*"Where Quality Is Not Negotiable"*

# Q2K Plus

# Installation and Parts Manual

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# TABLE OF CONTENTS


| | PAGE |
|---|---|
| UNIT IDENTIFICATION | 3 |
| WARRANTY | 4 |
| SAFETY INFORMATION | 5 |
| UNIT INSTALLATION | 6-13 |
| UNIT OPERATION | 14-15 |
| UNIT ADJUSTMENT | 16-17 |
| CONVERSION TO RIGHT HAND DISCHARGE | 18-25 |
| UNIT MAINTENANCE | 26 |
| PART ORDERING | 27 |
| INFEED BELT CONVEYOR ASSEMBLY - PART LIST | 28 |
| INFEED BELT CONVEYOR LIFT ASSEMBLY - PART LIST | 29 |
| INFEED BELT CONVEYOR DRIVE ASSEMBLY - PART LIST | 30 |
| POWERED ROLLER CONVEYOR - PART LIST | 31 |
| CONTROL PANEL - PART LIST | 32 |
| PHOTO EYES & PROXIMITY SENSOR - PART LIST | 33 |
| MISCELLANEOUS PARTS | 34 |

# UNIT IDENTIFICATION

Every plate transfer manufactured is identified with a UNIT I. D. NUMBER.
The UNIT I. D. NUMBER is needed when contacting the factory for technical support or to order parts. The UNIT I. D. NUMBER is located on the label on the electrical enclosure.

UNIT IDENTIFICATION LABEL



# WARRANTY

Conveyors Plus, Inc. warrants to the original buyer that the equipment, except items manufactured and covered by others warranty, shall be free of defects in workmanship or materials. The seller's sole obligation under this warranty shall consist exclusively of repairing or replacing, free of charge, F.O.B. it's factory, any parts received prepaid at it's factory within one year from the date of the part's delivery to the buyer, and determined by the seller upon inspection to be defective.

No other warranty, expressed or implied, as or description, quality, merchantability, fitness for a particular purpose, or any other matter is given by the seller in connection herewith. Under no circumstances shall the seller be liable for loss of profits or any other direct or secondary losses, expenses, losses or damages arising out of defects in or failure of the equipment or any part thereof.

The seller's obligation under it's warranty shall be nullified, if buyer has not paid for said equipment in full, if buyer does not provide proper maintenance of the equipment, or if the equipment is used for any purpose other than intended. Right is reserved to make changes in material or design which in the seller's judgment are necessary for the improvement or successful operation of the equipment.

The seller's equipment is designed and built to be compatible with high level of safety and sanitation standards. It is the seller's expectation that it's equipment, when installed, operated, and maintained properly will enable the owner to comply with regulations and interpretations of federal, state, or local government authority or industry health and safety standards. The seller, however, makes no representation or warranty that it's equipment meets all requirements of said standards. Warranties, changes or defects relating to said equipment shall be subject to above paragraph and this paragraph. It shall be the buyer's responsibility to determine that all safety devices and controls are in the proper location and in operating order at all times. The buyer shall also instruct operating personnel as to the safe operation and maintenance of said equipment upon and after delivery.

# SAFETY INFORMATION

Conveyors Plus, Inc., has designed and manufactured the provided equipment to a high level of safety standards, within the guideline specifications supplied by the buyer. In order for the system to be safely operated the buyer shall be responsible to train the operating personnel in the proper and applicable safety procedures of the local municipality.
BYPASSING or REMOVING any safety devices can cause serious personal harm.

GENERAL SAFETY INSTRUCTIONS
1. **DO NOT** service the machine without locking out electrical and pneumatic service.
2. **DO NOT** operate machine with any guarding removed.

LIFT ASSEMBLY SAFETY INFORMATION
1. **DO NOT** remove air cylinder without first mechanically blocking the lift assembly.
2. **DO NOT** remove guide wheels without first mechanically blocking the lift assembly.

**WARNING:** Removing the air cylinder without mechanical blocking could cause the unit to fall with the potential of causing personal injury.

# UNIT INSTALLATION

The installation of your new Q2K Plus Plate Transfer Unit is simple and can be completed within a four hour time frame.

The plate transfer will require two utility connections

Power: 115V 1PH 60HZ 3AMP.

Compressed air: 60 P.S.I. clean dry compressed air.

**INSTALLATION STEPS**

1. Remove only the shipping blocks and banding straps that stabilized the Q2K Plus during shipment, as shown in Figure 1 and Figure 2. This will allow the Q2K Plus to be lifted from the shipping skid. (The infeed belt section blocks will be removed in Step 10-C)

2. Remove the plate transfer from the shipping skid by lifting under the lower aluminum framework at designated lift points. (Figure 4)

3. With the Q2K Plus elevated, install the provided casters in each leg, turning in a clockwise direction. Fully insert each caster until it is hand tight. (Figure 5) Final tightening will take place during unit leveling procedure in Step 6.

4. Lower the plate transfer to the floor.

5. Position the plate transfer.

   A. Position the Q2K Plus on the centerline of the imager discharge. The middle roller of the Q2K Plus is the infeed centerline. (Figure 3) Leave ½" to 1" space between the imaging unit and the plate transfer.

   B. Note: The centerline of the plate discharge is not the midpoint of the rollers. The plate discharges centered about the vertical slot in the infeed belt frames. (Figure 3)

6. Level the plate transfer by turning the caster stem in or out. Lock the elevation by tightening each jam nut (4) against the vertical leg.

**(NOTE: THE Q2K PLUS IS SHIPPED AS A LEFT HAND DISCHARGE UNIT. IF YOUR INSTALLATION REQUIRES A RIGHT HAND DISCHARGE, SEE "CONVERSION TO A RIGHT HAND DISCHARGE" SECTION OF THIS MANUAL, PAGE 18 )**

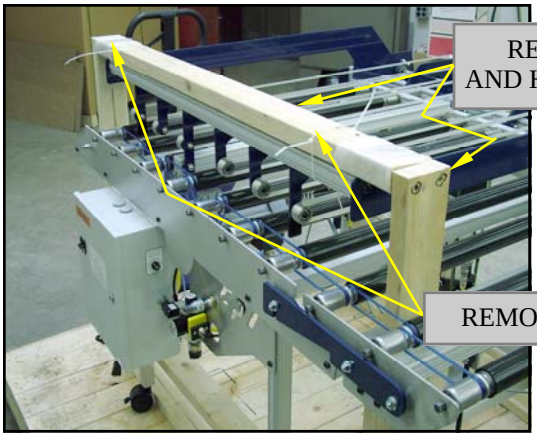



Figure 1

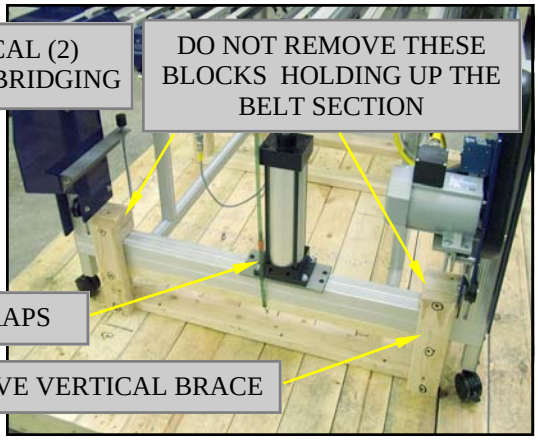



Figure 2

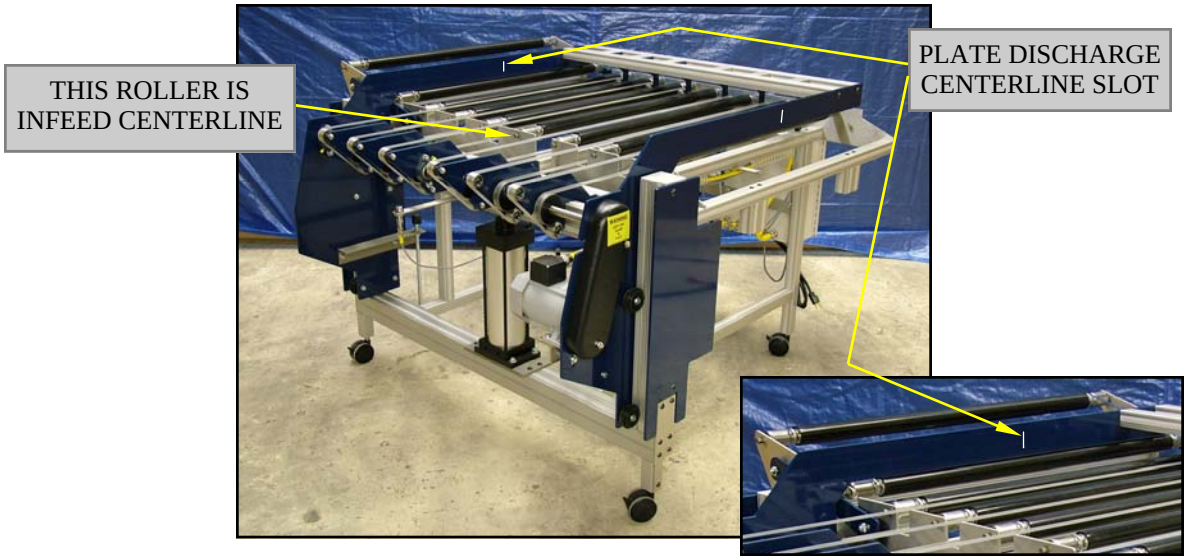



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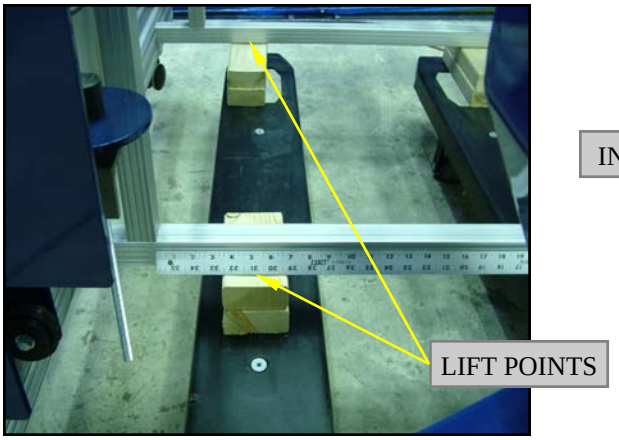



