

IN-LINE PLATE TRANSFER
MODEL IPT 20/20

Operation
and
Parts Manual

Conveyors Plus, Inc.
13301 Southwest Highway
Orland Park, IL 60462

Phone 708 361 1512
Fax 708 361 4372
e-mail: contact@conveyorsplus.net

Conveyors Plus, Inc.

Conveyors Plus, Inc. wants to thank you for your purchase of a new IPT 20/20 Inline Plate Turner.

Your Plate Turner has been specifically designed to convey plates from your imaging equipment to your processing equipment. During the transfer the plates will be reoriented 90 degrees discharging the plates with the large dimension parallel to flow.

Conveyors Plus, Inc. has prepared this product manual to guide you through installation, operation, adjustment, and maintenance of your new plate turner.

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

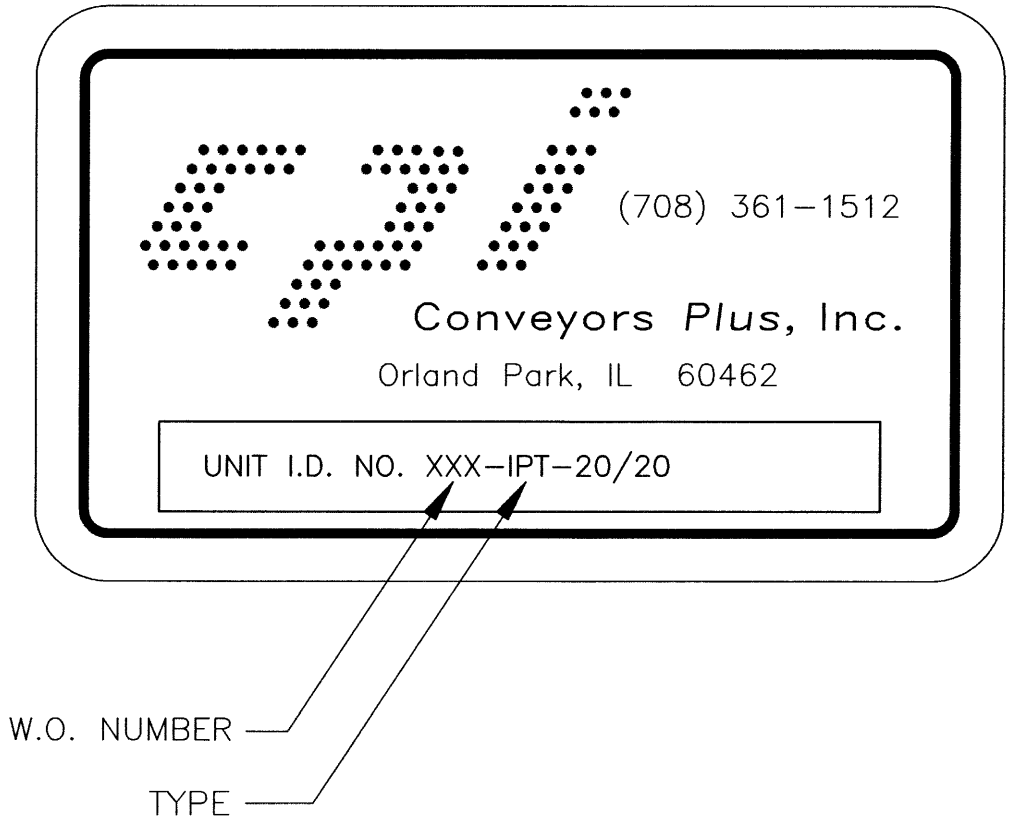
INLINE PLATE TRANSFER OPERATION & PARTS MANUAL

	PAGE
UNIT IDENTIFICATION	1
WARRANTY	2
SAFETY INFORMATION	3
UNIT INSTALLATION	4-10
UNIT OPERATION	11
UNIT MAINTENANCE	12
PART ORDERING	12
UNIT ADJUSTMENT	13-19
PART LISTS	20-27
ELECTRICAL SCHEMATIC	28

Each plate transfer manufactured has been identified with a UNIT I.D. NUMBER. The UNIT I.D. NUMBER is a combination of Conveyors Plus, Inc. W.O. NUMBER and the PLATE TRANSFER TYPE. The UNIT I.D. NUMBER is needed when contacting the factory for technical support or to order parts.

The UNIT I.D. NUMBER is shown on the label located on the electrical enclosure.

UNIT I.D. 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.

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. BY PASSING 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.

UNIT INSTALLATION

The installation of your new IPT-20/20 In-Line Plate Turner is simple and can usually be completed within a four hour time frame.

The In-Line Plate Turner will require two utility connections.

1. Power: 115V 1PH 60HZ 5 Amp.
2. Compressed air: 60 P.S.I. clean dry compressed air.

INSTALLATION STEPS

1. Remove In-Line Plate Turner from the crate and shipping skid by lifting under aluminum framework at designated lift points as shown on opposite page, Fig. 1. **NOTE: Use caution when cutting plastic strapping. Strapping is under tension and will snap when cut.** Be sure forklift arms reach opposite side of framework to lift properly.

2. Install casters with locking nut into threaded hole in aluminum extrusion (Fig. 1) Adjust caster to 4" dimension (Fig. 1) and lock nut tightly against aluminum extrusion.

