

OPERATION / MAINTENANCE PARTS MANUAL

SIPTU

Smooth Intelligent Product Transfer Unit

SCHWANS - ATLANTA
HS5160

REPLACEMENT MANUALS CAN BE ORDERED

AT A NOMINAL CHARGE. PURCHASES ORDER MUST INCLUDE
MACHINE MODEL _____ AND SERIAL NUMBER

(AND MANUAL NUMBER (S) IF AVAILABLE).

You can get additional information by contacting
Kliklok-Woodman at the address below:

Kliklok-Woodman
5224 Snapfinger Woods Drive
Decatur, Georgia 30035
E-Mail:service@kliklok-woodman.com
Telephone: 770/981-5200
Fax: 770/987-7160

To Order Spare Parts,

Ask for the Parts Sales Department.

If you want troubleshooting, maintenance,
or other advice, ask for the
Service Department.

Parts Sales are staffed daily
Monday-Thursday from
7 AM until 7 PM eastern time and
Friday 7AM until 5PM.

OPERATION / MAINTENANCE

ELECTRICAL DRAWINGS

REPLACEMENT PARTS

SPARE PARTS LIST

CUSTOM PARTS LIST

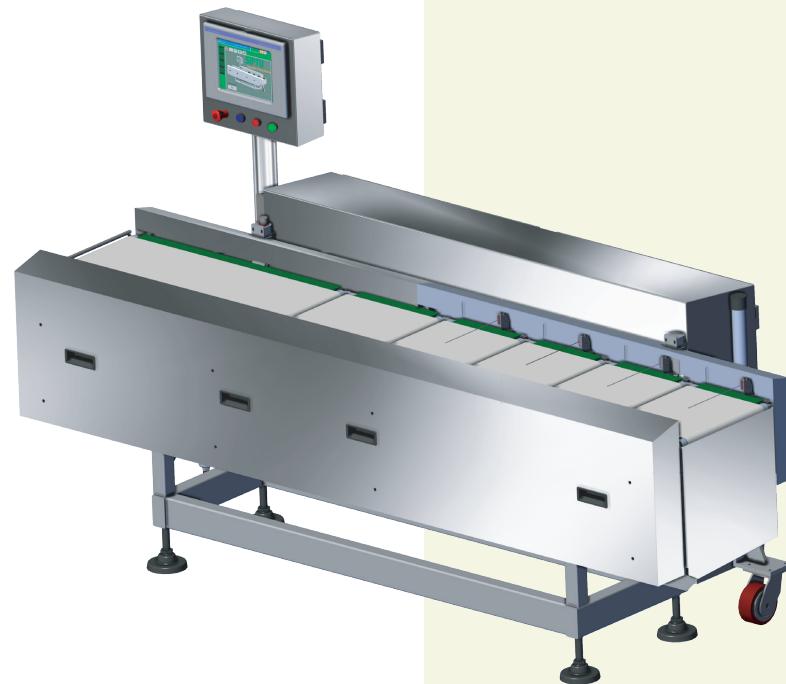
SETUP SHEETS

SERVICE BULLETINS

SERVICE
BULLETINS

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EXIT



SIPTU

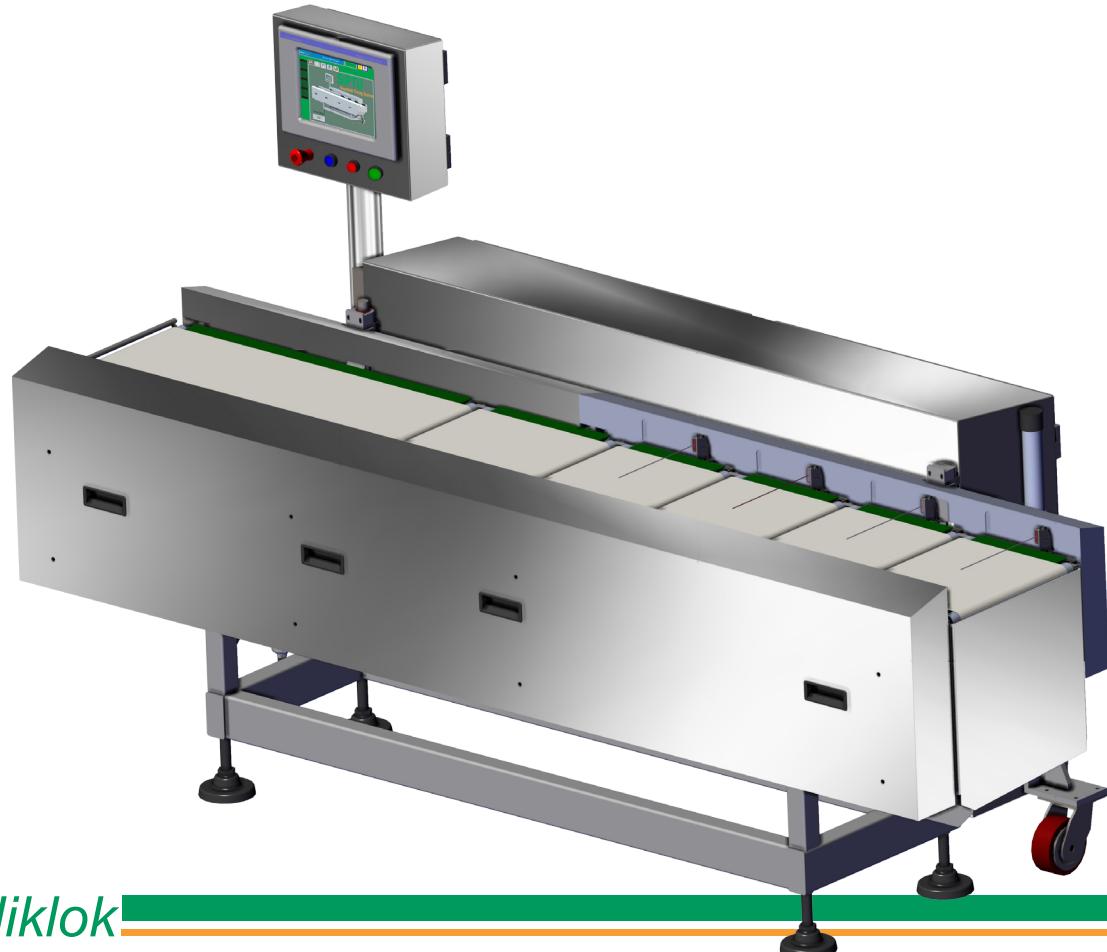
Smooth Intelligent Product Transfer Unit

**SCHWANS - ATLANTA
HS5160**

**OPERATION / MAINTENANCE
MANUAL**

SIPTU

Smooth Intelligent Product Transfer Unit



SIPTU
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Kliklok

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OPERATION / MAINTENANCE
MANUAL

⚠ WARNING

DO NOT OPERATE OR PERFORM
ANY MAINTENANCE / REPAIRS ON
THIS MACHINE UNLESS YOU HAVE
A FULL UNDERSTANDING OF THE
CONTENTS IN THIS MANUAL.....

KLIKLOK•WOODMAN®

AFTERMARKET SUPPORT TEAM

TECHNICAL SUPPORT

Monday-Friday

7:00am-5:00pm

770-981-5200

After Hours, Weekends and Holidays

770-331-8386 or 770-356-1128

Email Anytime

techsupport@kliklokwoodman.com

PARTS SUPPORT

Monday-Friday

7:00am-7:00pm

770-981-5200

After Hours, Weekends and Holidays

770-331-8397

Email Anytime

parts@kliklokwoodman.com



OPERATORS AND MAINTENANCE MANUAL

Thank you for your purchase of Kliklok-Woodman packaging machines. We hope this comprehensive Operators, Maintenance and Parts manual will help you get the best possible performance and reliability from your packaging system. Kliklok-Woodman stands behind every machine we make and we are ready to provide any additional assistance you may require.

The operator's sections give step by step procedures on machine operations and set ups. The maintenance sections give brief descriptions of each machine system along with a preventive maintenance schedule and troubleshooting guides.

Should service or assistance in troubleshooting and repair be required, please contact the Kliklok-Woodman Customer Service Department with the following information:

1. Machine Serial Number
2. Software Version

Your machine may differ slightly from those illustrated in this manual due to engineering changes or the addition of optional equipment.

MACHINE SERIAL NUMBERS	SOFTWARE VERSIONS



Packaging Productivity. ..by Design
5224 SNAPFINGER WOODS DRIVE, DECATUR GA 30035
USA TEL: 770/981-5200. FAX: 770/987-7160
email: publications@kliklokwoodman.com
UK/EUROPEAN INQUIRIES
WESTERN DRIVE, HENGROVE PARK ESTATE; BRISTOL BS14 OAY, ENGLAND
TEL: 44-1-275-836131 FAX: 44-1-275-891754

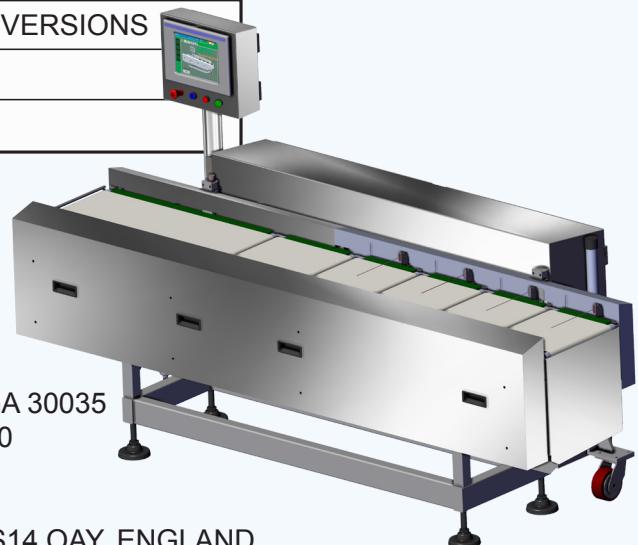


TABLE OF CONTENTS

1.0 GENERAL INFORMATION	11
1.2 STANDARD FEATURES	12
1.3 OPERATING REQUIREMENTS	12
1.4 CONTACT INFORMATION	13
1.5 MACHINE LAYOUT.....	14
2.0.1 SAFETY.....	15
2.1 BASIC RULES OF SAFE MACHINE OPERATION.....	16
2.1.1 SAFETY IN NORMAL MACHINE OPERATION	16
2.1.2 SHUT DOWN AND RESTART.....	17
2.2 LOCK-OUT/TAG-OUT PROCEDURES	17
2.3 MACHINE GUARDS AND SAFETY INTERLOCKS	18
2.4 Safety Symbols	18
2.5 Machine Safety Labels.....	19
2.6 INSTALLATION SAFETY	20
2.6.1 GENERAL INSTALLATION INFORMATION	20
2.6.2 PERSONNEL REQUIREMENTS	20
2.7 INSTALLATION	20
2.7.1 RECEIVING & UNPACKING THE MACHINE	20
2.7.2 MOVING THE MACHINE	21
2.7.3 LEVELING THE MACHINE	21
2.7.4 MAIN ELECTRICAL & AIR CONNECTIONS.....	22

TABLE OF CONTENTS

TABLE OF CONTENTS

DEFINITIONS

TERMS AND ABBREVIATIONS

AS	Compressed air supply
Check/Adjust	Check. Adjust as necessary
Check/Change	Check. Change if necessary
Conveyor Belt	Belt, slatband, tabletop chain or similar flat carrier used on a conveyor.
Conveyor Lug	A conveyor flight of sheet metal, often fastened to the side of a carrier chain or to the edge of a conveyor belt.
CPM, cpm	Cartons per minute
CT	Chain Tensioner
Flight	A surface projection or other attachment on a conveyor that limits the movement of items placed on a conveyor
GS	Glue system
HS	Heat seal (system).
IPTU	Intelligent Product Transfer Unit
LH	Left Hand
LH machine	Machine with the inserter on the left hand side
LH side	Left hand side of the machine, looking down stream.
Load side	The side of the machine on which the inserter is located.(LH side on LH machine and vice versa)
MMI	Man/Machine Interface (Operator Touch Screen)
OG	Overhead guides
OL	Oil lubrication (system)

Non-load Side

PI

PIC

PLC

Pocket

Pusher Lug

Retarder Lug

RH

RH Machine

RH Side

Rotary Feeder

RPL

RTS

SBI

UHMWP

The side opposite to the load side, i.e. the side of the

machine without the inserter. (RH side on a LH machine, and vice versa)

Piston inserter

Product infeed conveyor

Programmable logic controller (used to control product and cartoning operations)

The space, on a conveyor, between a pusher flight/lug and the preceding retarder flight/lug

A following flight which forces items to travel with the conveyor belt.

A flight preceding and forming a pocket in front of a pusher flight

Right hand side of machine, looking downstream

Machine with the inserter on the RH side

Right hand side of machine

Carton feeder

Replacement parts list

Rotary Transfer System

Smart Belt Infeed

Ultra High Molecular Weight Polyethylene

Section 1 Safety Instructions

1.0 SAFETY INSTRUCTIONS

1.1 GENERAL

BEFORE OPERATING THE MACHINE, THIS SECTION ON SAFETY MUST BE READ AND UNDERSTOOD.

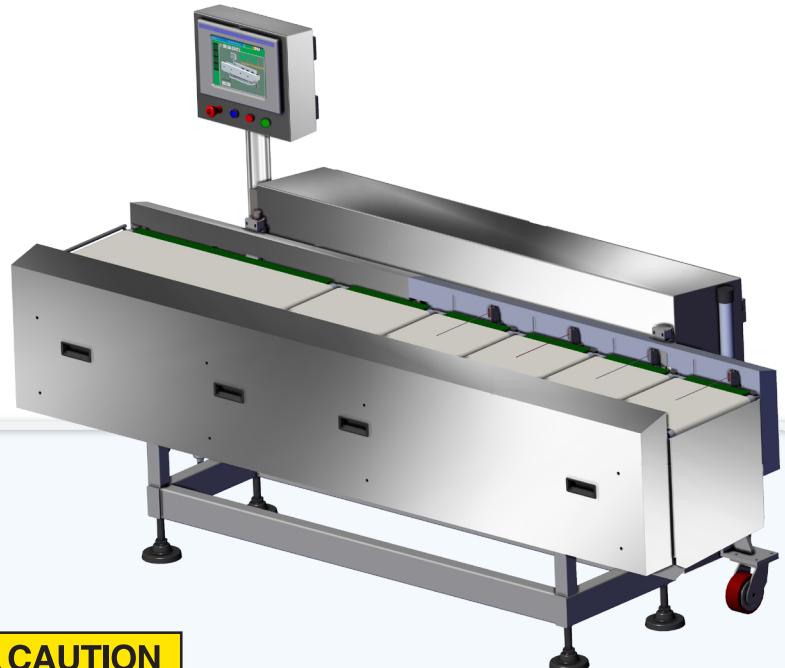
ALL SAFETY WARNINGS and SAFETY INSTRUCTIONS MUST BE STRICTLY FOLLOWED.

1.1.2 Safety Notes and Instructions.

SAFETY WARNINGS AND SAFETY INSTRUCTIONS IN THIS MANUAL ARE PRECEDED by the following symbol



This symbol indicates a potentially hazardous situation that might result in serious injury, death, or machine damage, when you misuse the machine without following the instructions under this symbol.



⚠ CAUTION

This symbol indicates a potentially hazardous situation that might result in minor injury or machine damage. It also indicates strict attention must be given to the instructions following this symbol



This symbol indicates important precautions for operation, or actions to be carried out prior to operation or adjustment of machinery



This symbol indicates other instructions that should be read in conjunction with the relevant section, i.e. the instructions following this symbol might tell the user to read a different section of the manual before proceeding.



This symbol indicates **NOT** to proceed until the following instructions are adhered to, or a potentially hazardous situation might occur if the instructions following this symbol are not carried out.

Section 1 Safety Instructions

-  This symbol indicates that when all the instructions have been carried out, it is safe to proceed, or the operation is complete.
-  This symbol indicates an example of an operation or procedure that could result in the machine not operating correctly.

1.1.3 Equipment Supplied by Others

Where associated equipment is supplied or fitted by others, the seller and purchaser of the equipment are responsible for ensuring that:

1. The equipment complies with all Safety Requirements,
2. The associated equipment does not adversely affect the operation or safety of equipment or guarding supplied by Kliklok International Limited.

1.2. INSTALLATION

Before starting the installation, read this Manual.

During installation, follow the recommended procedures in SECTION 4, and obey the safety instructions.

Installation may require the temporary removal of guards and / or the temporary removal of electrical interlocks. (See Personnel and Electrical Supply, below.)

1.2.1 Personnel

Installers should use only approved, trained, competent personnel.

All other persons should be prohibited from entering the installation area.

1.2.2 Electrical Supply

Only properly qualified persons may:

- a) Connect the electrical supply to the machine. The cable carrying the electrical supply to the machine must be correctly rated for the supply voltage and current specified. An upstream fuse or circuit breaker should be fitted to limit the fault current.
- b) Remove/disconnect and connect / reconnect electrical interlocks.

1.2.3 Guards

After installation, before starting the machine:

- 1) Refit the guards.
- 2) Re-commission the interlocks.
- 3) Check that, where associated equipment is supplied by others, any interface guards are electrically interlocked with the KL supplied machinery.
- 4) Check that guards comply with the current requirements of the relevant Health and Safety Authority.

WARNING

Never operate the machine unless all guards are in place.

1.2.4 Commissioning

Commissioning runs should be conducted by an approved person who has been instructed in the operation of the machinery.

1.3 Personnel Training

After the machine has completed satisfactory trials, the installer should train one or more authorised persons, nominated by the employer to be responsible for operating the machinery.

All persons operating or tending the machinery should be trained by a qualified trainer.

Training should include instruction on Safe Practices and known hazards.

⚠ WARNING

Operators and attendants should be directed **NOT** to operate the machinery unless all guards are in place.

Although guards, devices and warning signals have been provided for known hazards, the user is responsible for ensuring that personnel know and follow the correct Operating Procedures and Safe Practices.

Operators should not wear loose fitting clothing, neckties or gloves, except where sanitary requirements for handling the products specify that gloves are to be worn.

1.4 Operating Safety

1.4.1 General

Before starting up the machine, inspect it for damaged or missing parts.

⚠ CAUTION

Before clearing a jam or making an adjustment, turn off the machine by pressing one of the "**EMERGENCY STOP**" button.

⚠ WARNING

Unless the proposed procedure requires an electrical power supply to the machine, before undertaking any repair, size change or maintenance, switch OFF the main electrical isolator.

Wait until the machine has completely stopped.

Ensure that tools and other foreign objects are removed before start up.

Before start up, replace all guards (including changed or extra guards after a size change).

Before starting, restarting, or applying electrical power or compressed air to the machine:

1. Make a visual observation that all personnel are clear of moving components.
2. Make an audible warning to all personnel in the vicinity of the machine before pressing the START button.

1.5 Electrical System

⚠ WARNING

MOBILE TELEPHONES MUST NOT BE USED NEAR AN electrical control panel or electrical control centre when the panel/centre is powered and the panel/centre door is open. High frequency equipment and/or arc welding equipment must not be used in the vicinity of the machine when it is powered.

Section 1 Safety Instructions

⚠ WARNING

Failure to observe these instructions, and others written in this manual could result in severe damage to the machinery and injury to personnel.

1.6 Maintenance Safety Guidelines

1. Follow all safety guidelines, when applicable, from the Operator & Attendant Safety Guidelines.
2. Replace any broken or defective safety devices. Machine warranties will be void and injuries and/or damage to equipment becomes the responsibility of the user.

⚠ WARNING

NEVER REMOVE OR BYPASS ANY SAFETY SWITCH OR DEVICES USED FOR SAFETY! SERIOUS INJURY AND/OR DAMAGE TO THE MACHINE WILL RESULT.

3. Use only approved Kliklok replacement parts when replacing damaged or worn components. Failure to do so voids all warranties expressed and will cause damage to the machine and/or injuries to personnel caused either directly or indirectly from using non-approved components. The use of non-approved components or parts becomes the responsibility of the user or individual who authorized the equipment. Do not use unauthorized parts or components.
4. When replacing fuses, circuit breakers, overloads, or any other circuit protection components, replace only with components of the same rating.
5. Never modify barrier guarding without the approval of Kliklok engineering department.

SIPTU

Smooth Intelligent Product Transfer Unit

1.7 Machine Guards

The operators and attendants are protected from contact with the moving parts of the machine by barrier guarding. This machine is equipped with lower stainless steel guards and hinged polycarbonate or mesh guards covering the conveyor belts. All doors are interlocked with the machine control for safety. If any door is opened during production, the machine will stop.

⚠ WARNING

Never reach around or crawl under safety doors or guards. Disregarding the safety aspects of machine guards may result in serious personal injuries.

Safety Interlock switches are not to be tampered with or bypassed.

The correct operation of these switches is required at all times to provide the proper guarding. An interlock switch that is not functioning properly should be reported to a supervisor immediately and the machine should be shut down until the switch is repaired or replaced.

1.8 Main Disconnect Switch

The electrical cabinet of the machine is equipped with a Main Disconnect switch. This switch is linked to the main circuit breaker inside the cabinet which connects or disconnects the factory supplied power to the machine.

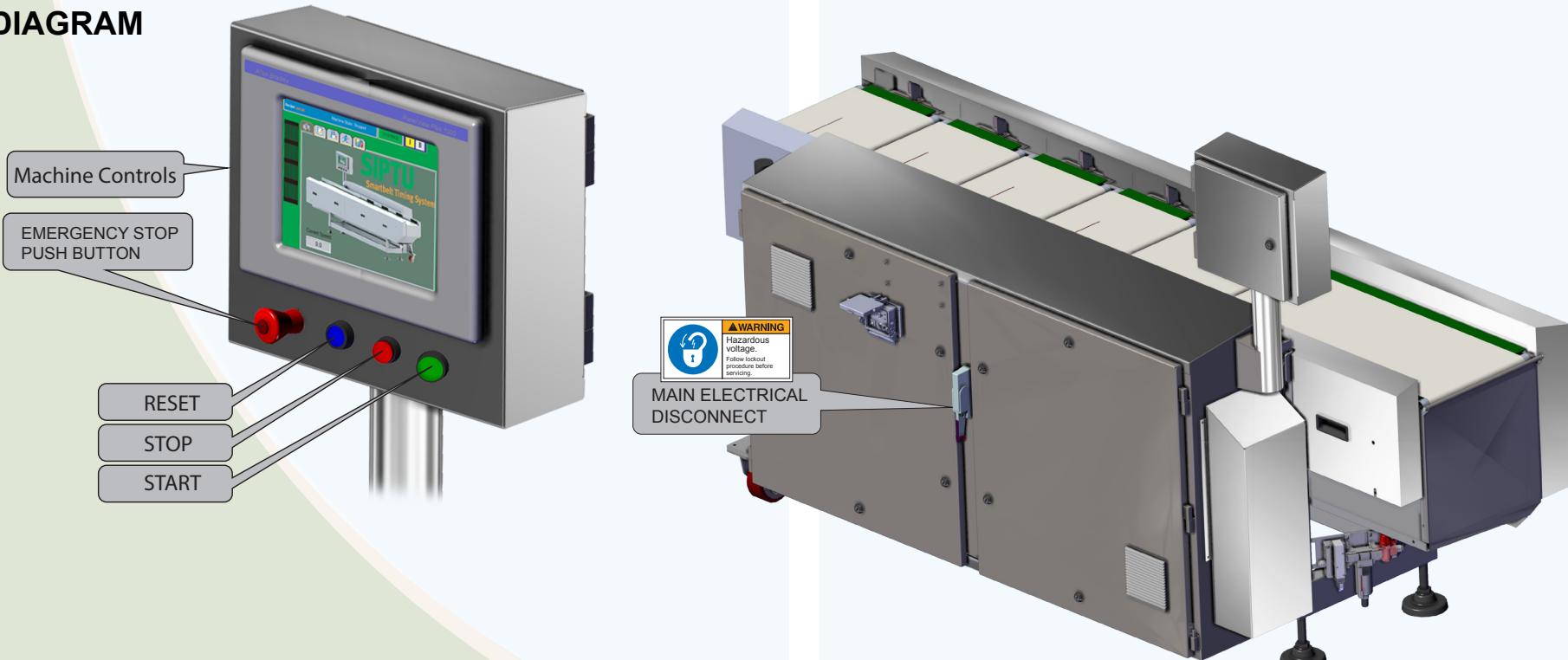
During maintenance, service, or repair operations, always use the appropriate lockout, tag-out procedure accepted in your plant

WARNING

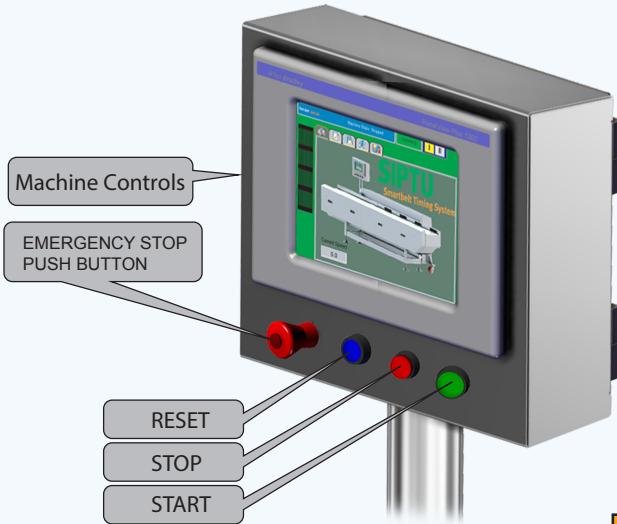
Always turn off the machine power OFF before servicing. It is critical not to touch high voltage components in the Electrical Cabinet, This could result in serious injuries.

The incoming Power Cables are still live when the Disconnect is turned off.

1.9 SAFETY COMPONENTS LOCATION DIAGRAM



Section 1 Safety Instructions



WARNING

The machine will not operate until all faults have been cleared and the RESET button pressed.

2. EMERGENCY STOP BUTTON.

This red illuminated button at the base of the HMI, stops the machine instantaneously when depressed.

It is only to be used in the event of an emergency.

Products will require removing from the machine before it is restarted. The opening of any of the machine doors, or guards, while the machine is running will also actuate an Emergency Stop.

To start the machine after an emergency stop or fault has occurred, clear all faults, reset the emergency stop button by **PULLING OUT THE BUTTON**, then press the **RESET BUTTON. THEN THE START BUTTON.**

SIPTU

Smooth Intelligent Product Transfer Unit

WARNING

THE EMERGENCY STOP BUTTONS SHOULD ONLY BE DEPRESSED WHEN EITHER THE MACHINE IS IN DANGER OF BEING DAMAGED, OR INJURY TO PERSONNEL MAY OCCUR.

Note!

The Siptu must be interlocked with the parent machine so that if the Siptu is stopped the parent machine stops as well. If this is not performed, the Siptu will fault out as it is being told to stop but the encoder is still running (on the parent machine).

NORMAL STOP

(Non-illuminated **RED** push-button). This button is pressed when initiating a normal stop on the machine.

This will stop the Metering Conveyor, but the phasing conveyors will continue to run until all products currently loaded are discharged.

RESET

When an Emergency Stop button has been depressed, or a guard switch operated or a machine fault has occurred, the display screen shows the related fault message indicating that the **RESET** button needs to be pressed to reset the safety circuit, and clear all faults.

REMOVE ALL REMAINING PRODUCTS FROM THE CONVEYORS BEFORE RESTARTING THE MACHINE.

1.10 Safety Symbols

Listed below are the safety symbols that are used throughout this manual.



NOTE!! Important Information To Be Aware Of!!



CAUTION!! Describes a process that could damage the machine.



WARNING!!! Risk of Injury or Death!!!



Indicates an imminent hazardous situation which, if not avoided, will result in death or serious injury.



LOCKOUT SYMBOL- When this is at the begining or next to a procedure, implement lock-out/tag-out procedures before continuing the procedure.

1.10.1 Machine Safety Labels



Section 1 Safety Instructions



Severe Shock Hazard

Only authorized personnel may service this equipment.
Turn power OFF before entry.

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Entanglement hazard.
Do not operate with guard removed.
Lockout /tagout before servicing.



Moving parts can crush and cut.
Keep hands clear while operating machine.

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CRUSH HAZARD.

Moving parts can crush and cut.
Do NOT operate with guard removed.
Lockout power before servicing machine.

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Hazardous voltage.
Follow lockout procedure before servicing.

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Hydraulic, pneumatic and electric power sources present.
Lockout ALL energy sources before servicing.

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WARNING

Any electrical wiring or other hardware modifications altering the electrical system provided with this equipment may impair important safety features, cause operational problems, or both.

Before altering this equipment in any way, please refer carefully to the equipment manual to ensure that neither control nor safety features will be compromised or defeated.

Additionally, contact Kliklok/Woodman Engineering for consultation and approval before attempting to interface with, or modify, the electrical system of this machine.



CAUTION

DO NOT OPERATE, SERVICE OR ADJUST THIS MACHINE BEFORE RECEIVING PROPER SAFETY AND OPERATING INSTRUCTIONS.

DO NOT PERFORM ANY TYPE OF MAINTENANCE OR CLEAN-UP ON MACHINE BEFORE DISCONNECTING ELECTRICAL POWER AND AIR SUPPLY.

DO NOT CLIMB ON OR UNDER REACH IN OR LEAN AGAINST MACHINE OR PACKAGING LINE WHILE IT IS RUNNING.

DO NOT ATTEMPT TO RETRIEVE OR REMOVE CARTONS, PRODUCT OR ANY OBJECT FROM MACHINE WHILE IT IS RUNNING.

DO NOT START MACHINE UNTIL ALL GUARDS ARE IN PLACE AND ALL ATTENDANTS ARE ALERTED AND SEEN TO BE CLEAR.

DO NOT WEAR JEWELRY OR LOOSE CLOTHING. ALWAYS WEAR PROPER EYE, HAIR AND HEAD PROTECTION.

KEEP CLEAR AT ALL TIMES WHEN MACHINE HAS AUTOMATIC START.

USE CAUTION WHEN ADDING ADHESIVE TO HOT MELT POTS, ADJUSTING APPLICATORS OR ATTENDING HEATED ELEMENTS.

These safety instructions are an extension of the machine operating manual.

Section 1 Safety Instructions

SIPTU
Smooth Intelligent Product Transfer Unit

Section 2 Standard Machine Specification

2.1 STANDARD MACHINE SPECIFICATION

The Smooth IPTU is designed to receive products arriving randomly at high speed, and load them onto a secondary process line, providing a smooth transition between product flow & variable infeed and outfeed speeds.

2.1.1 Machine Speed

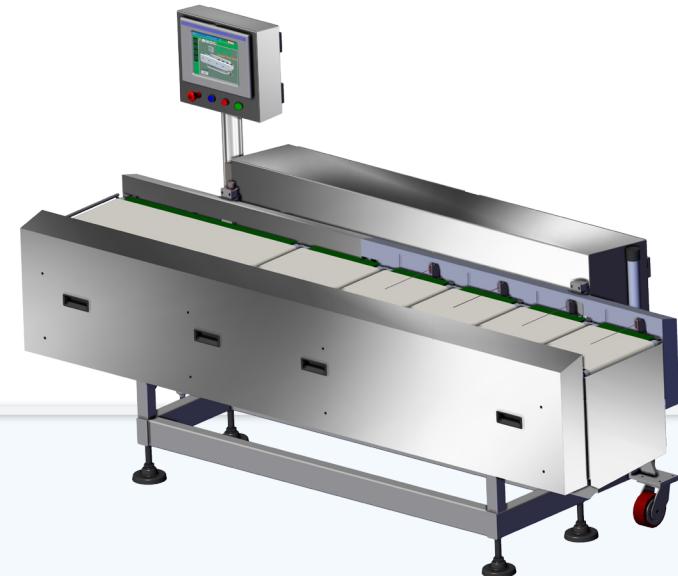
Variable : up to 250 products per minute.

2.1.2 Product

A wide range of food products (see customer specific specifications).

2.1.3 Controls

An operator control panel and machine running controls are located on top of the electrical control cabinet.



A touch sensitive operator control screen provides product infeed timing and positional setup functions via a user friendly screen menu system.

Other controls include:

- ◆ Machine Start Button
- ◆ Emergency Stop Button
- ◆ Normal Stop
- ◆ Reset Button

Machine Start & Running Speed are controlled from the parent machine during normal operation.

2.1.4 Size changing

Multiple product programmes can be entered into the screen menu system, to quickly change infeed timing settings during a size change.

Adjustable product guides are fitted.
The Position of the product sensors must not be adjusted.

Section 2 Standard Machine Specification

2.1.5 Product Pitch

305mm (12") Phasing Conveyors.
Or 229mm (9") Phasing conveyor

2.1.6 Product Specification :

A wide range of frozen, or non-frozen ready meals within C-PET type trays.

The standard size range is shown, but some combinations outside this band, (but within the current frame size), can be accommodated.



SIPTU

Smooth Intelligent Product Transfer Unit

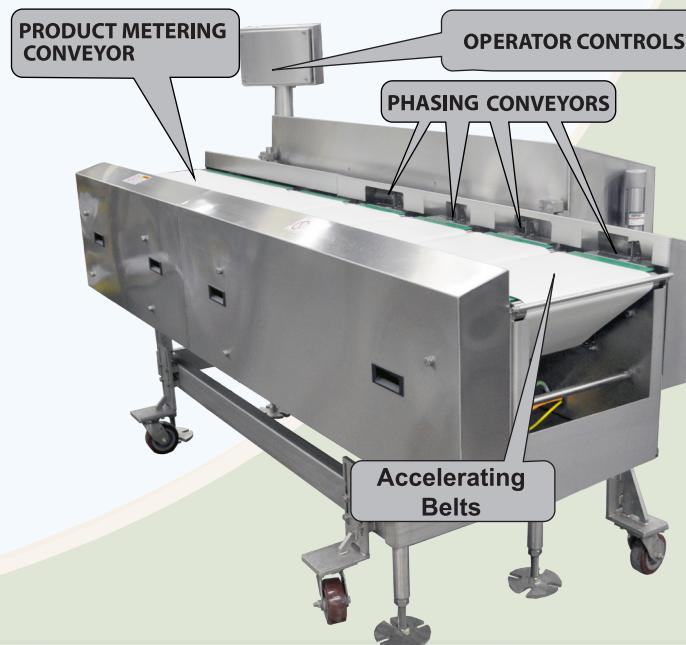
2.1.7 Machine guards

The machine is guarded as standard to comply in our opinion with the full US packaging machinery standards. The machine is safe for use providing it is operated in accordance with the instructions given during training and in this Operating Manual.

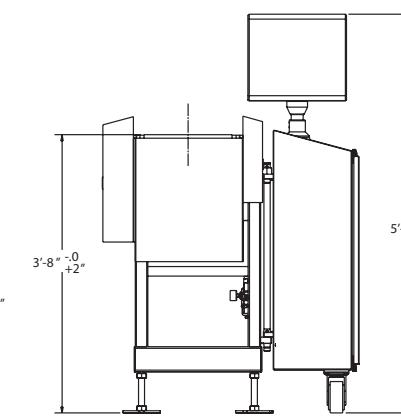
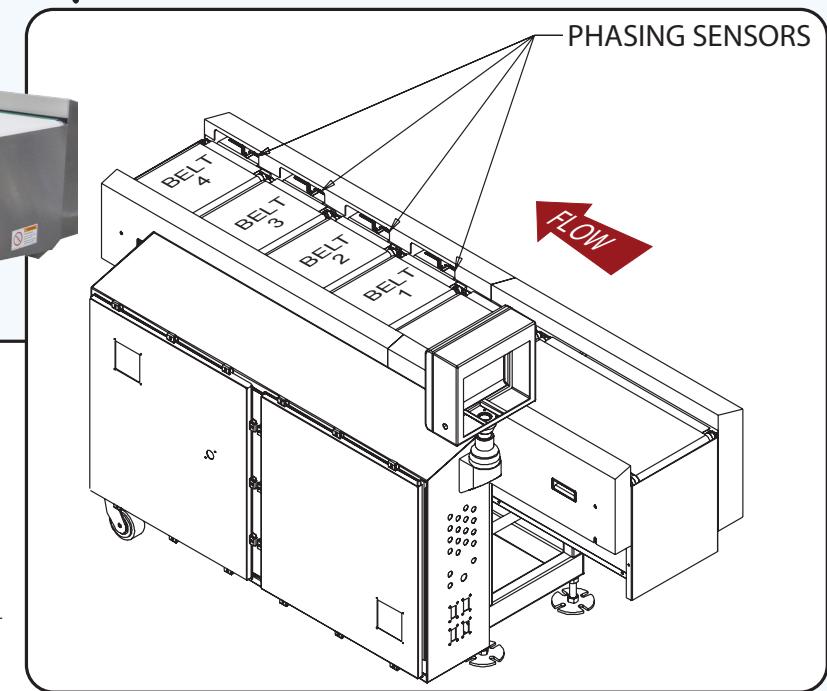
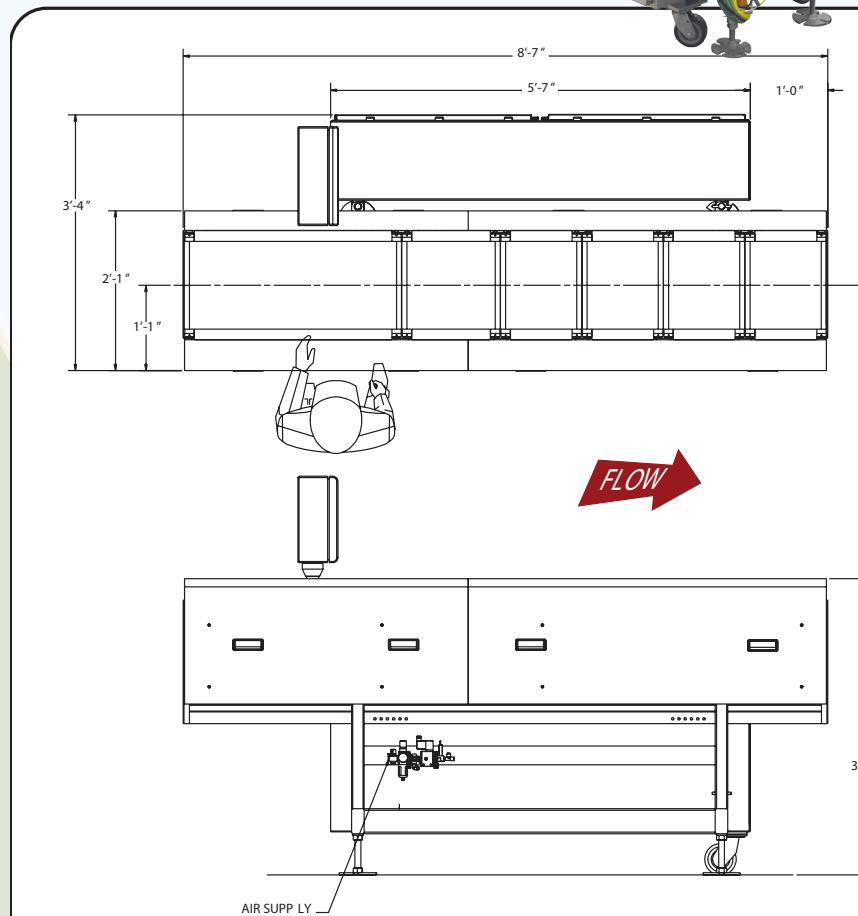
2.1.8 Lubrication

Manual lubrication points are fitted as standard on all bearings and running chains. Centralised manual or software controlled automatic lubrication systems, (controlled via the parent machine), can be fitted as an option.

2.1.9 EQUIPMENT LAYOUT DIAGRAM



2.1.10 MACHINE DIMENSIONS



Section 2 Standard Machine Specification

2.2 Electrical Installation

2.2.1 Services Required

Electricity: 480 VAC, 3 Phase, 60Hz, Live, and Protective Earth conductors.

Consumption: 8.5Kw maximum.

- a) The electric's as regard to Safety and Code of Compliance follow the latest.
- b) The electrical control panel is constructed in stainless steel
- c) Isolator protects the main electrical control panel.
- d) The operators controls are situated on top the main electrical enclosure.

2.2.2 Electrical Component Specification

Circuit Breakers	Allen Bradley
Contactors	Allen Bradley
Inverter Drive	Allen Bradley
Main Enclosure	Stainless Steel
Terminals	Allen Bradley
Main Disconnect	Allen Bradley
PLC / Servo Controller	Allen Bradley
Servo Drive/Motors	Allen Bradley
Relay	Allen Bradley
Push Button	Allen Bradley
Display	Allen Bradley
Lamps	Allen Bradley
Power Supply	Allen Bradley

Air Solenoids
Safety Relay
Guard Switch
Photo Eye
Encoders

S M C
Allen Bradley
Allen Bradley
Baumer
Allen Bradley

2.3 Mechanical Specification

2.3.1 Finish

The construction is basically of stainless steel. All components that contact the product are stainless steel, UHMWP or a food quality conveyor belt.