Figure 4

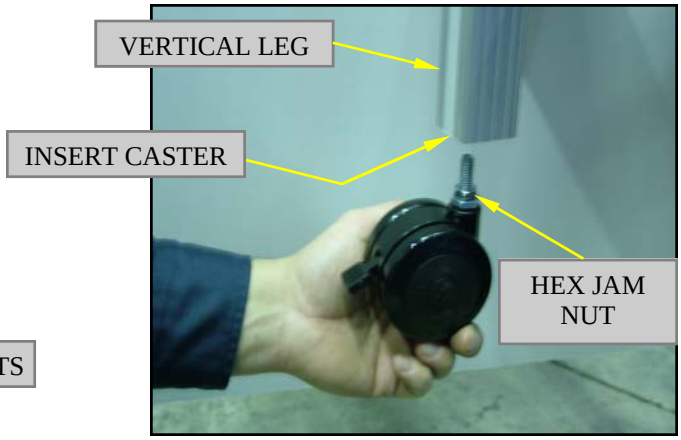



Figure 5

7. Adjust the roller discharge section elevation to match the down line processing equipment.
    A. Loosen rear mounting nuts on the roller discharge unit. (Figure 6)
    B. Loosen the upper eye bolt fastener on the adjusting screws to allow discharge section to raise or lower freely. (Figure 7)
    C. Raise or lower the jam nuts on the adjusting screw. (Figure 7)
    D. Tighten all adjusting screw nuts and rear mounting nuts to lock correct discharge elevation.

8. Compressed air connection will be made by a customer supplied 1/4" NPT male fitting into the quick disconnect air coupler. (Figure 8)
    A. The unit should be connected using a flexible air line. (Rigid pipe connections are **NOT** recommended.)
    B. Flexible air line should be 1/4" or larger in diameter.
    C. Apply air pressure.
    D. Open the slide valve (down position) on the filter-regulator and adjust the air pressure setting by lifting and rotating the adjusting knob. Set air pressure to **40 P.S.I.** (Figure 9)

9. Electrical connection.
    A. Verify that the control switch mounted in the electrical enclosure front panel is off. (Down) (Figure 10)
    B. Using the provided power cord plug into 115V 1PH 60HZ receptacle (**Note:** Have a qualified electrician verify that the receptacle is properly wired for 115V.)

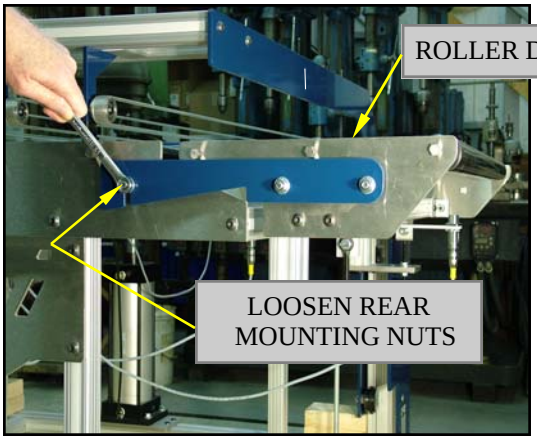



Figure 6

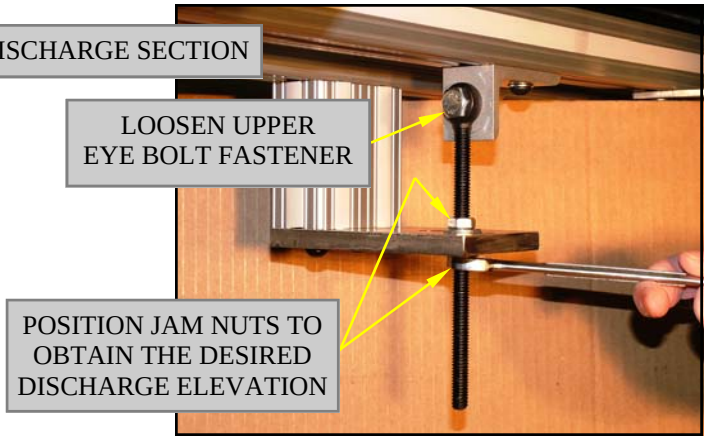



Figure 7



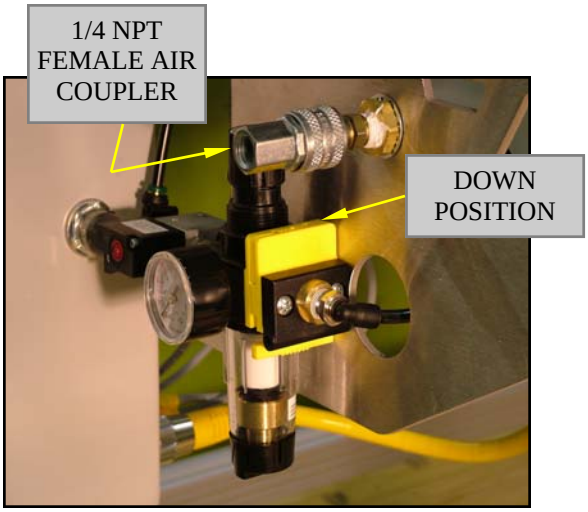




Figure 8

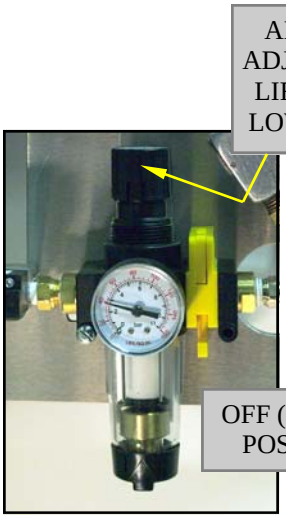



Figure 9

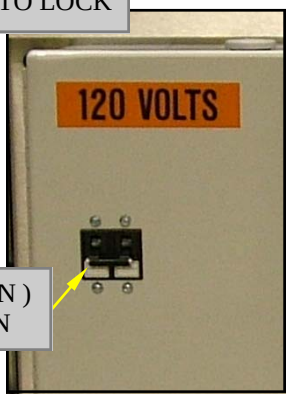



Figure 10

# UNIT INSTALLATION

At this point verify that all internal machine strapping has been removed.

Verify that tools, manuals, or other non unit materials are removed from any machine surface.

**CAUTION:** When applying power to the Q2K Plus the machine will become automated. (Be alert)

10. Power the Q2K Plus by switching the control switch to the "on" position. (Up) (Figure 11)
    A. The infeed belt section will automatically raise.
    B. If the infeed belt section does not raise, turn power switch "off".
        1. Verify air pressure is set at 40 P.S.I..
        2. Check for shipping straps still in place preventing the infeed belt section from raising.
        3. Verify that the receptacle the unit is plugged into is powered at 115V 1 Phase.
        4. Retry by turning the power switch "on" (up). (Figure 11)

*** If the infeed belt section does not raise contact:
Conveyors Plus, Inc. Technical Support 708 361-1512

C. When the infeed belt section has stopped movement in the up position, Remove the remaining shipping blocks. (Figure 12)

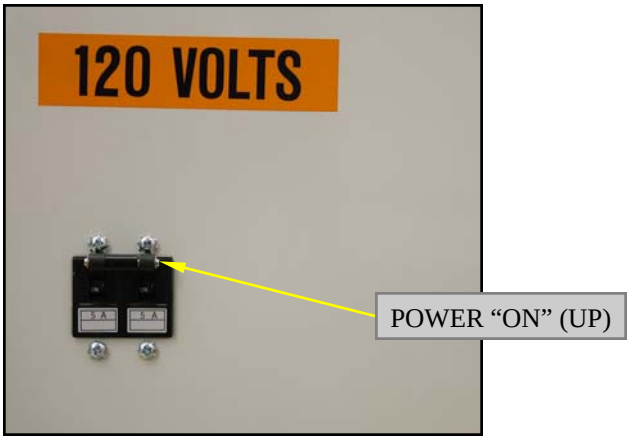
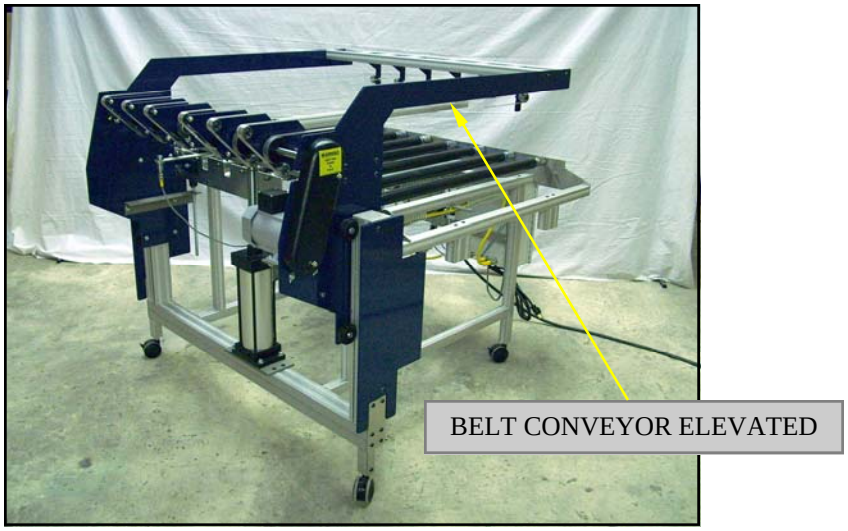



