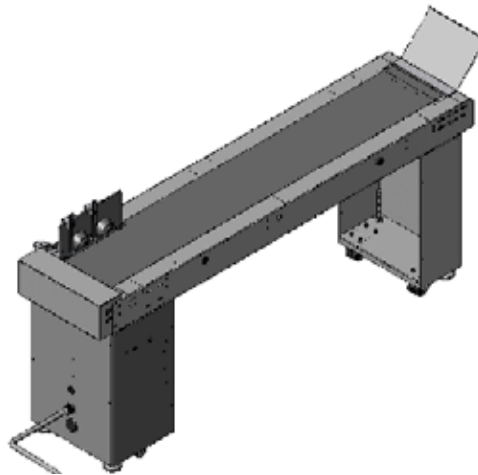


Speed Up Conveyor

**SPEED-XXUP-06
(STAND ALONE)
DRY CONTACT
6 FOOT MODEL**

OPERATION AND MAINTENANCE



PENDING



DIRECT MAIL SOLUTIONS

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VERSION HISTORY

The table below summarizes the history of this document as it is published onto the company website(s). It identifies the version, date of issue and revisions and changes.

VERSION	DATE	CHANGES
OPS_SPEED-XXUP-06	03-07-09	ORIGINAL RELEASE (BOM: SPEED6-SA-TUV)

REVISION CONVENTIONS-DOCUMENT

VERSION: name of document with revision_level of entire document- level designates minor changes that do not require revision change

DATE: date of issue for copying and publication of document.

CHANGES: details of document revision_level.

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SPECIAL NOTES, DEFINITIONS AND DISCLAIMERS

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.

DEFINITIONS

1	ON
0	OFF
∅	PHASE
~	VAC (volts a.c.)
!	WARNING or CAUTION
	HAZARDOUS
	HEAT

Section I

Installation

Speed Up Conveyor

**SPEED-XXUP-06
(STAND ALONE)
DRY CONTACT**



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SECTION I

INSTALLATION

SPEED-XXUP-06

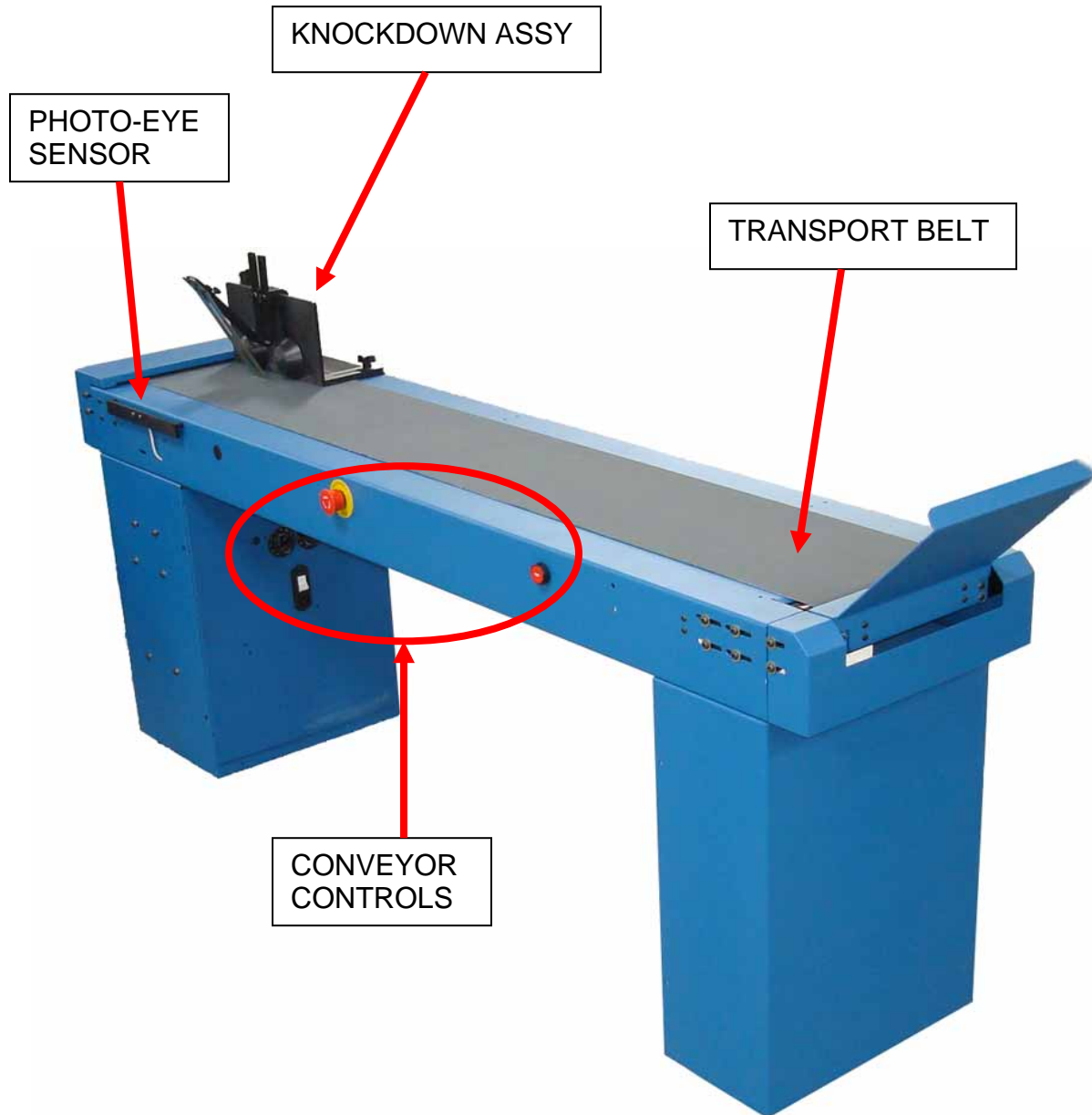
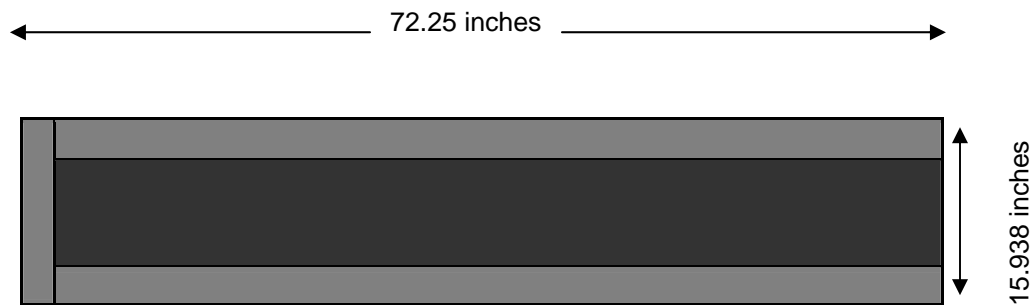


FIGURE I-1

Speed Up Conveyor Layout



Requirements
Floor Space – 73" x 16" (6 FT CONVEYOR)
Electrical – 110VAC @ 3 A
Air – None
Vacuum – None
Trigger Interface – Dry Contact
WEIGHT: 150 LB

FIGURE I-2

Environment:

The installation of the Speed Up conveyor is intended for operation in a specific environment. See Operating Environment Table below for details.

Operating Environment Table

ITEM		SPECIFICATION
Environmental Conditions	Ambient Operating Temperature	0 to 35° C
	Storage Temperature	-25 to 85° C
	Ambient Operating Humidity	30% to 95% RH (with no condensation)
	Ambient Storage Humidity	5% to 95% RH (with no condensation)
	Pollution Level	Pollution level 2 (conforming to UL/EN60950-1)
	Corrosion Gas	There must be no combustible or corrosive gas.
	Operating Altitude	2,000 m above sea level or lower
Installation Requirements	Ground	Ground (earth) connection required
	Cooling Method	Natural cooling

Installation: Positioning the Components

Once the Speed Up Conveyor has been removed from the shipping container, perform the following:

1. Inspect the location where the machine is to be set up.
Note: The manufacturer recommends that the area be a relatively flat and smooth concrete 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.
 - ✓ 110VAC @ 3 amp
 - ✓ 50 / 60 Hertz
 - ✓ 15 AMP Service

Note: Check voltage potential at ground to ensure the line was wired properly.