2.3.2 Drive Medium

All transmission drives are via Gates polychain timing belt 8mm pitch. 8m GT series.

2.3.3 Guards

The machine is guarded as standard to comply in our opinion with the full UK Health & Safety at Work Act and the current EC Directives relative to packaging machinery. It is safe for use provided it is operated in accordance with the instructions given during training and in the Operating Manual.

2.3.4 Lubrication

All flange bearings are equipped with grease nipples for lubrication by hand. Instructions are in the manual.

2.3.5 Conveying

The conveying means are Polyurethane flat belts running on stainless steel rollers.

2.3.6 Shafts

All shafts are manufactured in stainless steel.

2.3.7 Guides

All guide rails are manufactured in stainless steel.

2.3.8 Bearings

Drive shafts are supported in self-aligning electro less nickel-plated flanged bearings.

2.3.9 Infeed and Outfeed Height

890 mm \pm 25mm to base of carton.
(35" \pm 1")

2.3.10 Noise Levels

83 dBA max (12" machine at 250c.p.m)

2.3.11 Conditions

Machine running at 250ppm with product being fed.
Noise level measured one meter from the machine, on each side.

Section **2** Standard Machine Specification

SIPTU
Smooth Intelligent Product Transfer Unit

Section

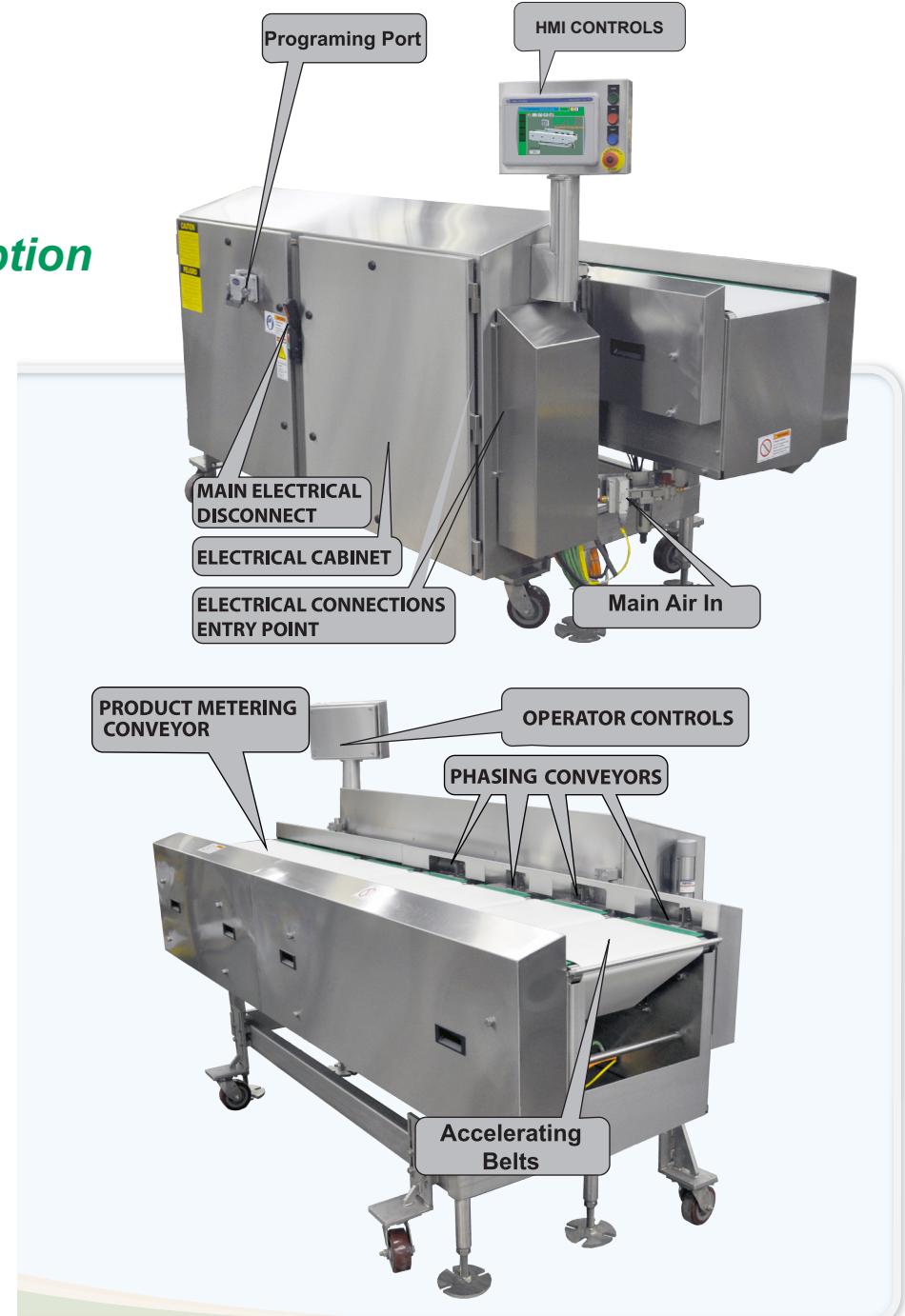
3 Standard Machine Description

3.1 INTRODUCTION

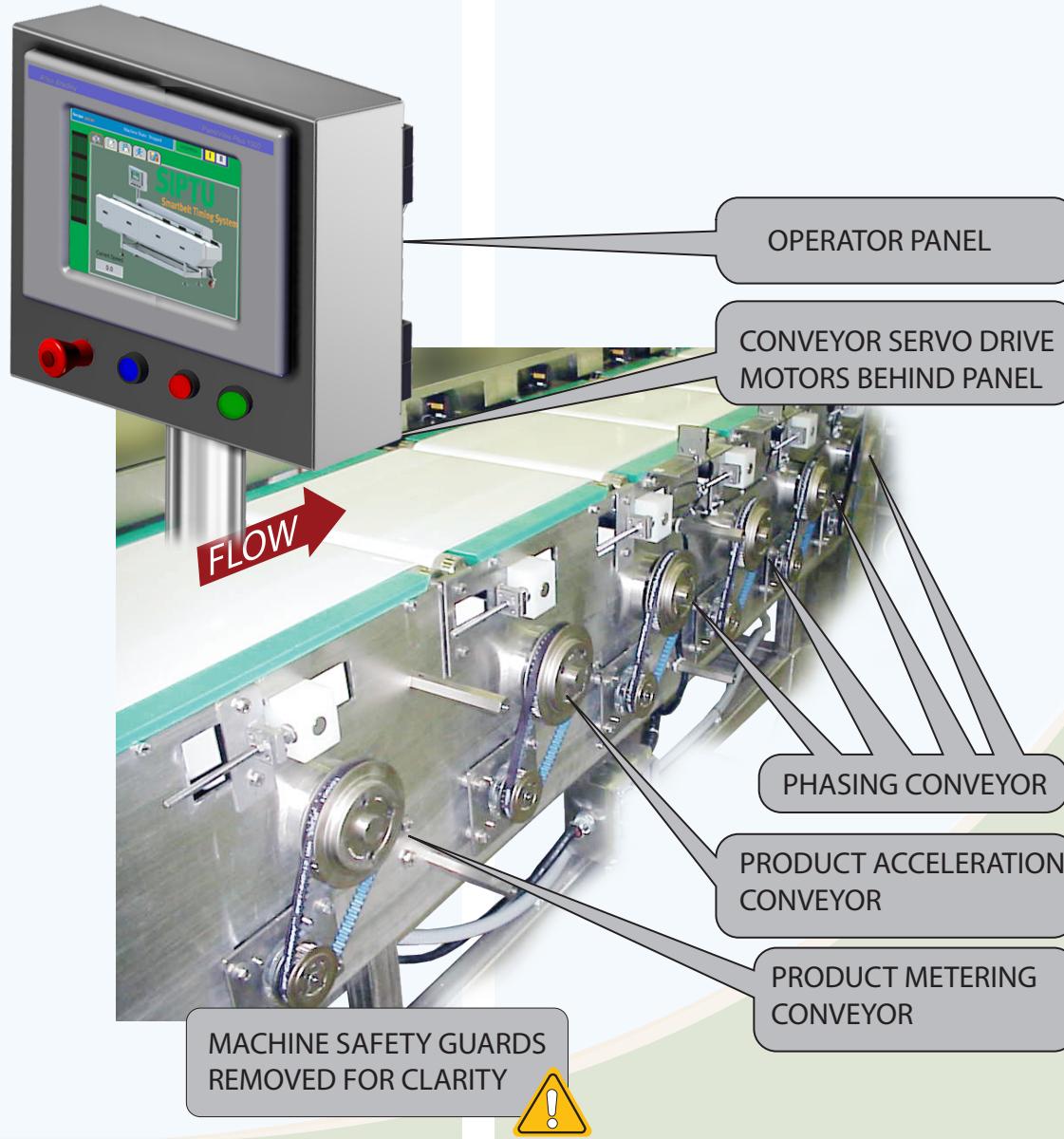
The Kliklok Smooth IPTU is designed to receive products arriving randomly at high speed, and load them equally spaced into the flights of a secondary process line, providing a smooth transition between variable infeed and outfeed speeds.

The gentle transfer operations provide effective product handling ensuring that even the most delicate products can be processed at high speeds.

An operator control panel and touch sensitive screen menu system provide the means for simple operation & adjusting the product infeed timing operations.



3.1.9 EQUIPMENT LAYOUT DIAGRAM



3.2 Sequence of Operation

Products are timed, & correctly spaced before placement onto the downstream Product Infeed Conveyor by means of a **Smooth IPTU**.

The **Smooth IPTU** consists of six separate conveyors, 1-metering, 1-acceleration and 4-phasing.

From the low back line pressure conveyor (recommended) the product passes onto the Metering conveyor.

This conveyor regulates (Meters) the flow products into the SIPTU and is running at a speed dependent on parent machine speed and product length, and is calculated as follows:-

(Machine speed PPM x Product Length mm) ÷ 1000 = M/Min.

(Machine speed PPM x Product Length (in inches) ÷ 12 =(feet). per minute.

From the Metering conveyor the product passes onto the Acceleration conveyor. This conveyor accelerates the products up to parent machine speed and pitches the product at the parent machine pitch length.

The speed is dependent on parent machine speed and pitch length, and is calculated as follows: -

(Machine speed PPM x Machine Pitch Length mm) ÷ 1000 = M/Min.

Section 3 Standard Machine Description

(Machine speed PPM x Product Length (in inches) ÷ 12 =(feet) per minute.

From the Acceleration Conveyor the product is transferred onto first phasing conveyor, the leading edge is detected by a pair of product sensors.

A signal is sent to the PLC that product is detected, and the machine encoder position is then integrated. The timing Encoder is generally located on the outfeed end of the parent machine, but the Encoder MUST be mounted on a one to one shaft

The position of the flights on the Product Infeed Conveyor, relative to the position of the product is then calculated. This is known as the CORRECTION FACTOR.

The Correction Factor is the distance a product has to be moved, in order to be finally placed in the correct position within the flights of the Product Infeed Conveyor. Each Phasing Conveyor's correction factor is adjustable via the operator screen menu system.

The product has now passed over the first phasing conveyor and positioned to a percentage of the total correction factor.

As the product travels downstream over the phasing conveyors, each pair of sensors will signal the PLC to establish where the PRODUCT position is, relative to the position of the downstream conveyor flights. The remaining positional error of the product is established.

In order to place the product in the correct position, each conveyor has to move, (or phase) a certain distance. As the product passes along the phasing conveyors, each conveyor will apply an adjustment, (Correction Factor), as a percentage of the remaining positional error.

Example Only:

Phasing Belt 1	= 0.40 (40%)
Phasing Belt 2	= 0.50 (50%)
Phasing Belt 3	= 0.90 (90%)
Phasing Belt 4	= 1.00 (100%)

If the positional error is 100mm:-

Phasing Belt 1 will apply a adjustment of 40% of 100mm = 40mm, (60mm positional error remaining).

Phasing Belt 2 will apply a adjustment of 50% of 60mm = 30mm, (30mm positional error remaining).

Phasing Belt 3 will apply a adjustment of 90% of 30 = 27mm, (3mm positional error remaining).

Phasing Belt 4 will remove the remaining product positional error if necessary.

The above example shows that phasing belt 1 is applying the most adjustment, and phasing belt 4 is applying the least adjustment.

On the final phasing conveyor the product is transferred into the flights of the downstream conveyor.

3.2.1 INFORMATION

Mode of Operation :

The metering belt meters the product into the SIPTU at the rate set by the product length in the machine setup screen 1 and the speed of the closing machine as the SIPTU follows the closing machine. The product then transfers on to the accelerating belts which pulls a gap between the products. The product gap is preset in the program and cannot be changed and the product then transfers onto phasing belt 1.

As the product triggers phasing belt 1 sensor, the product speeds up over the correction distance set in machine setup and screen 1. This distance is the same for all the phasing belts. The speed is automatic and variable as the program determines how much the belt can speed up, by using the correction factor in the machine setup 2 screen. The product then transfers onto phasing belt 2 and the process starts all over again.

Under normal operating conditions a queue is not expected to be present on the low back line pressure conveyor. The parent machine and the SIPTU normally run fractionally faster than the upstream equipment is feeding the product, normally the Siptu and closing machine run 10% faster than production.

The Metering conveyor can accommodate a queue of product on the low back line pressure conveyor, should the feed rate momentarily exceed the speed of the parent machine and the SIPTU. The length of the queue will be

dependent on the type of low back line pressure conveyor. Too long a queue will cause product to be forced into the SIPTU at a rate greater than can be accommodated causing positional errors.

Servo Motors:

- ◆ Metering conveyor section driven by servomotor M1.
- ◆ Acceleration conveyor section driven by servomotor M2.
- ◆ First phasing conveyor section driven by servomotor M3.
- ◆ Second phasing conveyor section driven by servomotor M4.
- ◆ Third phasing conveyor section driven by servomotor M5.
- ◆ The Fourth phasing conveyor section driven by servomotor M6.

Section 4 Installation

4.1 INSTALLATION

Before starting the installation, read this Manual.

During installation, follow the following recommended procedures in this manual and obey the safety instructions detailed in Section 1.

Installation may require the temporary removal of guards and / or the temporary removal of electrical interlocks. (See Personnel and Electrical Supply, below.)

4.1.1 Personnel

Installers should use only approved, trained, competent personnel.

All other persons should be prohibited from entering the installation area.



4.1.2 Electrical Supply

Only properly qualified persons may:

- a) Connect the electrical supply to the machine. The cable carrying the electrical supply to the machine must be correctly rated for the supply voltage and current specified. An upstream fuse or circuit breaker should be fitted to limit the fault current.
- b) Remove/disconnect and connect / reconnect electrical interlocks.

4.1.3 Guards

After installation, before starting the machine:

- 1) Refit the guards.
- 2) Re-commission the interlocks.
- 3) Check that, where associated equipment is supplied by others, any interface guards are electrically interlocked with the KW supplied machinery.
- 4) Check that guards comply with the current requirements of the relevant Health and Safety.

Section 4 Installation

⚠ WARNING

Never operate the machine unless all guards are in place.

4.1.4 Commissioning

Commissioning runs should be conducted by an approved person who has been instructed in the operation of the machinery.

4.2 Personnel Training

After the machine has completed satisfactory trials, the installer should train one or more authorised persons, nominated by the employer to be responsible for operating the machinery.

All persons operating or tending the machinery should be trained by a qualified trainer.

Training should include instruction on Safe Practices and known hazards.

⚠ WARNING

Operators and attendants should be directed **NOT** to operate the machinery unless all guards are in place.

Although guards, devices and warning signals have been provided for known hazards, the user is responsible for ensuring that personnel know and follow the correct Operating Procedures and Safe Practices.

⚠ WARNING

Operators should not wear loose fitting clothing, neckties or gloves, except where sanitary requirements for handling the products specify that gloves are to be worn

4.3 SAFETY COMPONENTS

4.3.1 Emergency Stop Buttons & Guards

The Emergency Stop system is designed to prevent people from being injured while working on or around the machine. It is also automatically actuated when a jam occurs during operation, or if the guard doors are opened.

Fig 4.3.1.1 shows the I Emergency Stop Button. In the case of an emergency, press the emergency stop button or open the guard. The machine will come to an immediate stop and the control screen will display that an emergency stop has been actuated.

If the electrical connections to the parent machine have been made as specified, then any Emergency Stop on the parent machine will also stop the SIPTU, and the other way around as well.

Testing of this circuit is included with the commissioning.

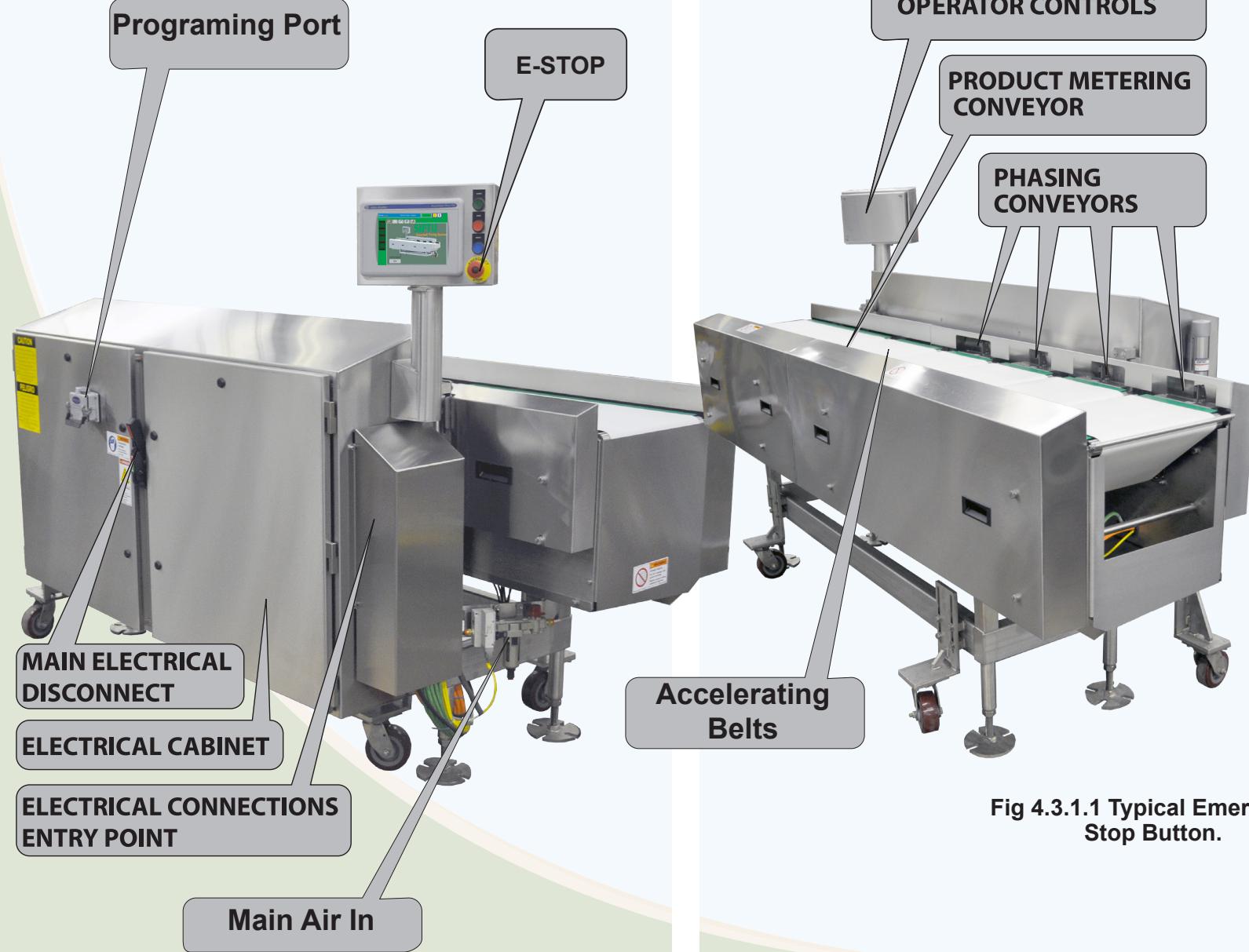


Fig 4.3.1.1 Typical Emergency Stop Button.

Section 4 Installation

4.4 Installing the Smooth iptu

⚠ WARNING

BEFORE INSTALLING THE MACHINE, SECTION ONE, SAFETY AND SECTION FIVE OPERATION, MUST BE READ AND UNDERSTOOD.

POST INSTALLATION CHECKS ARE TO BE CARRIED OUT BY QUALIFIED, SKILLED PERSONNEL.

IF IT IS NECESSARY TO REMOVE ANY FIXED GUARDS IN ORDER TO OBSERVE PARTS OF THE MACHINERY, EXTREME CARE MUST BE EXERCISED TO PREVENT INJURY.

4.4.1 General

Take care not to damage the machine during unpacking. While unpacking and installing the machine, check for damaged or missing parts. Record and report any dents, scratches or other damage, and check for broken or loose electrical connections. Accurately mark (on the floor) the position of the machine.

⚠ CAUTION

EXERCISE EXTREME CARE WHEN MOVING HEAVY MACHINERY.

Never lift the SIPTU with the Electrical Control Panel. Unhooked from the machine.

4.4.2 Moving the Machine

1. While installing the machine, check for damaged or missing parts.
2. When moving the SIPTU, use a suitably rated trolley lift or fork lift truck and take care to use the correct lifting points. The SIPTU may be lifted by carefully placing the fork lift truck forks beneath the main frame of the SIPTU on the long dimension only. The forks must be positioned centrally and the load distributed evenly.



Fig 4.4.2-1 Lifting the SIPTU

3. Position the SIPTU at the upstream end of the parent machine product infeed conveyor.
4. Check that the SIPTU is level.

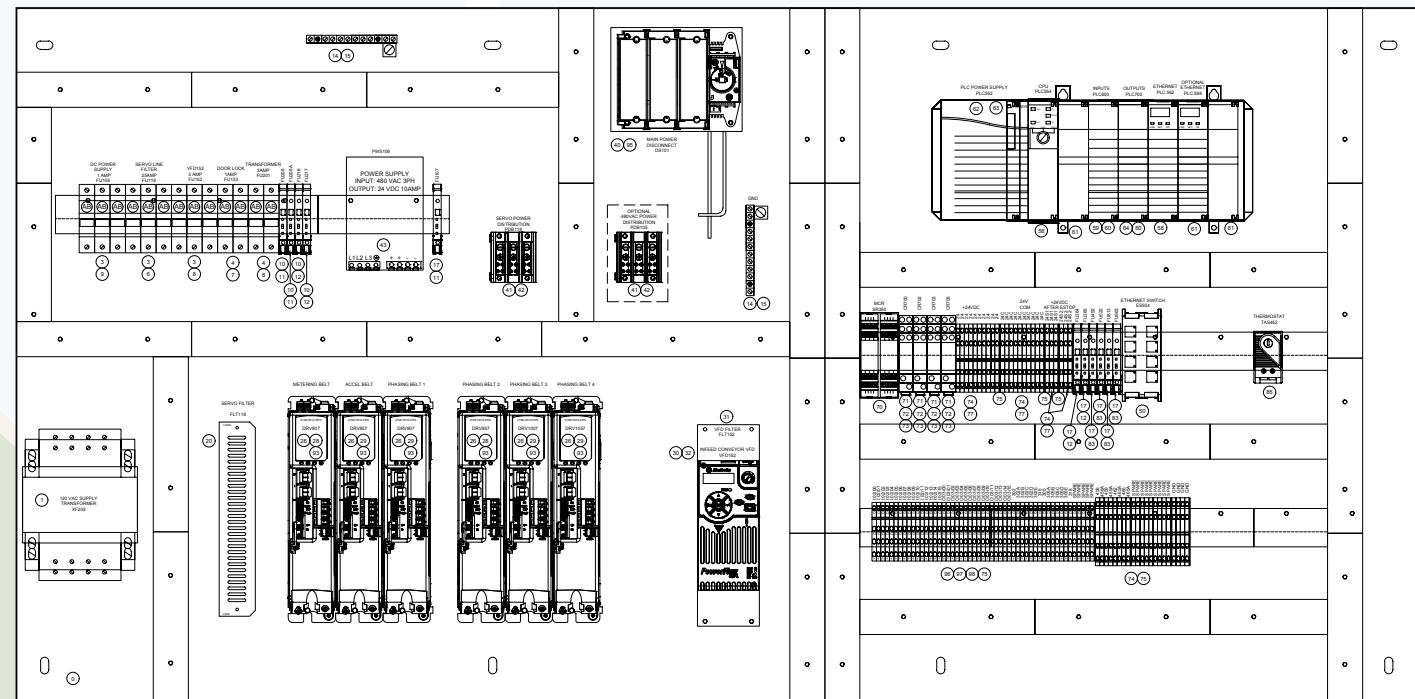
5. Attach the SIPTU to the parent machine product infeed conveyor using the two hexagon-headed screws and brackets which are located one to either side of the loader outfeed.
6. Move the low backline pressure infeed conveyor to the SIPTU infeed conveyor. Position the low backline pressure conveyor as close to the SIPTU infeed conveyor as possible.

4.5 Connection of Services

4.5.1 Mains Electrical Supply

⚠ WARNING

IF IN DOUBT CONSULT A QUALIFIED ELECTRICAL ENGINEER. WIRING IS TO BE CARRIED OUT ONLY BY The incoming power cables are still live when the disconnect is turned off.



- a) Take care to use the correct size of cable, with fuses or circuit breakers of the correct type and rating.
- b) Duct the main electrical supply or otherwise protect it from accidental damage. The entry for the mains supply cable is in the main control centre.
- c) Feed the mains electrical supply cable (three phase, neutral and EARTH, or three phase and EARTH, as required) through the cable entry and make off the ends.
- d) Connect the three phase conductors to the isolator input terminals, the neutral to the neutral bus bar connection and the EARTH to the main EARTH terminal.

4.5.2 Lubrication

Connect the piping for the automatic lubrication (where fitted) of the SIPTU. The SIPTU piping is normally an extension of the lubrication system.

4.5.3 Interconnections with parent machine

There are electrical connections with the parent machine

- Emergency stop circuit
- Running signal
- Encoder connections
- PLC connections

Refer to the circuit diagrams in Section 8

There are two types of encoder system.

If the parent machine is of the multiple servo-motor driven type it will only be necessary to connect the signal wires as shown on the circuit drawing.

If the parent machine is of conventional style and driven by one central motor, it will be necessary to fit the optical encoder supplied with the SIPTU.

Proceed as follows:

1. At the parent machine, fit the IPTU-i timing encoder which must be mounted on a 1:1 shaft. Refer to the parent machine Operating and Maintenance Manual for further information.
2. Tighten the encoder collar retaining screws.
3. Make the encoder electrical connections. Refer to the SIPTU electrical circuit diagrams.

- 4 Follow the instructions given in Section 7 of this manual for setting up the timing of the encoder with reference to the SIPTU .

4.6 Pre-Production Operations and Checks

Check that the Emergency Stop button operates correctly and stops both the IPTU and the main machine when operated.

At the appropriate time, ensure that the IPTU-i responds to the controls at the parent machine control panel in addition to the testing of the IPTU-i controls. When inching the parent machine, check for correct product deposition into the product infeed conveyor.

SIPTU

Smooth Intelligent Product Transfer Unit

Section 5 Operator Controls

5.1 OPERATOR CONTROLS

5.1.1 Machine Running Controls

Located on the top of the Electrical Control Operator Station are the machine running controls:

- ◆ **START BUTTON**
- ◆ **CYCLE STOP BUTTON**
- ◆ **RESET BUTTON**
- ◆ **EMERGENCY STOP BUTTON**

1. GREEN START BUTTON.

(Push Button - illuminated). This button is illuminated when the machine is ready to run (flashing) , or when running (solid).

When the machine has been setup ready for operation and all machine faults cleared, press the reset button then the start button to operate the Smooth IPTU in conjunction with the parent machine.



Fig 5.1.1-1 Operator Controls

If a fault has occurred, or the Emergency Stop button has been pressed, clear all faults and reset the Emergency Stop Button, then press the RESET BUTTON. The machine can now be started.

Press the START BUTTON.

(If the SIPTU is interconnected with the downstream machine, press the Start Button on the parent machine. The SIPTU will operate).

2. CYCLE STOP

(Non-illuminated push-button). This button is pressed when initiating a normal stop.

This will stop the upstream Conveyors, but the SIPTU will continue to run until all products currently loaded are discharged from the machine.

The SIPTU will then stop.

When an Emergency Stop button has been depressed, or a guard switch operated or a machine fault has occurred, the screen will display the fault message as a banner which is be shown at the bottom of the screen. Once the condition has been cleared from the machine, the reset button must be touched so that the safety circuit can reset and clear all faults.

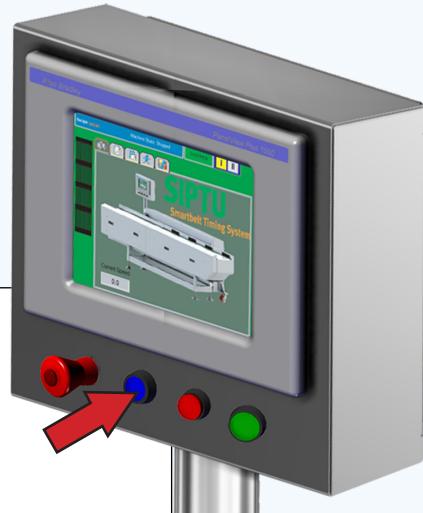
2A. RESET BUTTON

Press this button to reset any faults on the SIPTU as long as those faults are cleared.



The machine will not operate until all faults have been cleared and the RESET button pressed.

REMOVE ALL PRODUCT FROM THE Smooth IPTU.



3. EMERGENCY STOP BUTTON.

This red, mushroom shaped button stops the machine instantaneously when depressed. It is only to be used in the event of an emergency.

It has a lock-down mechanism, which is released when rotated.

Remove all products from the machine before restarting. The opening of any of the machine doors, or guards, while the machine is running will also actuate an Emergency Stop.

To start the machine after an emergency stop or fault has occurred, clear all faults, reset the emergency stop button by **ROTATING CLOCKWISE**, then press the **RESET BUTTON**.



Pressing the Emergency Stop Button on the downstream parent machine will also stop the Smooth IPTU.



THE EMERGENCY STOP BUTTONS SHOULD ONLY BE DEPRESSED WHEN EITHER THE MACHINE IS IN DANGER OF BEING DAMAGED, OR INJURY TO PERSONNEL MAY OCCUR.

REMOVE ALL REMAINING PRODUCTS FROM WITHIN THE Smooth IPTU, AND ON THE INFEEED PHASING CONVEYORS.

4. ELECTRICAL MAIN DISCONNECT

The Isolator Switch is mounted on the control centre door. Set the Switch to 0 (OFF) to disconnect the electrical supply.

Set the Switch to 1 (ON) to connect the electrical supply.



ELECTRICAL MAIN DISCONNECT SWITCH IN POWER ON POSITION. TURN THROUGH 90° TO SWITCH OFF.



5.2 OPERATOR INTERFACE

This section will identify the various operator controls you will encounter while working with the SIPTU.

This section should be read and understood by any personnel who will operate, maintain, or service the equipment.

5.3 INTRODUCTION

The SIPTU machine is mainly controlled by a software program written into the PLC which interfaces with the machine and its components. A comprehensive, password protected screen menu system is provided on a color, touch sensitive HMI (Human Machine Interface), mounted on top of the electrical panel.

Note! HMI passwords are not included in this manual.

Common terms you will encounter in the following section include:

ICON – Graphic symbol used to represent a command or function.

Navigate – Process of moving from one screen menu to another by using the buttons on the screen.

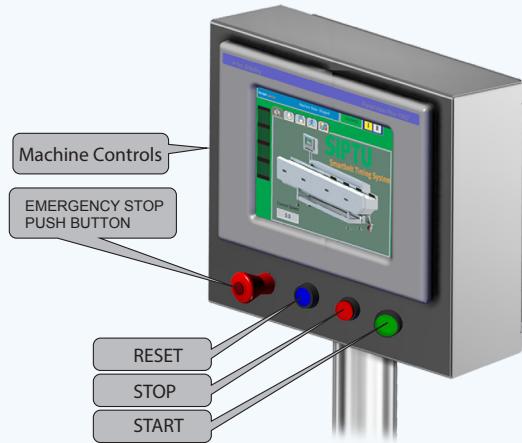
TAB – The icons located across the top and down the right side of the HMI display give the user access to the various screens and pages contained within the HMI.

PAGE – Pages are contained within various HMI screens, these are accessed by selecting the tabs running vertically along the right side of any given screen.

HOME SCREEN – Name used for the screen menu displayed during normal operation, also sometimes referred to as the “Running Screen”

5.4 HMI SCREENS, BUTTONS, AND FUNCTIONS

Operator machine controls are mounted on the HMI control panel, and consist of the following buttons.



KW GRAPHIC: Touching the KW Graphic on the Home Screen will open the Splash Screen. This screen gives the user contact information for Klik-lok-Woodman as well as the installed HMI and PLC versions.

5.4 HOME SCREEN

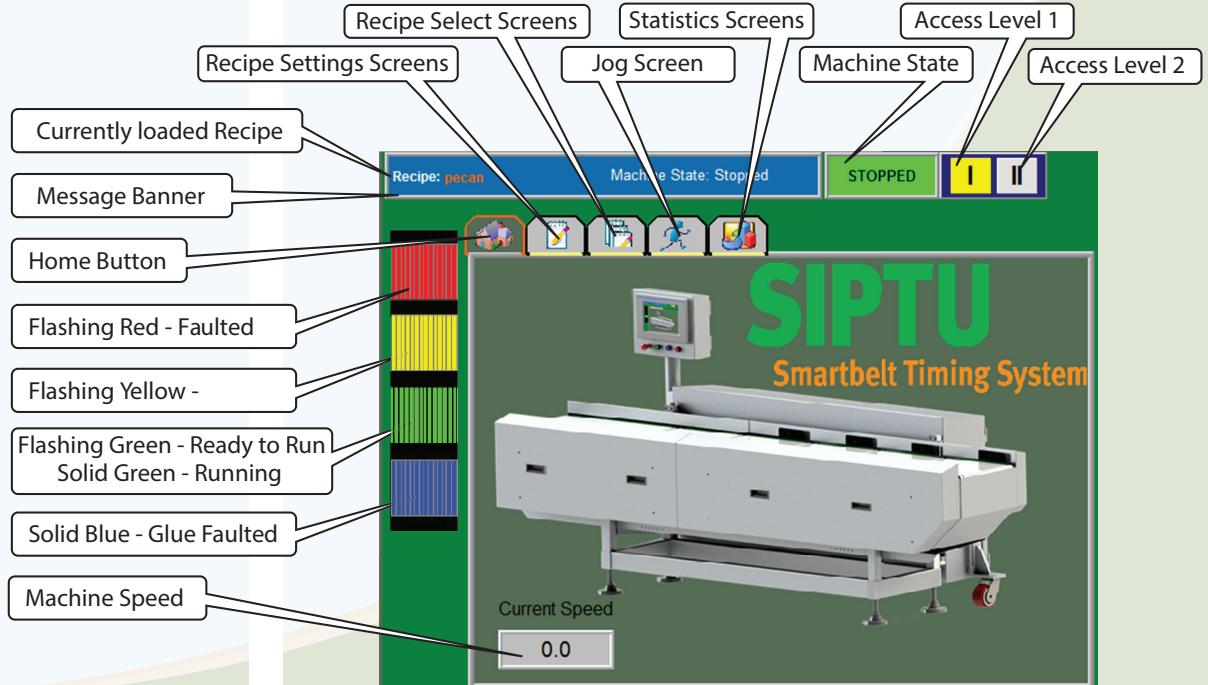
The Home Screen is the main screen displayed during normal production. This screen has been developed to give the operator pertinent production information at a glance such as Machine State, Machine Operating Speed, Loaded Recipe, and any Active Machine Faults. From here the different levels of operator access can be

Recipe: pecan Machine State: Aborted

MESSAGE BANNER: The message banner located at the top of the screen displays the current recipe, and machine state.



HOME ICON: Returns the user to the home screen.





Brings the user to the available recipe settings for the loaded recipe.



Brings the user to the Recipe Menu to load new recipe's.



Brings user to the Jog screen to jog whole machine or specific sections of the machine.



Brings the user to the Statistics screens, currently unavailable and are blank.

MACHINE SPEED: The machines operating speed in Cartons Per Minute (CPM).

ACCESS LEVEL ICON: The screen menu structure has been developed for three levels of access:



- Operator Level-Only change machine speed although most buttons are visible they cannot be changed.



- Operator Level II-Can change certain buttons but cannot save any values.



- Maintenance Level-Can change, save & delete values

Touching the Maintenance Level "II" icon will bring up an alphanumeric key pad prompting the user for a password. Type the password and press enter for admittance to this level. Passwords are not included in this manual, contact Kliklok-Woodman Service for information.

Touching the "I" icon will return the user to the Operator Level of Access.

These Icons are displayed on all pages and can be accessed at anytime.

5.5 OPERATOR LEVEL "I" ACCESS



At the OPERATOR LEVEL you have access to view, but not change, five distinct screens in the HMI program. Each screen is accessed from tabs located horizontally along the top of the displayed home screen. The information contained within these pages will change with each recipe loaded/selected. Below is a description of each of these selectable screens and their pages.

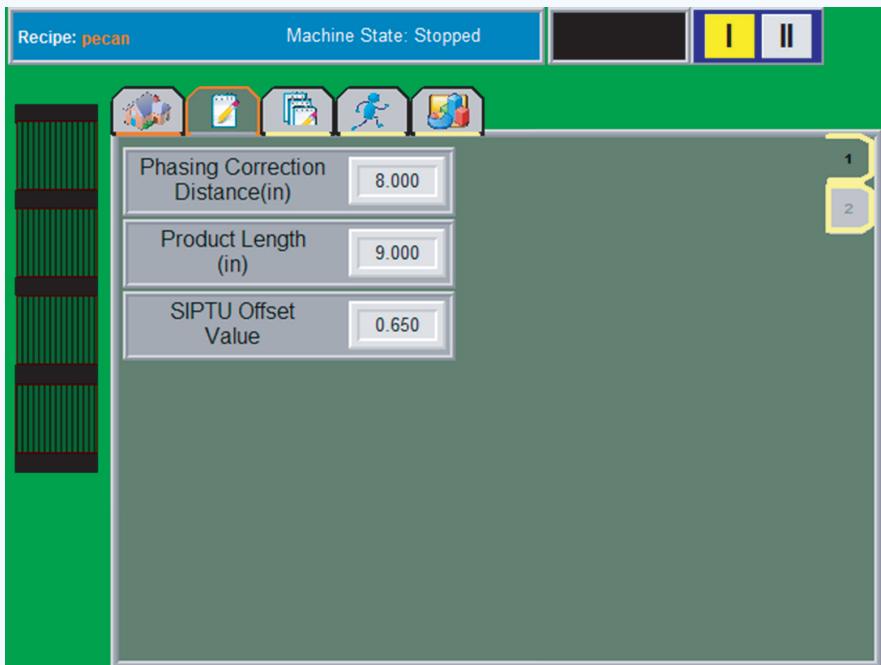
5.5.1 HOME SCREEN



Returns user to the HOME SCREEN

5.5.2 RECIPE SETTINGS SCREEN

The RECIPE SETTINGS SCREENS give the user the ability to adjust the Phasing Correction Distance, Insert the Product Length and determine the SIPTU Offset Value.



PAGE #1 – Phasing Correction Distance, Product Length and SIPTU Offset Value.

5.5.4 RECIPE MENU SCREEN

This screen displays all available recipes. The recipe currently loaded for production is revealed by an arrow ► to its left.



To do a size change load the new recipe and press Recipe Check list, a prompt will come which is a check to see if a size change is required.

CAUTION

Care must be taken when changing machine parameters. Always ensure there is no interference between machine components. We recommend jogging the machine, prior to running, anytime changes have been made.

5.5.5 MODE SCREEN

This screen gives the operator the ability to select between AUTOMATIC and MANUAL/JOG running modes.



NOTE: That the machine must be reset with **No Faults** to enter Manual Mode

The JOG MODE allows the operator to slow machine motion to ensure no interference between machine components. Utilizing the JOG PENDANT gives the operator freedom to move around the machine while checking said components.



To Utilize the Jog function first select the axis to be jogged, if multiple axis is desired select each necessary, Then touch and hold the Jog button. The feature to Jog continuously is available as well, allowing the machine to run without requiring the holding of the jog button.

Note! It is recommended to select a slower speed prior to jogging to ensure visual inspection and so in the event that there is an issue the condition is at the slowest possible form.

5.6 OPERATOR LEVEL "II"



Operator Level II allows access to all Level I screens and the ability to change values. When logged into Operator Level II, all recipe and machine parameters may be changed, however they may not be saved.