Figure 11



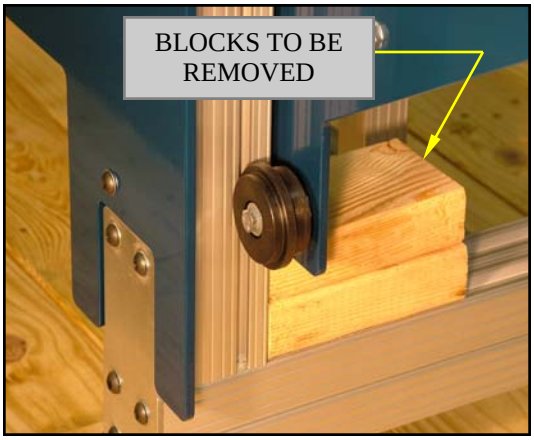




Figure 12

11. The final adjustment needed to complete the Q2K Plus installation is the matching of the infeed belt section elevation to the discharge elevation of the image setter.
    A. Power the Q2K Plus (power switch up) (Figure 13) The infeed section will raise. If the infeed belt section does not raise, return to Step 10 and complete diagnostics.
    B. If the elevation of the infeed belt section is below the discharge elevation of the image setter proceed to Step 14
    C. If the elevation of the infeed belt section is above the discharge elevation of the image setter continue to Step 12.

12. Infeed belt section elevation adjustment.
    A. Measure and note the distance that the infeed belts are above the image setter discharge elevation.
    B. Turn the Q2K Plus power switch "off" (down). (Figure 14)
    C. Disconnect Q2K Plus power cord from electrical receptacle. (Figure 15)
    D. Loosen the jam nuts that lock the vertical stop adjusters. (Figure 16)
    E. Raise both vertical stop adjusters the dimension that was measured in Step 12A.
        NOTE: Be certain both stop adjusters are adjusted equally. A variance in adjustment height from side to side will cause premature air cylinder failure.
    F. Hand tighten the jam nuts to secure the position of the vertical stop adjusters.
    G. Reconnect the Q2K Plus to the power source.
    H. Turn the Q2K Plus "on" (Switch up) (Figure 13)
    I. Verify when the infeed belt section is fully elevated that the Q2K Plus infeed belt section is even or slightly below (1/8"-1/4") the image setter discharge elevation.

If the infeed belt elevation is properly aligned proceed to Step 13.

If the infeed belt elevation is still above the image setter discharge, return to Step 12A and repeat until the desired elevation is obtained.

13. When the desired infeed belt elevation is obtained secure the vertical stop adjusters in position by locking the jam nuts against the mounting support angle. (Figure 16)

14. Installation of the Q2K Plus Plate Transfer is complete. Proceed to the operating section to begin testing.

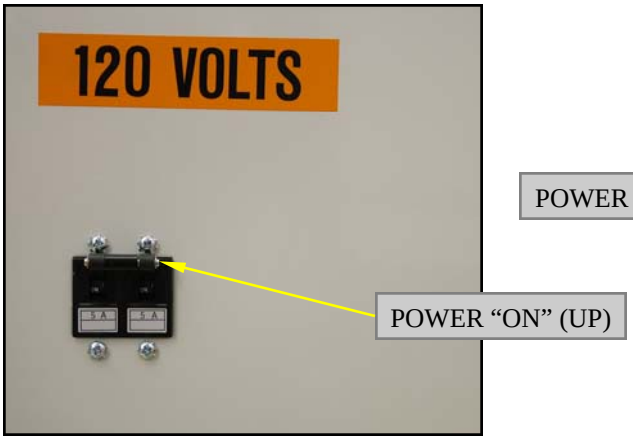



Figure 13

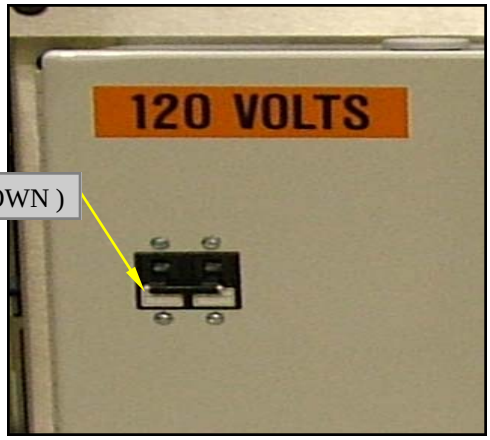
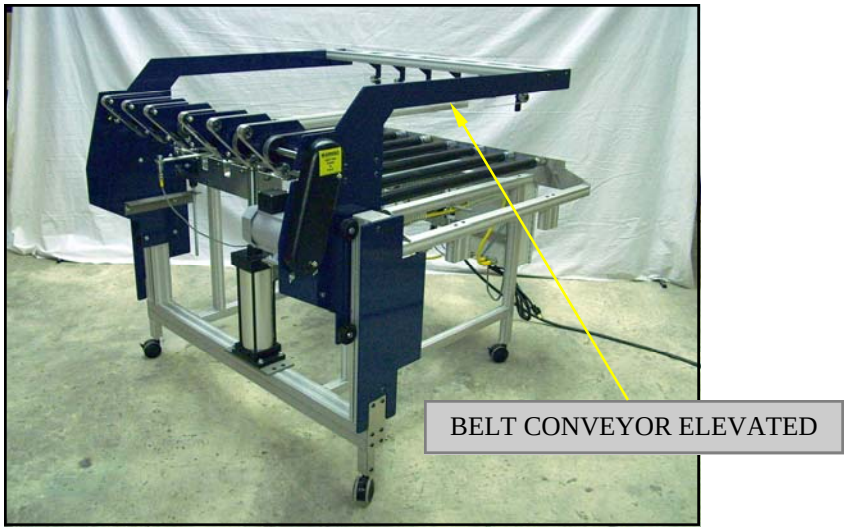



Figure 14



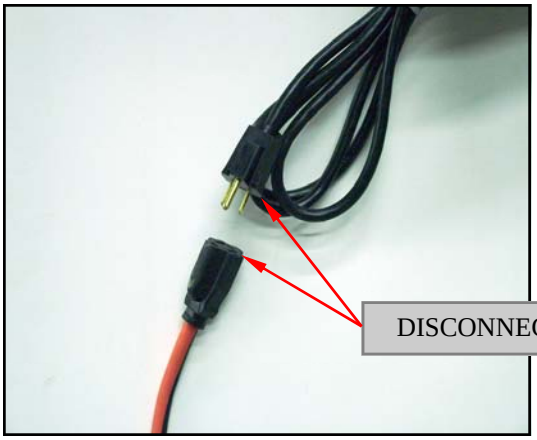




Figure 15

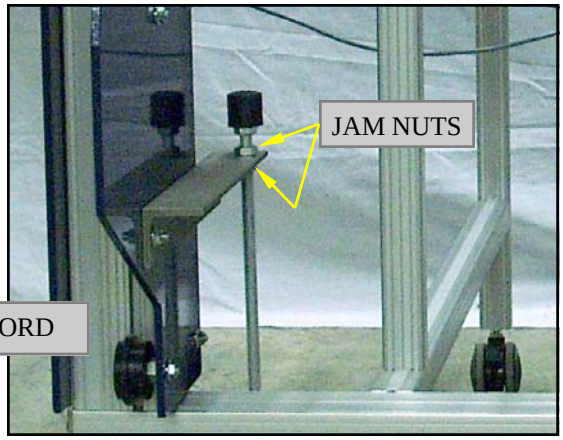



Figure 16

# UNIT OPERATION

The design and operation of the Q2K Plus is very basic and has been throughly tested prior to shipment.

The Q2K Plus is designed to:

1. Accept and convey a plate on demand from an image setter traveling in the landscape orientation.
2. Electronically measure the plate.
3. Stop the plate centered on a predetermined discharge centerline.
4. Lower the plate onto the discharge roller section and convey the plate left (or right) downstream to processing equipment.

The Q2K Plus is designed to handle a range of plate sizes.

1. 41" x 31 ½" Maximum
2. 15" x 12" Minimum

To verify the operation of the Q2K Plus follow the basic start up steps below. These steps will run the unit through one complete cycle.