3. Place In-Line Plate Turner away from the Plate Setter on level flooring.

4. Accurately measure plate discharge height of Plate Setter as shown on opposite page, Fig. 2.

UNIT INSTALLATION

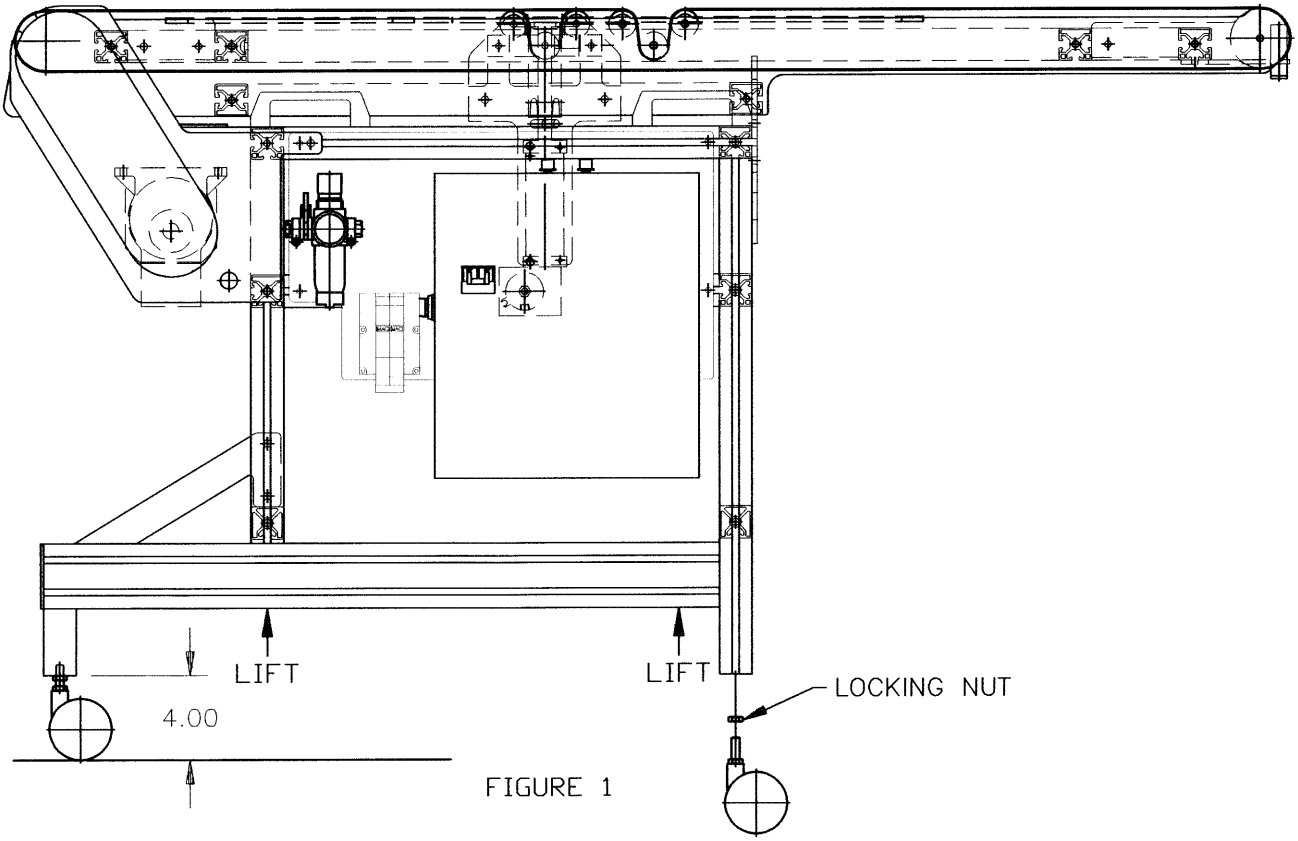


FIGURE 1

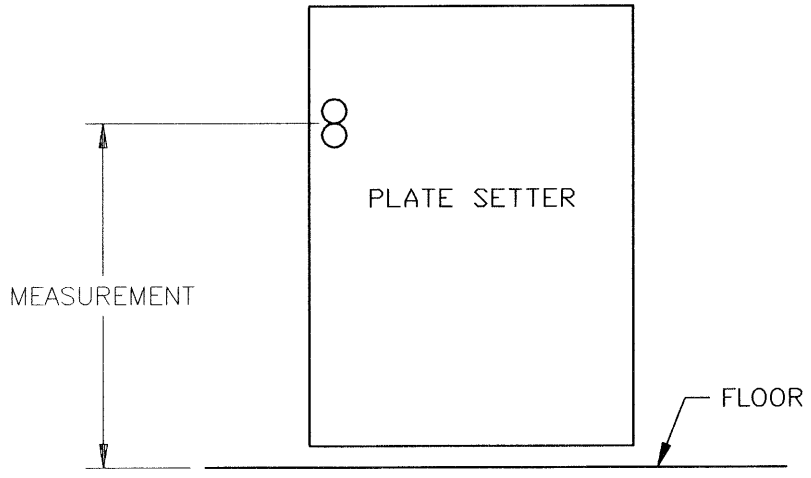


FIGURE 2

TAKING PRIDE IN AMERICA

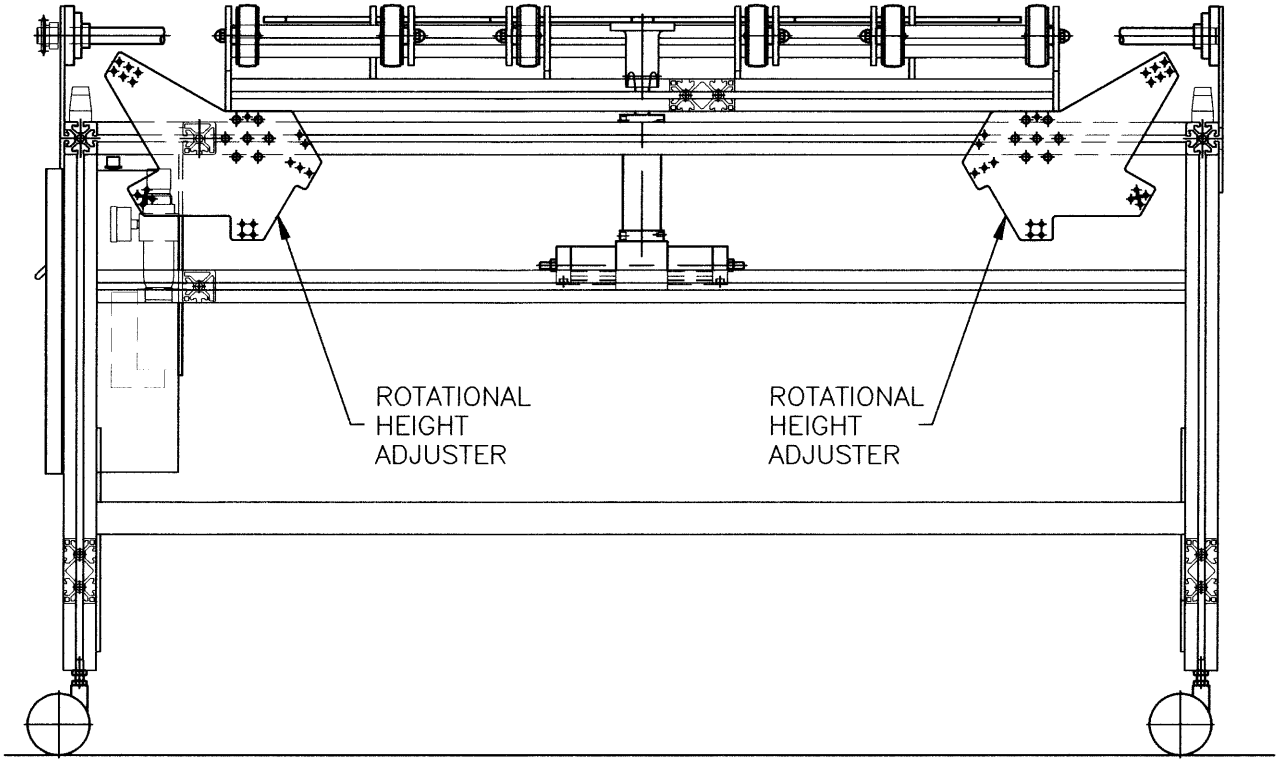
C:\WORKA\A2064

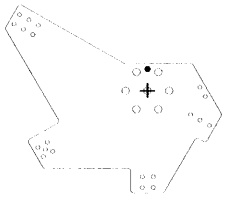
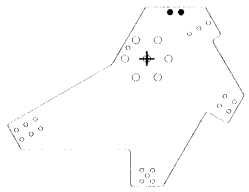
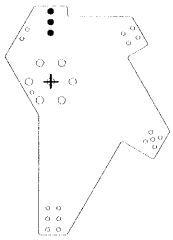
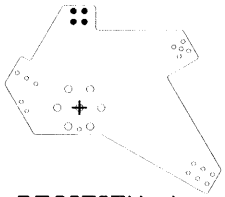
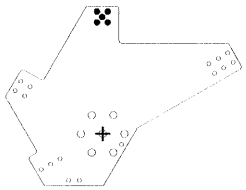
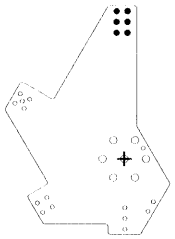
5. Use the chart below to determine the infeed height setting for your IPT-20/20.

Measured Height of Plate Setter Discharge	IPT 20/20 Setting
Less than 36 1/2"	Position 1
36 3/4" to 38 1/2"	Position 2
38 3/4" to 40 1/2"	Position 3
40 3/4" to 42 1/2"	Position 4
42 3/4" to 44 1/2"	Position 5
Greater than 44 1/2"	Position 6

6. Using the setting determined in step 5, identify the desired position of the height adjusters. See opposite page. (Fig. 3)

UNIT INSTALLATION



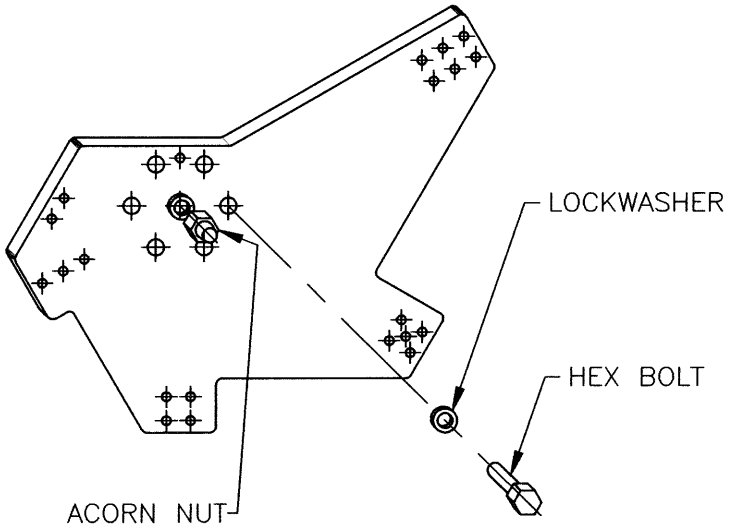
 POSITION 1 LESS THAN 36 1/2"	 POSITION 2 36 3/4" TO 38 1/2"	 POSITION 3 38 3/4" TO 40 1/2"
 POSITION 4 40 3/4" TO 42 1/2"	 POSITION 5 42 3/4" TO 44 1/2"	 POSITION 3 GREATER THAN 44 1/2"

TAKING PRIDE IN AMERICA

FIGURE 3

C:\WORKA\A2065

UNIT INSTALLATION



NOTE: LOCK CASTER BRAKES BEFORE PROCEEDING

7. Loosen acorn nut turning 1 1/2" revolutions counter clockwise.
8. Remove hex bolt.
9. Position two technicians on either side of the IPT 20/20 infeed as shown on opposite page in Fig. 5
10. The two technicians can raise the unit while the third technician rotates the height adjuster until the desired postion is located.
11. Once the desired position is located immediately replace the hex bolt with lockwasher and tighten the acorn nut.
12. Repeat the procedure on the opposite side.