4. Position the conveyor in the designated location then lower the leveler pads to raise the base to a comfortable operating height, see figure I-3.

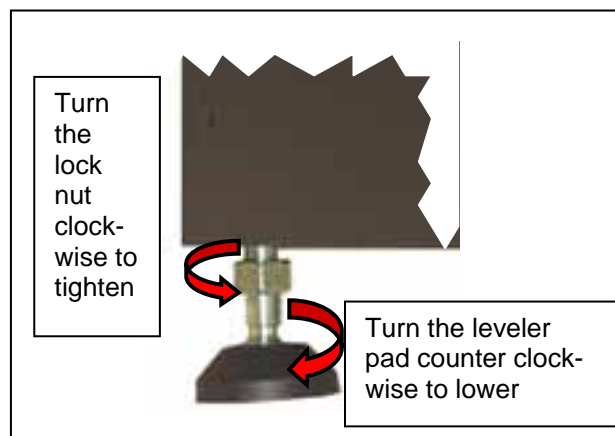


Figure I-3

5. Place a level in the center of the Speed Up Conveyor 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.

Section II

Safety Features and Warnings



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SECTION II

Safety Locks and Warnings

The Speed Up Conveyor has warning labels or stickers to safeguard persons operating and/or working on or around this equipment. These are as follows:

General Warning
Symbol indicating possible safety hazards.


Figure II-1



Label shown at actual size


Shock Hazard
Symbol indicating possible shock hazard.

Figure II-2




Mechanical Warning
Symbol indicating pinch hazard. Found posted on the mounting plate of the transport belt drive motor.

Figure II-3




Hair Warning
Symbol indicating entanglement hazard.

Figure II-4



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Label shown at actual size

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 warning labels and stickers are installed by the manufacturer to safeguard all persons operating and/or working on or around the machine. Removing or altering any of these labels or stickers will void any and all warranties, either real or implied, purchased or offered with the Speed Up Conveyor. All companies connected with the manufacturing, promotion and sale of the Speed Up Conveyor shall be held harmless for any and all injuries and damage in the event the warning labels and stickers are removed, altered or disabled.

In addition to the warnings installed on the Speed Up Conveyor by the manufacturer, the following recommendations for safe operation and maintenance of the Speed Up Conveyor are as follows:



- Any persons designated to operate, work on or near the Speed Up Conveyor must be fully trained by a factory-authorized representative.
- Do not operate or perform any type of maintenance on the Speed Up Conveyor while under the influence of drugs or alcohol.
- Do not operate or perform any type of maintenance on the Speed Up Conveyor in or around freestanding water.
- Do not wear loose 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 Speed Up Conveyor 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 Speed Up Conveyor. 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 Speed Up Conveyor 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 Speed Up Conveyor 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 Speed Up Conveyor should use caution. Electrical motors give off heat; contact with or exposure to bare skin may result in burns.

- The Speed Up Conveyor was designed to transport paper only. Do not attempt to Up and/or transport materials made of or containing glass, metal, wood, liquids, foods, powders, gasses, explosives or toxic and hazardous chemicals on the Speed Up Conveyor.

Note: The manufacturer recognizes and acknowledges that the Speed Up Conveyor is capable of successfully running and/or transporting envelopes containing compact discs or audio cassettes, however the manufacturer and other companies connected with the promotion and sale of the Speed Up Conveyor do not assume any responsibility for any damage to the Speed Up Conveyor or product and shall be held harmless for any damages and or injuries resulting in this practice.

Special Advisement:

The manufacturer and other companies connected with the promotion and sale of the Speed Up Conveyor 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 Speed Up Conveyor as shown and/or described herein.

Lock Out / Tag 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 conveyor and or any other components connected to or associated with the conveyor. 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 conveyor shall be held harmless for any and all injuries sustained to any person or persons and or damage to the conveyor and or any other components connected to or associated with the conveyor as a result of failure to comply with the "Lock Out Procedure".

1. Turn the main power switch to the off position.
2. Disconnect and lock out power to the machine and attach lock out tags.

For Plug-In type connection,

- a. Follow the main power line from the machine back to the receptacle or source of supplied power and disconnect it.
- b. Unplug the power cable from the receptacle.
- c. Place the plug end into an "Entry Plug Lockout Box", see figure II-5.
- d. Close the hinged lid and secure it using a "Key" operated Pad-Lock.
- e. Fill out and attach a Lock Out tag to the Lockout Box, see figure II-7.



Figure II-5

For Direct Hard Wired type connection,

- a. Follow the main power line from the machine back to the origin of supplied power and switch the circuit breaker to the "Off" position.
- b. Place a Circuit Breaker Lockout device over the disabled circuit breaker. Follow the manufacturer's instructions for use.
- c. Using a Key-operated padlock, secure the circuit breaker lockout, see figure II-6.
- d. Fill out and attach a "Lock Out" tag to the circuit breaker lockout device, see figure II-7.

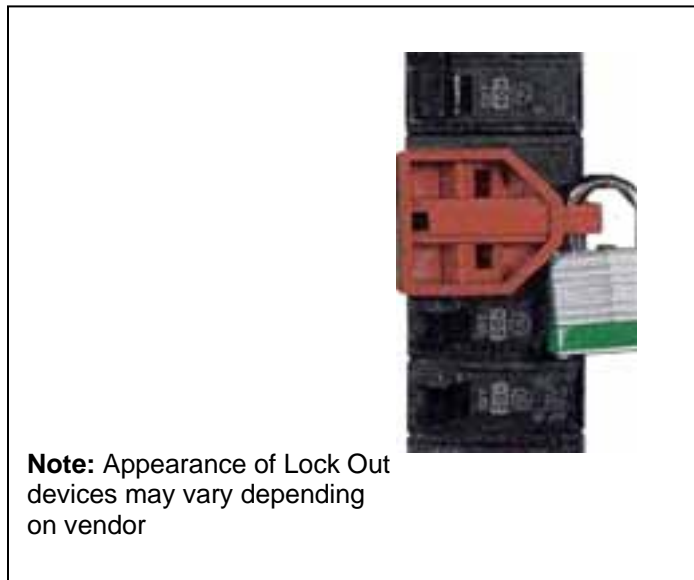


Figure II-6



Figure II-7

Section III

**SPEED-XXUP-06
(STAND ALONE)
DRY CONTACT**

General Setup



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SECTION III**Speed Up Conveyor**

The Speed Up Conveyor speed may be or optionally controlled by two factors, the speed control on the Ink Jet base or the speed control located on the Speed Up Conveyor. The Up control can be operated by 1 of 2 methods:

For use with Ink Jet Bases:

The software running the database signals the Ink Jet base when a Up break occurs, activating the Up feature which accelerates the Speed Up Conveyor for a duration determined by the software. To set up the Speed Up Conveyor and features, perform the following:

1. Position the edge of the Speed Up 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.
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 Speed Up conveyor and the exit end of the ink jet base/dryer base. Increasing or decreasing this distance may be required to accommodate the material you are running.
2. Remove the envelope knock down 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.
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 Speed Up conveyor.
4. Observe the material as it lands on the Speed Up conveyor; the material should lightly strike the stop plate of the envelope knock down assembly near the surface of the conveyor bed.
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 down previously removed in step 2.
5. Return the envelope knock down (removed in step 2), to the stop plate. Position the envelope knock down approximately ¼" from the top and bottom edge of the material, and tighten the Retaining Lock Knob by turning it in a clockwise direction.
6. Adjust the knock down strap. Once the job has been started and running speed has been established, watch the finished product as it lands on the Speed Up 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 strap to apply greater resistance to the material, (slowing it down) before it strikes the stop plate. Do this by turning the adjustment knobs, on the envelope knock down, in a clock-wise direction.
 - b. The material lands on the conveyor before reaching the stop plate. Adjust the knock down strap 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 the envelope knock down, in a counter clock-wise direction.

