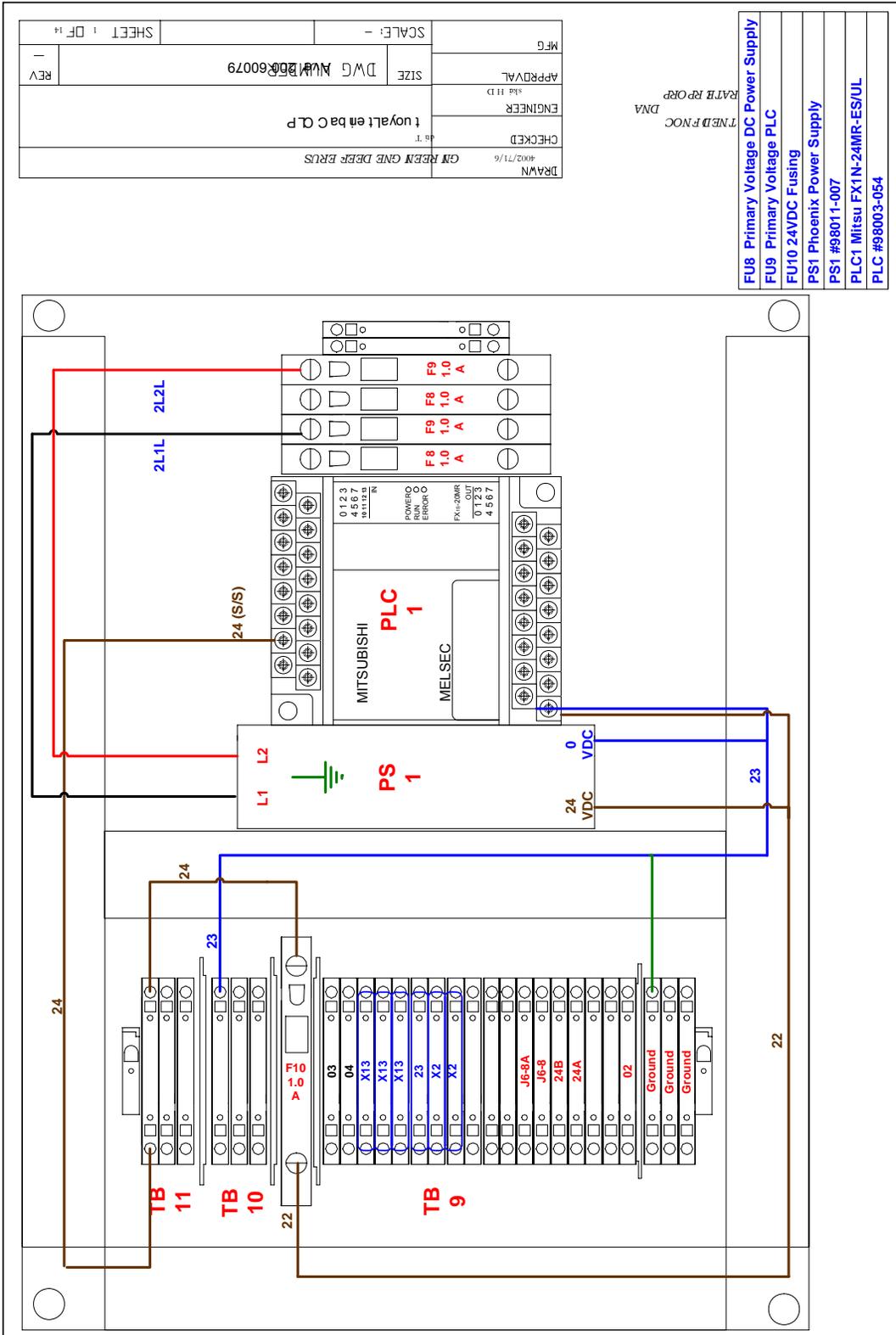
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ENGINEER	3/11/14	SCALE	
APPROVAL		SIZE	DWG NUMBER 97006-002 rev A
REV		SCALE	SHEET 1 OF 41

DRWN	4002/71/6	GM REEN GNE DEER BRUS	4.5 T.	CHECKED	ENGINEER	APPROVAL	SCALE: -	SHEET 1 OF 14
REV		DWG NUMBER 60079	SIZE					

TNED FNOC
RATB RPOP
DNA

FU8 Primary Voltage DC Power Supply
FU9 Primary Voltage PLC
FU10 24VDC Fusing
PS1 Phoenix Power Supply
PS1 #98011-007
PLC1 Mitsu FX1N-24MR-ES/UL
PLC #98003-054