TAKING PRIDE IN AMERICA

C:\WORKA\A2066

UNIT INSTALLATION

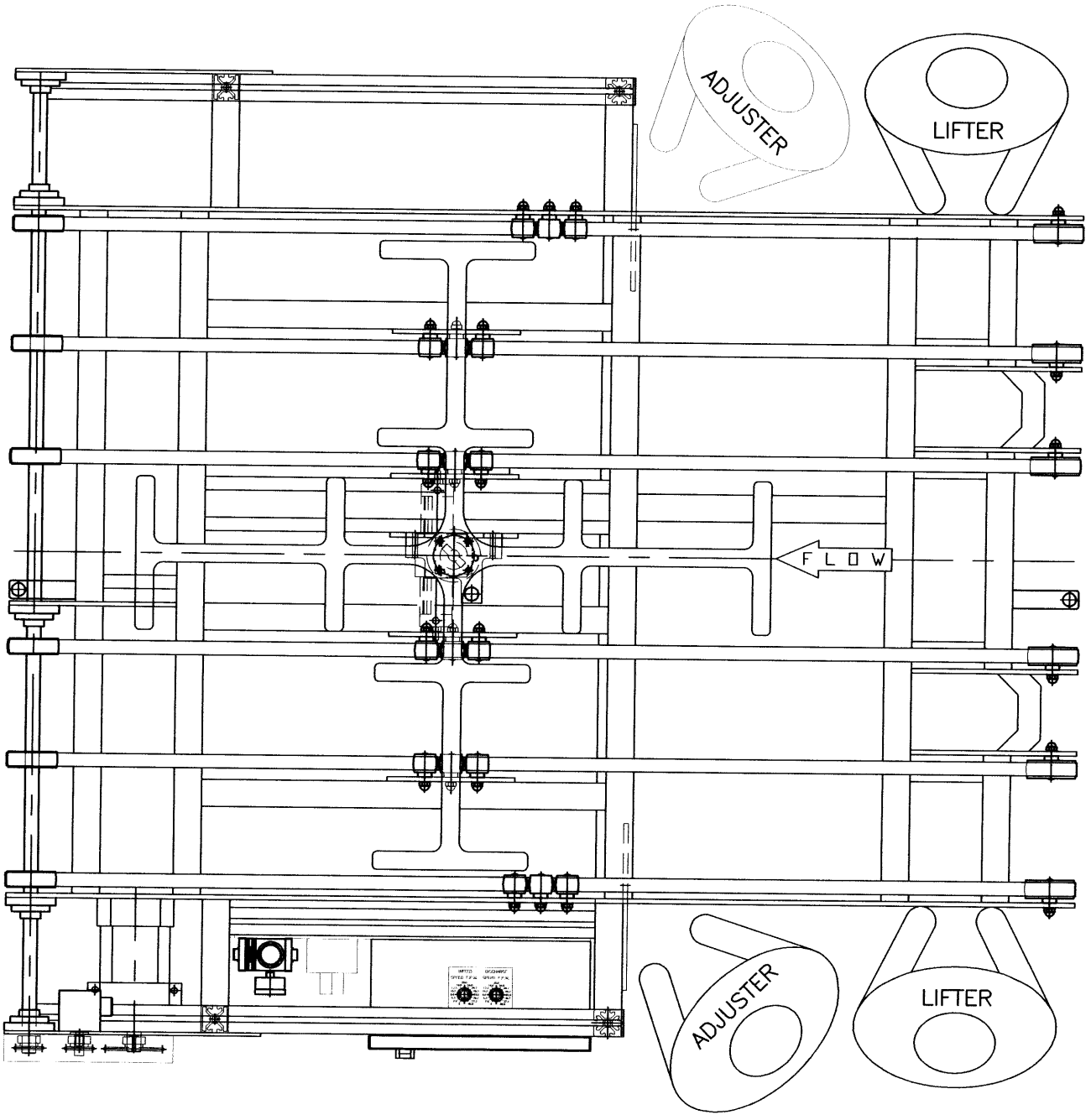


FIGURE 5

TAKING PRIDE IN AMERICA

C:\WORKA\A2067

10. Move the IPT-20/20 into the production line, centering the unit on the centerline of the Plate Setter. Leave a 1" gap between the Plate Setter and the IPT-20/20. See Fig. 7.

11. Level the IPT-20/20 elevation by using the threaded adjustment on the casters.
    A. Lock elevation with locking jam nuts tightened against aluminum legs. See Fig. 1 on page 5.

12. Compressed air connection will be made by customer supplied ¼" O.D. tubing inserted into the quick disconnect fitting located just below the drive guard on the IPT 20/20.
    A. The ¼" tube fitting can be removed should the buyer chose to use a different size hose to the quick disconnect.
    B. Removal of the quick disconnect will inhibit the portability.
    C. Apply air pressure.
    D. Open the slide valve on filter-regulator and adjust the pressure setting by lifting and rotating the adjusting knob. Set the air pressure to 40 P.S.I.

13. Electrical connection
    A. Verify that the control switch mounted in the electrical enclosure front panel is off. (Down)
    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.)

Installation of the Plate Transfer Unit is complete. Proceed to the unit operation section to begin testing.

The In-Line Plate Turner is designed to

1. Accept and convey a plate on demand from an image setter in the landscape orientation.
2. Reorient the plate to the portrait orientation.
3. Convey the reoriented plate to downstream processing equipment.

The In-Line Plate Turner is designed to handle plates ranging in size.

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

To verify the operation of the In-Line Plate Turner 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 switch on the electrical enclosure, in the "up" position. Set the "Infeed" speed by using the rotary knob. The "Infeed speed should be matched to the speed of the feed equipment. Set the "Discharge" speed by using the respective rotary knob. The "Discharge" speed should be matched to the speed of the take away equipment.
   RESULT: The conveyor is ready to run.

2. ACTION: Place the centering template (D2097) on the belts covering the infeed photo eye (PE-1).
   RESULT: Belts on the conveyor will start. When the template reaches the second photo eye (PE-2) it will initiate a logic routine that will advance the template a calculated distance, resulting in the belts stopping with the template centered over the lift/rotator plate. The lift/rotator plate will then raise and rotate 90 degrees to reorient the template. The lift/rotator plate will then lower the template on to the belts to convey the template to the processor. The belts will stop after the template completely leaves the IPT-20/20.

3. If the above sequence is executed the IPT-20/20 is operating as intended.

4. If the centering template is **NOT** centered on lift/rotator plate before lift and turn sequence, refer to "Electronic Plate Centering Adjustment" in the Unit Adjustment section of this manual.

5. If preceding sequences cannot be executed, contact Conveyors Plus, Inc at 708 361-1512 for technical support.

UNIT MAINTENANCE

Maintenance procedures are to be used as a guideline.

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

The system 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.