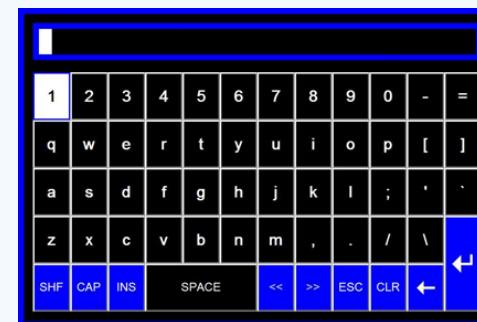
5.7 MAINTENANCE LEVEL "M"



MAINTENANCE LEVEL ACCESS is password protected. Selecting the "II" Maintenance Level button will display an alphanumeric keypad. Entering the wrong password will return the user to the "I" Operator Level.

Once logged into Maintenance Level, the "II" icon will change to a red highlighted "M"

These Icons are displayed on all pages and can be accessed at anytime.



Once logged into Maintenance Level, a timer located in the upper left hand corner of the Home Screen will begin to countdown. When this counter reaches “0” the system will initiate an automatic log-off, reverting access to Level I, Operator Access.

Passwords are not included in this manual. Contact Klik-lok-Woodman Customer Service Department for more information

Maintenance Level Access has all of the functionality of Operator Level access with the following features added:

- Access to Diagnostics, and Maintenance Screens.
- The ability to create, modify, and delete many of the parameters relating to recipes, automated and manual machine settings, and component timing.

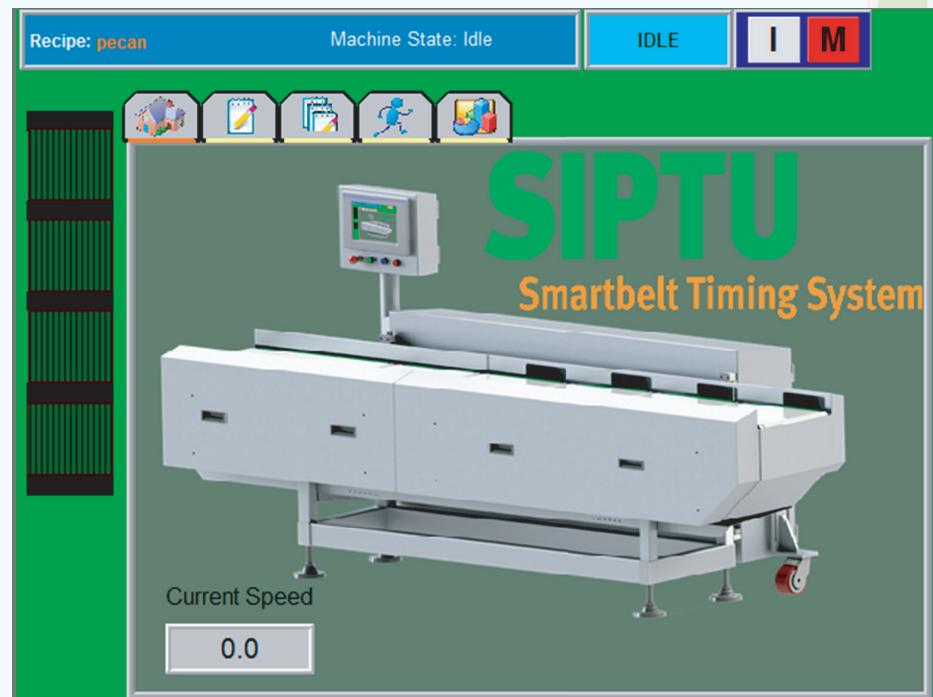
⚠ CAUTION

It is required that this manual be read and fully understood prior to attempting any changes to the stored settings.

Care must be taken when changing machine parameters. Always ensure there is no interference between machine components. We recommend jogging the machine, prior to running, anytime changes have been made.

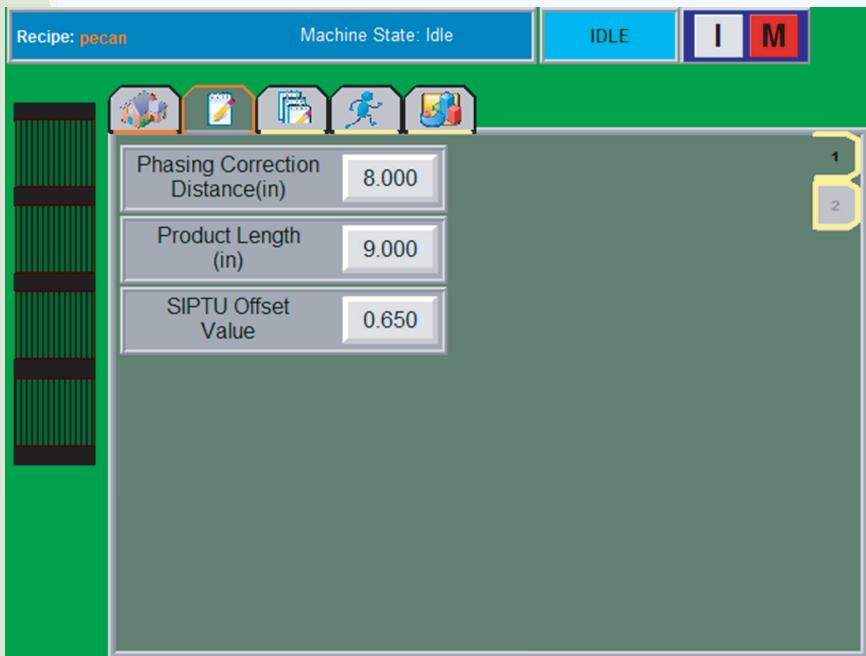
5.7.1 HOME SCREEN

Returns user to the home screen (see 3.2)



5.7.2 RECIPE SETTINGS SCREEN

Recipe Settings Screen 1 allows the operator to review specific recipe settings based on the Conveyor setup process. Operator level 1 can view this information, operator level 2 can edit but not save and Maintenance Level can edit and save their settings.



CAUTION

These parameters are able to be edited when accessed in the maintenance level. It is required that this manual be read and fully understood prior to attempting any changes to the stored settings.

5.7.3 RECIPE MENU SCREEN

This screen displays all available recipes and empty recipe locations. The recipe currently loaded for production is revealed by an arrow ► to its left. When accessed at the maintenance level, recipes are able to be created, edited, saved, and deleted.



5.7.4 MODE SCREEN – MAINTENANCE LEVEL

This screen gives the user the ability to select between automatic and manual/jog running modes. In maintenance level the user has the option to jog each axis independently or as a whole machine. The Jog feature is especially helpful when setting the machine up to run a new carton, as well as

for troubleshooting. Utilizing the jog pendant gives the user freedom to move around the machine while checking said components.

Servo positions are displayed for the each of the belts



NOTE: That the machine must be reset with **No Faults** to enter Manual Mode.

When exiting the jog screen this feature is re-enabled.



Note: To Jog the machine all guard doors must be closed and the machine reset and in a ready state.

To operate the machine in Manual Mode:

1. Navigate to the Jog Screen.
2. Touch the Manual Mode Icon.
3. Touch the Jog Speed Icon and input the desired jog speed into the pop-up keypad.
4. Select individual components to jog.
5. Touch the Jog Icon to place the machine into motion or utilize the Jog Pendant. The machine will stop all motion when the Jog Icon or Jog Pendant buttons are released.
6. The Jog Continuously Icon can be used to place the machine into constant motion. Touching the Jog Continuously Icon a second time will stop machine motion.
7. Exiting the Mode Screen will automatically place the machine back into Auto Mode.

5.7.5 DIAGNOSTICS SCREENS

The following screens provide information pertinent to troubleshooting machine faults. The pages accessed Diagnostics Screen 1 allow the user to monitor sensor input and output, set/view servo torque limits/statistics, and view stored servo fault history. Each page is further described below.

DIAGNOSTICS PAGE #1 – I/O

Diagnostics Page 1 provides operational state of the two (2) Remote Input/Output Slots located within the PLC.



DIAGNOSTICS PAGE #2 – INPUTS

Page 2 identifies each Input switch/sensor and its location within the PLC slots, and displays the operational state of said components.

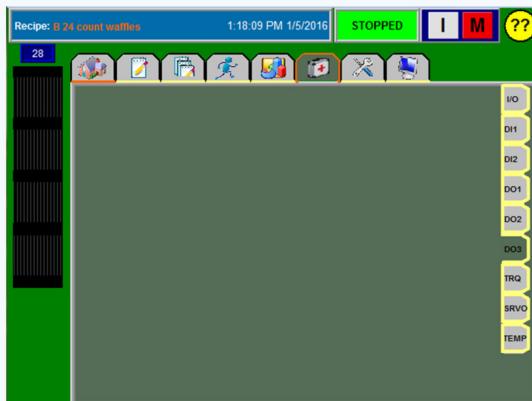


DIAGNOSTICS PAGE #4 – OUTPUTS

Page 4 identifies each Local Output switch/sensor within slot 3, and displays the operational state of said components.



Pages #3, 5 and 7 are intentionally left blank



DIAGNOSTICS PAGE #7 – SERVO TORQUE

Page 7 allows the user to set Over-Torque trip points for each servo axis. This page also records the Maximum Torque an axis has encountered as well as Torque Averages.

To enter a Trip Point value, touch the corresponding icon and input the new value on the pop-up keypad that displays.

To clear the max recorded and average torque touch the Reset Values icon.

	Over Torque Trip Point	Max Recorded Torque	Average Torque
Metering Belt Axis:	250	23.910	0.000
Accel Belt Axis:	250	23.533	0.085
Phasing Belt #1 Axis:	250	24.810	0.217
Phasing Belt #2 Axis:	250	21.861	0.076
Phasing Belt #3 Axis:	250	22.830	0.141
Phasing Belt #4 Axis:	250	21.457	0.128

Reset Values

5.7.6 MAINTENANCE SCREEN

This screen gives the user access to global set-up features, servo homing, sensor teach, and machine options. There are three (3) pages located within the MAINTENANCE SCREEN each of which is described below.

CAUTION

NEVER MAKE ANY CHANGES TO DATA CONTAINED WITHIN THE FOLLOWING SCREENS UNLESS THIS ENTIRE MANUAL HAS BEEN READ AND FULLY UNDERSTOOD.



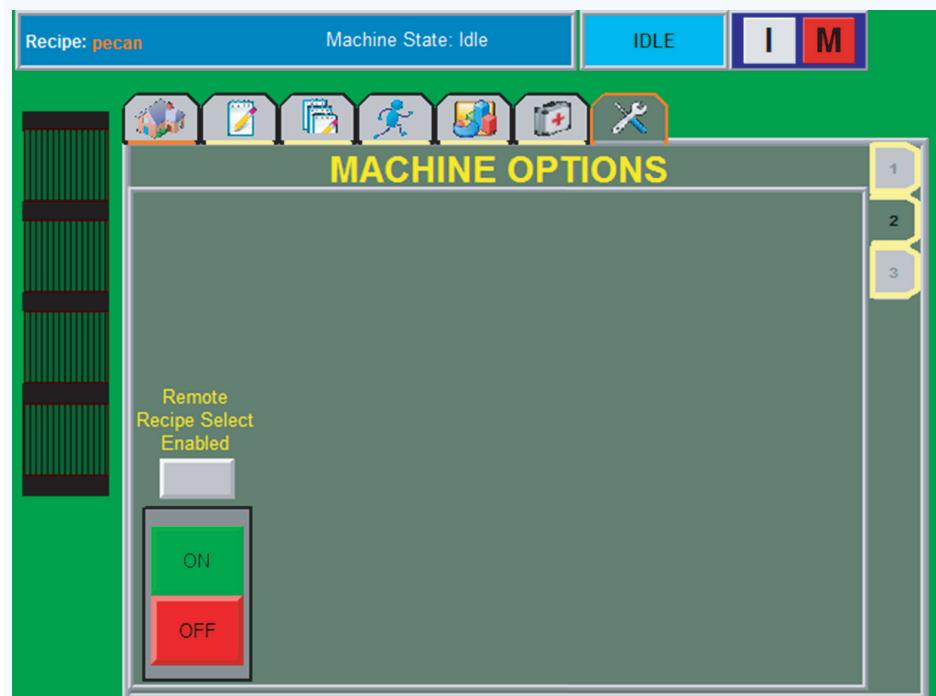
MAINTENANCE PAGE #1 – GLOBAL SET-UP

Page 1 allows the user to set the Date, and Time.

When changing the date/time, enter the desired values into the popup keypad and HOLD the blue clock icon for 5 seconds to apply the change.

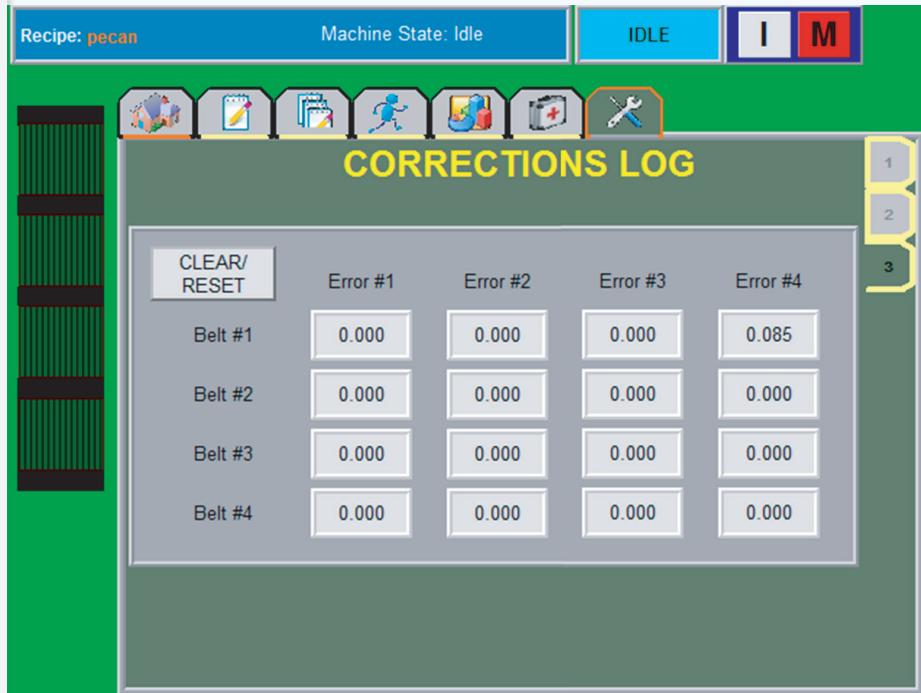
MAINTENANCE PAGE #2 – MACHINE OPTIONS

Remote Recipe Select Enabled- Is available to allow the SIPTU machine and the parent machine to communicate the desired recipe. Example: If the operator loads a new recipe from the parent machine the SIPTU is notified and changes to the same recipe without the operator being required to load additionally on the SIPTU machine.



MAINTENANCE PAGE #3 –CORRECTIONS LOG

Page 3 displays a detailed Log of each correction on each phasing belt.

**5.8 OPERATOR INSTRUCTIONS**

In this section, the Operator will learn how to load recipes, start, stop, and setup the SIPTU for production and how to jog the machine manually. This section should be thoroughly read and understood prior to attempting any of the procedures outlined.

Any personnel that will work with this machinery should be familiar with the information provided in the previous sections of this manual. These sections give essential safety information and terminologies that will be utilized to complete the actions detailed.

5.8.1 TYPES OF STOPS**5.8.1 TYPES OF STOPS**

There are two types of stops, Cycle Stops and Emergency Stops.

- **CYCLE STOP**

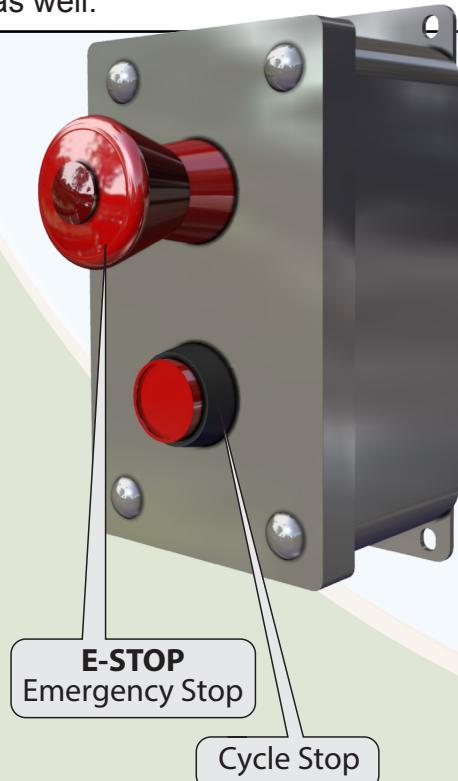
A CYCLE STOP is the standard means of stopping the machine. Unless required for safety concerns (i.e. when a guard door is opened, or the machine faults), all stops are cycle stops.

The Cycle Stop button is located on the HMI panel. To initiate the cycle stop procedure simply press this button. Once the button is pressed, the parent machine will determine the correct time to actually stop the machine. Give the Line a few seconds to clear the product so that it can stop in the correct location allowing for a jam free restart.

- **EMERGENCY STOP**

The Emergency Stop button is located on the HMI panel next to the Start button, Reset Button and Cycle Stop button. Be sure to know the location of this E-Stop Button.

Note! When connected to the parent machine and interfaced, all Cycle Stops and E-Stops on the parent machine will conduct their stopping features for the SIPTU machine as well.



An Emergency Stop (E Stop) situation exists when any of the following occur.

1. An E-Stop push button is depressed.
2. A guard door is opened (Parent Machine).
3. A sensed jam.
4. A servo fault.
5. An improper reading of the photo-sensors.

An Emergency Stop will immediately stop all machine motion, dump pneumatic air, and the control screen will display that an Emergency Stop has been actuated.

5.8.2 OPERATIONAL STATE IDENTIFICATION

The control system has four main operational states: E-Stop, Homing, Ready, and Run. These are explained in detail below.

- **E-STOP** – The machine is stopped, power is removed from components.
- **HOMING** – The machine is moving each axis to its home position.
- **READY** – Power is on, the servos are in their home position, and other systems are powered and ready to run.
- **RUN** – The system is running

Each state is identified either by the color coded stack light located on the left side of the HMI screen, and/or on the message banner located at the top of the HMI screen.

5.8.3 MACHINE STATE CHANGES

The system will enter an E-STOPPED STATE anytime a guard door is opened (On the Parent Machine), an E-Stop button is pressed, or a machine fault occurs. This is also the initial state after a power-up. Change out of this state requires that all guard doors to be closed, all E-Stop buttons be reset, and all machine faults be cleared.

From E-Stop the system will change to a Resetting State, whenever the Reset button on the Control Panel is pressed. Once the safety circuit has been checked the machine will enter the "Ready State".

In the READY STATE the system is primed to start production. To change from Ready to Run depress the Start button. Once the Start Button is pressed, the servos will move to the Start position for the selected recipe. Once this move is complete, the machine will Start. To change from Run to Ready press the cycle stop button.



Note! Parent Machine must be in the Ready State for the SIPTU machine to run and Vise Versa.

Touching the red beacon will take the operator to the alarm history page.



5.9 RUNNING THE MACHINE

This section will outline the steps required for a production run, how to restart the machine after a fault or jam, and how to operate the machine in manual mode.

The following procedure assumes that the machine has been setup, and ready for production.

5.9.1 STARTING PROCEDURES

1. Close all machine guards.
2. Load products onto the Infeed conveyors upstream of the SIPTU.
3. Select the RECIPE from the SCREEN MENU SYSTEM.
4. Clear all machine faults and perform all instructions that are indicated on the Smooth IPTU control panel screen.
5. Press the RESET BUTTON.
6. Press the START button on the Smooth IPTU. The screen will display SIPTU running with master. If the SIPTU is interconnected with the downstream parent machine, it will not move until the START button on the parent machine is pressed.
7. Perform the start procedure on the parent machine. On the parent machine operator control screen, the message READY TO RUN should be displayed.

WARNING

WARN ALL NEARBY PERSONNEL THAT THE MACHINES ARE TO BE STARTED.

- Press the START button on the parent machine. The Smooth IPTU will start with the parent machine.

5.9.2 RUNNING THE MACHINE IN MANUAL MODE (ENTERPRISE AND INTERCEPTOR TRANSFER UNIT)



- Close all guard doors, clear all alarms, and reset the machine.
- From the HOME SCREEN touch the MODE TAB.
- Touch the MANUAL ICON to open the JOG SCREEN.
- Touch the JOG SPEED ICON and enter the desired jog speed in the pop up keypad.

- Select the desired Axis(s) to Jog.
- Use the buttons on the Jog Pendant to put the machine into motion.

5.9.3 RUNNING THE MACHINE IN AUTO MODE (ENTERPRISE AND INTERCEPTOR TRANSFER UNIT)

- Clear all machine faults.
- Load product onto the upstream Conveyor.
- Press the reset button to home the servos.
- Press the start button to begin production.

5.9.4 STOPPING THE MACHINE – CYCLE STOP

- Press the Cycle Stop button on the HMI, or any cycle stop button on the parent machine if equipped.
- If the machine is to be stopped for more than an hour, disable the power via the main electrical disconnect.

5.9.5 STOPPING THE MACHINE – EMERGENCY STOP

The Emergency Stop system is designed to prevent people from being injured while working on or around the machine. It is also automatically actuated when a jam occurs during operation, or if the guard doors are opened on the parent machine.

1. In the case of an emergency, press any of the Emergency Stop buttons positioned around the machine. The machine will come to an immediate stop, the pneumatic system will be disabled, and the control screen will display that an Emergency Stop has been actuated.
2. Remove any products from the metering / phasing conveyors.

CAUTION

use caution when working around hot components

3. Check the area of the machine where the jam occurred for damage.
4. Clear all machine faults that are indicated on the displayed alarm screen.
5. Close all guard doors.
6. Press the reset button to re-home the servos.
7. Reload or ensure that product is prepared on the upstream conveyors.
8. Press the START button.

5.9.6 RESTARTING THE MACHINE AFTER A FAULT

Recipe: pecan

Machine State: Aborted

Alarms are categorized into two types: Warnings and Faults

All warnings are self clearing and generally will not stop the machine. Warnings are displayed in the upper banner on the home screen.

In the event of a fault, the machine will stop, the pneumatic system will be disabled, and a red warning banner will be displayed on the HMI screen detailing the cause of the fault.



Clearing a fault message and resetting the machine:

1. Inspect the area where the fault has occurred and remove the cause of the fault.
2. Remove any product from the phasing conveyors.

CAUTION

use caution when working around hot components

3. Inspect the surrounding area where the fault occurred for damage.
4. Close all guard doors.
5. Touch the displayed alarm banner to return to the home screen.
6. Press the reset button to clear the fault message.
7. Press the start button to resume production.

5.10 Screen Menu System

The correct positioning and timing of the products as they are transfer along the phasing conveyors and into the flight pockets of the downstream Infeed Conveyor, is controlled by a comprehensive screen menu system, programmed into the Operator Control Panel. Access to the various submenu is achieved by simply pressing the required menu box on the screen. Adjustment to the settings is best achieved with the machine running at slow speed, with product.

Before the machine can be adjusted the Sensors must be set to the correct positions. As shown in the diagram, X displays the product length once it is fully on the beginning portion of the conveyor. Each Photo Sensor must be positioned so that it is in line with the leading edge of the product. Once the Sensor is positioned (Each Phasing Belt Sensor must be positioned to the same dimension) the values can be then be adjusted. Review the following for a detailed description of each setting.

SIPTU OFFSET VALUE- This is the required offset to achieve the proper timing of the product from the SIPTU onto the Parent machines Infeed Conveyor.

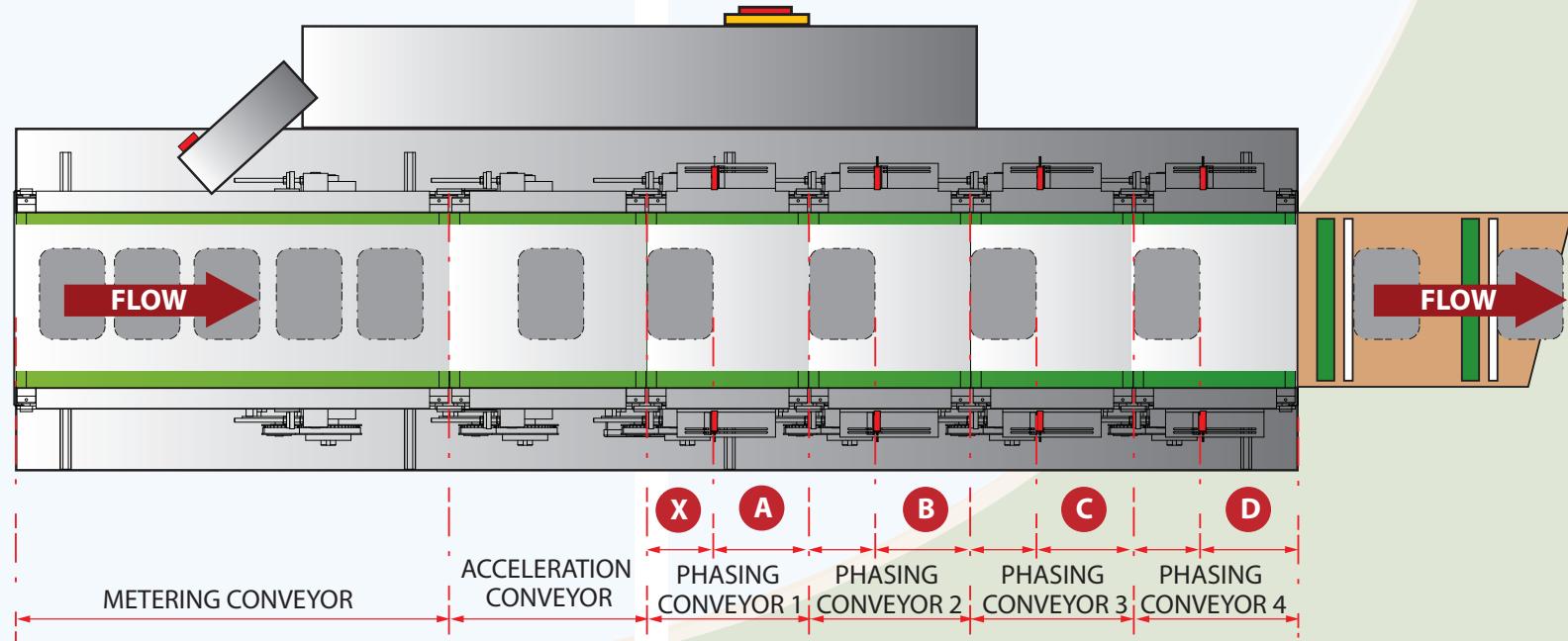
PRODUCT LENGTH- This is the length of the product, enter the length dimension here.

PHASING CORRECTION DISTANCE - This value is based on the remaining distance once the product is on each phasing conveyor. As shown in the diagram A,B,C, and D is the determined Phasing Correction Distance. Once the Photo Sensor has been set measure the remaining distance and record that dimension here. This allows the SIPTU system to determine the maximum distance it has to correct the spacing for each product.

- A** PHASING CONVEYOR No.1
CORRECTION DISTANCE.
- B** PHASING CONVEYOR No.2
CORRECTION DISTANCE.
- C** PHASING CONVEYOR No.3
CORRECTION DISTANCE.
- D** PHASING CONVEYOR No.4
CORRECTION DISTANCE.
- X** PRODUCT SENSOR POSITION
= PRODUCT LENGTH
MEASURED DOWNSTREAM
FROM END OF CONVEYOR.



Note! It is important that all 4 of the phasing sensors are set in the same position on all 4 phasing belts. The reason is the same phasing distance is used on all 4 belts.



5.11 SELECTING, EDITING, CREATING, AND PRODUCT SETUP AND COMPONENT ADJUSTMENT

This section will detail the steps taken to CREATE and MODIFY RECIPE PARAMETERS, RESET DATUM TIMING POSITIONS, AND TEACH COMPONENT S E N - SOR OPERATIONAL LIMITS.

CAUTION

Improperly adjusting these settings can have adverse results, resulting in poor machine performance and/or machine damage. DO NOT attempt making these adjustments unless you have thoroughly read this entire manual and completely understand the information contained herein.



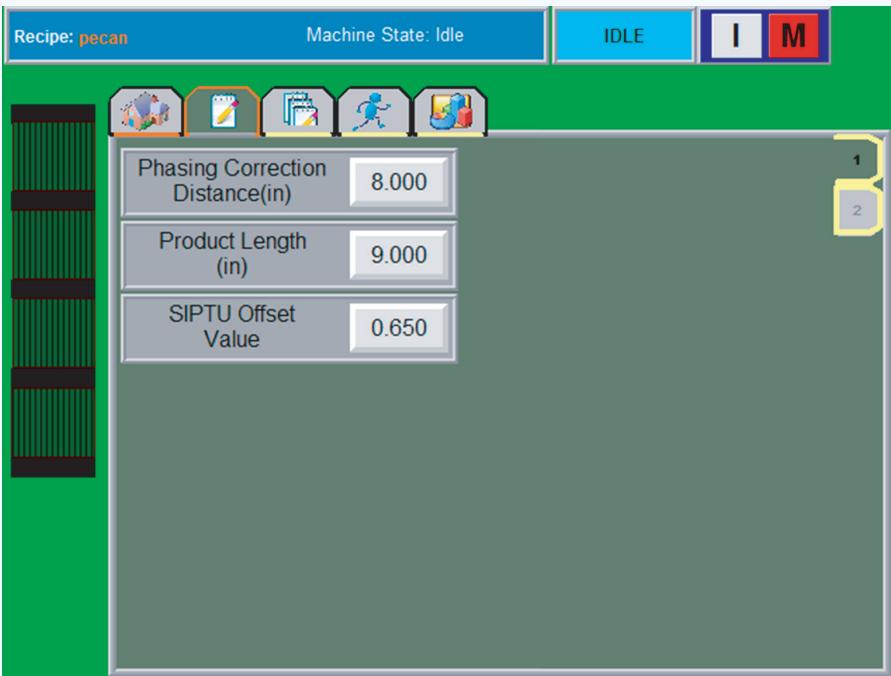
The procedures outlined in the following sections are performed while logged into the system with Maintenance Level II Access.

5.11.1 SELECTING A RECIPE



1. From the **HOME SCREEN** touch the **RECIPE MENU TAB**.
2. To select a recipe, touch the **BLUE RECIPE BAR** containing the recipe name you wish to choose. This will move the selection arrow ► to that recipe. You may also scroll the arrow ► up/down through the Recipe Bar by utilizing the scroll icons.
3. Touch the **LOAD ICON**.
4. A pop-up box will display asking you to confirm your selection.
5. Touch the green checkmark ✓ to confirm the change, Touch the red X to cancel the change.

5.11.2 EDITING A RECIPE



1. Select the recipe to edit.
2. Touch the RECIPE SETTINGS TAB 
3. Input the new Product dimensions, with the pop-up keypad, by touching the gray boxes containing the existing dimensions.
4. Touch the RECIPE MENU TAB.
5. Touch the SAVE ICON. 
6. CONFIRM your selection.

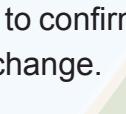
NOTE: Editing a Recipe can only be done in Operator II Level or above.



Editing, saving or Deleting a recipe can only be done in Main Mode.

5.11.3 CREATING A RECIPE



1. From the HOME SCREEN touch the RECIPE MENU TAB.
2. To select a recipe location, touch any empty, **Blue Recipe Bar**. This will move the selection arrow ► to that recipe location. You may also scroll the arrow ► up/down through the Recipe Bar by utilizing the scroll icons.
3. Touch the LOAD ICON. 
4. Touch the green checkmark icon to confirm the change. Touch the red X to cancel the change. 
5. Touch the RECIPE SETTINGS TAB. 
6. Consecutively input the new **CARTON DIMENSIONS**, **MACHINE SETTINGS**, and **CHANGE PART** Information on each of the attached ten (10) pages. (see 7.1.2)
7. Touch the RECIPE MENU TAB.
8. Touch the SAVE ICON. 
9. CONFIRM your selection.

5.11.4 DELETING A RECIPE

1. Touch the **RECIPE MENU TAB.** 
2. Touch the **BLUE RECIPE BAR** containing the recipe name you wish to delete. This will move the selection arrow ► to that recipe. You may also scroll the arrow ► up/down through the Recipe Bar by utilizing the scroll icons.
3. Touch the **DELETE ICON.** 
4. **CONFIRM** your selection.

Section 6 Maintenance

6.1 DAILY MAINTENANCE SCHEDULE

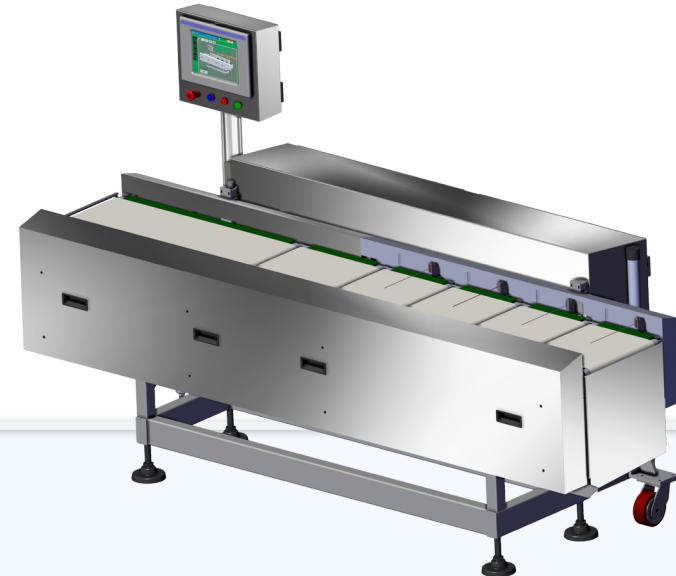
⚠ WARNING

BEFORE CARRYING OUT ANY MAINTENANCE, PUSH IN ONE OF THE EMERGENCY STOP BUTTONS AND OPEN A GUARD TO PREVENT THE MACHINE FROM BEING STARTED

IF New PARTS ARE FITTED, particularly conveyor or drive chains and belts, THE machine timing OPERATIONS MAY BE EFFECTED.

A preventative maintenance schedule should be employed every 8 hours. The following checks should be carried out daily before production running commences.

- Check for damaged or missing parts.
- Check all moving parts for signs of wear or insecure fixing.
- Inspect the condition of all belts. Clean if required, with warm water and a damp cloth. Replace a belt if it is damaged or broken.
- Report noisy operation of the motors to maintenance personnel.



- Check that the interlock switches on the guards are working. Replace if damaged.
- Check that the EMERGENCY STOP push buttons are working. Replace if damaged.
- Gently clean all sensors. Take care not to disturb the position of any sensor.

6.2 Maintenance Schedule

6.2.1 General

- Every 25 hours, check the tension in new chains & belts. These stretch quickly during the first 200 hours of operation.
- Within four weeks of initial installation, check all nuts, bolts and other fasteners for security. Tighten any that have worked loose.
- Within two weeks of fitting new parts, check that the parts are securely fastened. Tighten any loose fasteners.
- For proprietary items, see the manufacturer's data in Section 10 and the bulletins which were despatched with the machine.

6.2.2 Every 8 Hours

Refer to the Daily Maintenance Schedule in 6.1.

6.2.3 Every 50 Hours

- (a) Check the operation of the Electrical Main Disconnect. Repair the Isolator or fit a new one as required.
- (b) Check the operation of the Emergency Stop Button. Fit a new one if faulty.
- (c) Inspect the Product Metering / Phasing Conveyors. If contaminated, clean with warm water and detergent using a soft cotton cloth. Remove all traces of food and dirt as this may effect the phasing operations. Fit new belts if damaged.
- (d) Check/adjust the tension of all conveyor chains and drive belts.
- (e) Check that all sensors and associated circuits operate correctly. Correct any faults.

6.2.4 Every 250 Hours

- (a) Inspect the operation of all sensors. Clean them or fit new ones as needed.
- (b) Check the operation of all safety guard door interlock switches. Open each guard door in turn during operation. The safety circuit should perform an emergency stop.
- (c) Inspect all drive motors and belts or chains for damage & wear
- (d) Inspect all conveyor belts for cleanliness
- (e) Inspect all chain drive sprockets & bearings for wear and damage.

6.2.5 Every 500 Hours

- (a) Inspect all chains. If the chain stretch exceeds 2%, fit new chains.

6.2.6 Every 750 hours

- (a) Inspect the gearboxes & servo motors. Check for noisy running and backlash in the drive mechanism.

6.2.7 Every 3,000 Hours

Where chains are lubricated from a centralised system:

- (a) Remove the all drive chains, for cleaning and lubrication. Fit new chains if required.
- (b) Inspect all bearings. Check for bearing wear and damage to the bearings and housings.

6.3 Lubrication**6.3.1 General**

Some bearings (silver in colour) are fitted with grease nipples. These allow the bearings to be greased after harsh washing procedures. Sufficient grease should be pumped into each bearing to displace any fluid that has been forced into the bearing. Routine greasing is not needed. The Lubrication Schedule Table gives details of both automatic and manual lubrication requirements.

The Main Drive Servo Motor is “lubricated for life” and sealed. This gearbox needs no lubrication.

6.3.2 Lubrication Tables

STANDARD LUBRICANTS - Non Food Grade		
OIL		
LUBRICATION CODE	APPLICATION	SPECIFICATION
AO	IL CAN (GENERAL USE)	SHELL TONNA TX2200
AC	ENTRAL LUBRICATION SYSTEMS	HELL TONNA TX2200
	COMPRESSED AIR LUBRICATORS	REFER TO MANUFACTURERS BULLETINS IN SECTION 10 OF MANUAL
GREASE		
LUBRICATION CODE	APPLICATION	SPECIFICATION
B	GREASE GUN	SHELL LITHIUM ABIDA RL2
C	SPLINES AND SCREW JACKS	HEAVY SILICONE ANTI-SEIZE GREASE (COPPER MOLYBDENUM)
D	BEARINGS	OSSAGOL FLUID GREASE
DC	ENTRAL LUBRICATION SYSTEM	OSSAGOL FLUID GREASE
BG	EAR BOXES WHERE SPECIFIED	SHELL LITHIUM ABIDA RL2

NOTE: Some suppliers of oil and grease products may specify suitable alternatives. Refer to Section 10 of this manual for Manufacturers Bulletins & Instructions.

LUBRICATION MAINTENANCE SCHEDULE			
LUBRICATION CODE	FREQUENCY	ITEM	INSTRUCTIONS
A	Every 24 Hours	Central Lubrication Oil System	Operate the hand pump once only, or if automatic lubrication system fitted - manually select screen menu on parent machine to apply oil.
	Every Week	Compressed Air System	See Manufacturers Instructions supplied in Section 10 of this manual.
A	"	Central Lubrication Oil System	Operate the hand pump once only or manually set screen menu on parent machine to apply oil. Check oil level in reservoir and refill if required
D	"	Central Lubrication Grease System	Operate the hand pump once only or manually set screen menu on parent machine to apply grease. Check grease level in reservoir and refill if required
A	"	Drive Motors	See Manufacturers Instructions supplied in Section 10 of this manual.
A	"	Gear Boxes	See Manufacturers Instructions supplied in Section 10 of this manual.
A	Every 6 Months	Chains	Remove chains and clean in Hydraulic oil. Lubricate and refit. Adjust tension.
B	"	Overload Clutches	Grease during re-assembly after the maintenance inspection
	"	Gear Boxes	See Manufacturers Instructions supplied in Section 10 of this manual.

6.4 DRIVE BELTS TROUBLE SHOOTING TABLE

The most common causes of premature failure of drive belts are shown below. There are other less apparent causes of drive belt failure: excessive reverse bend, sub-minimum diameter idler pulley, variable centre (as caused by rubber mounted motors and mountings, etc. Periodic inspection of all drive belts should determine if wear is apparent, and if replacement is required.

Excessive edge wear	Misalignment or non-rigid centers. Bent flange	Check alignment and / or reinforce mounting. Straighten flange
Jacket wear on pressure-face side of belt tooth	Excessive overload and / or excessive belt tightness	Reduce installation tension and / or increase drive load-carrying capacity.
Excessive jacket wear between belt teeth (exposed tension members)	Excessive installation tension	Reduce installation tension
Cracks in neoprene backing	Exposure to excessive low temperature (below -35°C) and /or excessive high temperature (over 100°C).	Eliminate high/low temperature condition or consult factory for proper belt construction.
Softening of neoprene backing.	Exposure to oil	Eliminate oil condition or consult Kliklok for proper belt specification.
Tensile failure	Small or sub-minimum diameter pulley	Increase pulley diameter or recalculate drive
	Excessive overload	Increase belt width
	Foreign material	Use drive cover
Excessive pulley tooth wear (on pressure face and / or outer diameter.	Excessive overload and / or excessive belt tightness	Reduce installation tension and / or increase drive load-carrying capacity.
	Insufficient hardness of pulley material	Surface-harden pulley or use harder material
Unmounting of flange	Incorrect flange installation	Reinstall flange correctly
	Misalignment	Correct alignment
Excessive drive noise	Misalignment	Correct alignment
	Excessive installation belt tension	Reduce belt tension
	Excessive load	Increase drive load carrying capacity.
	Sub-minimum pulley diameter	Increase pulley diameters
Tooth shear	Too few teeth in pulley or sprocket	Fit pulley or sprocket with correct number of teeth.
	Excessive load	Increase drive load carrying capacity
Belt stretch	Reduction of center distance or belt tension pulley loose.	Re-tension drive pulleys.

