



ARPAC[®]

A DURAVANT COMPANY

Operation & Maintenance Manual

EL-2000 Series Tray Loader

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Record of Revisions



Revision History

REV	Date	Reason for Change
A	8/5/2011	Original
B	Dec 2017	Design Changes

Table i-1. Revision History

List of Affected Pages

Page Number	Rev Level	Page Number	Rev Level	Page Number	Rev Level
All	A				
All	B				

Table i-2. List of Affected Pages

Warranty Information



ARPAC warrants the Products of its manufacture to be free from defects in material or workmanship for a period of one year from date of shipment from ARPAC's factory, provided that:

- 1 Such equipment is given normal and proper usage.
- 2 It is still owned by the original buyer.
- 3 The Products have been operated in accordance with generally approved practice and in accordance with ARPAC's specifications and instructions.
- 4 No repairs, alterations, or replacements have been made by others without ARPAC's prior written approval.
- 5 Genuine ARPAC repair components are used during the warranty period.

ARPAC's liability under this warranty or in connection with any other claim relating to the Products shall be limited to the repair or, at ARPAC's option, the replacement of any products, parts or components thereof which are returned to ARPAC freight prepaid and which are defective in material or workmanship.

The Buyer shall notify ARPAC immediately of any defective parts and ARPAC shall thereupon correct the defect or defects. If such correction requires the replacement of a defective part or parts, ARPAC will supply same F.O.B. its factory.

If warranty parts are required, ARPAC will, at its discretion, repair or replace any defective parts with a charge to a valid purchase order number. Defective parts, with a valid Return Material Authorization number obtained from ARPAC's service department, must be returned to ARPAC within thirty (30) days of warranty part shipment, freight prepaid, to receive a credit to this purchase order number. Failure to do so will result in zero credit being applied to the original P.O. or may void this warranty. All returned parts are subject to factory inspection. ARPAC reserves the right to determine the cause of failure and the subsequent inclusion of the replacement part under this warranty. Defective parts that have been disassembled or damaged during removal or otherwise tampered with will not be covered under this warranty.

Damage caused during transport is the responsibility of the carrier and is not covered under this warranty. All damages detected upon receipt of equipment should be reported immediately to the carrier and ARPAC should be notified.

ARPAC shall in no event be held liable for any direct, indirect, incidental or consequential damage, losses, expenses or delay caused by defective parts and will not accept any charges for work performed by Buyer in making adjustments or repairs to the Products unless such work has been authorized in writing by ARPAC. Except as stated herein, ARPAC makes no other warranty, expressed or implied, nor does it assume or authorize anyone else to assume for it, any other obligation relating to our products or any products.

Any Product or component not of ARPAC's own manufacture is not covered by this warranty and is sold to Buyer only with such warranty, if any, as is provided by such manufacturer, to the extent ARPAC and its assigns are able or entitled to enforce such warranty. Such items are not warranted by ARPAC in any way.

When components are sold to be assembled in combination of Buyer's design, the warranty shall be limited to each separate component and shall not apply to any combinations or components.

EXCEPT AS EXPRESSLY STATED ABOVE, ARPAC MAKES NO WARRANTY, EXPRESS OR IMPLIED, WHETHER OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OR USE OR OTHERWISE, ON THE PRODUCTS, OR ANY PARTS OR LABOR FURNISHED DURING THE SALE, DELIVERY OR SERVICING OF THE PRODUCTS.

ARPAC factory trained, qualified technical services personnel are available for start-up and instructional assistance. If the customer does not utilize ARPAC personnel for this function, ARPAC is only liable for replacement of defective parts, not for labor or expenses necessary to adjust any problems during the start-up period.

ARPAC personnel are available for ARPAC equipment training, either on-site/hands on or in classroom environment, supported by visual aids and literature, to be contracted for by a separate purchase order.

1.1 Chapter Overview

This manual provides installation, operation and service information for the EL-2000 Series Tray/Case Loader. This manual also includes a spare parts list for the machine.



Figure 1-1. EL-2000 Series Tray/Case Loader

1.1.1 About Arpac

Thank you for choosing ARPAC for your packaging equipment. We sincerely appreciate your business.

For over 47 years, ARPAC has been a leader in secondary packaging machinery with proven experience in designing and manufacturing complex integrated packaging lines. As an experienced Original Equipment Manufacturer (OEM) integrator, ARPAC has in-house capabilities to conceptualize, manufacture, install and service complete end-of-line packaging solutions.

ARPAC is renowned for providing high quality end-of-line packaging machinery to consumer goods and industrial product producers. We deliver solutions to producers of food, beverage, building supplies, automotive products, printed publications, personal care products and a wide variety of packaged goods.

Corporate Office

Conveniently located just minutes from Chicago's O'Hare International Airport.

ARPAC

9555 Irving Park Road

Schiller Park, IL 60176

www.arpac.com

847-678-9034

A Duravant Company

1.1.2 Machine Features

ARPAC's EL-2000 SERIES intermittent motion end-load tray/case loader is designed to serve a wide range of industries. At speeds up to 25 trays/cases per minute, this rugged system helps minimize labor requirements and increases production output.

Material savings are realized by the end-load style tray/case. These tray/cases use less materials than conventional top-load style containers.

By combining product accumulation, tray/case forming, loading and sealing into a single compact system, the EL-2000 SERIES is well suited to handle a wide range of product configurations and applications including: plastic bottles, cans, boxes, folding cartons, bags and glass jars.

ARPAC's EL-2000 SERIES is easily integrated into new and existing production lines with other ARPAC packaging equipment.

- Intermittent motion end-load tray loader/case packer
- Completely integrated system that collates product, loads into a tray/case, forms and seals
- Heavy-duty rugged construction designed for high durability and around-the-clock operation
- Laser cut and CNC machined components for maximum precision
- Powder coat finish that provides a durable scratch resistant surface and prevents corrosion
- Speeds up to 25 cycles per minute
- Allen-Bradley® programmable logic controller
- ARPAC operator interface with self-diagnostics, cycle counting and system interlocks
- Digital controls for conveyor speeds, timing and temperature settings ensuring fast accurate setup when changing product size
- Designed to integrate with custom line controls
- Gentle product handling with pneumatic mechanical or servo-driven system
- Rapid changeovers in less than 30 minutes
- Vacuum blank feed handles variation in corrugated board and can be resupplied while machine is operating
- Low blank alert
- Durable Intralox conveyor belts eliminate tracking problems
- Nordson ProBlue® hot melt adhesive system for superior application flexibility and adhesion
- NEMA 12 electrical cabinet and controls

1.2 Machine Specifications

1.2.1 Equipment Dimensions

Refer to foldout drawing on next page for layout dimensions.

1.2.2 Project Specifications

Specifications	

Table 1-1: Specifications

1.3 Using This Manual

This manual is an operations and maintenance manual for ARPAC packaging equipment. Use this manual if you are responsible for using, operating and maintaining the equipment. It is organized in a manner that can be easily understood by personnel with reasonable experience. This manual is intended to provide clear and simple explanations on how to safely operate and maintain the equipment.

If operated and maintained correctly, this machine is designed to provide the user years of service. It combines up-to-date, state-of-the art technology as well as ARPAC's enormous experience in the area of packaging systems.

1.3.1 Graphical Notations

To help communicate hazardous and nonhazardous alerts, the following graphics are used through out this manual.

Hazard Alerts



DANGER indicates a hazardous situation which, if not avoided, will result in serious injury or death



WARNING indicates a hazardous situation which, if not avoided, could result in serious injury or death



CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury



NOTICE indicates information considered important, but not directly injury related (i.e. could cause equipment or property damage)

Non-Hazard Alerts



Indicates information considered important



Indicates detailed on complex or difficult procedures.



**Required
Tools**

Indicates the need for special tools that may be required to perform a procedure or task.

1.3.2 Photo's & illustrations

Photographs and illustration appear through out the manual for informational purposes. For highly complex and Engineered to Order (ETO) projects, actual machine photos, when possible, are used. However, not every photo shown in this manual will be of your specific machine(s).

NOTICE

Dimensions and specifications are approximates and drawings may not always be to scale.



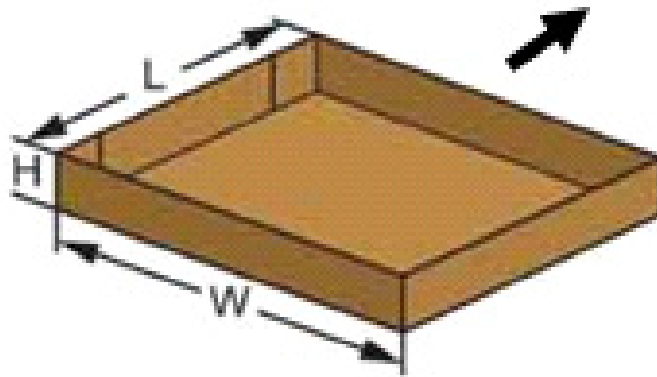
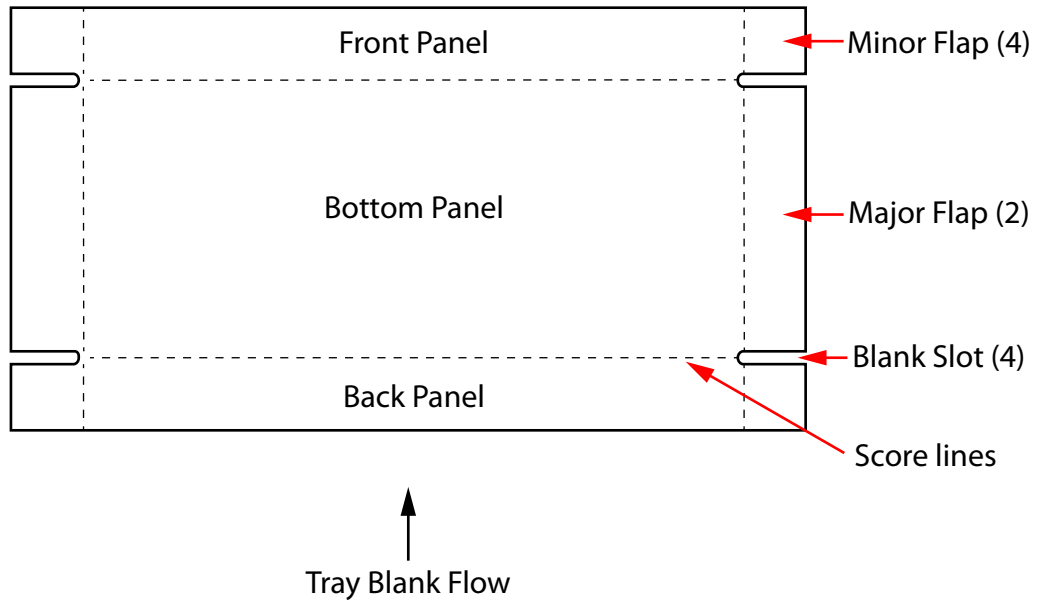
Some photo's may show safety guarding and fencing removed for illustration purposes only.

Never operate equipment with safety devices damaged, removed or modified.

1.3.3 Abbreviations

"	Inch
A	Ampere
cm	Centimeter
Hz	Hertz
ID	Inside Diameter
Kg	Kilogram
min	minute
Nl	Normal Liters
OD	Outside Diameter
Ph	Phase
psi	Pound Per Square Inch
SCFM	Standard Cubic Feet Per Minute
VAC	Voltage - Alternating Current

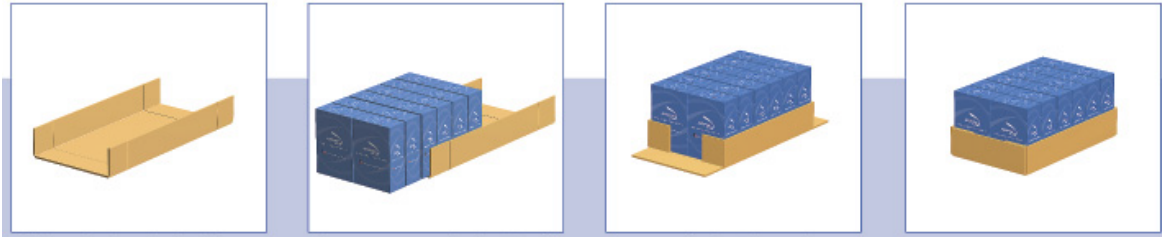
1.3.4 Tray Blank Nomenclature



1.4 Concept of Operation

The concept of this machine is to assemble a group of products into the specified configured pack pattern then place that product group into a 5 sided tray.

1.4.1 Tray Folding Sequence



- 1 A flat tray blank is pulled from a stack and fed into the machine
- 2 The blanks front and back panels are erected into an upright position as the blank is placed onto the index conveyor
- 3 The indexing conveyor advances the blank to the next position where the tray folding continues as the product group is pushed into the tray
- 4 The flaps of the boxes have glue applied then the folding is completed
- 5 The trayed product is then discharged from the machine.

2.1 Introduction

Every effort has been made by ARPAC to provide you with a safe machine. This section describes the safety precautions that should be taken when working with, on or around the equipment. It is essential that machine operators and maintenance personnel follow the safety information. Safety everyone's responsibility and the information in this chapter is vital to maintaining a quality work environment.

2.1.1 Statement of Liability

While this machine has been designed for safer operation, improper operation or carelessness may result in serious injury or death, harm to the environment and damage to equipment. The manufacturer or its agents and representatives assume no responsibility for the following.

- 1 Injury or danger from improper use of the machine.
- 2 Problems or hazards resulting from failure to maintain the equipment as specified in this manual.
- 3 Equipment which has been tampered with or modified. ARPAC is not liable for any damage or injury arising from failure to follow the instructions and procedures provided within the manuals or associated material, or from user failure to use caution when installing, operation, adjusting, or servicing this machine. ARPAC is not liable for damage or injury arising from the use of this product for any other use than that intended by the manufacturer.

2.2 Hazardous Alert Statements

To help communicate hazardous alerts, the following graphics are used through out this manual.



DANGER indicates a hazardous situation which, if not avoided, will result in serious injury or death



WARNING indicates a hazardous situation which, if not avoided, could result in serious injury or death



CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury



NOTICE indicates information considered important, but not directly injury related (i.e. could cause equipment or property damage)

2.3 Safety Precautions

2.3.1 Interfacing Equipment

Observe all applicable codes when interfacing this equipment to other equipment. Specific attention must be paid to any pinch points that may be created and the prevention of unintended restart of the equipment when the electrical interlocks shut it down.

2.3.2 Dressing for Safety

- Tie or pull back long, loose hair that can get caught in the machinery.
- Remove loose, dangling jewelry and rings and watches that can get caught in the machinery.
- Ensure that radio headphone wires do not get caught in the machinery and cause personal injury.
- Dress comfortably. Tight clothing restricts the ability to move freely and safely.
- Do not wear shoes with slippery soles, such as high heels or boots. Uncomfortable shoes can cause personal fatigue and reduce the ability to work well.
- Do not wear neckties or scarves.
- Roll loose sleeves or secure them with rubber bands.
- Button or remove open sweaters or jackets.
- Tuck in shirttails.

2.3.3 Maintaining a Clean Work Area

Keep the work area clean to avoid injuries and damage to the equipment. Inspect your work area for possible causes of accidents:

- Water and other spills are dangerous. Clean and dry the area immediately after a spill.
- Keep a 3-foot clear walkway around the entire machine. Boxes and papers are hazards when left on the floor near the machine.
- Keep all food and drink away from the machine.
- Keep your work area well lit. Report all burned-out bulbs to your supervisor.
- Do not leave tools and other loose items on the machine.
- A cluttered work area requires unnecessary and hasty movement that causes accidents. Keep all materials orderly and easily accessible.

2.4 Personnel Instructions

Read and understand the following personnel safety information before operating the equipment.

PPE

Make sure that you wear safety goggles and other personal protective equipment according to your company's safety standards when operating this machine. You may get injured if you do not.

Disconnect Power Before Servicing

Make sure that all the power is disconnected from machine before servicing it. You may get severely injured if you do not.

Proper Cleaning Solvents

Only use non-flammable, non-aerosol cleaning solvents to clean the equipment.

Keep Hands and Other Body Parts Clear

All personnel working around or coming in contact with the equipment must be instructed to keep their hands and other body parts of their person and clothing clear of all moving parts.

Ensure Safety Devices are Operational

Equipment must not be operated if safety devices, including guards and doors, removed, disconnected or damaged.

Never Reach Into Equipment

Personnel shall not reach into the equipment for any reason, including maintenance, adjustment or clearing of jams, while the equipment is in the cycle mode. The cycle mode stops when the guard doors are opened or when the CYCLE STOP button is pressed. The process may take a couple of seconds. Do not reach into the machine until the machine has stopped.

Before any person reaches into the equipment for maintenance or adjustment, air and electrical power shall be turned off using lockable shutoffs provided. The clearing of jams may be done while the machine is turned on, but not while in the cycle mode.

Anyone entering the machine for maintenance, troubleshooting or any procedure entailing the removal of guards or performing work at any point of operation, shall be required to observe all applicable lockout-tagout requirements.

2.5 Safety Labels

Safety labels are placed at various locations around the machine to communicate potential hazards.



Figure 2-1. Red & Black labels indicate DANGER hazards

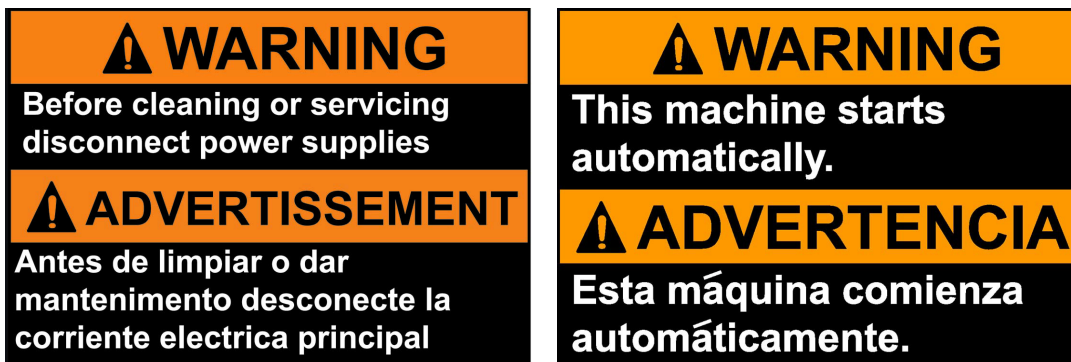


Figure 2-2. Orange & Black labels indicate WARNING hazards

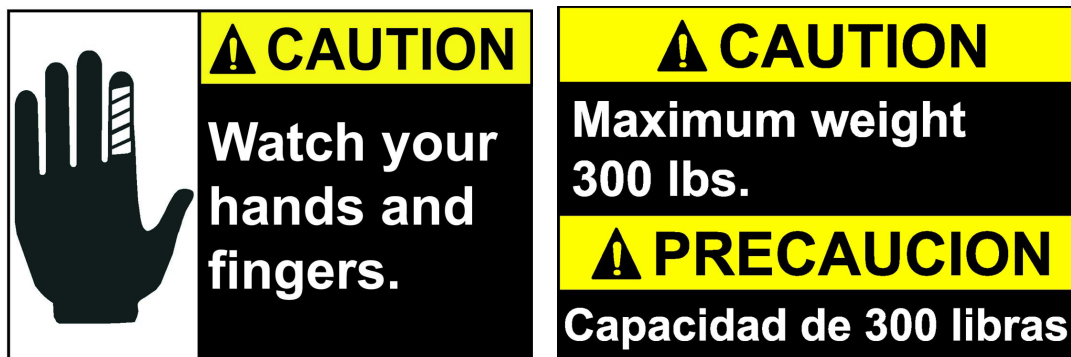


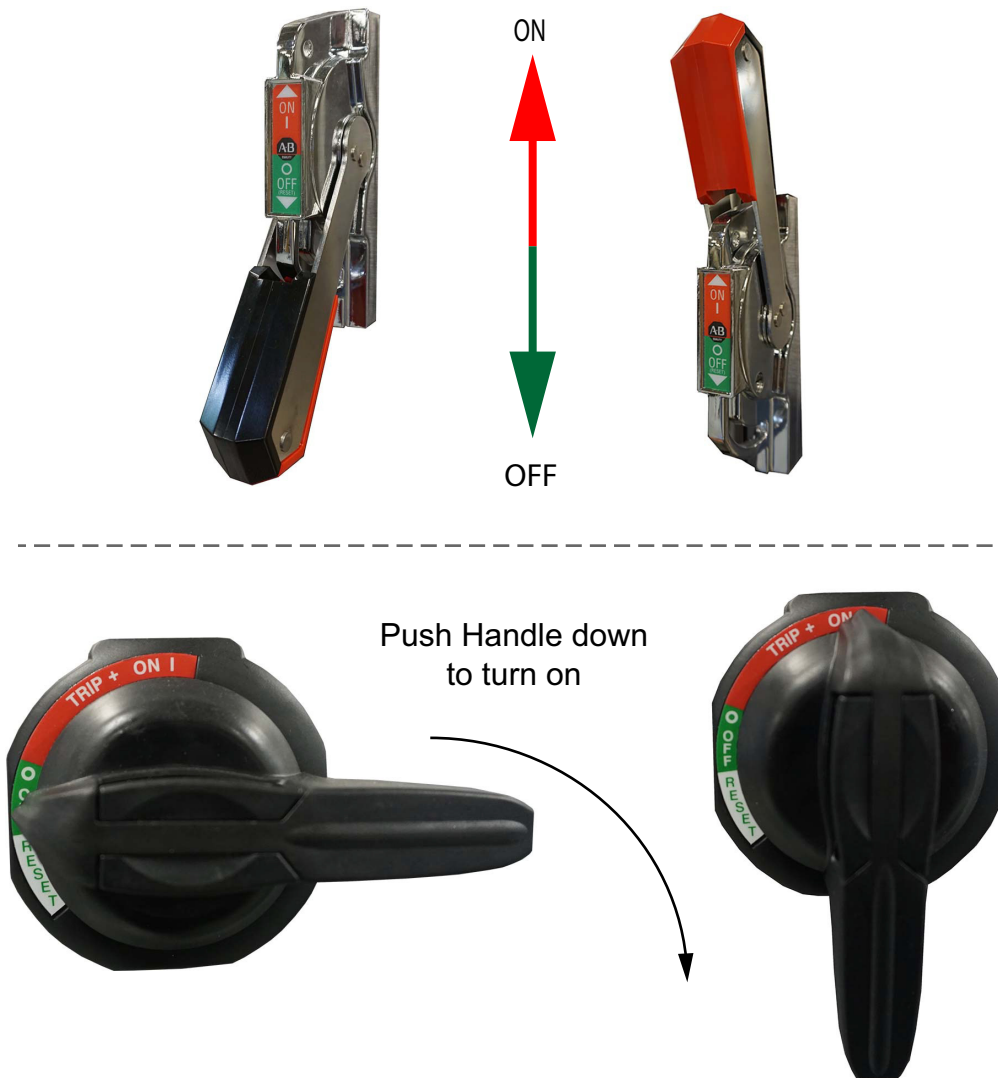
Figure 2-3. Yellow & Black labels indicate a Caution hazardous situation

2.6 Energy Isolating Devices

The section discusses the various devices and proper methods for isolating energy to prevent injuries when its necessary to stop the machine to clear jams or perform maintenance, for example.

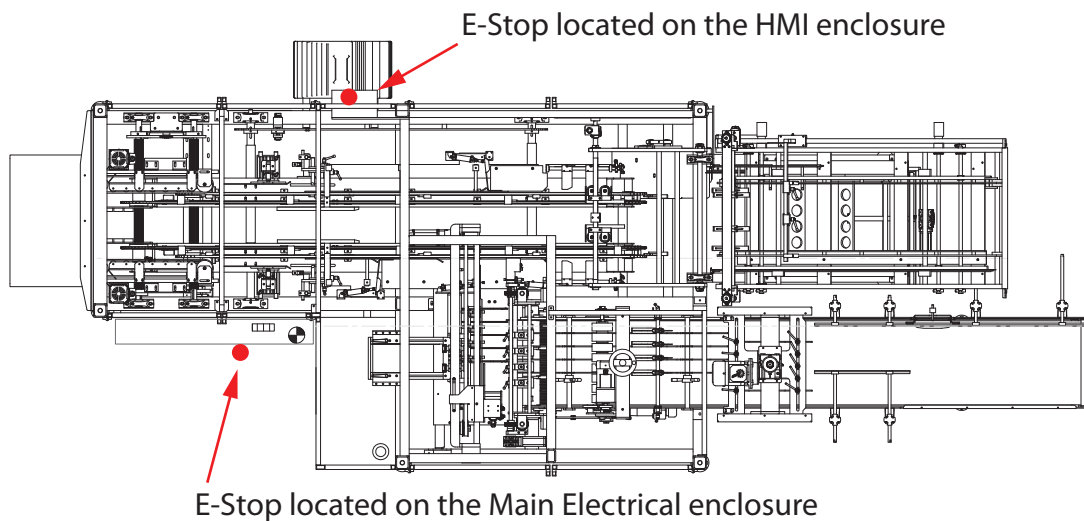
2.6.1 Main Disconnect Switch

The Main Disconnect is located on the main electrical cabinet. It is connected via a rod through the door to the Main Circuit Breaker that supplies all power to the equipment. Different types of switches are used, depending on the type and style of the enclosure.



2.6.2 Emergency Stop Buttons

Pressing any of these buttons will immediately stop the machine and drop all electrical and pneumatic power to the machine except the machine's internal controls. Below is a map showing the typical locations of the E-Stops for this Series of equipment.



NOTICE

Additional E-Stops are often added to the equipment per customer's specifications. Refer to the project specific layout for exact locations for your machine.

There are several different types of E-stop buttons. Some are lit, some are not. Some are reset by twisting the button, while others are reset by pulling them straight out. Whatever type of E-stop happens to be on your system, the function is identical. They all stop the machine immediately in case of an emergency.



E-Stop in normal run state.

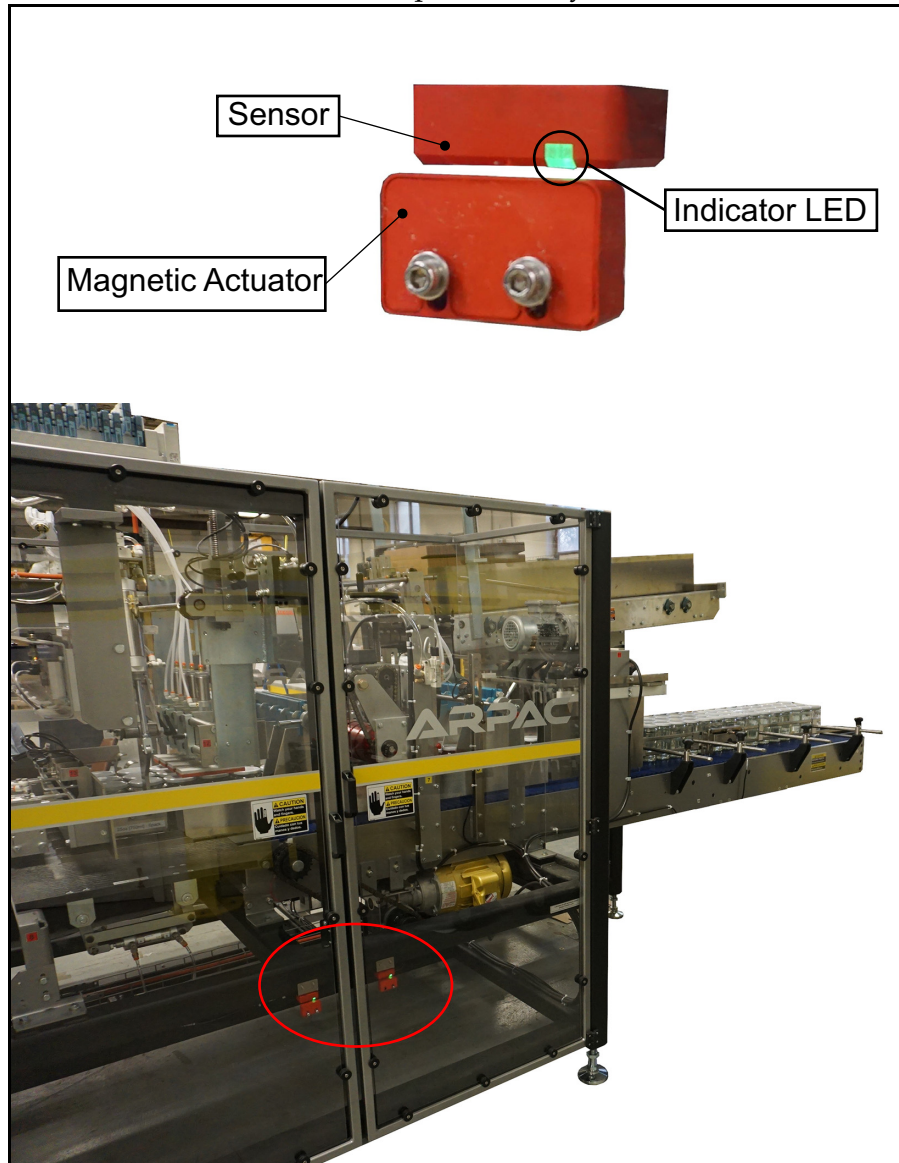


**E-Stop activated.
(LED illuminated)**



2.6.3 Guard Doors

Guard doors are equipped with an interlocking switch. When a door is opened, the switch is interrupted, disabling power to motion control devices, regardless of where the machine is in its cycle. Personnel shall not reach into the equipment for any reason, including maintenance, adjustments or clearing of jams, while the equipment is in the cycle mode. The process of stopping the cycle may take a couple of seconds. Do not reach into the machine until the machine has stopped. Refer to the electrical schematic for specific Safety Circuit information.



2.6.4 Motor Disconnects (If equipped)

If equipped, individual motors can be wired to an isolation disconnect that when in the “Off” position disables power to that motor only. These devices are not connected directly to the machine’s safety circuitry, but they can be wired to an input on the PLC so that a message can be displayed on the HMI to indicate that the motor is “Off”.



Figure 2-4. Motor Disconnect Switch

If a motor is connected to one of these disconnects, the disconnect will be within line of sight of the motor and identified as associated with that motor. If your machine has these disconnects installed, refer to the machine’s electrical schematic for more information.

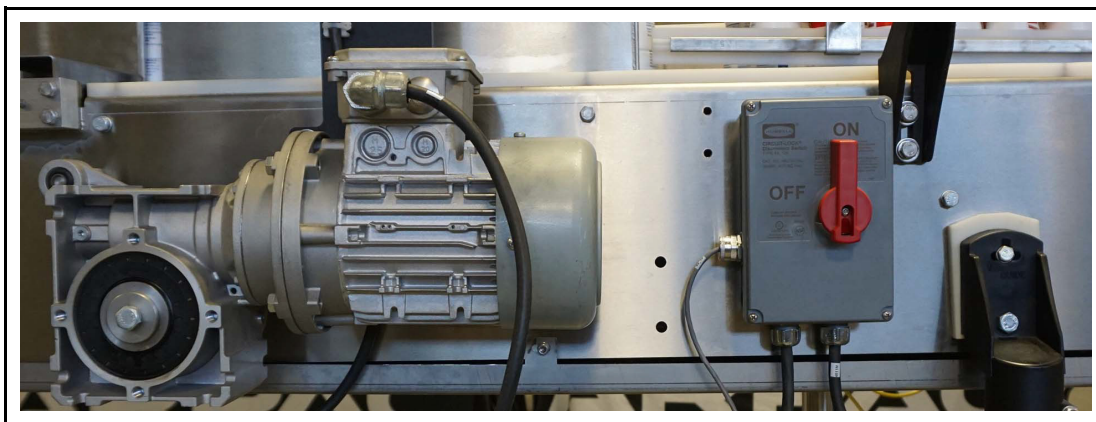


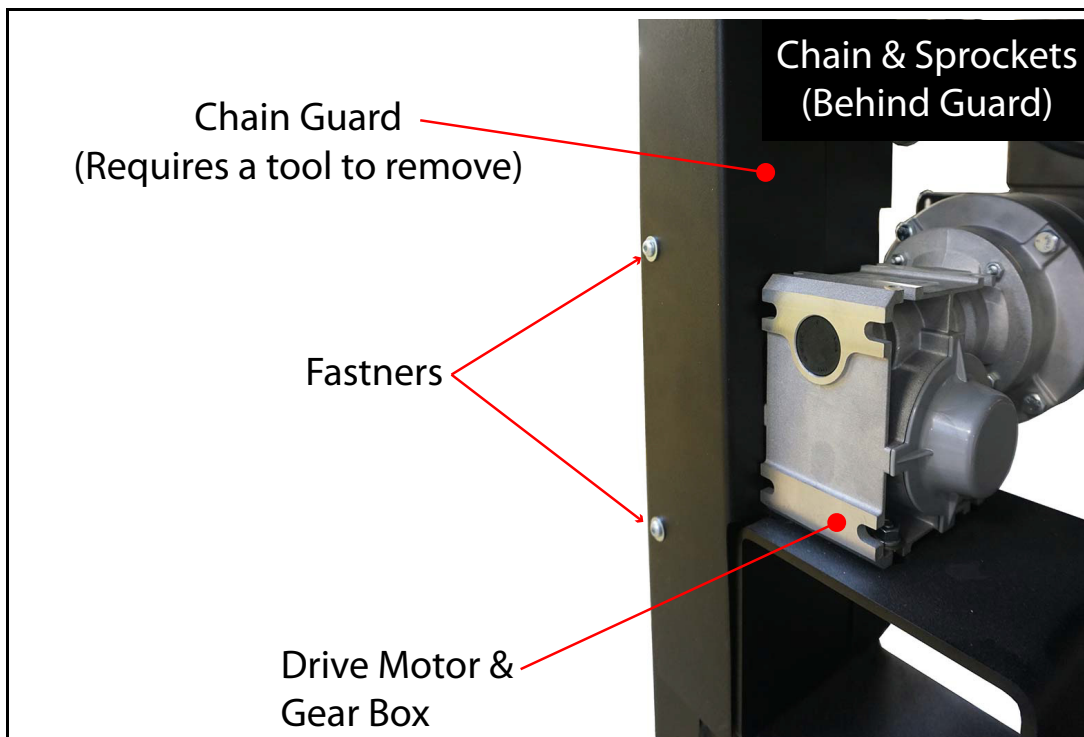
Figure 2-5. Disconnect shown with it's motor

2.7 Guarding

Guards covering chain drives are bolted to the machine, requiring a tool to remove



Equipment must never be operated if any safety devices, including guards and doors, are removed, disconnected or damaged.



2.8 Lock Out / Tag Out

You can lock the machine out by applying locks to the electrical main disconnect and the pneumatic regulator. Locking these two sections out will ensure safety when working on the equipment.

When you are going to work on ARPAC equipment, follow the Lock Out / Tag Out (LOTO) procedure to ensure safety.



Because companies tend to tailor the LOTO protocols specific to them, we advise all users to refer to their company's procedure manual. The LOTO procedure described here are the minimum requirements

2.8.1 Lockout/Tagout Kit

A typical lockout/tagout kit is shown in the figure below. ARPAC machines can be locked out with most standard lockout/tagout kits.



Figure 2-6. Typical LOTO Kit

2.8.2 Electrical LOTO

It is important to safely shut down the equipment and lock it out electrically before performing any maintenance.

- 1 Notify affected employees that the equipment is going to be locked out.
- 2 Safely shut down the equipment.
- 3 Complete the information on the tag.
- 4 Apply the lock to the main disconnect. (The example illustrates one type of main disconnect switch. Other styles have the same capacity for lock application.)

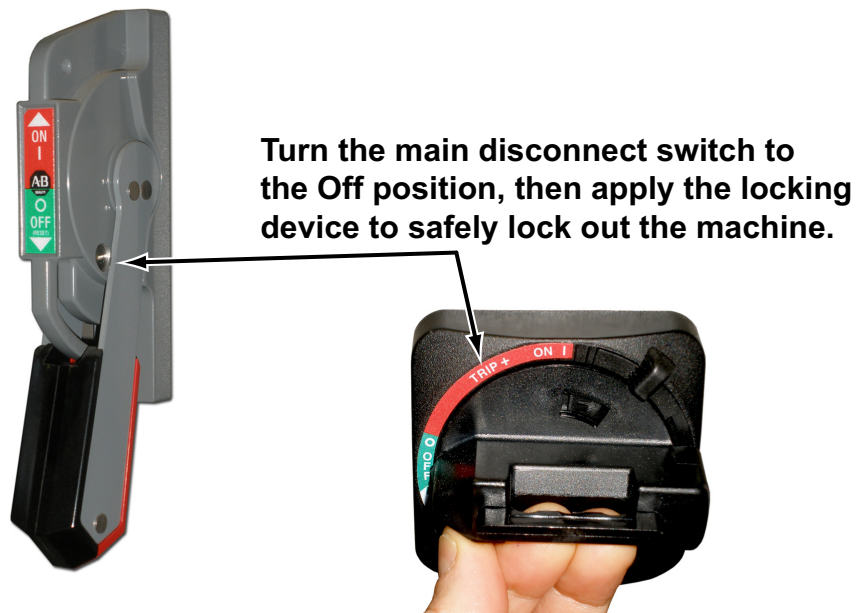


Figure 2-7. Lockout/Tagout at Main Disconnect

Verify power is off. The machine is now electrically locked out.



Never assume power has been isolated. Always verify.

2.8.3 Pneumatic Lockout/Tagout

To lock out the air supply:

- 1 Notify all affected persons that the equipment is being locked out.
- 2 Complete the information on the tag.
- 3 Turn the red knob clock-wise to shut off the valve and align the knockouts for the lock and apply lock.

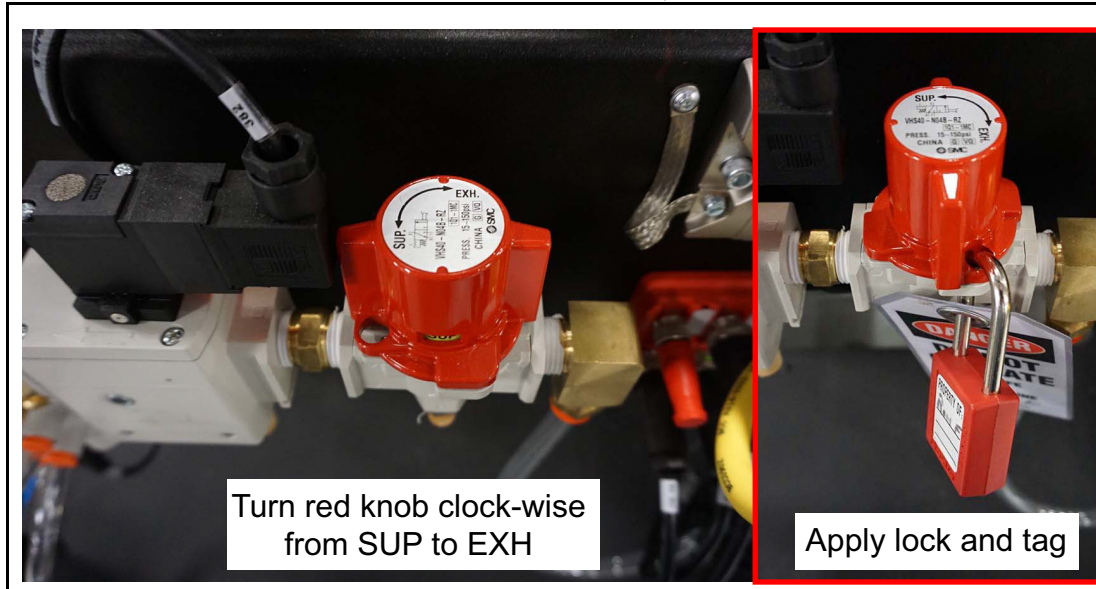


Figure 2-8. Lockout/Tagout at Pneumatic Regulator

Verify that there is no air present. The machine is now pneumatically locked out.

2.8.4 Restoring power and air to the Machine

Restore the machine to proper working order by the following steps:

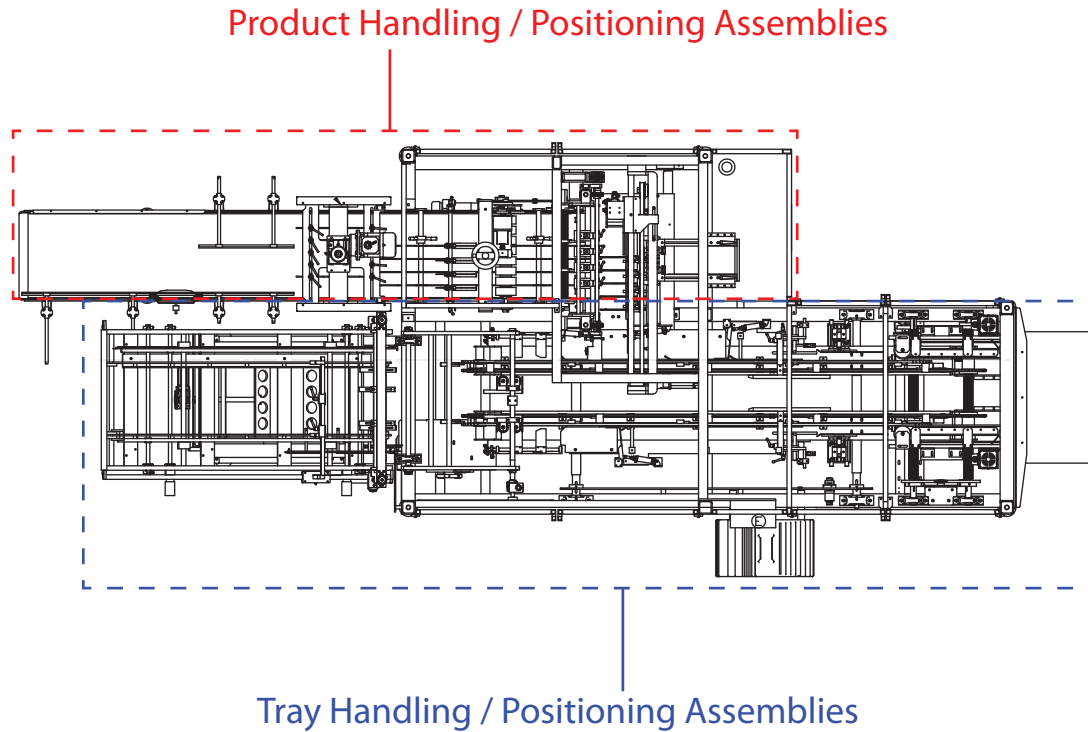
- 1** Ensure all personnel are clear of the machine.
- 2** Remove all tools and loose parts that may have been left behind from the maintenance procedure.
- 3** Replace all safety guarding that was removed for the maintenance procedure.
- 4** Remove locks and tags.
- 5** Notify affected employees that the lockout condition has been removed.
- 6** Restore power to the machine at the main disconnect.
- 7** Clear the machine using the human machine interface (HMI).
- 8** Ensure that any E-stops have been properly reset.
- 9** The machine is now restored to a run condition.

3.1 Overview

This section describes the machine's sub-assemblies and how they function under normal conditions. The figure below shows the location of the major sub-assemblies. For the purposes of this manual, the mechanical sub-assemblies are group together as either product handling / positioning assemblies or tray handling / positioning assemblies. The table on the following page is a complete list of sub-assemblies.



Figure 3-1. EL-2000 Series Tray/Case Loader



Mechanical Sub-Assemblies	
PRODUCT HANDLING / POSITIONING	TRAY HANDLING / POSITIONING
In-feed Conveyor	Blank Magazine
Product Agitator	Pick & Place
Product Detect	Indexing Conveyor
Top Drive	Flap Hold Down
Product Stop	Minor Flap Tuckers
Dead Plate with Pop-Up Guides	Tray Forming Guide
Step Back	Glue System
Servo Ram	Side Compression Plates
Gate Assemblies	Side Discharge

3.2 Product Handling / Positioning Assemblies

3.2.1 In-feed Conveyor

The in-feed conveyor is an independently driven, Intralox® belted conveyor. It is located at the front of the machine. The purpose of the conveyor is to transfer the product from the customers' conveyor to the side transfer position where it will be pushed onto a waiting tray blank.

The conveyor is fitted with sensors that control the flow of product based on incoming product levels and a series of guides to control the position of the product.



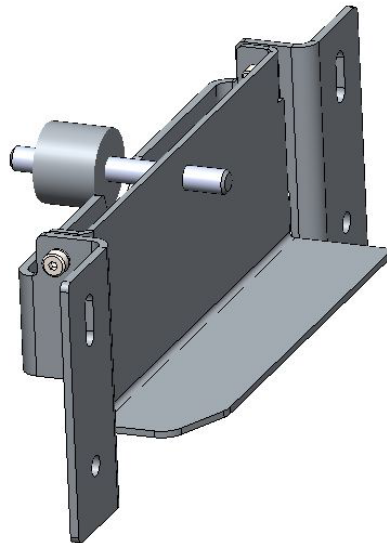
Figure 3-2. In-feed Conveyor

The conveyor starts running after the machine is put into the cycle mode. Product entering the conveyor travels across a transfer plate. The product then travels down the conveyor and disperses into individual lanes and continue moving forward until they contact the step back plate at the end of the conveyor belt.

3.2.1.1 Accumulation Detector

The accumulation detector, positioned along the side of the conveyor, has a metal plate that extends out over the conveyor belt. When enough product accumulates on the conveyor, it pushes the plate back to energize a sensor that signals the conveyor has enough product in place to run.

The counter-weight pushes the plate away from the sensor when the conveyor lacks product. A period of inactivity, sensed by this sensor, will turn off the conveyor drive causing the belt to stop running. A *"waiting for product"* message will appear on the HMI.

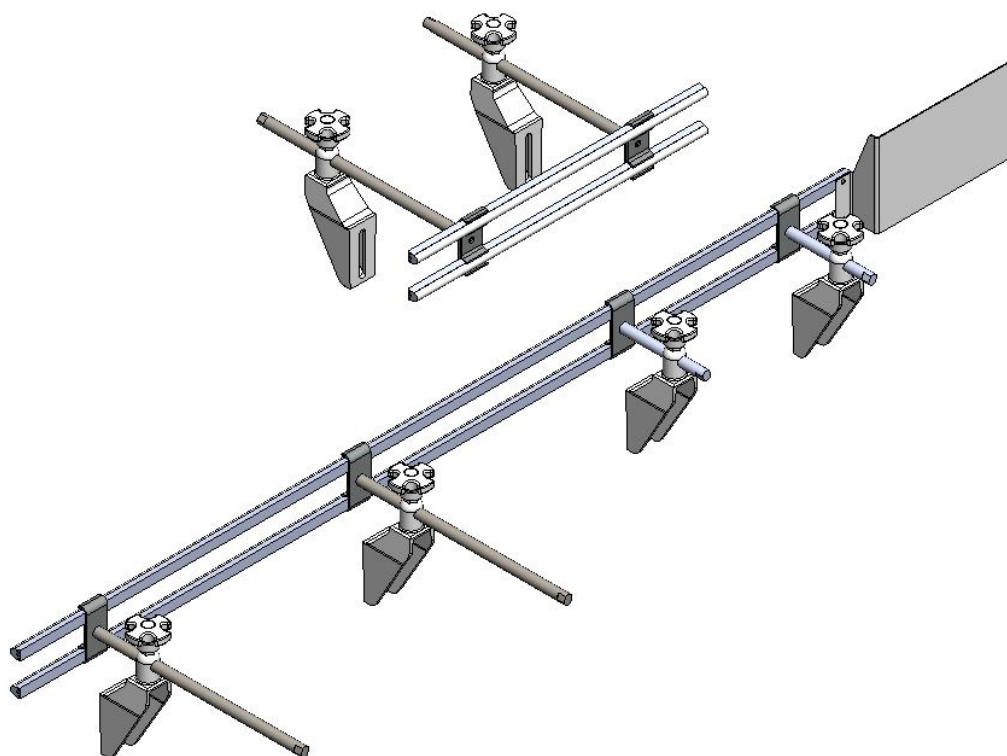


- 1 Detector Plate
- 2 Proximity Sensor
- 3 Counter-weight

3.2.1.2 Side Rails

Sets of adjustable Valu-Guides® side rails contain the product on the conveyor.

The downstream end should be set wide enough to accept the incoming product and the upstream end needs to be set to width of the product agitator.



3.2.2 Product Agitator

An oscillating product agitator is included to keep the product from stalling on the lane guides. The agitator is made up of a set of oscillating plates that gently agitate the product from side to side.

Product is maintained by guides in lanes as they advance.

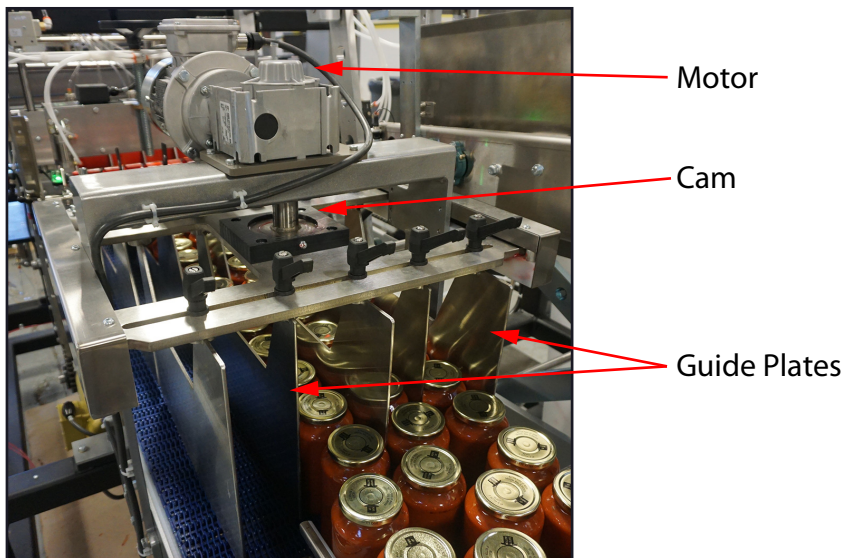
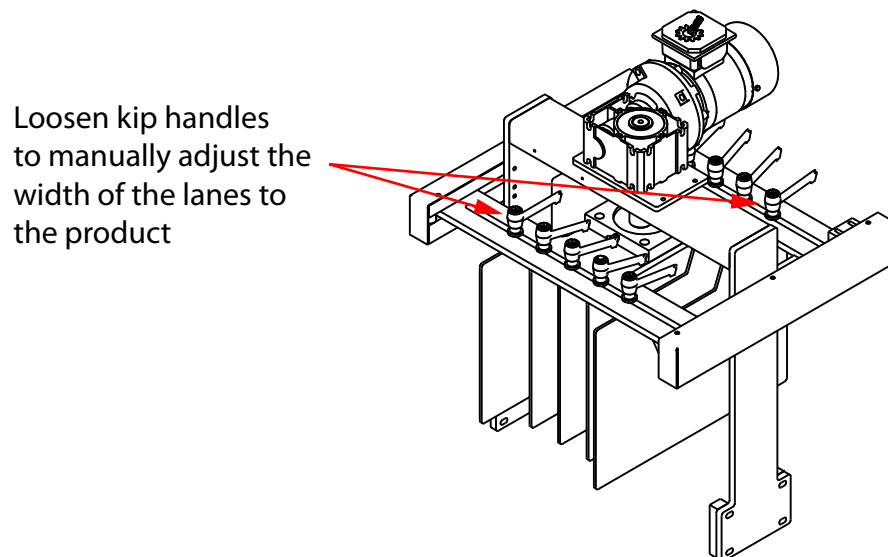


Figure 3-3. Agitator



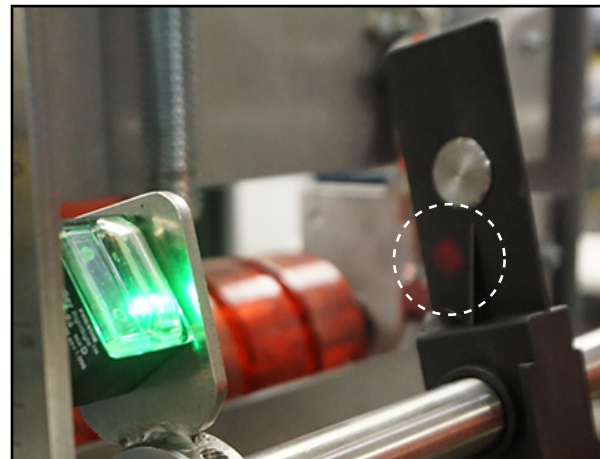
3.2.3 Product Detect

The product detect assembly follows the agitator. The purpose of the product detect is to monitor the presence of product.



Figure 3-4. Product Detect Assembly

Lack of product due to a jam at the agitator or on a lane guide or fallen product in a lane will cause the flag to drop and block the photo-eye.



Notice the LED's of the PE. When blocked, the orange LED is OFF because the PE isn't receiving the signal back from the reflector.

3.2.4 Top Drive

The top drive assembly follows the product detect assembly. The purpose of the assembly is to positively push down onto and drive the product forward to close the gap and therefore speed up the cycle time of getting product to the step back plate quicker.

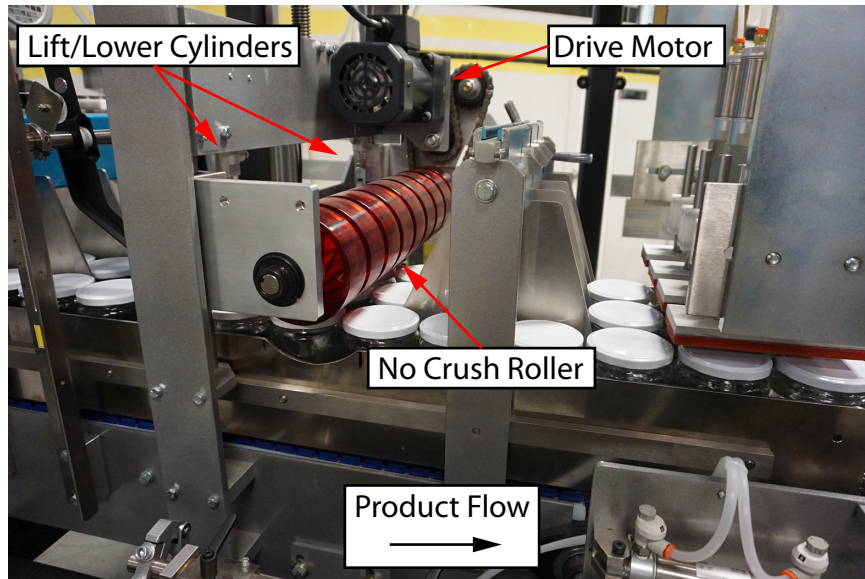
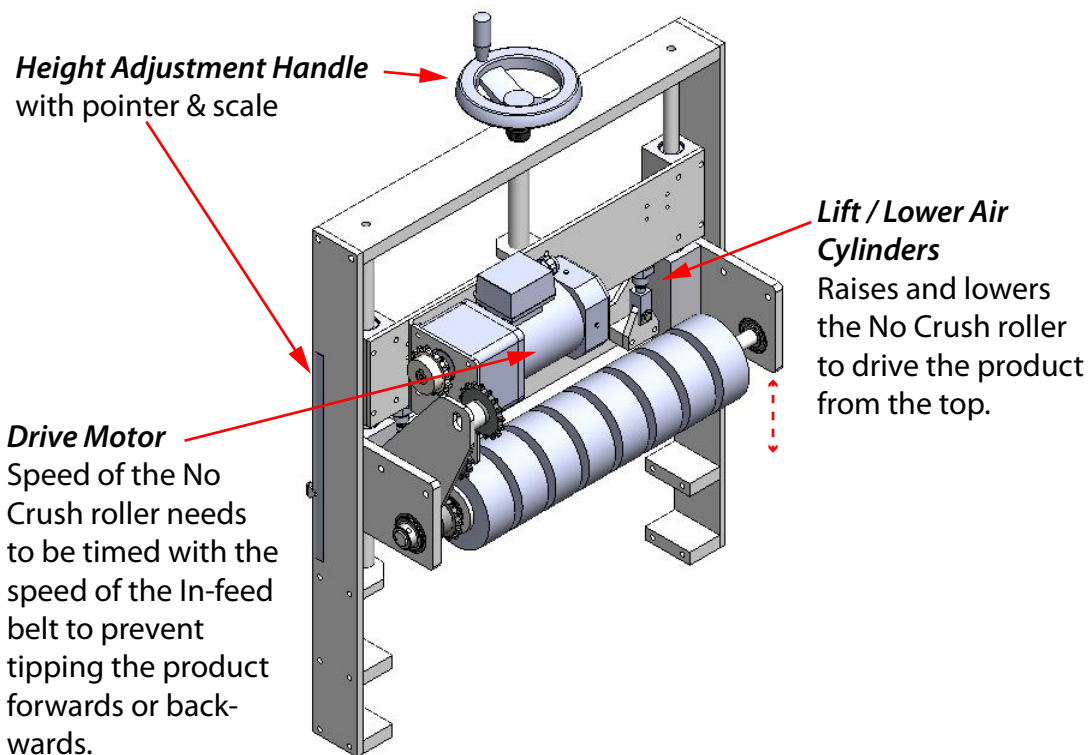


Figure 3-5. Top Drive Assembly



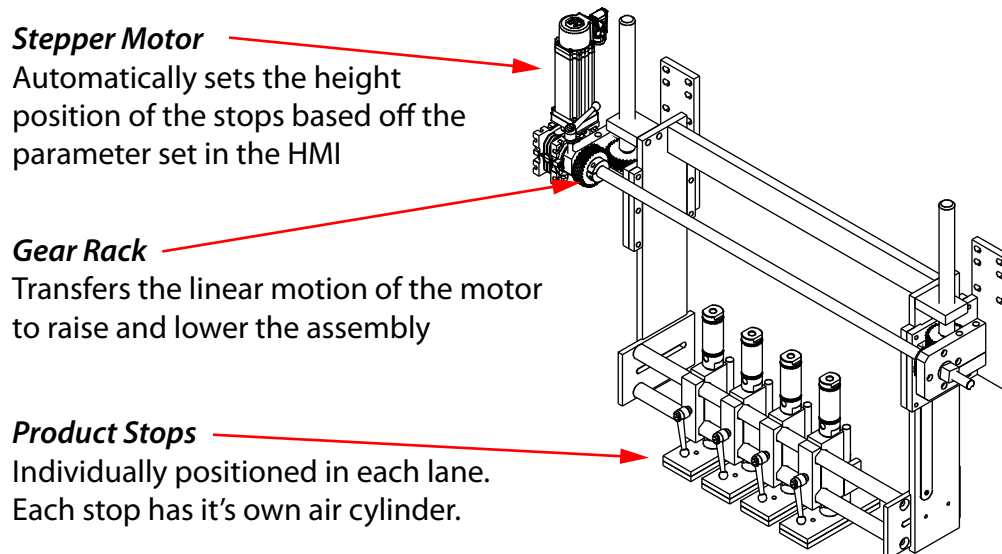
3.2.5 Product Stop

The pneumatically controlled product stops follow the top drive assembly. It consists of individual hold down assemblies that work together. Its purpose is to hold all product upstream of the ram area so that the product ram can function without interference.



Figure 3-6. Product Stops

When the product reaches the step back and triggers the photo eyes, the product stops lower preventing upstream products from entering the main ram section. When the ram reaches its home position, the product stops rise, releasing a new set of products to the ram area.



3.2.6 Dead Plate with Pop-Up Guides

The dead plate with pop-up guides is located directly after the product stops, under the ram assembly. The purpose of the dead plate and pop-up guides is to provide alignment and stability of the product as well as providing a smooth transition from the ram area to the tray blank waiting on the indexing conveyor.

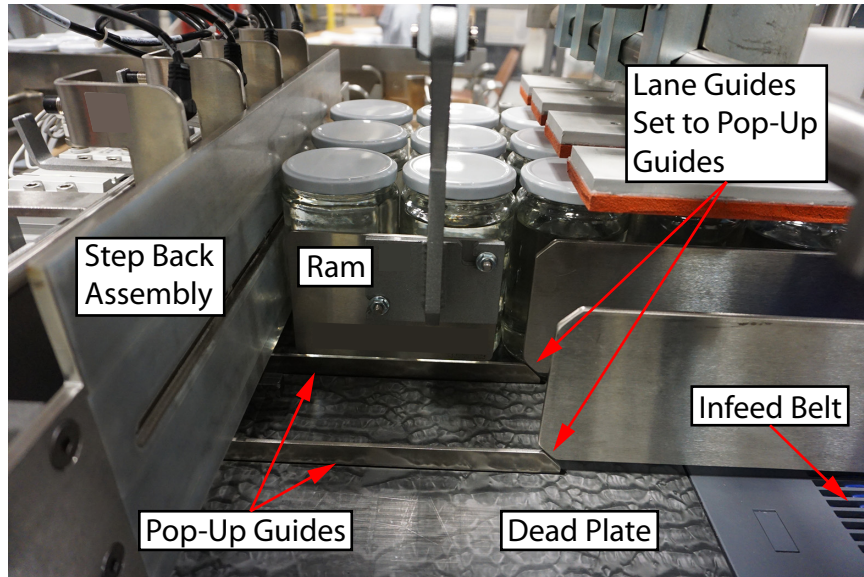
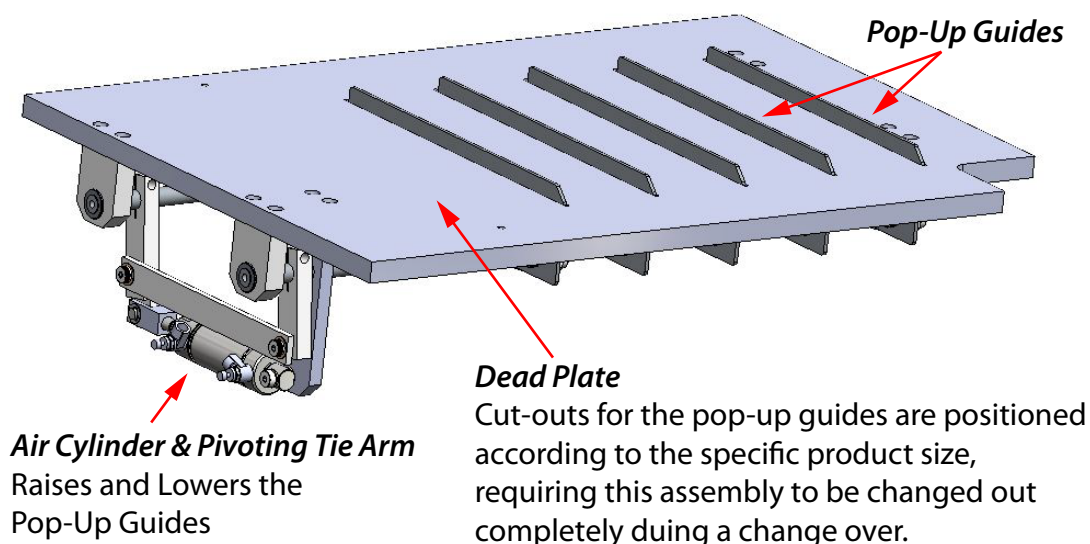


Figure 3-7. Dead Plate with Pop-Up Guides

The guides stay in the raised position until the product triggers the step back photo eyes. The step back will retreat and then the pop-up guides will drop down so that the ram can now push the products across the dead plate into the product load section.



3.2.7 Step Back

The step back consists of a retractable plate controlled by an air cylinder and a product detection system, mounted behind the stop plate. The purpose of the step back is to stop the product in the ram area and then move back to relieve pressure for a smooth transfer.

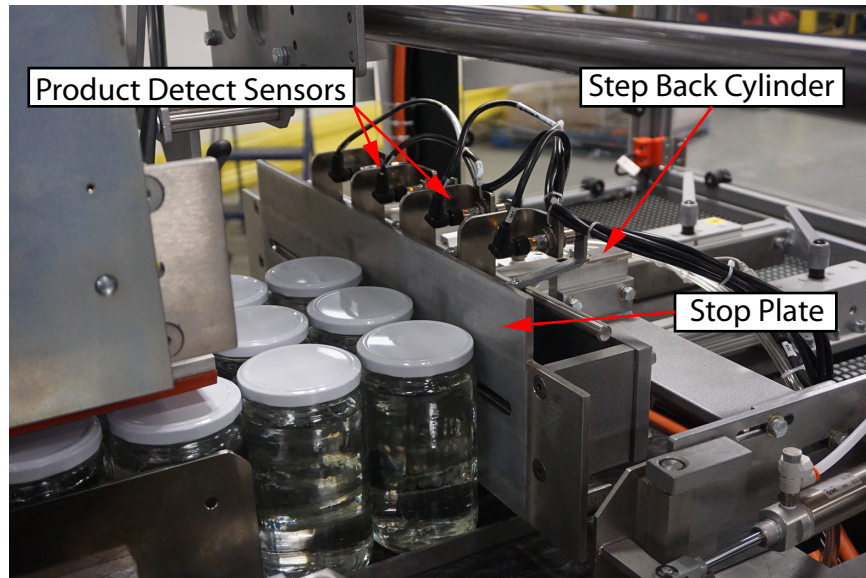
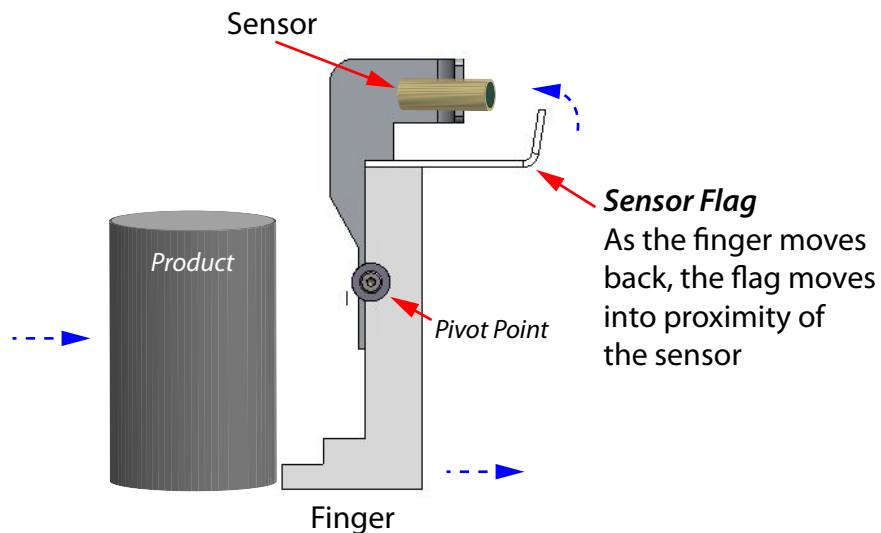


Figure 3-8. Step back Assembly

Product enters and pushes against the detection finger, causing the sensor flag to move in front of the sensor. Product needs to be detected in all lanes before the assembly will step back out of the way.

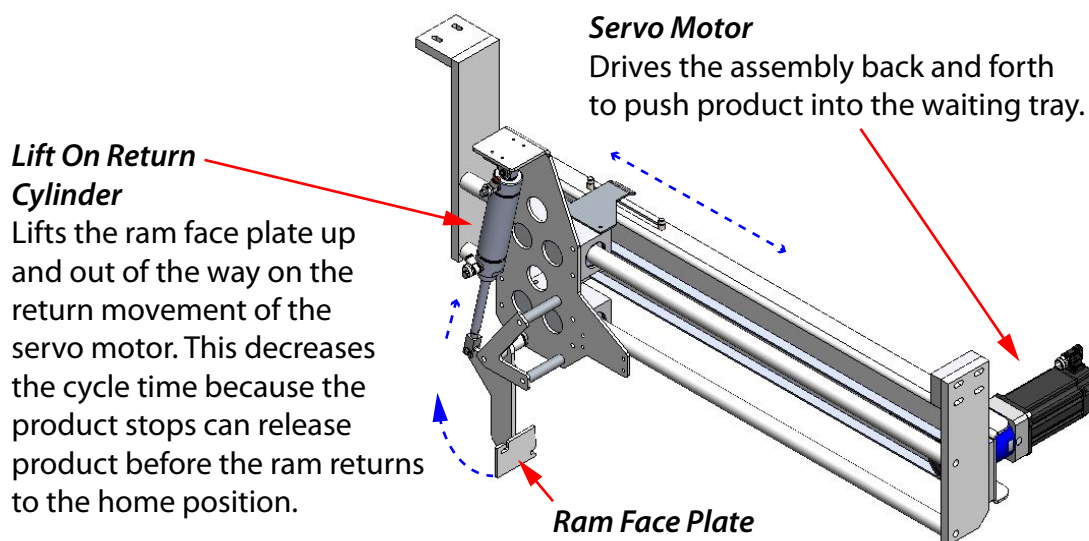


3.2.8 Servo Ram

The main ram is a servo motor driven device that pushes the group of product into the waiting tray. It is located just before the step back assembly. The assembly includes a pneumatically controlled “lift on return” face plate.



Figure 3-9. Servo Ram



3.2.9 Up & Down Stream Gates

The product gates consist of two pneumatically controlled plates. They are located between the ram area and the product load section. The gates are designed to act as a guide for the products exiting the ram area and entering the product load section.

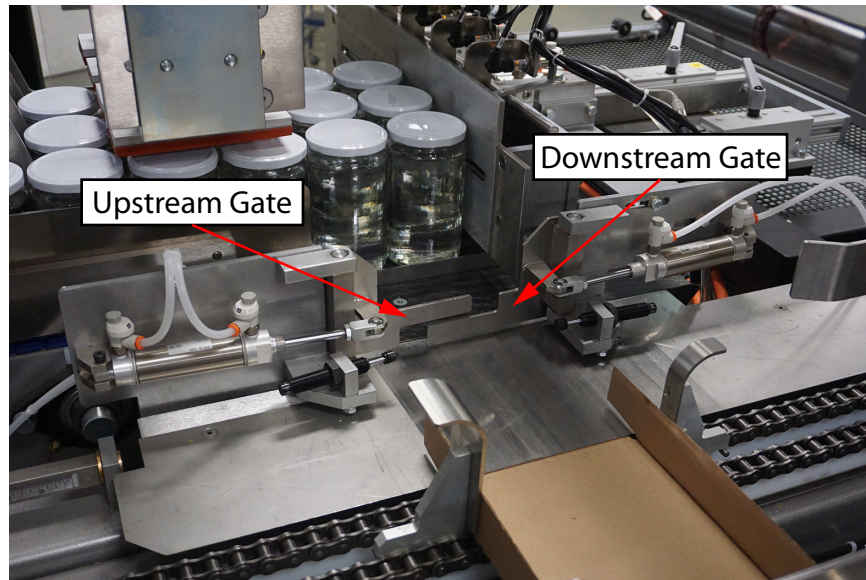


Figure 3-10.

The product gates are closed until product is detected at the step back. They open and act as side guides as the product ram moves the product from the dead plate to the product load section of the indexing conveyor.

3.3 Tray Handling / Positioning Assemblies

3.3.1 Blank Magazine

The blank magazine is located to one side of the in-feed section. The purpose of the assembly is to store and advance blanks to a point for the Pick and Place assembly to place blanks onto the indexing conveyor.

The blank magazine consists of auto adjust blank side guides, the height adjustment assembly, the blank pusher assembly and the vertical blank holder assembly.

This machine is equipped with a low blank supply proximity switch that signals the operator to refill the blanks.

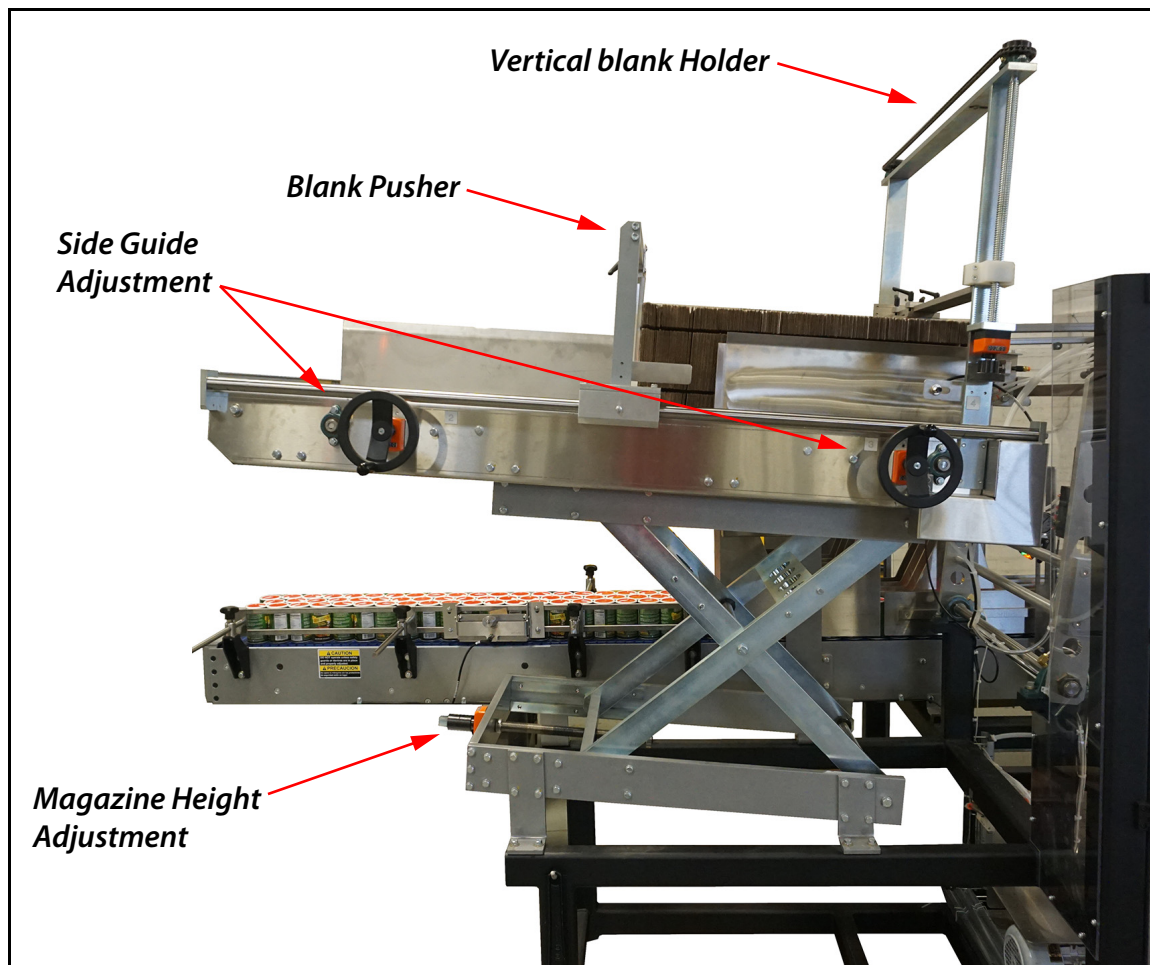
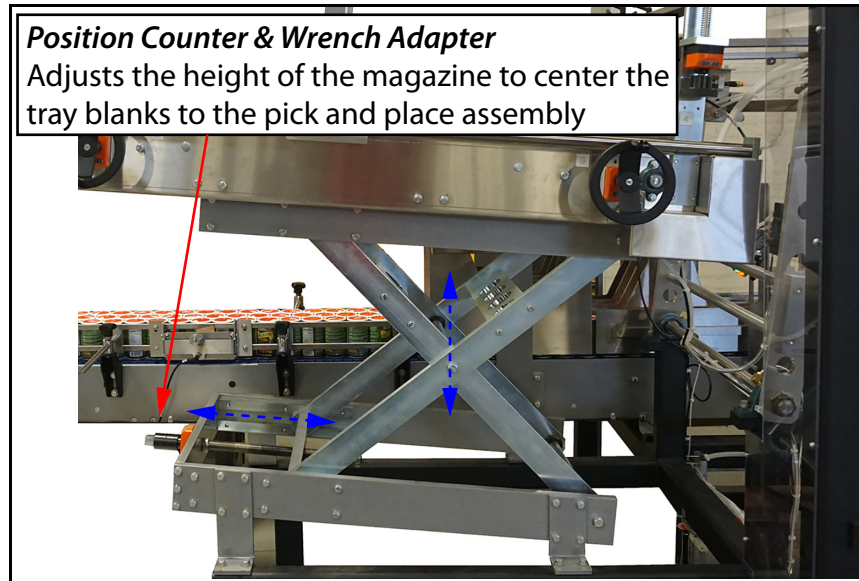


Figure 3-11. Blank Magazine

3.3.1.1 Magazine Height Adjustment Assembly

The position of the tray blank is determined by the height of the blank magazine. The pick point of the Pick & Place is fixed so the position of the trays needs to be changed for different size blanks.