PARTS ORDERING

TO ORDER SPARE PARTS:

1. Parts ordering can easily be done by contacting, Conveyors Plus, Inc. If there is any uncertainty our staff will assist you in identifying any component, provided you can supply us with UNIT I.D. No.
2. Contact Conveyors Plus, Inc. Parts
   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

PNEUMATIC ADJUSTMENT

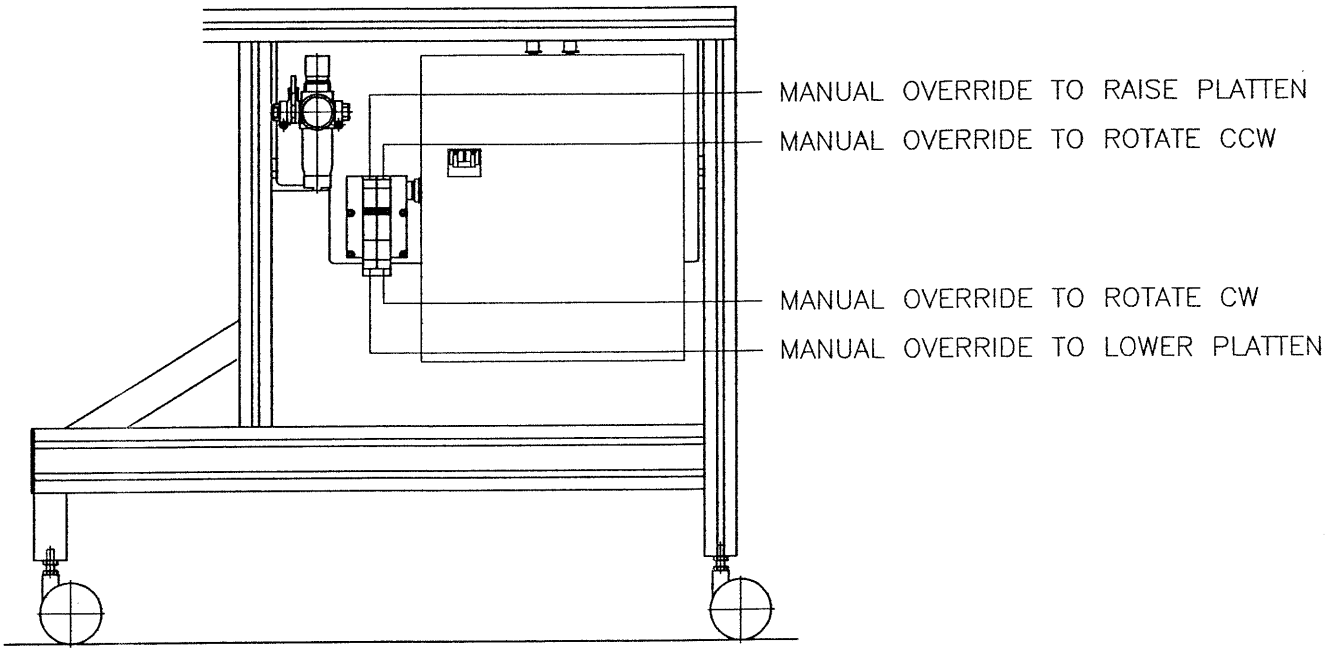


FIGURE 6

The rotator plate can be positioned manually to verify proper operation:

1. SWITCH CONTROL POWER TO THE OFF POSITION
2. Depressing the black buttons on the air valves will manually activate the solenoids. See above Fig. 6.

NOTE: ALWAYS HAVE THE ROTATOR PLATE IN THE UP POSITION PRIOR TO ACTIVATING THE MANUAL CLOCKWISE (CW) OR COUNTER CLOCKWISE (CCW) BUTTONS.

TAKING PRIDE IN AMERICA

C:\WORKA\A2068

PNEUMATIC SPEED ADJUSTMENTS

The **velocity** of the rotator plate lift and rotation motion is controlled by pneumatic flow control valves mounted on the ports of the actuator. See Fig. 7.

Rotating the respective adjustment screw will increase or decrease the actuator speed.

Turning the screw adjustment CW decreases speed.
Turning the screw CCW increases speed.

PNEUMATIC SPEED ADJUSTMENT

NOTE: CYLINDER AS VIEWED FROM INFEED END OF IPT 20/20

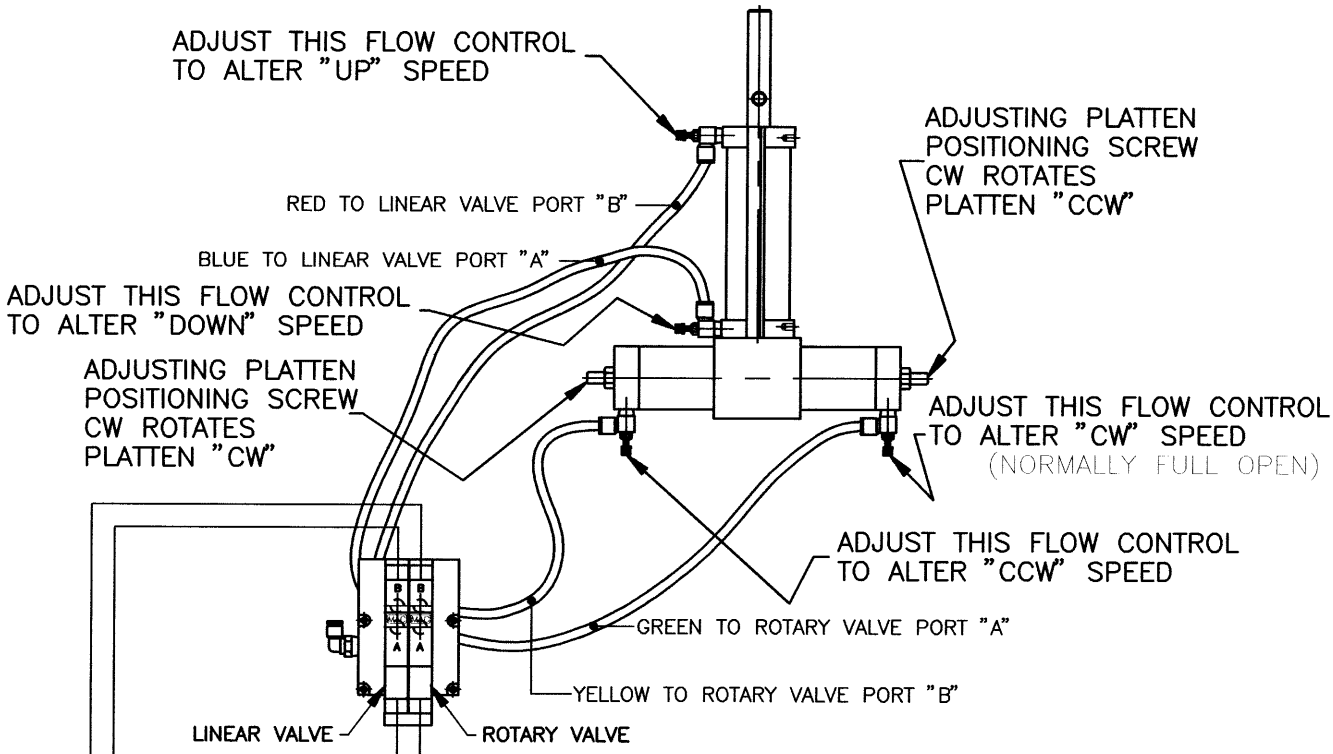
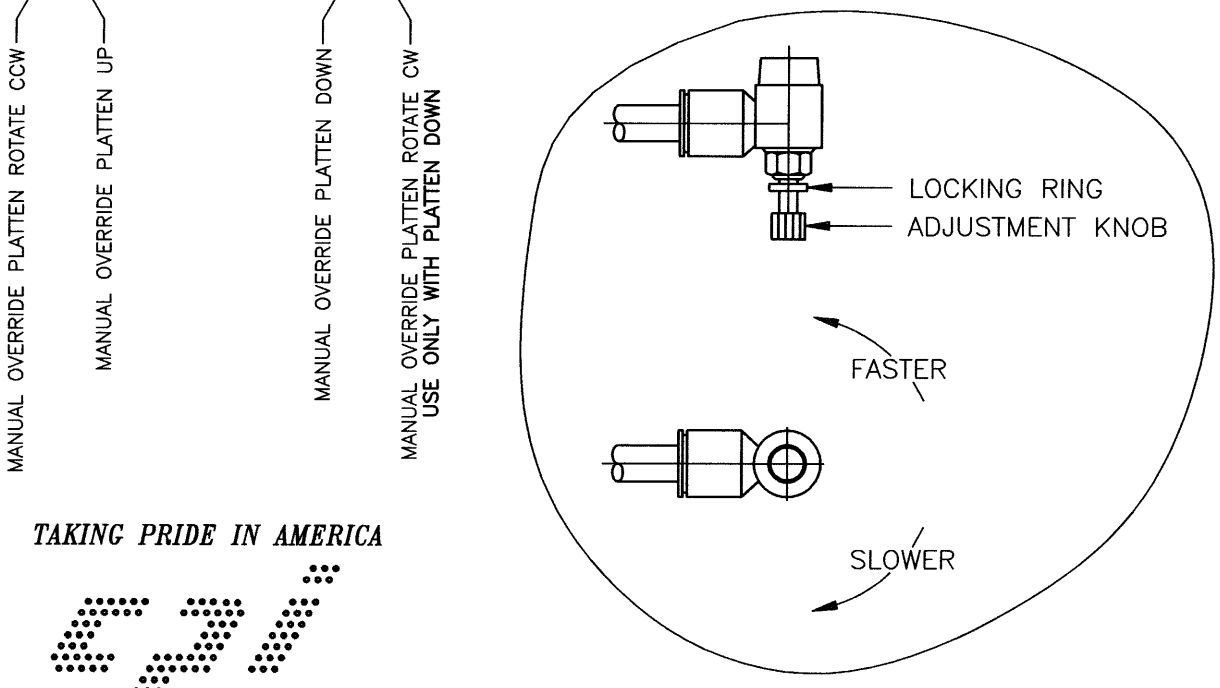


