



ARPAC[®]

A DURAVANT COMPANY

Operation and Maintenance Manual

**Model:
EL-2000 Series**

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Record of Revisions



i.1. Revision History

REV	Date	Reason for Change
A	August 2011	Original
B	December 2017	Design Changes
C	June 2019	Design Changes

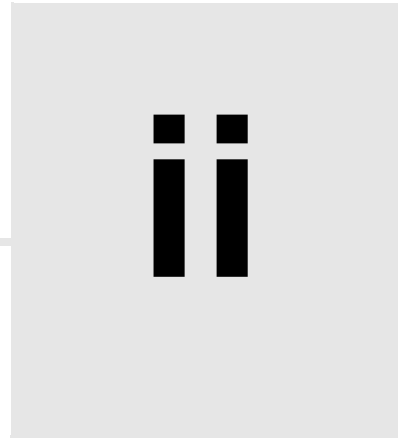
Table i-1. Revision History

i.2. List of Affected Pages

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

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.

Introduction

1.1. Introduction

Congratulations on the purchase of your ARPAC packaging equipment. We sincerely appreciate your business.

For 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 delivery solutions to producers of food, beverage, building supplies, automotive products, printed publications, personal care products and a wide variety of packaged goods.

1.2. Contact Information

ARPAC's corporate offices and production facilities are 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

1.3. Using This Manual

This manual is an operations and maintenance manual for the ARPAC 708-HBD shrink bundling system. 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 trouble-free 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, but not directly related to a specific hazard.



Indicates explanatory information on complex or difficult procedures.



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

**Required
Tools**

1.3.2. Photo's & Illustrations

Photographs and illustrations appear through out the manual for informational purposes. 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.

1.4. Safety

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.

1.4.1. 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.

1.4.2. Conventions in this Manual

Hazardous alerts; Dangers, Warnings, Cautions and Notices listed in the manual are intended to draw your attention to a particular condition that may pose a safety concern, that if not avoided, will or could result in injury or death.



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)

1.4.3. Safety Precautions

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.

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.

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.

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.

1.4.4. Safety Labels

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

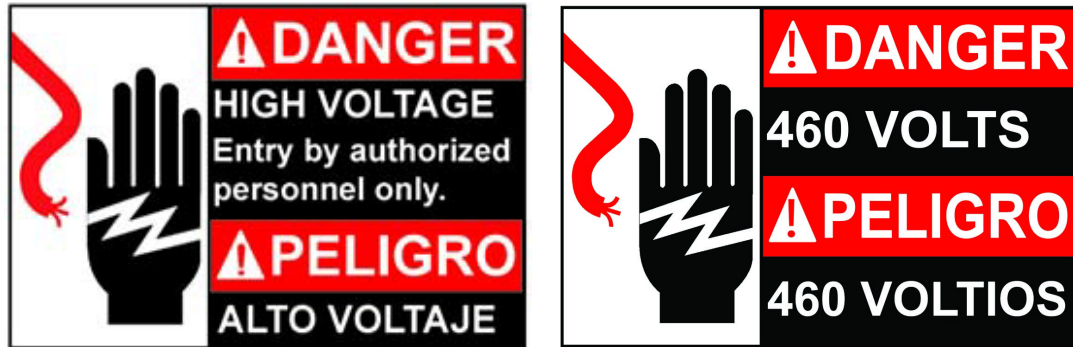


Figure 1-1 - Red & Black labels indicate DANGER hazards

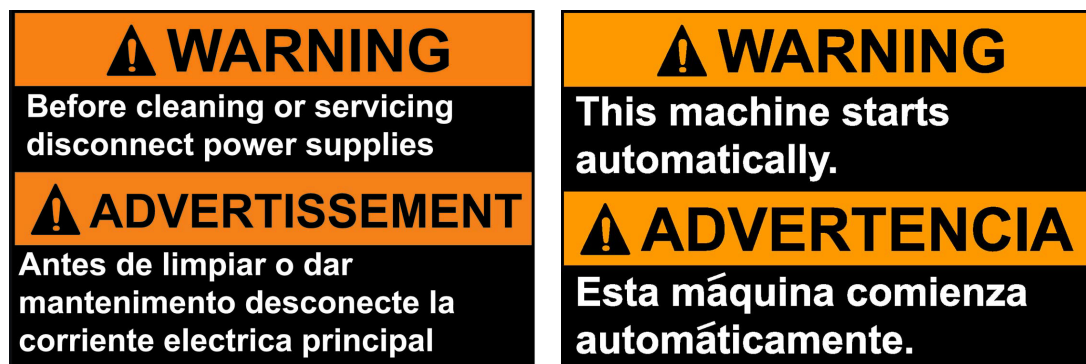


Figure 1-2 - Orange & Black labels indicate WARNING hazards

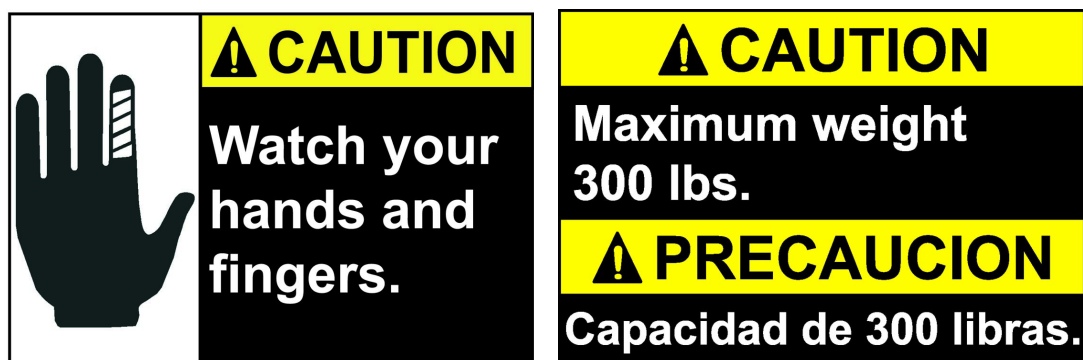


Figure 1-3 - Yellow & Black labels indicate a Caution hazardous situation

1.5. Installation Considerations

Due to the size and type of the equipment, disassembly of major components is typically required for shipping. Precise installation instructions are not available, but the following should be considered.



Rigging and installation of this equipment should only be performed by personnel qualified to perform heavy equipment rigging and with the equipment necessary to perform these types of tasks.

NOTICE

Contact SupportPro, ARPAC's after-market support group, if you require additional installation assistance.

1.5.1. Site Preparation & Other Considerations

The following has to be considered when planning for the rigging and installation of this equipment:

- Have and review the equipment layout drawings and electrical schematics prior to beginning this process.
- Firm, level work areas with suitable ground bearing capacity for the loads imposed by the equipment and the machinery used to position the equipment is required. Be sure to consider and plan for adequate space to maneuver.
- Ensure unrestricted/uninterrupted pathways from the equipment storage area (if not being installed upon arrival) or receiving area. Minimum clearance of pathways to be 11' wide by 12' high.
- Check with local authorities regarding any zoning and/or permit requirements. Obtaining any required permits and all taxes are the responsibility of the end user.

1.5.2. Material Handling Equipment Required

The following heavy rigging equipment is necessary, at a minimum, to install this equipment:

- Forklift (Minimum 6500 lbs Load Capacity) with extended forks and/or lifting straps (if ceiling heights will allow) and side shift capabilities



Required Tools

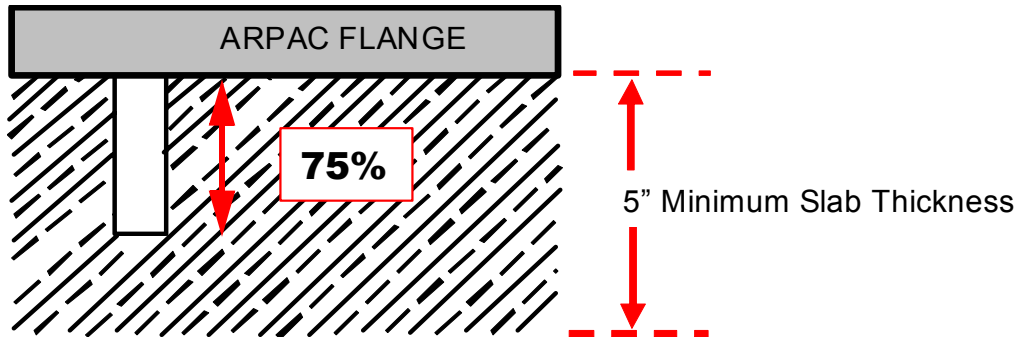
In addition to the rigging equipment, you need the following tools for this procedure:

- Pry Bar, Utility Knife, Diagonal Cutters and other tools to remove equipment from shipping crates
- 6' & 8' Ladders
- Machine Levels, Chalk-Lines and other marking tools
- Power and Hand Tools to include: Hammer Drills for anchoring, Sockets, Wrenches, Screwdrivers, etc.
- Plenty of fasteners of various sizes, wire ties, etc.

1.5.3. Anchoring the Equipment

The equipment is required to be anchored or secured to the floor by generally accepted rigging practices.

Local rules, laws, requirements and generally accepted rigging principles supersede these guidelines, but at a minimum, the following should be followed when anchoring the equipment to the floor:



Use 1/2-13 concrete anchor bolts and lagging shields. The length of the bolt is determined by the thickness of the concrete floor. Only drill down 75% of the concrete floor thickness as not to break through the bottom of the concrete slab. Also, when drilling stay away a minimum of 12" from the edge of the slab and avoid drilling through any surface cracks.



Failure to properly secure the equipment to the floor can result in severe injury to personnel and possible damage to the equipment.



The process of rigging and installing this equipment may require the temporary removal of safety design elements. Failure to properly reinstall and to confirm the functionality of all safety devices prior to and during the power up, start up and commissioning could result in severe injury.

1.5.4. 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.

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.

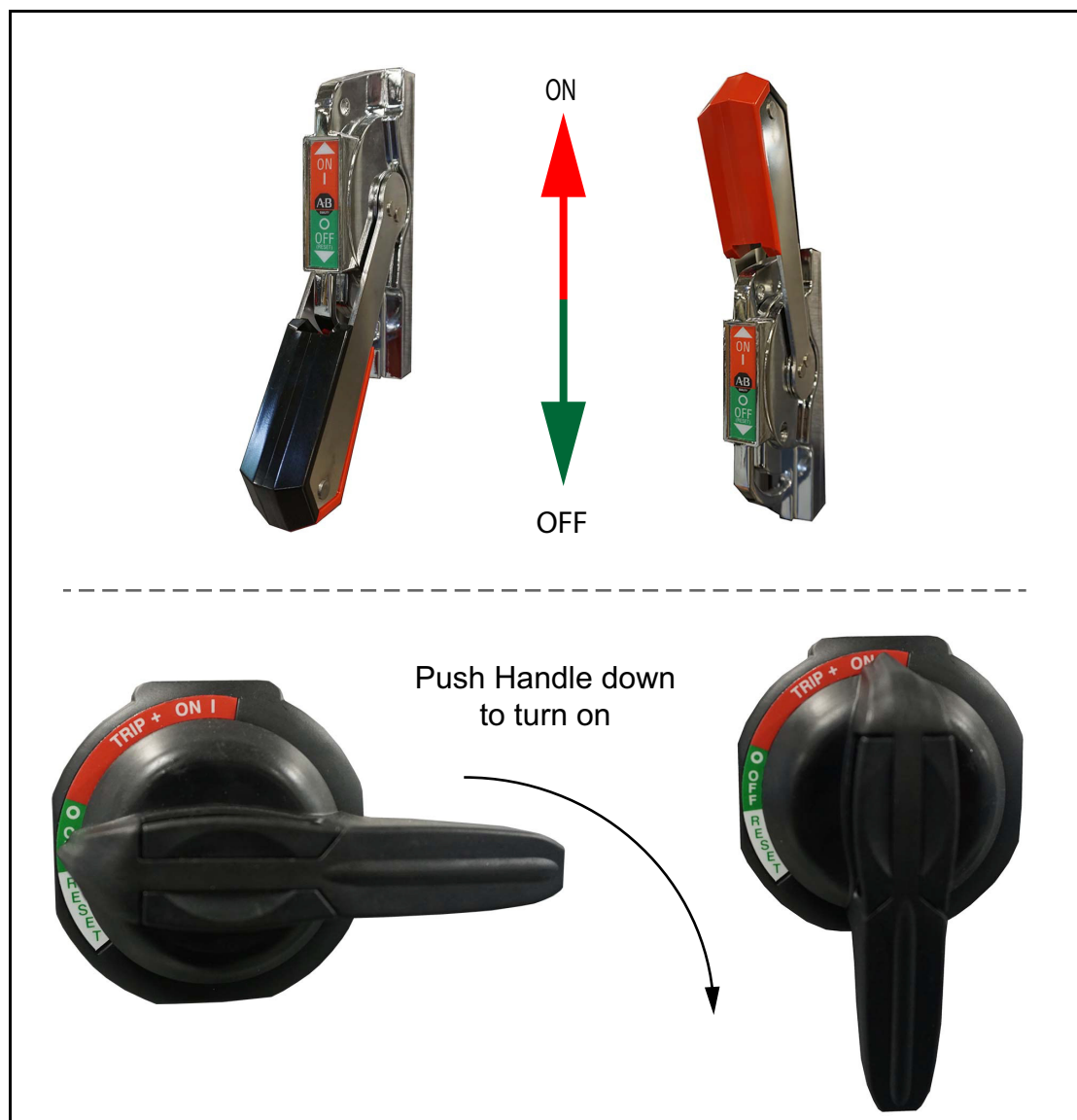


Figure 1-4 - Two Main Disconnect Switch Options

1.5.5. Emergency Stop Buttons

There are several emergency stop buttons located on the machine. 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.

NOTICE

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



If the Wrapper is integrated with a tunnel, activating an E-Stop will stop the tunnel conveyor belt. If machine stops with product in it, remove it as soon as it is safe to do so. Product could potentially catch fire or explode if you do not. Do not try to push product out with your hands.

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.



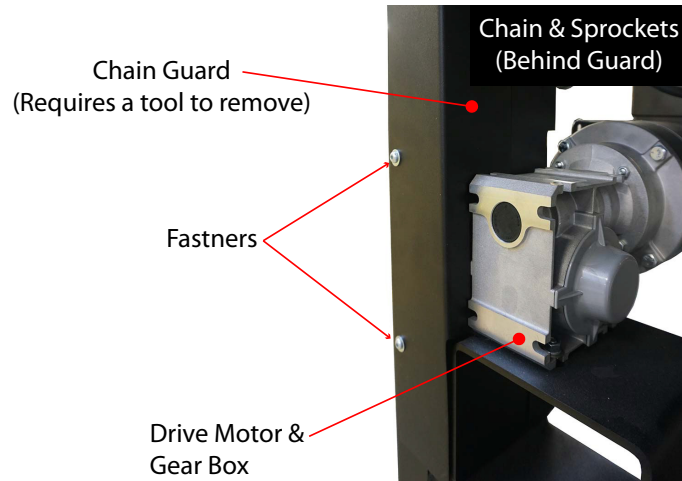
Figure 1-5 - E-Stop Button

1.5.6. Chain Guards Guard Doors



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

Chain guards are bolted to the machine, requiring a tool to remove.



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.



Figure 1-6 - Guard Door & Interlock Switch Example

1.5.7. 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 1-7 - 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.

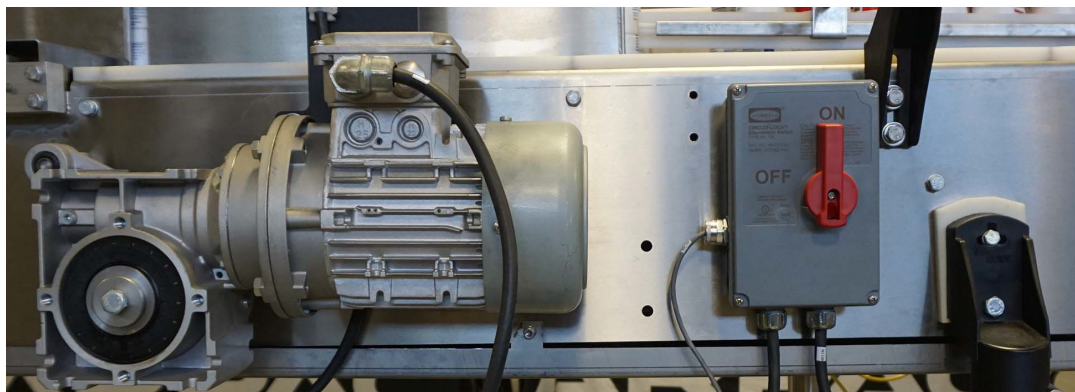


Figure 1-8 - Disconnect Location Example

1.5.8. 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

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 1-9 - Typical LOTO Kit

1.5.9. 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.)

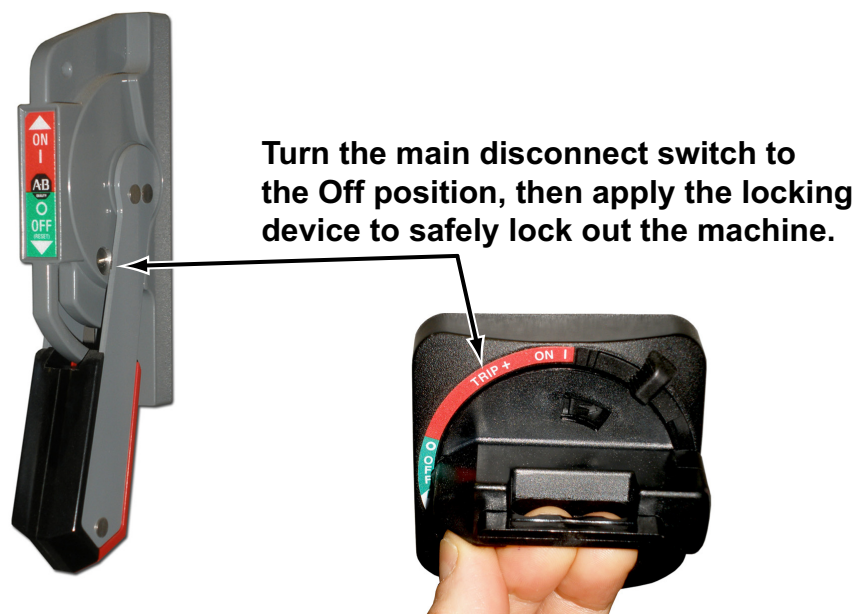


Figure 1-10 - Lockout/Tagout at Main Disconnect



Never assume power has been isolated. Always verify.

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

1.5.10. 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.

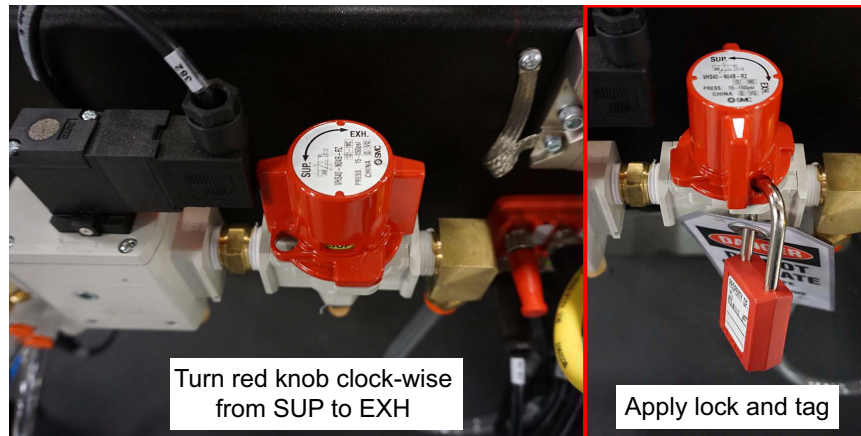


Figure 1-11 - Lockout/Tagout at Pneumatic Regulator Example

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

1.5.11. 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.

Machine Overview

2.1. 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.

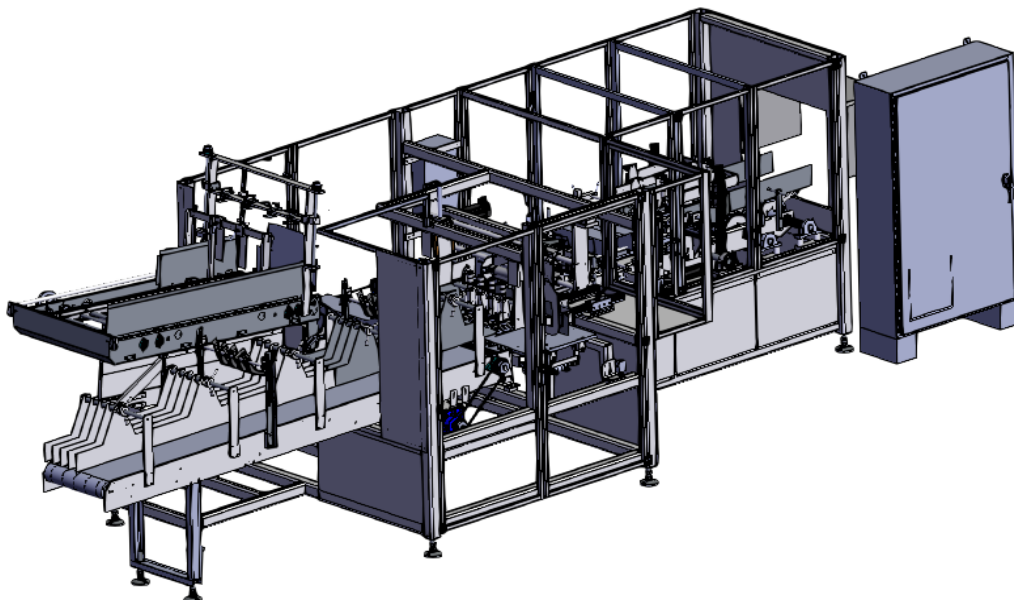
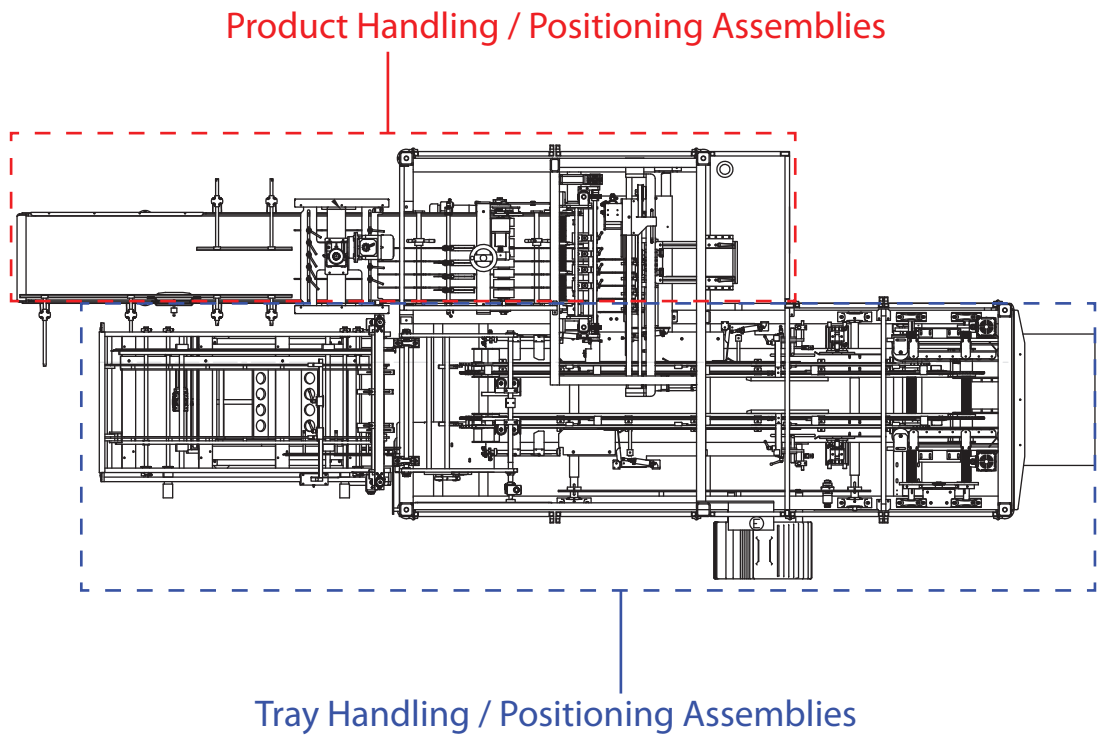


Figure 2-1 - EL-2000 Series Tray/Case Loader



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

2.2. Product Handling / Positioning Assemblies

2.2.1. Infeed Conveyor

The infeed 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 2-2 - 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.

2.2.2. 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.

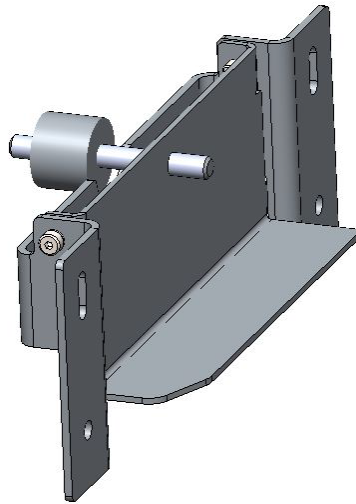
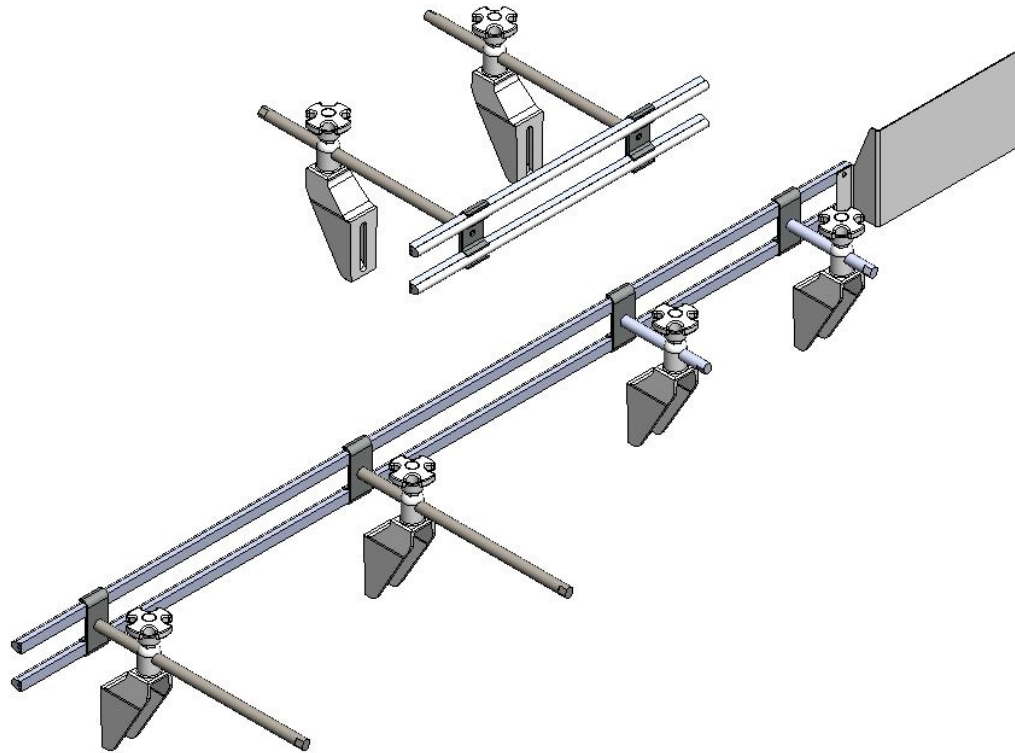


Figure 2-3 - Accumulation Detector

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

2.2.3. 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.



2.2.4. 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.

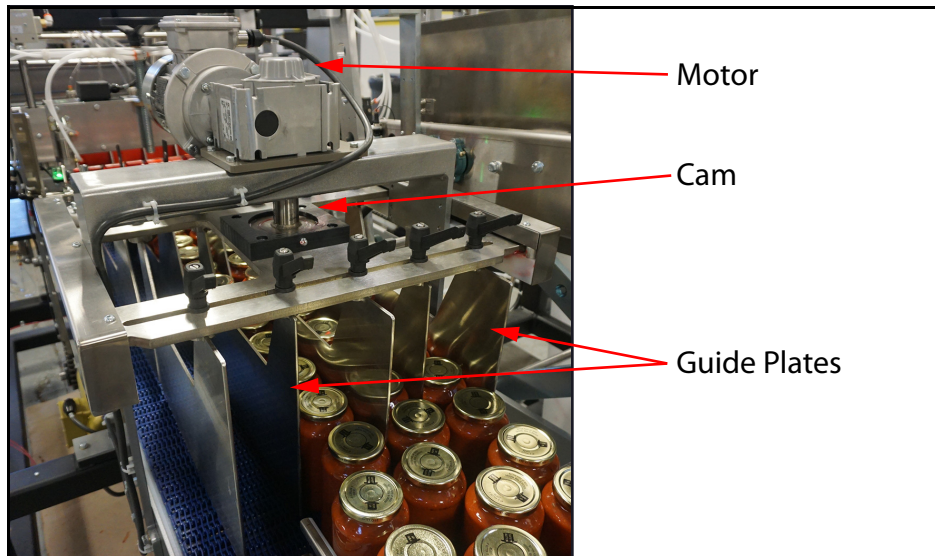
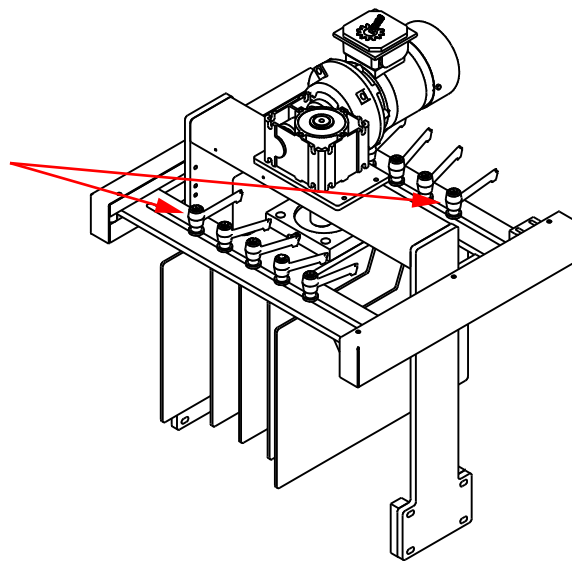


Figure 2-4 - Agitator

Loosen kip handles
to manually adjust the
width of the lanes to
the product



2.2.5. Product Detect

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



Figure 2-5 - 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.

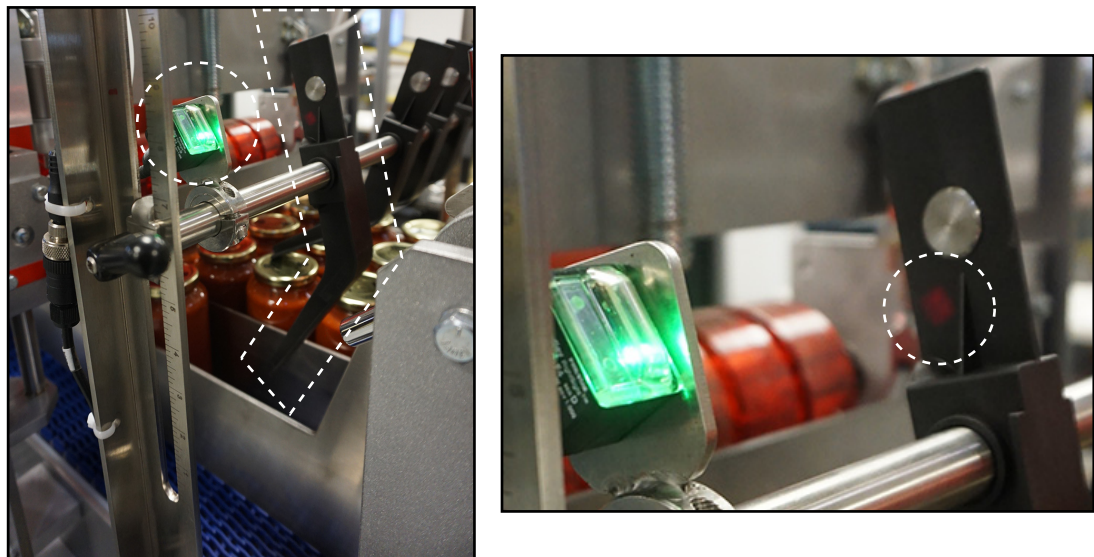


Figure 2-6 - Product detect Photo-Eye

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.

2.2.6. 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 2-7 - 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.

Stepper Motor

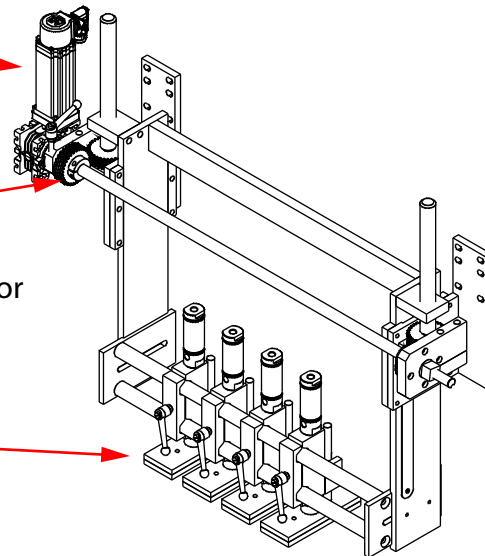
Automatically sets the height position of the stops based off the parameter set in the HMI

Gear Rack

Transfers the linear motion of the motor to raise and lower the assembly

Product Stops

Individually positioned in each lane. Each stop has it's own air cylinder.



2.2.7. 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.

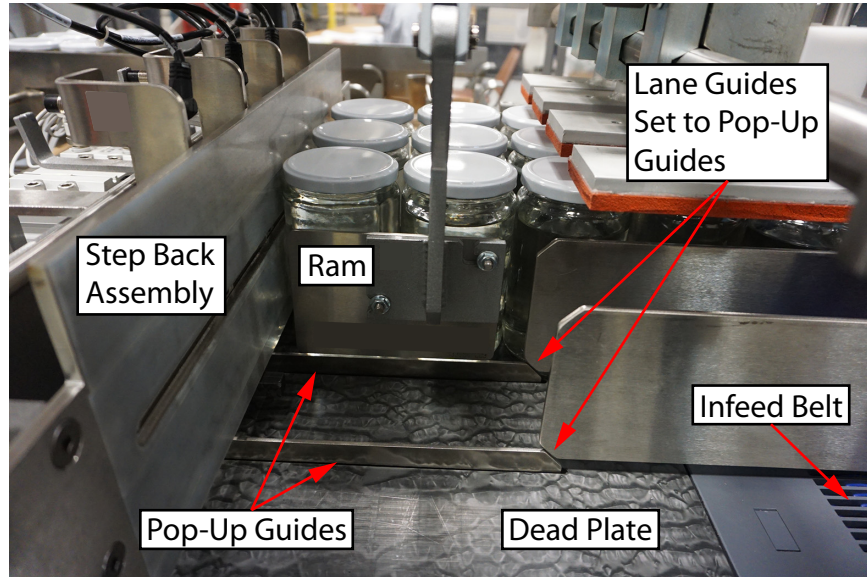
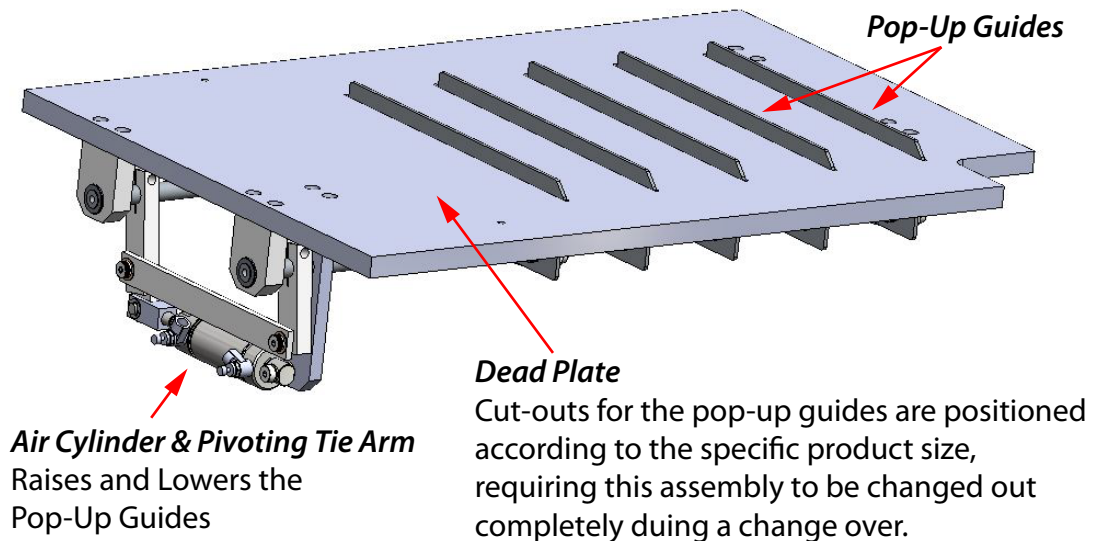


Figure 2-8 - Dead Plate with Pop-Up Guides

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.



2.2.8. 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.

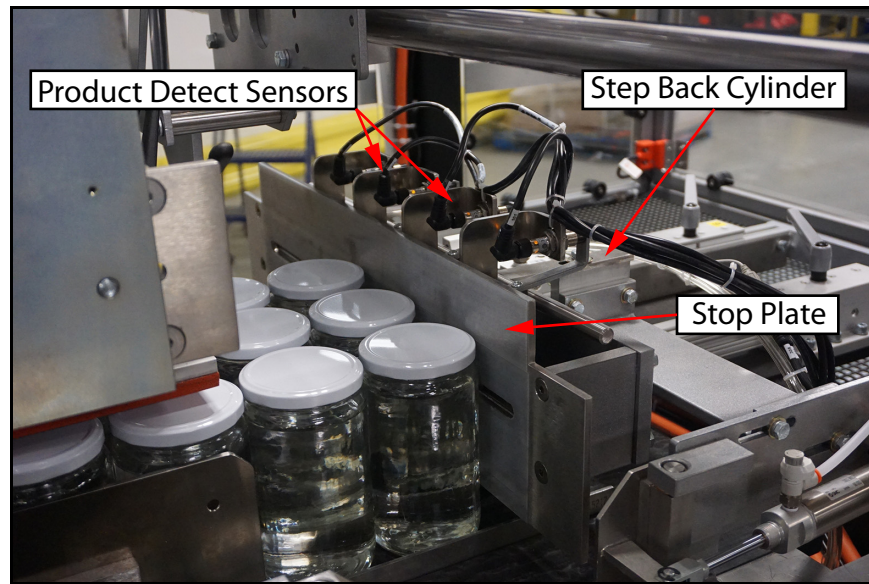
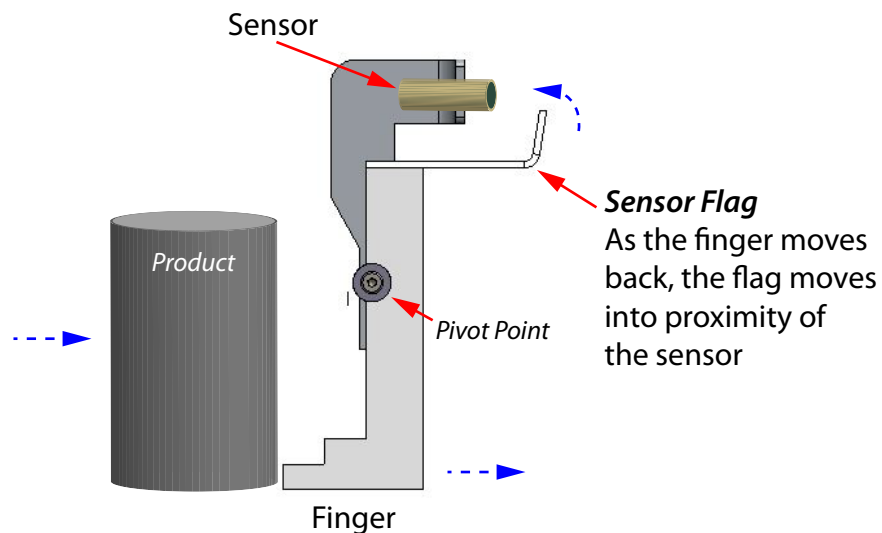


Figure 2-9 - Step back Assembly

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.

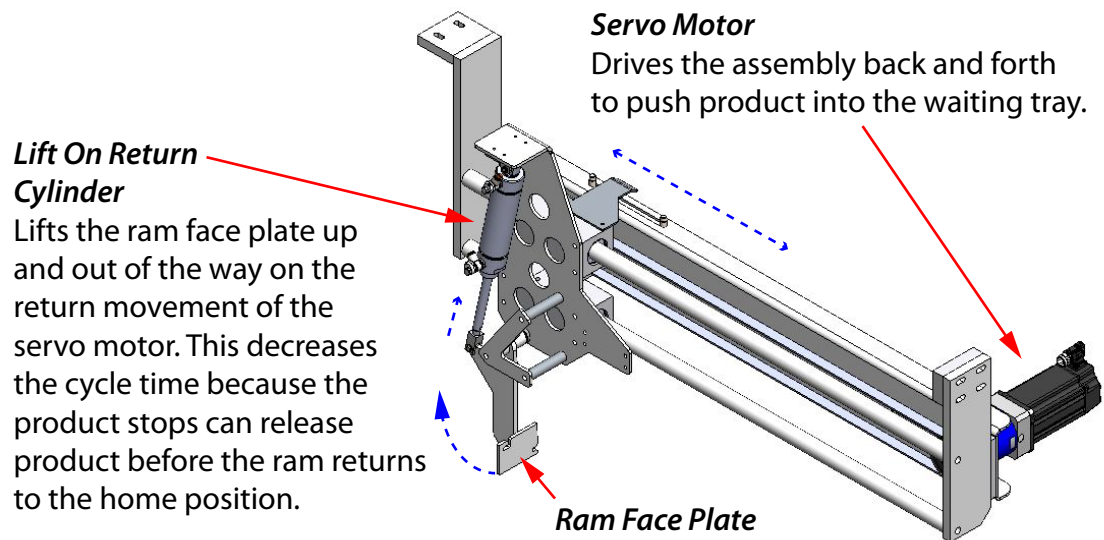


2.2.9. Servo Ram

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 2-10 - Servo Ram



2.2.10. Upstream Downstream 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.

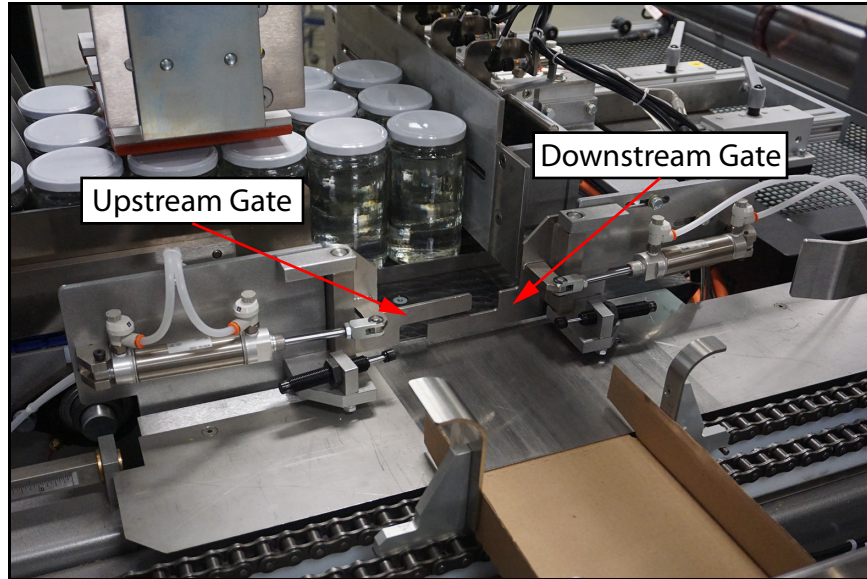


Figure 2-11 - Upstream & Downstream Gates

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.

2.3. Tray Handling / Positioning Assemblies

2.3.1. 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.

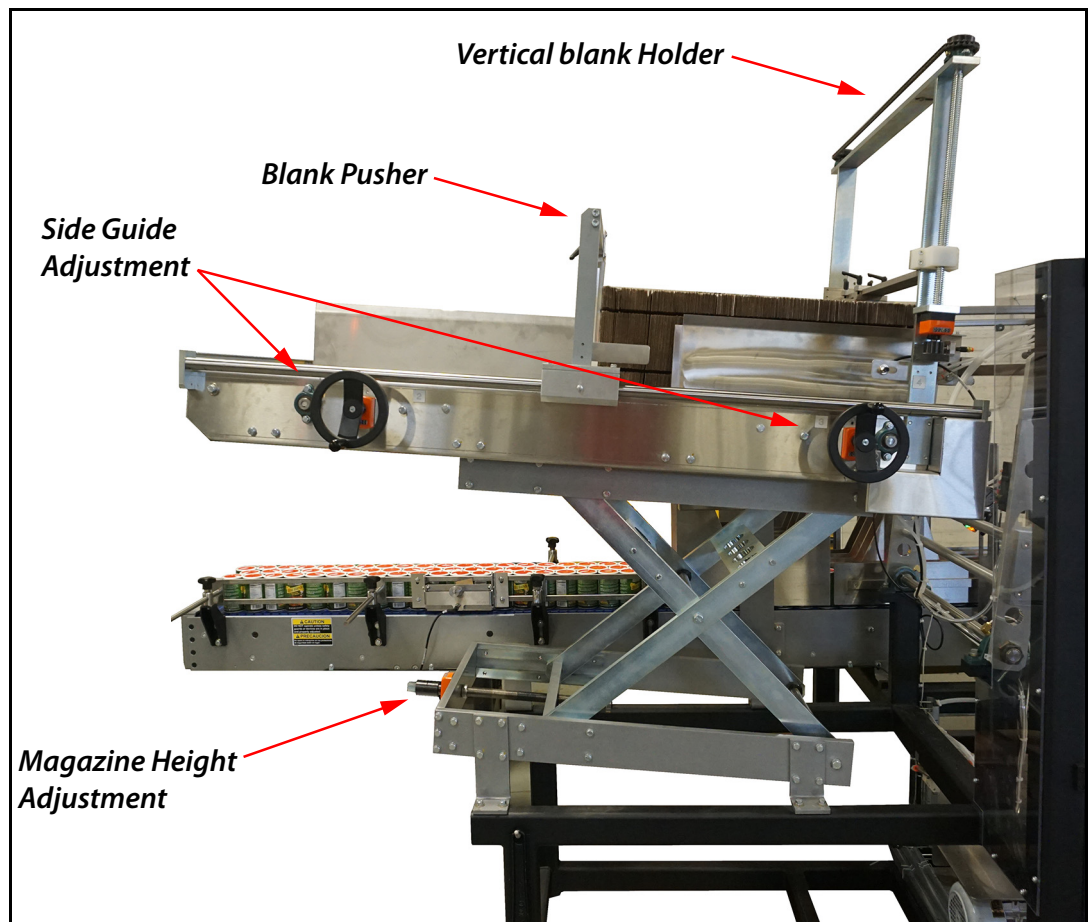


Figure 2-12 - Blank Magazine

2.3.2. 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.

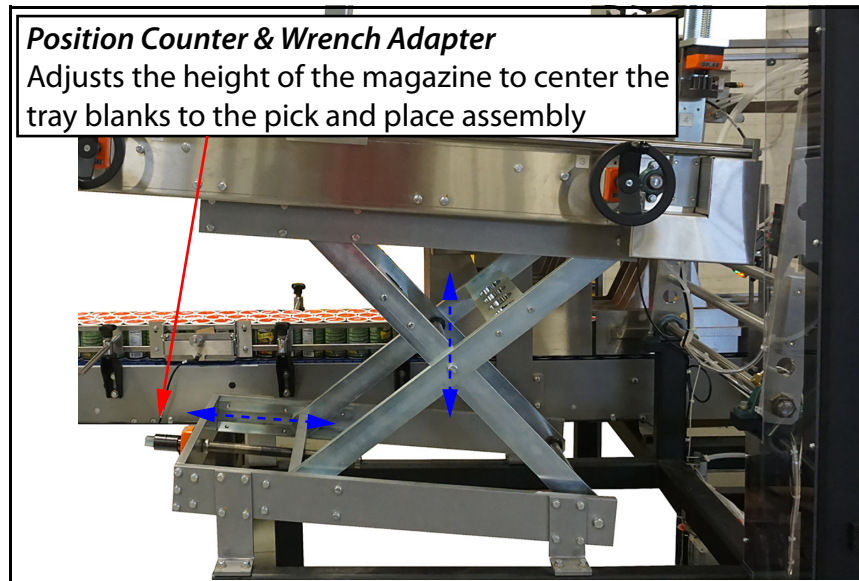


Figure 2-13 - Position Counter & Wrench Adaptor

2.3.3. Side Guide Adjustment

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

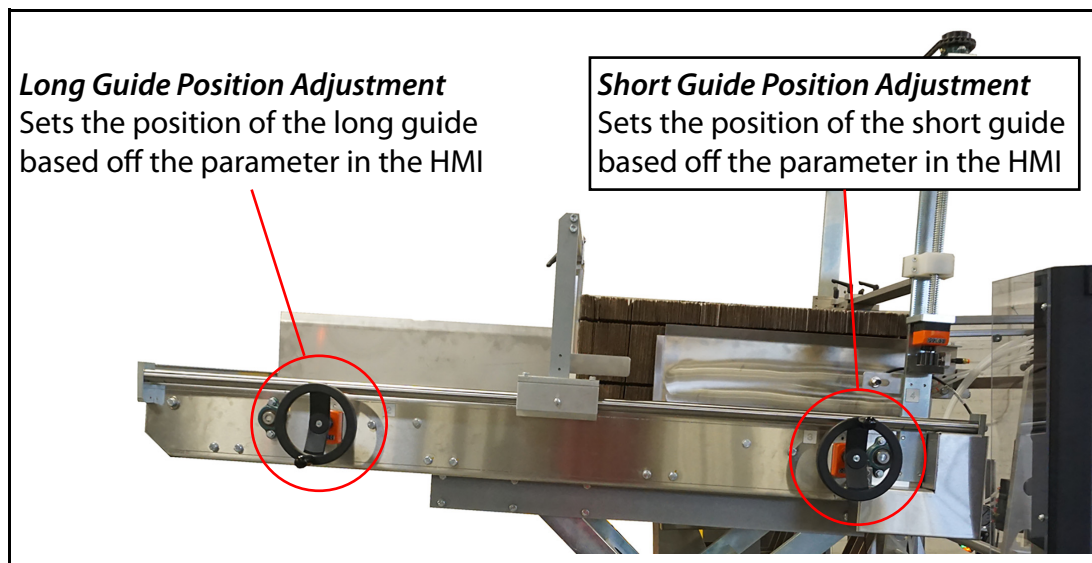


Figure 2-14 - Guide Adjustments

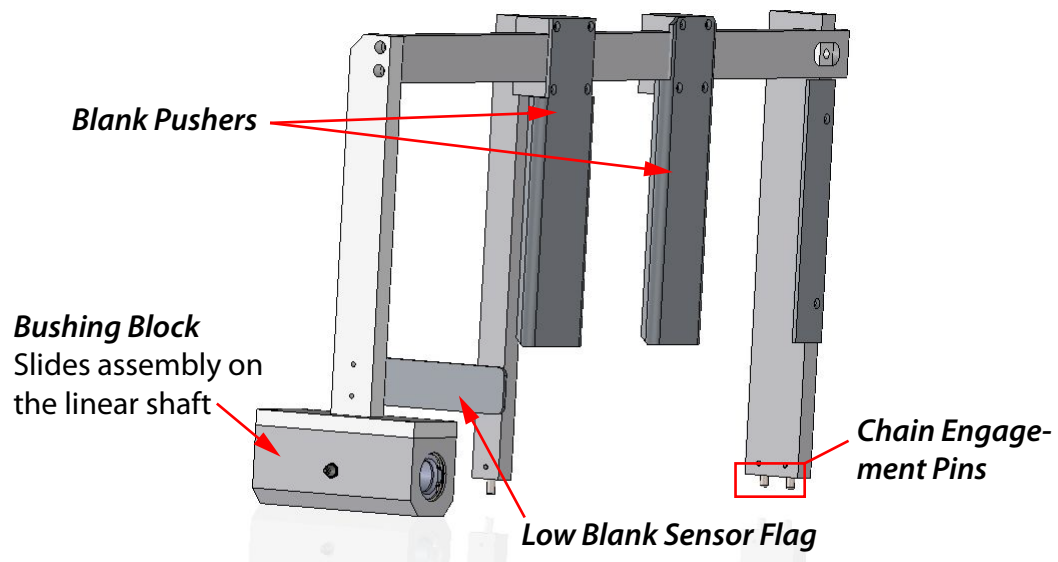
2.3.4. Blank Pusher Assembly

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



Figure 2-15 - Blank Pusher Assembly

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



2.3.5. Blank Advance Actuator

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

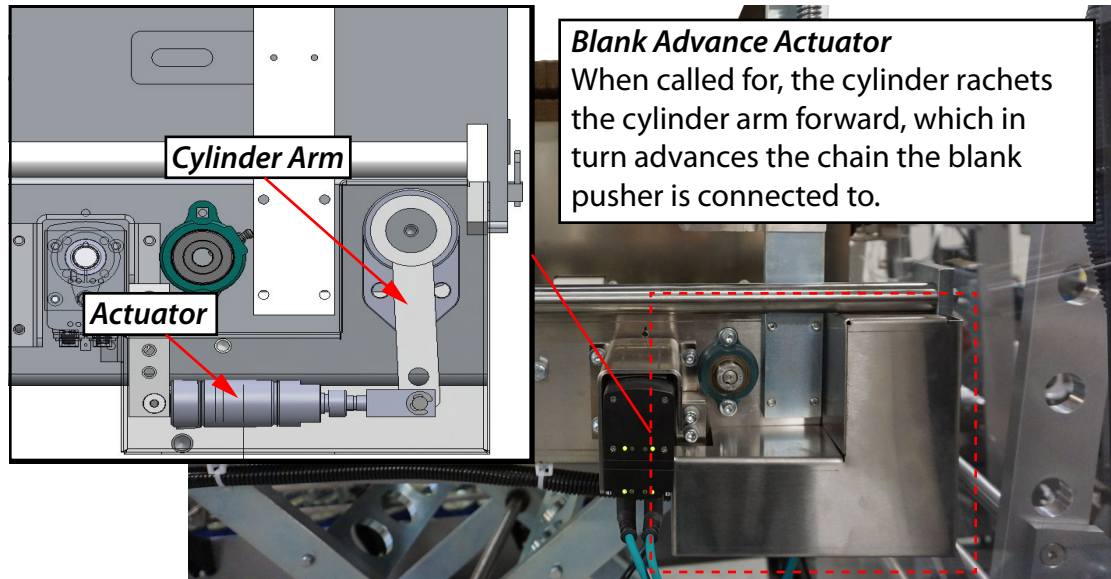


Figure 2-16 - Blank Advance Actuator

2.3.6. 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.

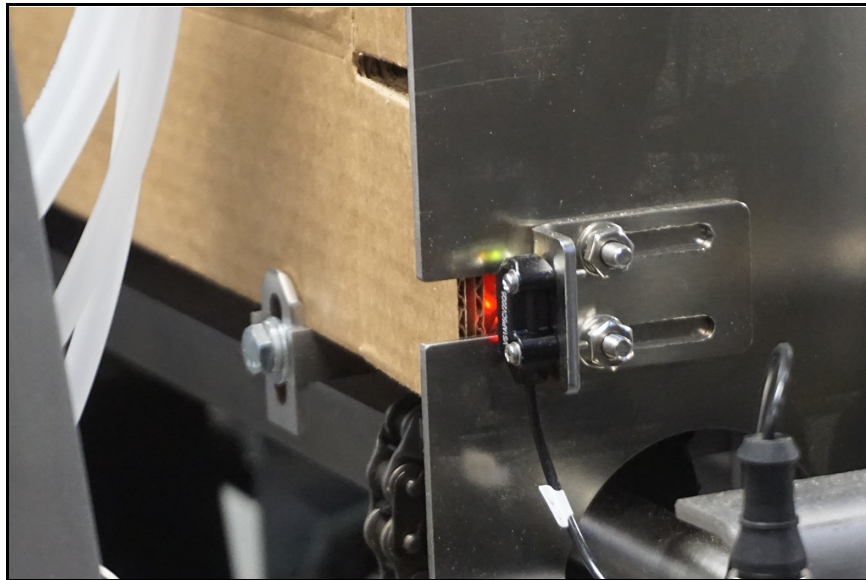


Figure 2-17 - Low Blank Supply PE

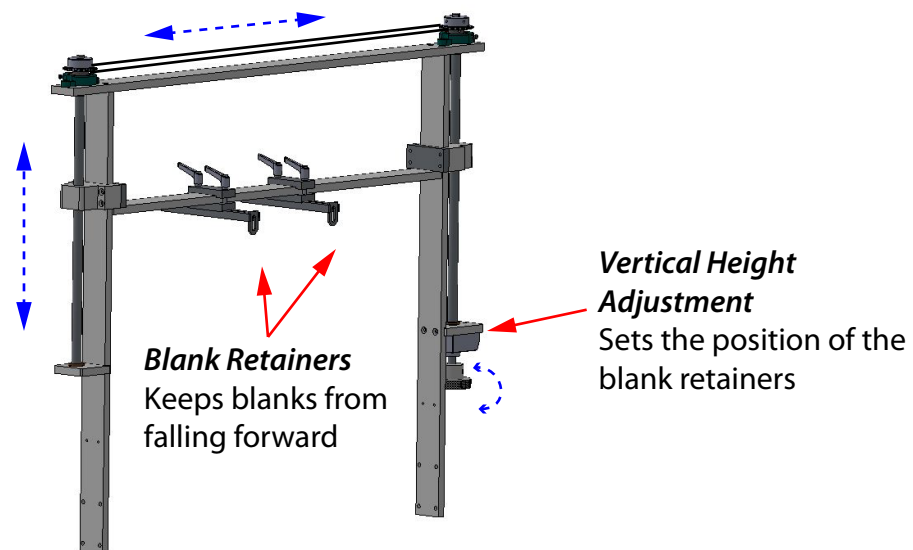
2.3.7. Vertical Blank Holder

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



Figure 2-18 - 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.



2.3.8. 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.