6.5 Machine Cleaning PROCEDURE

⚠ WARNING

STOP THE MACHINE AND SET THE ELECTRICAL ISOLATORS TO THE OFF POSITION BEFORE CLEANING.

Do not clean any ELECTRICAL drive motor directly WITH A high pressure hose. Enclose all electrical drive motors within a waterproof cover before proceeding, or damage to the electrical circuits may occur.

6.5.1 Safety Precautions

- 1) For individual components safety features, consult the manufacturers' bulletins, and those which were supplied separately with the machine.
- 2) Use hot water with care. Overheating can damage components.
- 3) Germicidal solutions may, in time, degrade some materials.
- 4) If a water or steam hose is used for cleaning, DO NOT direct the jet at electrical boxes and motors.
- 5) Although the machine is sealed to resist penetration of the washing solution into working parts, electrical cabinets, etc., hose jets could penetrate the seals.
- 6) Take care when cleaning items which could be damaged by washing down. For example:

Hot Components:

Allow to cool before cleaning

Chains:

Lubricate after cleaning, if required

Belts:

Rinse off washing solutions with clean water and air dry. Use warm air if required

Grease Nipples / Sensors / Bearing Seals:

Reapply grease / oil after cleaning as specified in the lubrication table.

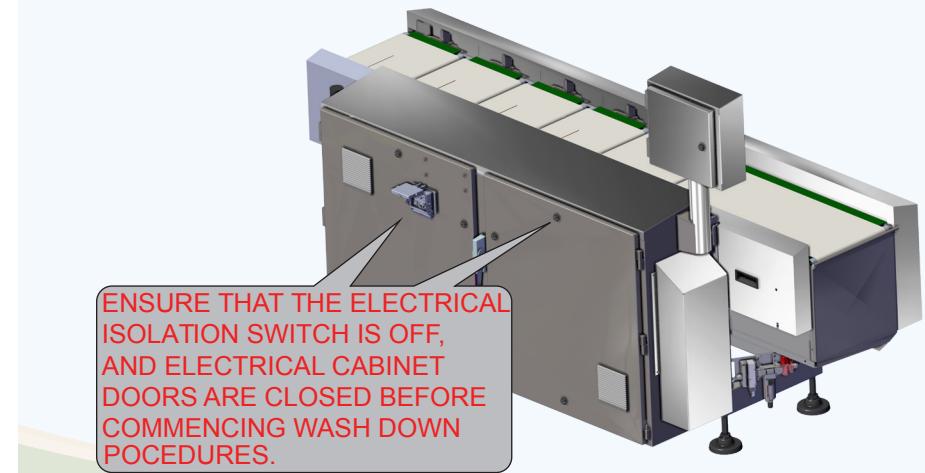
- 7) Wash down the machine to production requirements.
- 8) After washing with chemical solutions, rinse with clean water.

⚠ WARNING

Do not rinse surfaces which are required to be sanitised and the sanitising of which would be destroyed by clear water.

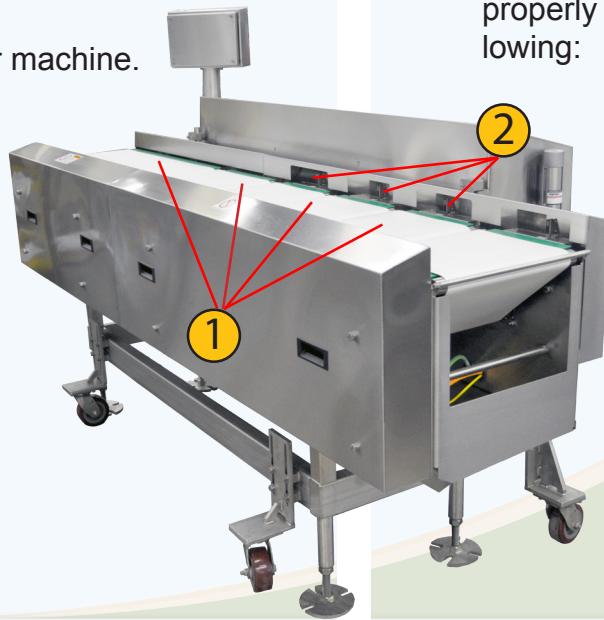
6.5.2 Machine Cleaning Procedure

Observe basic precautions before washing.
These apply to both models



6.5.2.1 Cleaning (Closed) Flat-belt model

- 1 Wash all Conveyor belts with warm water and detergent using a cotton cloth, or soft bristle hand brush. Do not use excessive amounts of water. Remove all food debris and dirt.
Dry conveyor belts with clean cotton cloth.
- 2 Gently wipe clean all product sensors using a clean dry cotton cloth. **DO NOT MOVE SENSOR POSITIONS.**
3. Clean the inside and outside of the safety guard using a non abrasive damp cotton cloth.
4. Wash all stainless steel guards with warm water and detergent using a cotton cloth or soft hand brush.
5. Remove debris from under machine.



6.6 Belt Replacement Tension AND Tracking Procedures

SIPTU BELT MAINTENANCE PROCEDURES

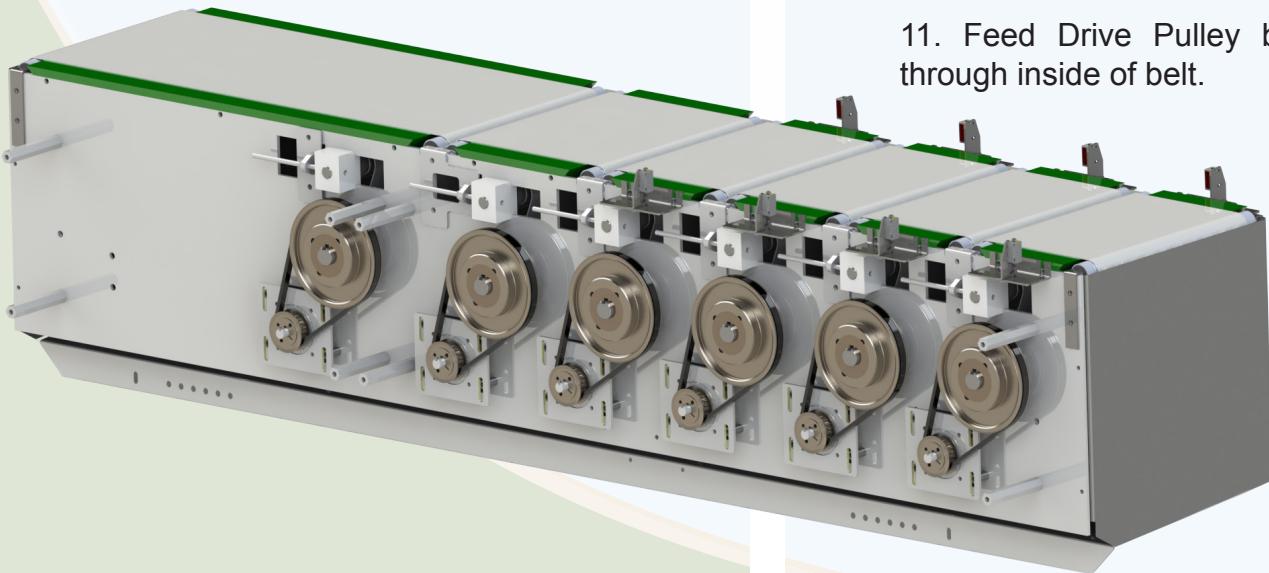
The SIPTU machine was designed to receive products arriving at high speed and load them equally spaced into the flights of a secondary process line. This provides a smooth transition between variable infeed and outfeed speed. Here we will discuss the proper procedures in Belt Replacement, Belt Tension and Belt Tracking. Prior to any work being performed on the machine, review your manual for all safety requirements and procedures.

If a belt becomes torn or damaged it may be necessary to replace the belt, in this case certain steps are required to properly remove and install the new belt. Review the following:

6.6.1 BELT REPLACEMENT

First remove the main outside guard that covers the 6 drive assemblies for the belts.

1. Loosen the motor mounting plate- (6) (Shown on Figure 1.0)
2. Loosen and remove TL Bushing (17) which holds the pulley. (Figure 1.0)
3. Remove pulley (16) and belt (20) (Figure 1.0)
4. De-tension the belt via Jacking screws (42) and (43), on both sides of the belt. (Figure 3.0)



5. Remove Motor side bearing (4) (Figure 1.0)
6. Remove Drive Pulley (5). (Figure 1.0)
7. Loosen Idler Retainers/ Tensioners (10) or (12) on both sides of the conveyor assembly. (Figure 1.0 and 2.0)
8. With the Idler Retainers, loosen, (on both sides of the conveyor) the Slider Bed (30)(31)or(32), retainers and lift the Slider bed Slightly.
9. Lift Idlers (3) and slide the old belt out. (Figure 1.0 and 2.0)
10. Insert New Belt over Idlers (3), re-install Slider Bed and tighten Retainer/ Tensioner (10) or (12) (Figure 1.0 and 2.0) Also See Belt Path Diagram Figure 5.0 at the end of this section.
11. Feed Drive Pulley back onto machine, inserting through inside of belt.

**9" SIPTU CONVEYOR BELT
INSTALLATION
PROCEDURES
(STANDARD HAND
SHOWN)**

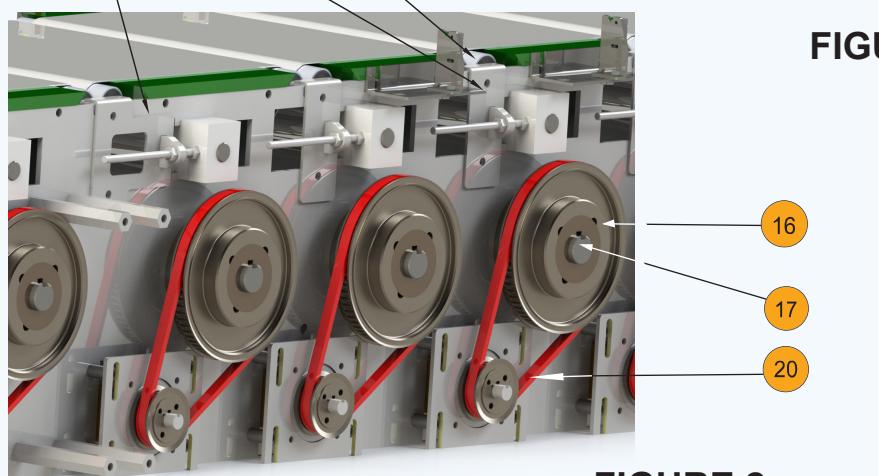


FIGURE 2

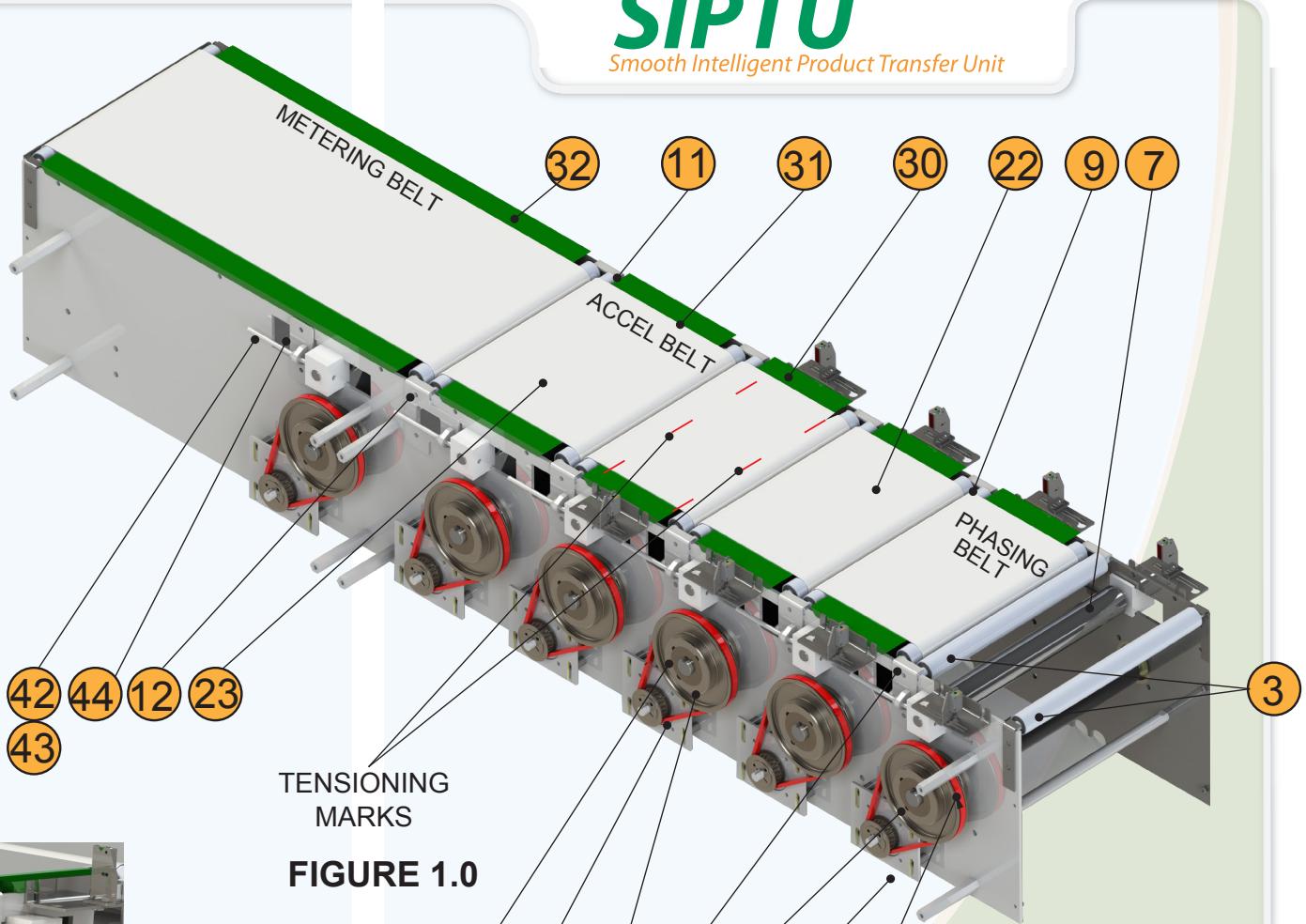
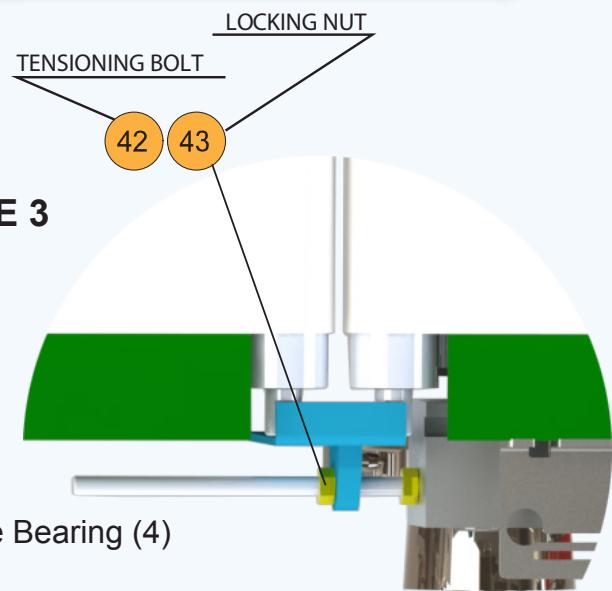


FIGURE 1.0



12. Replace Bearing (4)
13. Re-Seat Idlers (3) and tighten Retainer/ Tensioner (10) or (12) on Both sides of the conveyor.
14. See Tensioning Procedure for proper tension of the belt.
15. Replace Timing Belt / Pulley / TL Bushing (20) (16) (17)
16. Tension Timing Belt via motor mount (6) and snug (+) (+)



Note: If Belt is to be temporarily de-tensioned but re-used, Make 8.000" marks per Tensioning procedure BEFORE De-tensioning the Belt. After Maintenance is complete, used belt should be re-tensioned back to the 8.000". Over Tension can cause damage to the Belt and/or create tracking issues.

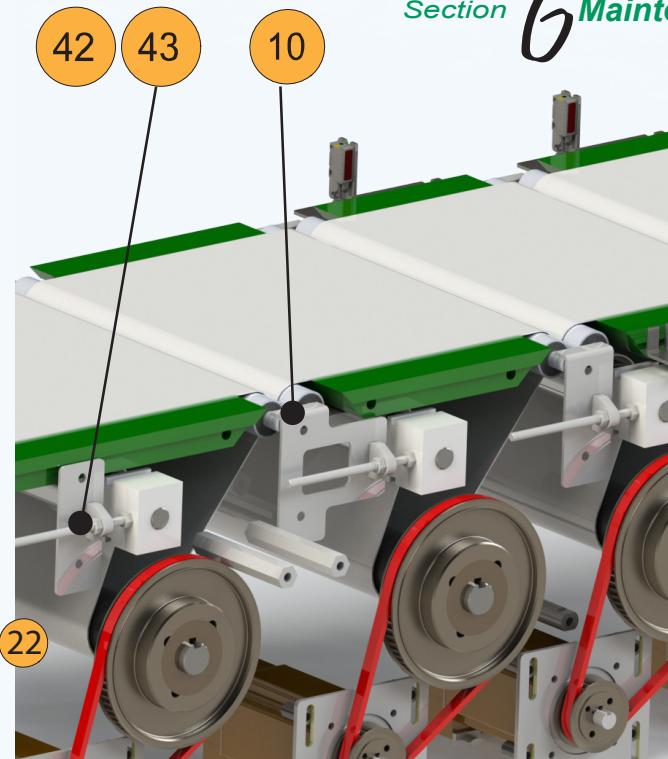
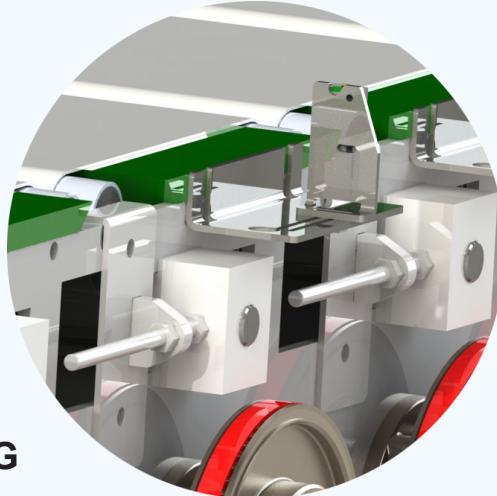


FIGURE 4

BELT PATH
For Belt Replacement
FIGURE 5.0





6.7 BELT TENSIONING

1. Tension belt evenly on both sides of the conveyor by hand, to remove slack. Keep belt centered across the width of the conveyor. (Figure 6.0)
2. Make (2) marks on top (flat) portion of the belt, EXACTLY 8.000" apart, at centerline and both edges of the Belt.
3. Gradually and Evenly Tension both sides (42) (43) until distance between all (3) sets of marks are between 8.024" and 8.040".
4. Should Slippage ever occur, tensioned spacing may be increased to 8.080" MAX.
- 5 Verify Tracking per Tracking procedures 3.0.

TOP VIEW @ PHASING BELT

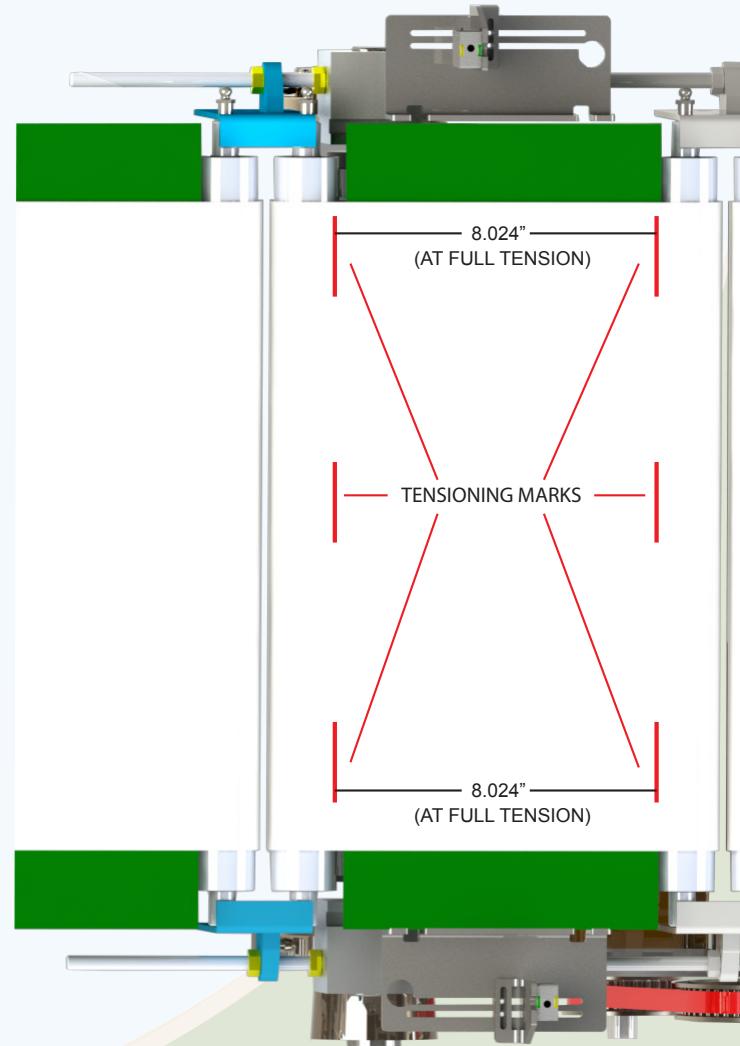


FIGURE 6.0

6.8 BELT TRACKING

1. Monitor belt path while the conveyor is running.
2. Shown to the Right: (Figure 7.0)
If the belt runs towards the left on Downstream Idler, initially reduce tension on the right side slightly.

Additional Tracking can be made by increasing Tension on the same side as the direction of track (Left for Left, Right for Right)

- 3 Always verify proper tensioning during and following tracking process. If over tension occurs during tracking, it is best practice to review Tension on both sides and set to 8.024" – 8.040" and start tracking procedure over.

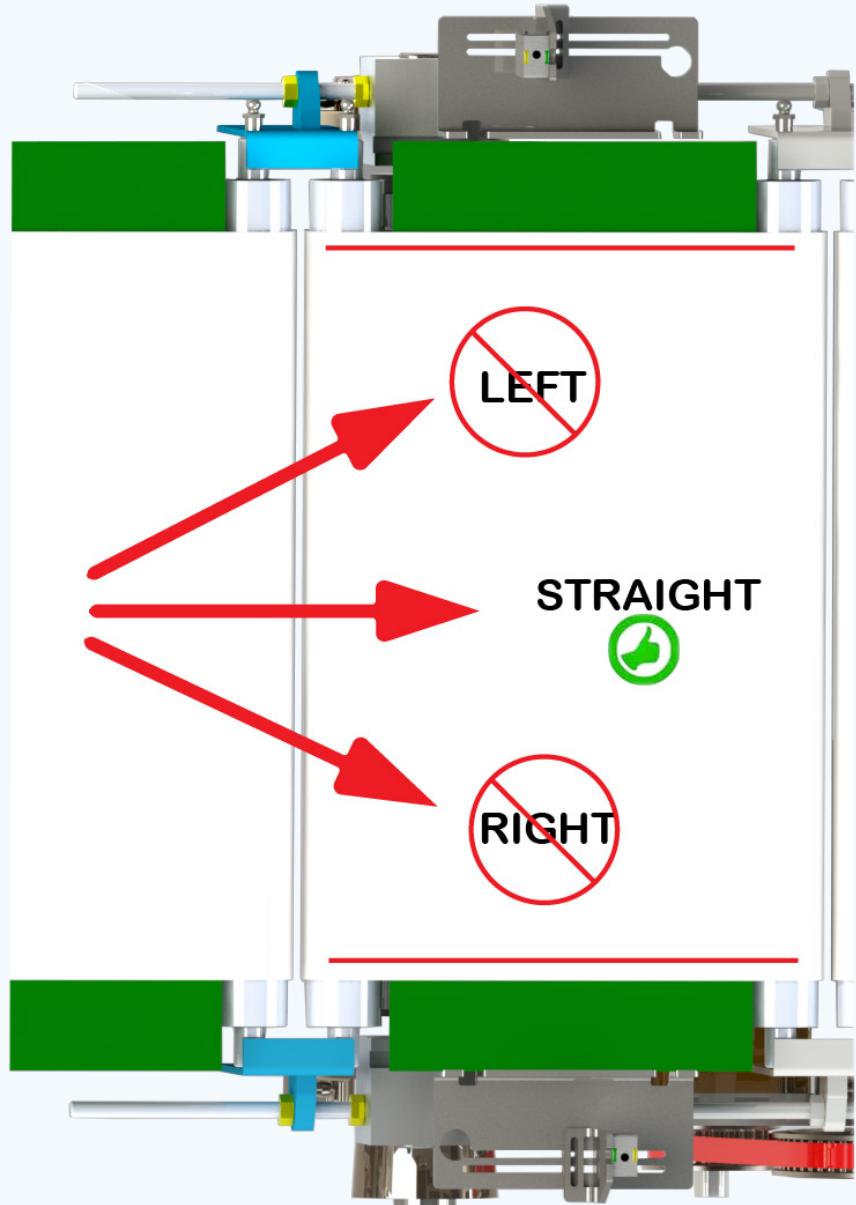


FIGURE 7.0

6.6.2 Transmitted Beam Sensors Installation and Setup Procedures

- Here we will discuss the proper procedures in installing and setting up the Photo Sensors for the SIPTU Machine.

Default Settings:

The factory default settings are configured so that no teaching is required in most conditions.

Output Mode:

Dark Operate (Output ON when the light between the emitter and the receiver is blocked)

Output Type: Auto PNP/NPN or IO-Link.

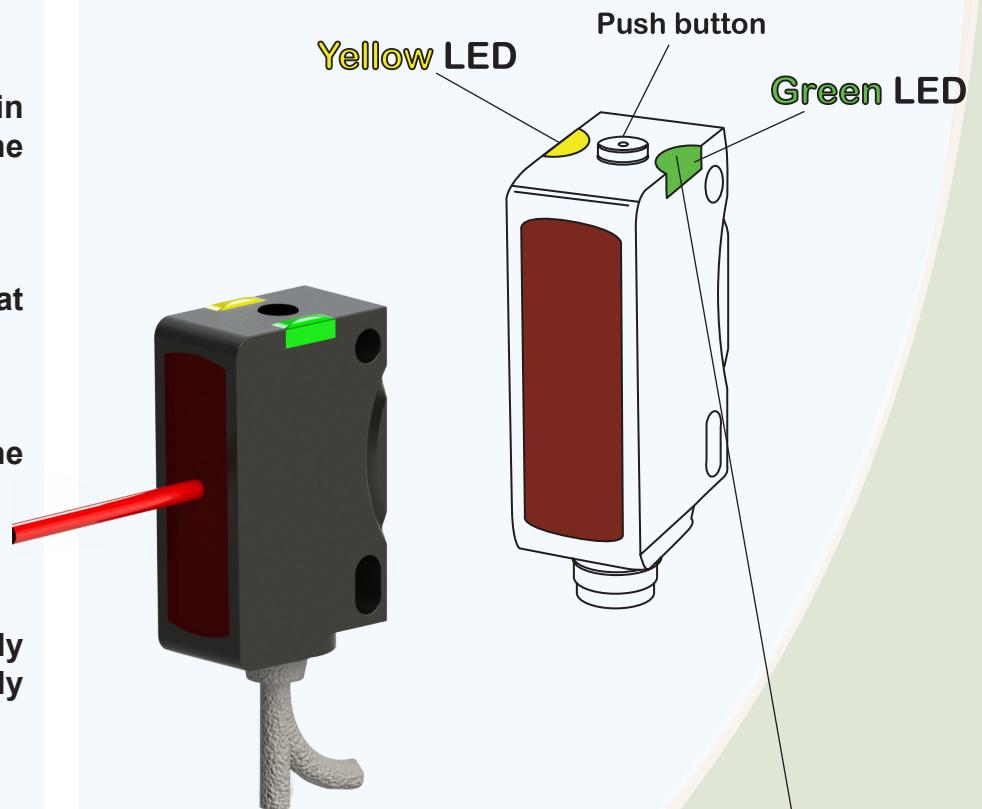
In Auto PNP/NPN mode, the sensor continuously monitors the load connection and automatically configures the output to PNP or NPN.

Receiver User Interface LED Status

The table below provides LED status on the receiver in the RUN mode i.e, during operation. The sensor is always in RUN mode, except when being taught.

IO-Link Operation

Green	OFF	Power is OFF
	Flashing	(1 Hz) Power is ON
Yellow	OFF	Output de-energized
	ON	Output energized

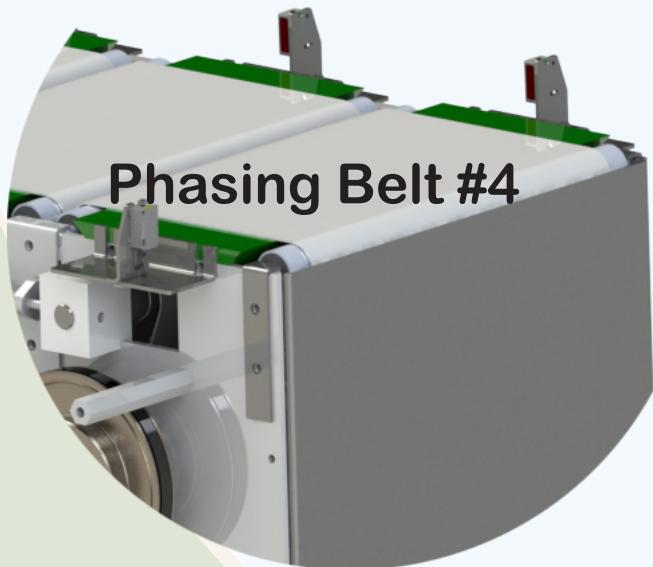


Auto PNP/NPN Operation

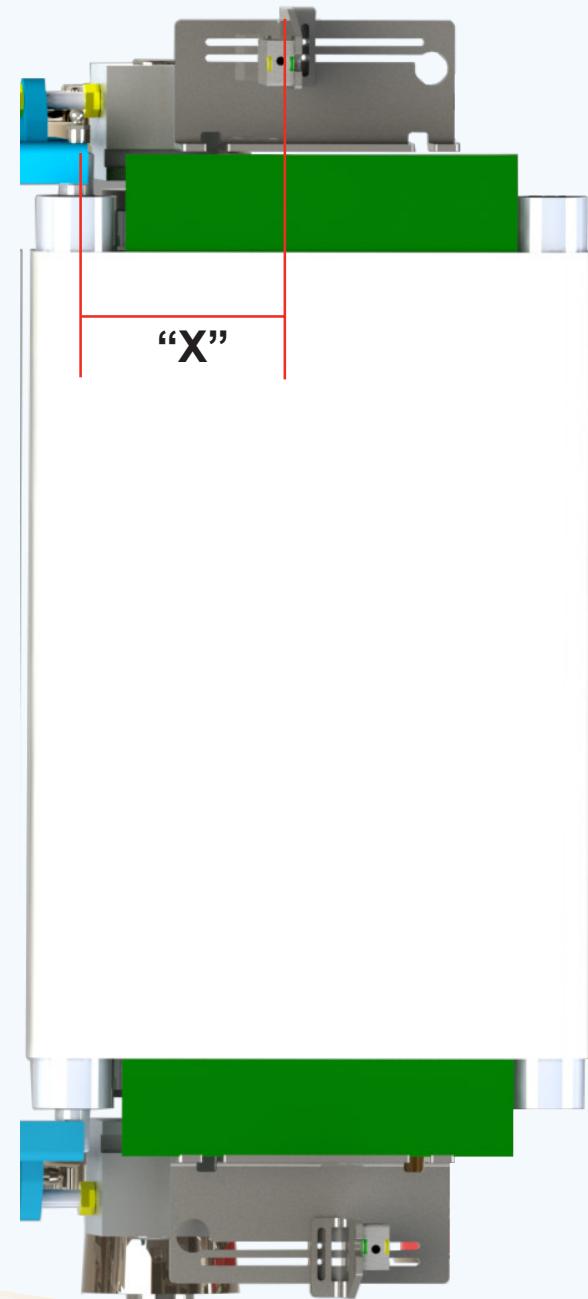
Green	OFF	Power is OFF
	ON	Power is ON
	Flashing	(6 Hz) Unstable light level ($0.5 < \text{margin} < 2$)
Yellow	Flashing	(1.5 Hz) Output short circuit protection active
	OFF	Output de-energized
	ON	Output energized

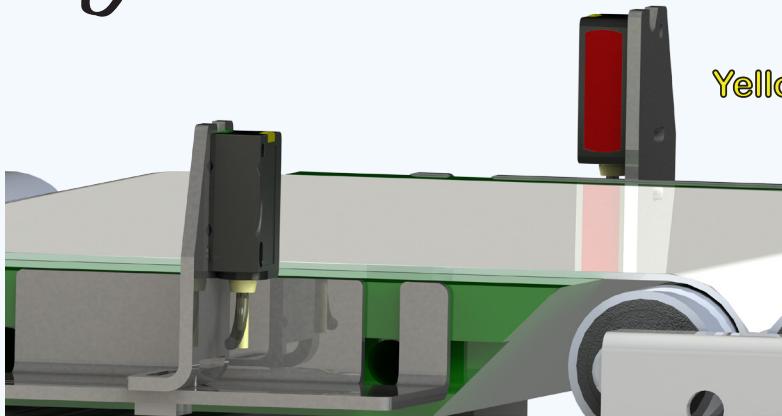
Setting up the Photo Sensors

Each Sensor must be set and positioned in the same location. Starting from the outfeed end follow the directions shown.



Measuring from the upstream idler centerline as shown determine the product length and measure downstream that distance. This will be the location to set the Photo-Sensor centerline. Shown as „X“ on the diagram is that dimension.



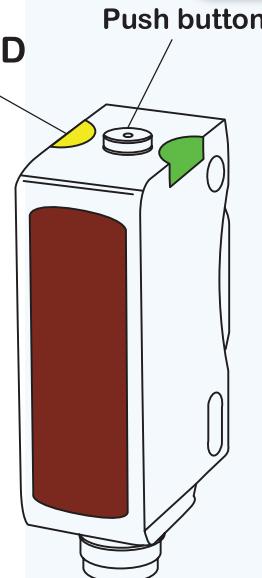


Align the Photo Sensors so that they are directly across from one another. The Center of the beam should be directly over the determined dimension of product length, inches position established earlier. Ensure that both Emitter and receiver are "seeing" one another.

Next you must train the eye without any product or debris obstructing the view of the eye.

Press and hold the button on top of the sensor for three (3) seconds until the Yellow LED light Starts Flashing.

Release the button. The Sensor Has now been taught.



All remaining belts are to be guaged off of this first phasing belt.

For each additional belt measure 10 inches from the previous 5.5 inch location.

Position relative to each belt should be the same 5.5 inches from downstream.

For further information, please contact Klik-lok Woodman Service Department at:



Section

7

Setting-Up and Timing

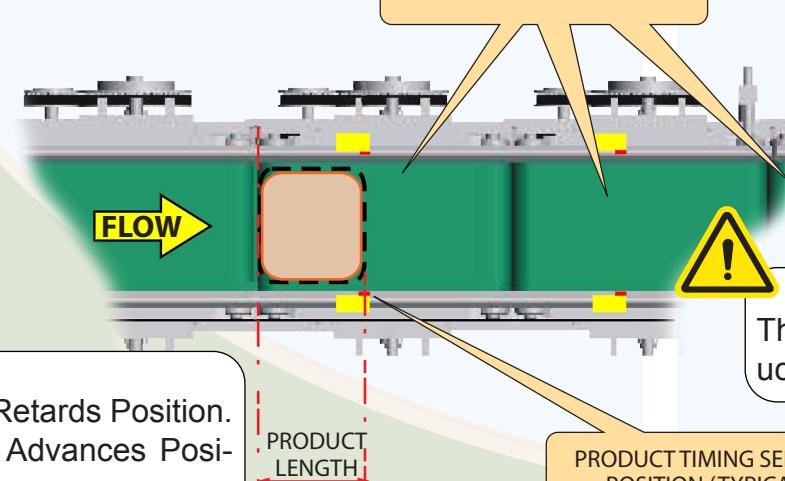
7.2 TIMING SENSOR SETUP

7.2.1 Phasing Conveyors Timing Sensors



Note: The following section is a general guide to positioning the product sensors. This will vary depending on product type and the belt design.

PHASING CONVEYORS



Note:

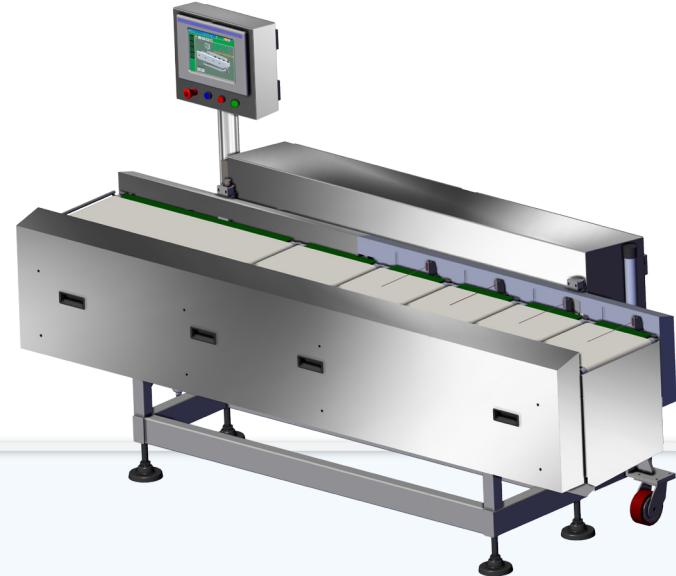
Higher Value = Retards Position.
Lower Value = Advances Position.

1. Measure the overall product length.
2. For closed flat belt conveyors, position the product over the first phasing belt so that the trailing edge is aligned with the end of the upstream conveyor.
3. With the product correctly positioned, move the timing sensors along the rails until they are just detecting the front leading edge of the product - fix in position.

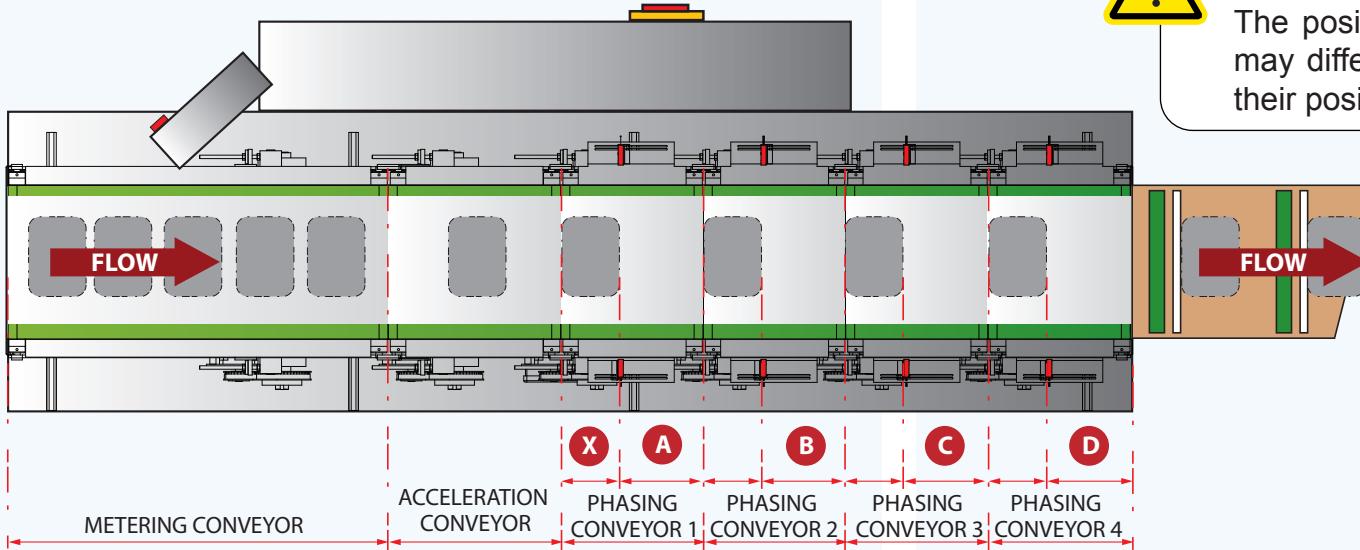
Repeat the above procedure for the remaining 3 phasing conveyors. Each sensor must be positioned in exactly the same position on each conveyor, and at equal pitch, (machine pitch = 9", 12" or 15").