FIGURE 7



TAKING PRIDE IN AMERICA

C:\WORKA\A2069

ELECTRONIC PLATE CENTERING ADJUSTMENTS

Adjustment must be done by 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 centering feature on the IPT-20/20 is factory calibrated with the "Infeed" speed set at 40.0 F.P.M.

2. Matching the speed of the IPT-20/20 and the imagining equipment will allow for a smooth transition of the plate as it is conveyed between units.

3. Rotate the "Infeed" speed adjustment dial on the top of electrical enclosure, to the velocity that is equal to or slightly faster than the imagining unit.

4. Place the centering template at the infeed of the IPT-20/20. Center left to right, by eye, on the infeed belts. See Fig. 9.

5. Observe position of template when belts stop prior to lift.

6. If template stops with gauge reference line within Zone "B", see Fig. 10, your IPT-20/20 requires no adjustments.

7. If template stops with gauge reference line **OUTSIDE** of Zone "B", then proceed to Step 8.

ELECTRONIC PLATE CENTERING ADJUSTMENT

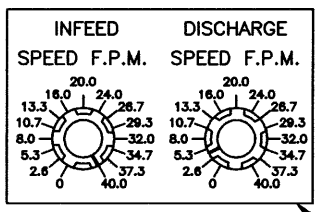


FIGURE 8

FIGURE 9

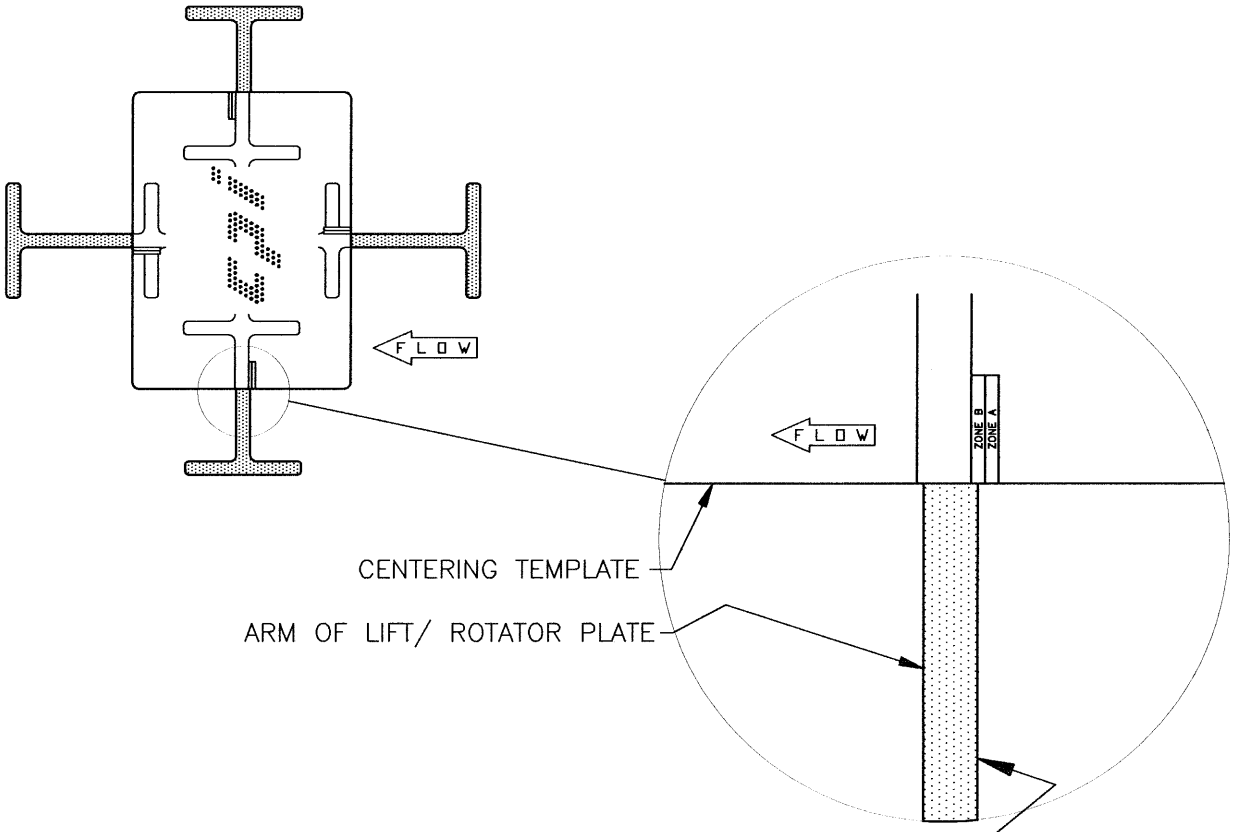


FIGURE 10

TAKING PRIDE IN AMERICA

C:\WORKA\A2070

ELECTRONIC PLATE CENTERING ADJUSTMENTS

WAIT FOR UNIT TO COMPLETE FULL CYCLE BEFORE MAKING ANY ADJUSTMENTS

8. If template travels past Zone "B" stopping in Zone "A" proceed to Step 10.

9. If template stops prior to Zone "B" proceed to Step 11.

10. Turn Pot "A" (located inside the electrical enclosure) see Fig. 11 CW in 5 minute increments to adjust the stopping point of the template.

11. Turn Pot "A" (located inside the electrical enclosure) see Fig. 11 CCW in 5 minute increments to adjust the stopping point of the template.

12. Retest, adjust, and repeat until template stops in Zone "B".

NOTE: Adjusting Pot "A" CW in 5 minute increments will stop the template sooner and CCW will stop the template later.