Paper Sensor Adjustment

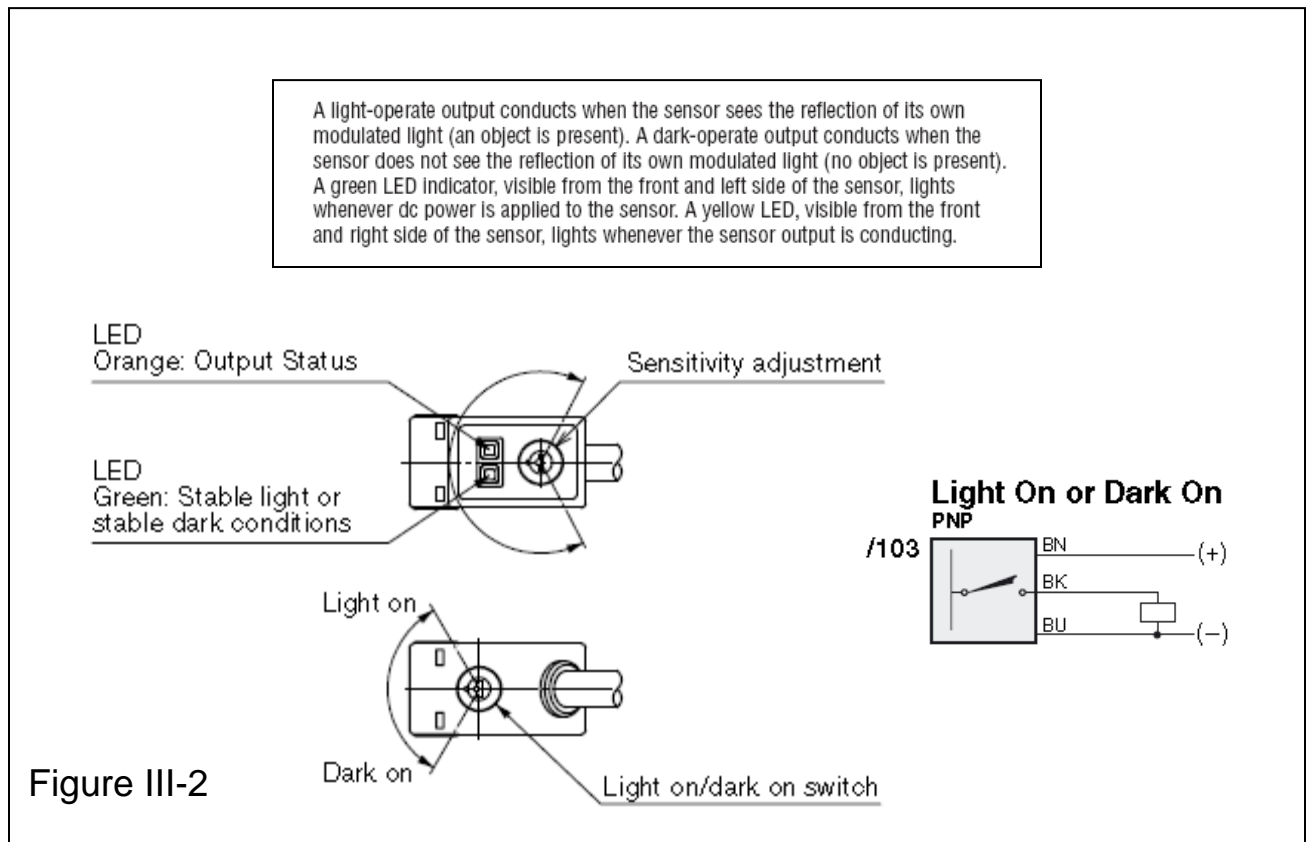
The paper sensor is located at the “In-Feed” end of the Speed 6 conveyor. This sensor is set to detect and confirm the presence of paper. This sensor does not normally need to be adjusted for each job, once the setting has been made, it should remain set unless otherwise disrupted. In the event the settings have been disrupted, perform the following:

1. 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 III-2.

Note: If this adjustment is performed correctly, the screw driver slot in the pot setting should be pointing towards the “LO” in the range scale next to the pot setting.

⚠ Caution: The stop point of this pot setting can be damaged if excessive force is applied.

2. Set the “Gain or Sensitivity” pot setting by performing the following:
 - a. Using a small flat blade screwdriver, 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 III-2. The orange LED indicator light should be off at this point.
 - b. Place a blank piece of white paper directly above the paper sensor.
 - c. Using a small flat blade screwdriver, slowly and carefully turn the pot setting located furthest from the electronic cable connection in a clock-wise direction until the orange LED light comes on, continue turning the pot setting in a clock-wise direction another half turn.



Section IV

**SPEED-XXUP-06
(STAND ALONE)
DRY CONTACT**

General Maintenance



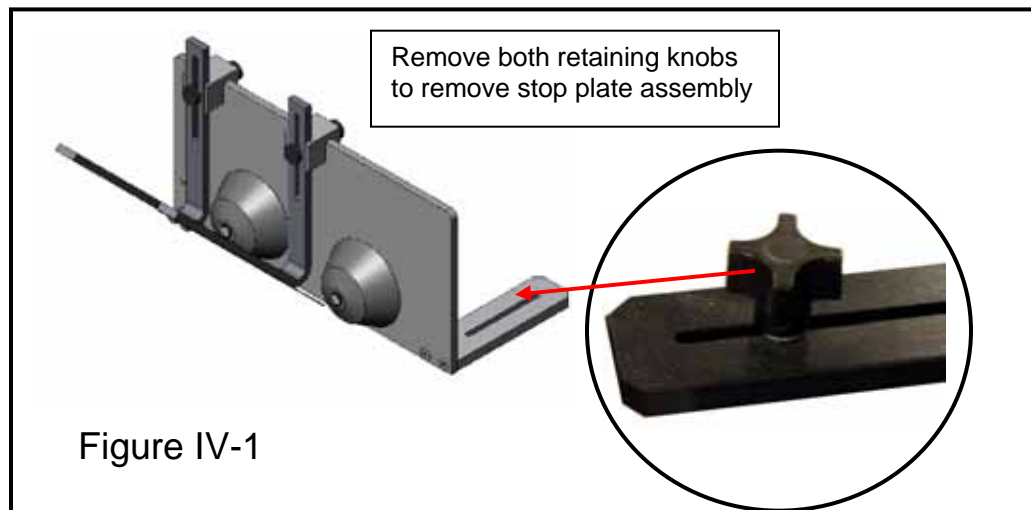
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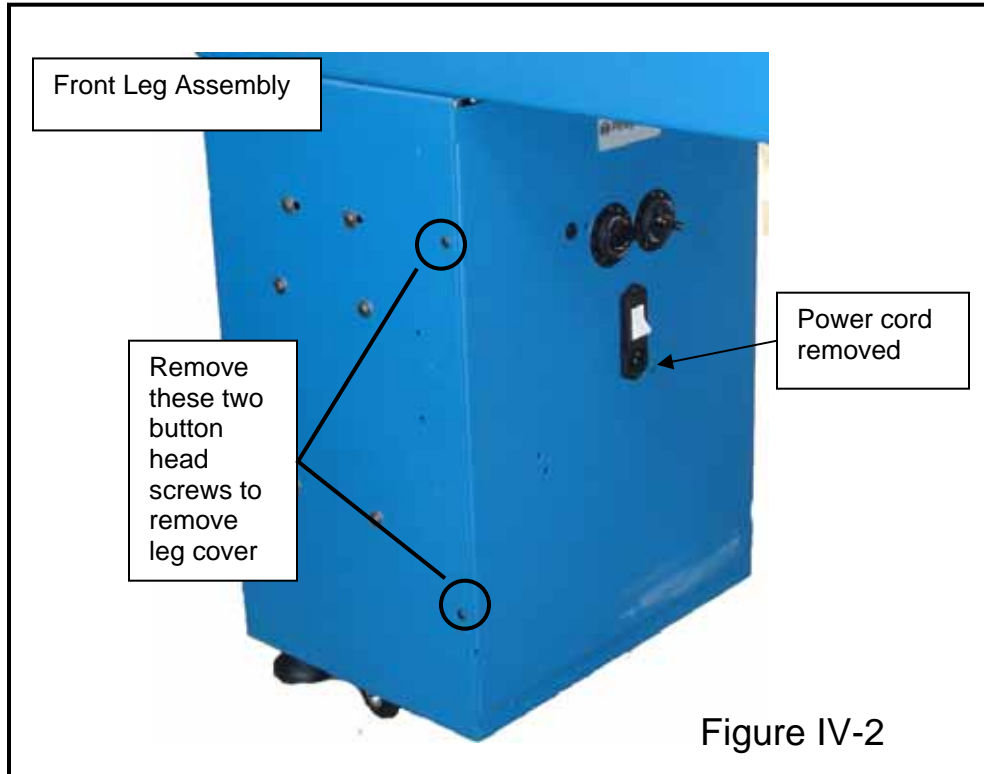
SECTION IV