**BASIC START UP STEPS:**

1. ACTION: Power unit by placing power switch "up", on the electrical enclosure. (See Figure 1)
   RESULT: The infeed belt section will raise.
2. ACTION: Place a customer supplied plate on the infeed section of the belt conveyor . (Figure 2)
   RESULT: 1. The infeed belt conveyor will turn on and transport the plate.
   RESULT: 2. The plate will advance a programmed distance and the infeed belt conveyor will stop. (Figure 3)
   RESULT: 3. The infeed belt section will lower. (Figure 4)
   RESULT: 4. The roller conveyor will start, transporting the plate left (or right) at a factory preset speed. (Figure 5)
   RESULT: 5. When the lead edge of the plate reaches the discharge of the Q2K Plus blocking PE 4 the roller conveyor will change speed to match the setting of the speed pot located on the right side of the electrical cabinet. (Figure 6 and 7)
   RESULT: 6. When the trailing edge of the discharging plate clears PE 3, (Figure 8) the infeed belt section will raise ready to accept the next plate from the image setter.
   RESULT: 7. The discharge roller section will continue to run at set pot speed until PE 4 is clear indicating the plate discharging has completely exited the Q2K Plus.
3. If the above sequence is executed the Q2K plus is operating as intended.
4. If the plate exiting the Q2K Plus is **NOT** centered on the downstream equipment centerline refer to "Electronic Plate Centering Adjustment" in the Unit Adjustment section of this manual. (Page 16)
5. If preceding sequences cannot be executed, contact Conveyors Plus, Inc. Technical Support (708) 361-1512.

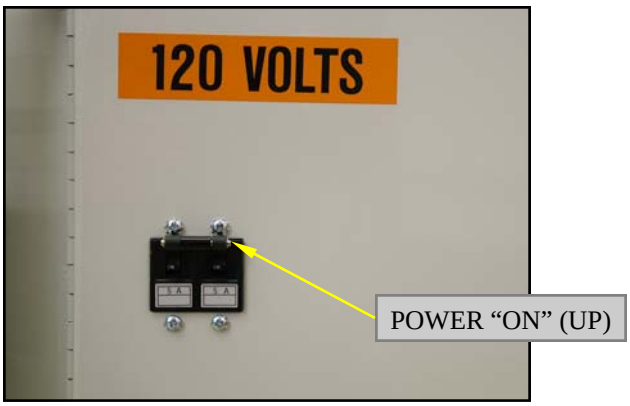



Figure 1



Figure 2



Figure 3



Figure 4



Figure 5

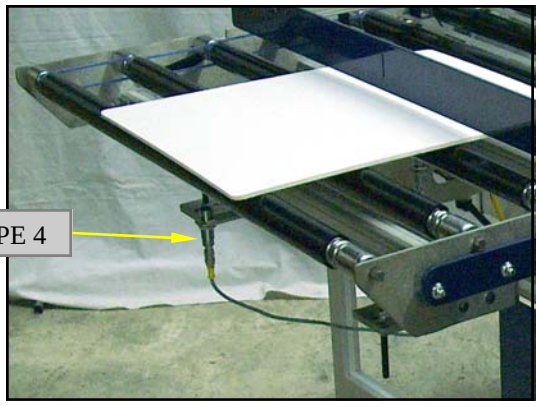



Figure 6




Figure 7

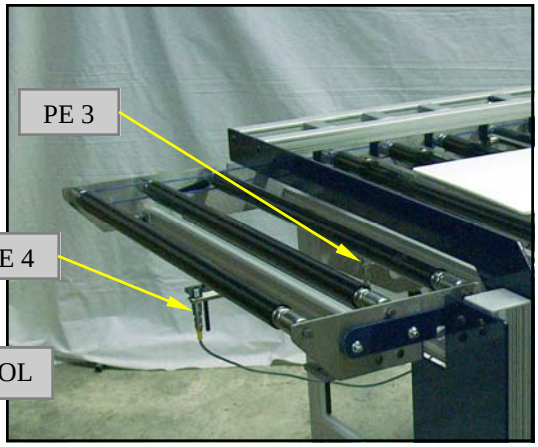



Figure 8

# UNIT ADJUSTMENT

## ELECTRONIC PLATE CENTERING ADJUSTMENTS

Adjustment must be done by a qualified Electrical Technician, as voltage is present in control panel when enclosure is open.

**NOTE: Read all instructions prior to starting adjustments.**

1. The electronic plate centering feature on the Q2K Plus is factory set, however a minor adjustment may be needed at the time of installation to calibrate the stop location of the plate on the infeed belts.

2. Observe the relationship of the center reference slot and the midpoint of the exiting plate. (Figure 1)

3. If the midpoint of the plate being transported on the infeed belts has stopped relative to the discharge centerline no further adjustment is needed.

4. If the midpoint of a plate while being transported on the infeed belts has stopped before or traveled beyond the discharge centerline, proceed to Step 5.

5. Plate stopping position can be electronically tuned by adjusting a potentiometer located on the IDEC Micro Smart PLC (Figure 2)

**NOTE:** Make adjustments in small increments and retest.

6. If the plate stops before reaching the reference centerline turn the potentiometer “CCW”.

7. If the plate travels past the reference centerline turn the potentiometer “CW”.

8. If the desired results cannot be achieved, contact Conveyors Plus, Inc. Technical Support 708 361-1512 for assistance.

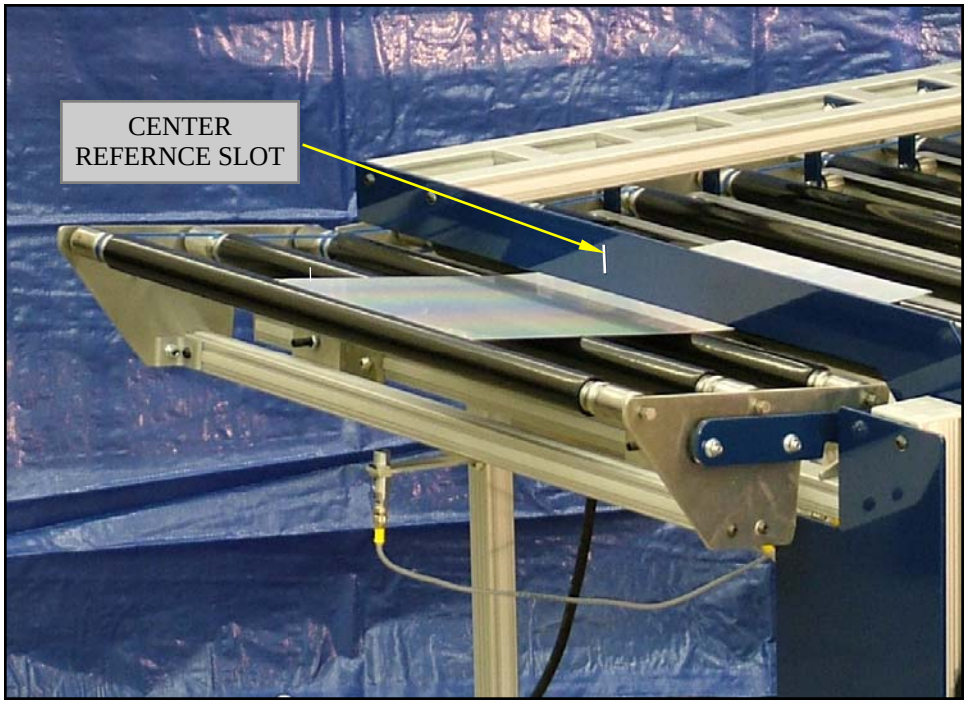



Figure 1

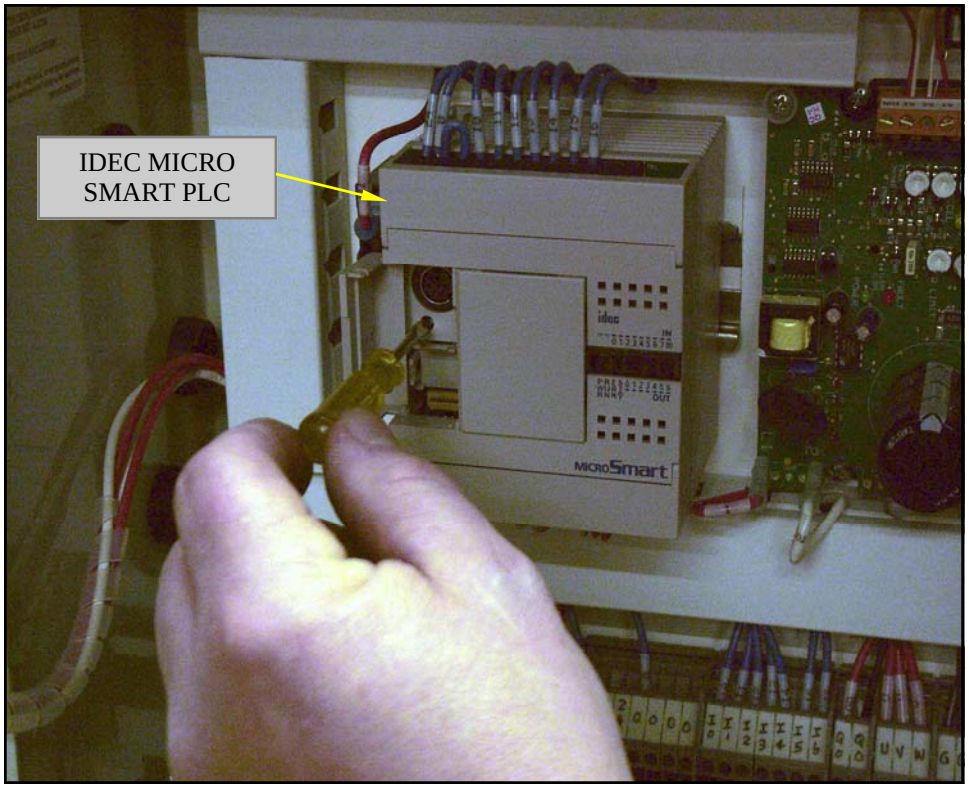



Figure 2

# CONVERSION TO RIGHT HAND DISCHARGE

**NOTE:** The discharge roller unit will have to be removed and relocated during conversion. This operation will require two technicians:

## STEPS TO CONVERT TO RIGHT HAND DISCHARGE

1. Disconnect air supply, turn off power at the control panel, and unplug power cord from power source.

2. Remove blue rubber belt from the spring loaded drive roller:

    A. Push the end of the spring loaded power take off roller shaft and lift the end above the side frame to remove the blue rubber belt from the power take off roller. (See Figure 1, 2, & 3)

    B. Replace the spring loaded power take off roller shaft in the side frame. (See Figure 4)

3. Remove the first roller of the discharge roller unit to change blue rubber belt positions. (See Figure 5)

4. Remove second blue rubber belt so you can place the first blue rubber belt inboard of second blue rubber belt. (See Figure 6)

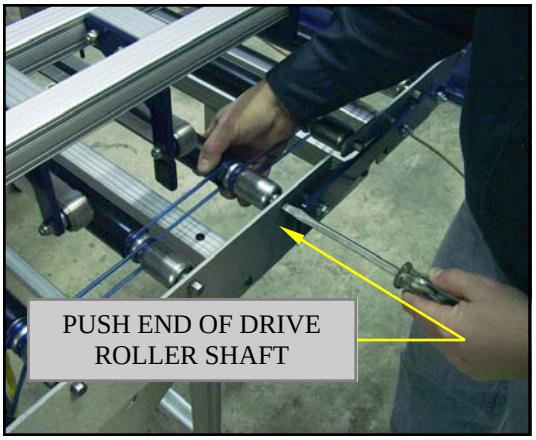



Figure 1

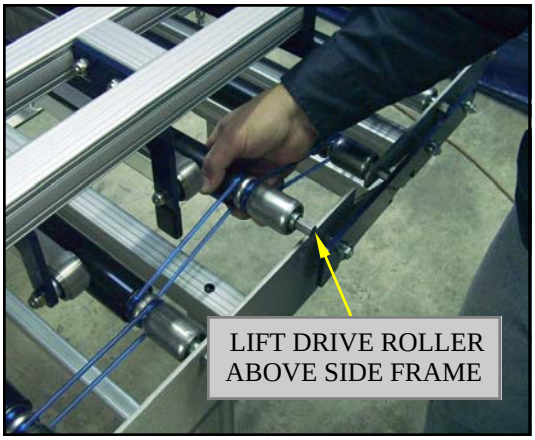



Figure 2

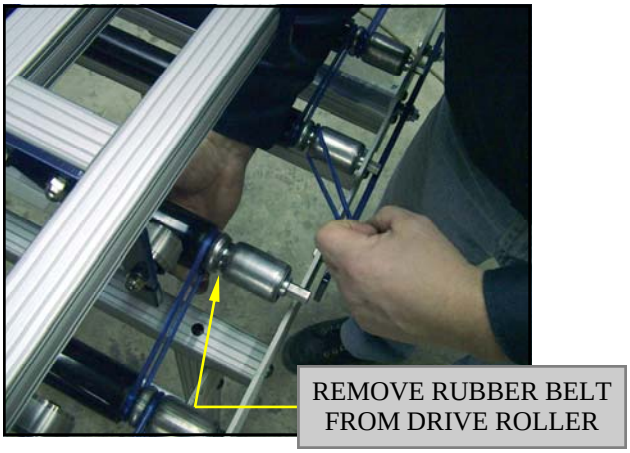



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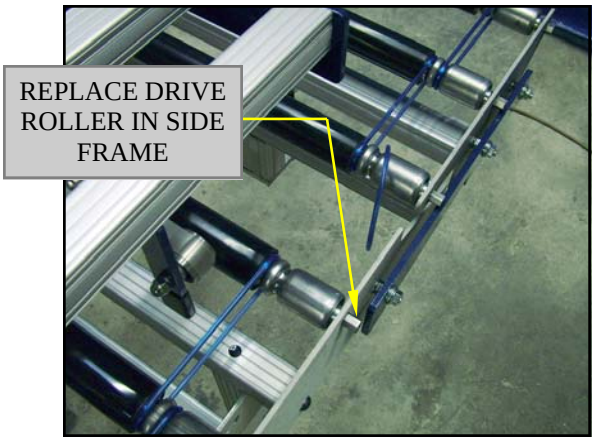



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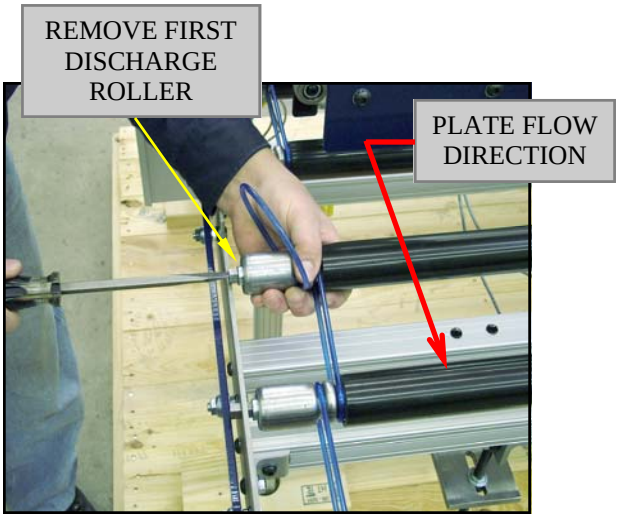



Figure 5

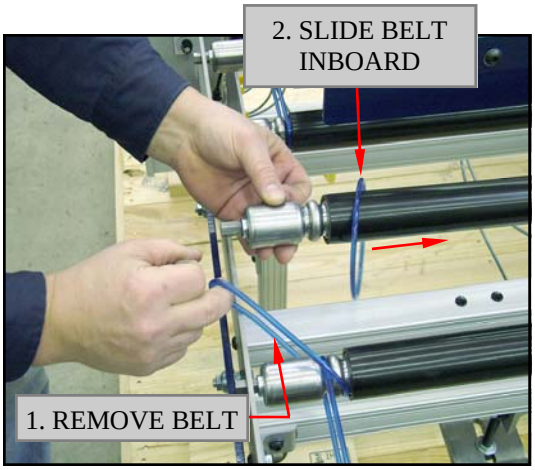



Figure 6

# CONVERSION TO RIGHT HAND DISCHARGE

5. Reinstall roller in side frame of the Q2K Plus. (See Figure 7)

6. Remove cable from photo eye (PE-4) discharge sensor. (Note the position of the cable end in relation to the photo eye socket so you can reinstall the cable correctly.) (See Figure 8)

7. Have a technician support the discharge unit roller section while the other technician removes the lower two hex nuts and washers on the discharge unit eye bolts. (See Figure 9)

8. Loosen the hex nuts that hold the discharge unit to the main side frame. ( See Figure 10)

9. Two technicians can now remove the discharge unit from the Q2K Plus frame.

10. Set the discharge unit roller section aside with rollers down to prevent damage to the photo eye sensor. (See Figure 11)

11. Loosen the hex nuts provided at the right hand end of the Q2K Plus where the discharge unit roller section will be relocated. (See Figure 12)

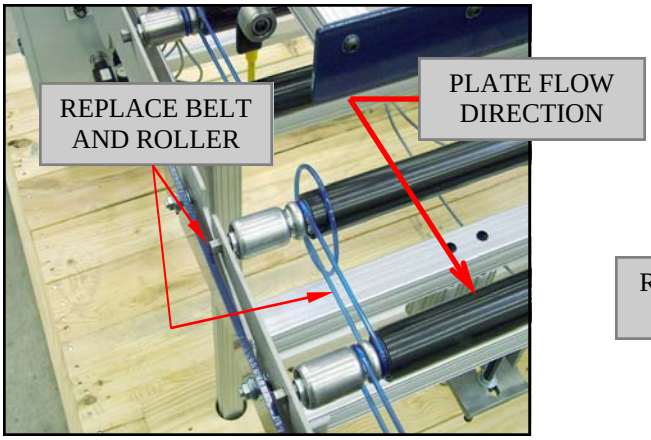



Figure 7

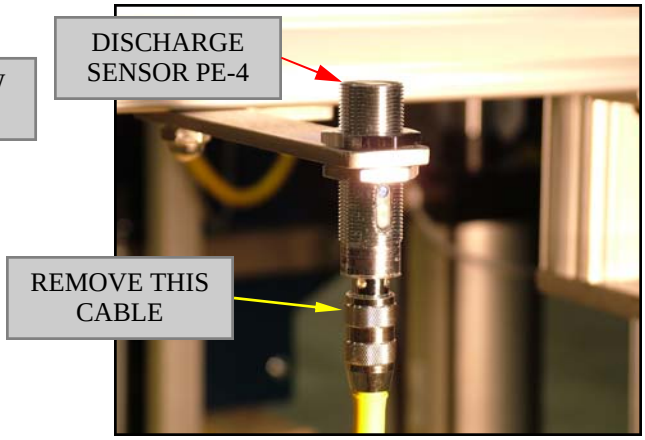



Figure 8

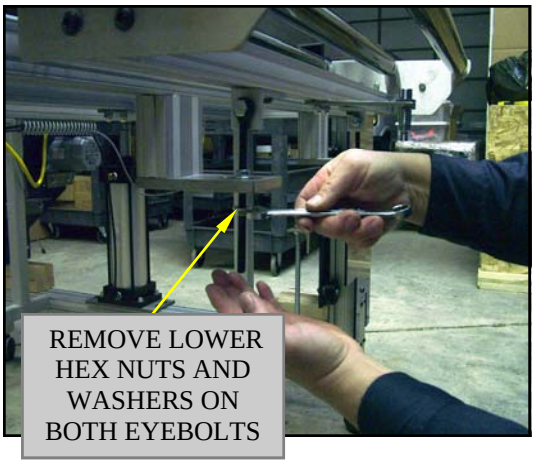



Figure 9




Figure 10




Figure 11

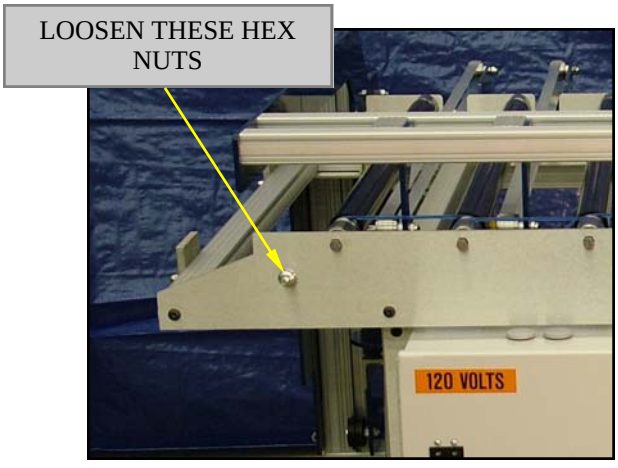



Figure 12

# CONVERSION TO RIGHT HAND DISCHARGE

12. Remove two roller section support mounting brackets using a 3/16” allen wrench and reinstall them at the right end of the Q2K Plus. (See Figure 13)