13. When the centering template stops within Zone "B" your IPT-20/20 plate centering adjustments are complete.

14. If preceding results cannot be achieved, contact Conveyors Plus, Inc. at 708 361-1512 for technical support.

ELECTRONIC PLATE CENTERING ADJUSTMENT

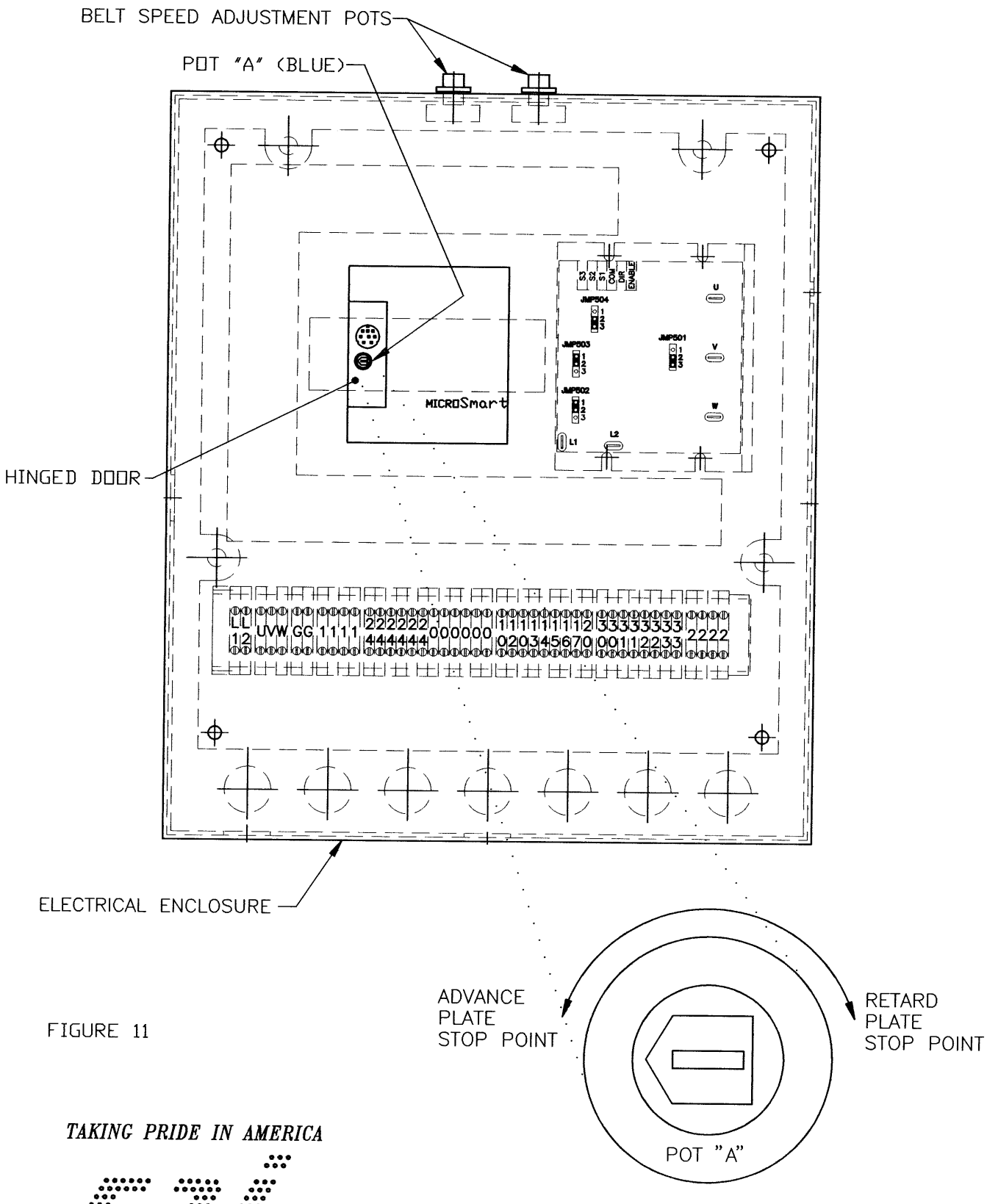


FIGURE 11

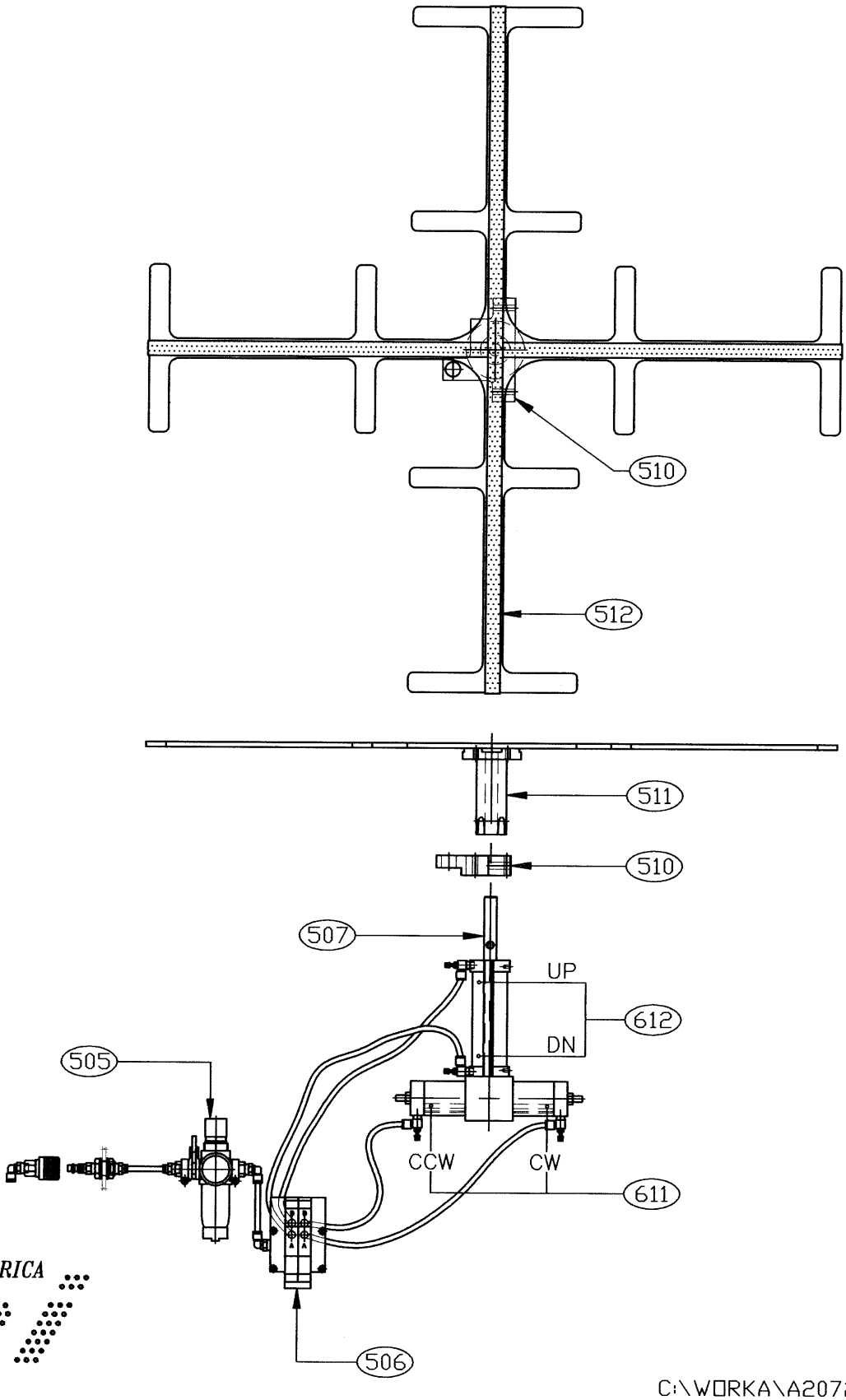
TAKING PRIDE IN AMERICA

C:\WORKA\A2071

ROTARY PLATE LIFT ASSEMBLY – PART LIST

ITEM	DESCRIPTION
505	Filter-Regulator B2060-1
506	Air Valve A2047
507	Rotary / Linear Actuator A2036
510	Guide Block A2053
511	Mounting Hub B2059
512	Anti Slip Belt B2056-2
611	Rotation Prox. Sensor MSCQ (2)
612	Up / Down Prox. Sensor HCQ (2)