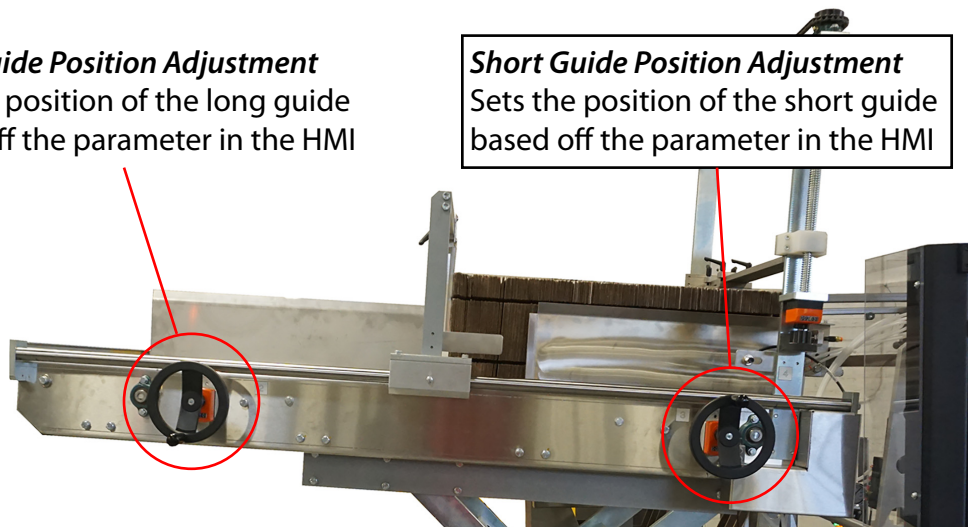


3.3.1.2 Side Guide Adjustment

The side guides are used to keep the tray blank in position for the pick and place assembly.

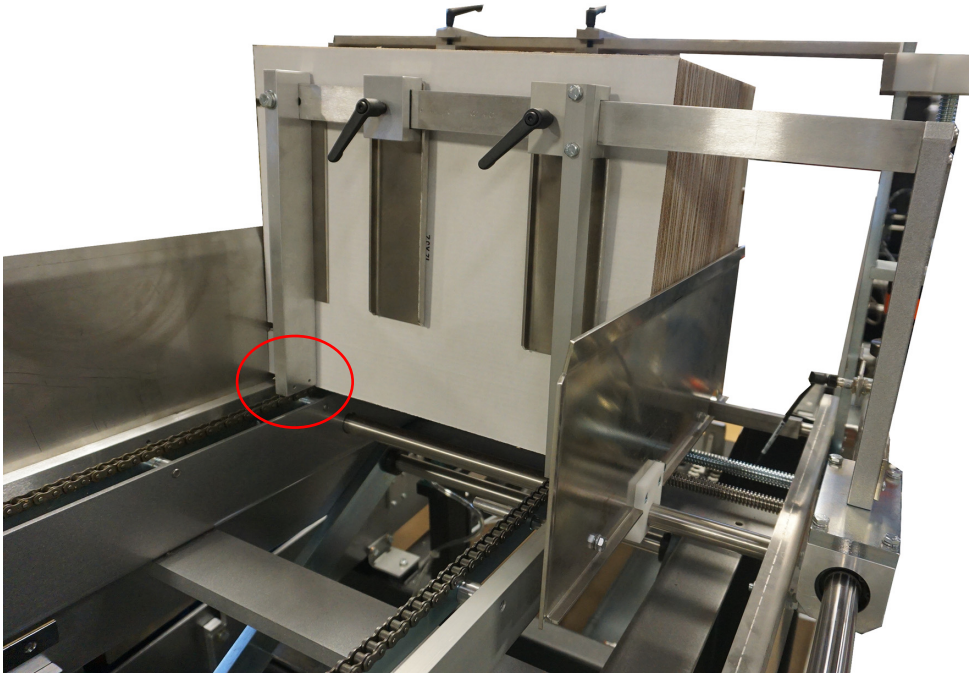
Long Guide Position Adjustment
Sets the position of the long guide based off the parameter in the HMI

Short Guide Position Adjustment
Sets the position of the short guide based off the parameter in the HMI

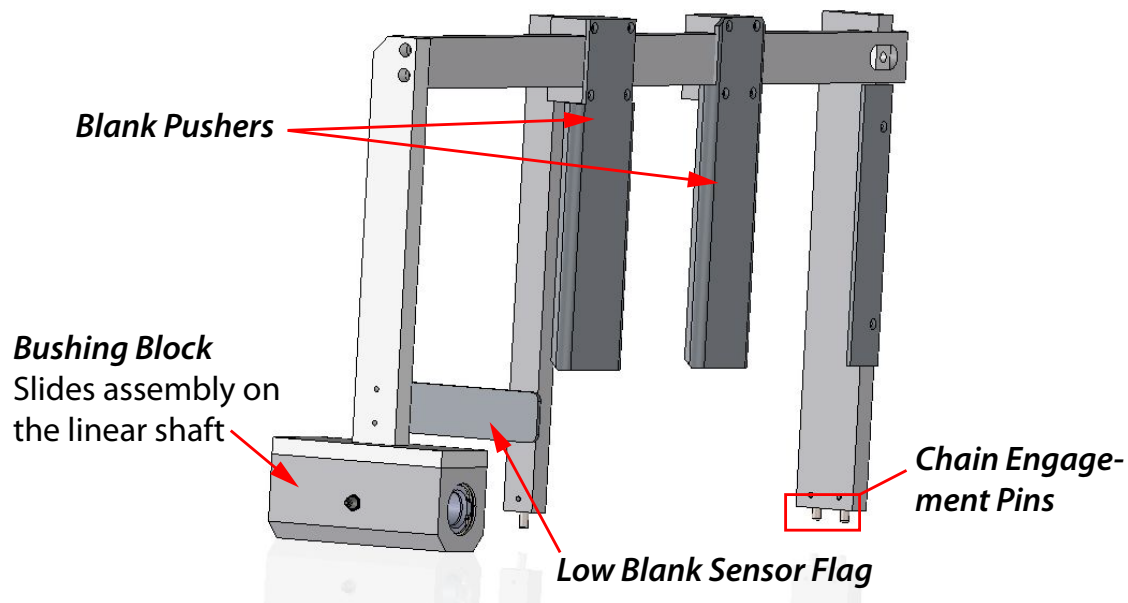


3.3.1.3 Blank Pusher Assembly

The blank pusher hold the blanks in an upright position in the blank holding area.

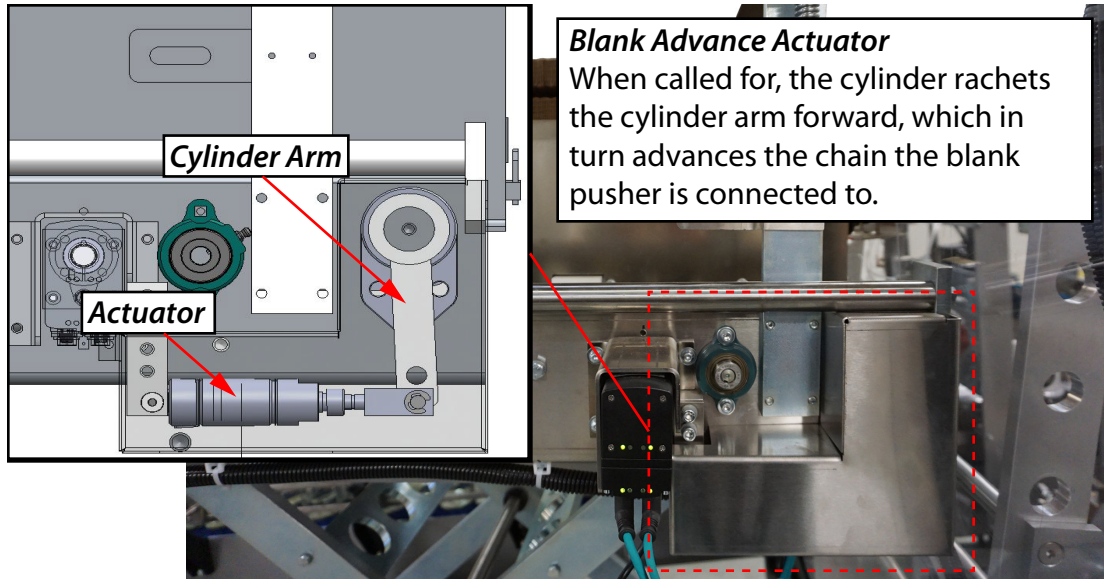


The pushers do not actually push the blanks across the blank assembly, but simply stabilize them as the chain conveyor moves them forward.



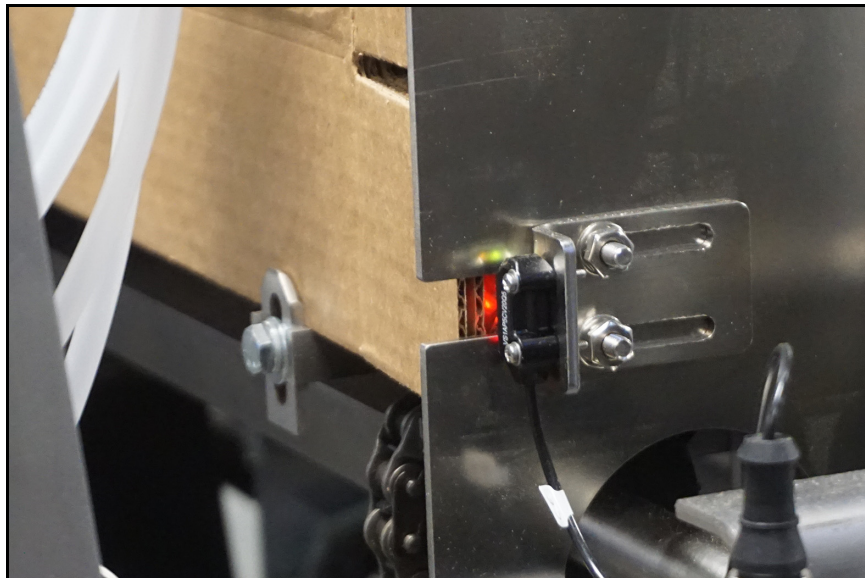
3.3.1.5 Blank Advance Actuator

Tray blanks resting on the chains are advanced by the blank advance actuator cylinder.



3.3.1.6 Low Blank Supply PE

As tray blanks are picked and placed, the low blank supply PE becomes unblocked. This condition sends a signal to the PLC to actuate the blank advance actuator.



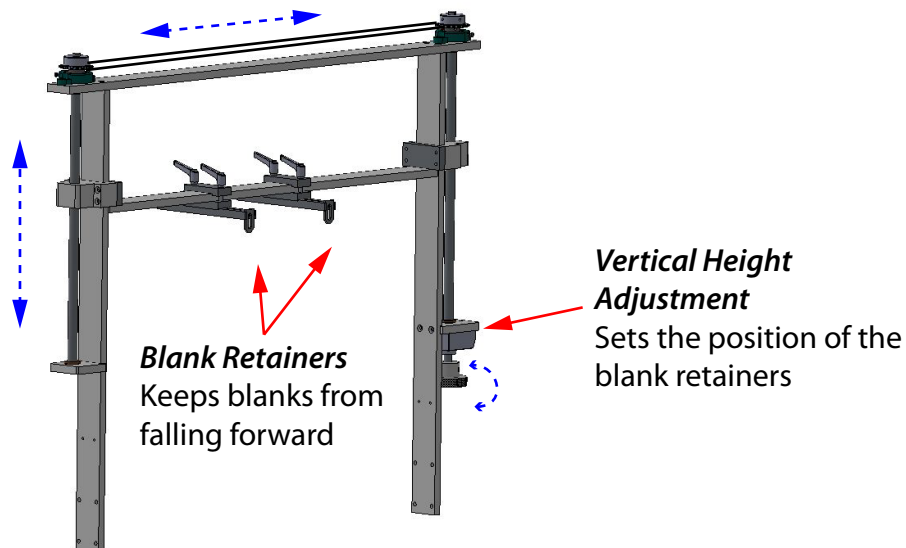
3.3.1.4 Vertical Blank Holder

The vertical blank holder keeps the tray blanks from falling out of the magazine.



Figure 3-12. Vertical Blank Holder

Use the vertical height adjustment knob to position the holder to the height of the blank. The dial indicator is used for repeatability.



3.3.2 Pick & Place

The pick and place assembly is located parallel to the in-feed and the very upstream end of the base machine. The assembly includes the suction cups to grab a waiting blank, the vacuum manifold that generates the vacuum for the suction cups, a guide rod that turns the suction cup assembly in and out, the connecting rod (attached to the gear motor and eccentric wheel) to bring the assembly up and down.

The purpose of the pick and place assembly is to oscillate up and down between the blank magazine and the indexing conveyor.

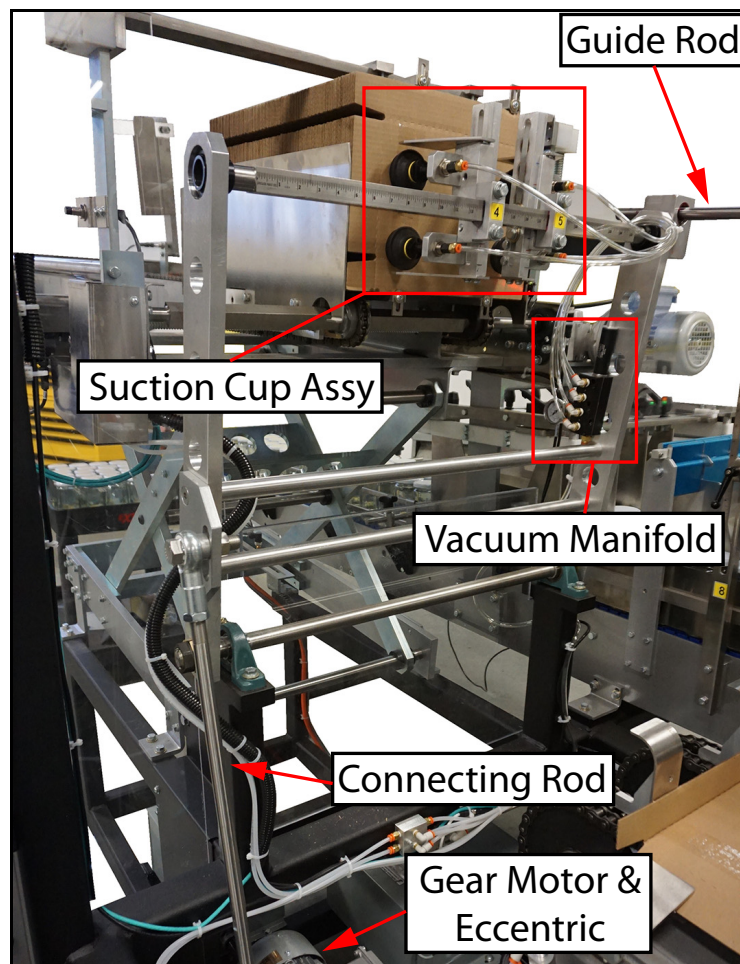


Figure 3-13. Pick and Place Assembly

The blank pick up assembly will raise and lower whether a blank is present or not.

Vacuum is generated at specific times to grab a blank and then release it as the assembly nears the indexing conveyor.

3.3.3 Indexing Conveyor

The indexing conveyor is a chain conveyor with a series of lugs. It is located in the center of the base machine. The purpose of this conveyor is to support and advance the tray blanks from the product load section to the glue and compression areas. All of the case forming and folding assemblies are mounted to this conveyor.

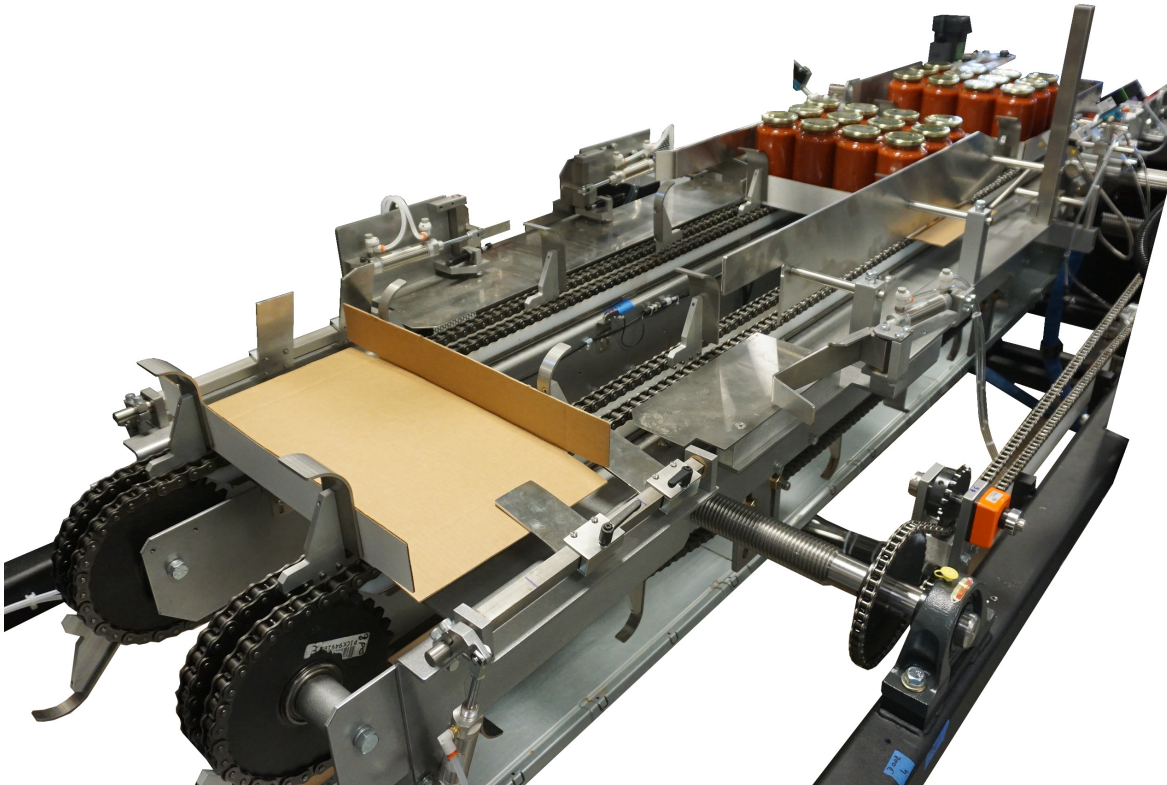
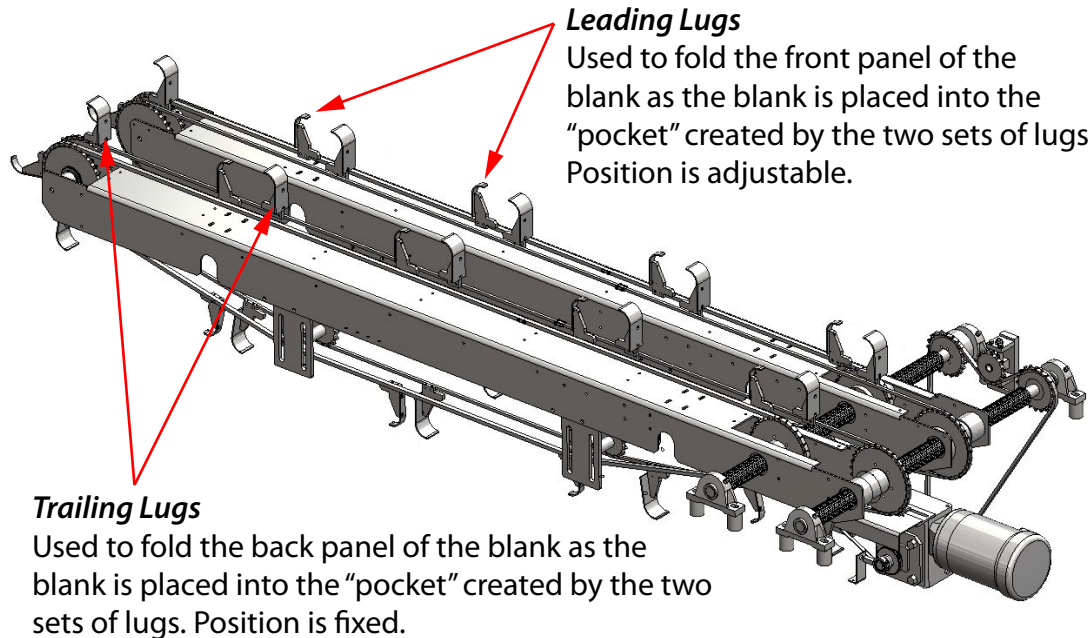


Figure 3-14. Index Conveyor

3.3.3.1 Leading and Trailing Lugs

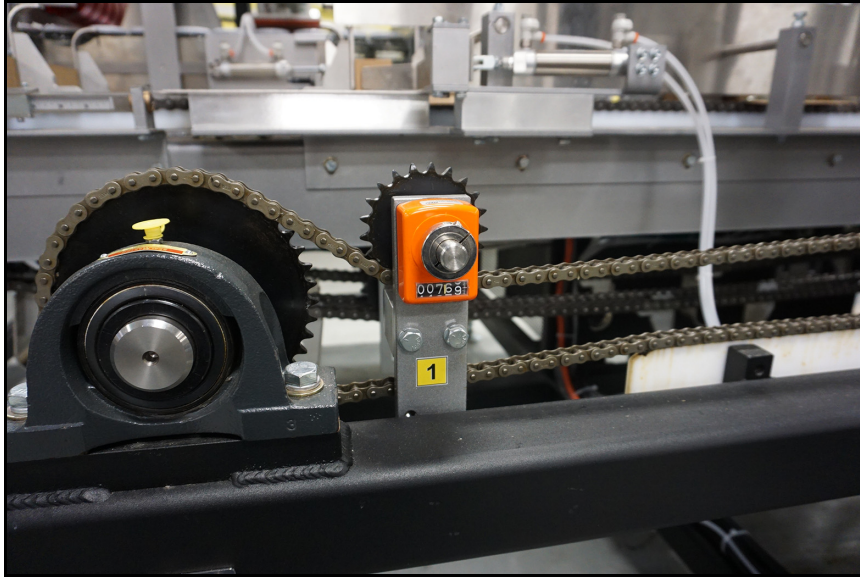
Two sets of leading and trailing lug assemblies form the pocket that folds the front and back panels of the tray blank into the upright position as the blank is placed onto the indexing conveyor.

The tray blank is placed onto the indexing conveyor by the blank feeding arm. When the blank is placed onto the indexing the front and rear flaps are folded up at a 90° angle.



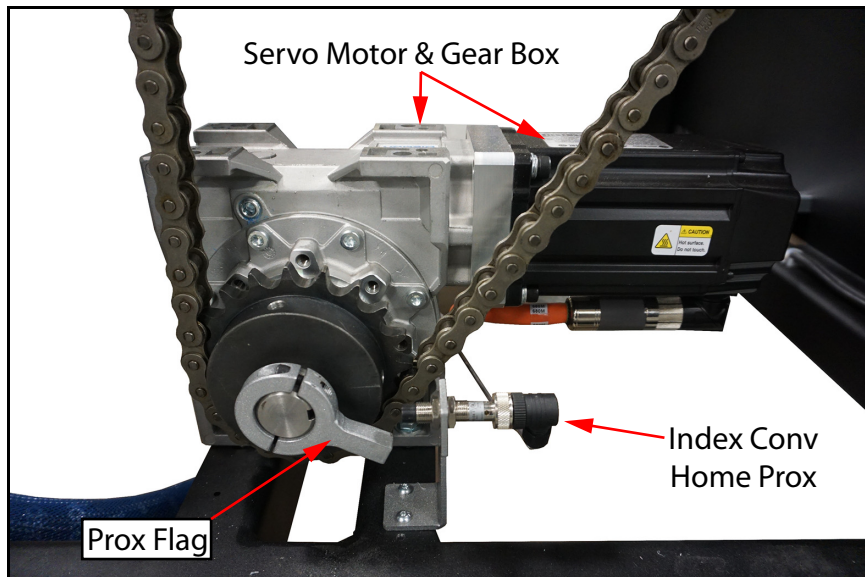
3.3.3.2 Counter Assembly

The counter assembly consists of a dial indicator and a sprocket connected to the spline shaft that sets the width of the chains of the indexing conveyor. It is provided to assist with changeovers.



3.3.3.3 Index conveyor Home Switch and Flag

The conveyor is driven by a servo motor that starts and stops incrementally to allow processes to be performed on the cases and to advance the cases to the next process. The motor and sensor are located on the drive side of the machine at the far downstream end of the indexing conveyor.



3.3.4 Flap Hold Down

The flap hold down assemblies are the first sets of tray forming and folding mechanisms mounted to the indexing conveyor. Their purpose is to hold the major flaps (1) down so that it can slide under the tray forming plate (2) while the indexing conveyor is advancing the tray blank. This is done to ensure the minor flap (3) gets folded in first.

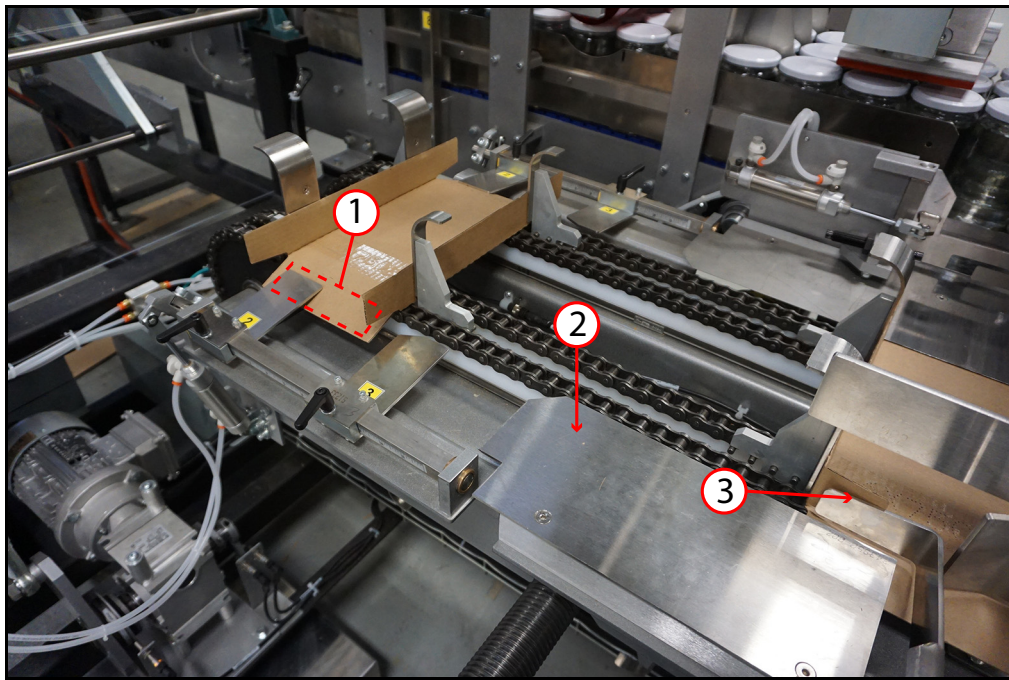
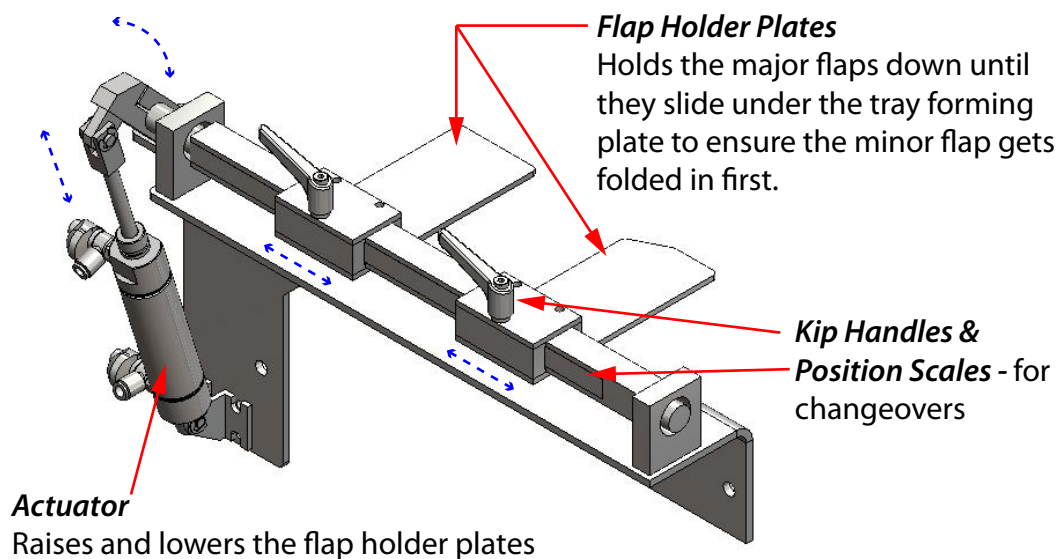


Figure 3-15. Flap Hold Downs



3.3.5 Minor Flap Tuckers

The next set of tray forming assemblies in the sequence are the minor flap tuckers. The leading, or front panel minor flaps (1), will be closed by the tray forming plate. The minor flap tucker arm will then engage and close the trailing minor flaps (2). The arm will stay engaged until the case is indexed fully against the plate and the trailing flap will also be held closed by the plate.

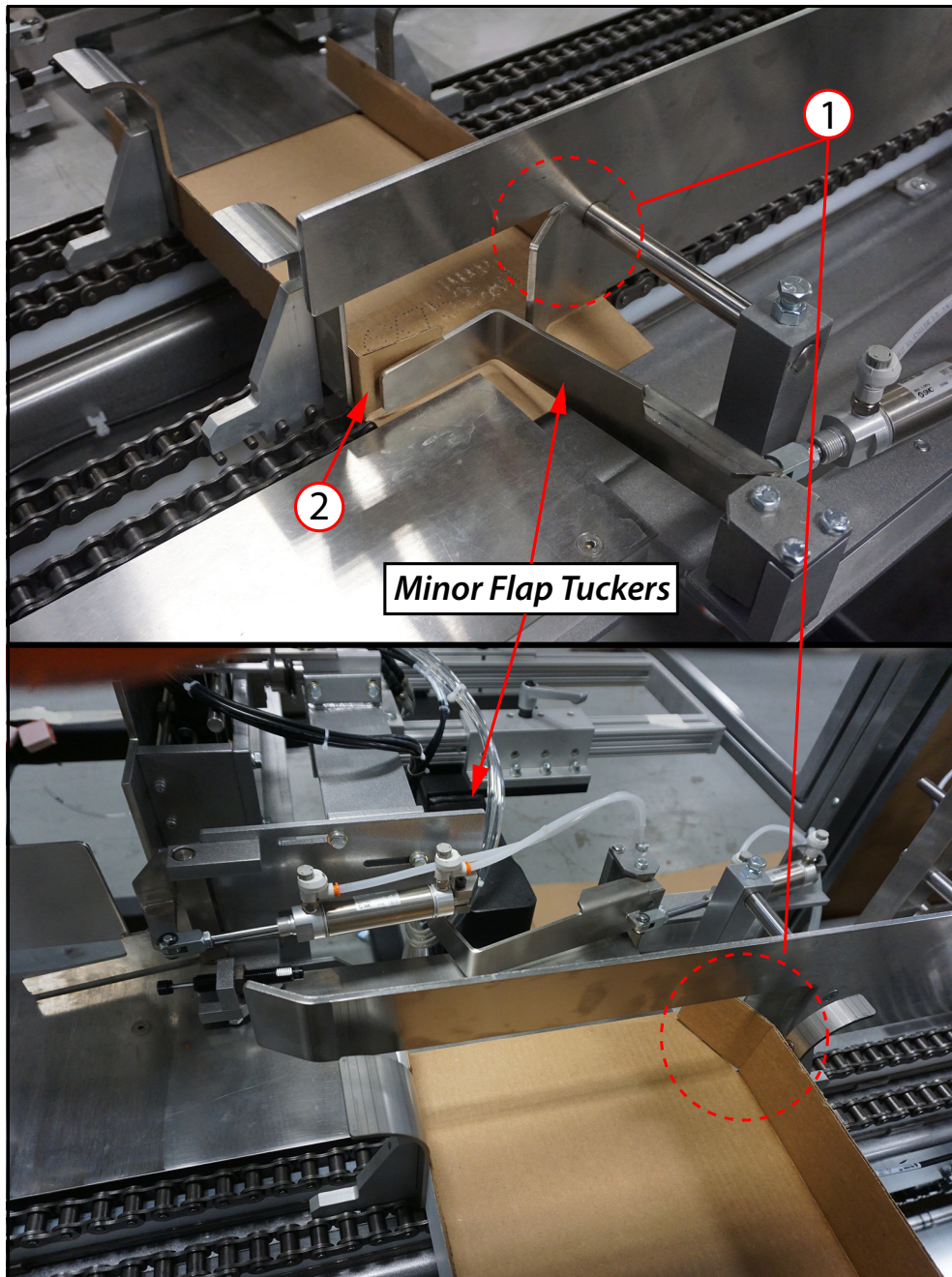


Figure 3-16. Minor Flap Tucker

3.3.6 Tray Forming Guide

Next in the sequence are the tray forming guides. Partially explained in the previous section, the forming guides keep the tray with the minor flaps tucked stable as it moves to the glue section.



Figure 3-17. Tray Forming Plates

The side guides hold the minor flaps in position. They should hold the tray squared, but not too tight, allowing approximately 1/8" clearance from the container.

3.3.7 Glue System

The glue section consists of a series of guides and brackets, as well as a glue system. It is located directly after the tray forming guides. Its purpose is to apply glue to the minor tray flaps prior to the tray being indexed to the compression section.

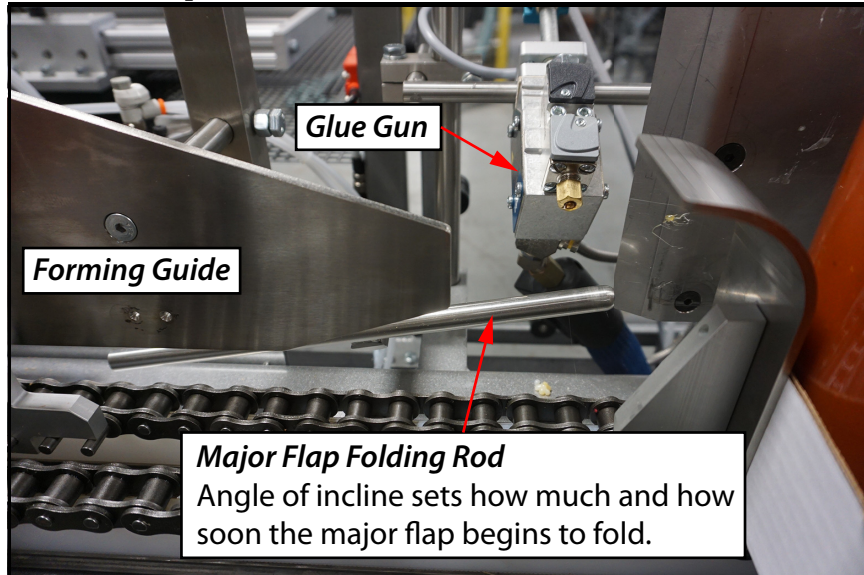
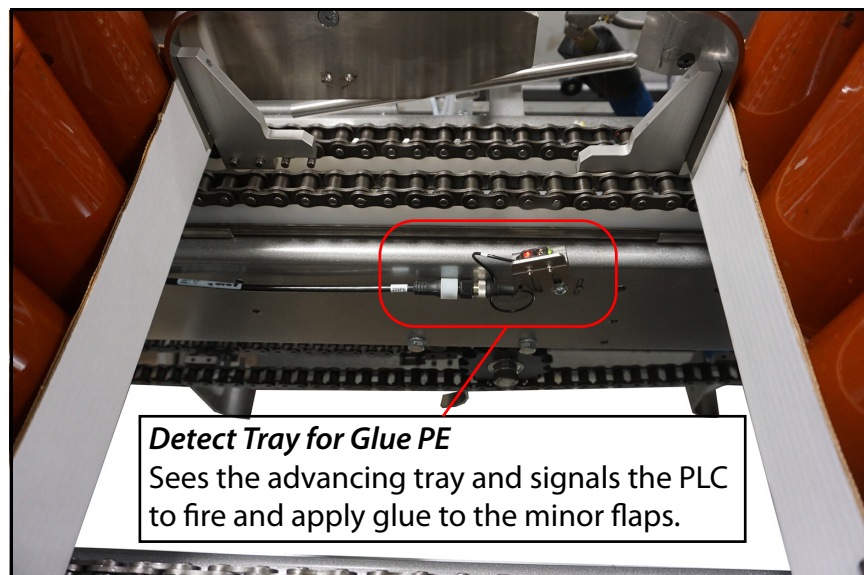


Figure 3-18. Glue Section

Adjustment of the angle of the folding rods is important. The major flaps must begin to fold and trap the minor flaps before the tray is advanced from the side guides, past the glue guns and to the side compression assemblies.

3.3.7.1 Detect Tray for Glue PE



3.3.8 Side Compression

The side compression assemblies consists of compression plates and air cylinders. The air cylinders actuate the movement of the compression plates. This section is located immediately after the glue section on the indexing conveyor. The purpose of the compression section is to compress the major flaps against the glued minor flaps to complete the tray forming sequence.

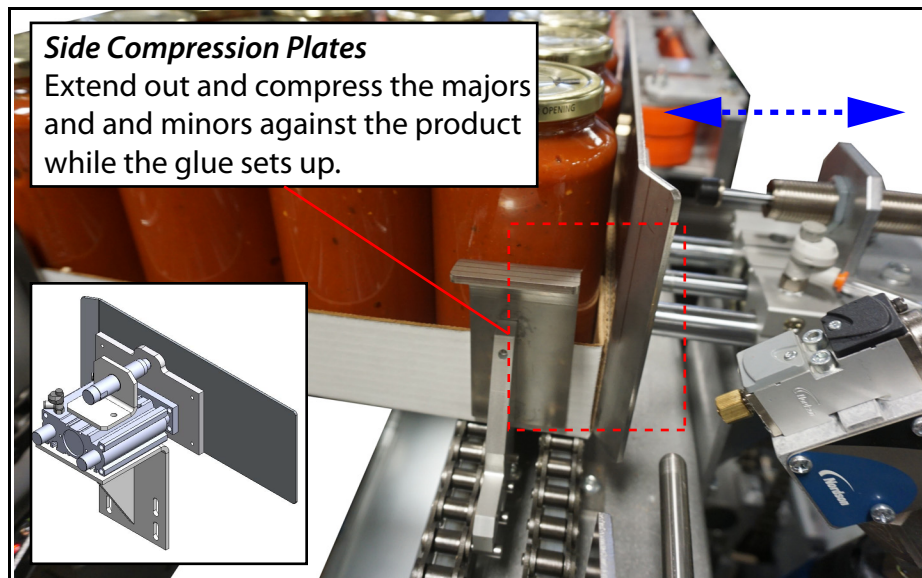
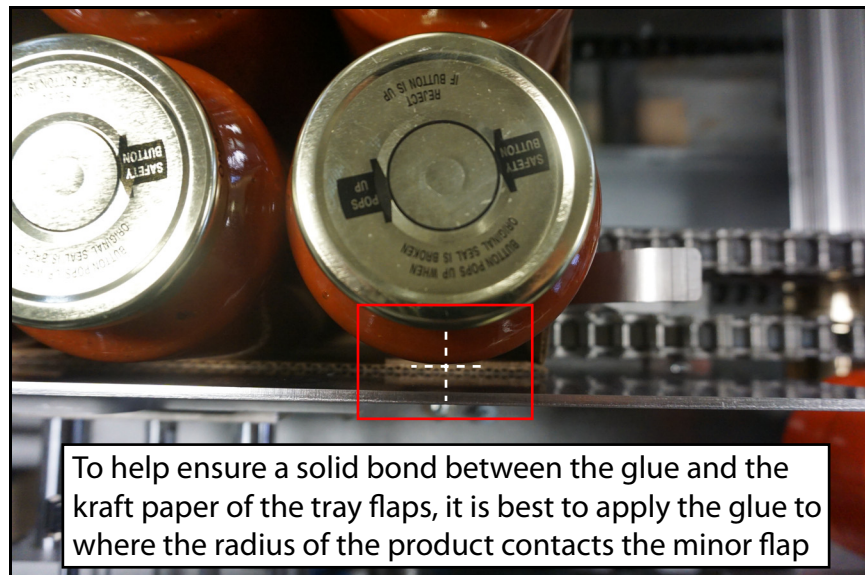


Figure 3-19. Side Compression Assembly

The compression assembly stays closed for a specific amount of time for the glue to begin to set and then retracts back to the home position.



3.3.9 Side Discharge

The final assembly for the machine is the side discharge assembly. It is located at the far downstream end of the machine. It's purpose is to positively drive the completed tray from the machine over the transition point from the EL to the conveyor after the machine.

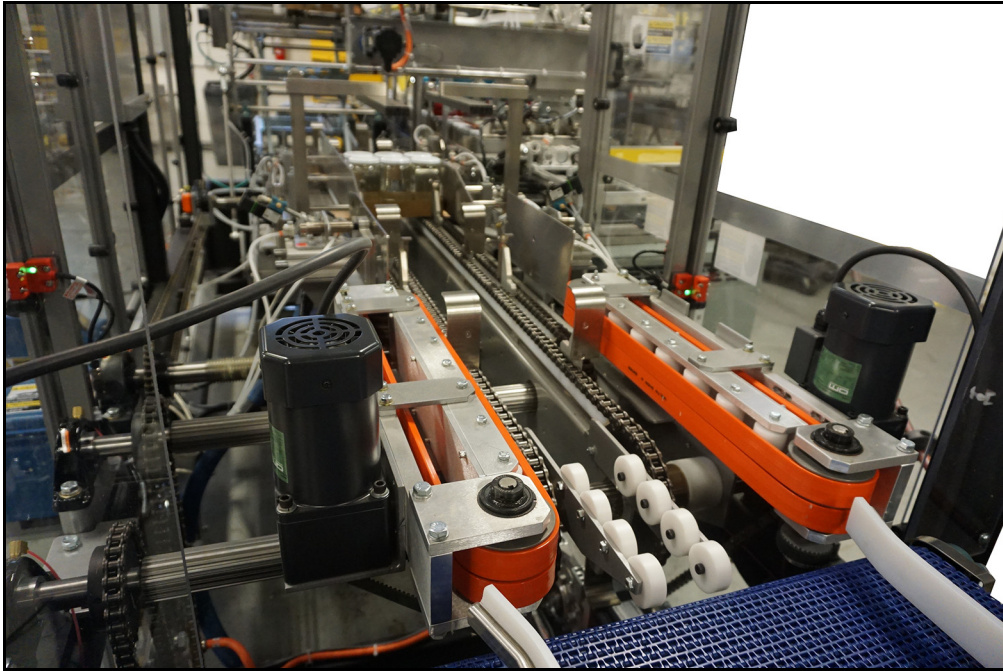
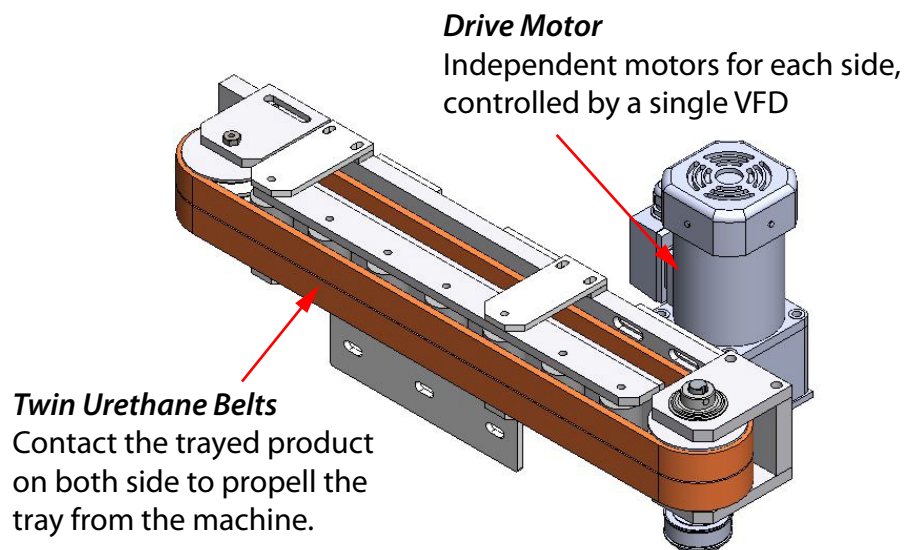


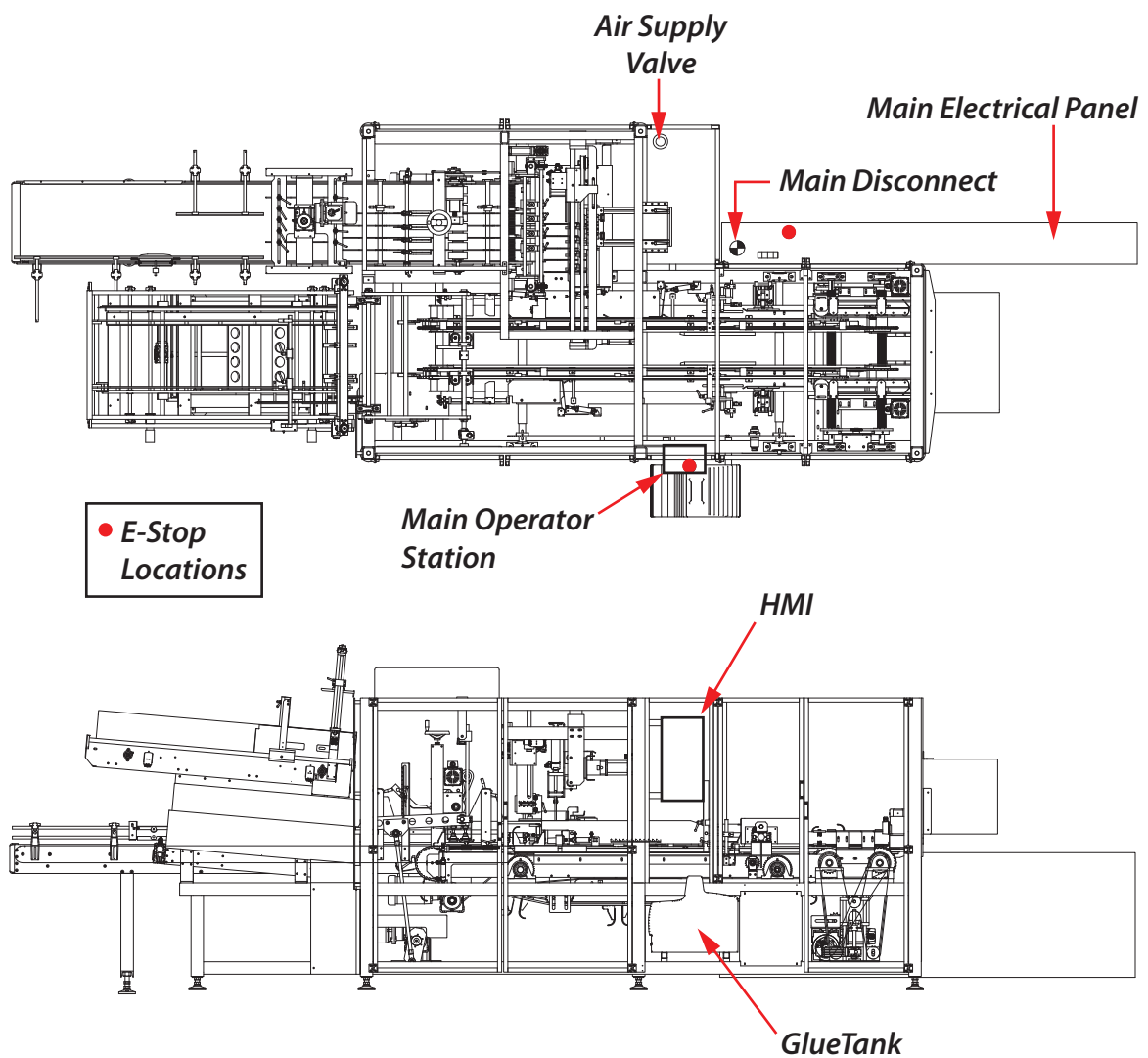
Figure 3-20. Side Discharge Assembly



Operator Controls

4

4.1 Overview



4.2 Utilities

This equipment relies on electric and pneumatic power for operation. The exact electrical requirements for this specific machine are stated on the electrical schematics.

Power, supplied from the facility, is connected at the Main Electrical Panel. The air supply from the facility is connected to the Air Supply Valve.

4.2.1 Main Disconnect Switch Description

The main disconnect switch, shown below, turns off all power to the machine.

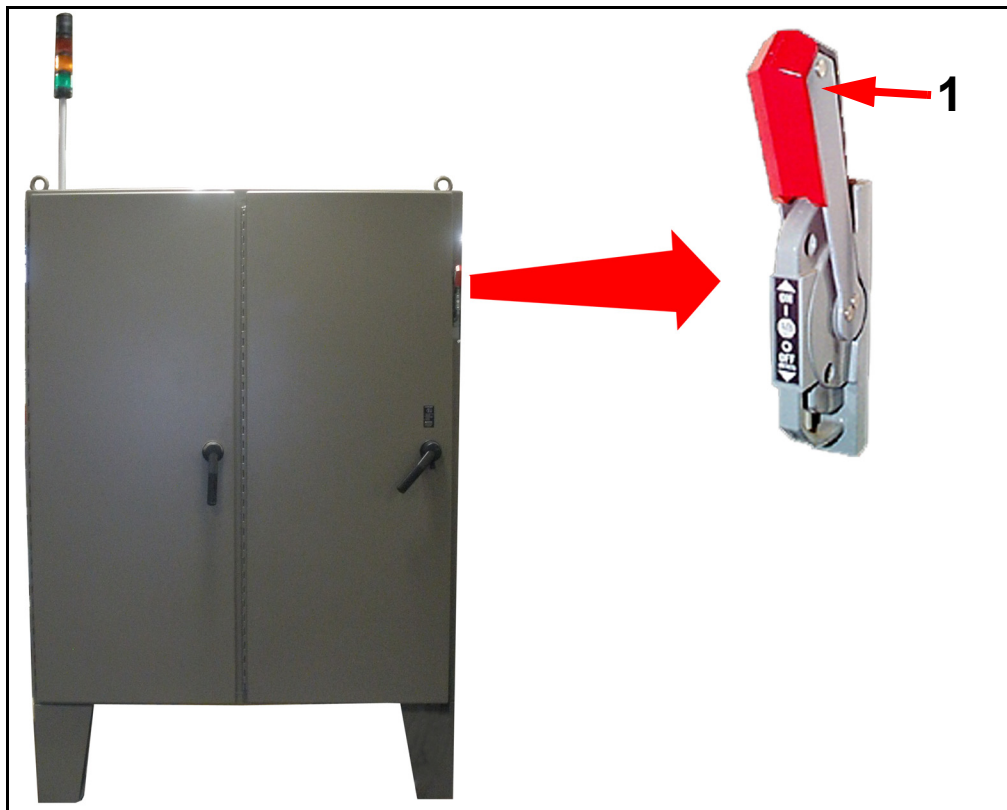


Figure 4-1. Main Disconnect Switch

4.2.2 Main Air Valve / Regulator

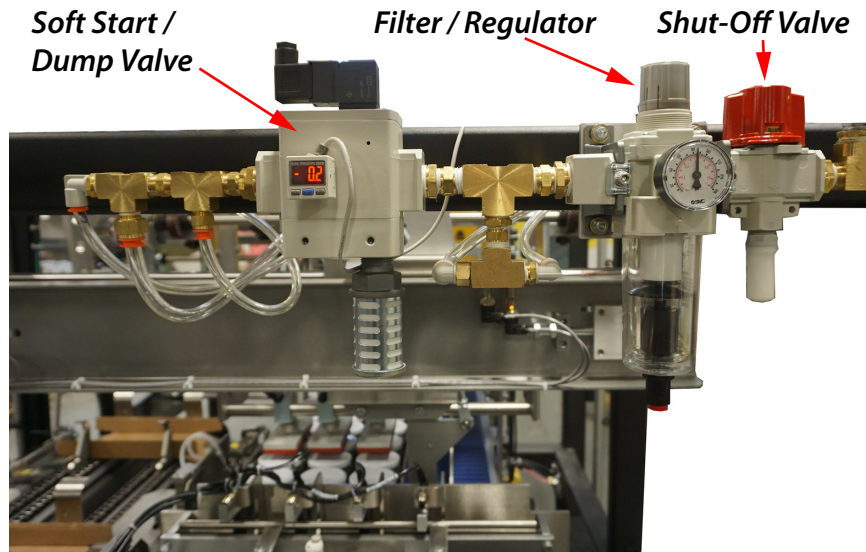
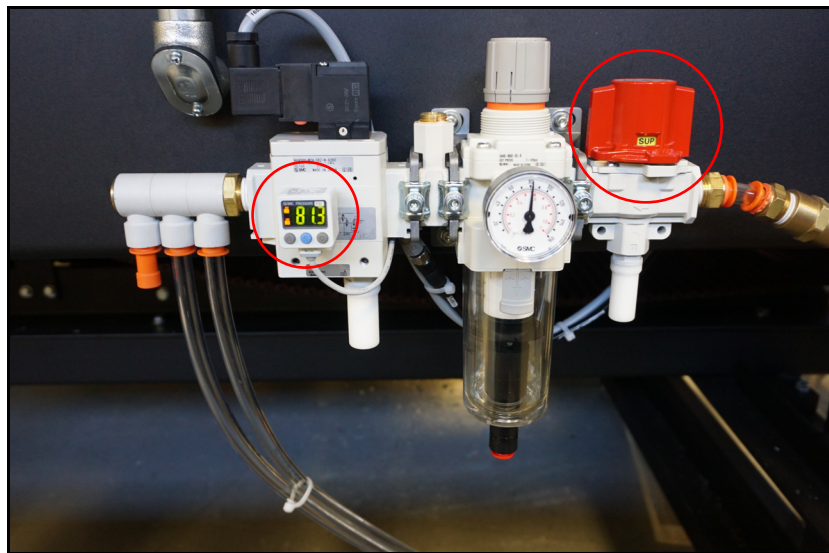


Figure 4-2. Air Manifold

Air Shut-off Valve - This valve turns all air to the machine on or off. Turn the valve from EXH (exhaust) to SUP (supply).



Filter / Regulator - This sets the air pressure to the machine. It should be set to 80 PSI.

Soft Start / Dump Valve - When air first comes on, this valve regulates how quickly it comes up to prevent pneumatically controlled devices from slamming.

4.3 Push Button Controls



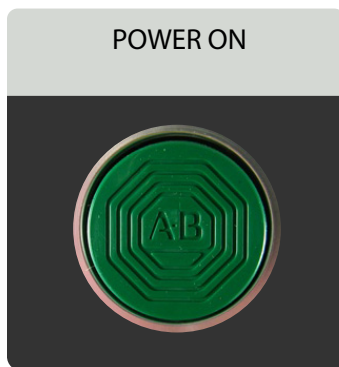
E-Stop in normal run state.



E-Stop activated.
(LED illuminated)

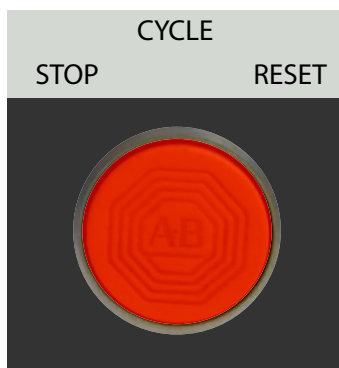
The EMERGENCY STOP push button will immediately interrupt power to all electrical and pneumatic devices, with the exception of the PLC. Low voltage remains on to the PLC so messages will be displayed on the HMI. This button should be used for an emergency, not to stop the machine normally.

The machine cannot be restarted until all EMERGENCY BUTTONS are pulled up and the CYCLE STOP/RESET button on the main control panel has been pressed.

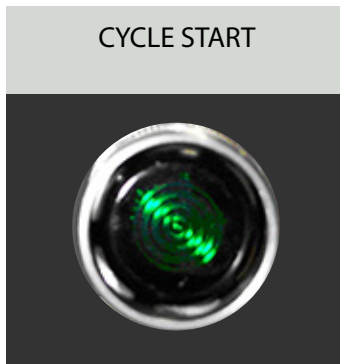


The POWER ON push button is used to apply power to all electrical and pneumatic devices by resetting the master control relay.

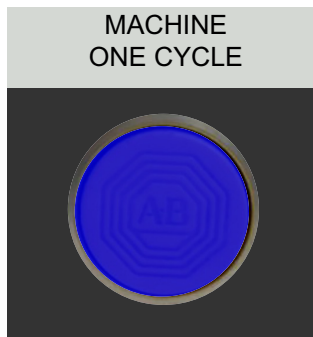
The Power On push button is used at initial start-up AND after an Emergency Stop has been pressed and reset.



The CYCLE STOP / RESET push button is used to bring the machine to a controlled stop AND to reset the machine after a fault.



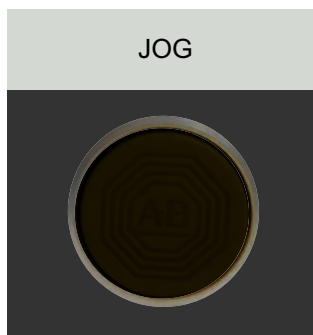
The CYCLE START push button is used to start the normal cycle of the machine, if all conditions are acceptable for the machine to start have been met. When pressed, the light will flash then go solid when the machine completes it's start-up routine. This button is disabled when an Emergency Stop push button has been pushed or if a guard door is open.



The MACHINE ONE CYCLE button is used to advance the machine one entire cycle.

Use this button to pre-position or reposition product and trays after a jam or to prime the machine.

This button is disabled when the machine is in cycle mode.



The JOG button is used to advance the indexing conveyor only.

This button is used clear trays and product from the machine.

This button is disabled when the machine is in cycle mode.

4.4 Stack Light

The stack light, mounted to the top of the operator station's junction box, shows the status of the machine and warns the operator of problems.

- Solid Red indicates an emergency stop button is tripped.
- Solid Amber indicates a fault or alarm situation.
- Solid Blue indicates that blanks are running low in blank magazine.
- Solid Green indicates the machine is in the cycle mode.
- Flashing Green indicates the machine is going into or coming out of the cycle mode. It also indicates that machine is in standby mode because it received an outside signal from an upstream or downstream sensor to stop.



Figure 4-3. Main Light Stack

4.5 HMI (Human Machine Interface)

The HMI (also referred to as the operator interface) is the operators primary means of directly interfacing with the equipment. The HMI is a color touch screen that allows the operator to monitor and change the operation of the machine. The HMI is a component of the electrical control system. It is a programmable device that communicates directly with the machines PLC control system via direct cabling or an Ethernet device. Typically, but not always, it is mounted on the main electrical cabinet along with the other operator controls called the “Operator Control Station”.

The program logic is based off the concept of treating products and the number of configurations required as “recipes”. Each recipe contains the machine settings, (set points) required to properly control the flow of product through the machine. Using recipes allows for a single machine to be used for multiple different products and configurations.



Caution

Do not use anything but your fingers to operate the interface’s touch screen. Using pens or pencils to contact the touch screen can easily damage it and it is very expensive to replace.

The following sections provide an understanding of the HMI and how to navigate the different HMI screens, as well as explaining the different screens and their functions.

4.5.1 Screen Layouts & General Operation

HMI screens are categorized, or grouped together according to their function and purpose. Screen groups for the TS-2000 Series are; the Overview, Recipes, Set Points, Maintenance and Production groups. The appearance and layout of the screens have many things in common.

Screen Layouts

Below is an image of the Control screen. This example is used to explain how the HMI screens are laid out.

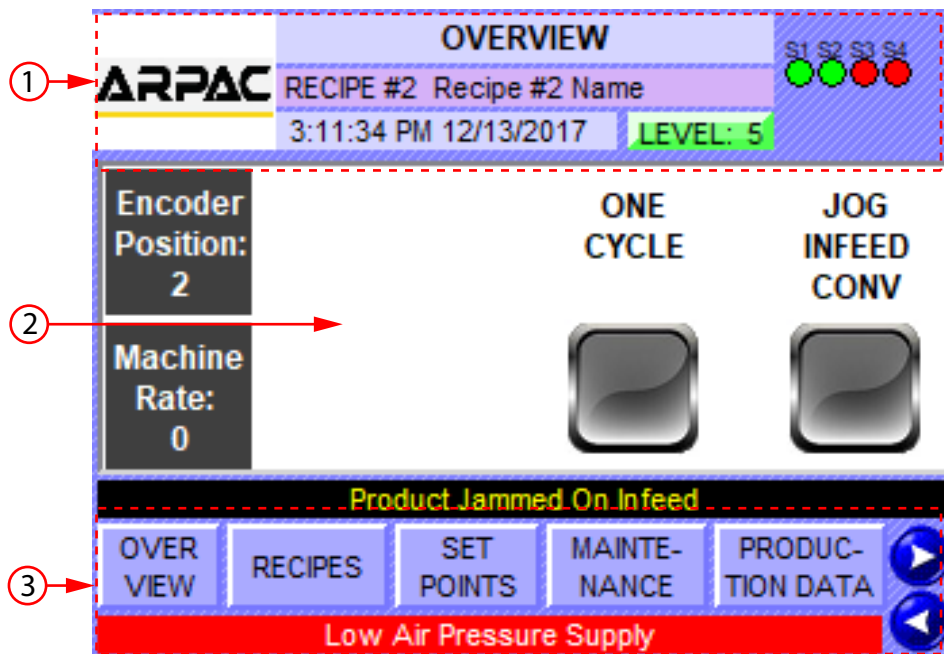


Figure 4-4. Screen Layouts

- 1 Title Block - There's a title block at the top of each screen. The title block displays the name of the screen, the current date and time and the security level currently accessed.
- 2 Main Body - The main body of the screen displays information related specifically to it's purpose. It may also contains push button control for certain functions.
- 3 Menu Group Buttons & Message Banners - The bottom of the screen contains a button for each menu group, a message banner and toggle buttons.

Pressing one of the menu group buttons will navigate to and open the first screen (some menu groups have multiple screens) for that group. The menu groups are password protected. The Over View and Set Point menu

groups contain the control functions and parameter settings to effect the operation of the equipment. The Maintenance menu group contains diagnostic data and high level settings. The Maintenance menu group should only be accessed by qualified individuals. The Production Data menu group contains production efficiency data and should only be accessed by supervisory/management personnel. Menu groups are discussed in greater detail later in the chapter.

The message banner displays the current status of the machine; i.e. running condition, faults and warnings.

The toggle buttons can be used to cycle between the screens of menu groups with multiple pages.

4.5.2 Data Entry & Navigating to Different Screens

The interface is equipped with two objects for data entry [numeric and string (i.e. text)]. If the interface is at a sufficient security level for a particular function, the keypad or keyboard opens when an operator touches an object calling for data entry.



Figure 4-5. Numeric Keypad

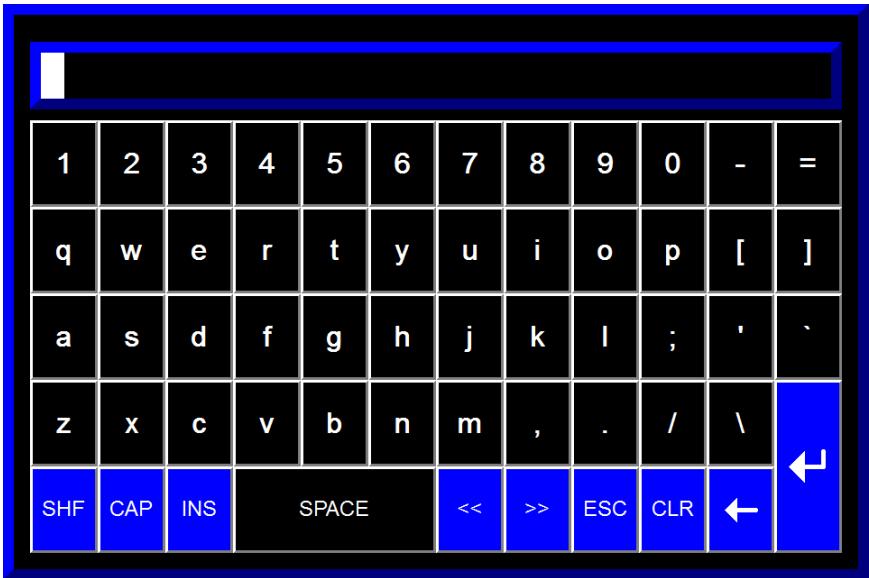


Figure 4-6. Alpha-numeric Keypad

4.5.3 Navigation Tools

To navigate directly to a specific screen within a Menu Group that has multiple screens, press the button for that screen from the expandable screen menu that pops-up when the Menu Group button is pressed, as long as an operator is logged in with sufficient security access. The toggle buttons in the lower right hand corner can also be used to navigate to the next or previous screen.

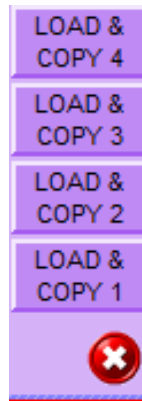
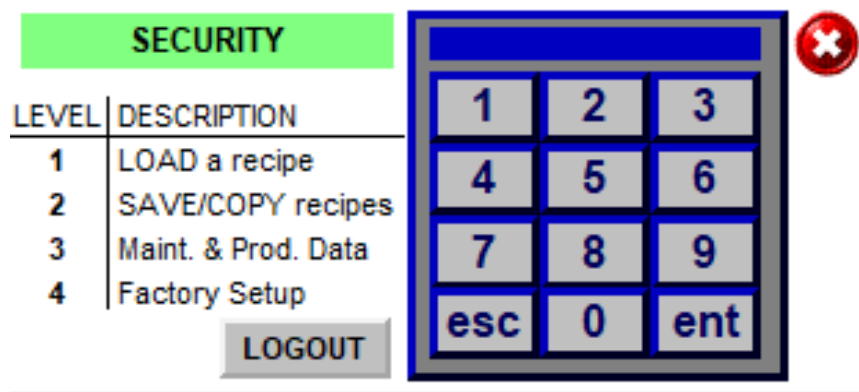


Figure 4-7. Expandable Screen Menu Pop-Ups

4.5.4 Security Levels



There are multiple security levels associated with the interface, not including "Level 0", the default security level upon power-up.

Each progressive level offers a deeper level of access to controlling and monitoring the machine.



The default security level, Level 0, is available to all users and is active when the machine is first turned on. This level does not allow anyone to change anything, but it does allow the operator to view basic machine messages.

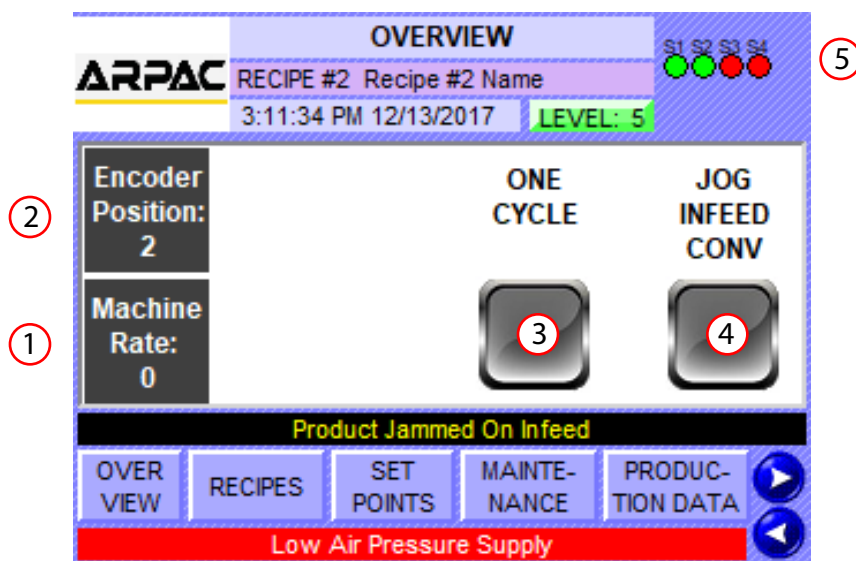
4.6 HMI Menu Groups

The following explains the specific functions of each HMI menu group.

4.6.1 The Over View Menu Group

The Overview group, in addition to being the “home” or “default” screen, is where the user monitors and controls the machine. Security level 1 or higher needed to access the following screens:

4.6.1.1 Main Screen



Displayed on the screen:

- 1 **Machine Rate** - Displays the rate of trays through the machine, based off PLC counter values.
- 2 **Encoder Position** - Displays the position of the machine based off the
- 3 **One Cycle** - This button functions the same as the One Cycle push button.
- 4 **Jog In-feed Button** - Pressing this button, when not in cycle, will manually move the in-feed belt forward, as long as the button is held.
- 5 **Product Detect PE Status Indicator** - Indicates the presence of product by the PE's at the Product Detect assembly.

4.6.1.2 Machine Controls Screens

This machine has several Control screens provided to manually manipulate specific areas of the machine.

These buttons are disabled when the machine is in cycle.

Blank Pick-Up Controls



Figure 4-8. Blank Controls Screen

Servo Ram Controls

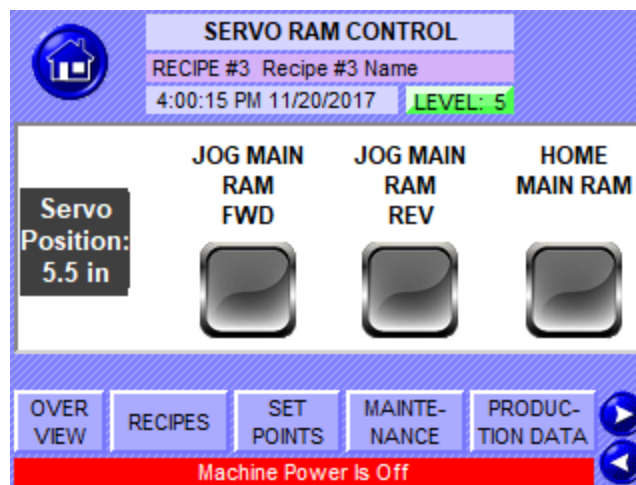


Figure 4-9. Ram Control Screen

Index Conveyor Controls

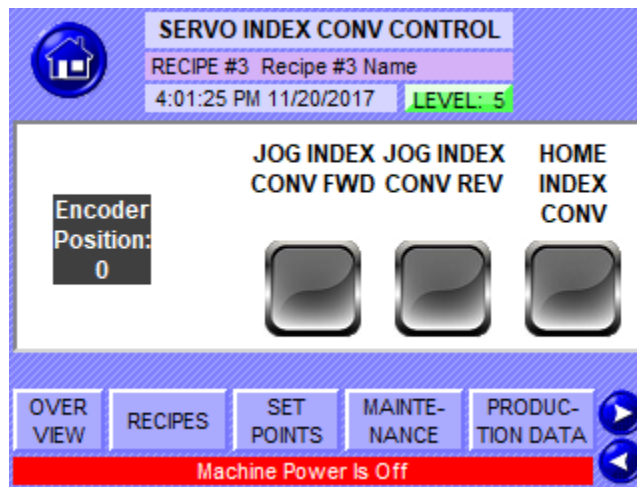
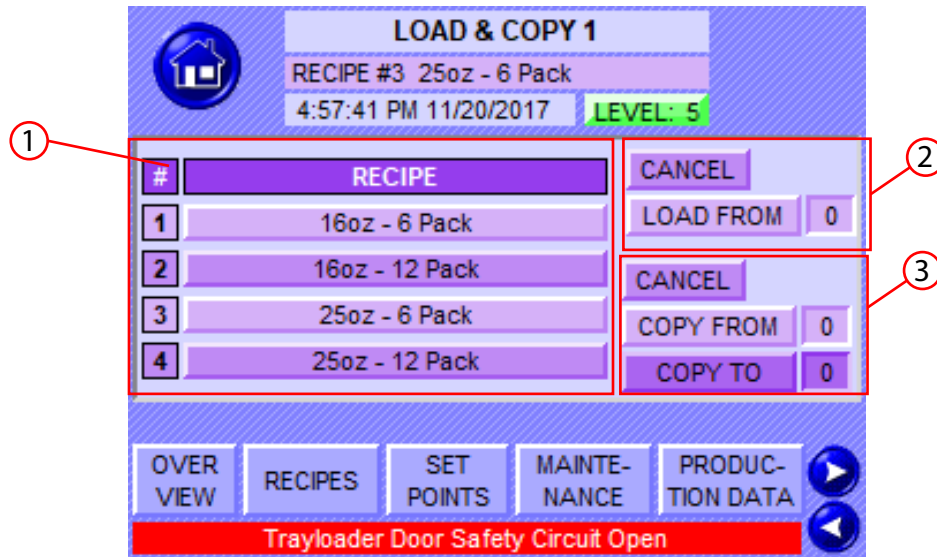


Figure 4-10. Index Conv Controls

4.6.2 Recipes Menu Group

The Recipe Menu Group contains the screens from which an operator can view the available product Recipes. Each individual Recipes contains the unique settings for that product configuration.



- 1 **Recipe # and Description** - A quick reference list containing all the product configurations that have been programmed into the HMI.
- 2 **Load** - Used to load an existing Recipe into the HMI.
- 3 **Copy** - Used to copy one Recipe into a different Recipes # slot. This is helpful when an operator has a new product configuration to create that is similar to another one to minimize the amount of information that needs to be keyed in.

4.6.3 The Set Points Menu Group

The Set Points menu group consists of several screens containing all of the available set point parameters needed to adjust the performance of the machine. Each screen can contain up to five different parameters. Regardless of the number of available set point screens, they are all laid out the same.

4.6.3.1 Set Point Modify Screens

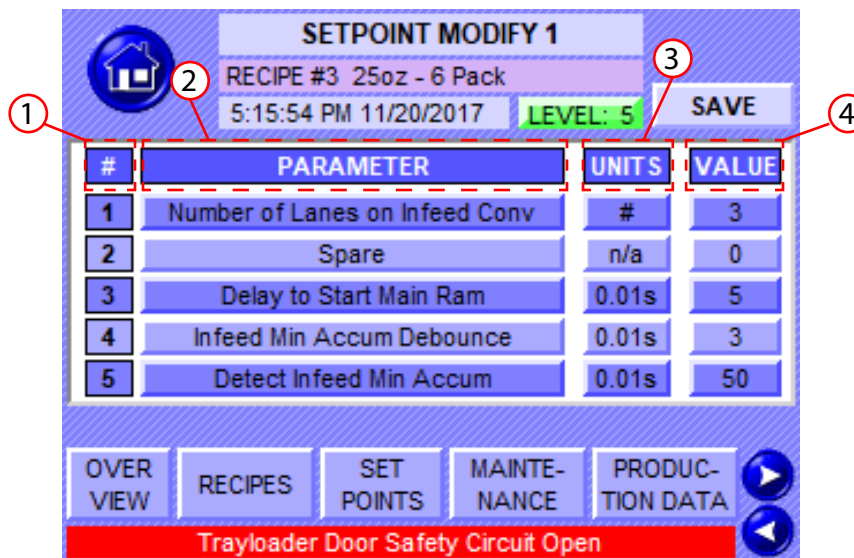


Figure 4-11. Set Point Modify Screen Example

- 1 **#** - Each parameter is assigned a number
- 2 **Parameter** - The names of the parameters are listed next to the # column
- 3 **Units** - This represents the unit of measure for a parameter.
- 4 **Value** - This represents the user defined machine settings.



Parameter descriptions that say “Spare” or “Reserved” are available slots that are either not used by the PLC or are reserved by the PLC for available equipment options that are not a part of this system.

4.6.3.2 Changeover Point Screens

Screens specific to changeover points are included in the Set Point Modify group to store changeover related data. Changeover points have dial indicator readings or scales to mark their set point. These screens are used to store that data. An operator can refer to these settings to aid with changeover.

SETPOINT MODIFY 6

RECIPE #3 25oz - 6 Pack

5:19:28 PM 11/20/2017 **LEVEL: 5** **SAVE**

#	PARAMETER	UNITS	VALUE
26	Adjustment Point #1 (YEL)	Cnt	769
27	Adjustment Point #2 (YEL)	0.01 in	0
28	Adjustment Point #3 (YEL)	0.01 in	675
29	Adjustment Point #4 (YEL)	0.01 in	1300
30	Adjustment Point #5 (YEL)	0.01 in	1775

OVER VIEW RECIPES SET POINTS MAINTENANCE PRODUCTION DATA

Trayloader Door Safety Circuit Open

4.6.4 The Maintenance Menu Group

The Maintenance menu group allows a user to access various maintenance-level functions. This menu requires security level 3 or above for access.