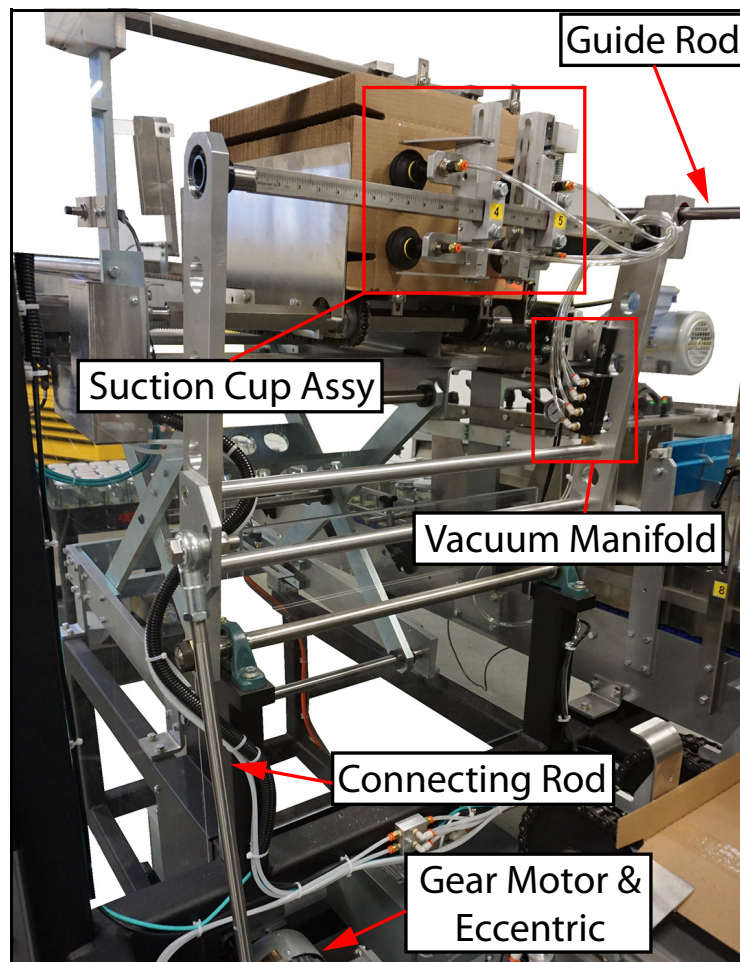


Figure 2-19 - Pick and Place Assembly

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.

2.3.9. 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.

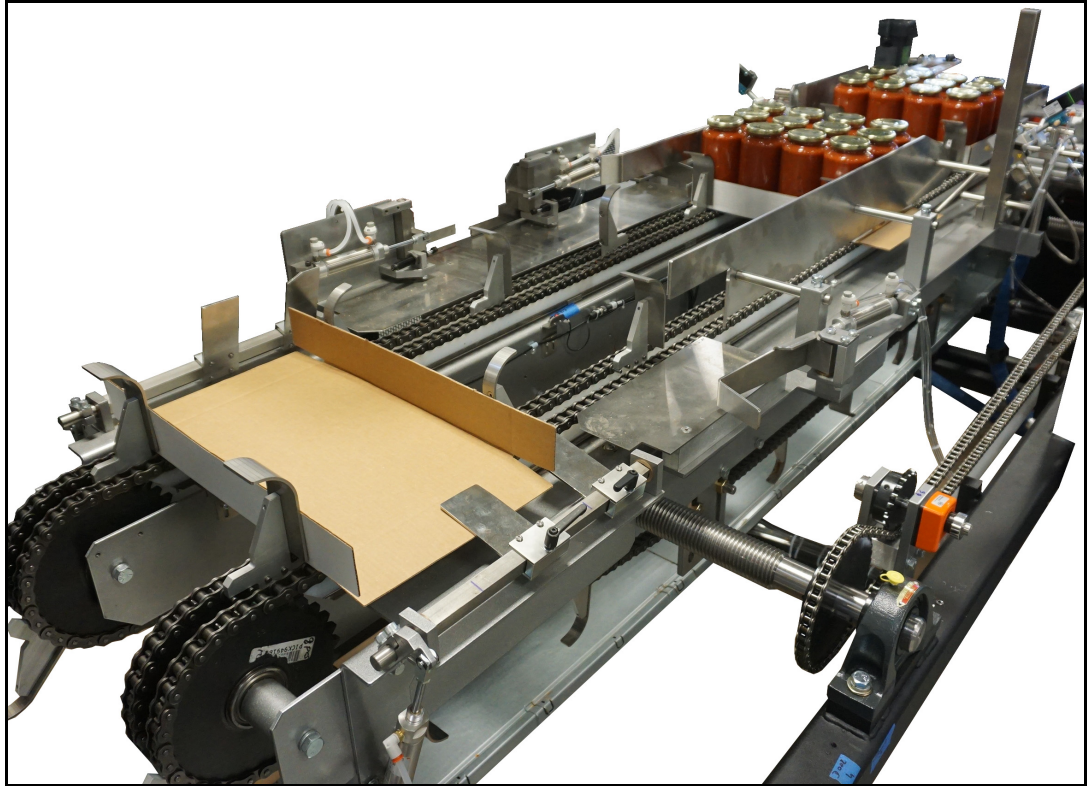
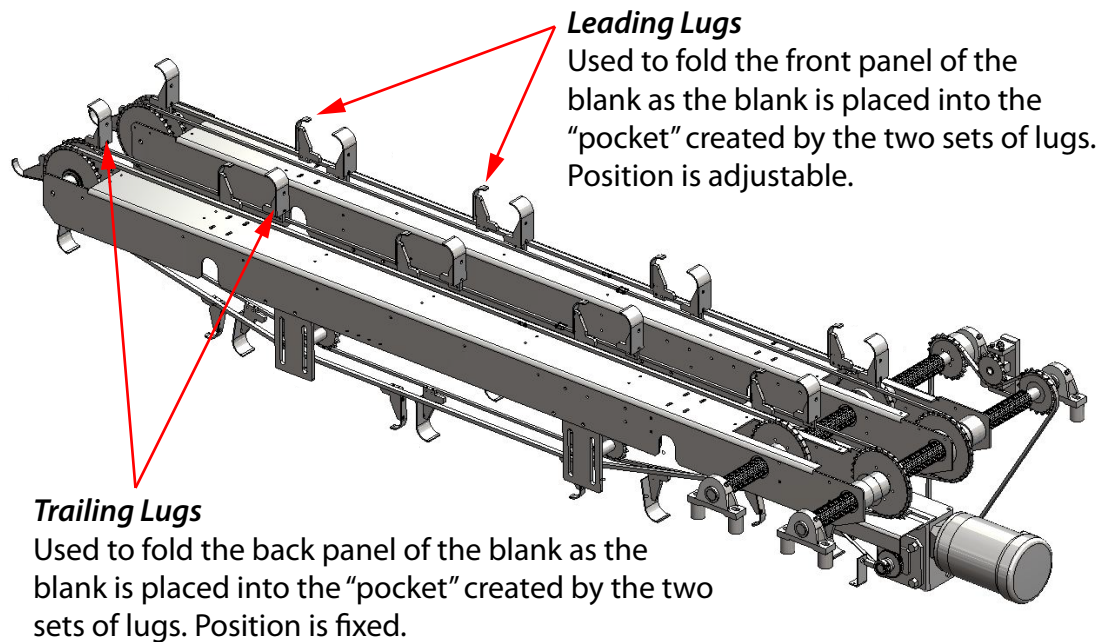


Figure 2-20 - Index Conveyor

2.3.10. 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.



2.3.11. 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.

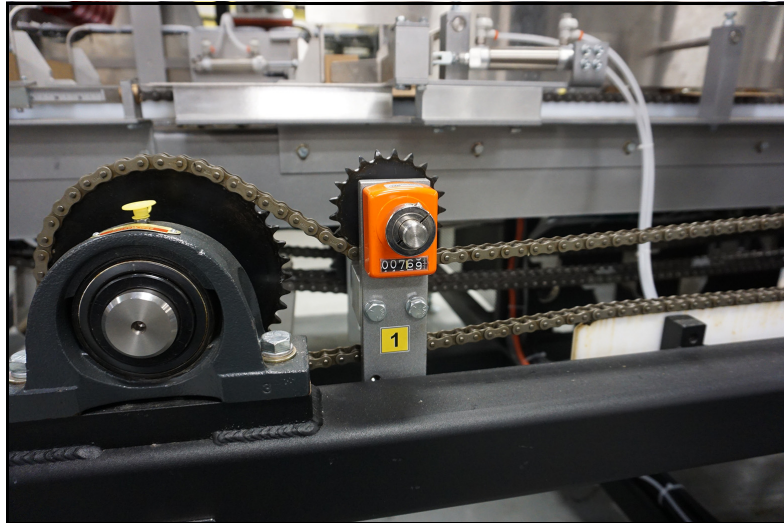


Figure 2-21 - Counter Assembly

2.3.12. 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.

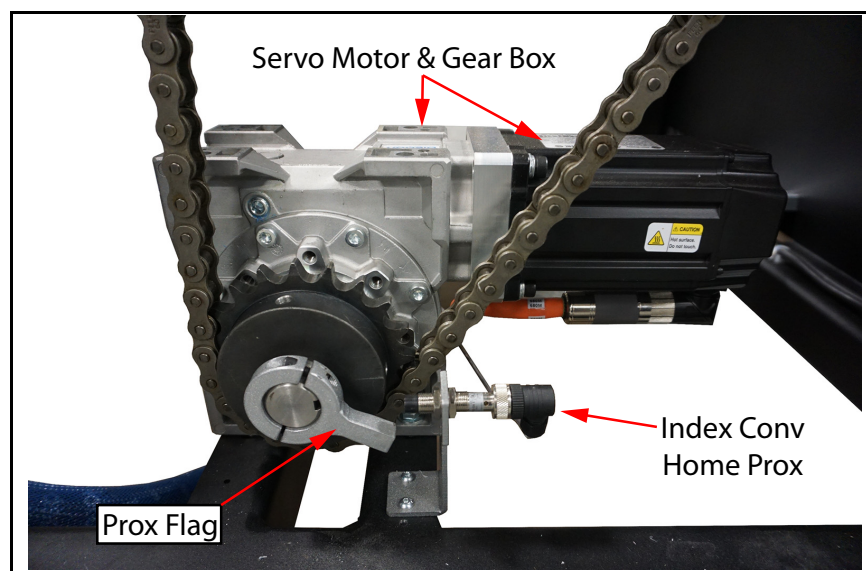


Figure 2-22 - Index Conveyor Home Switch & Flag

2.3.13. 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.

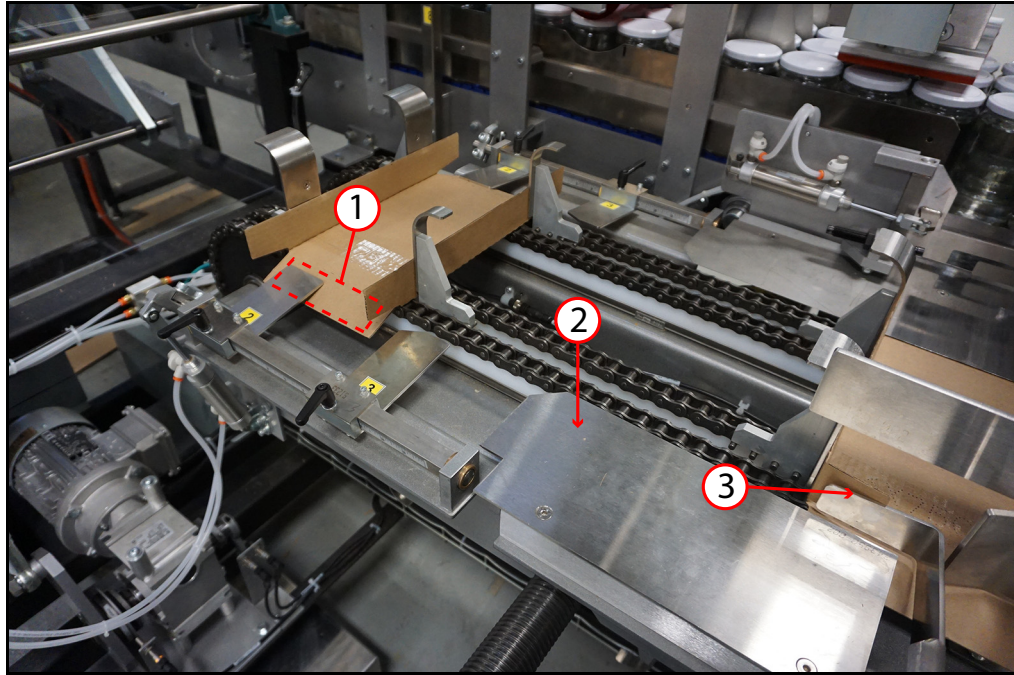
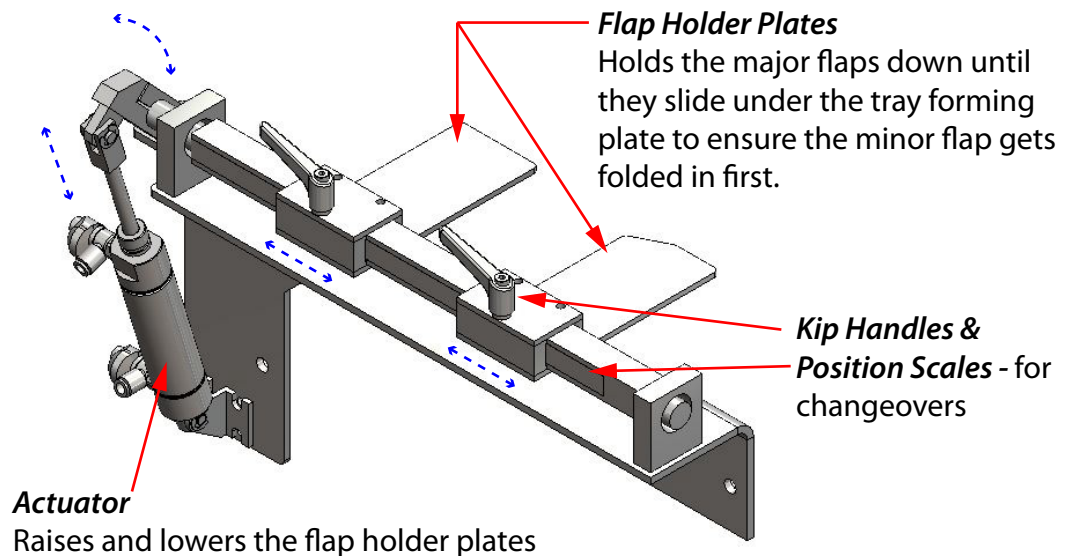


Figure 2-23 - Flap Hold Downs



2.3.14. 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.

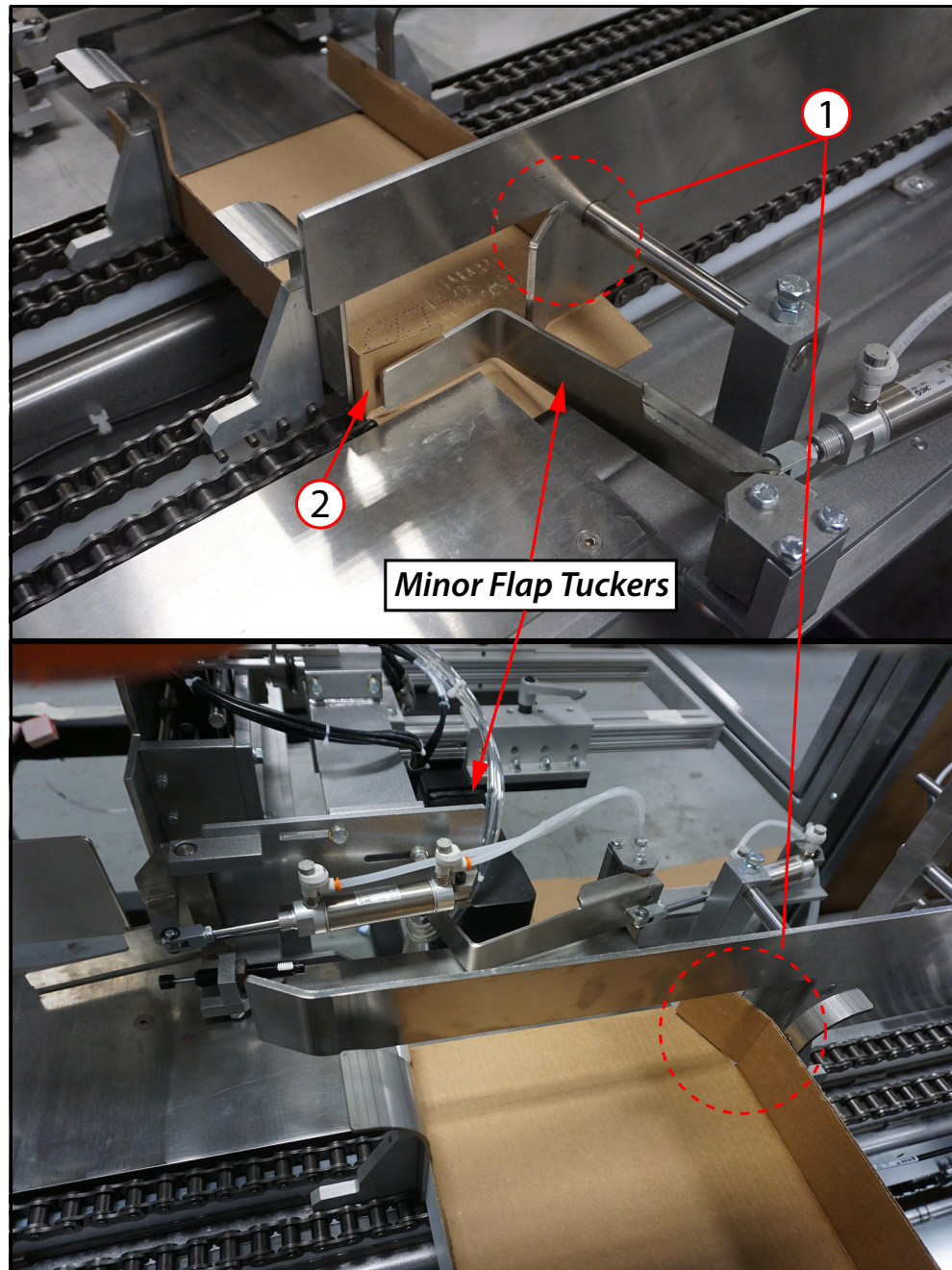


Figure 2-24 - Minor Flap Tucker

2.3.15. 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 2-25 - 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.

2.3.16. 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.

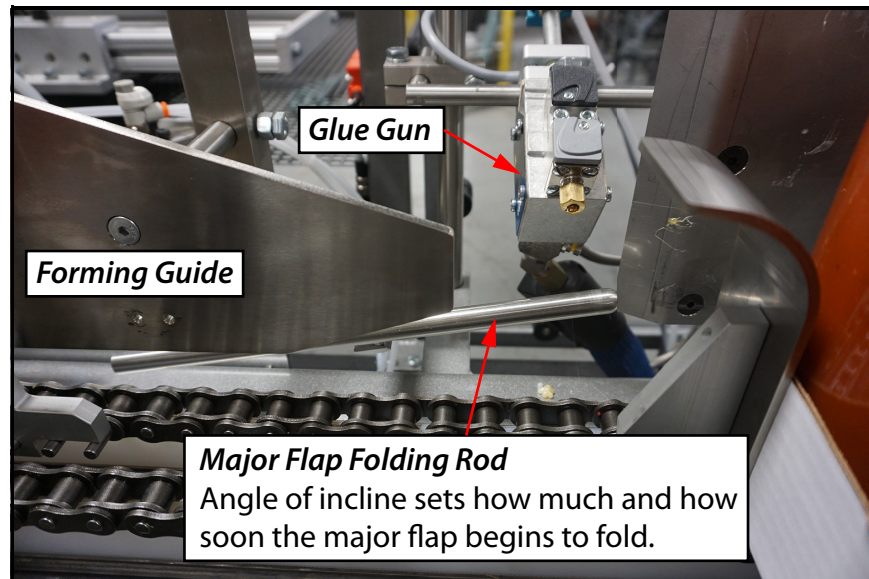


Figure 2-26 - Glue Section

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.

2.3.17. Detect Tray for Glue PE

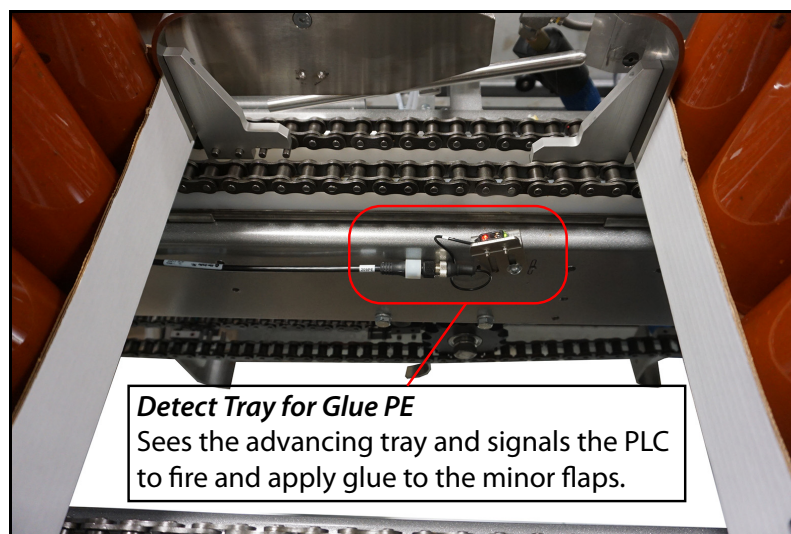


Figure 2-27 - Detect Tray for Glue PE

2.3.18. 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.

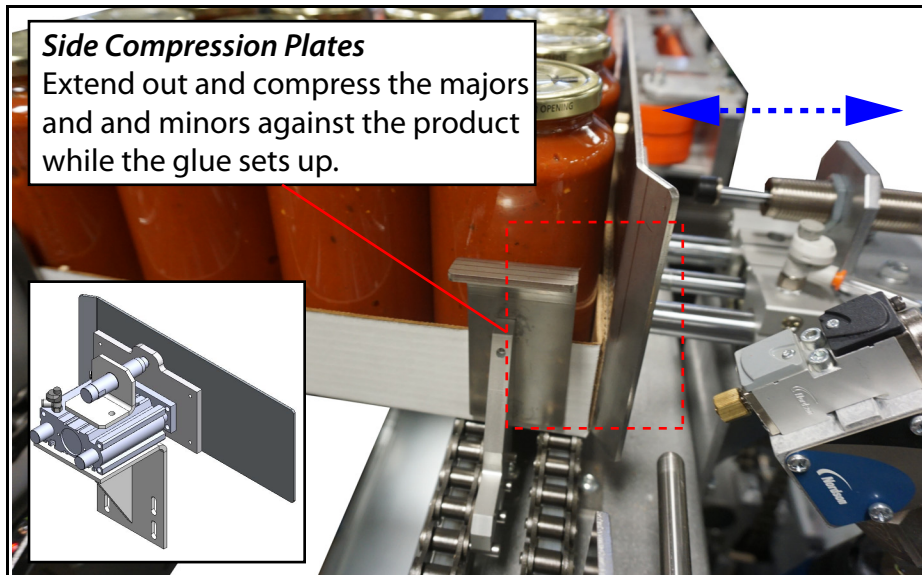


Figure 2-28 - Side Compression Assembly

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.

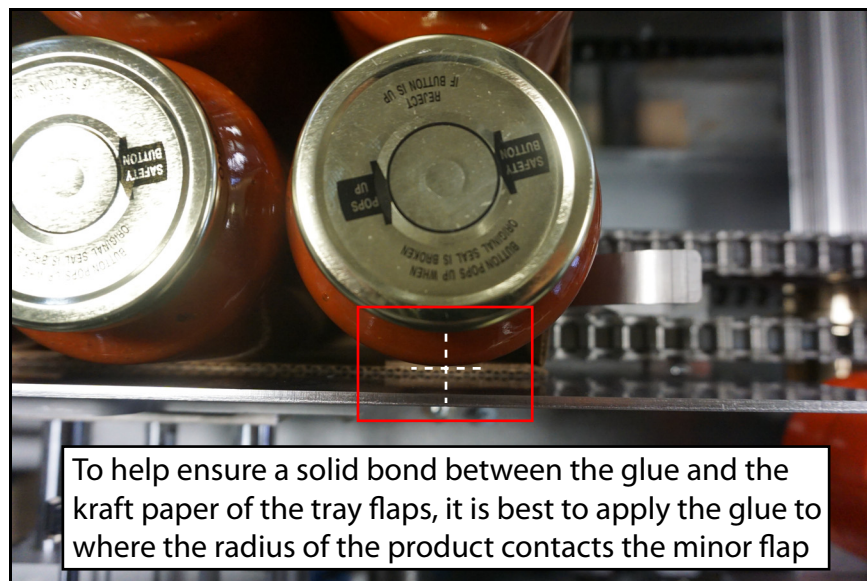
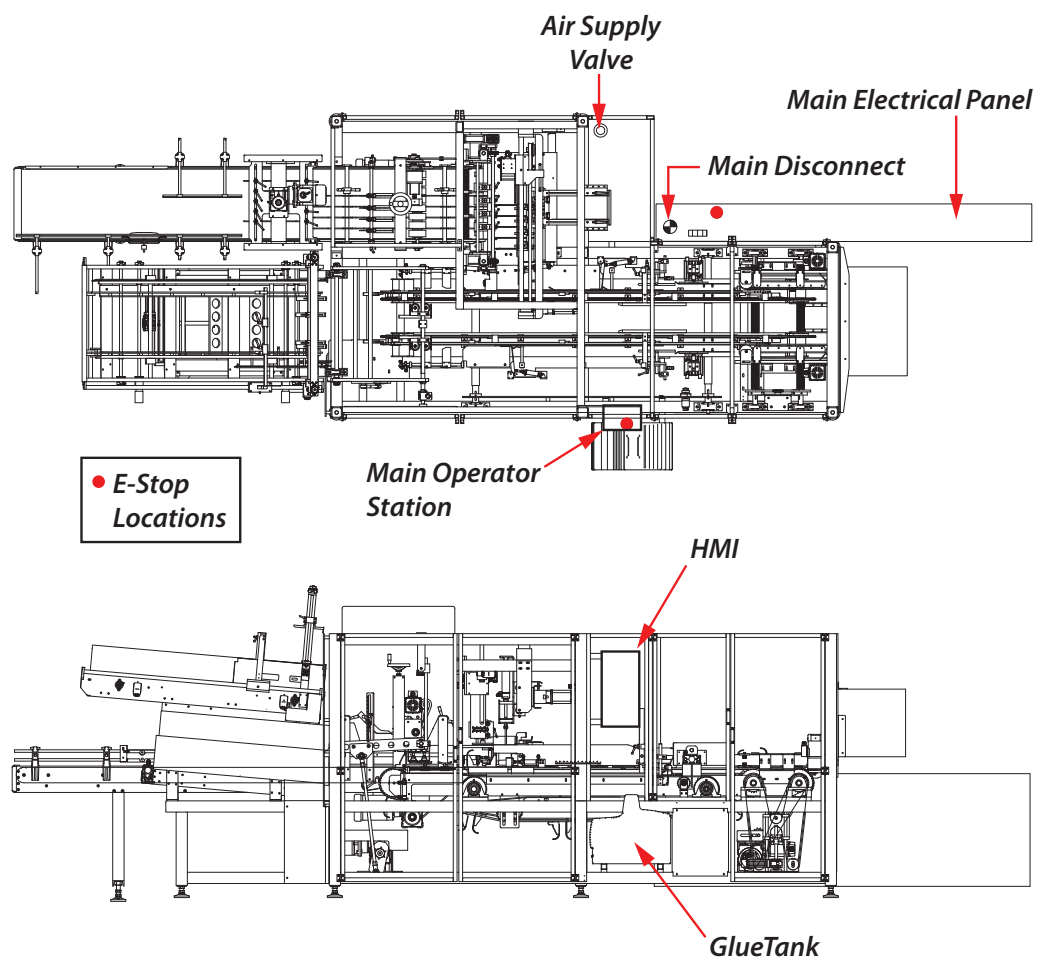


Figure 2-29 - Glue Application Point

3

Operator Controls

3.1. Overview



3.2. 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.

3.2.1. Main Air Regulator System

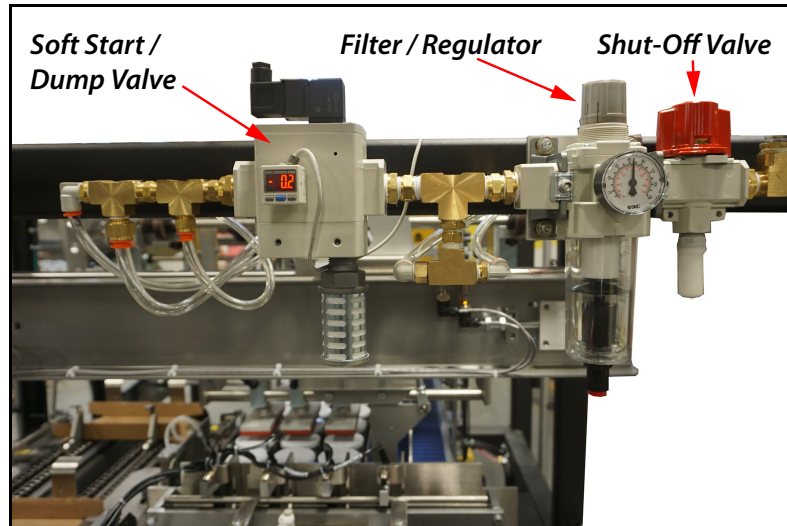
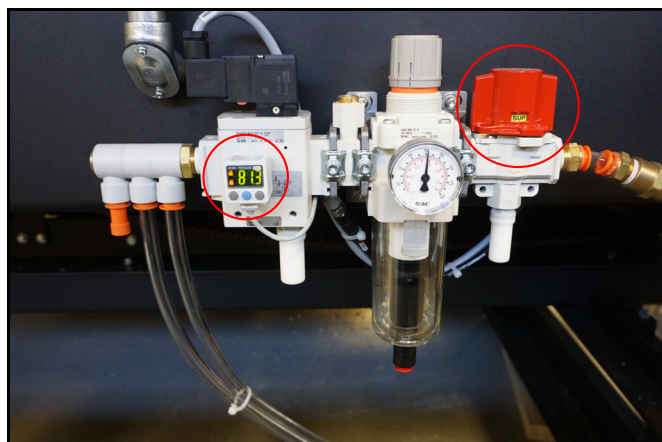


Figure 3-1 - Air Manifold

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.

3.3. Push Button Controls



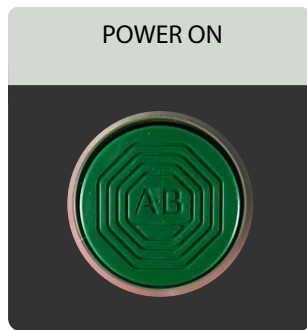
E-Stop in normal run state.



E-Stop activated.
(LED illuminated)

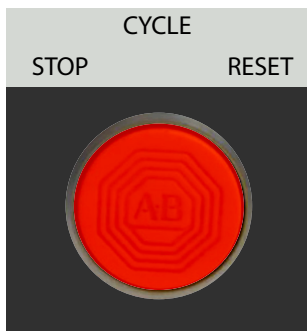
The EMERGENCY STOP push button will immediately interrupt power to all electrical and pneumatic devices, with the exception of the PLC. Low voltage remains on to the PLC so messages will be displayed on the HMI. This button should be used for an emergency, not to stop the machine normally.

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.

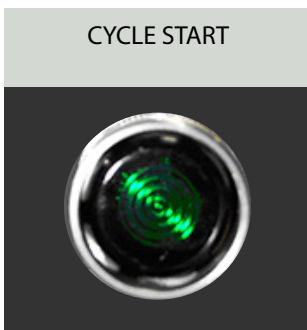


The POWER ON push button is used to apply power to all electrical and pneumatic devices by resetting the master control relay.

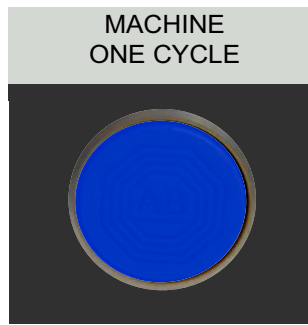
The Power On push button is used at initial start-up AND after an Emergency Stop has been pressed and reset.



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



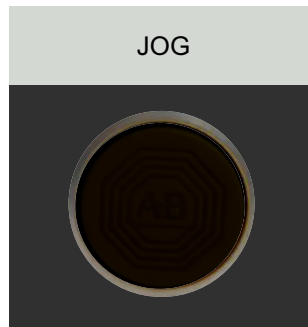
The CYCLE START push button is used to start the normal cycle of the machine, if all conditions are acceptable for the machine to start have been met. When pressed, the light will flash then go solid when the machine completes it's start-up routine. This button is disabled when an Emergency Stop push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

3.4. 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 3-2 - Main Light Stack

3.5. Human Machine Interface (HMI)

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.



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.

3.5.1. 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.

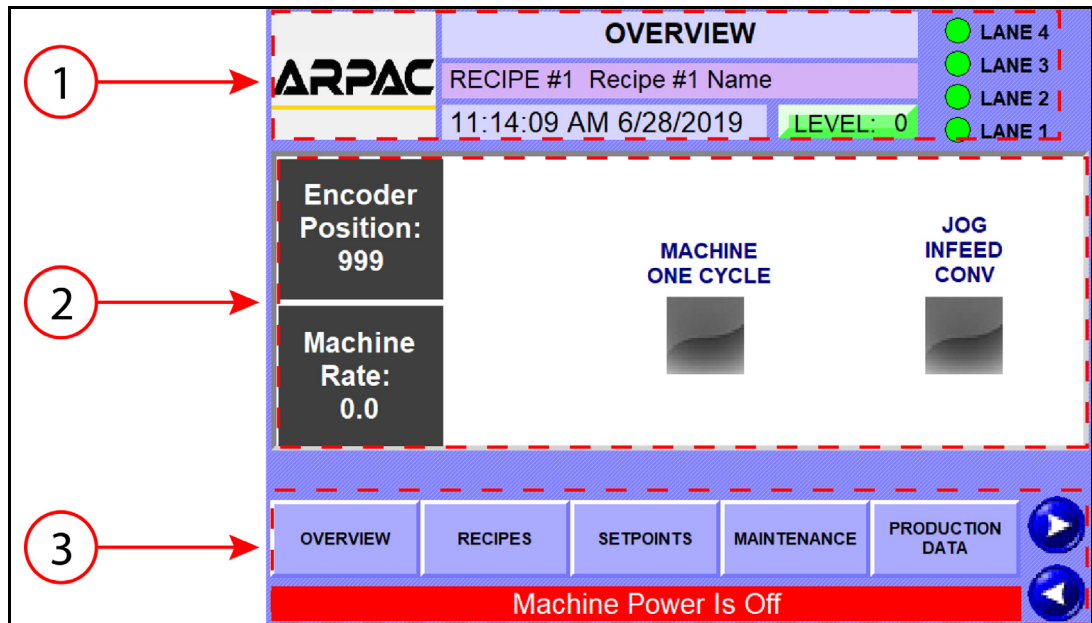


Figure 3-3 - Screen Layouts

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.

3.5.2. 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.

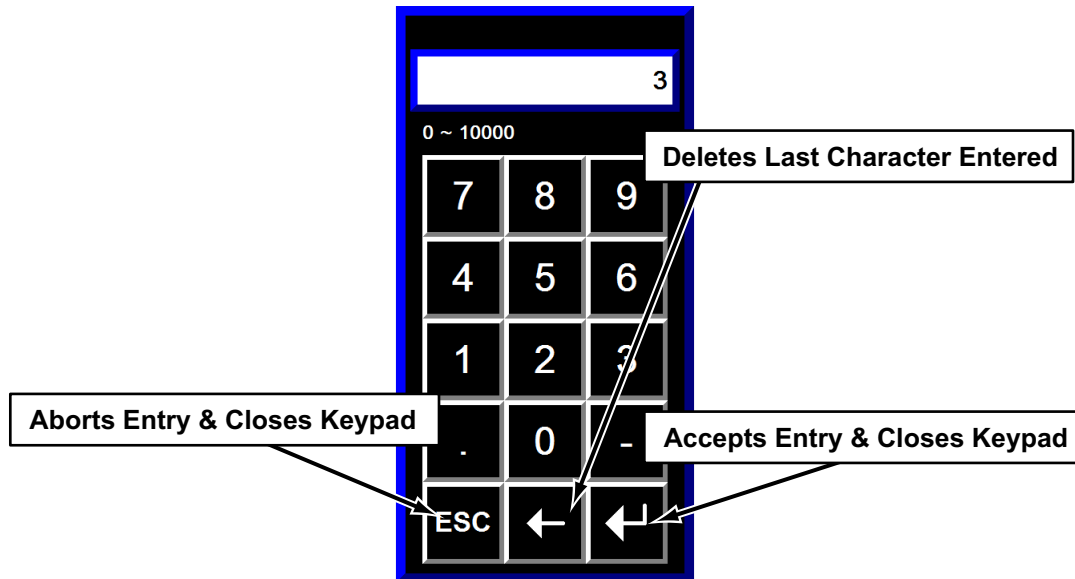


Figure 3-4 - Numeric Keypad

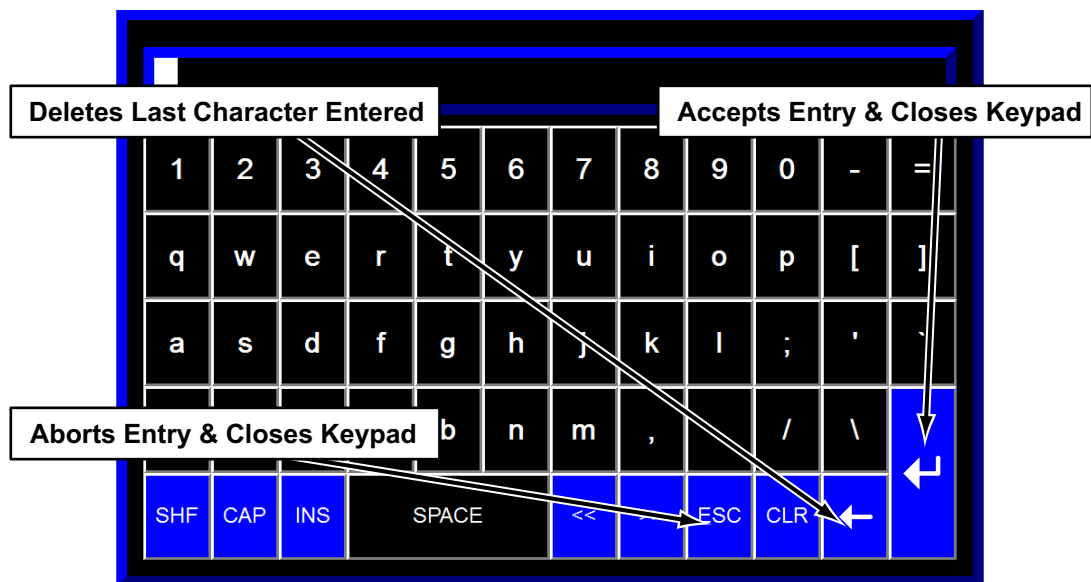


Figure 3-5 - Alpha-numeric Keypad

3.5.3. 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.

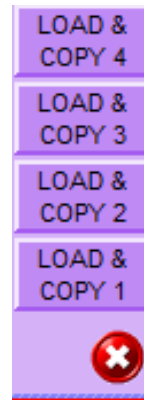


Figure 3-6 - Expandable Screen Menu Pop-Ups

3.5.4. Security Levels

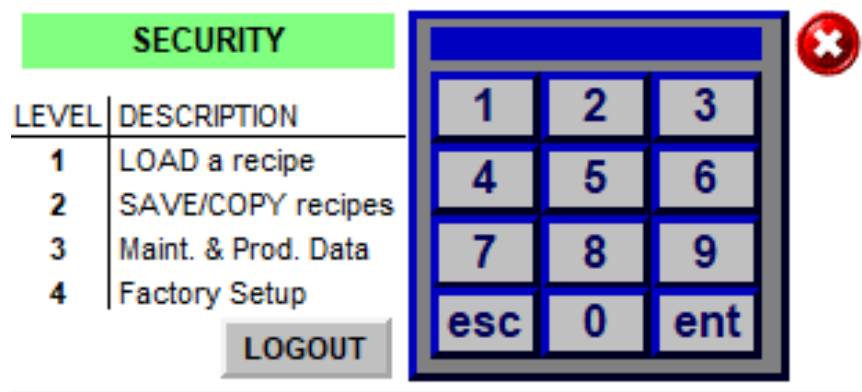


Figure 3-7 - Security Levels

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.

3.6. HMI Menu Groups

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

3.6.1. 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:

Main Screen

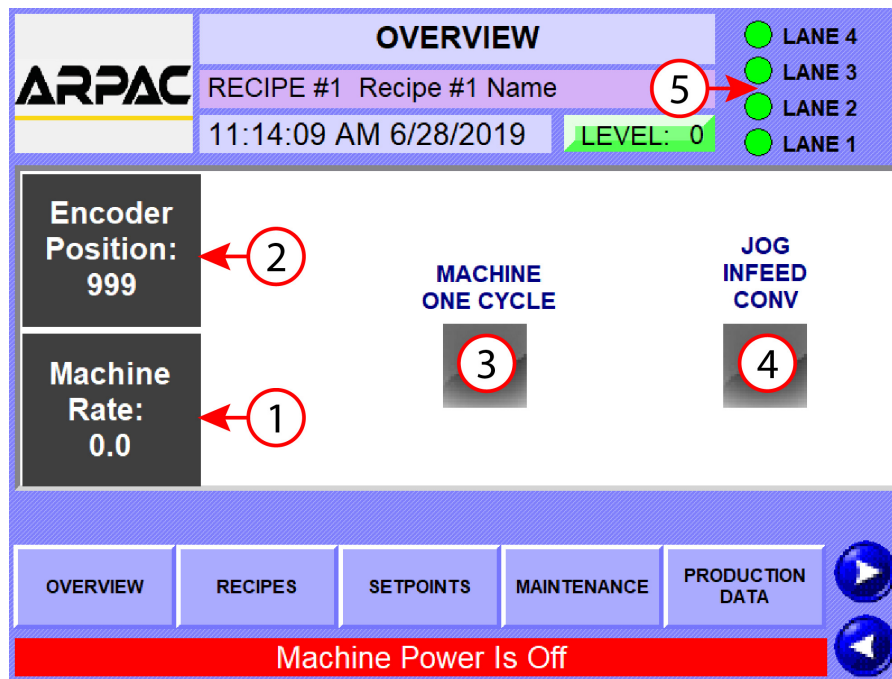


Figure 3-8 - Main Overview Screen

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 oush 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.

3.6.2. Machine Controls Screens

This machine has several Control screens provided to manually manipulate specific areas of the machine, useful tools when recovering from a jam or when priming or purging product. These buttons are disabled when the machine is in cycle.

Blank Pickup Controls

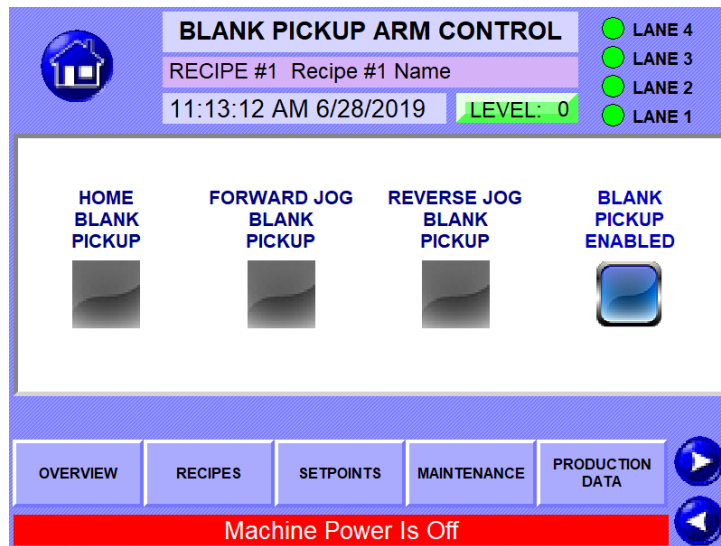


Figure 3-9 - Blank Pickup Controls

- Pressing the Home Blank Pickup button will move the motor until the *Blank Pick Up Home* prox switch is made, as long as a case is not already present in the first position. The *Jog Blank Pickup* button is a “press and hold” button, meaning that is the assembly will stop when the button is released.

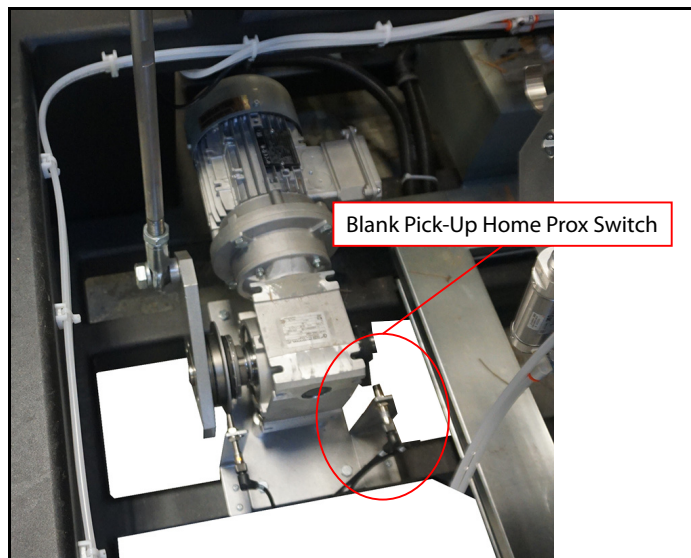


Figure 3-10 - Blank Pickup Home Proximity Switch

Additional Control Screens

Similar motion control screens are provided for the servo motor driven assemblies.

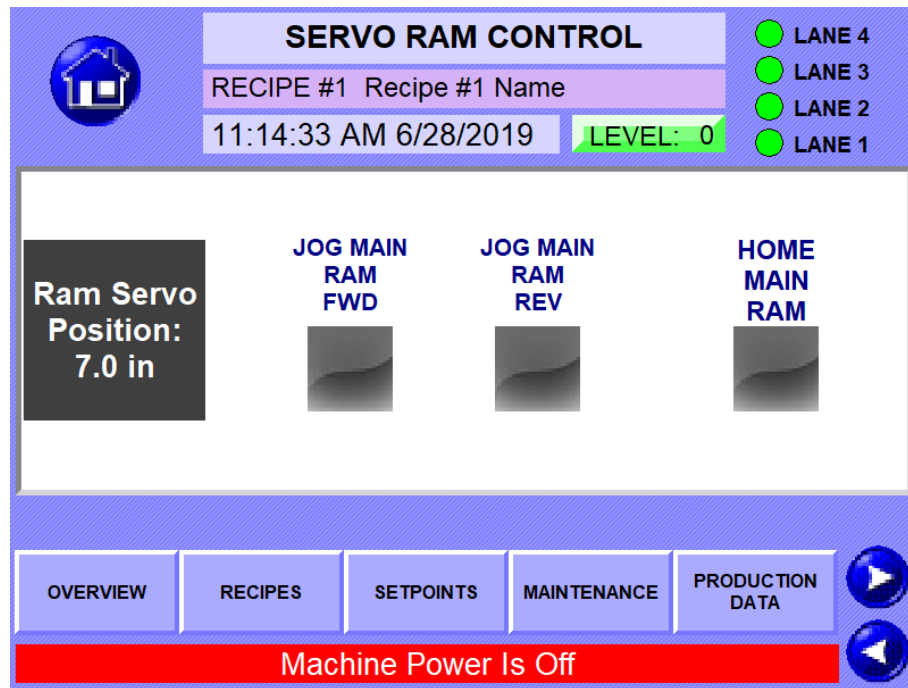


Figure 3-11 - Ram Control Screen

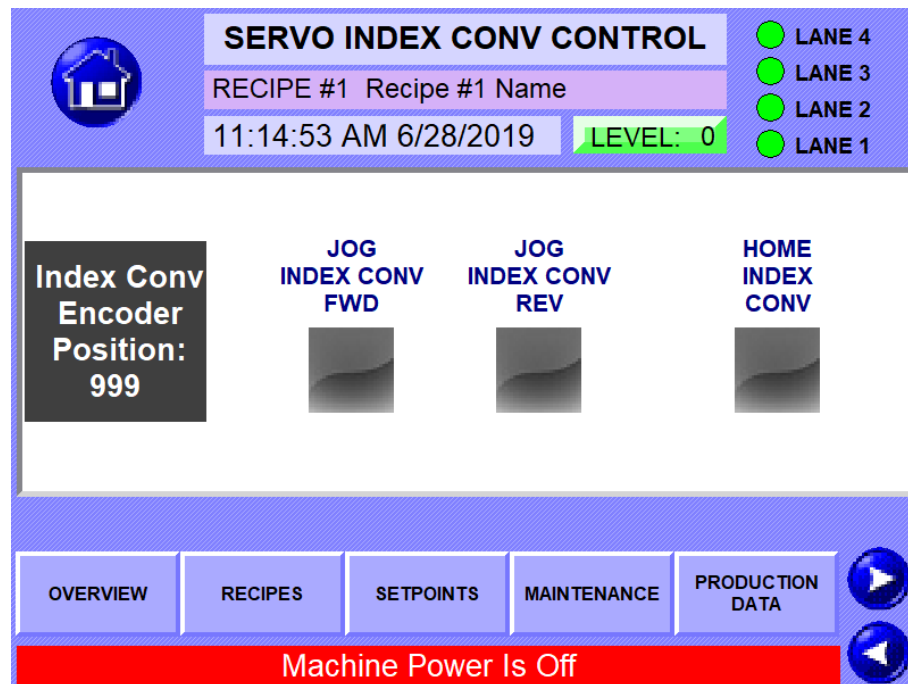


Figure 3-12 - Index Conveyor Controls

3.6.3. 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.

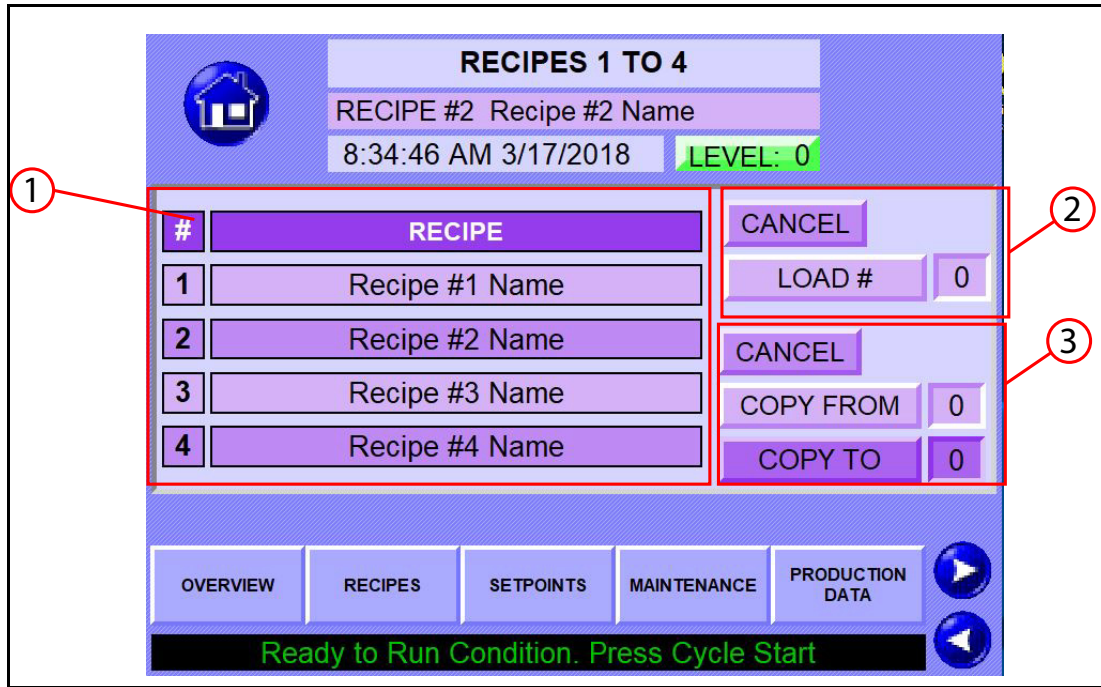


Figure 3-13 - Recipes Screen

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.

3.6.4. 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.

Set Point Modify Screens

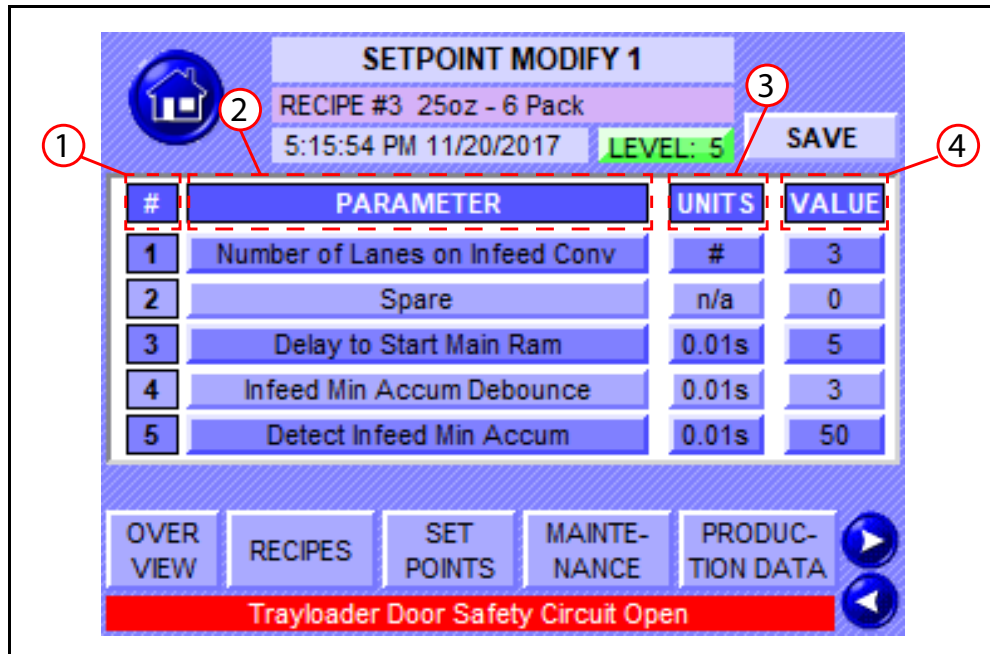


Figure 3-14 - Set Point Modify Screen Example

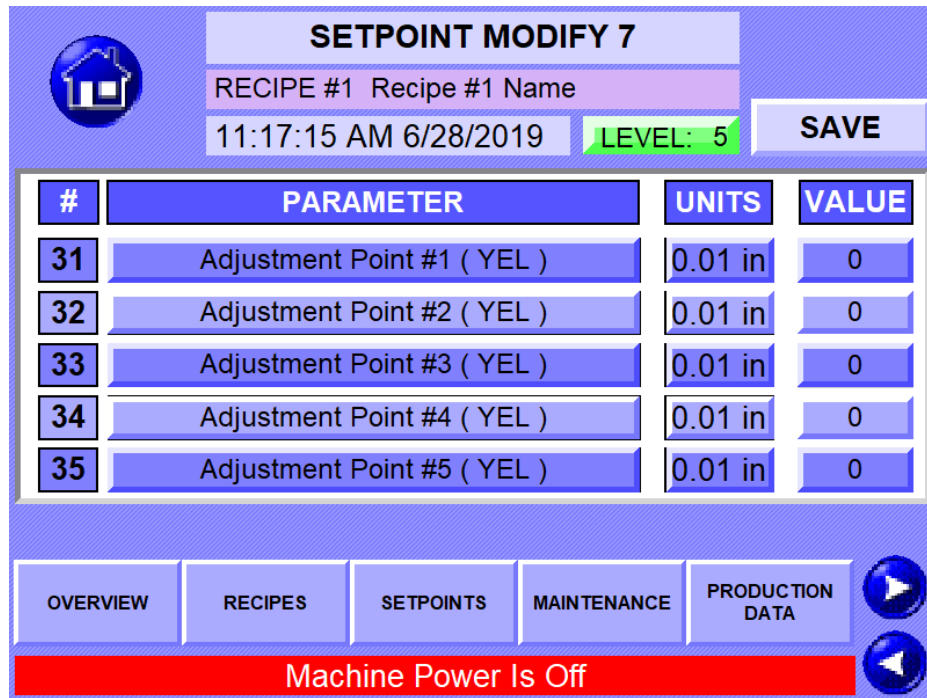
1. **#** - Each parameter is assigned a number
2. **Parameter** - The names of the parameters are listed next to the # column
3. **Units** - This represents the unit of measure for a parameter.
4. **Value** - This represents the user defined machine settings.



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.

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.



The screenshot displays the 'SETPOINT MODIFY 7' interface. At the top left is a house icon. The title 'SETPOINT MODIFY 7' is in a blue box. Below it, 'RECIPE #1' is followed by a text field containing 'Recipe #1 Name'. To the right of this is a timestamp '11:17:15 AM 6/28/2019', a green 'LEVEL: 5' indicator, and a 'SAVE' button. The main area contains a table with four columns: '#', 'PARAMETER', 'UNITS', and 'VALUE'. The table lists five adjustment points, all with units of '0.01 in' and values of '0'. At the bottom, there are five navigation buttons: 'OVERVIEW', 'RECIPES', 'SETPOINTS', 'MAINTENANCE', and 'PRODUCTION DATA'. To the right of these buttons are two circular arrow icons. A red banner at the very bottom reads 'Machine Power Is Off'.

#	PARAMETER	UNITS	VALUE
31	Adjustment Point #1 (YEL)	0.01 in	0
32	Adjustment Point #2 (YEL)	0.01 in	0
33	Adjustment Point #3 (YEL)	0.01 in	0
34	Adjustment Point #4 (YEL)	0.01 in	0
35	Adjustment Point #5 (YEL)	0.01 in	0

OVERVIEW RECIPES SETPOINTS MAINTENANCE PRODUCTION DATA

Machine Power Is Off

Figure 3-15 - Changeover Point Screen Example

3.6.5. 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.

Main Maintenance Screen

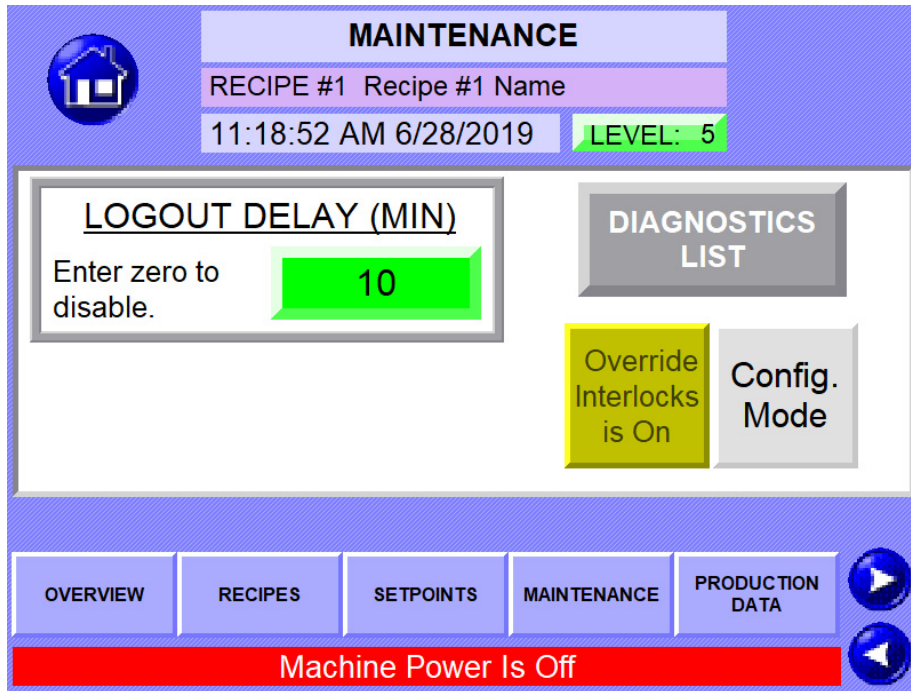


Figure 3-16 - 1st Maintenance Screen

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.