13. Reinstall the discharge unit on the right end of the Q2K Plus. (See Figure 14)

14. Reinstall the two hex nuts on the eye bolt adjustment rods and adjust discharge height if necessary. Tighten all eye bolt hex nuts to lock in discharge elevation.

15. Tighten side frame hex nuts to lock the discharge unit in place.

16. Slide the blue rubber belt back to the control panel side of the Q2K Plus. (See Figure 14)

17. Remove drive roller (above control panel) and install blue belt as shown. (See Figure 15, 16, & 17)

18. Reinstall roller into side frame. (See Figure 17)

19. Reinstall the cable to the discharge sensor.

20. Remove the upper hex nut holding sensor (PE-3) and remove the sensor from the mounting bracket. (See Figure 18)

21. Relocate and install sensor (PE-3) to the open sensor bracket provided for this conversion. Replace and tighten the upper hex nut to lock the sensor in place. (Do not remove center photo eye. This photo eye is for infeed purposes only.)

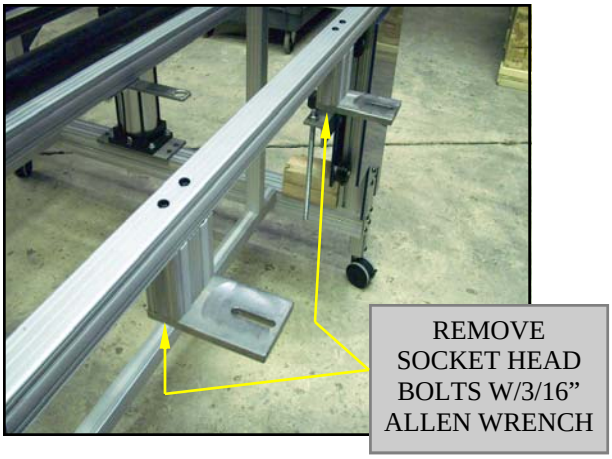



Figure 13

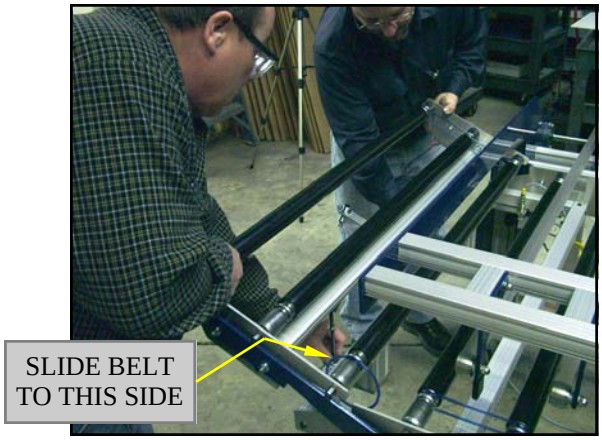



Figure 14




Figure 15

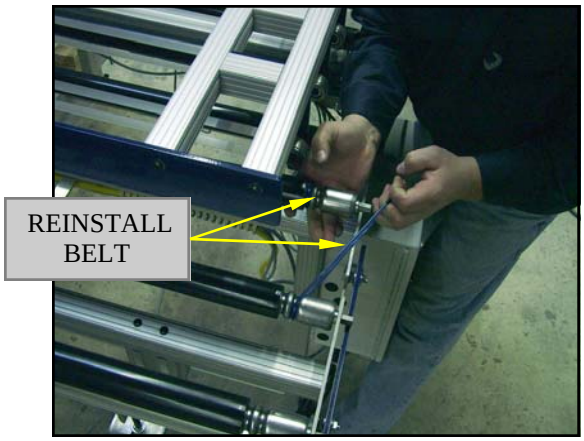



Figure 16

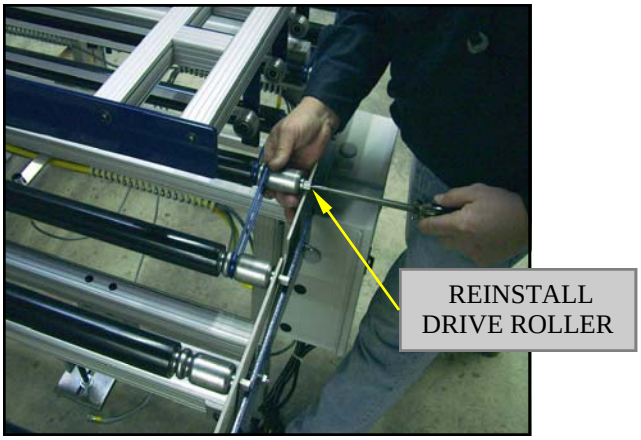



Figure 17

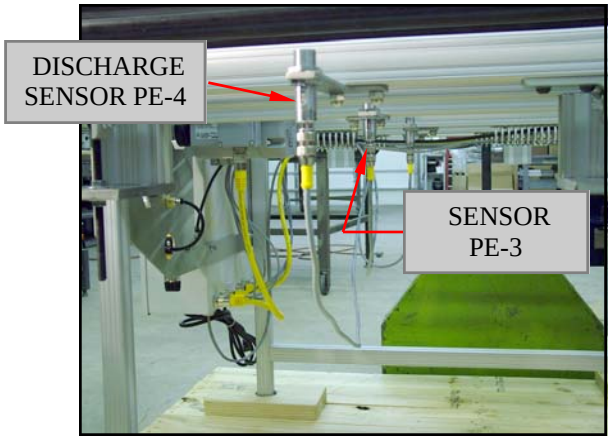



Figure 18

# CONVERSION TO RIGHT HAND DISCHARGE

22. Open the control panel door. (See Figure 19)

23. Loosen lower terminal screws that secure blue and black wires to terminals "V" and "W". (See Figure 20)

24. Interchange the blue and black wires:
    Blue to move to terminal "W"
    Black to terminal "V"
    Retighten the terminal screws. (See Figure 20)

25. Close control panel, plug power cord into power source, turn on the power, and reconnect the air supply. You can now exhale a satisfying sigh, knowing that you have successfully converted your Q2K Plus to a right hand discharge configuration.

**NOTE:** At any time should you have a situation occur that is not addressed in this manual please contact:

Conveyors Plus Inc.
PHONE:708 361-1512
FAX: 708 361-4372
E-mail: contact@conveyorsplus.net

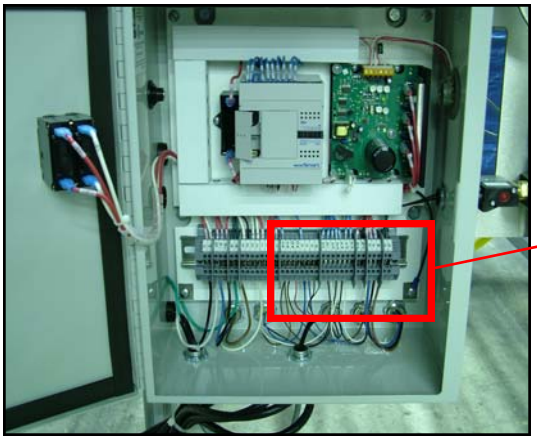


Figure 19

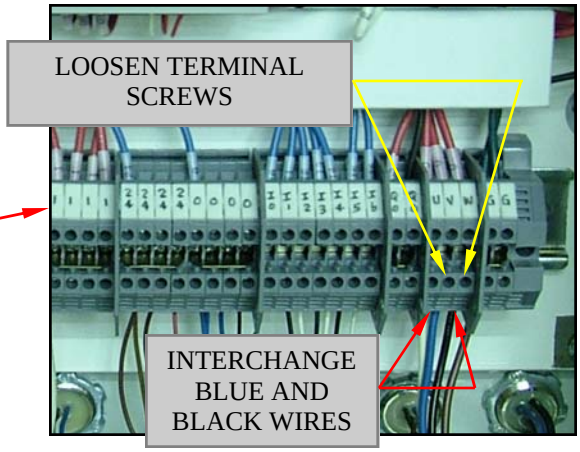



Figure 20

# UNIT MAINTENANCE

Maintenance procedures are to be used as a guideline.

Basic system maintenance frequency ( i.e. bearing lubrication, chain lubrication, chain tensioning, etc.) should be determined by the maintenance director of the plant where the equipment is installed.