4.6.4.1 Main Maintenance Screen

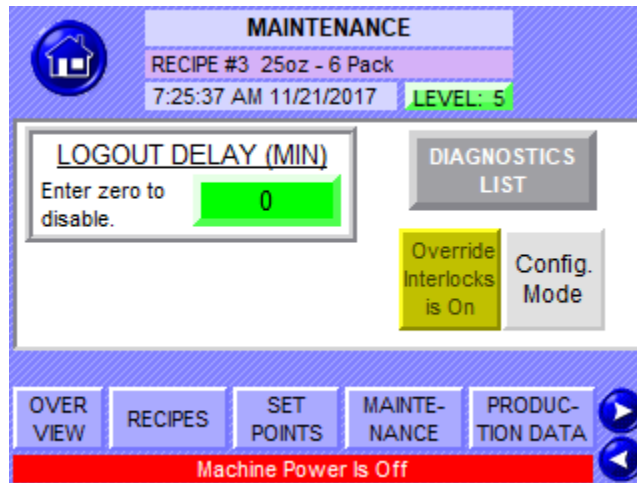


Figure 4-12. 1st Maintenance Screen

From this Maintenance screen, qualified personnel can change the following:

- **Logout Delay** - Once someone logs in to a security level, that login remains active based on this setting. Once the Logout Delay times out, that person would need to re-enter the password.
- **Override Interlocks** - This machine is capable of being interlocked to other equipment immediately upstream or downstream. If these options are being used, an operator can override these interlocks if necessary by pressing this button.
- **Diagnostics List** - This button is used to view the communication protocol messages between the HMI and the PLC.
- **Config. Mode** - Press this button to place the HMI into configuration mode. Configuration mode accesses the HMI's set-up functions (time format, for example). Only qualified personnel should put an HMI into Config. mode.

4.6.4.2 Timers & Counters Screen

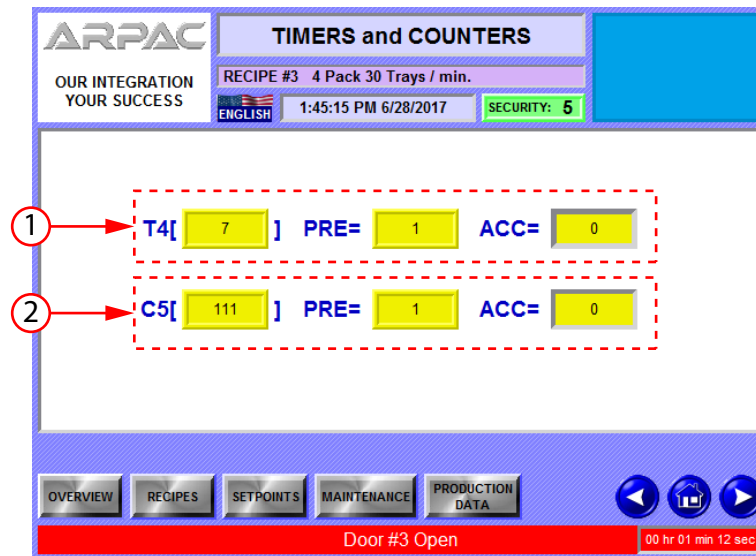


Figure 4-13. Timers Screen

The Timers & Counters screen allows one to see preset parameter values and accumulated values, but does not list the specific timer description. This screen should be used as a diagnostic tool, along with the PLC code for troubleshooting.

4.6.4.3 Alarm History

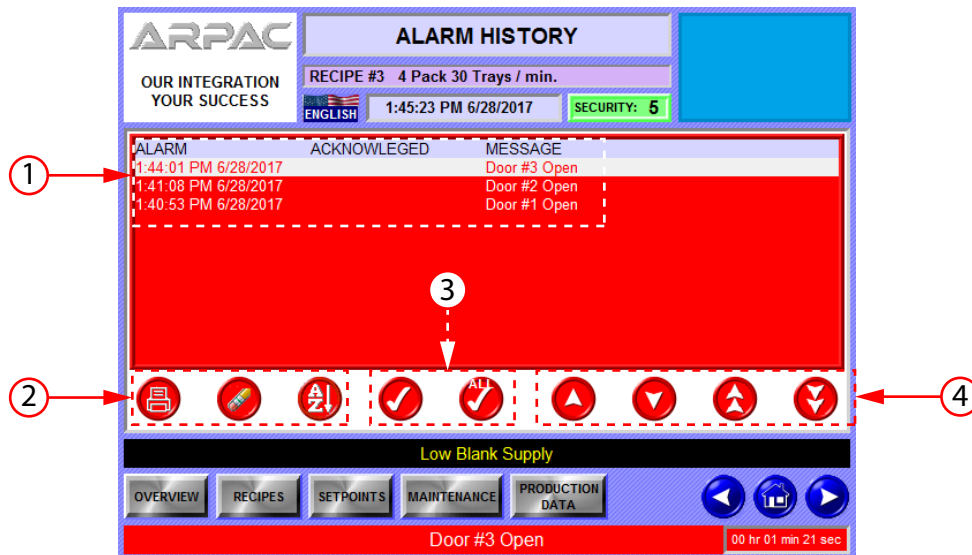


Figure 4-14. Alarm History

Alarm History shows alarms and faults that occurred on the system. Use the red buttons to acknowledge and clear the list, cycle from one to another or page up and down the list.

4.6.4.4 PLC Chassis Screens

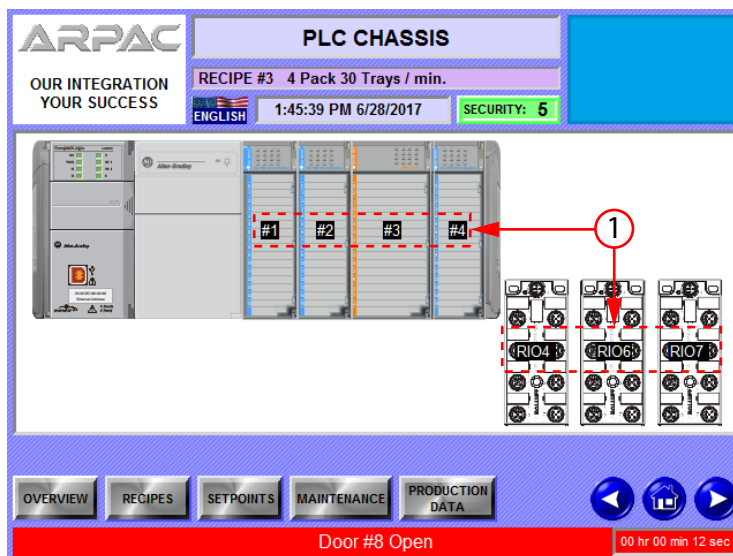


Figure 4-15. PLC Chassis Screen

To aid with diagnosis of issues and troubleshooting, multiple diagnostic screens have been provided. Not all of them are covered here, but the concept for all the screen are the same.

Touching the screen where a text block exists will open an addition screen. The example below is the screen what would appear for the “Digital IN” text. A green box indicates the I/O is “ON” and a gray box indicates the I/O is “OFF”.

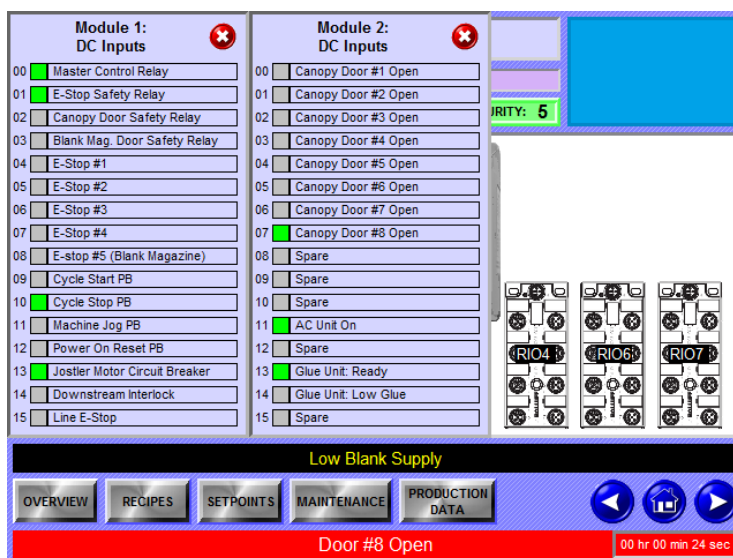


Figure 4-16. PLC Module Screens

4.6.4.5 Maintenance Level Set Point Modify Screens

Several Set Point Modify screens, similar to those in the Set Point Modify group are included in the Maintenance group. These screens are included here and not in the Set Point Modify group because these settings are typically only required to be accessed and modified during initial set-up and/or during troubleshooting.

SETPOINT MODIFY 13

RECIPE #3 25oz - 6 Pack

5:21:21 PM 11/20/2017 LEVEL: 5

1.00

SAVE

#	PARAMETER	UNIT S	STATUS	ON	DISTANCE
61	Minor Flap Tucker On		☒	0	155
63	1st Glue Pulse		☐	570	40
65	2nd Glue Pulse		☐	775	40
67	Lower Tucker Up		☐	600	300
69	Blank Arm Start		☐	290	75

OVER VIEW RECIPES SET POINTS MAINTENANCE PRODUCTION DATA

Trayloader Door Safety Circuit Open

Figure 4-17.

4.6.5 The Production Data Menu Group

The Product Data menu group has two screens; Production Data and Production Data Settings. product count per shift with a running total. Access level 3 or above is required to clear production data.

4.6.5.1 Production Data

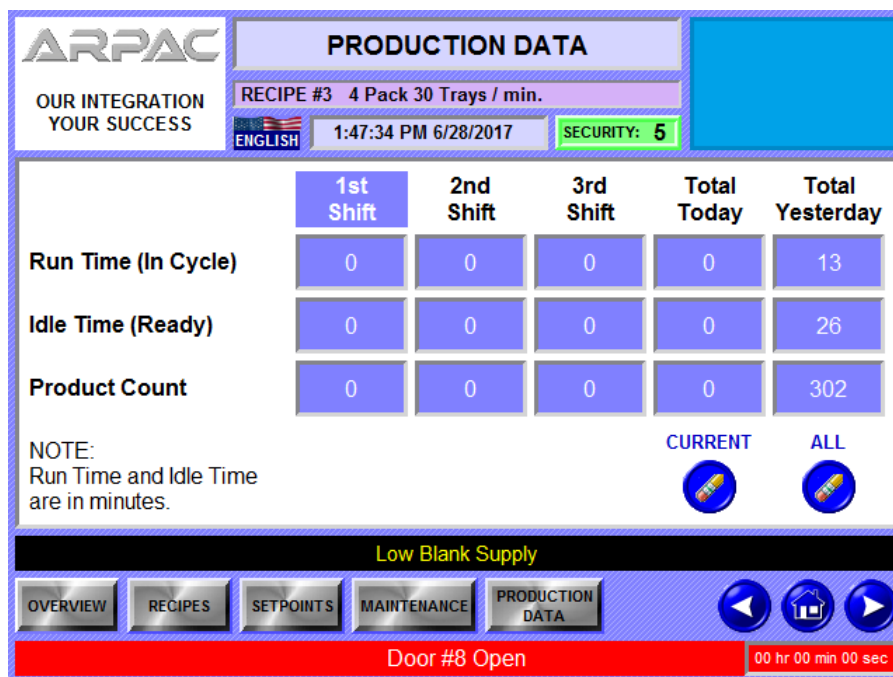


Figure 4-18. Production Data Screen

- Data values related to the number of loads wrapped are displayed here.
- Two different reset buttons allow for resetting the production data for the current shift only or all the data collected since the last reset occurred.

A warning message that has to be acknowledged will appear before the data can be reset.

4.6.5.2 Production Data Settings

The second screen related to production data allows an operator or supervisor to change the shift times.



Figure 4-19. Production Data Settings Screen

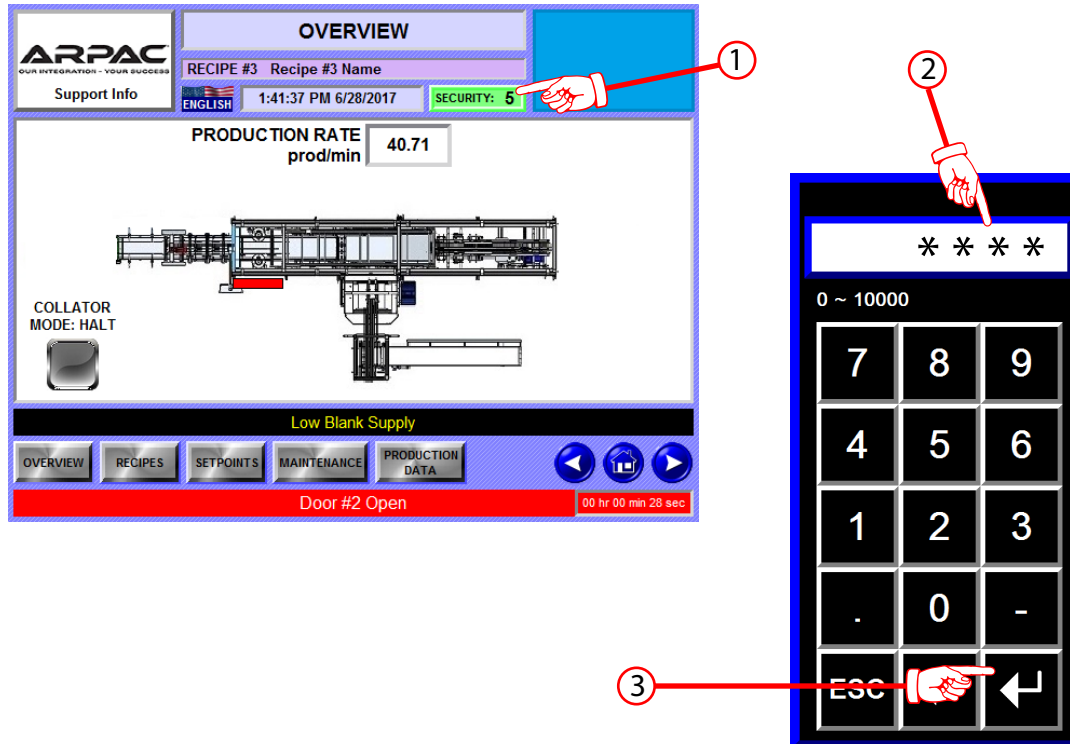
- Press inside any of the boxes for **Start** or **Finish** to change the setting. The numeric key pad will pop-up. Enter the new value and press the ENTER key.

4.7 Using the HMI

The following describes how to use the HMI.

4.7.1 Logging In

The HMI, when first powered on, boots up on security level 0. Security level 0 allows an operator to view the machine status and to start and stop the machine. Accessing screens requires an operator to be logged.



- 1 Log in by pressing the green LEVEL button.
- 2 The numeric key pad will open. Enter the 4 digit password for that required level.
- 3 Press the ENTER key.

NOTICE

Passwords can be obtained by your company's authorized personnel or by calling Arpac's Technical Service department.

4.7.2 Loading & Copying Recipes

This machine has the ability to store multiple different recipes. Recipes contain the set point values for various machine functions. Each recipe is identified by a number and name. Security level 1 or higher is required to load a recipe.

4.7.2.1 Loading an Existing Recipe

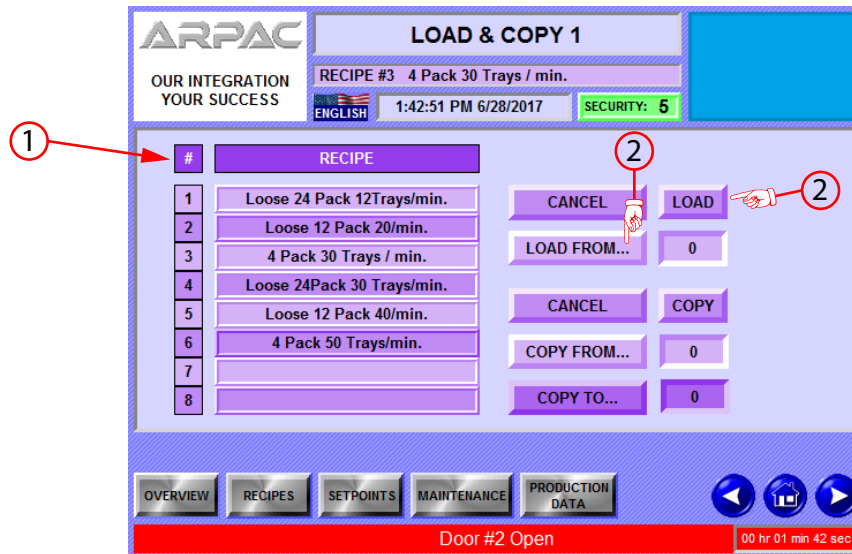


Figure 4-20. Recipe Load & Copy 1 screen

When you wish to load a recipe, you must make sure the machine is out of cycle.

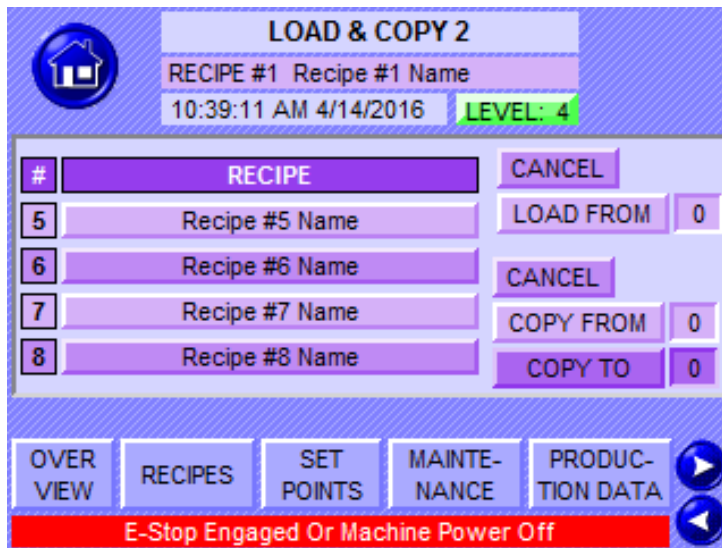
- 1 Identify the assigned # of the Recipe you want to load.
- 2 Press the LOAD FROM to open the numeric keypad. Enter the recipe number you wish to use.
- 3 Press LOAD to upload. Click YES to load the recipe or NO to abort the operation.

NOTICE

A warning pop-up will appear letting you know you are about to overwrite the current recipe settings.

4.7.2.2 Using the Copy Recipe feature to Create a New Recipe

Copying a recipe takes that data and saves it to a user defined recipe slot. If data already exists in that slot, it will be overwritten with the new data.



- 1 Press COPY FROM to open the numeric keypad and enter the recipe number from which you wish to copy set points.



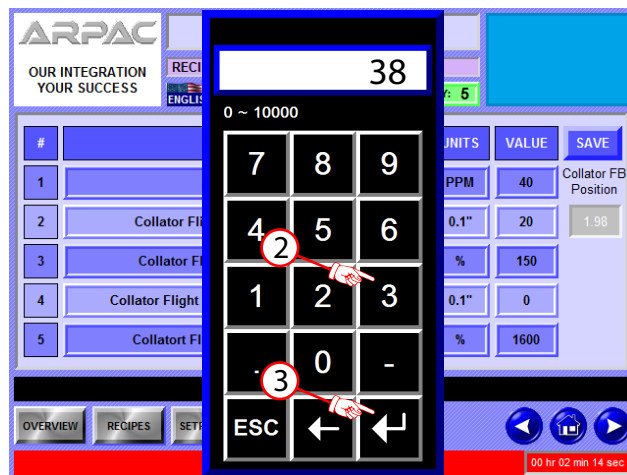
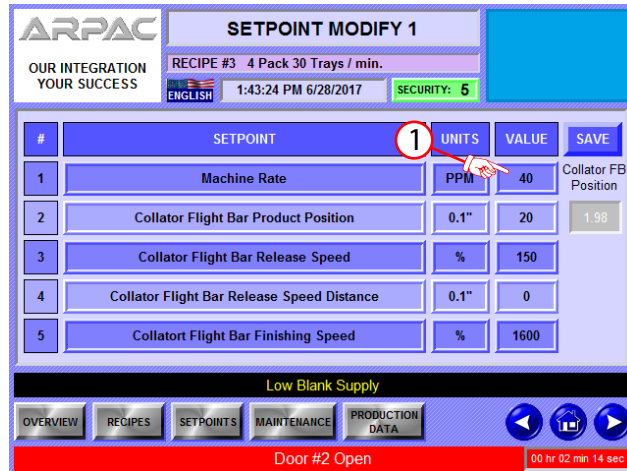
The recipe you are copying information from remains unaffected by this operation.

- 1 Press COPY TO to enter recipe number that you wish to copy the setpoints to for use.
- 2 Press CANCEL to abort the operation without copying any data.
- 3 Press COPY to copy the recipe.
- 4 A warning pop-up will appear letting you know you are about to overwrite the contents.

Press YES to copy the recipe data or NO to abort the operation.

4.7.3 Changing Values

To change a value, navigate to that screen.



- 1 Press the box containing the set point value. The pop-up keypad will appear.
- 2 Enter the new value.
- 3 Press the ENTER key to accept the new value.

5.1 Overview

This chapter covers how to operate the EL Series. Topics covered include:

- Applying power and getting the machine ready for production
- Loading tray blank and getting the glue system ready
- Putting the machine into and out of cycle, or run mode
- Stopping the machine in cases of emergencies - to people and the equipment
- Clearing jams and restarting the machine
- Changing over the machine to run a different product size or configuration.

5.2 Applying Power & Preparing the Machine to Run

5.2.1.1 Pre-Start Inspection

Before starting the machine, check for the following:

- 1 Make sure the machine and the area around the machine is clear of items not directly related to the normal operation of the machine.
- 2 Remove LOTO devices, if used.
- 3 Check the pneumatic regulator drain bowl. Empty accordingly.
- 4 Make sure that all persons in the area of the machine are aware the machine is about to start.

5.2.1.1 Electrical Power



Warning

Make sure all personnel are cleared away from machine before turning the machine on. Injury may result if you do not.



Warning

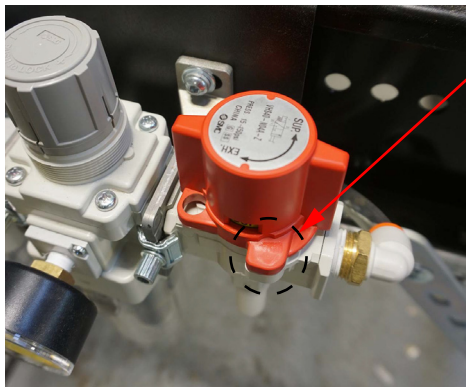
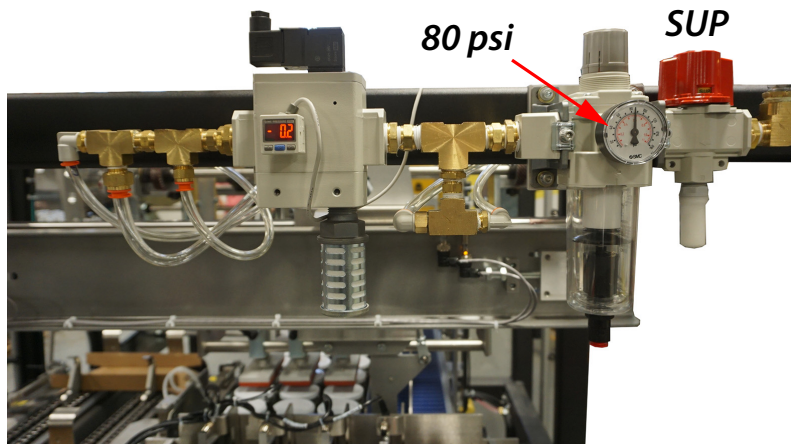
Press the **EMERGENCY STOP** button to stop the machine if a hazard appears to personnel or the machine.

- 1 Make sure the machine is connected to its power source.
- 2 Turn on the main disconnect switch at the Main Electrical cabinet.

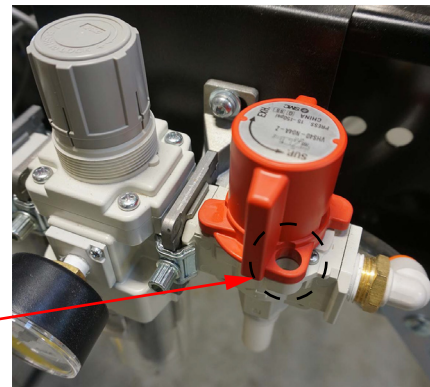


5.2.1.2 Pneumatic Power

- 1 Turn the Shut Off Valve from EXH to SUP. Verify the air regulator gauge is at least 80 psi.



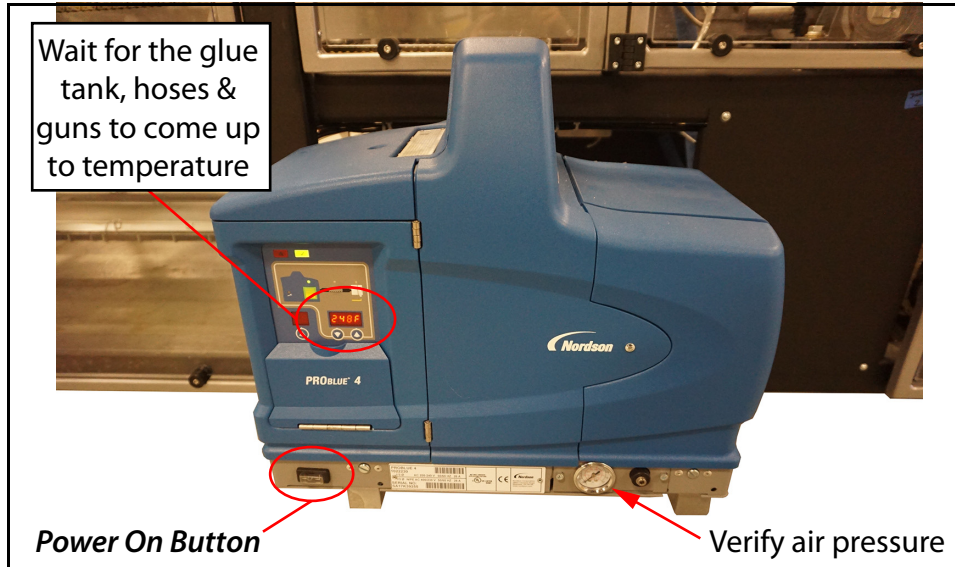
Valve in the
ON position
(SUP)



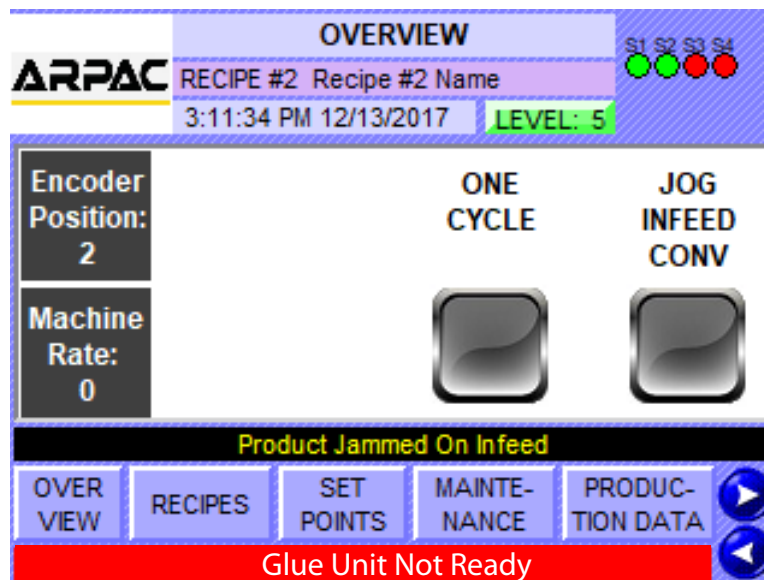
Valve in the
OFF position
(EXH)

5.2.1.3 Turning on the Glue Unit

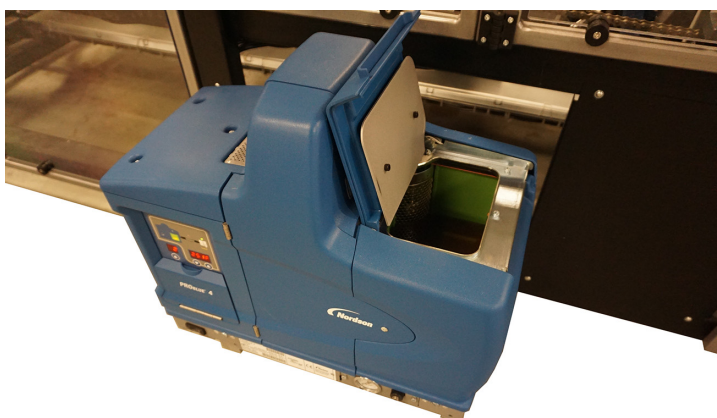
The glue system gets its power supply from the machine, but it has its own Power On button.



The machine cannot go into cycle until the glue system reaches its set temperature and proper air pressure. The fault message in the banner will go away once the unit reaches the proper temperature.



5.2.1.4 Filling The Glue Unit



Open the glue tank lid to fill with glue pellets

Refer to the OEM vendor manual for additional information.

5.3 Loading Blanks

- 1 Inspect the blanks to be loaded and discard any that are damaged. Examples of damaged blanks are the following: blanks that are coming apart, that have water damage, that are warped, that are torn or have crease marks from banding straps.
- 2 Orient the blanks as they will be run. Inspect the stack being loaded to ensure they are all facing the proper direction.
- 3 Place the blank pusher in it's adjustment position.

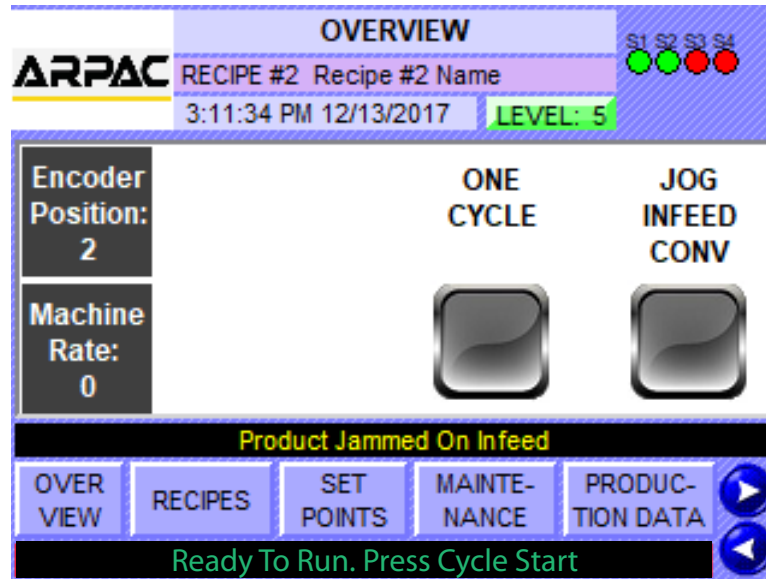


- 4 Load the blank magazine.
- 5 Place the blank pusher against the stack to keep them in position.



5.4 Starting the Machine - Putting it “IN CYCLE”

- 1 Make sure that people near the machine are aware that it is about to start.
- 2 Make sure that the correct recipe for product that is going to be run has been selected and loaded into the HMI.
- 3 Verify that the machine is ready to run. The banner @ the bottom of the HMI screen will display: *Ready To Run. Press Cycle Start.*



- 4 Press the **CYCLE START** push button.

5.5 Stopping the Machine

5.5.1 In An Emergency

Press the EMERGENCY STOP button to stop the machine if a hazard appears to personnel or the machine. Pressing either of these buttons will immediately stop the machine and drop all electrical power to the machine except the machine's internal controls.



5.5.1.1 Recovering from an Emergency Stop

After pressing the **EMERGENCY STOP** button, do the following to reset the machine:

- 1 Remove or resolve the cause of the emergency stop action.
- 2 Close all guards and doors.
- 3 Pull all the **EMERGENCY STOP** buttons up.
- 4 Press and release the **POWER ON** button.
- 5 Press the **CYCLE STOP/RESET** button.

5.5.2 Performing a Normal Cycle Stop

The best way to stop the machine, under normal conditions, is to press the **CYCLE STOP / RESET** push button. This allows the machine to come to a controlled stop which will make restarting the machine much easier.

NOTICE

Opening a guard door will also stop the machine, but this method isn't a controlled stop and removal of some product will be necessary, increasing the amount of time the machine will be out of cycle.

5.5.3 Long Term Shut Down

To completely shut down the machine for an extended period of time (maintenance, end of production for the day):

- 1 Press the *CYCLE STOP/RESET* button.
- 2 Clear out any product from the machine.
- 3 Press an *EMERGENCY STOP* push button.
- 4 From the Main Electrical Cabinet, turn the *Main Disconnect Switch* to the OFF position.

5.6 Clearing Jams/ Recovering from a Fault

This section explains how to identify the fault and procedures for restarting. A list of faults, possible causes and corrective actions is included in the Troubleshooting chapter.

5.6.1 Identifying the Fault

When a fault occurs, a red banner will appear at the bottom of the HMI screen indicating what the fault is.

5.6.2 After Addressing the Cause

- 1 Close the guard door.
- 2 Press the *CYCLE STOP/RESET* button.
- 3 Press the *ONE CYCLE* button to “reset” the index conveyor.
- 4 Prep the machine for a restart by adding or removing product, if necessary. If not, skip 5 & 6.
- 5 Close the guard door.
- 6 Press the *CYCLE STOP/RESET* button.
- 7 Press the *CYCLE START* button when ready.

NOTICE

The machine may stop with a tray at the glue station that does not get to the compression section causing the glue to set before the tray is completely formed. Be prepare to remove that tray and product once it exits the machine or remove it prior to a restart.

5.7 Safe Removal of Product - Purging

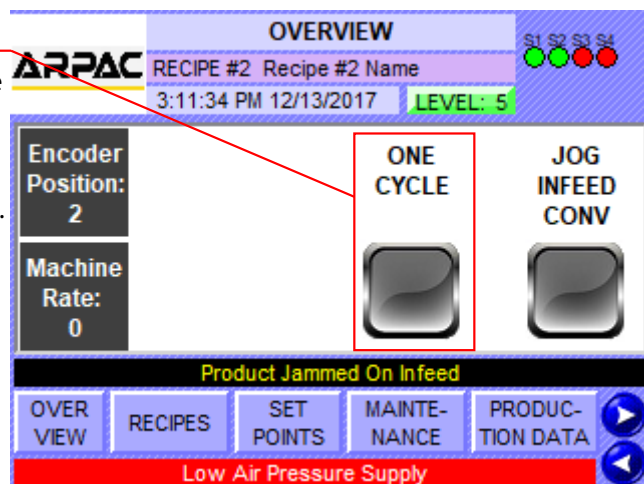
At the end of a shift or prior to performing a changeover, it may be necessary to remove product from the machine.

This machine does not have an automatic purge function, but the following steps describe how to safely remove product from the machine, with minimal physical handling of the product.

- 1 After the in-feed belt stops due to inactivity, press the **CYCLE STOP** button.
- 2 With the machine stopped, but in a "Ready to Run" state, alternate pressing the **ONE CYCLE** button to manually advance the machine from one station to the next until the in-feed conveyor no longer has product on it.

One Cycle

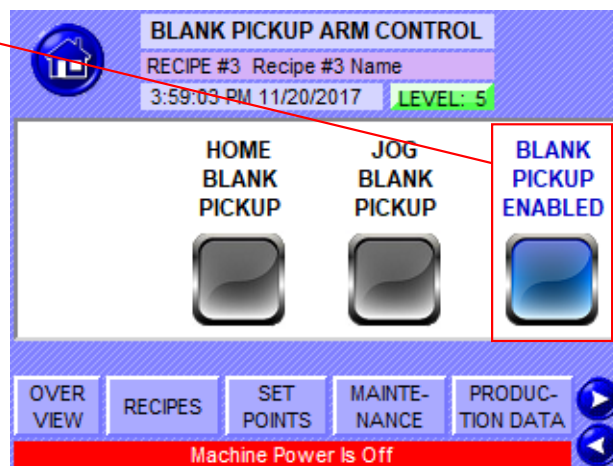
Press and release the One Cycle button as many times as necessary to empty the In-feed conveyor.



- 3 From the HMI, turn the Pick & Place arm off.

Blank Pick-Up

Press to disables the Blank Pick arm to not waste tray blanks.



- 4 Continue pressing the **ONE CYCLE** button until the machine is completely empty of product.

5.8 Performing a Changeover

5.8.1 Overview

This machine is capable of running multiple individual product sizes in several bundle configurations. The procedure discussed in this section is intended to serve as a guide to assist with performing a successful changeover from one size to another.

The changeover process for this machine involves control adjustments, mechanical adjustments and mechanical change parts. To help simplify and speed up the process, specific features were designed into the machine.

- 1** Red changeover points represent areas requiring either a change part or an adjustment that needs to be set to the product or tray. These changeover points do not have a scale or indicator dial and they are not referenced or stored in the HMI
- 1** Yellow changeover points represent changeover points that are stored in the HMI for reference. These points should be set the value from a scale or dial indicator
- Blue rectangle** represents where program changes are made

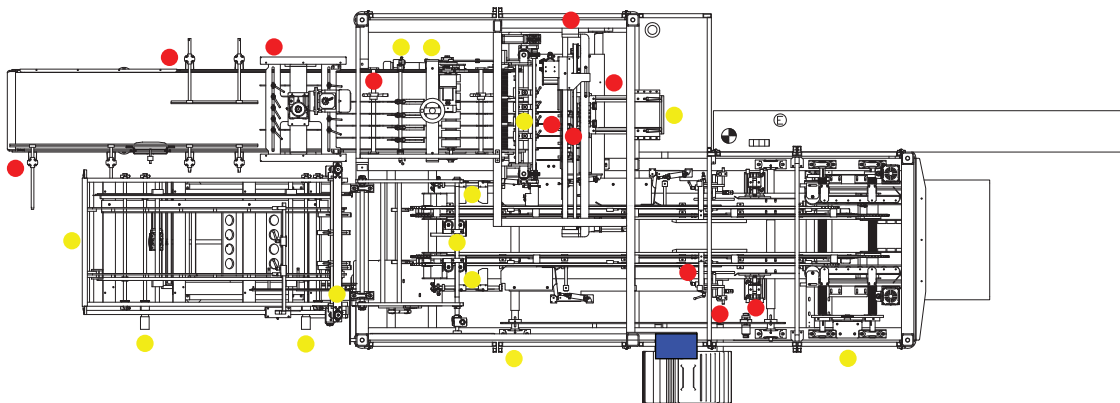


Figure 5-1. Adjustment Points

5.8.2 Before Performing a Changeover

Before performing a change over, have a plan and be prepared.



This procedure should only be performed by qualified, experienced personnel with knowledge of mechanical, electrical and control systems.

5.8.2.1 Planning

A key aspect required to perform a successful changeover is planning and preparation. The following should be considered before starting:

- 1 Know the production schedule - knowing when a changeover needs to occur ahead of time allows for proper preparation.
- 2 Gather all necessary tools, change parts, etc before you begin. A changeover rack or cart like the one shown below helps to keeps everything organized.



- 3 Have a note pad and pen to jot down any notes or issues that come up so they can be corrected and the process can be improved for the next time.

5.8.3 Clear the Machine of Product and Tray Blanks

The machine needs to be completely empty of product and tray blanks before it can be changed over.

- 1 Purge product from the machine.
- 2 Remove and store the existing tray blanks from the magazine.
- 3 At the main operator station, navigate to the Set Point Menu group on the HMI and save the existing recipe.

#	PARAMETER	UNITS	VALUE
1	Number of Lanes on Infeed Conv	#	3
2	Spare	n/a	0
3	Delay to Start Main Ram	0.01s	5
4	Infeed Min Accum Debounce	0.01s	3
5	Detect Infeed Min Accum	0.01s	50

SAVE

OVER VIEW RECIPES SET POINTS MAINTENANCE PRODUCTION DATA

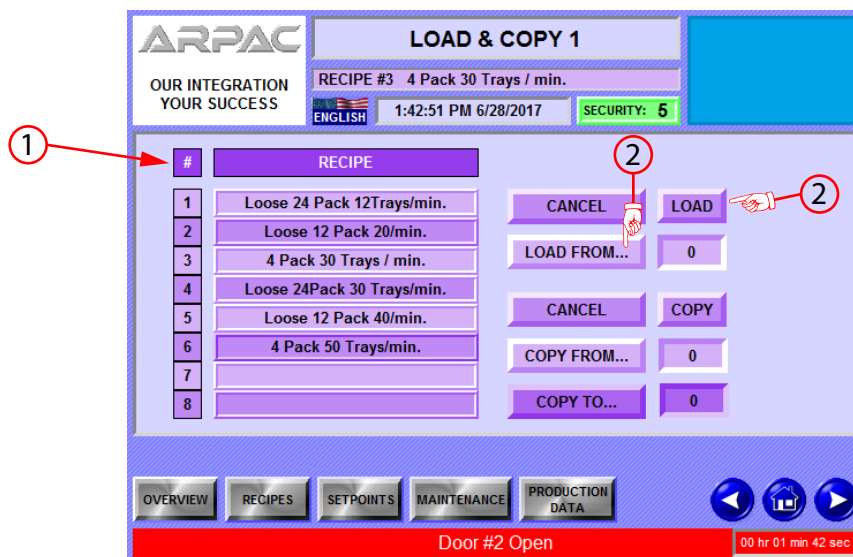
Trayloader Door Safety Circuit Open

Save Existing Recipe

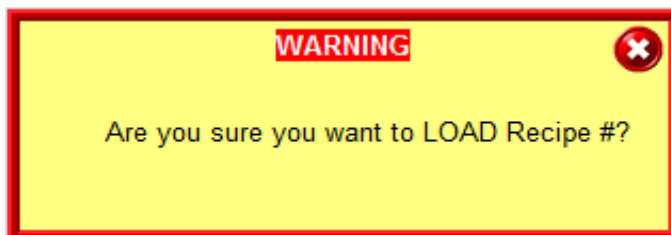
A good habit to get into is saving the existing recipe before changing over. This will help ensure a smooth start-up when running that recipe the next time.

5.8.4 Load the new Recipe

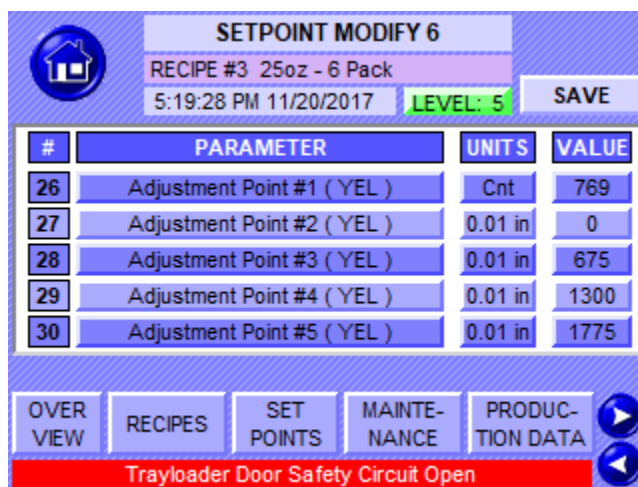
- 1 Find the number of the recipe that is going to be ran next and load it into the HMI.



- 2 Press **ENTER** to confirm.



- 3 Navigate to the Adjustment Point screens used for reference and write down the yellow adjustment positions.



5.8.5 Power Down & Apply LOTO

To safely perform a changeover, the machine should be powered down and locked out to limit the possibility of injury.

- 1 Press an **E-STOP** button.
- 2 Switch the main disconnect from ON to OFF.
- 3 Switch the air supply valve from SUP to EXH.
- 4 Apply LOTO to disconnect and air shut-off valve.



Refer to the LOTO procedure in the Safety Information chapter for the complete procedure.

NOTICE

Your company's LOTO procedures and protocols take precedence.

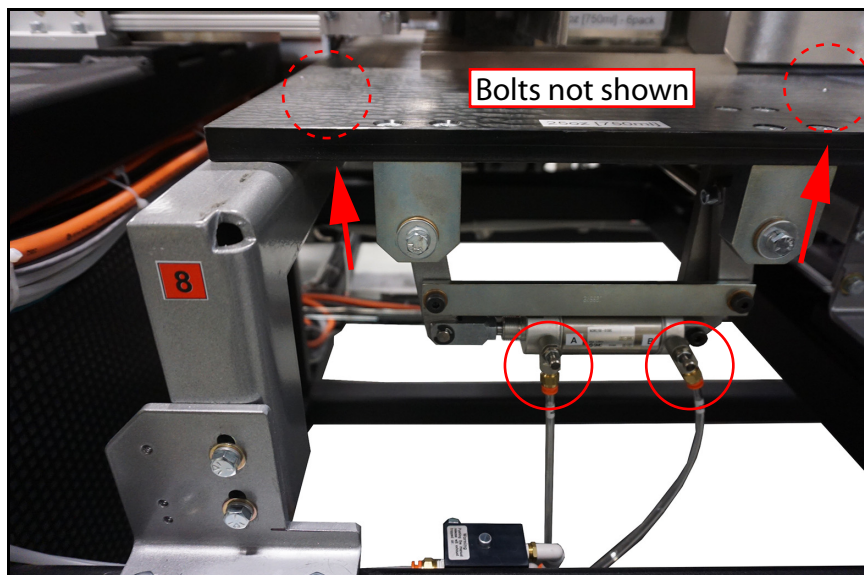
5.8.6 Install Change Parts

Several assemblies have change parts that need to be swapped out.

NOTICE

Some of the steps described in this procedure should be performed in a particular sequence, but as personnel become familiar with and experienced in performing a changeover, it is expected that some modifications, adjustments, revisions and improvements can or will be necessary.

5.8.6.1 Dead Plate



- 1 Disconnect the two air lines from the Pop-Up guide air cylinder.
- 2 Loosen, but don't remove the two dead plate retaining screws (red arrows) from underneath the dead plate.
- 3 Slide the dead plate to the side, then out and up.
- 4 Install the correct dead plate by reversing the steps listed above.
- 5 Reconnect the air cylinder air lines.

5.8.6.2 Ram Face Plate



- 1 Loosen, but don't remove the two face plate retaining screws.
- 2 Slide the plate over then up and out.
- 3 Install the correct sized plate by reversing the step listed above.

5.8.6. Swap Out the Lane Guide Spacers



- 1 Loosen the Nut Handle assembly.
- 2 Swap out the spacer assemblies.
- 3 Tighten the Nut Handle assembly.

5.8.7 Make Mechanical Adjustments

Complete the remaining red adjustment points and then the yellow adjustment points.

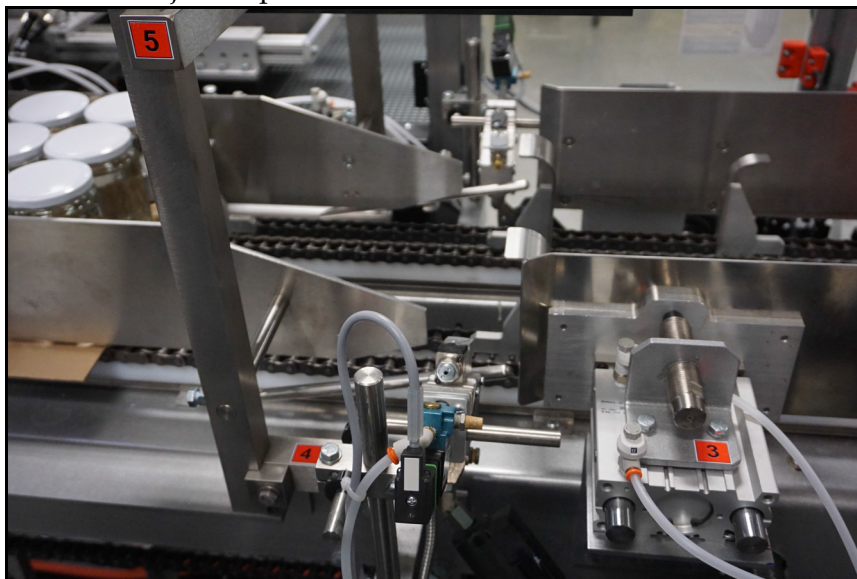
5.8.7.1 Red Adjustment Points

The red labeled adjustment points signify change parts and/or adjustment points that do not have a scale or dial indicator and require either the actual product and/or a tray blank for the adjustment.

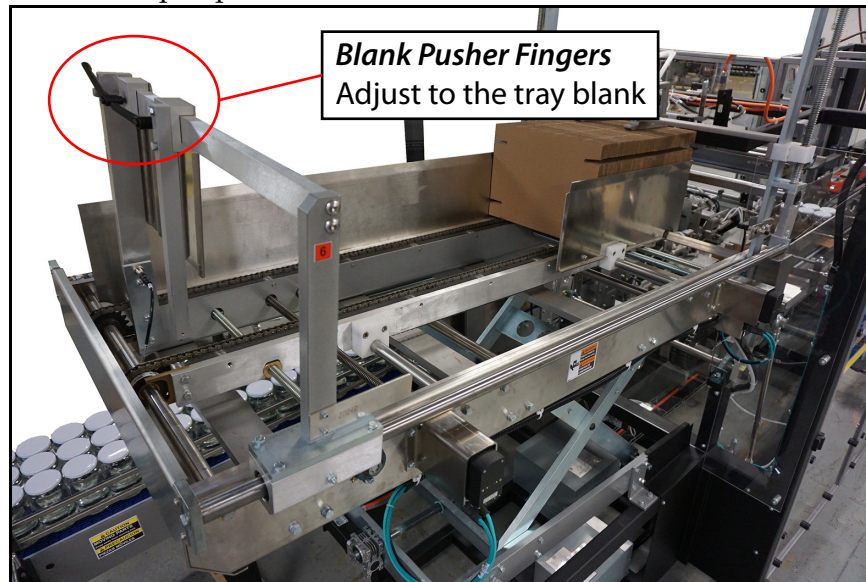
- 1 Adjust out RH Suction Cup Guard
- 2 Adjust LH Suction Cup Guard



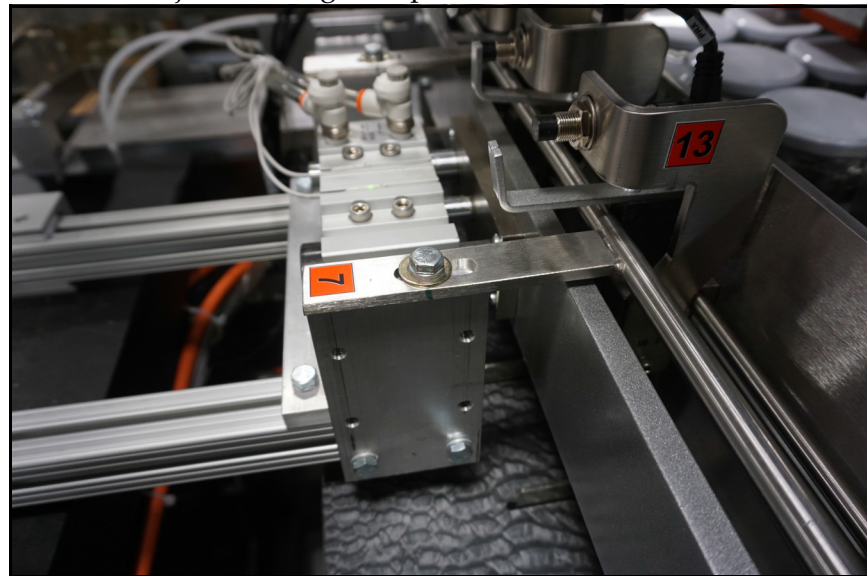
- 3 Adjust Side Compression position
- 4 Adjust Major Flap Plow
- 5 Adjust Top Guide Position



- 6 Adjust the position of the blank pusher fingers in or out to ensure equal pressure across the width of the blank.

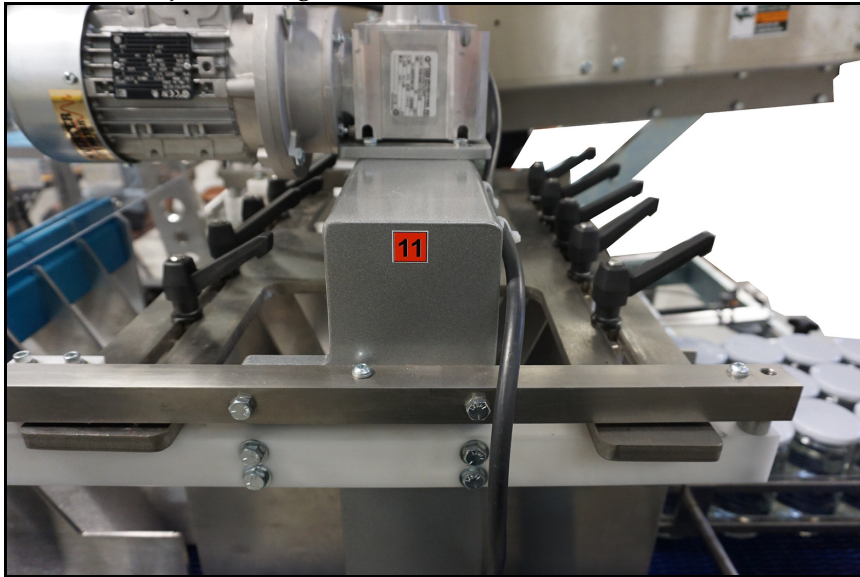


- 7 Adjust the Finger Stop bar.



- 8 Dead Plate (see: Change Parts)
- 9 Swap out the Ram face plate (see: Change Parts)
- 10 Swap out the lane spacers (see: Change Parts)

11 Adjust the Agitator Lane Positions



12 Center the Product Stops to the product.



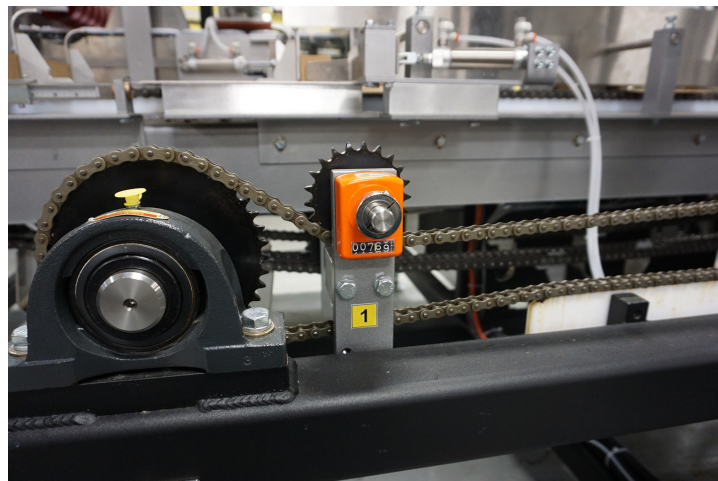
13 Center the finger positions of the step back assembly to the product.



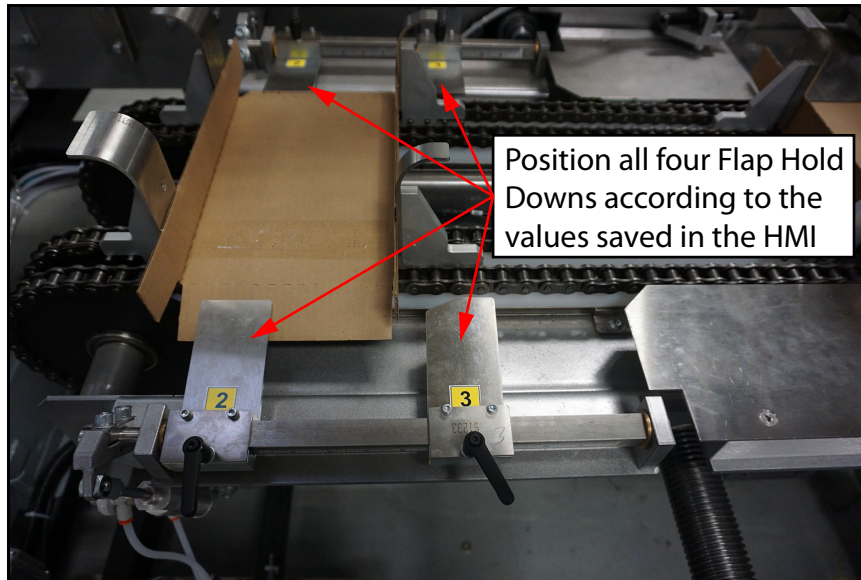
5.8.7.2 Yellow Adjustment Points

These adjustment points are listed in order according to their number, but the exact order does not matter. The values for these adjustments have been saved in the HMI for each product recipe.

1 Index Conveyor Width



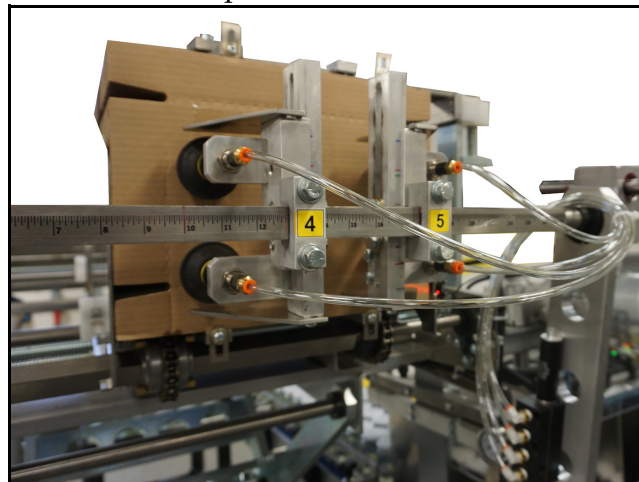
2 Upstream Flap Hold Downs



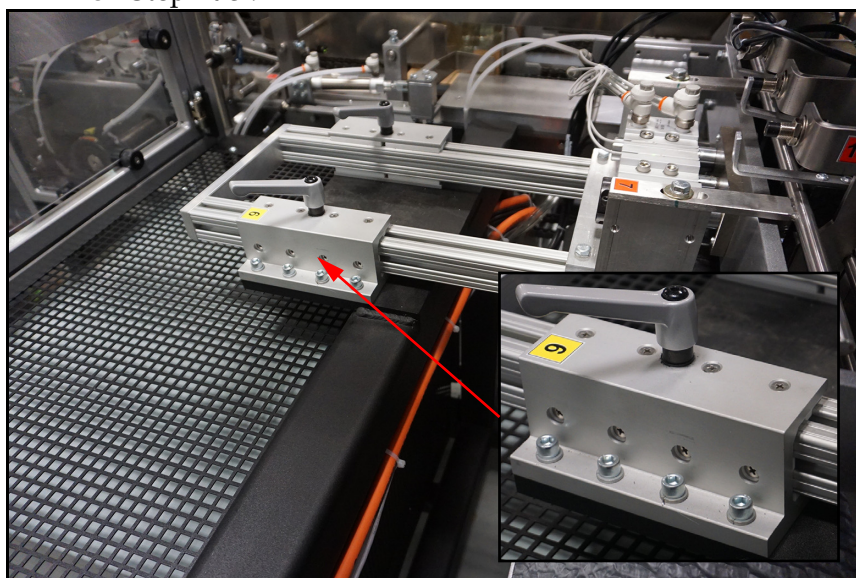
3 Downstream Flap Hold down

4 Right Suction Cup Position

5 Left Suction Cup Position

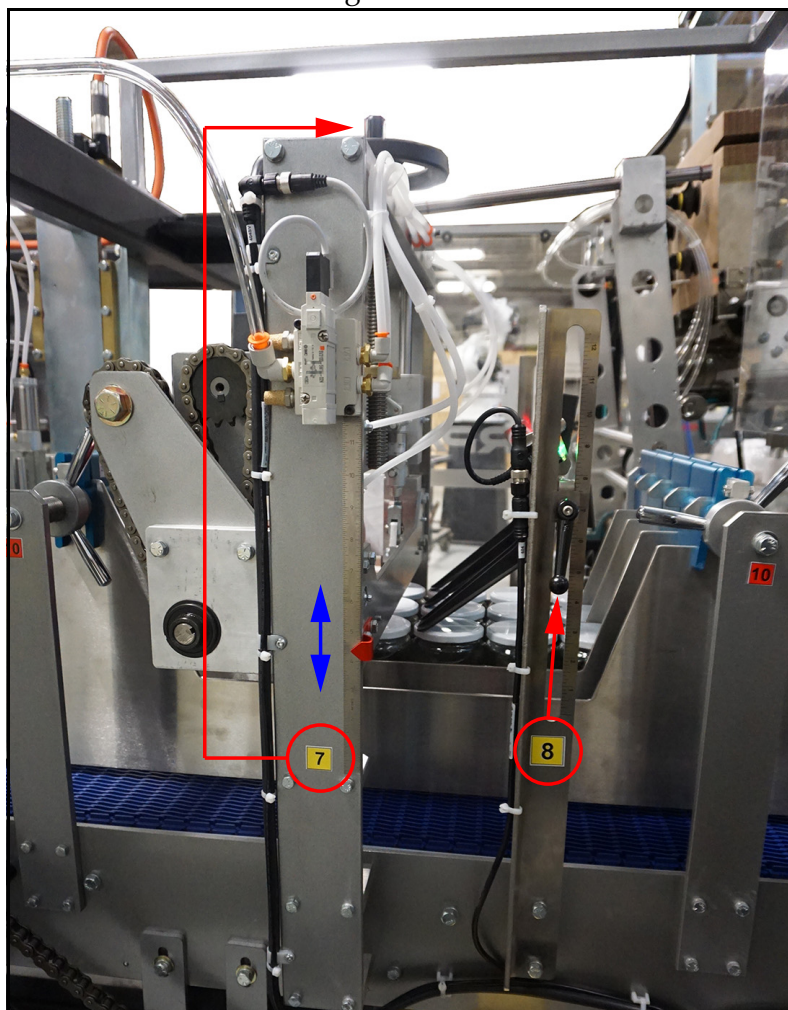


6 Step Back



7 Top Drive Height

8 Product Detect Height



5.8.8 Complete PLC Control Changes

- 1 Remove LOTO devices from the air shut-off valve and main disconnect.
- 2 Navigate to the Blank Pickup Arm, the Servo Ram and Servo Index Con. control screens and home all the servo motors. Homing the servo motors sets the physical position of the devices they control at their "home" position.
- 3 Press the **CYCLE STOP / RESET** button to clear any fault messages.

5.8.9 Prep The Machine For Production

Before being able to run production, the Blank Magazine needs to be loaded with the correct tray blanks and the in-feed conveyor needs to be primed with product.

- 1 Load the Blank Magazine with tray blanks.
- 2 Prime the in-feed conveyor. Fill the infeed conveyor with product by pressing and holding the **JOG INFEED CONV** button. Ensure that product fills the lanes evenly and that there is enough product on the infeed conveyor to block the **Product Detect** PE's, at a minimum.
- 3 Once all the step back PE's and the product detect PE's are blocked and the message banner reads, *"Ready to Run. Press Cycle Start"* the machine is ready to run.

6.1 Introduction

This chapter covers the periodic maintenance procedures for the machine and other maintenance related items.



Warning

The following procedures should only be done after the machine has been turned off, allowed to cool down and the air pressure has been released. Always follow Lockout/Tagout procedures. Always wear safety glasses and all required personal protective equipment.

6.2 Preventive Maintenance Schedule

Refer to the schedule below for information on when to perform periodic maintenance on the machine.

Note: Due to varying operating conditions, the procedures listed below may have to be performed at greater or lesser intervals. You may have to adjust intervals according to your machine's performance.

What To Do:	When To Do It:			
	Daily	Weekly	Monthly	Yearly
Perform Walk Around Safety Inspection	X			
Clean External Surfaces	X			
Check EMERGENCY STOP Buttons For Proper Operation	X			
Drain Air Filters	X			
Inspect & Clean Glue System		X		
Inspect Suction Cups		X		
Clean Photo Eyes		X		
Inspecting Conveyor Belts		X		
Lubricate Drive Chains			X	
Lubricate Bearings				X

Table 6-1: Preventive Maintenance Schedule

6.3 PM Tasks

6.3.1 Walk Around Safety Inspection

Tools Required:

- None

At the beginning of each day, do a daily safety inspection of the machine and its surrounding area. Pick up any trash or obstacles around the machine. Wipe up any grease or spills.

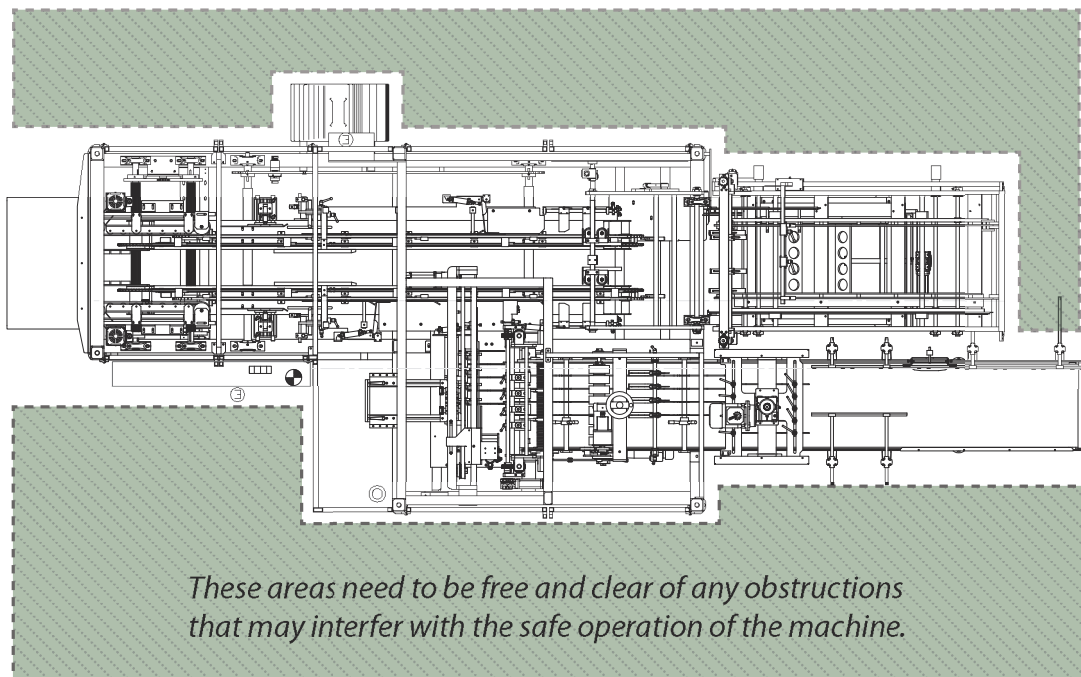


Figure 6-1. Inspecting the Machine

6.3.2 Cleaning External Surfaces

Tools & Materials Required:

- cleaning wipes
- warm, soapy water

Use cleaning wipes and warm soapy water to clean external surfaces of the machine.

6.3.2 Check Emergency Stop Button

With the machine cycling, press the each **EMERGENCY STOP** button. The machine should stop immediately. Pull each button back up and press **CYCLE STOP/RESET** button to reset.



6.3.3 Draining Air Filter Bowl

There is one air filter located on the machine.

Tools Required:

- Cleaning Wipes
- 1 Make sure that air is connected to machine and machine is turned on but not running.
 - 2 Turn drain plug 1/4 turn and let water drain out.
 - 3 Turn drain plug back 1/4 turn to stop air flow.
 - 4 Wipe up expelled water.

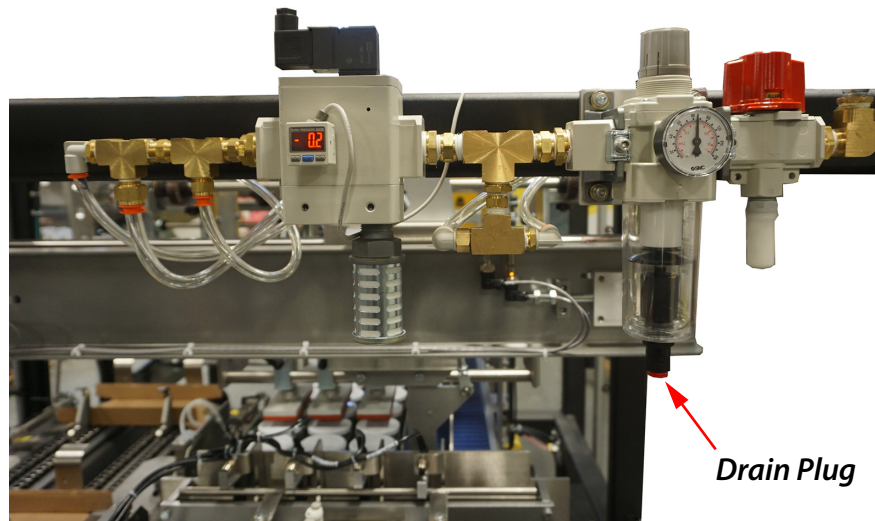
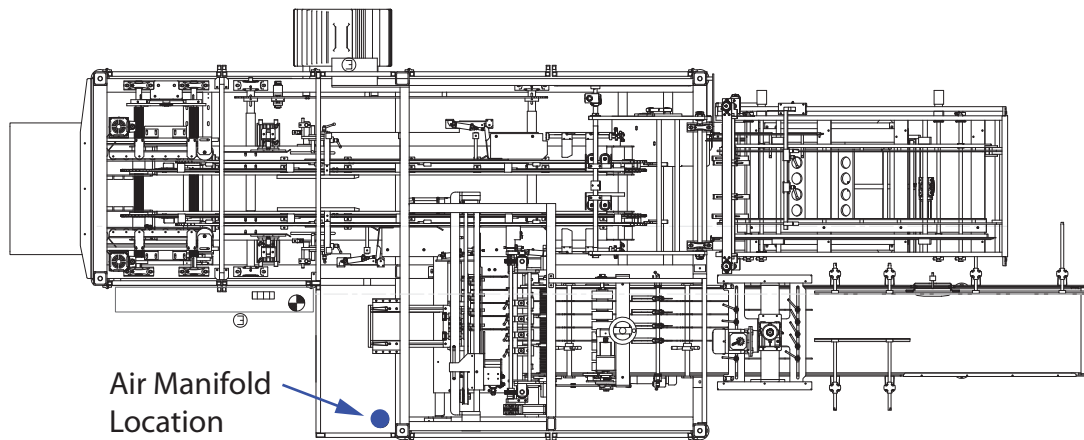
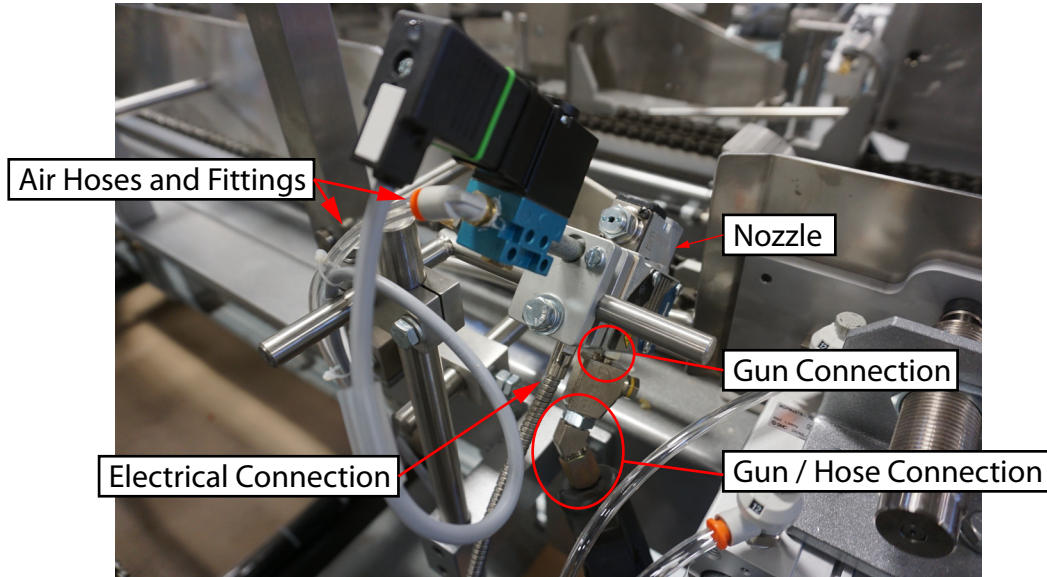


Figure 6-2. Air Filter Drain Plug



6.3.4 Inspect and Clean the Glue System

Inspect and clean as necessary all glue system components; nozzles, glue gun, hoses and connections.



Warning

Do not attempt to clean a glue system that is energized or still hot. Refer to the vendor's manual for additional safety information.

6.3.5 Inspect Suction Cups

Tools & Materials Required: None

- 1 Turn off machine's main disconnect switch.
- 2 Inspect suction cups for cracks or damage. Replace as necessary.



Figure 6-3. Suction Cups

6.3.6 Cleaning Photo Eyes

Tools & Materials Required:

- Cleaning Wipes
- Window Cleaning Solution

Warning

Turn off machine's main disconnect switch before servicing machine. You can get severely injured if you do not.

- 1 Turn off machine's main disconnect switch.
- 2 Spray a small amount of window cleaning solution to the face of each photo eyes.
- 3 Dry photo eye with cleaning wipe.
- 4 Turn main disconnect switch back on.

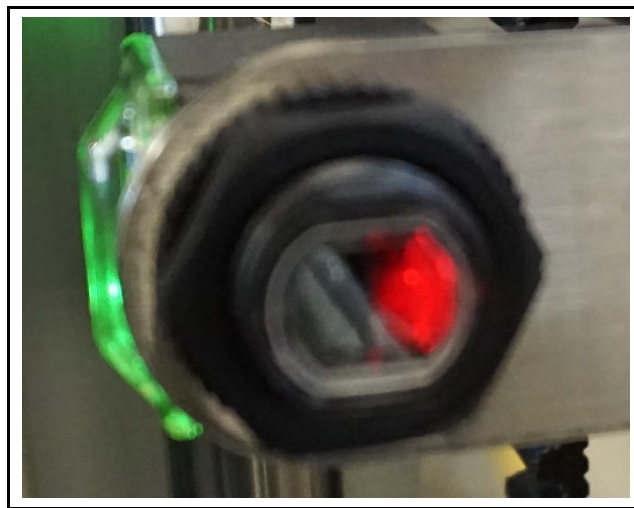


Figure 6-4. Typical PE

6.3.7 Inspecting Conveyor Belts

Tools & Materials Required:

- Cleaning Wipes
- Fine Wire Brush
- Warm, Soapy Water

Inspect the plastic modular belting for any loose pins at the edges of the belt (1) or damaged links (2). Using cleaning wipes or a soft damp cloth to clean the belt.



Figure 6-5. Module Plastic Belting care

6.4 Chain & Bearing Maintenance

Chain and bearing care and lubrication schedules vary based on application and environment. The following are general guidelines to extend chain and bearing life.

6.4.1 Chain Lubrication & Care

Proper lubrication is critical in achieving the maximum wear life of any roller chain. As the chain articulates around the sprockets, the pin and bushing wear. This wearing causes the elongation, or “stretch” in the chain. Lubrication of these surfaces through proper lube application can greatly increase the wear life of the chain. Chain lubricants should have a sufficiently low viscosity to reach the internal surfaces of the pin and bushings which articulate with each other while the chain is under full load and free of corrosive ingredients, yet have sufficient enough body to maintain the lubricating film. The Index conveyor chains carrying the leading and trailing lugs is the exception. Avoid greasing these chains to prevent the trays from getting marred.



Recommended Lubricants

- Ambient temperature: 20-40 F - SUS Viscosity 100 F of 200-400, SAE Engine oil of 20 Weight, SAE Gear Oil 80 W, ISO 46 or 68, and AGMA lubrication 1 or 2.
- Ambient temperature: 40-100 F - SUS Viscosity 400-650, SAE Engine oil of 30 Weight, SAE Gear Oil 85 W, ISO 100, and AGMA lubrication 3.
- Ambient Temperature 100-120 F - SUS Viscosity 650-950, SAE Engine oil of 40 Weight, SAE Gear Oil 90, ISO 150, and AGMA lubrication 4.
- Ambient Temperature 120-140 F - SUS Viscosity 950-1450, SAE Engine oil of 50 Weight, SAE Gear Oil 90, ISO 220, and AGMA lubrication 5.

6.4.2 Bearing Lubrication & Care

Bearings supplied with grease fittings should be periodically re-lubricated with hand or automatic grease guns. For safety purposes, stop rotating equipment prior to greasing. Add grease slowly until a small bead of grease is present at the seals. Depending on operating conditions, two pumps from a hand operated grease gun should be sufficient. Care needs to be taken to not over apply the grease. Excessive application when re-greasing can cause damage to the seals. Always wipe the fittings and areas around the seals clean after application to help prevent contamination.

Food Grade

LUBRIPLATE SFL-2 is a **synthetic multi-purpose food-grade grease**, which can be used throughout most modern food processing plants for most all grease lubrication requirements. This product has an approximate operating temperature range of -25 to 400°F. (white in color).