PLATTEN ASSEMBLY



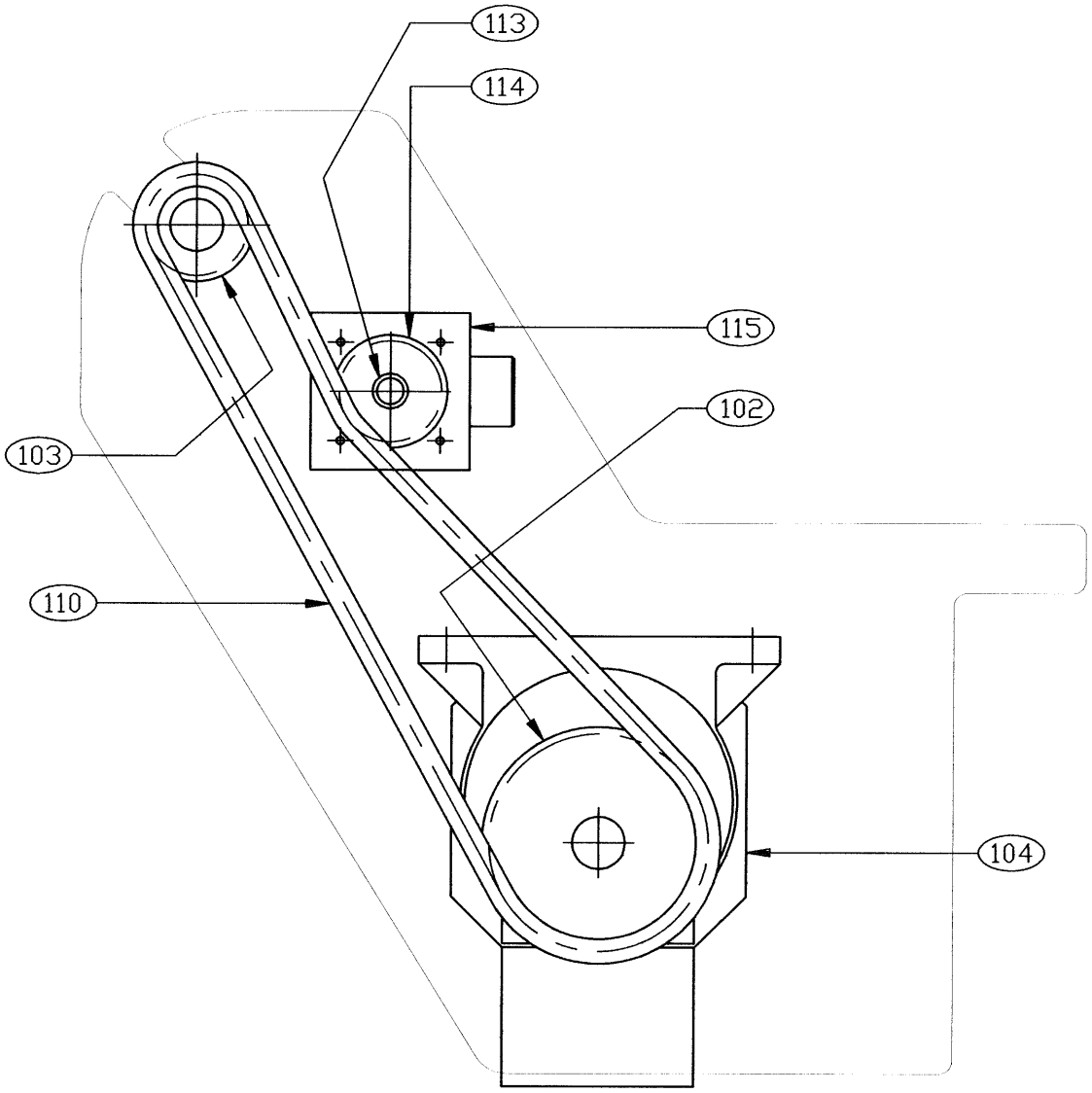
TAKING PRIDE IN AMERICA

C:\WORKA\A2072

CONVEYOR DRIVE ASSEMBLY – PART LIST

ITEM	DESCRIPTION
102	Driver Sprocket D2118-37
103	Driven Sprocket D2118-38
104	Motor D2118-44
110	Chain D2118-42
113	Shaft Adaptor D2118-40
114	Encoder Sprocket D2118-39
115	Encoder D2118-41 (125 ppr)

CONVEYOR DRIVE ASSEMBLY



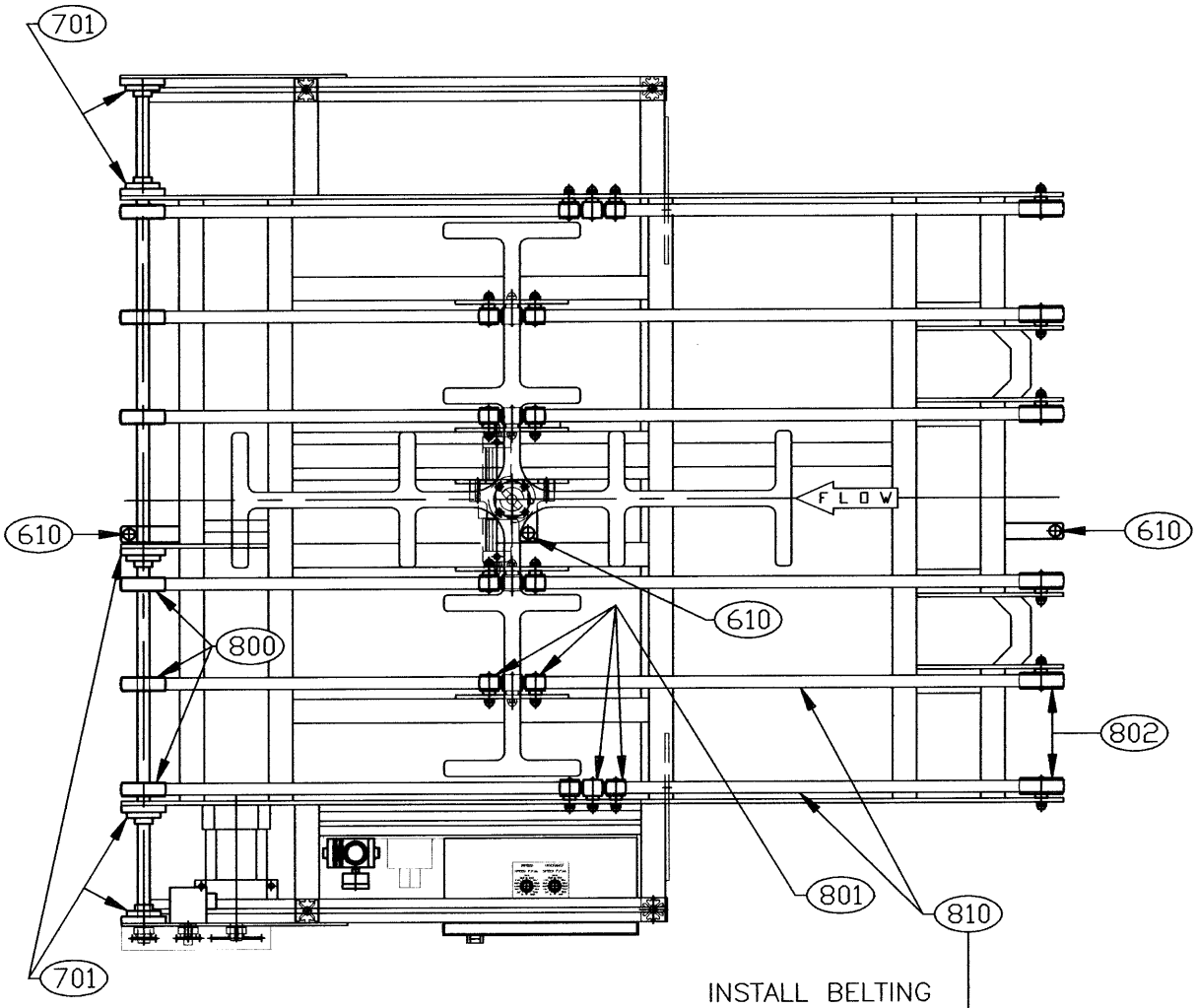
TAKING PRIDE IN AMERICA

C:\WORKA\A2073

CONVEYOR SYSTEM – PART LIST

ITEM	DESCRIPTION
610	PE-1, PE-2, PE-3 D2111-27
701	Flange Bearing D2118-36
800	Drive Pulley A2046 (6)
801	Stainless Idler A2041 (18)
802	Infeed Idler A2044 (6)
810	Conveyor Belts (6)