The maintenance program should be based on the duty cycle of the system and its operating environment.

**DAILY** Check all photo eye sensors for cleanliness. A dirty sensor lens can cause false signals.

**WEEKLY** Compressed air preparation filter bowl should be drained.

**MONTHLY** All drives should be checked for wear, alignment, and tension.

**CAUTION** All maintenance personnel should follow applicable safety regulations when servicing equipment.

# PART ORDERING

**TO ORDER SPARE PARTS:**

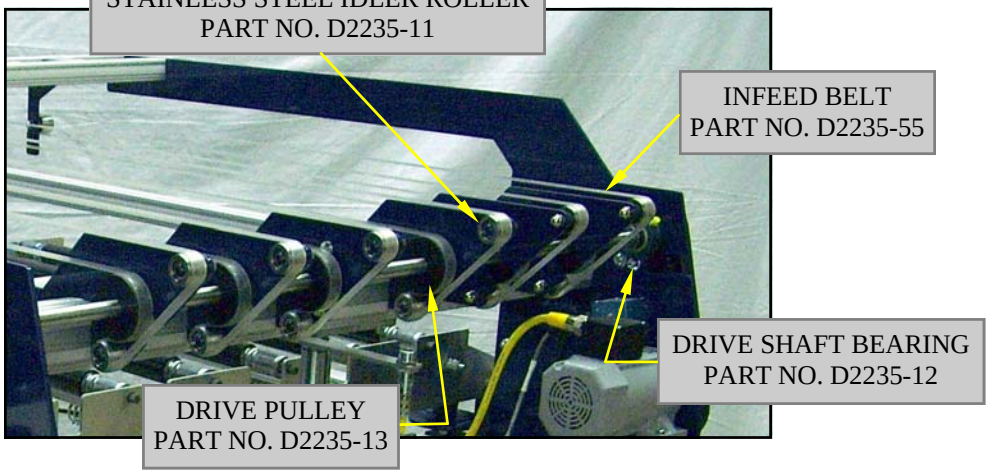
1. Parts can be ordered by contacting Conveyors Plus, Inc. If there is any uncertainty regarding parts for your machine our staff will assist you in identifying any component, provided you can supply us with the UNIT I.D. number.

2. Contact Conveyors Plus, Inc.
   Phone: 708 361-1512
   Hours: Monday thru Friday
   8:00 A.M.— 4:30 P.M. C.S.T.
   Fax: 708 361-4372
   E-mail: contact@conveyorsplus.net
   24 hours a day

Conveyors Plus, Inc. has provided the following parts lists showing Q2K Plus components that are subject to wear from normal use.

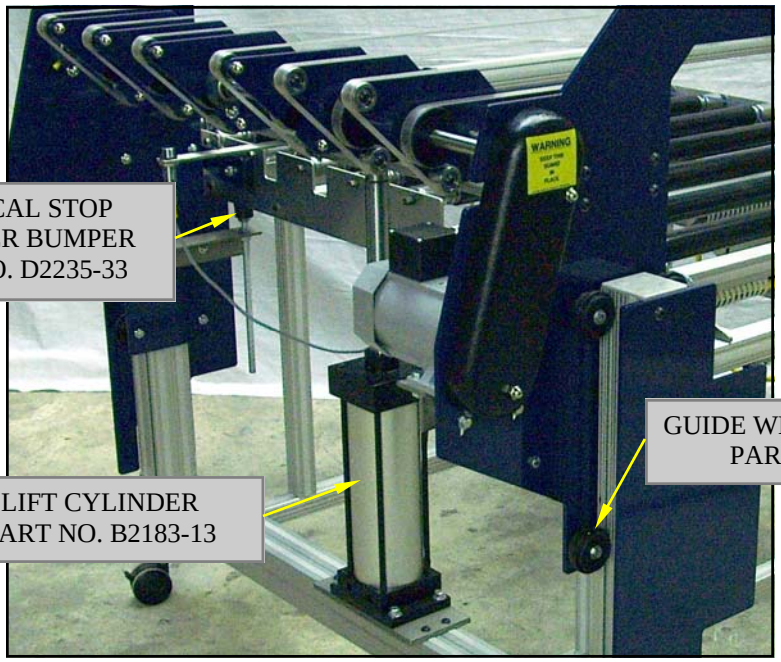
It is the determination of Conveyors Plus, Inc. that any Q2K Plus component not listed in the following parts list requires contact with Conveyors Plus, Inc. Technical Support 708 361-1512.

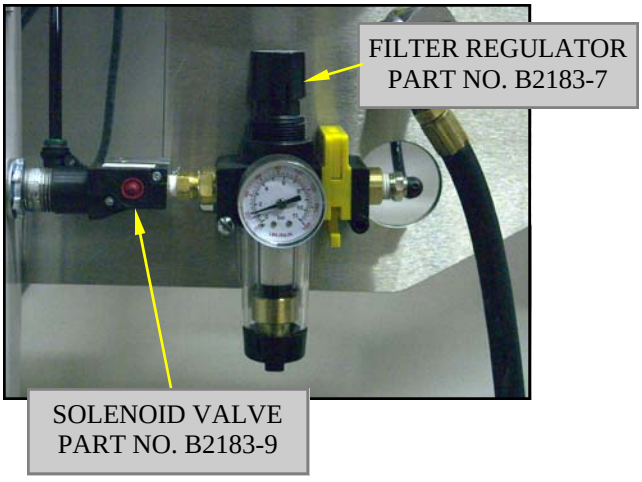
# INFEED BELT CONVEYOR ASSEMBLY - PART LIST