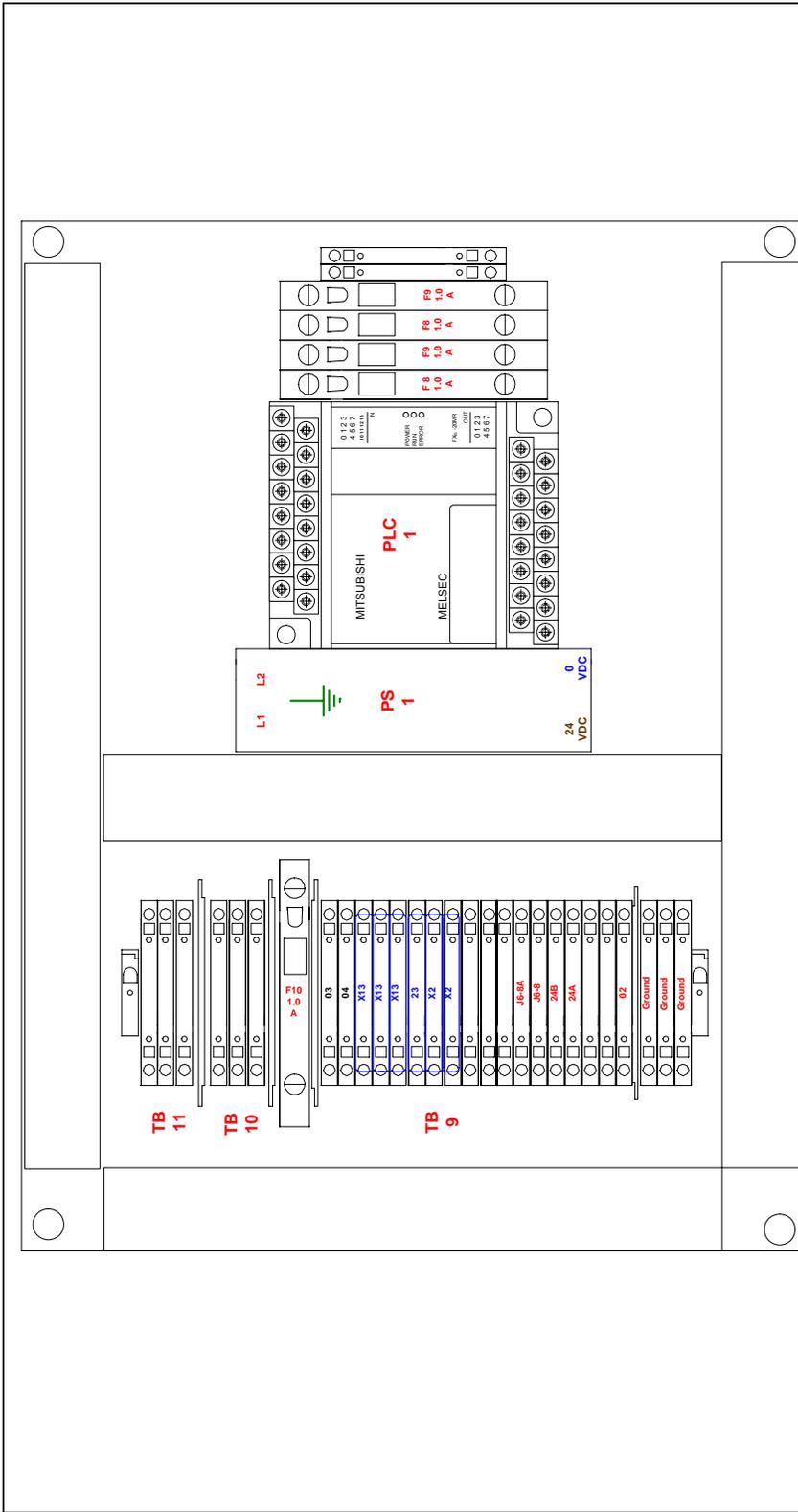




DRAWN	4002/71/6	GM REEN GNE DEER BRUS	4.5 T.	CHECKED	4.5 T.	ENGINEER	4.5 T.	APPROVAL	4.5 T.	SIZE	DWG	REV	SHEET 1 OF 14

TNEB FNOC
RATB RPOP
DNA

FU8	Primary Voltage DC Power Supply
FU9	Primary Voltage PLC
FU10	24VDC Fusing
PS1	Phoenix Power Supply
PS1	#98011-007
PLC1	Mitsubishi FX1N-24MR-ES/UL
PLC	#98003-054