Timers & Counters Screen

This 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.

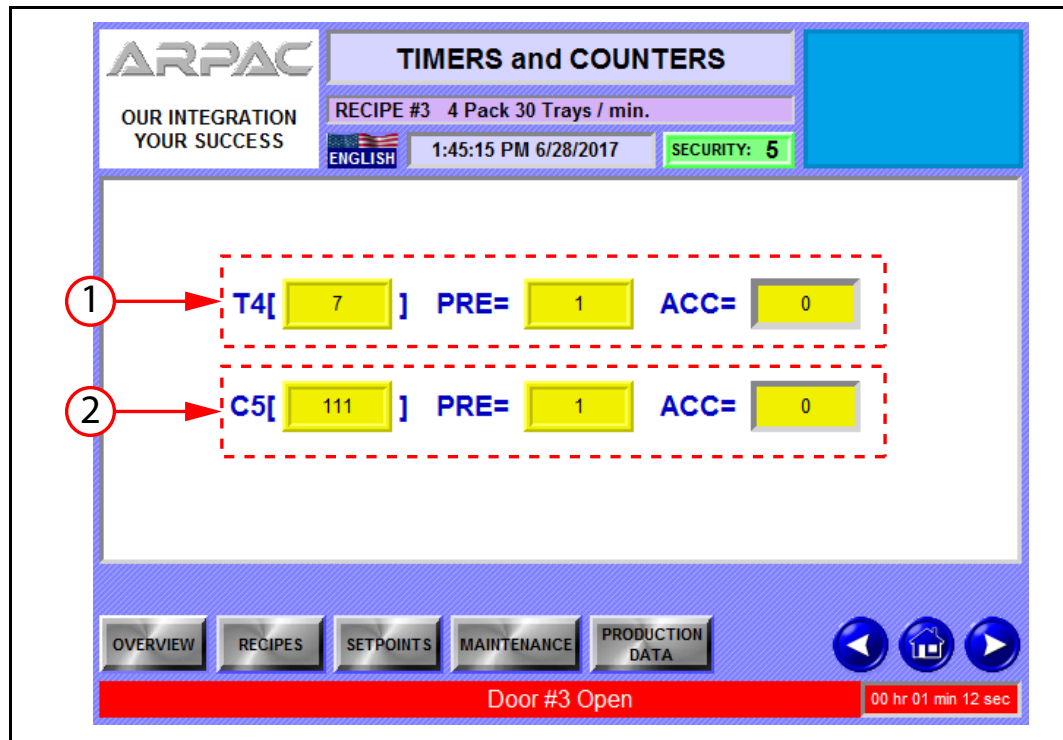


Figure 3-17 - Timers Screen

Alarm History

This shows previous alarms and faults in the system. The red buttons acknowledge and clear the list, cycle from one to another or page up and down the list.

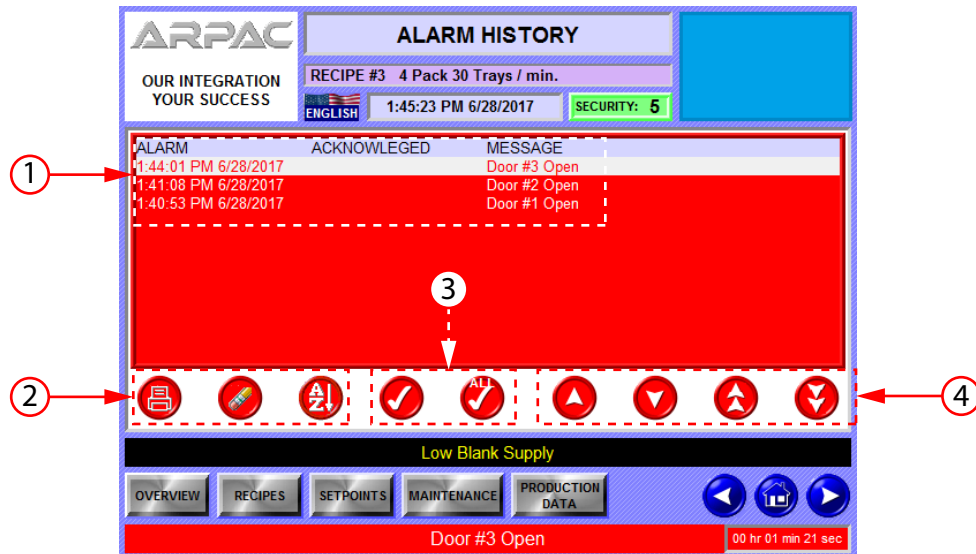


Figure 3-18 - Alarm History

PLC Chassis Screens

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.

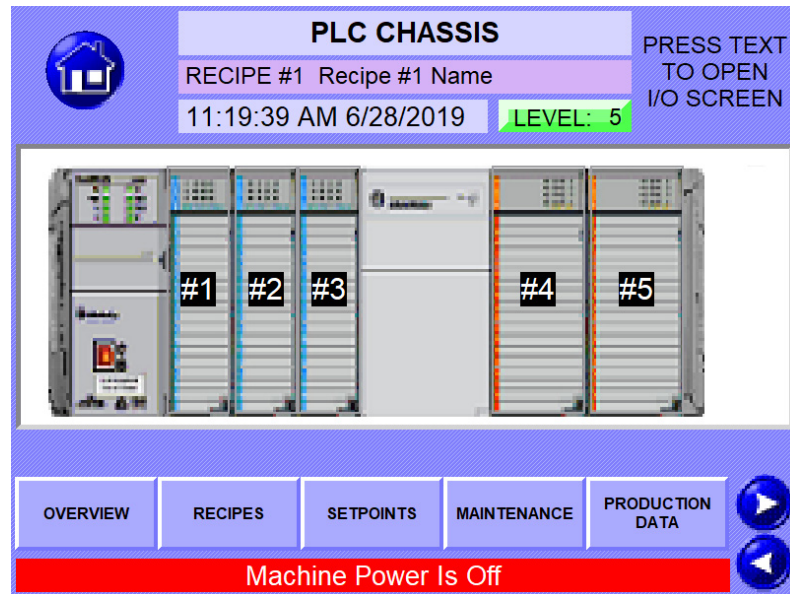


Figure 3-19 - PLC Chassis Screen

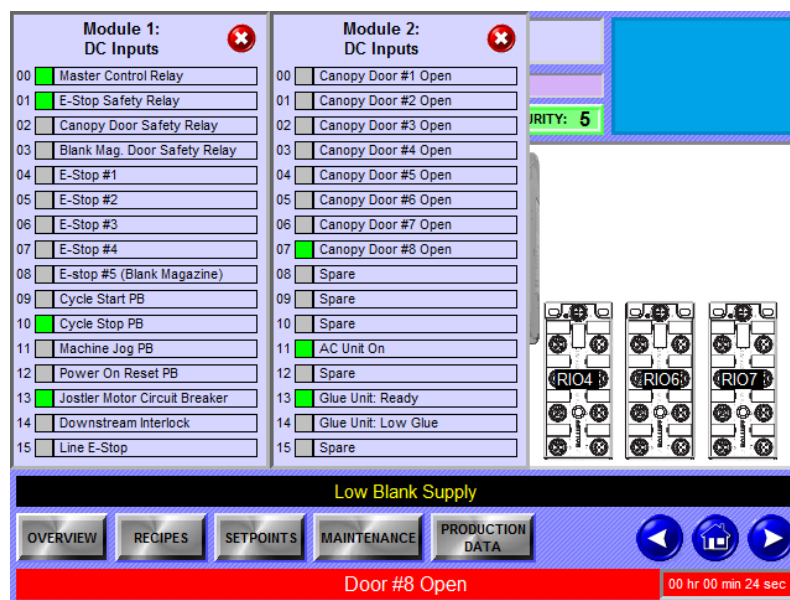


Figure 3-20 - PLC Module Screens

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.

#	PARAMETER	UNITS	VALUE
41	Index Conveyor Cycle Speed	Cnt/s	950
42	Index Conveyor Home Offset	Count	5
43	Index Conveyor Jog Speed	Cnt/s	200
44	Index Conveyor Accel. Forward	"/s2	3500
45	Index Conveyor Decel. Forward	"/s2	3500

OVERVIEW RECIPES SETPOINTS MAINTENANCE PRODUCTION DATA

Machine Power Is Off

Figure 3-21 - Maintenance Level Setpoints

3.6.6. 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.

Production Data

The screenshot shows the 'PRODUCTION DATA' screen. At the top left is a home icon. The title 'PRODUCTION DATA' is centered. Below it, 'RECIPE #1' is followed by a text field containing 'Recipe #1 Name'. The date and time '11:23:38 AM 6/28/2019' are displayed, along with a green 'LEVEL: 5' indicator. The main data area contains a table with columns for '1st Shift', '2nd Shift', '3rd Shift', 'Total per Day', and 'Total Last Day'. The rows are 'Running (min)', 'Idling (min)', and 'Product'. Below the table are two buttons: 'RESET CURRENT DATA' and 'RESET ALL DATA'. At the bottom, there is a navigation bar with buttons for 'OVERVIEW', 'RECIPES', 'SETPOINTS', 'MAINTENANCE', and 'PRODUCTION DATA' (which is highlighted). To the right of the navigation bar are two circular arrows. A red banner at the very bottom reads 'Machine Power Is Off'.

	1st Shift	2nd Shift	3rd Shift	Total per Day	Total Last Day
Running (min)	0	0	0	0	4
Idling (min)	0	0	0	0	3
Product	2	0	0	2	97

RESET CURRENT DATA RESET ALL DATA

OVERVIEW RECIPES SETPOINTS MAINTENANCE PRODUCTION DATA

Machine Power Is Off

Figure 3-22 - 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.

Production Data Settings

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

	Start	Finish
Shift #1	5:15 am	1:15 pm
Shift #2	1:15 pm	9:15 pm
Shift #3	9:15 pm	5:15 am

NOTE: Production clock is in military format.

OVERVIEW RECIPES SETPOINTS MAINTENANCE PRODUCTION DATA

Machine Power Is Off

Figure 3-23 - 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.

3.7. Using the HMI

The following describes how to use the HMI.

3.7.1. 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.

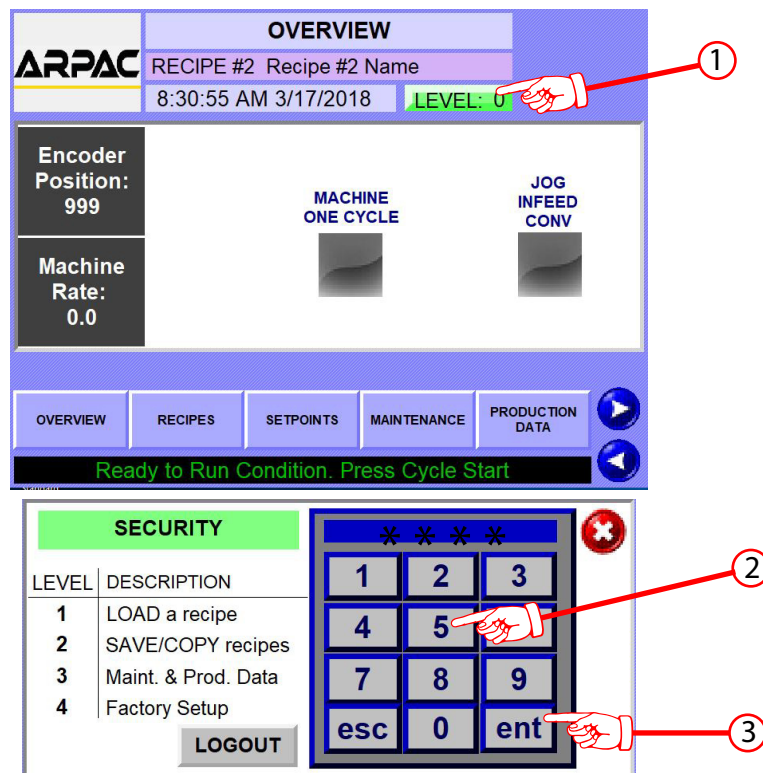


Figure 3-24 - Logging In

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.

3.7.2. 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.

Loading an Existing Recipe

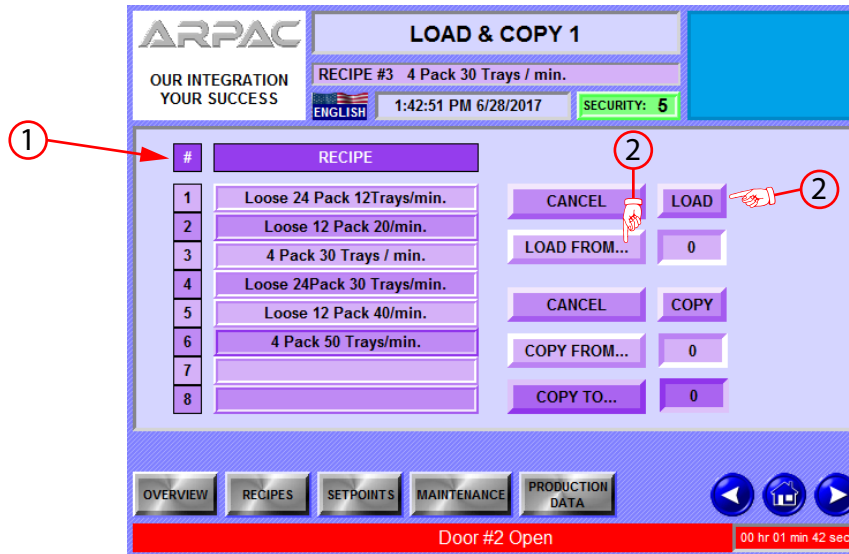


Figure 3-25 - Recipe Load & Copy 1 screen

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.

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.

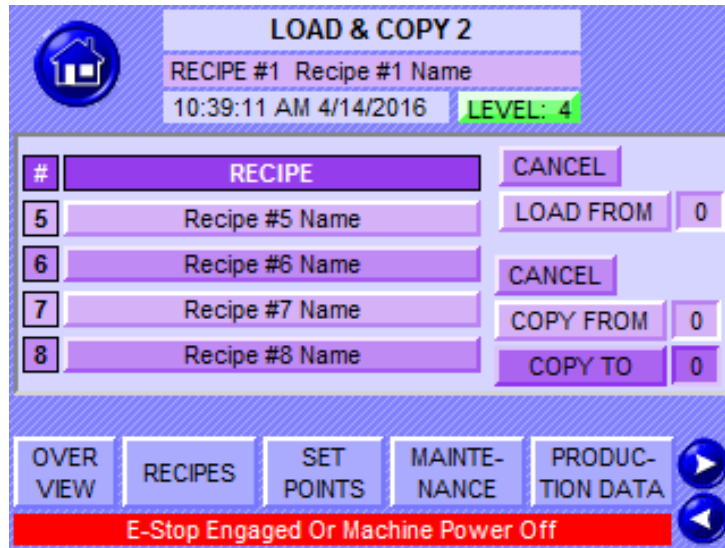


Figure 3-26 - Load & Copy Screen

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.

2. Press COPY TO to enter recipe number that you wish to copy the setpoints to for use.
3. Press CANCEL to abort the operation without copying any data.
4. Press COPY to copy the recipe.
5. A warning pop-up will appear letting you know you are about to overwrite the contents.
6. Press YES to copy the recipe data or NO to abort the operation.

3.7.3. Changing Values

To change a value, navigate to that screen.

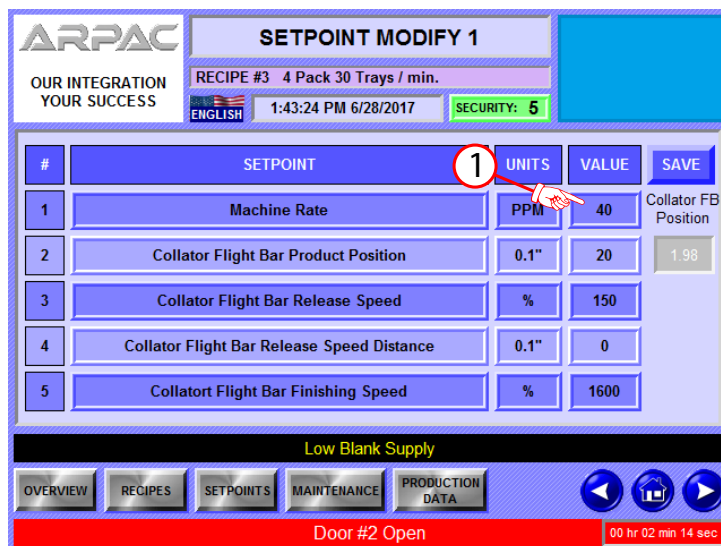


Figure 3-27 - Changing Values 1

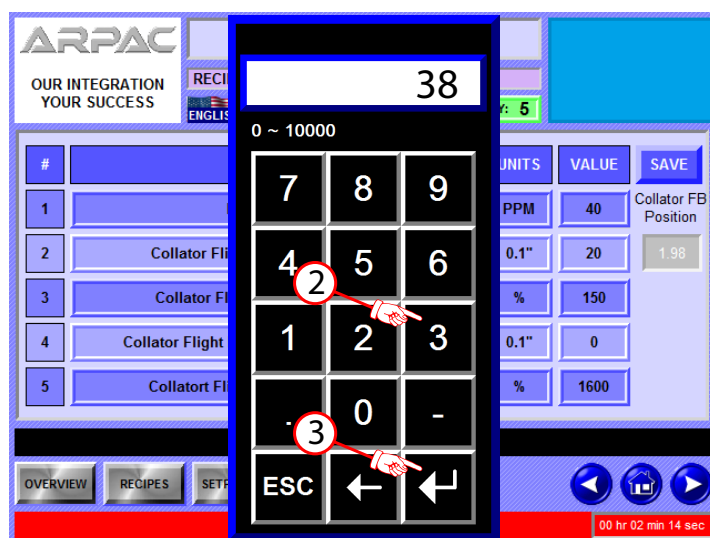


Figure 3-28 - Changing Values 2

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.

4

Operating Procedures

4.1. 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

4.2. Applying Power & Preparing the Machine to Run

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.

Electrical Power



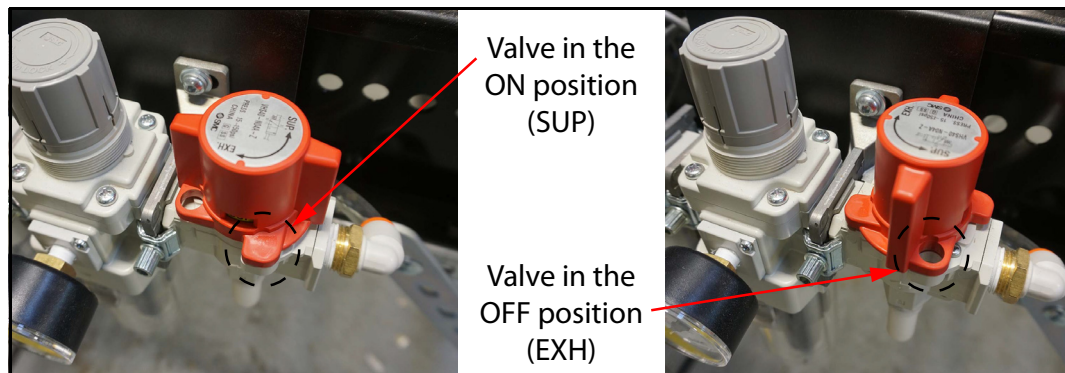
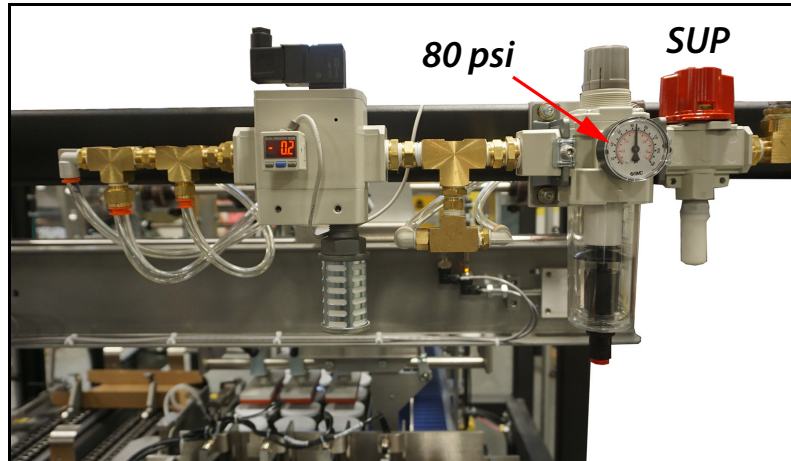
Make sure all personnel are cleared away from machine before turning the machine on. Severe injury may result if you do not. Press the EMERGENCY STOP button to stop the machine if a hazard appears to personnel or the machine.

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



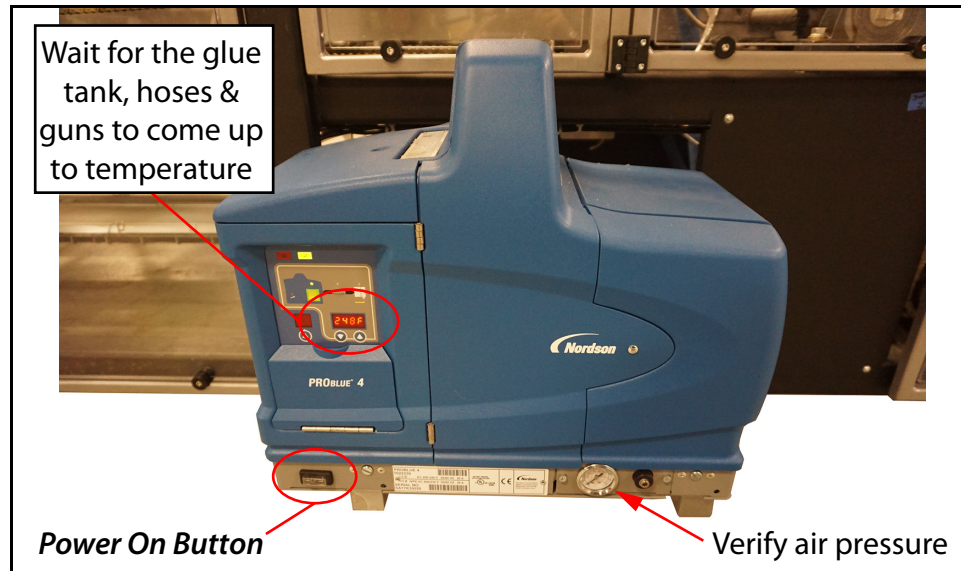
Pneumatic Power

1. Turn the shutoff valve from EXH to SUP. Verify the air regulator gauge is at least 80 psi.

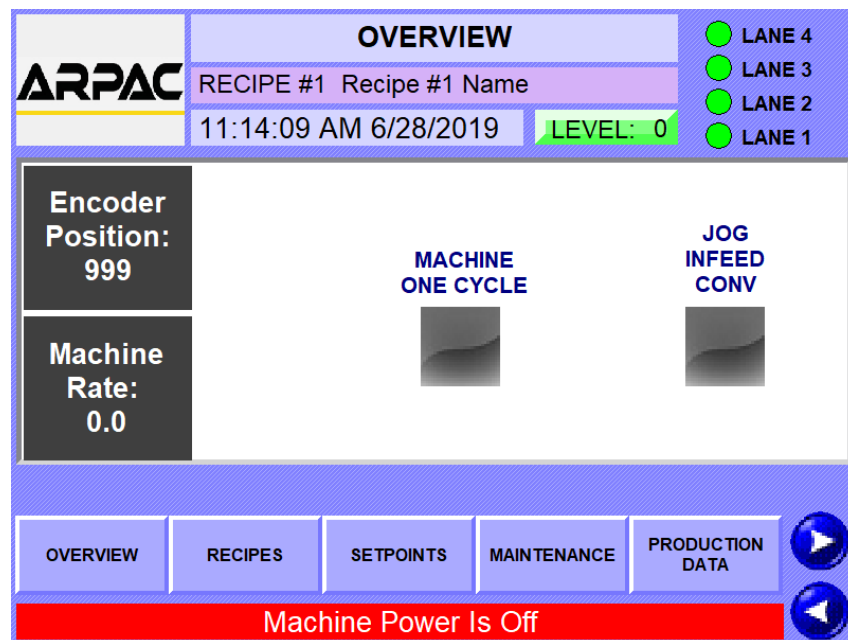


Turning on the Glue Unit

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



The machine cannot go into cycle until the glue system reaches it's set temperature and proper air pressure. The fault message in the banner will go away once the unit reaches the proper temperature and the overview screen will be accessible.



Filling The Glue Unit



Refer to the Nordson user manual on the CD located at the end of this manual.

4.3. 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.

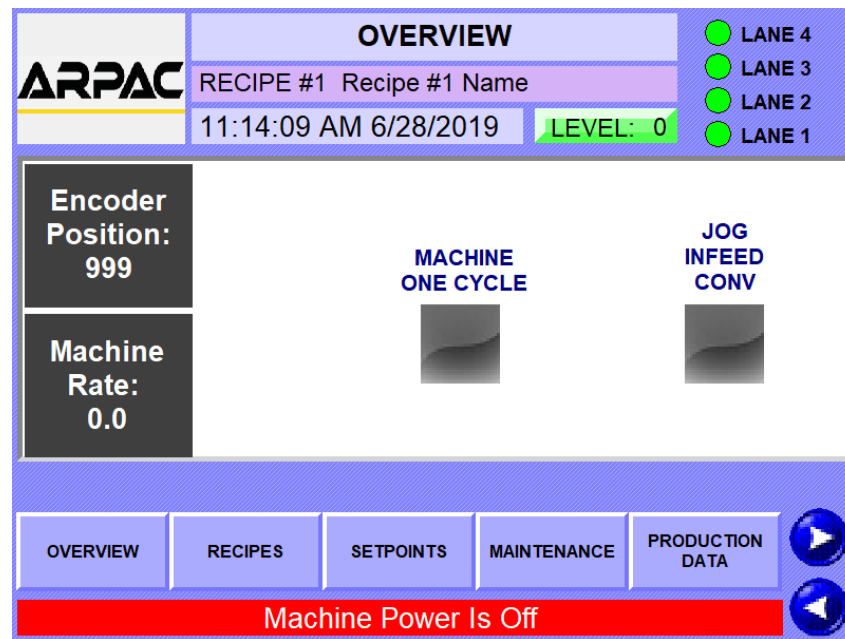


4. Load the blank magazine.
5. Place the blank pusher against the stack to keep them in position.



4.4. 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.

4.5. Stopping the Machine

4.5.1. 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.



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.

4.5.2. 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.

4.5.3. Long Term Shutdown

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.

4.6. 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.

4.6.1. Identifying the Fault

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

4.6.2. After Addressing the Cause

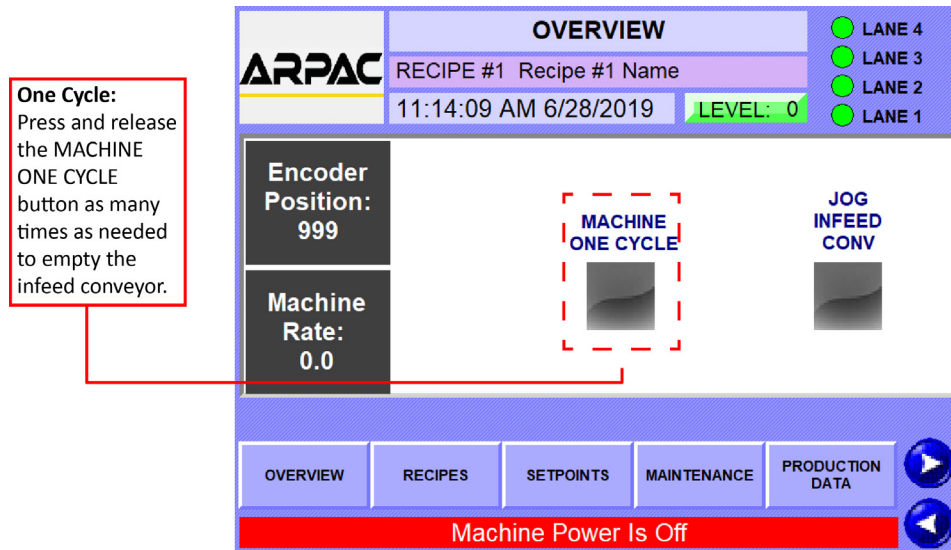
1. Close the guard door.
2. Press the **CYCLE STOP / RESET** button.
3. Press the **ONE CYCLE** button to “reset” the index conveyor.
4. Prep the machine for a restart by adding or removing product, if necessary. If not, skip 5 & 6.
5. Close the guard door.
6. Press the **CYCLE STOP / RESET** button.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

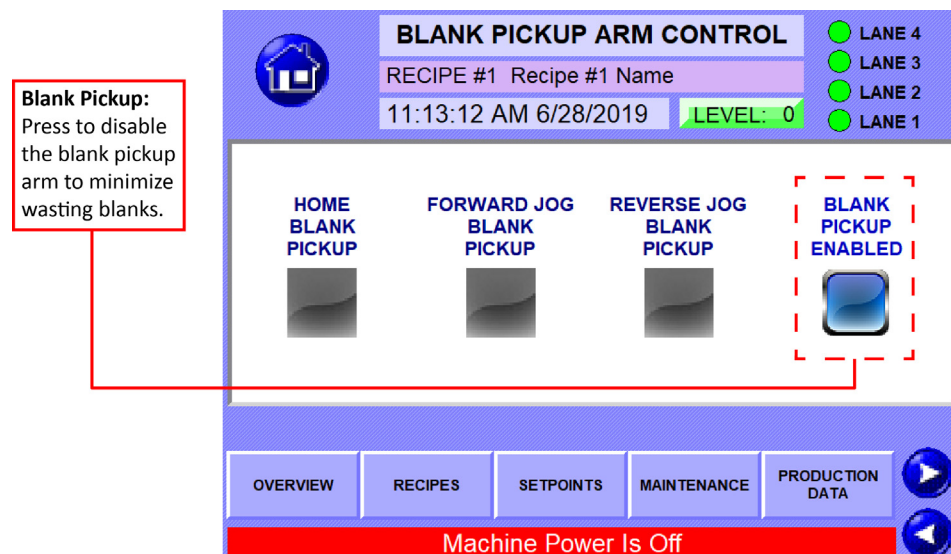
4.7. Safe Removal of Product - Purging

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



3. From the HMI, turn the Pick & Place arm off.
4. Continue pressing the **ONE CYCLE** button until the machine is completely empty of product.



4.8. Performing a Changeover

4.8.1. 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 change over 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
- 1** Blue rectangle represents where program changes are made

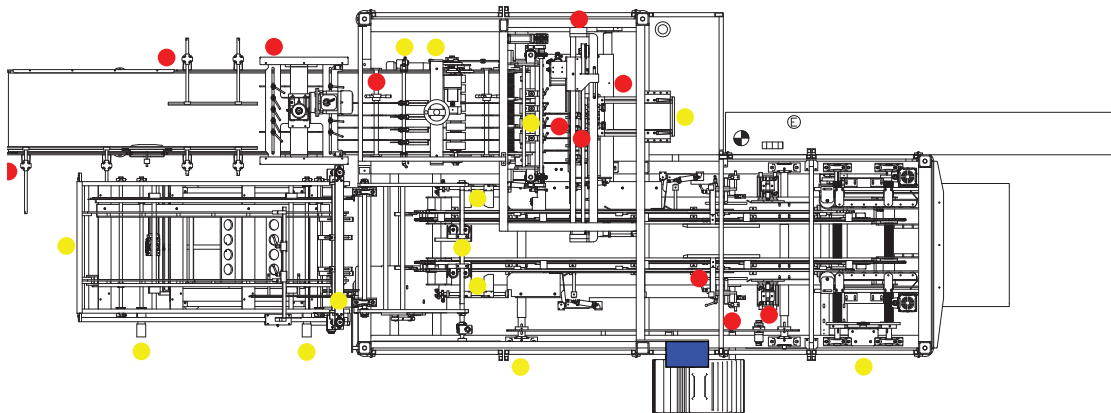


Figure 4-1 - Adjustment Points

4.8.2. 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.

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 keep everything organized.

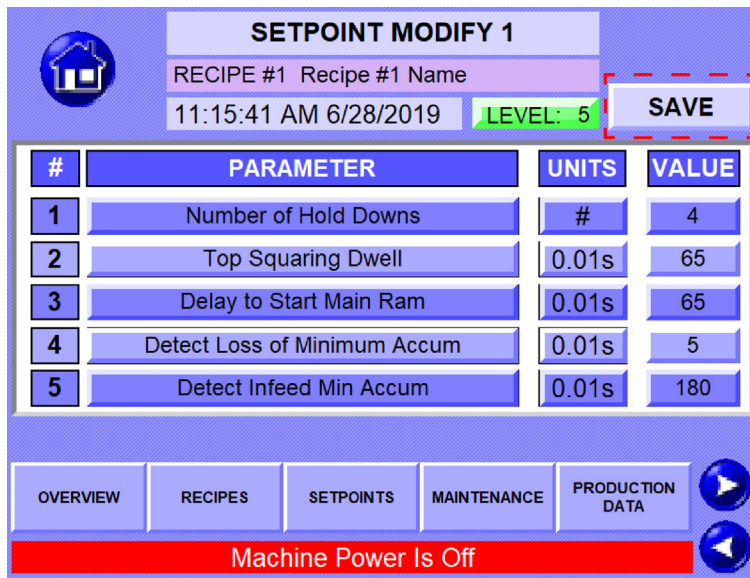


3. Have a note pad and pen to jot down any notes or issues that come up so they can be corrected and the process can be improved for the next time.

4.8.3. 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.



SETPOINT MODIFY 1

RECIPE #1 Recipe #1 Name
11:15:41 AM 6/28/2019 LEVEL: 5 **SAVE**

#	PARAMETER	UNITS	VALUE
1	Number of Hold Downs	#	4
2	Top Squaring Dwell	0.01s	65
3	Delay to Start Main Ram	0.01s	65
4	Detect Loss of Minimum Accum	0.01s	5
5	Detect Infeed Min Accum	0.01s	180

OVERVIEW RECIPES SETPOINTS MAINTENANCE PRODUCTION DATA

Machine Power Is Off

Save Existing Recipe:
It is a good habit for you to save the existing recipe before changing over. This will help ensure a smooth start-up when running that recipe the next time

4.8.4. Load the new Recipe

1. Find the number of the recipe that is going to be run next.
2. Enter recipe number into the load number field.

RECIPES 1 TO 4

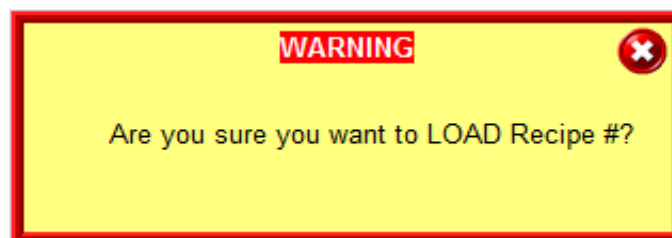
RECIPE #1 Recipe #1 Name
11:22:22 AM 6/28/2019 LEVEL: 5

#	RECIPE	CANCEL
1	Recipe #1 Name	LOAD # 0
2	Recipe #2 Name	CANCEL
3	Recipe #3 Name	COPY FROM 0
4	Recipe #4 Name	COPY TO 0

OVERVIEW RECIPES SETPOINTS MAINTENANCE PRODUCTION DATA

Machine Power Is Off

3. Press **LOAD #** to confirm.



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



SETPOINT MODIFY 7

RECIPE #1 Recipe #1 Name

11:17:15 AM 6/28/2019

LEVEL: 5

SAVE

#	PARAMETER	UNITS	VALUE
31	Adjustment Point #1 (YEL)	0.01 in	0
32	Adjustment Point #2 (YEL)	0.01 in	0
33	Adjustment Point #3 (YEL)	0.01 in	0
34	Adjustment Point #4 (YEL)	0.01 in	0
35	Adjustment Point #5 (YEL)	0.01 in	0

OVERVIEW

RECIPES

SETPOINTS

MAINTENANCE

PRODUCTION DATA



Machine Power Is Off



4.8.5. 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.



NOTICE

Refer to the LOTO procedure in the Safety Information section of the Introduction chapter. Your company's LOTO procedures and protocols take precedence.

4.8.6. Install Change Parts for Case/Tray Change

When changing over from case to tray (or vice versa), the product side guide rails and have change parts which need to be swapped out.

Guide Rails

There are two product guide rails, located between the vacuum transfer arm and the first glue station, that will need to be changed before switching case/tray production. These guides have several points where the guides are attached to their supporting assemblies with screws. There are typically two on the product pusher side and three on the other side.

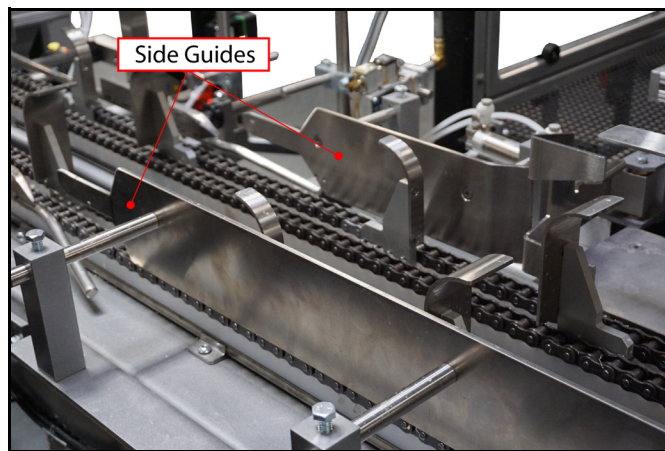


Figure 4-2 - Side Guide Rails

1. Using a hex wrench remove screws holding side guides in place and place screws to the side.

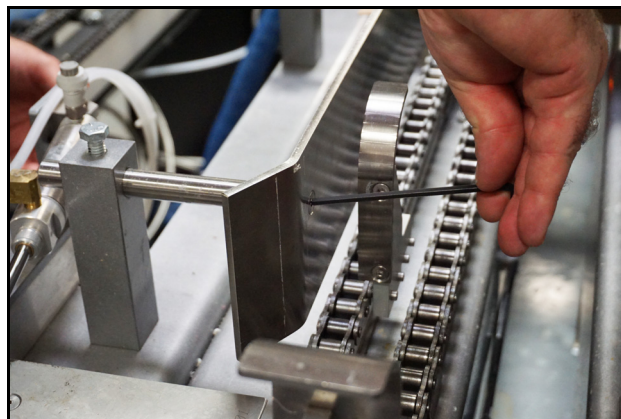


Figure 4-3 - Side Guide Rail Screw Removal

2. After all screws have been removed, remove side guide and place on changeover cart.

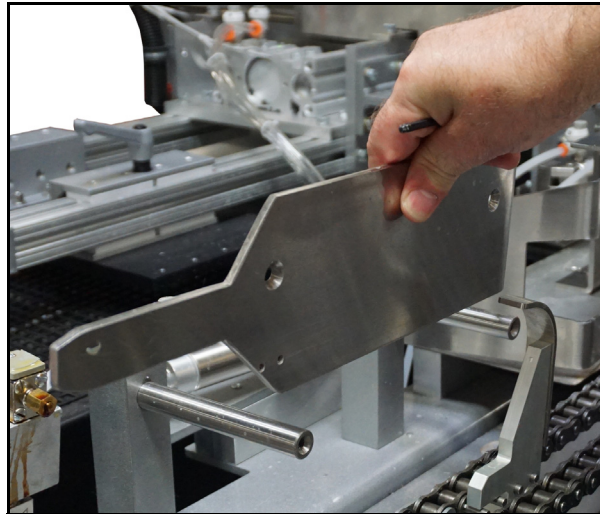


Figure 4-4 - Side Guide Rail Removal

3. To install new side guide, follow the steps above in reverse order.

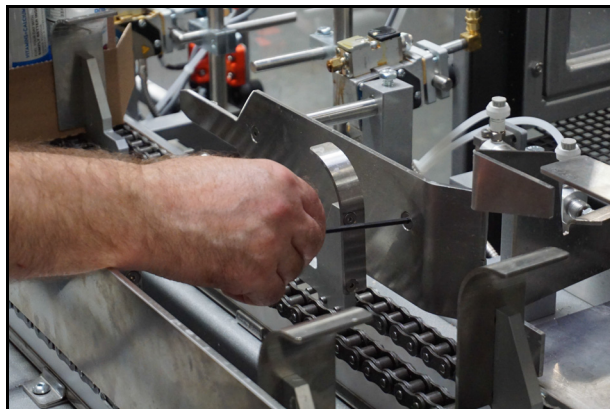


Figure 4-5 - Install New Side Guide Rail

4. Repeat steps 1-3 to replace side guide rail on opposite side.

Flap Folders

There are flap folders, located between the first and second glue stations, that will need to be changed before switching case/tray production. These flap folders have two points where the folders are attached to their supporting assemblies with bolts.

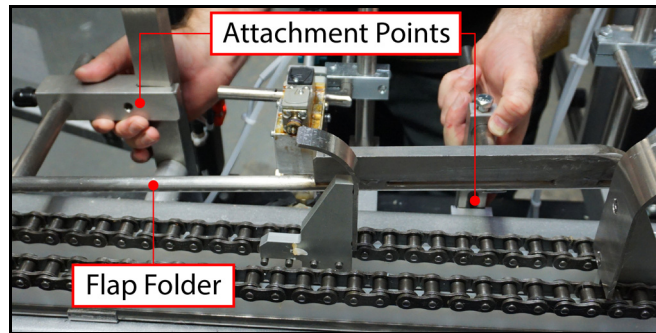


Figure 4-6 - Flap Folder

1. Using an open-end wrench, loosen the bolt that secure the flap folder on both ends of the assembly.



Figure 4-7 - Loosen Bolts

2. Supporting the assembly with one hand, remove the bolt and clamp by hand and set aside.

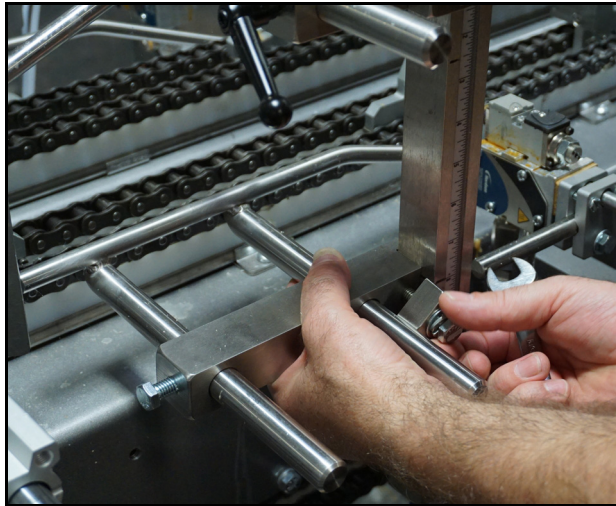


Figure 4-8 - Remove bolts

3. Remove flap folder from supporting assemblies.



Figure 4-9 - Flap Folder Removal

4. To install new flap folder, follow the steps listed above in reverse order.
5. Set new flap folders to the required recipe setpoint using the measurement scale on the supporting assembly.

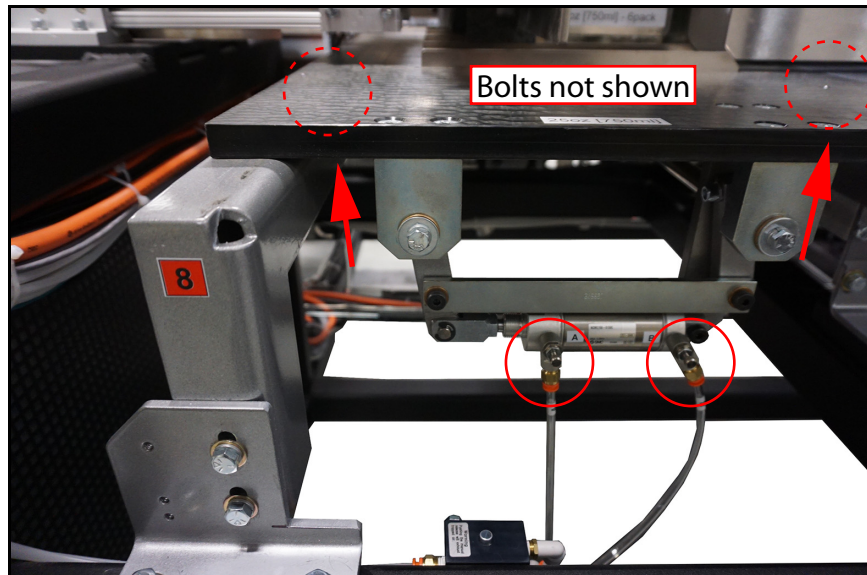
4.8.7. Install Change Parts for Product Change

When changing over from one product size to another, there are several assemblies that have change parts which 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.

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.

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.

Swap Out the Lane Guide Spacers



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

4.8.8. Make Mechanical Adjustments

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

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.

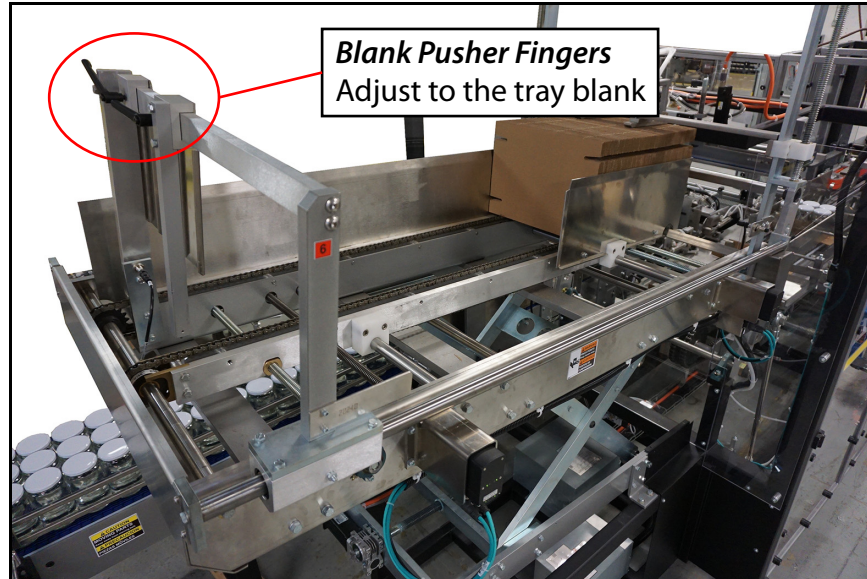
1. Adjust out RH Suction Cup Guard
2. Adjust LH Suction Cup Guard



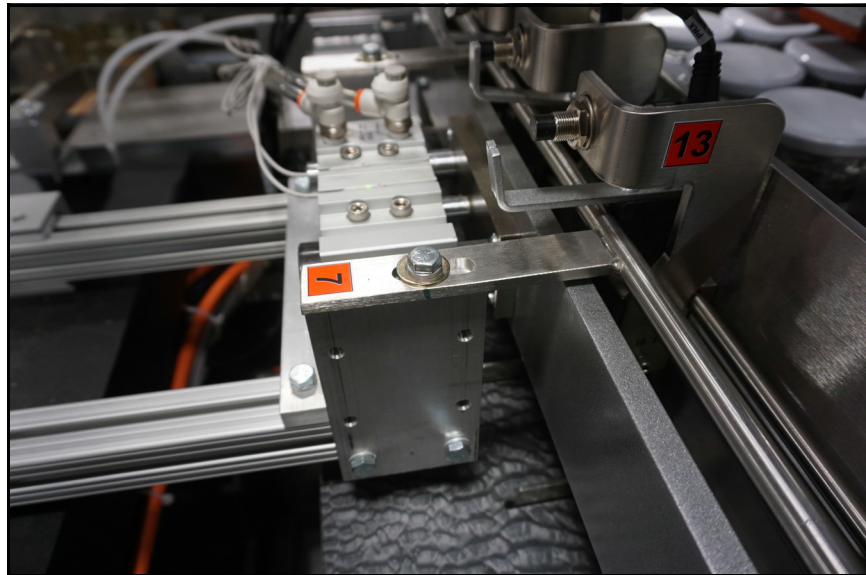
3. Adjust Side Compression position
4. Adjust Major Flap Plow
5. Adjust Top Guide Position



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

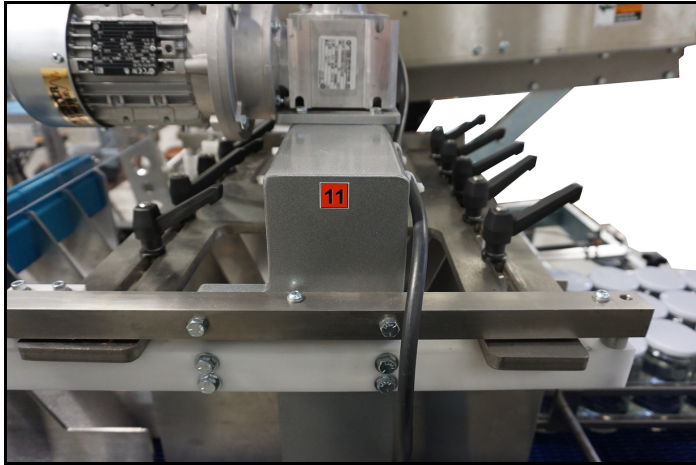


7. Adjust the Finger Stop bar.



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.



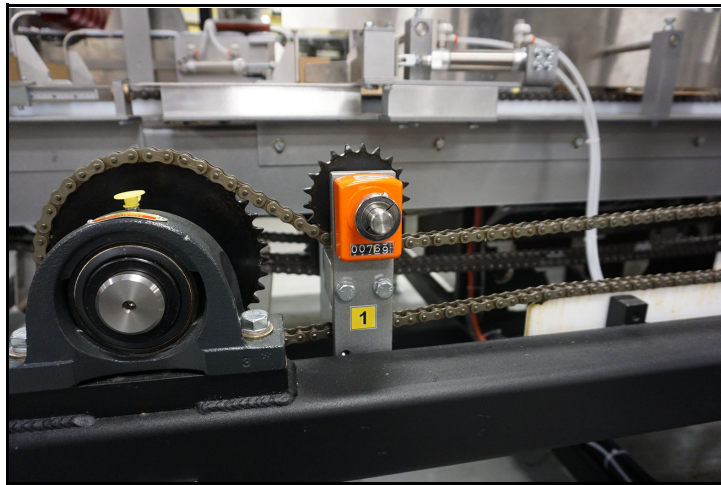
13. Center the finger positions of the step back assembly to the product.



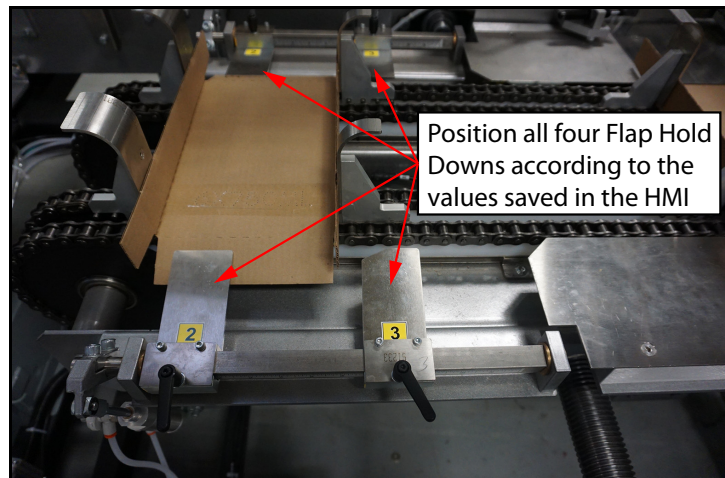
Yellow Adjustment Points

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



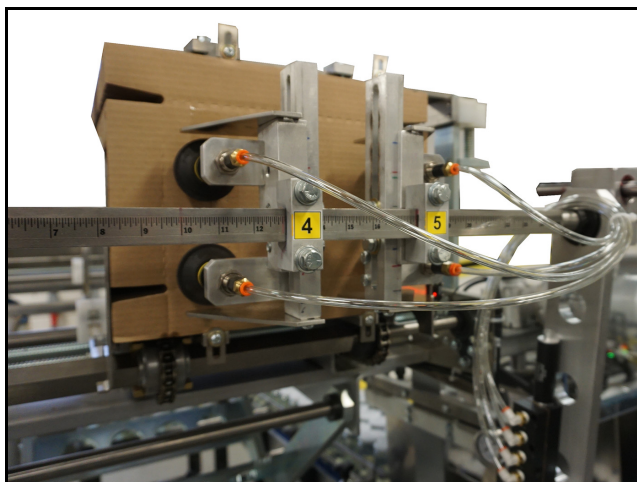
2. Upstream Flap Hold Downs



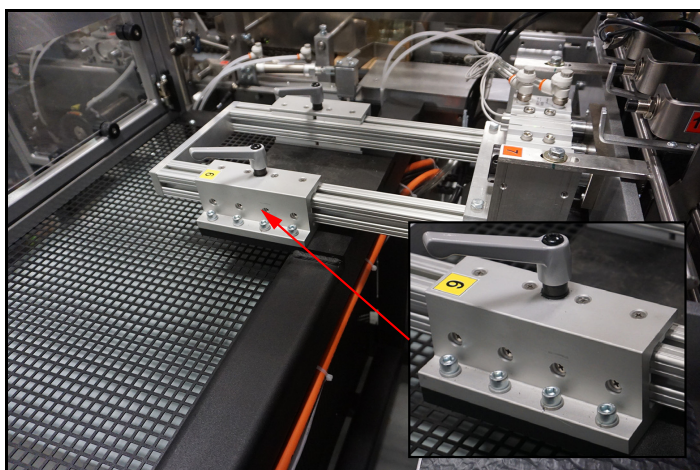
3. Downstream Flap Hold down

4. Right Suction Cup Position

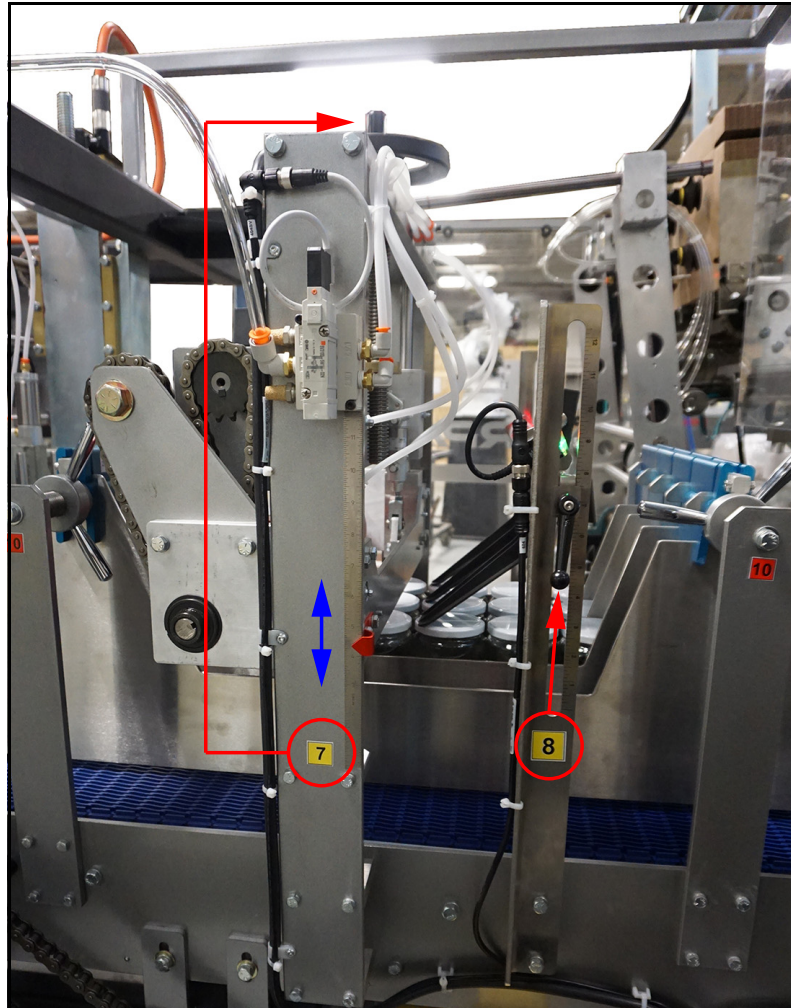
5. Left Suction Cup Position



6. Step Back



- 7. Top Drive Height
- 8. Product Detect Height



4.8.9. 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.

4.8.10. 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 INFEEED 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.

Trayloader Setpoints EL-2200 Serial #17220			1		2		3		4	
			Factory Value	Field Value	Factory Value	Field Value	Factory Value	Field Value	Factory Value	Field Value
Number	Parameter Name	Units	6-pack		12pack					
1	Number of Lanes On Infeed Conveyor	#	3		4					
2	Spare	0.01s	0		75					
3	Delay to Start Main Ram	0.01s	15		15					
4	Infeed Minimum Accumulation Debounce	-	3		3					
5	Detect Infeed Minimum Accumulation	-	50		50					
6	Enable Ram Hold Down	-	0		0					
7	Main Ram Dwell	0.01s	5		5					
8	Blank Magazine Index Counter	Count	1		3					
9	Low Blank Cycle Stop Delay	Count	10		10					
10	Delay To Return Main Ram After Lift	0.01s	20		20					
11	Spare	Hz	0		0					
12	Spare	-	0		0					
13	Spare	Hz	0		0					
14	Spare	-	0		0					
15	Spare	0.01s	0		0					
16	Spare	-	0		0					
17	Spare	-	0		0					
18	Spare	-	0		0					
19	Spare	-	0		0					
20	Spare	-	0		0					
21	VFD 41-Blank Pickup-Speed	#	60		60					
22	VFD 42-Trayloader Infeed-Speed	#	50		50					
23	VFD 43-Side Discharge Speed	#	120		120					
24	Spare	#	0		0					
25	Spare	0.01"	0		0					
26	Spare	0.01"	0		0					
27	Spare	0.01"	0		0					
28	Spare	0.01"	0		0					
29	Spare	0.01"	0		0					
30	Spare	#	0		0					
31	Manual Adjustment Location #1	0.01"	328		328					
32	Manual Adjustment Location #2	0.01"	510		510					
33	Manual Adjustment Location #3	0.01"	627		627					
34	Manual Adjustment Location #4	0.01"	355		355					
35	Manual Adjustment Location #5	0.01"	6.75		6.75					
36	Manual Adjustment Location #6	-	710		710					
37	Manual Adjustment Location #7	-	5.37		5.37					
38	Manual Adjustment Location #8	-	11.5		11.5					
39	Manual Adjustment Location #9	-	0		0					
40	Manual Adjustment Location #10	-	0		0					
61	Minor Flap Tucker On	ON	Pulse	990		990				
		Distance		60		60				

Table 4-1 - Recipe Setpoints 1

Trayloader Setpoints EL-2200 Serial #17220				1		2		3		4	
				Factory Value	Field Value	Factory Value	Field Value	Factory Value	Field Value	Factory Value	Field Value
Number	Parameter Name		Units	6-pack		12pack					
63	1st Glue Pulse	ON	Pulse	650		520					
		Distance		30		50					
65	2nd Glue Pulse	ON	Pulse	800		780					
		Distance		30		50					
67	Lower Tucker Up	ON	Pulse	600		600					
		Distance		300		300					
69	Blank Arm Start	ON	Pulse	250		250					
		Distance		75		75					
71	Blank Vacuum On	ON	Pulse	550		550					
		Distance		50		50					
73	Blank Flap Hold Down Up	ON	Pulse	400		400					
		Distance		20		20					
75	Side Compression	ON	Pulse	975		975					
		Distance		50		50					
77	Spare	ON	Pulse	0		0					
		Distance		0		0					
79	Spare	ON	Pulse	0		0					
		Distance		0		0					
Maintenance Setpoints											
41	Index Conveyor Cycle Speed		Cnt/s	3000		3000					
42	Index Conveyor Home Offset		Count	145		145					
43	Index Conveyor Jog Speed		-	500		500					
44	Index Conveyor Accel. Forward		"/s2	3000		3000					
45	Index Conveyor Decel. Forward		"/s2	3000		3000					
46	Main Ram Speed Forward		"/s	300		300					
47	Main Ram Home Offset Position		0.1in	103		75					
48	Main Ram Forward Position		0.1in	302		302					
49	Main Ram Accel. Forward		"/s2	150		150					
50	Main Ram Decel. Forward		"/s2	300		300					
51	Main Ram Speed Return		Cnt/s	300		300					

Table 4-2 - Recipe Setpoints 2

Maintenance

5.1. Introduction

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



The following procedures should only be performed after the machine has been turned off, allowed to cool down and the air pressure has been released. Always follow proper lockout/tagout procedures. Always wear required personal protective equipment. Always follow your company's safety procedures.