Non-Food Grade

MULTIPLEX RED #2 **lithium complex grease** developed for the lubrication of automotive and industrial equipment operating under heavy loads and at moderate to high temperatures. It is particularly recommended for use in applications that are too severe or require higher performance than provided by conventional extreme-pressure lithium greases.

These are just brands, there are many other comparable brands which can be used on industrial equipment use in secondary packaging.

They only need to be comparable in temperature range, viscosity, and application (food grade or not).

7.1 Introduction

This chapter is divided into two sections.

The first section is an index of fault messages that appear on the machine's display. This index is cross referenced to a second section that contains group of troubleshooting charts that will guide you through how to resolve fault message issues.

7.2 Fault Message Troubleshooting Index & Charts

Use the following troubleshooting index and troubleshooting charts as an aid in solving your problems associated with fault messages that appear on the machine's display.

Problem
After solving problem that caused message to occur, press the red CYCLE/STOP RESET button on the main control panel to clear message from display.
Main Ram Servo Must Be Homed
Index Conveyor Must Be Homed
Low Air Pressure Supply
Glue Unit Fault
Glue Unit Not Ready
Blank Jammed At Blank Load Section
Tipped Product Detected On Infeed
Main Ram Servo Overtraveled
Main Ram Servo Position Error
Index Servo Position Error
Blank Pick Up Drive Comm Loss
Infeed Drive Comm Loss
Discharge Conv Drive Comm Loss
Blank Pick Up Drive Not Ready
Discharge Conv Drive Not Ready
Discharge Conv OI Tripped
Machine Power Is Off
Blank Pick Up Torque Limitor Tripped
Main Ram Servo Drive Not Ready
Index Conveyor Servo Drive Not Ready
Back Up At Index Exit
Blanks In Magazine Did Not Advance
Main Ram Lift Not Up
Door Safety Circuit Open
Blank Pusher Not At Adjust Position
Step Back Cylinder Jammed

Table 7-1: Troubleshooting Index

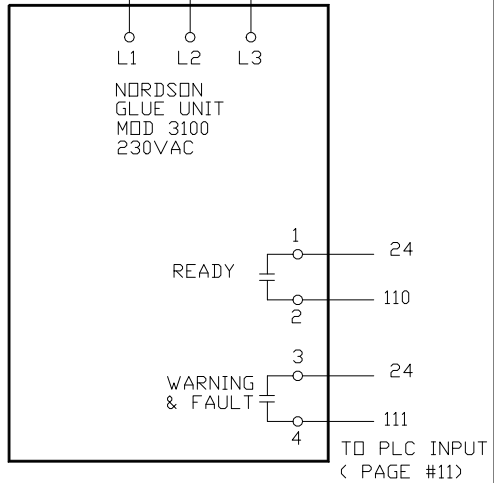
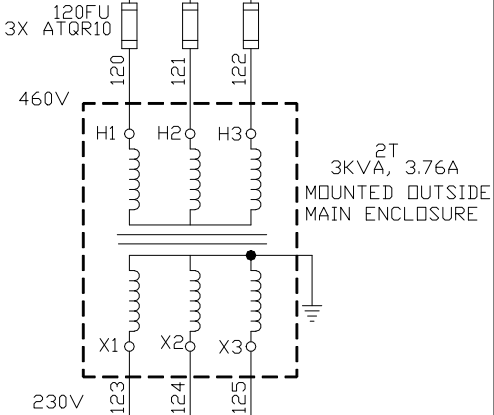
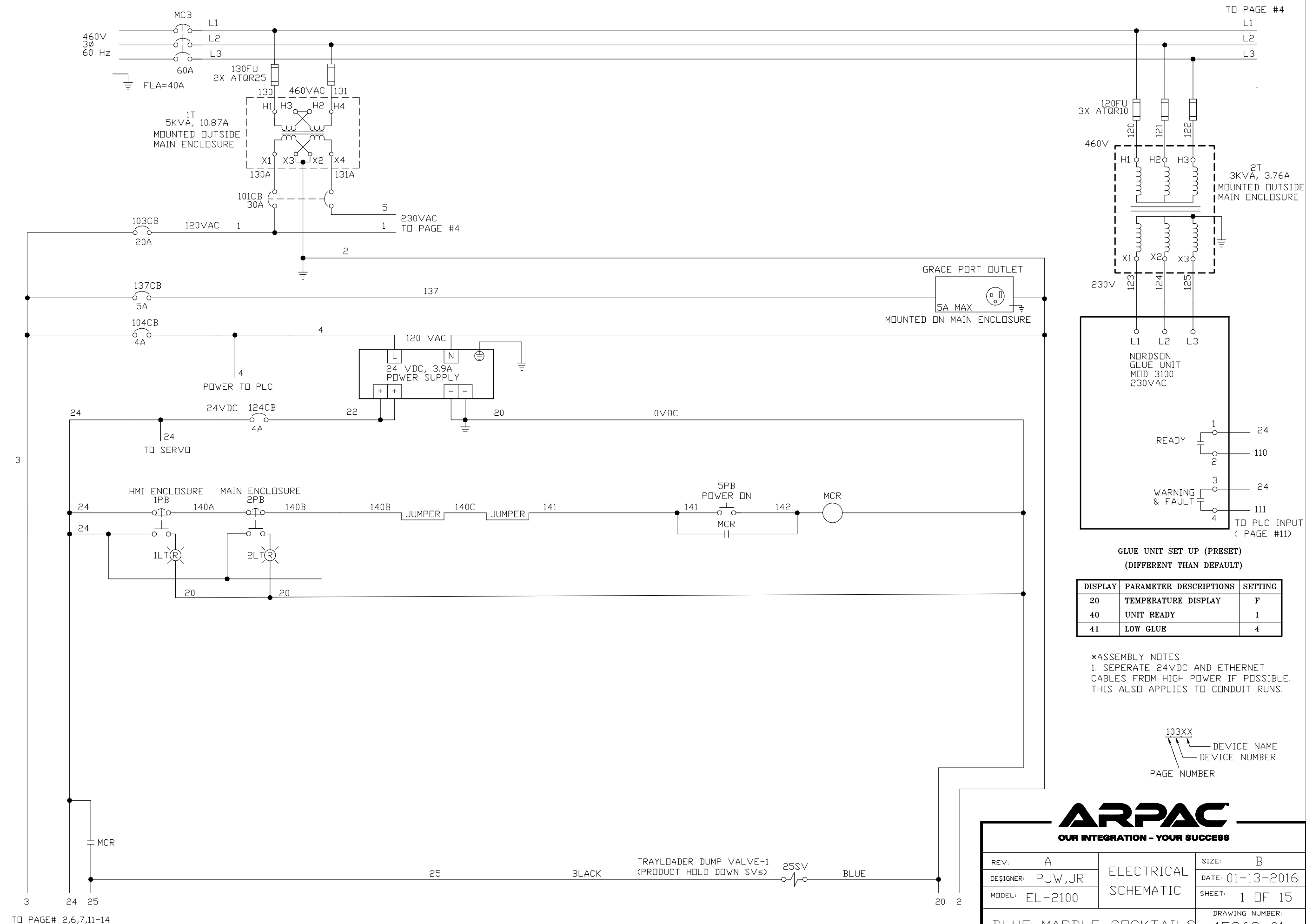
Fault Message	Possible Cause	Remedy
Main Ram Servo Must Be Homed	Servo motor does not know its location.	Home the motor. Press CYCLE STOP/ RESET
Index Conveyor Must Be Homed	Servo motor does not know its location.	Home the motor. Press CYCLE STOP/ RESET
Low Air Pressure Supply	Air pressure has dropped below the allowable limit	Clear obstruction Turn the air ON
Glue Unit Fault	Glue system fault message being sent to the PLC	Refer to vendor manual from corrective action
Glue Unit Not Ready	Glue system not turned on or not up to temperature	Turn unit on and allow to come up to temperature
Blank Jammed At Blank Load Section	The <i>Detect Blank At Product Load Station</i> PE is not blocked when the main ram is ready to push	Clear obstruction. Insert a blank at the load station position. Press CYCLE STOP/ RESET.
Tipped Product Detected On Infeed	PE at the product detect is blocked	Stand up product or clear the obstruction. Press CYCLE STOP/ RESET.
Main Ram Servo Overtraveled	Indicates that servo moved assembly past overtravel proximity switch.	Make sure that proximity switch on assembly is mounted correctly and are functioning properly.

Fault Message	Possible Cause	Remedy
Main Ram Servo Position Error	Indicates that blank transfer mechanism is blocked by obstruction. Proximity switches faulty or not properly mounted.	Check for and remove any obstructions. Reset servo. Make sure that proximity switches are working correctly and are mounted properly. There is an LED on the back of each switch that will light up when the switch is activated.
Index Servo Position Error	Indicates that blank transfer mechanism is blocked by obstruction. Proximity switches faulty or not properly mounted.	Check for and remove any obstructions. Reset servo. Make sure that proximity switches are working correctly and are mounted properly. There is an LED on the back of each switch that will light up when the switch is activated.
Blank Pick Up Drive Comm Loss	VFD has lost it's Ethernet signal	refer to vendor manual
Infeed Drive Comm Loss	VFD has lost it's Ethernet signal	refer to vendor manual
Discharge Conv Drive Comm Loss	VFD has lost it's Ethernet signal	refer to vendor manual
Blank Pick Up Drive Not Ready	Drive is just starting up.	Waits 30 seconds. Then press CYCLE STOP/ RESET button and restart machine.
Discharge Conv Drive Not Ready	Drive is just starting up.	Waits 30 seconds. Then press CYCLE STOP/ RESET button and restart machine.
Discharge Conv OL Tripped	One of the discharge motor's over loads is tripped	Clear possible obstruction. Refer to electrical schematic to troubleshoot the circuit.

Fault Message	Possible Cause	Remedy
Machine Power Is Off	The MCR (Master Control Relay) is not on	Refer to electrical schematic to troubleshoot cause.
Blank Pick Up Torque Limitor Tripped	Indicates that the torque limiter has tripped due to obstruction.	Remove obstruction and reset torque limiter.
Main Ram Servo Drive Not Ready	Drive is just starting up.	Waits 30 seconds. Then press CYCLE STOP/ RESET button and restart machine.
Index Conveyor Servo Drive Not Ready	Drive is just starting up.	Waits 30 seconds. Then press CYCLE STOP/ RESET button and restart machine.
Back Up At Index Exit	PE at the exit of the Index conv was blocked for too long	Check for and remove any obstructions.
Blanks In Magazine Did Not Advance	Blank Magazine Index solenoid valve turned on then off, but the <i>Index Blank</i> PE is still not blocked.	Verify position of PE. Check for any obstruction.
Main Ram Lift Not Up	Ram Up prox switch not detected AFTER the ram's forward movement has been completed.	Verify functionality of the prox switch. Troubleshoot the air cylinder.
Door Safety Circuit Open	Safety circuit has detected that one of the guard doors is open.	Close all guard doors. Press CYCLE STOP/ RESET button
Blank Pusher Not At Adjust Position	Adjustment Position prox switch not ON	Place the blank pusher
Step Back Cylinder Jammed	<i>Step Back Retracted</i> prox switch not detected AFTER <i>Step Back Forward</i> prox switch turns off.	Verify proper air pressure. Verify functionality of prox switches. Clear obstruction.

8.1 Electrical Schematics

This chapter contains the electrical schematics for the EL-2000 Series Tray/Case Loader.



GLUE UNIT SET UP (PRESET)
(DIFFERENT THAN DEFAULT)

DISPLAY	PARAMETER DESCRIPTIONS	SETTING
20	TEMPERATURE DISPLAY	F
40	UNIT READY	1
41	LOW GLUE	4

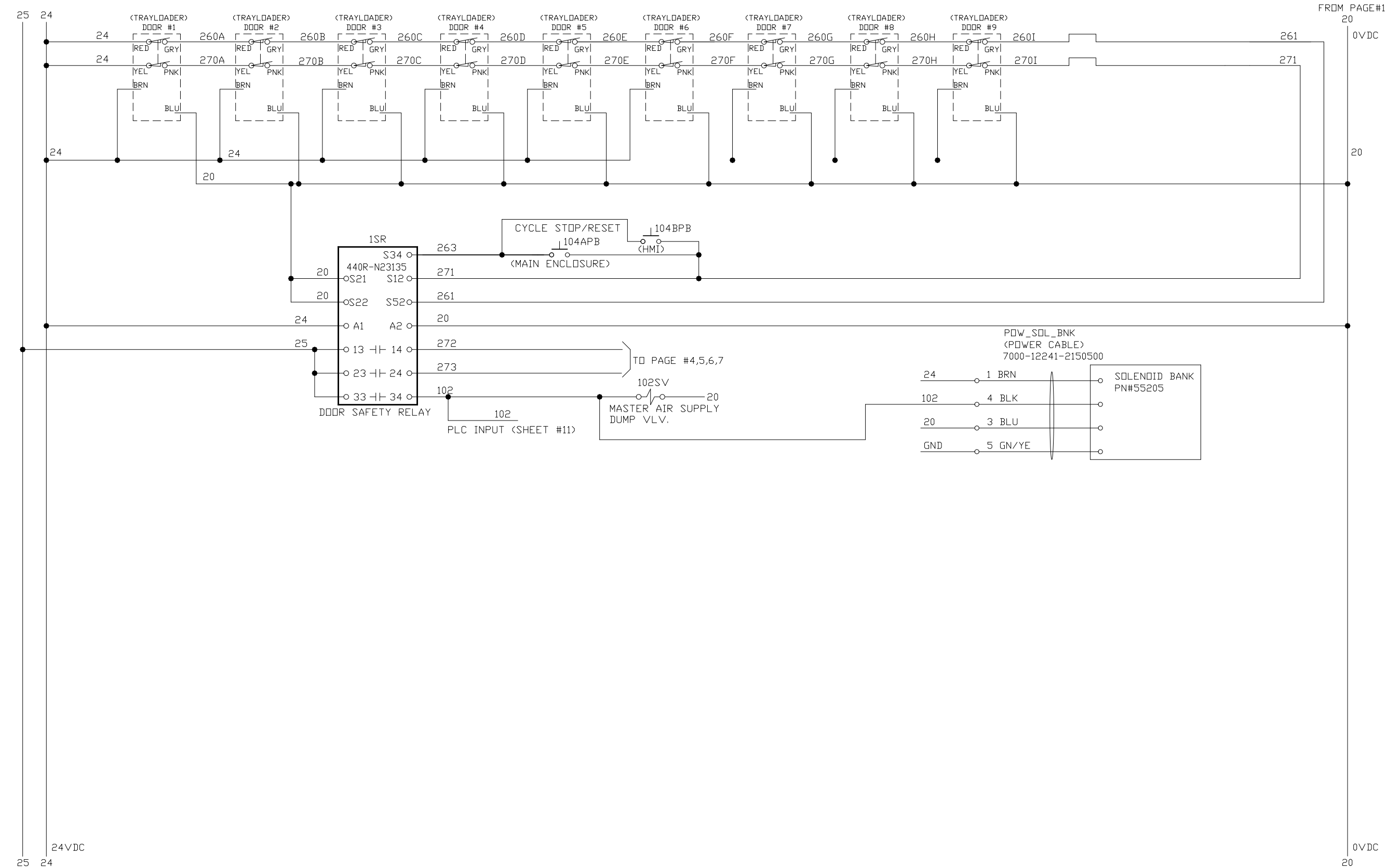
*ASSEMBLY NOTES
1. SEPERATE 24VDC AND ETHERNET CABLES FROM HIGH POWER IF POSSIBLE. THIS ALSO APPLIES TO CONDUIT RUNS.

103XX
— DEVICE NAME
— DEVICE NUMBER
PAGE NUMBER



 OUR INTEGRATION - YOUR SUCCESS				
REV.	A	ELECTRICAL SCHEMATIC	SIZE:	B
DESIGNER:	PJW,JR		DATE:	01-13-2016
MODEL:	EL-2100		SHEET:	1 OF 15
BLUE MARBLE COCKTAILS			DRAWING NUMBER: 15269-01	

FROM PAGE #1



103XX
— DEVICE NAME
— DEVICE NUMBER
PAGE NUMBER

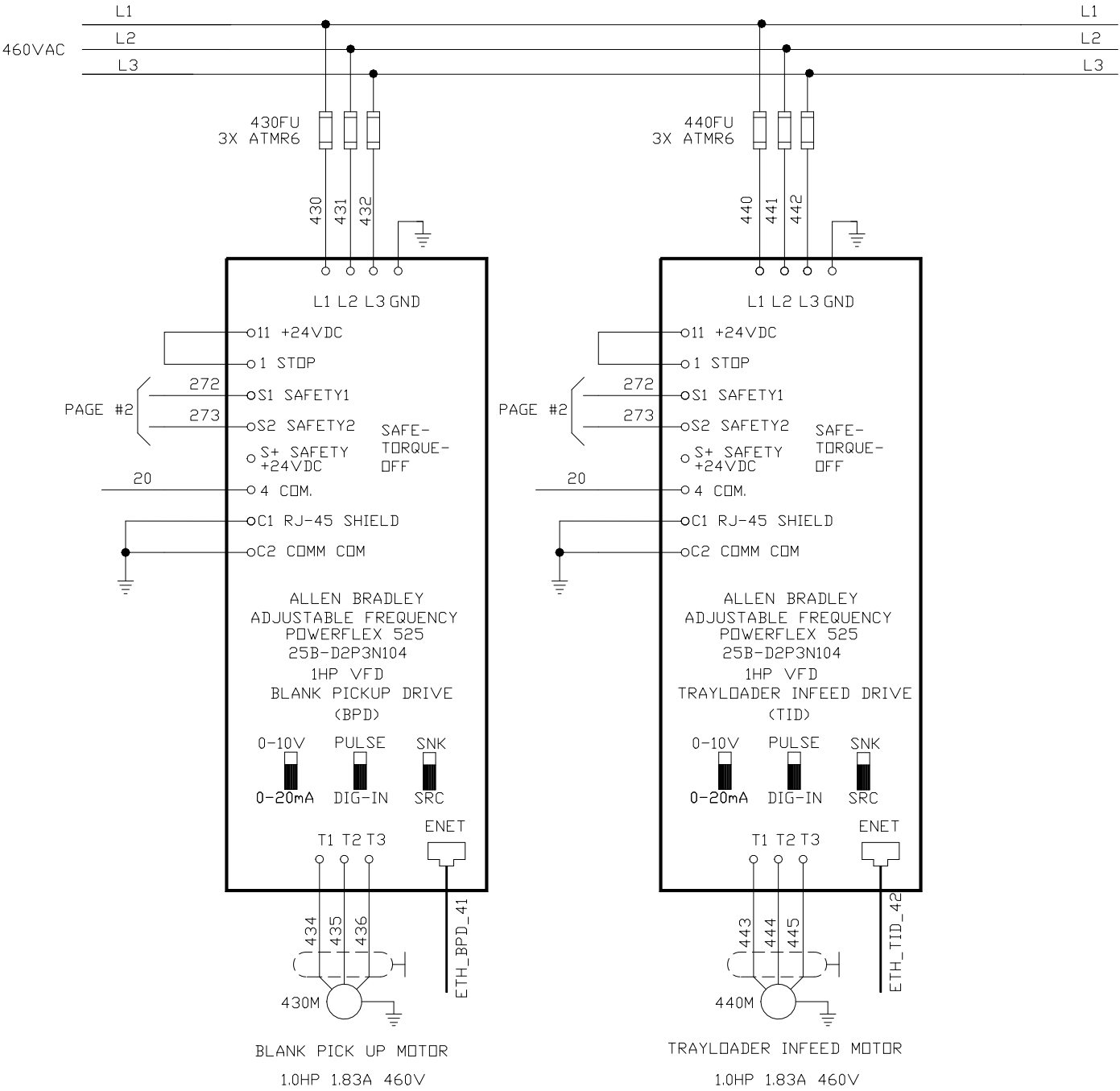
ARPAC			
OUR INTEGRATION - YOUR SUCCESS			
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DESIGNER: PJW, JR		DATE: 11-09-2015	
MODEL: EL-2100		SHEET: 2 OF 15	
BLUE MARBLE COCKTAILS		DRAWING NUMBER:	15269-02

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103XX
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PAGE NUMBER



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DESIGNER: PJW,JR		DATE: 11-09-2015	
MODEL: EL-2100		SHEET: 3 OF 15	
BLUE MARBLE COCKTAILS		DRAWING NUMBER: 15269-03	



POWER FLEX 525 DRIVE SET UP
(DIFFERENT THAN DEFAULT)

DISPLAY	PARAMETER DESCRIPTIONS	SETTING
P031	RATED VOLTAGE	460
P033	MOTOR OL CURRENT	*
P034	MOTOR NAMEPLATE FLA	*
P046	START SOURCE	5
P047	SPEED REFERENCE	15.0
P041	ACCELERATION TIME	1.0 SEC
P042	DECELERATION TIME	1.0 SEC
P044	MAX FREQUENCY	90 HZ
A541	AUTO RESTART TRIES	0.0
A543	START AT POWER UP	0

* SET TO THE MAXIMUM
ALLOWABLE MOTOR CURRENT



103XX
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— DEVICE NUMBER
PAGE NUMBER

ARPAC
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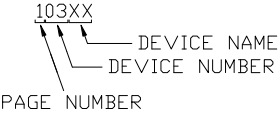
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DESIGNER: PJW,JR		DATE: 01-13-2016
MODEL: EL-2100		SHEET: 4 OF 15
BLUE MARBLE COCKTAILS		DRAWING NUMBER: 15269-04



POWER FLEX 525 DRIVE SET UP
(DIFFERENT THAN DEFAULT)

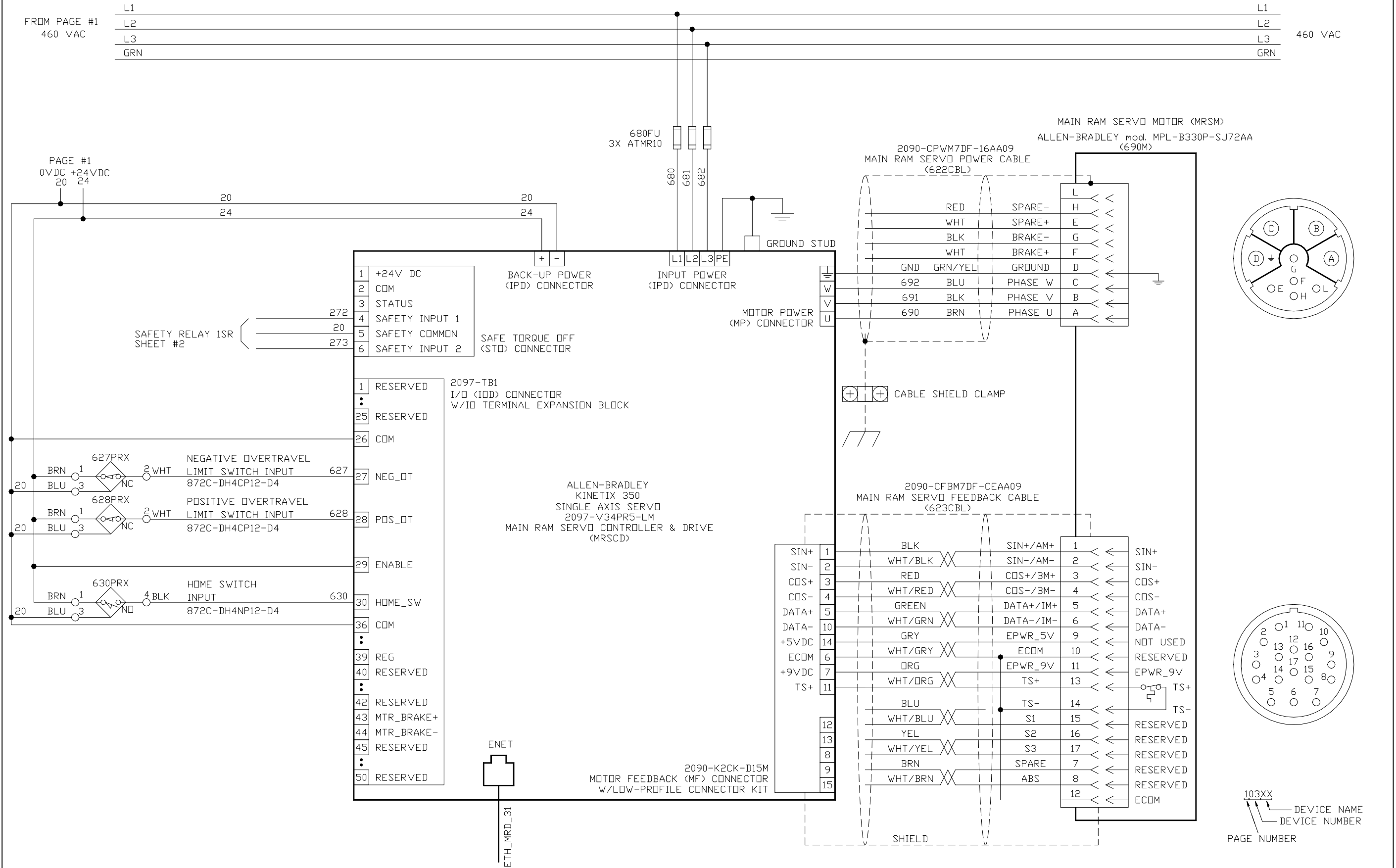
DISPLAY	PARAMETER DESCRIPTIONS	SETTING
P031	RATED VOLTAGE	460
P033	MOTOR OL CURRENT	*
P034	MOTOR NAMEPLATE FLA	*
P046	START SOURCE	5
P047	SPEED REFERENCE	15.0
P041	ACCELERATION TIME	1.0 SEC
P042	DECELERATION TIME	1.0 SEC
P044	MAX FREQUENCY	90 HZ
A541	AUTO RESTART TRIES	0.0
A543	START AT POWER UP	0

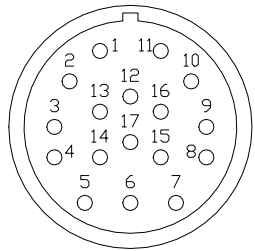
* SET TO THE MAXIMUM
ALLOWABLE MOTOR CURRENT



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REV. A	ELECTRICAL SCHEMATIC	SIZE: B
DESIGNER: PJW,JR		DATE: 11-09-2015
MODEL: EL-2100		SHEET: 5 OF 15
BLUE MARBLE COCKTAILS		DRAWING NUMBER: 15269-05





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103XX
DEVICE NAME
DEVICE NUMBER
PAGE NUMBER

ARPAC OUR INTEGRATION - YOUR SUCCESS			
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DESIGNER: PJW, JR			DATE: 11-09-2015
MODEL: EL-2100			SHEET: 8 OF 15
BLUE MARBLE COCKTAILS			DRAWING NUMBER: 15269-08

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PAGE NUMBER

ARPAC OUR INTEGRATION - YOUR SUCCESS			
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DESIGNER: PJW,JR		DATE: 01-13-2015	
MODEL: EL-2100		SHEET: 9 OF 15	
BLUE MARBLE COCKTAILS		DRAWING NUMBER: 15269-09	

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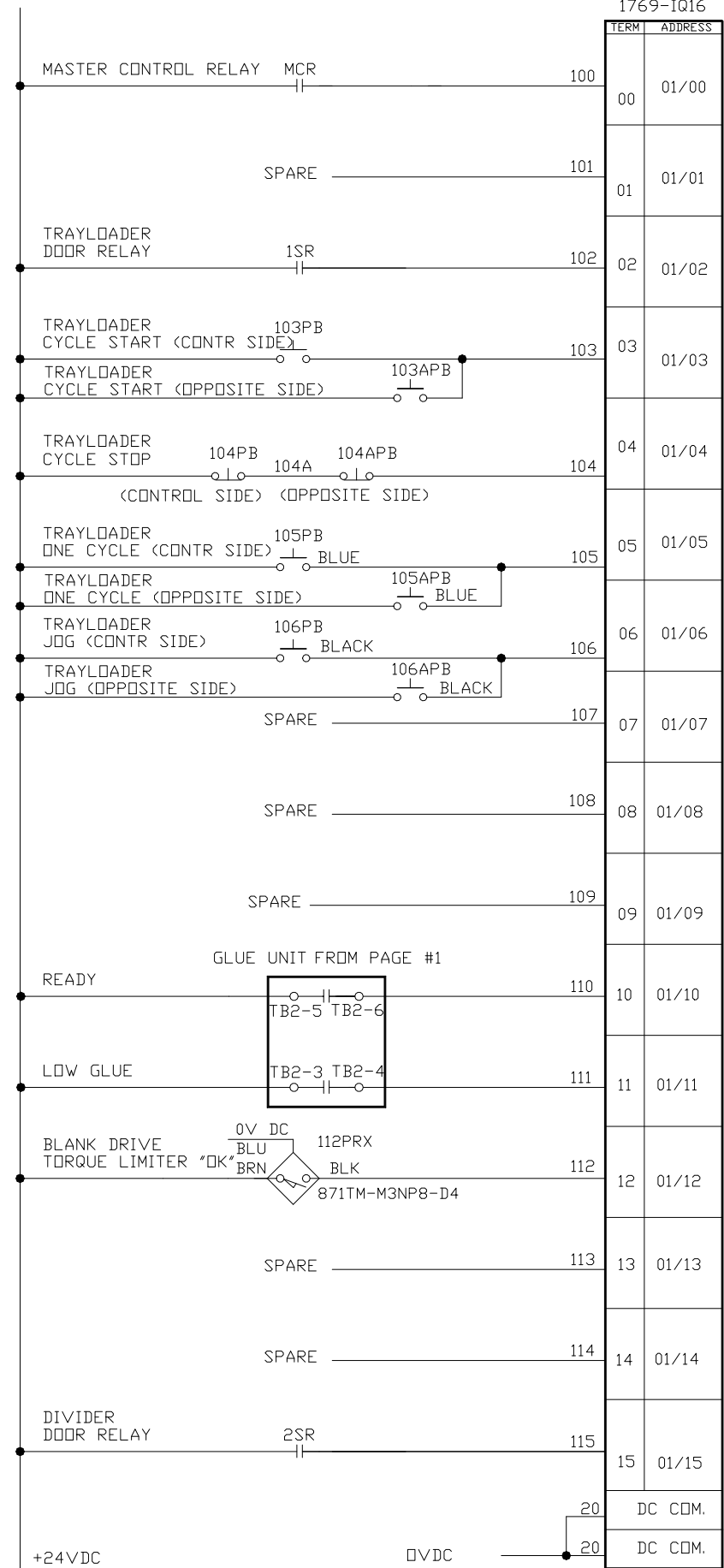
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— DEVICE NUMBER
PAGE NUMBER



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DESIGNER: PJW, JR			DATE: 11-09-2015	
MODEL: EL-2100			SHEET: 10 OF 15	
BLUE MARBLE COCKTAILS			DRAWING NUMBER: 15269-10	

24

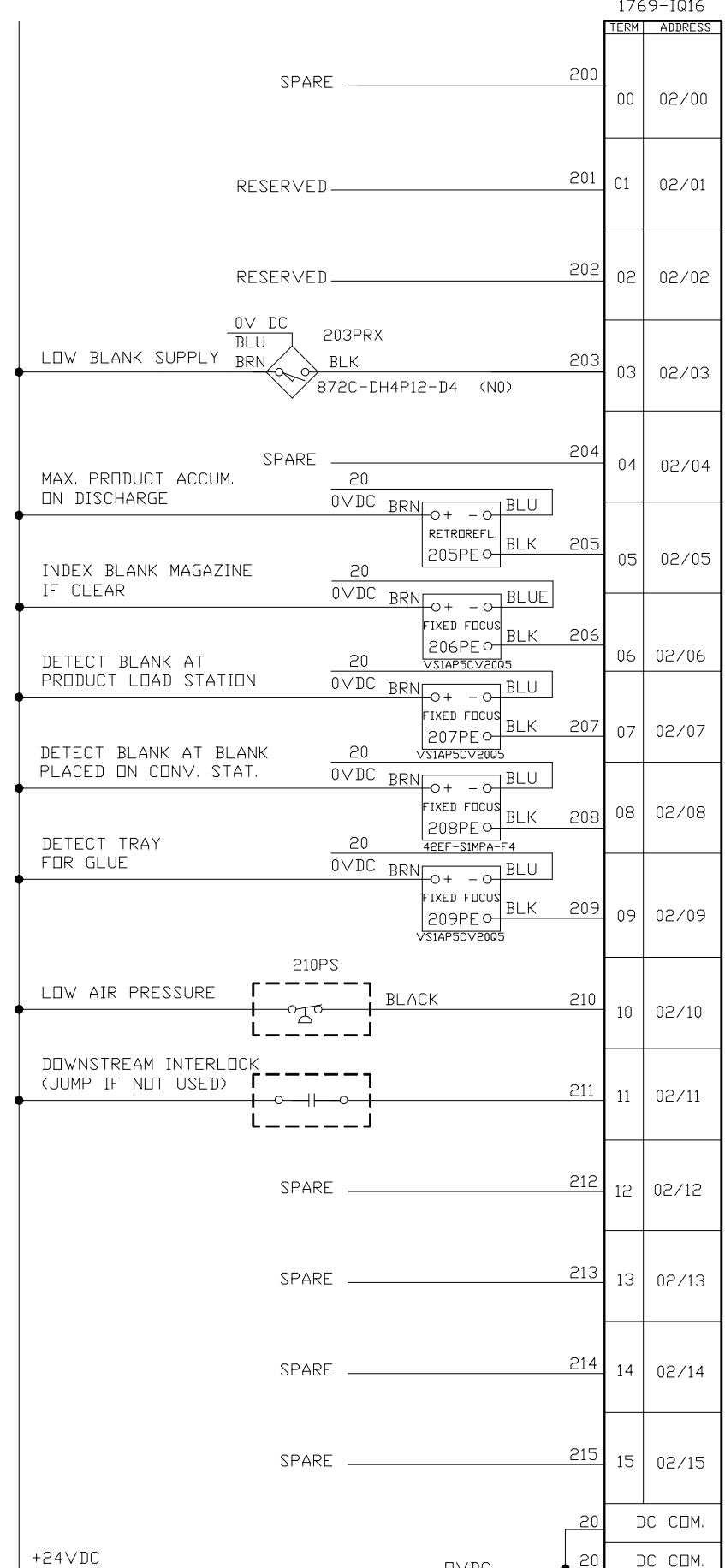
INPUT MODULE #1



24

24

INPUT MODULE #2

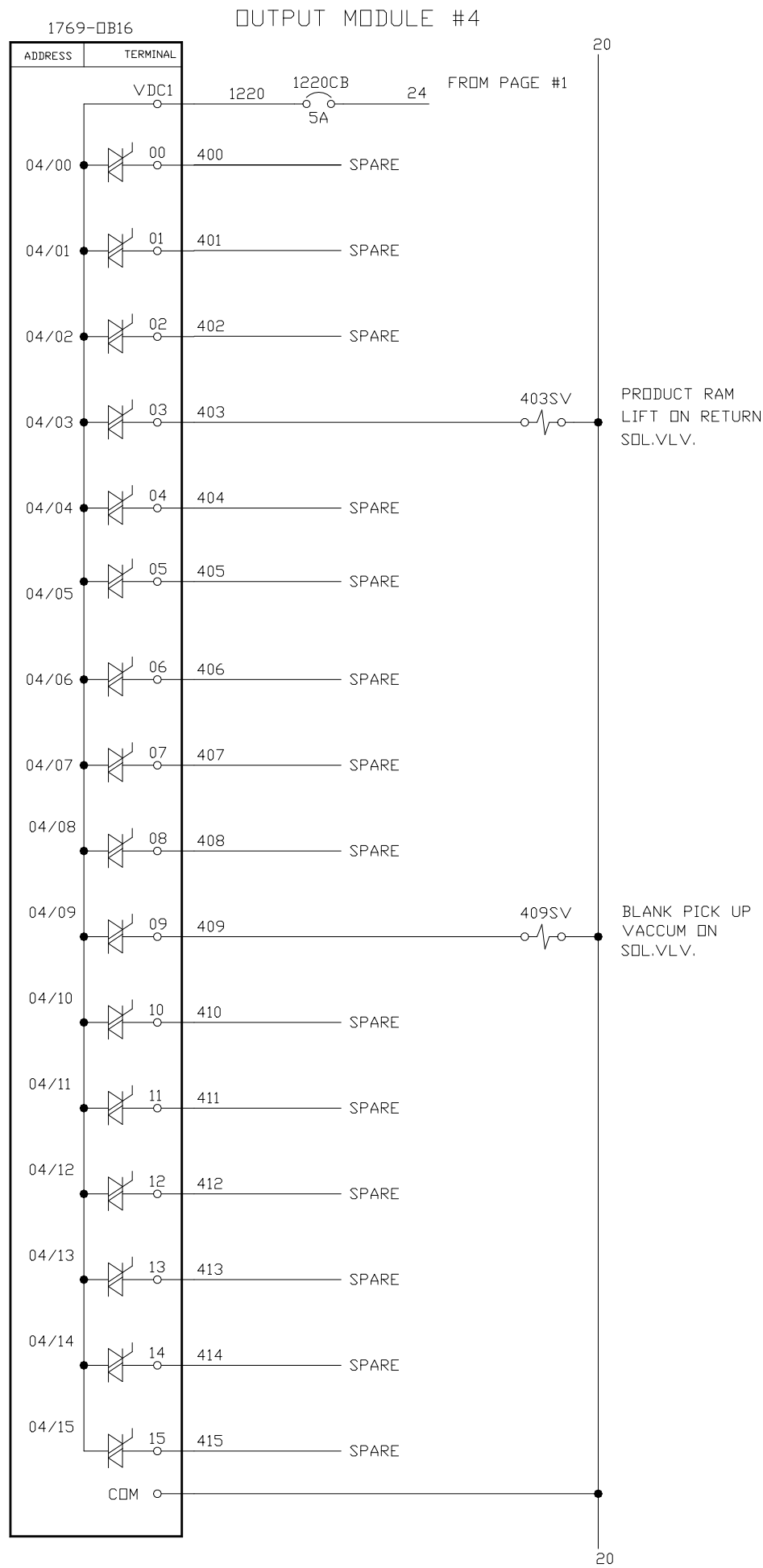
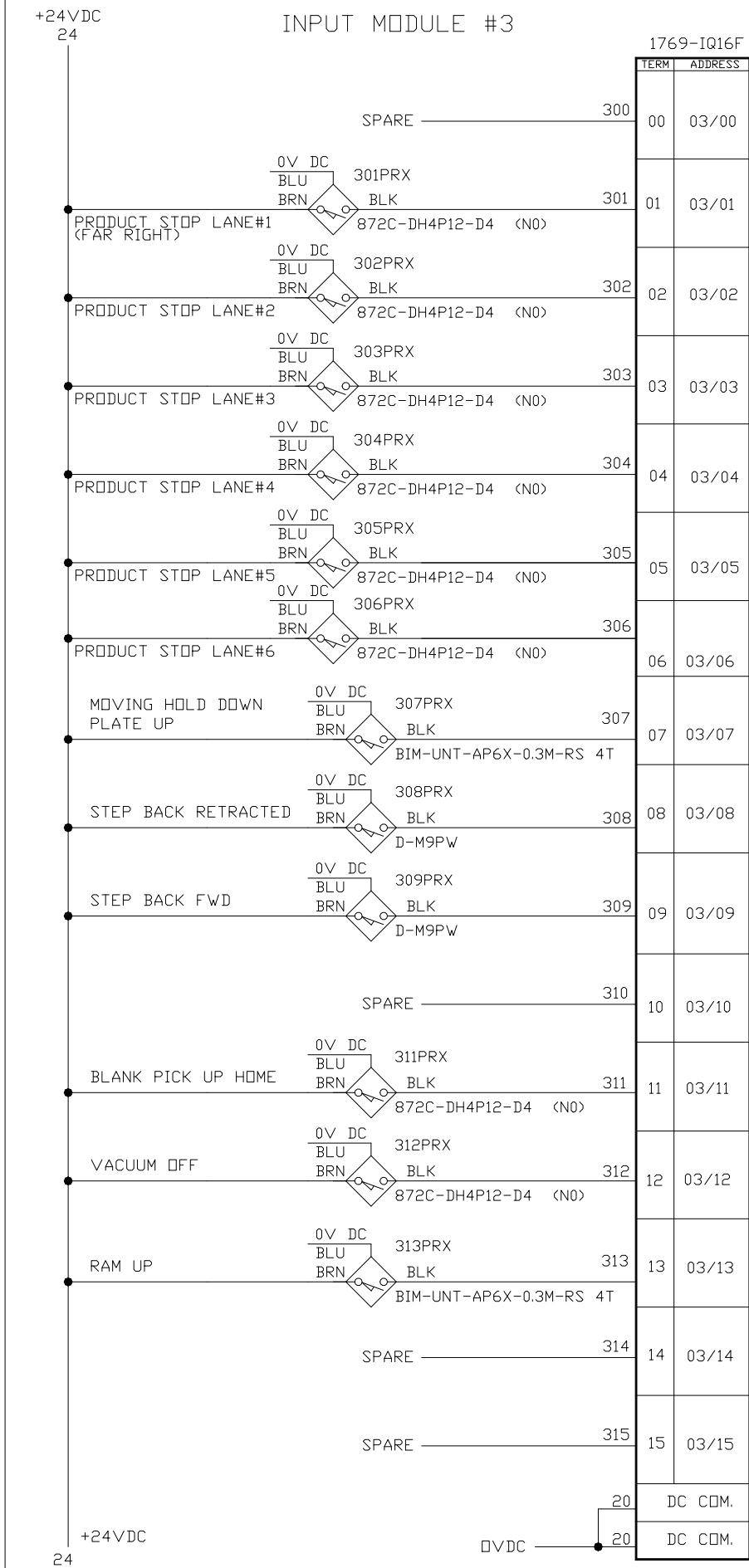


24

103XX
— DEVICE NAME
— DEVICE NUMBER
PAGE NUMBER

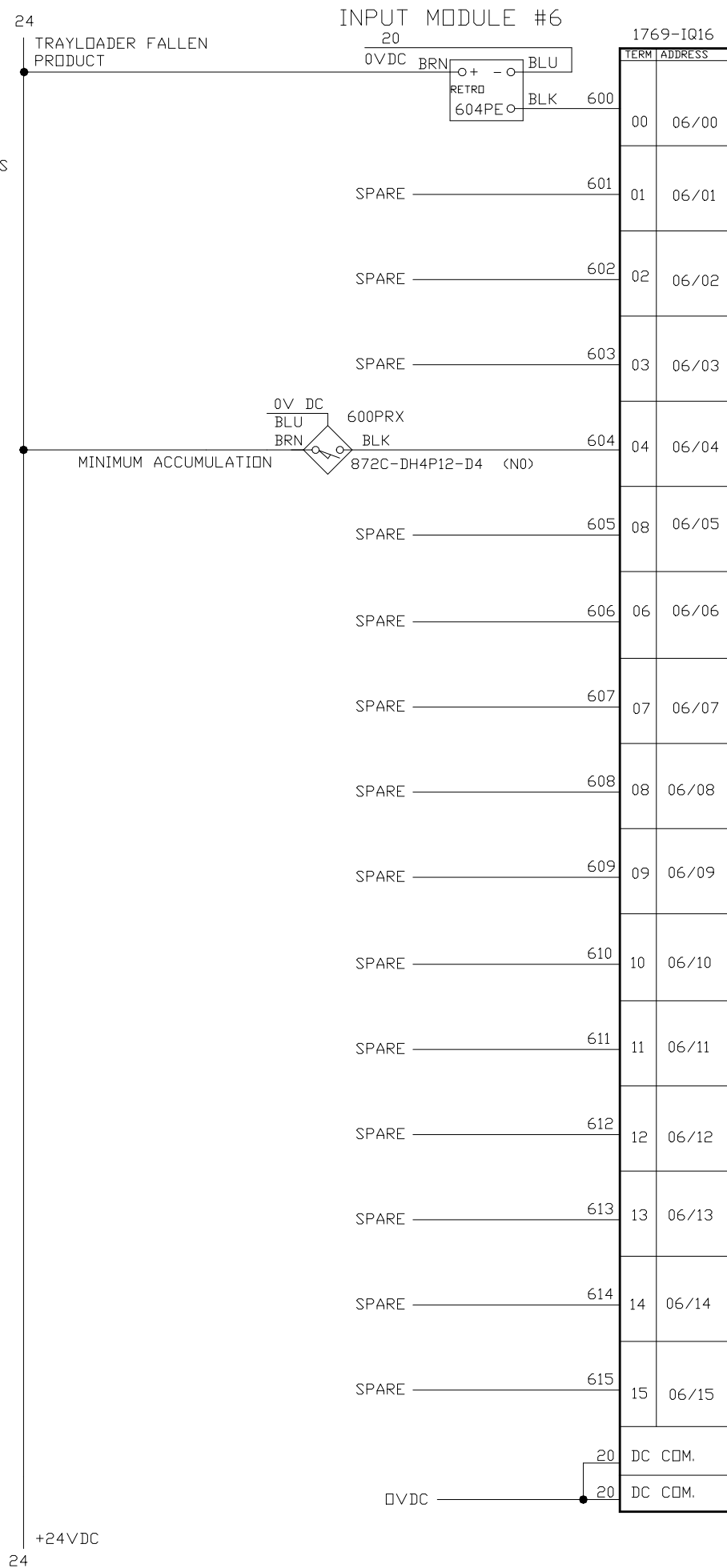
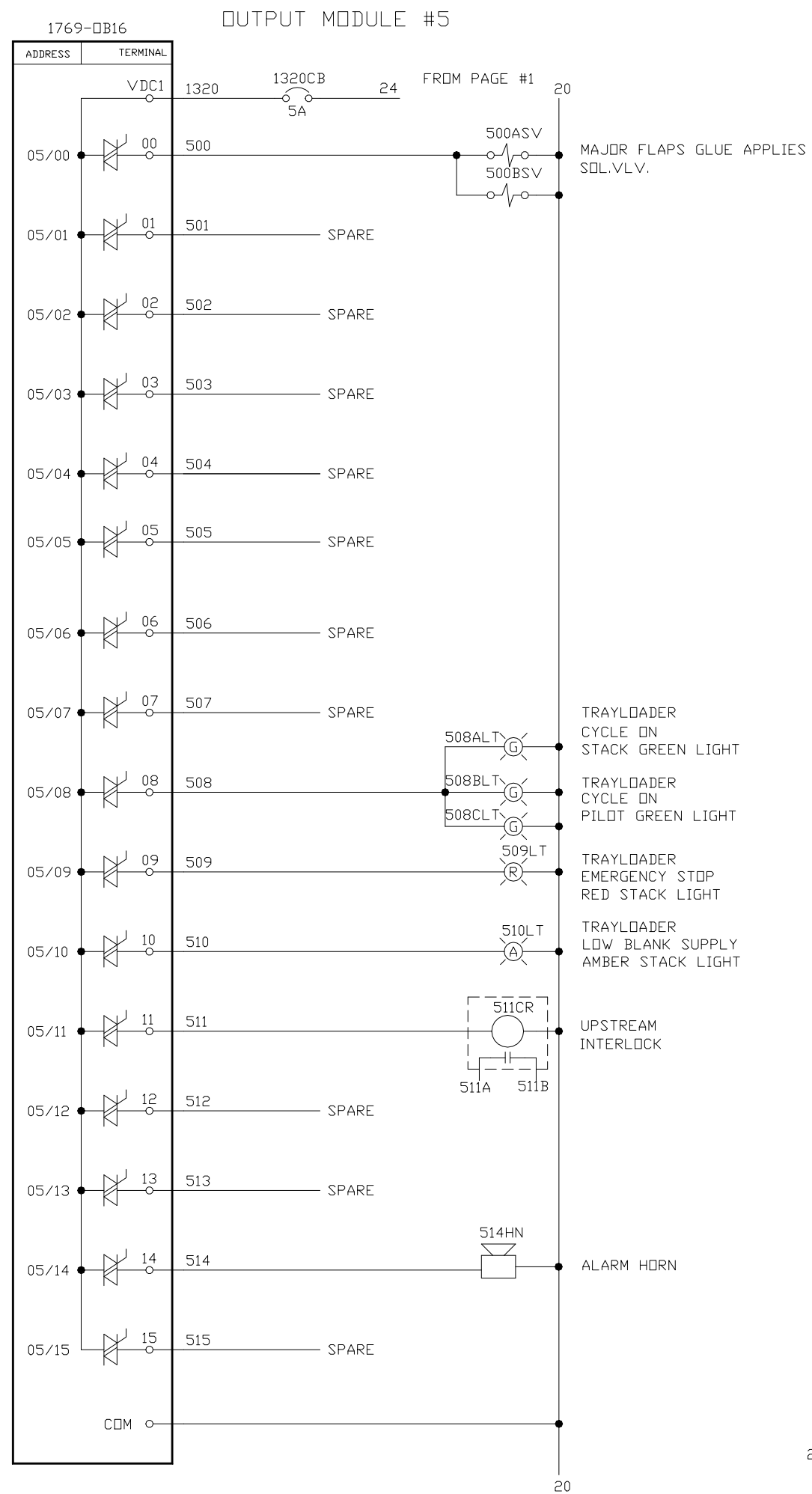


REV. A	ELECTRICAL SCHEMATIC	SIZE: B
DESIGNER: PJW,JR		DATE: 11-09-2015
MODEL: EL-2100		SHEET: 11 OF 15
BLUE MARBLE COCKTAILS		DRAWING NUMBER: 15269-11



103XX
— DEVICE NAME
— DEVICE NUMBER
PAGE NUMBER

ARPAC			
OUR INTEGRATION - YOUR SUCCESS			
REV. A	ELECTRICAL SCHEMATIC	SIZE: B	
DESIGNER: PJW,JR		DATE: 11-09-2015	
MODEL: EL-2100		SHEET: 12 OF 15	
BLUE MARBLE COCKTAILS		DRAWING NUMBER:	15269-12



103XX

— DEVICE NAME

— DEVICE NUMBER

PAGE NUMBER

ARPAC

OUR INTEGRATION - YOUR SUCCESS

REV. A	ELECTRICAL SCHEMATIC	SIZE: B
DESIGNER: PJW		DATE: 03-28-2016
MODEL: EL-2100		SHEET: 13 OF 15
BLUE MARBLE COCKTAILS		DRAWING NUMBER: 15269-13

SPARE	700
SPARE	701
SPARE	702
SPARE	703
SPARE	704
SPARE	705
SPARE	706
SPARE	707
SPARE	708
SPARE	709
SPARE	710
SPARE	711
SPARE	712
SPARE	713
SPARE	714
SPARE	715

TERM	ADDRESS
00	07/00
01	07/01
02	07/02
03	07/03
04	07/04
08	07/05
06	07/06
07	07/07
08	07/08
09	07/09
10	07/10
11	07/11
12	07/12
13	07/13
14	07/14
15	07/15
DC CDM.	

DC COM.



				
OUR INTEGRATION - YOUR SUCCESS				
REV.	A	ELECTRICAL SCHEMATIC	SIZE:	B
DESIGNER:	PJW,JR		DATE:	01-13-2016
MODEL:	EL-2100		SHEET:	14 OF 15
BLUE MARBLE COCKTAILS			DRAWING NUMBER:	
			15269-14	

Arpac BOM

Parent Number: 15269-E Parent Revision: 0
 Description: ASSY, ELEC, EL-2100, LH MACH, FRESHBEV
 Model:

Assembly Part Number: 15269-ELEC
 Description: ASSY, ELEC, EL-2100, LH MACH, FRESHBEV

Item	Qty	Arpac Part	Description
1	1.00	804000-469	CIRCUIT BREAKER, OPERATING MECHANISM ROD FOR ENCLOSURE DEPTH min 9 1/8 ma
2	1.00	804000-600	CIRCUIT BREAKER, 3P 60A 480V H-FRAME TRIP(THM/MAG)=NOMIN/0600A IR=25KA
3	1.00	804000-621	CIRCUIT BREAKER, ACCESSORY, LUG KIT, H-FRAME 6 WIRES/LUG WITH TERMINAL CO
4	1.00	804000-643	CIRCUIT BREAKER, ACCESSORY, H-FRAME, TERMINAL LUG, QTY 3, FCCu 1x14-1/0(2.
5	1.00	804000-655	CIRCUIT BREAKER, 1P 5A 277V TRIP=05-10 IR=10KA UL489
6	1.00	804000-659	CIRCUIT BREAKER, 1P 20A 277V TRIP=05-10 IR=10KA UL489
7	2.00	804000-759	CIRCUIT BREAKER, 1P 4A 277V TRIP=05-10 IR=10KA UL1077 SUPPLEMENTAL PROT
8	2.00	804000-760	CIRCUIT BREAKER, 1P 5A 277V TRIP=05-10 IR=10KA UL1077 SUPPLEMENTAL PROT
9	1.00	804000-800	CIRCUIT BREAKER, ACCESSORY, 1494V VARIABLE-DEPTH FLANGE MOUNTED FOR 140G
10	1.00	804000-846	CIRCUIT BREAKER, 2P 30A 240V TRIP=05-10 IR=10KA UL489
11	1.00	804002-127	SAFETY CONTROL RELAY, 8P, 24VDC, 3NO/1NC (SAFE, 20A), 3NO/1NC (AUX, 10A)
12	15.00	804003-135	CABLE, QD, 5M STRAIGHT MICRO 4-PIN BLK PVC
13	9.00	804003-139	CABLE, QD, 5M 90-DEGREE MICRO 4-PIN BLK PVC, (USE 848706 FOR STRETCH)
14	9.00	804003-204	CABLE, QD, 5M STRAIGHT MICRO 8-PIN BLK PVC
15	2.00	804003-212	CABLE, QD, 10M STRAIGHT MICRO 8-PIN BLK PVC
16	6.00	804003-323	CABLE, QD, 10M 90-DEGREE MICRO 4-PIN BLK PVC
17	11.00	804003-324	CABLE, QD, 10M STRAIGHT MICRO 4-PIN BLK PVC, Female, Straight, PVC Cabl
18	1.00	804004-049	PUSH BUTTON, 30MM FLUSH GRN NON-ILL MOMENTARY 1NO/1NC NEMA4X
19	3.00	804004-629	PUSH BUTTON, 30MM MUSHROOM RED ILL-24V TWIST-TO-REL 1NC/1NO NEMA4X, FING
20	3.00	804004-630	PUSH BUTTON, 30MM GUARDED GRN ILL-24V MOMENTARY 1NO/1NC NEMA4X, FING
21	3.00	804004-631	PUSH BUTTON, 30MM EXTENDED RED NON-ILL MOMENTARY 1NO/1NC NEMA4X, FING
22	2.00	804004-632	PUSH BUTTON, 30MM FLUSH BLK NON-ILL MOMENTARY 1NO/1NC NEMA4X, FING
23	2.00	804004-647	PUSH BUTTON, 30MM FLUSH BLUE NON-ILL MOMENTARY 1NO/1NC NEMA4X, FIN
24	4.00	804005-266	PLC, COMPACTLOGIX, DIGITAL 16IN 24VDC SINK/SOURCE
25	1.00	804005-269	PLC, COMPACTLOGIX, POWER SUPPLY, 120/240VAC, 2.0A @ 5VDC, 0.8A @ 24VDC
26	1.00	804005-271	PLC, COMPACTLOGIX, ACCESSORY END CAP RIGHT
27	2.00	804005-275	PLC, COMPACTLOGIX, DIGITAL 16OUT 24VDC SOURCE
28	1.00	804005-400	PLC, COMPACTLOGIX, DIGITAL 16IN 24VDC SINK/SOURCE HIGH-SPEED
29	5.00	804005-520	PLC, COMPACTLOGIX, ACCESSORY, IFM CBL 0.2M 1769-IQ16 INPUTS TO IFM20FN
30	1.00	804005-628	PLC, COMPACTLOGIX DUAL ETHERNET w/DLR CAPABILITY, 3MB MEMORY, 30 I/OE
31	2.00	804005-730	ETHERNET SWITCH, 8 PORT (COPPER), UNMANAGED, DIN RAIL MOUNT, STRATIX 2000
32	2.00	804005-802	PLC, COMPACTLOGIX, ACCESSORY, IFM CBL 0.2M 1769-OB16 OUTPUTS TO IFM20FN
33	10.00	804006-170	PROXIMITY SENSOR, DC 3-WIRE 4.0MM NO QD 12MM PNP UNSHIELDED SHORT-BARREL
34	4.00	804006-217	PROXIMITY SENSOR, ACCESSORY, MOUNTING STRAP, .984-2.480 IN. 25-63 MM.& CL
35	4.00	804006-224	OBSOLETE USE 804006-318** PROXIMITY SENSOR, DC 3-WIRE 4.0MM NC QD 12MM PN
36	4.00	804006-253	PROXIMITY SENSOR, DC 3-WIRE CYL NO QD CYLINDER-MOUNT W/O.3M-M12 PIGTAIL
37	1.00	804006-316	PROXIMITY SENSOR, 3-Wire DC Extended Range Standard Barrel, 8mm Diameter,
38	4.00	804006-324	PROXIMITY SENSOR, INDUCTIVE FOR SMC CYLINDER 4 MM DIAMETER CABLE STYLE WI
39	6.00	804007-034	OBSOLETE USE 804007-234** PHOTO SENSOR, REFLECTOR-DISK DIA=1.25IN OK-FOR
40	4.00	804007-106	PHOTO SENSOR, DIFFUSE, DC, PNP QD RANGE=20MM W/PIGTAIL L.O. (MINIATURE)
41	6.00	804007-135	PHOTO SENSOR, RETRO-POLAR DC PNP QD RANGE=3M W/6IN-PIGTAIL NEMA4X/6P
42	13.00	804007-136	PHOTO SENSOR, DIFFUSE DC PNP QD RANGE=5IN W/6IN-PIGTAIL SHARP-CU
43	1.00	804007-337	DISTRIBUTED I/O, CABLE, M12 MALE 0° / RJ45, STRAIGHT, SHIELDED, ETHERNET
44	1.00	804007-338	DISTRIBUTED I/O, CABLE, M12 FEMALE CONNECTOR STRAIGHT WITH CABLE PVC-JB 5
45	2.00	804008-069	RELAY, CONTROL 2PDT COIL= 24VDC 5A, SLIM-LINE-RELAY W/PILOT-LIGHT
46	2.00	804008-070	RELAY, SOCKET 2PDT 8-BLADE, FOR-SLIM-LINE-RELAY W/RETAINER-CLIP
47	2.00	804008-166	RELAY, SAFETY MINOTAUR MSR127RP 24V IN=2NC OUT=3NO MONITORED MANUAL RES
48	1.00	804010-228	GRACEPORT, ETHERNET (CAT 5E), SINGLE 120VAC OUTLET, UL TYPE 4
49	3.00	804012-376	DRIVE, SERVO, KINETIX 300/350, ACCESSORY, I/O TERMINAL BLOCK (FOR DIRECT

50	2.00	804012-405	DRIVE, SERVO, KINETIX 350, 480VAC, 3PH , 4A, 2KW
51	1.00	804012-406	DRIVE, SERVO, KINETIX 350, 480VAC, 3PH , 6A, 3KW
52	3.00	804012-407	DRIVE, SERVO, KINETIX, LOW PROFILE FEEDBACK CONNECTOR FOR KINETIX 350
53	3.00	804012-415	DRIVE, SERVO, MOTOR FEEDBACK CBL, 9M, FLYING LEADS TO SPEEDTEC DIN CONNE
54	3.00	804012-637	DRIVE, SERVO, MOTOR PWR CBL, 9M, 16AWG, NO BRAKE, FLYING LEADS TO SPEEDT
55	3.00	804012-695	DRIVE, AC, 1.00HP 480V 3PH 2.3A POWERFLEX 525 DRIVE
56	1.00	804012-820	DRIVE, AC, 1.00HP 230V 1PH 4.8A POWERFLEX 525 DRIVE
57	1.00	804014-089	ENCLOSURE, 30X100X 12 FLANGE-DISC W/SUBPANEL (TRAYLOADER) NEMA 12
58	1.00	804014-092	ENCLOSURE, 20X 10X 6 ENCL, 20X10X6, OPERATOR PANEL
59	1.00	804014-111	ENCLOSURE, 16X 14X 06 NEMA12 JBOX SCREW-COVER
60	1.00	804014-143	ENCLOSURE, PUSHBUTTON-4 NEMA12 30MM 10.00X 4.00X 4.75 EXTRA-DEEP
61	1.00	804014-939	ENCLOSURE, 16X 14 SUBPANEL 14.75X12.88 GALVANIZED
62	9.00	804015-013	FUSE, 10A 600V FAST-ACTING CLASS-CC
63	9.00	804015-060	FUSE, 6A 600V FAST-ACTING CLASS-CC
64	2.00	804015-061	FUSE, 15A 600V FAST-ACTING CLASS-CC
65	2.00	804015-195	FUSE, 25A, 600V, TIME DELAY, CLASS CC, CURRENT LIMITING, HIGHLY INDUC
66	3.00	804015-262	FUSE, 10A, 600V, TIME DELAY, CLASS CC, CURRENT LIMITING, HIGHLY INDUC
67	2.00	804017-038	LIGHT STACK, 70MM GRN 24V NEMA4X BLK-HOUSING STEADY-LED
68	2.00	804017-039	LIGHT STACK, 70MM RED 24V NEMA4X BLK-HOUSING STEADY-LED
69	1.00	804017-040	LIGHT STACK, 70MM AMB 24V NEMA4X BLK-HOUSING STEADY-LED
70	1.00	804017-052	LIGHT STACK, 70MM SOUND 24V NEMA4X BLK-HOUSING SINGLE-TONE
71	2.00	804017-056	LIGHT STACK, 70MM BASE 16IN SS NEMA4X BLK-HOUSING W/CAP-&-GASKET
72	1.00	804018-176	*SERVICE ONLY*, OPERATOR INTERFACE, PANELVIEW PLUS 6 600, COLOR, TOUCH, D
73	1.00	804019-037	POWER SUPPLY 24VDC 3.9A (NEC CLASS 2)
74	1.00	804022-261	TERMINAL BLOCK, GROUND BLOCK WITH RAIL CONTACT 42 TERMINAL 3 TALL
75	1.00	804024-008	TRANSFORMER, 1PH 5.0KVA 240/480 120/240 NEMA3R ENCAPSULATED
76	1.00	804024-108	TRANSFORMER, 3PH 3.0KVA 480/240 NEMA3R ENCAPSULATED
77	11.00	804025-225	SWITCH, MAGNETICALLY CODED, 2 N.C. SOLID-STATE RELAYS, W/ LED INDICATOR,
78	3.00	804027-023	LEGEND PLATE, YELLOW E-STOP ROUND FOR 30MM PB
79	3.00	804035-015	PUSHBUTTON, CONTACT BLOCK FOR 800T/H, SHALLOW, 1NO/1NC
80	2.00	804036-071	FUSE HOLDER 30A 2 POLE CC CLASS 600V WITH BLOWN FUSE INDICATOR
81	7.00	804036-072	FUSE HOLDER 30A 3 POLE CC CLASS 600V WITH BLOWN FUSE INDICATOR
82	1.00	804036-149	DISCONNECT, 1494V COMPONENT, OPERATING HANDLE, PAINTED METAL, FOR 30/60/
83	2.00	804037-047	OVERLOAD RELAY, NEMA 24A 3 POLES MANUAL RESET, THERMAL TYPE, 1NO-1NC
84	2.00	804037-070	OVERLOAD RELAY, 1NO CONTACT FOR 592-JOV169 OVERLOAD
85	7.00	804993-133	PLC, IFM BASE, DIGITAL, 20PT, 2-LEVEL, NARROW
86	6.00	804996-063	OVERLOAD RELAY, (OLD STYLE P1136)
87	1.00	999999-003	WIRING MAT'L PER MACHINE TYPICAL NORMAL USAGE
88	1.00	804002-113	CONTACTOR, IEC 3P 23A COIL= 24VDC 1NO-AUX LINE-SIDE-COIL W/INTEGRATED D

Arpac BOM

Parent Number: 15269-EL Parent Revision: 0
Description: ASSY, ELEC, EL-2100, LH MACH, FRESHBEV
Model:

Assembly Part Number: 804014-092
Assembly Drawing Number: 804014
Description: ENCLOSURE, 20X 10X 6 ENCL, 20X10X6, OPERATOR PANEL
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	685.00	903563	HRS SHEET 10GA, P&O

Arpac BOM

Parent Number: 15269-EL Parent Revision: 0
Description: ASSY, ELEC, EL-2100, LH MACH, FRESHBEV
Model:

9.1 Ordering Parts

For your convenience, replacement parts and accessories can be ordered from ARPAC[®] by fax 24 hours a day. Please have the following information available to ensure quick, easy, and accurate service.

- Your name and telephone number
- Your P.O. (Purchase Order) number
- Your preferred method of delivery

9.1.1 Replacement Parts Policy & Contact Information

Should a replacement part be needed, ARPAC[®]'s return material authorization policy must be adhered to. ARPAC[®] will not distribute equipment or parts without a purchase order from an authorized ARPAC[®] distributor. This procedure includes warranty and non-warranty replacement parts. A return authorization will be issued at that time, and credit will not be issued until the suspect part has been received and inspected. Call ARPAC[®] sales for the distributor in your area at (847) 678-9034.

ARPAC[®] Service Contact Information

Phone (847) 678-9034

Fax: (866) 365-4131

**Hours of Operation Monday through Friday,
8:00 AM to 5:30 PM (Central Time)**

After Hour Emergency Service: (847) 678-9034

9.2 How to Use This Parts List

9.2.1 General Part Numbers

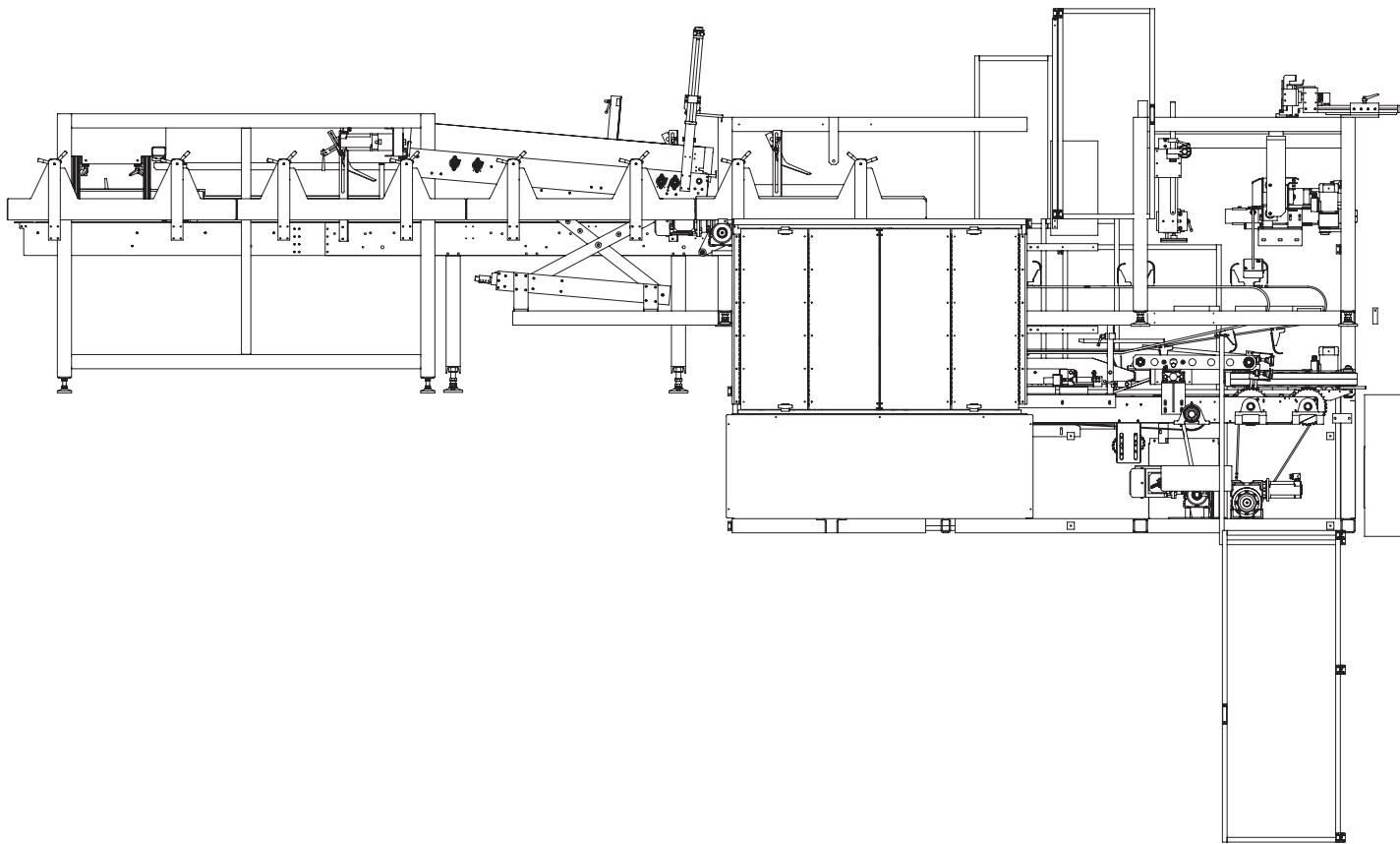
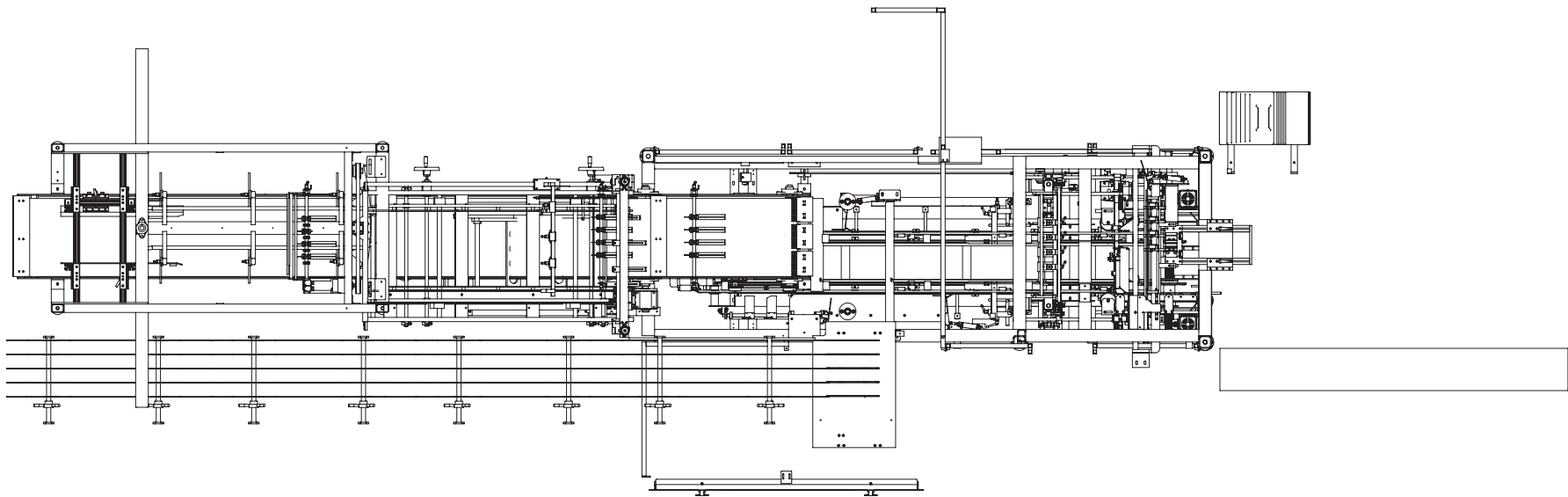
This chapter contains all part numbers necessary to order EL-2000 Tray Case Loader replacement parts and assemblies.

This illustrated parts breakdown is presented in disassembled order. Detail parts are shown below their respective upper level assemblies whenever possible.

The parts lists follow the illustration for a particular assembly and represent components of that assembly. The number listed in the quantity column is the number of the specific part required to complete the assembly and may not reflect the quantity needed for the entire system.

The lists are divided into four columns. The item/index numbers refer to the identification number located on the drawing. The part number is the Arpac part number, used to identify the part for ordering. The part description column lists each part name, and the quantity column lists the quantity of that part used in that particular assembly.

Illustrations are shown before the parts list for each assembly.