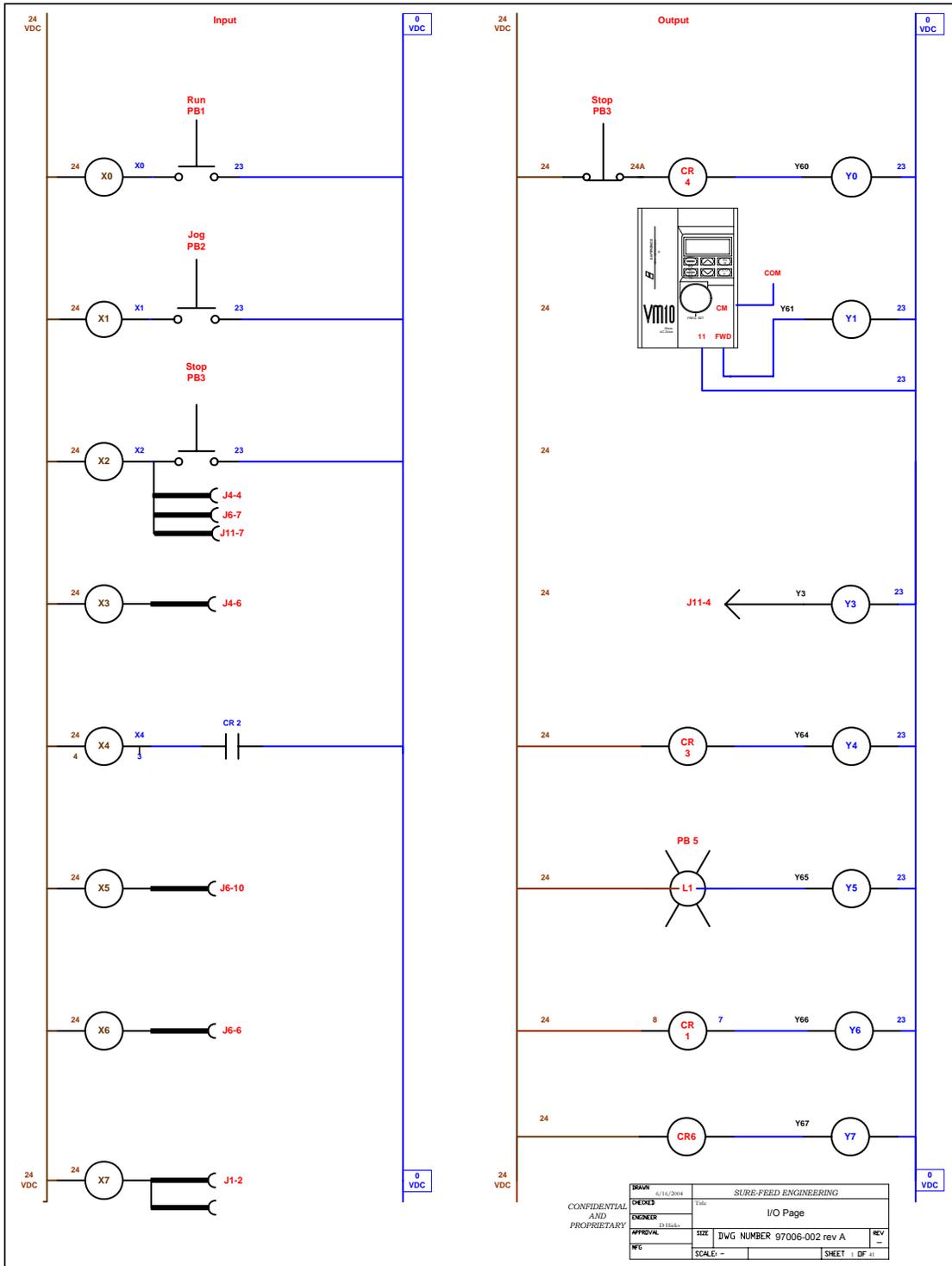
X1	RUN
X2	Jog
X3	Stop & J11-7 & J6-7 & J4-4 (Computer Cable Green)
X4	Sort Signal Input J4-6 (Computer Cable orange)
X5	CR 2 #3
X6	J11-10 & J6-10 (Conveyor & Feeder Plug)
X7	Base Photocell Signal & J4-8 (Computer Cable Violet)
X8	Feeder Photocell J6-24
X9	Feeder Stop Input J4-5 (Computer Cable Brown)
X10	Feeder On/Off
X11	J6-14 & J11-14
X12	Feedmax Sensor
X13	Spare
X14	Spare
X15	Spare
X16	Spare

Y0	CR 4 #8
Y1	MTR2 FWD (Saffronic Feeder Drive)
Y2	Feeder Separator Motor
Y3	J6-4 & J11-4
Y4	CR 3 #1
Y5	Feeder On/Off Light
Y6	CR 1 #8
Y7	CR 6 #1
Y8	CR 7 #1
Y9	Spare
Y10	Spare
Y11	Spare
Y12	Spare
Y13	Spare
Y14	Spare
Y15	Spare
Y16	Spare