Note!

The Sensor position must be set using the smallest product.



7.3 PRODUCT PHASING SETUP



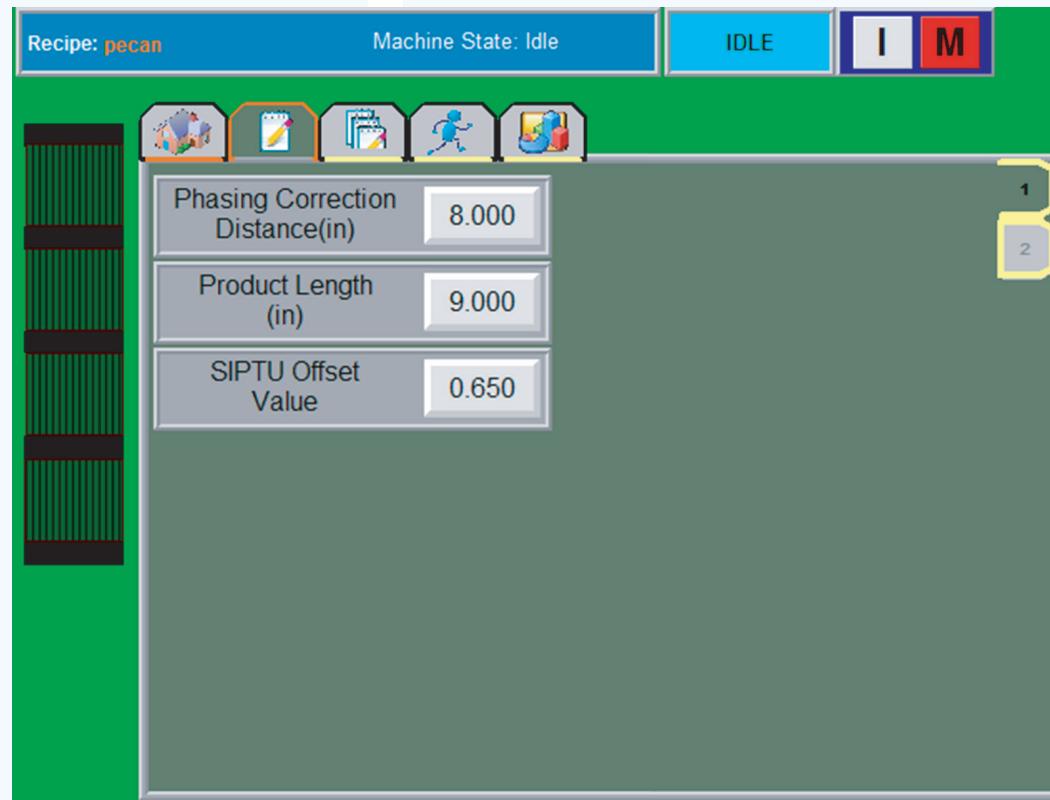
PHASING CORRECTION DISTANCE

The Correction Distance on each phasing conveyor is measured from the product sensor to the end of the associated conveyor belt.

It is over this distance that the positional adjustment to the product is made on each conveyor.

- A** PHASING CONVEYOR No.1 CORRECTION DISTANCE.
- B** PHASING CONVEYOR No.2 CORRECTION DISTANCE.
- C** PHASING CONVEYOR No.3 CORRECTION DISTANCE.
- D** PHASING CONVEYOR No.4 CORRECTION DISTANCE.
- X** PRODUCT SENSOR POSITION
= PRODUCT LENGTH
MEASURED DOWNSTREAM
FROM END OF CONVEYOR.

7.3.1 Recipe Settings Screen 1



SIPTU Offset Value – is the position of the product as it transfers onto the Infeed Conveyor of the parent machine. Note that the smaller the number the more advanced the product and the larger the number the more retarded the product relative to the PIC (product infeed conveyor).

Phasing Correction distance – is the distance the servo belts move to change the product position. Normally the larger the product the smaller the correction distance and the smaller the product the larger the correction distance.

Product Length (inches) – is the measured length of the product as the product approaches the SIPTU, simply measure the product length.



7.3.2 Machine Options Page 3

This screen sets the percentage of correction for each servo belt so that any one belt is not trying to do all the correction but is shared between all four servo belts.

Normal setup is

Belt 1 (upstream belt) is the 1st of 4 belts so belt 1 does 25% (0.25) of the remaining correction.

Belt 2 is the 2nd of 3 remaining belts so belt 2 does 33% (3rd) (0.33) of the remaining correction.

Belt 3 is the 3rd of 2 remaining belts so belt 3 does 50% (1/2) (0.50) of the remaining correction.

Belt 4 is the 4th of 1 remaining belts so belt 4 does 100% (all) (1.0) of the remaining correction.

If the product positional error is 100mm (4") relative to the PIC pocket

Phasing belt 1 will apply 25% of 100mm (4") = 25mm (1") of product movement which will leave 75mm (3") positional error remaining.

Phasing belt 2 will apply 33% of 75mm (3") = 25mm (1") of product movement which will leave 50mm (2") positional error remaining.

Phasing belt 3 will apply 50% of 50mm (2") = 25mm (1") of product movement which will leave 25mm (1") positional error remaining.

Phasing belt 4 will apply 100% of 25mm (1") = 25mm (1") of product movement which will leave 0mm (0") positional error remaining.



NOTE!!!! Any phasing belt correction factors changes will only be registered in the CPU when the machine is stopped. To alter the factors first stop the SIPTU by pressing the normal stop button, access the machine set-up screen 2 and adjust accordingly then press the start button.



7.3.2 Diagnostics Screen 7- Servo Torque Page.

This screen shows the maximum recorded and set points of each of the 6 servo motors

Metering Belt is the 1st belt as the product enters the SIPTU.

Accel Belt is the 2nd belt as the product enters the SIPTU.

Phasing Belt1 is the 3rd belt as the product enters the SIPTU but the 1st belt that changes speed and the position of the product

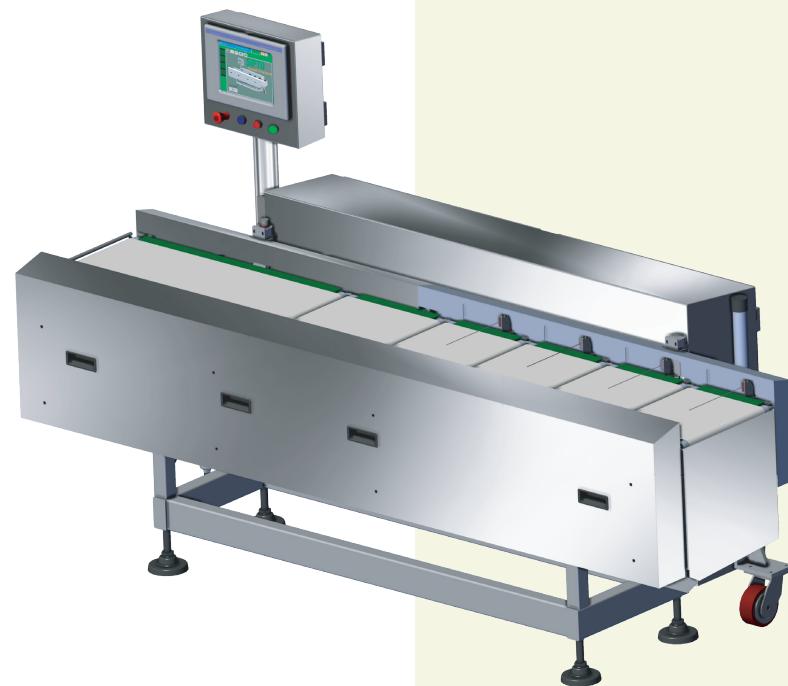
Phasing Belt2 is the 4th belt as the product enters the SIPTU but the 2nd belt that changes speed and the position of the product.

Phasing Belt3 is the 5th belt as the product enters the SIPTU but the 3rd belt that changes speed and the position of the product.

Phasing Belt4 is the 6th belt as the product enters the SIPTU but the 4th belt that changes speed and the position of the product

Reset Torque Values – this button when touched resets ALL torque values to zero.

To set the torque values correctly touch the reset torque values to set all torque values to zero. Run the machine with product for 10 minutes and look at the maximum recorded values, now set each torque for each motor 10 to 15% higher than the maximum recorded value for that motor.



SIPTU

Smooth Intelligent Product Transfer Unit

SCHWANS - ATLANTA
HS5160

 **HOME**

**TOP ELEC, SIPTU, AB CONTROLS
480VAC, MOTORS, K5500
169000**

Find Num	Part Number	Item Description	Qty	Rev
				A
1	169001	ELECTRICAL WIRING SCHEMATICS, SIPTU, AB CONTROLS, 480VAC, K5500	1	D
2	169002	MAIN ELECTRICAL PANEL, SIPTU, AB CONTROLS, 480VAC, K5500	1	E
3	169003	FRAME ELECTRICALS, SIPTU, AB CONTROLS, 480VAC, K5500	1	C
4	169004	OPERATOR INTERFACE, SIPTU, AB CONTROLS, 480VAC, K5500	1	A
5	169005	CONTROL PANEL AUXILLARY EQUIPMENT, SIPTU, AB CONTROLS, 480VAC, K5500	1	B

**TOP ELEC, SIPTU, AB CONTROLS
480VAC, MOTORS, K5500
169000**

KLIKLOK WOODMAN
5224 SNAPFINGER WOODS DR.
DECATUR, GA 30035 USA
TEL: 770-981-5200
FAX: 770-987-7160

NAME PLATE DATE:
VOLTS: 480 AMPS: 40
HERTZ: 60
PHASE: 3 DISCONNECT
RATING: 40A
SHORT CIRCUIT CURRENT RATING:
100KA
LARGEST CIRCUIT AMPS: 25

DRAWING LIST:
PAGE 0: DOCUMENTATION COVER SHEET
PAGE 1: MAIN POWER DISTRIBUTION
PAGE 2: 120VAC POWER DISTRIBUTION
PAGE 3: SAFETY CIRCUIT LOOPS
PAGE 4: SAFETY RELAY/ 24VDC POWER DISTRIBUTION
PAGE 5: ETHERNET/PLC CONNECTIONS
PAGE 6: REMOTE DIGITAL INPUT CONNECTIONS
PAGE 7: REMOTE DIGITAL OUTPUTS CONNECTIONS
PAGE 8: SERVO DRIVES-METERING BELT, ACCEL BELT
PAGE 9: SERVO DRIVES-PHASING BELT 1, PHASING BELT 2
PAGE 10: SERVO DRIVES-PHASING BELT 3, PHASING BELT 4

MFG\WIRING NOTES

Wire Colors:
480VAC: BLACK
120VAC
LINE<120L>:BLACK
NEUTRAL <120N>: WHITE
GROUND (GND): GREEN W/ YELLOW STRIPE
24VDC
POSITIVE (24P, 24AE): BLUE
COMMON (24C): WHITE W/ BLUE STRIPE
PANEL INTERCONNECTIONS: YELLOW

1. ALL UNGROUNDED 480VAC and 240 VAC WIRING TO BE 12 AWG BLACK UNLESS OTHERWISE SPECIFIED.
2. ALL DC VOLTAGE WIRING TO BE 18 AWG BLUE UNLESS OTHERWISE SPECIFIED.
3. ALL UNGROUNDED 120VAC CONTROL WIRING TO BE 18 AWG RED UNLESS OTHERWISE SPECIFIED.
4. ALL UNGROUNDED 24VDC "+" WIRING TO BE 18 AWG BLUE UNLESS OTHERWISE SPECIFIED.
5. ALL GROUNDED 24VDC "COM" WIRING TO BE 16 AWG WHITE/BLU UNLESS OTHERWISE SPECIFIED.
6. ALL UNGROUNDED WIRING TO REMOTE INLINE I/O MODULES TO BE 18 AWG BLUE (24VDC"+") AND GROUNDED WIRING BLUWHITE (24VDC "COM")
7. ALL GROUND(PE) WIRING TO BE 14 AWG GREEN/YELLOW UNLESS OTHERWISE SPECIFIED AND OR MARKED AS GROUND. GROUND TERMINALS ARE MARKED "GND".
8. NO MORE THAN 2 CONDUCTORS ON ANY ONE TERMINAL.
9. POWER CABLING AND CONTROL WIRING TO BE KEPT SEPERATE WHERE EVER POSSIBLE AND RUN AT 90 ANGLE WHERE IT IS NOT POSSIBLE.
10. BOTTOM AND OR RIGHT SIDE OF TERMINAL BLOCKS ARE RESERVED FOR FIELD TERMINATIONS. FIELD TERMINATIONS ARE DESIGNATED BY DASHED LINES.
11. POWER WIRING TO TERMINATE TO DEVICES USING THE FOLLOWING RULES. TOP TO BOTTOM, LEFT TO RIGHT, FRONT TO BACK DEPENDING ON THE DEVICE ORIENTATION AS MOUNTED IN THE ENCLOSURE.
12. ALL COMPONENTS ARE TO BE LABELED FROM THE SCHEMATIC TAG NUMBER AND LOCATED DIRECTLY ABOVE OR BELOW THE COMPONENT ON THE SUBPANEL AND OR REAR OF DOOR AS APPLICABLE. THE SELF ADHESIVE LABEL WILL BE WHITE 0.5 INCH HIGH WITH 0.25 INCH HIGH BLACK LETTERS. CROY TAPE OR EQUAL. NO LABELS ARE TO BE APPLIED TO THE WIRE DUCT COVERS.
13. DO NOT USE SELF TAPPING SCREWS FOR MOUNTING - ONLY MACHINE SCREWS - DRILL AND TAP AS REQUIRED.

1
52

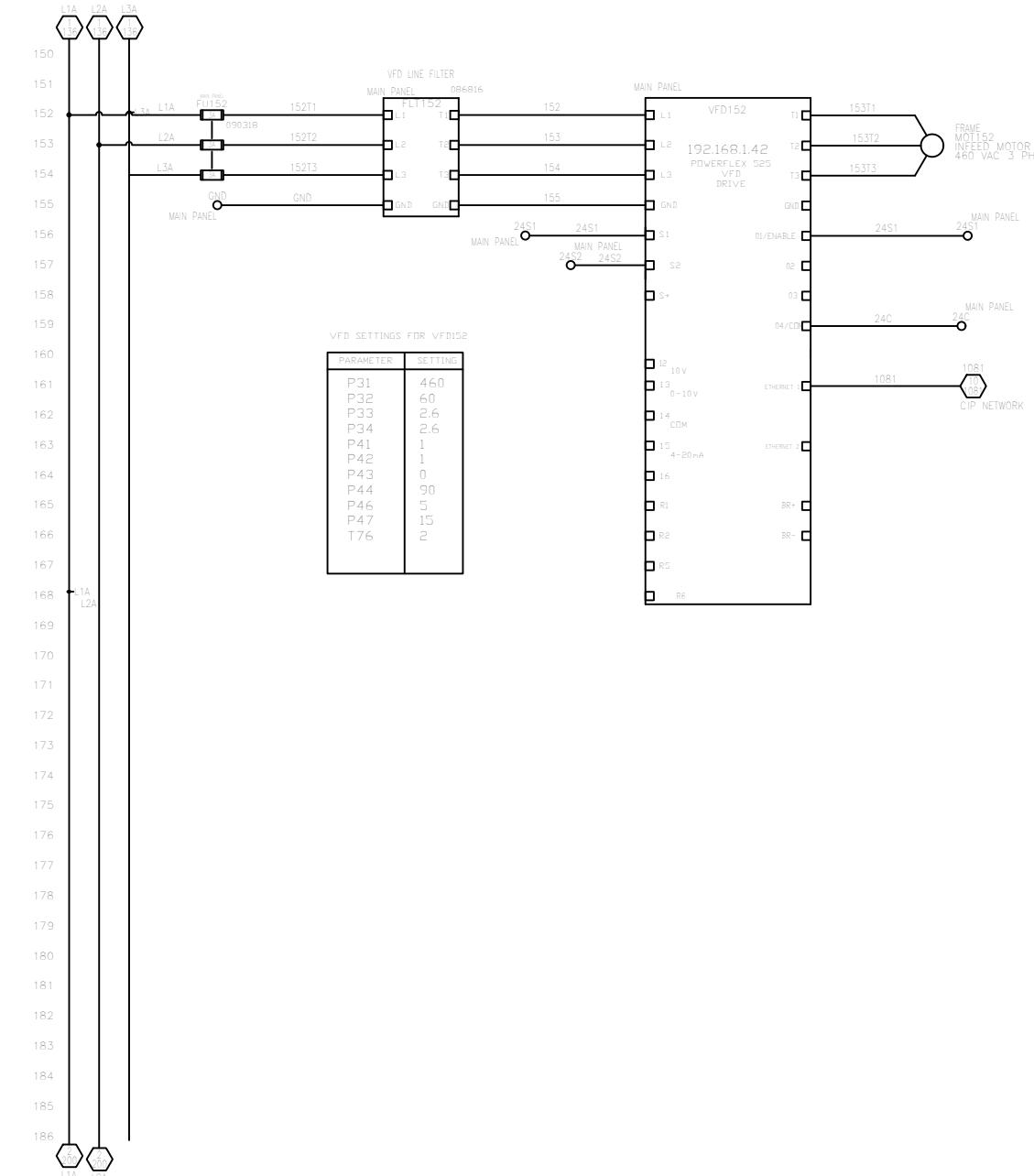
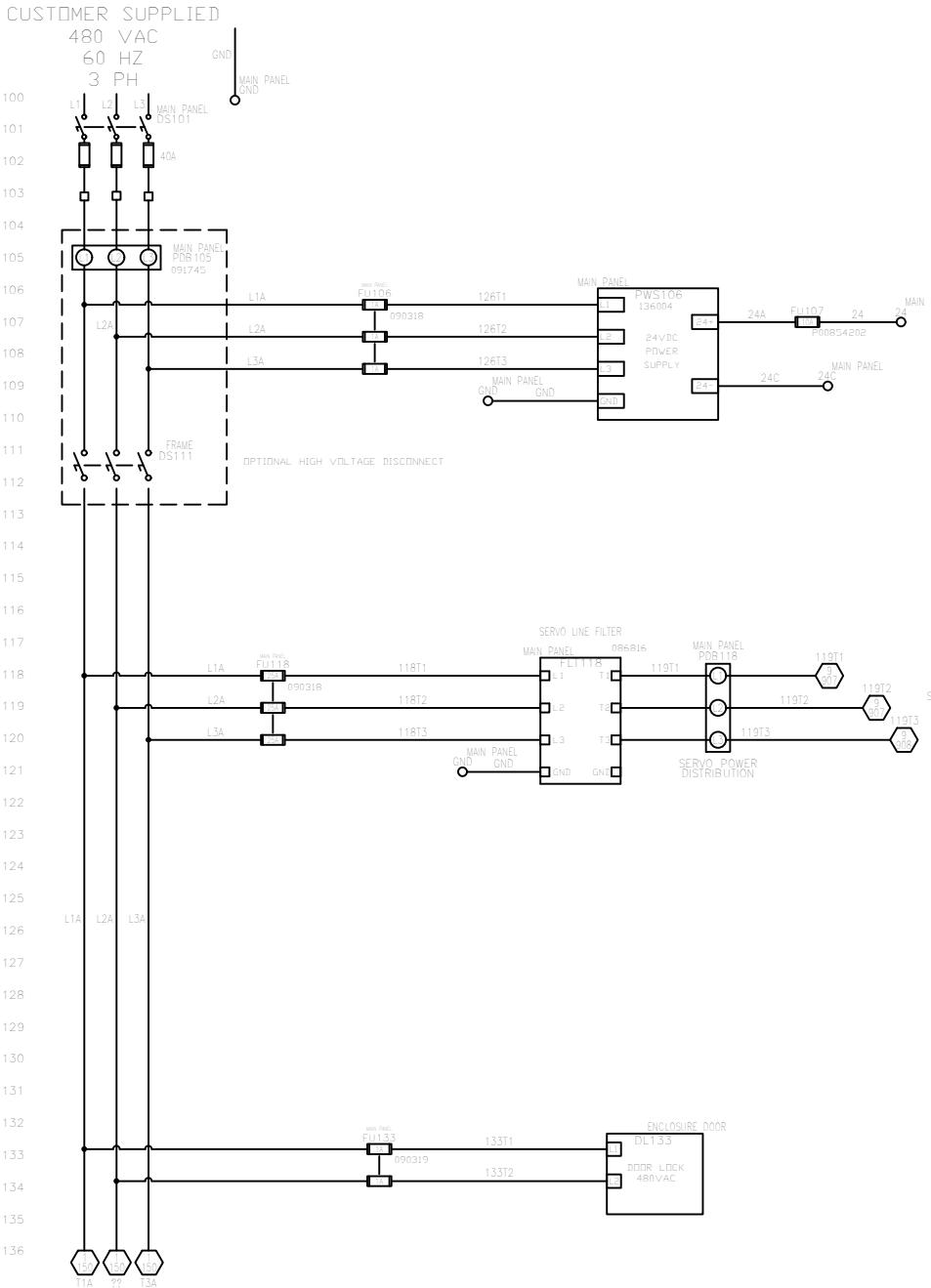
Page Number
Line Number

D
REVISION

TITLE SHEET
SIPTU 480 VAC

0 OF 10
SHEET NO

169001
DRAWING NUMBER

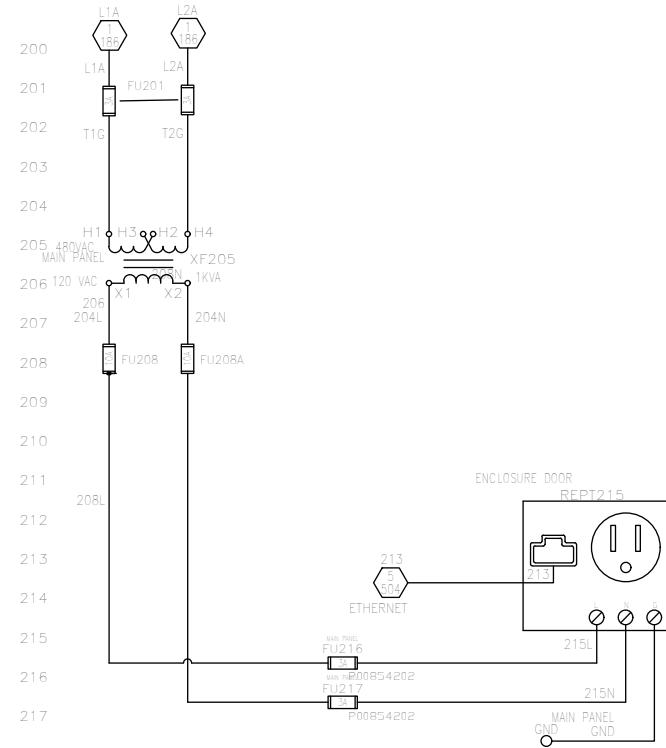


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REVISION

480 VAC DISTRIBUTION PAGE
SIPTU 480 VAC

1 OF 10
SHEET NO

169001
DRAWING NUMBER

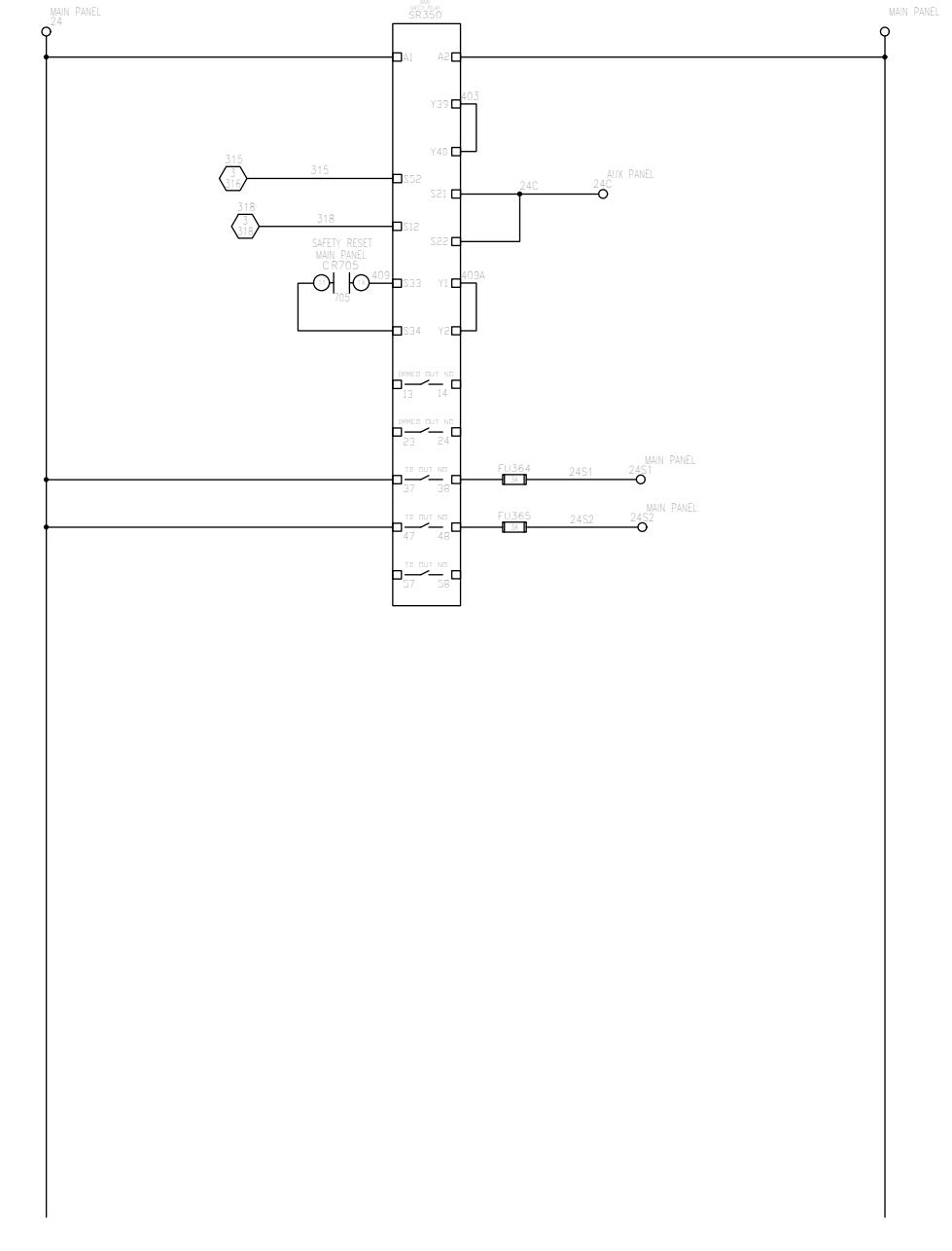
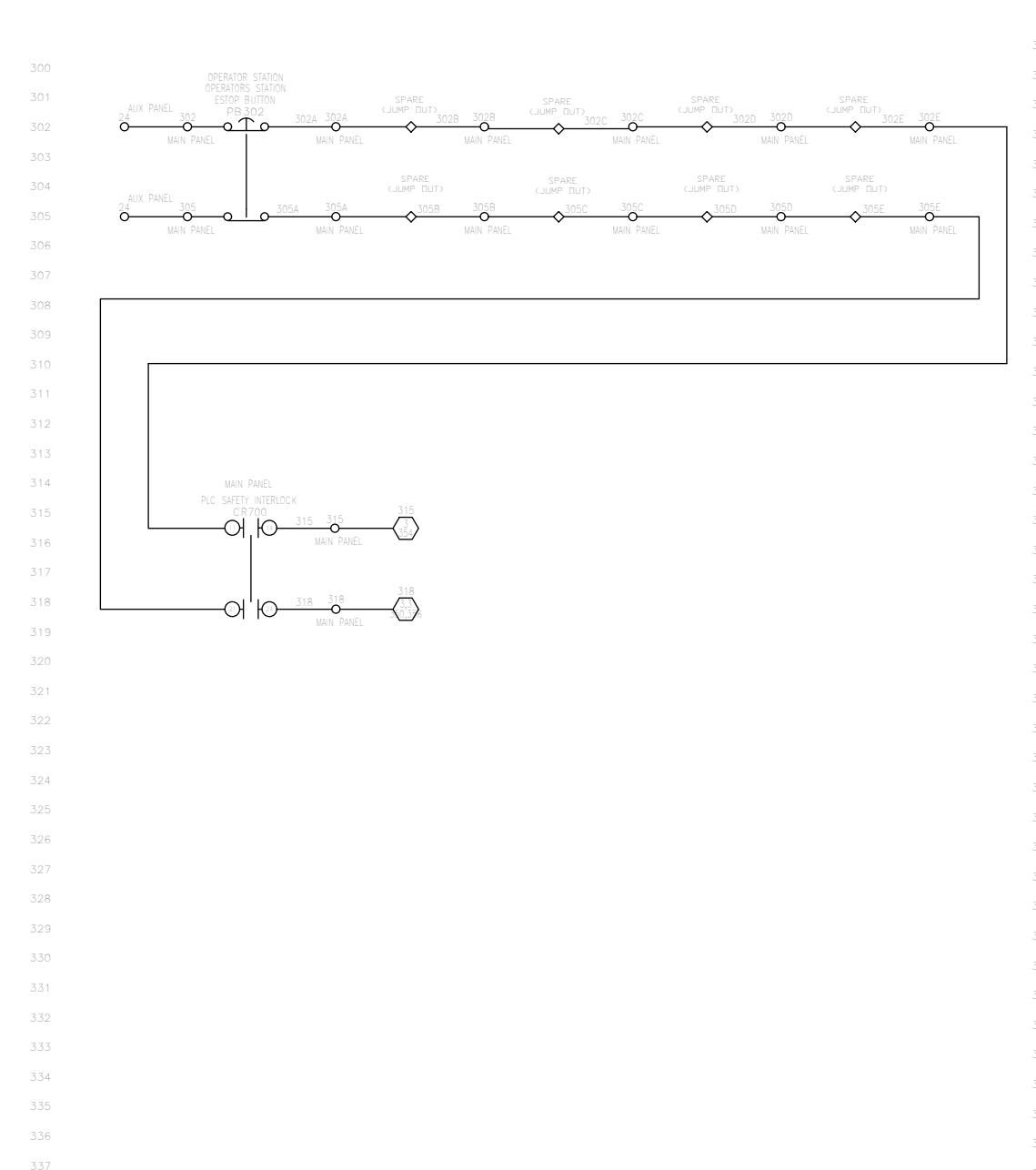


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120 VAC DISTRIBUTION
SIPTU 480 VAC

2 OF 10
SHEET NO

169001
DRAWING NUMBER



D
REVISI

REVISION

SAFETY CIRCUIT PAGE

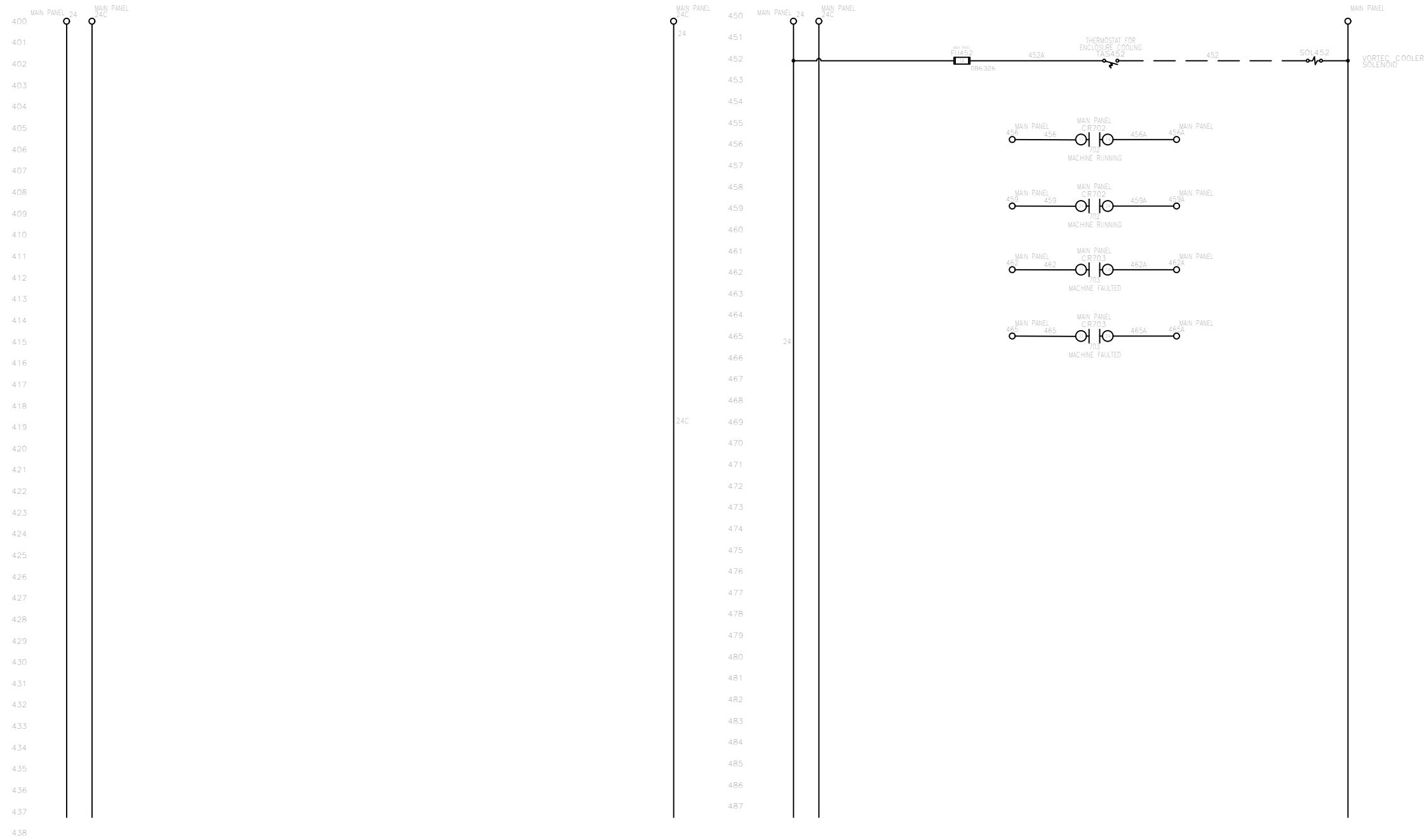
SIPTU 480 VAC

3 OF 10

HEET NO

169001
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DRAWING NUMBER

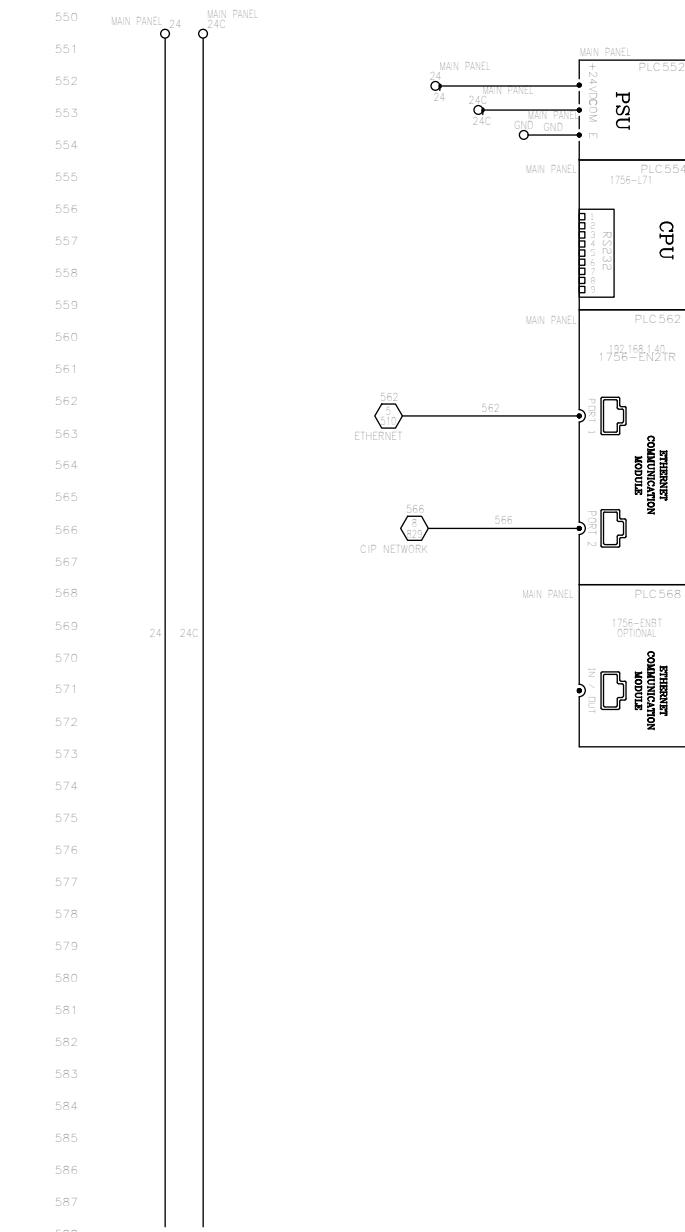
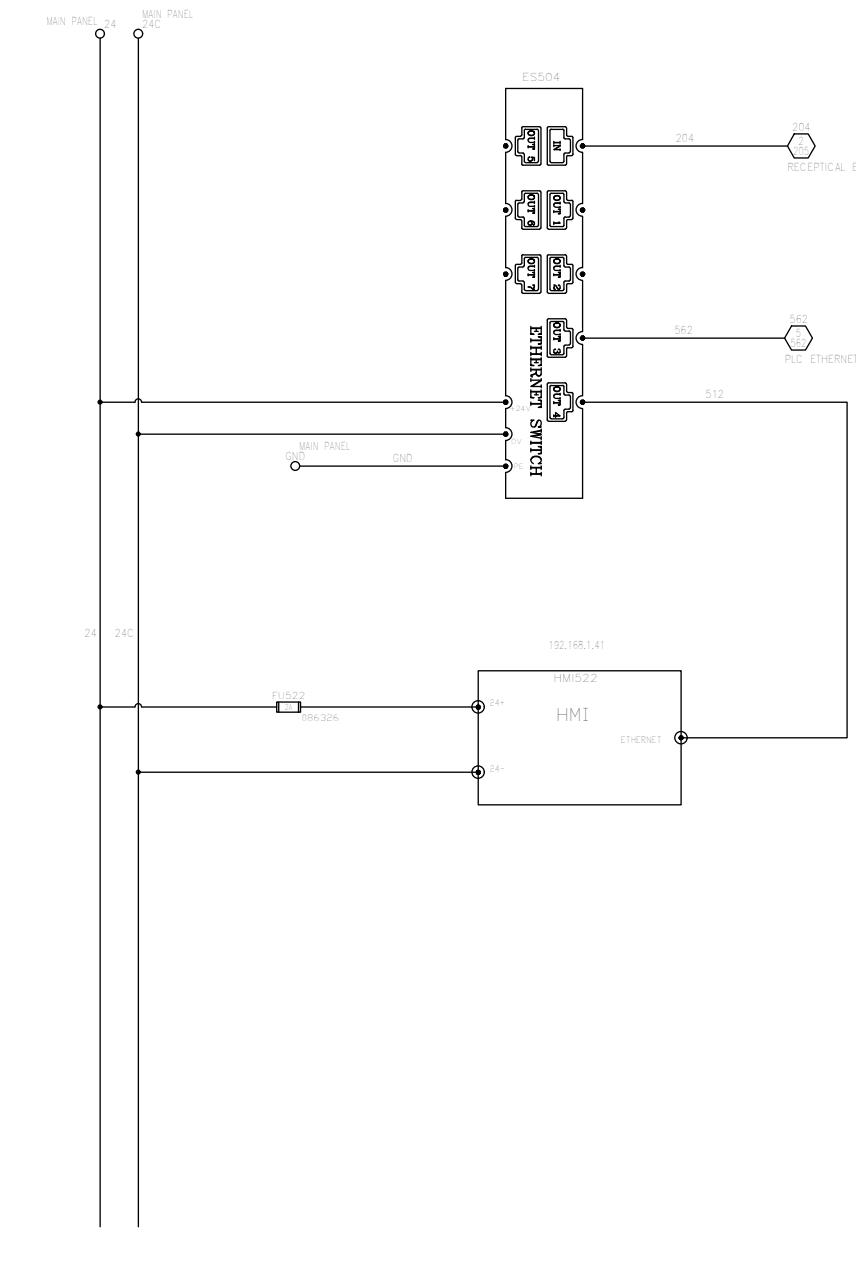