Conveyor belt replacement:

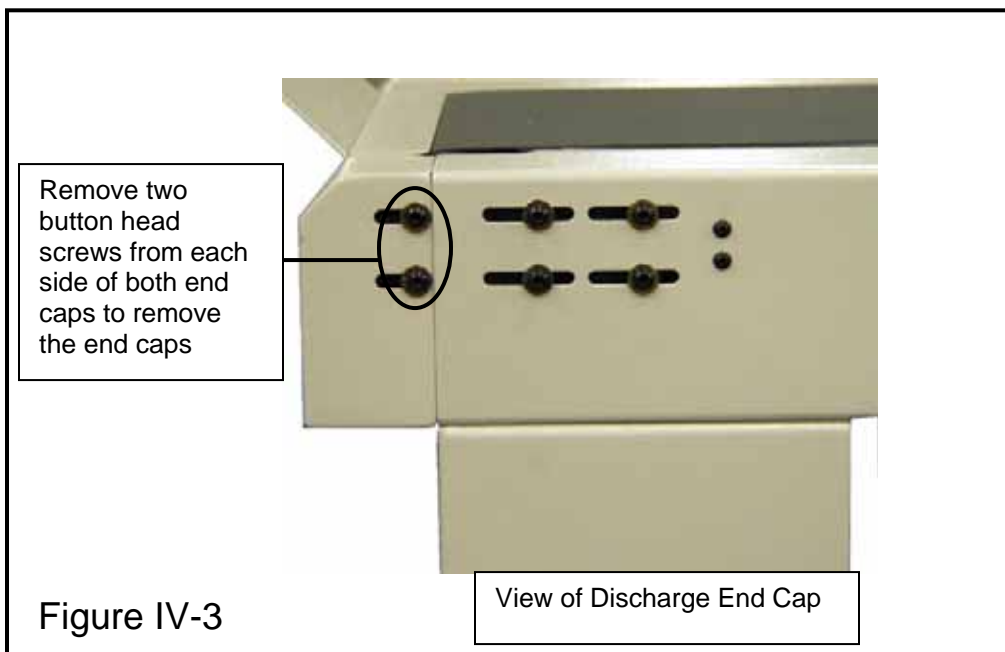
1. Turn off the power to the ink jet base/dryer base.
2. Unplug the power cable and the communication cable from the Speed Up Conveyor. (Move the single conveyor away from the ink jet base/dryer base or the inserter in order to provide room to work.)
3. Remove the Envelope Knock Down / Stop Plate assembly: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



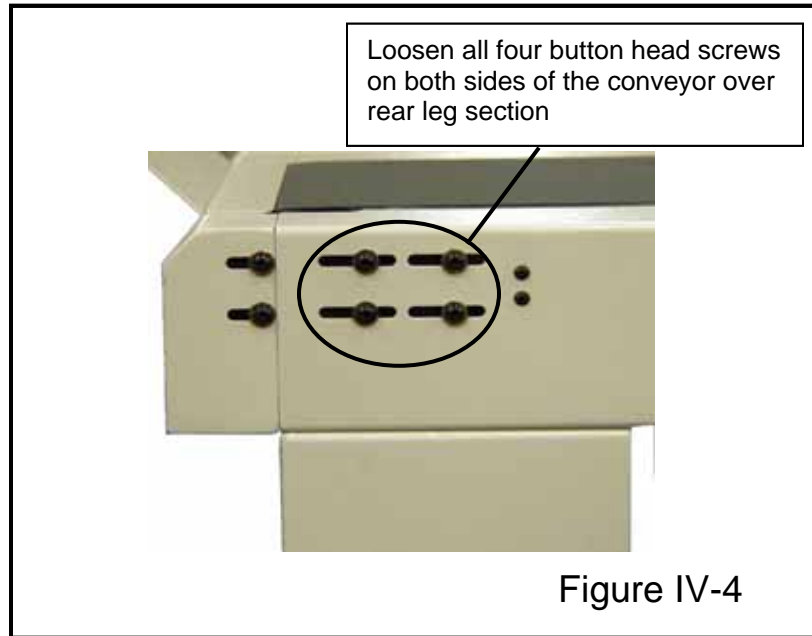
4. Remove the front leg cover:
 - a. Using a 1/8" Allen wrench, remove the two button head Allen screws located on the side of the front leg assembly, see figure IV-2.
 - b. Pull the left side (same side as the button head Allen screws removed in step a) of the leg cover back to clear the leg assembly, 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 IV-2.



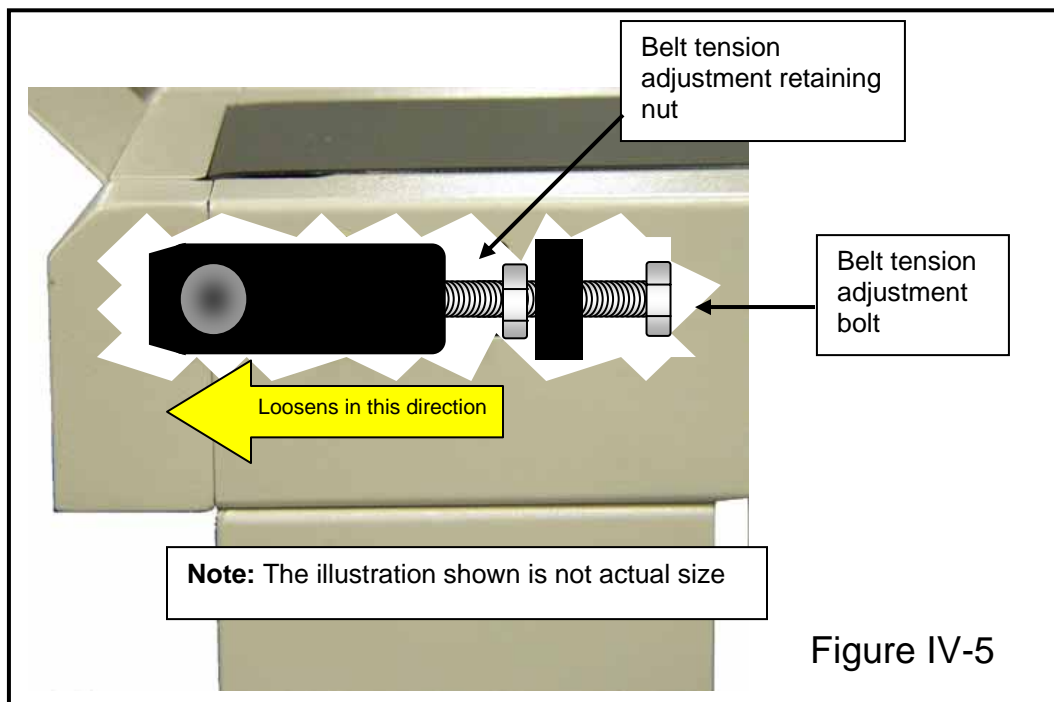
5. Remove both end cap covers from the conveyor:
 - a. Using a 5/32" Allen wrench, remove the two (2) button head Allen screws located at each side of the end cap cover, see figure IV-3.
 - b. Pull each end cap straight out from the conveyor.