34	1	322564	ASSY, BRUSH
33	1	316367	WLDMT, PUSHER, 2.60 DIA 3 X 2, LH
32	1	311590-001	ASSY, CONV, SIDE, DISCHARGE
31	1	311590	ASSY, CONV, SIDE, DISCHARGE
30	1	311597	ASSY, GUARD, LH
29	1	316364	ASSY, GUIDE, FORM, TRAY
28	1	304445	ASSY, CHAIN DRIVE, LH MACHINE EL-2000, 460V
27	1	311589	ASSY, RAIL, SUPPORT, RH
26	1	311596	ASSY, FRAME, LH
25	1	232679-002	ASSY, BLANK, MAGAZINE, EL-2100, LH
24	1	316360	ASSY, STOP, 4 PRODUCT
23	1	316347	ASSY, CONV, DIVIDER
22	1	286909	ASSY, DETECT, PRODUCT, 4 LANES, 20" WIDE
21	1	316333	ASSY, DIVIDER, 48" ELEVATION
20	1	HMI 20X10X6	BOX, HMI, 20 X 10 X 6
19	1	219639-000A	
18	1	232796-001	ASSY, GATE, UP-STREAM, LH
17	1	300692	ASSY, GATE, DOWN-STREAM
16	2	286910	ASSY, DETECT, PRODUCT, 4 LANES, 20" WIDE
15	1	316341	ASSY, ARM, SERVO, A-B, LH
14	1	311601	ASSY, GUIDE, 4 LANE
13	1	316345-001	ASSY, CONV, INF, LH, SIDE TRANSFER
12	1	220456	ASSY, GLUE
11	1	297563	ASSY, POP-UP, RH, 2.047 DIA PROD
10	1	243431	ASST, SUPPORT, DEAD PLT
9	1	230241-002	ASSY, COMPRESSION, SIDE
8	1	230241-001	ASSY, COMPRESSION, SIDE
7	1	233678-002	ASSY, TUCKER, MINOR FLAP
6	1	233678-001	ASSY, TUCKER, MINOR FLAP
5	1	230236-002	ASSY, FLAP HOLD DOWN
4	1	230236-001	ASSY, FLAP HOLD DOWN
3	1	300710	ASSY, PICK AND PLACE, LH EL-2100
2	1	230844	ASSY, CHAIN, LUG
1	1	300695	ASSY, STEP BACK
ITM	QTY	PART NUM	DESCRIPTION

ARPAC

9511 WEST RIVER ST.
SCHILLER PARK, IL 60176

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONAL TOLERANCES:

FRACTIONS
TWO (2) DECIMALS
THREE (3) DECIMALS
ANGLES

± 1/64
± 0.010
± 0.005
± 0.5°

DRAWN: 7/6/2011

BY:

SCALE: 1:20

SIZE: D

FILENAME: 15269

DESCRIPTION:
ASSY, FINAL, EL-2121, LH, MACH

DRAWING NUMBER:
15269

Date: 3/28/2019

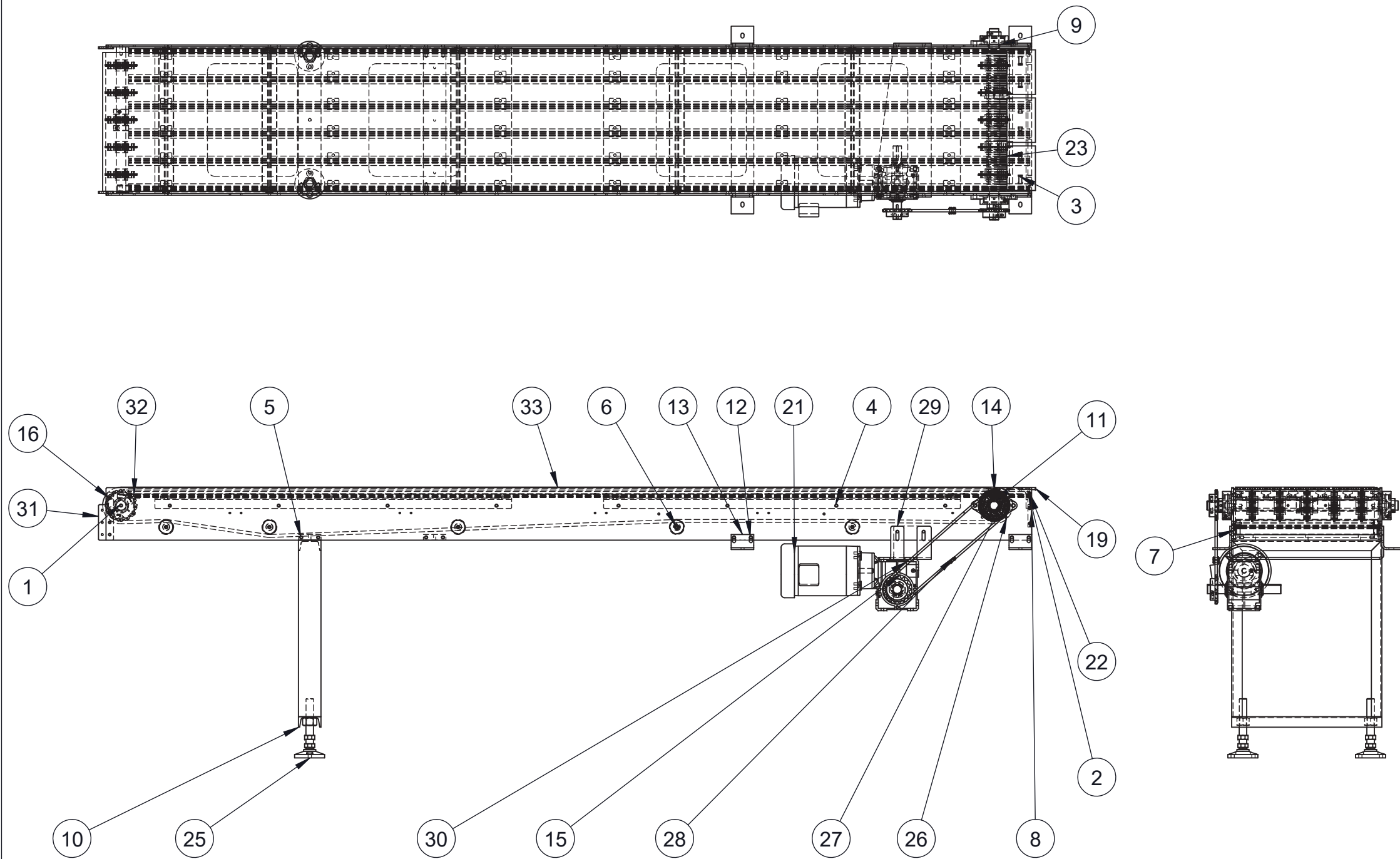
Time: 1:53:14PM

Arpac BOM

Parent Number: 15269 Parent Revision: B
Description: ASSY, FINAL, MACH, EL-2100, LH
Model: EL-2121

Assembly Part Number: 15269
Description: ASSY, FINAL, MACH, EL-2100, LH

Item	Qty	Arpac Part	Description
1	1.00	316345-001	ASSY, CONV, INF, LH
2	1.00	364273	ASSY, GUIDE, 6-LANE
3	1.00	364285	ASSY, CLAMP, STOP, 6 PRODUCT
4	1.00	364279	ASSY, STEP BACK, 6-LANE
5	1.00	316341	ASSY, RAM, SERVO, A-B
6	1.00	232796-001A	ASSY, GATE, UPSTREAM L.H. MACH NUMATIC CYL
7	1.00	300692	ASSY, GATE, DOWNSTREAM L.H. MACH
8	1.00	322449	ASSY, BLANK, TRAY, MAGAZINE, LH
9	1.00	311596	ASSY, FRAME, LH MACHINE
10	1.00	311589	ASSY, RAIL, SUPPORT, LH MACH
11	1.00	304445	ASSY, CHAIN DRIVE, LH MACHINE EL-2000, 460V
12	1.00	230844	ASSY, CHAIN, LUG
13	1.00	316364-001	ASSY, GUIDE, FORM, TRAY, LH
14	1.00	322571	ASSY, PICK AND PLACE, EL-2100, LH
15	1.00	306905-001	ASSY, HOLD DOWN, FLAP, RH
16	1.00	306905-002	ASSY, HOLD DOWN, FLAP, LH
17	1.00	233678-001B	ASSY, TUCKER, MINOR FLAP, RH NUMATIC
18	1.00	233678-002B	ASSY, TUCKER, MINOR FLAP, LH NUMATIC
19	1.00	230241-001B	ASSY, COMPRESSION, SIDE, RH
20	1.00	230241-002B	ASSY, COMPRESSION, SIDE, LH
21	1.00	311586	ASSY, GLUE, EL-2000, FREE STAND GLUE TANK
22	1.00	364286	ASSY, PNEUMATIC, MACONNECT, EL-2100
23	1.00	311597	ASSY, GUARD, LH
24	1.00	243431	ASSY, DEAD PLT SUPPORT, LH MACHINE
25	1.00	286910	ASSY, DETECT, PRODUCT, 4 LANES, 20" WIDE, HIGH PROD
26	1.00	219639-000A	ASSY, CENTRAL POINT LUBE BLOCK, NYLON
27	1.00	292546	GENERAL PARTS, EL-2000
28	1.00	364278	KIT, PARTS, CHANGE, 15269
29	1.00	323268	ASSY, PRODUCT DETECTOR, ACCUMULATION, ADJ
30	1.00	357410	ASSY, AGITATOR, 20"WIDE, 6 LANES, 230/460V
31	1.00	357171	ASSY, GUARD, AGITATOR, EL-2000



33	22	808414	BELT, ACETAL, BLUE, RAISED RIB, 18.5"W
32	1	801316	VALUGUIDE SPLICE SLEEVE VG-013-01
31	2	316352	PLT, NUT, CONNECTION
30	1	846471	GEARBOX, WORM, 15:1, 140TC FACE, QUILL FACE, DOUBLE SHAFT
29	1	296177	BKT, MTG, MOTOR, LH
28	1	800505	LINK, CONN, #50
27	1	800468	CHAIN, RLR, #50
26	2	839307	BRG, FLG, 1-1/4 ID, 2-BOLT STANDARD-DUTY
25	2	827619	LEVELER, ARTICULATING, 20000 # CAP, 1-8 STEM, 7.88 HIGH, CRS 4" BASE, 2 C'SUNK LAG HOLES, HEAVY LIP ON BASE
24	36	801359	CLAMP, RAIL, SINGLE, 1.5 LG, SS, ROUND HOLE
23	4	822399-002	RAIL, GUIDE, TEE, 1.25 W, SS, 10' LG
22	2	801292-003	RAIL, GUIDE, TEE, 1.0 X 0.38 L-SHAPE, 10' SS
21	1	803188	MOTOR, 1-1/2 HP, 208-230/460V, 60HZ, 3PH 145TC FRM. TEFC
20	2	810147	COLLAR, SHAFT, SET SCREW, 1-1/4, SS
19	3	802634	PLT, TRANSFER FINGER GREY, # 900
18	5	806043	SPKT, 12T, 1-1/2 SQ BORE, 4.1 PD, ACETAL
17	2	800335-027	RING, SNAP, EXTERNAL, 1-1/2 SHAFT
16	5	808417	SPKT, 12T, 1-1/4 DIA BORE, 4.1PD, MOLDED WHITE ACETAL
15	1	101833	SPKT, 50B18, MOD, 1.125 BORE
14	1	126947	SPKT, 50B19, MOD, 1.250 BORE
13	4	228334	BKT, MTG
12	1	142904	CROSS MEMBER BOTTOM
11	1	123750	INFEED DRIVE SHAFT
10	1	142899	LEG, SUPPORT
9	1	316346-001	PLT, SIDE, CONV
8	1	316346-002	PLT, SIDE, CONV
7	5	101814-079	RLR, IDL, CRS, 2.00, 18.75 L TUBE
6	5	142898	HEX, SHFT, ROLLER
5	2	123755	CROSS MEMBER, BOTTOM
4	2	238054	PLT, BED, CONV
3	1	142896	BRACKET, ANGLE
2	1	222914	PLT, END
1	1	123760	IDLER SHAFT, 19.50 LG

ITM	QTY	PART NUM	DESCRIPTION	
BILL OF MATERIALS				
			9511 WEST RIVER ST. SCHILLER PARK, IL 60176	
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONAL TOLERANCES:			FRACTIONS TWO (2) DECIMALS THREE (3) DECIMALS ANGLES	± 1/64 ± 0.010 ± 0.005 ± 0.5°
DRAWN: 11/02/2015		BY: JW	SCALE: 1:24	SIZE: B
		FILENAME: 316345		
DESCRIPTION: ASSY, CONV, INF				
				
			DRAWING NUMBER: 316345	

Arpac BOM

Parent Number: 15269 Parent Revision: B

Description: ASSY, FINAL, MACH, EL-2100, LH

Model: EL-2121

Assembly Part Number: 316345-001

Assembly Drawing Number: 316345

Description: ASSY, CONV, INF, LH

Quantity: 1.00

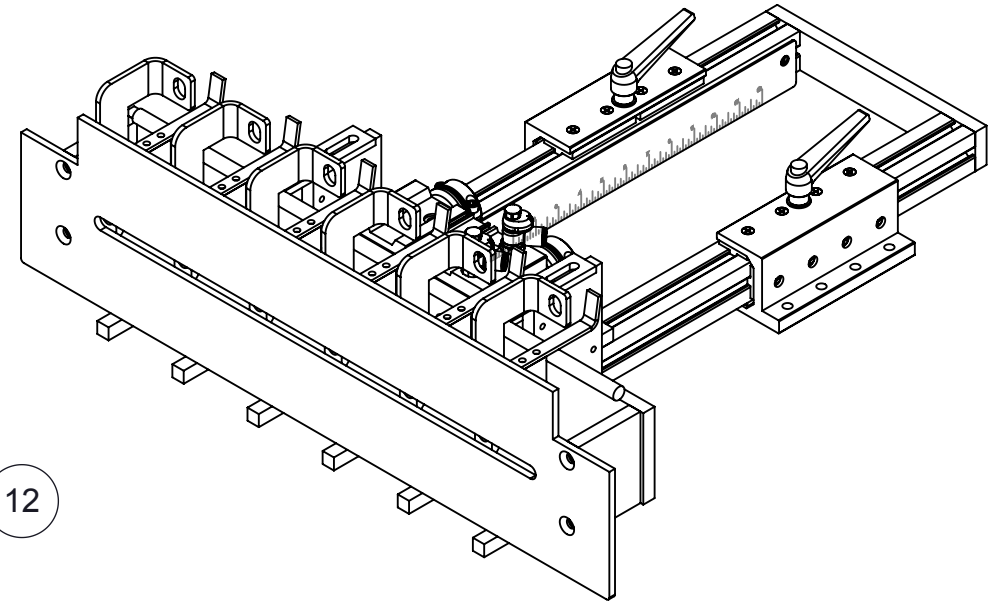
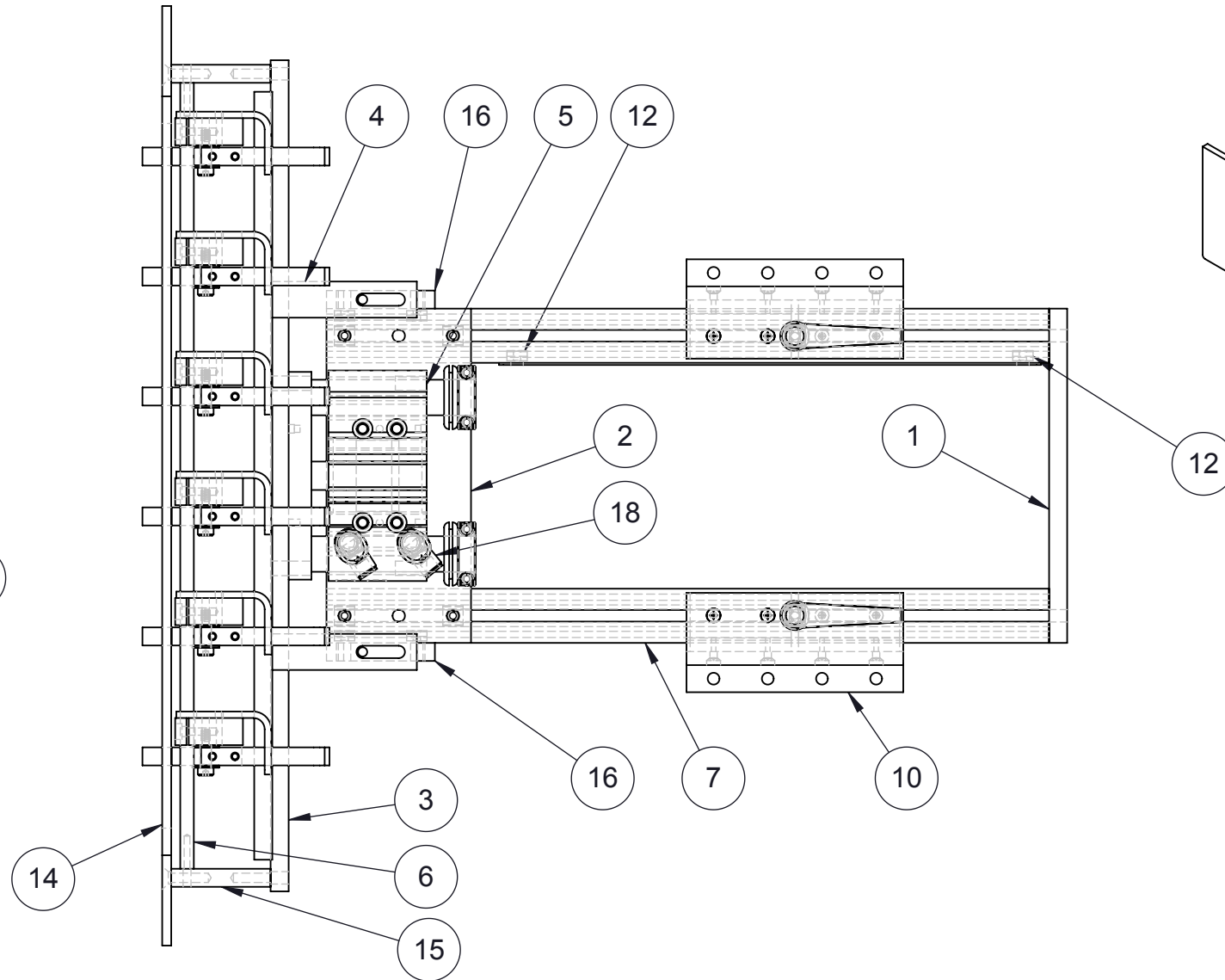
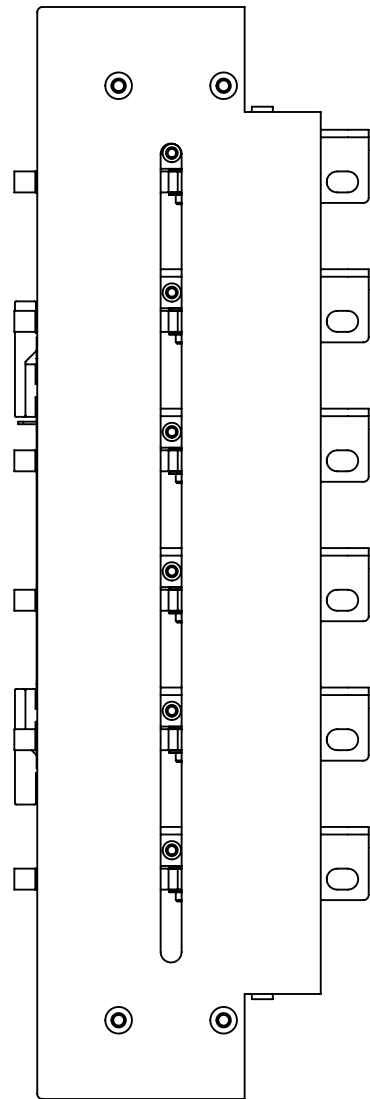
Item	Qty	Arpac Part	Description
1	1.00	123760	IDLER SHAFT, 19.50 LG
2	1.00	222914	PLATE, END
3	1.00	142896	BKT, ANGLE
4	2.00	238054	PLT, BED, CONV
5	2.00	123755	CROSS MEMBER, BOTTOM
6	5.00	142898	HEX, SHFT, ROLLER, 19 1/2
7	5.00	101814-079	RLR, IDL, CRS, 2.000, 18.750 LG
8	1.00	316346-002	PLT, SIDE, RH, INFEED
9	1.00	316346-001	PLT, SIDE,LH, INFEED
10	1.00	142899	LEG, SUPRT INFEED
11	1.00	123750	SHAFT, DRIVE, INFEED
12	1.00	142904	CROSS MEMBER BOTTOM
13	4.00	228334	BKT, MTG
14	1.00	126947	SPKT, 50B19, MOD, 1.250 BORE STL W/ KKY AND SSCR
15	1.00	101833	SPKT, 50B18, MOD, 1.125 BORE
16	5.00	808417	SPKT, 12T, 1-1/4 DIA BORE, 4.1PD, MOLDED WHITE ACETAL
17	2.00	800335-027	RING, SNAP, EXTERNAL, 1-1/2 SHAFT
18	5.00	806043	SPKT, 12T, 1-1/2 SQ BORE, 4.1 PD, ACETAL
19	3.00	802634	PLT, TRANSFER FINGER GREY, # 900
20	2.00	810147	COLLAR, SHAFT, SET SCREW, 1-1/4 SS
21	1.00	803188	Obsolete use P/N 854583 - MOTOR, 1-1/2 HP, 208-230/460V, 60HZ, 3PH 145TC
22	2.00	801292-003	RAIL, GUIDE, TEE, 1.0 X 0.38 L-SHAPE,10' SS
23	4.00	822399-002	RAIL, GUIDE, TEE, 1.25 W, SS, 10' LG
24	36.00	801359	CLAMP, RAIL, SINGLE, 1.5 LG, SS, ROUND HOLE
25	2.00	827619	LEVELER, ARTICULATING, 20000 # CAP, 1-8 STEM, 7.88 HIGH, CRS 4" DIA X 2"
26	2.00	839307	BRG, FLG, 1-1/4 ID, 2-BOLT STANDARD-DUTY
27	1.00	800468	CHAIN, RLR, #50
28	1.00	800505	LINK, CONN, #50
29	1.00	296177	BKT, MTG, MOTOR, LH
30	1.00	846471	GEARBOX, WORM, 15:1, 140TC FACE, QUILL FACE, DOUBLE SHAFT
31	2.00	316352	PLT, NUT, CONNECTION
32	1.00	801316	CLAMP, RAIL, SPLICE, 3 LG, SS
33	22.00	808414	BELT, ACETAL, BLUE, RAISED RIB, 18.5"W

Arpac BOM

Parent Number: 15269 Parent Revision: B
Description: ASSY, FINAL, MACH, EL-2100, LH
Model: EL-2121

Assembly Part Number: 364285
Assembly Drawing Number: 364285
Description: ASSY, CLAMP, STOP, 6 PRODUCT
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	243312-001B	ASSY, ADJ., CAN STOP, LH EL2000
2	6.00	364284	ASSY, CLAMP, STOP, PRODUCT, 2 X 5-1/2



ITEM 18 NOT SHOWN

18	2	822126-001	VALVE, CONTROL, FLOW, 3/8 OD PUSH-ON 1/4 NPT, NUMERIC INDICATOR
17	6	300784	ASSY, FINGER DETECTOR
16	2	300694	PLT, MNT, STOP, FINGER & GATE
15	2	300693	BAR, MTG, STEP BACK
14	1	300696	PLT, STOP, BACK, STEP
13	2	822051	GROMMET, 1" ID, 1.75 OD, 3/8 THICK
12	12	809939	T-NUT, 5/16-18, 15 SERIES, SLIDE IN, BLACK ZINC
11	2	816449	HANDLE, LINEAR BEARING BRAKE
10	2	816026	BRG, LINEAR, FLANGED FOR 1515 EXT
9	1	215775-001	SCALE, R TO L
8	2	800568	COLLAR, SHAFT, CLAMP, 2-PIECE, 1 ID x 1 3/4 OD
7	2	809015-007	EXTRUSION, 1515 SERIES 20" LENGTH
6	2	242943	SHAFT, MTG, FINGER
5	1	816448	THRUSTER, LINEAR, 50MM BORE, 25MM STROKE BALL BRG
4	1	233434	BKT, FINGER POSITION
3	1	216201	PLT, BACK, STEP
2	1	188769	PLT, MNT, CYL STEP BACK
1	1	188768	PLT, CONNECT EXTRUSIONS
ITM	QTY	PART NUM	DESCRIPTION

BILL OF MATERIALS

ARPAC 9511 WEST RIVER ST.
SCHILLER PARK, IL 60176

UNLESS OTHERWISE SPECIFIED:
ALL DIMENSIONAL TOLERANCES:

FRACTIONS	± 1/64
TWO (2) DECIMALS	± 0.010
THREE (3) DECIMALS	± 0.005
ANGLES	± 0.5°

DRAWN: 3/27/2019	BY: SRA	SCALE: 0.21875:1	SIZE: B
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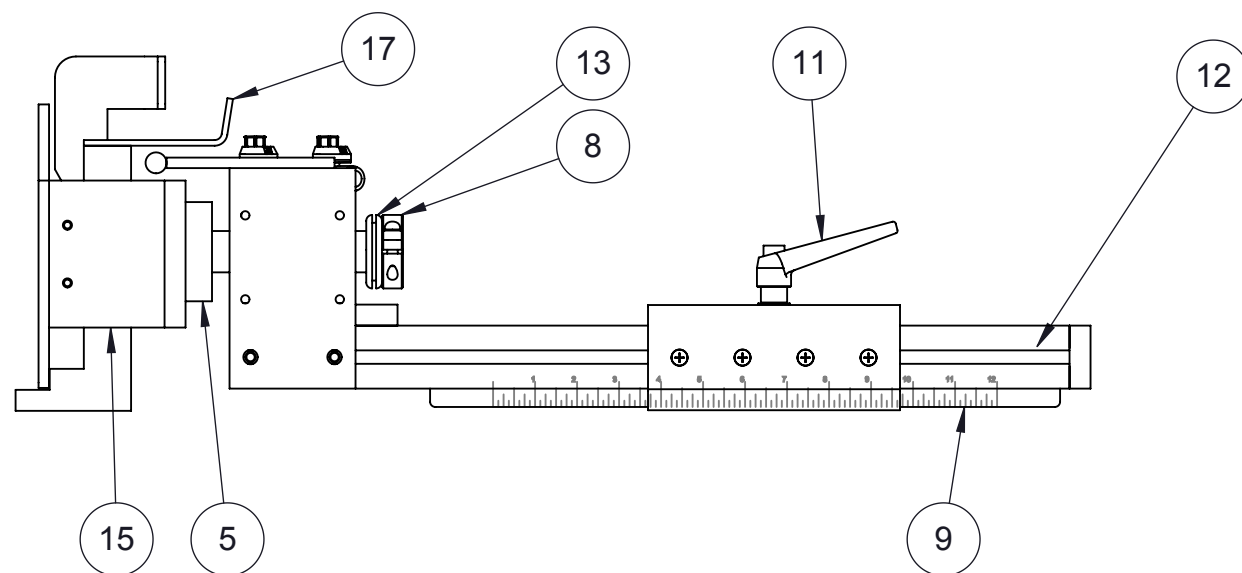
RELEASED:	FILENAME: 364279	APPROVED BY:
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DESCRIPTION: ASSY, STEP BACK, 6-LANE

3

DRAWING NUMBER:
364279

364279 AS SHOWN
364279-001 OPPOSITE



Arpac BOM

Parent Number: 15269 Parent Revision: B

Description: ASSY, FINAL, MACH, EL-2100, LH

Model: EL-2121

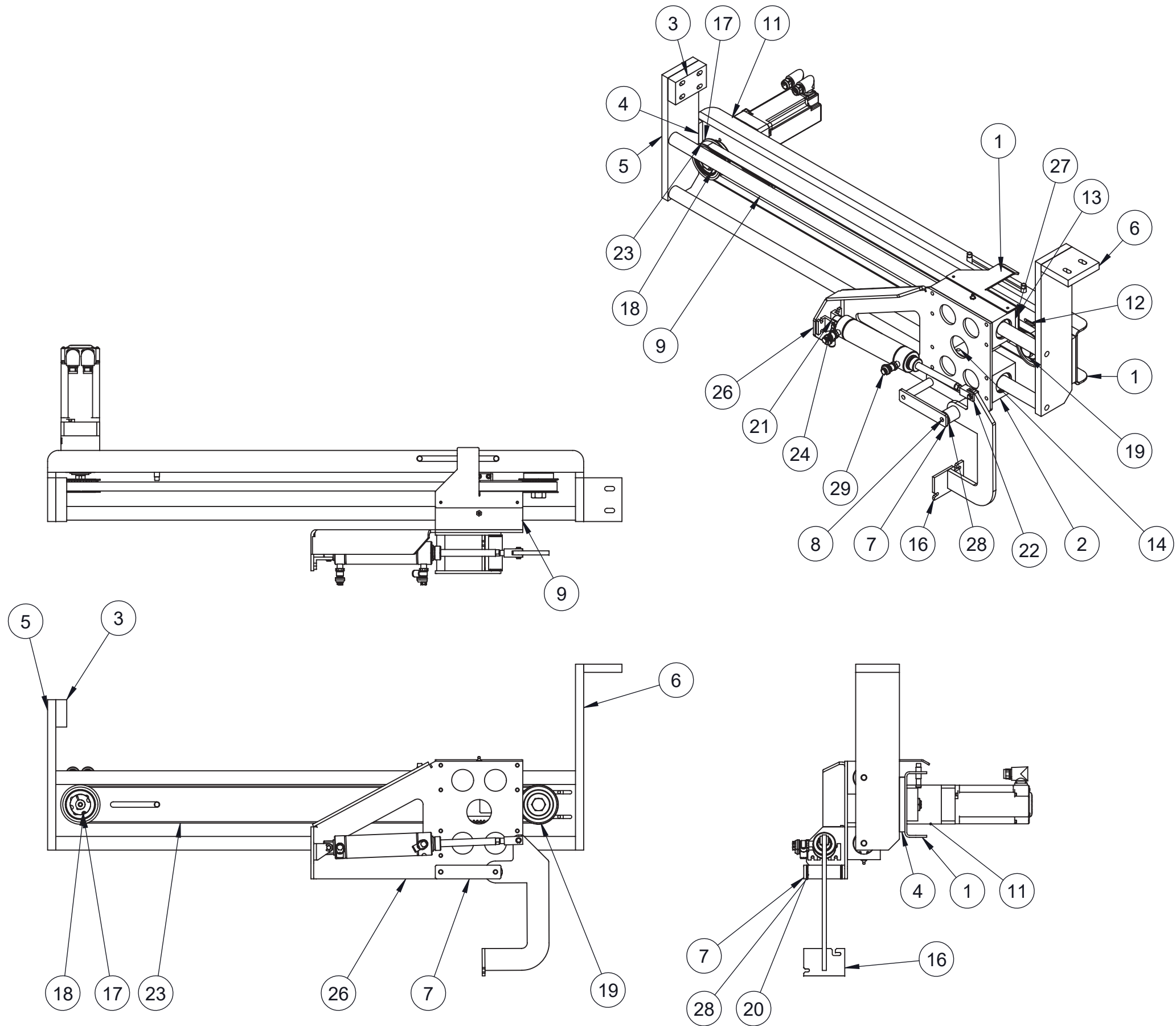
Assembly Part Number: 364279

Assembly Drawing Number: 364279

Description: ASSY, STEP BACK, 6-LANE

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	188768	PLT, CONNECT EXTRUSION TS25, STD
2	1.00	188769	PLT, MNT, CYL STEP BACK TS25, STD
3	1.00	216201	PLT, STEP BACK
4	1.00	233434	WLDMT, BKT, FINGER POSITION
5	1.00	816448	THRUSTER, LINEAR, 50MM BORE, 25MM STROKE BALL BRG
6	2.00	242943	SHAFT, MTG, FINGER
7	2.00	809015-007	EXTRUSION, 1515 SERIES 20" LENGTH
8	2.00	800568	COLLAR, SHAFT, CLAMP, 2-PIECE, 1 ID x 1 3/4 OD
9	1.00	215775-001	SCALE, R TO L
10	2.00	816026	BRG, LINEAR, FLANGED FOR 1515 EXT
11	2.00	816449	HANDLE, LINEAR BEARING BRAKE
12	12.00	809939	T-NUT, 5/16-18, 15 SERIES, SLIDE IN, BLACK ZINC
13	2.00	822051	GROMMET, 1 ID, 1.75 OD, 3/8 THK, 1-3/8 DIA HOLE, 3/32 THK PANEL
14	1.00	300696	PLT, STOP, BACK, STEP
15	2.00	300693	BAR, MTG, BACK, STEP
16	2.00	300694	PLT, MNT, FINGER & GATE
17	6.00	300784	ASSY, FINGER DETECTOR
18	2.00	822126-001	VALVE, CONTROL, FLOW, W/SEALANT, 3/8 OD PUSH-ON 1/4 NPT, NUMERIC INDICATO



29	2	822126-001	VALVE, CONTROL, FLOW, 3/8 OD PUSH-ON 1/4 NPT, NUMERIC INDICATOR
28	2	807258	WSHR, OILITE, 0.753 X 1.250 X 1/16 THK
27	1	304441	ASSY, BLK, BUSH, SHAFT, 1-1/4", 8" LG,
26	1	311587	WLDMNT, BKT, MTG, CYL, LH
25	1	304440-001	FLAG, PROX, RAM, LH
24	1	825507	BKT, PVT, SET-(1LEFT AND 1RIGHT BKT) FOR 2 & 2.5 BORE
23	1	823124	BELT, TIMING, 8MM P, 21MM W, 2400MM LG, POLY CHAIN
22	1	816543	CLVS, ROD, 1/2-20, 1 3/4" - 2" BORE
21	1	822607	CYL, AIR, 2 BORE, 5" STROKE, REAR PIVOT, 3/8 BUSH, DOUBLE CUSHION, MAGNET
20	2	800381	BUSH, OILITE, FLG, 0.751 X 0.877 X 1, 1 OD X 1/8 THK FLG
19	1	806349	SPKT, 32T, 8MM P, 21MM W, IDLER, 7720 SERIES
18	1	823427	BUSHING
17	1	823123	PULLEY, TIMING, 32T, 8MM P, 21MM W, 1210 BUSHING REQUIRED
16	1	316365	WLDMT, ARM, PUSHER
15	1	231210	PLATE, CLAMPING
14	1	231211	PLT, MNT, BELT CLAMP
13	1	231231	BLOCK, TENSIONER, TAPPED
12	1	231266	PLT, MTG, TENSIONER
11	1	839117	GEARBOX, 10:1
10	1	839096	MOTOR, SERVO, 37 IN-LB, 5000 RPM 460VAC KEYED/MULTI-TURN ABSOL. HIGH RES.
9	2	137693-002	SHAFT, SLIDE PUSHER, 47 17/32
8	2	189950	SHAFT, PIVOT
7	2	300810	PLT, SUPPORT, SHAFT
6	1	259650	WLDMNT, BKT
5	1	259649	PLT, MTG, SHAFT, SLIDE, PUSHER
4	2	235322	SPACER, MTG, CHANNEL
3	1	309151	BLK, SPACER
2	1	231163	ASSY, BLK, BUSH, SHAFT, 1-1/4", 8" LG,
1	1	297587	CHANNEL, MTG, SERVO
ITM	QTY	PART NUM	DESCRIPTION

BILL OF MATERIALS			
ARPAC		9511 WEST RIVER ST. SCHILLER PARK, IL 60176	
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONAL TOLERANCES:		FRACTIONS TWO (2) DECIMALS THREE (3) DECIMALS ANGLES	± 1/64 ± 0.010 ± 0.005 ± 0.5°
DRAWN:	10/28/15	BY: JW	SCALE: 1:10
		FILENAME: 316341	SIZE: B
DESCRIPTION: ASSY, ARM, SERVO, A-B, LH			
			DRAWING NUMBER: 316341

Arpac BOM

Parent Number: 15269 Parent Revision: B

Description: ASSY, FINAL, MACH, EL-2100, LH

Model: EL-2121

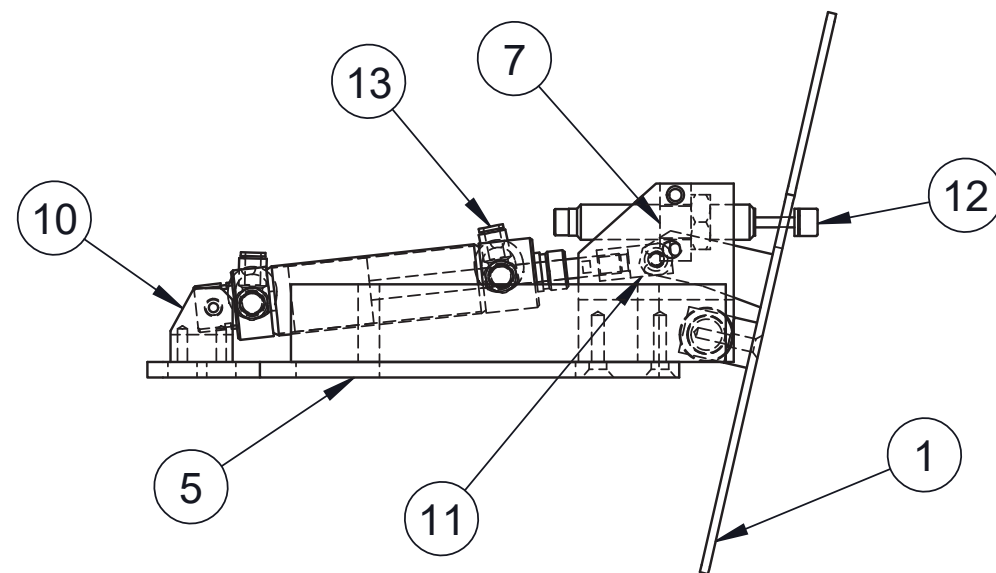
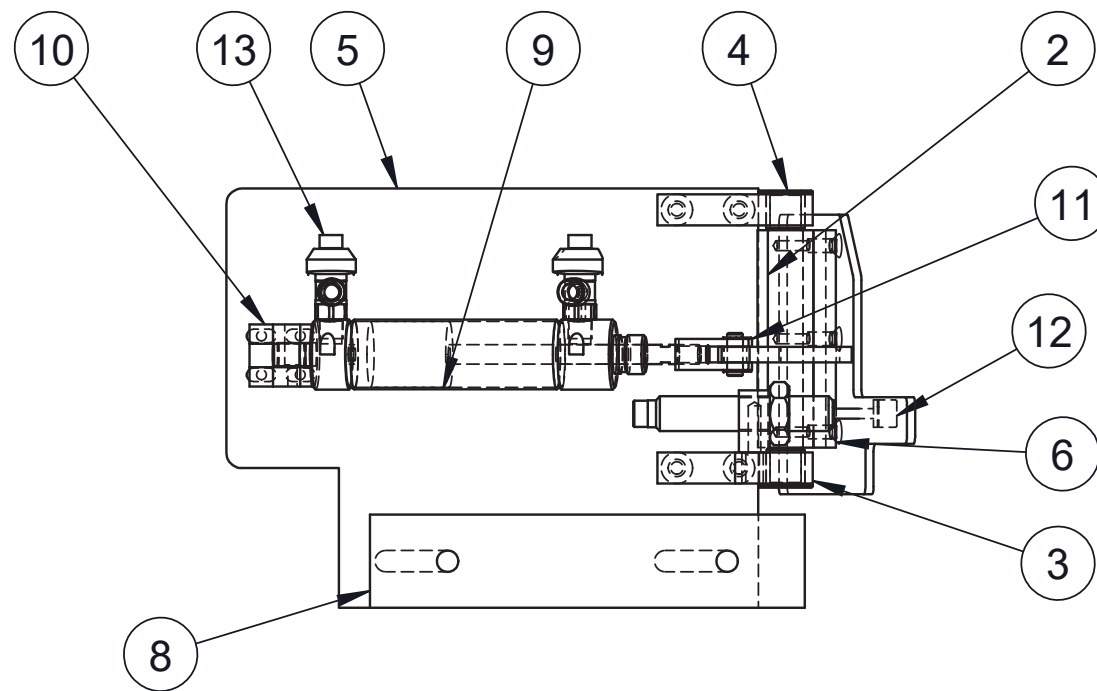
Assembly Part Number: 316341

Assembly Drawing Number: 316341

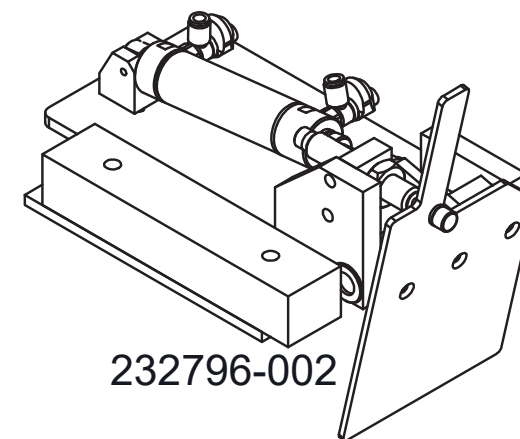
Description: ASSY, RAM, SERVO, A-B

Quantity: 1.00

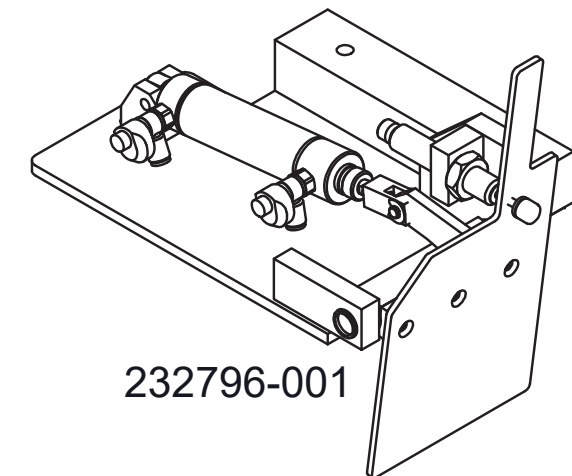
Item	Qty	Arpac Part	Description
1	1.00	297587	CHANNEL, MTG, SERVO
2	1.00	231163	ASSY, BLK, BUSH, SHAFT, 1-1/4", 8" LG,
3	1.00	309151	BLK, SPACER
4	2.00	235322	SPACER, MTG, CHANNEL
5	1.00	259649	PLT, MTG, SHAFT
6	1.00	259650	WLDMNT, BKT, LH
7	2.00	300810	PLT, SUPPORT, SHAFT
8	2.00	189950	SHAFT, PIVOT
9	2.00	137693-002	SHAFT, SLIDE, PUSHER 47 17/32 LG
10	1.00	839096	MOTOR, SERVO, 37 IN-LB, 5000 RPM 460VAC KEYED/MULTI-TURN ABSOL. HIGH RES.
11	1.00	839117	GEARBOX, 10:1
12	1.00	231266	PLT, MTG, TENSIONER
13	1.00	231231	BLOCK, TENSIONER, TAPPED
14	1.00	231211	PLT, MNT, BELT CLAMP
15	1.00	231210	PLATE, CLAMPING
16	1.00	316365	WLDMT, ARM, PLT, PUSHER, LH
17	1.00	823123	PULLEY, TIMING, 32T, 8MM P, 21MM W, 1210 BUSHING REQUIRED,
18	1.00	823427	BUSHING
19	1.00	806349	SPKT, 32T, 8MM P, 21MM W, IDLER, 7720 SERIES
20	2.00	800381	BUSH, OILITE, FLG, 0.751 X 0.877 X 1, 1 OD X 1/8 THK FLG
21	1.00	822607	OBSOLETE USE 855085, CYL, AIR, 2 BORE, 5" STROKE, REAR PIVOT, 3/8 BUSH, D
22	1.00	816543	CLVS, ROD, 1/2-20, 1 3/4" - 2" BORE
23	1.00	823124	BELT, TIMING, 8MM P, 21MM W, 2400MM LG, POLY CHAIN
24	1.00	825507	BKT, PVT, SET-(1LEFT AND 1RIGHT BKT) FOR 2 & 2.5 BORE
25	1.00	304440-001	FLAG, PROX, RAM, LH
26	1.00	311587	WLDMNT, BKT, MTG, CYL, LH
27	1.00	304441	ASSY, BLK, BUSH, SHAFT, 1-1/4", 8" LG,
28	2.00	807258	WSHR, OILITE, 0.753 X 1.250 X 1/16 THK
29	2.00	822126-001	VALVE, CONTROL, FLOW, W/SEALANT, 3/8 OD PUSH-ON 1/4 NPT, NUMERIC INDICATO



232796-002 AS SHOWN
232796-001 OPPOSITE



232796-002



232796-001

13	2	825362-001	VALVE, CONTROL, FLOW, 1/8 NPT X 1/4 TUBE 90DEG, NUMERIC INDICATOR, MTR OUT
12	1	847799	SHOCK, 9/16-18 THRD, .63 S, W/ BUTTON (PM25 IC + BUTTON + JAM NUT)
11	1	816269	CLVS, ROD 5/16-24
10	1	230839-001	BKT, PIVOT, CYL RH
9	1	816418	CYL, AIR, 1 1/16 BORE, 2 STRK, RND PVT BUSH, DBL ACT, W/CUSHION
8	1	214331	SPACER, GATE
7	1	214329	BRACKET, SHOCK ABS.
6	1	197425	SPACER, MNT, GATE
5	1	232797-001	BKT, GATE, MTG, UPSTREAM RH
4	1	197424	BRG, SHAFT
3	1	214327	BLOCK, BRG, TOP
2	1	197423	SHAFT, GATE
1	1	230498-002	GATE, UPSTREAM
ITM	QTY	PART NUM	DESCRIPTION

BILL OF MATERIALS

ARPAC

9511 WEST RIVER ST.
SCHILLER PARK, IL 60176

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONAL TOLERANCES:
FRACTIONS ± 1/64
TWO (2) DECIMALS ± 0.010
THREE (3) DECIMALS ± 0.005
ANGLES ± 0.5°

DRAWN: 5/6/2005 BY: HHG SCALE: 1:4 SIZE: A

RELEASED: 5/6/2005 FILENAME: 232796 APPROVED BY: HHG

DESCRIPTION: ASSY, GATE, UP-STREAM

JS

DRAWING NUMBER:
232796

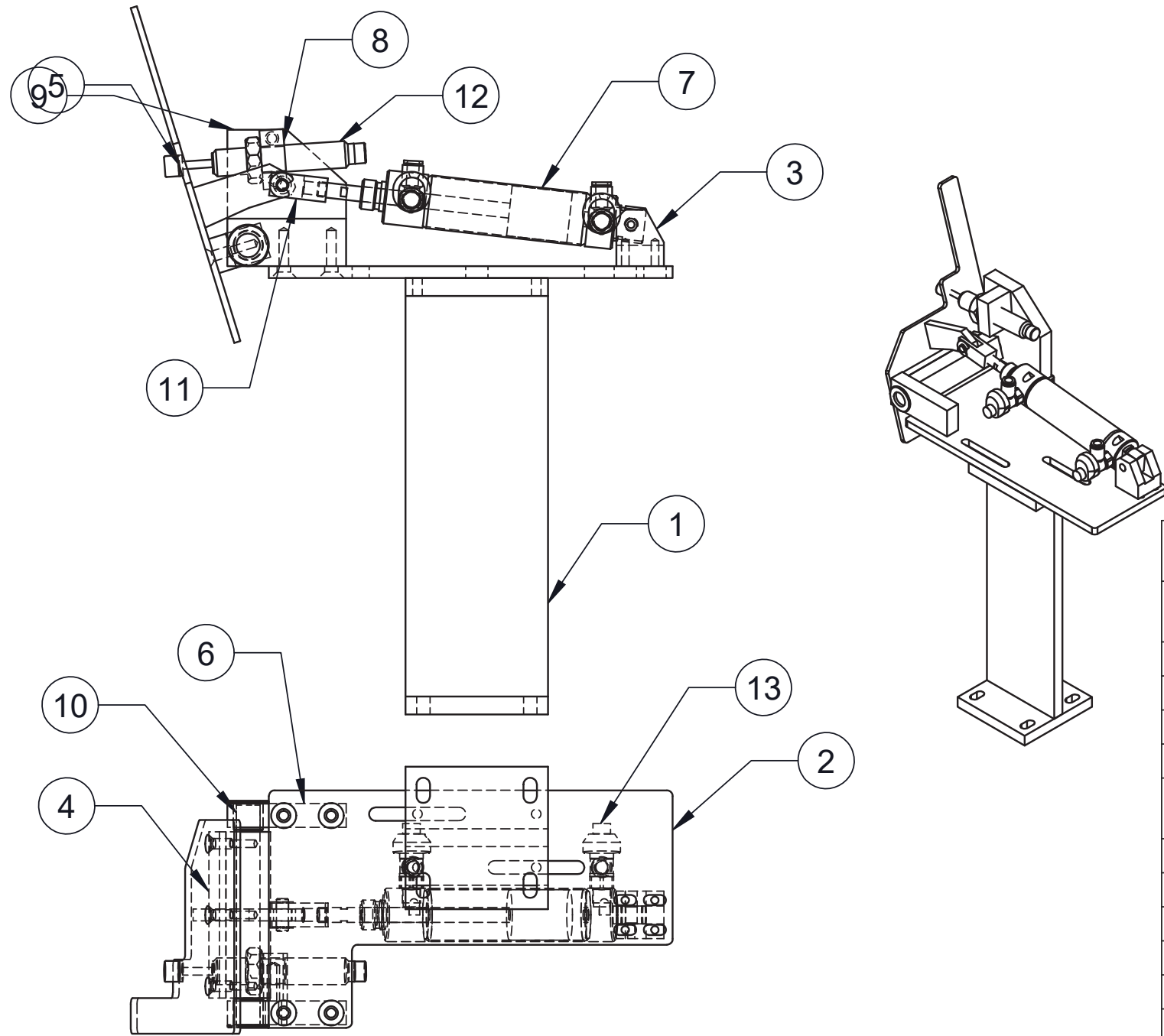
FINISH- NONE

Arpac BOM

Parent Number: 15269 Parent Revision: B
Description: ASSY, FINAL, MACH, EL-2100, LH
Model: EL-2121

Assembly Part Number: 232796-001A
Assembly Drawing Number: 232796
Description: ASSY, GATE, UPSTREAM L.H. MACH NUMATIC CYL
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	230498-001	GATE, UP-STREAM, LH MACHINE
2	1.00	197423	SHAFT, GATE
3	1.00	214327	BLOCK, BRG, SHAFT GATE, TOP
4	1.00	197424	BLOCK, BRG, BOTTOM
5	1.00	232797-002	BKT, GATE, MTG, RH MACH UP STREAM
6	1.00	197425	SPACER, MNT GATE
7	1.00	214329	BKT, SHOCK ABS.
8	1.00	214331	SPACER, MTG, GATE
9	1.00	816418	OBS USE 854762, CYL, AIR, 1 1/16 BORE, 2 STRK, RND PVT BUSH, DBL ACT, W/C
10	1.00	230839-002	BKT, PIVOT, CYL RH
11	1.00	816269	OBSOLETE USE 839340, CLVS, ROD 5/16-24
12	1.00	847799	SHOCK, 9/16-18 THRD, .63 S, W/ BUTTON (PM25 IC + BUTTON + JAM NUT)
13	2.00	825362-001	VALVE, CONTROL, FLOW, 1/8 NPT X 1/4 TUBE 90DEG, NUMERIC INDICATOR, MTR OU



300692 AS SHOWN
300692-001 OPPOSITE

FINISH-NONE

13	2	825362-001	VALVE, CONTROL, FLOW, 1/8 NPT X 1/4 TUBE 90DEG, NUMERIC INDICATOR, MTR OUT
12	1	847799	SHOCK, 9/16-18 THRD, .63 S, W/ BUTTON (PM25 IC + BUTTON + JAM NUT)
11	1	816269	CLVS, ROD 5/16-24
10	1	197423	SHAFT, GATE
9	1	214327	BLOCK, BRG, TOP
8	1	214329	BRACKET, SHOCK ABS.
7	1	816418	CYL, AIR, 1 1/16 BORE, 2 STRK, RND PVT BUSH, DBL ACT, W/CUSHION
6	1	197424	BRG, SHAFT
5	1	230522-001	GATE, UPSTREAM, LH
4	1	197425	SPACER, MNT, GATE
3	1	230839-001	BKT, PIVOT, CYL RH
2	1	230835	BKT, MTG, GATE
1	1	300691	BRACKET, MTG, GATE
ITM	QTY	PART NUM	DESCRIPTION

BILL OF MATERIALS

ARPAC

9511 WEST RIVER ST.
SCHILLER PARK, IL 60176

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONAL TOLERANCES:
FRACTIONS ± 1/64
TWO (2) DECIMALS ± 0.010
THREE (3) DECIMALS ± 0.005
ANGLES ± 0.5°

DRAWN: 12/30/2004 BY: HHG SCALE: 0.25:1 SIZE: A

RELEASED: FILENAME: 300692 APPROVED BY: HHG

DESCRIPTION: ASSY, GATE, DOWN-STREAM



DRAWING NUMBER:
300692

Arpac BOM

Parent Number: 15269 Parent Revision: B
Description: ASSY, FINAL, MACH, EL-2100, LH
Model: EL-2121

Assembly Part Number: 300692
Assembly Drawing Number: 300692
Description: ASSY, GATE, DOWNSTREAM L.H. MACH
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	300691	BKT, GATE, MTG
2	1.00	230835	BKT, GATE MTG, LH MACH DOWNSTREAM,
3	1.00	230839-001	BKT, PIVOT, CYL LH
4	1.00	197425	SPACER, MNT GATE
5	1.00	230522-001	GATE, DOWN STREAM LH MACH
6	1.00	197424	BLOCK, BRG, BOTTOM
7	1.00	816418	OBS USE 854762, CYL, AIR, 1 1/16 BORE, 2 STRK, RND PVT BUSH, DBL ACT, W/C
8	1.00	214329	BKT, SHOCK ABS.
9	1.00	214327	BLOCK, BRG, SHAFT GATE, TOP
10	1.00	197423	SHAFT, GATE
11	1.00	816269	OBSOLETE USE 839340, CLVS, ROD 5/16-24
12	1.00	847799	SHOCK, 9/16-18 THRD, .63 S, W/ BUTTON (PM25 IC + BUTTON + JAM NUT)
13	2.00	825362-001	VALVE, CONTROL, FLOW, 1/8 NPT X 1/4 TUBE 90DEG, NUMERIC INDICATOR, MTR OU

Arpac BOM

Parent Number: 15269 Parent Revision: B

Description: ASSY, FINAL, MACH, EL-2100, LH

Model: EL-2121

Assembly Part Number: 322449

Assembly Drawing Number: 322449

Description: ASSY, BLANK, TRAY, MAGAZINE, LH

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	119857	NUT, ADJ, SQ
2	4.00	102341-000A	NUT, ADJ, ACME, 3/4-6
3	1.00	138328	SPKT, IDLER, SLIDING
4	4.00	119856	BLK, GUIDE, SIDE TS-25
5	2.00	224118	PLT, MTG, ADJ, MAGAZINE
6	2.00	224119	ARM, ADJ, MAGAZINE
7	2.00	224120	ARM, ADJ, MAGAZINE
8	8.00	224121	BLK, GUIDE, ADJ, MAGAZINE
9	1.00	224122-000A	XBAR, ADJ, MAGAZINE
10	1.00	224123-002	ROD, SS, 1.000, TAPPED, 1/2-13, 19.500LG
11	1.00	224123	ROD, SS, 1.000, TAPPED, 1/2-13, 21.063LG
12	1.00	224123-001	ROD, SS, 1.000, TAPPED, 1/2-13, 18.000LG
13	1.00	224124-001	BKT, MTG, SIDE, MAGAZINE, RH
14	1.00	224124-002	BKT, MTG, SIDE, MAGAZINE, LH
15	1.00	224125-001	BKT, MTG, SIDE, MAGAZINE, RH
16	2.00	819440-001	HANDWHEEL, 6 DIA, W/REVOLVING HANDLE 1/2 BORE
17	1.00	224125-002	BKT, MTG, SIDE, MAGAZINE, LH
18	1.00	244360-001	CHANNEL, SIDE RH
19	1.00	244360-002	CHANNEL, SIDE LH
20	3.00	132990	BKT, MTG, TAIL
21	1.00	132987	BLK, BUSH, SHAFT, 1.000, 6" LG. CP-25
22	1.00	132989	BKT, MTG CP-25 BLANK MAGAZINE
23	1.00	219681	SUPPORT, BLANK, VERT. LH
24	1.00	138801-002	BLANK, SUPPORT/HORIZONTAL, BLANK MAGAZINE
25	1.00	132945	ARM, SUPPORT BLANK
26	3.00	138327	SHAFT, IDLER
27	1.00	138329	SPKT, 40B18, MOD FOR OILITE BUSH, STEEL
28	1.00	123794	WLDMT, SPKT, WELDMENT
29	1.00	135716	SHAFT, DRIVE "A" 32 7/8"
30	2.00	123796	BLOCK, BRG., ADJ., HORIZ.
31	1.00	132988	SHFT, SLIDE CP-25
32	2.00	132385	SHAFT, ADJ, HORIZ, DRIVEN 33" LG
33	1.00	132386	SHAFT, ADJ, HORIZ, DRIVE, 36 3/8" LG
34	1.00	132387	SHAFT, ADJ, HORIZ, 36 3/8" LG
35	1.00	132983	BAR, GUIDE, ADJ. EL-2000
36	1.00	132982	BAR, GUIDE, ADJ, SPKT CP-25, L.H. MACH
37	4.00	123805	SPACER, FORK
38	2.00	132985	GUIDE, CHAIN
39	14.00	123807	SPACER, GUIDE, CHAIN, RH
40	1.00	132984	ANGLE, MTG, RAIL, CHN CP-25, L.H MACH
41	1.00	238401-001	GUIDE, BLANK, SHORT, LH MACH
42	2.00	800335-019	RING, SNAP, INTERNAL, 1-1/4 BORE,
43	1.00	238400-001	GUIDE, BLANK, LONG, LH EL-2000 BLANK MAGAZINE
44	4.00	224140	CROSSBAR

Arpac BOM

Parent Number: 15269 Parent Revision: B

Description: ASSY, FINAL, MACH, EL-2100, LH

Model: EL-2121

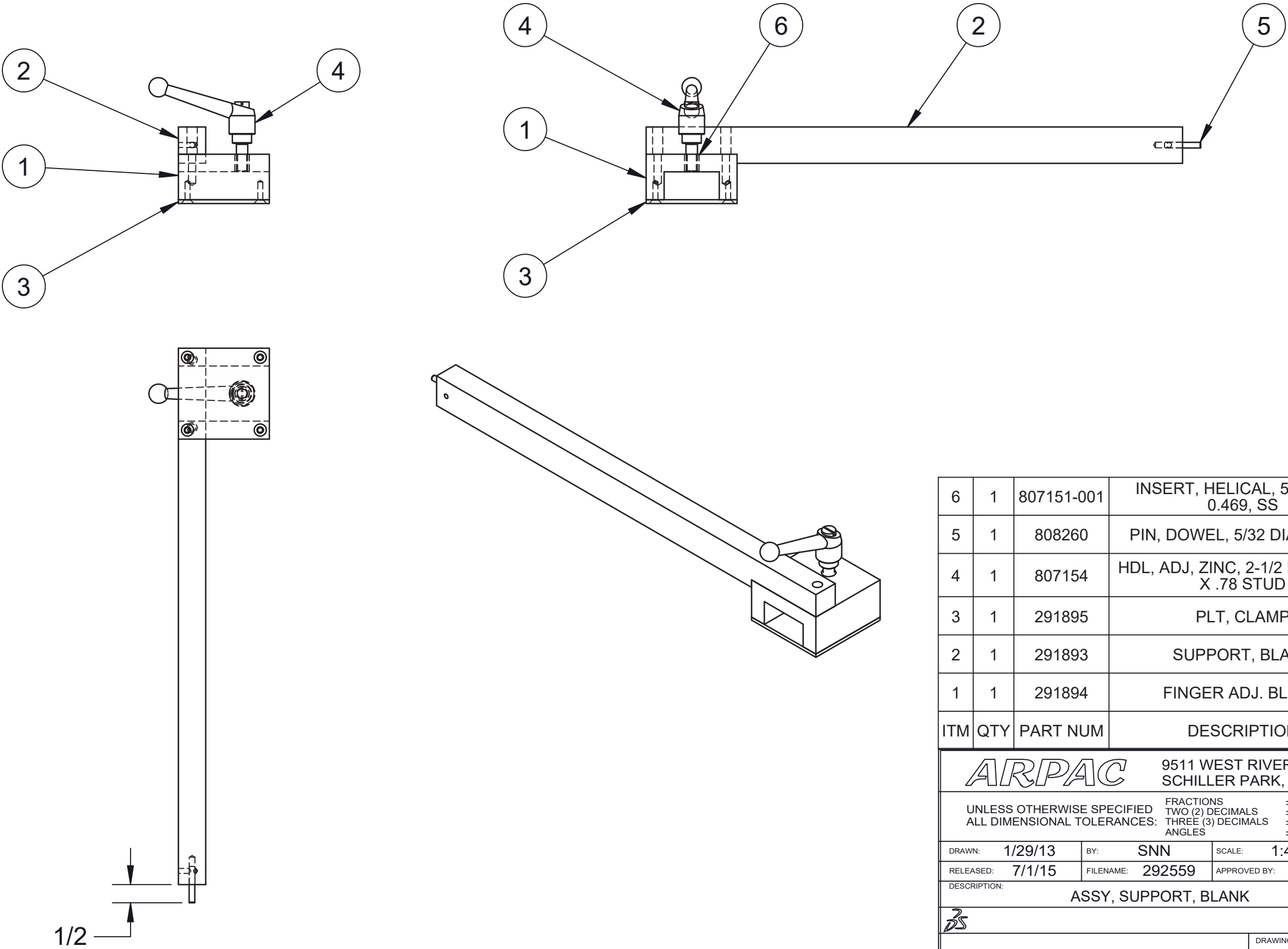
Assembly Part Number: 322449

Assembly Drawing Number: 322449

Description: ASSY, BLANK, TRAY, MAGAZINE, LH

Quantity: 1.00

Item	Qty	Arpac Part	Description
45	1.00	226283	SHAFT, PIVOT, 19 7/16 LG
46	10.00	807110	BUSH, OILITE, 1.0010 X 1.2520 X 3/4 LG,
47	2.00	132991	BAR, VERTICAL CP-25 BLANK MAGAZINE
48	1.00	227002	CROSSBAR, TOP
49	1.00	227000	PLATE, BEARING
50	2.00	227012	NUT, ADJ, VERT 3/4-6 ACME
51	2.00	322448	PLATE, NUT
52	1.00	123821	SHAFT, TOP 29 3/4" LG
53	2.00	132389	BKT, CLAMP
54	4.00	123823	FINGER, BLANK
55	1.00	218190	SHAFT, THREAD, VERT.
56	1.00	218698	SHAFT, THREAD, VERT.
57	1.00	132993	WLDMT, ARM, CYL
58	1.00	123830	WASHER, RETAINING
59	1.00	132997	SPACER, MNT, BKT, CYL
60	1.00	132996	BKT, MNT, CYL
61	1.00	101912	SPKT, 40B18, MOD, 0.750 BORE
62	1.00	224127	ROD, TAKE-UP, ARM, MAGAZINE
63	4.00	126068	RETAINER, BLANK
64	1.00	126071	BKT, REST, BLANK
65	1.00	126072	BKT, REST, BLANK
66	1.00	126073	FORK TAPPED
67	2.00	126074	FORK CLEARANCE HOLE
68	1.00	126076	FORK TAPPED FOR BLANK REST
69	1.00	224126-001	ANGLE, MTG, SIDE, MAGAZINE, RH
70	1.00	224126-002	ANGLE, MTG, SIDE, MAGAZINE, LH
71	1.00	808304	COLLAR, SHAFT, CLAMP, 1-PIECE, 1/2, S/A 850735
72	2.00	808253	COUNTER, POSITION, 1/2 ID
73	1.00	800442	WSHR, OILITE, 0.510 X 1.000 X 1/8 THK
74	2.00	808260	PIN, DOWEL, 5/32 DIA X 1 LG,
75	1.00	227006	BKT, PROX
76	2.00	306773	BRG, FLG, 3/4 ID, 3-BOLT MOD.
77	10.00	827118	BRG, FLG, 1/2 ID, 2 BOLT, 2.50 MTG HOLES
78	2.00	808214	BUSH, OILITE, 0.5025 X 0.7530 X 1 LG
79	6.00	125227	SPKT, 35B17, MOD, 0.500 BORE, W/KEYWAY, SET SCR
80	3.00	808257	ROD, ADJ, 1/2 DIA X 5 LG, 5/16-18 TAPPED THREAD, SS
81	4.00	800446	WSHR, OILITE, 0.507 X 0.750 X 1/16 THK,
82	1.00	801931	OBSOLETE USE 855086, CYL, AIR, 1-1/4 BORE, 1/2 STROKE, AL SQUAREHEAD, CL
83	1.00	808259	CLUTCH, ROLLER, DC 3/4 ID X 1 OD X 5/8 LG. (NOM.)
84	1.00	808258	RING, INNER 1/2 ID X 3/4 OD X 3/4 LG. (NOM.)
85	1.00	220240	FLAG, PROX, BLANK MAGAZINE, 6" LG
86	1.00	101092-003	(SEE COMMENTS) ASSY, BLK, BUSH, SHAFT, 1
87	1.00	224128	BAR, ADJ, TAKE-UP, ARM, MAGAZINE, 18 LG
88	2.00	224129	ROD, END, BAR, TAKE-UP



REVISIONS			
RV	DATE	BY	DESCRIPTION
A	7/1/2015	SRA	ADDED ITEM 6 HELICAL INSERT

6	1	807151-001	INSERT, HELICAL, 5/16-18 X 0.469, SS
5	1	808260	PIN, DOWEL, 5/32 DIA X 1 LG,
4	1	807154	HDL, ADJ, ZINC, 2-1/2 LG 5/16-18 X .78 STUD
3	1	291895	PLT, CLAMP
2	1	291893	SUPPORT, BLANK
1	1	291894	FINGER ADJ. BLOCK
ITM	QTY	PART NUM	DESCRIPTION

ARPAC		9511 WEST RIVER ST. SCHILLER PARK, IL 60176	
UNLESS OTHERWISE SPECIFIED		FRACTIONS	± 1/64
ALL DIMENSIONAL TOLERANCES:		TWO (2) DECIMALS	± 0.010
		THREE (3) DECIMALS	± 0.005
		ANGLES	± 0.5°
DRAWN:	1/29/13	BY:	SNN
RELEASED:	7/1/15	SCALE:	1:4
FILENAME:		APPROVED BY:	SRA
DESCRIPTION: ASSY, SUPPORT, BLANK			
			DRAWING NUMBER: 292559

Arpac BOM

Parent Number: 15269 Parent Revision: B
 Description: ASSY, FINAL, MACH, EL-2100, LH
 Model: EL-2121

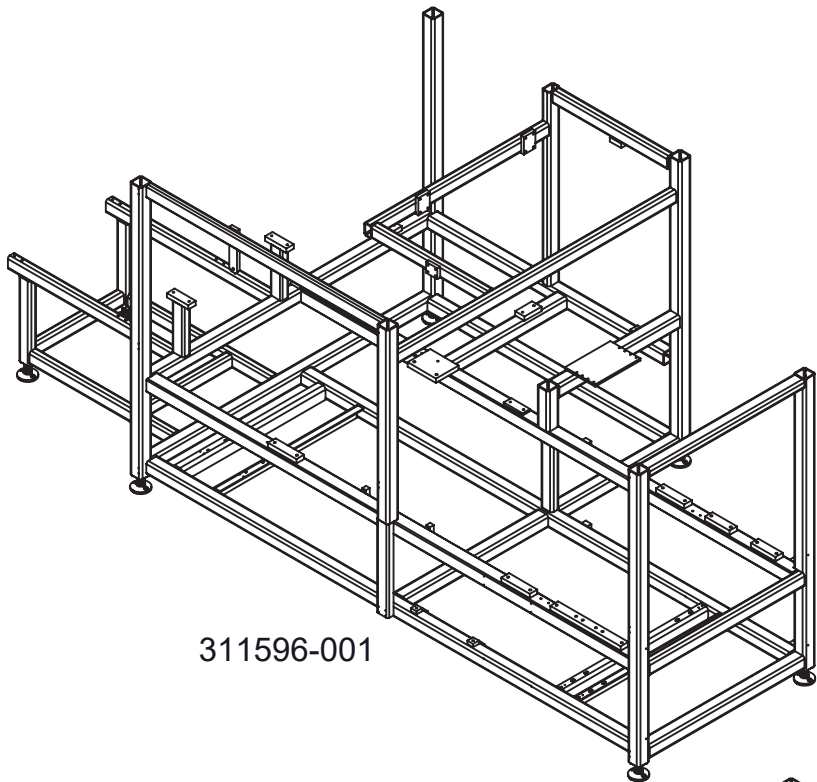
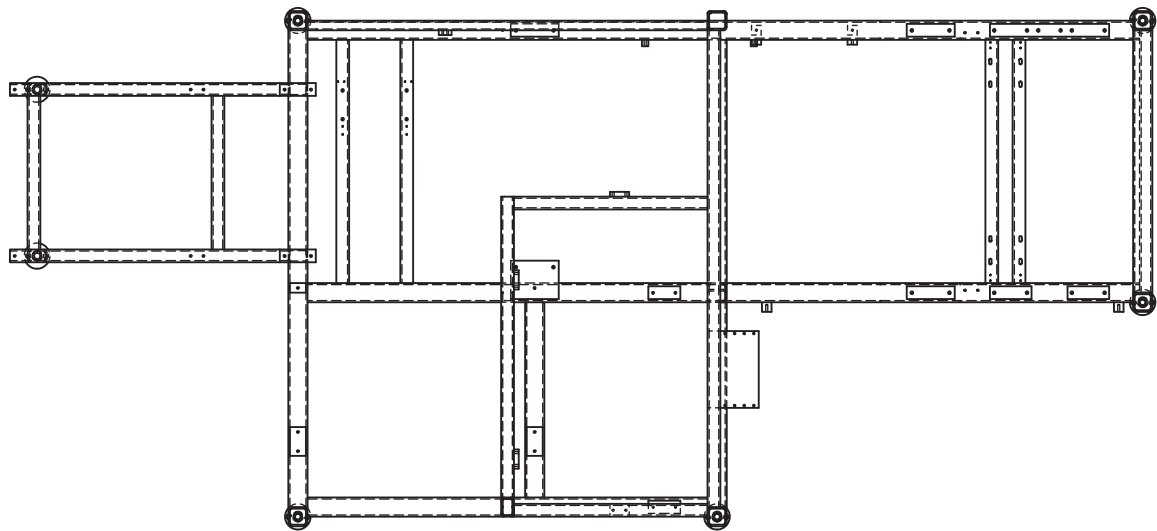
Assembly Part Number: 322449

Assembly Drawing Number: 322449

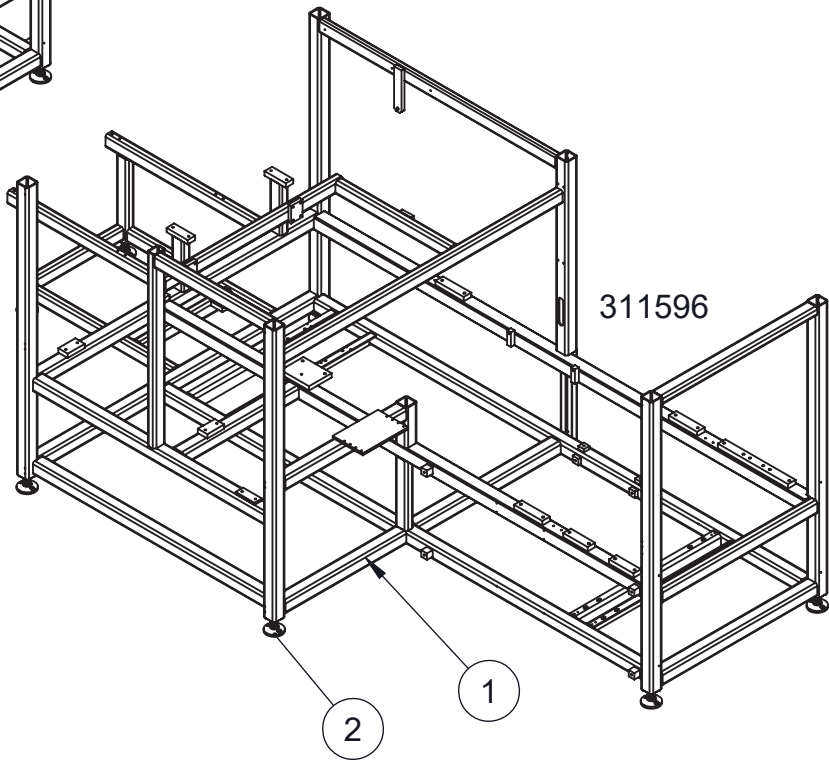
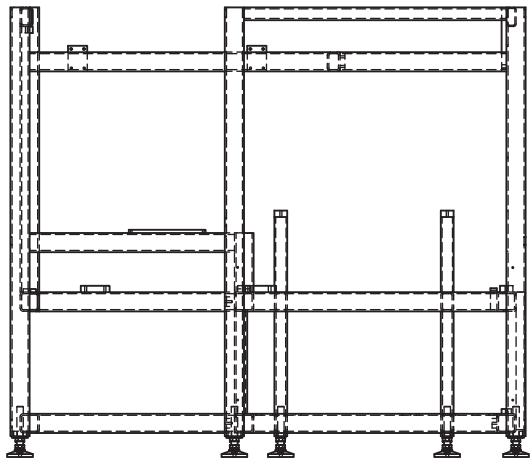
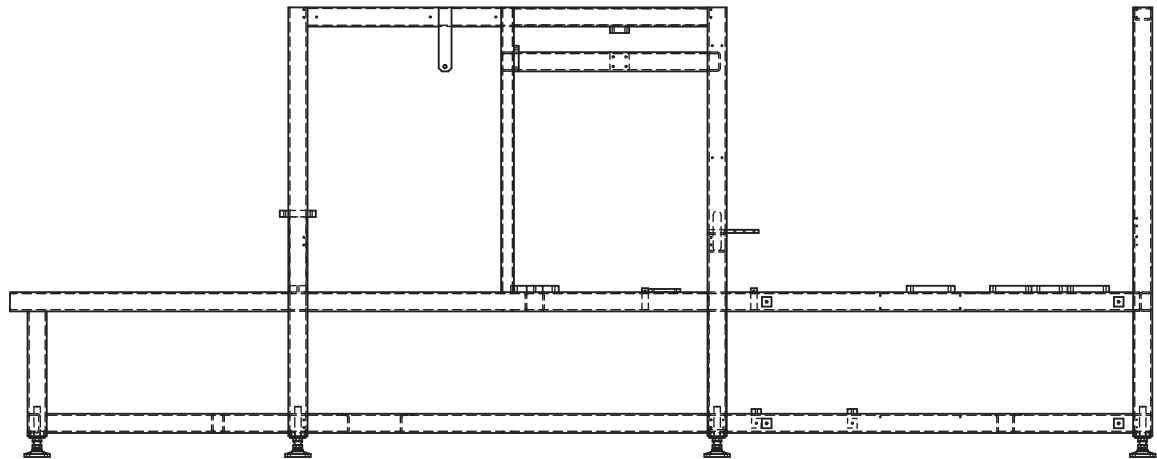
Description: ASSY, BLANK, TRAY, MAGAZINE, LH

Quantity: 1.00

Item	Qty	Arpac Part	Description
89	1.00	822652	COUNTER, POSITION, 5/8 BORE, 0.01 RES CLOCKWISE ROTATION
90	1.00	133000	GUARD, CYL, LH CP-25
91	1.00	219257	GUARD, FRONT 33" LG
92	2.00	132398	BLK, ADJ, FINGER
93	2.00	132399	FINGER, BLANK, A=10.44
94	1.00	132400	FINGER, BLANK, FIXED
95	2.00	132401	SHOE, ADJ
96	2.00	808027	HDL, ADJ, ZINC, 2-1/2 LG 5/16-18 X .59 STUD
97	1.00	822743	CPLG, 5/8 X 5/8 X 1.5 OD X 2.25 LG 4-BOLT CLAMP
98	20.00	800459	CHAIN, RLR, #35, RLR RVT
99	2.00	800660	COLLAR, SHAFT, CLAMP, 1-PIECE, 1"-8, THREADED ID, STAINLESS STEEL
100	32.00	800462	CHN, RLR, #40, RLR RVT
101	10.00	800600	COLLAR, SHAFT, CLAMP, 1-PIECE, 1
102	1.00	810131	BUSH, OILITE, FLG, 1.003 X 1.254 X 1 1/2 OD X 1/8 THK FLG
103	1.00	810133	WSHR, OILITE, 1.012 X 1.750 X 1/8 THK
104	1.00	808597	BUSH, OILITE, 1.003 X 1.254 X 1-1/2
105	1.00	800385	BUSH, OILITE, 0.7520 X 1.0040 X 1/2 LG
106	1.00	807903	BUSH, OILITE, FLG, 0.502 X 0.753 X 7/8 1 OD X 1/8 THK FLG
107	2.00	806082	PIN, CLEVIS, DETACHABLE 1.25 BORE
108	1.00	806081	CLVS, ROD FOR 1-1/4 BORE CYL,
109	1.00	142871	TENSIONER, UPPER CHAIN
110	1.00	226918	ADAPTER, WRENCH
111	1.00	227001	PLATE, BEARING & COUNTER
114	1.00	836881	COUNTER, POSITION, 1/2 ID, COUNTERCLOCKWISE INCREMENT
115	2.00	222285	BKT, SIDE HOLDER
116	1.00	222284-001	HOLDER, SIDE, BLANK, RH
117	1.00	222284-002	HOLDER, SIDE, BLANK, LH
118	1.00	238402	PLT, STIFF 16.5 LG
119	1.00	238403	PLT, STIFF 18 LG
120	1.00	237856	BKT, PE, MINI
121	4.00	256149	TAKE-UP, CHAIN
122	1.00	292559	ASSY, SUPPORT, BLANK
123	1.00	833000	BRG, THRUST, 5/8 ID X 1 11/32 OD X 9/16, SHIELDED
124	1.00	849688	KNOB, STEEL KNURLED-RIM, W/SET SCREW



311596-001



311596

2	7	827619	LEVELER, ARTICULATING, 20000 # CAP, 1-8 STEM, 7.88 HIGH, CRS 4" BASE, 2 C'SUNK LAG HOLES, HEAVY LIP ON BASE
1	1	311595	WLDMT, FRAME, MAIN, LH
ITM	QTY	PART NUM	DESCRIPTION

BILL OF MATERIALS



9511 WEST RIVER ST.
SCHILLER PARK, IL 60176

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONAL TOLERANCES:

FRACTIONS
TWO (2) DECIMALS ± 1/64
THREE (3) DECIMALS ± 0.010
ANGLES ± 0.005
± 0.5°

DRAWN: 7/16/12 BY: SCALE: 1:30 SIZE: B

FILENAME: 311596

DESCRIPTION: ASSY, FRAME, EL-2100

3

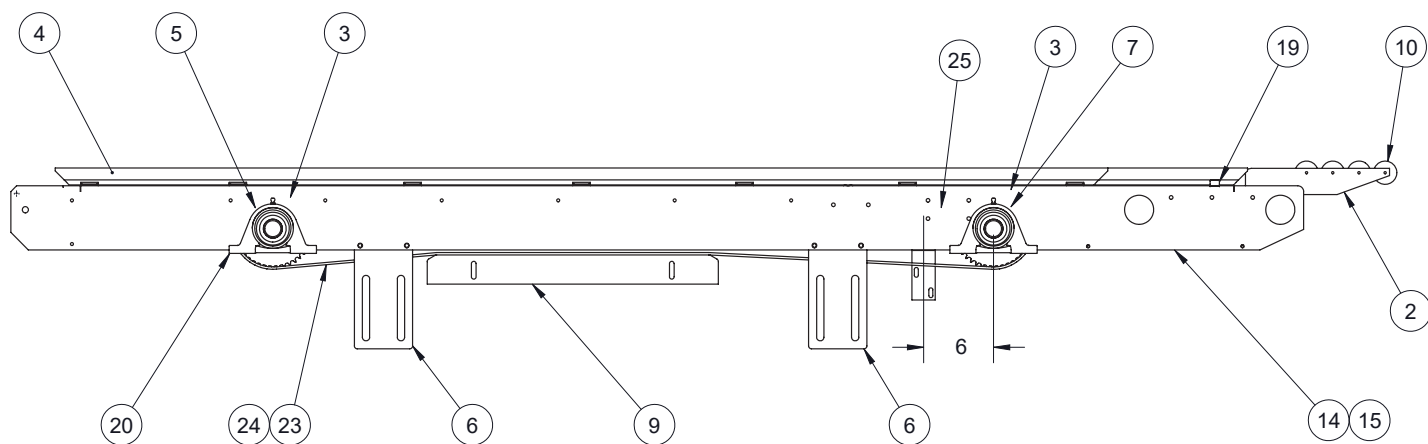
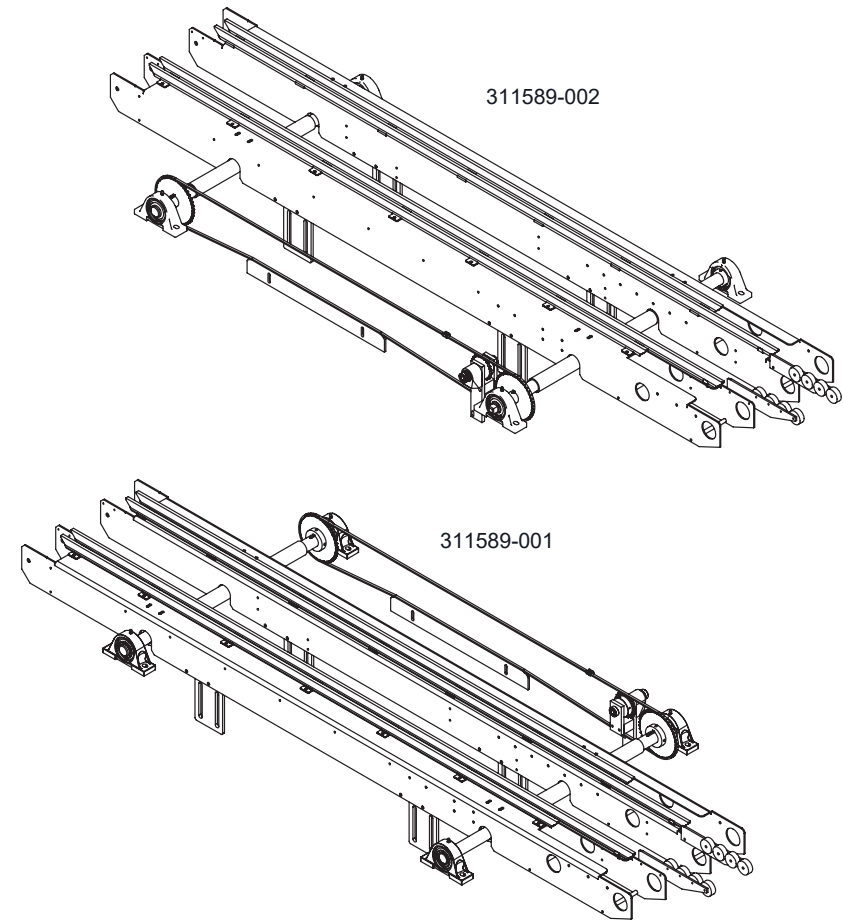
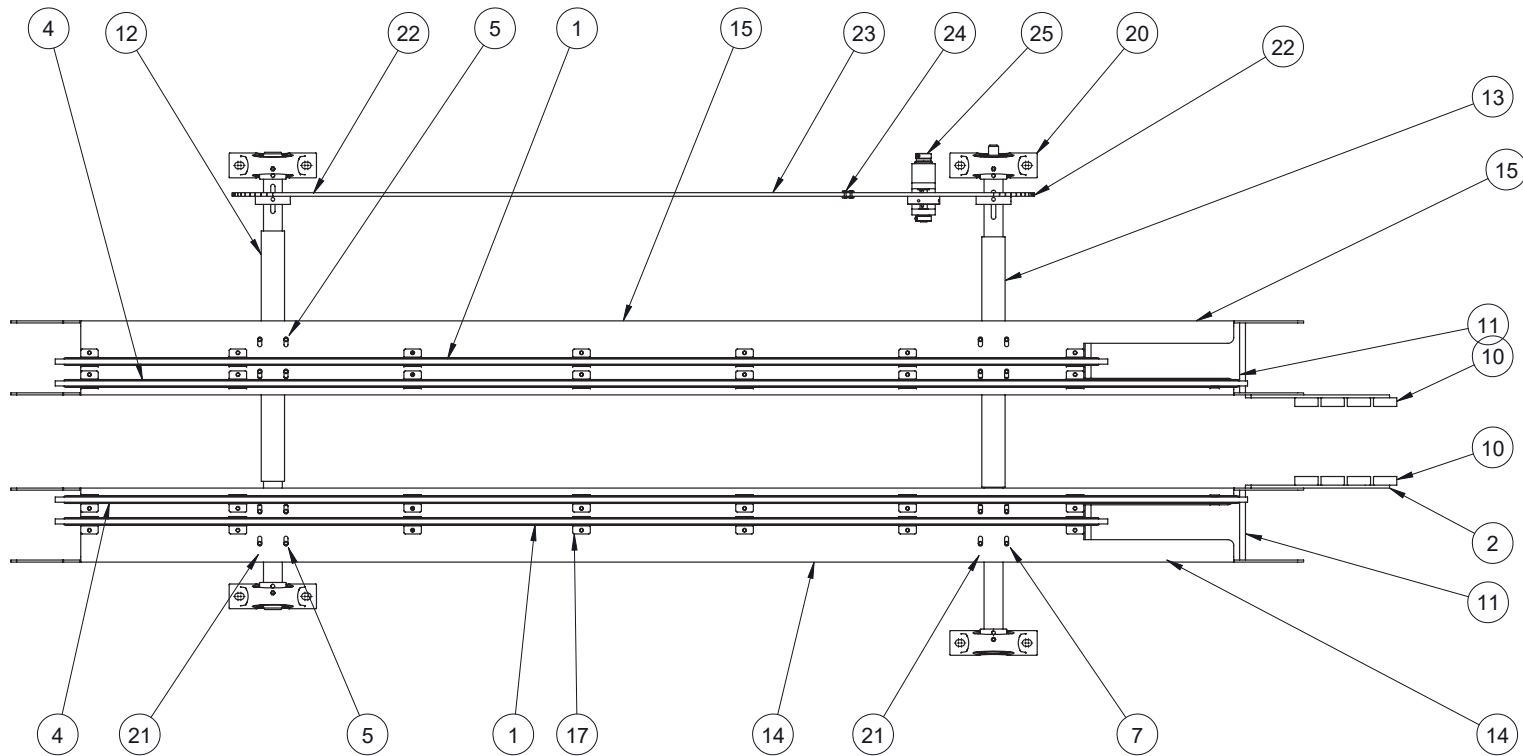
DRAWING NUMBER:
311596

Arpac BOM

Parent Number: 15269 Parent Revision: B
Description: ASSY, FINAL, MACH, EL-2100, LH
Model: EL-2121

Assembly Part Number: 311596
Assembly Drawing Number: 311596
Description: ASSY, FRAME, LH MACHINE
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	311595	WLDMT, FRAME, MAIN, EL-2100, LH
2	7.00	827619	LEVELER, ARTICULATING, 20000 # CAP, 1-8 STEM, 7.88 HIGH, CRS 4" DIA X 2"



25	1	227062	ASSY, COUNTER
24	1	800502	LINK, CONN, #40,
23	12	800462	CHAIN, RLR, #40, RLR RVT,
22	2	135705	SPKT, 40B42, MOD, 1.625 BORE
21	4	809964	COLLAR, SHAFT, SET SCREW, 1-5/8
20	4	809961	BRG, PILLOW BLK, 1-5/8 ID STANDARD SERIES
19	2	801315	CLIP, RAIL, SELFTIGHTENING, 1/4 STUD X 0.66 LG, SS, LIGHT DUTY
18	1	802411	WRENCH (NOT SHOW)
17	28	801359	CLAMP, RAIL, SINGLE, 1.5 LG, SS, ROUND HOLE
15	1	311588-001	RAIL, INDEX CONV., LH
14	1	311588	RAIL, INDEX CONV., RH
13	1	215081	SCREW, ADJ, REAR
12	1	215065	SCREW, ADJ, FRONT
11	4	191224	SPACER, RAIL
10	8	139121	ROLLER, TRANSFER
9	1	138447	SUPPORT, GUIDE CHAIN
7	2	137181	BLK, FIXED, RAIL ADJ
6	4	230245	BKT, MNT, TENSIONER
5	2	132486	BLK, THREAD, RAIL ADJ
4	2	122102-100	CHAIN GUIDE, #60 (LONG)
3	4	230232	SPACER, RAIL
2	2	230229	PLT. TRANSFER
1	2	122101-100	CHAIN GUIDE, #60 (SHORT)

ITM	QTY	PART NUM	DESCRIPTION
BILL OF MATERIALS			
ARPAC		9511 WEST RIVER ST. SCHILLER PARK, IL 60176	
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONAL TOLERANCES:		FRACTIONS ± 1/64 TWO (2) DECIMALS ± 0.010 THREE (3) DECIMALS ± 0.005 ANGLES ± 0.5°	
DRAWN:	04/03/2006	BY:	HHG
RELEASED:	04/03/2006	FILENAME:	311589
DESCRIPTION:		APPROVED BY:	HHG
		ASSY, RAIL, SUPPORT	
		DRAWING NUMBER: 311589	

Arpac BOM

Parent Number: 15269 Parent Revision: B

Description: ASSY, FINAL, MACH, EL-2100, LH

Model: EL-2121

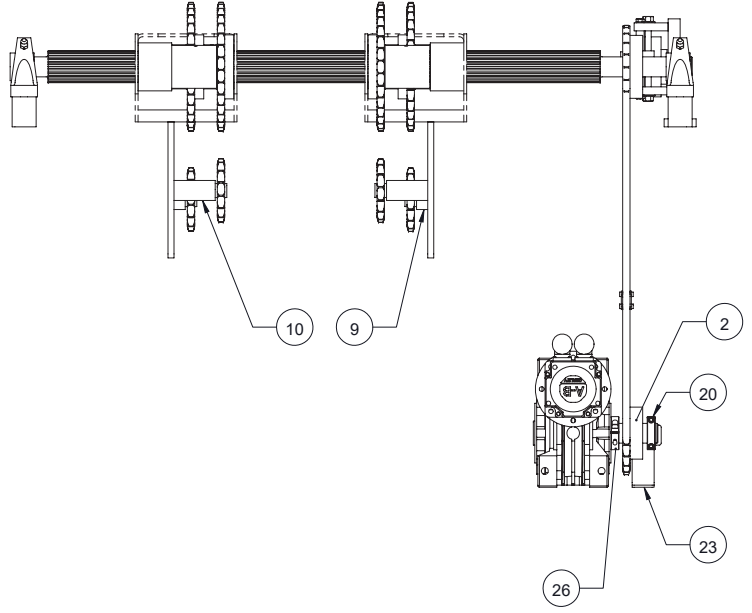
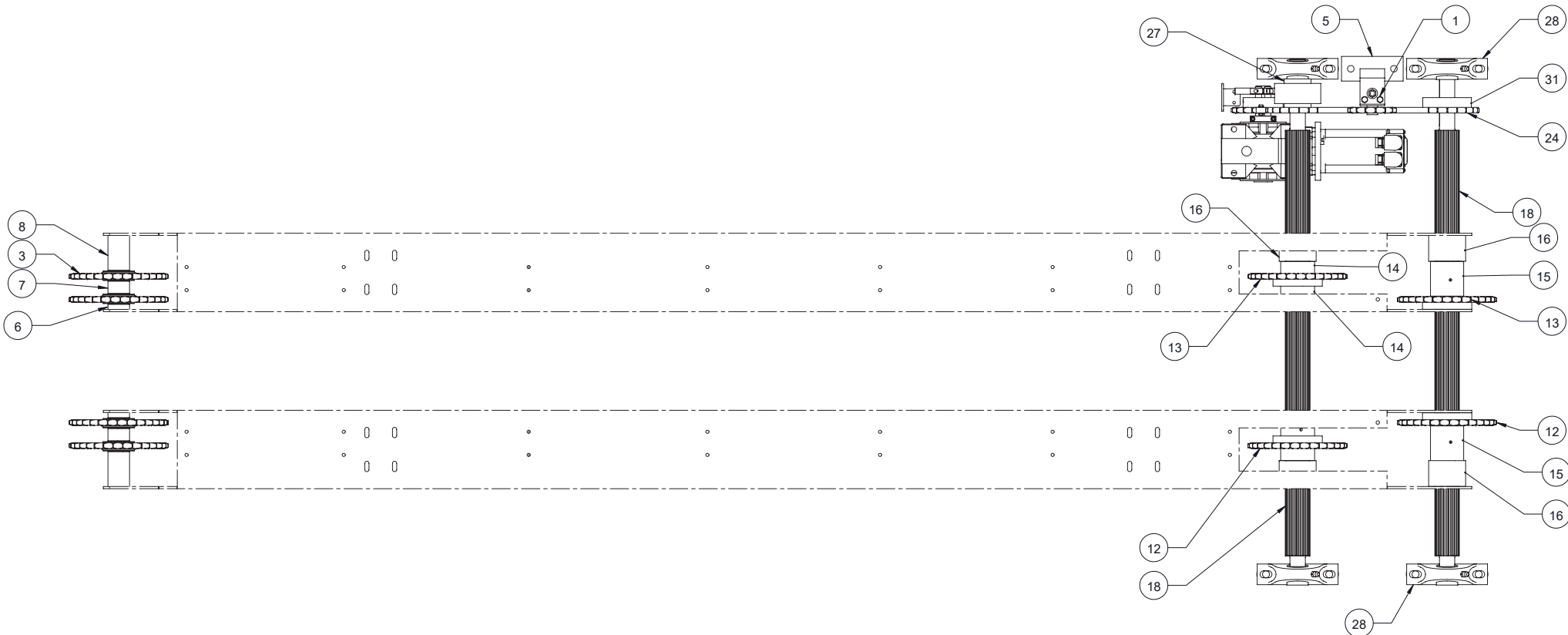
Assembly Part Number: 311589

Assembly Drawing Number: 311589

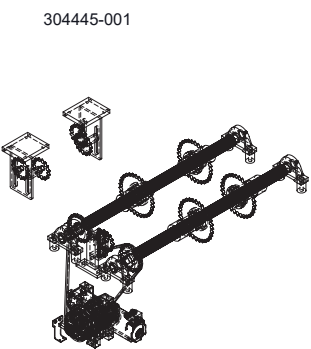
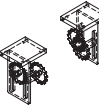
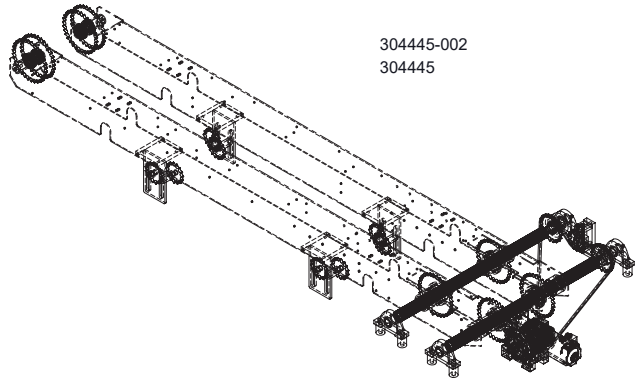
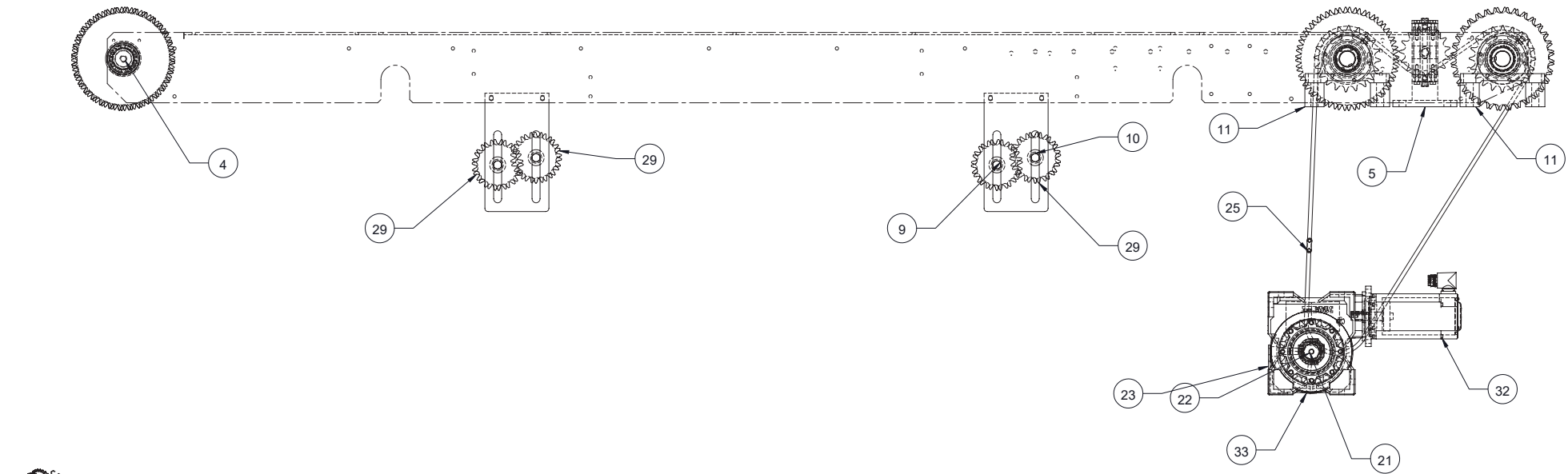
Description: ASSY, RAIL, SUPPORT, LH MACH

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	2.00	122101-100B	GUIDE, #60 CHAIN, SHORT
2	2.00	230229	PLT, TRANSFER EL-2000
3	4.00	230232	SPACER, RAIL
4	2.00	122102-100B	GUIDE, #60 CHAIN, LONG
5	2.00	132486	BLK, THREAD, RAIL ADJ
6	4.00	230245	WLDMT, BKT, MNT, TENSIONER
7	2.00	137181	BLK, FIXED, RAIL ADJ
9	1.00	138447	SUPPORT, CHAIN, GUIDE, 25 LG TS-25 STD
10	8.00	139121	ROLLER TRANSFER
11	4.00	191224	SPACER, RAIL
12	1.00	215065	SCREW, ADJ, FRONT
13	1.00	215081	SCREW, ADJ, REAR
14	1.00	311588	RAIL, INDEX CONV, RH
15	1.00	311588-001	RAIL, INDEX CONV, LH
17	32.00	801359	CLAMP, RAIL, SINGLE, 1.5 LG, SS, ROUND HOLE
18	1.00	802411	WRENCH, RATCHET 7/8 SQ X 16-1/2 LG
19	4.00	801315	CLIP, RAIL, SELF TIGHTENING, 1/4 STUD X 0.66 LG, SS, LIGHT DUTY
20	4.00	809961	BRG, PILLOW BLK, 1-5/8 ID STANDARD SERIES
21	4.00	809964	COLLAR, SHAFT, SET SCREW, 1 5/8
22	2.00	135705	SPKT, 40B42, MOD, 1.625 BORE
23	12.00	800462	CHN, RLR, #40, RLR RVT
24	1.00	800502	CHN, LINK, CONN, #40
25	1.00	227062	ASSY, COUNTER



REVISIONS			
RV	DATE	BY	DESCRIPTION
A	10/29/2015	JW	ADD TABLE TO SHOW BOM W/ VOLTAGE



ASSY NO.	304445-001	304445-003
ASSY NO.	304445	304445-002
ITEM 32	839096	819882-003
VOLTAGE	460V	230V

33	1	848066	GEARBOX, WORM, , MODEL 70, RATIO 40:1, 1-1/4 HOLLOW SHAFT
32	1	SEE TABLE	MOTOR, SERVO, 3/4 IN-LB, 5000 RPM
31	1	823423	KEYED/MULTI-TURN ABSOL. HIGH RES.
30	1	808765	SPKT, 60BTB20H REQUIRE 2012 BUSHING
29	9	808463	BUSH, TAPER, 1-1/4 BORE X 1-1/4 LG, FOR METRIC SPROCKET 30 TEETH
28	4	807444	SPKT, 60BB15H, IDLER, 5/8 ID, HARDENED
27	1	800610	BRG, PILLOW BLK, 1-1/4 ID
26	1	800594	CPLG, PHASE-LOCK 1-1/4 BORE
25	1	800516	COLLAR, SHAFT, CLAMP, 2-PIECE, 1-1/4
24	1	800486	LINK, CONN. #60, COATED
23	1	305246	CHAIN, RLR, #60
22	1	304449	BKT, PROX, FLAG
21	1	304448	WASHER, STOP
20	1	304446	SHAFT, DRIVE
18	2	214311	FLAG, PROX
17	1	193095	SHAFT, SPLINE
16	4	191213	SPKT, 60A20, MOD, 1.250 BORE
15	2	191212	SPACER, DRV SHFT
14	2	191211	CARRIER, DRV SPKT, TRAILING CHAIN
13	2	191210	CARRIER, DRV SPKT, LEADING CHAIN
12	2	191209	SPROCKET, 60A32, DRIVE, ADJ
11	8	188012	SPROCKET, 60A32, DRIVE
10	4	139617-002	SPACER, BRG, DRIVE SHAFT
9	4	139617-001	SPACER, TENSIONER
8	2	139615-003	SPACER, TENSIONER
7	2	139615-002	SPACER, IDL SHFT
6	2	139615-001	SPACER, IDL SHFT
5	1	132925	SHFT, IDL
4	2	122244	WLDMT, BKT, MTG, TAKEUP
3	4	122106	SHFT, IDL
2	1	112736	SPKT, 60A32, MOD, 2.562 BORE
1	1	101965	SPKT, 60B20, MOD, 1.250 BORE
ITM	QTY	PART NUM	ASSY, SLIDE, TAKE-UP, CHAIN, 2.250, STD
DESCRIPTION			

BILL OF MATERIALS			
ARPAC		9511 WEST RIVER ST. SCHILLER PARK, IL 60176	
UNLESS OTHERWISE SPECIFIED:		FRACTIONS ± 1/64 TWO (2) DECIMALS ± 0.010 THREE (3) DECIMALS ± 0.005 ANGLES ± 0.5°	
DRAWN:	6/30/11	BY:	SCALE: 1:6
FILENAME:	304445	SIZE:	D
DESCRIPTION:			
ASSY, CHAIN DRIVE, EL-2000, AMD=21,			
DRAWING NUMBER:			
304445			

Arpac BOM

Parent Number: 15269 Parent Revision: B

Description: ASSY, FINAL, MACH, EL-2100, LH

Model: EL-2121

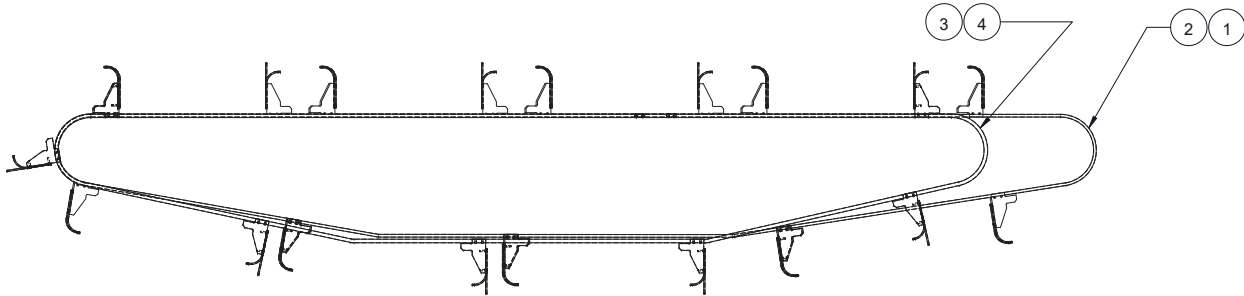
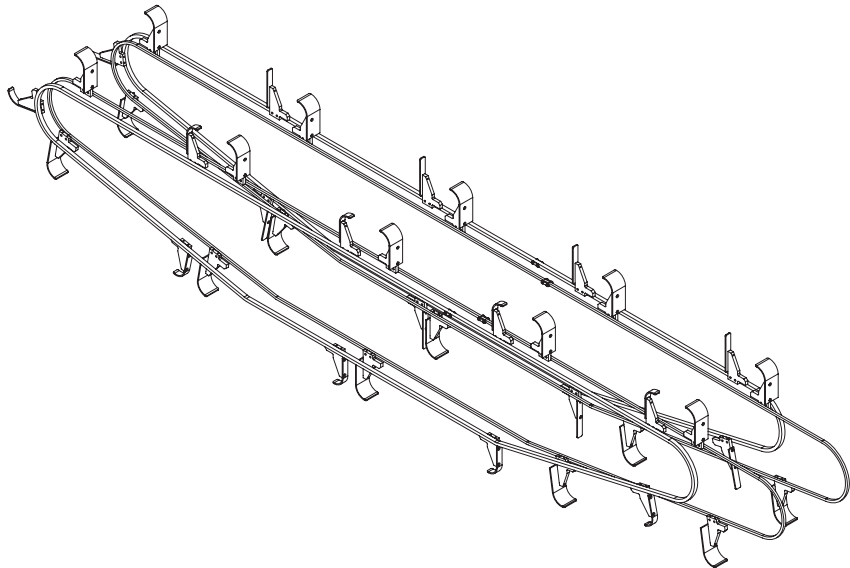
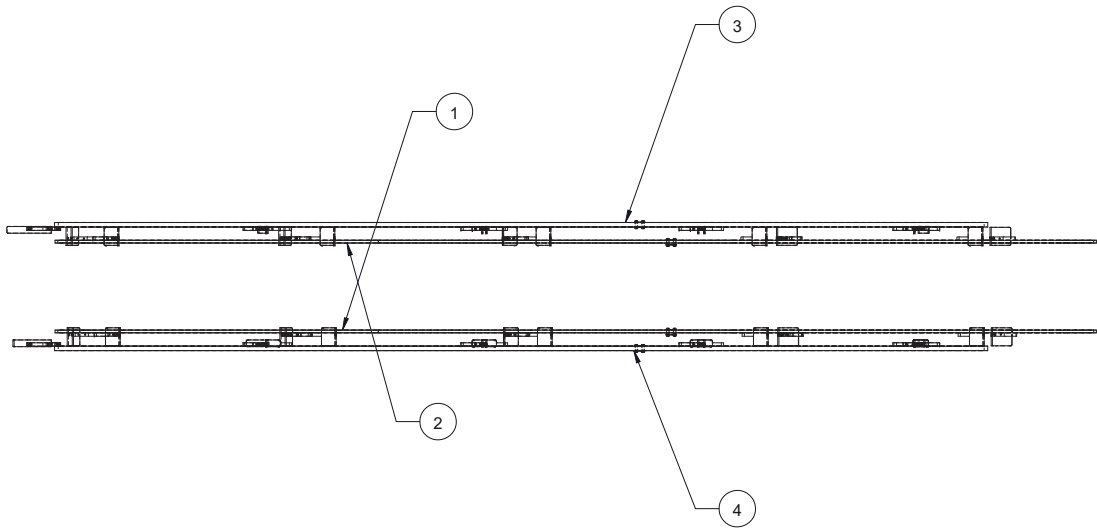
Assembly Part Number: 304445

Assembly Drawing Number: 304445

Description: ASSY, CHAIN DRIVE, LH MACHINE EL-2000, 460V

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	101965	ASSY, SLIDE, TAKE-UP, CHAIN, 2.250, STD,
2	1.00	112736	SPKT, 60B20, MOD, 1.250 BORE
3	4.00	122106	SPKT, 60A32, MOD, 2.562 BORE
4	2.00	122244	SHAFT, IDL, 1.25 D X 6 L, 1/2-13 (2)
5	1.00	132925	WLDMT, BKT, TAKE UP
6	2.00	139615-001	SPACER, IDL SHFT
7	2.00	139615-002	SPACER, IDL SHFT
8	2.00	139615-003	SPACER, IDL SHFT
9	4.00	139617-001	SPACER, TENSSION SPKT
10	4.00	139617-002	SPACER, TENSSION SPKT
11	8.00	188012	SPACER, BRG, DRIVE SHAFT
12	2.00	191209	SPKT, 60A32, MOD, 2.753 BORE
13	2.00	191210	SPKT, 60A32, MOD, 2.753 BORE, ADJ
14	2.00	191211	CARRIER, DRV SPKT, LEADING CHAIN
15	2.00	191212	CARRIER, DRV SPKT, TRAILING CHAIN
16	4.00	191213	SPACER, CHAIN DRV
17	1.00	193095	SPKT, 60A20, MOD, 1.313 BORE, SPECIAL FOR PHASE ADJ
18	1.00	214311	SHAFT, SPLINE, 42 5/8 LG, TS-25
19	1.00	214312	SHAFT, SPLINE, ADJ, 43 1/4 LG, TS-25
20	1.00	304446	WLDMT, FLAG, PROX
21	1.00	304448	SHAFT, DRIVE
22	1.00	304449	WASHER, STOP
23	1.00	305246	BKT, PROX, FLAG
24	1.00	800486	CHAIN, RLR, #60
25	1.00	800516	LINK, CONN, #60,
26	1.00	800594	COLLAR, SHAFT, CLAMP, 2-PIECE, 1-1/4
27	1.00	800610	CPLG, PHASE-LOCK 1-1/4 BORE
28	4.00	807444	BRG, PILLOW BLK, 1-1/4 ID
29	9.00	808463	SPKT, 60BB15H, IDLER, 5/8 ID, HARDENED
30	1.00	808765	BUSH, TAPER, 1-1/4 BORE X 1-1/4 LG, FOR METRIC SPROCKET 30 TEETH
31	1.00	823423	SPKT, 60BTB20H REQUIRE 2012 BUSHING
32	1.00	839096	MOTOR, SERVO, 37 IN-LB, 5000 RPM 460VAC KEYED/MULTI-TURN ABSOL. HIGH RES.
33	1.00	848066	GEARBOX, WORM, , MODEL 70, RATIO 40:1, 1-1/4 HOLLOW SHAFT, W/ADAPTER PLA



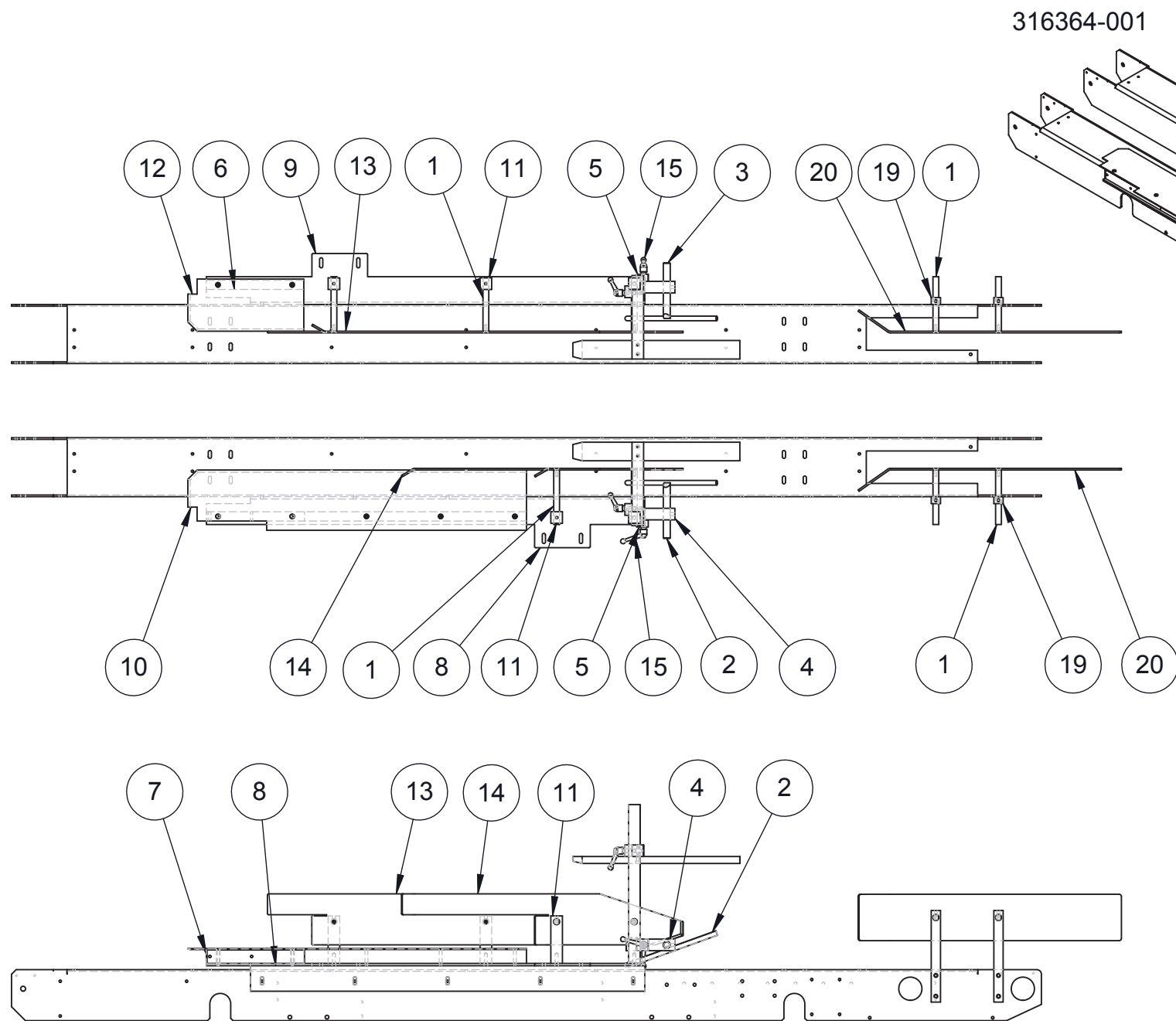
4	1	141291-001	ASSY, FLIGHT, LEADING, RH
3	1	141291-002	ASSY, FLIGHT, LEADING, LH
2	1	230434-002	ASSY, FLIGHT, TRAILING, LH
1	1	230434-001	ASSY, FLIGHT, TRAILING, RH
ITM	QTY	PART NUM	DESCRIPTION
BILL OF MATERIALS			
		ARPAC 9511 WEST RIVER ST. SCHILLER PARK, IL 60176	
		UNLESS OTHERWISE SPECIFIED: FRACTIONS: ± 1/64 ALL DIMENSIONAL TOLERANCES: TWO (2) DECIMALS ± 0.010 THREE (3) DECIMALS ± 0.005 ANGLES ± 0.5°	
DRAWN:	7/5/11	BY: HG	SCALE: 0.09375:1 SIZE: D
RELEASED:	3/14/14	FILENAME: 230844	APPROVED BY: SRA
		DESCRIPTION: ASSY, CHAIN, LUG	
		DRAWING NUMBER: 230844	

Arpac BOM

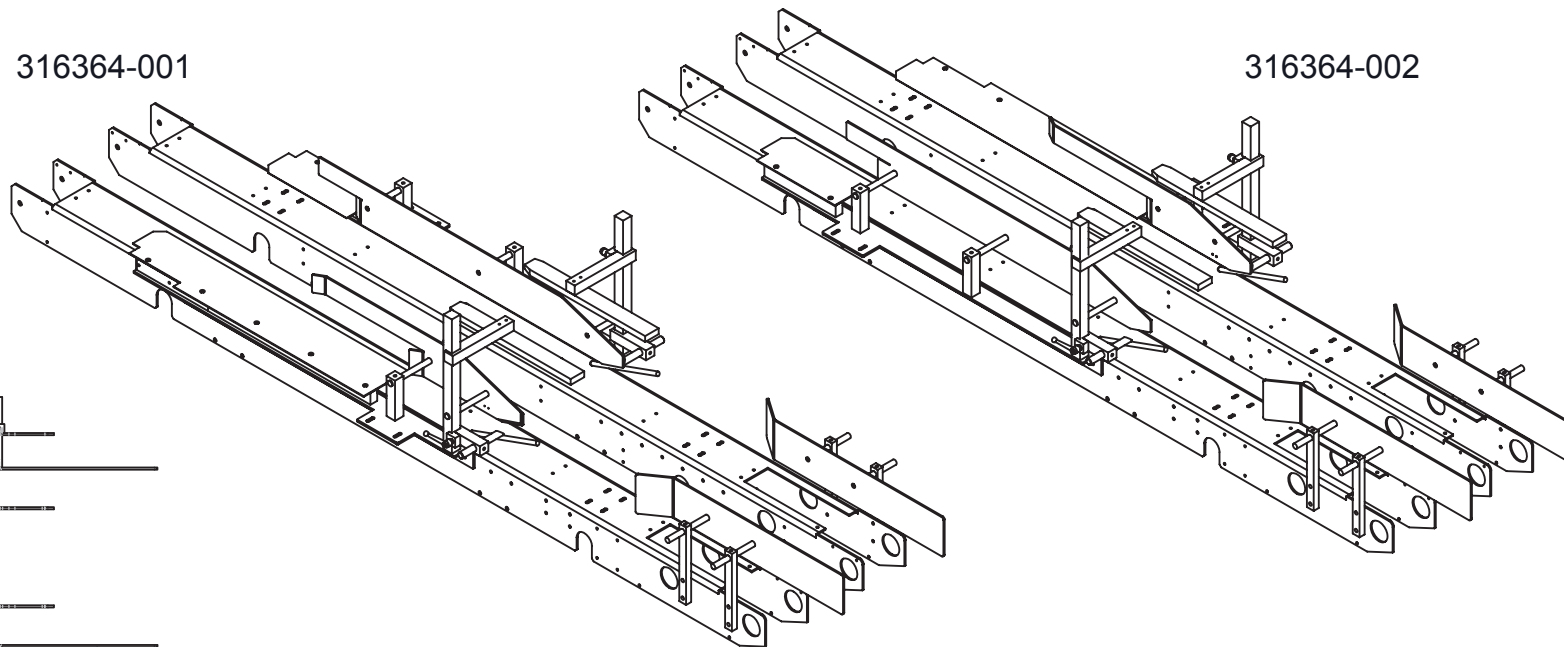
Parent Number: 15269 Parent Revision: B
Description: ASSY, FINAL, MACH, EL-2100, LH
Model: EL-2121

Assembly Part Number: 230844
Assembly Drawing Number: 230844
Description: ASSY, CHAIN, LUG
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	230434-001	ASSY, FLIGHT, TRAILING, RH
2	1.00	230434-002	ASSY, FLIGHT, TRAILING, LH
3	1.00	141291-002	ASSY, FLIGHT, LEADING, LH
4	1.00	141291-001	ASSY, FLIGHT, LEADING, RH
5	152.00	900077	AL FLAT 3/8 X 3, 6061-T6511
6	250.00	plating	PLATING FOR PARTS
7	254.00	903575	SS SHEET 10GA, 304, #2B FINISH



316364-001



316364-002

20	2	243944	GUIDE, EXIT
19	4	243947	BKT, MTG, GUIDE, EXIT
18	2	322537	TOP GUIDE
17	2	322536	BAR, MTG, TOP GUIDE
16	2	235763	POST, MTG, GUIDE, TALL
15	4	806464	HDL, ADJ, ZINC, 2-1/2 LG 3/8-16 X 1.18 STUD
14	1	292547-001	GUIDE, PRODUCT, LOAD SIDE, LH
13	1	292129-001	GUIDE, SIDE, TRAY, LH
12	1	243950-001	GUIDE, FLAP HOLD DOWN, OPP. LOAD, LH
11	3	235764	POST, MTG, GUIDE
10	1	233497-001	GUIDE, FLAP HOLD DOWN, LOAD SIDE, LH
9	1	228296-001	BKT, MTG, TUCKER, LOAD, OPP, LH
8	1	228293-001	BKT, MTG, TUCKER, LOAD, SIDE, LH
7	1	197440	BAR, SPACER, GUIDE, LOAD SIDE
6	2	197436	BAR, SPACER
5	4	132969	CLAMP, SLIDE GUIDE
4	2	132968	CLAMP, MNT BAR GUIDE
3	1	132958-002	PLOUGH, MAJOR, FLAP
2	1	132958-001	PLOUGH, MAJOR, FLAP
1	9	122222-001	ROD, MTG, GUIDE
ITM	QTY	PART NUM	DESCRIPTION

BILL OF MATERIALS

ARPAC

9511 WEST RIVER ST.
SCHILLER PARK, IL 60176

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONAL TOLERANCES:

FRACTIONS
TWO (2) DECIMALS ± 1/64
THREE (3) DECIMALS ± 0.010
ANGLES ± 0.005
± 0.5°

DRAWN: 11/05/15 BY: JW SCALE: 1:16 SIZE: B

RELEASED: 11/05/15 FILENAME: 316364 APPROVED BY: JW

DESCRIPTION: ASSY, GUIDE, FORM, TRAY

3

DRAWING NUMBER:

316364

P/N	316364-001	316364-002
ITEM 8	228293-001	228293-002
ITEM 9	228296-001	228296-002
ITEM 10	233497-001	233497-002
ITEM 12	243950-001	243950-002
ITEM 13	292129-001	292129-002
ITEM 14	292547-001	292547-002

Arpac BOM

Parent Number: 15269 Parent Revision: B

Description: ASSY, FINAL, MACH, EL-2100, LH

Model: EL-2121

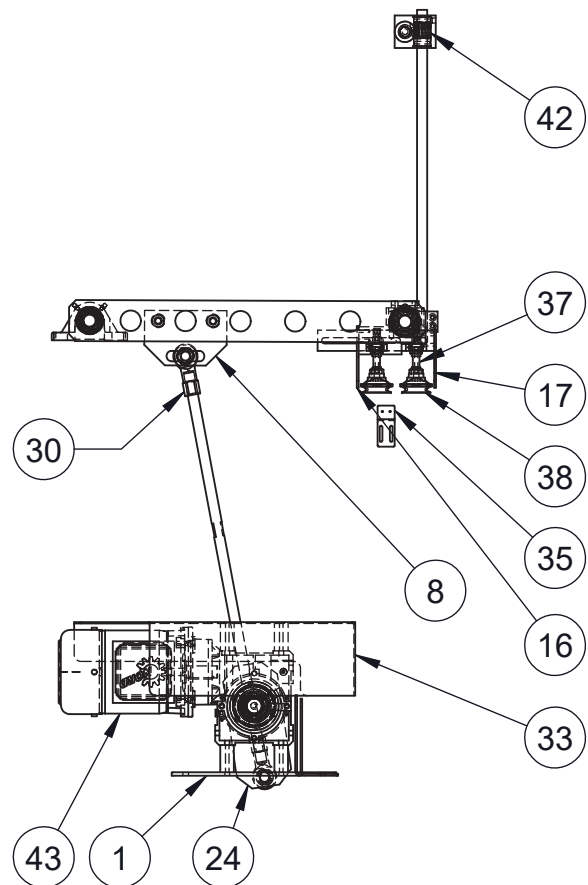
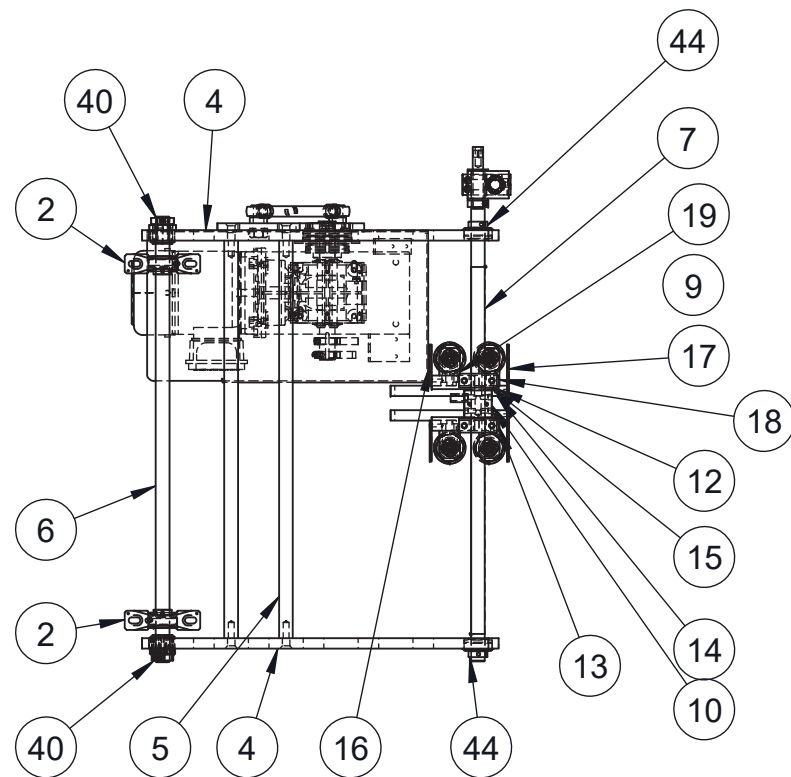
Assembly Part Number: 316364-001

Assembly Drawing Number: 316364

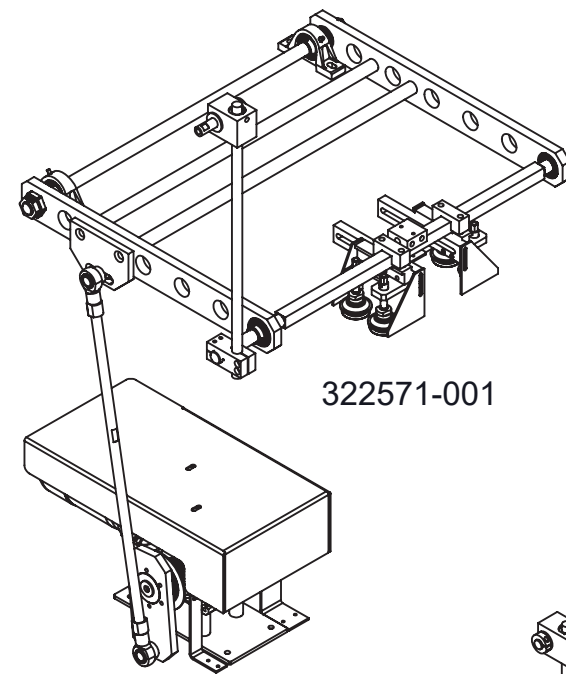
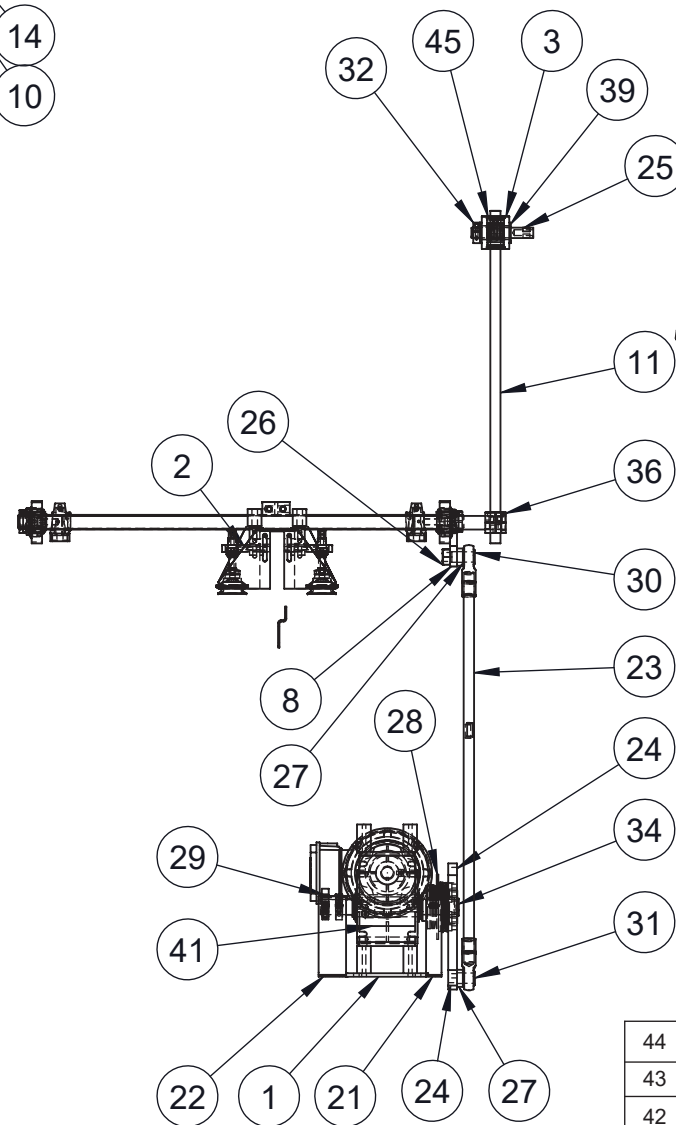
Description: ASSY, GUIDE, FORM, TRAY, LH

Quantity: 1.00

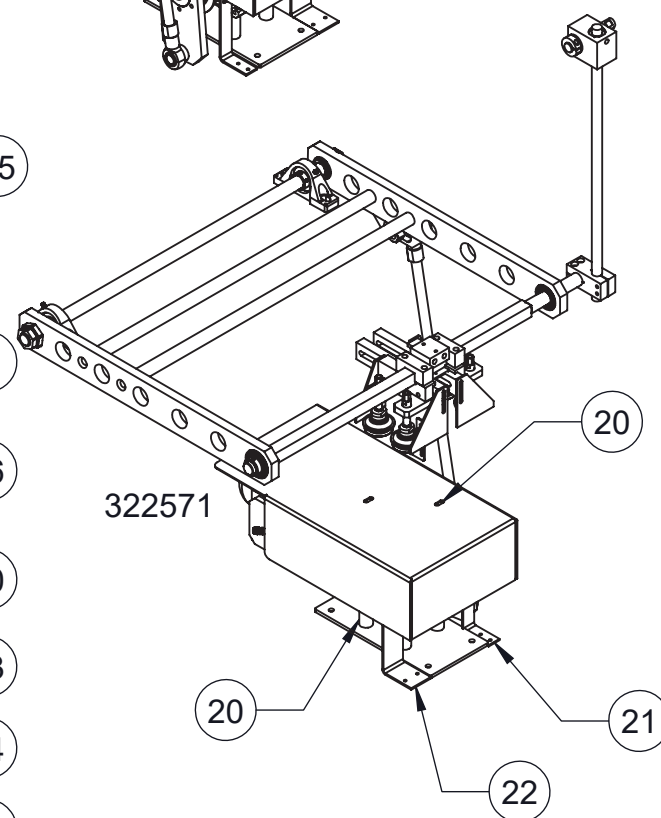
Item	Qty	Arpac Part	Description
1	9.00	122222-001	ROD, MTG, GUIDE, 5.875 LG
2	1.00	132958-001	PLOUGH, MAJOR, FLAP, RH
3	1.00	132958-002	PLOUGH, MAJOR, FLAP, LH
4	2.00	132968	CLAMP, MNT, GUIDE
5	4.00	132969	CLAMP, SLIDE GUIDE
6	1.00	197436	BAR, SPACER
7	1.00	197440	BAR, SPACER, GUIDE, LOAD SIDE
8	1.00	228293-001	BKT, MTG, TUCKER, LOAD, SIDE, LH
9	1.00	228296-001	BKT, MTG, TUCKER, LOAD, OPP, LH, MACH,
10	1.00	233497-001	GUIDE, FLAP HOLD DOWN, LOAD SIDE LH MACH
11	3.00	235764	POST, MTG, GUIDE
12	1.00	243950-001	GUIDE, FLAP HOLD DOWN, OPP. LOAD SIDE LH MACH
13	1.00	292129-001	GUIDE, SIDE, TRAY, LH
14	1.00	292547-001	GUIDE, PRODUCT, LOAD SIDE, LH
15	4.00	806464	HDL, ADJ, ZINC, 2-1/2 LG 3/8-16 X 1.18 STUD
16	2.00	235763	POST, MTG, GUIDE, TALL
17	2.00	322536	BAR, MTG, TOP GUIDE
18	2.00	322537	TOP GUIDE
19	4.00	243947	BKT, MTG, GUIDE, EXIT
20	2.00	243944	GUIDE, EXIT



322571 AS SHOWN
322571-001 OPPOSITE



322571-001



322571

ITEM 45 IS NOT SHOWN

44	2	802921	BRG, CART, 1 X 2.0472 X 1-3/8 LG, SEALED, SET SCREW ID, PRESS FIT OD
43	1	848037	MOTOR, 1 HP, 3 PH, 60HZ, 230/460VAC
42	1	226217	ASSY, BUSH, BRG, .75 SHAFT, SINGLE SUPER BALL BUSHING
41	1	846475	GEARBOX, WORM, 50:1, 56C FACE, DUAL, TYPE, DOUBLE SHAFT
ITM	QTY	PART NUM	DESCRIPTION

BILL OF MATERIALS

40	2	802938	BUSH, TRANTORQUE, 1 X 1-3/4 X 1-7/8, 7/8 LG EXPANDING OD
39	2	800382	BUSH, OILITE, FLG, 0.751 X 1.002 X 3/4, 1-1/2 OD X 1/8 THK FLG
38	4	808519	CUP, VACUUM, 52.5MM DIA, 1/8 FITTING
37	4	808421	COMPENSATOR, LEVEL, 1/8"
36	1	138425	CLAMP, PIVOT, UPPER STD, TS25
35	1	242599	BKT, PE, MINI
34	1	233878	STOP, TORQUE IMITER
33	1	303343-001	GUARD, MOTOR & GEARBOX, LH
32	1	807096	COLLAR, SHAFT, CLAMP, 1-PIECE, 3/4
31	1	808412-001	END, ROD, 0.75 X 2 7/8, .7500-16 THREAD FEMALE, LH TREAD
30	1	808412	END, ROD, 0.75 X 2 7/8, .7500-16 THREAD FEMALE
29	2	220361	FLAG, PROX
28	1	816968-001	LIMITER, TORQUE, SINGLE RESET OPTI SIZE2 1.125 BORE, STANDARD HUB
27	2	138331	SPACER, ECCENTRIC
26	1	132947	3/4-10 NUT HEX, SS
25	1	138427-001	SHAFT, PIVOT
24	1	216184	WHEEL, ECCENTRIC
23	1	193035-002	ROD, LINK
22	1	220806	BKT, PROX
21	1	220805	BKT, PROX
20	6	118369-001	SPACER, 1" DIA, 5/16-18 TAP, AL, 2" LONG
19	2	126144	BRACKET, CUP, SUCTION, SHORT
18	2	126143	BRACKER, CUP, SUCTION
17	2	188885	SUPPORT, ADJ, GUARD
16	2	188884	SUPPORT, ADJ, GUARD
15	2	139111	ADJUSTING, CLAMP
14	2	188747	ADJUSTING, SUPPORT
13	1	188748-001	PLATE, CLAMP, FIXED
12	1	188748	PLATE, CLAMP, FIXED
11	1	141736-005	SHAFT, THOMSON, .750
10	1	197415	MANIFOLD, 4 PORT X 1
9	1	212413	PLT, MTG, MANIFOLD
8	1	220803	PLT, MTG, LINK
7	1	226221	SHAFT, 1" SQ
6	1	132922	STIFFENER, CROSS, LOWER
5	2	132921	STIFFENER, CROSS
4	2	126137	FRAME, SIDE
3	1	226220	BLK, BSG, 0.750 SHFT, SINGLE
2	2	827114	BRG, BLK, PILLOW, 1 BORE, INTERMEDIATE DUTY
1	1	303341	PLT, MTG, MOTOR
ITM	QTY	PART NUM	DESCRIPTION

BILL OF MATERIALS

ARPAC 9511 WEST RIVER ST.
SCHILLER PARK, IL 60176

UNLESS OTHERWISE SPECIFIED:
ALL DIMENSIONAL TOLERANCES:

FRACTIONS TWO (2) DECIMALS THREE (3) DECIMALS ANGLES	± 1/64 ± 0.010 ± 0.005 ± 0.5°
---	--

DRAWN: 2/6/12 BY: HG SCALE: 1:14 SIZE: B

RELEASED: FILENAME: 322571 APPROVED BY:

DESCRIPTION: ASSY, PICK AND PLACE, LH EL-2000



DRAWING NUMBER:
322571

Arpac BOM

Parent Number: 15269 Parent Revision: B
 Description: ASSY, FINAL, MACH, EL-2100, LH
 Model: EL-2121

Assembly Part Number: 322571

Assembly Drawing Number: 322571

Description: ASSY, PICK AND PLACE, EL-2100, LH

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	303341	PLT, MTG, GEARBOX
2	2.00	827114	BRG, BLK, PILLOW, 1 BORE, INTERMEDIATE DUTY
3	1.00	226220	BLK, BUSH, SHAFT, 0.750, 2-3/8" LG, SINGLE BALL BUSH
4	2.00	126137	FRAME,SIDE
5	2.00	132921	STIFFNER, CROSS
6	1.00	132922	STIFFNER, CROSS, LOWWER
7	1.00	226221	SHAFT, 1" SQ
8	1.00	220803	PLT, LINK, MTG
9	1.00	212413	PLT, MTG, MANIFOLD
10	1.00	197415	MANIFOLD 4 PORT X 1
11	1.00	141736-005	CRS SHAFT THOMSON 3/4, 24.250 LG
12	1.00	188748	PLT, CLAMP, FIXED
13	1.00	188748-001	PLT, CLAMP, FIXED
14	2.00	188747	BLOCK, ADJUSTING SUPPORT STD, TS25
15	2.00	139111	CLAMP, ADJUSTING
16	2.00	188884	GUARD, VACUUM CUP TS-25 STD
17	2.00	188885	GUARD, VACUUM CUP TS-25 STD
18	2.00	126143	BRACKET, CUP, SUCTION
19	2.00	126144	BRACKET,CUP, SUCTION, SHORT
20	6.00	118369-001	SPACER, 1" DIA, 5/16-18 TAP 2 LG, AL
21	1.00	220805	BKT, PROX
22	1.00	220806	BKT, PROX
23	1.00	193035-002	ROD, LINK, 27.50 LG
24	1.00	216184	WHEEL, ECCENTRIC
25	1.00	138427-001	SHAFT, PIVOT A=4.5
26	1.00	132947	HEX NUT
27	2.00	138331	SPACER, ECCENTRIC
28	1.00	816968-001	LIMITER, TORQUE, SINGLE RESET OPTI SIZE2 1.125 BORE, STANDARD HUB
29	2.00	220361	WLDMT, FLAG, PROX
30	1.00	808412	END, ROD, 0.75 X 2 7/8, .7500-16 THREAD FEMALE
31	1.00	808412-001	END, ROD, 0.75 X 2 7/8, .7500-16 THREAD FEMALE, LH TREAD
32	1.00	807096	COLLAR, SHAFT, CLAMP, 1-PIECE, 3/4, EXTREME CL8867
33	1.00	303343-001	WLDMNT, GUARD, MOTOR & GEARBOX, LH
34	1.00	233878	STOP, TORQUE LIMITER
35	1.00	242599	BKT, PE, MINI
36	1.00	138425	CLAMP, PIVOT, UPPER STD, TS25
37	4.00	808421	COMPENSATOR, LEVEL, 1/8"
38	4.00	808519	CUP, VACUUM, 52.5MM DIA, 1/8 FITTING
39	2.00	800382	BUSH, OILITE, FLG, 0.751 X 1.002 X 3/4, 1-1/2 OD X 1/8 THK FLG
40	2.00	802938	BUSH, TRANSTORQUE, 1 X 1-3/4 X 1-7/8, 7/8 LG EXPANDING OD
41	1.00	846475	GEARBOX, WORM, 50:1, 56C FACE, DUAL, TYPE, DOUBLE SHAFT
42	1.00	226217-000A	ASSY, BUSH, BRG, .75 SHAFT, SINGLE SUPER BALL BUSHING
43	1.00	848037	MOTOR, 1 HP, 3 PH, 60HZ, 230/460VAC
44	2.00	802921	BRG, CART, 1 X 2.0472 X 1-3/8 LG, SEALED, SET SCREW ID, PRESS FIT OD

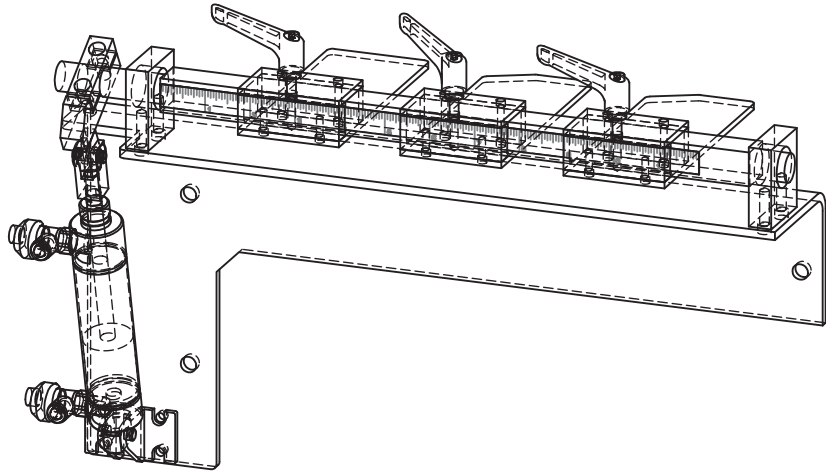
Arpac BOM

Parent Number: 15269 Parent Revision: B
Description: ASSY, FINAL, MACH, EL-2100, LH
Model: EL-2121

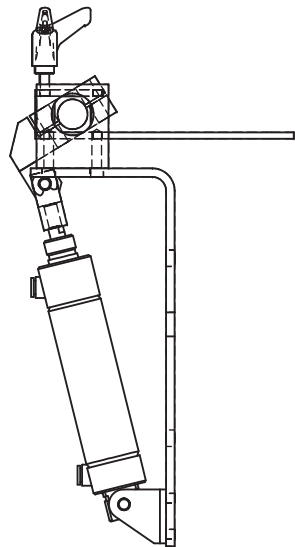
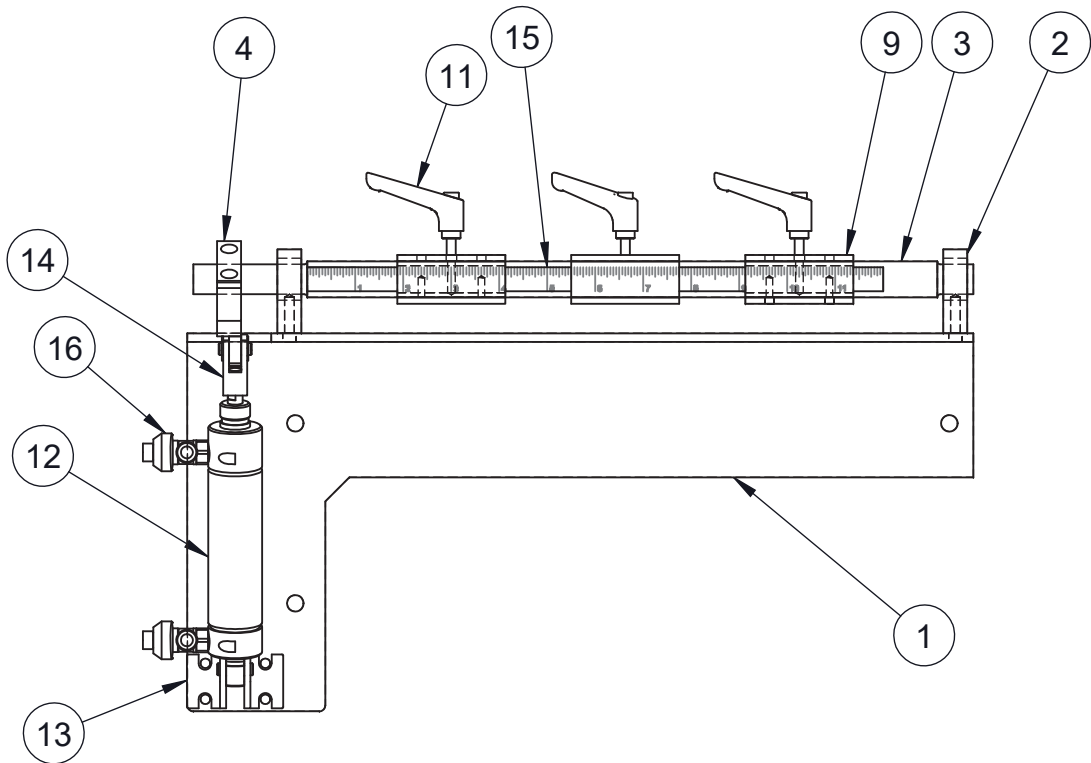
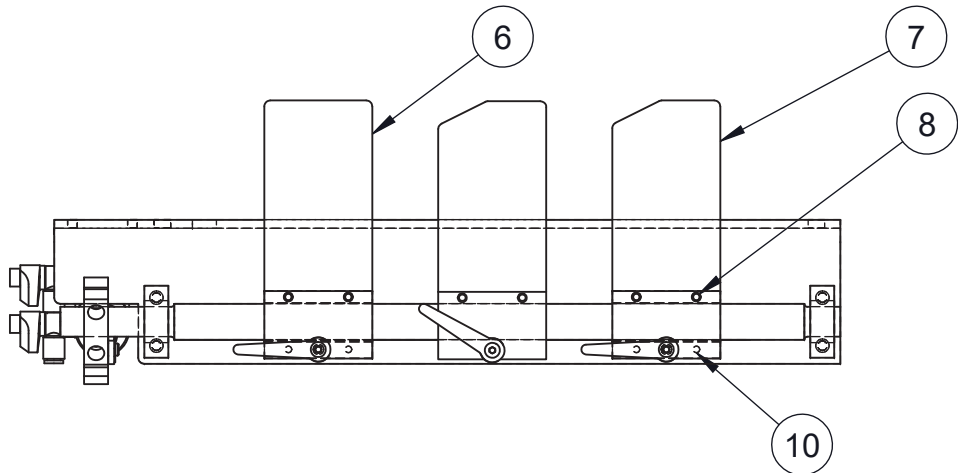
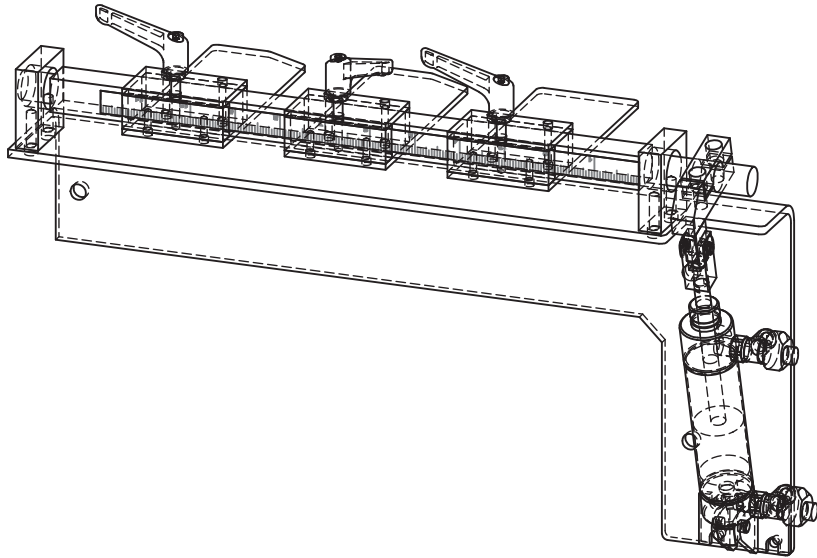
Assembly Part Number: 322571
Assembly Drawing Number: 322571
Description: ASSY, PICK AND PLACE, EL-2100, LH
Quantity: 1.00

Item	Qty	Arpac Part	Description
45	1.00	845899	PUMP, VACUUM, W/SILENCER, MULTI-PORT, 20" Hg MAX VAC

306905-001



306905-002
OPPOSITE



16	2	825362-001	VALVE, CONTROL, FLOW, 1/8 NPT X 1/4 TUBE 90DEG, NUMERIC INDICATOR, MTR OUT
15	1	809498	SCALE, ADHESIVE, 1/2W X 1FT LEFT TO RIGHT
14	1	816269	CLVS, ROD 5/16-24
13	1	816268	BKT, PVT, SET-(1LEFT AND 1RIGHT BKT)
12	1	816421	CYL, AIR, 1 1/16 BORE, 2 STRK, RND PVT MTG, DBL ACT, W/CUSHION
11	3	809458	HDL, ADJ, ZINC, 1 3/4 LG 10-32 X .47
10	3	133225	PLT, SIDE, FLAP HOLD
9	3	191233	PLT, CLAMP
8	3	133223	PLT, SIDE, FLAP HOLD
7	2	191235	PLT, FLAP HOLDING
6	1	300770	PLT, FLAP HOLDING
4	1	122124	CLAMP, SHAFT
3	1	132447	SHAFT, FLAP HOLDING
2	2	230238	BLK, BRG
1	1	230237-001	BKT, FLAP, HOLDDOWN
ITM	QTY	PART NUM	DESCRIPTION

BILL OF MATERIALS

ARPAC		9511 WEST RIVER ST. SCHILLER PARK, IL 60176	
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONAL TOLERANCES:		FRACTIONS TWO (2) DECIMALS THREE (3) DECIMALS ANGLES	± 1/64 ± 0.010 ± 0.005 ± 0.5°
DRAWN:	8/25/15	BY:	MFitc
RELEASED:		FILENAME:	306905
DESCRIPTION:		SCALE:	1:4
		APPROVED BY:	SRA
		ASSY, HOLD DOWN, FLAP	
		DRAWING NUMBER: 306905	

Arpac BOM

Parent Number: 15269 Parent Revision: B

Description: ASSY, FINAL, MACH, EL-2100, LH

Model: EL-2121

Assembly Part Number: 306905-001

Assembly Drawing Number: 306905

Description: ASSY, HOLD DOWN, FLAP, RH

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	230237-001	BKT, FLAP HOLDDOWN, RH
2	2.00	230238	BLK, BRG
3	1.00	132447	SHAFT, FLAP HOLDING
4	1.00	122124	CLAMP, SHAFT
6	1.00	300770	PLT, FLAP HOLDING, UP STREAM
7	2.00	191235-000A	PLT, FLAP HOLDING, DOWN STREAM
8	3.00	133223	PLT, SIDE FLAP HOLD
9	3.00	191233	PLT, CLAMP
10	3.00	133225	PLT, SIDE, FLAP HOLD
11	3.00	809458	HDL, ADJ, ZINC, 1 3/4 LG 10-32 X .47
12	1.00	816421	OBSOLETE USE 855057, CYL, AIR, 1 1/16 BORE, 2 STRK, RND PVT MTG, DBL ACT,
13	1.00	816268	OBSOLETE USE 839339, BKT, PVT, SET- (1LEFT AND 1RIGHT BKT)
14	1.00	816269	OBSOLETE USE 839340, CLVS, ROD 5/16-24
15	1.00	809498	RULE, ADHESIVE, 1/2W X 1FT LEFT TO RIGHT
16	2.00	825362-001	VALVE, CONTROL, FLOW, 1/8 NPT X 1/4 TUBE 90DEG, NUMERIC INDICATOR, MTR OU

Arpac BOM

Parent Number: 15269 Parent Revision: B

Description: ASSY, FINAL, MACH, EL-2100, LH

Model: EL-2121

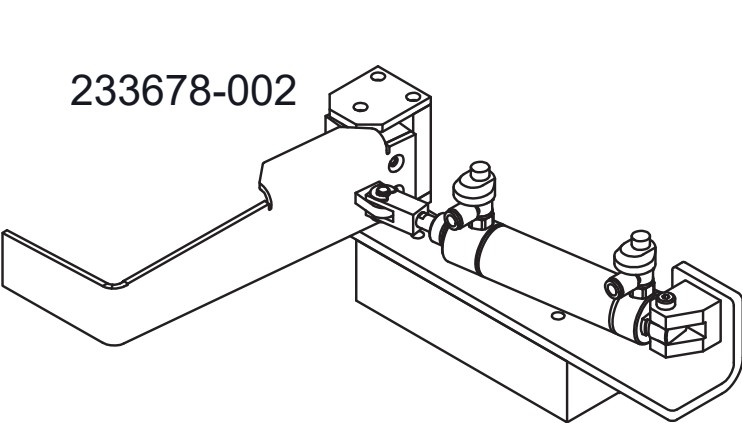
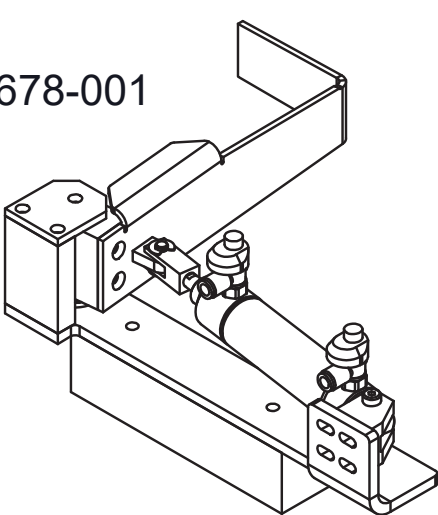
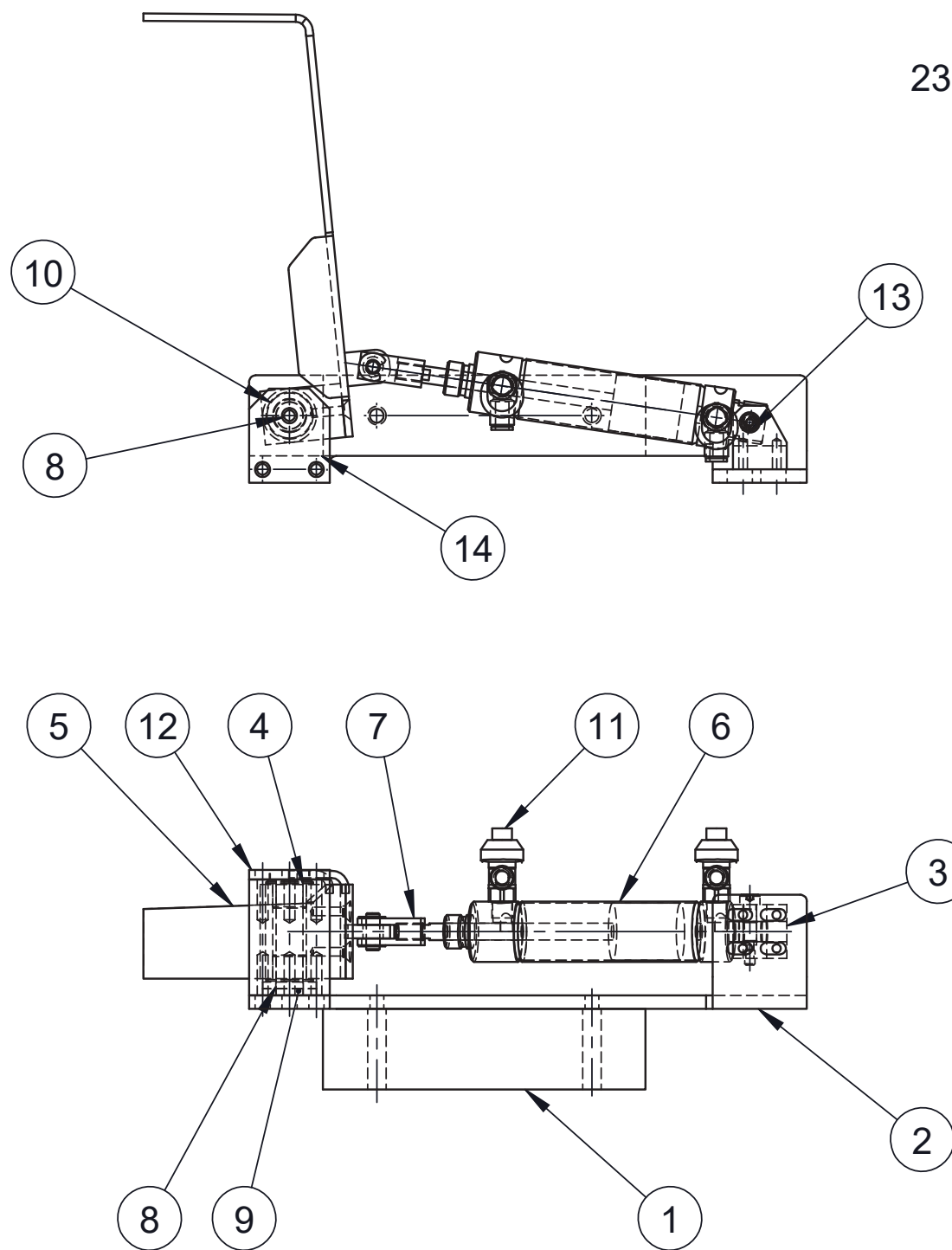
Assembly Part Number: 306905-002

Assembly Drawing Number: 306905

Description: ASSY, HOLD DOWN, FLAP, LH

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	230237-002	BKT, FLAP HOLDDOWN, LH
2	2.00	230238	BLK, BRG
3	1.00	132447	SHAFT, FLAP HOLDING
4	1.00	122124	CLAMP, SHAFT
6	1.00	300770	PLT, FLAP HOLDING, UP STREAM
7	2.00	191235-000A	PLT, FLAP HOLDING, DOWN STREAM
8	3.00	133223	PLT, SIDE FLAP HOLD
9	3.00	191233	PLT, CLAMP
10	3.00	133225	PLT, SIDE, FLAP HOLD
11	3.00	809458	HDL, ADJ, ZINC, 1 3/4 LG 10-32 X .47
12	1.00	816421	OBSOLETE USE 855057, CYL, AIR, 1 1/16 BORE, 2 STRK, RND PVT MTG, DBL ACT,
13	1.00	816268	OBSOLETE USE 839339, BKT, PVT, SET- (1LEFT AND 1RIGHT BKT)
14	1.00	816269	OBSOLETE USE 839340, CLVS, ROD 5/16-24
15	1.00	809498	RULE, ADHESIVE, 1/2W X 1FT LEFT TO RIGHT
16	2.00	825362-001	VALVE, CONTROL, FLOW, 1/8 NPT X 1/4 TUBE 90DEG, NUMERIC INDICATOR, MTR OU