D
REVISION

**SAFETY RELAY AND 24VDC DISTRIBUTION
SIPTU 480 VAC**

4 OF 10
SHEET NO

169001
DRAWING NUMBER

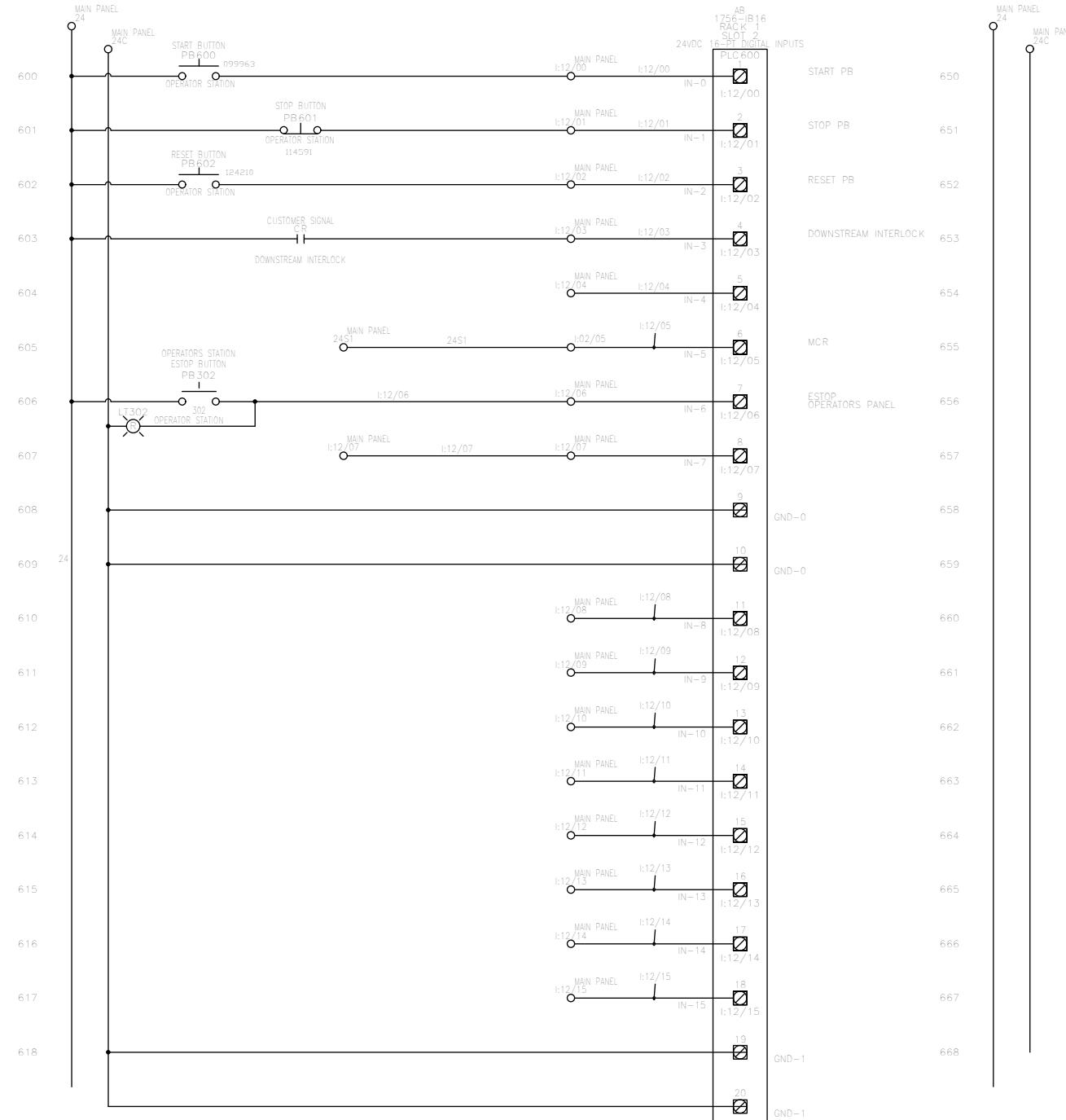


D
REVISION

**ETHERNET CONNECTIONS
SIPTU 480 VAC**

5 OF 10
SHEET NO

169001
DRAWING NUMBER

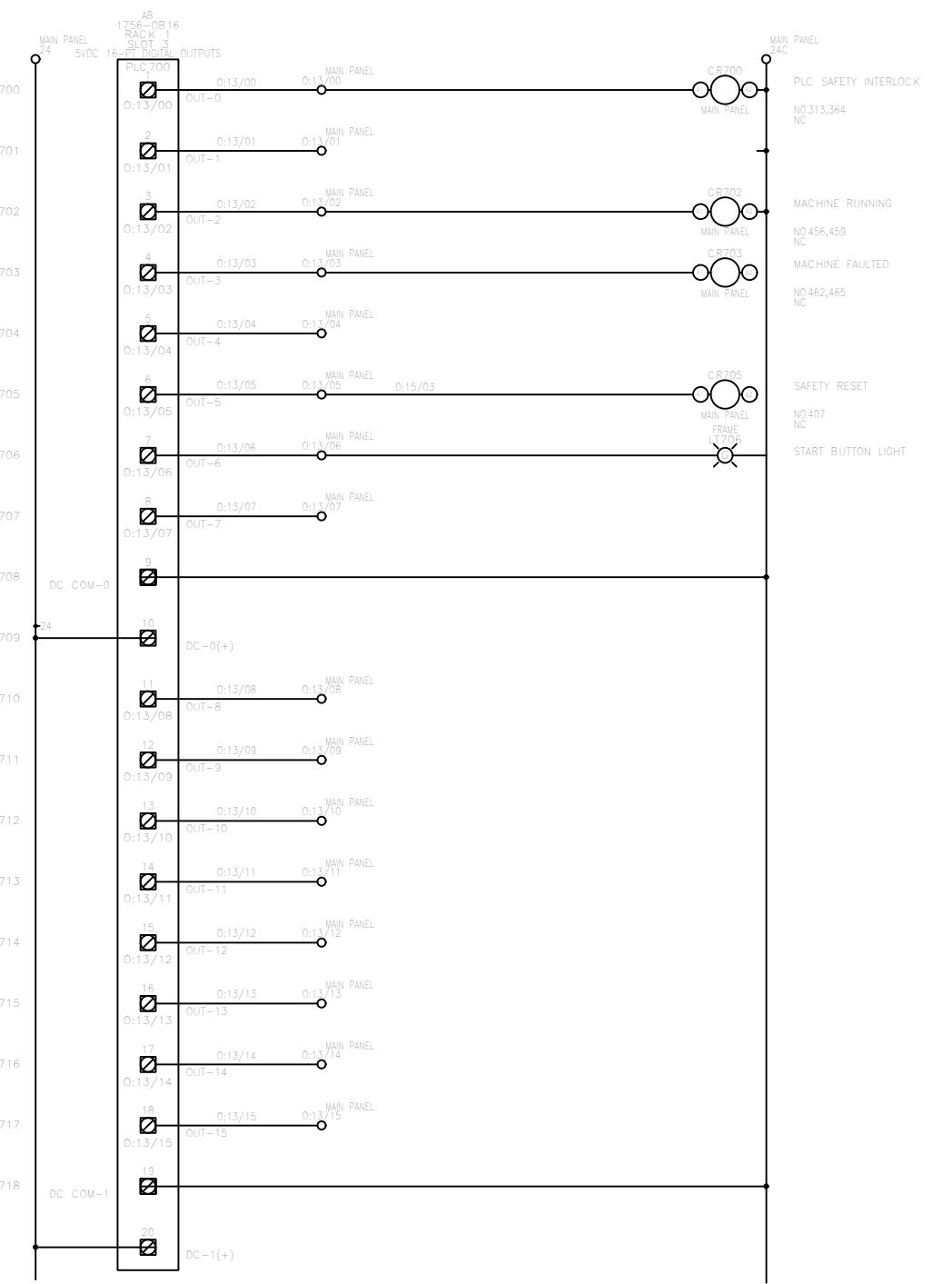


D
REVISION

**PLC INPUTS PAGE
SIPTU 480 VAC**

6 OF 10
SHEET NO

169001
DRAWING NUMBER



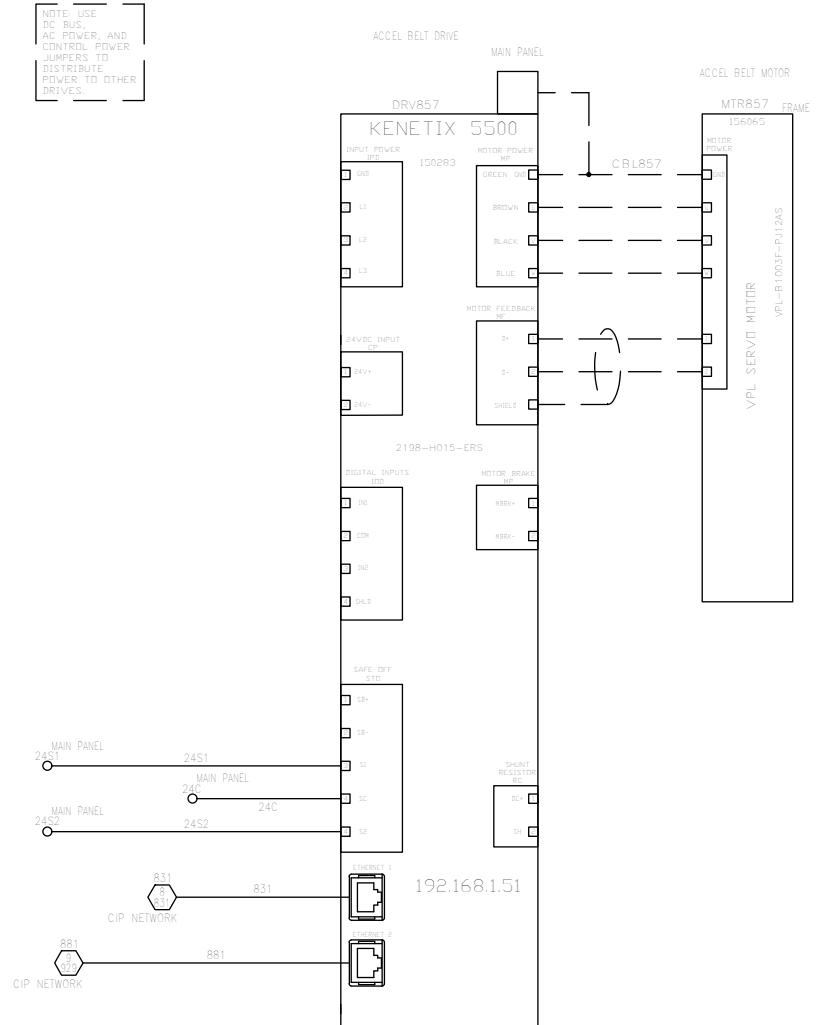
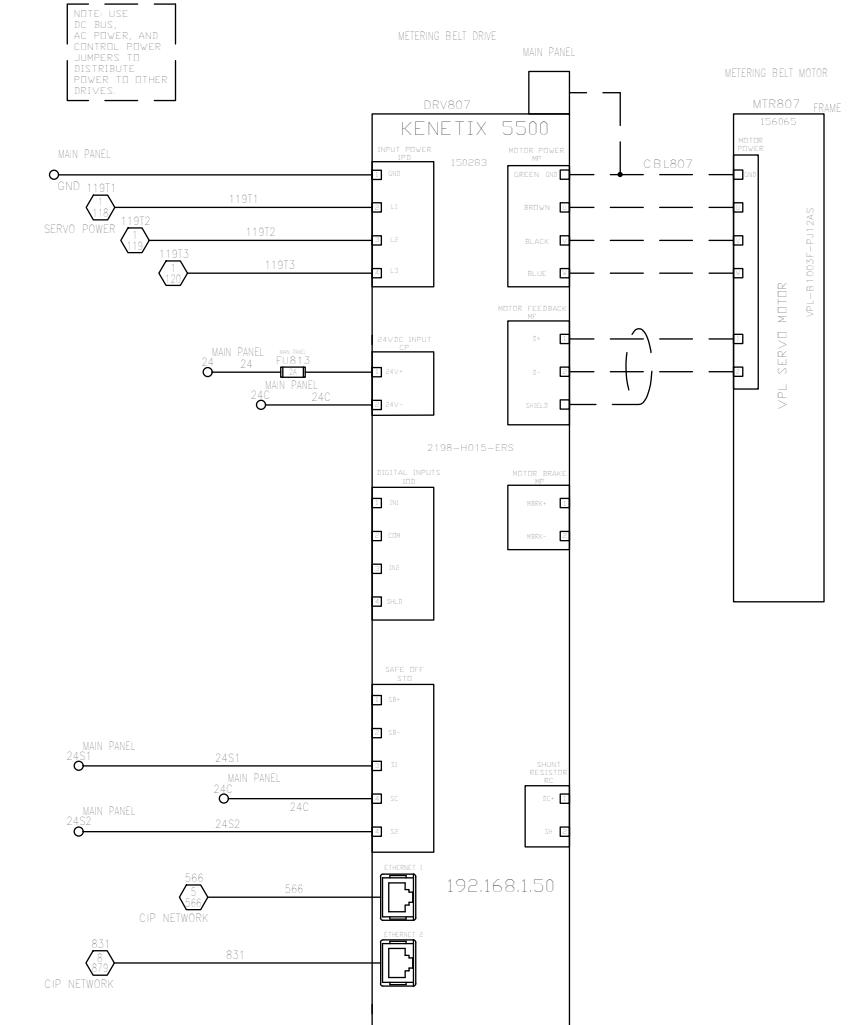
D
REVISION

PLC OUTPUTS PAGE

SIPTU 480 VAC

7 OF 10

169001

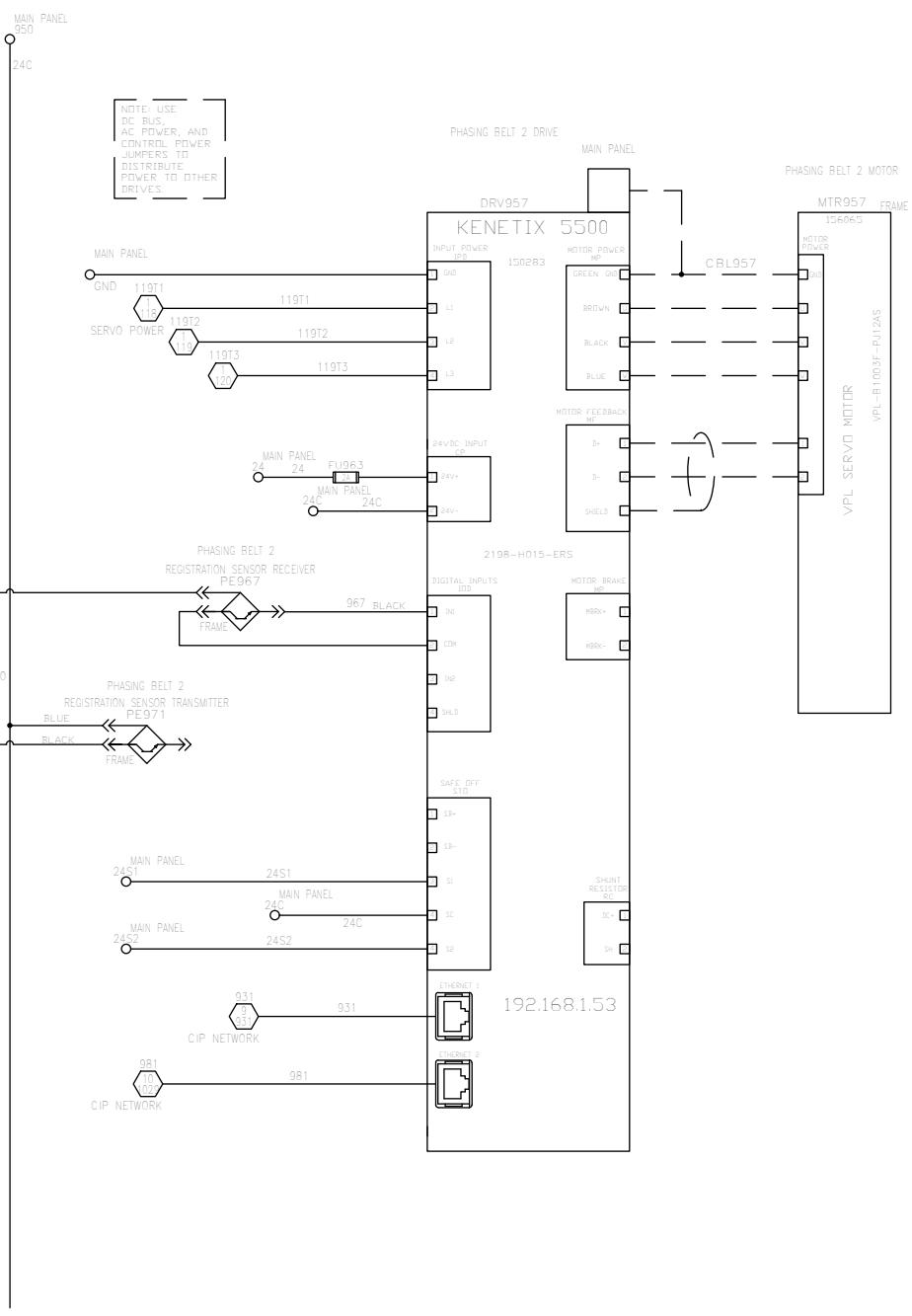
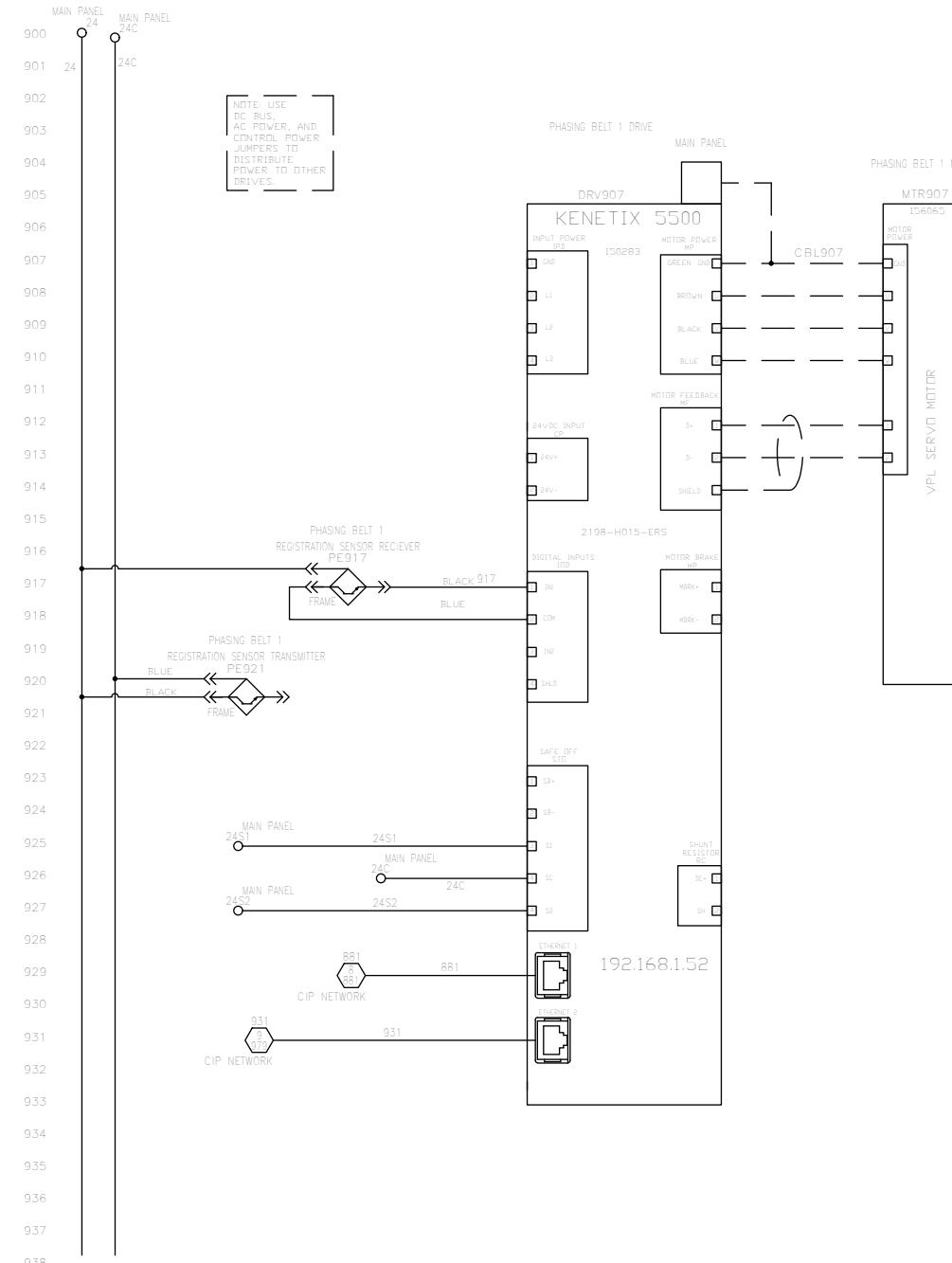


D
REVISION

**SERVO DRIVES: METERING BELT, ACCEL BELT
SIPTU 480 VAC**

8 OF 10
SHEET NO

169001
DRAWING NUMBER



D
REVISION

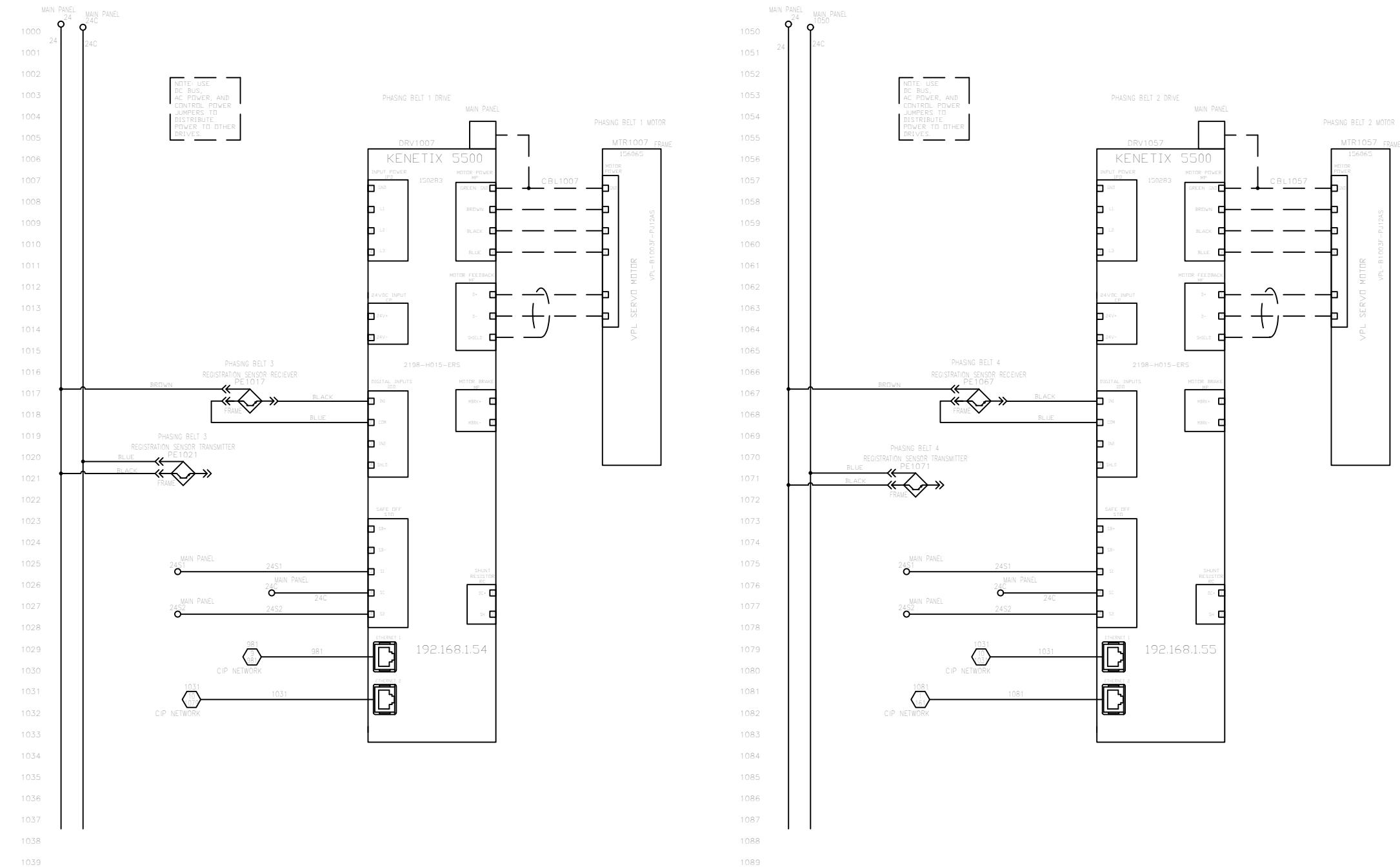
SERVO DRIVES- PHASING BELT 1, PHASING BELT 2 SIPTU 480 VAC

9 OF 10

SHEET NO

169001

DRAWING NUMBER



D
REVISION

**SERVO DRIVES - PHASING BELT 3, PHASING BELT 4
SIPTU 480 VAC**

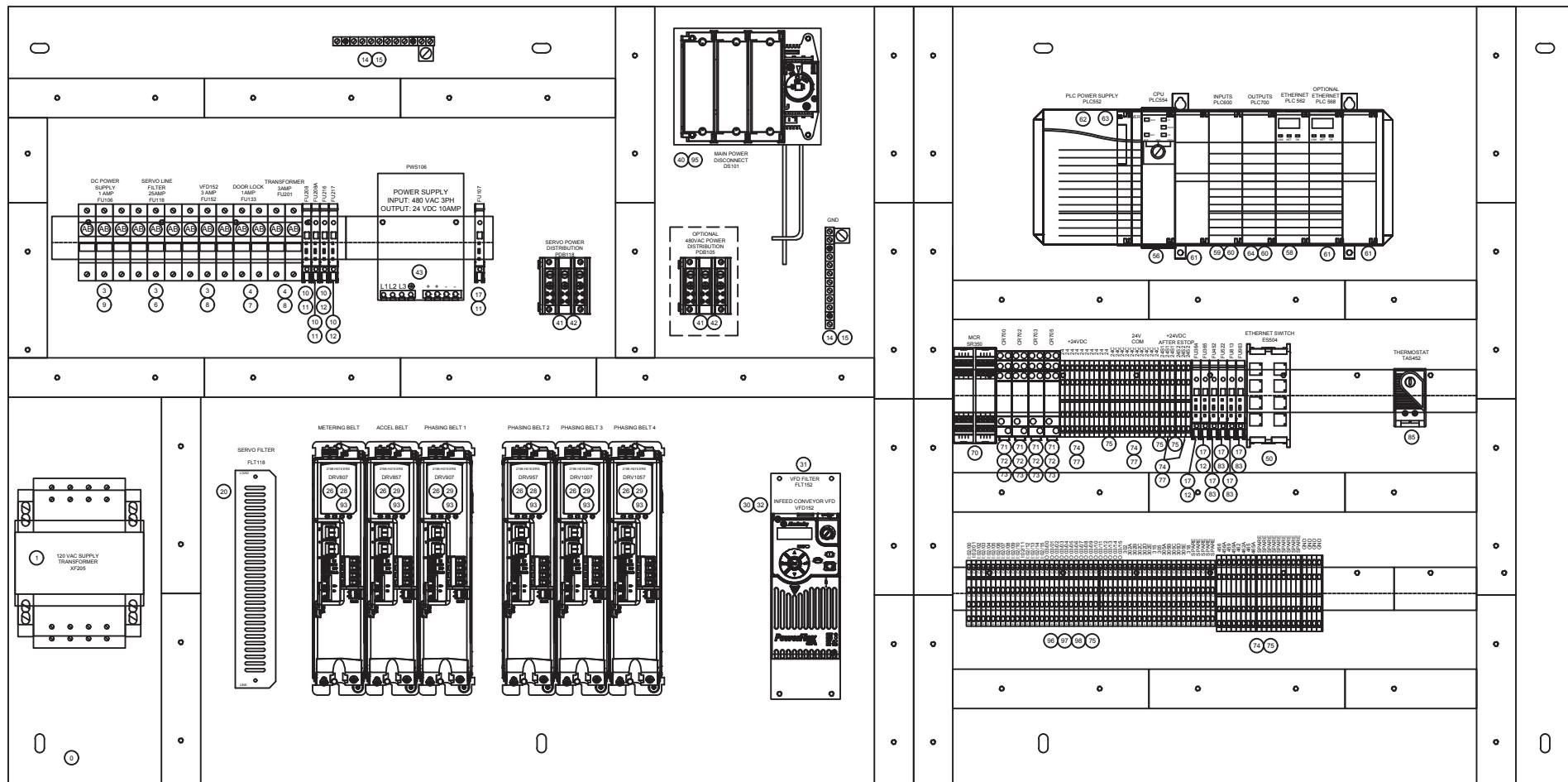
10 OF 10
SHEET NO

169001
DRAWING NUMBER

SHEET 1 OF 3
MAIN ELECTRICAL PANEL
SIPTU, AB CONTROLS, 480VAC, K5500
169002

SHEET 2 OF 3
MAIN ELECTRICAL PANEL
SIPTU, AB CONTROLS, 480VAC, K5500
169002

Find Num	Part Number	Item Description	Qty	Rev
				E
0	168676	CONTROL PANEL BACK PLATE, SIPTU, AB CONTROLS, 480VAC, K5500	1	A
1	099226	TRF-Transformer	1	A
3	090318	FSH-Fuse Holder	3	D
4	090319	FSH-Fuse Holder	2	D
6	165521	FUS-Fuse	3	A
7	096685	FUS-Fuse	5	A
8	125063	FUS-Fuse	5	A
10	147260	FSH-Fuse Holder	4	A
11	114543	FUS-Fuse	3	A
12	044232P	FUS-Fuse	4	A
14	037732P	TER-Terminal	2	B
15	037735P	TER-Terminal	2	B
16	147258	TER-Terminal	4	A
17	147259	FSH-Fuse Holder	7	A
20	086816	FLT-Filter	1	B
26	150283	DRV-Drive	6	B
28	150284	CON-Connector	2	A
29	150285	CON-Connector	4	A
30	165524	VFD-Variable Frequency Drive	1	A
31	150282	FLT-Filter	1	A
32	159041	VFD-Variable Frequency Drive	1	A
35	147339	TER-Terminal	3	A
36	147338	TER-Terminal	1	A
37	150125	TER-Terminal	2	A
40	145859	SWT-Switch	1	A
41	058847	PWB-Power Block	1	C
42	098232	CVP-Cover Plate	1	A
43	136004	PWS-Power Supply	1	A
44	145349	HAN-Handle	1	A
45	146987	CBL-Cable	1	A
50	136005	HUB-Hub	1	A
56	144807	PLC-Programmable Logic Controller	1	A
58	159043	PLC-Programmable Logic Controller	1	A
59	069838	PLC-Programmable Logic Controller	1	D
60	069842	PLC-Programmable Logic Controller	2	A
61	069835	PLC-Programmable Logic Controller	3	A
62	069833	PWS-Power Supply	1	D
63	069832	PLC-Programmable Logic Controller	1	A
64	069839	PLC-Programmable Logic Controller	1	A
70	133497	REL-Relay	1	B
71	111509	REL-Relay	4	B
72	111510	MOD-Module	4	B
73	111507	REL-Relay	4	A
74	147254	TER-Terminal	47	A
75	147261	TER-Terminal	8	A
76	095671	TER-Terminal	8	A
77	134229	JMP-Jumper	6	A
82	P0072510	FUS-Fuse	1	A
83	P0072515	FUS-Fuse	3	C
85	012853P	THS-Thermostats	1	B
86	086829	PAN-Panel	25	B
87	P00856112	MNR-Mounting Rail	25	-
88	125025	MNR-Mounting Rail	3	A
89	096518	TER-Terminal	1	A
90	033324P	TER-Terminal	2	-
91	134234	TER-Terminal	2	B
92	091502	CBL-Cable	2	B
93	136162	CBL-Cable	6	A
94	114719	CBL-Cable	1	A
95	117610	FUS-Fuse	3	A
96	147257	TER-Terminal	51	A
97	147256	TER-Terminal	51	A
98	147255	TER-Terminal	51	A



E

REVISION

MAIN PANEL LAYOUT

SIPTU 480 VAC

1 OF 1

SHEET NO

169002

DRAWING NUMBER

SHEET 3 OF 3
MAIN ELECTRICAL PANEL
SIPTU, AB CONTROLS, 480VAC, K5500
169002

**FRAME ELECTRICALS, SIPTU
AB CONTROLS, 480VAC, K5500
169003**

Find Num	Part Number	Item Description	Qty	Notes	Rev
					C
1	156065	SRV-Servo Motor	6		A
2	150751	CBL-Cable	6		A
4	144665-1	SNR-Sensor	4		A
5	144665-2	SNR-Sensor	4		A
10	011101P	CBL-Cable	8		C
30	149828	GRO-Grommet	12	if cord in place, split one wall to fit	A
31	004158P	CBL-Cable	25		-
32	099328	CBL-Cable	1		B
34	140975	SWT-Switch	REF	Optional High voltage disconnect.	A

**FRAME ELECTRICALS, SIPTU
AB CONTROLS, 480VAC, K5500
169003**

**OPERATOR INTERFACE, SIPTU
AB CONTROLS, 480VAC, K5500
169004**

Find Num	Part Number	Item Description	Qty	Rev
				A
1	159516	DISPLAY, PANELVIEW PLUS 6 EXTENDED FEATURES 10" WITH 2GB SD CARD.	1	A
4	114940	SWT-Switch	1	A
5	114951	SWT-Switch	1	A
6	099963	SWT-Switch	1	C
8	124210	SWT-Switch	1	A
9	103534	LBL-Label	1	A
10	103535	LBL-Label	1	A
11	103537	LBL-Label	1	A
12	114487	NMP-Nameplate	1	A

**OPERATOR INTERFACE, SIPTU
AB CONTROLS, 480VAC, K5500
169004**

**CONTROL PANEL AUXILLARY EQUIPMENT
SIPTU, AB CONTROLS, 480VAC, K5500
169005**

Find Num	Part Number	Item Description	Qty	Notes	Rev
		SR4W Former			B
0	070020	CON-Connector	1		A
0	121220	PLL-Pilot Light	1		C
0	151288	SWT-Switch	1		A
0	154023	LGH-Light	4		A
3	110901	ADP-Adapter	1		B
9	100872	LCK-	1		B
10	016866P	ENC-Enclosure	1		-
12	N8800508	CDF-Conduit Fitting	25		A
14	091501	CBL-Cable	2	RECPT	B
21	170574	CON-Connector	6		A

**CONTROL PANEL AUXILLARY EQUIPMENT
SIPTU, AB CONTROLS, 480VAC, K5500
169005**



SIPTU

Smooth Intelligent Product Transfer Unit

SCHWANS - ATLANTA
HS5160

Replacement Parts

1. When ordering replacement parts, the following information must be furnished:

Machine Model
Serial Number
Part Number and Description

Specific Quantity

2. Orders should be placed directly with the Parts Sales Department.

Kliklok-Woodman
5224 Snapfinger Woods Drive
Decatur, Georgia 30035
E-Mail:service@ kliklok-woodman.com
Telephone: 770/981-5200 • Fax: 770/987-7160

3. The last numerical grouping in a certain •B• standard part number signifies the length in inches. The length code usually applies to studs, spacers, shafts, keys, belts, rails and drive chains that have •B• numbers.

4. Motor: To reorder, please give the following information from the motor nameplate: Make, Model Number, H.P. Rating, RPM, Voltage, Brake or Non-Brake, Part Number, etc.