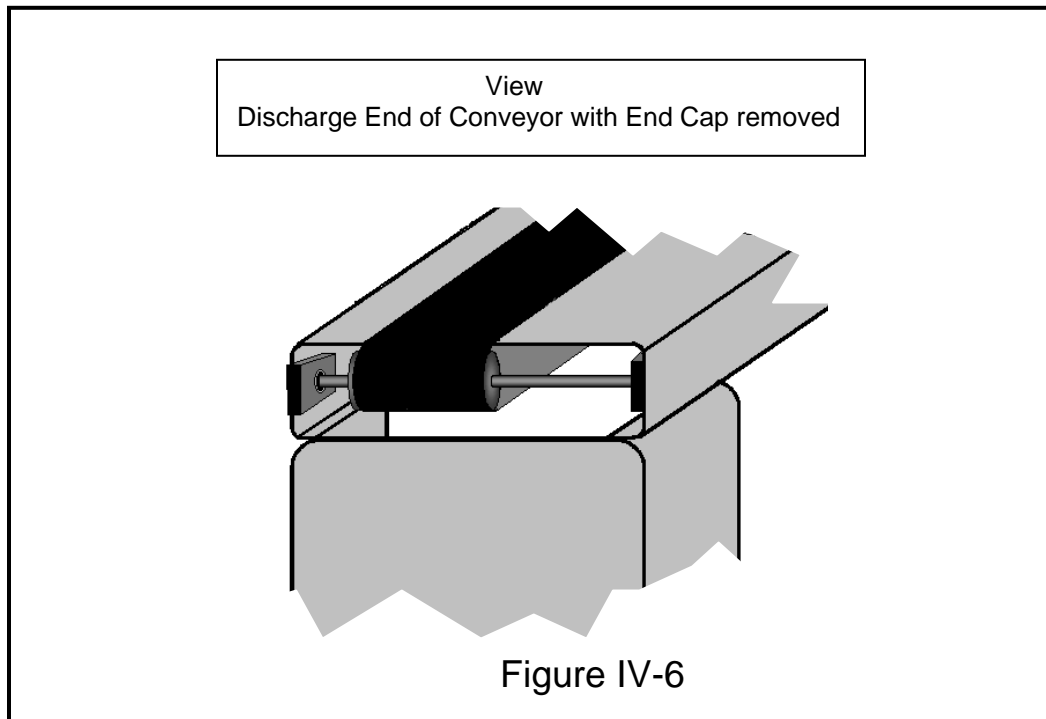
- 6. Loosen the conveyor belt:
 - a. Using a 5/32" Allen wrench loosen the four (4) button head Allen screws located on each side of the conveyor bed near the material stop post at the rear end of the conveyor, see figure IV-4.



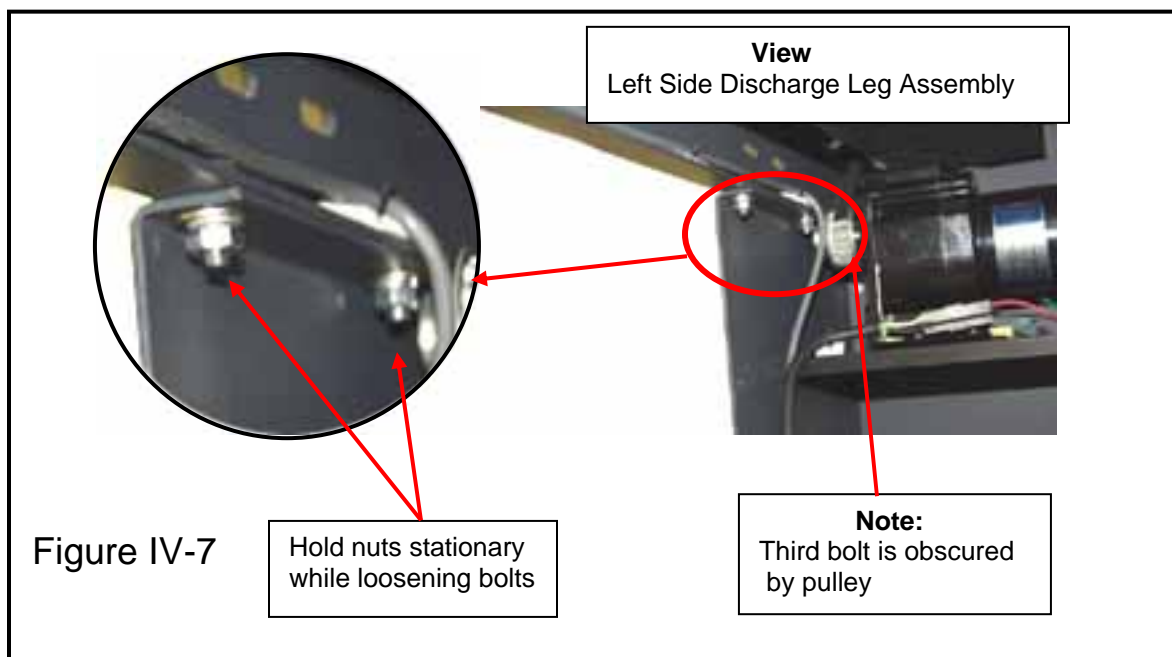
- 7. Using a 7/16" open end wrench, loosen the retaining nut located on each of the conveyor belt tensioner found inside the conveyor bed above the discharge leg assembly, see figure IV-5.



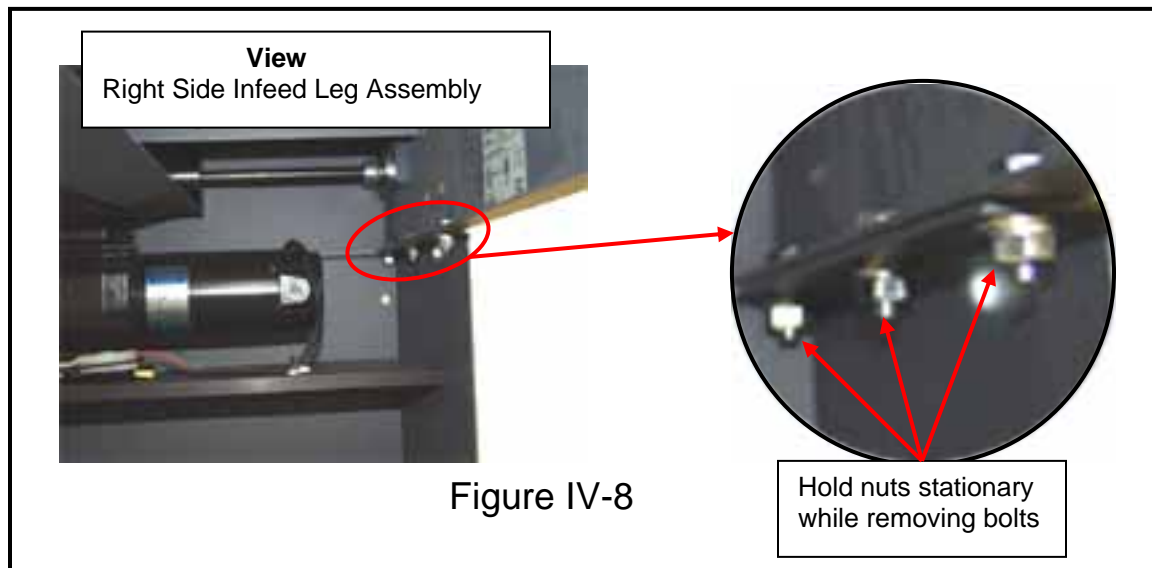
- 8. Using a 7/16" open-end wrench, **loosen** the conveyor belt tension adjustment bolt by turning it in a counter clock-wise direction, see figure IV-5.