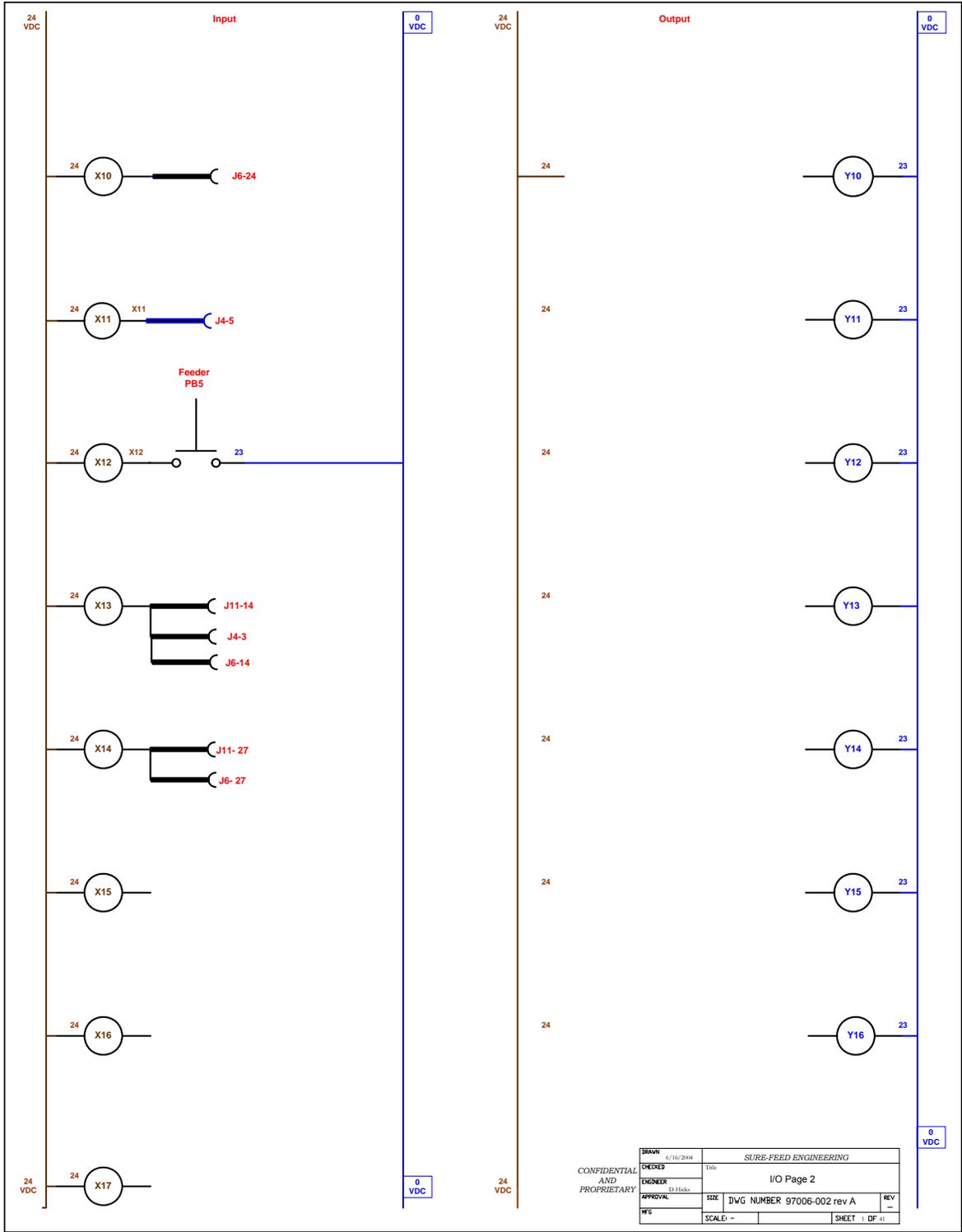
Com 0	24 VDC
Com 1	MTR2 CM (Saffronic Feeder Drive)
Com 2	24 VAC
Com 3	24 VDC
Com 4	24 VDC

FUB	Primary Voltage DC Power Supply 2 AMP
FUB	Primary Voltage PLC 2 AMP
FUI0	24VDC Fusing 1 AMP
PS1	Phoenix Power Supply
PS1	#8011-007
PLC1	Mitsu FX1N-24MR-ESJUL
PLC1	#98003-084

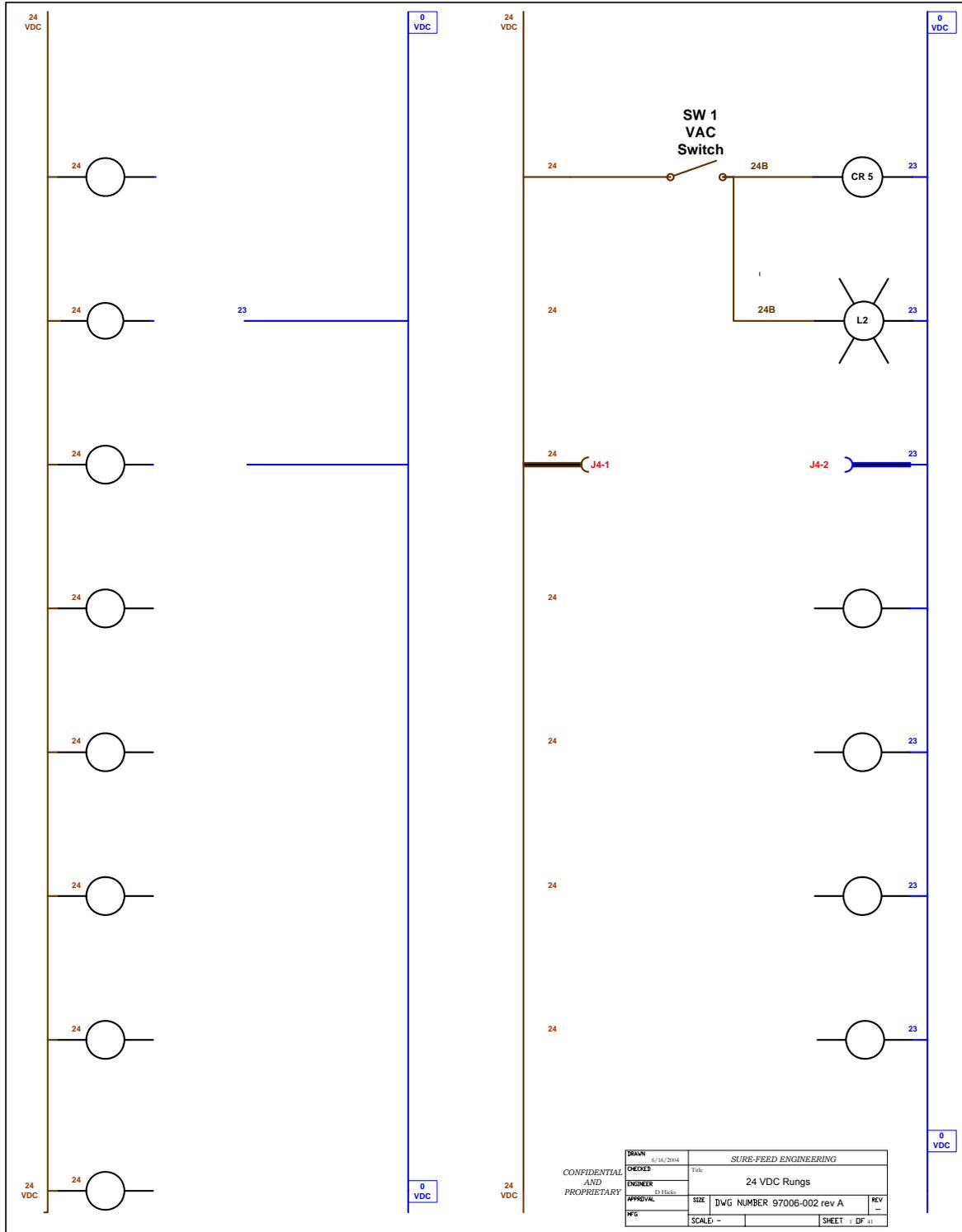
DESIGN	6/17/2004
CHECKED	TAK
ENGINEER	PLC Cabinet Layout
APPROVAL	
SIZE	DWG NUMBER 97006-002 rev A
SCALE	1:1
SHEET	1 OF 4