PART NUMBER	MODE
233678-001	RH, AS SHOWN
233678-002	LH, OPPOSITE

14	1	232850	SPACER, PIVOT
13	1	800321-019	FSNR, BOLT, SHLDR, 1/4 DIA X 3/4 LG, SS
12	1	232851	PLT, TOP, PIVOT
11	2	825362-001	VALVE, CONTROL, FLOW, 1/8 NPT X 1/4 TUBE 90DEG, NUMERIC INDICATOR, MTR OUT
10	2	800394	BUSH, OILITE, FLG, 0.502 X 0.627 X 1/2, 7/8 OD X 1/16 THK FLG
9	2	800442	WSHR, OILITE, 0.510 X 1.000 X 1/8 THK
8	1	232852	SHAFT, PIVOT
7	1	816269	CLVS, ROD 5/16-24
6	1	816418	CYL, AIR, 1 1/16 BORE, 2 STRK, RND PVT BUSH, DBL ACT, W/CUSHION
5	1	223133-001	ARM, TUCKER
4	1	127489	BLK, ARM, MTG
3	1	230839-001	BKT, PIVOT, CYL RH
2	1	232853-001	BKT, TUCKER, RH
1	1	137182	SPACER, TUCKER
ITM	QTY	PART NUM	DESCRIPTION

BILL OF MATERIALS

ARPAC		9511 WEST RIVER ST. SCHILLER PARK, IL 60176	
UNLESS OTHERWISE SPECIFIED		FRACTIONS	± 1/64
ALL DIMENSIONAL TOLERANCES:		TWO (2) DECIMALS	± 0.010
		THREE (3) DECIMALS	± 0.005
		ANGLES	± 0.5°
DRAWN:	07/14/2005	BY:	KKL
RELEASED:	07/14/2005	FILENAME:	233678
SCALE:	0.25:1	APPROVED BY:	KKL
SIZE:	A	DESCRIPTION: ASSY, TUCKER, MINOR FLAP	
		DRAWING NUMBER: 233678	

FINISH- NONE

Arpac BOM

Parent Number: 15269 Parent Revision: B
Description: ASSY, FINAL, MACH, EL-2100, LH
Model: EL-2121

Assembly Part Number: 233678-001B
Assembly Drawing Number: 233678
Description: ASSY, TUCKER, MINOR FLAP, RH NUMATIC
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	137182	SPACER, TUCKER
2	1.00	232853-001	BKT, TUCKER, RH
3	1.00	230839-001	BKT, PIVOT, CYL LH
4	1.00	127489-000A	BLK, ARM, MTG TS25, STD
5	1.00	223133-001	WLDMT, ARM, TUCKER, RH EL-2000
6	1.00	816418	OBS USE 854762, CYL, AIR, 1 1/16 BORE, 2 STRK, RND PVT BUSH, DBL ACT, W/C
7	1.00	816269	OBSOLETE USE 839340, CLVS, ROD 5/16-24
8	1.00	232852	SHAFT, PIVOT
9	2.00	800442	WSHR, OILITE, 0.510 X 1.000 X 1/8 THK
10	2.00	800394	BUSH, OILITE, FLG, 0.502 X 0.627 X 1/2, 7/8 OD X 1/16 THK FLG
11	2.00	825362-001	VALVE, CONTROL, FLOW, 1/8 NPT X 1/4 TUBE 90DEG, NUMERIC INDICATOR, MTR OU
12	1.00	232851	PLT, TOP, PIVOT
13	1.00	800321-019	FSNR, BOLT, SHLDR, 1/4 DIA X 3/4 LG, SS
14	1.00	232850	SPACER, PIVOT

Arpac BOM

Parent Number: 15269 Parent Revision: B
Description: ASSY, FINAL, MACH, EL-2100, LH
Model: EL-2121

Assembly Part Number: 233678-002B
Assembly Drawing Number: 233678
Description: ASSY, TUCKER, MINOR FLAP, LH NUMATIC
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	137182	SPACER, TUCKER
2	1.00	232853-002	BKT, TUCKER, LH
3	1.00	230839-002	BKT, PIVOT, CYL RH
4	1.00	127489-000A	BLK, ARM, MTG TS25, STD
5	1.00	223133-002	WLDMT, ARM, TUCKER, LH EL-2000
6	1.00	816418	OBS USE 854762, CYL, AIR, 1 1/16 BORE, 2 STRK, RND PVT BUSH, DBL ACT, W/C
7	1.00	816269	OBSOLETE USE 839340, CLVS, ROD 5/16-24
8	1.00	232852	SHAFT, PIVOT
9	2.00	800442	WSHR, OILITE, 0.510 X 1.000 X 1/8 THK
10	2.00	800394	BUSH, OILITE, FLG, 0.502 X 0.627 X 1/2, 7/8 OD X 1/16 THK FLG
11	2.00	825362-001	VALVE, CONTROL, FLOW, 1/8 NPT X 1/4 TUBE 90DEG, NUMERIC INDICATOR, MTR OU
12	1.00	232851	PLT, TOP, PIVOT
13	1.00	800321-019	FSNR, BOLT, SHLDR, 1/4 DIA X 3/4 LG, SS
14	1.00	232850	SPACER, PIVOT

Arpac BOM

Parent Number: 15269 Parent Revision: B
Description: ASSY, FINAL, MACH, EL-2100, LH
Model: EL-2121

Assembly Part Number: 230241-001B

Assembly Drawing Number: 230241
Description: ASSY, COMPRESSION, SIDE, RH
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	230242	BKT, MTG, THRUSTER, COMPRESION, SIDE
2	1.00	216167	PLT, MTG, FACE, COMPRESSION
3	1.00	247121-001	PLT, FACE, COMPRESSION, RH
4	1.00	132954	ANGLE, MNT SHOCK
5	1.00	847044	THRUSTER, LINEAR, 40MM BORE 75MM STROKE
6	1.00	816625-001	SHOCK, 1-12 THRD, 1 STROKE, NICKLE PLATE W/2 LOCK NUT,BUTTON (PM-100-IF-1
7	2.00	825362-001	VALVE, CONTROL, FLOW, 1/8 NPT X 1/4 TUBE 90DEG, NUMERIC INDICATOR, MTR OU

Arpac BOM

Parent Number: 15269 Parent Revision: B
Description: ASSY, FINAL, MACH, EL-2100, LH
Model: EL-2121

Assembly Part Number: 230241-002B

Assembly Drawing Number: 230241
Description: ASSY, COMPRESSION, SIDE, LH
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	230242	BKT, MTG, THRUSTER, COMPRESION, SIDE
2	1.00	216167	PLT, MTG, FACE, COMPRESSION
3	1.00	247121-002	PLT, FACE, COMPRESSION, LH
4	1.00	132954	ANGLE, MNT SHOCK
5	1.00	847044	THRUSTER, LINEAR, 40MM BORE 75MM STROKE
6	1.00	816625-001	SHOCK, 1-12 THRD, 1 STROKE, NICKLE PLATE W/2 LOCK NUT,BUTTON (PM-100-IF-1
7	2.00	825362-001	VALVE, CONTROL, FLOW, 1/8 NPT X 1/4 TUBE 90DEG, NUMERIC INDICATOR, MTR OU

Arpac BOM

Parent Number: 15269 Parent Revision: B

Description: ASSY, FINAL, MACH, EL-2100, LH

Model: EL-2121

Assembly Part Number: 311586

Assembly Drawing Number: 311586

Description: ASSY, GLUE, EL-2000, FREE STAND GLUE TANK

Quantity: 1.00

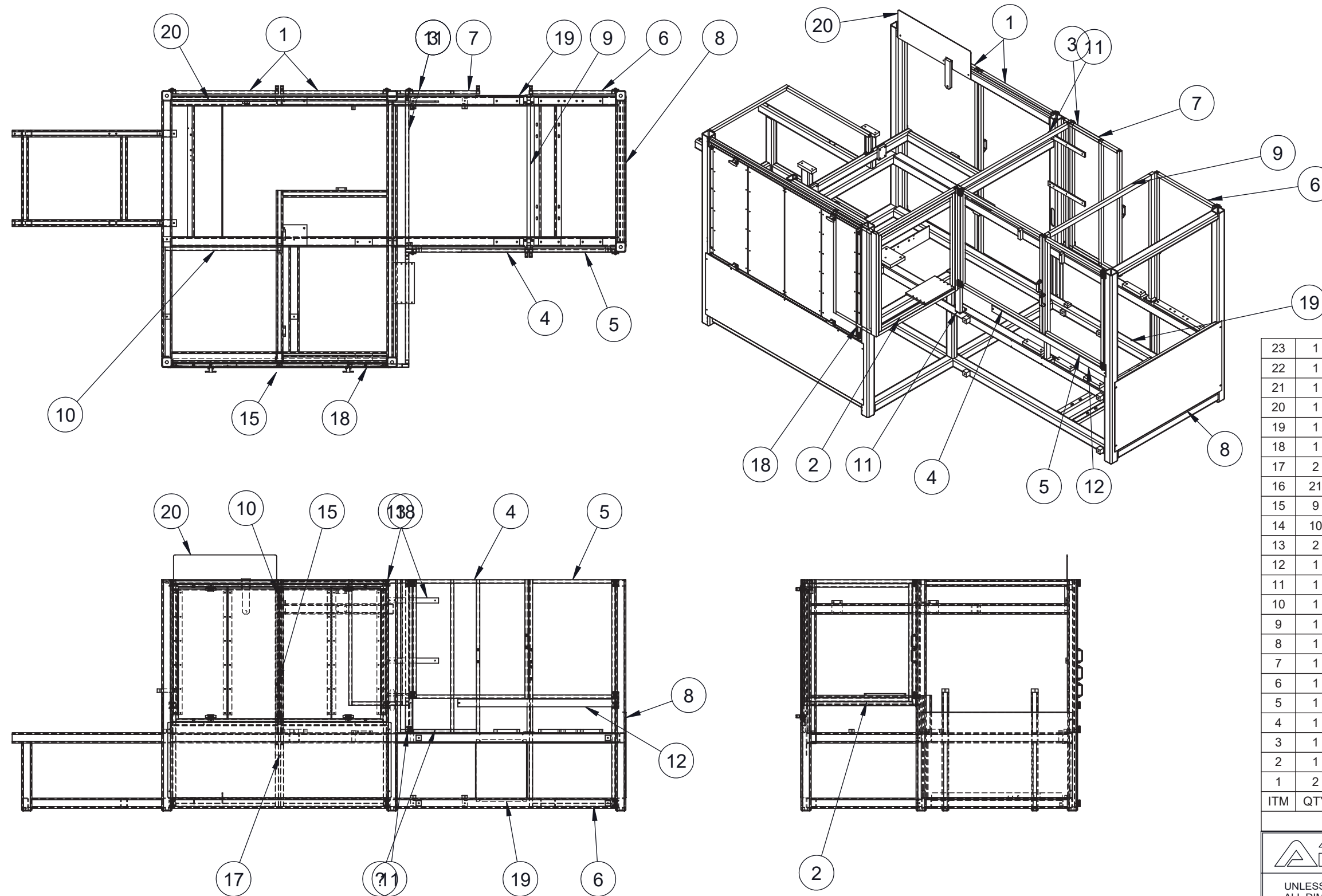
Item	Qty	Arpac Part	Description
1	2.00	133933-100	BLK, MTG, GLUE WASHDOWN
2	1.00	118254	FRAME, GLUE, EXTERNAL 3100, 3400
3	2.00	138349	POST, GLUE GUN 3/4 DIA X 8" LG
4	2.00	216179	WLDMT, BKT, MTG, GUN, GLUE
5	2.00	216180	ROD, GUN, GLUE
6	1.00	821931	MELTER, NORDSON PROBLUE-4, 2 HOSE
7	1.00	806119	HOSE, 8 FT 230 VAC AUTOMATIC
8	1.00	802512	HOSE, 6 FT 230 VAC
10	2.00	806776	GUN, GLUE H201T
11	2.00	806780	NUT, RETAINING
12	2.00	808674	NOZZLE 15DEG DUAL .016 ORIFICE
13	2.00	846253	VALVE, SOL, HIGH TEMP, 24VDC, 3-WAY NC, 1/8" NPT PORTS
14	4.00	802507	STRAP, HANGER HOSE
15	2.00	825485	FILTER, SATURN, INLINE, 45 DEGREE 100 MESH
16	2.00	846254	CABLE, SOL VALVE, B1 11MM DIN TO M12 CONNECTOR, 0.6M LG

Arpac BOM

Parent Number: 15269 Parent Revision: B
Description: ASSY, FINAL, MACH, EL-2100, LH
Model: EL-2121

Assembly Part Number: 364286
Assembly Drawing Number: 364286
Description: ASSY, PNEUMATIC, MACONNECT, EL-2100
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	847720	ASSY, VALVE, 12-STATION, MACONNECT, 92 SERIES
3	1.00	850154	ASSY, FILTER, REGULATOR, SWITCH, DUMP, 3/4" NPT, CAT 1, L-R
4	2.00	846248	VALVE, SOL, 24VDC, 2POS SINGLE, M12 CONNECTOR, IP67, W/LT & SRG
5	1.00	846523	VALVE, EXHAUST, 3 WAY, SAFETY (DUMP VALVE), 24 VDC, DIN CONNECTOR
6	1.00	846061	REGULATOR, 3/8 NPT W/GUAGE
7	2.00	816683-001	SILENCER, EXHAUST, 3/8 NPT, FEM SUPER QUIET FLOW
8	1.00	186775	PLT, MTG, BANK, SOLENOID
9	2.00	233350	BKT, MANIFOLD, CROSS
10	4.00	135759	MANIFOLD 2 PORT X 2
11	1.00	135758	MANIFOLD 2 PORT X 4
12	1.00	846254	CABLE, SOL VALVE, B1 11MM DIN TO M12 CONNECTOR, 0.6M LG
13	2.00	816662	VALVE, SOL, 24VDC, 1/4 NPTF, LIGHT, MACO



23	1	311577	GUARD, BOTTOM
22	1	311585	ASSY, DOOR, BI-FOLD
21	1	827364	CLAMP, PANEL
20	1	264149	GUARD, PICK & PLACE
19	1	308209	PANEL, GUARD
18	1	243965	FRAME, GUARD, STEP BACK
17	2	256214	BKT, CATCH, DOOR
16	21	810174	HINGE, DOOR, POLYAMIDE, BLACK
15	9	806828	HANDLE, SMALL BLACK PLASTIC
14	10	837001	CATCH, DOOR, BALL STYLE
13	2	243967	PLT, ELECTRICAL BOX HOLDER
12	1	234449	GUARD
11	1	243977-001	FRAME, GUARD
10	1	316213-001	SUPPORT, GUARD, LH
9	1	243973	FRAME, GUARD
8	1	216173	GUARD, END
7	1	141604-054	FRAME, PANEL, GUARD
6	1	141604-053	FRAME, PANEL, GUARD
5	1	141604-052	FRAME, PANEL, GUARD
4	1	141604-051	FRAME, PANEL, GUARD
3	1	141604-050	FRAME, PANEL, GUARD
2	1	141604-049	FRAME, PANEL, GUARD
1	2	141604-048	FRAME, PANEL, GUARD
ITM	QTY	PART NUM	DESCRIPTION

BILL OF MATERIALS

ARPAC 9511 WEST RIVER ST.
SCHILLER PARK, IL 60176

UNLESS OTHERWISE SPECIFIED:
ALL DIMENSIONAL TOLERANCES:
FRACTIONS ± 1/64
TWO (2) DECIMALS ± 0.010
THREE (3) DECIMALS ± 0.005
ANGLES ± 0.5°

DRAWN: 10/3/2014 BY: MC SCALE: 1:32 SIZE: B

FILENAME: 311597

DESCRIPTION: ASSY, GUARD



DRAWING NUMBER:
311597

Arpac BOM

Parent Number: 15269 Parent Revision: B

Description: ASSY, FINAL, MACH, EL-2100, LH

Model: EL-2121

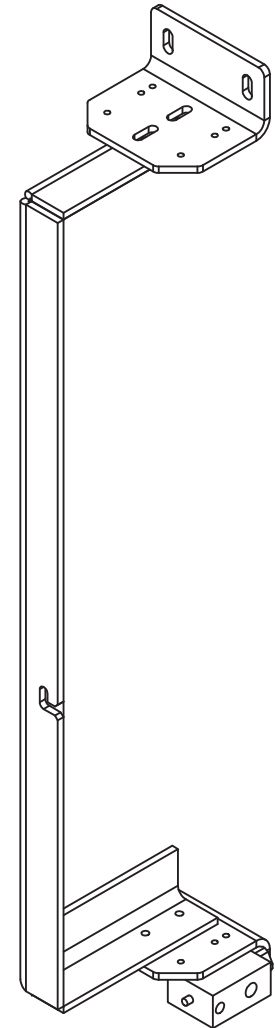
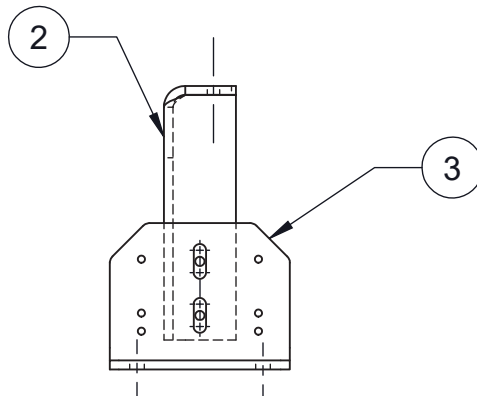
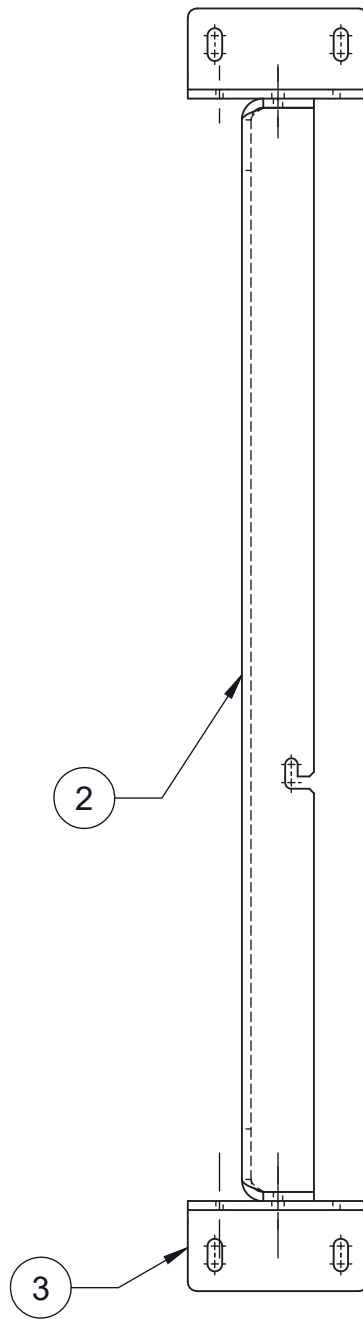
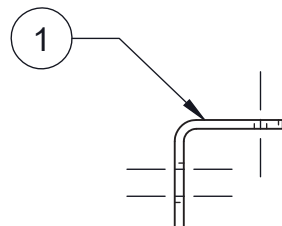
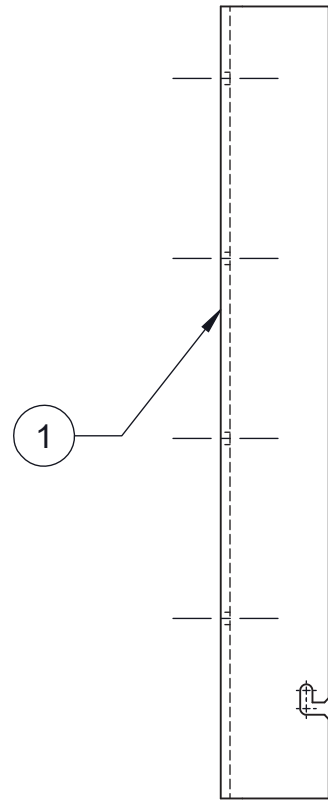
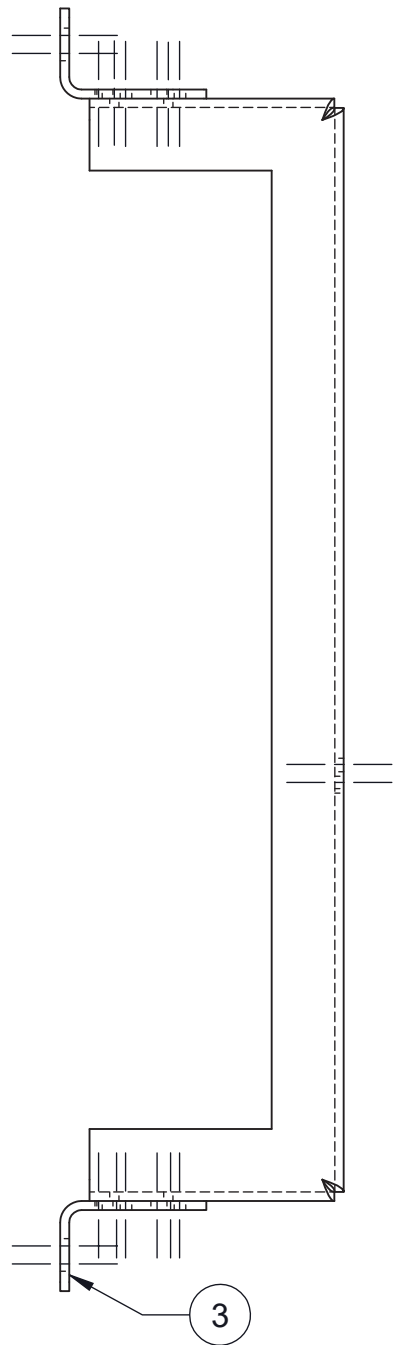
Assembly Part Number: 311597

Assembly Drawing Number: 311597

Description: ASSY, GUARD, LH

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	2.00	141604-048	FRAME, PANEL, GUARD 28 7/8 X 66
2	1.00	141604-049	FRAME, PANEL, GUARD 29 1/4 X 34 1/4
3	1.00	141604-050	FRAME, PANEL, GUARD 14 1/2 X 44 1/2
4	1.00	141604-051	FRAME, PANEL, GUARD 17 7/16 X 34 1/2
5	1.00	141604-052	FRAME, PANEL, GUARD 23 X 34 1/2
6	1.00	141604-053	FRAME, PANEL, GUARD 23 X 66
7	1.00	141604-054	FRAME, PANEL, GUARD 18 7/16 X 44 1/2
8	1.00	216173	GUARD, END
9	1.00	243973	FRAME, GUARD
10	1.00	316213-001	WLDMT, SUPPORT, GUARD LH
11	1.00	243977-001	FRAME, GUARD LH
12	1.00	234449	GUARD
13	2.00	243967	PLT, ELECTRICAL BOX HOLDER
14	10.00	837001	CATCH, DOOR, BALL STYLE
15	11.00	806828	HANDLE, SMALL BLACK PLASTIC
16	27.00	810174	HINGE, DOOR, POLYAMIDE, BLACK
17	2.00	256214	BKT, CATCH, DOOR
18	1.00	243965	FRAME, GUARD, STEP BACK
19	1.00	308209	PANEL, GUARD
20	1.00	264149	GUARD, PICK & PLACE
21	100.00	827364	CLAMP, PANEL
22	1.00	311585	ASSY, DOOR, BI-FOLD
23	1.00	311577	GUARD, BOTTOM



PART NUMBERS	
243431	LH, AS SHOWN
243431-001	RH, OPPOSITE

4	1	825527	VALVE, CHECK PILOT/MANUAL RELEASE, 1/4 NPT	
3	2	228879	ANGLE, MTG, PLT, DEAD	
2	1	228880-001	BKT, MTG, PLT, DEAD	
1	1	215218	ANGLE, MTG, PLT, DEAD	
ITM	QTY	PART NUM	DESCRIPTION	
BILL OF MATERIALS				
ARPAC			9511 WEST RIVER ST. SCHILLER PARK, IL 60176	
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONAL TOLERANCES:			FRACTIONS ± 1/64 TWO (2) DECIMALS ± 0.010 THREE (3) DECIMALS ± 0.005 ANGLES ± 0.5°	
DRAWN: 11/21/2008		BY: YYL	SCALE: 0.1875:1	SIZE: B
RELEASED: 11/21/2008		FILENAME: 243431	APPROVED BY: YYL	
DESCRIPTION: ASSY, SUPPORT, DEAD PLT				
				
			DRAWING NUMBER: 243431	

Arpac BOM

Parent Number: 15269 Parent Revision: B

Description: ASSY, FINAL, MACH, EL-2100, LH

Model: EL-2121

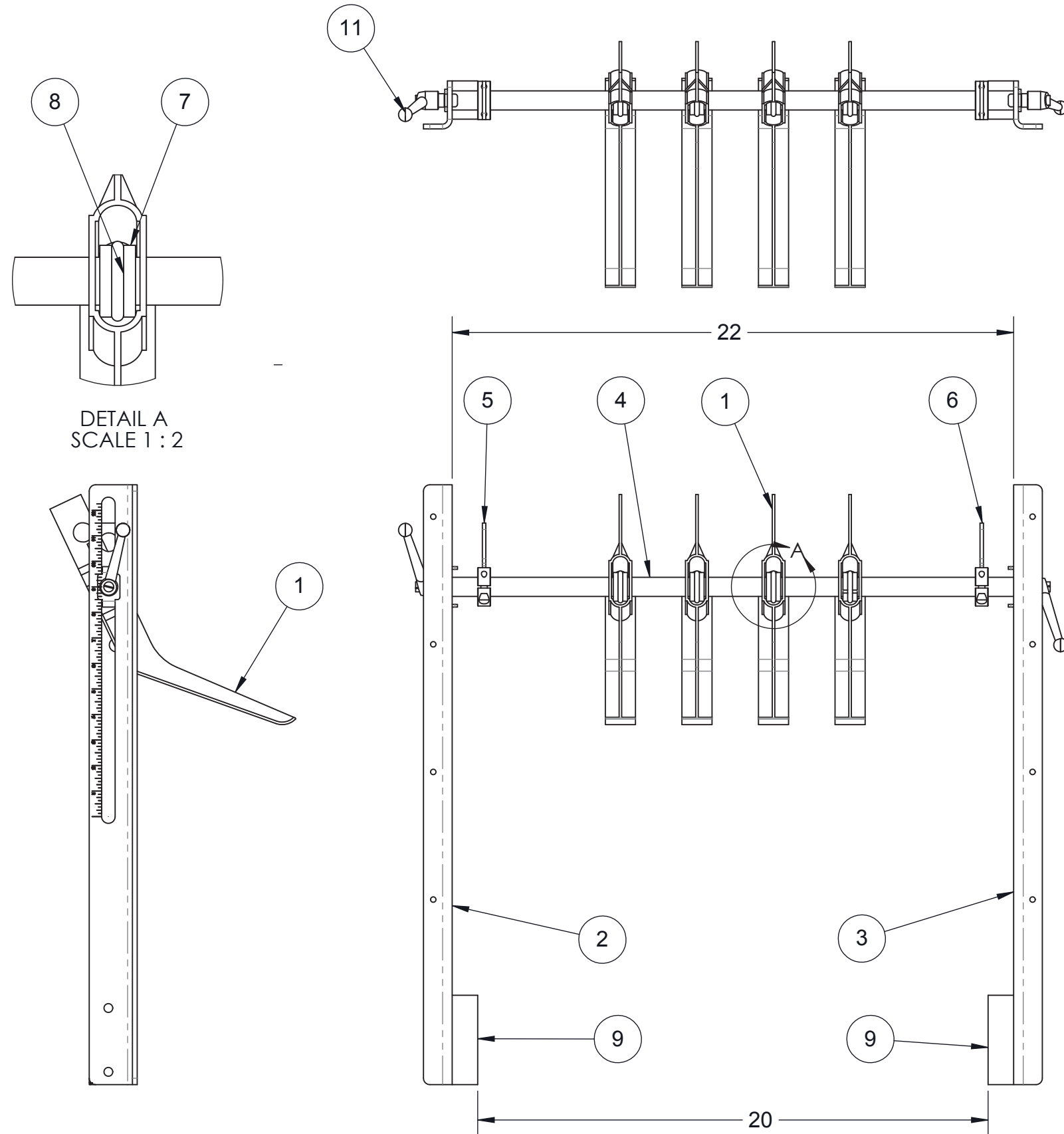
Assembly Part Number: 243431

Assembly Drawing Number: 243431

Description: ASSY, DEAD PLT SUPPORT, LH MACHINE

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	215218	ANGLE, MTG, PLT, DEAD, LH MACH
2	1.00	228880-001	BKT, MTG, PLT, DEAD, LH
3	2.00	228879	ANGLE, MTG, PLT, DEAD
4	1.00	825527	VALVE, CHECK PILOT/MANUAL RELEASE, 1/4 NPT



REVISIONS			
RV	DATE	BY	DESCRIPTION
A	4/25/2017	SRA	ITEM 1 WAS 841336

11	2	808969	HDL, ADJ, SS, 2.56 LG 5/16-18 X .59 STUD
10	2	286907	INDICATOR
9	2	216906	SPACER
8	4	842149	SPRING, EXTENSION
7	4	283414	COLLAR, LOCATOR, FINGER
6	1	238514	WLDMT, BKT, MTG, P.E. REFLECTOR
5	1	225647	WLDMT, BKT, MTG, P.E.
4	1	214781-004	SHAFT, MTG, DETECTOR
3	1	286911-001	POST MTG DETECTOR
2	1	286911	POST MTG DETECTOR
1	4	848956	LEVER, W/INSERT, DETECT, PRODUCT
ITM	QTY	PART NUM	DESCRIPTION

BILL OF MATERIALS

ARPAC		9511 WEST RIVER ST. SCHILLER PARK, IL 60176	
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONAL TOLERANCES:		FRACTIONS TWO (2) DECIMALS THREE (3) DECIMALS ANGLES	± 1/64 ± 0.010 ± 0.005 ± 0.5°
DRAWN: 2/21/2013	BY: SRA	SCALE: 1:8	SIZE: B
RELEASED: 2/21/2013	FILENAME: 286910	APPROVED BY: SRA	
DESCRIPTION: ASSY, DETECT, PRODUCT, 4 LANES, 20" WIDE			
			DRAWING NUMBER: 286910

Arpac BOM

Parent Number: 15269 Parent Revision: B
Description: ASSY, FINAL, MACH, EL-2100, LH
Model: EL-2121

Assembly Part Number: 286910
Assembly Drawing Number: 286910
Description: ASSY, DETECT, PRODUCT, 4 LANES, 20" WIDE, HIGH PROD
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	4.00	848956	LEVER, DETECT, PRODUCT, W/INSERT
2	1.00	286911	POST MTG DETECTOR, RH
3	1.00	286911-001	POST MTG DETECTOR, LH
4	1.00	214781-004	SHAFT, MTG, DETECTOR, BOTTLE 22 1/4 LG
5	1.00	225647	WLDMT, BKT, MTG, P.E., SS
6	1.00	238514	WLDMT, BKT, MTG, P.E. REFLECTOR, SS
7	4.00	283414	COLLAR, LOCATOR, FINGER
8	4.00	842149	SPRING, EXTENSION
9	2.00	216906	SPACER
10	2.00	286907	INDICATOR
11	2.00	808969	HDL, ADJ, SS, 2.56 LG 5/16-18 X .59 STUD

Arpac BOM

Parent Number: 15269 Parent Revision: B
Description: ASSY, FINAL, MACH, EL-2100, LH
Model: EL-2121

Assembly Part Number: 219639-000A
Assembly Drawing Number: 219639
Description: ASSY, CENTRAL POINT LUBE BLOCK, NYLON
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	120.00	800179	TBG, 1/8 OD, NYL, PRESSURE TYPE H, .079" ID
2	12.00	801406	FTG, ELBOW, 1/8 OD TBG COMP X 1/4-28 TAPERED MALE
3	30.00	801449	FTG, CONN, 1/8 OD TBG COMP X 1/4-28, MALE, SILVER BASE
4	30.00	801455	FTG,ADAPTER,1/8 NPT,1/4-28ID,1/8-27 NPSM, USE W/NUT 51055 (801456)
5	30.00	801456	NUT, 1/8 NPSM, USE W/ADAPTER 13154 (801455)
6	30.00	802208	FTG, GREASE, 1/8 NPT, STRAIGHT, ZINC PL
8	2.00	219641	PLT, CENTRAL LUB, 4 HOLE

Arpac BOM

Parent Number: 15269 Parent Revision: B
Description: ASSY, FINAL, MACH, EL-2100, LH
Model: EL-2121

Assembly Part Number: 292546
Assembly Drawing Number: 292546
Description: GENERAL PARTS, EL-2000
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	999999-002	1407 GENERAL NON-BOM CCCC, FSXX, MMSS, PPCN
2	10.00	845767	PAINT BLACK S/G TEXTURE HYBRID
3	10.00	828102	PAINT, POWDER, SILVER, SPARKLE

Arpac BOM

Parent Number: 15269 Parent Revision: B

Description: ASSY, FINAL, MACH, EL-2100, LH

Model: EL-2121

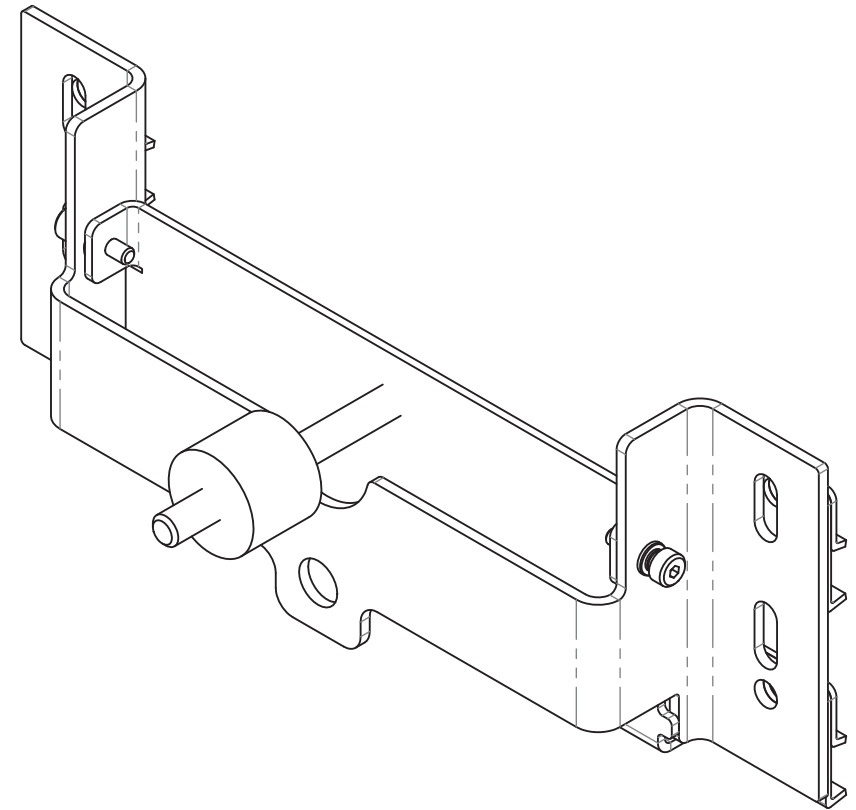
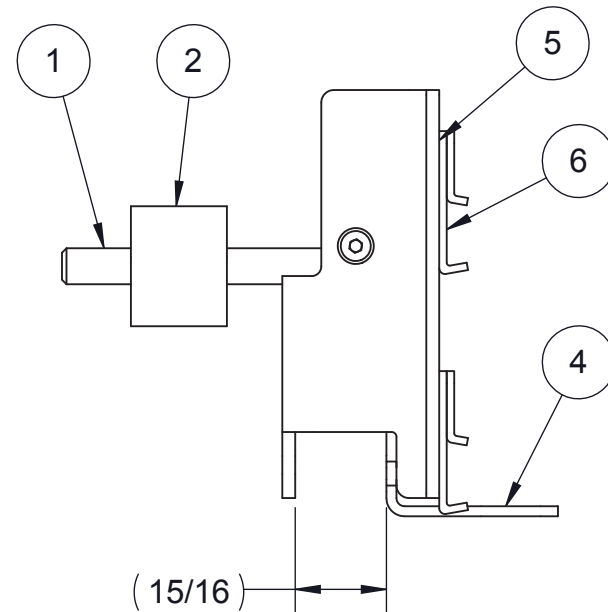
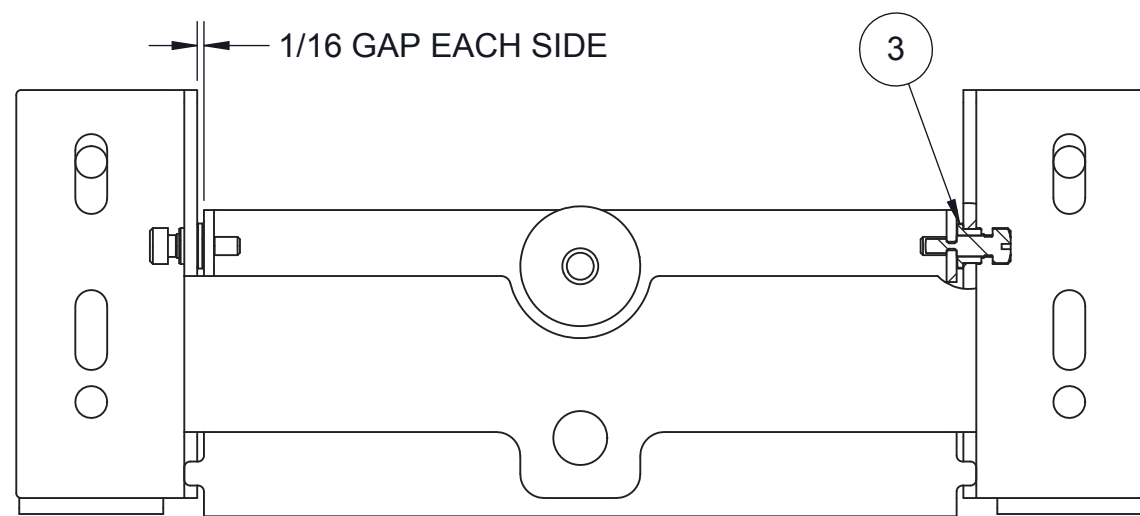
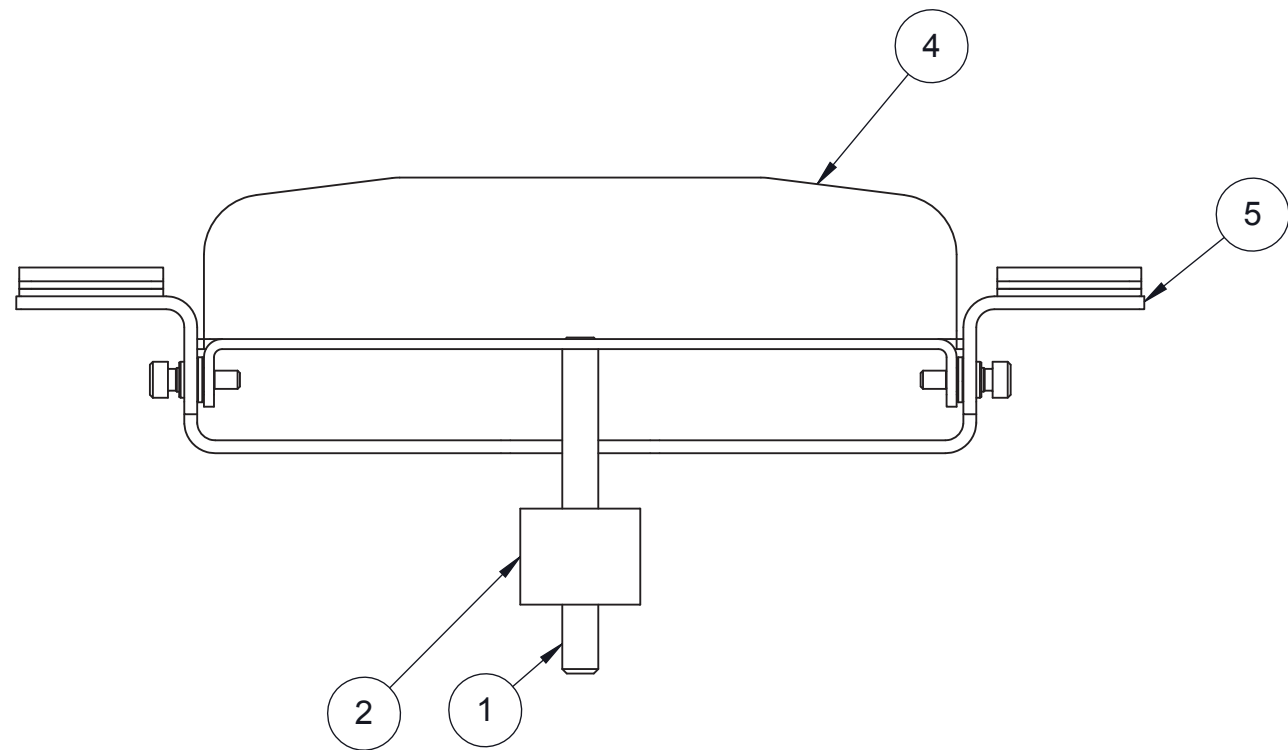
Assembly Part Number: 364278

Assembly Drawing Number: 364278

Description: KIT, PARTS, CHANGE, 15269

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	364277	ASSY, GUIDE, POP-UP, 6-LANE, LH, 2.09 DIA PROD
2	1.00	364275	WLDMT, PLT, PUSHES
3	1.00	364274	SUBASSY, SPACER, GUIDE, 6-LANE, 2.09 DIA
4	1.00	322570	BLK, HOSE PARKING



6	4	801359	CLAMP, RAIL, SINGLE, 1.5 LG, SS, ROUND HOLE
5	1	323269	BRKT, FRAME, PRD DTCTR, ACCUM, ADJ
4	1	291031	BRACKET, PROD DETECTOR, ACCUM
3	2	800424	BUSH, OILITE, FLG, 0.252 X 0.3775 X 1/4, 15/32 OD X 1/16 THK FLG
2	1	107147	WEIGHT, COUNTER
1	1	107149	SHAFT, WEIGHT, COUNTER
ITM	QTY	PART NUM	DESCRIPTION
BILL OF MATERIALS			
ARPAC		9511 WEST RIVER ST. SCHILLER PARK, IL 60176	
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONAL TOLERANCES:		FRACTIONS ± 1/64 TWO (2) DECIMALS ± 0.010 THREE (3) DECIMALS ± 0.005 ANGLES ± 0.5°	
DRAWN: 11/8/2012		BY: SR	SCALE: 1:2
RELEASED: 11/8/2012		FILENAME: 323268	APPROVED BY: SRA
DESCRIPTION: ASSY, PRODUCT DETECTOR, ACCUMULATION, ADJ			
			DRAWING NUMBER: 323268

Arpac BOM

Parent Number: 15269 Parent Revision: B
Description: ASSY, FINAL, MACH, EL-2100, LH
Model: EL-2121

Assembly Part Number: 323268
Assembly Drawing Number: 323268
Description: ASSY, PRODUCT DETECTOR, ACCUMULATION, ADJ
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	107149	SHAFT WEIGHT COUNTER
2	1.00	107147	WEIGHT COUNTER
3	2.00	800424	BUSH, OILITE, FLG, 0.252 X 0.3775 X 1/4, 15/32 OD X 1/16 THK FLG
4	1.00	291031	BRACKET, PROD DETECTOR, ACCUM
5	1.00	323269	BRKT, FRAME, PRD DTCTR, ACCUM, ADJ
6	4.00	801359	CLAMP, RAIL, SINGLE, 1.5 LG, SS, ROUND HOLE

Arpac BOM

Parent Number: 15269 Parent Revision: B
Description: ASSY, FINAL, MACH, EL-2100, LH
Model: EL-2121

Assembly Part Number: 357410
Assembly Drawing Number: 357410
Description: ASSY, AGITATOR, 20"WIDE, 6 LANES, 230/460V
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	3.00	245943	WLDMT, PLT, DIVIDER
2	4.00	245946	WLDMT, PLT, DIVIDER
3	1.00	245954	PLT, TOP
4	4.00	245956	SPACER
5	2.00	245957	BLK, GUIDE
6	2.00	292992	BAR, OSCILLATOR
7	2.00	292993	BAR, SLIDE
8	1.00	303335	WLDMT, SHAFT, DRIVE, ECCENTRIC
9	1.00	303334	PLT, MOUNT, GEARBOX
10	1.00	303332	WLDMT, BRIDGE, 20"
11	1.00	300790	BAR, MTG, FRONT, AGITATOR, 20"
12	14.00	811880	HDL, ADJ, SS, 3.13 LG, PLAS 3/8-16 X 1.18 LG
13	14.00	819732	FSNR, WASHER, 1 OD, 3/16 TH.
14	1.00	819733	FTG, GREASE 45 DEG, 1/4-28
15	1.00	848034	GEARMOTOR, FLEXBLOC, 1/3 HP, OUTPUT: 28 RPM, 1.125 BORE, 230/460VAC, 3PH,
16	2.00	300789	SPACER

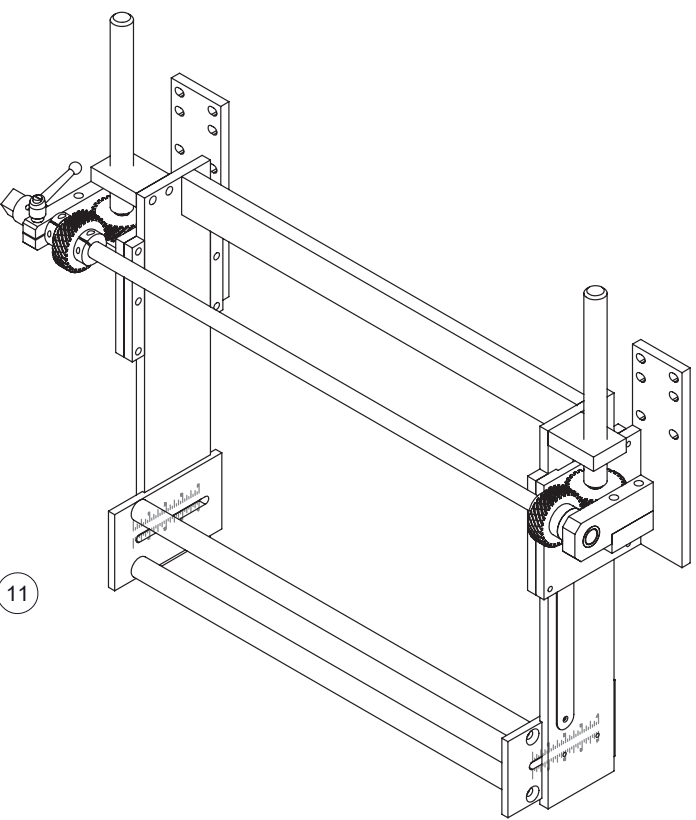
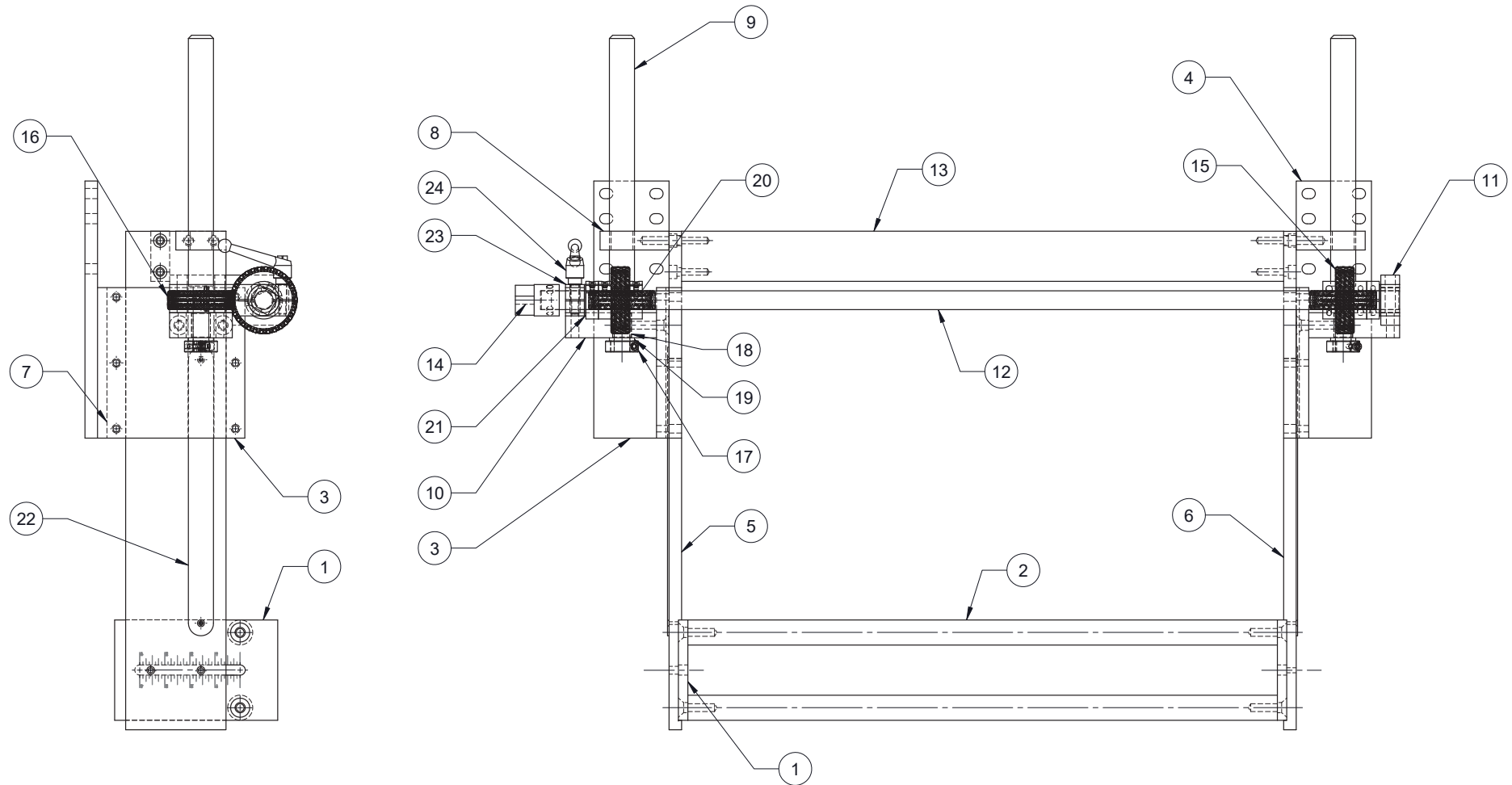
Arpac BOM

Parent Number: 15269 Parent Revision: B
Description: ASSY, FINAL, MACH, EL-2100, LH
Model: EL-2121

Assembly Part Number: 357171
Assembly Drawing Number: 357171
Description: ASSY, GUARD, AGITATOR, EL-2000
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	4.00	810174	HINGE, DOOR, POLYAMIDE, BLACK
2	2.00	802653	LATCH, VISE-ACTION
3	2.00	357168	DOOR, AGITATOR, EL-2000
4	2.00	357166	TBG, MTG, LEXAN
5	2.00	357169	BKT, MTG
6	1.00	357167	BKT, STOP & LOCK

REVISIONS			
RV	DATE	BY	DESCRIPTION
A	4/1/2013	SRA	ADDED ITEMS 23 AND 24



24	1	806459	HDL, ADJ, ZINC, 2-1/2 LG 5/16-18 X 1.18 STUD
23	1	290615	BLK, CLAMP, SHAFT
22	2	242962	GAUGE, STOP, CAN
21	2	807258	WSHR, OILITE, 0.753 X 1.250 X 1/16 THK
20	6	807096	COLLAR, SHAFT, CLAMP, 1-PIECE, 3/4
19	2	800449	WSHR, OILITE, 0.628 X 1.000 X 1/8 THK
18	4	800357	BUSH, OILITE, 0.6270 X 0.7530 X 1 LG
17	2	800578	COLLAR, SHAFT, CLAMP, 1-PIECE, 5/8
16	2	808333	GEAR, HELICAL, 12 DP, 30T, 14.5 DEG PA, 3/4 FACE, 5/8 BORE, 2.500 PD, HARD TEETH
15	2	243330	VERTICAL ADJUSTMENT GEAR
14	1	243280	ADJ NUT 3/4 SQUARE, Ø5/8 BORE
13	1	242951	XBAR, STOP, CAN
12	1	242955	SHAFT, ADJ, STOP, CAN
11	1	242954	BLK,SUPPORT,LWR
10	2	242957	BLK, MTG, ADJ, STOP, CAN
9	2	243416	VERT. ADJ. SCREW
8	2	242956	NUT, ADJ, STOP, CAN
7	4	242949	BLK, GUIDE
6	1	242948-002	BAR, VER, STOP, CAN, LH
5	1	242948-001	BAR, VER, STOP, CAN, RH
4	1	242952-002	WLDMT, BKT, STOP, CAN, LH
3	1	242952-001	WLDMT, BKT, STOP, CAN, RH
2	2	214314	SHAFT, TAPPED
1	2	228674	PLT, STOP, CAN

ITM	QTY	PART NUM	DESCRIPTION
BILL OF MATERIALS			
ARPAC		9511 WEST RIVER ST. SCHILLER PARK, IL 60176	
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONAL TOLERANCES:		FRACTIONS TWO (2) DECIMALS THREE (3) DECIMALS ANGLES	± 1/64 ± 0.010 ± 0.005 ± 0.5°
DRAWN:	02/13/2007	BY:	HHG
RELEASED:	02/13/2007	FILENAME:	243312
SCALE:	0.25:1	APPROVED BY:	HHG
SIZE:	C	DESCRIPTION: ASSY, ADJ, CAN STOP	
			DRAWING NUMBER: 243312

PART NUMBER	MODE
243312-001	LH, AS SHOWN
243312-002	RH, OPPOSITE
243312-100	LH, AS SHOWN, SS

Arpac BOM

Parent Number: 15269 Parent Revision: B

Description: ASSY, FINAL, MACH, EL-2100, LH

Model: EL-2121

Assembly Part Number: 243312-001B

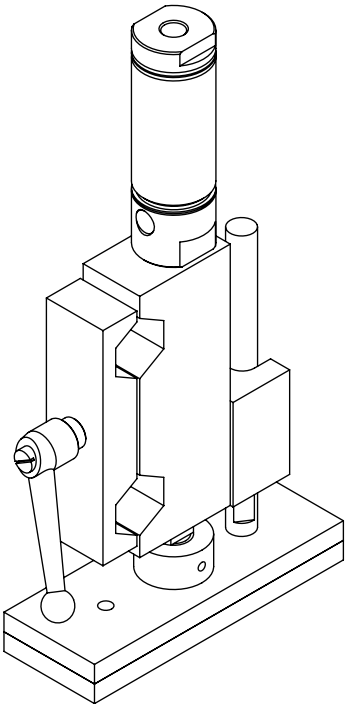
Assembly Drawing Number: 243312

Description: ASSY, ADJ., CAN STOP, LH EL2000

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	2.00	228674	PLT, STOP, CAN
2	2.00	214314	SHAFT TS-25 STD, 23 1/2 LG
3	1.00	242952-001	WLDMT, BKT, CAN STOP, RH
4	1.00	242952-002	WLDMT, BKT, CAN STOP, LH
5	1.00	242948-001	BAR, VER, STOP, CAN, RH
6	1.00	242948-002	BAR, VER, STOP, CAN, LH
7	4.00	242949	BLK, GUIDE
8	2.00	242956	NUT, ADJ, STOP, CAN
9	2.00	243416	SCREW, ADJ, VERTICAL
10	2.00	242957	BLK, MTG, ADJ, STOP, CAN
11	1.00	242954	BLK, SUPPORT, LWR
12	1.00	242955-100	SHAFT, ADJ, STOP, CAN, SS
13	1.00	242951	XBAR, STOP, CAN
14	1.00	243280	ADAPTER, WRENCH, 3/4 DIA TO 7/8 SQ
15	2.00	243330	GEAR, ADJUST., 12 DP, 30 T, 14.5 DEG 3/4" FACE, 3/4 BORE
16	2.00	808333	GEAR, HELICAL, 12 DP, 30T, 14.5 DEG PA, 3/4 FACE, 5/8 BORE, 2.500 PD, HAR
17	2.00	800578	COLLAR, SHAFT, CLAMP, 1-PIECE, 5/8, *USE 800578-001 FOR STRETCH
18	4.00	800357	BUSH, OILITE, 0.6270 X 0.7530 X 1 LG
19	4.00	800449	WSHR, OILITE, 0.628 X 1.000 X 1/8 THK
20	6.00	807096	COLLAR, SHAFT, CLAMP, 1-PIECE, 3/4, EXTREME CL8867
21	2.00	807258	WSHR, OILITE, 0.753 X 1.250 X 1/16 THK
22	2.00	242962	SCALE, STOP, CAN
23	1.00	290615	BLK, CLAMP, SHAFT
24	1.00	806459	HDL, ADJ, ZINC, 2-1/2 LG 5/16-18 X 1.18 STUD

REV	DATE	BY	NOTE
REVISIONS			
SIZE B	SCALE 1:3	MATERIAL SEE BILL OF MATERIALS	DESCRIPTION ASSY, CLAMP, STOP, PRODUCT, 2 X 5-1/2
3RD ANGLE 	UNITS INCH		
TOLERANCES X/X: ±1/32 X.XX: ±.015 X.XXX: ±.005 ANGLES: ±1°		FINISH NONE	NUMBER 364284

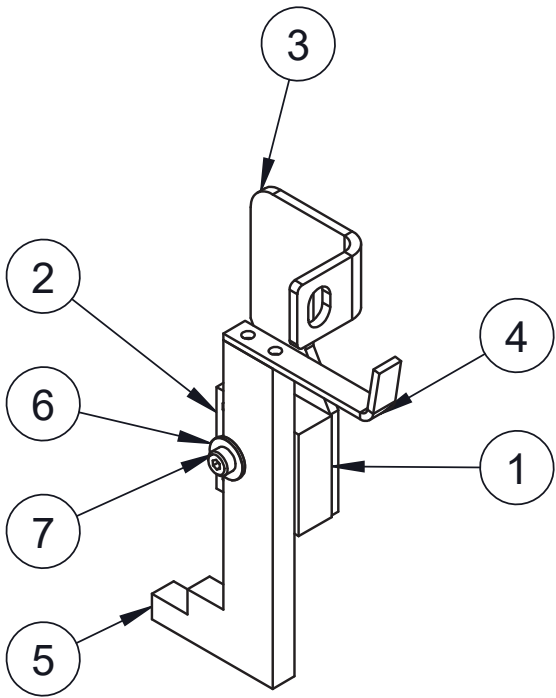
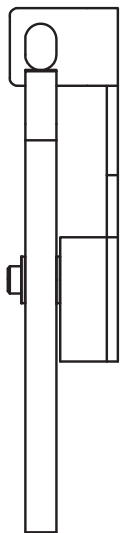
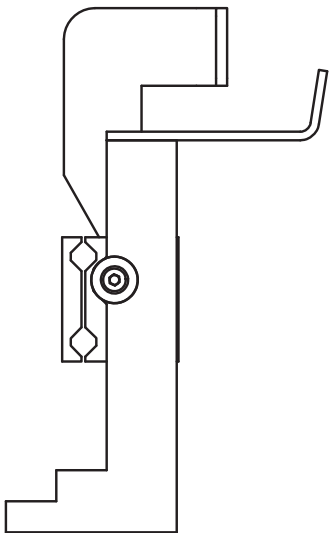
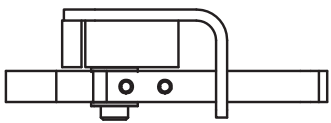


Arpac BOM

Parent Number: 15269 Parent Revision: B
Description: ASSY, FINAL, MACH, EL-2100, LH
Model: EL-2121

Assembly Part Number: 364284
Assembly Drawing Number: 364284
Description: ASSY, CLAMP, STOP, PRODUCT, 2 X 5-1/2
Quantity: 6.00

Item	Qty	Arpac Part	Description
1	1.00	364283	ASSY, CLAMP, STOP, PRODUCT, 2 X 5-1/2
2	1.00	261117	BARREL, CAN STOP
3	1.00	243425	CLAMP, CAN STOP
4	1.00	122151-002	SHAFT, CAN STOP 5 1/4 LG
5	1.00	825526	CYL, AIR, 1-1/4 BORE, 1 STROKE, ROUND, NOSE MTG
6	1.00	802678	HDL, ADJ, ZINC, 2-1/2 LG 3/8-16 X 1.57 STUD
7	1.00	223560	BLK, GUIDE
8	1.00	223575	ROD, SS, 0.500, TAPPED, 1/4-20



7	1	800322-009	FSNR, BOLT, SHLDR, 5/16 DIA X 5/8 LG
6	2	800445	WSHR, OILITE, 0.315 X 0.750 X 1/16 THK
5	1	300785	FINGER, DETECTOR
4	1	300781	FLAG, PROX
3	1	300783	BKT, MTG, PROX
2	1	242950	BLK, TOP, ADJ, BKT, MTG, PROX
1	1	242947	BLK, ADJ, BKT, MTG, PROX
ITM	QTY	PART NUM	DESCRIPTION

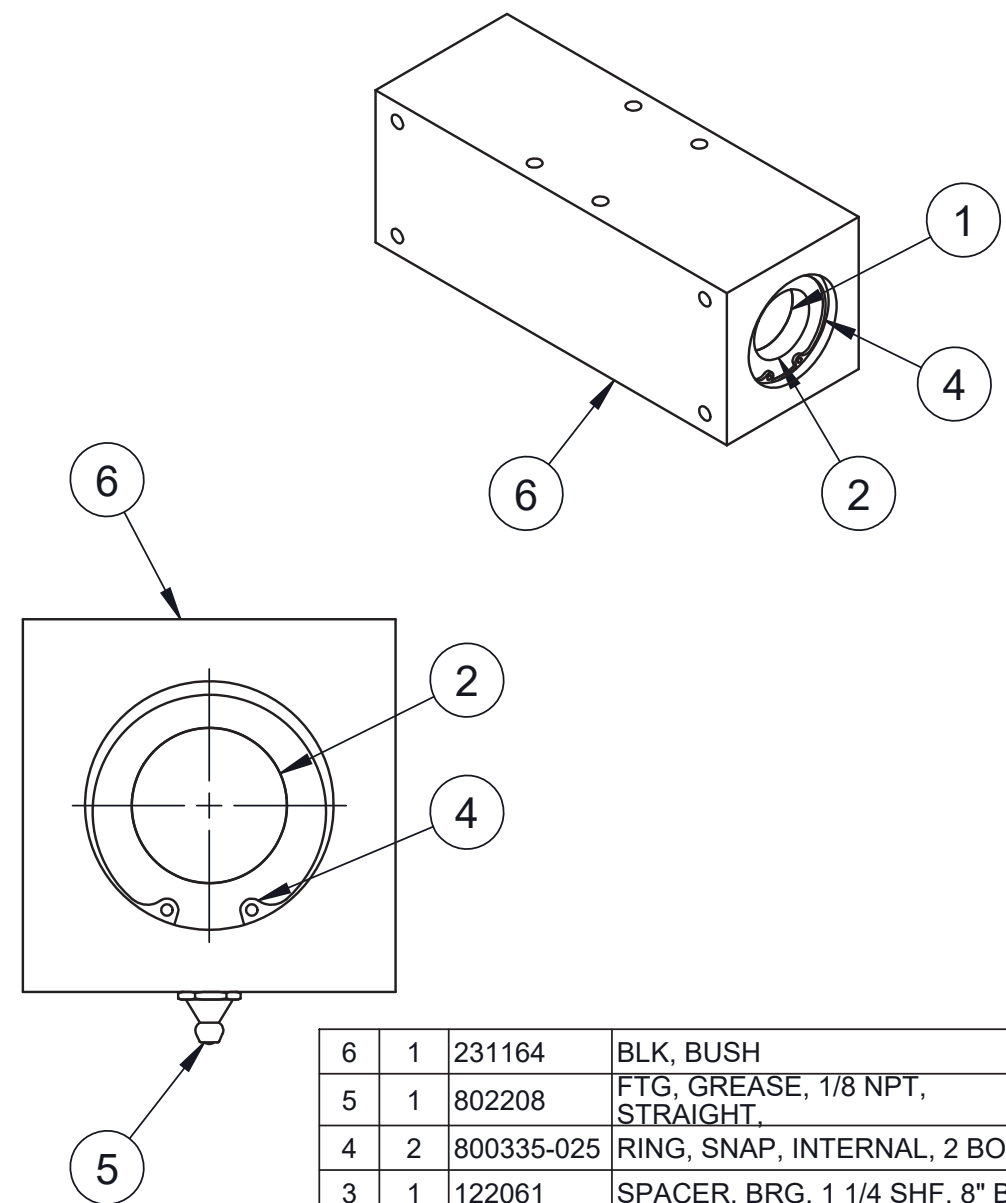
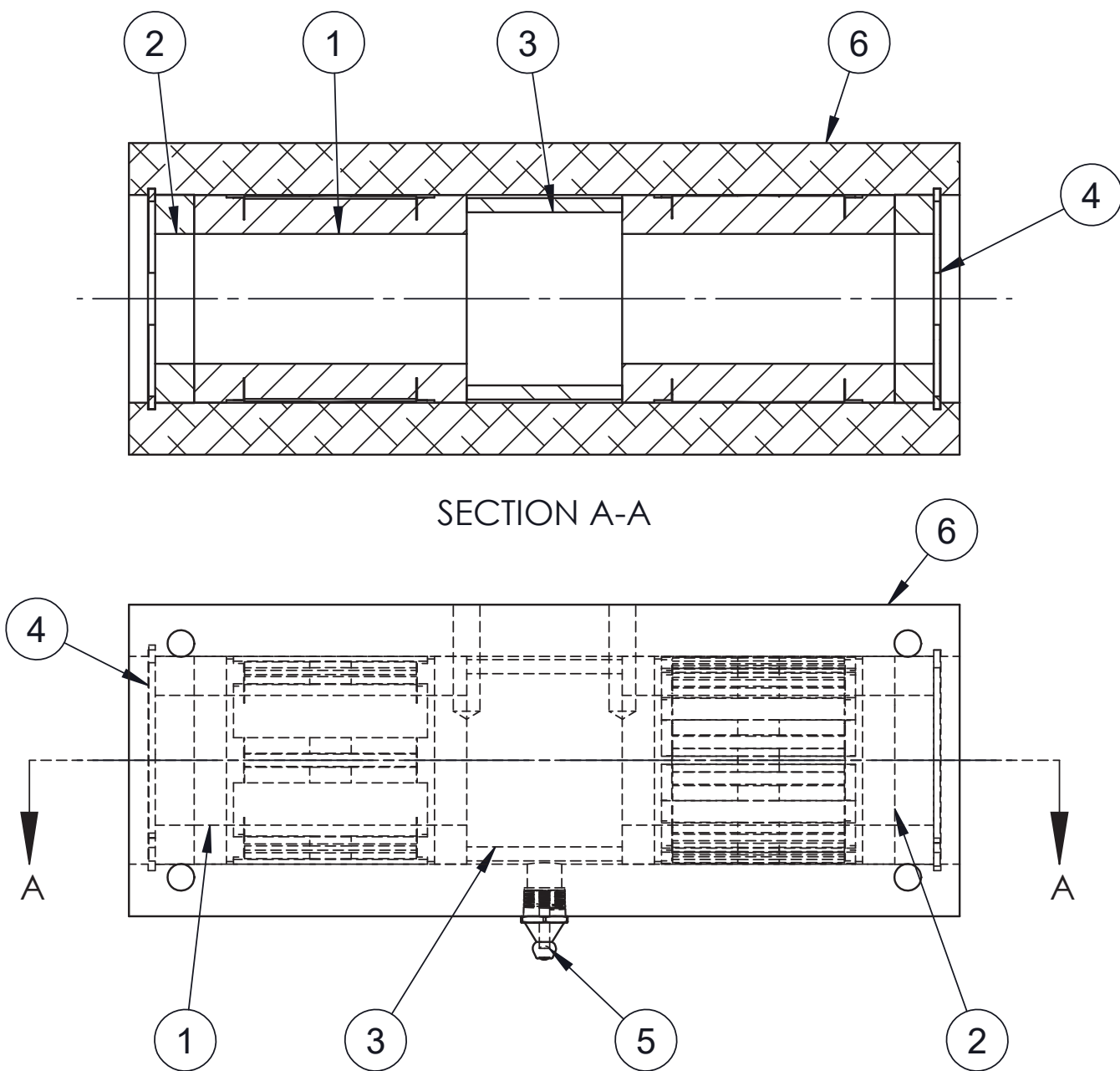
BILL OF MATERIALS			
ARPAC		9511 WEST RIVER ST. SCHILLER PARK, IL 60176	
UNLESS OTHERWISE SPECIFIED		FRACTIONS	± 1/64
ALL DIMENSIONAL TOLERANCES:		TWO (2) DECIMALS	± 0.010
		THREE (3) DECIMALS	± 0.005
		ANGLES	± 0.5°
DRAWN:	6/21/11	BY:	HG
		SCALE:	1:4
		SIZE:	A
		FILENAME:	300784
DESCRIPTION: ASSY, FINGER DETECTOR			
DRAWING NUMBER:			300784

Arpac BOM

Parent Number: 15269 Parent Revision: B
Description: ASSY, FINAL, MACH, EL-2100, LH
Model: EL-2121

Assembly Part Number: 300784
Assembly Drawing Number: 300784
Description: ASSY, FINGER DETECTOR
Quantity: 6.00

Item	Qty	Arpac Part	Description
1	1.00	242947	BLK, ADJ, BKT, MTG, PROX
2	1.00	242950	BLK, TOP, ADJ, BKT, MTG, PROX
3	1.00	300783	BKT, MTG, PROX
4	1.00	300781	FLAG, PROX.
5	1.00	300785	FINGER, DETECTOR
6	2.00	800445	WSHR, OILITE, 0.315 X 0.750 X 1/16 THK
7	1.00	800322-009	FSNR, BOLT, SHLDR, 5/16 DIA X 5/8 LG, SS
8	2.13	900306	SS FLAT 3/4 X 1-1/2, 304, EXTRUDED FLAT BAR/TRUE BAR
9	0.50	902675	SS FLAT 3/4 X 2, 303, TRUE BAR
10	23.81	903588	SS SHEET 7GA, 304, #2B FINISH
11	2.38	900563	CRS FLAT 1-1/4 X 2-1/2, 1018
12	18.00	903817	PL NYLATRON GS SHEET 1/2 THK



6	1	231164	BLK, BUSH
5	1	802208	FTG, GREASE, 1/8 NPT, STRAIGHT,
4	2	800335-025	RING, SNAP, INTERNAL, 2 BORE
3	1	122061	SPACER, BRG, 1 1/4 SHF, 8" BLK
2	2	802927	RING, SEAL, 1-1/4 X 2.004 X 0.375 THK
1	2	805975	BUSH, BALL, 1-1/4 X 2 X 2-5/8 LG
ITM	QTY	PART NUM	DESCRIPTION

BILL OF MATERIALS			
ARPAC		9511 WEST RIVER ST. SCHILLER PARK, IL 60176	
UNLESS OTHERWISE SPECIFIED		FRACTIONS ± 1/64	
ALL DIMENSIONAL TOLERANCES:		TWO (2) DECIMALS ± 0.010	
		THREE (3) DECIMALS ± 0.005	
		ANGLES ± 0.5°	
DRAWN:	3/31/14	BY:	HG
		SCALE:	1:2
		SIZE:	A
		FILENAME:	231163
DESCRIPTION: ASSY, BLK, BUSH, SHAFT, 1-1/4", 8" LG,			
DRAWING NUMBER: 231163			

Arpac BOM

Parent Number: 15269 Parent Revision: B

Description: ASSY, FINAL, MACH, EL-2100, LH

Model: EL-2121

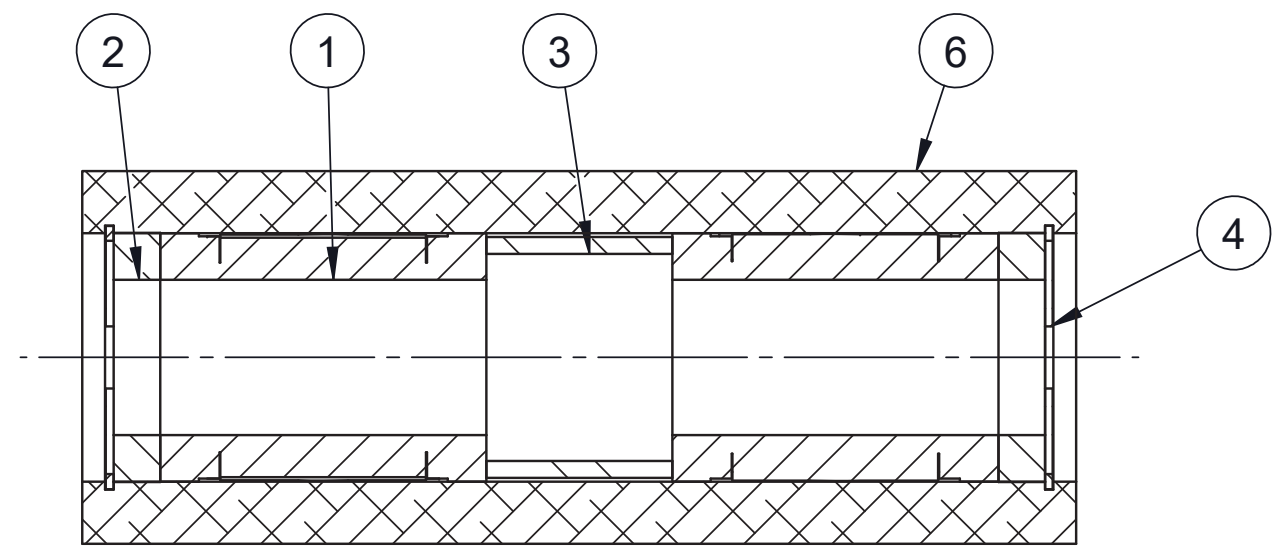
Assembly Part Number: 231163

Assembly Drawing Number: 231163

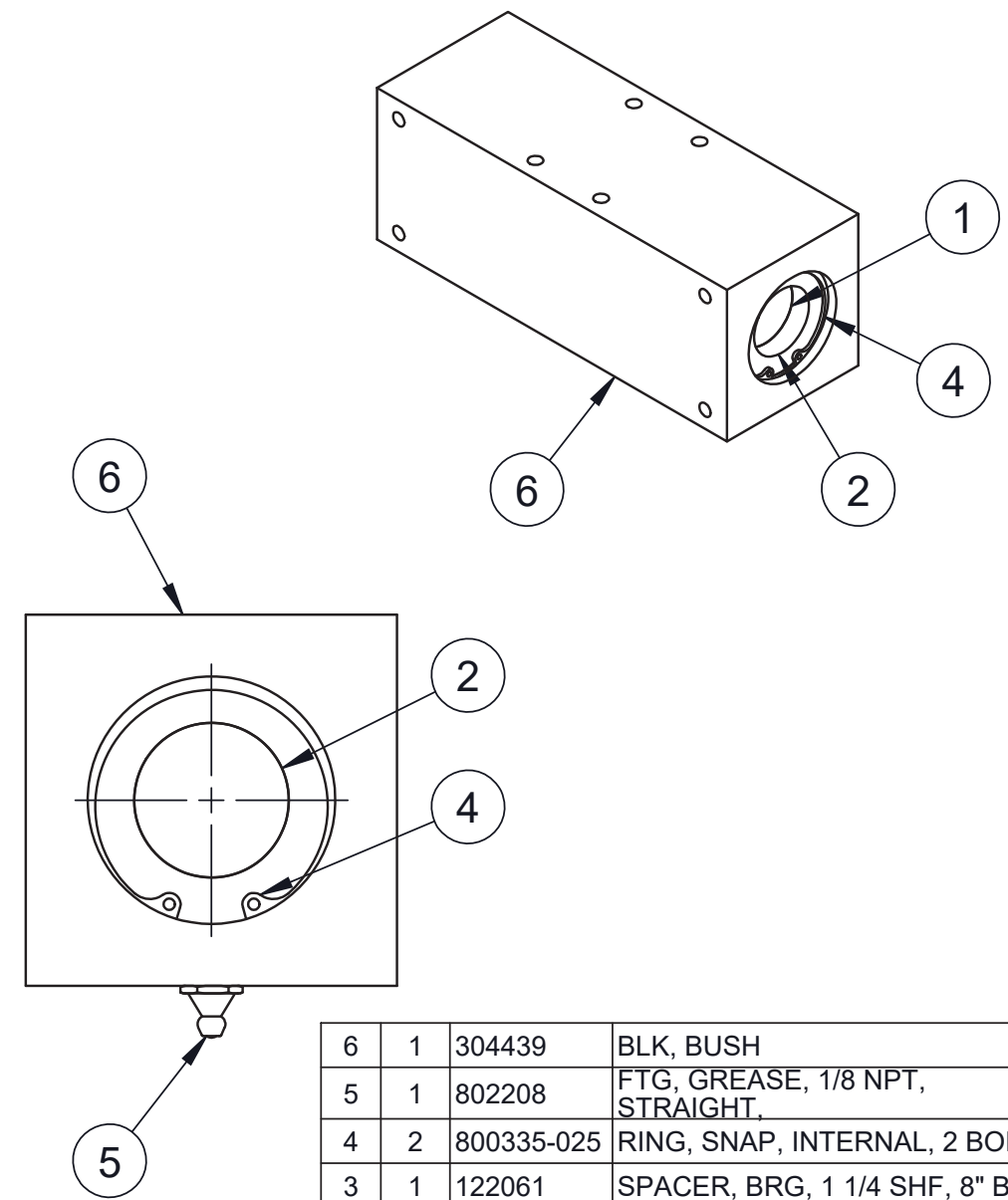
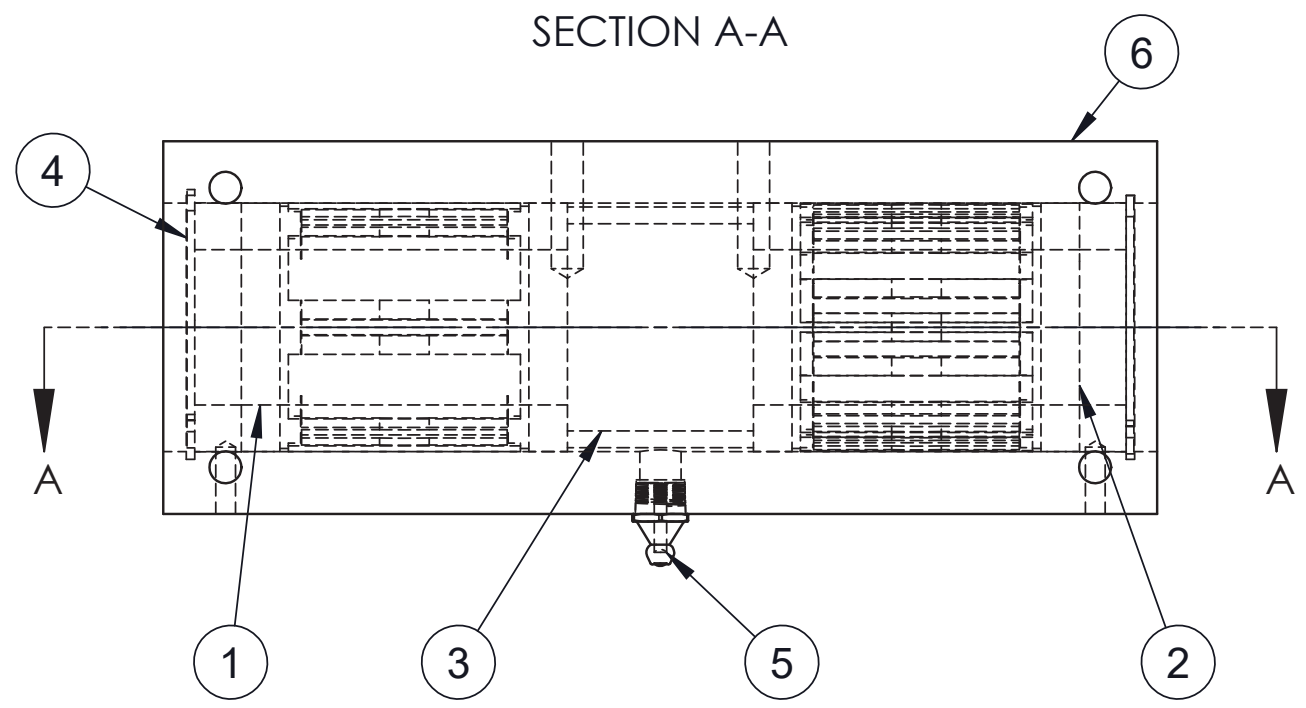
Description: ASSY, BLK, BUSH, SHAFT, 1-1/4", 8" LG,