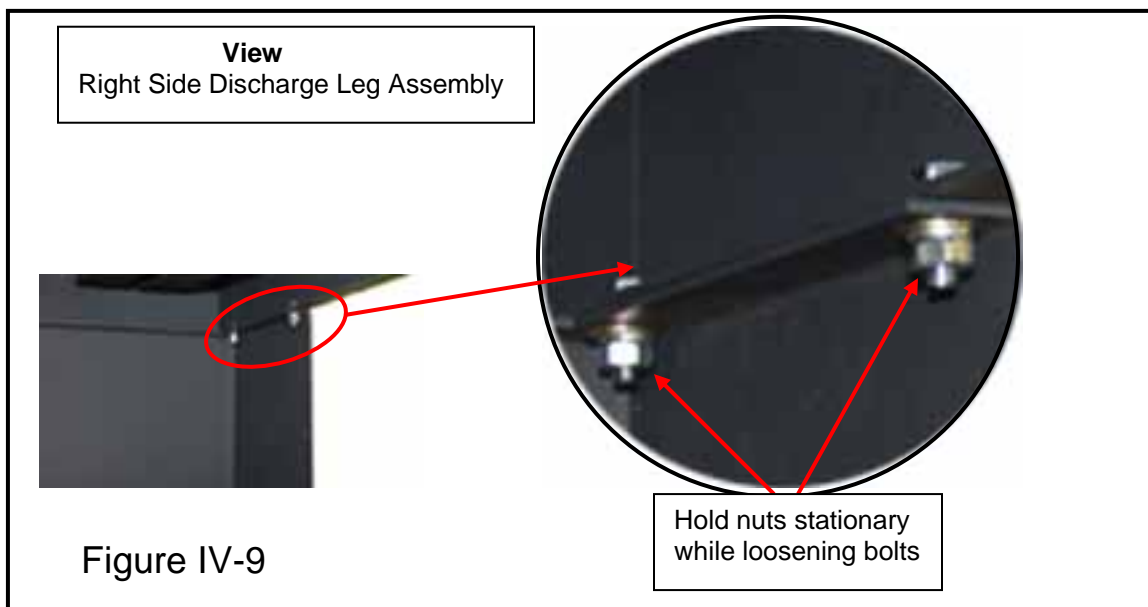
- Using a 7/16" open end wrench, loosen the three (3) hex head bolts located under the conveyor bed, found on the left side (motor side) of the infeed leg section, see figure IV-7.
Note: There is a 7/16" retaining nut under each hex head bolt that will need to be held in place in order to loosen the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



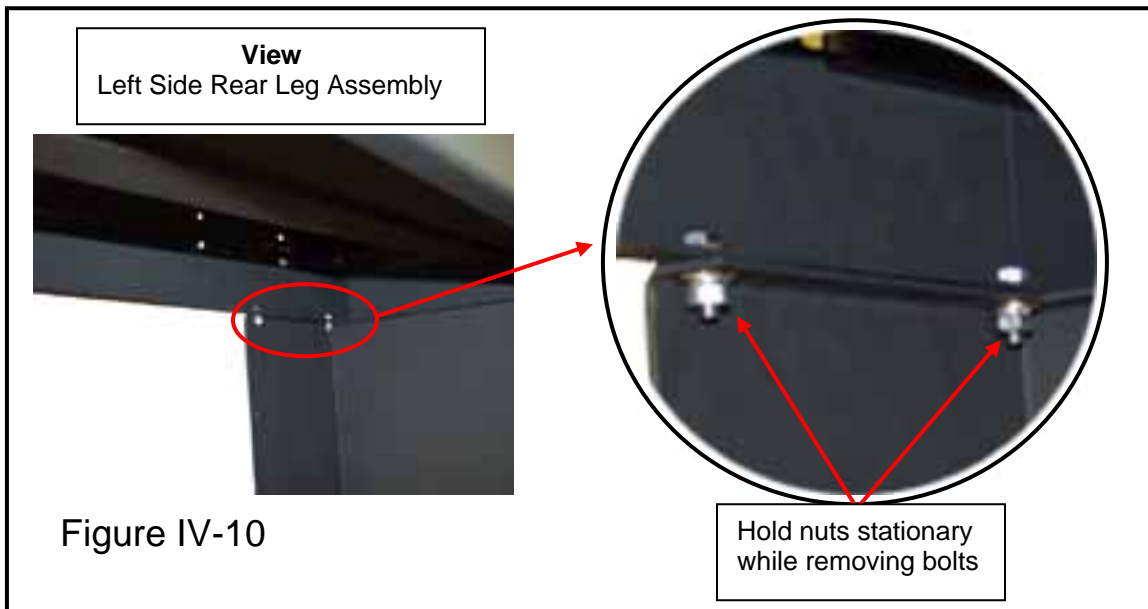
10. Using a 7/16" open end wrench, **remove** the three (3) hex head bolts located under the conveyor bed, found on the right side of the infeed leg section, see figure IV-8.
Note: There is a 7/16" retaining nut under each hex head bolt that will need to be held in place in order to loosen the bolts.




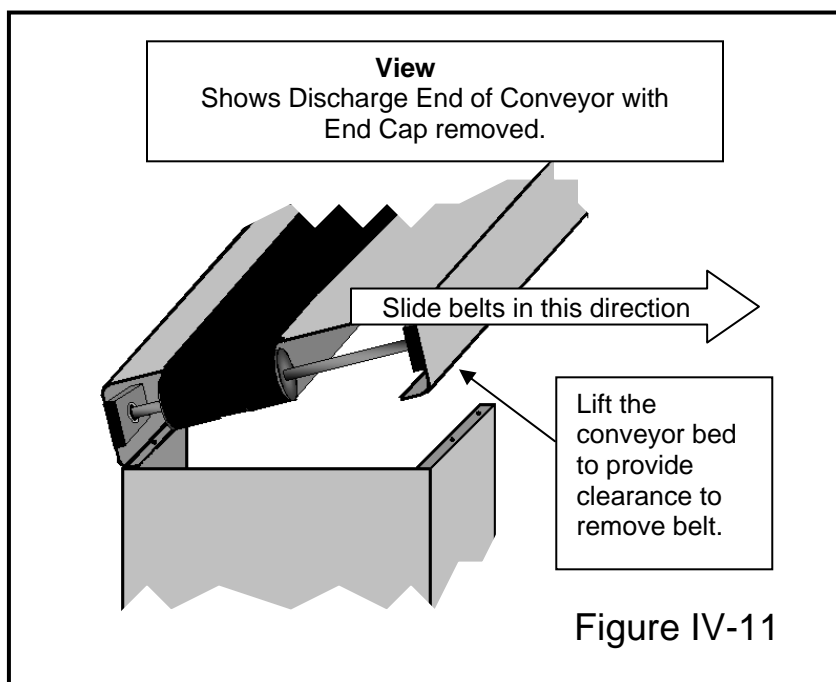
11. Using a 7/16" open end wrench, **loosen** the two (2) hex head bolts located under the conveyor bed, found on the right side of the discharge leg section, see figure IV-9.
Note: There is a 7/16" retaining nut under each hex head bolt that will need to be held in place in order to loosen the bolts. **Do not** remove these bolts, just loosen them.




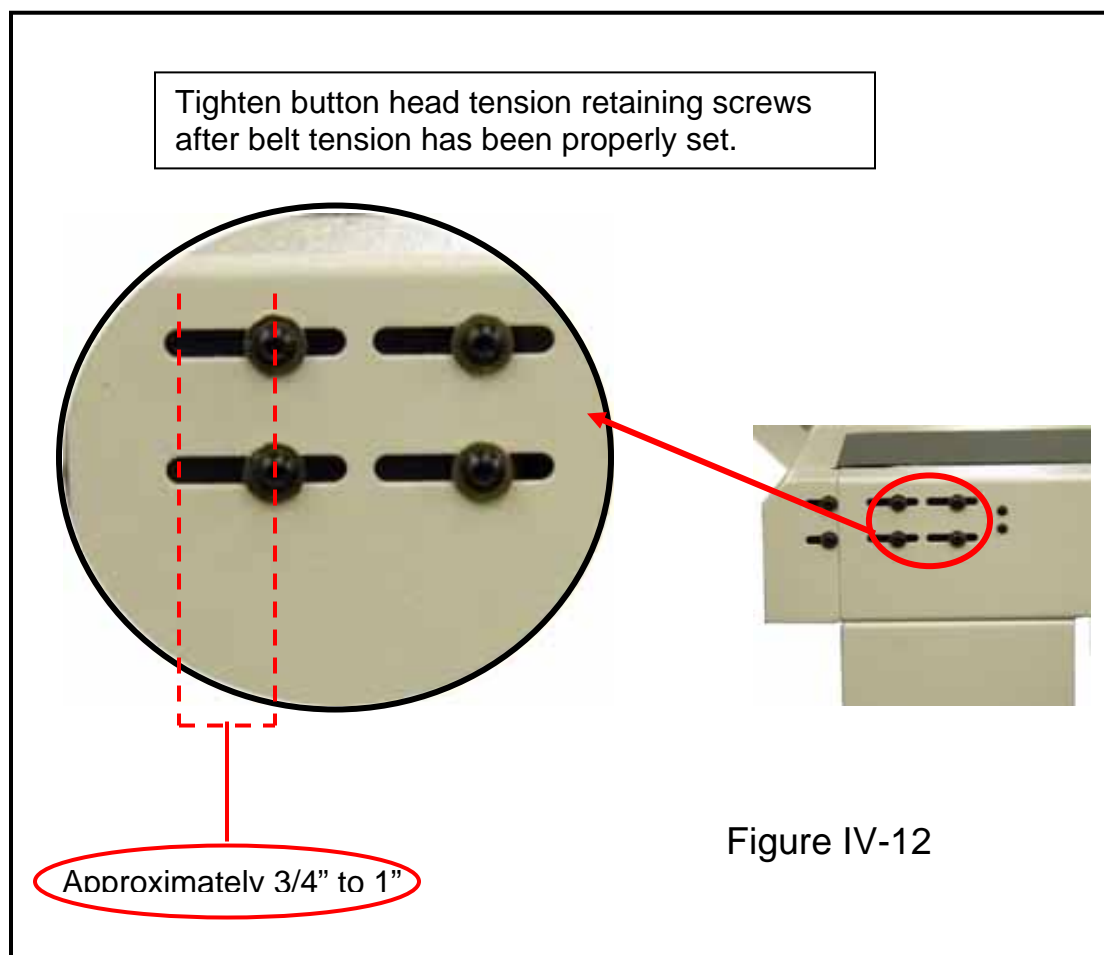
12. Using a 7/16" open end wrench, **remove** the two (2) hex head bolts located under the conveyor bed, found on the left side of the discharge leg section, see figure IV-10.
Note: There is a 7/16" retaining nut under each hex head bolt that will need to be held in place in order to loosen the bolts.