5. Sprockets: To replace, give Part Number, pitch, number of teeth and bore size.

**SCHWANS - ATLANTA
KLIKLOK 'SIPTU'
HS5160**

Find Num	Part Number	Item Description	Qty	Rev
				J
1	HS5160-1	SCHWANS ENTERPRISE CARTONER, 12", PIC INFEED, STD HAND	1	I
2	HS5160-2	SCHWANS WSIPTU, IN-LINE STYLE PRODUCT INFEED UNIT	1	E
10	16-4485	LINE LAYOUT, ENTERPRISE WITH WSIPTU INFEED, HS5160 PORTABILITY KIT, ELEVATED KIT	REF	C

**SCHWANS - ATLANTA
KLIKLOK 'SIPTU'
HS5160**

SCHWANS W/SIPTU, IN-LINE STYLE PRODUCT INFEED UNIT HS5160-2

Find Num	Part Number	Item Description	Qty	Rev
				E
0	SP01153	RECOMMENDED MECHANICAL SPARES; 12" WSIPTU, PN9+	REF	C
0	SP01535	ELECTRICAL SPARES LIST, SIPTU, AB CONTROLS, 480VAC, K5500	REF	A
1	147354	12" WSIPTU ASSY	2	G
1	169585	CNV-Conveyor	1	B
1	169586	CNV-Conveyor	1	B
2	169000	TOP ELEC, SIPTU, AB CONTROLS, 480VAC, MOTORS, K5500	2	A
3	149237	KIT, WSIPTU VORTEX COOLING ASSY	2	B
4	169294	OUTFEED TRANSFER KIT, WSIPTU TO ENTERPRISE, CASTELLATED ROLLERS, V2	2	B
5	160315	CATCH PAN, WSIPTU, 12" FOR 2.5" LUG	2	A
6	160327-001	INFEED ROLLER KIT, WSIPTU FOR 5 IN DIA SPROCKET, OPP	2	A
7	149208	CASTER KIT, WSIPTU, 40" ELEVATION	1	C
8	169296	RISER KIT, WSIPTU, 37" (MIN) - 42" (MAX) ELEVATION	1	A
9	170143	OUTFEED GUARD KIT, SS MESH SIPTU TO ENTERPRISE	2	E
10	107172	GASKET - SERVO CABLE COVER	2	B
11	170575	SERVO CABLE BULKHEAD	2	A
14	DELETIONS	DELETION LIST	REF	-

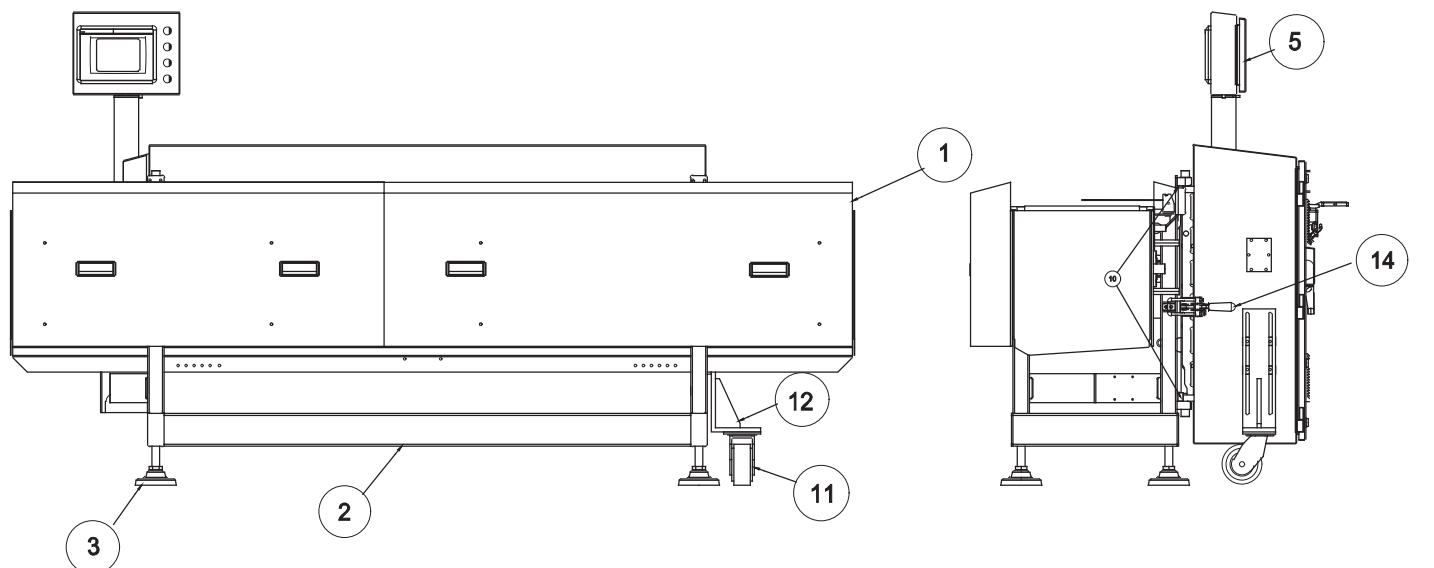
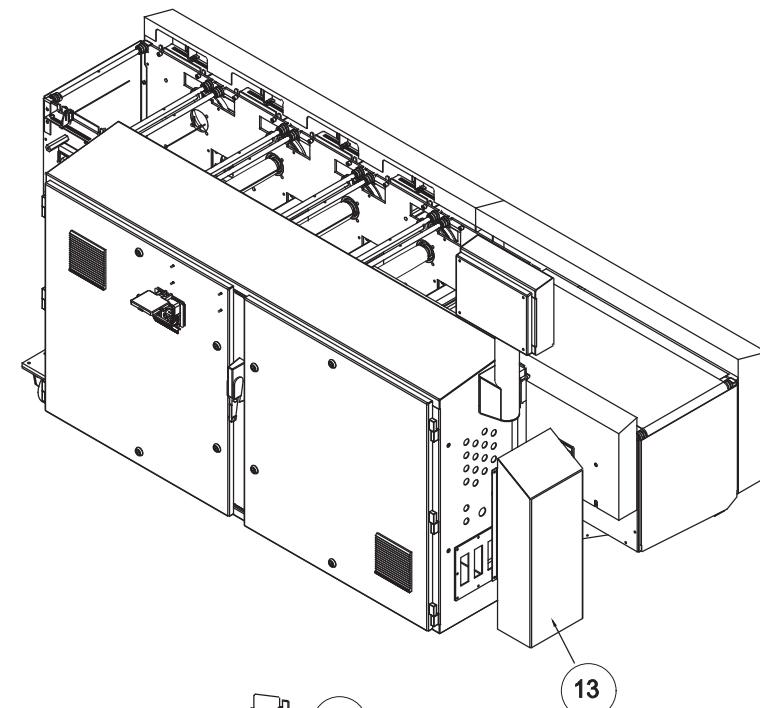
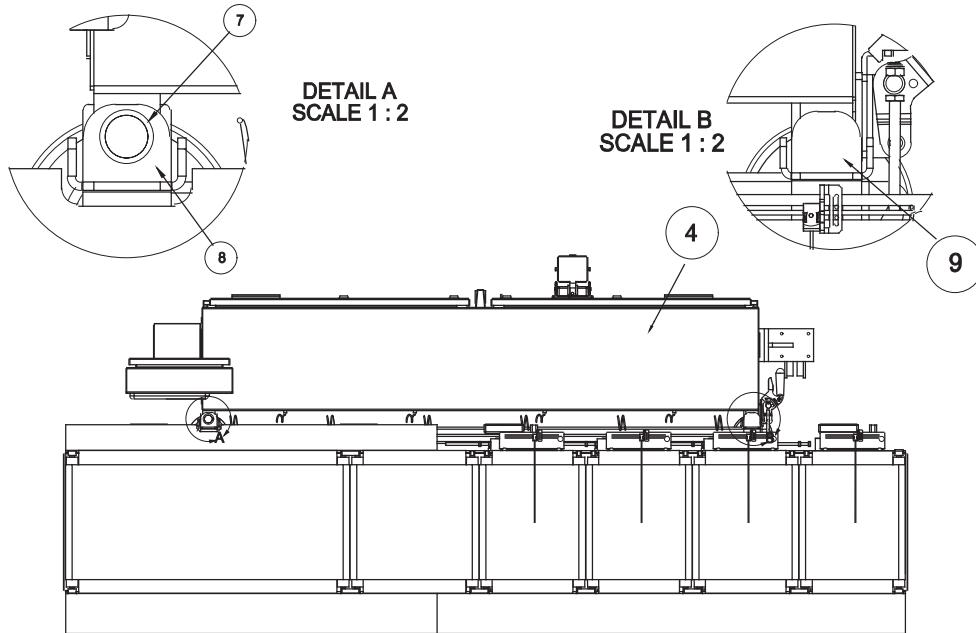
**SCHWANS W/SIPTU, IN-LINE STYLE
PRODUCT INFEED UNIT
HS5160-2**

**SHEET 1 OF 3
12" WSIPTU ASSEMBLY
147354**

Find Num	Part Number	Item Description	Qty	Rev
				G
1	147355	CONVEYOR ASSY, 12" WSIPTU	1	F
2	147168	FRAME WELDMENT, WSIPTU	1	E
3	080705	FOT-Foot	4	B
4	149383	ENCLOSURE ASSY, WSIPTU	1	E
5	147425	HMI & MTG ASSEMBLY WSIPTU	1	B
7	P0044875	BSH-Bushing	2	-
8	106057	BLOCK, TOP PIVOT	1	A
9	149897	BLOCK, TOP LOCK	1	A
10	149894	BMP-Bumper	2	A
11	106076	CTR-Caster	1	A
12	107980	BRACKET WMT, CASTER MOUNTING	1	A
13	146281	SIPTU CABLE SHROUD	1	C
14	149906	CLP-Clamp	1	A
15	146411	DCL-Decal	2	B
16	102608	DCL-Decal	2	C
17	039428C	DCL-Decal	1	-
18	000150931000	SAFETY SIGN-ENGLISH;NX9210PURCHASE EXCESS	1	-
19	000150932000	SAFETY SIGN-SPANISH;NX9210PUR EXCESS	1	-
20	072358	DCL-Decal	1	B
21.	072359	DCL-Decal	1	B
22	135036	DCL-Decal	1	C
23	152587	DCL-Decal	2	A
24	153601	DCL-Decal	1	A
25	P00776140	DCL-Decal	1	B
26	054851P	FTG-Fitting	24	-
27	P0043015	CON-Connector	12	-
28	P0043019	FTG-Fitting	12	-
29	083013	FTG-Fitting	12	A
30	P00430006	TUB-Tube	60	-

SHEET 2 OF 3

12" WSIPTU ASSEMBLY
147354



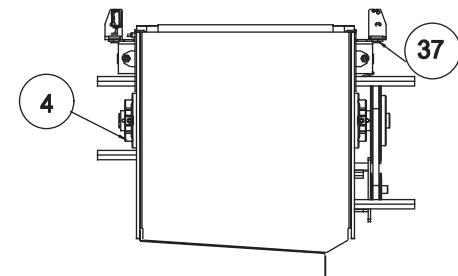
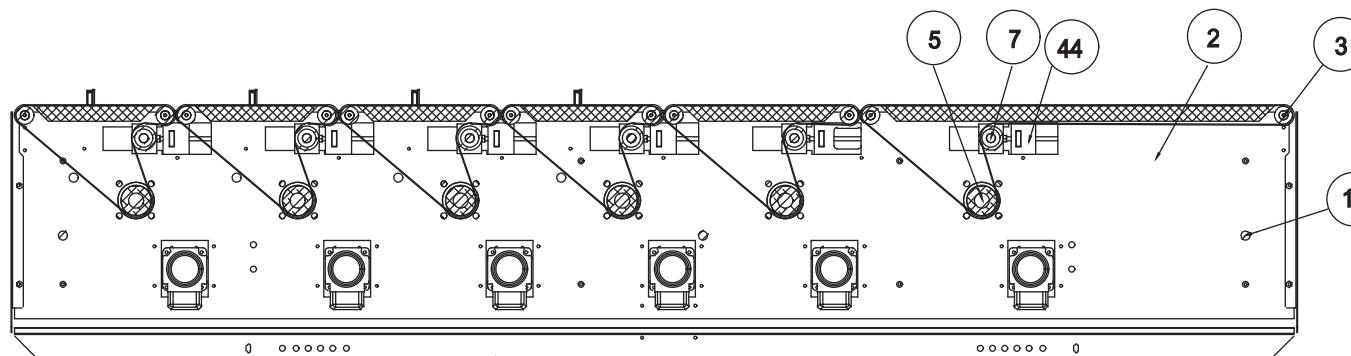
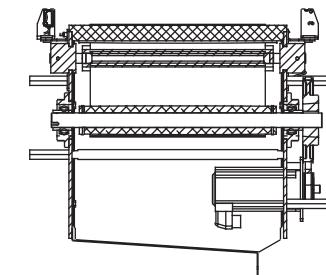
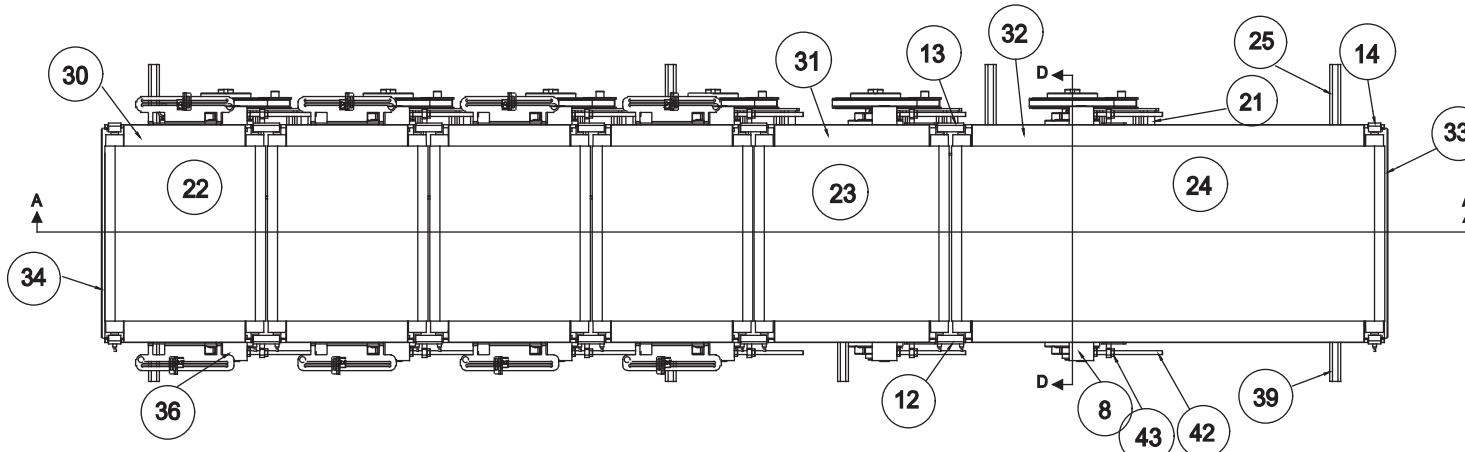
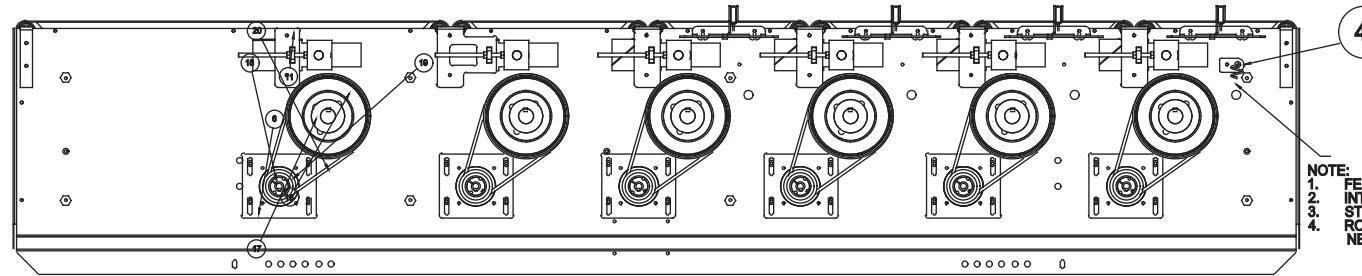
147354 12" WSIPTU ASSEMBLY (STANDARD HAND, SHOWN)
147354-001 12" WSIPTU ASSEMBLY, OPP (CONVEYOR PORTION ONLY)

SHEET 3 OF 3
12" WSIPTU ASSEMBLY
147354

**SHEET 1 OF 4
CONVEYOR ASSEMBLY, 12" WSIPTU
147355**

Find Num	Part Number	Item Description	Qty	Rev
				F
1	147366	SIDE MTG PLATE, LH	1	D
2	147384	SIDE MTG PLATE, RH	1	C
3	147208	IDLER ROLLER ASSEMBLY	12	C
4	147333	BFL-Bearing, Flange	12	A
5	147216	DRIVE SHAFT ASSEMBLY	6	B
6	105814	MOTOR MOUNTING PLATE	6	B
7	147234	TENSIONER ROLLER ASSEMBLY	6	A
8	105816	BLOCK, TAKE-UP	12	B
9	147412	BRKT, LH TAKE-UP WMT	4	C
10	147412-001	BRKT, RH TAKE-UP WMT	4	C
11	149751	BRKT, LH TAKE-UP WMT, FLANGELESS	1	A
12	147413	BRKT, LH TAKE-UP WMT, ACCEL	1	D
13	147413-001	BRKT, RH TAKE-UP WMT, ACCEL	1	C
14	149765	KEEPER, END SHAFT HOLD-DOWN	4	A
15	105839	CROSS MEMBER	3	A
16	B72E147247P	PLY GTS 8MX-67S-12	6	A
17	B72E070028	PLATED BSH MRT 2012-30MM	6	-
18	B72E147249P	BSH DGE 1008-16MM	6	A
19	B72E147248P	PLY GTS 8MX-22S-12	6	A
20	147250	BLT-Belt	6	A
21	B400561201094	SPACER .56 X .12 X 1.094 SS;	24	-
22	147636	BLT-Belt	4	B
23	147635	BLT-Belt	1	B
24	147634	BLT-Belt	1	B
25	B78080481322	HEX SPACER; M10 THREAD X 4.813 LG.	8	A
26	105891	CATCH PAN, WSIPTU, 12"	1	C
27	105895	COVER RH, DOWNSTREAM	1	G
28	010583P	HAN-Handle	8	-
29	105916	COVER RH, UPSTREAM	1	F
30	105931	BTR-Belt Track	4	D
31	105932	BTR-Belt Track	1	D
32	149776	BTR-Belt Track	1	B
33	147350	END CAP	1	A
34	147350-001	END CAP, OPP	1	A
35	144665	TRANSMITTED LASER BEAM SENSOR ASSY	REF	A
36	168994	BRACKET, ANGLE, 12" WSIPTU	8	A
37	106146	NUT PLATE	8	A
38	144800	SENSOR BRACKET, FOR 144665 (-1 OR -2)	8	E
39	B78080312522	3/4" HEX SPACER 3.125 LG, M10 THREAD	8	A
40	147362	COVER LH, DOWNSTREAM	1	B
41	147365	COVER LH, UPSTREAM	1	B
42	147420	FST-Fastener	12	A
43	FS	M8X1.25 HEX NUT	12	-
44	149751-001	BRKT, RH TAKE-UP WMT, FLANGELESS	1	A
45	132651	SUPPORT, SMALL CABLE W/ ATTACHING PLATE	4	B

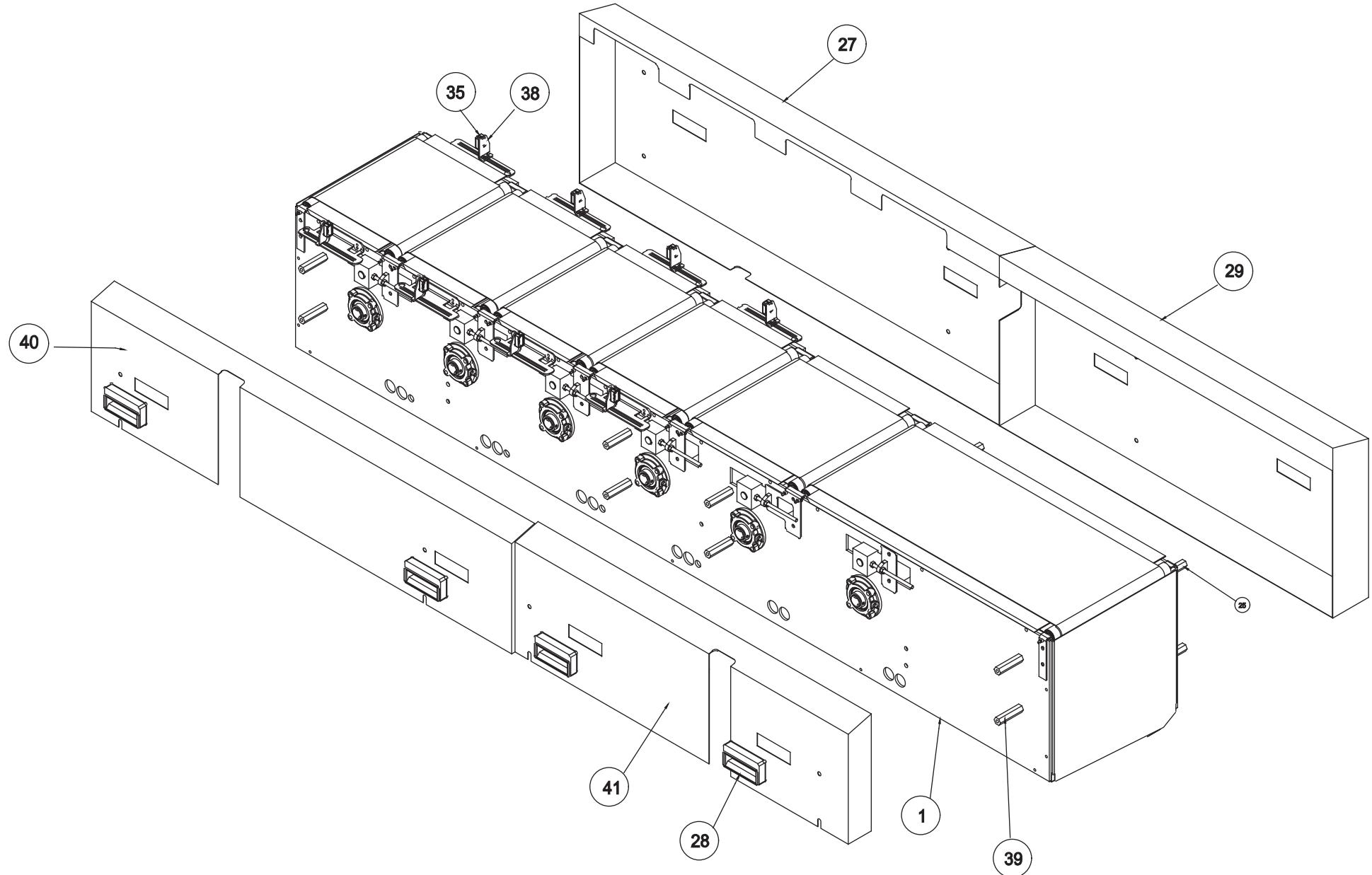
SHEET 2 OF 4
CONVEYOR ASSEMBLY, 12" WSIPTU
147355



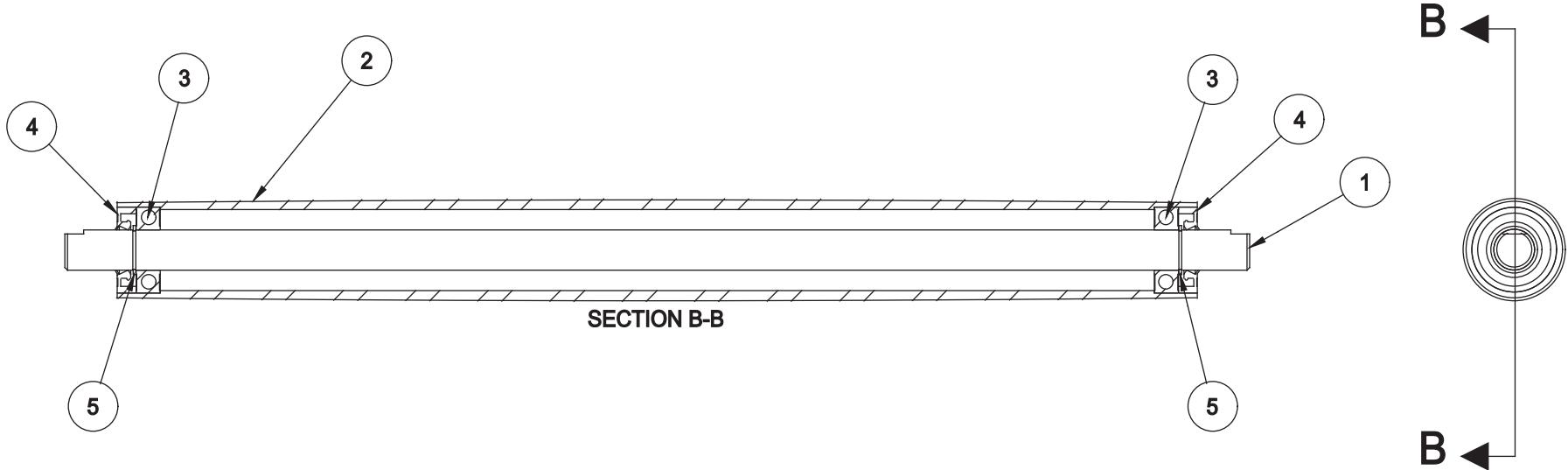
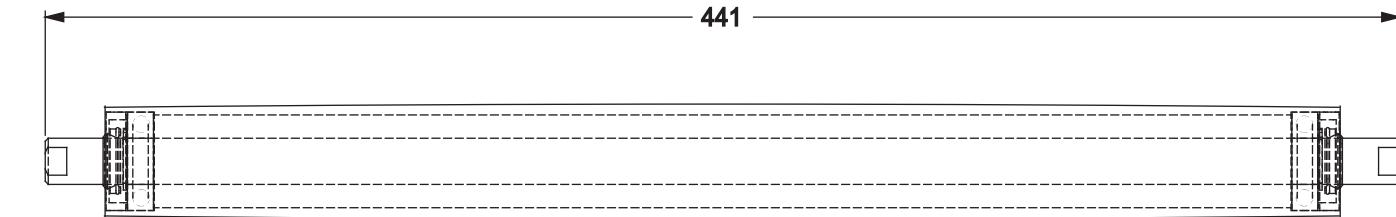
SECTION A-A

147355 CONVEYOR, 12" WSIPTU (STANDARD HAND, SHOWN)
147355-001 CONVEYOR, 12" WSIPTU, OPP OPPOSITE HAND

SHEET 3 OF 4
CONVEYOR ASSEMBLY, 12" WSIPTU
147355

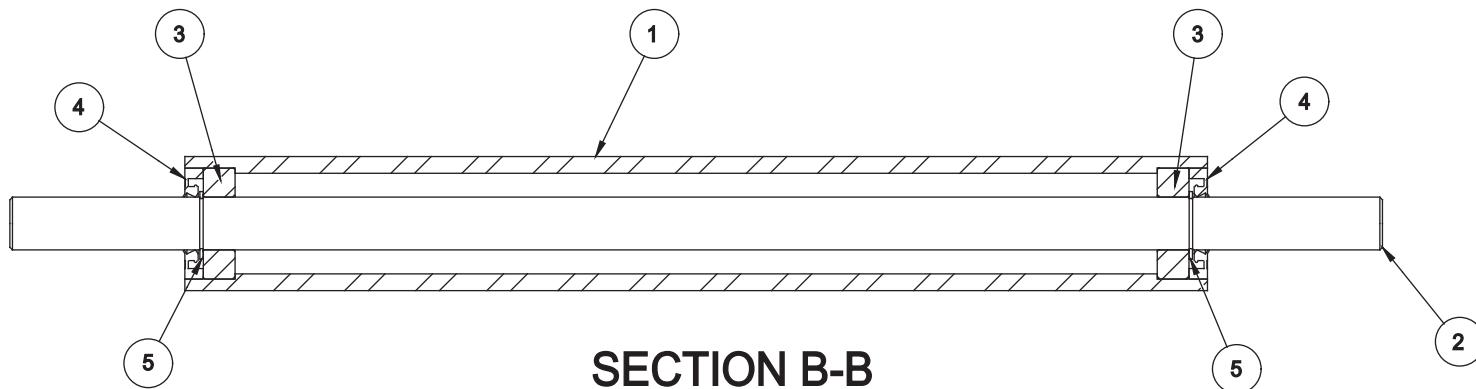
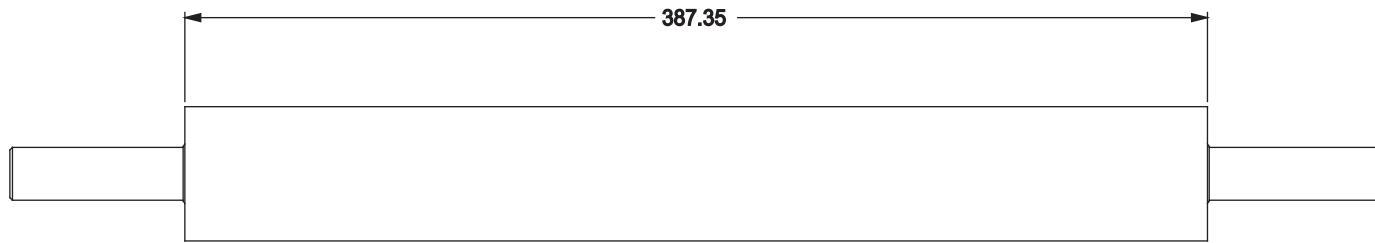


SHEET 4 OF 4
CONVEYOR ASSEMBLY, 12" WSIPTU
147355



Find Num	Part Number	Item Description	Qty	Rev
				A
1	147212	SHAFT, IDLER ROLLER	1	B
2	147209	IDLER ROLLER	1	A
3	089570	BRD-Bearing, Radial	2	A
4	147210	SEL-Seal	2	A
5	089596	RNG-Ring	2	B

**IDLER ROLLER ASSEMBLY
147208**



SECTION B-B

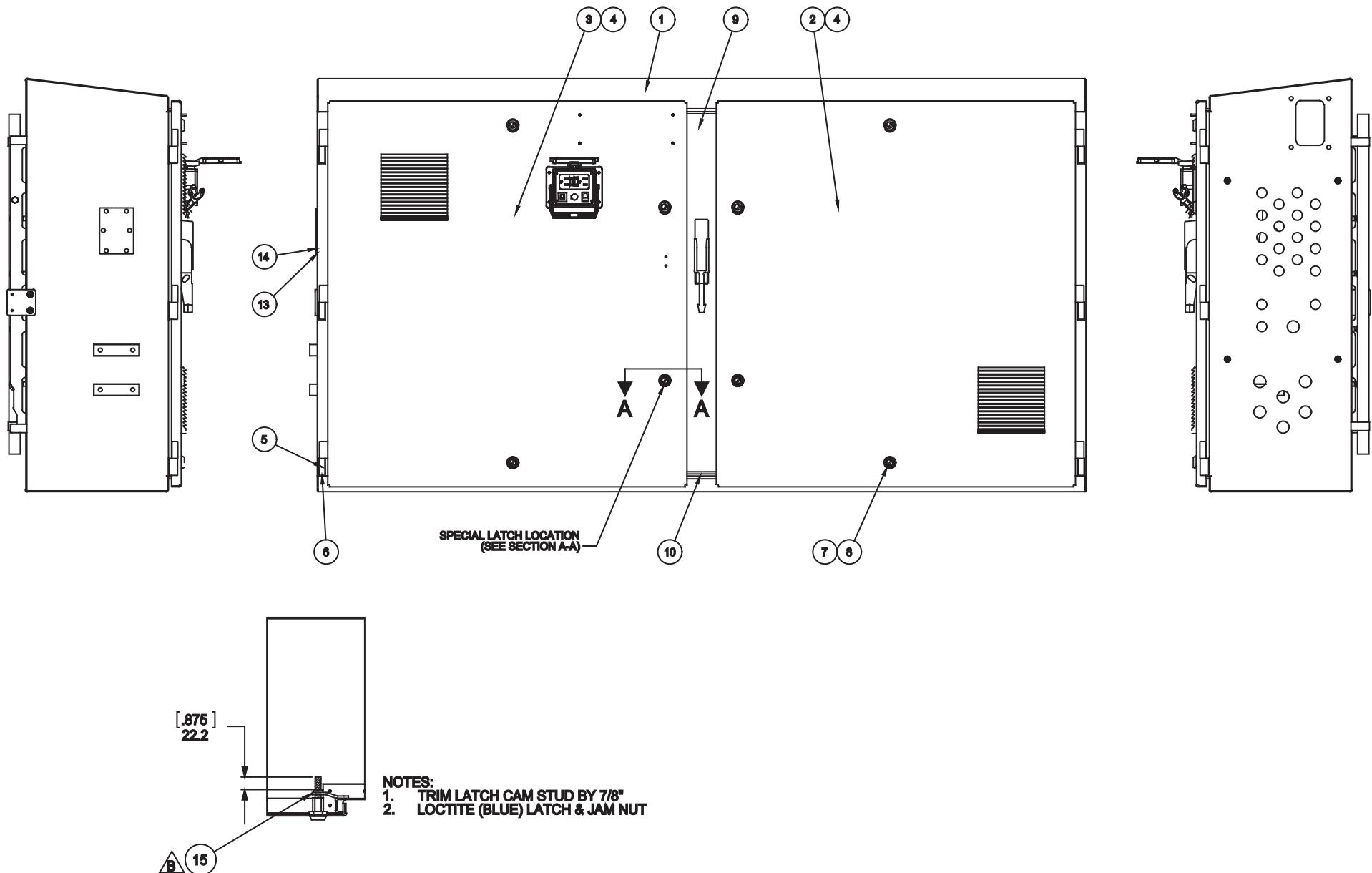
Find Num	Part Number	Item Description	Qty	Rev
				A
1	147235	ROLLER, TENSIONER	1	A
2	147243	SHAFT, TENSIONER	1	A
3	093912	BRG-Bearing	2	B
4	147239	SEL-Seal	2	A
5	128922	RNG-Ring	2	A

**TENSIONER ROLLER ASSEMBLY
147234**

**SHEET 1 OF 3
ENCLOSURE ASSEMBLY, WSIPTU
149383**

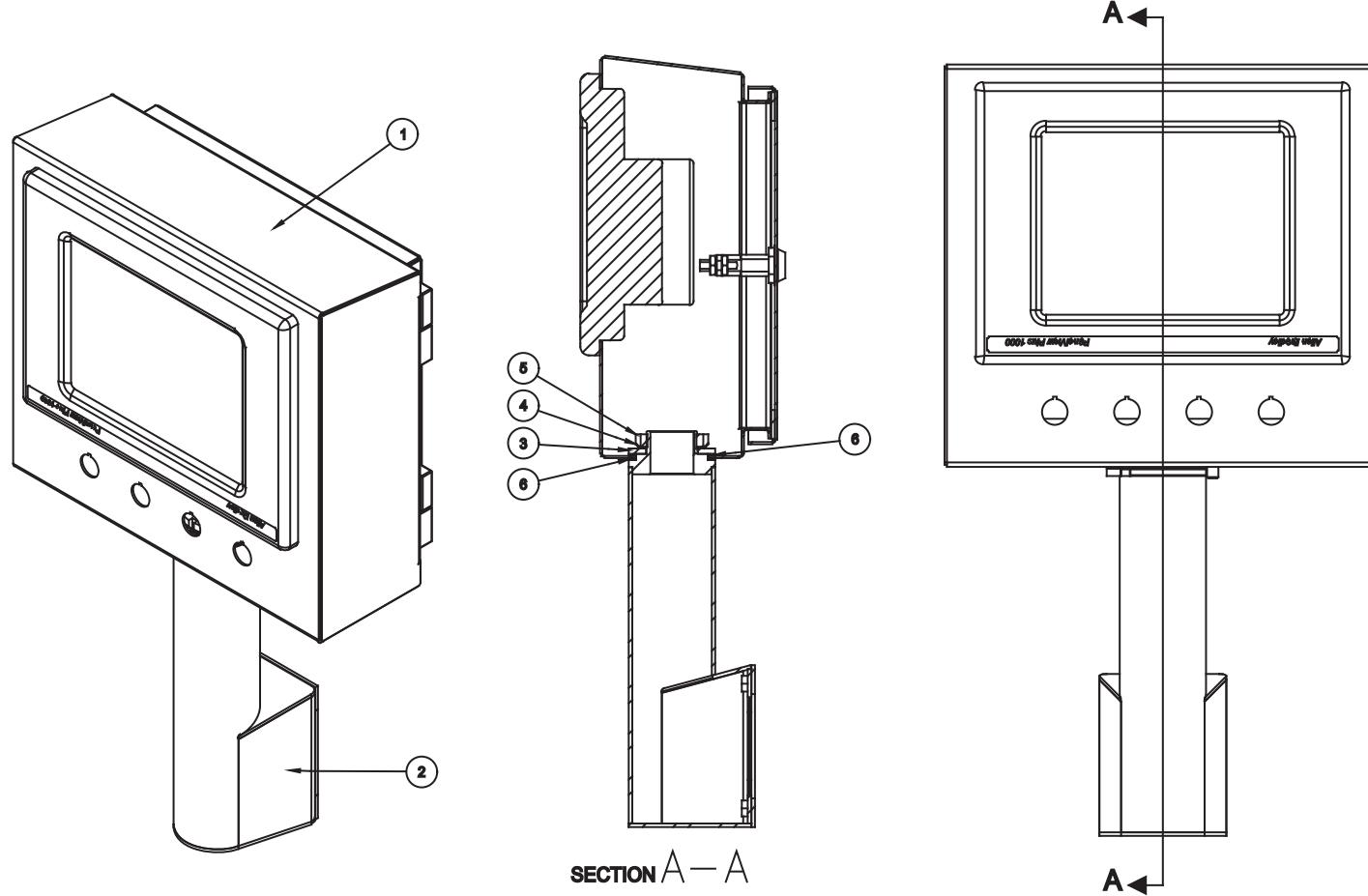
Find Num	Part Number	Item Description	Qty	Rev
				E
1	147135	MAIN CONTROL BOX WMT, WSIPTU	1	H
2	105905	DOOR, ELECTRICAL BOX DOWN STREAM	1	C
3	105905-001	DOOR, ELECTRICAL BOX UP STREAM	1	C
4	P0021554	GSK-Gasket	22	-
5	153729	HINGE, STAINLESS, BLOCK	6	A
6	159665	GASKET- HINGE	6	A
7	120468	LTH-Latch	8	A
8	120469	ENCLOSURE LATCH CAM	7	D
9	149323	REMOVABLE CENTER SUPPORT; ELECTRICAL ENCLOSURE	1	A
10	030502A	GASKET, REMOVABLE C'SUPPORT	2	B
13	149243	VORTEX GASKET	1	A
14	149242	COVER PLATE, NO VORTEX	1	A
15	149957	ENCLOSURE LATCH CAM, SHALLOW	1	A

SHEET 2 OF 3
ENCLOSURE ASSEMBLY, WSIPTU
149383



SECTION A-A

SHEET 3 OF 3
ENCLOSURE ASSEMBLY, WSIPTU
149383



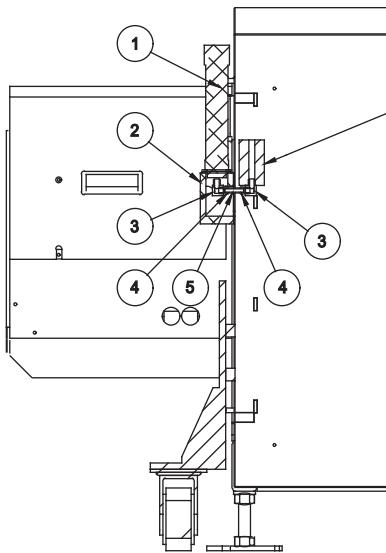
Find Num	Part Number	Item Description	Qty	Rev
				B
1	169319	HMI ENCLOSURE, PV+ 1000, SIPTU	1	A
2	147424	HMI SUPPORT	1	B
3	169329	HMI WASHER, SIPTU	1	A
4	085592	WSH-Washer	1	A
5	085593	NUT-Nut	1	A
6	091577	THRUST BEARING, CONTROL BOX	2	A

**HMI & MTG ASSEMBLY
WSIPTU
147425**

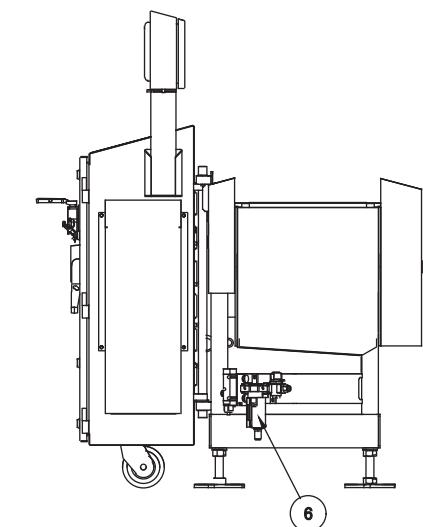
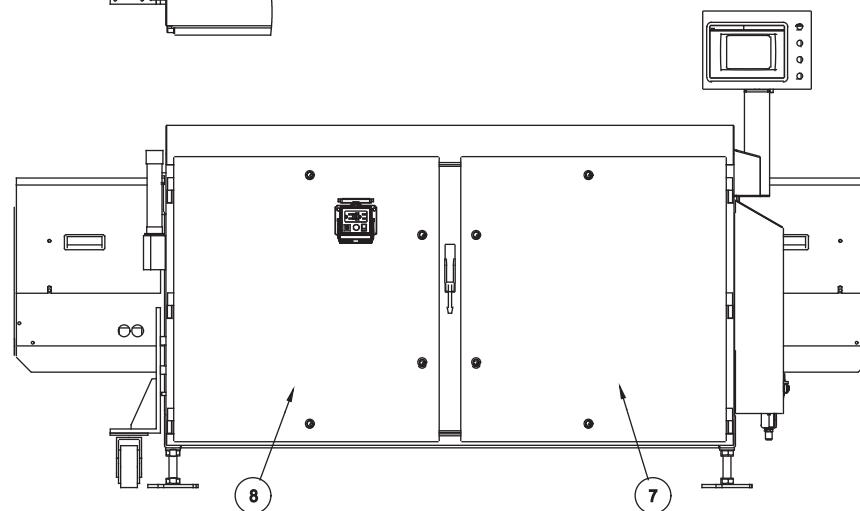
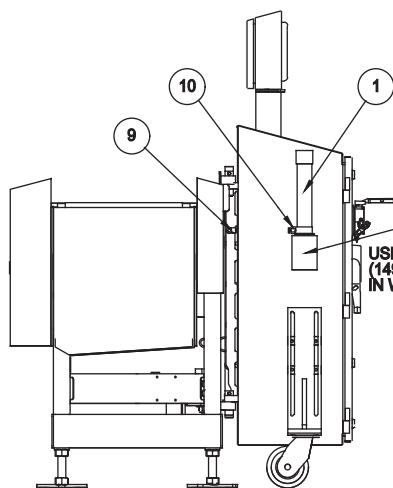
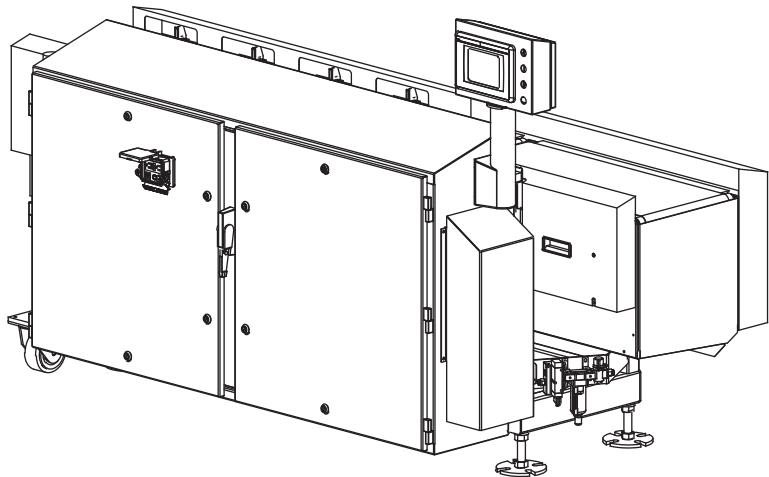
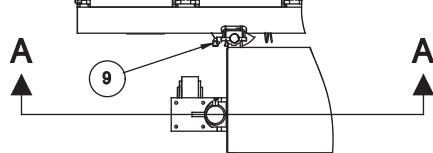
**SHEET 1 OF 3
KIT, W/SIPTU VORTEX
COOLING ASSEMBLY
149237**

Find Num	Part Number	Item Description	Qty	Notes	Rev
					B
1	105136	VTC-Vortex Cooler	1		A
2	149220	MTG BLOCK, VORTEX	1		C
3	P0042126	FTG-Fitting	2		-
4	P0042117	FTG-Fitting	2		-
5	P0042374	FTG-Fitting	1		-
6	149271	VALVE ASSY, WSIPTU VORTEX	1		B
7	147380	DOOR, ELECTRICAL BOX, RH	1	REPLACES 105905	B
8	147381	DOOR, ELECTRICAL BOX, LH	1	REPLACES 105905-001	B
9	035212P	CON-Connector	1		A
10	P0042660	CON-Connector	1		-