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	2.00	805975	BUSH, BALL, 1-1/4 X 2 X 2-5/8 LG
2	2.00	802927	RING, SEAL, 1-1/4 X 2.004 X 0.375 THK
3	1.00	122061	SPACER, BRG, 1 1/4 SHF, 8" BLK
4	2.00	800335-025	RING, SNAP, INTERNAL, 2 BORE
5	1.00	802208	FTG, GREASE, 1/8 NPT, STRAIGHT, ZINC PL
6	1.00	231164	BLK, BUSH
7	8.13	900169	AL SQ 3, 6061-T6511
8	1.88	900998	CRS TBG DOM 2 OD X 1.732 ID X 10GA (0.134) WALL



SECTION A-A



6	1	304439	BLK, BUSH
5	1	802208	FTG, GREASE, 1/8 NPT, STRAIGHT,
4	2	800335-025	RING, SNAP, INTERNAL, 2 BORE
3	1	122061	SPACER, BRG, 1 1/4 SHF, 8" BLK
2	2	802927	RING, SEAL, 1-1/4 X 2.004 X 0.375 THK
1	2	805975	BUSH, BALL, 1-1/4 X 2 X 2-5/8 LG
ITM	QTY	PART NUM	DESCRIPTION

BILL OF MATERIALS

ARPAC

9511 WEST RIVER ST.
SCHILLER PARK, IL 60176

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONAL TOLERANCES:

FRACTIONS
TWO (2) DECIMALS
THREE (3) DECIMALS
ANGLES

± 1/64
± 0.010
± 0.005
± 0.5°

DRAWN: 7/09/2014

BY: GGP

SCALE: 1:2

SIZE: A

FILENAME: 304441

DESCRIPTION: ASSY, BLK, BUSH, SHAFT, 1-1/4", 8" LG,

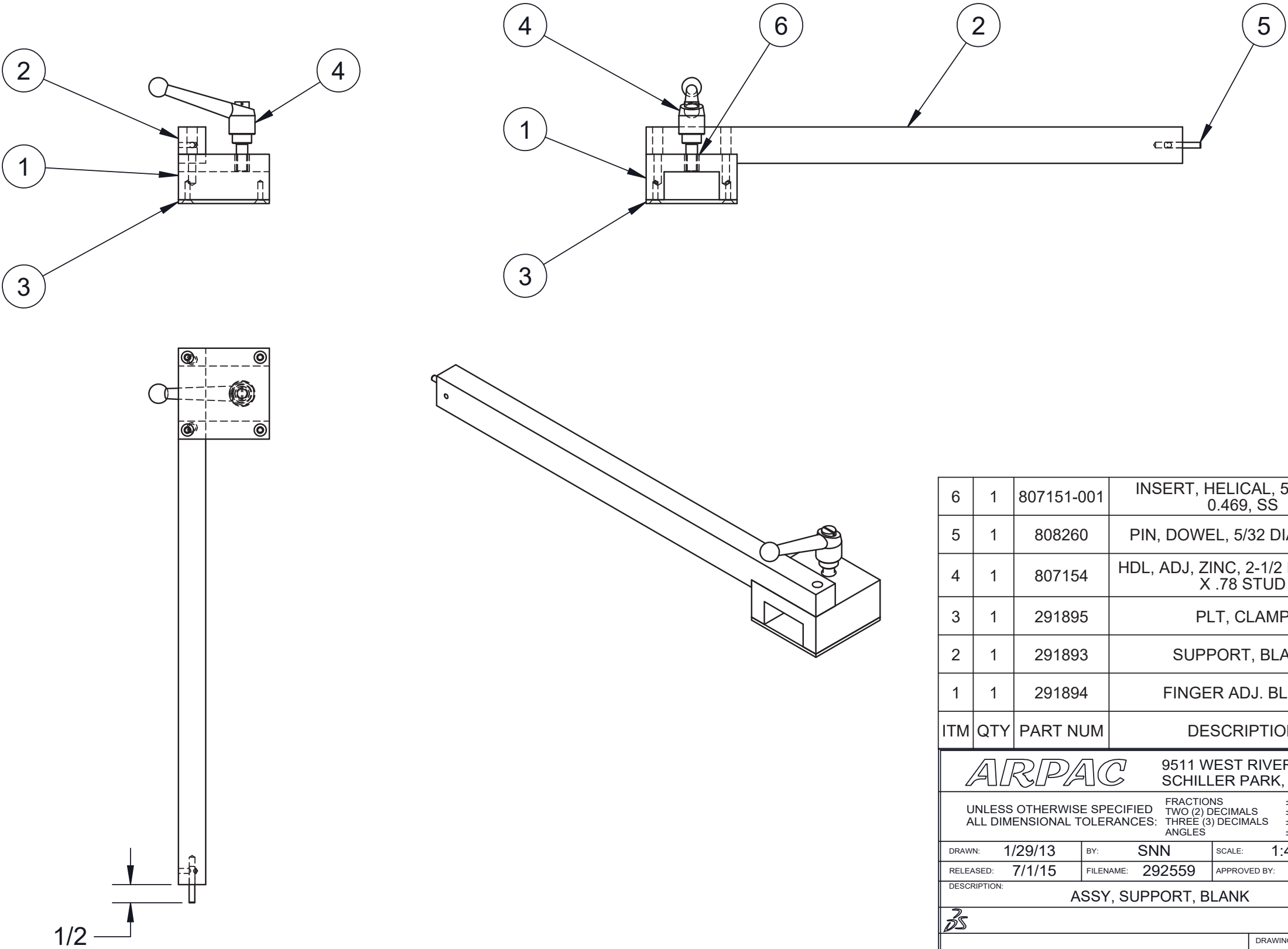
DRAWING NUMBER: 304441

Arpac BOM

Parent Number: 15269 Parent Revision: B
Description: ASSY, FINAL, MACH, EL-2100, LH
Model: EL-2121

Assembly Part Number: 304441
Assembly Drawing Number: 304441
Description: ASSY, BLK, BUSH, SHAFT, 1-1/4", 8" LG,
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	2.00	805975	BUSH, BALL, 1-1/4 X 2 X 2-5/8 LG
2	2.00	802927	RING, SEAL, 1-1/4 X 2.004 X 0.375 THK
3	1.00	122061	SPACER, BRG, 1 1/4 SHF, 8" BLK
4	2.00	800335-025	RING, SNAP, INTERNAL, 2 BORE
5	1.00	802208	FTG, GREASE, 1/8 NPT, STRAIGHT, ZINC PL
6	1.00	304439	BLK, BUSH



REVISIONS			
RV	DATE	BY	DESCRIPTION
A	7/1/2015	SRA	ADDED ITEM 6 HELICAL INSERT

6	1	807151-001	INSERT, HELICAL, 5/16-18 X 0.469, SS
5	1	808260	PIN, DOWEL, 5/32 DIA X 1 LG,
4	1	807154	HDL, ADJ, ZINC, 2-1/2 LG 5/16-18 X .78 STUD
3	1	291895	PLT, CLAMP
2	1	291893	SUPPORT, BLANK
1	1	291894	FINGER ADJ. BLOCK
ITM	QTY	PART NUM	DESCRIPTION

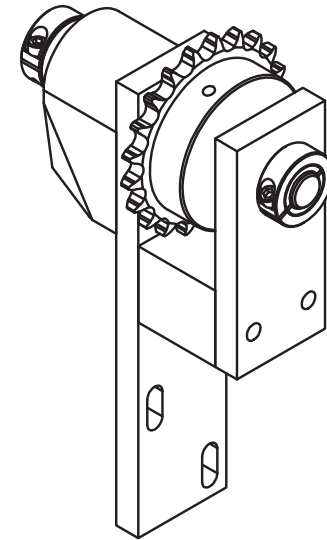
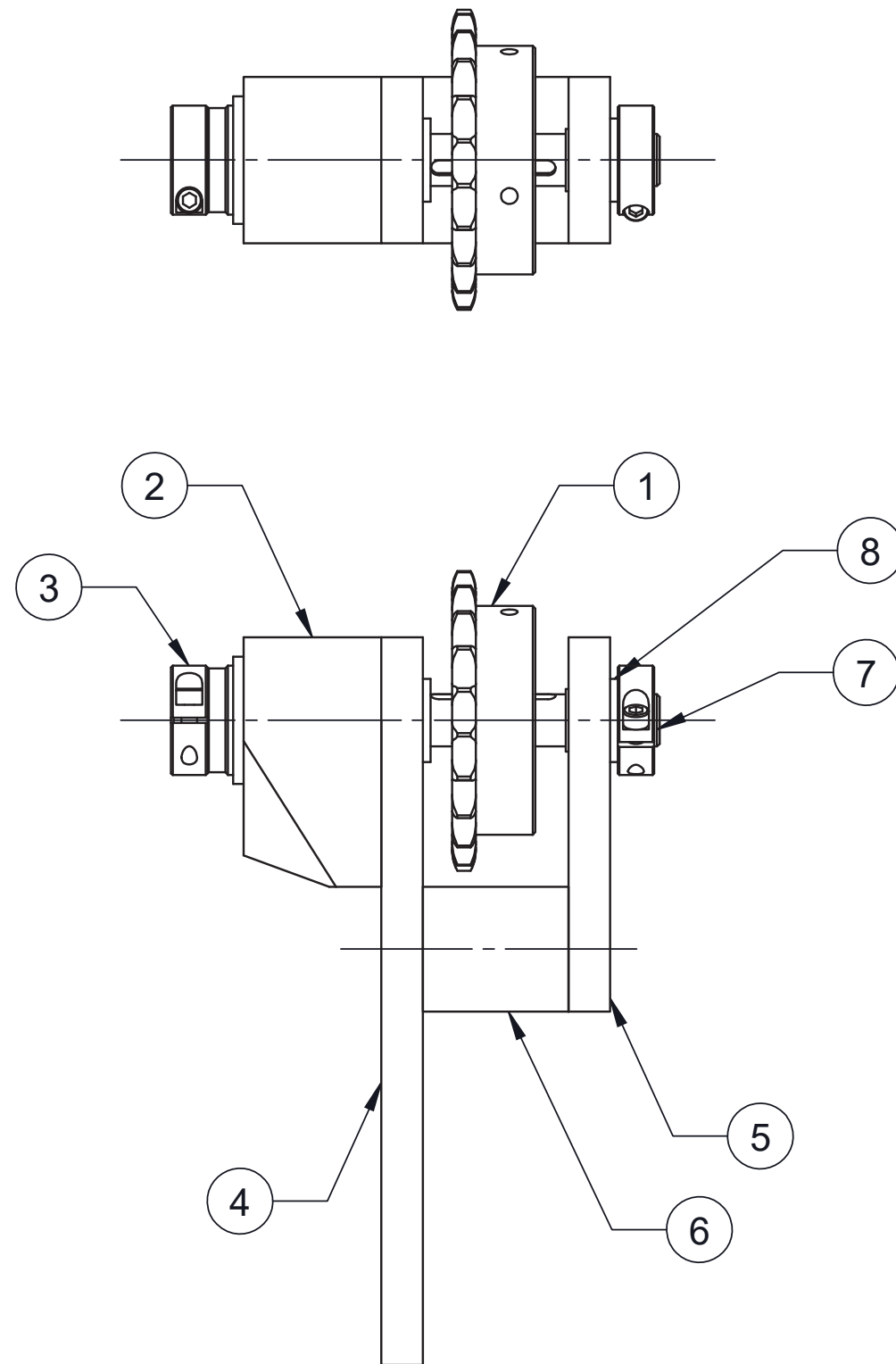
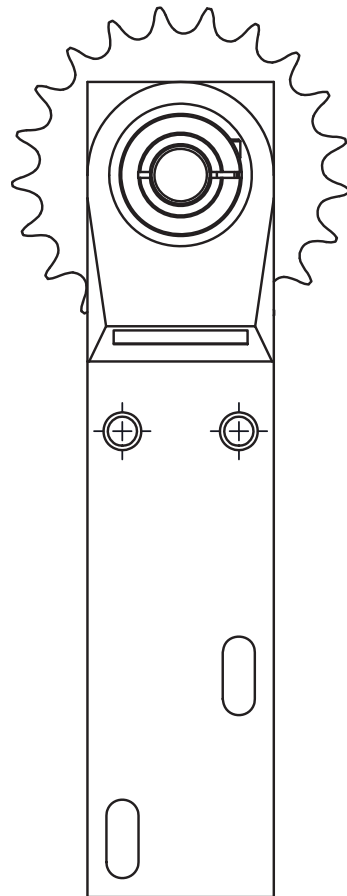
ARPAC		9511 WEST RIVER ST. SCHILLER PARK, IL 60176	
UNLESS OTHERWISE SPECIFIED		FRACTIONS	± 1/64
ALL DIMENSIONAL TOLERANCES:		TWO (2) DECIMALS	± 0.010
		THREE (3) DECIMALS	± 0.005
		ANGLES	± 0.5°
DRAWN:	1/29/13	BY:	SNN
RELEASED:	7/1/15	SCALE:	1:4
DESCRIPTION:		APPROVED BY:	SRA
		ASSY, SUPPORT, BLANK	
		DRAWING NUMBER: 292559	

Arpac BOM

Parent Number: 15269 Parent Revision: B
Description: ASSY, FINAL, MACH, EL-2100, LH
Model: EL-2121

Assembly Part Number: 292559
Assembly Drawing Number: 292559
Description: ASSY, SUPPORT, BLANK
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	291894	BLK, CLAMP
2	1.00	291893	POST, SUPPORT, BLANK
3	1.00	291895	PLT, CLAMP
4	1.00	807154	HDL, ADJ, ZINC, 2-1/2 LG 5/16-18 X .78 STUD
5	1.00	808260	PIN, DOWEL, 5/32 DIA X 1 LG,
6	1.00	807151-001	INSERT, HELICAL, 5/16-18 X 0.469LG, SS FREE RUNNING



8	2	800395	BUSH, OILITE, FLG, 0.6265 X 0.7525 X 5/8 1 OD X 3/32 THK FLG
7	1	227059	SHAFT
6	1	227058	SPACER
5	1	227057	PLT, SUPPORT
4	1	227056	PLT, MTG, COUNTER
3	2	806983	COLLAR, SHAFT, CLAMP, 1-PIECE, 5/8
2	1	822769	COUNTER, POSITION, 0.625 BORE
1	1	227066	SPKT, 40B21, MOD, 0.625 BORE
ITM	QTY	PART NUM	DESCRIPTION

BILL OF MATERIALS			
ARPAC		9511 WEST RIVER ST. SCHILLER PARK, IL 60176	
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONAL TOLERANCES:		FRACTIONS ± 1/64 TWO (2) DECIMALS ± 0.010 THREE (3) DECIMALS ± 0.005 ANGLES ± 0.5°	
DRAWN:	6/14/2004	BY:	HHG
RELEASED:	6/14/2004	FILENAME:	227062
DESCRIPTION:		SCALE:	0.375:1
		APPROVED BY:	HHG
		ASSY, COUNTER	
		DRAWING NUMBER: 227062	

Arpac BOM

Parent Number: 15269 Parent Revision: B

Description: ASSY, FINAL, MACH, EL-2100, LH

Model: EL-2121

Assembly Part Number: 227062

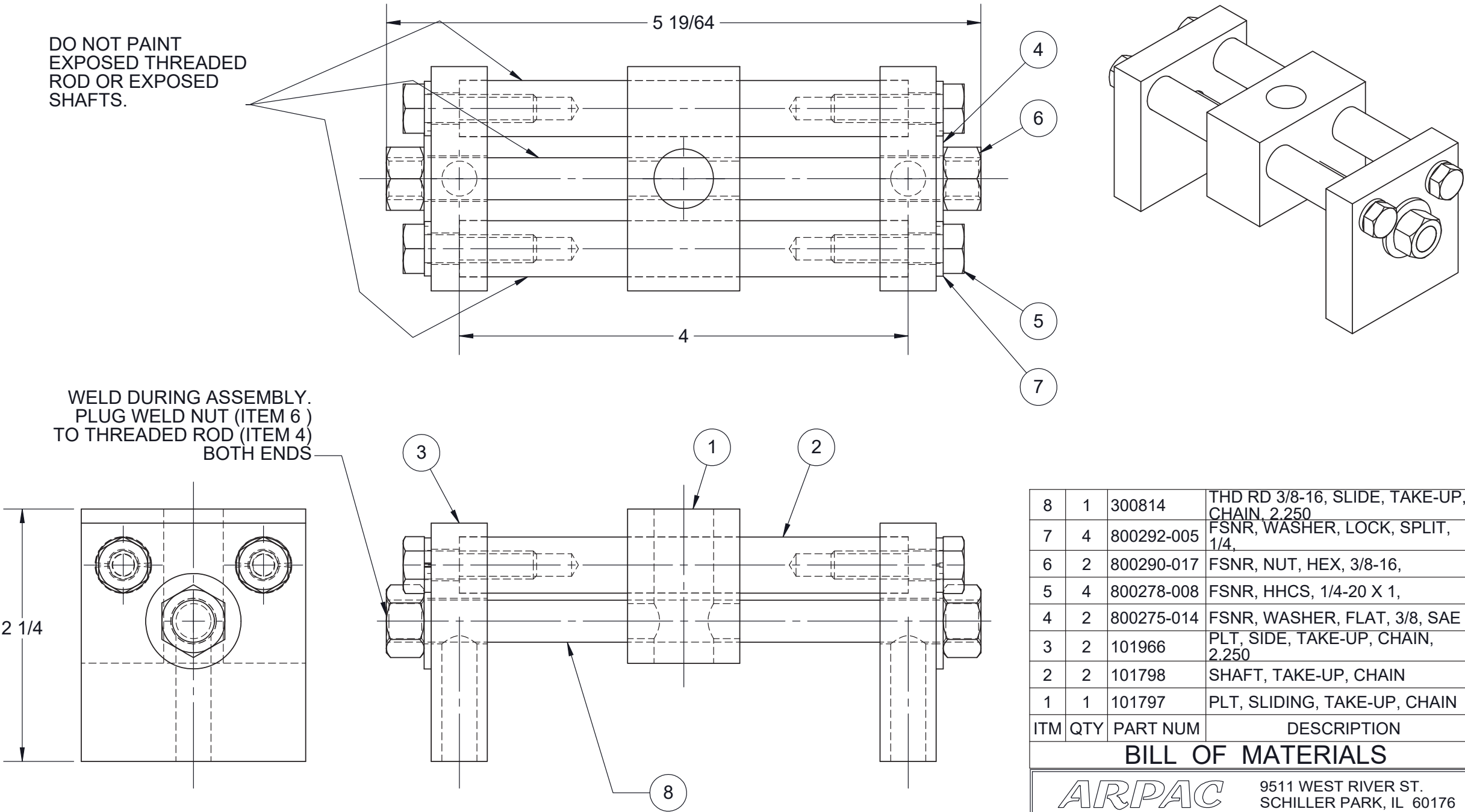
Assembly Drawing Number: 227062

Description: ASSY, COUNTER

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	227066	SPKT, 40B21, MOD, 0.625 BORE
2	1.00	822769	COUNTER, POSITION, 0.625 BORE
3	2.00	806983	COLLAR, SHAFT, CLAMP, 1-PIECE, 5/8, SS
4	1.00	227056	PLT, MTG, COUNTER
5	1.00	227057	PLT, SUPPORT
6	1.00	227058	SPACER
7	1.00	227059	SHAFT, COUNTER
8	2.00	800395	BUSH, OILITE, FLG, 0.6265 X 0.7525 X 5/8 1 OD X 3/32 THK FLG

REVISIONS			
RV	DATE	BY	DESCRIPTION
A	6/27/2017	JW	UPDATED NOTE. PER DCR #18243 AND #18137
B	10/5/2017	SRA	UPDATED BOM



8	1	300814	THD RD 3/8-16, SLIDE, TAKE-UP, CHAIN, 2.250
7	4	800292-005	FSNR, WASHER, LOCK, SPLIT, 1/4,
6	2	800290-017	FSNR, NUT, HEX, 3/8-16,
5	4	800278-008	FSNR, HHCS, 1/4-20 X 1,
4	2	800275-014	FSNR, WASHER, FLAT, 3/8, SAE
3	2	101966	PLT, SIDE, TAKE-UP, CHAIN, 2.250
2	2	101798	SHAFT, TAKE-UP, CHAIN
1	1	101797	PLT, SLIDING, TAKE-UP, CHAIN
ITM	QTY	PART NUM	DESCRIPTION

BILL OF MATERIALS			
ARPAC		9511 WEST RIVER ST. SCHILLER PARK, IL 60176	
UNLESS OTHERWISE SPECIFIED		FRACTIONS	± 1/64
ALL DIMENSIONAL TOLERANCES:		TWO (2) DECIMALS	± 0.010
		THREE (3) DECIMALS	± 0.005
		ANGLES	± 0.5°
DRAWN:	12/16/1997	BY:	JPC
RELEASED:	12/16/1997	SCALE:	0.75:1
DESCRIPTION:		SIZE:	A
		APPROVED BY:	JPC
ASSY, SLIDE, TAKE-UP, CHAIN, 2.250, STD			
			DRAWING NUMBER:
			101965

Arpac BOM

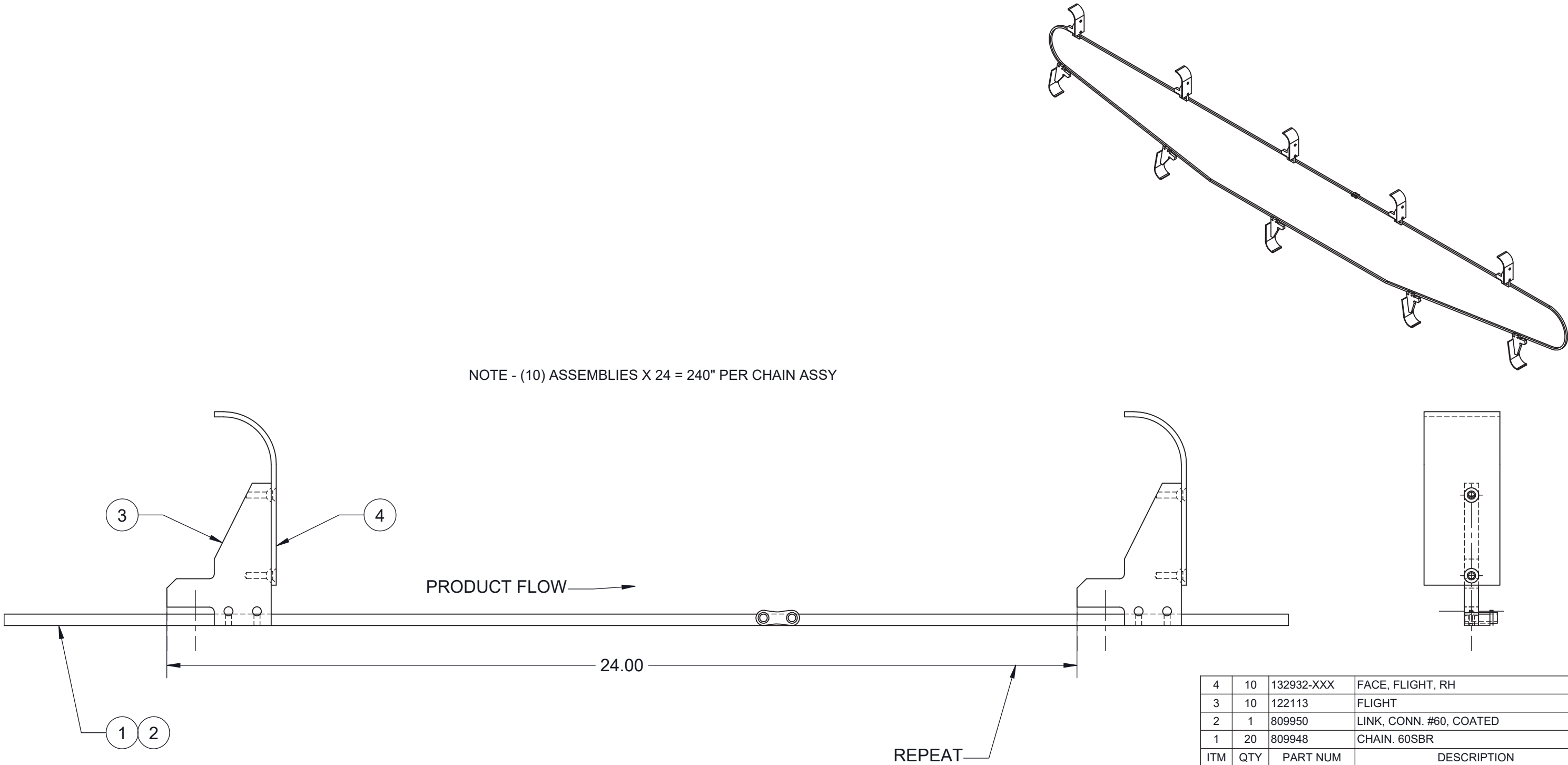
Parent Number: 15269 Parent Revision: B
Description: ASSY, FINAL, MACH, EL-2100, LH
Model: EL-2121

Assembly Part Number: 101965

Assembly Drawing Number: 101965
Description: ASSY, SLIDE, TAKE-UP, CHAIN, 2.250, STD,
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	101797	PLT, SLIDING, TAKE-UP, CHAIN,
2	1.00	101797	PLT, SLIDING, TAKE-UP, CHAIN,
3	2.00	101966	PLT, SIDE, TAKE-UP, CHAIN, 2.250,
4	5.59	900763	CRS THD ROD 3/8-16, RH, ZINC PLATED, B7
5	4.00	800278-008	FSNR, HHCS, 1/4-20 X 1,
6	2.00	800290-017	FSNR, NUT, HEX, 3/8-16,
7	4.00	800292-005	FSNR, WASHER, LOCK, SPLIT, 1/4,
8	4.00	800292-005	FSNR, WASHER, LOCK, SPLIT, 1/4,
9	4.75	900009	CRS FLAT 1/2 X 2, 1018
10	1.50	900554	CRS FLAT 1 X 2, 1018
12	1.00	300814	ROD, THREAD, 3/8-16
13	22.00	900763	CRS THD ROD 3/8-16, RH, ZINC PLATED, B7
14	1.00	300814	ROD, THREAD, 3/8-16

NOTE - (10) ASSEMBLIES X 24 = 240" PER CHAIN ASSY



4	10	132932-XXX	FACE, FLIGHT, RH
3	10	122113	FLIGHT
2	1	809950	LINK, CONN. #60, COATED
1	20	809948	CHAIN. 60SBR
ITM	QTY	PART NUM	DESCRIPTION

BILL OF MATERIALS

ARPAC		9511 WEST RIVER ST. SCHILLER PARK, IL 60176	
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONAL TOLERANCES:		FRACTIONS TWO (2) DECIMALS THREE (3) DECIMALS ANGLES	± 1/64 ± 0.010 ± 0.005 ± 0.5°
DRAWN: 12/16/2004	BY: HHG	SCALE: 0.375:1	SIZE: B
RELEASED:	FILENAME: 230434	APPROVED BY: HHG	
DESCRIPTION: ASSY, FLIGHT, TRAILING			
			DRAWING NUMBER: 230434

PART NUMBER	DESCRIPTION
230434-001	RH, AS SHOWN
230434-002	LH, OPPOSITE

Arpac BOM

Parent Number: 15269 Parent Revision: B
Description: ASSY, FINAL, MACH, EL-2100, LH
Model: EL-2121

Assembly Part Number: 230434-001
Assembly Drawing Number: 230434
Description: ASSY, FLIGHT, TRAILING, RH
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	20.00	809948	CHAIN, 60SBR NEO PERFEC, W/ D-3 @ 2 & 4 P ON A 32 PITCH REPEAT
2	1.00	809950	LINK, CONN, #60, NEO PERFECT COAT
3	10.00	122113	FLIGHT
4	10.00	132932-001	FACE FLIGHT, RH,
5	220.00	903576	SS SHEET 10GA, 304, #4 FINISH LASER VINYL
6	75.00	900077	AL FLAT 3/8 X 3, 6061-T6511
7	140.00	PLATING	PLATING FOR PARTS

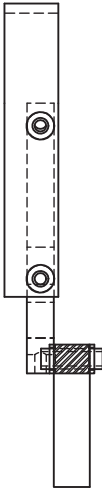
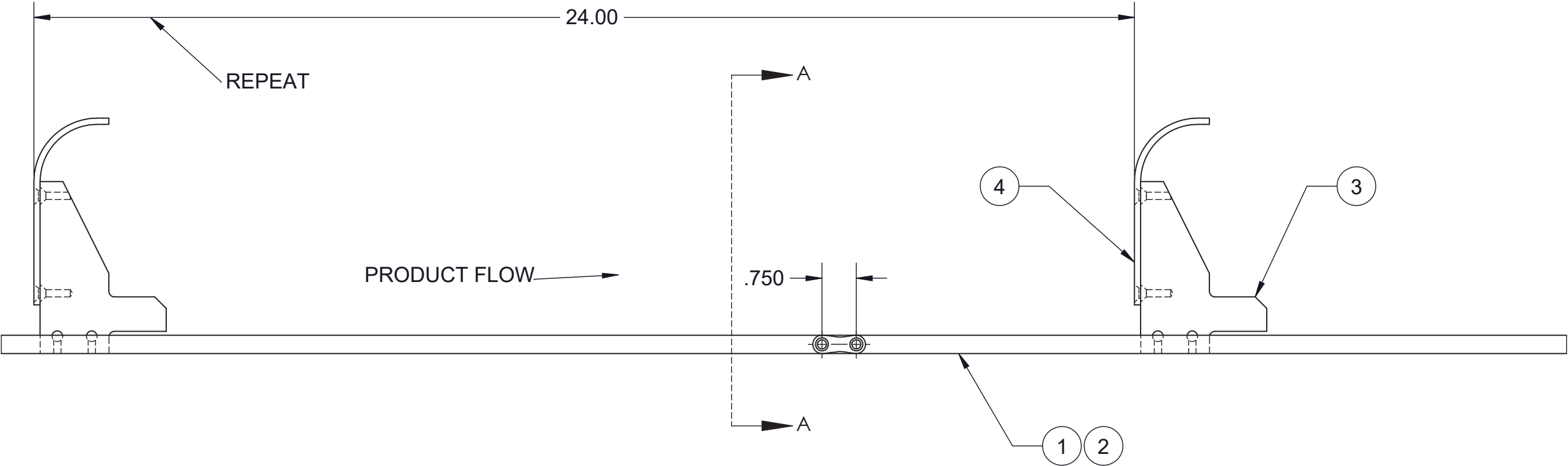
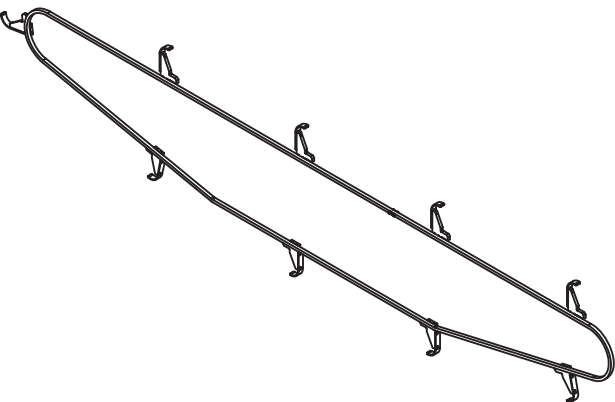
Arpac BOM

Parent Number: 15269 Parent Revision: B
Description: ASSY, FINAL, MACH, EL-2100, LH
Model: EL-2121

Assembly Part Number: 230434-002
Assembly Drawing Number: 230434
Description: ASSY, FLIGHT, TRAILING, LH
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	20.00	809948	CHAIN, 60SBR NEO PERFEC, W/ D-3 @ 2 & 4 P ON A 32 PITCH REPEAT
2	1.00	809950	LINK, CONN, #60, NEO PERFECT COAT
3	10.00	122113	FLIGHT
4	10.00	132932-002	FACE FLIGHT, LH,
5	9.50	903576	SS SHEET 10GA, 304, #4 FINISH LASER VINYL
6	75.00	900077	AL FLAT 3/8 X 3, 6061-T6511
7	140.00	PLATING	PLATING FOR PARTS

(9) ASSEMBLIES X 24 = 216" PER CHAIN ASSY



SECTION A-A

PART NUMBER	DESCRIPTION
141291-001	RH, AS SHOWN
141291-002	LH, OPPOSITE

4	9	132931-001	FACE, FLIGHT, RH
3	9	122113	FLIGHT
2	1	809950	LINK, CONN. #60, COATED
1	18	809948	CHAIN, 60SBR
ITM	QTY	PART NUM	DESCRIPTION

BILL OF MATERIALS

ARPAC		9511 WEST RIVER ST. SCHILLER PARK, IL 60176	
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONAL TOLERANCES:		FRACTIONS TWO (2) DECIMALS THREE (3) DECIMALS ANGLES	± 1/64 ± 0.010 ± 0.005 ± 0.5°
DRAWN: 03/20/2001	BY: TTR	SCALE: 0.375:1	SIZE: B
RELEASED: 03/20/2001	FILENAME: 141291	APPROVED BY: TTR	
DESCRIPTION: ASSY, FLIGHT, LEADING			
			DRAWING NUMBER: 141291

Arpac BOM

Parent Number: 15269 Parent Revision: B

Description: ASSY, FINAL, MACH, EL-2100, LH

Model: EL-2121

Assembly Part Number: 141291-002

Assembly Drawing Number: 141291

Description: ASSY, FLIGHT, LEADING, LH

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	18.00	809948	CHAIN, 60SBR NEO PERFEC, W/ D-3 @ 2 & 4 P ON A 32 PITCH REPEAT
2	1.00	809950	LINK, CONN, #60, NEO PERFECT COAT
3	9.00	122113	FLIGHT
4	9.00	132931-002	FACE FLIGHT, LH
5	220.00	903576	SS SHEET 10GA, 304, #4 FINISH LASER VINYL
6	67.50	900077	AL FLAT 3/8 X 3, 6061-T6511
7	140.00	PLATING	PLATING FOR PARTS

Arpac BOM

Parent Number: 15269 Parent Revision: B
Description: ASSY, FINAL, MACH, EL-2100, LH
Model: EL-2121

Assembly Part Number: 141291-001
Assembly Drawing Number: 141291
Description: ASSY, FLIGHT, LEADING, RH
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	18.00	809948	CHAIN, 60SBR NEO PERFEC, W/ D-3 @ 2 & 4 P ON A 32 PITCH REPEAT
2	1.00	809950	LINK, CONN, #60, NEO PERFECT COAT
3	9.00	122113	FLIGHT
4	9.00	132931-001	FACE FLIGHT, RH
5	220.00	903576	SS SHEET 10GA, 304, #4 FINISH LASER VINYL
6	67.50	900077	AL FLAT 3/8 X 3, 6061-T6511
7	140.00	PLATING	PLATING FOR PARTS

D

C

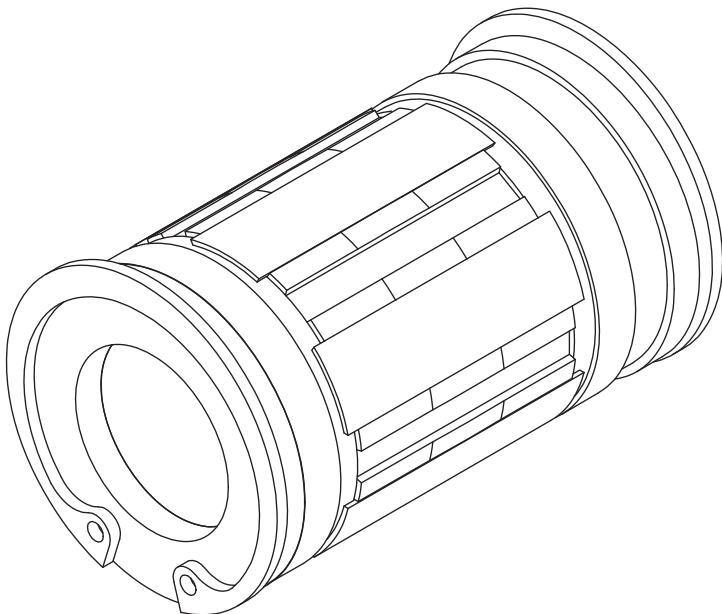
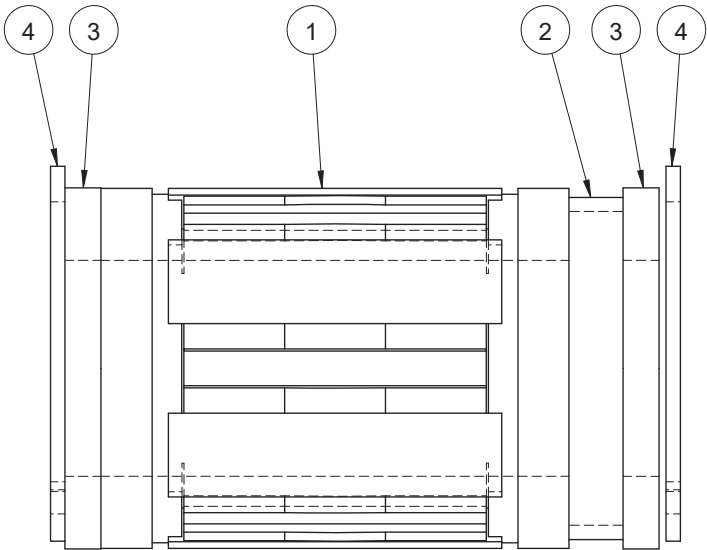
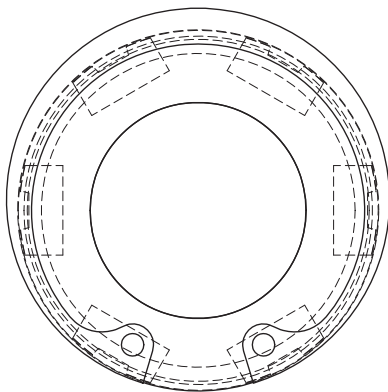
B

A

ARPAC B SIZE FORMAT R5

BILL OF MATERIALS			
ITEM	QTY	NUMBER	DESCRIPTION
1	1	823378	BUSH, BALL, 3/4 X 1-1/4 X 1-5/8 LG SUPER BALL
2	1	101169	SPACER, BUSH, 3/4" SHAFT, 4' LG BLK
3	2	802925	RING, SEAL, 3/4 X 1.254 X 0.125 THK
4	2	800335-019	RING, SNAP, INTERNAL, 1-1/4 BORE

NOTE: ITEM 5 NOT SHOWN



REV	DATE	BY	NOTE
REVISIONS			
SIZE	SCALE	MATERIAL	DESCRIPTION
B	3:2	SEE BILL OF MATERIALS	ASSY, BUSH, BRG, .75 SHAFT, SINGLE SUPER BALL BUSHING
3RD ANGLE	UNITS	FINISH	NUMBER
	INCH	NONE	226217
TOLERANCES			
X/X: ±1/32			
X.XX: ±.015			
X.XXX: ±.005			
ANGLES: ±1°			

NOTES • INTERPRET PER ASME Y14.5M-1994. • DIMENSIONS ARE IN INCHES [mm]. • DIMENSIONS IN PARENTHESES FOR REFERENCE ONLY. • BREAK SHARP EDGES AND CORNERS. • PROPRIETARY NOTICE: THIS INFORMATION IS THE PROPERTY OF ARPAC LLC AND SHALL NOT BE USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT WAS OBTAINED. • CREATED IN SOLIDWORKS 2013.		CREATED IN SOLIDWORKS 2013		 9555 W. Irving Park Rd Schiller Park, IL 60176 www.arpac.com	
		MODEL	FILE \ CONFIG SIMILAR TO DATE CREATED DATE UPDATED DATE UPDATED BY	226217\Default	
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D

C

B

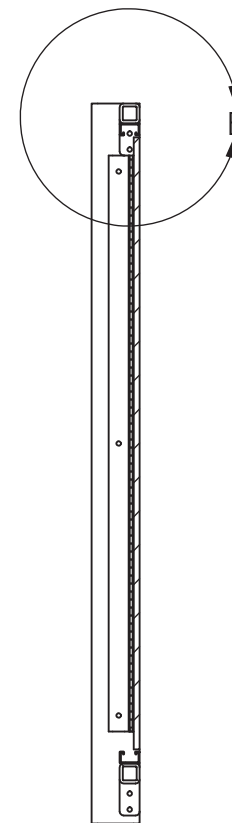
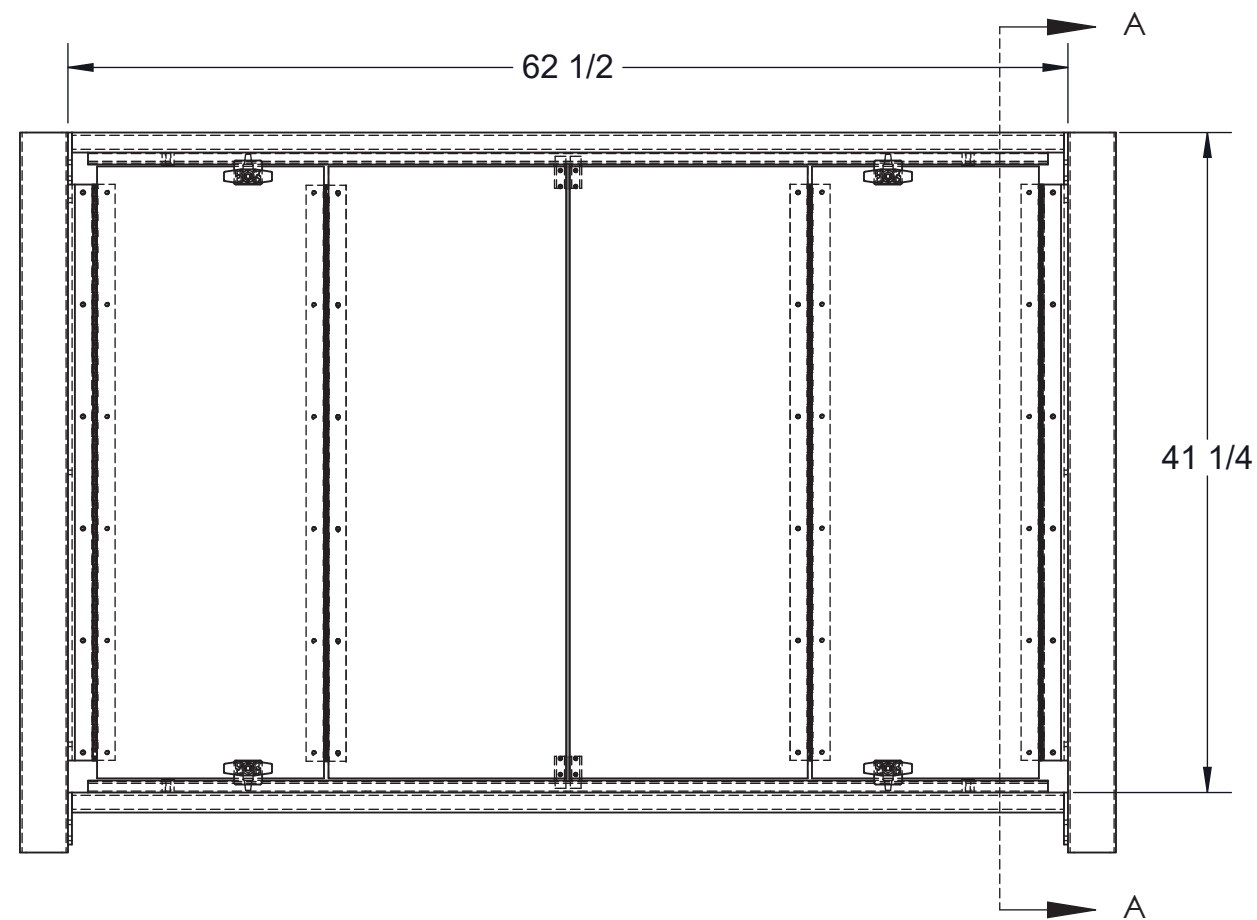
A

Arpac BOM

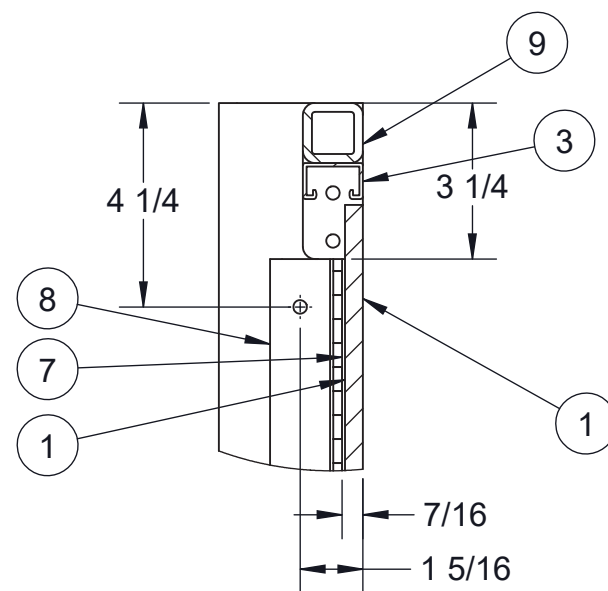
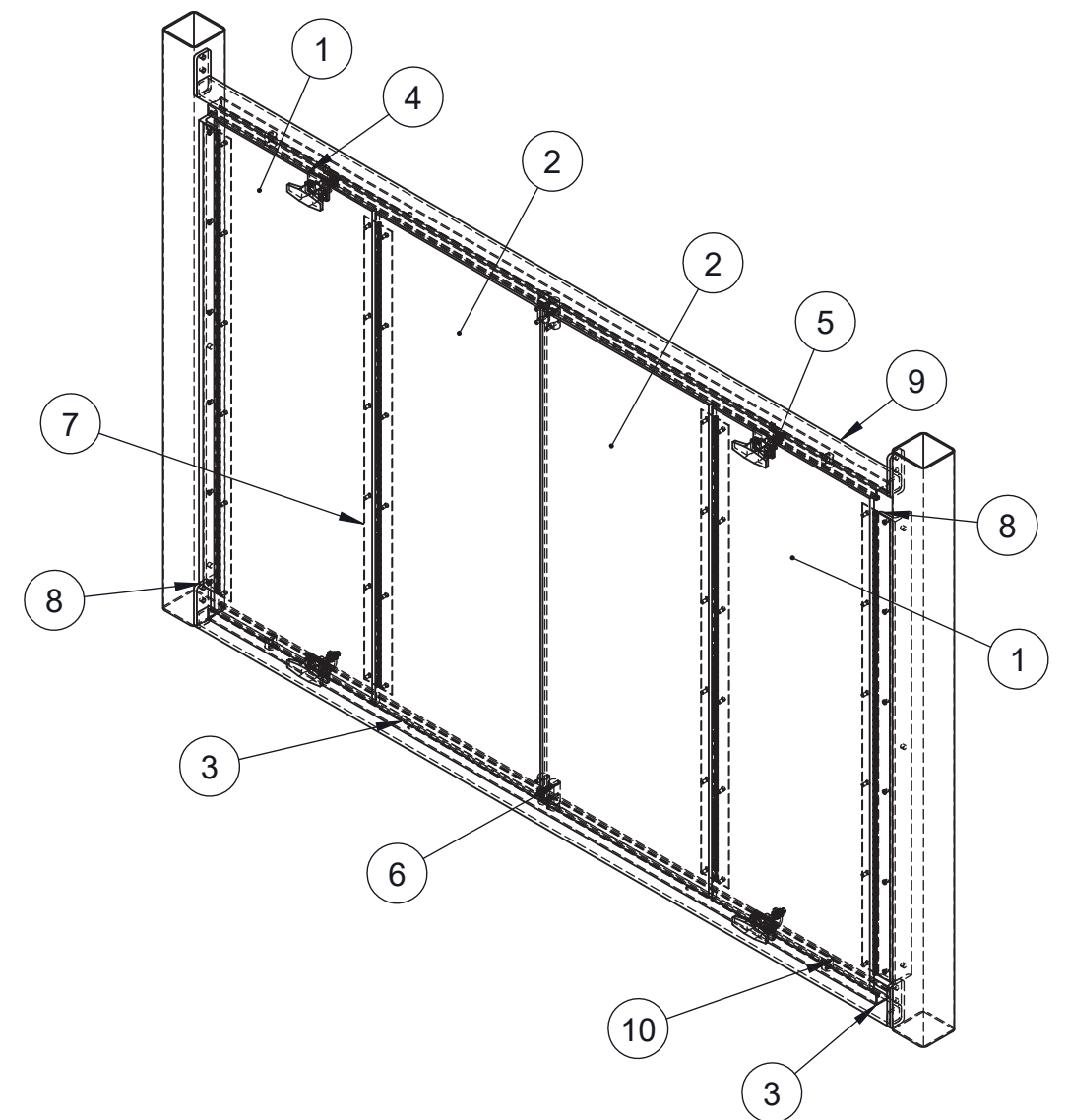
Parent Number: 15269 Parent Revision: B
Description: ASSY, FINAL, MACH, EL-2100, LH
Model: EL-2121

Assembly Part Number: 226217-000A
Assembly Drawing Number: 226217
Description: ASSY, BUSH, BRG, .75 SHAFT, SINGLE SUPER BALL BUSHING
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	823378	DUPLICATE PART USE 802722***BUSH, BALL, 3/4 X 1-1/4 X 1-5/8 LG SUPER BALL
2	1.00	101169	SPACER, BUSH, 3/4 SHAFT, 4.000 LG BLK,
3	2.00	802925	RING, SEAL, 3/4 X 1.254 X 0.125 THK,
4	2.00	800335-019	RING, SNAP, INTERNAL, 1-1/4 BORE,
5	1.00	802208	FTG, GREASE, 1/8 NPT, STRAIGHT, ZINC PL



SECTION A-A



DETAIL B
SCALE 1 : 4

10	4	101751	STOP, DR, BIFOLD
9	2	311578	WLDMNT, MTG, BI-FOLD DOOR
8	2	311582	ANGLE, MTG, GUARD, PANEL, FOLDING
7	4	311581	HINGE, DOOR, GUARD
6	4	292839	PIN, GUIDE
5	4	802653	LATCH, VISE-ACTION
4	4	292841	SPACER, LATCH
3	2	311584	CHANNEL, DOOR
2	2	311580	PANEL, FOLLOWING, DOOR, BI-FOLD
1	2	311583	PANEL, LEADING, DOOR, BI-FOLD
ITM	QTY	PART NUM	DESCRIPTION

BILL OF MATERIALS

ARPAC

9511 WEST RIVER ST.
SCHILLER PARK, IL 60176

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONAL TOLERANCES:

FRACTIONS
TWO (2) DECIMALS ± 1/64
THREE (3) DECIMALS ± 0.010
ANGLES ± 0.005
± 0.5°

DRAWN: 2/13/13

BY: HG

SCALE: 1:12

SIZE: B

FILENAME: 311585

DESCRIPTION:

ASSY, DOOR, BI-FOLD

ARPAC

DRAWING NUMBER:

311585

Arpac BOM

Parent Number: 15269 Parent Revision: B

Description: ASSY, FINAL, MACH, EL-2100, LH

Model: EL-2121

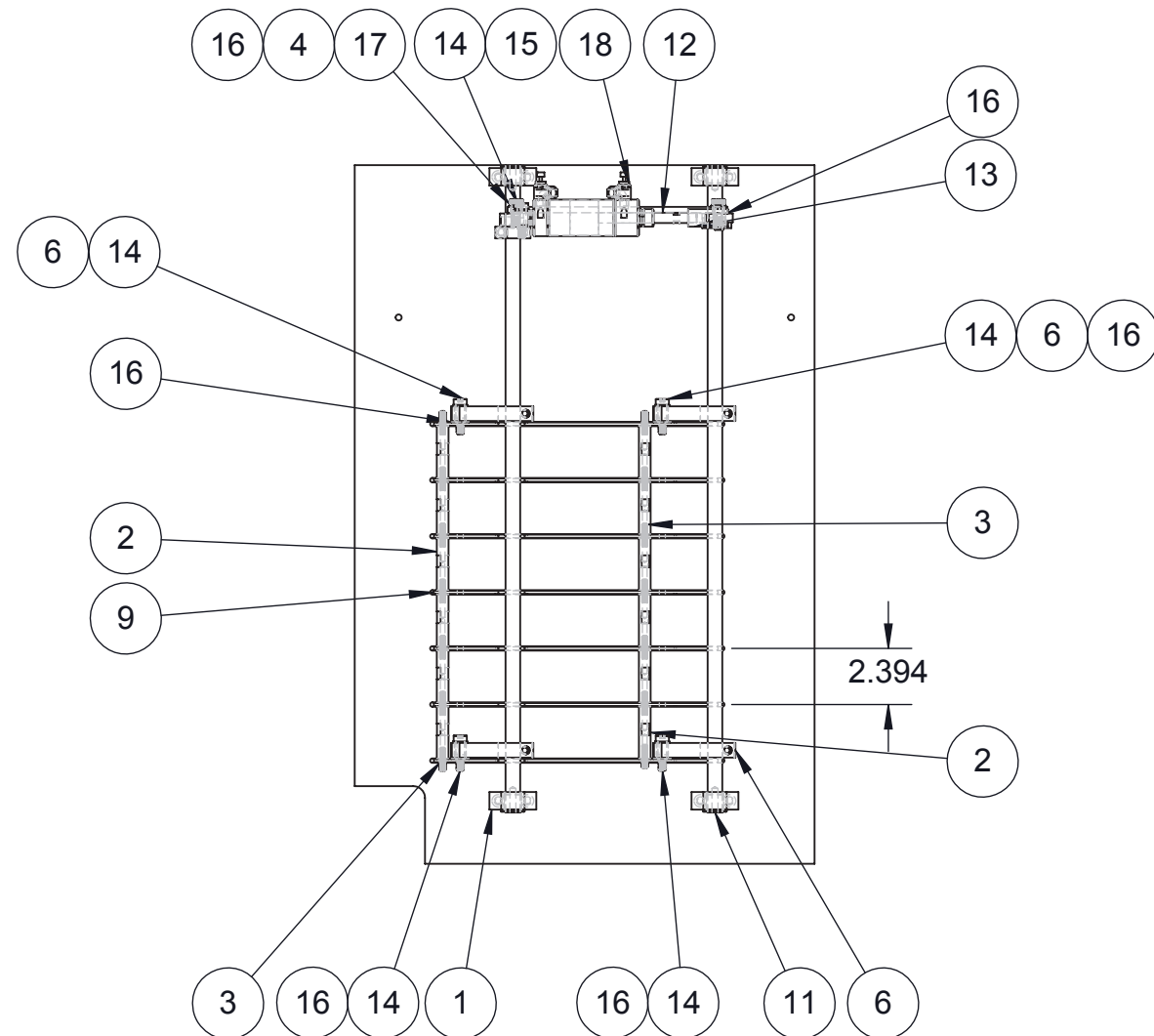
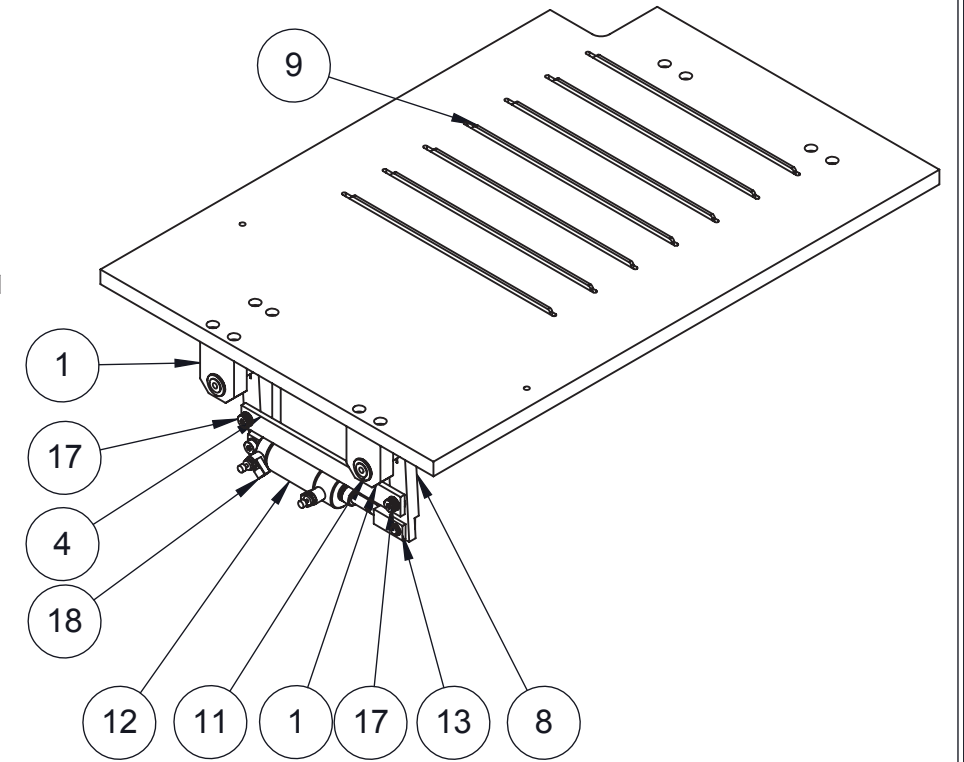
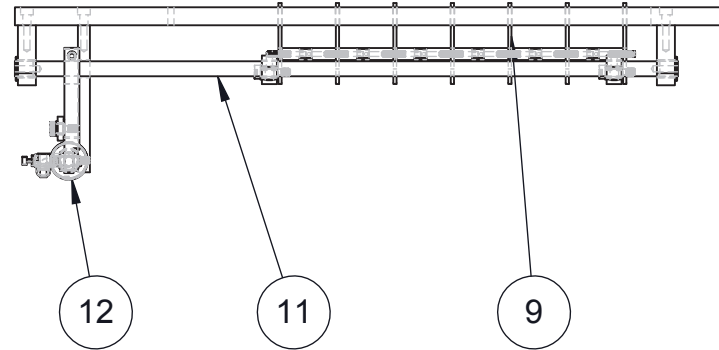
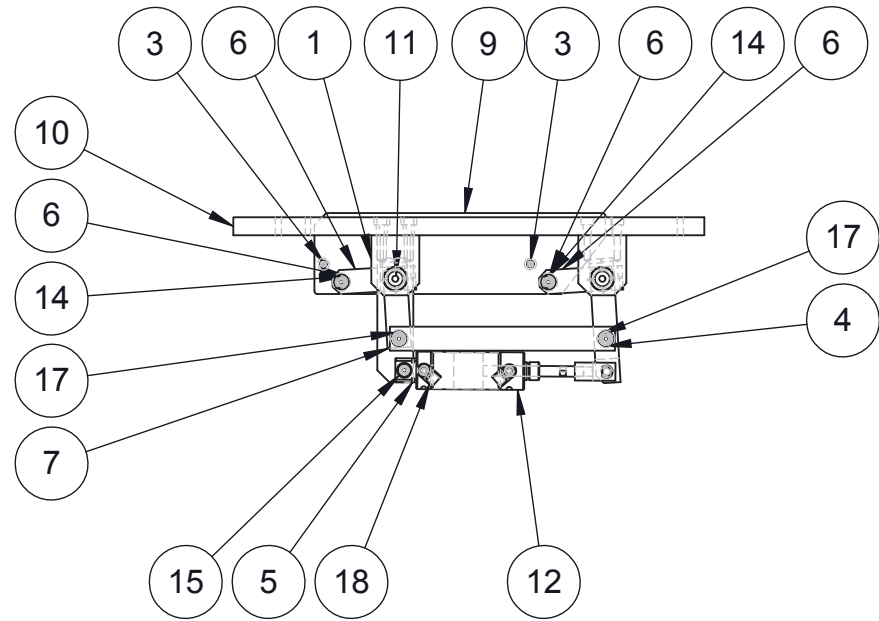
Assembly Part Number: 311585

Assembly Drawing Number: 311585

Description: ASSY, DOOR, BI-FOLD

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	2.00	311583	PANEL, LEADING, DOOR, BI-
2	2.00	311580	PANEL, FOLLOWING, DOOR, BI-
3	2.00	311584	CHANNEL, DOOR
4	4.00	292841	SPACER, LATCH
5	4.00	802653	LATCH, VISE-ACTION
6	4.00	292839	PIN, GUIDE
7	4.00	311581	HINGE, DOOR, GUARD
8	2.00	311582	ANGLE, MTG, BI-FOLD DOOR
9	2.00	311578	WLDMNT, MTG, BI-FOLD DOOR
10	4.00	101751	STOP, DOOR, BIFOLD,



18	2	800090	VALVE, CONTROL, FLOW, 1/8" 90DEG
17	2	800323-001	FSNR, BOLT, SHLDR, 3/8 DIA X 3/8 LG, 5/16-18 THD
16	6	800444	WSHR, OILITE, 0.390 X .750 X 1/32 THK
15	2	808142	WSHR, OILITE, 0.385 X 0.625 X 1/16 THK
14	5	800323-006	FSNR, BOLT, SHLDR, 3/8 DIA X 3/4 LG,
13	1	816090	CLEVIS, ROD, CYLINDER, 7/16-20
12	1	816087	CYL, AIR, 1 1/2 BORE, 1.5" STROKE REAR PIVOT, 3/8 BUSH, DOUBLE CUSHION
11	2	189987-002	SHAFT, PIVOT
10	1	364272	PLT, DEAD, POP-UP, LH, 2.09 DIA
9	7	215217	GUIDE, POP-UP
8	1	189983-001	CLAMP, LINK, DRIVE
7	1	189982	BAR, TIE, CLAMP
6	4	189981	CLAMP, PIVOT
5	1	189980	MNT, REAR, CYL
4	1	189979	BAR, TIE
3	14	800342-011	FSNR, SCREW, SET, 1/4-20 X 1, SS
2	12	197925-096	SPACER, LANE, POP-UP, L=2.280
1	4	186781	PIVOT, SIDE
ITM	QTY	PART NUM	DESCRIPTION

BILL OF MATERIALS

ARPAC

9511 WEST RIVER ST.
SCHILLER PARK, IL 60176

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONAL TOLERANCES:

FRACTIONS ± 1/64
TWO (2) DECIMALS ± 0.010
THREE (3) DECIMALS ± 0.005
ANGLES ± 0.5°

DRAWN: 3/26/2019

BY: JW

SCALE: 1:8

SIZE: B

FILENAME: 364277

DESCRIPTION:

ASSY, GUIDE, POP-UP, 6-LANE, LH, 2.09 DIA PROD

3

DRAWING NUMBER:

364277

Arpac BOM

Parent Number: 15269 Parent Revision: B
Description: ASSY, FINAL, MACH, EL-2100, LH
Model: EL-2121

Assembly Part Number: 364277
Assembly Drawing Number: 364277
Description: ASSY, GUIDE, POP-UP, 6-LANE, LH, 2.09 DIA PROD
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	4.00	186781	PIVOT, SIDE
2	12.00	197925-096	SPACER, LANE, POP-UP, L=2.260
3	14.00	800342-011	FSNR, SCREW, SET, 1/4-20 X 1, SS
4	1.00	189979	BAR, TIE
5	1.00	189980	MNT, REAR, CYL
6	4.00	189981	CLAMP, PIVOT
7	1.00	189982	BAR, TIE, CLAMP
8	1.00	189983-001	CLAMP, LINK, DRIVE STD, RH MACH,
9	7.00	215217	GUIDE, POPUP, SS
10	1.00	364272	PLT, GUIDE, POP-UP, 6-LANE, LH, 2.09 DIA PROD
11	2.00	189987-002	SHAFT, PIVOT, 0.625 DIA, 5/16-18 TAPPED, BOTH ENDS, 27.625 LG
12	1.00	816087	CYL, AIR, 1 1/2 BORE, 1.5" STROKE REAR PIVOT, 3/8 BUSH, DOUBLE CUSHION
13	1.00	816090	CLEVIS, ROD, CYLINDER, 7/16-20
14	5.00	800323-006	FSNR, BOLT, SHLDR, 3/8 DIA X 3/4 LG,
15	2.00	808142	WSHR, OILITE, 0.385 X 0.625 X 1/16 THK
16	6.00	800444	WSHR, OILITE, 0.390 X 0.750 X 1/32 THK
17	2.00	800323-001	FSNR, BOLT, SHLDR, 3/8 DIA X 3/8 LG, 5/16-18 THD
18	2.00	800090	VALVE, CONTROL, FLOW, 1/8" 90DEG

ARPAC B SIZE FORMAT R5.1

2

1

D

C

B

A

BILL OF MATERIALS			
ITEM	QTY	NUMBER	DESCRIPTION
1	1	364282	WLDMT, PLT, CLAMP, PRODUCT, 2 X 5-1/2
2	1	803375	RUBBER, SPONGE SILICONE SH 3/8 X 36 X 36

NOTE: GLUE ITEMS 1 AND 2 TOGETHER FIRMLY WITH SILICONE ADHESIVE

PART NUMBER	ITEM 1
364283	364282
364283-001	364282-001

REV	DATE	BY	NOTE
REVISIONS			

NOTES • INTERPRET PER ASME Y14.5M-1994. • DIMENSIONS ARE IN INCHES [mm]. • DIMENSIONS IN PARENTHESES FOR REFERENCE ONLY. • BREAK SHARP EDGES AND CORNERS. • PROPRIETARY NOTICE: THIS INFORMATION IS THE PROPERTY OF ARPAC LLC AND SHALL NOT BE USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT WAS OBTAINED. • CREATED IN SOLIDWORKS 2018.	CREATED IN SOLIDWORKS 2018		ARPAC A DURAVANT COMPANY 9555 W. Irving Park Rd. Schiller Park, IL 60176 www.arpac.com	SIZE B	SCALE 3:4	MATERIAL SEE BILL OF MATERIALS	DESCRIPTION ASSY, CLAMP, STOP, PRODUCT, 2 X 5-1/2	
	MODEL	FILE \ CONFIG SIMILAR TO DATE CREATED DATE UPDATED UPDATED BY		364283\Default Tuesday, May 1, 2012 3:03:45 PM Wednesday, March 27, 2019 2:16:21 PM sarcher	3RD ANGLE 			UNITS INCH
	DRAFT	DATE CREATED DATE UPDATED UPDATED BY		Wednesday, March 27, 2019 2:18:50 PM Wednesday, March 27, 2019 2:33:49 PM sarcher	TOLERANCES X/X: ±1/32 X.XX: ±.015 X.XXX: ±.005 ANGLES: ±1°			

D

C

B

A

"C:\ARPAC_VAULT\Designs\CORRUGATED\EL-2100\15269\364283.slddrw" accessed Wednesday, March 27, 2019.

SHEET 1 OF 1

Arpac BOM

Parent Number: 15269 Parent Revision: B
Description: ASSY, FINAL, MACH, EL-2100, LH
Model: EL-2121

Assembly Part Number: 364283
Assembly Drawing Number: 364283
Description: ASSY, CLAMP, STOP, PRODUCT, 2 X 5-1/2
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	364282	WLDMT, PLT, CLAMP, PRODUCT, 2 X 5-1/2
2	0.10	803375	RUBBER, SPONGE SILICONE SH 3/8 X 36 X 36 (SEE COMMENTS)

Arpac BOM

Parent Number: 15269 Parent Revision: B

Description: ASSY, FINAL, MACH, EL-2100, LH

Model: EL-2121

10.1 Introduction

This section contains an overview of ARPAC®'s field service policies.

10.2 Field Service Policy

10.2.1 Objective

To furnish our customer with prompt, competent, and complete service so they can operate at optimum efficiency.

10.2.3 Service Personnel

ARPAC®'s field technicians are experienced in the servicing of ARPAC® equipment, are qualified to instruct customer's personnel in correct operation and maintenance procedures of ARPAC® equipment. ARPAC® Field Service Technicians are fully supported by factory and all Engineering Departments.

10.2.4 Training

The ARPAC® Group is pleased to provide free lifetime access to ARPAC® University's regularly scheduled technical training courses for customers purchasing a packaging machine from ARPAC® or its distributors.

These technical training courses will focus on theory of operation, machine setup and operation, preventive maintenance and long-term care. Many specific machine courses are available on ARPAC® bundler, horizontal, corrugated, and stretch wrapping machines. These regularly scheduled 1 day or 2 day courses are held approximately every 12 weeks at the ARPAC® University and Demo Room located near O'Hare airport in Chicago. Class demand will influence the frequency of these class offerings.

For further information or a current technical training calendar and agenda, contact ARPAC®'s training department at 847-678-9034 ext 4088.

Custom machine specific training courses can be developed for delivery at your location or at ARPAC®. For further information and a quotation, contact ARPAC®'s training department.

10.2.5 ARPAC Commitment

- Be readily available to communicate with the customer(s).
- Service Technicians available for supervision and instruction of personnel at prevailing rates and expenses.
- Upon arrival of the ARPAC® Service Technician, he should be able to commence immediately, minimize "downtime" of your production facilities and commence training of your personnel.

10.2.6 Scheduling Service

At least 10-days advance notice is required for scheduling personnel. Emergencies will be handled as quickly as possible. If assistance is required during installation or operation of the system or if you need information pertaining to system-related problems not covered by this manual, please contact ARPAC® Service Dept. (telephone (847) 678-9034.

10.3 Installation Policy

10.3.1 Objective

To furnish our customer with prompt, competent, and complete service so they can operate at optimum efficiency. Failure to use factory trained personnel for initial machine start-up may void the warranty.

10.3.2 Service Personnel

ARPAC®'s field technicians are experienced in the servicing of ARPAC® equipment, and are qualified to instruct customer's personnel in the correct operation and maintenance procedures of ARPAC® equipment. ARPAC® Field Service Technicians are fully supported by factory and all Engineering Departments.

10.3.3 Training

ARPAC® personnel are available for ARPAC® equipment training, either on site hands-on, or in a classroom environment supported by visual aids and literature to be administered under separate purchase order.

The ARPAC® Group is also pleased to provide free lifetime access to ARPAC® University's regularly scheduled technical training courses for customers purchasing a packaging machine from ARPAC® or its distributors.

These technical training courses will focus on theory of operation, machine setup and operation, preventive maintenance and long-term care. Many specific machine courses are available on ARPAC® bundler, horizontal, corrugated, and stretch wrapping machines.

These regularly scheduled 1 day or 2 day courses are held approximately every 12 weeks at the ARPAC® University and Demo Room located near O'Hare airport in Chicago. Class demand will influence the frequency of these class offerings.

For further information or a current technical training calendar and agenda, contact ARPAC®'s training department at 847-678-9034 ext 4088.

Custom machine specific training courses can be developed for delivery at your location or at ARPAC®. For further information and a quotation, contact ARPAC®'s training department.

10.3.4 ARPAC® Commitment

- To furnish equipment per quotation.
- Be readily available to communicate with the customer(s) to facilitate start-up.
- Service Technicians available for start-up supervision and instruction of personnel at prevailing rates and expenses.
- Upon arrival of the ARPAC® Service Technician, he should be able to commence immediately, minimize "downtime" of your production facilities and commence training of your personnel.

10.3.5 Customer On-Site Preparation

- Unload, unpack, and inspect the equipment for any freight damage (apparent or hidden). If there is any damage, the Bill of Lading will need to be signed, noting the damage. You will then need to file all the necessary freight claims with the appropriate carrier. All shipments are freight collect and you are responsible for any damages in transit.
- Remove all interfering equipment and clear area where equipment is to be installed.
- Assemble/erect subject equipment.
- Lag system to floor.
- Furnish all electrical wiring and connections per system requirements.

- Furnish any air and/or gas lines and connections if required.
- Integrate with any existing up and/or down stream equipment.
- Provide qualified technicians, operators, and maintenance personnel to start-up system.

10.3.6 Scheduling Service

If assistance is required during installation or operation of the system or if you need information pertaining to system-related problems not covered by this manual, please contact ARPAC[®] Service Dept. (telephone (847) 678-9034).

10.3.7 Aftermarket Contact Information

Contact information for parts and service is listed below. Please have your machine's model number and serial number ready when calling. Also have a Purchase Order number when calling.

ARPAC[®] Parts Contact Information

Phone: (847) 678-9034

Fax: (847) 678-2109

parts@arpac.com

**Hours of operation Monday through Friday,
7:30 AM to 6:00 PM (Central Time)**

ARPAC[®] Service Contact Information

Phone (847) 678-9034

Fax: (866) 365-4131

**Hours of Operation Monday through Friday,
8:00 AM to 5:30 PM (Central Time)**

After Hour Emergency Service: (847) 678-9034