13. Slide the old conveyor belt off of the rollers towards the side of the conveyor that the bolts were removed from in steps 10 and 12.
14. Lift the infeed end of the conveyor bed at the side where the bolts were removed in step 10 and slide the belt 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.
15. Lift the discharge end of the conveyor bed at the side the bolts were removed in step 12 and slide the belt through the space between the conveyor bed and the leg section, see figure IV-11.



16. Place the new belt on the conveyor in the same manner in which the old belt was removed in steps 13-15.
 17. Re-attach the conveyor bed to the infeed and discharge leg sections.
 18. Tension the new conveyor belt:
 - a. Using the a 7/16" open-end wrench turn the adjustment bolts (refer to figure IV-5) in a clock-wise direction until the center of the button head retaining screws, (loosened in step 6, figure IV-4) are approximately 3/4" to 1" from the back edge of the adjustment slot.
-  **Warning:** Do not over tighten the conveyor belt.. Over tightening the conveyor belt may result in damage to the conveyor drive motor and shafts.
- b. Using a 7/16" open-end wrench tighten the belt tension adjustment-retaining nut, see figure IV-5.
 - c. 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 IV-12.



19. Plug the conveyor back into the ink jet / dryer base, refer to step 2.
20. Turn the power "On" to the ink jet / dryer base or separate power source and run the machine, observe the conveyor belt 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 17.

21. Once the conveyor belt have proven to track straight, finish reassembling the conveyor following steps 3 through 5 in reverse order.

Section V

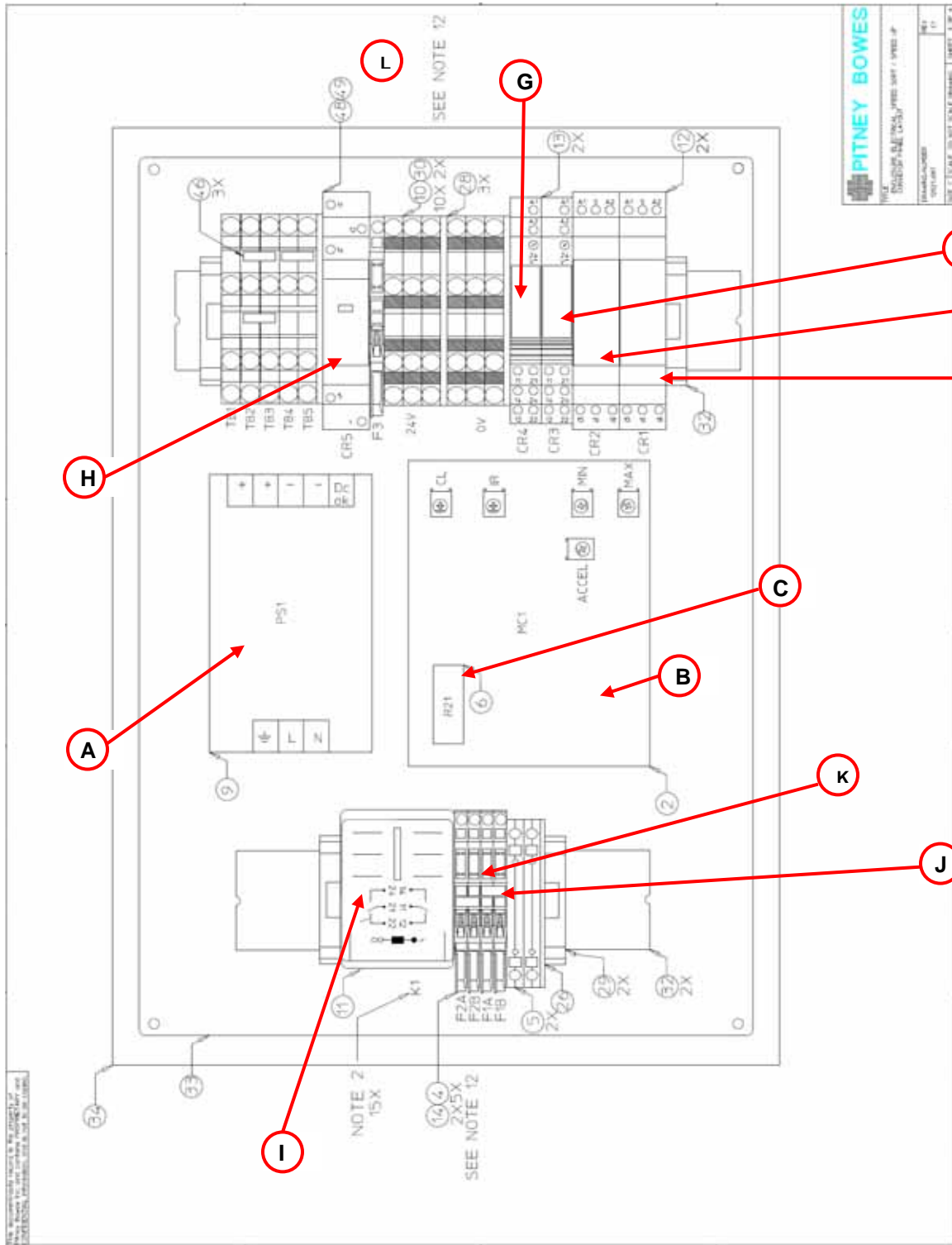
**SPEED-XXUP-06
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Electrical Components



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Item	Component	Function
A	24VDC POWER SUPPLY(PS1)	Supply voltage output
B	DC MOTOR CONTROL (PC1)	Conveyor motor speed controller
C	POWER RESISTOR	Sized for HP
D	TIME DELAY RELAY (CR1)	For sensor delay timing
E	TIME DELAY RELAY (CR2)	Controls Sort function
F	CONTROL RELAY (CR3)	E-STOP circuit control
G	CONTROL RELAY (CR4)	SPEED UP circuit control
H	CONTROL RELAY (CR5)	E-STOP circuit control
I	CONTROL RELAY (K1)	Energizes motor controller
J	FUSE (F1A,F2A) – 2A	Input for POWER SUPPLY (PS1)
K	FUSE (F1B,F2B) – 3A	Input for MOTOR CONTROL (PC1)
L	FUSE (F3) – 500mA	Output for POWER SUPPLY (PS1)