CONVEYOR SYSTEM



INSTALL BELTING
WITH SHINY
SURFACE DOWN
SHINY SURFACE
TO CONTACT
DRIVE PULLEY FACE

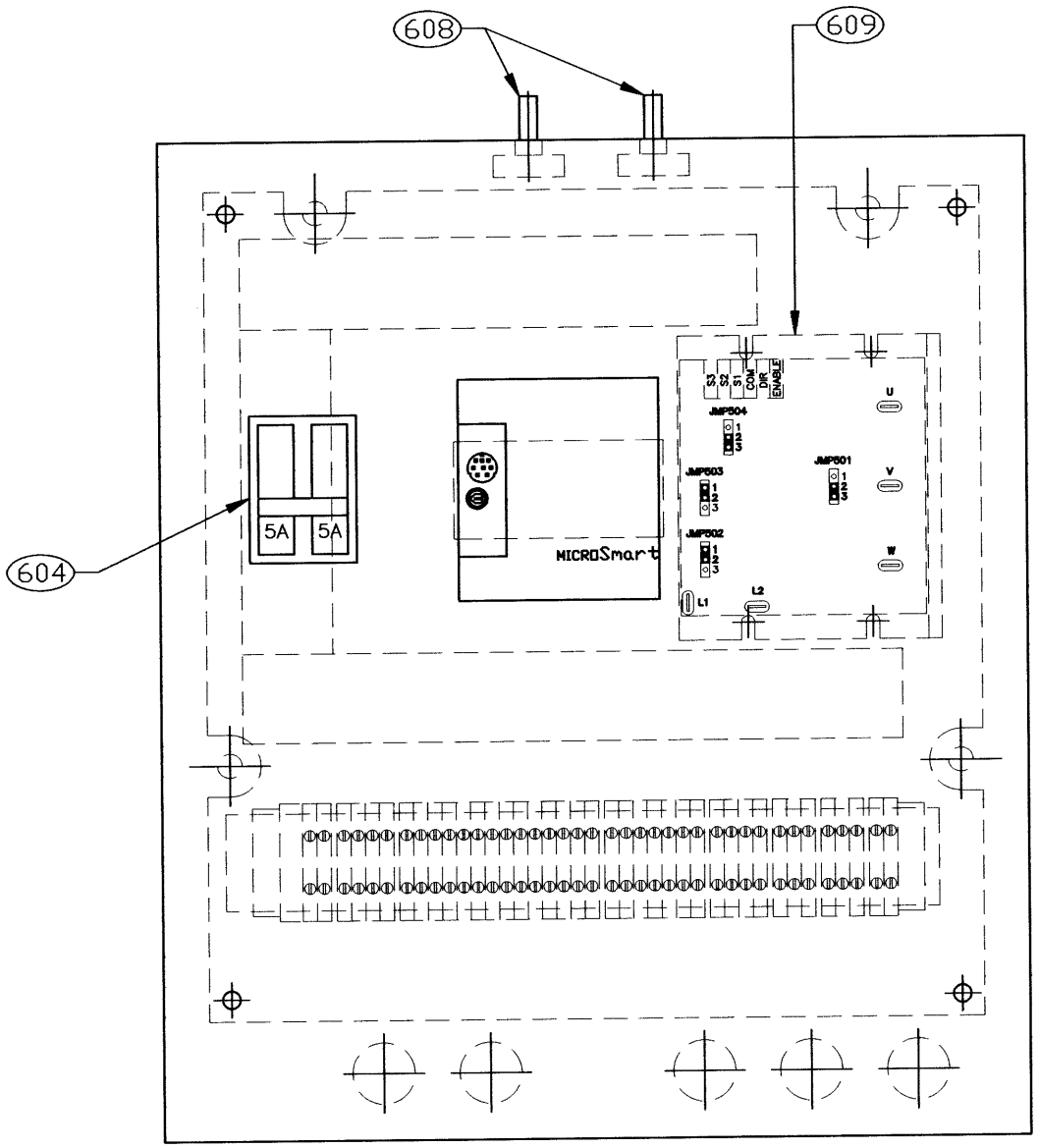
TAKING PRIDE IN AMERICA

C:\WORKA\A2074

CONTROL PANEL – PART LIST

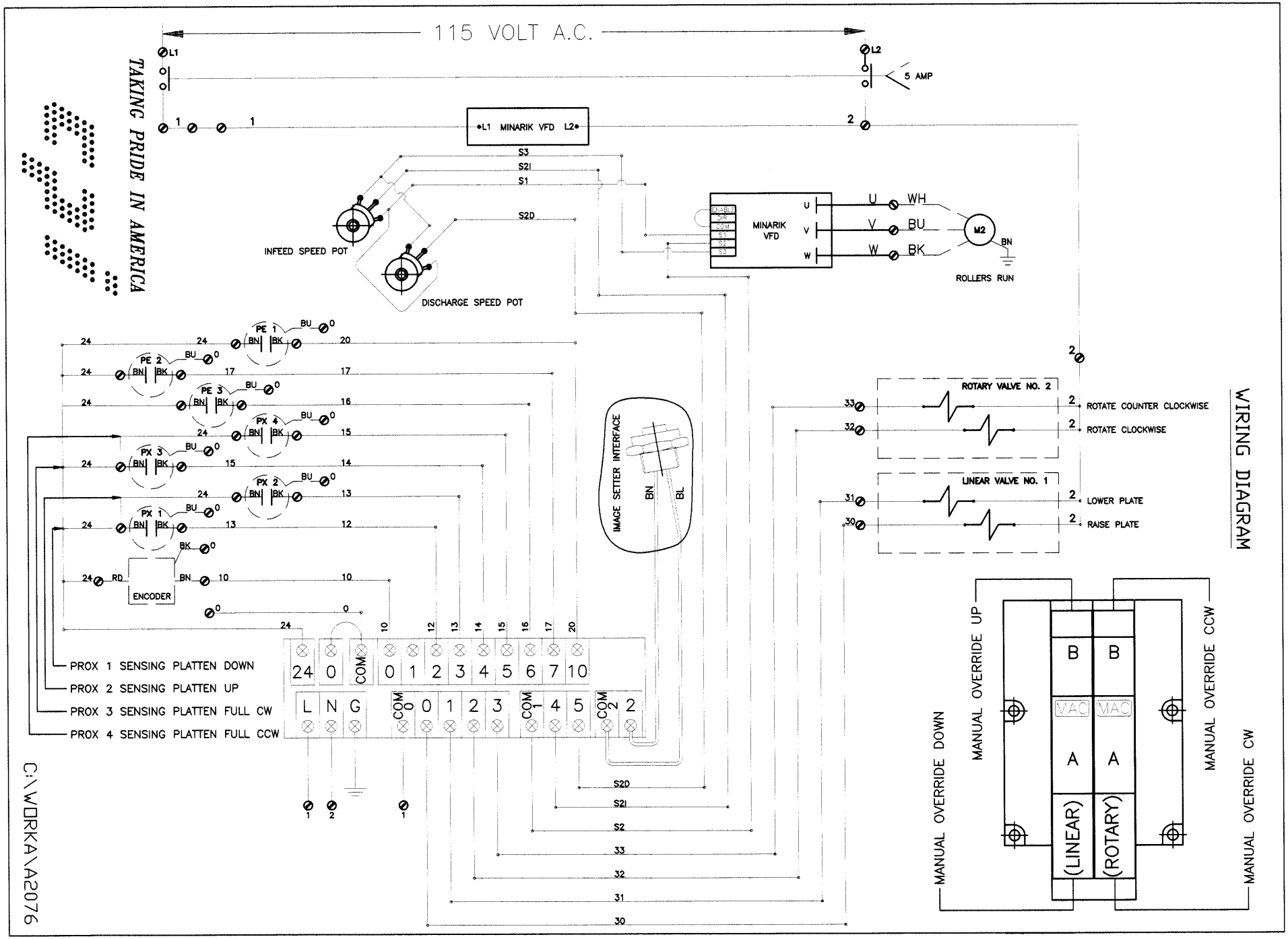
ITEM	DESCRIPTION
604	Circuit Breaker D2111-16
608	Speed Potentiometer D2111-41
609	Variable Frequency Drive D2111-18

CONTROL PANEL



TAKING PRIDE IN AMERICA

C:\WORKA\A2075


TAKING PRIDE IN AMERICA
115 VOLT A.C.
L1
L2
5 AMP
•L1 MINARIK VFD L2•
MINARIK VFD
INFEED SPEED POT
DISCHARGE SPEED POT
S3
S2I
S1
S2D
U
V
W
WH
BU
BK
M2
BN
ROLLERS RUN
ENABLE
DIR
COM
S1
S2
S3
PE 1
PE 2
PE 3
PX 4
PX 3
PX 2
PX 1
ENCODER
IMAGE SETTER INTERFACE
BN
BL
ROTARY VALVE NO. 2
ROTATE COUNTER CLOCKWISE
ROTATE CLOCKWISE
LINEAR VALVE NO. 1
LOWER PLATE
RAISE PLATE
PROX 1 SENSING PLATTEN DOWN
PROX 2 SENSING PLATTEN UP
PROX 3 SENSING PLATTEN FULL CW
PROX 4 SENSING PLATTEN FULL CCW
24 0 COM 0 1 2 3 4 5 6 7 10
L N G COM 0 0 1 2 3 COM 4 5 COM 2 2
MANUAL OVERRIDE DOWN
MANUAL OVERRIDE UP
MANUAL OVERRIDE CCW
MANUAL OVERRIDE CW
B B
MAC MAC
A A
(LINEAR) (ROTARY)
WIRING DIAGRAM
C:\WORKA\A2076