Required Tools

- Clean, soft cloth
- Fine wire brush
- Warm, soapy water
- Window cleaning solution

5.2. Preventive Maintenance Schedule

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



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 5-1: Preventive Maintenance Schedule

5.3. Preventative Maintenance Tasks

5.3.1. Walk Around Safety Inspection

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.

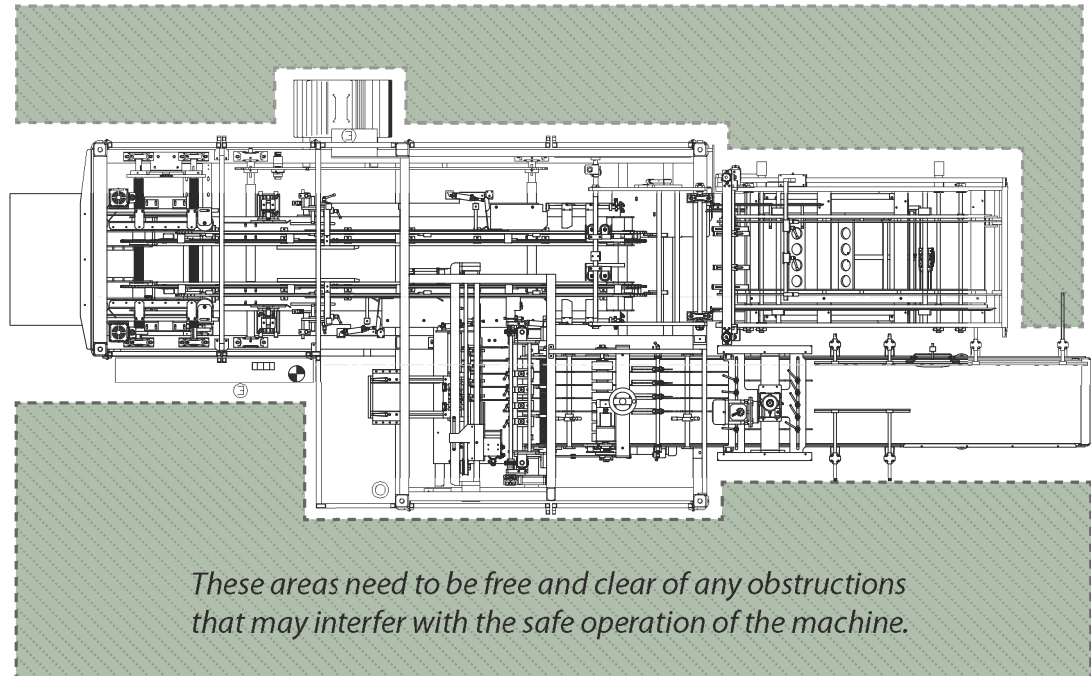


Figure 5-1 - Inspecting the Machine

5.3.2. Cleaning External Surfaces

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

5.3.3. 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.



5.3.4. Draining Air Filter Bowl

There is one air filter located on the machine.

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.

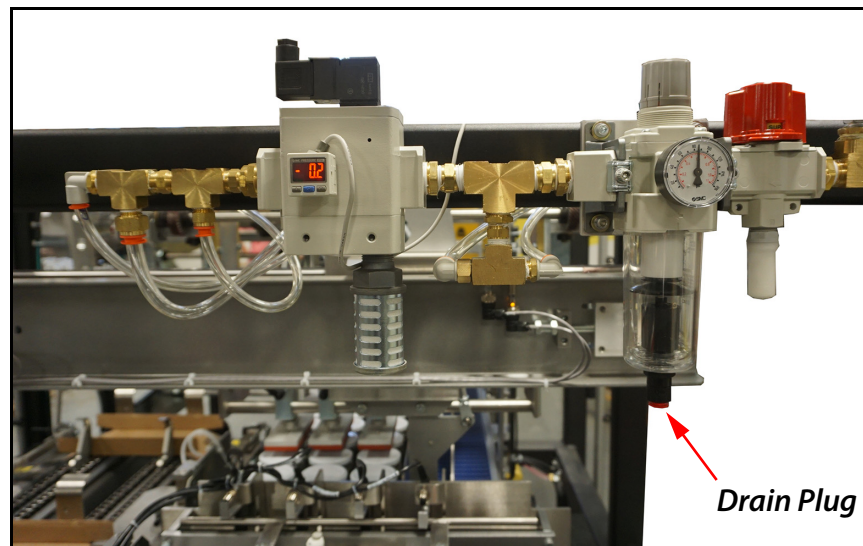
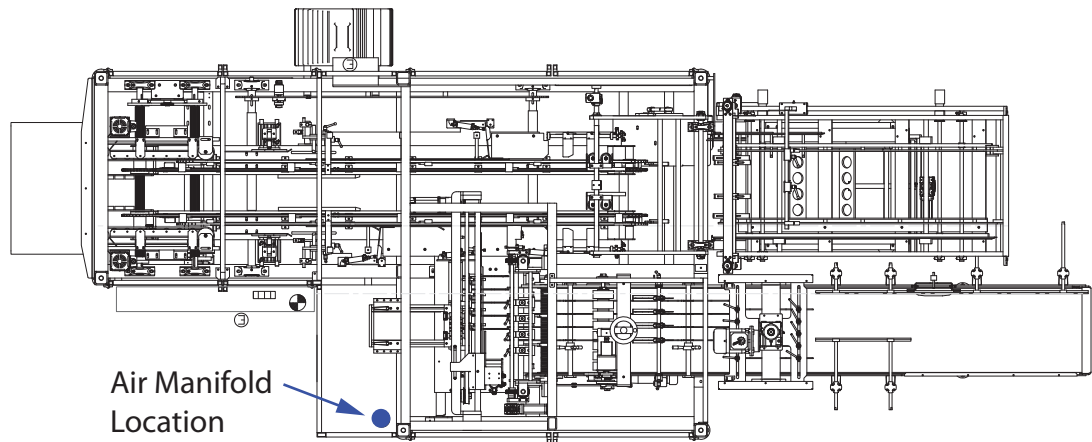
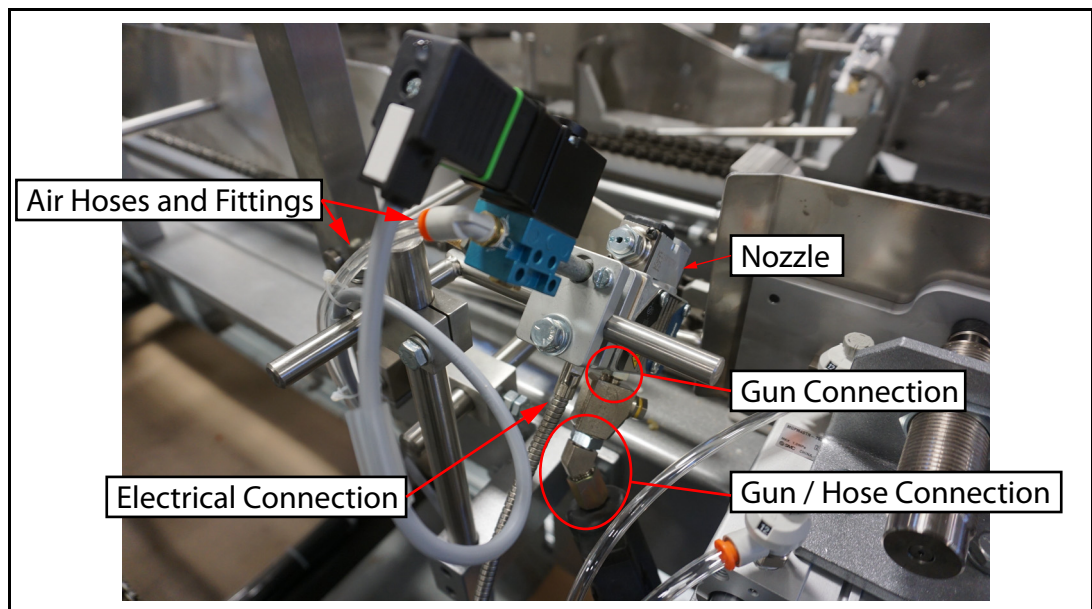


Figure 5-2 - Air Filter Drain Plug



5.3.5. *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.

5.3.6. *Inspect Suction Cups*

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



Figure 5-3 - Suction Cups

5.3.7. Cleaning Photo Eyes



Turn off machine's main disconnect switch before servicing the machine. You may be 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.

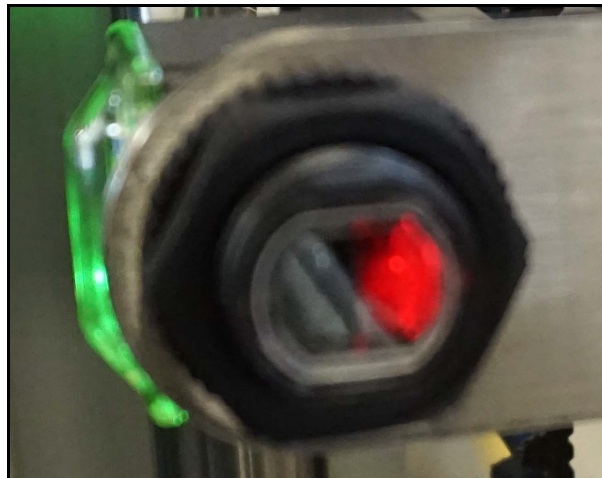


Figure 5-4 - Typical PE

5.3.8. Inspecting Conveyor Belts

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 5-5 - Module Plastic Belting care

5.4. 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.

5.4.1. 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.

5.4.2. 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).

6

Troubleshooting

6.1. Introduction

This chapter provides information and suggestions on corrective actions to take in the event the machine stops due to a fault.

Faults are specific conditions that interrupt the machine cycle resulting in the equipment stopping. A message related to the fault will appear on the HMI screen.

The lists that follow group fault messages and their corrective action as follows:

- Issues related to electrical motion control devices, i.e. servo motor and AC motor drives.
- Issues detected by sensors that monitor the position of mechanical assemblies to determine if they are in the correct position at the correct time.
- Issues related to the position of or the lack of product or trays.
- Other physical conditions sensed by the PLC.



Where appropriate, a machine diagram is provided to help pin point the area where the fault has occurred.

6.2. Fault Message Troubleshooting Index & Charts



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.

6.2.1. Related to Motion Control Devices

Fault Message
Main Ram Servo Must Be Homed
Index Conveyor Must Be Homed
Divider Servo Must Be Homed
Blank Pick Up Drive Comm Loss
Trayloader Infeed Drive Comm Loss
Discharge Conv. Drive Comm Loss
Overhead Infeed Roller Drive Comm Loss
Divider Infeed Conv. Drive Comm Loss
Main Ram Servo Drive Not Ready
Index Conveyor Servo Drive Not Ready
Divider Servo Drive Not Ready
Blank Pick Up Drive Not Ready
Trayloader Infeed Drive Not Ready
Overhead Infeed Roller Drive Not Ready
Discharge Conv. Drive Not Ready
Divider Infeed Conv. Drive Not Ready
Discharge Conv. OL Tripped

Table 6-1: Troubleshooting Index - Motion Control Devices

Fault Message	Possible Cause	Remedy
"X" Servo Must Be Homed	Servo motor controller does not know its location.	Home the motor. Press CYCLE STOP/ RESET
"X" Comm Loss	VFD has lost it's Ethernet signal	Refer to vendor manual
"X" Drive Not Ready	Drive is just starting up.	Wait 30 seconds. 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.

Table 6-2: Troubleshooting Chart - Motion Control Devices

6.2.2. Related to Mechanical Position

Fault Types

- **Jams** - Messages with “Jam” in them indicate a specific assembly did move to where the PLC told it to go. This is detected because a sensor, like a photo-eye or prox switch was not made when it was supposed to.
- **Overtravel** - These faults occur when a assembly, whether controlled by a servo motor or an air cylinder, move further, or beyond where it was supposed to go. In servo applications, the over travel is sensed by the controller. In air operated applications, a reed switch or prox switch is used as the sensor.
- **Position Errors** - Position errors occur when the controller for that servo motor no longer knows its position. That is caused when something prevents the motor from going to it programmed position.
- **Tripped** - These faults indicate a “tripped” condition occurs when a prox switch being used to sense the torque limiter trip plate is ON.

Fault Message
Main Ram Jammed
Index Conveyor Jammed
Main Ram Servo Overtravel
Main Ram Servo Position Error
Index Servo Position Error
Blank Pick Up Torque Limiter Tripped
Main Ram Lift Not Up
Step Back Cylinder Jammed
Divider Servo Overtravel
Divider Jammed at Gate

Table 6-3: Troubleshooting Index - Mechanical Positions

Fault Message	Possible Cause	Remedy
Index Conveyor Jam	The index conveyor was not able to index forward without overloading the torque setting of the controller.	Check for and remove any obstructions. Remove any product or trays before the glue station. Close tray loader doors, reset the machine. Home the index conveyor.
Index Servo Position Error	Index Conveyor did not reach the position set in the Servo Controller 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.
Step Back Cylinder Jammed	Step Back Retracted prox switch not detected <i>AFTER Step Back Forward</i> prox switch turns off.	Clear obstruction.
		Verify proper air pressure & functionality of the air cylinder.
		Verify the position & functionality of prox switches.

Fault Message	Possible Cause	Remedy
Main Ram Jammed	The main ram did not get to its forward position after leaving the home position.	Obstruction - Open trayloader door and clear obstruction. Position the ram assembly so that the over travel prox is not made. Close the trayloader door and press the RESET button.
	Assembly position not known by the controller	Press the STOP/RESET button. Go to the Servo Ram Control screen in the HMI & press the HOME MAIN RAM button.
Main Ram Servo Overtraveled	Indicates the Main Ram over traveled (moved past) its forward position and made the over travel proximity switch.	Make sure that proximity switch on assembly is mounted correctly and is functioning properly.
		Physically move the main ram so the over travel prox is OFF. Home the main ram.
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.

Fault Message	Possible Cause	Remedy
Main Ram Lift Not Up	Ram Up prox switch not detected AFTER the ram's forward movement has been completed.	Verify position & functionality of the prox switch.
		Clear Obstruction
		Troubleshoot the air cylinder.
Blank Pick Up Torque Limitor Tripped	Indicates that the torque limiter has tripped.	Verify position & functionality of the prox switch.
		Remove obstruction and reset torque limiter.

Table 6-4: Troubleshooting Chart - Position of Mechanical Assemblies

6.2.3. Product and Tray Related

Fault Message
Blank Jammed at Blank Load Position
Back Up at Index Exit
Blanks in Magazine Did Not Advance

Table 6-5: Troubleshooting Index - Product and Tray Related

Fault Message	Possible Cause	Remedy
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.
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.

Table 6-6: Troubleshooting Chart - Product and Tray Related

6.2.4. Related to Some Other Physical Condition

Fault Message
Low Air Pressure Supply
Glue Unit Fault
Glue Unit Not Ready
Machine Power is Off
Tray Loader Door Safety Circuit Open
Divider Door Safety Circuit Open

Table 6-7: Troubleshooting Index - Other Conditions

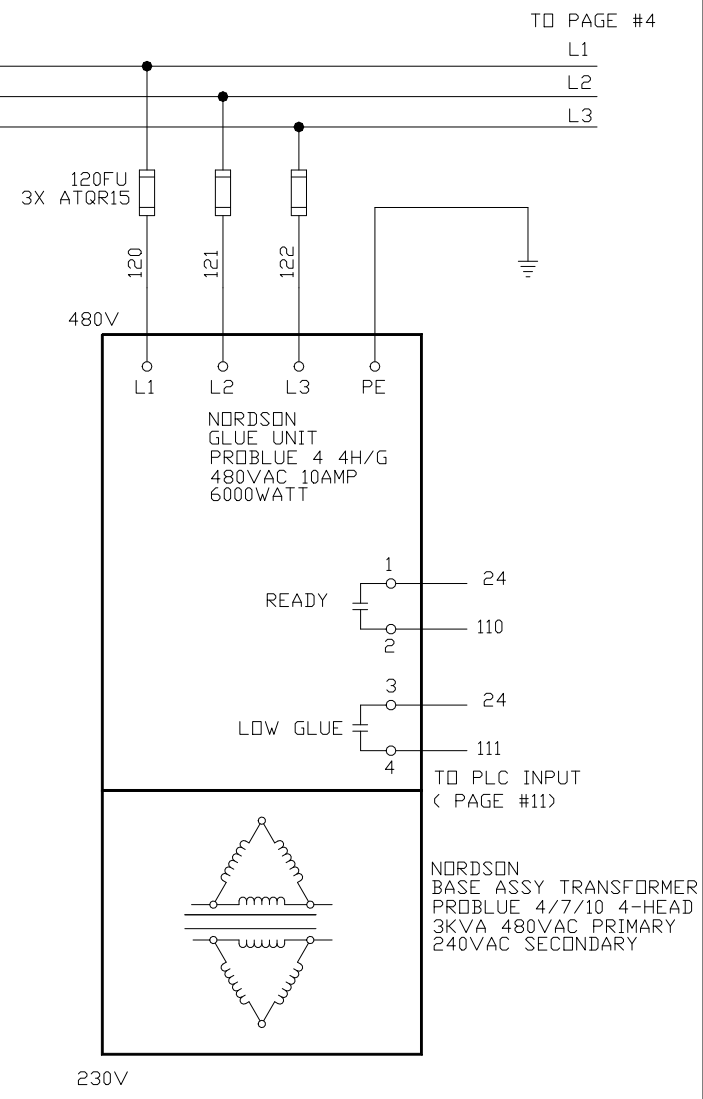
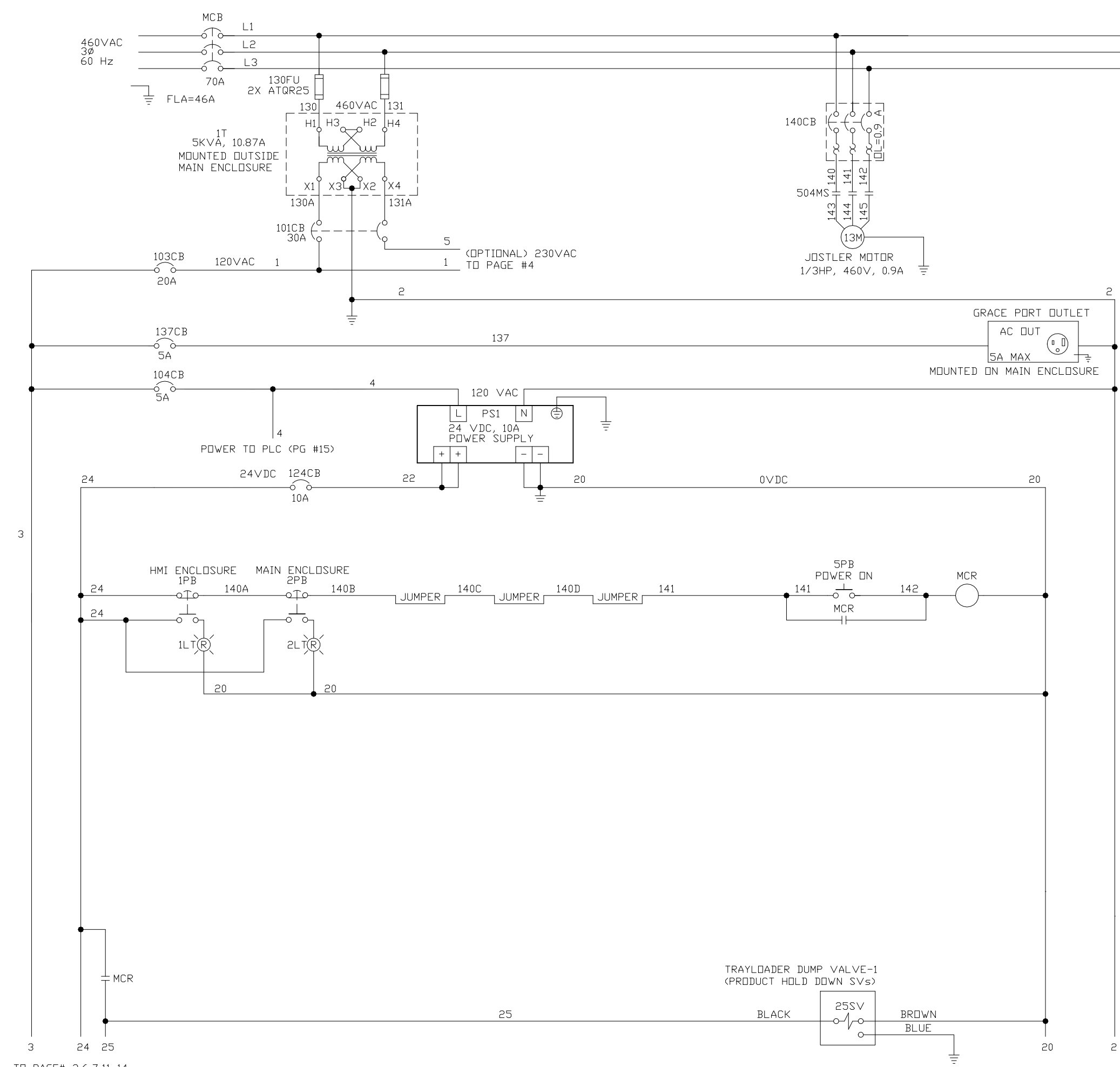
Fault Message	Possible Cause	Remedy
Low Air Pressure Supply	Air pressure has dropped below the allowable limit. The air pressure switch is set to signal an alarm if the pressure drops below 70 psi.	Verify that the air ON
	Air Pressure is set too low	Open the valve on the Filter Regulator until the pressure reaches 80 psi.
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
Machine Power Is Off	When the Main Disconnect is ON and power is being supplied to the machine, but the Power On push button has not been pressed	Press the Power On button
	The MCR (Master Control Relay) is not on.	Refer to electrical schematic to troubleshoot cause.
(Tray Loader & Divider) 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

7

Electrical Schematics

7.1. Electrical Schematics

This chapter contains the electrical schematics for the EL-2000 Series.



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

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



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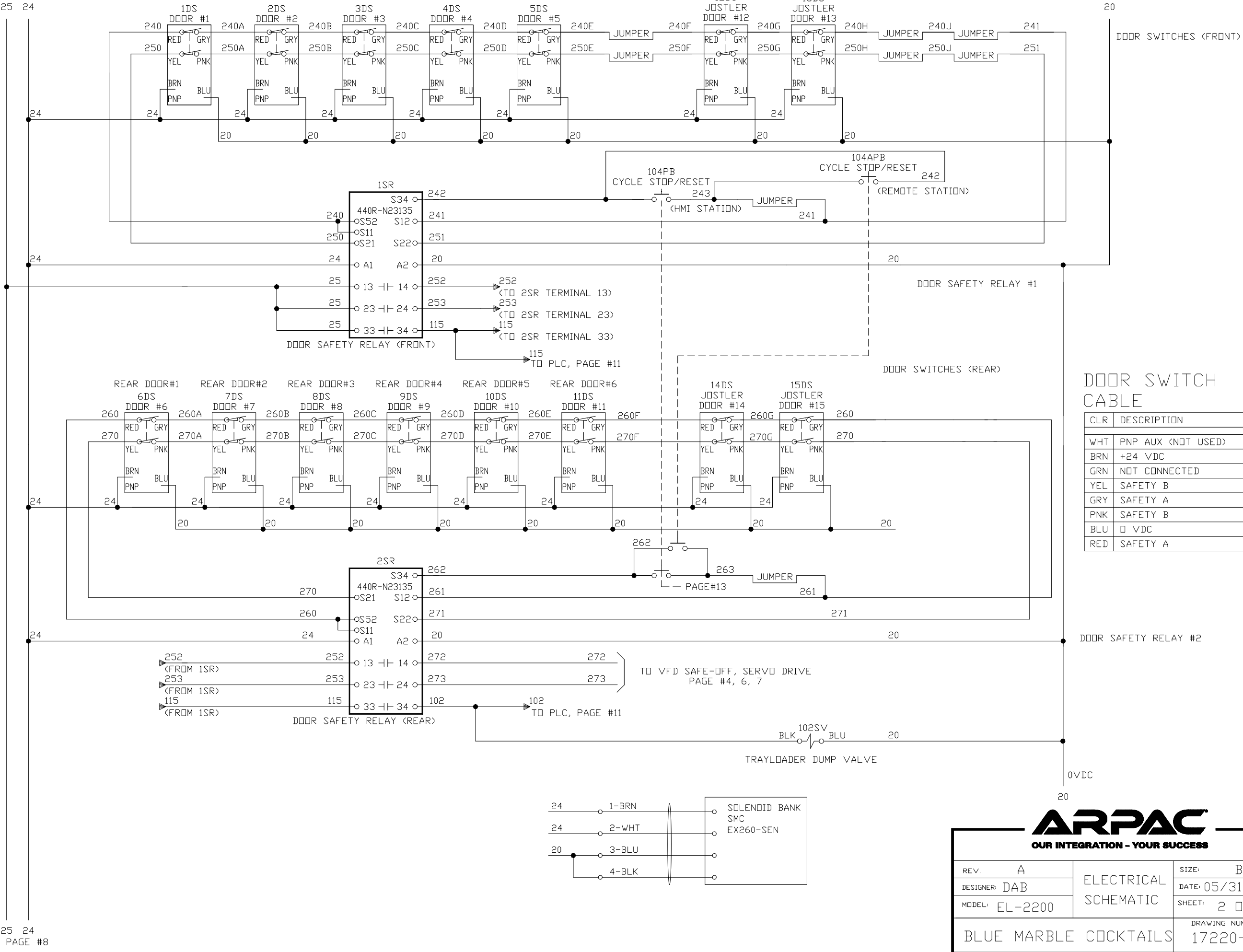
REV. A	ELECTRICAL SCHEMATIC	SIZE: B
DESIGNER: DAB		DATE: 05/07/2019
MODEL: EL-2200		SHEET: 1 OF 15
BLUE MARBLE COCKTAILS		DRAWING NUMBER: 17220-01

TO PAGE# 2,6,7,11-14

103XX
— DEVICE NAME
— DEVICE NUMBER
PAGE NUMBER

TO PAGE #4

25 24



ARPAC
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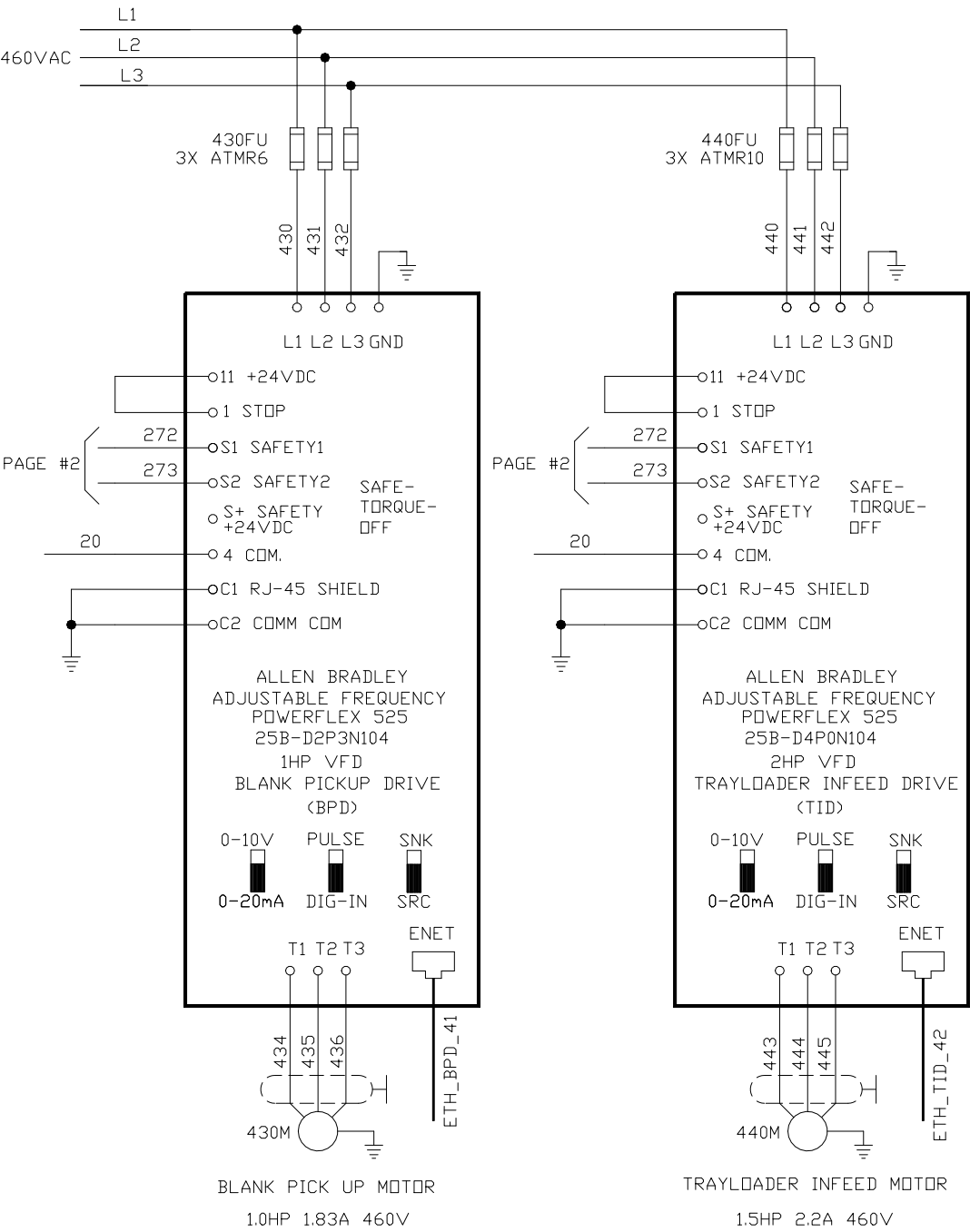
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DESIGNER: DAB		DATE: 05/31/2019
MODEL: EL-2200		SHEET: 2 OF 15
BLUE MARBLE COCKTAILS		DRAWING NUMBER: 17220-02

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103XX
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— DEVICE NUMBER
PAGE NUMBER

ARPAC			
OUR INTEGRATION - YOUR SUCCESS			
REV. A	ELECTRICAL SCHEMATIC	SIZE: B	
DESIGNER: DAB		DATE: 04/18/2019	
MODEL: EL-2200		SHEET: 3 OF 15	
BLUE MARBLE COCKTAILS		DRAWING NUMBER: 17720-03	

FROM PAGE #1



BPD- DRIVE PARAMETERS
POWER FLEX 525 DRIVE SET UP
(DIFFERENT THAN DEFAULT)

DISP	PARAMETER DESC	SETTING
C128	EN ADDR SELECT	1
C129	EN IP ADDR CFG 1	10
C130	EN IP ADDR CFG 2	255
C131	EN IP ADDR CFG 3	255
C132	EN IP ADDR CFG 4	41
C133	EN SUBNET CFG 1	255
C134	EN SUBNET CFG 2	255
C135	EN SUBNET CFG 3	255
C136	EN SUBNET CFG 4	0
DISP	PARAMETER DESC	SETTING
P031	RATED VOLTAGE	460
P033	MOTOR OL CURRENT	2.0 AMP
P034	MOTOR NP FLA	1.8 AMP
P037	MOTOR NP POWER	1.0 HP
P046	START SOURCE 1	5 (ETH)
P047	SPEED REFERENCE 1	15 (ETH)
P041	ACCELERATION TIME	1 SEC
P042	DECELERATION TIME	0.5 SEC
P044	MAX FREQUENCY	90 HZ
A486	SHEAR PIN 1 LEVEL	1.6 AMP
A487	SHEAR PIN 1 TIME	0.5 SEC
A541	AUTO RESTART TRIES	0
A543	START AT POWER UP	0
C132	EN IP ADDR CFG 4	41

TID- DRIVE PARAMETERS
POWER FLEX 525 DRIVE SET UP
(DIFFERENT THAN DEFAULT)

DISP	PARAMETER DESC	SETTING
P031	RATED VOLTAGE	460
P033	MOTOR OL CURRENT	2.4 AMP
P034	MOTOR NP FLA	2.2 AMP
P037	MOTOR NP POWER	1.5 HP
P046	START SOURCE 1	5 (ETH)
P047	SPEED REFERENCE 1	15 (ETH)
P041	ACCELERATION TIME	1 SEC
P042	DECELERATION TIME	1 SEC
P044	MAX FREQUENCY	90 HZ
A486	SHEAR PIN 1 LEVEL	2.0 AMP
A487	SHEAR PIN 1 TIME	1.0 SEC
A541	AUTO RESTART TRIES	0
A543	START AT POWER UP	0
C132	EN IP ADDR CFG 4	42

*INSTALL DRIVES WITH 2" CLEARANCE
TOP AND BOTTOM AND WITH 1" CLEARANCE
LEFT TO RIGHT

103XX
— DEVICE NAME
— DEVICE NUMBER
PAGE NUMBER

REV. A

DESIGNER: DAB

MODEL: EL-2200

ELECTRICAL SCHEMATIC

SIZE: B

DATE: 06/06/2019

SHEET: 4 OF 15

BLUE MARBLE COCKTAILS

DRAWING NUMBER: 17220-04

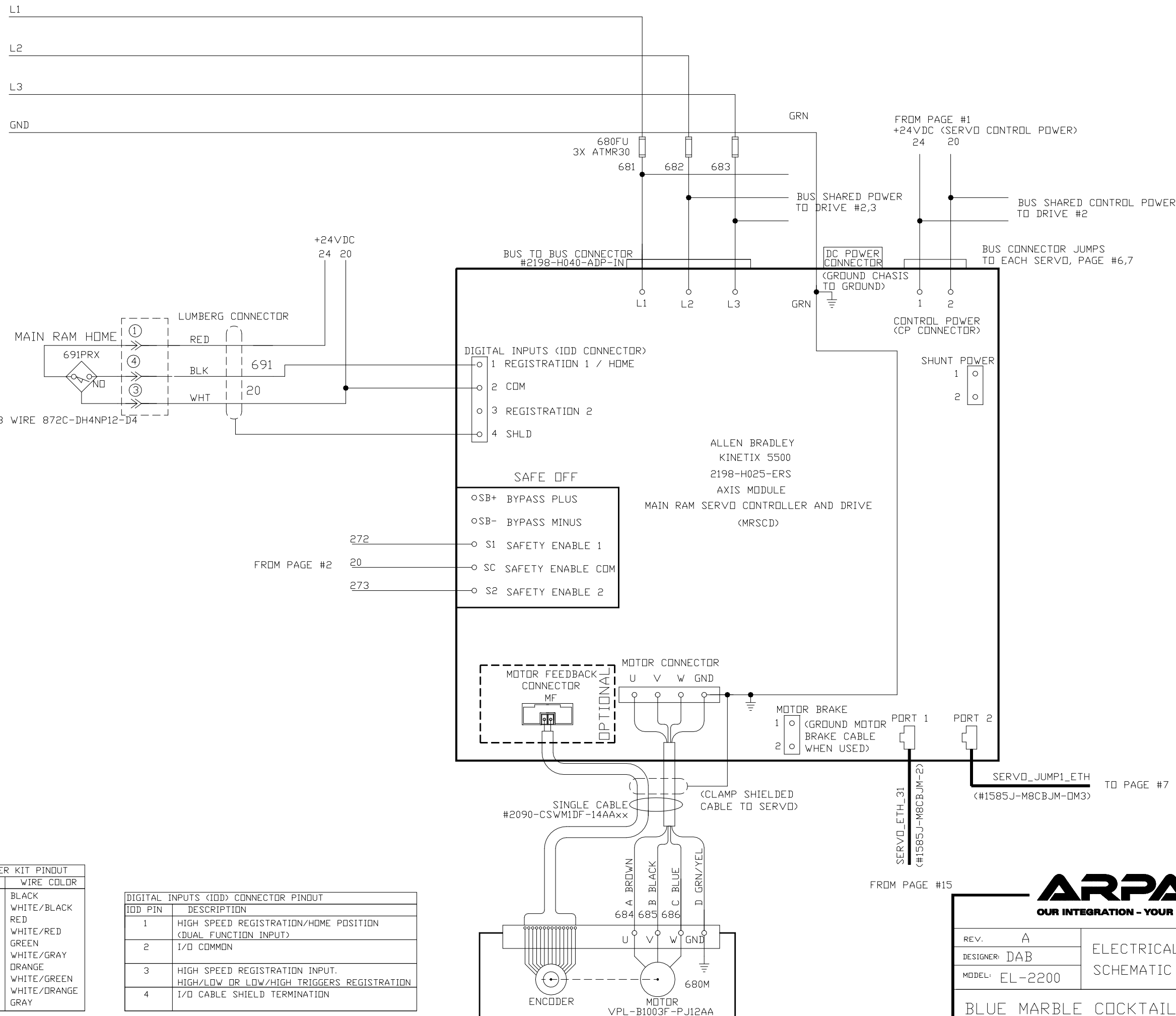
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103XX
— DEVICE NAME
— DEVICE NUMBER
PAGE NUMBER



 OUR INTEGRATION - YOUR SUCCESS				
REV. A	ELECTRICAL SCHEMATIC		SIZE: B	
DESIGNER: DAB			DATE: 04/18/2019	
MODEL: EL-2200			SHEET: 5 OF 15	
BLUE MARBLE COCKTAILS			DRAWING NUMBER: 17720-03	

FROM PAGE #1
460 VAC

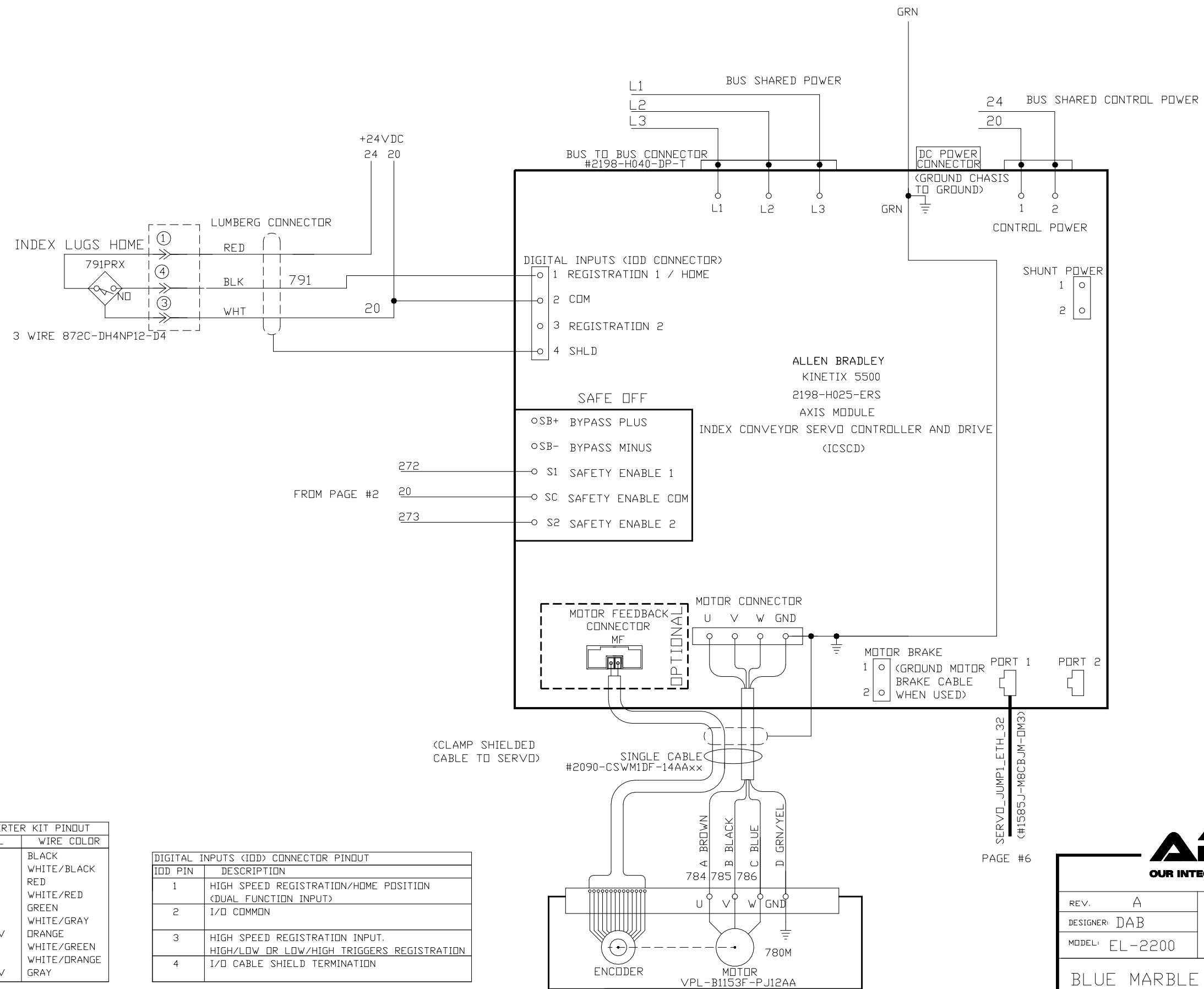


2198-H2DCK CONVERTER KIT PINOUT		
TERMINAL	SIGNAL	WIRE COLOR
1	SIN+	BLACK
2	SIN-	WHITE/BLACK
3	COS+	RED
4	COS-	WHITE/RED
5	DATA+	GREEN
6	ECOM	WHITE/GRAY
7	EPWR_9V	ORANGE
10	DATA-	WHITE/GREEN
11	TS+	WHITE/DRANGE
14	EPWR_5V	GRAY

DIGITAL INPUTS (IOD) CONNECTOR PINOUT	
IOD PIN	DESCRIPTION
1	HIGH SPEED REGISTRATION/HOME POSITION (DUAL FUNCTION INPUT)
2	I/O COMMON
3	HIGH SPEED REGISTRATION INPUT. HIGH/LOW OR LOW/HIGH TRIGGERS REGISTRATION
4	I/O CABLE SHIELD TERMINATION

ARPAC
OUR INTEGRATION - YOUR SUCCESS

REV. A	ELECTRICAL SCHEMATIC	SIZE: B
DESIGNER: DAB		DATE: 04/18/2019
MODEL: EL-2200		SHEET: 6 OF 15
BLUE MARBLE COCKTAILS		DRAWING NUMBER: 17220-06



2198-H2DCK CONVERTER KIT PINOUT		
TERMINAL	SIGNAL	WIRE COLOR
1	SIN+	BLACK
2	SIN-	WHITE/BLACK
3	COS+	RED
4	COS-	WHITE/RED
5	DATA+	GREEN
6	ECOM	WHITE/GRAY
7	EPWR_9V	ORANGE
10	DATA-	WHITE/GREEN
11	TS+	WHITE/DRANGE
14	EPWR_5V	GRAY

DIGITAL INPUTS (IOD) CONNECTOR PINOUT	
IOD PIN	DESCRIPTION
1	HIGH SPEED REGISTRATION/HOME POSITION (DUAL FUNCTION INPUT)
2	I/O COMMON
3	HIGH SPEED REGISTRATION INPUT. HIGH/LOW OR LOW/HIGH TRIGGERS REGISTRATION
4	I/O CABLE SHIELD TERMINATION

ARPAC
OUR INTEGRATION - YOUR SUCCESS

REV. A	ELECTRICAL SCHEMATIC	SIZE: B
DESIGNER: DAB		DATE: 04/18/2019
MODEL: EL-2200		SHEET: 7 OF 15
BLUE MARBLE COCKTAILS		DRAWING NUMBER: 17220-07

SERV_JUMP1_ETH_32
(#1585J-M8CBJM-QM3)
PAGE #6

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103XX
— DEVICE NAME
— DEVICE NUMBER
PAGE NUMBER



 OUR INTEGRATION - YOUR SUCCESS				
REV.	A	ELECTRICAL SCHEMATIC	SIZE:	B
DESIGNER:	DAB		DATE:	04/18/2019
MODEL:	EL-2200		SHEET:	8 OF 15
BLUE MARBLE COCKTAILS			DRAWING NUMBER: 17720-03	

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103XX
PAGE NUMBER
DEVICE NAME
DEVICE NUMBER

ARPAC

OUR INTEGRATION - YOUR SUCCESS

REV. A	ELECTRICAL SCHEMATIC	SIZE: B
DESIGNER: DAB		DATE: 04/18/2019
MODEL: EL-2200		SHEET: 9 OF 15
BLUE MARBLE COCKTAILS		DRAWING NUMBER: 17220-09

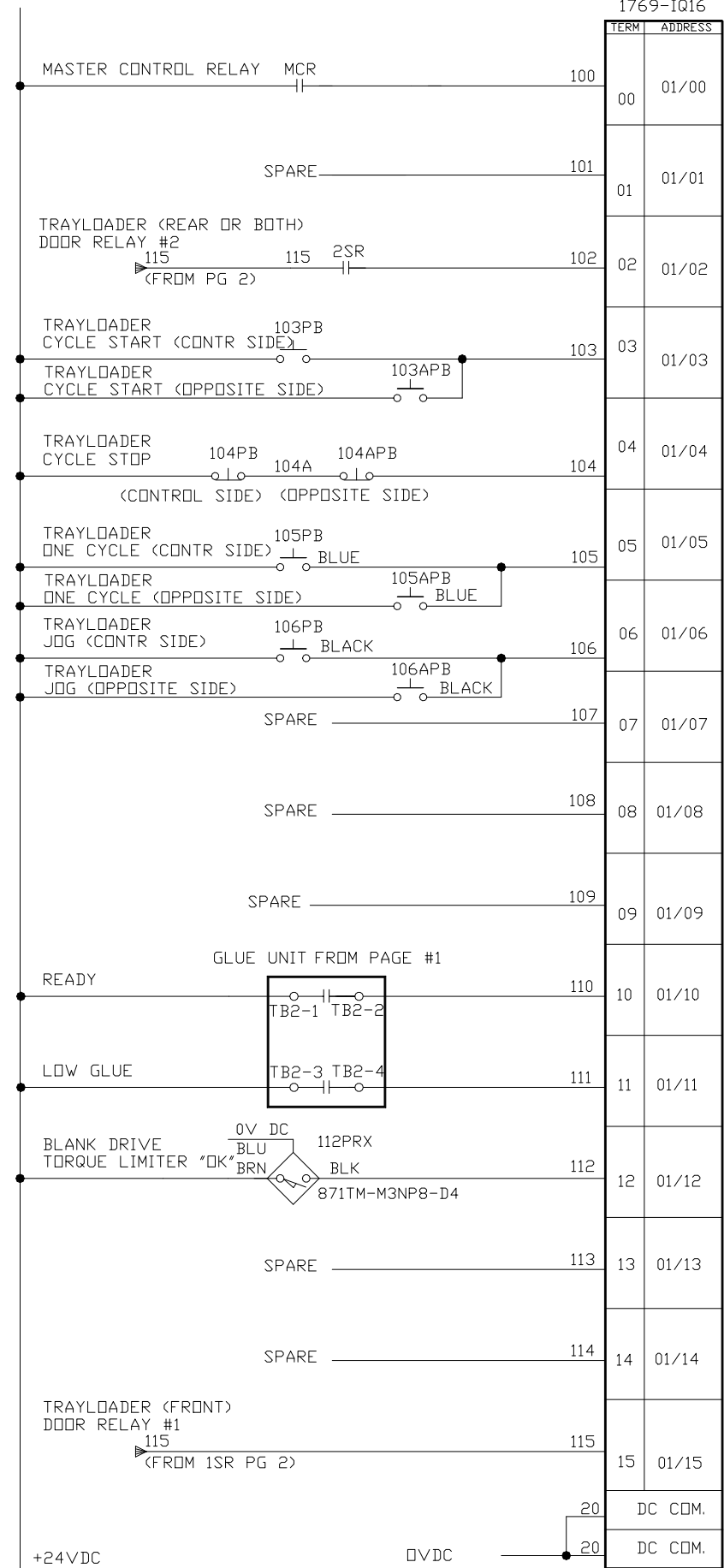
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OUR INTEGRATION - YOUR SUCCESS			
REV. A	ELECTRICAL SCHEMATIC	SIZE: B	DRAWING NUMBER: 17220-10
DESIGNER: DAB		DATE: 04/18/2019	
MODEL: EL-2200		SHEET: 10 OF 15	
BLUE MARBLE COCKTAILS			

24

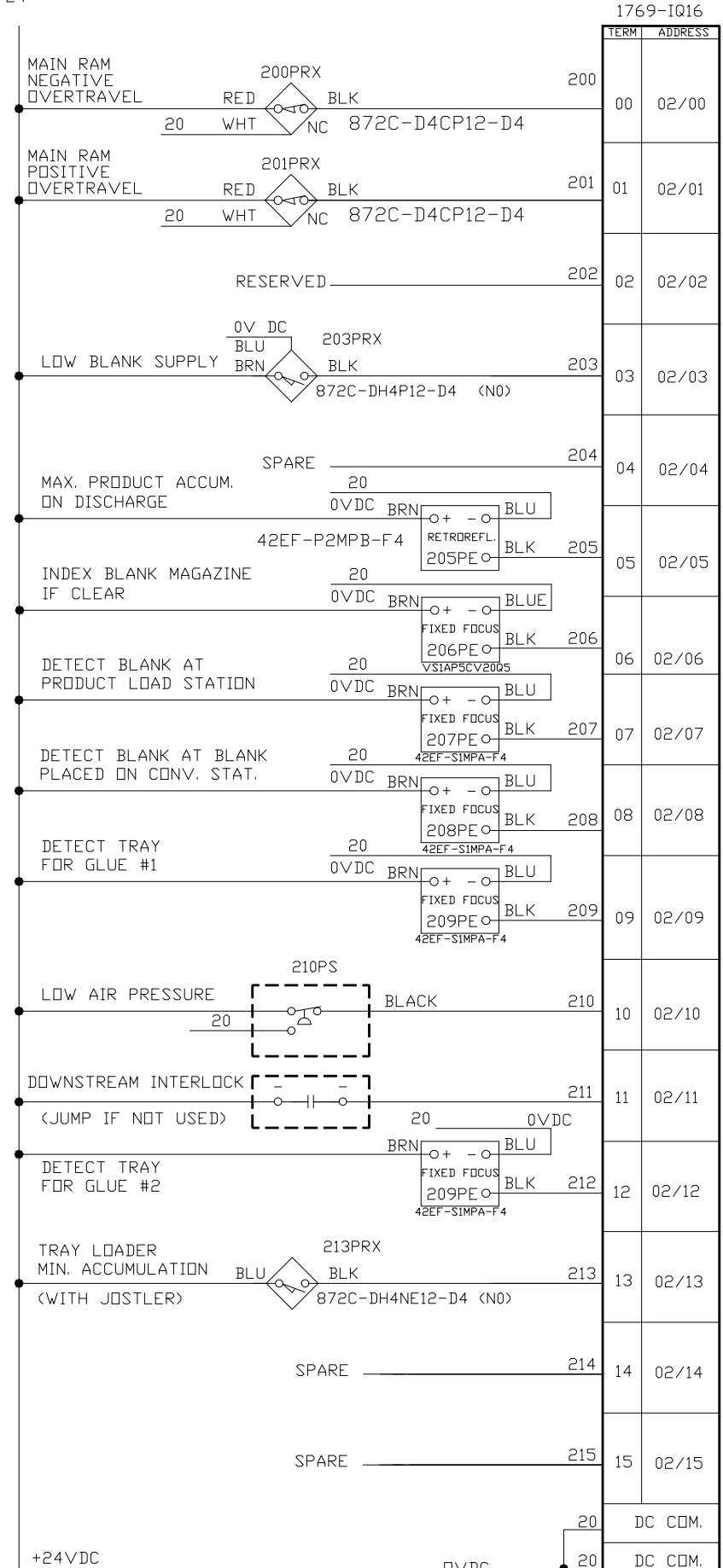
INPUT MODULE #1



24

24

INPUT MODULE #2

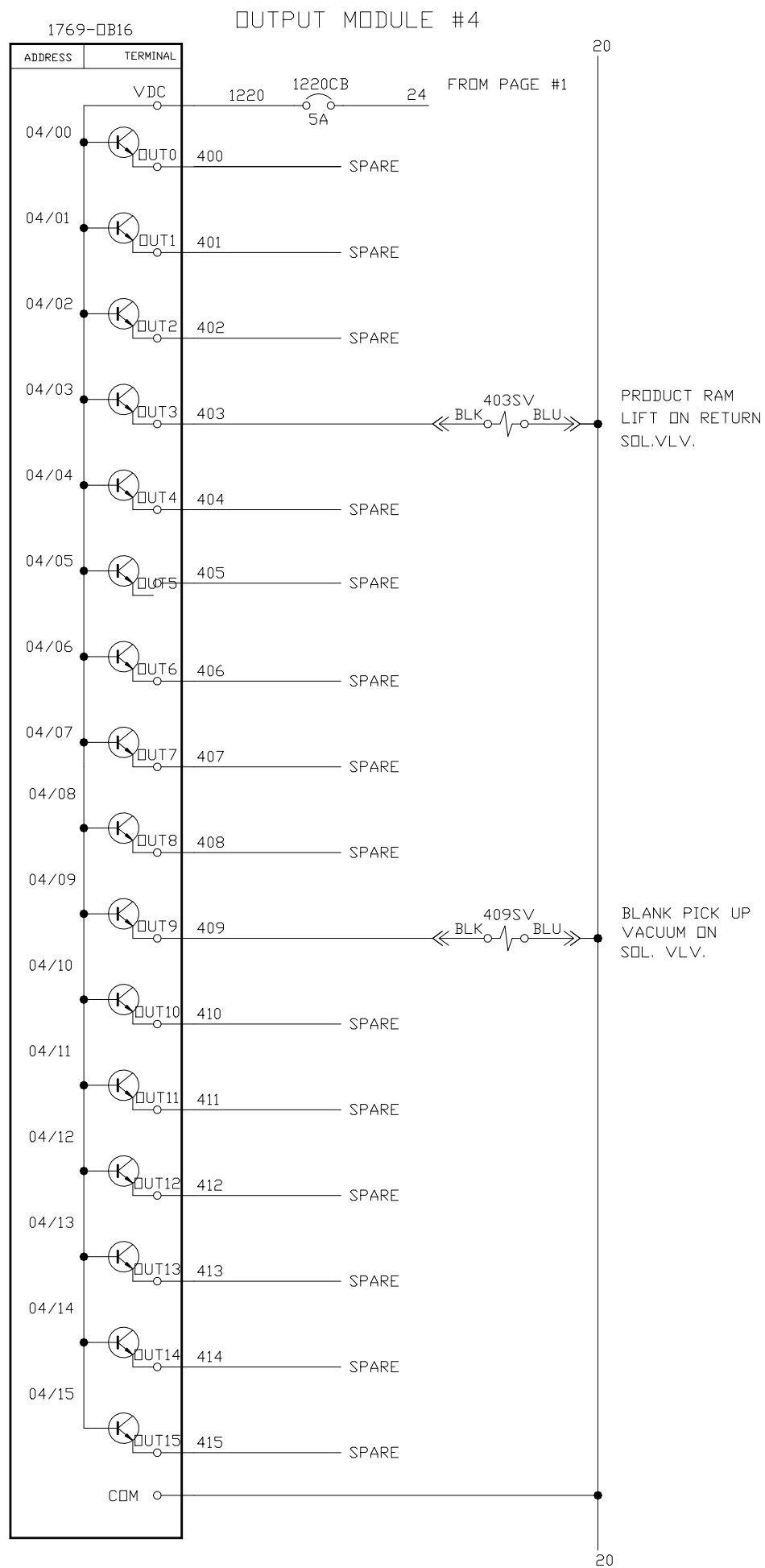
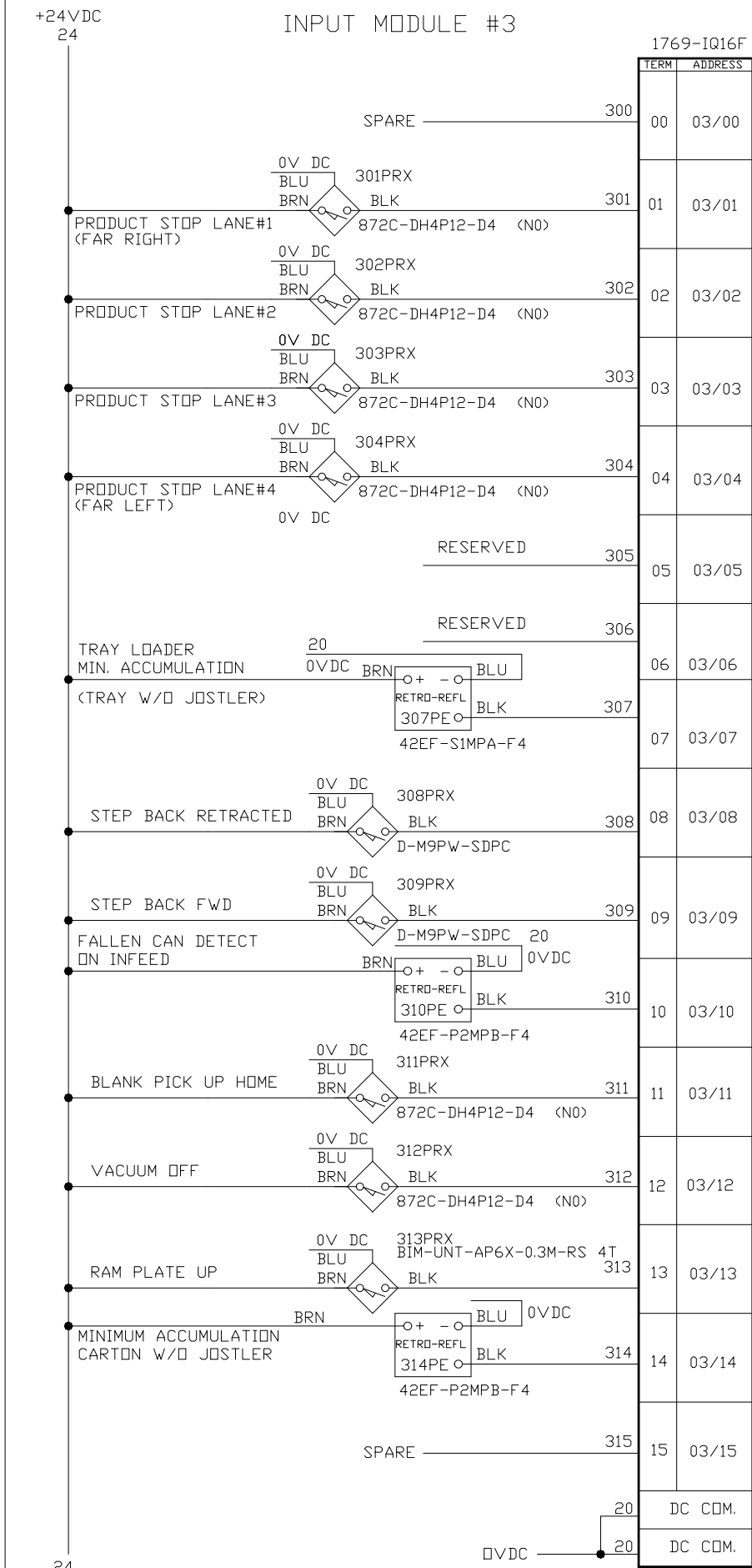