Section VI

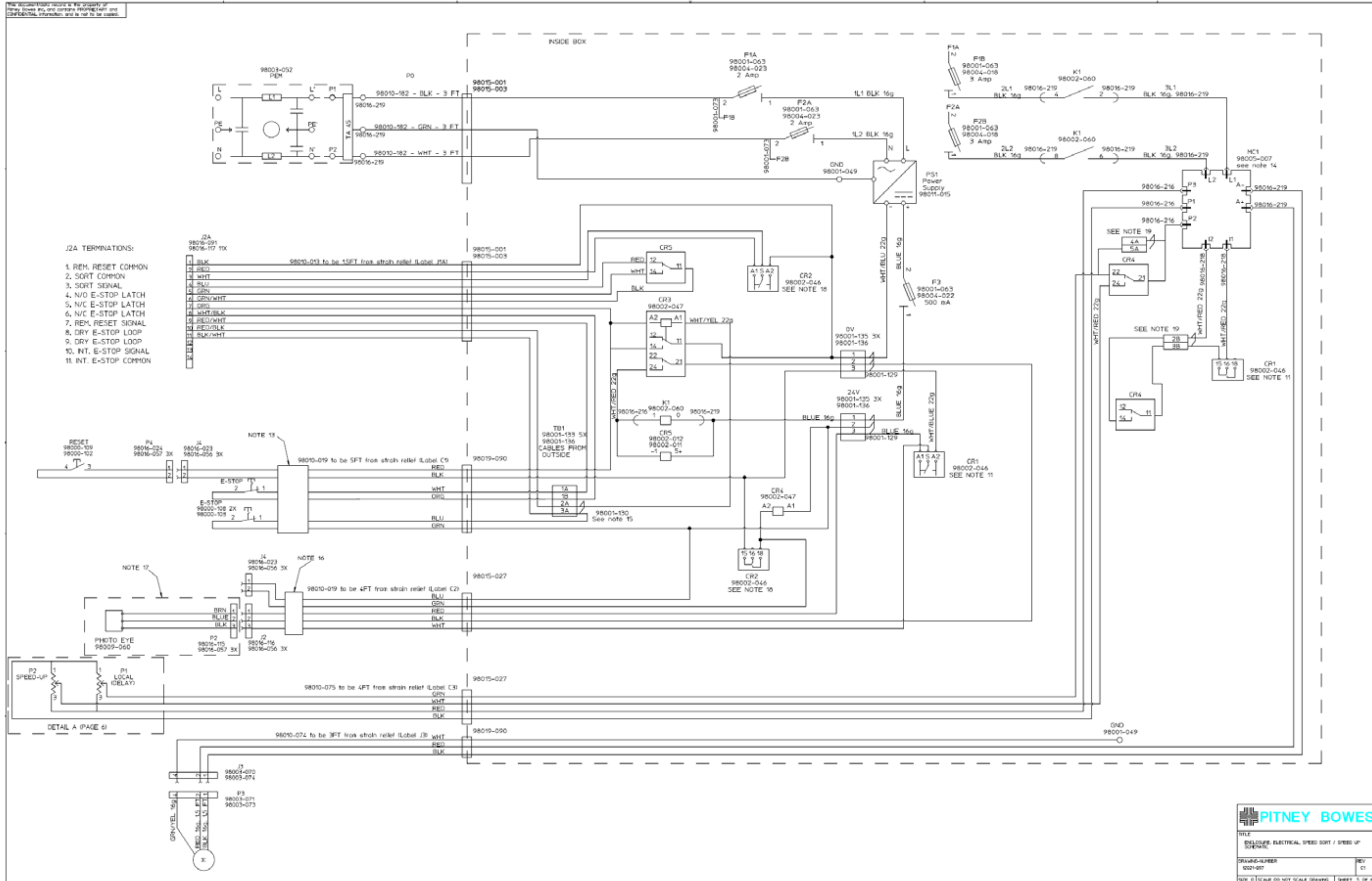
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Wiring Diagrams



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PITNEY BOWES

TITLE: ENCLOSURE ELECTRICAL SPEED SORT / SPEED UP SCHEMATIC

DRAWING NUMBER: 0021-007

REV: C1

DATE: 01/24/06 DO NOT SCALE DRAWING SHEET 1 OF 4

Section VII

**SPEED-XXUP-06
(STAND ALONE)
DRY CONTACT**

Troubleshooting



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Speed Up Conveyor / Stand Alone	
Problem	Solution
<p>Will not “Power Up”</p> <p>Conveyor Motor is not moving</p> <p>Table Belts not moving</p>	<p>Visually inspect the VAC power cord, making sure that the plugs are inserted firmly into wall socket.</p> <p>Make sure that “Twist Lock” VAC plug is twisted clockwise and locked into receptacle.</p> <p>Visually inspect sensor “Trigger” making sure only “GREEN” LED power indicator is lit. (GREEN indicates that the sensor is operational)</p>
<p>Conveyor Motor and belt continuously run</p>	<p>Visually Check Conveyor Sensor “Trigger” making sure Only “GREEN” LED is lit. (Both must be lit in order for machine to run. Unit needs to see material to function.)</p> <p>(GREEN LED indicates Power, while GREEN and ORANGE on simultaneously indicates Trigger is seeing material or obstruction)</p> <p>Make sure that the sensor is not seeing the conveyor or Material “Trigger Sensor” is factory set for “Depth” and “LIGHT ON” (For use with Light colored material).</p>
<p>Conveyor Belt moves only at one speed</p>	<p>Locate Potentiometer with “Dial” and turn knob clockwise to increase speed.</p>
<p>No Delay on Conveyor Motor when material is “Not” read by sensor “Trigger” (No “Delay Time Adjustment”)</p>	<p>Please consult your manual for information on this function.</p> <p>Visually locate the “Delay Potentiometer” (without dial). Adjusting clockwise increases the delay on Conveyor Belt “Delay Time Adjustment.”</p>



FUNCTION DEFINITION TABLES

Function	Operation	Timing Chart
A. ON DELAY Power On	When the input voltage U is applied, timing delay t begins. Relay contacts R change state after time delay is complete. Contacts return to their shelf state when power U is removed. Control switch is not used in this mode.	
B. REPEAT CYCLE Starting Off	When input voltage U is applied, time delay t begins. When time delay t is complete, relay contact R change state for time delay t . This cycle will repeat until input voltage U is removed. Control switch is not used in this mode.	
C. INTERVAL Power On	When input voltage U is applied, relay contacts R change state immediately and timing cycle begins. When time delay is complete, contacts return to shelf state. When input voltage U is removed, contacts return to their shelf state. Control switch is not used in this mode.	
D. OFF DELAY S Break	Input voltage U must be applied continuously. When control S is closed, relay contacts R change state. When control S is opened delay t begins. When delay t is complete, contact R return to their shelf state. If signal S is closed before time delay t is complete, then time is reset, the delay begins again, and relay contacts remain in their energized state. If input voltage U is removed, relay contact R return to their shelf state.	
USE THESE SETTINGS		
E. RETRIGGERABLE ONE SHOT	Upon application of input voltage U , the time delay relay is ready to accept trigger signals S . Upon application of the trigger signal S , the relay contacts R transfer and the preset time t begins. At the end of the preset time t , the relay contacts R return to their normal condition unless the trigger signal S is opened and closed prior to time out t (before preset time elapses). Continuous cycling of the trigger signal S at a rate faster than the preset time will cause the relay contacts R to remain closed.	
F. REPEAT CYCLE Starting On	When input voltage U is applied, relay contacts R change state immediately and time delay t begins. When time delay t is complete, contacts return to their shelf state for time delay t . This cycle will repeat until input voltage U is removed. Control switch is not used in this mode.	
G. PULSE GENERATOR	Upon application of input voltage U , a single output pulse of 0.5 seconds long is delivered to relay after time delay t . Power must be removed and reapplied to repeat pulse. Control switch S is not used in the mode.	
H. ONE SHOT	Upon application of input voltage U , the time delay relay is ready to accept trigger signals S . Upon application of the trigger signal S , the relay contacts R transfer and the preset time t begins. During time-out, the trigger signal S is ignored. The time delay relay resets by applying the trigger signal S when the relay is not energized.	
I. ON/OFF DELAY S Make/Break	Input voltage U must be applied continuously. When control S is closed, time delay t begins. When time delay t is complete, relay contacts R change state and remain transferred until control S is opened. If input power U is removed relay contacts R return to their shelf state.	
J. MEMORY LATCH S Make	Input voltage U must be applied continuously. Output changes state with every control S closure. Returned to rest condition when power is removed.	

U = Input Voltage S = Control Switch R = Relay Contacts t = Time Delay