DATE	4/14/2004	TITLE	SURE-FEED ENGINEERING
DESIGNER			I/O Page
ENGINEER	DJH/ksk	SIZE	DWG NUMBER 97006-002 rev A
APPROVAL		SCALE	SHEET 1 OF 11
REV			



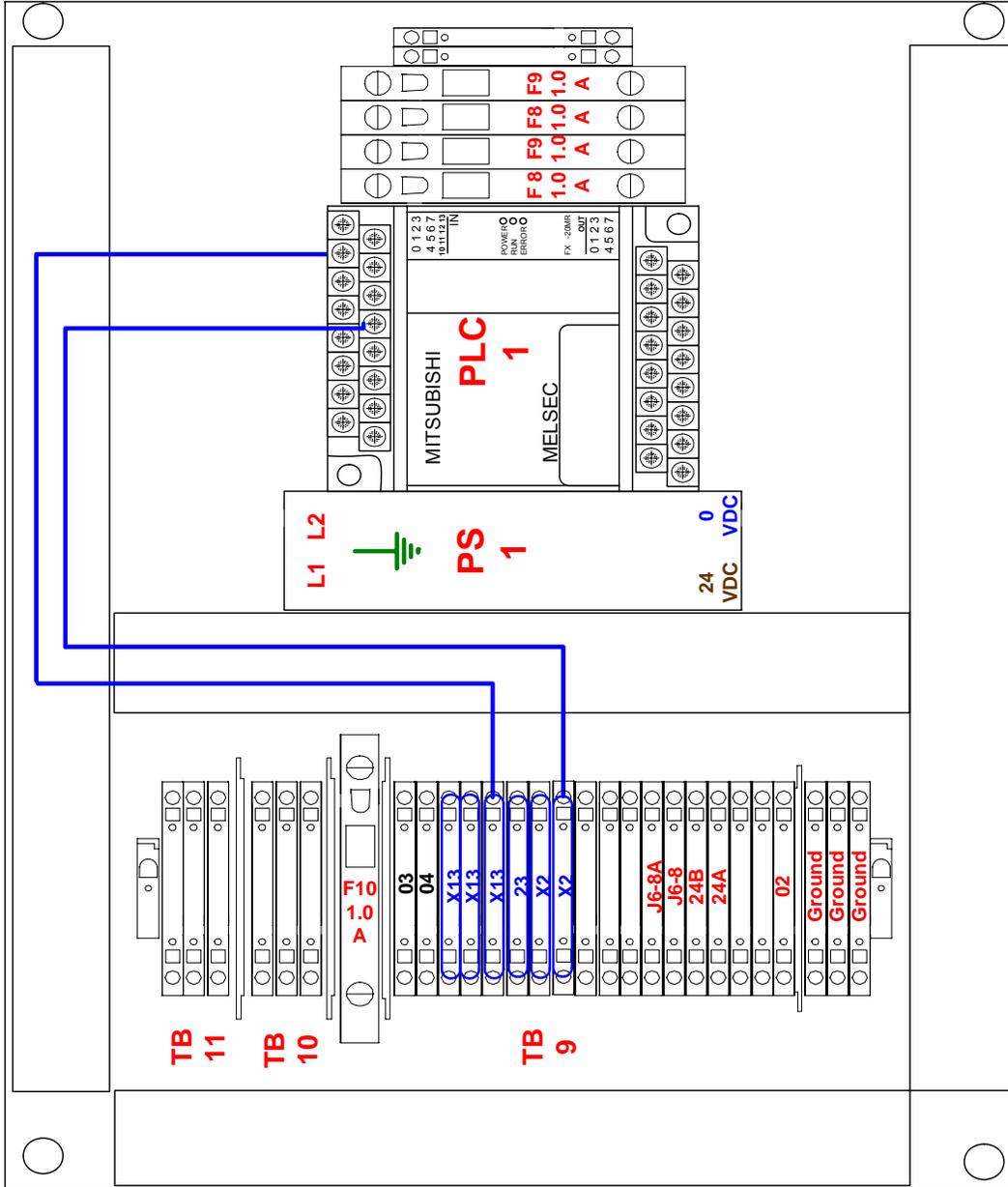
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APPROVAL		SIZE	REV	
WFG		SCALE	SHEET	1 OF 11