24

103XX
— DEVICE NAME
— DEVICE NUMBER
PAGE NUMBER

ARPAC
OUR INTEGRATION - YOUR SUCCESS

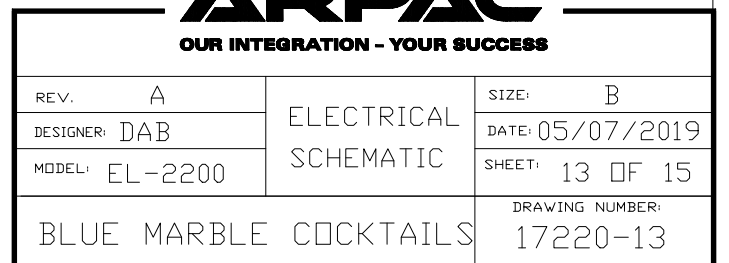
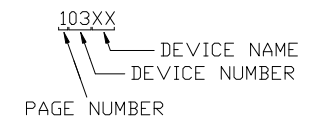
REV. A	ELECTRICAL SCHEMATIC	SIZE: B
DESIGNER: DAB		DATE: 05/29/2019
MODEL: EL-2200		SHEET: 11 OF 15
BLUE MARBLE COCKTAILS		DRAWING NUMBER: 17220-11



103XX
— DEVICE NAME
— DEVICE NUMBER
PAGE NUMBER

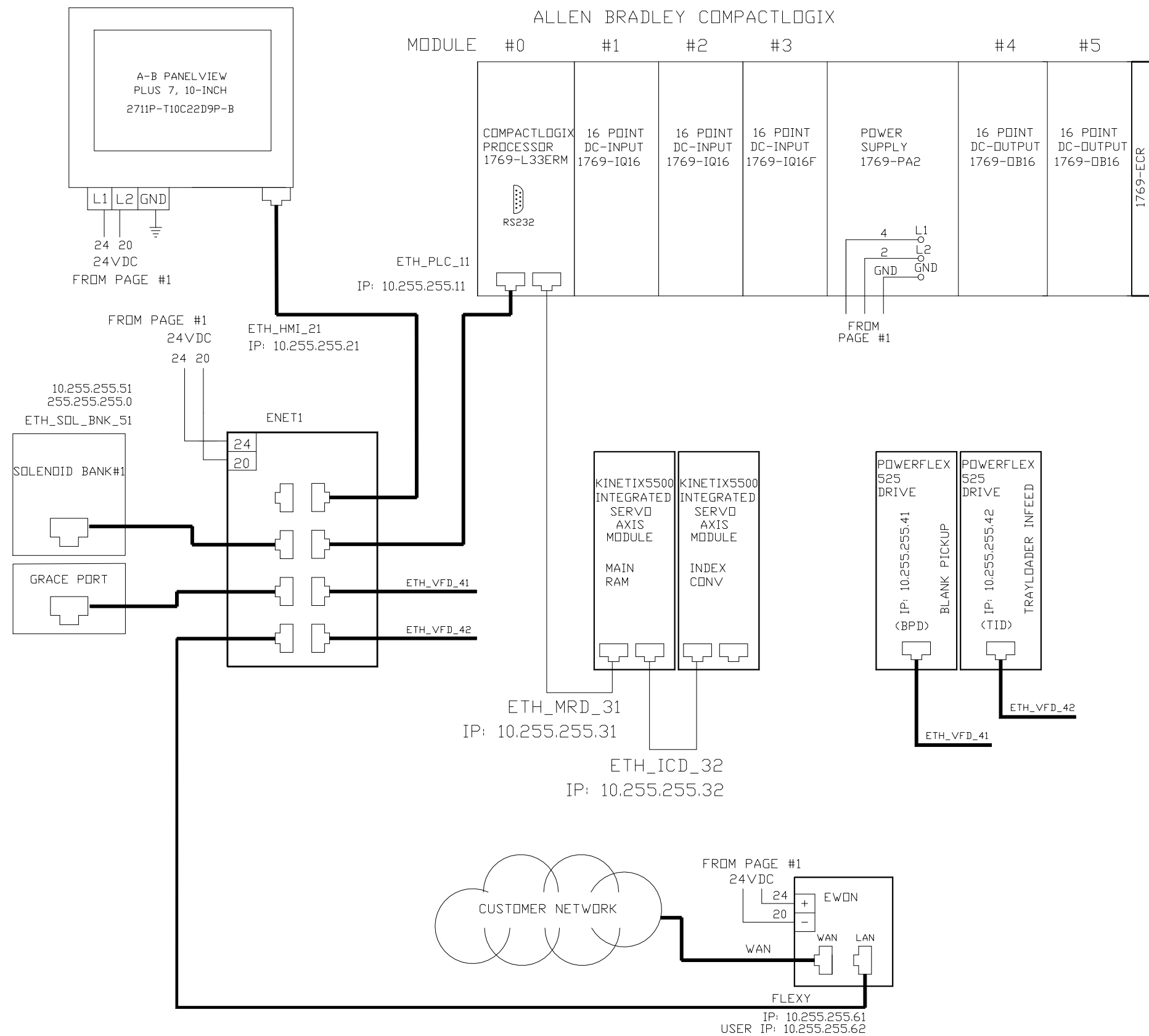
ARPAC			
OUR INTEGRATION - YOUR SUCCESS			
REV. A		ELECTRICAL SCHEMATIC	SIZE: B
DESIGNER: DAB			DATE: 06/03/2019
MODEL: EL-2200			SHEET: 12 OF 15
BLUE MARBLE COCKTAILS			DRAWING NUMBER: 17220-12

1769-B16



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ARPAC OUR INTEGRATION - YOUR SUCCESS			
REV. A		ELECTRICAL SCHEMATIC	SIZE: B
DESIGNER: DAB			DATE: 04/18/2019
MODEL: EL-2200			SHEET: 14 OF 15
BLUE MARBLE COCKTAILS			DRAWING NUMBER: 17220-14



10.255.255.51
255.255.255.0
SOLENDID BANK#1 (ETHERNET)
SMC MURR SOLENDID BANK ETH MODULE PN#55205
SLOT 1: SV_FLAP_BLANK_HOLD_DOWN
SLOT 2: SV_BLANK_MAGAZINE_INDEX
SLOT 3: SV_PRODUCT_GATE_OPEN
SLOT 4: SV_FLAP_MINOR_REAR_TUCKER
SLOT 5: SV_COMPRESSION_CLAMPS_EXTEND
SLOT 6: SV_SQUARING_UPPER_TUCKER_EXTEND
SLOT 7: SV_STEP_BACK
SLOT 8: SV_PDP_UP
SLOT 9: SV_PRODUCT_HOLD_DOWN_LANE#1 (RT)
SLOT 10: SV_PRODUCT_HOLD_DOWN_LANE#2
SLOT 11: SV_PRODUCT_HOLD_DOWN_LANE#3
SLOT 12: SV_PRODUCT_HOLD_DOWN_LANE#4 (LF)

IP ADDRESS SCHEME
IP: 10.255.255.XXX
SUBNET: 255.255.255.0

103XX
— DEVICE NAME
— DEVICE NUMBER
PAGE NUMBER

ARPAC OUR INTEGRATION - YOUR SUCCESS			
REV. A		ELECTRICAL SCHEMATIC	SIZE: B
DESIGNER: DAB			DATE: 05/16/2019
MODEL: EL-2200			SHEET: 15 OF 15
BLUE MARBLE COCKTAILS			DRAWING NUMBER: 17220-15

Arpac BOM

Parent Number: 17220-E Parent Revision: 0

Description: ASSY,ELEC,EL-2200,RH MACH,BLUE MARBLE COCKTAILS,460VAC,W/4-HEAD GLUE

Model:

Assembly Part Number: 17220-ELEC

Description: ASSY,ELEC,EL-2200,RH MACH,BLUE MARBLE COCKTAILS,460VAC,W/4-HEAD GLUEING

Item	Qty	Arpac Part	Description
1	1.00	804014-901	ENCLOSURE, 60X 38X 12 NEMA12 1DR WALL-MOUNTED FLANGE-DISC WITH HAND
2	1.00	804014-567	ENCLOSURE, ACCESSORY, FLOOR-STAND-KIT 6IN-HEIGHT FOR-12IN-DEEP-ENCLOSURE
3	1.00	804014-847	ENCLOSURE, 60X36, SUBPANEL 60X36 GALVANIZED
4	1.00	804005-371	DISTRIBUTED I/O, ETHERNET PATCHCORD, M12, RIGHT ANGLE MALE, STANDARD, RJ4
5	1.00	804003-512	CABLE, M12, 5 PIN, 5M, FLYING LEAD, POWER CABLE FOR SMC VALVE BANKS
6	1.00	804036-149	DISCONNECT, 1494V COMPONENT, OPERATING HANDLE, PAINTED METAL, FOR 30/60/
7	1.00	804000-469	CIRCUIT BREAKER, OPERATING MECHANISM ROD FOR ENCLOSURE DEPTH min 9 1/8 ma
8	1.00	804000-601	CIRCUIT BREAKER, 3P 70A 480V H-FRAME TRIP(THM/MAG)=NOMIN/0700A IR=25KA
9	1.00	804000-643	CIRCUIT BREAKER, ACCESORY, H-FRAME, TERMINAL LUG, QTY 3, FCCu 1x14-1/0(2.
10	2.00	804000-655	CIRCUIT BREAKER, 1P 5A 277V TRIP=05-10 IR=10KA UL489
11	1.00	804000-659	CIRCUIT BREAKER, 1P 20A 277V TRIP=05-10 IR=10KA UL489
12	2.00	804000-760	CIRCUIT BREAKER, 1P 5A 277V TRIP=05-10 IR=10KA UL1077 SUPPLEMENTAL PROT
13	1.00	804000-800	CIRCUIT BREAKER, ACCESSORY, 1494V VARIABLE-DEPTH FLANGE MOUNTED FOR 140G
14	1.00	804000-846	CIRCUIT BREAKER, 2P 30A 240V TRIP=05-10 IR=10KA UL489
15	1.00	804002-127	SAFETY CONTROL RELAY, 8P, 24VDC, 3NO/1NC (SAFE, 20A), 3NO/1NC (AUX, 10A)
16	11.00	804003-212	CABLE, QD, 10M STRAIGHT MICRO 8-PIN BLK PVC
17	10.00	804003-323	CABLE, QD, 10M 90-DEGREE MICRO 4-PIN BLK PVC
18	14.00	804003-324	CABLE, QD, 10M STRAIGHT MICRO 4-PIN BLK PVC, Female, Straight, PVC Cabl
19	1.00	804004-049	PUSH BUTTON, 30MM FLUSH GRN NON-ILL MOMENTARY 1NO/1NC NEMA4X
20	2.00	804004-629	PUSH BUTTON, 30MM MUSHROOM RED ILL-24V TWIST-TO-REL 1NC/1NO NEMA4X, FING
21	2.00	804027-023	LEGEND PLATE, YELLOW E-STOP ROUND FOR 30MM PB
22	4.00	804035-015	PUSHBUTTON, CONTACT BLOCK FOR 800T/H, SHALLOW, 1NO/1NC
23	2.00	804004-630	PUSH BUTTON, 30MM GUARDED GRN ILL-24V MOMENTARY 1NO/1NC NEMA4X, FING
24	2.00	804004-631	PUSH BUTTON, 30MM EXTENDED RED NON-ILL MOMENTARY 1NO/1NC NEMA4X, FING
25	2.00	804004-632	PUSH BUTTON, 30MM FLUSH BLK NON-ILL MOMENTARY 1NO/1NC NEMA4X, FING
26	2.00	804004-647	PUSH BUTTON, 30MM FLUSH BLUE NON-ILL MOMENTARY 1NO/1NC NEMA4X, FIN
27	1.00	804005-350	PLC, COMPACTLOGIX, CPU 2MB, DUAL ETHERNET, USB PORT, 8 AXIS CIP MOTION
28	2.00	804005-266	PLC, COMPACTLOGIX, DIGITAL 16IN 24VDC SINK/SOURCE
29	1.00	804005-269	PLC, COMPACTLOGIX, POWER SUPPLY, 120/240VAC, 2.0A @ 5VDC, 0.8A @ 24VDC
30	1.00	804005-271	PLC, COMPACTLOGIX, ACCESSORY END CAP RIGHT
31	2.00	804005-275	PLC, COMPACTLOGIX, DIGITAL 16OUT 24VDC SOURCE
32	1.00	804005-400	PLC, COMPACTLOGIX, DIGITAL 16IN 24VDC SINK/SOURCE HIGH-SPEED
33	5.00	804993-133	PLC, IFM BASE, DIGITAL, 20PT, 2-LEVEL, NARROW
34	3.00	804005-520	PLC, COMPACTLOGIX, ACCESSORY, IFM CBL 0.2M 1769-IQ16 INPUTS TO IFM20FN
35	2.00	804005-802	PLC, COMPACTLOGIX, ACCESSORY, IFM CBL 0.2M 1769-OB16 OUTPUTS TO IFM20FN
36	1.00	804005-730	ETHERNET SWITCH, 8 PORT (COPPER), UNMANAGED, DIN RAIL MOUNT, STRATIX 2000
37	8.00	804006-170	PROXIMITY SENSOR, DC 3-WIRE 4.0MM NO QD 12MM PNP UNSHIELDED SHORT-BARREL
38	1.00	804006-217	PROXIMITY SENSOR, ACCESSORY, MOUNTING STRAP, .984-2.480 IN. 25-63 MM.& CL
39	1.00	804006-253	PROXIMITY SENSOR, DC 3-WIRE CYL NO QD CYLINDER-MOUNT W/O.3M-M12 PIGTAIL
40	1.00	804006-316	PROXIMITY SENSOR, 3-Wire DC Extended Range Standard Barrel, 8mm Diameter,
41	3.00	804006-318	PROXIMITY SENSOR, DC 3-WIRE, 4.0MM NC MICRO QD 12MM UNSHIELDED 872C-D4CP1
42	2.00	804006-324	PROXIMITY SENSOR, INDUCTIVE FOR SMC CYLINDER 4 MM DIAMETER CABLE STYLE WI
43	5.00	804007-106	PHOTO SENSOR, DIFFUSE, DC, PNP QD RANGE=20MM W/PIGTAIL L.O. (MINIATURE)
44	3.00	804007-135	PHOTO SENSOR, RETRO-POLAR DC PNP QD RANGE=3M W/6IN-PIGTAIL NEMA4X/6P
45	1.00	804007-136	PHOTO SENSOR, DIFFUSE DC PNP QD RANGE=5IN W/6IN-PIGTAIL SHARP-CU
46	3.00	804007-234	PHOTO SENSOR, REFLECTOR, 1.25" ROUND, W M5 MTG SCREW POST
47	1.00	804008-069	RELAY, CONTROL 2PDT COIL= 24VDC 5A, SLIM-LINE-RELAY W/PILOT-LIGHT
48	1.00	804008-070	RELAY, SOCKET 2PDT 8-BLADE, FOR-SLIM-LINE-RELAY W/RETAINER-CLIP
49	2.00	804008-166	RELAY, SAFETY MINOTAUR MSR127RP 24V IN=2NC OUT=3NO MONITORED MANUAL RES

50	2.00	804010-039	CONNECTOR, 4P,FEMALE,90 DEGREE,FIELD WIRABLE
51	1.00	804010-228	GRACEPORT, ETHERNET (CAT 5E), SINGLE 120VAC OUTLET, UL TYPE 4
52	1.00	804012-695	DRIVE, AC, 1.00HP 480V 3PH 2.3A POWERFLEX 525 DRIVE
53	1.00	804012-696	DRIVE, AC, 2.00HP 480V 3PH 4.0A POWERFLEX 525 DRIVE
54	1.00	804012-732	DISTRIBUTED I/O, CABLE, 1585 ETHERNET CABLES, 8 CONDUCTORS, RJ45, STRAIGH
55	2.00	804012-796	DRIVE, SERVO, KINETIX 5500, MID RANGE DRIVE 195-528VAC, 3 PHASE, 20.0RMS
56	2.00	804012-798	DRIVE, SERVO, MOTOR FEEDBACK AND POWER CBL, 15M, 14AWG, FLYING LEAD, MID
57	1.00	804012-799	DRIVE, SERVO, KINETIX 5500 FRAME 1 AND 2 INPUT CONNECTORS, DC AND HIGH PO
58	2.00	804012-800	DRIVE, SERVO, KINETIX 5500, FRAME 3 DC AND POWER T CONNECTOR
59	1.00	804012-801	DISTRIBUTED I/O, CABLE, 1585 ETHERNET CABLES, 8 CONDUCTORS, RJ45, STRAIGH
60	2.00	804012-822	DRIVE, SERVO, KINETIX 5500, FOLLOWER DRIVE CONNECTOR KIT FRAME 1 or 2 AC
61	1.00	804014-939	ENCLOSURE, 16X 14 SUBPANEL 14.75X12.88 GALVANIZED
62	1.00	804014-544	ENCLOSURE, 16X14X06 JUNCTION BOX CONTINUOUS HINGE WITH QUATER TURN FLAS
63	1.00	804014-621	ENCLOSURE, FOR 6 PUSH BUTTONS NEMA 30.5MM
64	3.00	804015-013	FUSE, 10A 600V FAST-ACTING CLASS-CC
65	3.00	804015-060	FUSE, 6A 600V FAST-ACTING CLASS-CC
66	3.00	804015-063	FUSE, 30A 600V FAST-ACTING CLASS-CC
67	2.00	804015-195	FUSE, 25A, 600V, TIME DELAY, CLASS CC, CURRENT LIMITING, HIGHLY INDUC
68	3.00	804015-188	FUSE, 15A, 600V, TIME DELAY, CLASS CC, CURRENT LIMITING, HIGHLY INDUC
69	1.00	804017-038	LIGHT STACK, 70MM GRN 24V NEMA4X BLK-HOUSING STEADY-LED
70	1.00	804017-039	LIGHT STACK, 70MM RED 24V NEMA4X BLK-HOUSING STEADY-LED
71	1.00	804017-040	LIGHT STACK, 70MM AMB 24V NEMA4X BLK-HOUSING STEADY-LED
72	1.00	804017-052	LIGHT STACK, 70MM SOUND 24V NEMA4X BLK-HOUSING SINGLE-TONE
73	1.00	804017-056	LIGHT STACK, 70MM BASE 16IN SS NEMA4X BLK-HOUSING W/CAP-&-GASKET
74	1.00	804018-250	OPERATOR INTERFACE, PANELVIEW PLUS 7 - 10", PERFORMANCE MODEL, BRANDLESS
75	1.00	804019-121	POWER SUPPLY, 24VDC 10A 120VAC, 3.73A INPUT CURRENT
76	1.00	804022-261	TERMINAL BLOCK, GROUND BLOCK WITH RAIL CONTACT 42 TERMINAL 3 TALL
77	1.00	804024-008	TRANSFORMER, 1PH 5.0KVA 240/480 120/240 NEMA3R ENCAPSULATED
78	11.00	804025-225	SWITCH, MAGNETICALLY CODED, 2 N.C. SOLID-STATE RELAYS, W/ LED INDICATOR,
79	1.00	804036-071	FUSE HOLDER 30A 2 POLE CC CLASS 600V WITH BLOWN FUSE INDICATOR
80	4.00	804036-072	FUSE HOLDER 30A 3 POLE CC CLASS 600V WITH BLOWN FUSE INDICATOR
81	1.00	804005-998	REMOTE CONNECTION, EWON, FLEXY 205 W/ 4 PORT LAN/WAN CONFIGURABLE
82	1.00	999999-003	WIRING MAT'L PER MACHINE TYPICAL NORMAL USAGE

Arpac BOM

Parent Number: 17220-EL Parent Revision: 0

Description: ASSY,ELEC,EL-2200,RH MACH,BLUE MARBLE COCKTAILS,460VAC,W/4-HEAD GLUE

Model:

Assembly Part Number: 804007-234

Assembly Drawing Number: 804007

Description: PHOTO SENSOR, REFLECTOR, 1.25" ROUND, W M5 MTG SCREW POST

Quantity: 3.00

Item	Qty	Arpac Part	Description
1	4.00	903776	PL LEXAN CLEAR SHEET 1/4 THK

Arpac BOM

Parent Number: 17220-EL Parent Revision: 0

Description: ASSY,ELEC,EL-2200,RH MACH,BLUE MARBLE COCKTAILS,460VAC,W/4-HEAD GLUE

Model:

8.1. Service Information Introduction

This section contains an overview of ARPAC's field service policies. ARPAC aims to deliver the highest level of service with the assistance of the aftermarket department, SupportPro™.

8.2. Objective

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

SupportPro is a one-stop, national aftermarket solution, representing strategic secondary packaging equipment partners. Our facilities in Chicago and Syracuse, combined with a nationwide field service network, allow us to provide a complete range of aftermarket services. We offer these in a convenient, cost-effective, and value-added manner for our equipment partners and end-customers across the US.

8.3. Service Personnel

Our technical services work to optimize your equipment investment. With their experience in servicing ARPAC equipment, instructing customer's personnel in correct operation and maintenance is a simple task. All field service technicians receive support from the factory and engineering departments.

8.4. Training

An ARPAC advantage is free lifetime training for customers purchasing packaging machines from ARPAC or its distributors. Knowledge of machines leads to power, performance, and profitability. SupportPro teaches theory of operation, machine setup and operation, preventive maintenance and long-term care. For further information please contact SupportPro at 844.777.8776.

8.5. ARPAC & SupportPro Commitment

Consistently accessible to communicate with customer(s). Service Technician availability for supervision and instruction of personnel. The goal of the tech is to minimize downtime of your production facilities and commence training of your personnel.

8.6. Tech Scheduling

Please allow 10-days advance notice to schedule a SupportPro technician. Emergency situation are handled as quickly as possible. If assistance is required please contact SupportPro to schedule a technician at 844.777.8776.

8.7. Instillation Policy

All equipment is unloaded, unpacked and inspected for any damage. If there is any damage, the Bill of Landing will need to be signed describing the damage.

Prepare area to install your ARPAC equipment. Assemble your equipment.

Provide qualified technicians, operators, and maintenance personnel to start up system.

8.8. The SupportPro Advantage

Leverage our aftermarket services. Our secure web portal gives you access to all documentation of your machines. Therefore, no need to reorder any lost manuals, schematics, or bill of materials. In addition, the portal user can access pictures and videos of their machine to visually understand the machine. Finally, the portal gives the machine operator secure way to contact SupportPro with any questions or concerns. Details about the web portal will be sent via email after the machine is shipped.

SupportPro

3500 Lacey Road, Suite 290

Downers Grove, IL 60515

844.777.8776

Illustrated Parts List

9.1. Ordering Parts

For your convenience, replacement parts and accessories can be ordered from ARPAC by contacting SupportPro.

SupportPro

3500 Lacey Road, Suite 290

Downers Grove, IL 60515

844.777.8776

service@supportpro.com

Open for service Monday through Friday
7:00 AM to 6:00 PM (Central Time)

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

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.

9.2. How to Use This Parts List

9.2.1. General Part Numbers

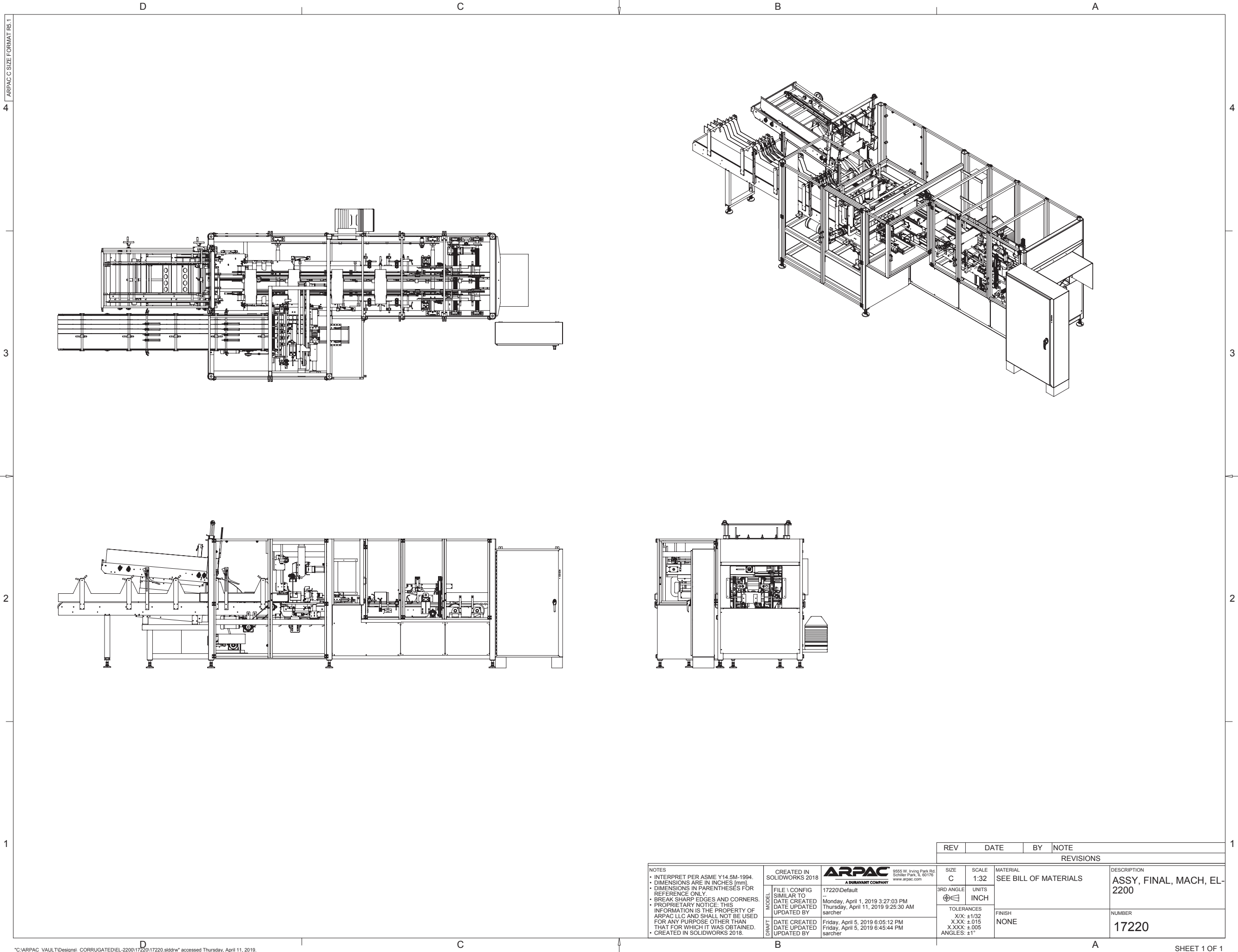
This chapter contains all part numbers necessary to order MTE-1100 tray erector replacement parts and assemblies.

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 when available.



ARPAC C SIZE FORMAT RS.1

1

2

3

4

1

2

3

4

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 8555 W. Irving Park Rd Schiller Park, IL 60176 www.arpac.com		SIZE C		SCALE 1:32	MATERIAL SEE BILL OF MATERIALS	DESCRIPTION ASSY, FINAL, MACH, EL-2200				
		MODEL	FILE \ CONFIG	17220\Default	3RD ANGLE 	UNITS INCH								
			DATE CREATED	Monday, April 1, 2019 3:27:03 PM										
			DATE UPDATED	Thursday, April 11, 2019 9:25:30 AM										
DRAFT	DATE CREATED	Friday, April 5, 2019 6:05:12 PM			TOLERANCES		FINISH NONE	NUMBER 17220						
	DATE UPDATED	Friday, April 5, 2019 6:45:44 PM			X/X: ±1/32 X/XX: ±.015 X/XXX: ±.005 ANGLES: ±1°									
			DATE UPDATED											
		DATE UPDATED												

Arpac BOM

Parent Number: 17220 Parent Revision: A

Description: ASSY, FINAL, MACH, EL-2200

Model:

Assembly Part Number: 17220

Description: ASSY, FINAL, MACH, EL-2200

Item	Qty	Arpac Part	Description
1	1.00	292546	GENERAL PARTS, EL-2000
2	1.00	219639-000A	ASSY, CENTRAL POINT LUBE BLOCK, NYLON
3	1.00	365017	ASSY, FRAME, MAIN, EL-2000
4	1.00	365016	ASSY, GUIDE, FORMING, CASE
5	1.00	297533-001	ASSY, RAIL, SUPPORT, LH MACH
6	1.00	297583	ASSY, CHAIN, LUG
7	1.00	365122-001	ASSY, FEED, BLANK, SINGLE ARM, EL-2200
8	1.00	365390-001	ASSY, MAGAZINE, BLANK, 60" LG, 31" WIDE, LH
9	1.00	230241-001B	ASSY, COMPRESSION, SIDE, RH
10	1.00	230241-002B	ASSY, COMPRESSION, SIDE, LH
11	1.00	365402	ASSY, SQUARING, TOP, CASE
12	1.00	365402-001	ASSY, SQUARING, TOP, CASE
13	1.00	365212	ASSY, HOLD-DOWN, FLAP
14	1.00	365212-001	ASSY, HOLD-DOWN, FLAP
15	1.00	365102	ASSY, TUCKER, MINOR FLAP
16	1.00	365102-001	ASSY, TUCKER, MINOR FLAP
17	1.00	365027	ASSY, DRIVE, CHAIN, LUG, EL-2000, 460V
18	1.00	365107	ASSY, GATE, DOWNSTREAM
19	1.00	365108	ASSY, GATE, UPSTREAM
20	1.00	316360	ASSY, STOP, 4 PRODUCT
21	1.00	300695	ASSY, STEP BACK 4 PRODUCT
22	1.00	243431	ASSY, DEAD PLT SUPPORT, LH MACHINE
23	1.00	365140	ASSY, RAM, SERVO, A-B VPL, EL-2200
24	1.00	365064-001	ASSY, CONV, INFEEED, EL-2000
25	1.00	365063	ASSY, GUIDE, 4-LANE
26	3.00	365237	ASSY, DETECT, PRODUCT, 4-LANES, 20" WIDE
27	1.00	365109	ASSY, GUARDS, EL-2200
28	1.00	365111	ASSY, APPLICATOR, GLUE, TWO STATION, 4-HOSE, 480VAC, EL-2200
29	1.00	365125	ASSY, PNEUMATIC, 24VDC, SMC, EL-2200
30	1.00	365126	ASSY, PARTS, CHANGE, EL-2200
31	1.00	300706	ASSY, AGITATOR, 20"WIDE, 4 LANES, 230/460V
32	1.00	357171	ASSY, GUARD, AGITATOR, EL-2000
33	1.00	365234	ASSY, GUIDE, SIDE, INFEEED
34	1.00	323268	ASSY, PRODUCT DETECTOR, ACCUMULATION, ADJ
35	1.00	367322	KIT, GUARD, SPLASH

Arpac BOM

Parent Number: 17220 Parent Revision: A
Description: ASSY, FINAL, MACH, EL-2200
Model:

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: 17220 Parent Revision: A

Description: ASSY, FINAL, MACH, EL-2200

Model:

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

D

C

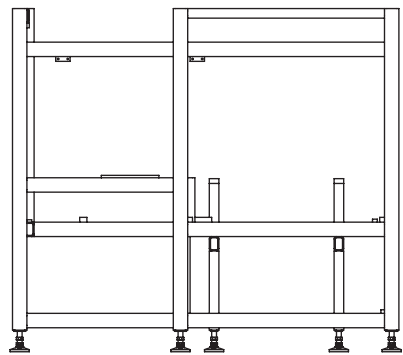
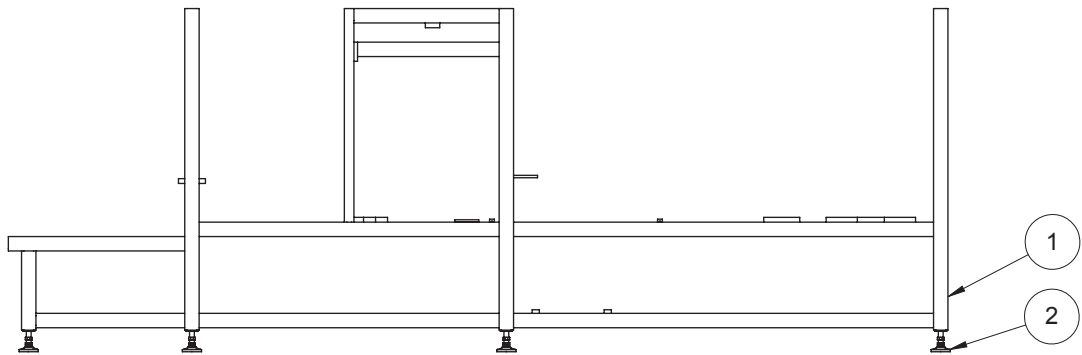
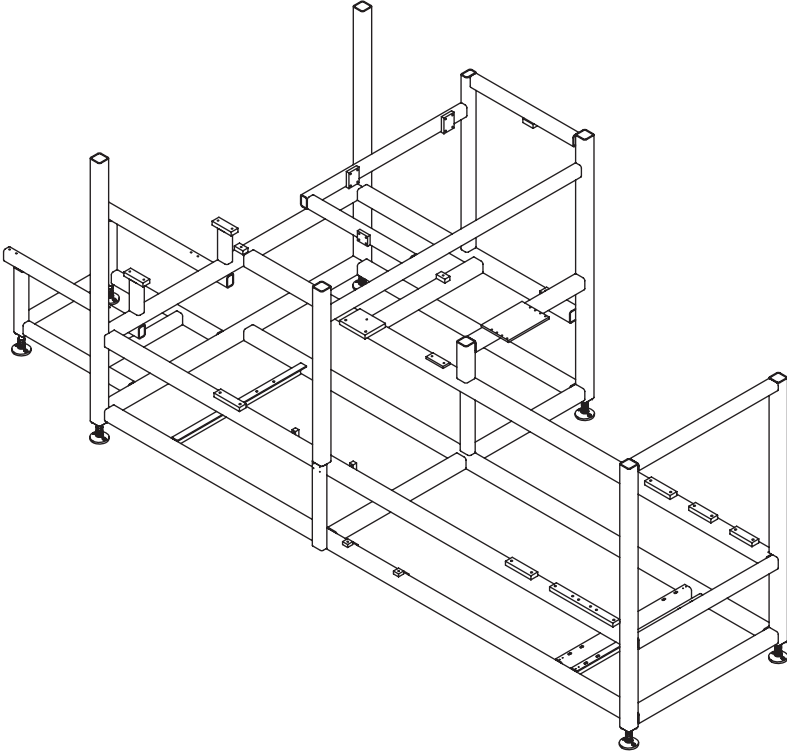
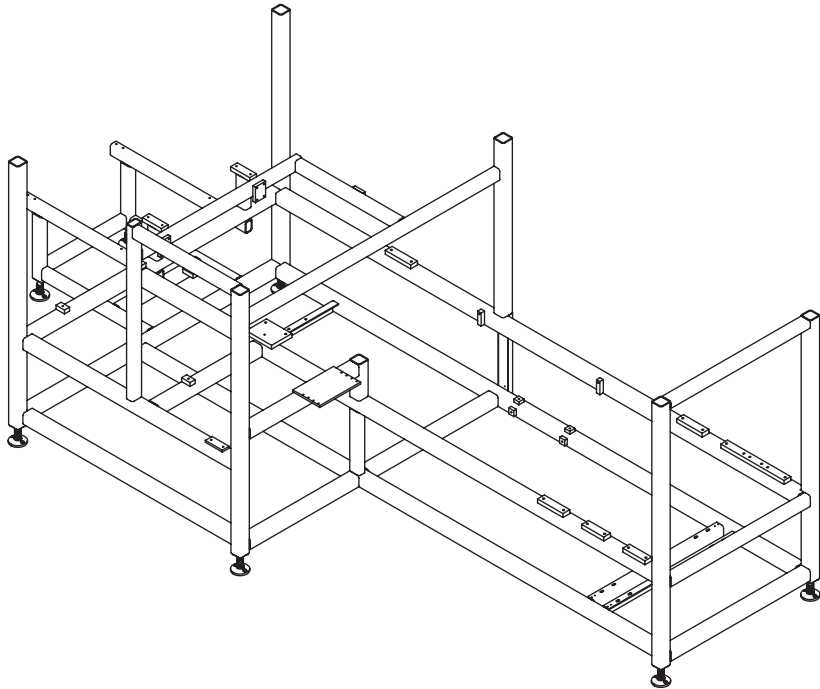
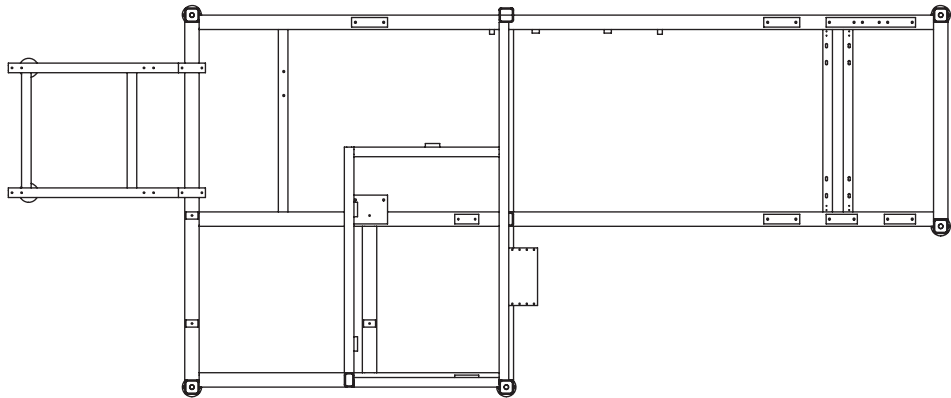
B

A

BILL OF MATERIALS			
ITEM	QTY	NUMBER	DESCRIPTION
1	1	365030	WLDMT, FRAME, MAIN, LH
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

365017

365017-001



REV	DATE	BY	NOTE
REVISIONS			
SIZE	SCALE	MATERIAL	DESCRIPTION
B	1:40	SEE BILL OF MATERIALS	ASSY, FRAME, MAIN, EL-2000
3RD ANGLE	UNITS	FINISH	NUMBER
	INCH	NONE	365017
TOLERANCES			
X/X: ±1/32			
X.XX: ±.015			
X.XXX: ±.005			
ANGLES: ±1°			

NOTES	CREATED IN SOLIDWORKS 2018		 9555 W. Irving Park Rd Schiller Park, IL 60176 www.arpac.com	
	MODEL	FILE \ CONFIG SIMILAR TO DATE CREATED DATE UPDATED UPDATED BY	365017\Default - Monday, April 1, 2019 3:19:45 PM Wednesday, April 3, 2019 5:02:50 PM sarcher	
		DRAFT	DATE CREATED DATE UPDATED UPDATED BY	Wednesday, April 3, 2019 9:30:52 AM Wednesday, April 3, 2019 9:38:20 AM sarcher
	• 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.			

D

C

B

A

Arpac BOM

Parent Number: 17220 Parent Revision: A
Description: ASSY, FINAL, MACH, EL-2200
Model:

Assembly Part Number: 365017
Assembly Drawing Number: 365017
Description: ASSY, FRAME, MAIN, EL-2000
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	365030	WLDMT, FRAME, MAIN, EL-2000, 36" ELEV
2	7.00	827619	LEVELER, ARTICULATING, 20000 # CAP, 1-8 STEM, 7.88 HIGH, CRS 4" DIA X 2"

Arpac BOM

Parent Number: 17220 Parent Revision: A

Description: ASSY, FINAL, MACH, EL-2200

Model:

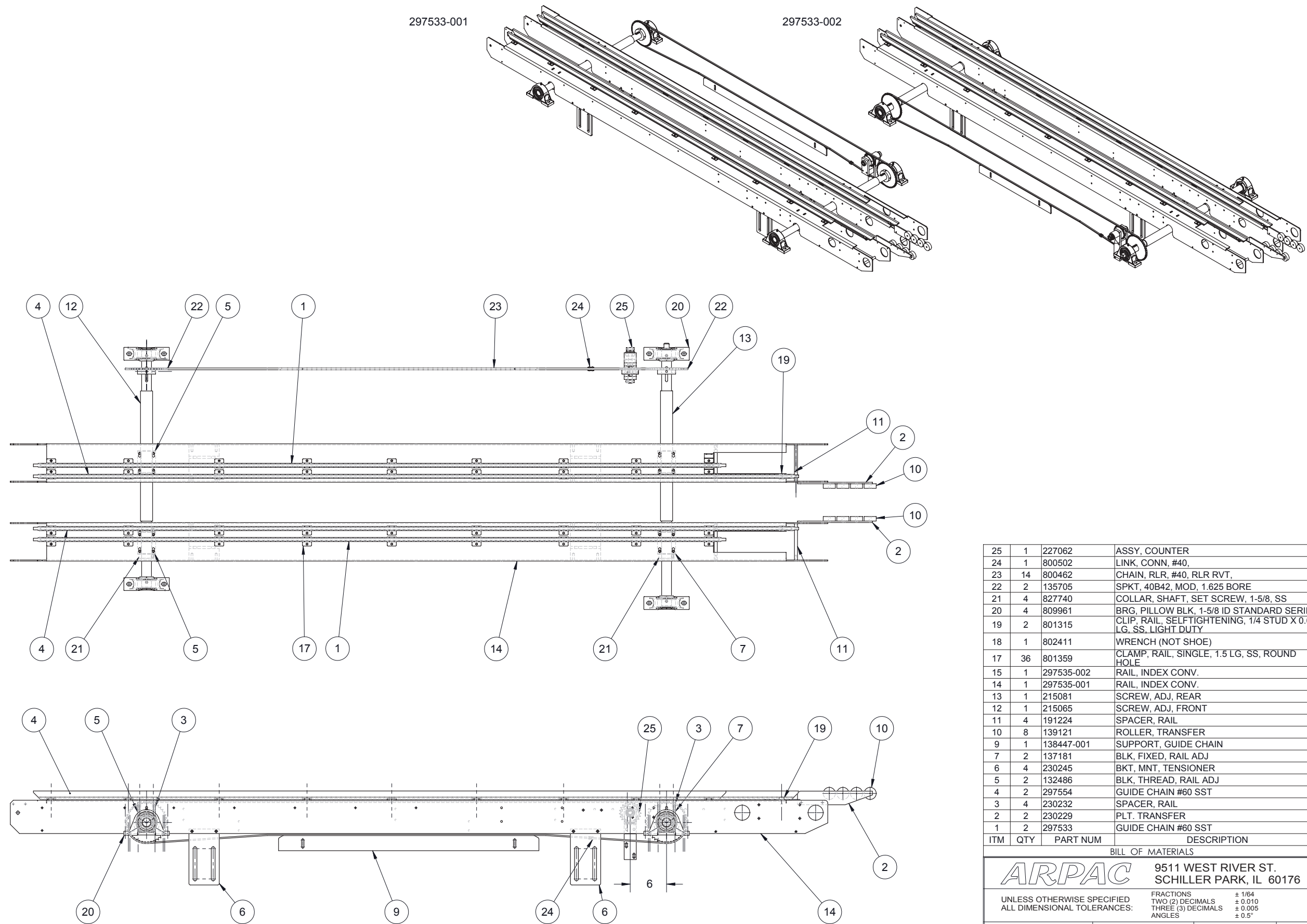
Assembly Part Number: 365016

Assembly Drawing Number: 365016

Description: ASSY, GUIDE, FORMING, CASE

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	9.00	122222-001	ROD, MTG, GUIDE, 5.875 LG
2	5.00	300832	POST, MTG, GUIDE
3	1.00	365150	WLDMNT, PLOW, FLAP, MAJOR
4	1.00	243950-001	GUIDE, FLAP HOLD DOWN, OPP. LOAD SIDE LH MACH
5	1.00	197436	BAR, SPACER
6	1.00	233497-001	GUIDE, FLAP HOLD DOWN, LOAD SIDE LH MACH
7	1.00	197440	BAR, SPACER, GUIDE, LOAD SIDE
8	1.00	228293-001	BKT, MTG, TUCKER, LOAD, SIDE, LH
9	1.00	300828	BKT, MTG, TUCKER, LOAD, OPP, LH, MACH,
10	2.00	243944	GUIDE, EXIT
11	4.00	367329	POST, MTG, GUIDE, EXIT
12	4.00	132968	CLAMP, MNT, GUIDE
13	4.00	132969	CLAMP, SLIDE GUIDE
14	5.00	806464	HDL, ADJ, ZINC, 2-1/2 LG 3/8-16 X 1.18 STUD
15	1.00	216190-001	GUIDE, RH
16	1.00	216190-002	GUIDE, LH
17	2.00	365024	POST, MTG, GUIDE
18	4.00	365148	SPACER, MTG, POST
19	1.00	365150-001	WLDMNT, PLOW, FLAP, MAJOR
20	5.00	816633	HDL, ADJ, ZINC, 2-1/2 LG 3/8-16 X .59 STUD
21	1.00	366021	GUIDE, SIDE
22	1.00	366022	GUIDE, SIDE
23	1.00	365134	WLDMT, PLOW, FLAP
24	2.00	365135	POST, ADJ, PLOW
25	2.00	365136	BLK, SLIDE
26	1.00	365134-001	WLDMT, PLOW, FLAP
27	2.00	809498	RULE, ADHESIVE, 1/2W X 1FT LEFT TO RIGHT



25	1	227062	ASSY, COUNTER
24	1	800502	LINK, CONN, #40,
23	14	800462	CHAIN, RLR, #40, RLR RVT,
22	2	135705	SPKT, 40B42, MOD, 1.625 BORE
21	4	827740	COLLAR, SHAFT, SET SCREW, 1-5/8, SS
20	4	809961	BRG, PILLOW BLK, 1-5/8 ID STANDARD SERIES
19	2	801315	CLIP, RAIL, SELF TIGHTENING, 1/4 STUD X 0.66 LG. SS, LIGHT DUTY
18	1	802411	WRENCH (NOT SHOE)
17	36	801359	CLAMP, RAIL, SINGLE, 1.5 LG, SS, ROUND HOLE
15	1	297535-002	RAIL, INDEX CONV.
14	1	297535-001	RAIL, INDEX CONV.
13	1	215081	SCREW, ADJ, REAR
12	1	215065	SCREW, ADJ, FRONT
11	4	191224	SPACER, RAIL
10	8	139121	ROLLER, TRANSFER
9	1	138447-001	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	297554	GUIDE CHAIN #60 SST
3	4	230232	SPACER, RAIL
2	2	230229	PLT. TRANSFER
1	2	297533	GUIDE CHAIN #60 SST

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:	3/21/14	BY:	JW	SCALE:0.09375:1
RELEASED:	3/21/14	FILENAME:	297533	SIZE: C
DESCRIPTION:				
ASSY, RAIL, SUPPORT				
				DRAWING NUMBER:
				297533

DESCRIPTION	PART NUMBER
LH, AS SHOWN	297533-001
RH, OPPOSITE	297533-002

Arpac BOM

Parent Number: 17220 Parent Revision: A

Description: ASSY, FINAL, MACH, EL-2200

Model:

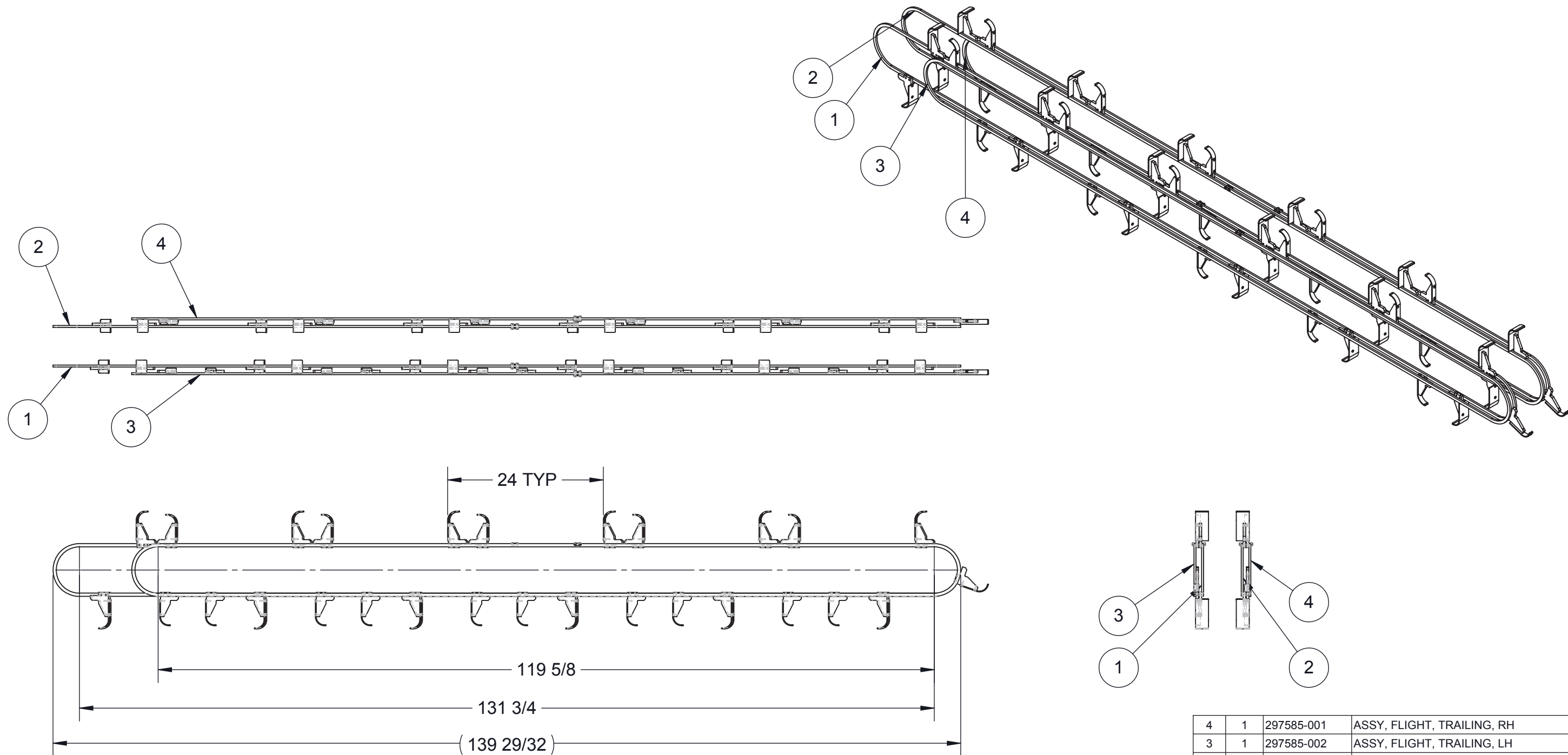
Assembly Part Number: 297533-001

Assembly Drawing Number: 297533

Description: ASSY, RAIL, SUPPORT, LH MACH

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	2.00	297553	GUIDE, #60 CHAIN, SHORT
2	2.00	230229	PLT, TRANSFER EL-2000
3	4.00	230232	SPACER, RAIL
4	2.00	297554	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	138447-001	SUPPORT, CHAIN, GUIDE, 43 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	297535-001	RAIL, INDEX CONV, RH
15	1.00	297535-002	RAIL, INDEX CONV, LH
17	36.00	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	8.00	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	827740	COLLAR, SHAFT, SET SCREW, 1 5/8, SS
22	2.00	135705	SPKT, 40B42, MOD, 1.625 BORE
23	14.00	800462	CHN, RLR, #40, RLR RVT
24	1.00	800502	CHN, LINK, CONN, #40
25	1.00	227062	ASSY, COUNTER



4	1	297585-001	ASSY, FLIGHT, TRAILING, RH
3	1	297585-002	ASSY, FLIGHT, TRAILING, LH
2	1	297584-002	ASSY, FLIGHT, TRAILING, LH
1	1	297584-001	ASSY, FLIGHT, TRAILING, RH
ITM	QTY	PART NUM	DESCRIPTION

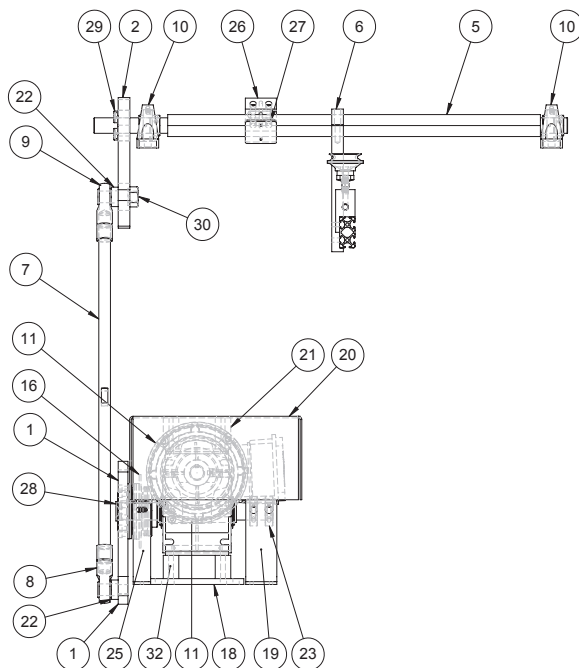
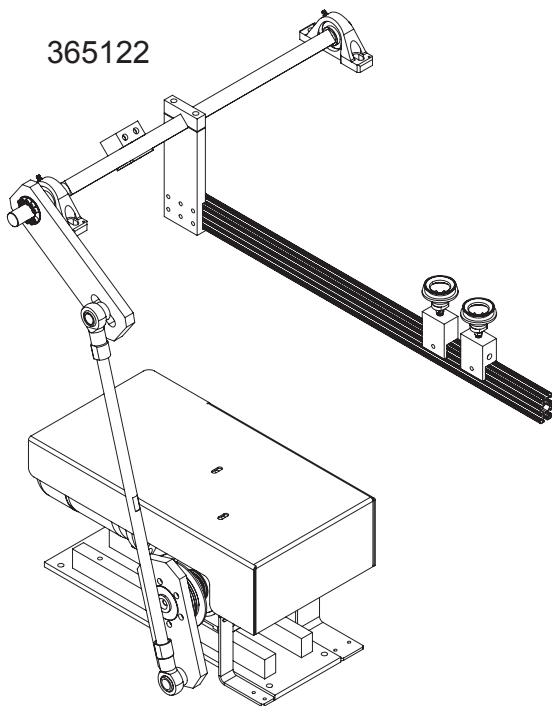
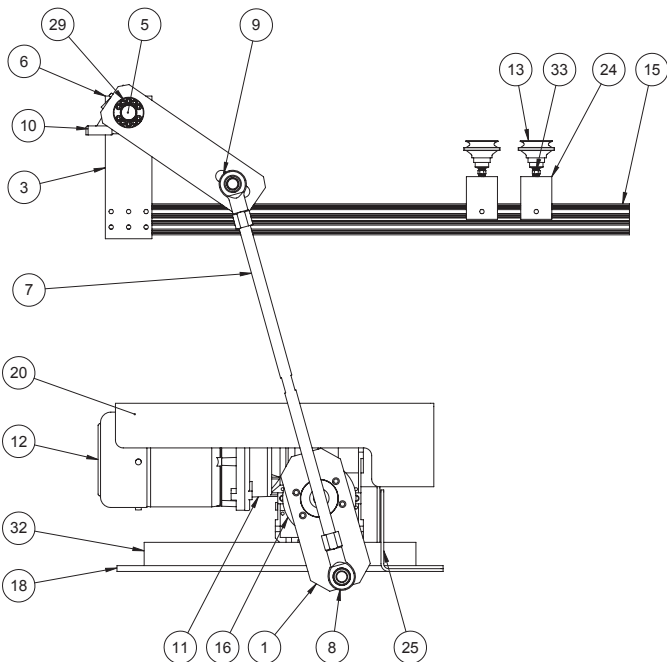
BILL OF MATERIALS			
		9511 WEST RIVER ST. SCHILLER PARK, IL 60176	
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONAL TOLERANCES:		FRACTIONS TWO (2) DECIMALS THREE (3) DECIMALS ANGLES	± 1/64 ± 0.010 ± 0.005 ± 0.5°
DRAWN: 4/10/2014	BY: JW	SCALE: 1:16	SIZE: B
FILENAME: 297583			
DESCRIPTION: ASSY, CHAIN, LUG			
			
			DRAWING NUMBER: 297583

Arpac BOM

Parent Number: 17220 Parent Revision: A
Description: ASSY, FINAL, MACH, EL-2200
Model:

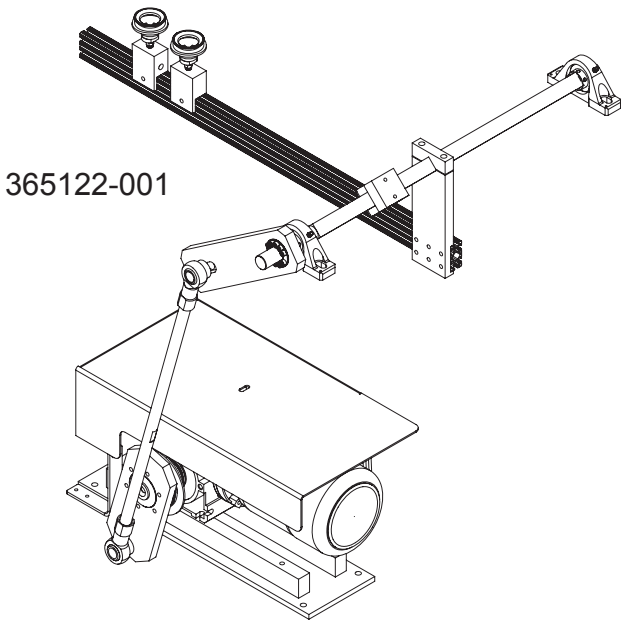
Assembly Part Number: 297583
Assembly Drawing Number: 297583
Description: ASSY, CHAIN, LUG
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	297584-001	ASSY, FLIGHT, TRAILING, RH
2	1.00	297584-002	ASSY, FLIGHT, TRAILING, LH
3	1.00	297585-001	ASSY, FLIGHT, LEADING, RH
4	1.00	297585-002	ASSY, FLIGHT, LEADING, LH