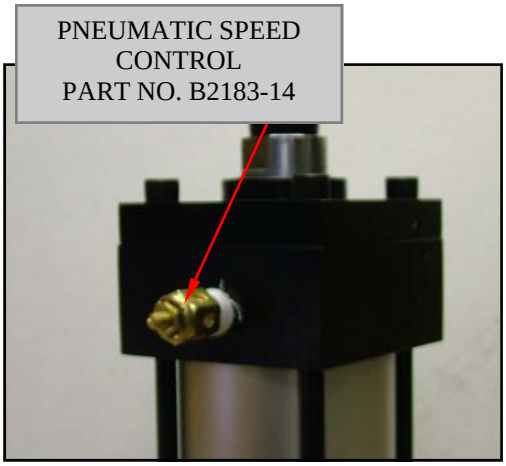




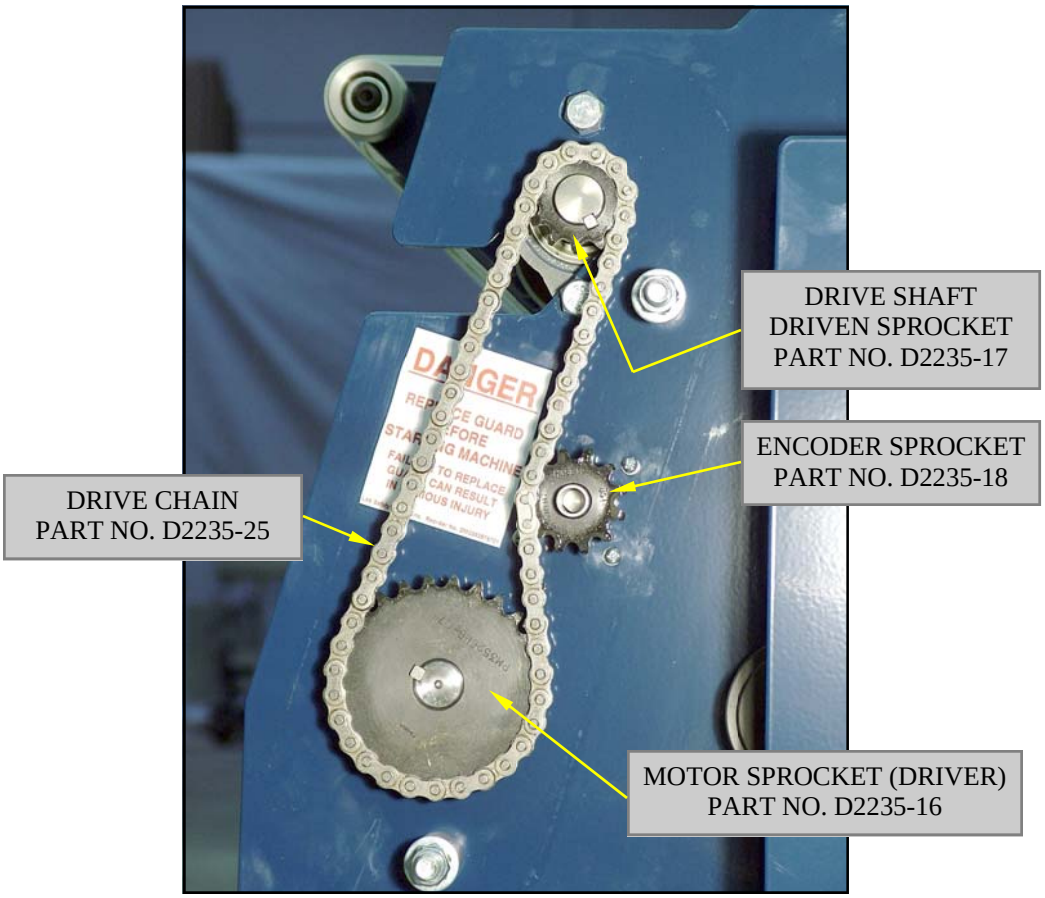

# INFEED BELT CONVEYOR LIFT ASSEMBLY - PART LIST

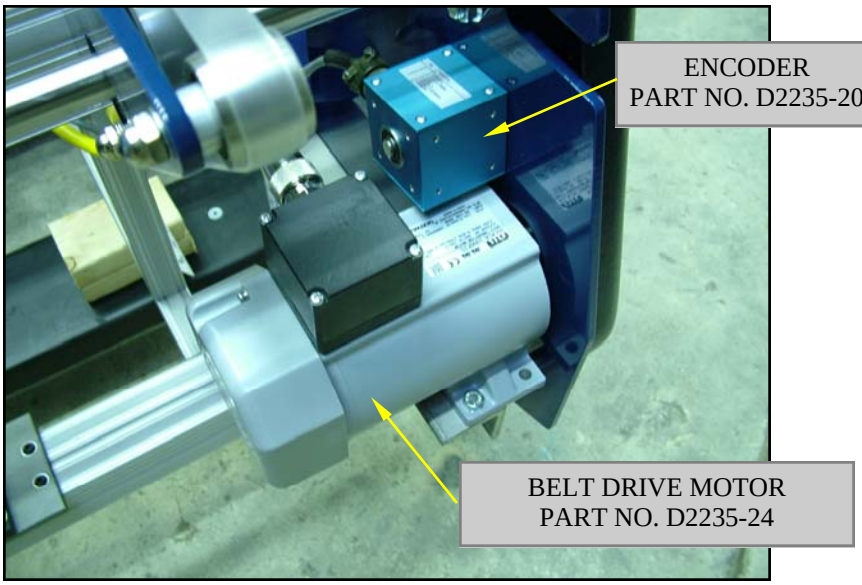


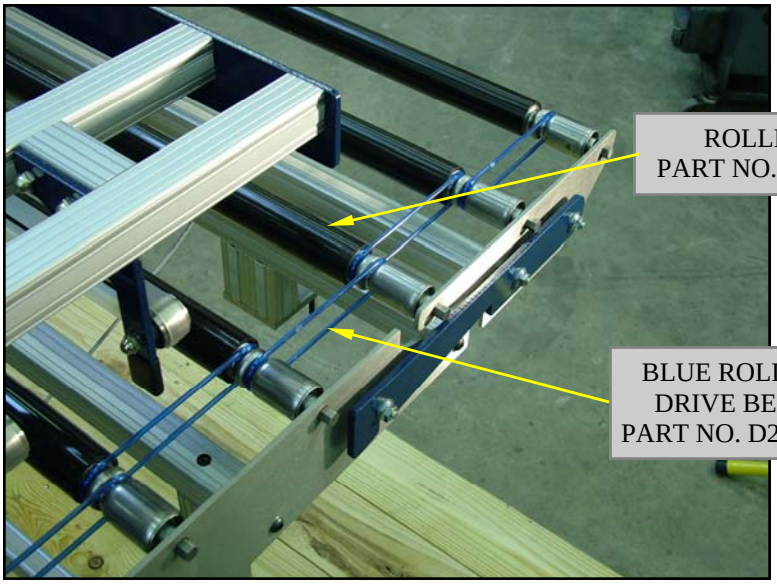



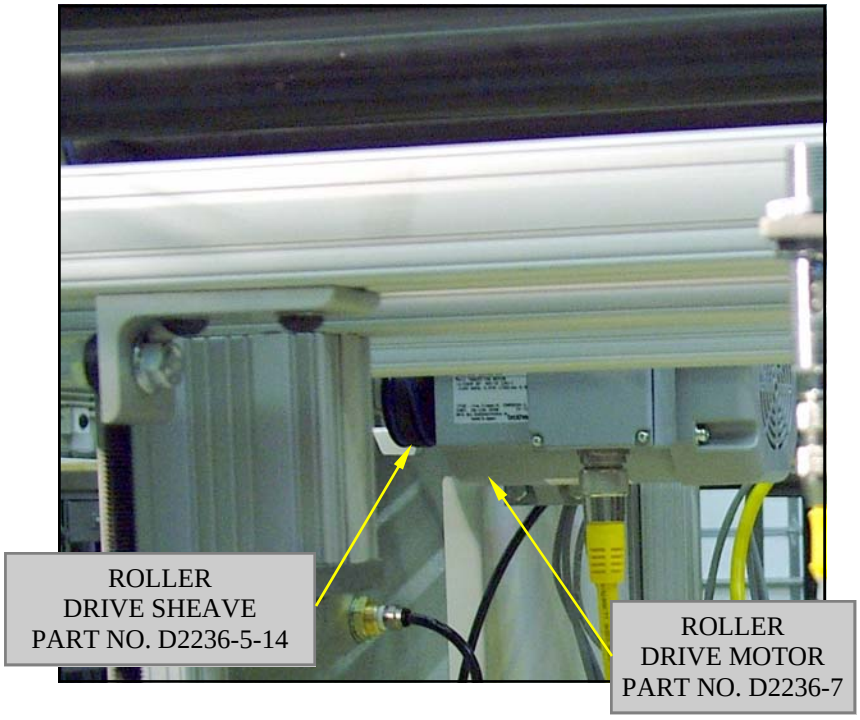
# INFEED BELT CONVEYOR DRIVE ASSEMBLY - PART LIST



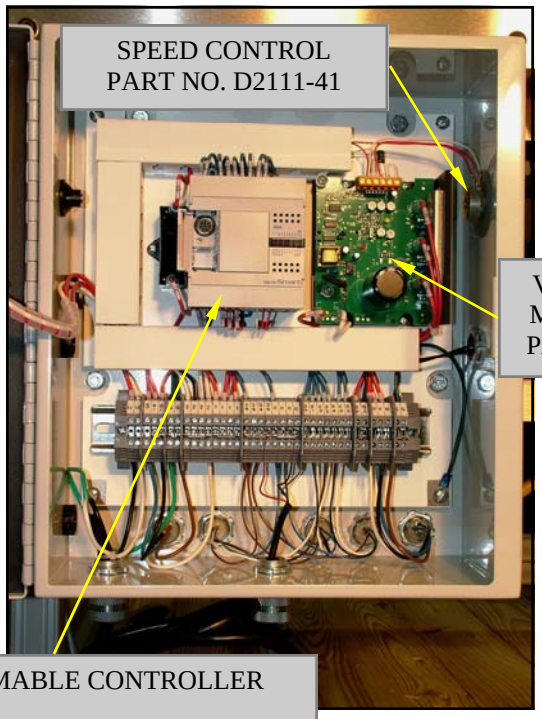



# POWERED ROLLER CONVEYOR - PART LIST

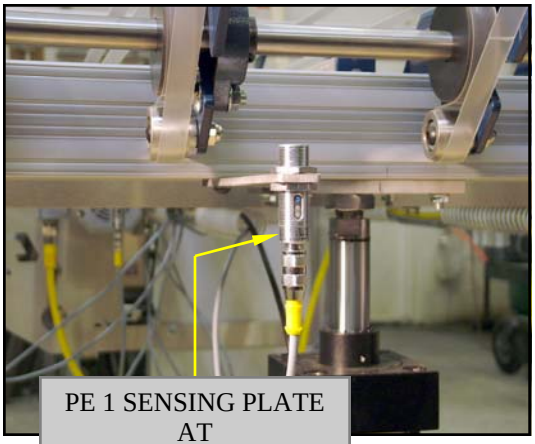


# CONTROL PANEL - PART LIST



# PHOTO EYES & PROXIMITY SENSOR - PART LIST



PE 1 SENSING PLATE
AT
BELT INFEED
PART NO. D2244-27



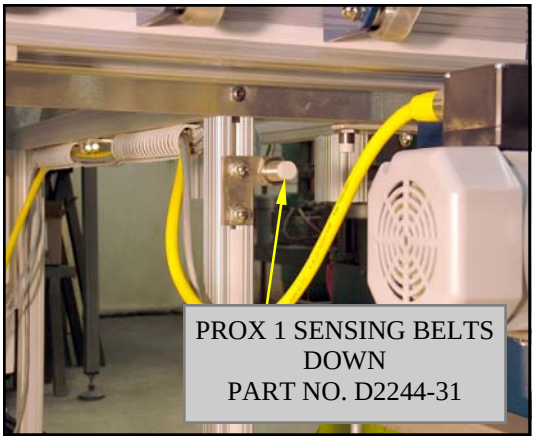
PE 2 SENSING PLATE
AT
ROLLER CENTERLINE
PART NO. D2244-27



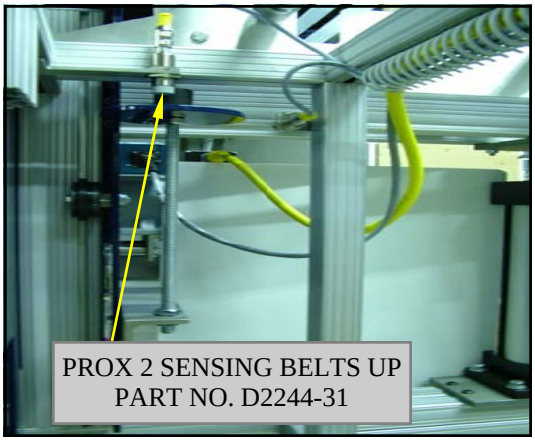
PE 3 SENSING PLATE
FOR CLEAR TO LIFT
PART NO. D2244-27



PE 4 SENSING PLATE AT
ROLLER DISCHARGE
PART NO. D2244-27



PROX 1 SENSING BELTS
DOWN
PART NO. D2244-31



PROX 2 SENSING BELTS UP
PART NO. D2244-31

# MISCELLANEOUS PARTS