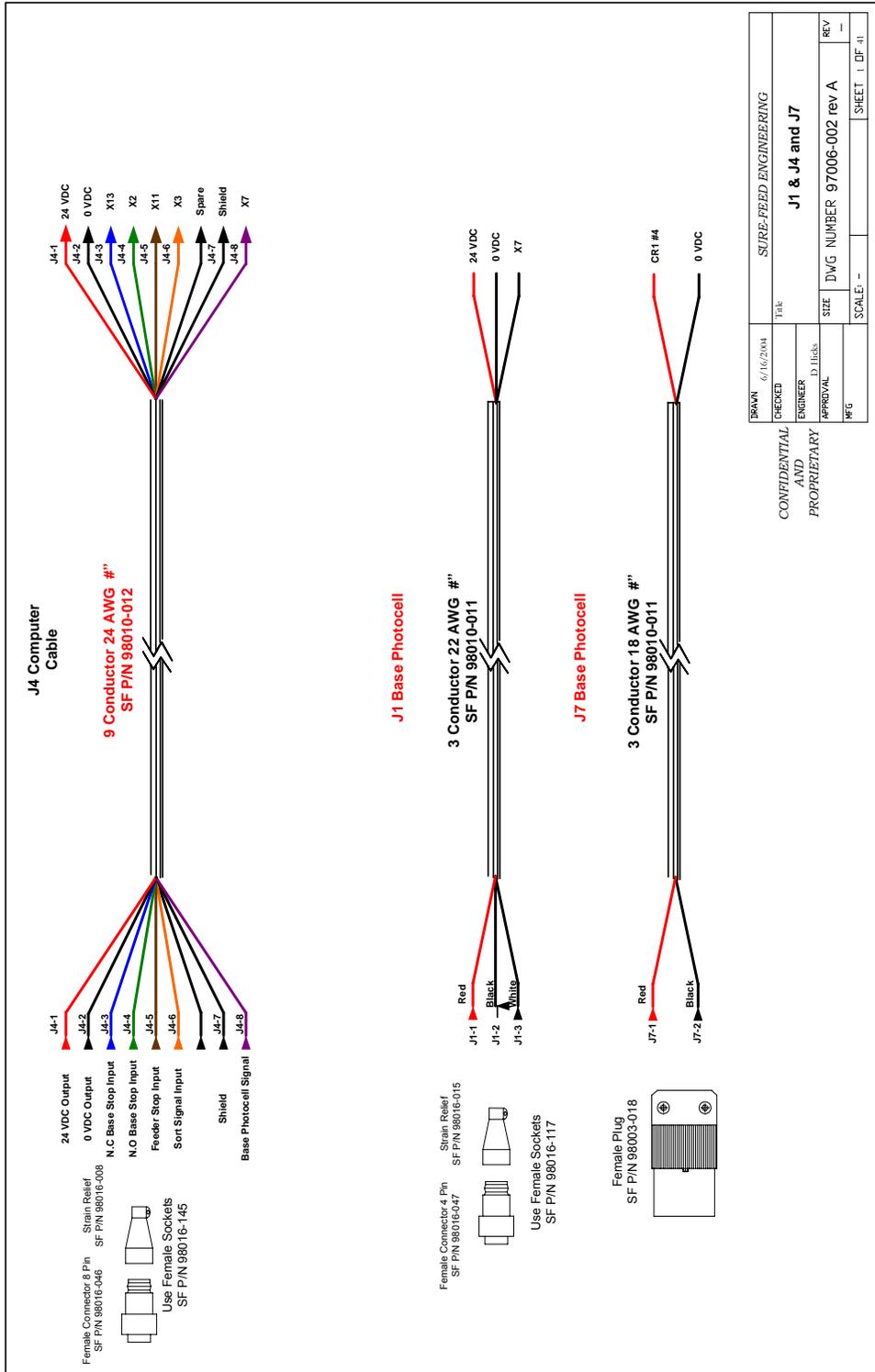


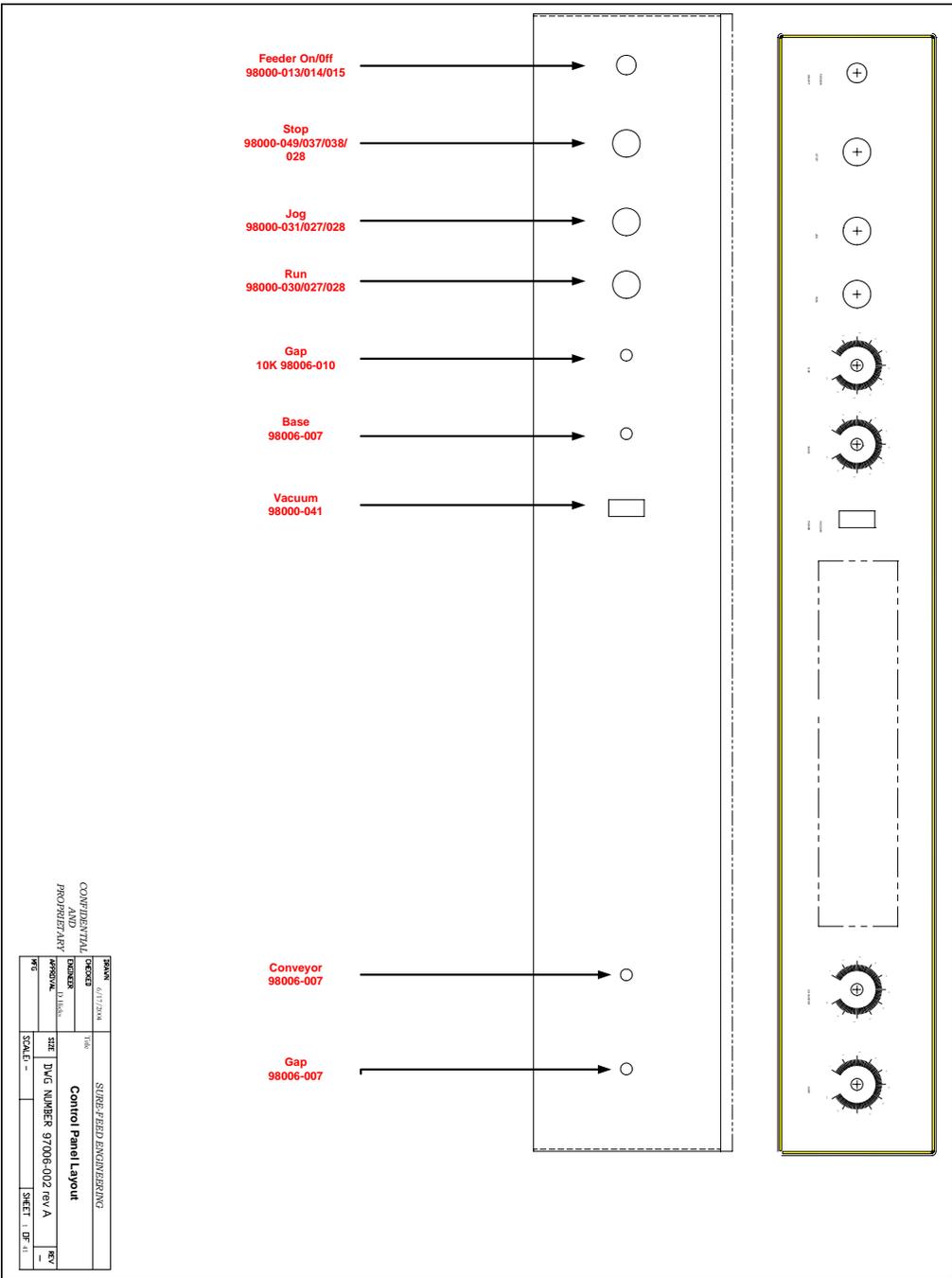
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AND
PROPRIETARY

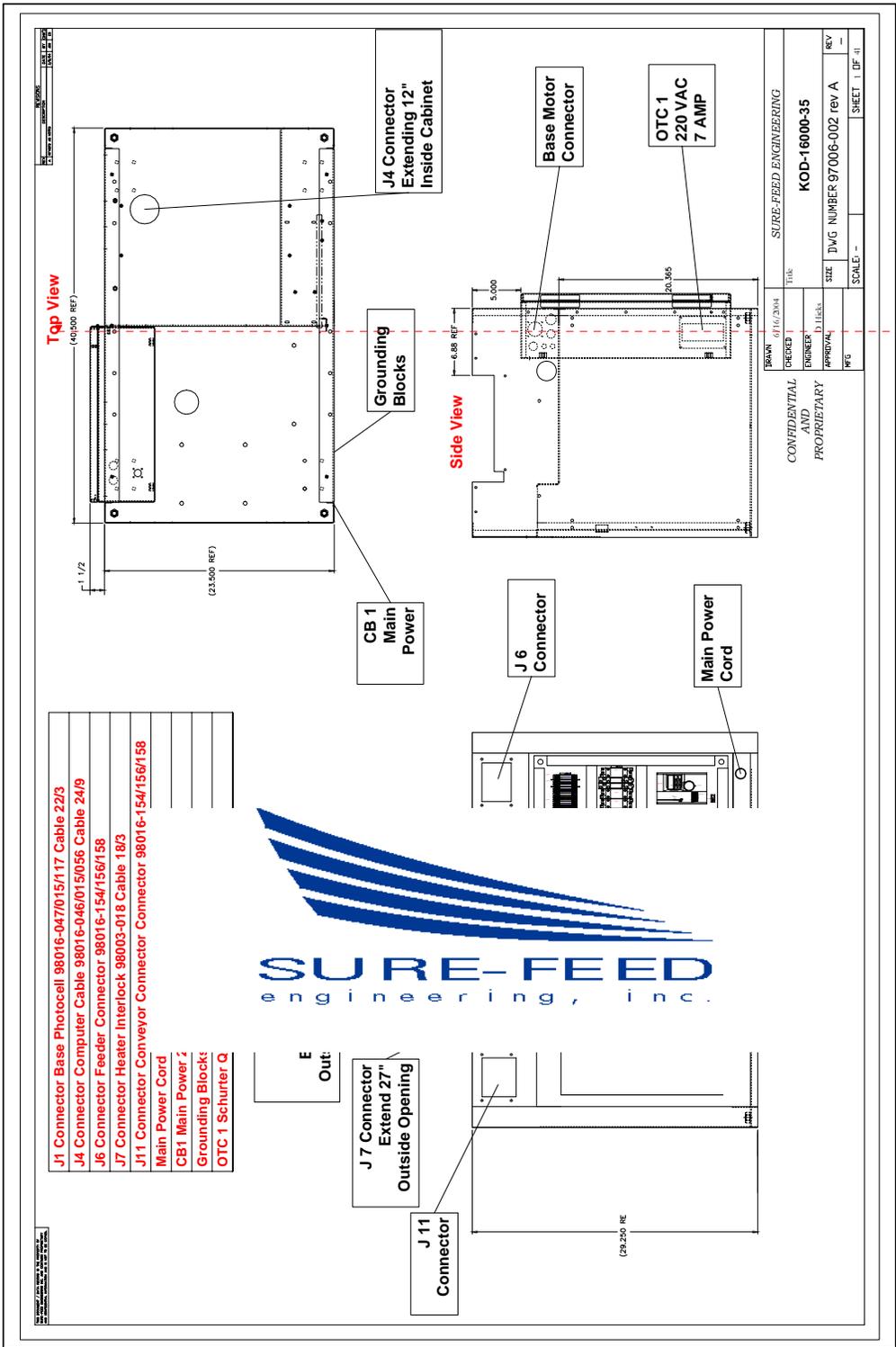
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CHECKED		Title	
ENGINEER	D Hicks	PLC Cabinet Layout	
APPROVAL		SIZE	DWG NUMBER 97006-002 rev A
MFG		SCALE: -	SHEET 1 OF 41