BILL OF MATERIALS			
ITEM	QTY	NUMBER	DESCRIPTION
1	1	216184	WHEEL, ECCENTRIC
2	1	236135	ARM
3	1	216185	CLAMP, ARM
4	1	365388	BLK, CUP MTG
5	1	216182	SHAFT, PICK, BLANK
6	1	193033	CLAMP, TOP
7	1	193035-005	ROD, LINK
8	1	808412	END, ROD, 0.75 X 2 7/8, .7500-16 THREAD FEMALE
9	1	808412-001	END, ROD, 0.75 X 2 7/8, .7500-16 THREAD FEMALE, LH TREAD
10	2	827114	BRG, BLK, PILLOW, 1 BORE, INTERMEDIATE DUTY
11	1	849458	GEARBOX, WORM, 30:1, 56C FACE, QUILL TYPE
12	1	848037	MOTOR, 1 HP, 3 PH, 60HZ, 230/460VAC
13	2	808519	CUP, VACUUM, 52.5MM DIA, 1/8 FITTING
14	1	845899	PUMP, VACUUM, W/SILENCER, MULTI-PORT, 20" Hg MAX VAC
15	1	816966-001	EXTRUSION, 1020 SERIES 33.75" LONG
16	1	816968-001	LIMITER, TORQUE, SINGLE RESET OPTI SIZE2 1.125 BORE, STANDARD HUB
17	1	817017	T-NUT, 1/4-20, STANDARD, FOR 10 SERIES BLACK ZINC
18	1	316019	PLATE
19	1	220463	BKT, PROX
20	1	303343	GUARD, MOTOR & GEARBOX, RH
21	2	118369-001	SPACER, 1" DIA, 5/16-18 TAP, AL, 2" LONG
22	2	138331	SPACER, ECCENTRIC
23	2	220361	FLAG, PROX
24	1	365388-001	BLK, CUP MTG
25	1	220464	BKT, PROX
26	1	197415	MANIFOLD, 4 PORT X 1
27	1	1212413	PLT, MTG, MANIFOLD
28	1	233932	STOP, TORQUE LIMITER
29	1	803668-001	LOCKING DEVICE, KEYLESS 1"
30	1	132947	3/4-10 NUT HEX, SS
31	1	242599	BKT, PE, MINI
32	2	328775	BAR, STIFF
33	2	819779	NIPPLE, HEX 1/8"

NOTE: ITEMS 14 AND 17 NOT SHOWN



REV	DATE	BY	NOTE
REVISIONS			
SIZE C	SCALE 1:8	MATERIAL SEE BILL OF MATERIALS	DESCRIPTION ASSY, FEED, BLANK, SINGLE ARM, EL-2200
3RD ANGLE 	UNITS INCH		
TOLERANCES X/X: ±1/32 X.XX: ±0.015 X.XXX: ±0.005 ANGLES: ±1°		FINISH NONE	NUMBER 365122

Arpac BOM

Parent Number: 17220 Parent Revision: A

Description: ASSY, FINAL, MACH, EL-2200

Model:

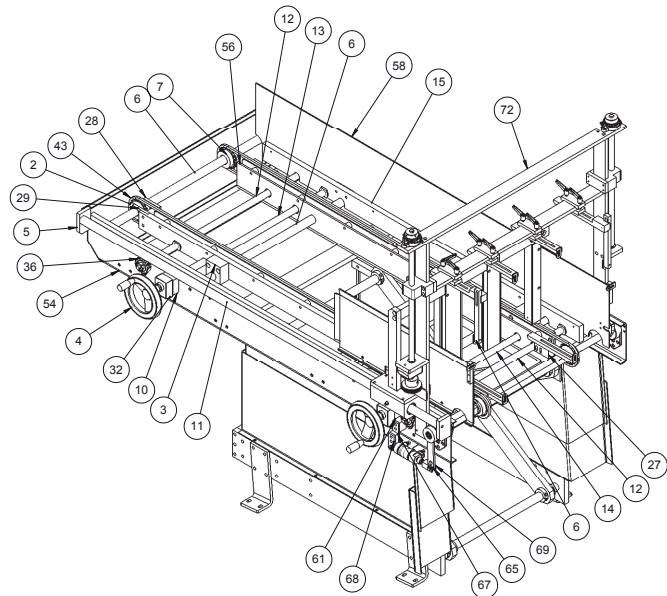
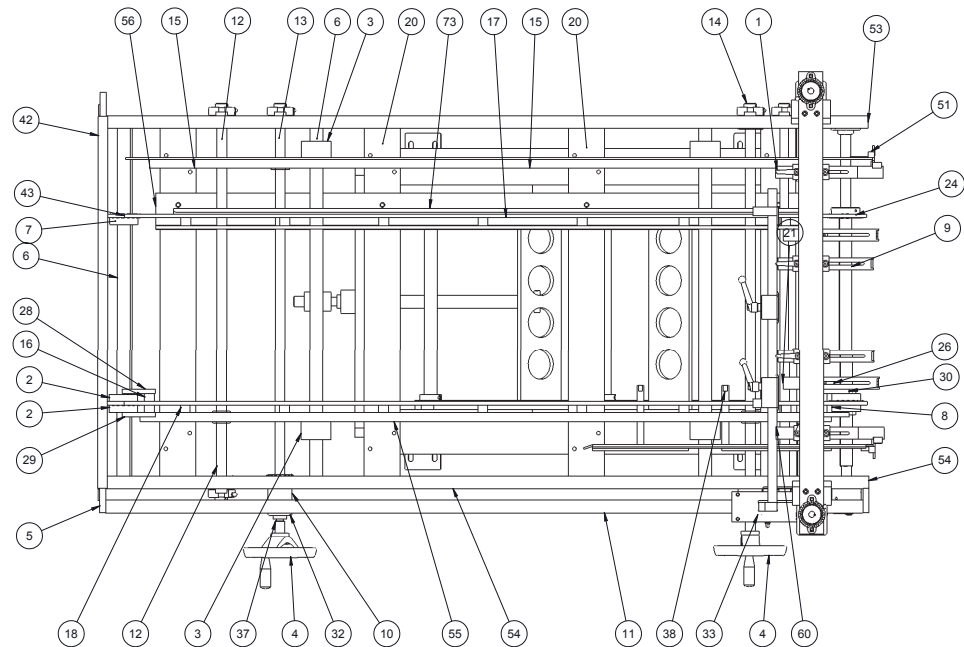
Assembly Part Number: 365122-001

Assembly Drawing Number: 365122

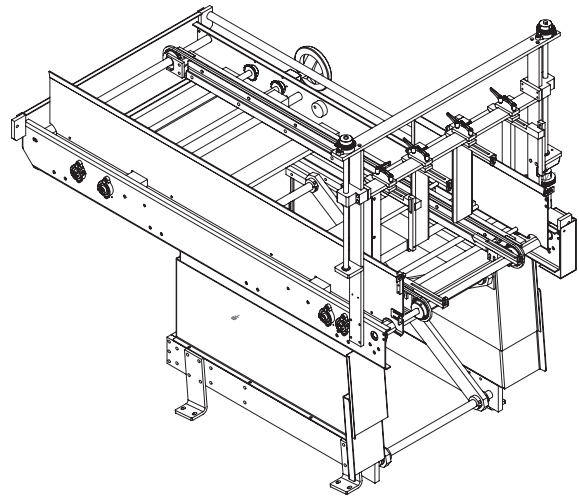
Description: ASSY, FEED, BLANK, SINGLE ARM, EL-2200

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	216184	WHEEL, ECCENTRIC
2	1.00	236135	ARM
3	1.00	216185	CLAMP, ARM
4	1.00	365388	BLK, MTG, CUP, VACUUM
5	1.00	216182	SHAFT, BLANK, PICK
6	1.00	193033	CLAMP, TOP
7	1.00	193035-005	ROD, LINK, 22.50 LG
8	1.00	808412	END, ROD, 0.75 X 2 7/8, .7500-16 THREAD FEMALE
9	1.00	808412-001	END, ROD, 0.75 X 2 7/8, .7500-16 THREAD FEMALE, LH TREAD
10	2.00	827114	BRG, BLK, PILLOW, 1 BORE, INTERMEDIATE DUTY
11	1.00	849458	GEARBOX, WORM, 30:1, 56C FACE, QUILL TYPE
12	1.00	848037	MOTOR, 1 HP, 3 PH, 60HZ, 230/460VAC
13	2.00	808519	CUP, VACUUM, 52.5MM DIA, 1/8 FITTING
14	1.00	845899	PUMP, VACUUM, W/SILENCER, MULTI-PORT, 20" Hg MAX VAC
15	1.00	816966-001	EXTRUSION, 1020 SERIES 33.75" LONG
16	1.00	816968-001	LIMITER, TORQUE, SINGLE RESET OPTI SIZE2 1.125 BORE, STANDARD HUB
17	20.00	817017	T-NUT, 1/4-20, STANDARD, FOR 10 SERIES BLACK ZINC
18	1.00	316019	PLATE
19	1.00	220463	BKT, PROX
20	1.00	303343-001	WLDMNT, GUARD, MOTOR & GEARBOX, LH
21	2.00	118369-001	SPACER, 1" DIA, 5/16-18 TAP 2 LG, AL
22	2.00	138331	SPACER, ECCENTRIC
23	2.00	220361	WLDMT, FLAG, PROX
24	1.00	365388-001	BLK, MTG, CUP, VACUUM
25	1.00	220464	BKT, PROX
26	1.00	197415	MANIFOLD 4 PORT X 1
27	1.00	212413	PLT, MTG, MANIFOLD
28	1.00	233932	STOP, TORQUE LIMITER
29	1.00	803668-001	LOCKING DEVICE, KEYLESS 1",
30	1.00	132947	HEX NUT
31	1.00	242599	BKT, PE, MINI
32	2.00	328775	BAR, STIFF
33	2.00	819779	NIPPLE, HEX 1/8"

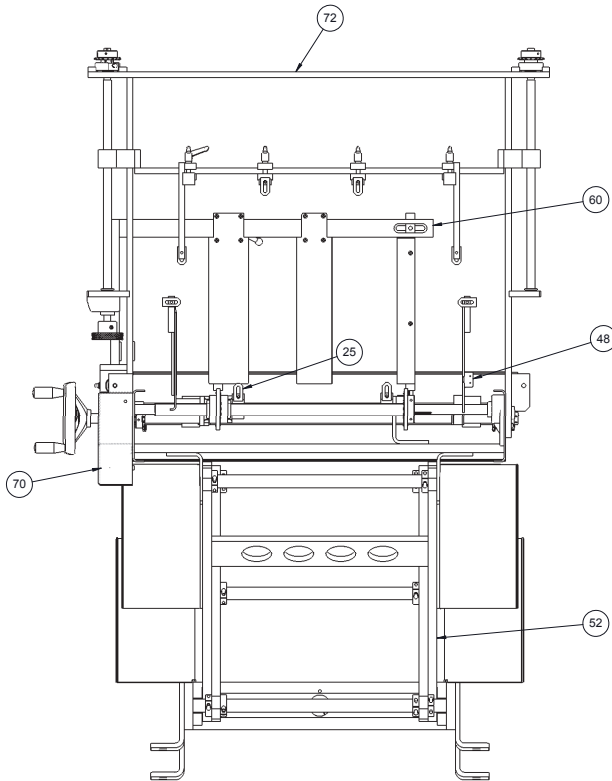
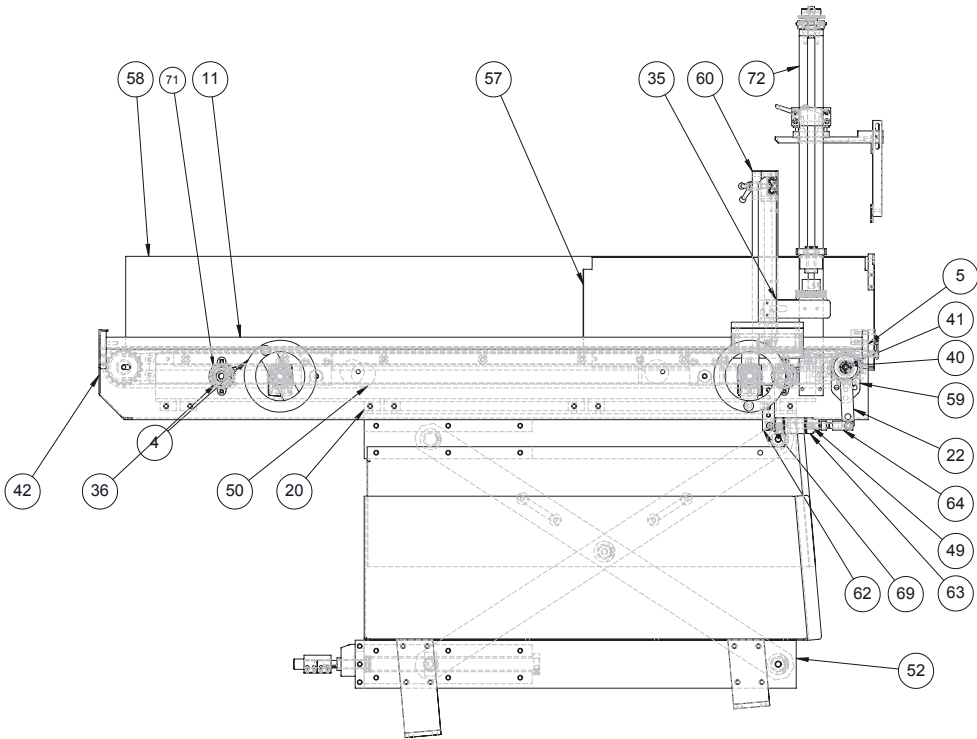


365390



365390-001

NOTE: ITEMS 19, 23, 31, 34, 39, 44, 45, 46, 47, 66 NOT SHOWN



73	1	357772	GUIDE, CHAIN
72	1	366017	ASSY, HOLDER, BLANK, ADJ. VERT
71	4	125227	SPKT, 35B17, MOD, 0.005 BORE
70	1	328553-001	GUARD, CYL, RH
69	1	800323-006	FSNR, BOLT, SHLDR, 3/8 DIA X 3/4 LG.
68	1	328554	BKT, CYL
67	1	328555	SPACER
66	1	800376	BUSH, OILITE, 0.3750 X 0.5030 X 1/4 LG
65	2	800443	WSHR, OILITE, 0.377 X 0.750 X 1/16 THK
64	1	837023	CLEVIS, ROD, PISTON, 7/16-20, 3/8 PIN
63	1	854763	CYL, AIR, 1-1/4 BORE, 1/2 STROKE,
62	1	328556	BKT, CYL
61	1	328557	SPACER, MNT, BKT, CYL
60	1	366011	ASSY, PUSHER, BLANK
59	2	306773	BRG, FLG, 3/4 ID, 3-BOLT STANDARD-DUTY
58	1	244061-002	GUIDE, BLANK, LONG, RH
57	1	311539-001	GUIDE, BLANK, RH
56	1	132984-001	ANGLE, MTG, RAIL, CHN
55	1	132982-101	BAR, GUIDE, ADJ, RH
54	1	244360-002	CHANNEL, SIDE, LH
53	1	244360-001	CHANNEL, SIDE, RH
52	1	342762	ASSY, ADJ, VERT
51	2	311541	BAR, MTG, HOLDER
50	4	256149	TAKE-UP, CHAIN
49	2	800090	VALVE, CONTROL, FLOW, 1/8" 90DEG
48	1	237856	BKT, PE
47	1	142871	TENSIONER, UPPER CHAIN
46	1	807903	BUSH, OILITE, FLG, 0.502 X 0.753 X 7/8 1 OD X 1/8 THK FLG
45	1	800385	BUSH, OILITE, 0.7520 X 1.0040 X 1/2 LG
44	1	800462	CHAIN, RLR, #40, RLR RVT
43	2	800459	CHN, RLR, #35, RLR RVT
42	1	219257	GUARD, FRONT
41	1	808258	RING, INNER 1/2 ID X 3/4 OD X 3/4 LG. (NOM)
40	1	808259	CLUTCH, ROLLER, DC 3/4 ID X 1 OD X 5/8 LG. (NOM)
39	4	800446	WSHR, OILITE, 0.507 X 0.750 X 1/16 THK
38	3	808257	ROD, ADJ, 1/2 DIA X 5 LG, 5/16-18 TAPPED, SS
37	2	808214	BUSH, OILITE, 0.5025 X 0.7530 X 1 LG
36	6	827118	BRG, FLG, 1/2 ID, 2 BOLT, 2.50 MTG HOLES
35	1	227006	BKT, PROX.
34	1	800442	WSHR, OILITE, 0.510 X 1.000 X 1/8 THK
33	1	838956	COUNTER, POSITION, 1/2 ID, COUNTER-CLOCKWISE INCREASING
32	1	808253	COUNTER, POSITION, 1/2 ID
31	1	808304	COLLAR, SHAFT, CLAMP, 1-PIECE, 1/2
30	1	126076	FORK
29	2	126074	FORK
28	1	126073	FORK
27	1	126072	BKT, REST, BLANK
26	1	126071	BKT, REST, BLANK
25	4	126068	BLANK RETAINER
24	1	101912	SPKT, 40B18, MOD, 0.750 BORE
23	1	123830	WASHER, RETAINING
22	1	132993	WLDMT, ARM, CYL
21	2	123823	BLANK FINGER
20	4	365391	CROSSBAR
19	2	800335-019	RING, SNAP, INTERNAL, 1-1/4 BORE
18	14	123807	SPCR, GUIDE, CHAIN
17	2	132985	GUIDE, CHN
16	4	123805	SPCR, FORK
15	1	132983	BAR, GUIDE, ADJ
14	1	132387	HOR. ADJ. THREAD SHAFT
13	1	132386	HOR. ADJ. THREAD SHAFT - DRIVE
12	2	132385	HOR. ADJ. THREAD SHAFT - DRIVEN
11	1	132988	SHAFT, SLIDE
10	2	123796	BLK, BRG, ADJ, HOR
9	1	135716	DRIVE SHAFT
8	1	123794	SPROCKET, WELDMENT
7	1	138329	SPKT, MOD
6	3	138327	IDLER, SHAFT
5	3	132990	BKT, MTG, TAIL
4	2	819440-001	HANDWHEEL, 6 DIA, W/REVOLVING HANDLE 1/2 BORE
3	4	119856	BLK, GUIDE, SIDE
2	1	138328	SPKT, IDLER, SLIDING
1	4	102341	NUT, ADJ, ACME, 3/4-6

ITEM	QTY	PART NUM	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:	6/3/2019	BY: SRA	SCALE: 0.125:1 SIZE: D
RELEASED:		FILENAME: 365390	APPROVED BY:
DESCRIPTION: ASSY, BLANK, MAGAZINE. 60" LG, 31" WIDE			
DRAUGHTSMAN: [Signature]			
DRAWING NUMBER:			365390

Arpac BOM

Parent Number: 17220 Parent Revision: A

Description: ASSY, FINAL, MACH, EL-2200

Model:

Assembly Part Number: 365390-001

Assembly Drawing Number: 365390

Description: ASSY, MAGAZINE, BLANK, 60" LG, 31" WIDE, LH

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	4.00	102341	NUT, ADJ BASE
2	1.00	138328	SPKT, IDLER, SLIDING
3	4.00	119856	BLK, GUIDE, SIDE TS-25
4	2.00	819440-001	HANDWHEEL, 6 DIA, W/REVOLVING HANDLE 1/2 BORE
5	3.00	132990	BKT, MTG, TAIL
6	3.00	138327	SHAFT, IDLER
7	1.00	138329	SPKT, 40B18, MOD FOR OILITE BUSH, STEEL
8	1.00	123794	WLDMT, SPKT, WELDMENT
9	1.00	135716	SHAFT, DRIVE "A" 32 7/8"
10	2.00	123796	BLOCK, BRG., ADJ., HORIZ.
11	1.00	132988	SHFT, SLIDE CP-25
12	2.00	132385	SHAFT, ADJ, HORIZ, DRIVEN 33" LG
13	1.00	132386	SHAFT, ADJ, HORIZ, DRIVE, 36 3/8" LG
14	1.00	132387	SHAFT, ADJ, HORIZ, 36 3/8" LG
15	1.00	132983	BAR, GUIDE, ADJ. EL-2000
16	4.00	123805	SPACER, FORK
17	2.00	132985	GUIDE, CHAIN
18	14.00	123807	SPACER, GUIDE, CHAIN, RH
19	2.00	800335-019	RING, SNAP, INTERNAL, 1-1/4 BORE,
20	4.00	365391	CROSSBAR
21	2.00	123823	FINGER, BLANK
22	1.00	132993	WLDMT, ARM, CYL
23	1.00	123830	WASHER, RETAINING
24	1.00	101912	SPKT, 40B18, MOD, 0.750 BORE
25	4.00	126068	RETAINER, BLANK
26	1.00	126071	BKT, REST, BLANK
27	1.00	126072	BKT, REST, BLANK
28	1.00	126073	FORK TAPPED
29	2.00	126074	FORK CLEARANCE HOLE
30	1.00	126076	FORK TAPPED FOR BLANK REST
31	1.00	808304	COLLAR, SHAFT, CLAMP, 1-PIECE, 1/2, S/A 850735
32	1.00	808253	COUNTER, POSITION, 1/2 ID
33	1.00	838956	COUNTER, POSITION, 1/2 ID, COUNTER-CLOCKWISE INCREASING
34	1.00	800442	WSHR, OILITE, 0.510 X 1.000 X 1/8 THK
35	1.00	227006	BKT, PROX
36	6.00	827118	BRG, FLG, 1/2 ID, 2 BOLT, 2.50 MTG HOLES
37	2.00	808214	BUSH, OILITE, 0.5025 X 0.7530 X 1 LG
38	3.00	808257	ROD, ADJ, 1/2 DIA X 5 LG, 5/16-18 TAPPED THREAD, SS
39	4.00	800446	WSHR, OILITE, 0.507 X 0.750 X 1/16 THK,
40	1.00	808259	CLUTCH, ROLLER, DC 3/4 ID X 1 OD X 5/8 LG. (NOM.)
41	1.00	808258	RING, INNER 1/2 ID X 3/4 OD X 3/4 LG. (NOM.)
42	1.00	219257	GUARD, FRONT 33" LG
43	2.00	800459	CHAIN, RLR, #35, RLR RVT
44	1.00	800462	CHN, RLR, #40, RLR RVT

Arpac BOM

Parent Number: 17220 Parent Revision: A

Description: ASSY, FINAL, MACH, EL-2200

Model:

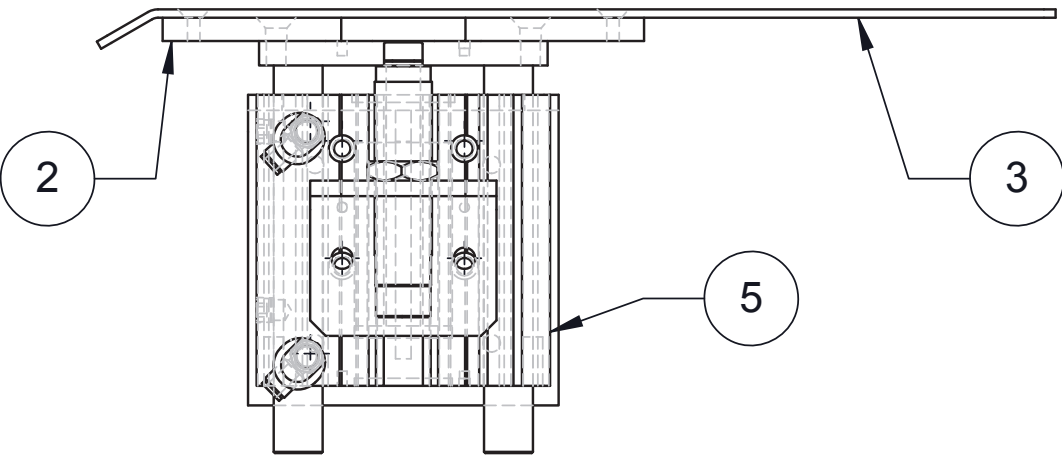
Assembly Part Number: 365390-001

Assembly Drawing Number: 365390

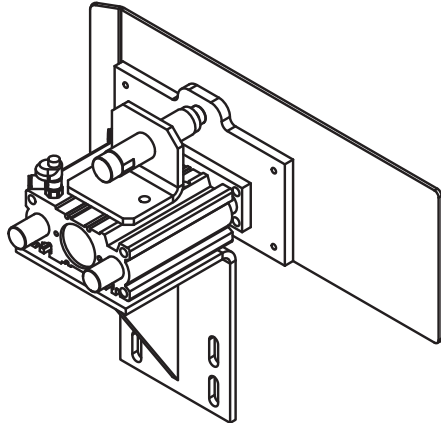
Description: ASSY, MAGAZINE, BLANK, 60" LG, 31" WIDE, LH

Quantity: 1.00

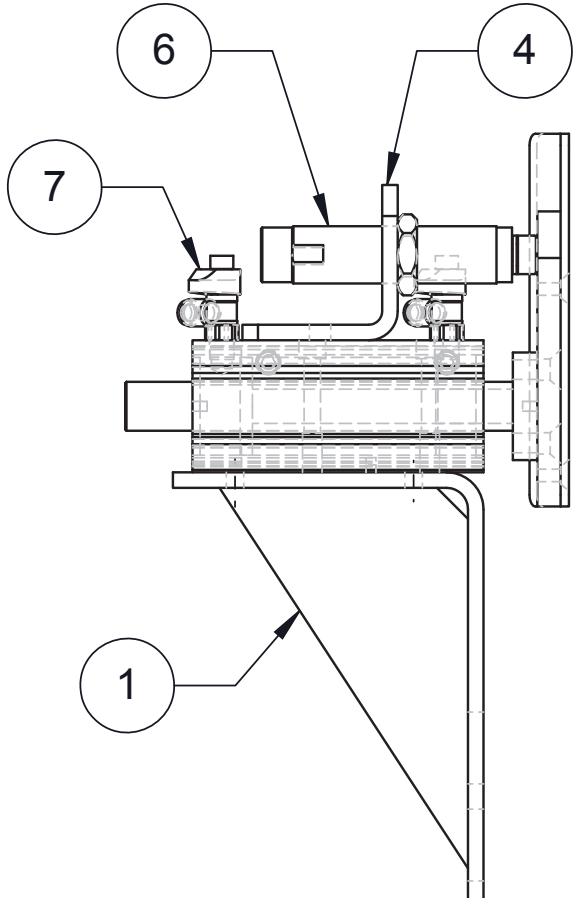
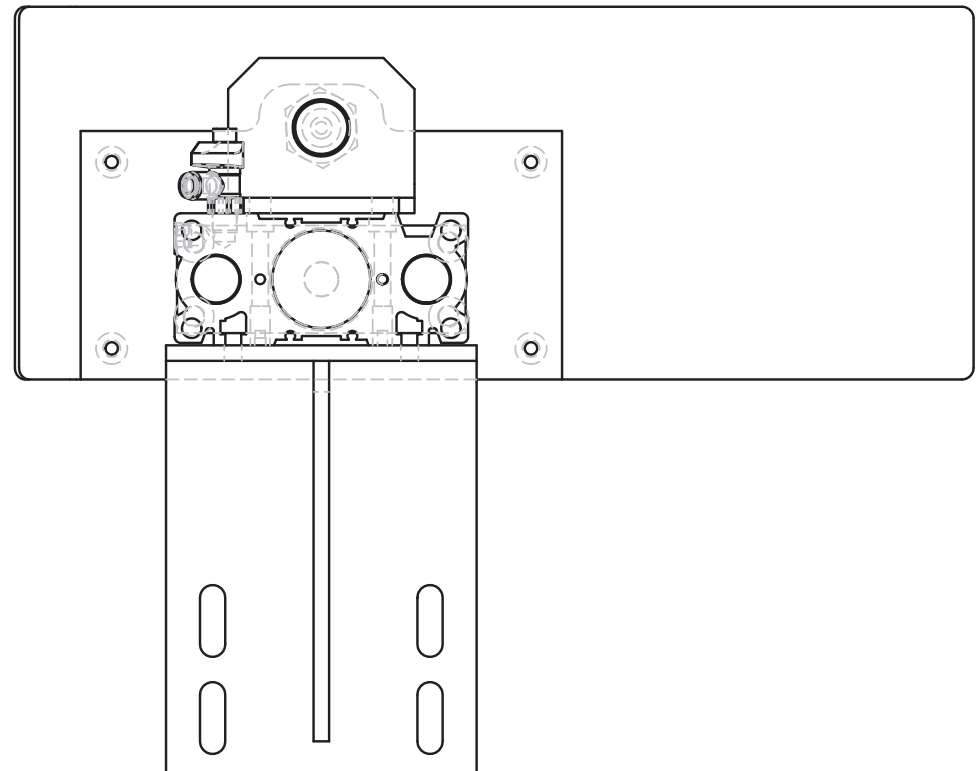
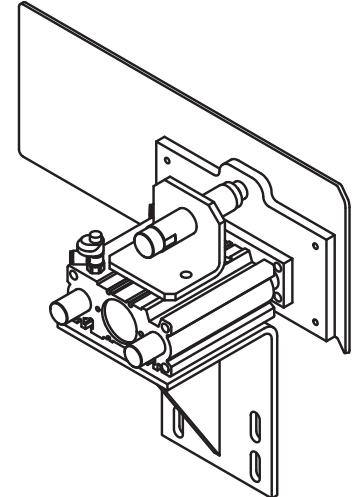
Item	Qty	Arpac Part	Description
45	1.00	800385	BUSH, OILITE, 0.7520 X 1.0040 X 1/2 LG
46	1.00	807903	BUSH, OILITE, FLG, 0.502 X 0.753 X 7/8 1 OD X 1/8 THK FLG
47	1.00	142871	TENSIONER, UPPER CHAIN
48	1.00	237856	BKT, PE, MINI
49	2.00	800090	VALVE, CONTROL, FLOW, 1/8" 90DEG
50	4.00	256149	TAKE-UP, CHAIN
51	2.00	311541	BAR, MTG , HOLDER
52	1.00	342762	ASSY, ADJ, VERT
53	1.00	244360-001	CHANNEL, SIDE RH
54	1.00	244360-002	CHANNEL, SIDE LH
55	1.00	132982-100	BAR, GUIDE, ADJ, SPKT, ANODIZE CP-25, L.H. MACH
56	1.00	132984	ANGLE, MTG, RAIL, CHN CP-25, L.H MACH
57	1.00	311539	GUIDE, BLANK, SHORT, LH MACH
58	1.00	244061-001	GUIDE, BLANK, LONG, LH EL-2000 BLANK MAGAZINE
59	2.00	306773	BRG, FLG, 3/4 ID, 3-BOLT MOD.
60	1.00	366011-001	ASSY, PUSHER, BLANK
61	1.00	328557	SPACER, MNT, BKT, CYL
62	1.00	328556	BKT, MNT, CYL
63	1.00	854763	CYL, AIR, 1-1/4 BORE, 1/2 STROKE,
64	1.00	837023	CLEVIS, ROD, PISTON, 7/16-20, 3/8 PIN
65	2.00	800443	WSHR, OILITE, 0.377 X 0.750 X 1/16 THK
66	1.00	800376	BUSH, OILITE, 0.3750 X 0.5030 X 1/4 LG
67	1.00	328555	SPACER
68	1.00	328554	PLT, MNT, CYL
69	1.00	800323-006	FSNR, BOLT, SHLDR, 3/8 DIA X 3/4 LG,
70	1.00	328553	GUARD, CYL, LH
71	4.00	125227	SPKT, 35B17, MOD, 0.500 BORE , W/KEYWAY, SET SCR
72	1.00	366017-001	ASSY, HOLDER, BLANK, ADJ, VERT
73	1.00	357772	GUIDE, CHAIN



230241-001



230241-002



230241-002	LH, OPPOSITE
230241-001	RH, AS SHOWN
PART NUMBER	ORIENTATION

7	2	825362-001	VALVE, CONTROL, FLOW, 1/8 NPT X 1/4 TUBE 90DEG, NUMERIC INDICATOR, MTR OUT
6	1	816625-001	SHOCK, 1-12 THRD, 1 STROKE, NICKLE PLATE W/2 LOCK NUT,BUTTON (PM-100-IF-1B SHOCK)
5	1	847044	THRUSTER, LINEAR, 40MM BORE 75MM STROKE
4	1	132954	ANGLE, MNT, SHOCK
3	1	247121-002	PLT, FACE, COMPRESSION,LH
2	1	216167	PLT, MTG, FACE, COMPRESSION
1	1	230242	BKT, MTG, THRUSTER
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:	11/24/2004	BY:	HHG
RELEASED:		SCALE:	1:4
DESCRIPTION:	ASSY, COMPRESSION, SIDE		
		SIZE:	A
		APPROVED BY:	HHG
		DRAWING NUMBER:	230241

Arpac BOM

Parent Number: 17220 Parent Revision: A

Description: ASSY, FINAL, MACH, EL-2200

Model:

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: 17220 Parent Revision: A

Description: ASSY, FINAL, MACH, EL-2200

Model:

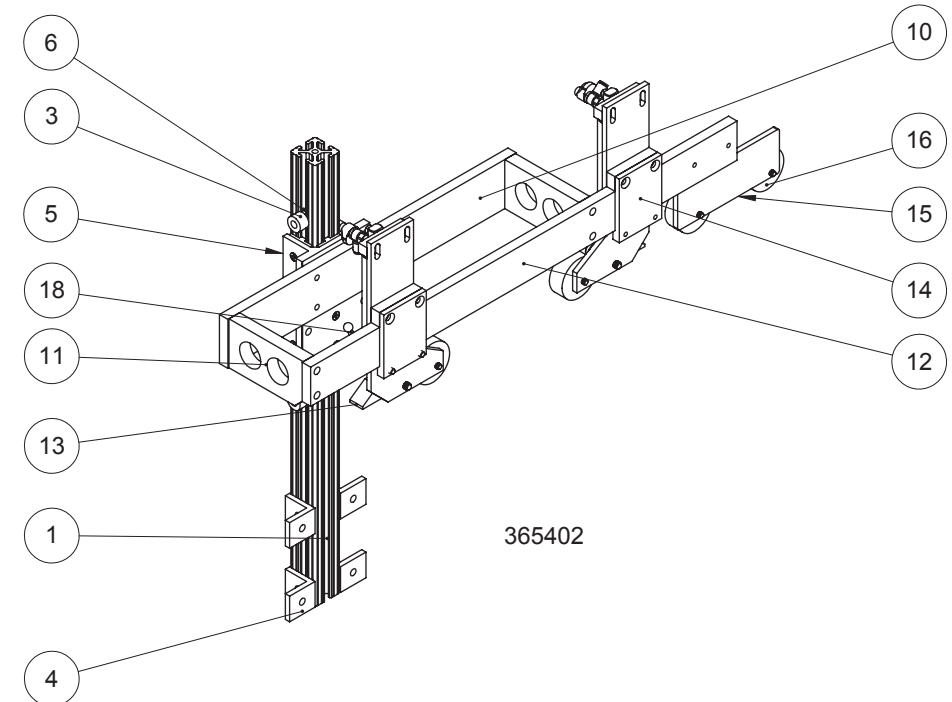
Assembly Part Number: 230241-002B

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



REV	DATE	BY	NOTE	
REVISIONS				
Rd. 76	SIZE B	SCALE 1:8	MATERIAL SEE BILL OF MATERIALS	DESCRIPTION ASSY, SQUARING, TOP, CASE
3RD ANGLE 	UNITS INCH			
TOLERANCES X/X: ±1/32 X.XX: ±.015 X.XXX: ±.005 ANGLES: ±1°			FINISH NONE	NUMBER 365402

NUMBER	365402
--------	--------

Arpac BOM

Parent Number: 17220 Parent Revision: A

Description: ASSY, FINAL, MACH, EL-2200

Model:

Assembly Part Number: 365402

Assembly Drawing Number: 365402

Description: ASSY, SQUARING, TOP, CASE

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	809015-031	EXTRUSION, 1515 SERIES 22.5" LENGTH,
2	1.00	816449	HANDLE, LINEAR BEARING BRAKE
3	2.00	311704	STOP
4	4.00	817018	BRKT, INSIDE, CORNER, 2 HOLE 15 SERIES
5	1.00	300536	BRG, LINEAR, W/BRAKE
6	6.00	809939	T-NUT, 5/16-18, 15 SERIES, SLIDE IN, BLACK ZINC
7	1.00	243170	SCALE, 5 LG, LH
8	1.00	342716	POINTER
9	2.00	342715	NUT
10	1.00	342703	BAR, BACK
11	2.00	342701	BAR, CONNECT
12	1.00	342702	BAR, TOP SQUARE
13	1.00	365401-001	ASSY, HOLDER, TOP SQUARE
14	1.00	365401	ASSY, HOLDER, TOP SQUARE
15	1.00	365400	PLT, MTG, ROLLER, TOP
16	2.00	139121	ROLLER TRANSFER
17	2.00	800322-008	FSNR, BOLT, SHLDR, 5/16 DIA X 3/4 LG, SS
18	2.00	810224	HDL, ADJ, SS, 1.57 LG 1/4-20 X 1.18 STUD

Arpac BOM

Parent Number: 17220 Parent Revision: A

Description: ASSY, FINAL, MACH, EL-2200

Model:

Assembly Part Number: 365402-001

Assembly Drawing Number: 365402

Description: ASSY, SQUARING, TOP, CASE

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	809015-031	EXTRUSION, 1515 SERIES 22.5" LENGTH,
2	1.00	816449	HANDLE, LINEAR BEARING BRAKE
3	2.00	311704	STOP
4	4.00	817018	BRKT, INSIDE, CORNER, 2 HOLE 15 SERIES
5	1.00	300536	BRG, LINEAR, W/BRAKE
6	6.00	809939	T-NUT, 5/16-18, 15 SERIES, SLIDE IN, BLACK ZINC
7	1.00	243170	SCALE, 5 LG, LH
8	1.00	342716	POINTER
9	2.00	342715	NUT
10	1.00	342703	BAR, BACK
11	2.00	342701	BAR, CONNECT
12	1.00	342702	BAR, TOP SQUARE
13	1.00	365401-001	ASSY, HOLDER, TOP SQUARE
14	1.00	365401	ASSY, HOLDER, TOP SQUARE
15	1.00	365400	PLT, MTG, ROLLER, TOP
16	2.00	139121	ROLLER TRANSFER
17	2.00	800322-008	FSNR, BOLT, SHLDR, 5/16 DIA X 3/4 LG, SS
18	2.00	810224	HDL, ADJ, SS, 1.57 LG 1/4-20 X 1.18 STUD

ARPAC C SIZE FORMAT RS.1

4

3

2

1

D

C

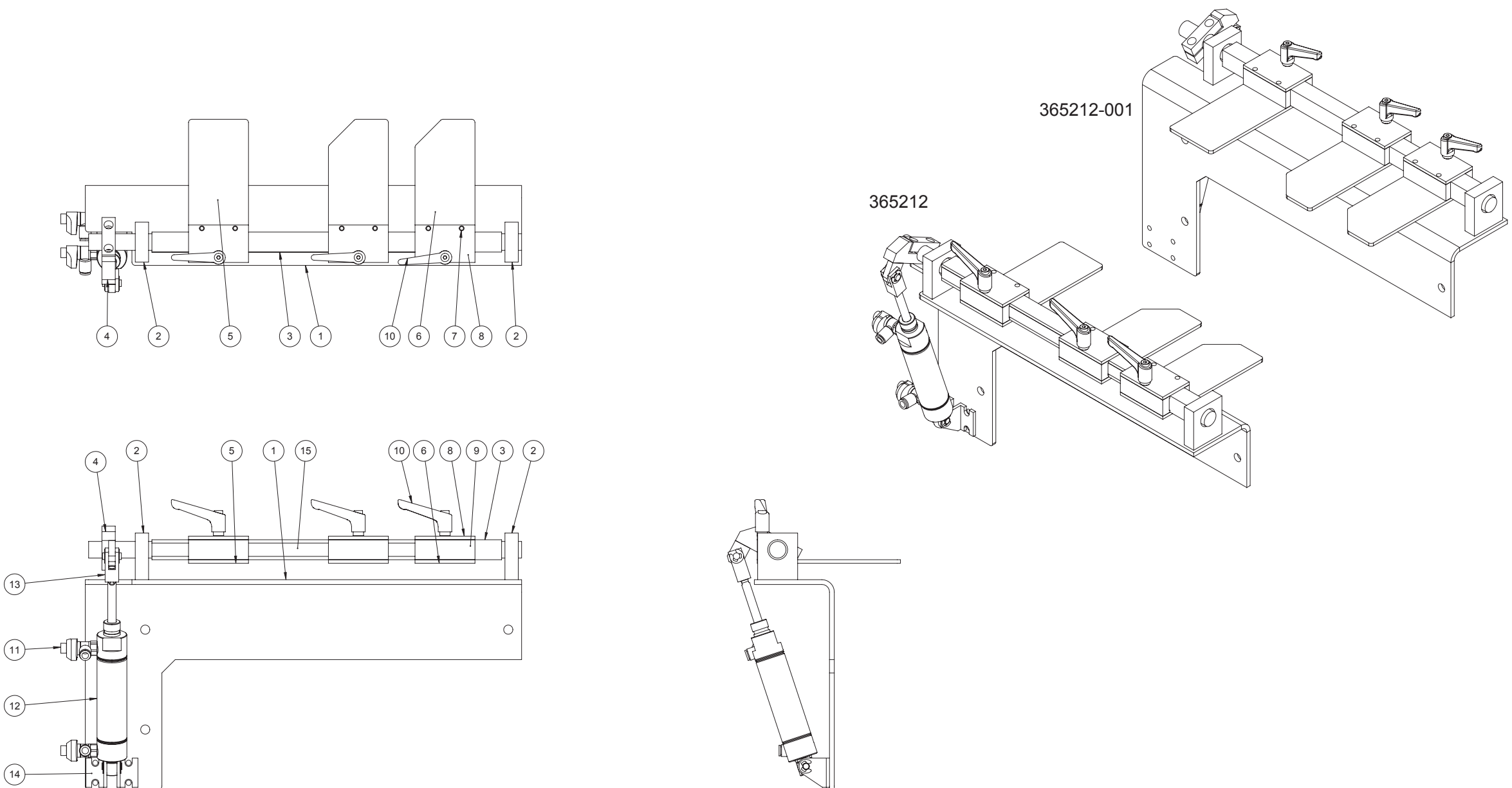
B

A

BILL OF MATERIALS			
ITEM	QTY	NUMBER	DESCRIPTION
1	1	230237-001	BKT, FLAP, HOLDDOWN
2	2	230238	BLK, BRG
3	1	132447	SHAFT, FLAP HOLDING
4	1	122124	CLAMP, SHAFT
5	1	300770	PLT, FLAP HOLDING
6	2	367313	PLT, HOLDING, FLAP
7	3	133223	PLT, SIDE, FLAP HOLD
8	3	191233	PLT, CLAMP
9	3	133225	PLT, SIDE, FLAP HOLD
10	3	809458	HDL, ADJ, ZINC, 1 3/4 LG 10-32 X .47
11	2	825362-001	VALVE, CONTROL, FLOW, 1/8 NPT X 1/4 TUBE 90DEG, NUMERIC INDICATOR, MTR OUT
12	1	855057	CYL, AIR, 1 1/16 BORE, 2 STRK, RND PVT MTG, DBL ACT, W/CUSHION, MAGNET
13	1	839340	ROD CLEVIS
14	1	839339	BKT, PIVOT
15	1	809498	SCALE, ADHESIVE, 1/2W X 1FT LEFT TO RIGHT

365212

365212-001



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

8555 W. Irving Park Rd. Schiller Park, IL 60176 www.arpac.com

MODEL

365212/365212

FILE \ CONFIG SIMILAR TO

DATE CREATED Friday, June 24, 2011 5:23:03 AM

DATE UPDATED Monday, June 24, 2019 2:37:04 PM

UPDATED BY sarcher

DATE CREATED Thursday, April 11, 2019 4:55:30 PM

DATE UPDATED Monday, June 24, 2019 2:36:53 PM

UPDATED BY sarcher

SIZE C

SCALE 1:3

MATERIAL SEE BILL OF MATERIALS

DESCRIPTION ASSY, HOLD DOWN, FLAP

3RD ANGLE

UNITS INCH

TOLERANCES X/X: ±1/32 X/XX: ±.015 X/XXX: ±.005 ANGLES: ±1°

FINISH NONE

NUMBER 365212

REV	DATE	BY	NOTE
REVISIONS			

C

B

A

SHEET 1 OF 1

Arpac BOM

Parent Number: 17220 Parent Revision: A
Description: ASSY, FINAL, MACH, EL-2200
Model:

Assembly Part Number: 365212
Assembly Drawing Number: 365212
Description: ASSY, HOLD-DOWN, FLAP
Quantity: 1.00

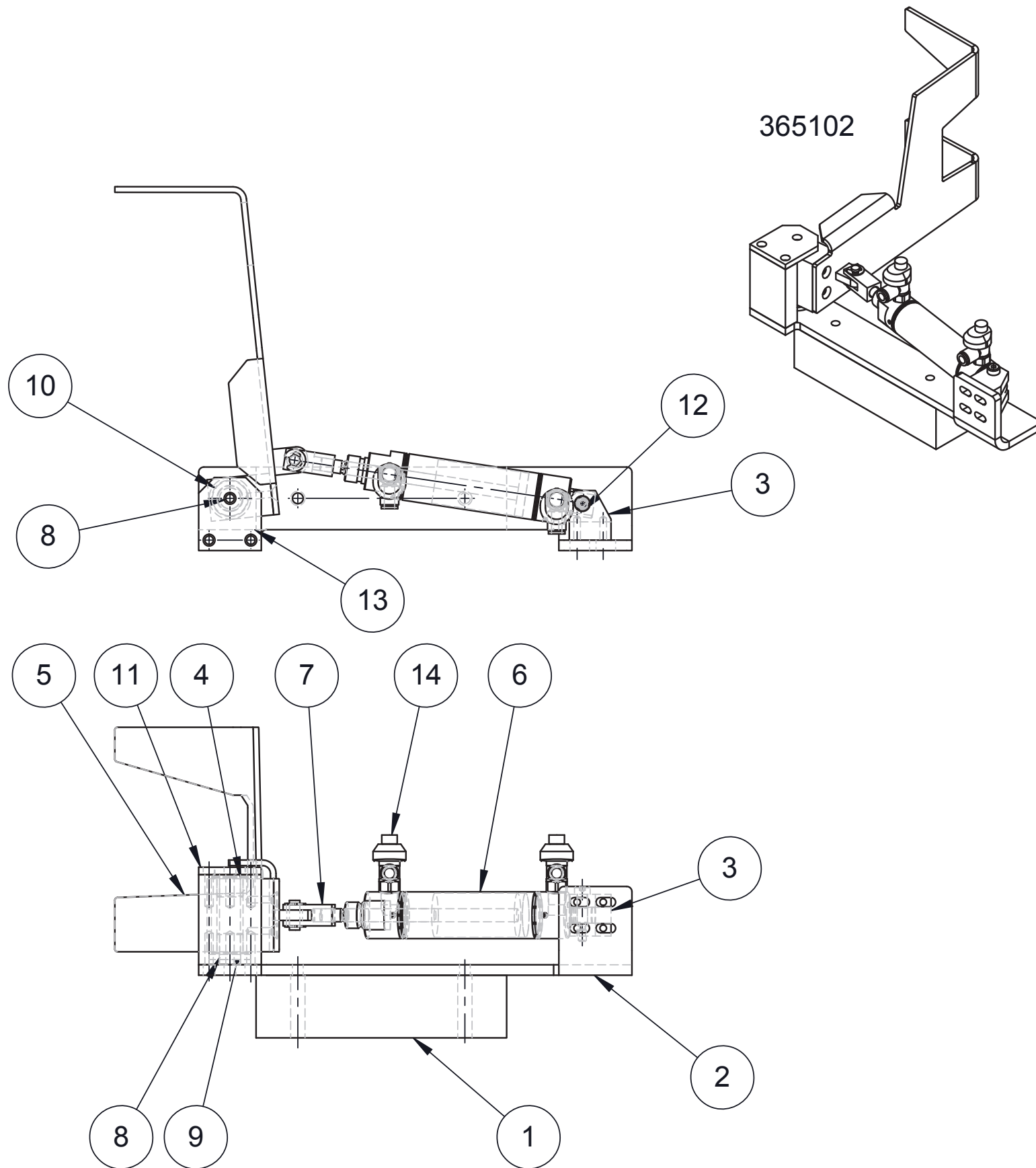
Item	Qty	Arpac Part	Description
1	1.00	230237-001	BKT, FLAP HOLDDOWN, RH
2	2.00	230238	BLK, BRG
3	1.00	132447	SHAFT, FLAP HOLDING
4	1.00	122124	CLAMP, SHAFT
5	1.00	300770	PLT, FLAP HOLDING, UP STREAM
6	2.00	367313	PLT, HOLDING, FLAP
7	3.00	133223	PLT, SIDE FLAP HOLD
8	3.00	191233	PLT, CLAMP
9	3.00	133225	PLT, SIDE, FLAP HOLD
10	3.00	809458	HDL, ADJ, ZINC, 1 3/4 LG 10-32 X .47
11	2.00	825362-001	VALVE, CONTROL, FLOW, 1/8 NPT X 1/4 TUBE 90DEG, NUMERIC INDICATOR, MTR OU
12	1.00	855057	CYL, AIR, 1 1/16 BORE, 2 STRK, RND PVT MTG, DBL ACT, W/CUSHION, MAGNET
13	1.00	839340	CLEVIS, ROD, 5/16- 24, CYL, AIR, REPLACES 801759
14	1.00	839339	BKT, PIVOT, CYL, 1 1/16 BORE
15	1.00	809498	RULE, ADHESIVE, 1/2W X 1FT LEFT TO RIGHT

Arpac BOM

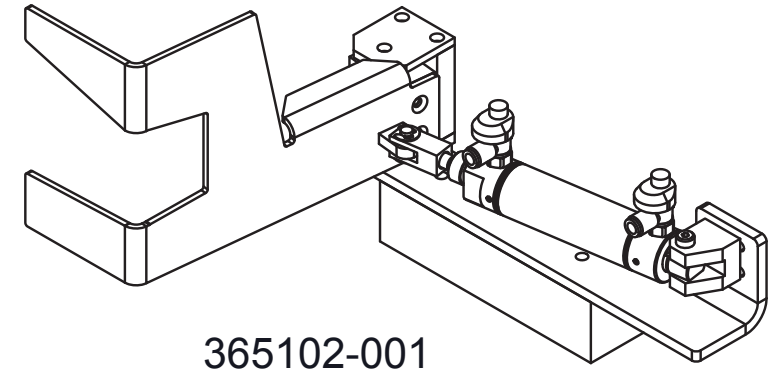
Parent Number: 17220 Parent Revision: A
Description: ASSY, FINAL, MACH, EL-2200
Model:

Assembly Part Number: 365212-001
Assembly Drawing Number: 365212
Description: ASSY, HOLD-DOWN, FLAP
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
5	1.00	300770	PLT, FLAP HOLDING, UP STREAM
6	2.00	367313	PLT, HOLDING, FLAP
7	3.00	133223	PLT, SIDE FLAP HOLD
8	3.00	191233	PLT, CLAMP
9	3.00	133225	PLT, SIDE, FLAP HOLD
10	3.00	809458	HDL, ADJ, ZINC, 1 3/4 LG 10-32 X .47
11	2.00	825362-001	VALVE, CONTROL, FLOW, 1/8 NPT X 1/4 TUBE 90DEG, NUMERIC INDICATOR, MTR OU
12	1.00	855057	CYL, AIR, 1 1/16 BORE, 2 STRK, RND PVT MTG, DBL ACT, W/CUSHION, MAGNET
13	1.00	839340	CLEVIS, ROD, 5/16- 24, CYL, AIR, REPLACES 801759
14	1.00	839339	BKT, PIVOT, CYL, 1 1/16 BORE
15	1.00	809498	RULE, ADHESIVE, 1/2W X 1FT LEFT TO RIGHT



365102



14	2	825362-001	VALVE, CONTROL, FLOW, 1/8 NPT X 1/4 TUBE 90DEG, NUMERIC INDICATOR, MTR OUT
13	1	232850	SPACER, PIVOT
12	1	800321-019	FSNR, BOLT, SHLDR, 1/4 DIA X 3/4 LG, SS
11	1	232851	PLT, TOP, PIVOT
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	839340	ROD CLEVIS
6	1	854762	CYL, AIR, 1 1/16 BORE, 2 STRK, RND PVT MTG, DBL ACT, W/CUSHION
5	1	316197-001	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
TWO (2) DECIMALS ± 0.010
ALL DIMENSIONAL TOLERANCES: THREE (3) DECIMALS ± 0.005
ANGLES ± 0.5°

DRAWN: 4/4/2019 BY: SRA SCALE: 0.25:1 SIZE: A

RELEASED: FILENAME: 365102 APPROVED BY:

DESCRIPTION: ASSY, TUCKER, MINOR FLAP



DRAWING NUMBER:
365102

Arpac BOM

Parent Number: 17220 Parent Revision: A
Description: ASSY, FINAL, MACH, EL-2200
Model:

Assembly Part Number: 365102
Assembly Drawing Number: 365102
Description: ASSY, TUCKER, MINOR FLAP
Quantity: 1.00

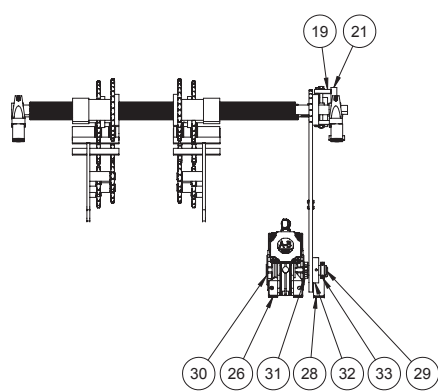
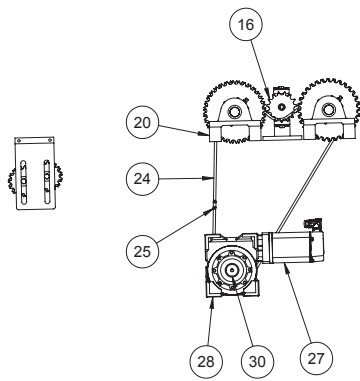
Item	Qty	Arpac Part	Description
1	1.00	137182	SPACER, TUCKER
2	1.00	232853-001	BKT, TUCKER, RH
3	1.00	230839-001	BKT, PIVOT, CYL LH
4	1.00	127489-000A	BLK, ARM, MTG TS25, STD
5	1.00	316197-001	WLDMT, ARM, TUCKER, RH EL-2000
6	1.00	854762	CYL, AIR, 1 1/16 BORE, 2 STRK, RND PVT MTG, DBL ACT, W/CUSHION
7	1.00	839340	CLEVIS, ROD, 5/16- 24, CYL, AIR, REPLACES 801759
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	1.00	232851	PLT, TOP, PIVOT
12	1.00	800321-019	FSNR, BOLT, SHLDR, 1/4 DIA X 3/4 LG, SS
13	1.00	232850	SPACER, PIVOT
14	2.00	825362-001	VALVE, CONTROL, FLOW, 1/8 NPT X 1/4 TUBE 90DEG, NUMERIC INDICATOR, MTR OU

Arpac BOM

Parent Number: 17220 Parent Revision: A
Description: ASSY, FINAL, MACH, EL-2200
Model:

Assembly Part Number: 365102-001
Assembly Drawing Number: 365102
Description: ASSY, TUCKER, MINOR FLAP
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	316197-002	WLDMT, ARM, TUCKER, LH EL-2000
6	1.00	854762	CYL, AIR, 1 1/16 BORE, 2 STRK, RND PVT MTG, DBL ACT, W/CUSHION
7	1.00	839340	CLEVIS, ROD, 5/16- 24, CYL, AIR, REPLACES 801759
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	1.00	232851	PLT, TOP, PIVOT
12	1.00	800321-019	FSNR, BOLT, SHLDR, 1/4 DIA X 3/4 LG, SS
13	1.00	232850	SPACER, PIVOT
14	2.00	825362-001	VALVE, CONTROL, FLOW, 1/8 NPT X 1/4 TUBE 90DEG, NUMERIC INDICATOR, MTR OU



REV	DATE	BY	NOTE
REVISIONS			
SIZE C	SCALE 1:16	MATERIAL SEE BILL OF MATERIALS	DESCRIPTION ASSY, DRIVE, CHAIN, LUG, EL-2000, 460V
3RD ANGLE 	UNITS INCH		
TOLERANCES X/X: ±1/32 X/XX: ±0.015 X/XXX: ±0.005 ANGLES: ±1°		FINISH NONE	NUMBER 365027

Arpac BOM

Parent Number: 17220 Parent Revision: A

Description: ASSY, FINAL, MACH, EL-2200

Model:

Assembly Part Number: 365027

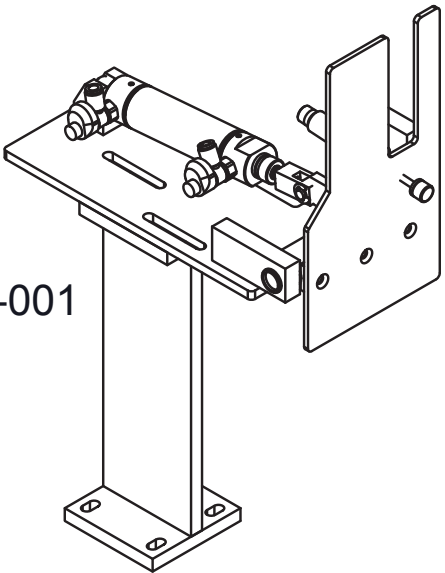
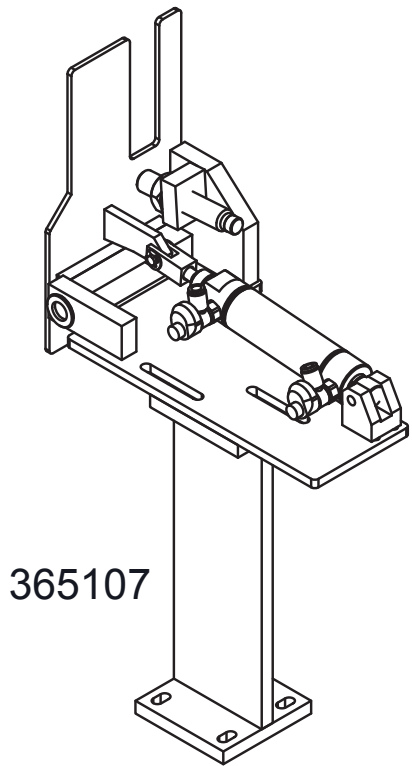
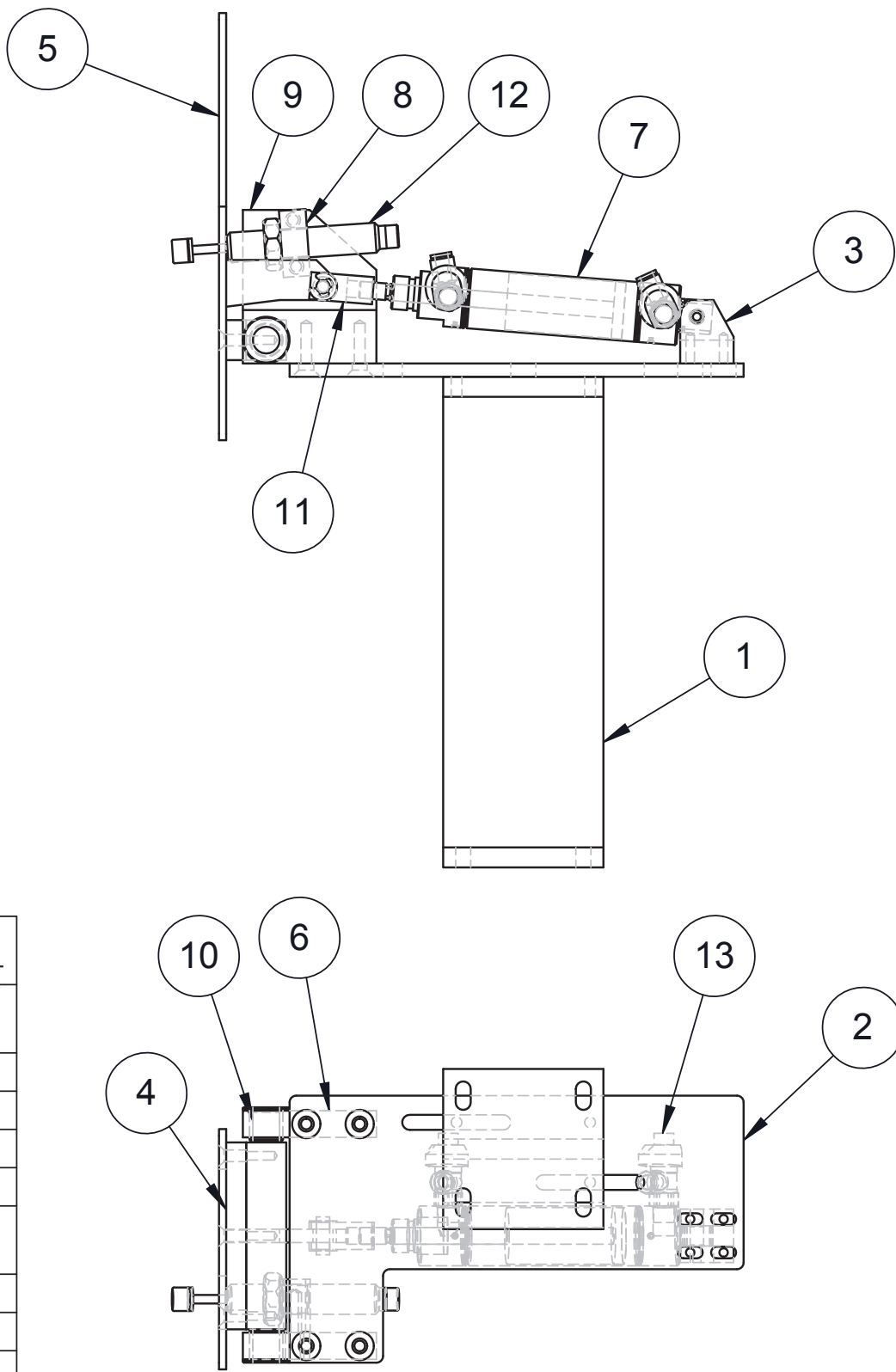
Assembly Drawing Number: 365027