**SHEET 2 OF 3
 KIT, W/SIPTU VORTEX
 COOLING ASSEMBLY
 149237**



**SECTION A-A
SCALE 1:8**

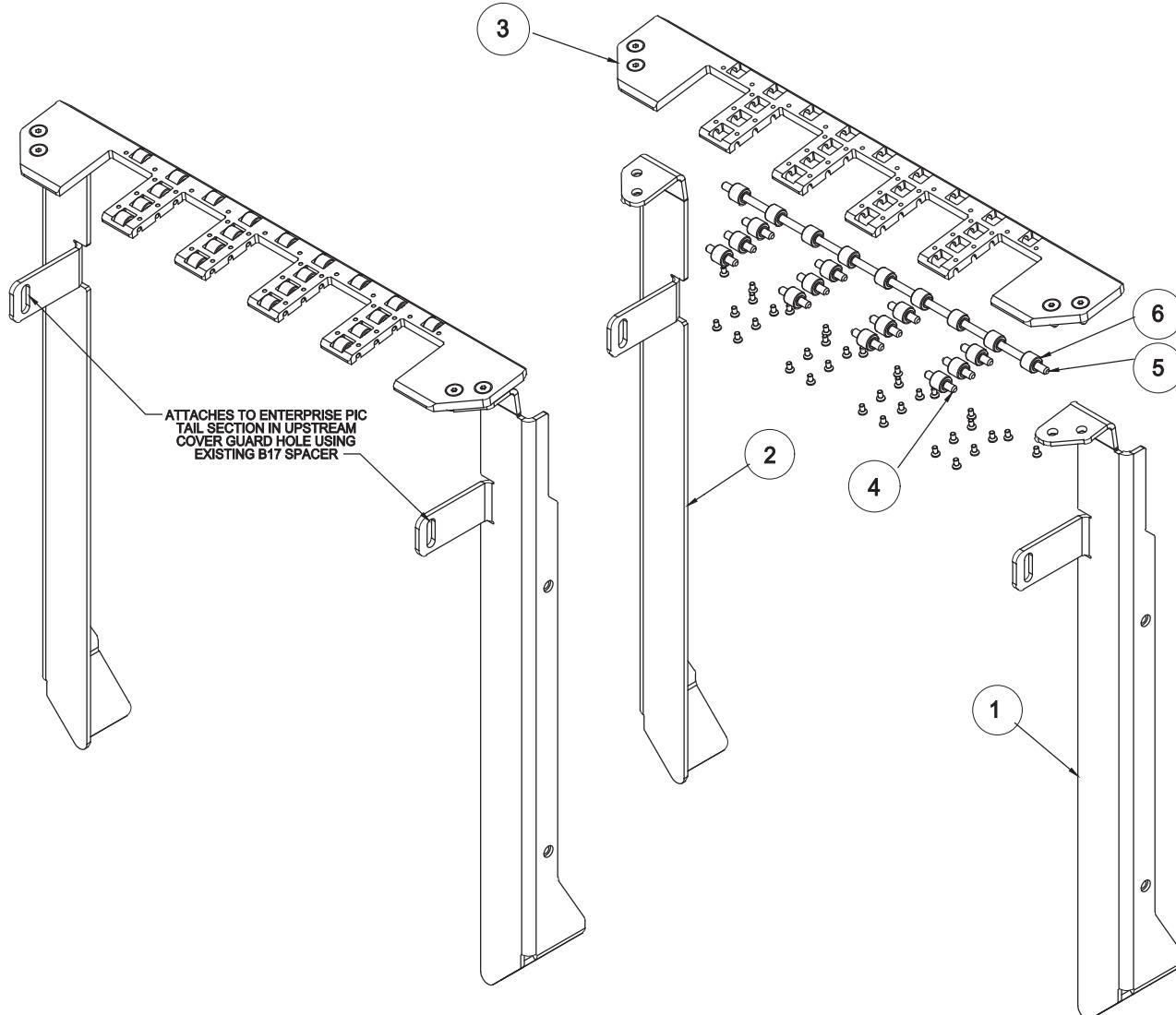


NOTES:

1. 12" STD HAND WSIPTU SHOWN, BUT MOUNTING IS SAME FOR BOTH HANDS/ALL SIZES (9"/12"/15")
2. PLUMB ITEM 6 TO ITEM 9 AND ITEM 9 TO ITEM 10 WITH 3/8" BLACK TUBING
3. ROUTE FIRST RUN THROUGH PIGTAILS ON REAR OF ENCLOSURE

**SHEET 3 OF 3
KIT, W/SIPTU VORTEX
COOLING ASSEMBLY
149237**

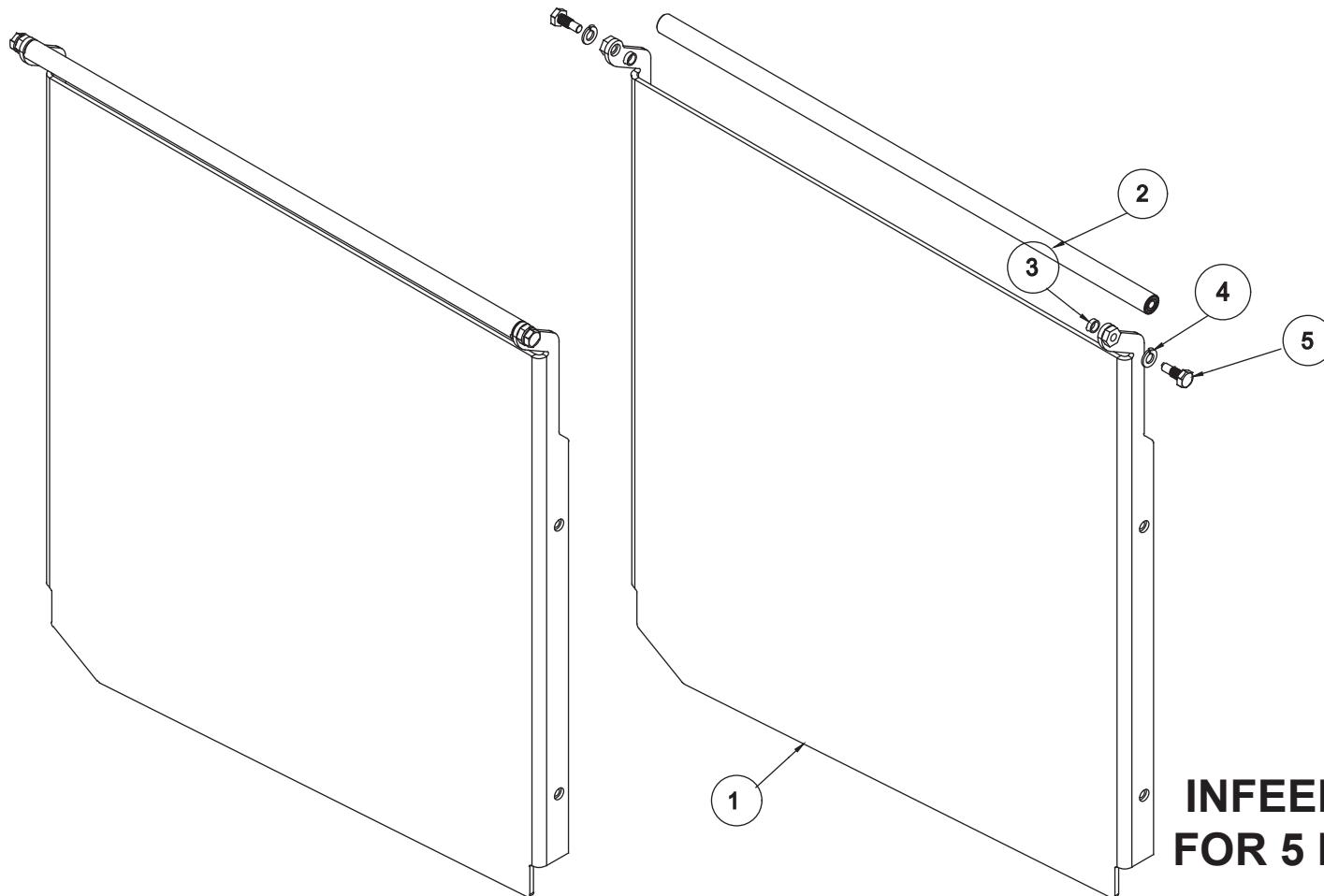
Find Num	Part Number	Item Description	Qty	Rev
				B
1	161181	END CAP, WSIPTU FOR ENTERPRISE, WITH ROLLER TRANSFER MTG	1	A
2	161181-001	END CAP, WSIPTU FOR ENTERPRISE, WITH ROLLER TRANSFER MTG, OPP	1	A
3	168532	TRANSFER PLATE, CASTELLATED, FOR ROLLERS	1	A
4	161191-1	TRANSFER ROLLER PIN, 25 LG	12	A
5	161191-2	TRANSFER ROLLER PIN, 282 LG	1	A
6	161192	ROL-Roller	21	B



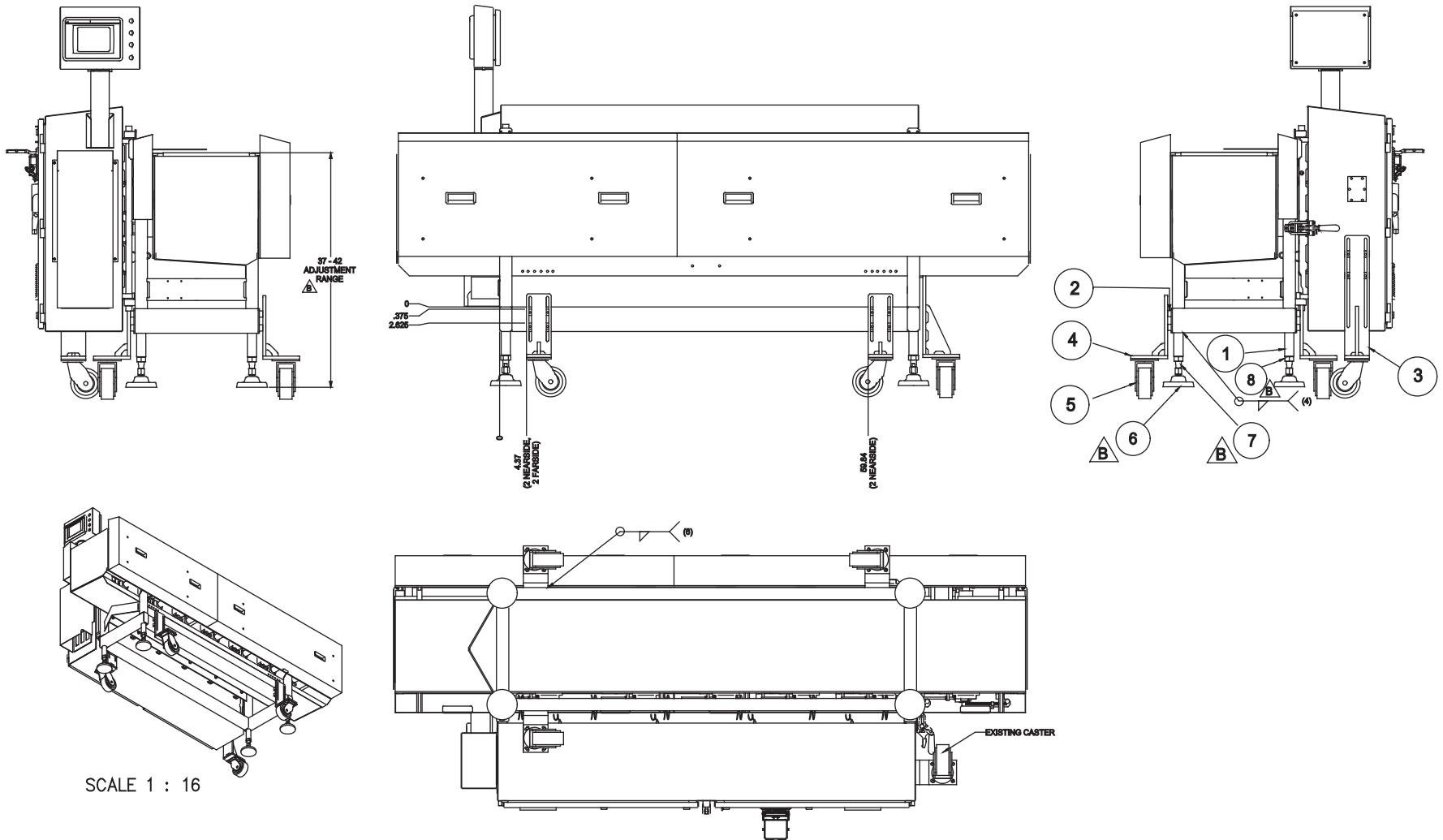
**OUTFEED TRANSFER KIT
WSIPTU TO ENTERPRISE
CASTELLATED ROLLERS, V2
169294**

Find Num	Part Number	Item Description	Qty	Rev
				A
1	160328-001	END CAP, WSIPTU FOR 5 IN SPROCKET, OPP	1	A
2	149854	ROLLER ASSY, WSIPTU OUTFEED	1	A
3	150204	SPACER, OUTFEED ROLLER	2	A
4	FS	M6 LOCK WSHR, SS	2	-
5	149862	PIVOT BOLT	2	A

160327 INFEED ROLLER KIT, WSIPTU (STANDARD HAND, SHOWN)
 160327-001 INFEED ROLLER KIT, WSIPTU, OPP (OPPOSITE HAND)

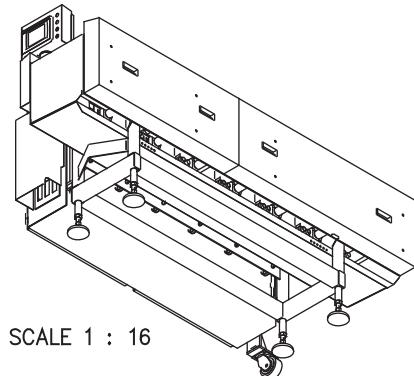
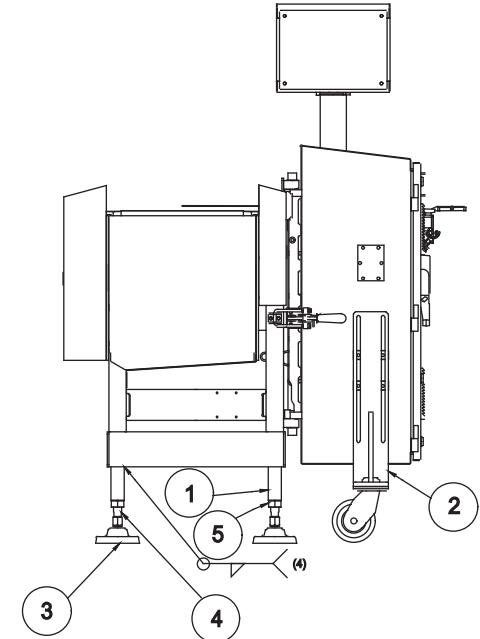
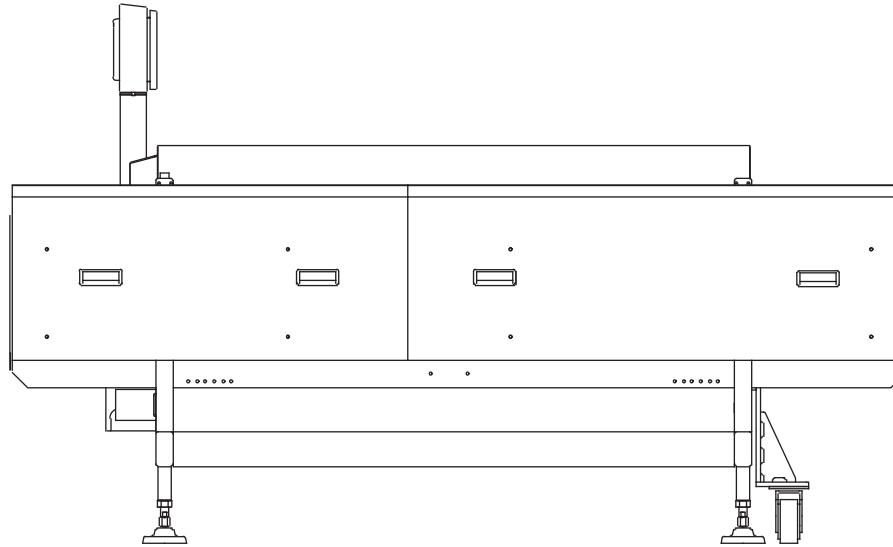
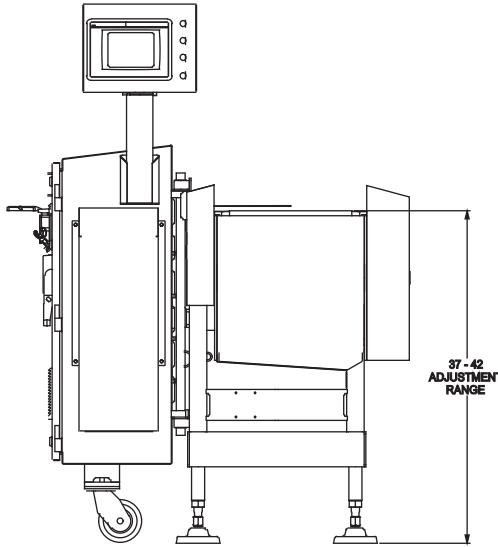


**INFEED ROLLER KIT, WSIPTU
FOR 5 IN DIA SPROCKET, OPP**
160327-001



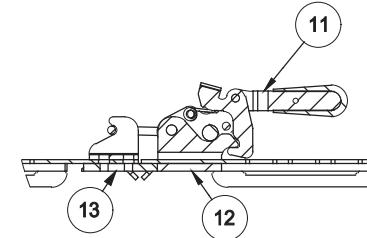
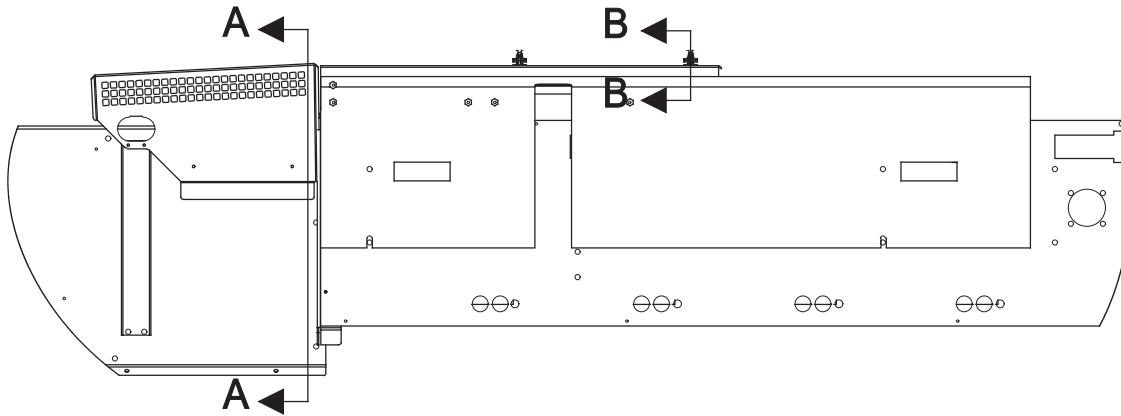
Find Num	Part Number	Item Description	Qty	Rev
1	148886	LEVELING PAD EXTENSION, 24MM X 150 LG, SS	4	C
2	113555	MOUNTING PAD, CASTER MTG	6	B
3	148878	BRACKET WMT, CASTER MOUNTING	1	A
4	148834	BRACKET, CASTER MTG, SHORT	3	A
5	106076	CTR-Caster	3	A
6	169221	FOT-Foot	4	A
7	169222	LEVELER STUD, M24 X 200	4	A
8	066021	FST-Fastener	4	-

**CASTER KIT, WSIPTU
40" ELEVATION
149208**

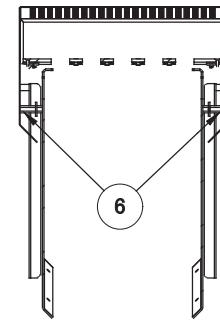


Find Num	Part Number	Item Description	Qty	Rev
				A
1	148886	LEVELING PAD EXTENSION, 24MM X 150 LG, SS	4	C
2	148878	BRACKET WMT, CASTER MOUNTING	1	A
3	169221	FOT-Foot	4	A
4	169222	LEVELER STUD, M24 X 200	4	A
5	066021	FST-Fastener	4	-

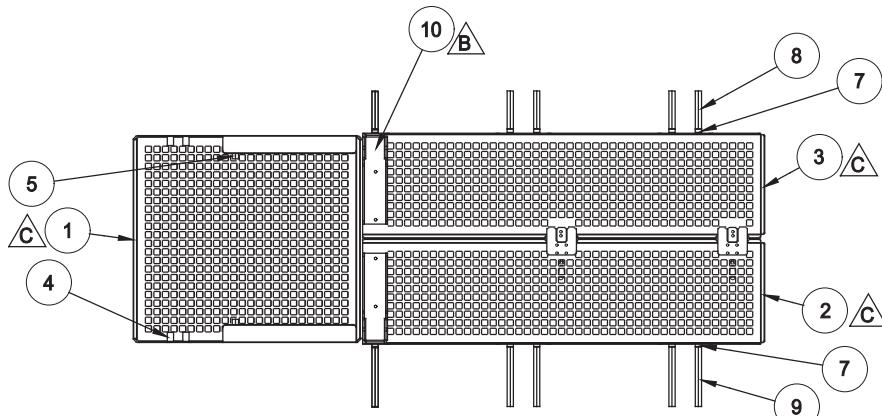
**RISER KIT, WSIPTU, 37" (MIN)
42" (MAX) ELEVATION
169296**



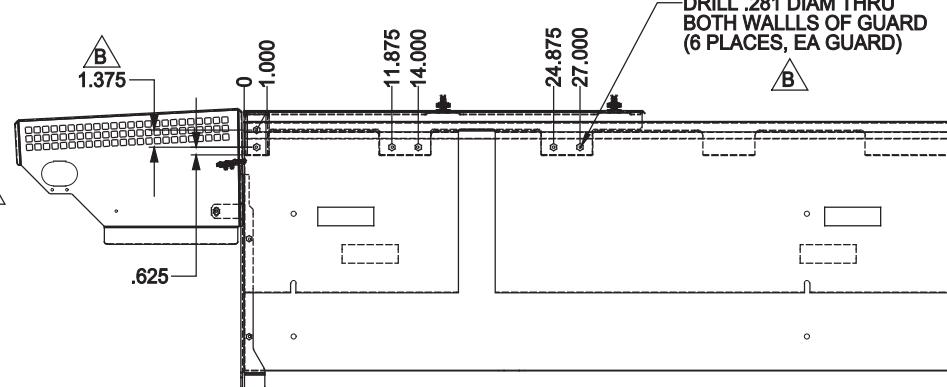
**SECTION B-B
SCALE 1 : 2**



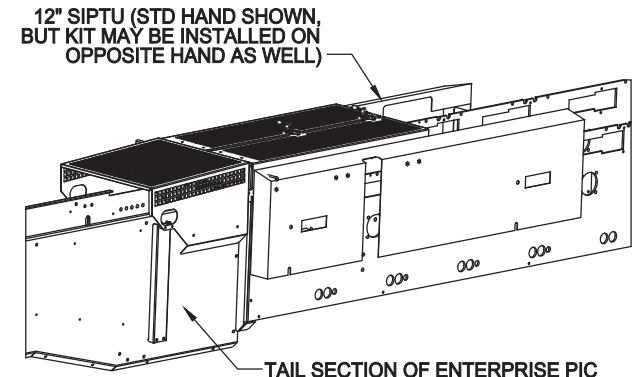
SECTION A-A



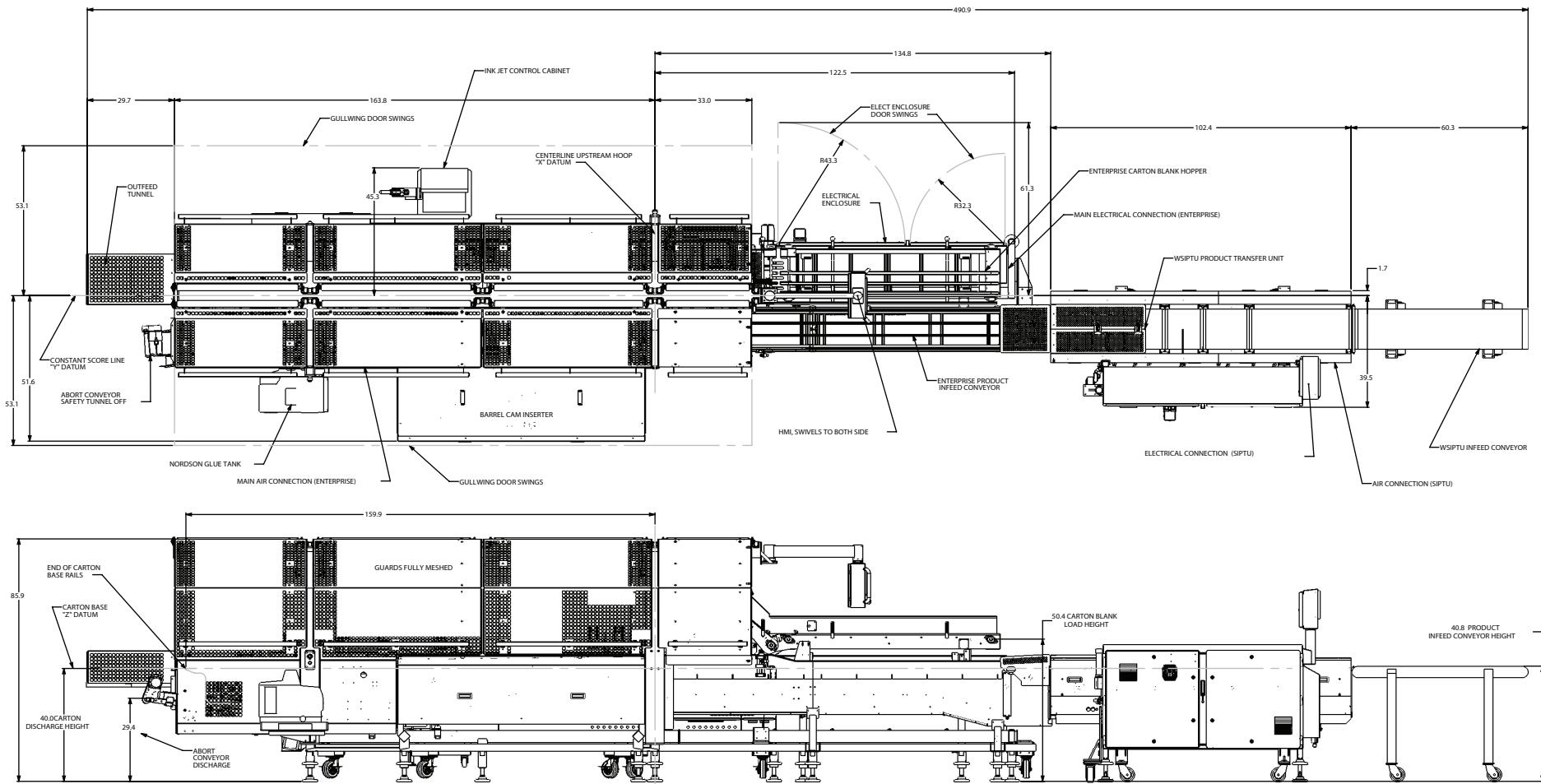
NOTE: IF MOUNTING HOLES ARE NOT
ALREADY PRESENT IN SIPTU GUARDS,
DRILL AS SHOWN



Find Num	Part Number	Item Description	Qty	Rev
1	170929	TUNNEL GUARD, PIC INFEED SS MESH	1	B
2	170933	TUNNEL GUARD, SIPTU OUTFEED SS MESH	1	A
3	170933-001	TUNNEL GUARD, SIPTU OUTFEED SS MESH, OPP HAND	1	A
4	B400501200725	SPACER: .725 LG;	4	A
5	B78050180018	1/2" HEX SPCR X 1.80" LG, M6 THREAD	2	A
6	B78050123518	1/2" HEX SPCR X 1.235" LG, M6 THREAD	2	A
7	B400501200250	SPACER;	12	-
8	B78050302518	1/2" HEX SPACER 3.025" LG, M6 THREAD	5	A
9	B78050477518	1/2" HEX SPACER 4.775" LG, M6 THREAD	5	A
10	170188	GUSSET, SIPTU OUTFEED GUARD	2	A
11	161679	CLP-Clamp	2	A
12	170945	GUARDING LATCH B	2	A
13	170943	GUARDING LATCH A	2	A



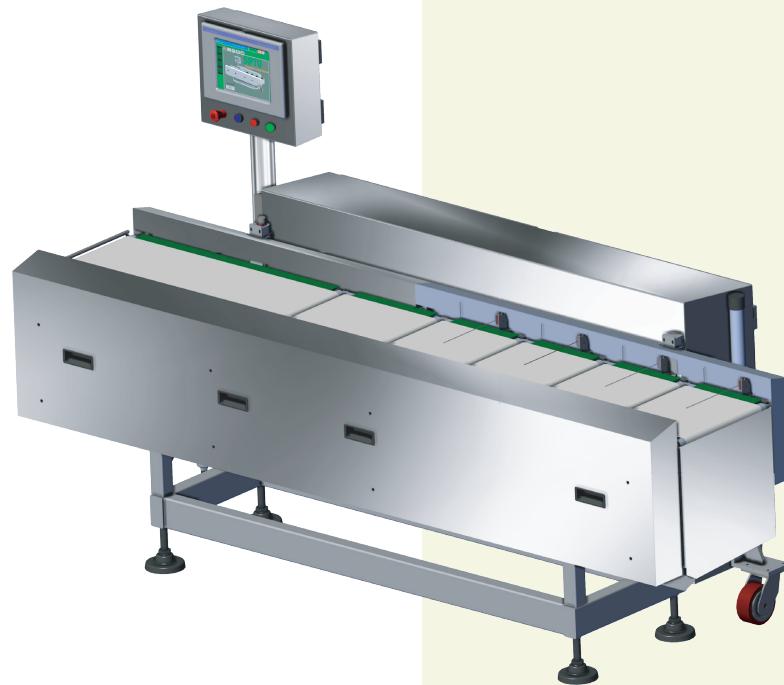
**OUTFEED GUARD KIT, SS
MESH SIPTU TO ENTERPRISE
170143**



NOTE: MACHINE SHOWN WITH CASTER KIT (SERIAL NO ENT-117)
 HEIGHT ADJUSTABLE PLUS OR MINUS 2"
 FROM DIMENSIONS SHOW WITHOUT CASTER KIT
 BUT WITH LEG EXTENSIONS (SERIAL NO ENT-118)

LINE LAYOUT, ENTERPRISE WITH WSIPTU INFEED HS5160, PORTABILITY KIT, ELEVATED KIT

16-4485



SIPTU

Smooth Intelligent Product Transfer Unit

SCHWANS - ATLANTA
HS5160

 **HOME**

RECOMMENDED SPARES

RECOMMENDED MECHANICAL SPARES

12" WSIPTU, PN109+

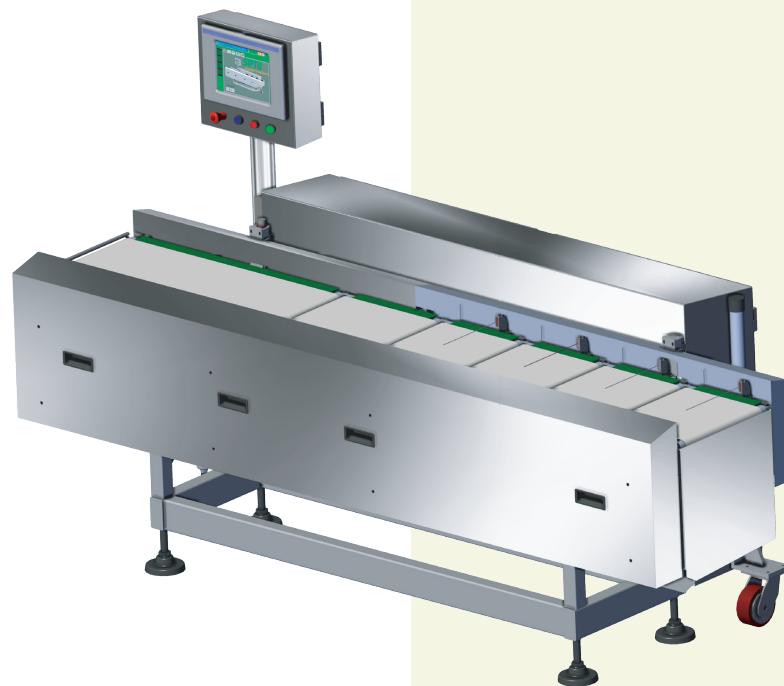
SP01153

Find Num	Part Number	Item Description	Qty	
				C
1	147333	BFL-Bearing, Flange	2	A
2	B72E147248P	PLY GTS 8MX-22S-12	2	A
3	B72E147247P	PLY GTS 8MX-67S-12	2	A
4	147250	BLT-Belt	4	A
5	147636	BLT-Belt	4	B
6	147635	BLT-Belt	1	B
7	147634	BLT-Belt	1	B
8	147234	TENSIONER ROLLER ASSEMBLY	2	A
9	147216	DRIVE SHAFT ASSEMBLY	2	B
10	147208	IDLER ROLLER ASSEMBLY	4	C

RECOMMENDED MECHANICAL SPARES
12" WSIPTU, PN109+
SP01153

Find Num	Part Number	Item Description	Qty	Rev
				A
1	150283	DRV-Drive	1	A
2	150284	CON-Connector	1	A
3	150285	CON-Connector	1	A
4	150751	CBL-Cable	1	A
5	156065	SRV-Servo Motor	1	A
6	144665-1	SNR-Sensor	1	A
7	114951	SWT-Switch	1	A
8	144665-2	SNR-Sensor	1	A
9	095765	FUS-Fuse	3	A
10	099963	SWT-Switch	1	C
11	096685	FUS-Fuse	5	A
12	124210	SWT-Switch	1	A
13	125063	FUS-Fuse	5	A
14	011101P	CBL-Cable	1	C
15	114543	FUS-Fuse	4	A
16	044232P	FUS-Fuse	3	A
17	086703	FUS-Fuse	3	B
20	086816	FLT-Filter	1	B
32	099328	CBL-Cable	1	B
34	140975	SWT-Switch	1	A
40	145859	SWT-Switch	1	A
43	136004	PWS-Power Supply	1	A
44	145349	HAN-Handle	1	A
45	146987	CBL-Cable	1	A
50	136005	HUB-Hub	1	A
56	144807	PLC-Programmable Logic Controller	1	A
58	159043	PLC-Programmable Logic Controller	1	A
59	069838	PLC-Programmable Logic Controller	1	D
60	069842	PLC-Programmable Logic Controller	1	A
61	069835	PLC-Programmable Logic Controller	1	A
62	069833	PWS-Power Supply	1	D
63	069832	PLC-Programmable Logic Controller	1	A
64	069839	PLC-Programmable Logic Controller	1	A
70	086670	REL-Relay	1	B
71	111509	REL-Relay	1	B
72	111510	MOD-Module	4	B
73	111507	REL-Relay	4	A
82	P0072510	FUS-Fuse	3	A
83	P0072515	FUS-Fuse	1	C
85	012853P	THS-Thermostats	1	B
92	091502	CBL-Cable	1	B
93	136162	CBL-Cable	1	A
95	117610	FUS-Fuse	3	A
99	157603	CNT-Contactor	1	A
100	094857	REL-Relay	1	B

**ELECTRICAL SPARES LIST
SIPTU, AB CONTROLS, 480VAC, K5500
SP01535**

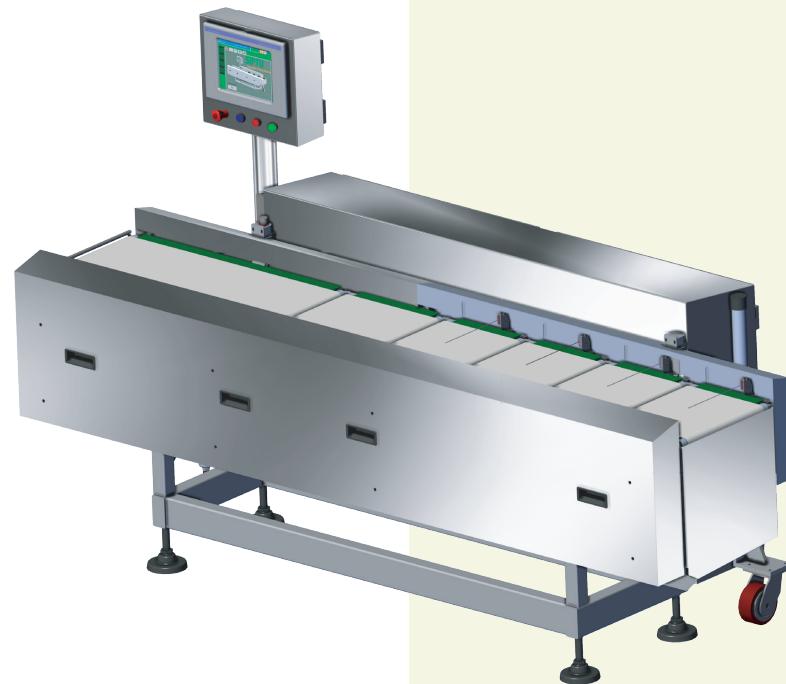


SIPTU

Smooth Intelligent Product Transfer Unit

SCHWANS - ATLANTA
HS5160

 **HOME**



SIPTU

Smooth Intelligent Product Transfer Unit

SCHWANS - ATLANTA
HS5160





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Email: sales@kliklook-woodman-int.com

SIPTU Setup Sheet

Factory #	HS5160	FAT Date:	10/27/2016
Customer Name:	SFCGSC-Atlanta		
Customer Location:	One Lemon Lane NE		
Atlanta, GA 30307-2899			
Carton	'A'	Color Designation	RED
Carton Size:	9.625"x2.375"x9.625"	Machine Speed	70/160 CPM

Torque Readings

	Maximum Recorded	Fault Trip Point
Metering Belt	29	100
Accel Belt	31	100
Phasing Belt 1	31	100
Phasing Belt 2	37	100
Phasing Belt 3	36	100
Phasing Belt 4	31	100

Has the Zero Position Been set?

 Yes No

Engineering Data Screen

VFD Speed Ratio

7.4

Machine Setup 1

SIPTU Offset

0.700

Correction Distance

8.5

Product Length (Inches)

9.5

Machine Setup 2

Phasing Belt 1 Correction Factor

0.250

Phasing Belt 2 Correction Factor

0.333

Phasing Belt 3 Correction Factor

0.500

Phasing Belt 4 Correction Factor

1.000



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Email: sales@kliklook-woodman-int.com

SIPTU Setup Sheet

Factory #	HS5160	FAT Date:	10/27/2016
Customer Name:	SFCGSC-Atlanta		
Customer Location:	One Lemon Lane NE		
Atlanta, GA 30307-2899			
Carton	'A'	Color Designation	RED
Carton Size:	9.625"x2.375"x9.625"	Machine Speed	120/160 CPM

Torque Readings

	Maximum Recorded	Fault Trip Point
Metering Belt	28.3	100
Accel Belt	39.4	100
Phasing Belt 1	42.4	100
Phasing Belt 2	41.8	100
Phasing Belt 3	38.9	100
Phasing Belt 4	38.6	100

Has the Zero Position Been set?

 Yes No

Engineering Data Screen

VFD Speed Ratio

7.4

Machine Setup 1

SIPTU Offset

0.700

Correction Distance

8.5

Product Length (Inches)

9.5

Machine Setup 2

Phasing Belt 1 Correction Factor

0.250

Phasing Belt 2 Correction Factor

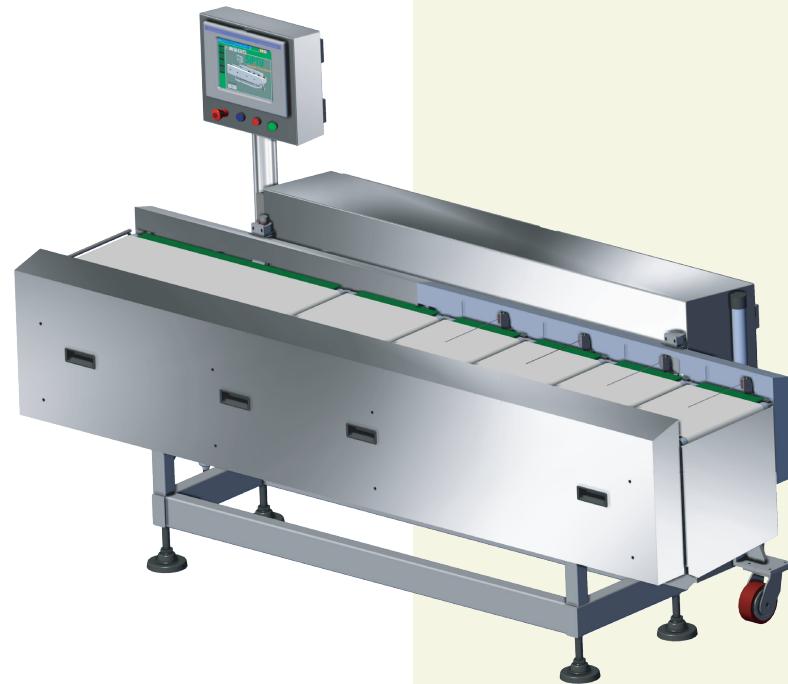
0.333

Phasing Belt 3 Correction Factor

0.500

Phasing Belt 4 Correction Factor

1.000



SIPTU

Smooth Intelligent Product Transfer Unit

**SCHWANS - ATLANTA
HS5160**