FU8 Primary Voltage DC Power Supply
FU9 Primary Voltage PLC
FU10 24VDC Fusing
PS1 Phoenix Power Supply
PS1 #98011-007
PLC1 Mitsu FX1N-24MR-ES/UL
PLC #98003-054









DESIGNER	6/16/2004	Talk
ENGINEER		
APPROVAL	D. Hicks	
WFG		
SURF-FEED ENGINEERING		
KOD-16000-35		
SIZE	DWG NUMBER 97006-002 rev A	
SCALE	SHEET 1 OF 11	

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Troubleshoot

Problem:	Things to Check:
No power to all components of the machine	Check Main Breaker Check power to the machine
No power to base control cabinet	Check 7amp Breaker
No power to computer cabinet receptacle	Check 15amp Breaker inside of transformer box.
No power to VFD	Check FU1 fuses (VFD 1) Check FU2 fuses (VFD2) Check 7amp Breaker
No power to PLC	Check FU4 fuses
Conveyor does not move	Check FU5 fuses Check Conveyor Plug Check CONVEYOR Potentiometer Check PLC in Run Mode Check Photocell Check Input X7 Check Y6 output when hand is passed under photocell when base is running. Y6 will illuminate for 2 seconds. Check Relay CR1
Conveyor does not speed up	Check setting on SORT potentiometer Check connection of BASE CONTROLS cable Check X3 input (illuminates when input is applied) Check Potentiometer on PLC (position of arrow @ 11:00)
Feeder is not feeding	Check Feeder On/Off Button (Lamp illuminated = On) Check Connection at Base Feeder needs to be full (Photocell Blocked) Check VFD 2 if off , refer to "No Power to VFD" Check X12 Input on PLC. (Feeder On/Off) Check Y2 Output on PLC.
Base is not running	Check main disconnect is ON Check PLC switch to RUN – Lamp "RUN" is on. Check power to PLC, refer to "No Power PLC" Check Power to VFD1, refer to "No Power VFD" Check input to X13, normal when lit. Check all stop buttons. Check input X2 on PLC, Un-illuminated normal.
Vacuum Motor does not come on	Check fuses on FU6 Check CR5 Relay, engages when the vacuum power is on. Check 7amp breaker
X2 is ON	Check all stop buttons. Check connection to feeder, disconnect to troubleshoot. Check all STOP contact blocks for 0 Ohm. (Normally ∞.)

SE - 1200 SJ 30 Troubleshooting Guide

<u>Problem</u>	<u>Solution</u>
Feeder will not run.	<p>Check fuse condition.</p> <p>Check outlet power source.</p> <p>Check power switch.</p>
Feeder runs but no material is being dispensed.	<p>Check material supply.</p> <p>Remove all material and follow setup procedure.</p> <p>Check rollers and belts for excessive wear or dirt.</p>
Feeder does not create a gap between pieces.	<p>Lower separator adjustment and observe. If a gap is not present after this adjustment, return separator to original position and move the back guide forward.</p> <p>Lower rear elevator belts slightly.</p>
Feeder does not detect material.	<p>Adjust position of the sensor.</p>
Thick material does not feed well.	<p>Decrease the height at the back of the material stack.</p> <p>Increase the opening at the separation device (the thicker the material the less critical the setting is).</p>
Thin material does not feed.	<p>Adjust separation device as described in section 2.</p> <p>Remove material and fan the stack allowing air to separate the pieces.</p> <p>Raise the rear of the material stack by moving the wedge forward.</p>