Description: ASSY, DRIVE, CHAIN, LUG, EL-2000, 460V

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	214311	SHAFT, SPLINE, 42 5/8 LG, TS-25
2	1.00	214312	SHAFT, SPLINE, ADJ, 43 1/4 LG, TS-25
3	2.00	191209	SPKT, 60A32, MOD, 2.753 BORE
4	2.00	191212	CARRIER, DRV SPKT, TRAILING CHAIN
5	4.00	191213	SPACER, CHAIN DRV
6	2.00	122244	SHAFT, IDL, 1.25 D X 6 L, 1/2-13 (2)
7	4.00	122106	SPKT, 60A32, MOD, 2.562 BORE
8	2.00	139615-001	SPACER, IDL SHFT
9	2.00	139615-007	SPACER, IDL SHFT, 0.9375 LG
10	2.00	139615-008	SPACER, IDL SHFT, 2.894 LG
11	4.00	807444	BRG, PILLOW BLK, 1-1/4 ID
12	1.00	800610	CPLG, PHASE-LOCK 1-1/4 BORE
13	1.00	193095	SPKT, 60A20, MOD, 1.313 BORE, SPECIAL FOR PHASE ADJ
14	1.00	808765	BUSH, TAPER, 1-1/4 BORE X 1-1/4 LG, FOR METRIC SPROCKET 30 TEETH
15	1.00	823423	SPKT, 60BTB20H REQUIRE 2012 BUSHING
16	9.00	808463	SPKT, 60BB15H, IDLER, 5/8 ID, HARDENED
17	4.00	139617-003	SPACER, TENSSTION SPKT, 0.766
18	4.00	139617-002	SPACER, TENSSTION SPKT
19	1.00	101965	ASSY, SLIDE, TAKE-UP, CHAIN, 2.250, STD,
20	8.00	188012	SPACER, BRG, DRIVE SHAFT
21	1.00	132925	WLDMT, BKT, TAKE UP
22	2.00	191210	SPKT, 60A32, MOD, 2.753 BORE, ADJ
23	2.00	297537	CARRIER, DRV SPKT, LEADING CHAIN
24	1.00	800486	CHAIN, RLR, #60
25	1.00	800516	LINK, CONN, #60,
26	1.00	855004	GEARBOX, WORM, , MODEL 70, RATIO 28:1, 1-1/4 HOLLOW SHAFT, W/ADAPTER PLA
27	1.00	855014	SERVO, VPL, 6.55/58 NM/LB.IN, 115MMBC, 4500 RPM
28	1.00	305246	BKT, PROX, FLAG
29	1.00	304448	SHAFT, DRIVE
30	1.00	304449	WASHER, STOP
31	1.00	800594	COLLAR, SHAFT, CLAMP, 2-PIECE, 1-1/4
32	1.00	112736	SPKT, 60B20, MOD, 1.250 BORE
33	1.00	304446	WLDMT, FLAG, PROX

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	839340	ROD CLEVIS
10	1	197423	SHAFT, GATE
9	1	214327	BLOCK, BRG, TOP
8	1	214329	BRACKET, SHOCK ABS.
7	1	854762	CYL, AIR, 1 1/16 BORE, 2 STRK, RND PVT MTG, DBL ACT, W/CUSHION
6	1	197424	BRG, SHAFT
5	1	366238	WLDMT, GATE, DOWNSTREAM
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			



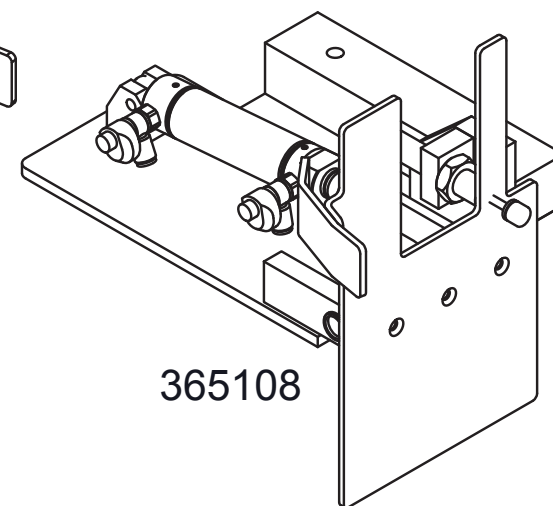
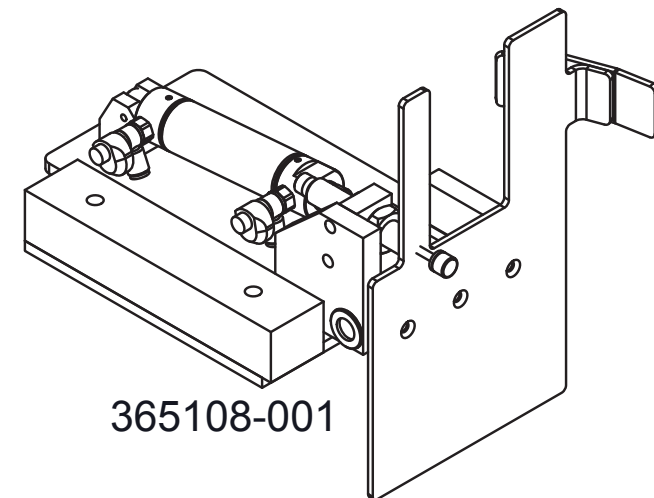
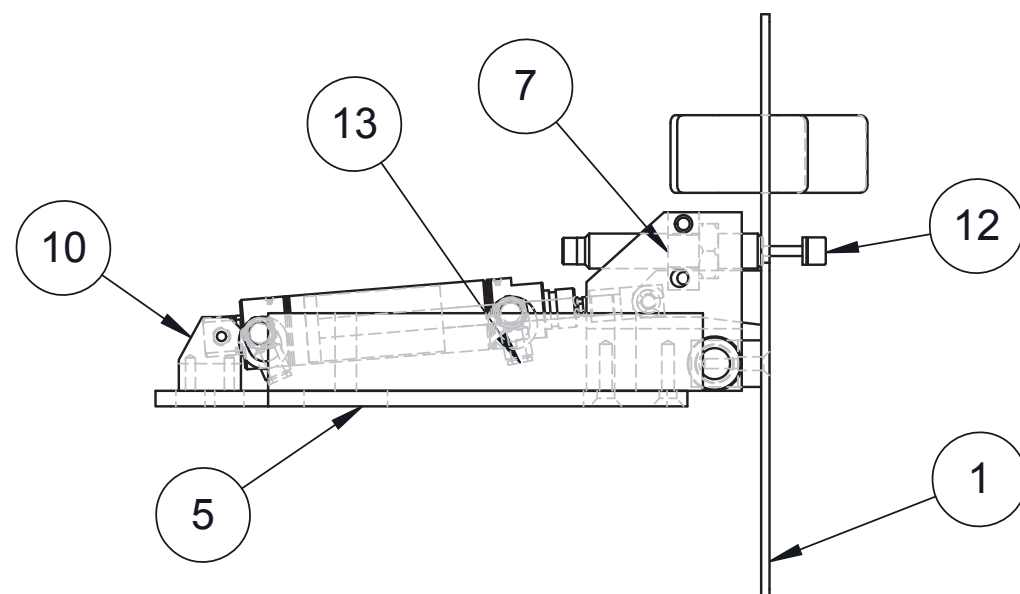
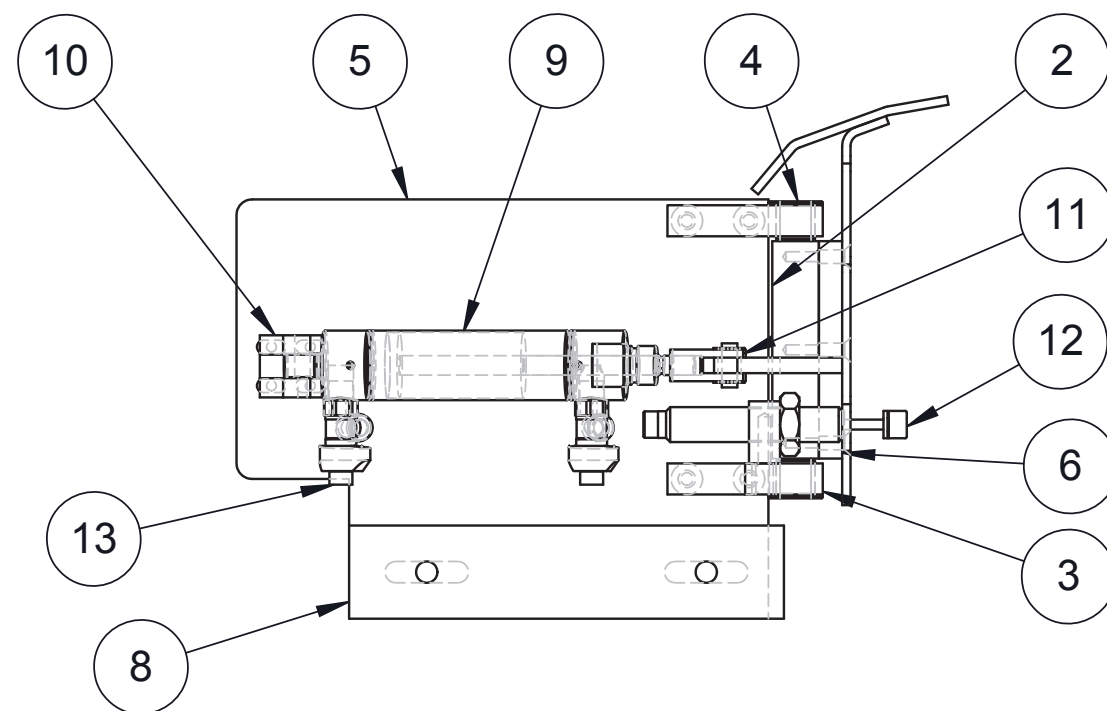
ARPAC		9511 WEST RIVER ST. SCHILLER PARK, IL 60176	
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONAL TOLERANCES:		FRACTIONS TWO (2) DECIMALS THREE (3) DECIMALS ANGLES	± 1/64 ± 0.010 ± 0.005 ± 0.5°
DRAWN: 4/4/2019	BY: SRA	SCALE: 0.25:1	SIZE: A
RELEASED:	FILENAME: 365107	APPROVED BY:	
DESCRIPTION: ASSY, GATE, DOWNSTREAM			
			
		DRAWING NUMBER: 365107	

Arpac BOM

Parent Number: 17220 Parent Revision: A
Description: ASSY, FINAL, MACH, EL-2200
Model:

Assembly Part Number: 365107
Assembly Drawing Number: 365107
Description: ASSY, GATE, DOWNSTREAM
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	366238	WLDMT, GATE, DOWNSTREAM
6	1.00	197424	BLOCK, BRG, BOTTOM
7	1.00	854762	CYL, AIR, 1 1/16 BORE, 2 STRK, RND PVT MTG, DBL ACT, W/CUSHION
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	839340	CLEVIS, ROD, 5/16- 24, CYL, AIR, REPLACES 801759
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



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	839340	ROD CLEVIS
10	1	230839-001	BKT, PIVOT, CYL RH
9	1	854762	CYL, AIR, 1 1/16 BORE, 2 STRK, RND PVT MTG, 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	366239-001	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: 4/4/2019 BY: SRA SCALE: 1:4 SIZE: A

RELEASED: FILENAME: 365108 APPROVED BY:

DESCRIPTION: ASSY, GATE, UPSTREAM



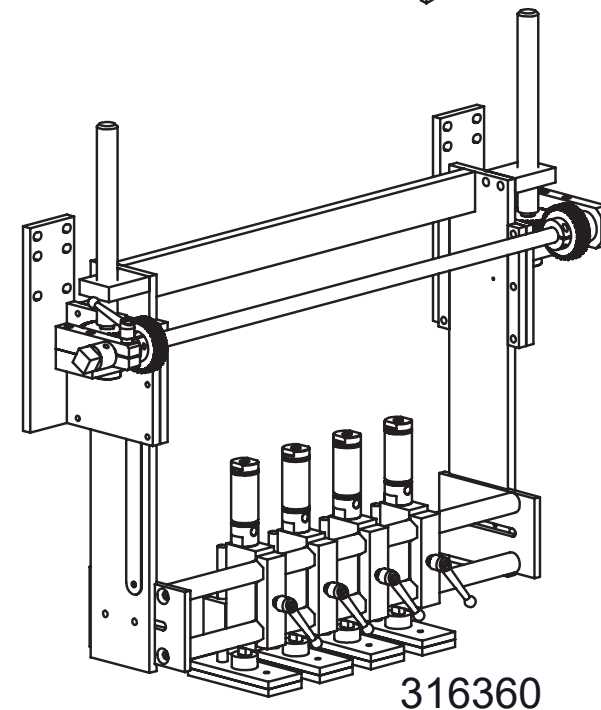
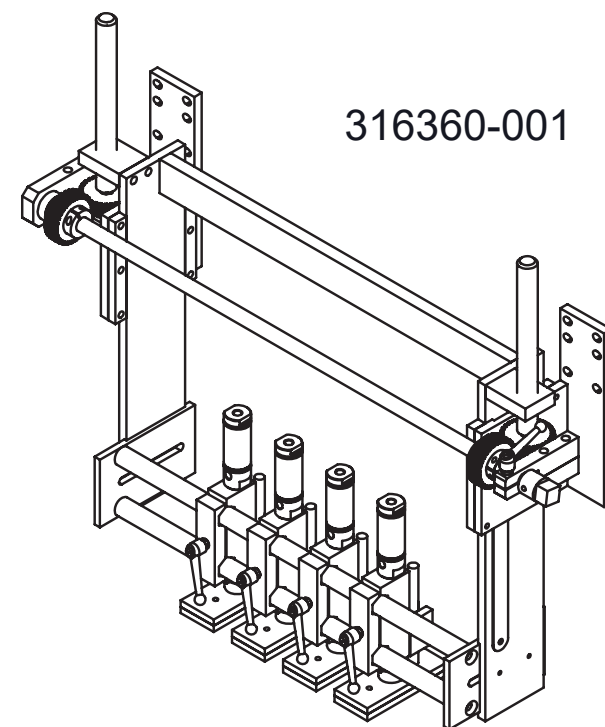
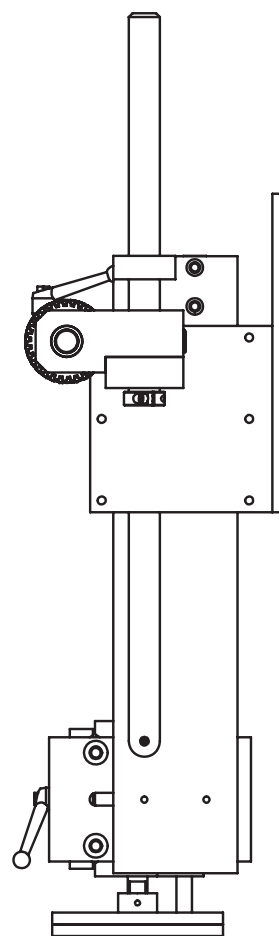
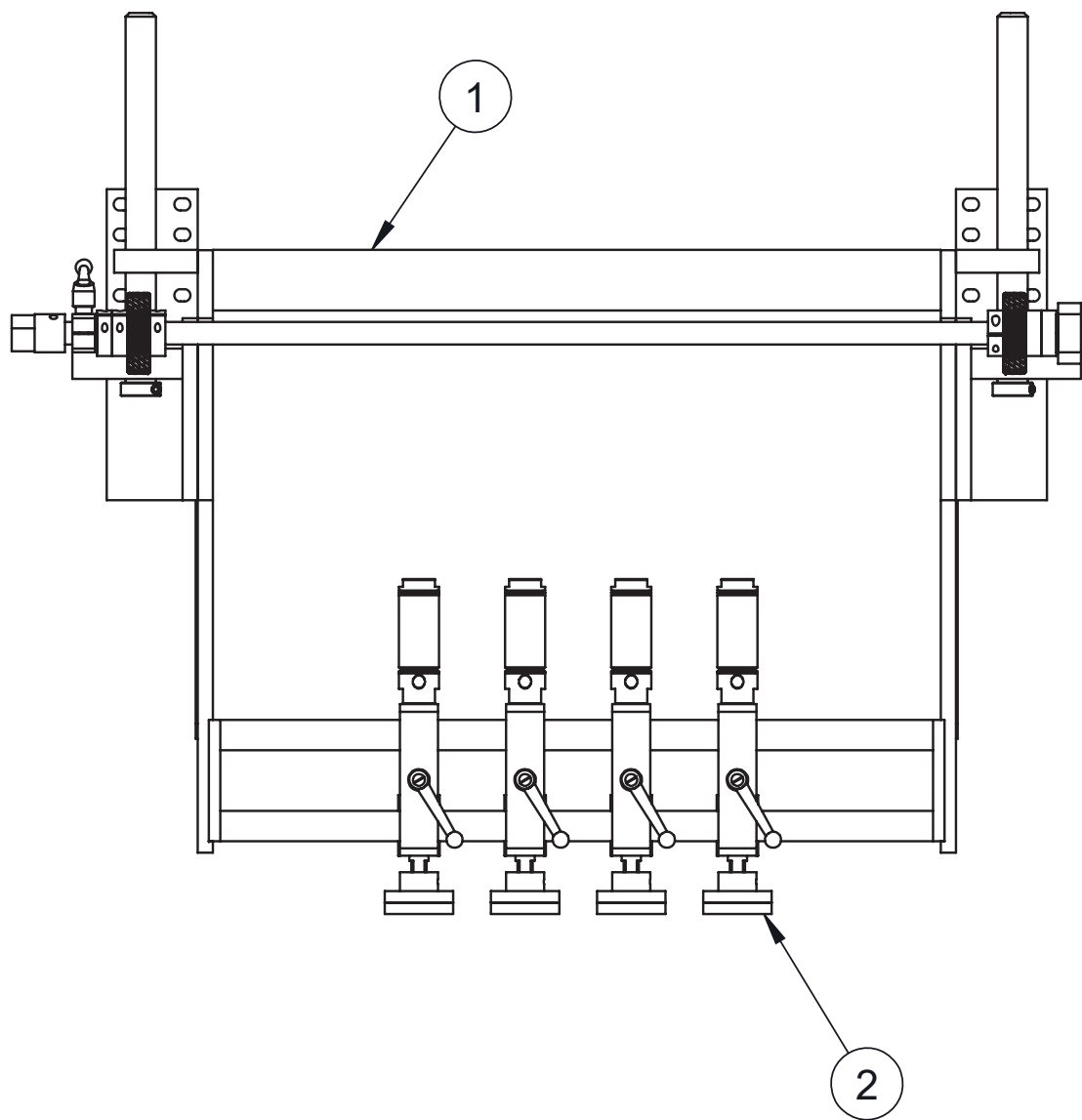
DRAWING NUMBER:
365108

Arpac BOM

Parent Number: 17220 Parent Revision: A
Description: ASSY, FINAL, MACH, EL-2200
Model:

Assembly Part Number: 365108
Assembly Drawing Number: 365108
Description: ASSY, GATE, UPSTREAM
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	366239	WLDMT, GATE, UPSTREAM
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	BKT, GATE, MTG, LH 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	854762	CYL, AIR, 1 1/16 BORE, 2 STRK, RND PVT MTG, DBL ACT, W/CUSHION
10	1.00	230839-002	BKT, PIVOT, CYL RH
11	1.00	839340	CLEVIS, ROD, 5/16- 24, CYL, AIR, REPLACES 801759
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



2	4	316361	ASSY, CLAMP, PRODUCT STOP
1	1	243312-001	ASSY, ADJ, CAN STOP
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: 2/1/2013 BY: SRA SCALE: 1:8 SIZE: A

RELEASED: 2/1/2013 FILENAME: 316360 APPROVED BY: SRA

DESCRIPTION: ASSY, STOP, 4 PRODUCT

JS

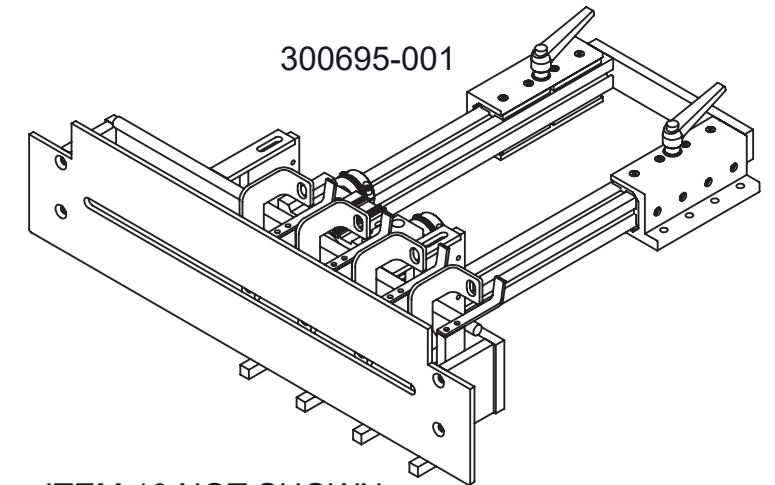
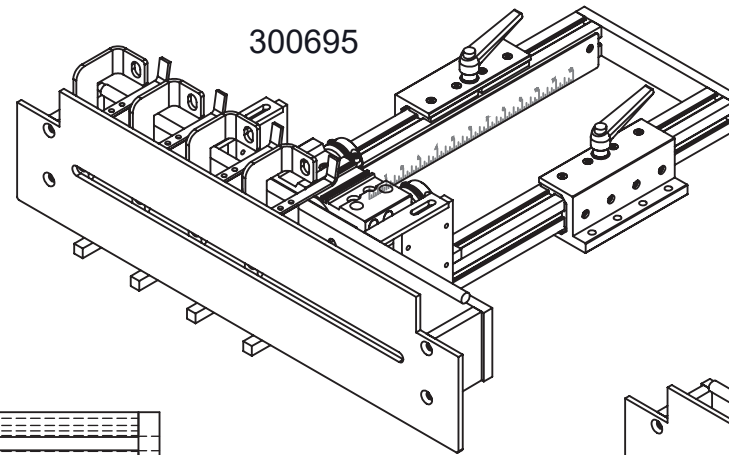
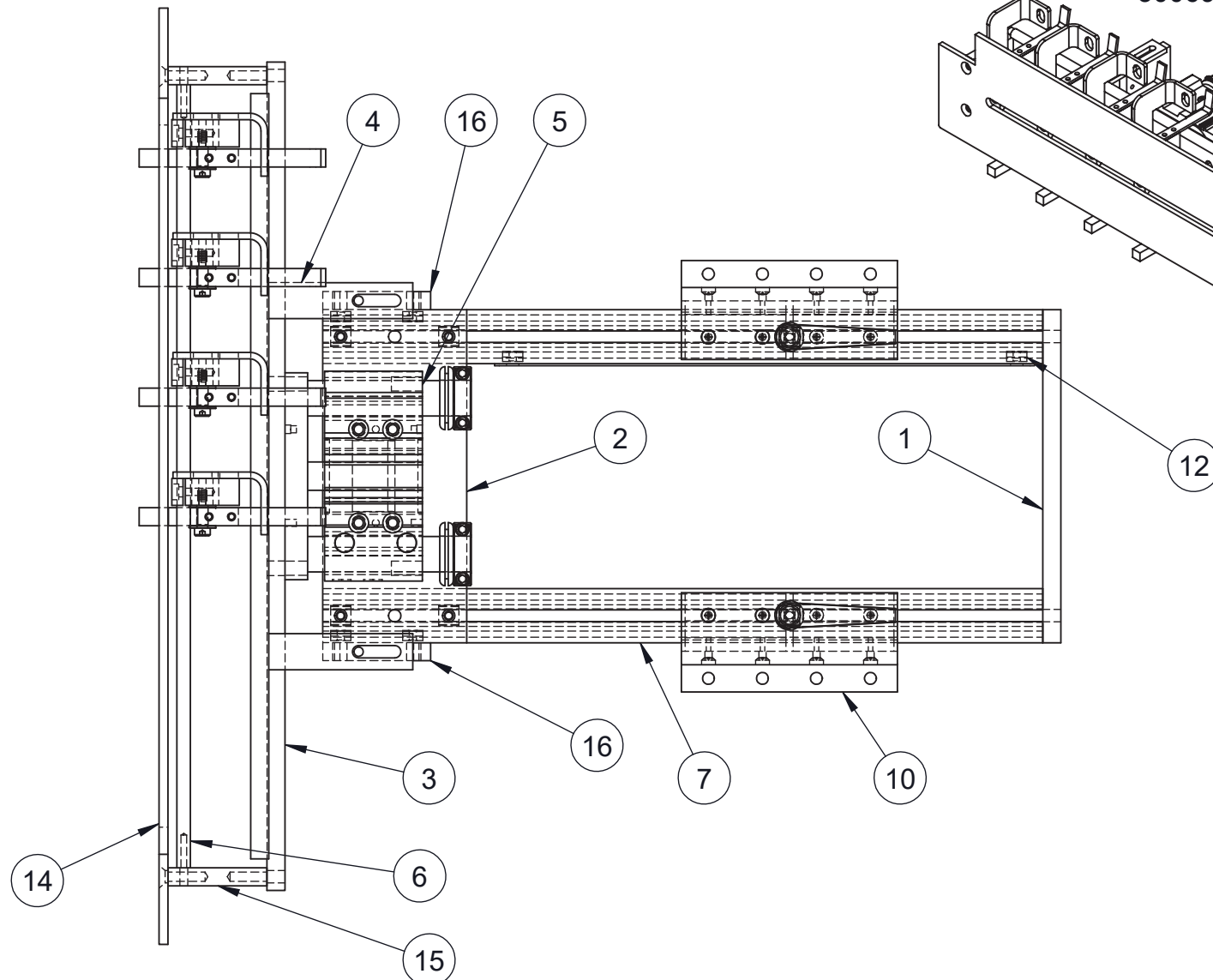
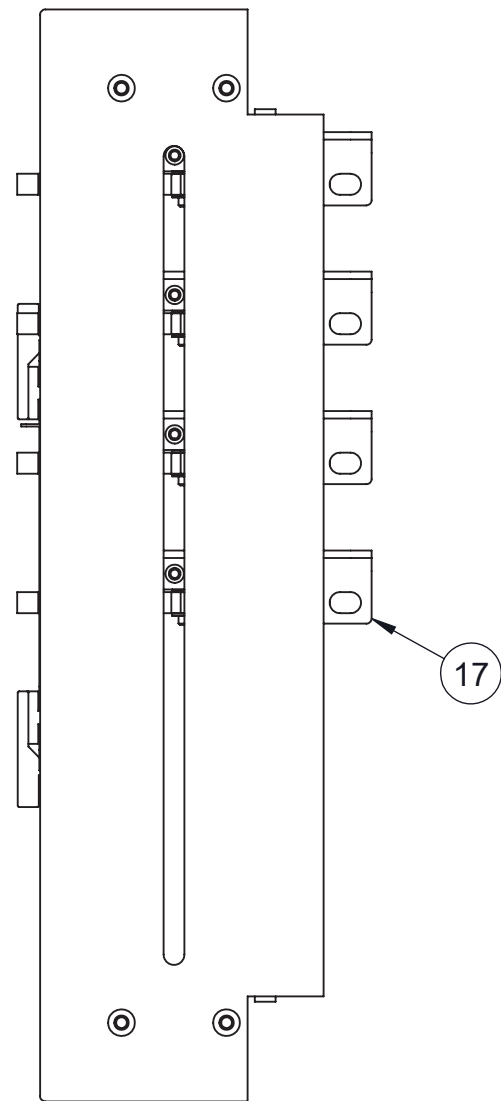
DRAWING NUMBER:
316360

Arpac BOM

Parent Number: 17220 Parent Revision: A
Description: ASSY, FINAL, MACH, EL-2200
Model:

Assembly Part Number: 316360
Assembly Drawing Number: 316360
Description: ASSY, STOP, 4 PRODUCT
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	243312-001B	ASSY, ADJ., CAN STOP, LH EL2000
2	4.00	316361	ASSY, CLAMP, PRODUCT STOP



ITEM 18 NOT SHOWN

18	2	822126-001	VALVE, CONTROL, FLOW, 3/8 OD PUSH-ON 1/4 NPT, NUMERIC INDICATOR
17	4	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
TWO (2) DECIMALS ± 1/64
THREE (3) DECIMALS ± 0.010
ANGLES ± 0.005
± 0.5°

DRAWN: 7/22/2014 BY: HHG SCALE: 0.21875:1 SIZE: B

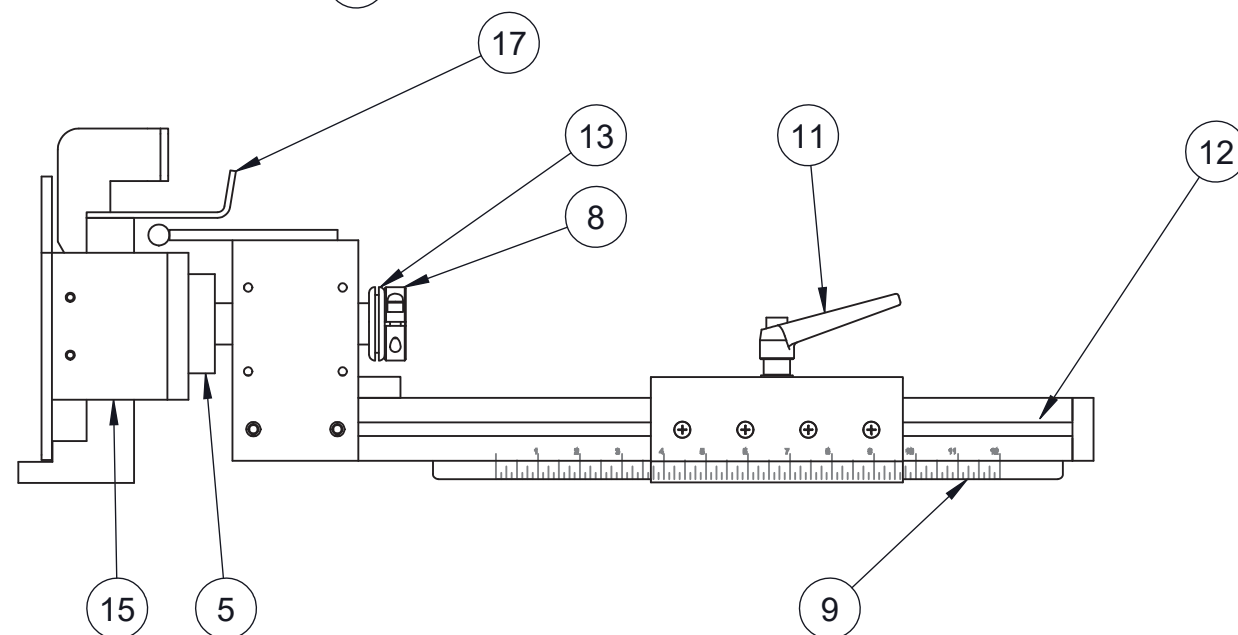
RELEASED: 7/22/2014 FILENAME: 300695 APPROVED BY: HHG

DESCRIPTION: ASSY, STEP BACK

Handwritten signature

DRAWING NUMBER:
300695

300695 AS SHOWN
300695-001 OPPOSITE



Arpac BOM

Parent Number: 17220 Parent Revision: A

Description: ASSY, FINAL, MACH, EL-2200

Model:

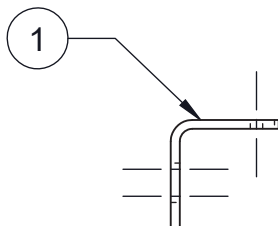
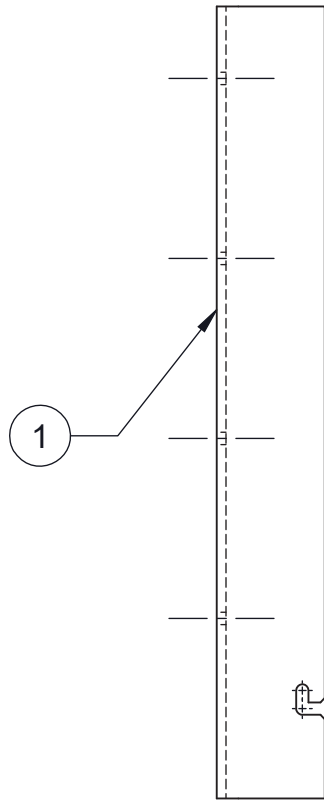
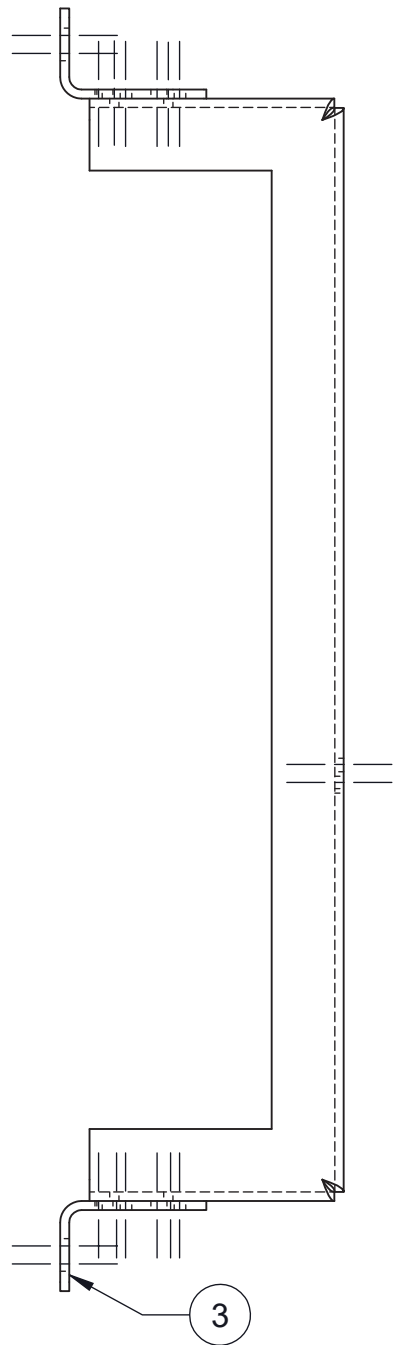
Assembly Part Number: 300695

Assembly Drawing Number: 300695

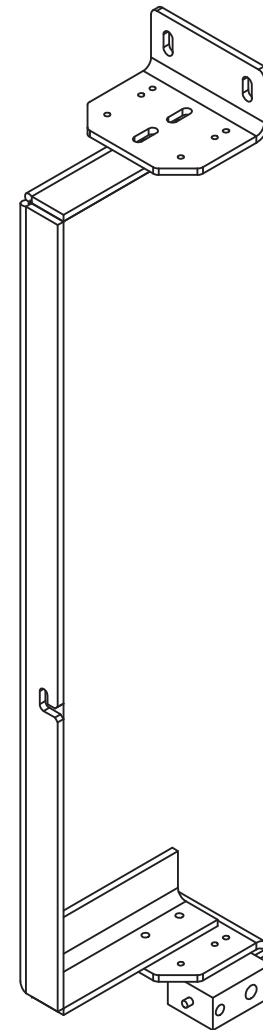
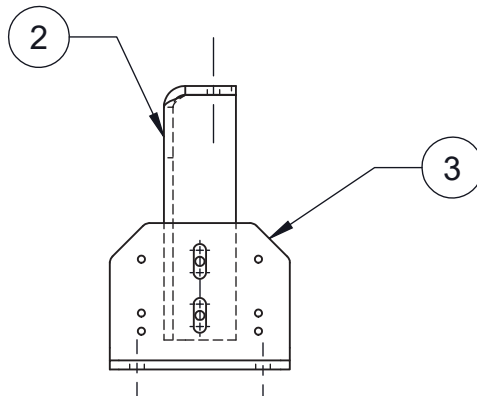
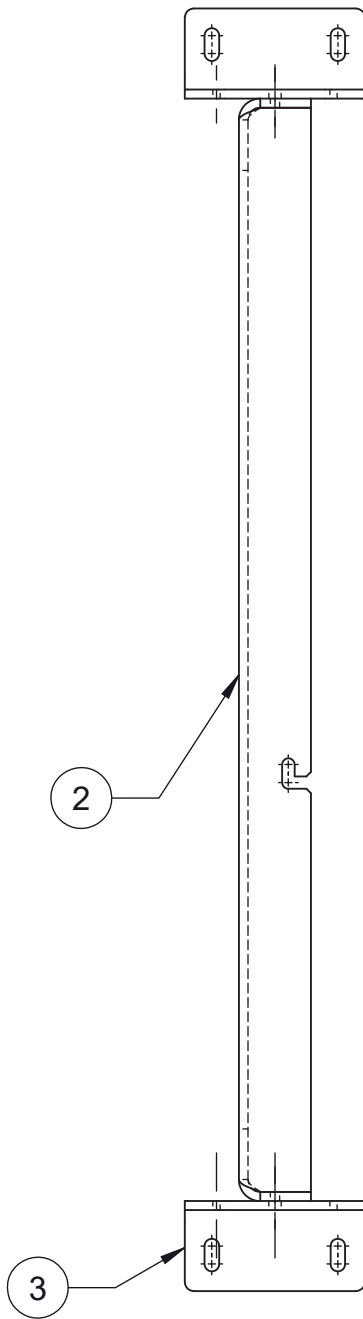
Description: ASSY, STEP BACK 4 PRODUCT

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	4.00	300784	ASSY, FINGER DETECTOR
18	2.00	822126-001	VALVE, CONTROL, FLOW, W/SEALANT, 3/8 OD PUSH-ON 1/4 NPT, NUMERIC INDICATO



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



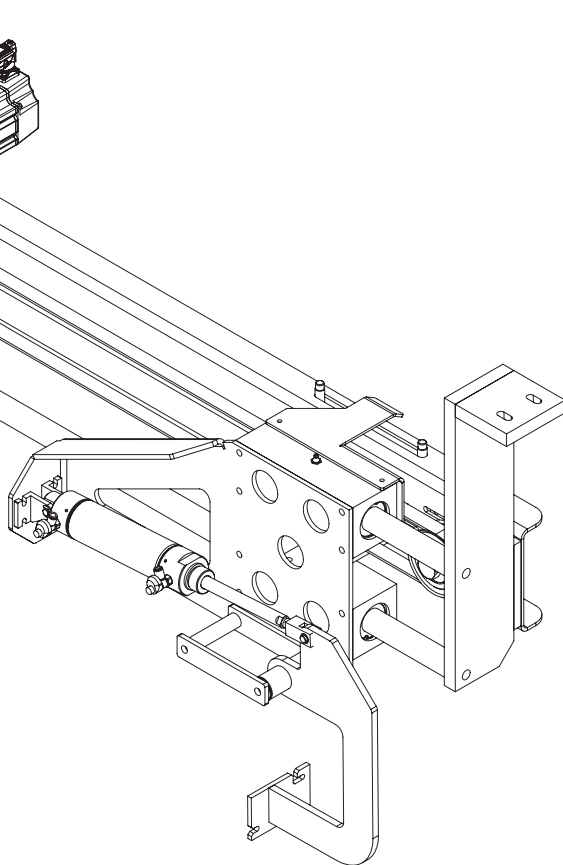
4	1	825527	VALVE, CHECK PILOT/MANUAL RELEASE, 1/4 NPT	
3	2	228879	ANGLE, MTG, PLT, DEAD	
2	1	228880-001	BKT, MTG, PLT, DEAD	
1	1	215218	ANGLE, MTG, PLT, DEAD	
ITM	QTY	PART NUM	DESCRIPTION	
BILL OF MATERIALS				
<i>ARPAC</i>			9511 WEST RIVER ST. SCHILLER PARK, IL 60176	
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONAL TOLERANCES:			FRACTIONS TWO (2) DECIMALS THREE (3) DECIMALS ANGLES	± 1/64 ± 0.010 ± 0.005 ± 0.5°
DRAWN: 11/21/2008		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: 17220 Parent Revision: A
Description: ASSY, FINAL, MACH, EL-2200
Model:

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

1SHEET 1 OF 1

Arpac BOM

Parent Number: 17220 Parent Revision: A

Description: ASSY, FINAL, MACH, EL-2200

Model:

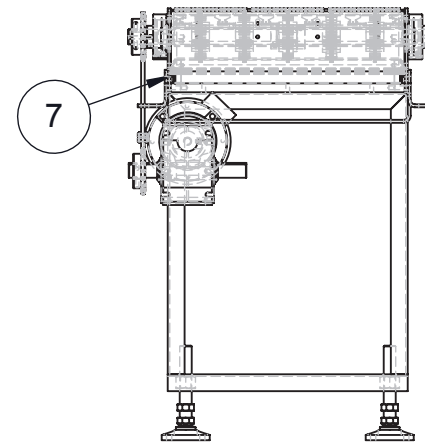
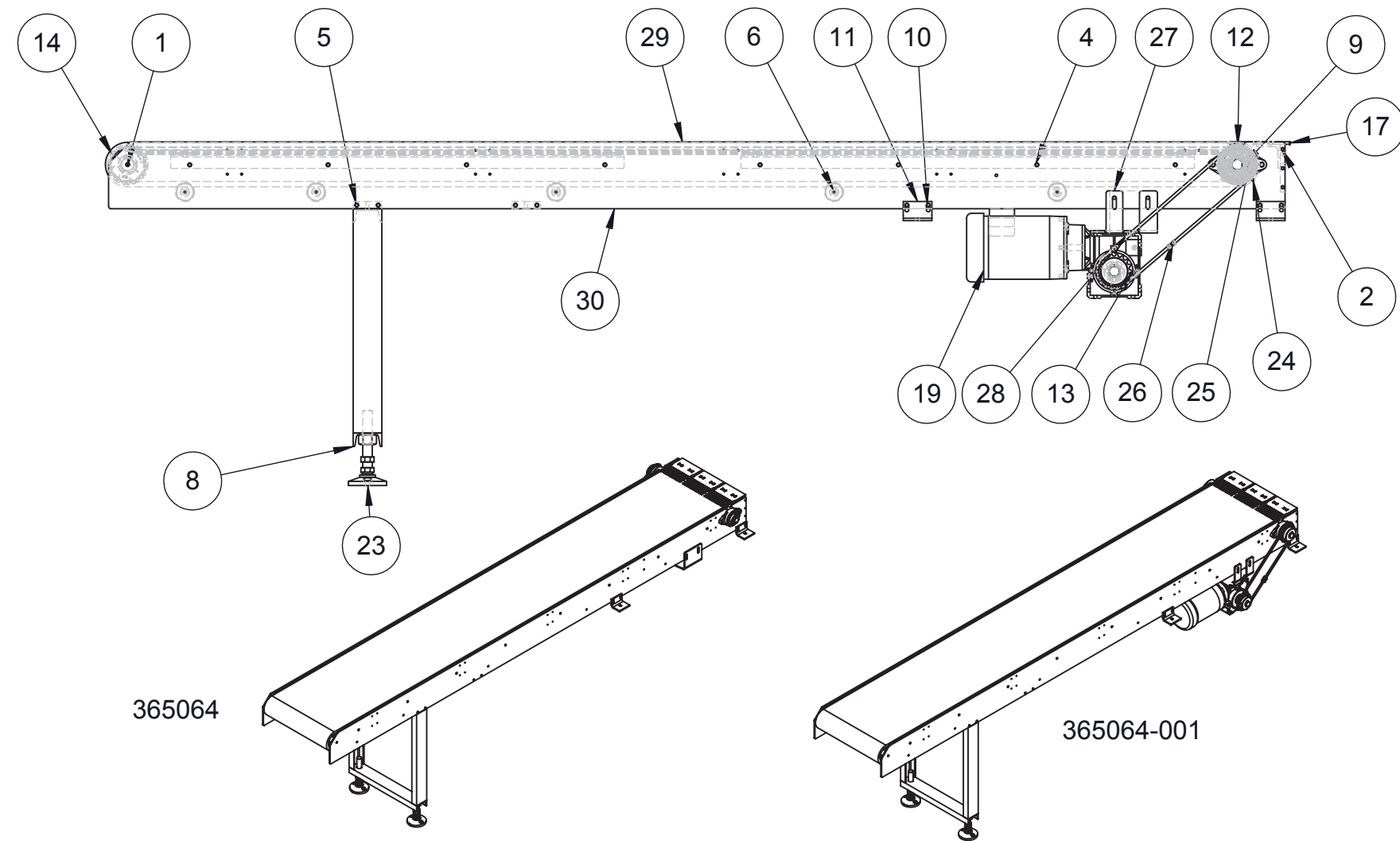
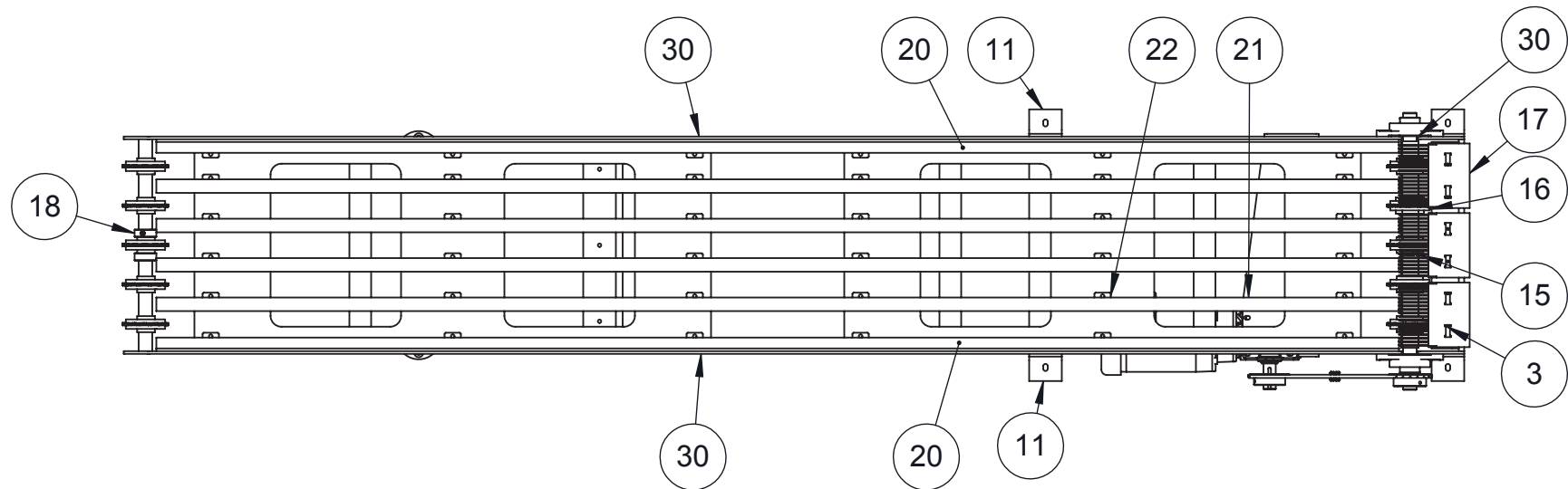
Assembly Part Number: 365140

Assembly Drawing Number: 365140

Description: ASSY, RAM, SERVO, A-B VPL, EL-2200

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	297587	CHANNEL, MTG, SERVO
2	1.00	304441	ASSY, BLK, BUSH, SHAFT, 1-1/4", 8" LG,
3	1.00	251756	SPACER, MTG
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	849316	MOTOR, SERVO, 37 IN-LB, 4750 RPM 460VAC, KINETIX 5500 CONTROLLER
11	1.00	870225	GEARBOX, PLANETARY, INLINE, 7:1 RATIO, SINGLE STAGE, FOR A-B VPL-B1003F M
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	365142	WLDMT, ARM, PUSHER
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	855085	CYL, AIR, 2 BORE, 5" STROKE, REAR PIVOT, 3/8 BUSH, DOUBLE CUSHION, MAGNET
22	1.00	816543	CLVS, ROD, 1/2-20, 1 3/4" - 2" BORE
23	1.00	825507	BKT, PVT, SET-(1LEFT AND 1RIGHT BKT) FOR 2 & 2.5 BORE
24	2.00	807258	WSHR, OILITE, 0.753 X 1.250 X 1/16 THK
25	1.00	304440-001	FLAG, PROX, RAM, LH
26	1.00	823124	BELT, TIMING, 8MM P, 21MM W, 2400MM LG, POLY CHAIN
27	1.00	300811	WLDMNT, BKT, MTG, CYL, LH
28	1.00	231163	ASSY, BLK, BUSH, SHAFT, 1-1/4", 8" LG,
29	2.00	825362-001	VALVE, CONTROL, FLOW, 1/8 NPT X 1/4 TUBE 90DEG, NUMERIC INDICATOR, MTR OU



P/N	ITEM 27
365064	296177-001
365064-001	296177

30	2	365204	PLT, SIDE, CONV, INFEED
29	22	808414	BELT, ACETAL, BLUE, RAISED RIB, 18.5"W
28	1	846471	GEARBOX, WORM, 15:1, 140TC FACE, QUILL FACE, DOUBLE SHAFT
27	1	296177	BKT, MTG, MOTOR, LH
26	1	800505	LINK, CONN, #50
25	1	800468	CHAIN, RLR, #50
24	2	839307	BRG, FLG, 1-1/4 ID, 2-BOLT STANDARD-DUTY
23	2	827619	LEVELER, ARTICULATING, 20000 # CAP, 1-8 STEM, 7.88 HIGH, CRS 4" BASE, 2 C'SUNK LAG HOLES, HEAVY LIP ON BASE
22	36	801359	CLAMP, RAIL, SINGLE, 1.5 LG, SS, ROUND HOLE
21	4	822399-002	RAIL, GUIDE, TEE, 1.25 W, SS, 10' LG
20	2	801292-003	RAIL, GUIDE, TEE, 1.0 X 0.38 L-SHAPE, 10' SS
19	1	854583	MOTOR, 1-1/2 HP, 208-230/460V, 60HZ, 3PH 145TC FRM, TEFC, NOT INVERTER, PREMIUM EFFICIENCY
18	2	810147	COLLAR, SHAFT, SET SCREW, 1-1/4, SS
17	3	802634	PLT, TRANSFER FINGER GREY, # 900
16	5	806043	SPKT, 12T, 1-1/2 SQ BORE, 4.1 PD, ACETAL
15	2	800335-027	RING, SNAP, EXTERNAL, 1-1/2 SHAFT
14	5	808417	SPKT, 12T, 1-1/4 DIA BORE, 4.1PD, MOLDED WHITE ACETAL
13	1	101833	SPKT, 50B18, MOD, 1.125 BORE
12	1	126947	SPKT, 50B19, MOD, 1.250 BORE
11	4	228334	BKT, MTG
10	1	142904	CROSS MEMBER BOTTOM
9	1	123750	INFEED DRIVE SHAFT
8	1	142899	LEG, SUPPORT
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

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: 4/3/2019 BY: SRA SCALE: 1:24 SIZE: B

FILENAME: 365064

DESCRIPTION: ASSY, CONV, INFEED, EL-2000

3

DRAWING NUMBER:
365064

Arpac BOM

Parent Number: 17220 Parent Revision: A

Description: ASSY, FINAL, MACH, EL-2200

Model:

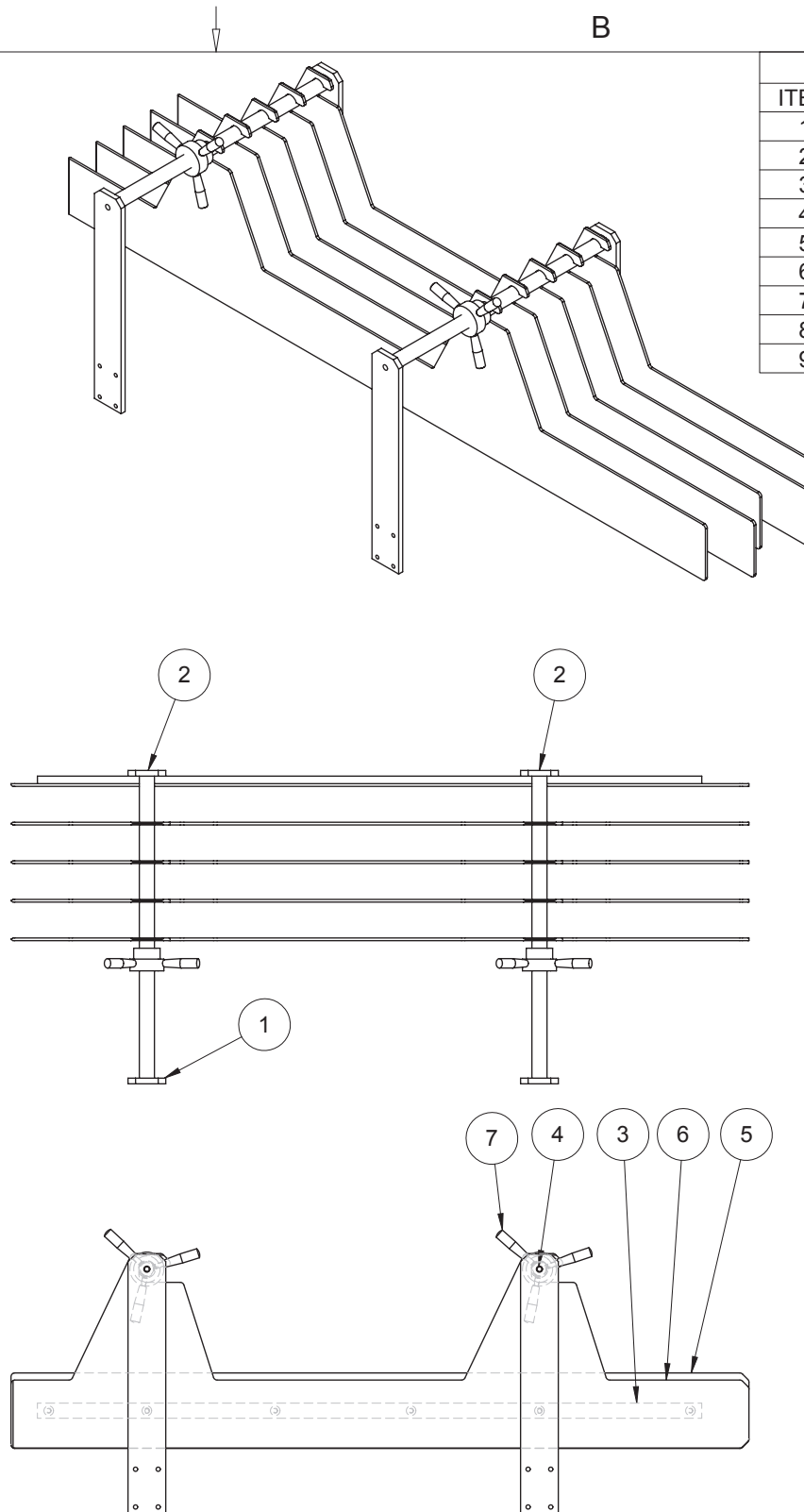
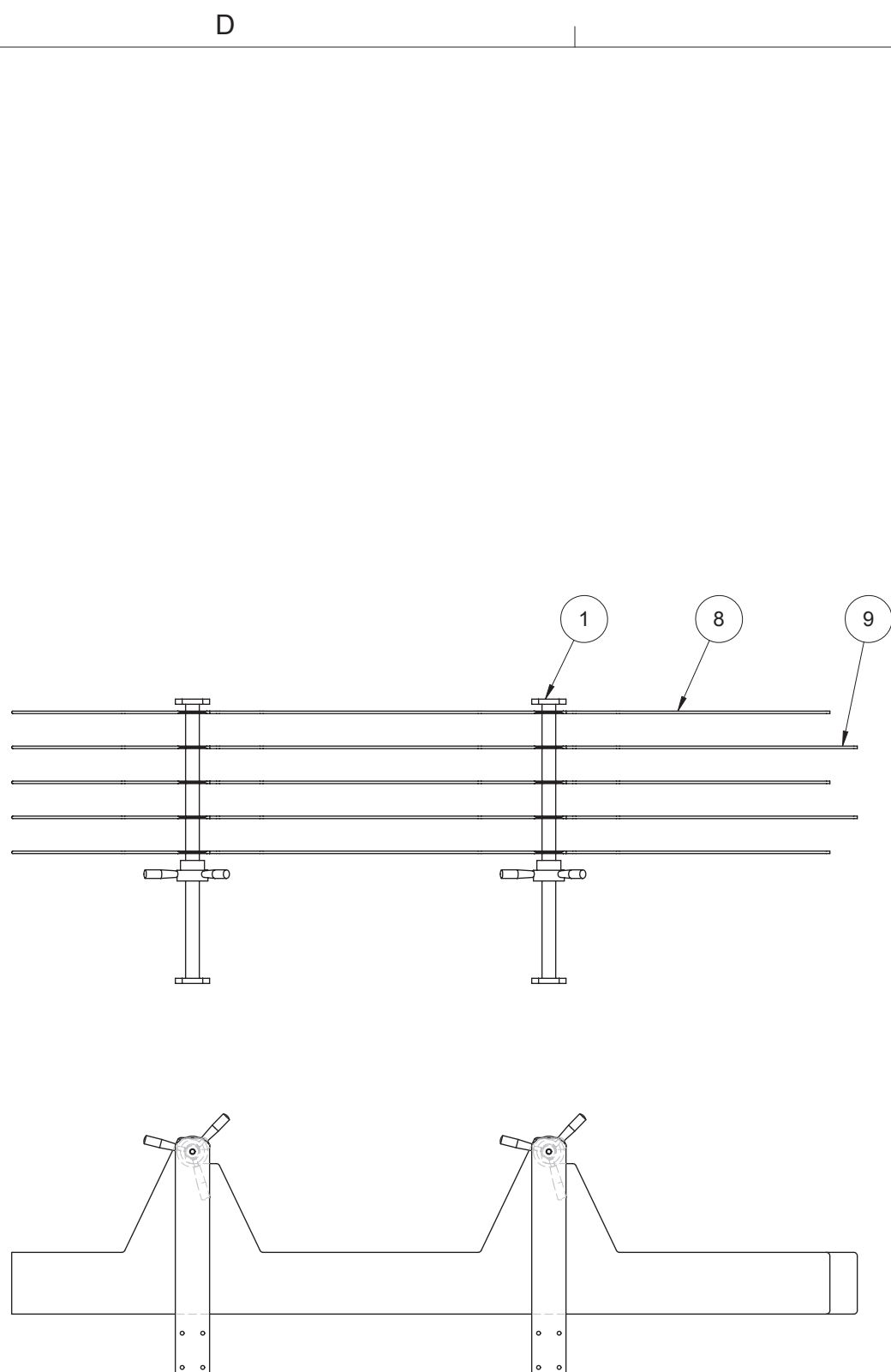
Assembly Part Number: 365064-001

Assembly Drawing Number: 365064

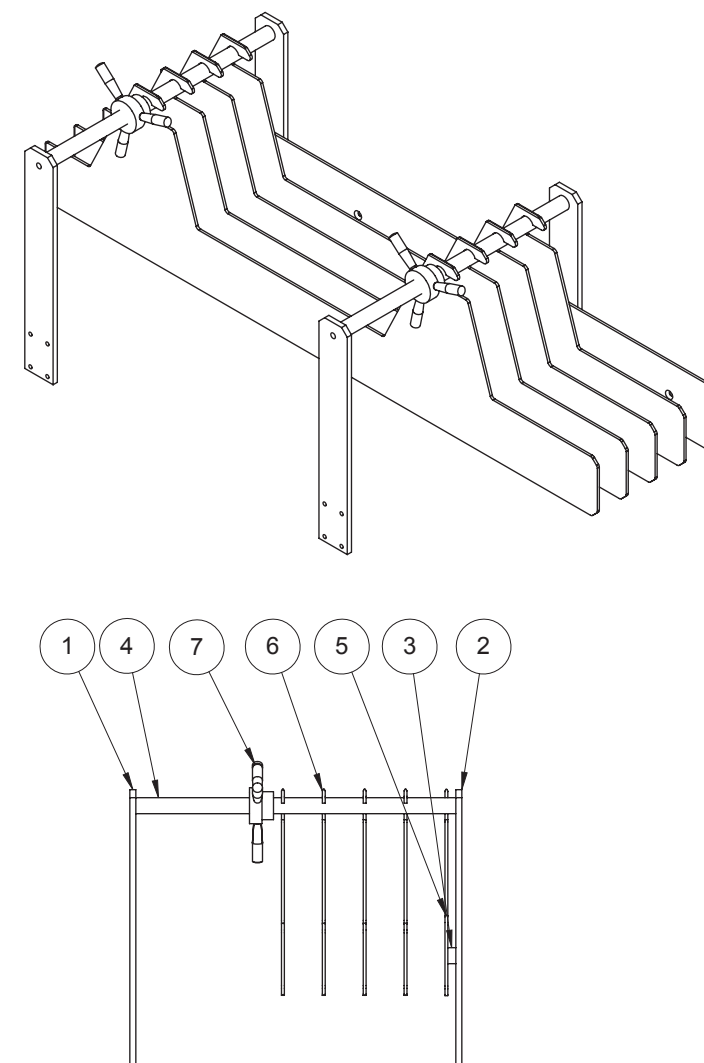
Description: ASSY, CONV, INFEED, EL-2000

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	142899	LEG, SUPRT INFEED
9	1.00	123750	SHAFT, DRIVE, INFEED
10	1.00	142904	CROSS MEMBER BOTTOM
11	4.00	228334	BKT, MTG
12	1.00	126947	SPKT, 50B19, MOD, 1.250 BORE STL W/ KKY AND SSCR
13	1.00	101833	SPKT, 50B18, MOD, 1.125 BORE
14	5.00	808417	SPKT, 12T, 1-1/4 DIA BORE, 4.1PD, MOLDED WHITE ACETAL
15	2.00	800335-027	RING, SNAP, EXTERNAL, 1-1/2 SHAFT
16	5.00	806043	SPKT, 12T, 1-1/2 SQ BORE, 4.1 PD, ACETAL
17	3.00	802634	PLT, TRANSFER FINGER GREY, # 900
18	2.00	810147	COLLAR, SHAFT, SET SCREW, 1-1/4 SS
19	1.00	854583	MOTOR, 1-1/2 HP, 208-230/460V, 60HZ, 3PH 145TC FRM, TEFC, NOT INVERTER, P
20	2.00	801292-003	RAIL, GUIDE, TEE, 1.0 X 0.38 L-SHAPE, 10' SS
21	4.00	822399-002	RAIL, GUIDE, TEE, 1.25 W, SS, 10' LG
22	36.00	801359	CLAMP, RAIL, SINGLE, 1.5 LG, SS, ROUND HOLE
23	2.00	827619	LEVELER, ARTICULATING, 20000 # CAP, 1-8 STEM, 7.88 HIGH, CRS 4" DIA X 2"
24	2.00	839307	BRG, FLG, 1-1/4 ID, 2-BOLT STANDARD-DUTY
25	1.00	800468	CHAIN, RLR, #50
26	1.00	800505	LINK, CONN, #50
27	1.00	296177	BKT, MTG, MOTOR, LH
28	1.00	846471	GEARBOX, WORM, 15:1, 140TC FACE, QUILL FACE, DOUBLE SHAFT
29	22.00	808414	BELT, ACETAL, BLUE, RAISED RIB, 18.5"W
30	2.00	365204	PLT, SIDE, CONV, INFEED



BILL OF MATERIALS			
ITEM	QTY	NUMBER	DESCRIPTION
1	6	243234	POST, GUIDE, LANE
2	2	297586	POST, GUIDE, LANE
3	1	297541	SPACER, PLT, MTG, GUIDE, LANE
4	4	242959-001	SHAFT- HANGER, 20 LG
5	1	297540	GUIDE, LANE, FIXED
6	4	297539	GUIDE, LANE
7	4	228692	ASSY, HANDLE, NUT
8	3	365235	PLT, GUIDE, LANE
9	2	365236	PLT, GUIDE, LANE



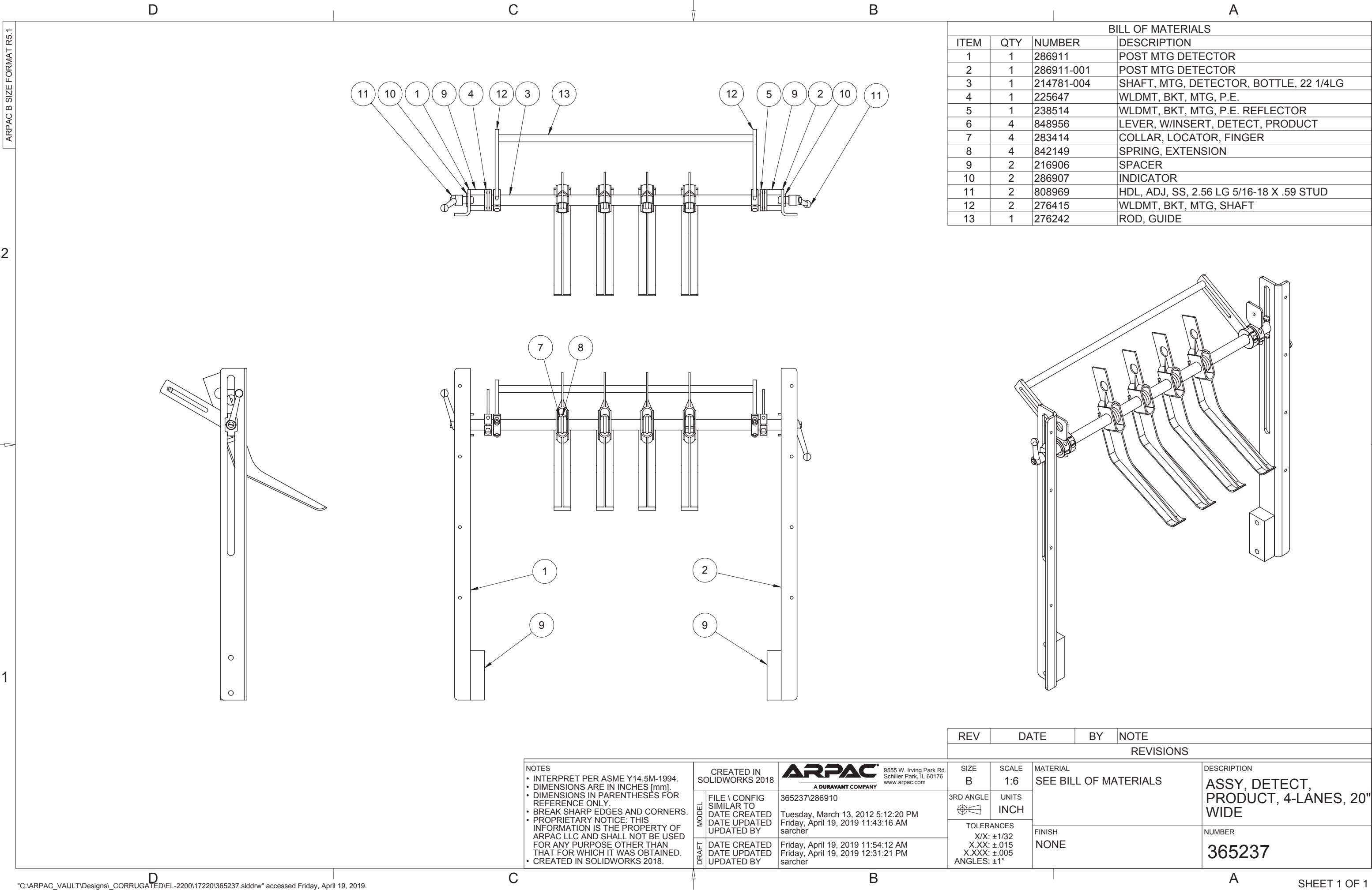
REV	DATE	BY	NOTE
REVISIONS			
Rd. 76	SIZE B	SCALE 1:12	MATERIAL SEE BILL OF MATERIALS
3RD ANGLE 	UNITS INCH		DESCRIPTION ASSY, GUIDE, 4-LANE
TOLERANCES X/X: ±1/32 X.XX: ±.015 X.XXX: ±.005 ANGLES: ±1°		FINISH NONE	NUMBER 365063

Arpac BOM

Parent Number: 17220 Parent Revision: A
Description: ASSY, FINAL, MACH, EL-2200
Model:

Assembly Part Number: 365063
Assembly Drawing Number: 365063
Description: ASSY, GUIDE, 4-LANE
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	6.00	243234	POST, GUIDE, LANE
2	2.00	297586	POST, GUIDE, LANE
3	1.00	297541	STIFFNER, GUIDE, LANE
4	4.00	242959-001	SHAFT, HANGER, 20.00 LG
5	1.00	297540	GUIDE, LANE, FIXED
6	4.00	297539	GUIDE, LANE
7	4.00	228692	SUBASSY, HANDLE, NUT 1"-8
8	3.00	365235	PLT, GUIDE, LANE
9	2.00	365236	PLT, GUIDE, LANE



BILL OF MATERIALS			
ITEM	QTY	NUMBER	DESCRIPTION
1	1	286911	POST MTG DETECTOR
2	1	286911-001	POST MTG DETECTOR
3	1	214781-004	SHAFT, MTG, DETECTOR, BOTTLE, 22 1/4LG
4	1	225647	WLDMT, BKT, MTG, P.E.
5	1	238514	WLDMT, BKT, MTG, P.E. REFLECTOR
6	4	848956	LEVER, W/INSERT, DETECT, PRODUCT
7	4	283414	COLLAR, LOCATOR, FINGER
8	4	842149	SPRING, EXTENSION
9	2	216906	SPACER
10	2	286907	INDICATOR
11	2	808969	HDL, ADJ, SS, 2.56 LG 5/16-18 X .59 STUD
12	2	276415	WLDMT, BKT, MTG, SHAFT
13	1	276242	ROD, GUIDE

REV	DATE	BY	NOTE
REVISIONS			
SIZE B	SCALE 1:6	MATERIAL SEE BILL OF MATERIALS	DESCRIPTION ASSY, DETECT, PRODUCT, 4-LANES, 20" WIDE
3RD ANGLE 	UNITS INCH		
TOLERANCES X/X: ±1/32 X.XX: ±.015 X.XXX: ±.005 ANGLES: ±1°		FINISH NONE	NUMBER 365237

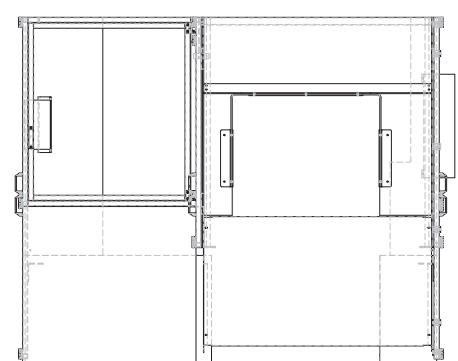
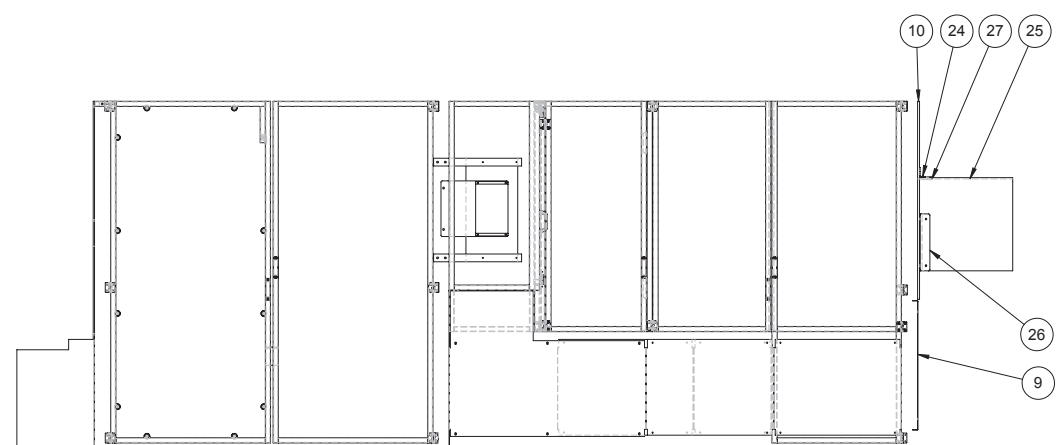
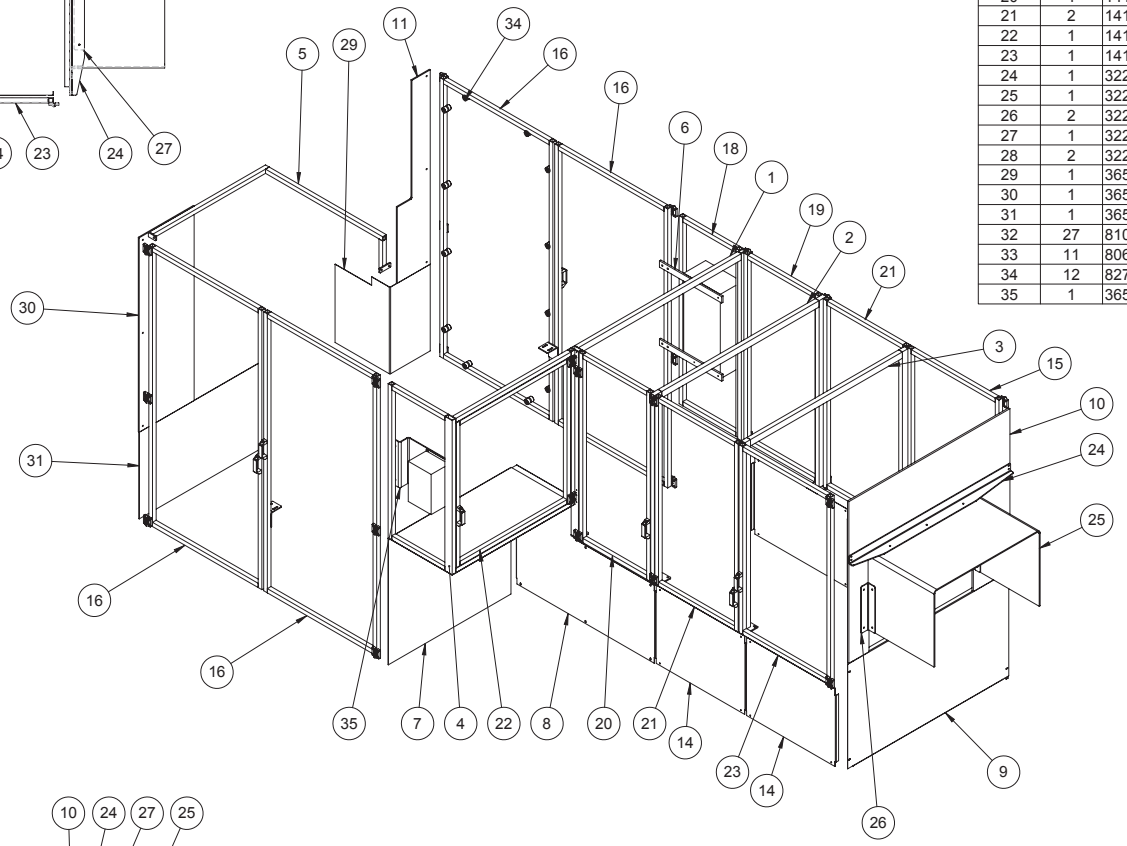
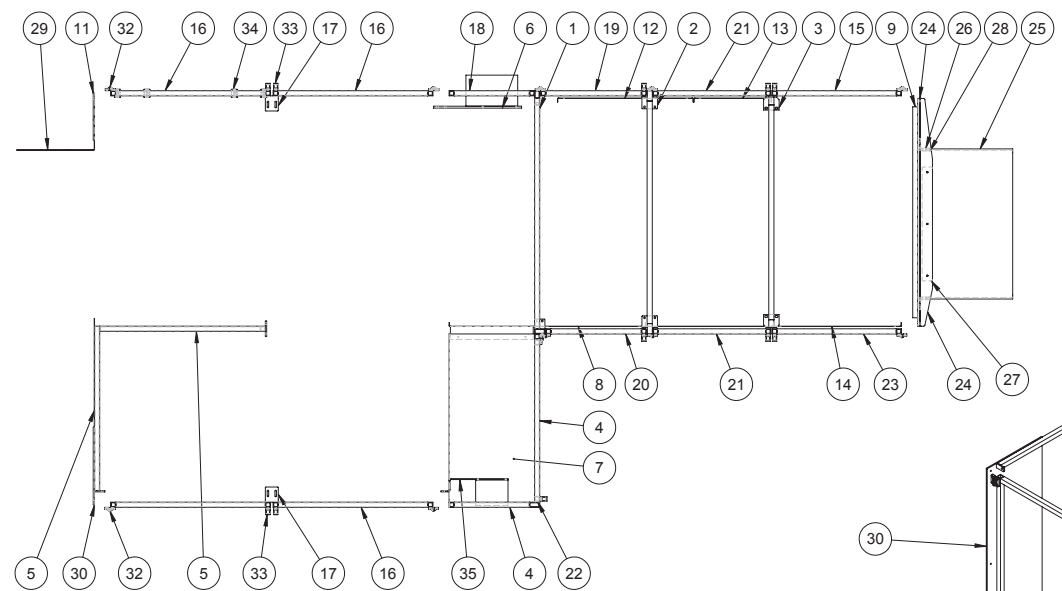
NOTES • INTERPRET PER ASME Y14.5M-1994. • DIMENSIONS ARE IN INCHES [mm]. • DIMENSIONS IN PARENTHESES FOR REFERENCE ONLY. • BREAK SHARP EDGES AND CORNERS. • PROPRIETARY NOTICE: THIS INFORMATION IS THE PROPERTY OF ARPAC LLC AND SHALL NOT BE USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT WAS OBTAINED. • CREATED IN SOLIDWORKS 2018.		CREATED IN SOLIDWORKS 2018		 9555 W. Irving Park Rd. Schiller Park, IL 60176 www.arpac.com A DURAVANT COMPANY	
		MODEL	FILE \ CONFIG SIMILAR TO DATE CREATED DATE UPDATED DATE UPDATED BY		365237\286910 Tuesday, March 13, 2012 5:12:20 PM Friday, April 19, 2019 11:43:16 AM sarcher
		DRAFT	DATE CREATED DATE UPDATED DATE UPDATED BY		Friday, April 19, 2019 11:54:12 AM Friday, April 19, 2019 12:31:21 PM sarcher

Arpac BOM

Parent Number: 17220 Parent Revision: A
Description: ASSY, FINAL, MACH, EL-2200
Model:

Assembly Part Number: 365237
Assembly Drawing Number: 365237
Description: ASSY, DETECT, PRODUCT, 4-LANES, 20" WIDE
Quantity: 3.00

Item	Qty	Arpac Part	Description
1	1.00	286911	POST MTG DETECTOR, RH
2	1.00	286911-001	POST MTG DETECTOR, LH
3	1.00	214781-004	SHAFT, MTG, DETECTOR, BOTTLE 22 1/4 LG
4	1.00	225647	WLDMT, BKT, MTG, P.E., SS
5	1.00	238514	WLDMT, BKT, MTG, P.E. REFLECTOR, SS
6	4.00	848956	LEVER, DETECT, PRODUCT, W/INSERT
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
12	2.00	276415	BKT, MTG, SHAFT
13	1.00	276242	ROD, GUIDE, 18 LG



BILL OF MATERIALS			
ITEM	QTY	NUMBER	DESCRIPTION
1	1	243977-001	FRAME, GUARD
2	1	297592	FRAME, GUARD
3	1	243973	FRAME, GUARD
4	1	243965	FRAME, GUARD, STEP BACK
5	1	243976-001	SUPPORT, GUARD, LH
6	2	332108	PLT, ELECTRICAL BOX HOLDER
7	1	333077	GUARD, UNDER, BACK, STEP
8	1	328333	GUARD, BOTTOM
9	1	216173	GUARD, END
10	1	322596	PLT, LEXAN, END
11	1	365100	PANEL, GUARD
12	1	234450-002	GUARD
13	1	234450	GUARD
14	2	234450-004	GUARD, 24-5/8 LG
15	1	141604-053	FRAME, PANEL, GUARD
16	4	141604-048	FRAME, PANEL, GUARD
17	2	256214	BKT, CATCH, DOOR
18	1	141604-050	FRAME, PANEL, GUARD
19	1	141604-054	FRAME, PANEL, GUARD
20	1	141604-092	FRAME, PANEL, GUARD
21	2	141604-081	FRAME, PANEL, GUARD
22	1	141604-049	FRAME, PANEL, GUARD
23	1	141604-101	FRAME, PANEL, GUARD
24	1	322594	ANGLE, MTG, GUARD, DISCHARGE
25	1	322595	GUARD, DISCHARGE, EL-2000
26	2	322592	ANGLE, MTG, GUARD
27	1	322593	PLT, NUT, MTG, GUARD
28	2	322591	PLT, NUT, MTG, GUARD
29	1	365115	GUARD, CORNER
30	1	365100	PANEL, GUARD
31	1	365119	PANEL, GUARD
32	27	810174	HINGE, DOOR, POLYAMIDE, BLACK
33	11	806828	HANDLE, SMALL BLACK PLASTIC
34	12	827364	CLAMP, PANEL
35	1	365365	BKT, MTG, ENCLOSURE, PUSH BUTTON

NOTE: ITEMS 36 - 44 NOT SHOWN

REVISIONS									
NOTES		CREATED IN SOLIDWORKS 2018		ARPAC A SUBURBAN COMPANY 9555 W. Irving Park Rd Schiller Park, IL 60176 www.arpac.com		SIZE C	SCALE 1:24	MATERIAL SEE BILL OF MATERIALS	DESCRIPTION ASSY, GUARDS, EL-2200
* INTERPRET PER ASME Y14.5M-1994. * DIMENSIONS ARE IN [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.		MODEL	FILE \ CONFIG SIMILAR TO DATE CREATED DATE UPDATED DATE BY	365109 Default -- Thursday, April 4, 2019 4:23:46 PM Wednesday, May 29, 2019 8:57:12 AM UPDATED BY	3RD ANGLE 	TOLERANCES XX: ±1/32 XXX: ±.015 X.XXX: ±.005 ANGLES: ±1°	FINISH NONE	NUMBER 365109	
		DRAFT	DATE CREATED DATE UPDATED DATE BY	Friday, April 5, 2019 4:42:27 PM Wednesday, May 29, 2019 9:01:08 AM sarcher					

Arpac BOM

Parent Number: 17220 Parent Revision: A

Description: ASSY, FINAL, MACH, EL-2200

Model:

Assembly Part Number: 365109

Assembly Drawing Number: 365109

Description: ASSY, GUARDS, EL-2200

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	243977-001	FRAME, GUARD LH
2	1.00	297592	FRAME, GUARD
3	1.00	243973	FRAME, GUARD
4	1.00	243965	FRAME, GUARD, STEP BACK
5	1.00	243976-001	SUPPORT, GUARD LH
6	2.00	332108	PLT, ELECTRICAL BOX HOLDER
7	1.00	333077	GUARD, UNDER, BACK, STEP
8	1.00	328333	GUARD, BOTTOM
9	1.00	216173	GUARD, END
10	1.00	322596	PLT, LEXAN, END
11	1.00	365100	PANEL, GUARD
12	1.00	234450-002	GUARD, 26 1/4 LG
13	1.00	234450	GUARD, 15 LG
14	2.00	234450-004	GUARD, 24-5/8 LG
15	1.00	141604-053	FRAME, PANEL, GUARD 23 X 66
16	4.00	141604-048	FRAME, PANEL, GUARD 28 7/8 X 66
17	2.00	256214	BKT, CATCH, DOOR
18	1.00	141604-050	FRAME, PANEL, GUARD 14 1/2 X 44 1/2
19	1.00	141604-054	FRAME, PANEL, GUARD 18 7/16 X 44 1/2
20	1.00	141604-092	FRAME, PANEL, GUARD 17 7/16 X 44 1/2
21	2.00	141604-081	FRAME, PANEL, GUARD, 20 3/4 X 44 1/2
22	1.00	141604-049	FRAME, PANEL, GUARD 29 1/4 X 34 1/4
23	1.00	141604-101	FRAME, PANEL, GUARD 23 X 44 1/2
24	1.00	322594	ANGLE, MTG, GUARD, DISCHARGE
25	1.00	322595	GUARD, DISCHARGE, EL-2100
26	2.00	322592	ANGLE, MTG, GUARD, DISCHARGE
27	1.00	322593	PLT, NUT, MTG, GUARD
28	2.00	322591	PLT, NUT, MTG, GUARD
29	1.00	365115	GUARD, CORNER
30	1.00	365100	PANEL, GUARD
31	1.00	365119	PANEL, GUARD
32	27.00	810174	HINGE, DOOR, POLYAMIDE, BLACK
33	11.00	806828	HANDLE, SMALL BLACK PLASTIC
34	110.00	827364	CLAMP, PANEL
35	1.00	365365	BKT, MTG, ENCLOSURE, PUSH BUTTON
36	11.00	837001	CATCH, DOOR, BALL STYLE
37	4.00	342721-001	LEXAN, SHEET
38	1.00	342721-002	LEXAN, SHEET
39	1.00	342721-005	LEXAN, SHEET
40	1.00	342721-006	LEXAN, SHEET
41	1.00	342721-011	LEXAN, SHEET
42	1.00	342721-012	LEXAN, SHEET
43	2.00	342721-018	LEXAN, SHEET
44	1.00	342721-019	LEXAN, SHEET

Arpac BOM

Parent Number: 17220 Parent Revision: A

Description: ASSY, FINAL, MACH, EL-2200

Model:

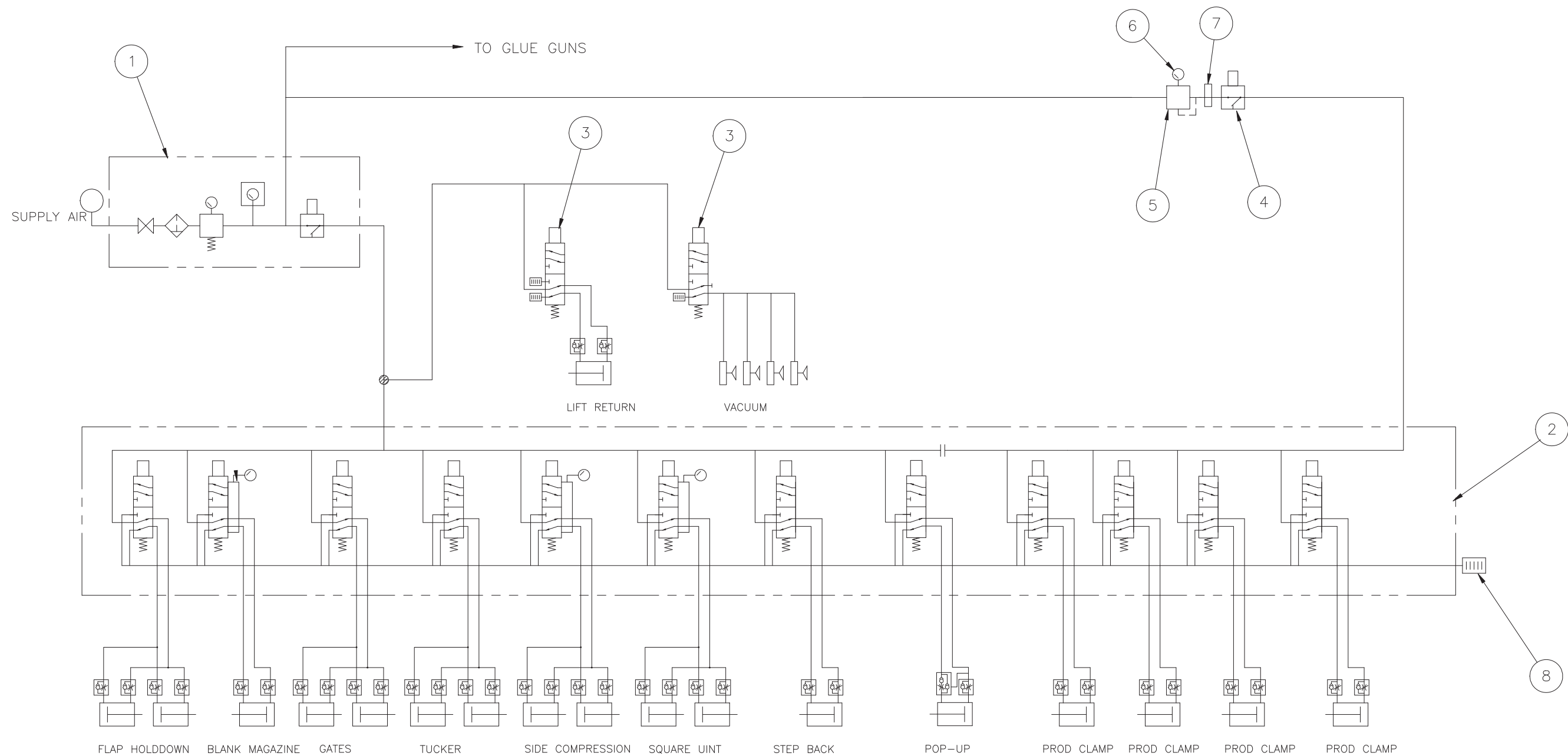
Assembly Part Number: 365111

Assembly Drawing Number: 365111

Description: ASSY, APPLICATOR, GLUE, TWO STATION, 4-HOSE, 480VAC, EL-2200

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	870393	MELTER, NORDSON, PROBLUE 4, 4-HOSE, 400/480VAC
2	2.00	365345	WLDMT, SUPPORT, MELTER, GLUE
3	4.00	806776	GUN, GLUE H201T
4	4.00	806780	NUT, RETAINING
5	4.00	846253	VALVE, SOL, HIGH TEMP, 24VDC, 3-WAY NC, 1/8" NPT PORTS
6	4.00	825485	FILTER, SATURN, INLINE, 45 DEGREE 100 MESH
7	4.00	846254	CABLE, SOL VALVE, B1 11MM DIN TO M12 CONNECTOR, 0.6M LG
8	2.00	808675	NOZZLE 30DEG DUAL .016 ORIFICE
9	2.00	808674	NOZZLE 15DEG DUAL .016 ORIFICE
10	2.00	870199	NOZZLE, GLUE, SINGLE ORIFICE, 0.016 DIA X 0.050 ENGMT
11	2.00	806119	HOSE, 8 FT 230 VAC AUTOMATIC
12	2.00	806120	HOSE, 4 FT 230 VAC
13	4.00	216180	ROD, GUN, GLUE
14	4.00	216179	WLDMT, BKT, MTG, GUN, GLUE
15	4.00	138349	POST, GLUE GUN 3/4 DIA X 8" LG
16	4.00	133933	BLK, MTG, GLUE
17	1.00	837619	TRANSFORMER, BASE ASSEMBLY, 3 kVA, PROBLUE 4/7/10, 480VAC



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: 4/8/2019	BY: SRA	SCALE: 3/4"=1"	SIZE: B
RELEASED:	FILENAME: 365125	APPROVED BY:	
DESCRIPTION: SCHEMATIC, PNEUMATIC, 24VDC, SMC, EL-2200			
			DRAWING NUMBER: 365125

Arpac BOM

Parent Number: 17220 Parent Revision: A
Description: ASSY, FINAL, MACH, EL-2200
Model:

Assembly Part Number: 365125
Assembly Drawing Number: 365125
Description: ASSY, PNEUMATIC, 24VDC, SMC, EL-2200
Quantity: 1.00

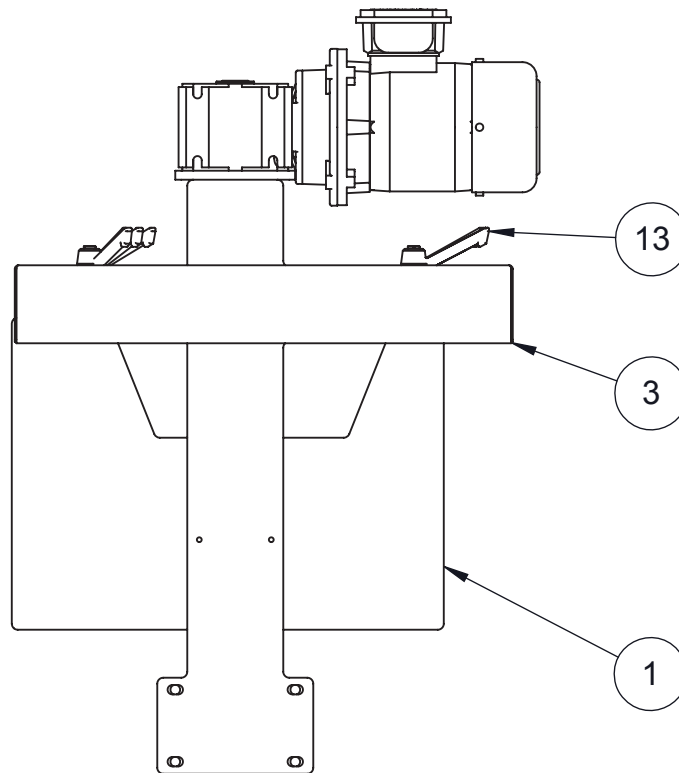
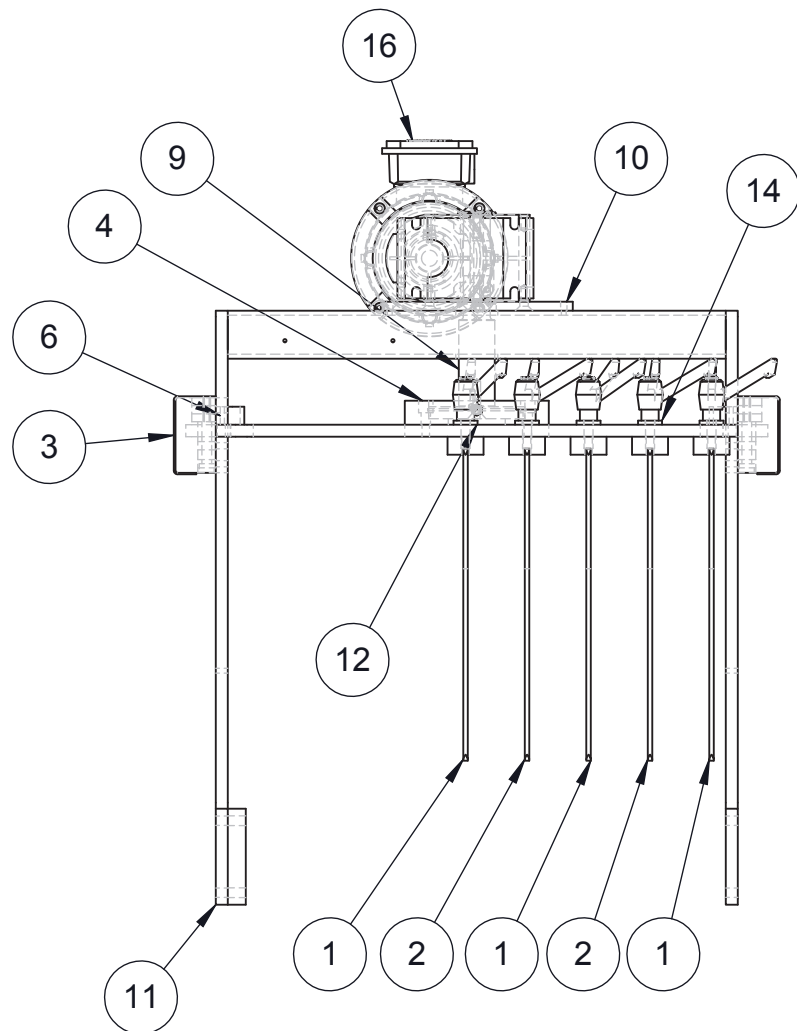
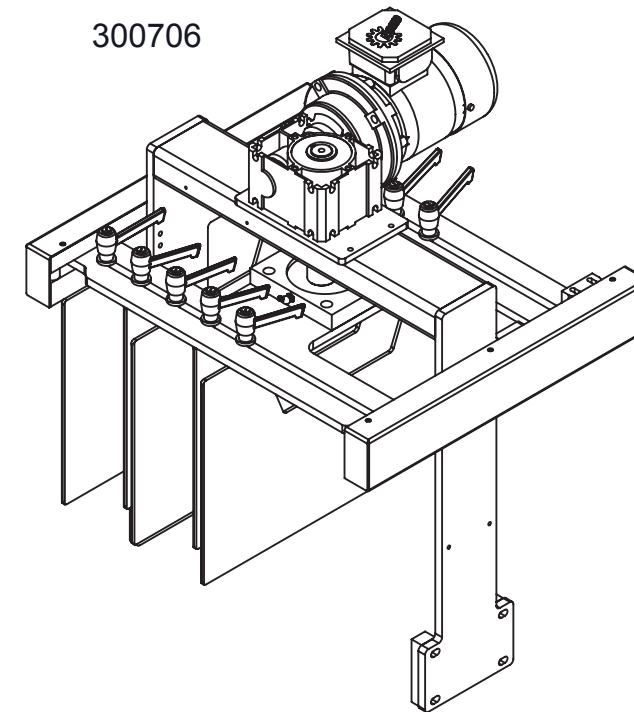
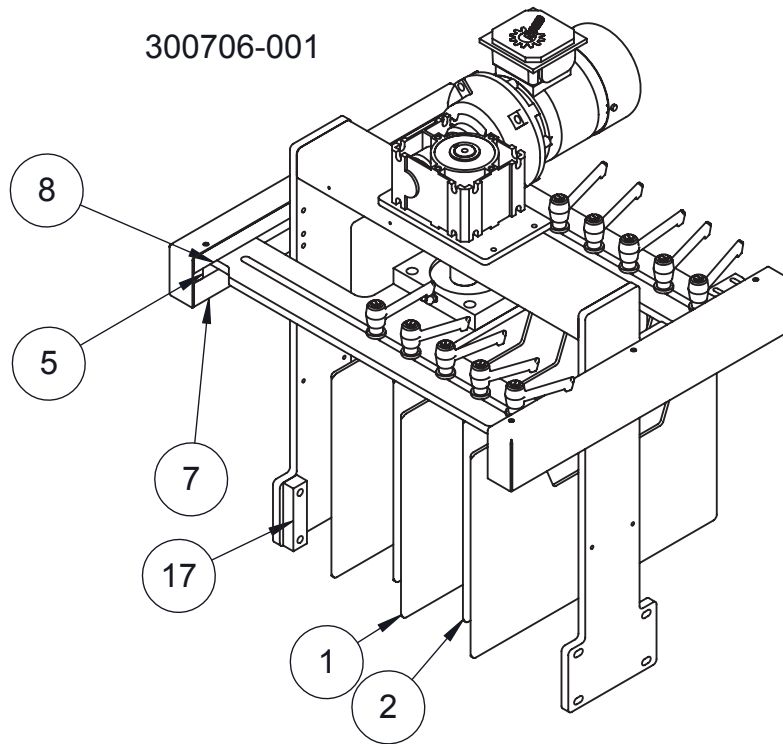
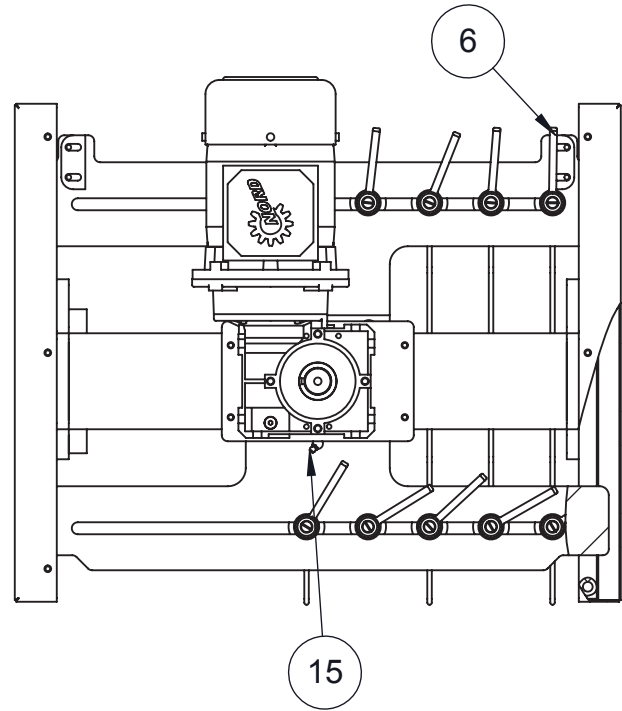
Item	Qty	Arpac Part	Description
1	1.00	850154	ASSY, FILTER, REGULATOR, SWITCH, DUMP, 3/4" NPT, CAT 1, L-R
2	1.00	855529	VALVE, 12 STATION, 8+4, SMC
3	2.00	846248	VALVE, SOL, 24VDC, 2POS SINGLE, M12 CONNECTOR, IP67, W/LT & SRG
4	1.00	848860	VALVE, DUMP, START, SOFT, 1/2 NPT, 24VDC, DIN
5	1.00	855138	REGULATOR, 1/2 NPT, W/O GAUGE
6	1.00	855139	GAUGE, 2" 0-160PSI
7	1.00	825954	ATTACHMENT, SPACER, BRKT
8	2.00	846789	SILENCER, 1/2 NPT, FTG, SMC, RESIN
9	1.00	186775	PLT, MTG, BANK, SOLENOID
10	1.00	861982	Coupler
11	1.00	861983	Tee Interface, 1/2 NPT

Arpac BOM

Parent Number: 17220 Parent Revision: A
Description: ASSY, FINAL, MACH, EL-2200
Model:

Assembly Part Number: 365126
Assembly Drawing Number: 365126
Description: ASSY, PARTS, CHANGE, EL-2200
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	367309	ASSY, GUIDE, POP-UP, 4-LANE, 2.25 DIA PROD
2	1.00	365129	WLDMT, PLT, PUSHHER
3	1.00	365131	SUBASSY, SPACER, GUIDE, 4-LANE, 2.25 DIA PROD
4	1.00	366028	PLT, SUPPORT, REAR, STACK, BLANK
5	2.00	366242	CLAMP, MTG, BAR, GUIDE
6	1.00	366241	WLDMT, PLOW, FLAP
7	1.00	366241-001	WLDMT, PLOW, FLAP
8	1.00	366244	GUIDE, SIDE
9	1.00	366243	GUIDE, SIDE



17	2	300789	SPACER
16	1	848034	GEARMOTOR, FLEXBLOC, 1/3 HP, OUTPUT: 28 RPM, 1.125 BORE, 230/460VAC, 3PH, 60HZ, 56C FRAME, TEFC,
15	1	819733	FTG, GREASE 45 DEG, 1/4-28
14	10	819732	FNSR, WASHER, 1 OD, 3/16 TH, HDL, ADJ, SS, 3.13 LG, PLAS 3/8-16 X 1.18 LG
13	10	811880	BAR, MTG, FRONT, AGITATOR
12	1	300790	WLDMT, BRIDGE, 20"
11	1	303332	PLT, MOUNT, GEARBOX
10	1	303334	WLDMT, SHAFT, DRIVE
9	1	303335	BAR, SLIDE
8	2	292993	BAR, SLIDE
7	2	292992	BLK, GUIDE
6	2	245957	SPACER
5	4	245956	PLT, TOP
4	1	245954	COVER
3	2	300788	WLDMT, PLT, DIVIDER
2	2	245946	WLDMT, PLT, DIVIDER
1	3	245943	WLDMT, PLT, DIVIDER
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: 04/30/2014

BY: GGP

SCALE: 1:8

SIZE: B

FILENAME: 300706

DESCRIPTION:

ASSY, AGITATOR, 20" WIDE, 4 LANES, 230/460V

3

DRAWING NUMBER:

300706

Arpac BOM

Parent Number: 17220 Parent Revision: A
Description: ASSY, FINAL, MACH, EL-2200
Model:

Assembly Part Number: 300706
Assembly Drawing Number: 300706
Description: ASSY, AGITATOR, 20"WIDE, 4 LANES, 230/460V
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	3.00	245943	WLDMT, PLT, DIVIDER
2	2.00	245946	WLDMT, PLT, DIVIDER
3	2.00	300788	COVER
4	1.00	245954	PLT, TOP
5	4.00	245956	SPACER
6	2.00	245957	BLK, GUIDE
7	2.00	292992	BAR, OSCILLATOR
8	2.00	292993	BAR, SLIDE
9	1.00	303335	WLDMT, SHAFT, DRIVE, ECCENTRIC
10	1.00	303334	PLT, MOUNT, GEARBOX
11	1.00	303332	WLDMT, BRIDGE, 20"
12	1.00	300790	BAR, MTG, FRONT, AGITATOR, 20"
13	10.00	811880	HDL, ADJ, SS, 3.13 LG, PLAS 3/8-16 X 1.18 LG
14	10.00	819732	FSNR, WASHER, 1 OD, 3/16 TH.
15	1.00	819733	FTG, GREASE 45 DEG, 1/4-28
16	1.00	848034	GEARMOTOR, FLEXBLOC, 1/3 HP, OUTPUT: 28 RPM, 1.125 BORE, 230/460VAC, 3PH,
17	2.00	300789	SPACER

ARPAC C SIZE FORMAT RS.1

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BILL OF MATERIALS			
ITEM	QTY	NUMBER	DESCRIPTION
1	4	810174	HINGE, DOOR, POLYAMIDE, BLACK
2	2	802653	LATCH, VISE-ACTION
3	2	357168	DOOR, AGITATOR, 16880
4	2	357166	TBG, MTG, LEXAN
5	2	360123	BKT
6	1	357167	BKT, STOP & LOCK

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

FILE \ CONFIG SIMILAR TO DATE CREATED DATE UPDATED DATE UPDATED BY

357171357171 Thursday, April 19, 2018 11:49:22 AM Wednesday, March 27, 2019 3:43:05 PM hng

ARPAC
A DURAVANT COMPANY

8555 W. Irving Park Rd.
Schiller Park, IL 60176
www.arpac.com

SIZE C

SCALE 1:8

3RD ANGLE

TOLERANCES
X/X: ±1/32
X/XX: ±.015
X/XXX: ±.005
ANGLES: ±1°

MATERIAL SEE BILL OF MATERIALS

FINISH NONE

DESCRIPTION
ASSY, GUARD, AGITATOR, EL-2000

NUMBER
357171

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ARPAC VAULTDesigns\CORRUGATED\EL-2100\15269\357171.slddrw" accessed Wednesday, March 27, 2019.

SHEET 1 OF 1

Arpac BOM

Parent Number: 17220 Parent Revision: A
Description: ASSY, FINAL, MACH, EL-2200
Model:

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

ARPAC B SIZE FORMAT R5.1

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Arpac BOM

Parent Number: 17220 Parent Revision: A

Description: ASSY, FINAL, MACH, EL-2200

Model:

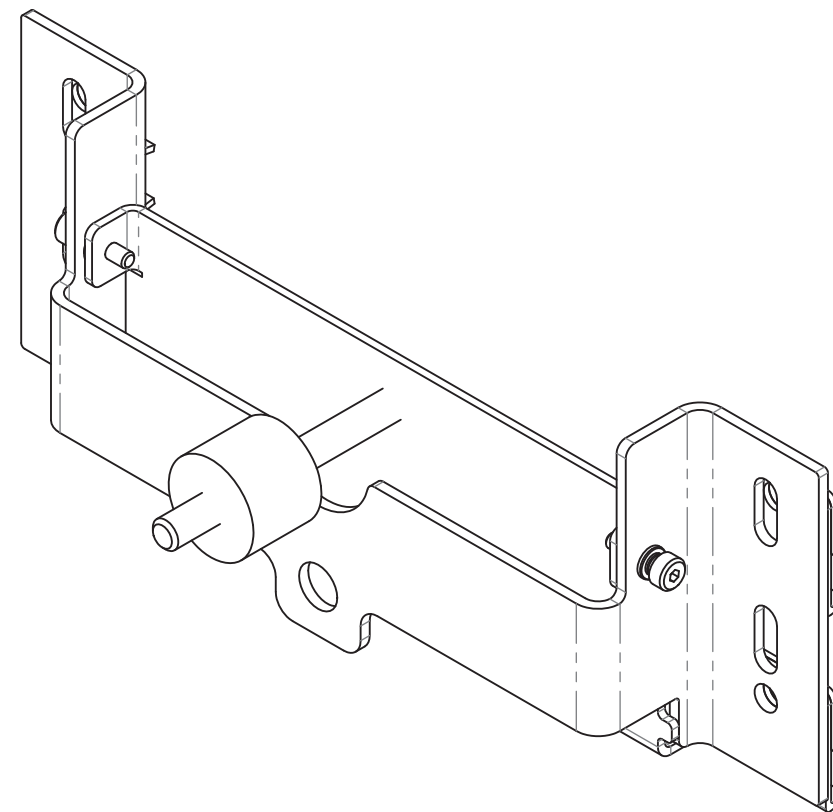
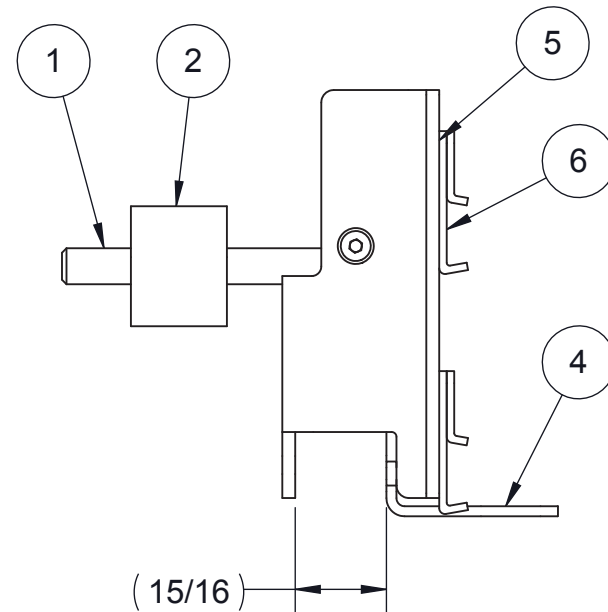
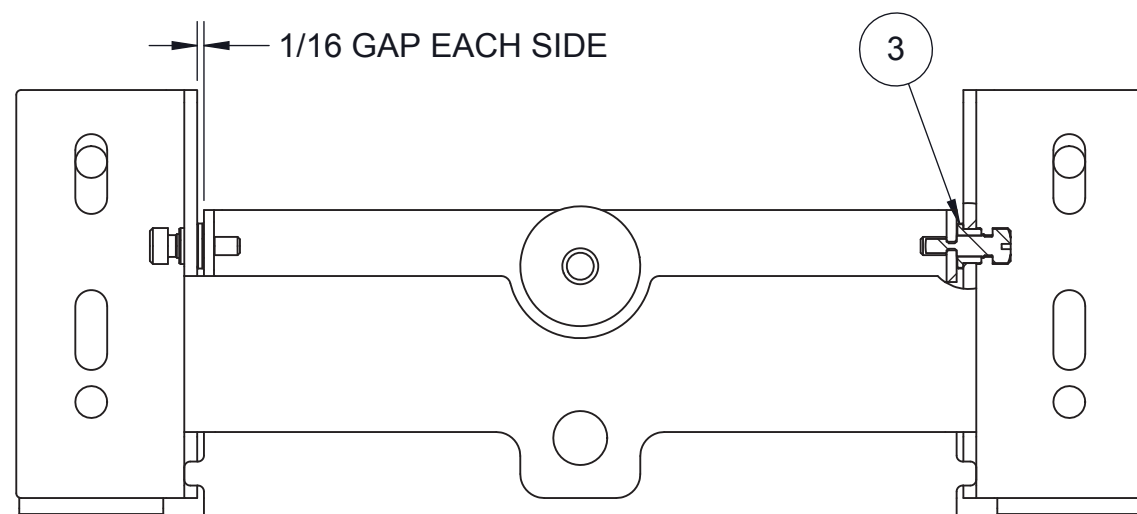
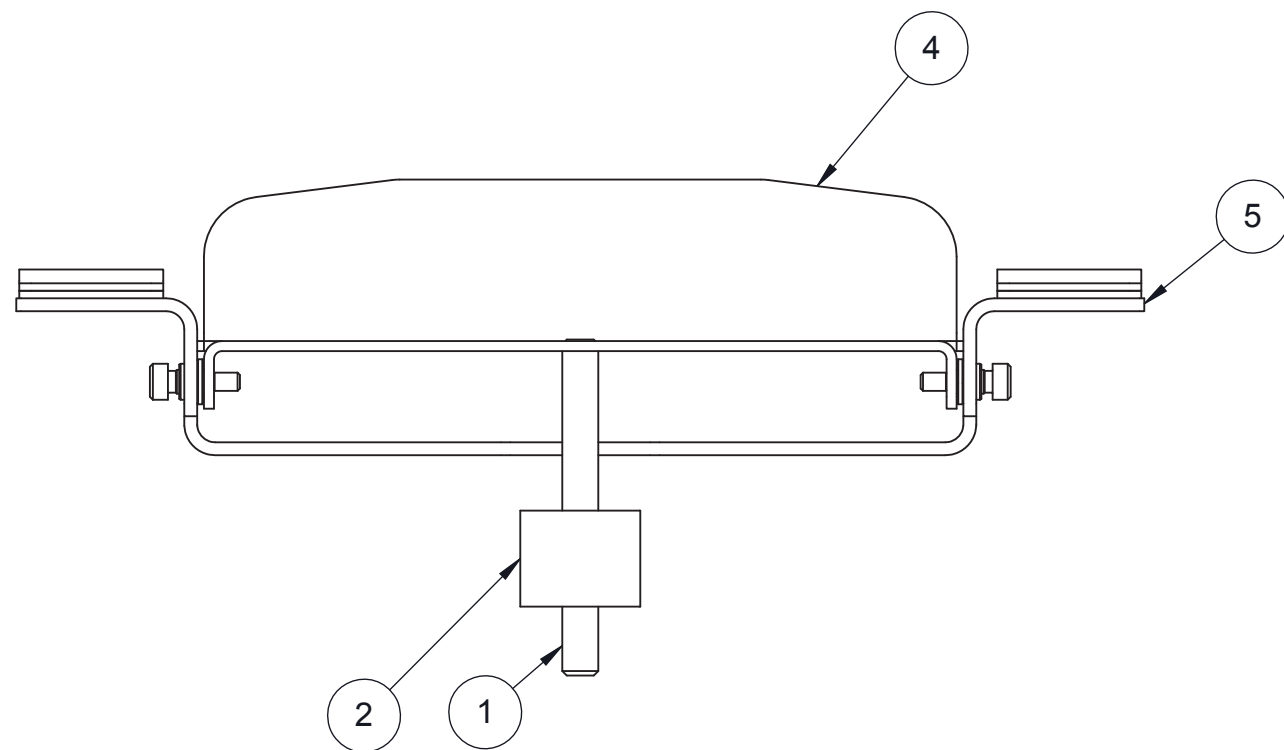
Assembly Part Number: 365234

Assembly Drawing Number: 365234

Description: ASSY, GUIDE, SIDE, INFEED

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	6.00	801340	BKT, SWIVEL, 5/8 ROD, W/KNOB AND EYLET, POLYAMIDE
2	3.00	845497	ROD, ADJ, 5/8 DIA X 6 LG, 3/8-16 TAPPED THREAD, SS, NUMBERED
3	6.00	801312	CLAMP, RAIL, DOUBLE, 1.5 LG, SS, 2.5 CENTERS, ROUND HOLE
4	4.00	815212-002	RAIL, GUIDE, ROUND, SS, 10' LG
5	3.00	847722	ROD, ADJ, 5/8 DIA X 15 LG, 3/8-16 TAPPED, SS, NUMBERED



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

DRAWN: 11/8/2012 BY: SR SCALE: 1:2 SIZE: B

RELEASED: 11/8/2012 FILENAME: 323268 APPROVED BY: SRA

DESCRIPTION:
ASSY, PRODUCT DETECTOR, ACCUMULATION, ADJ

3

DRAWING NUMBER:
323268

Arpac BOM

Parent Number: 17220 Parent Revision: A

Description: ASSY, FINAL, MACH, EL-2200

Model:

Assembly Part Number: 323268

Assembly Drawing Number: 323268

Description: ASSY, PRODUCT DETECTOR, ACCUMULATION, ADJ

Quantity: 1.00

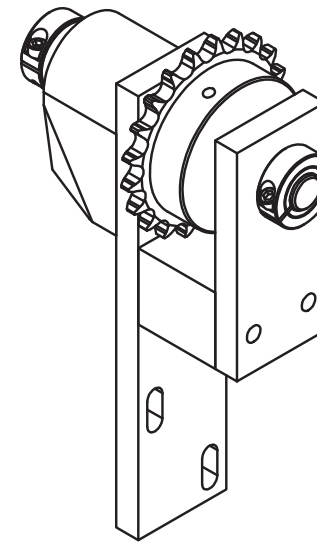
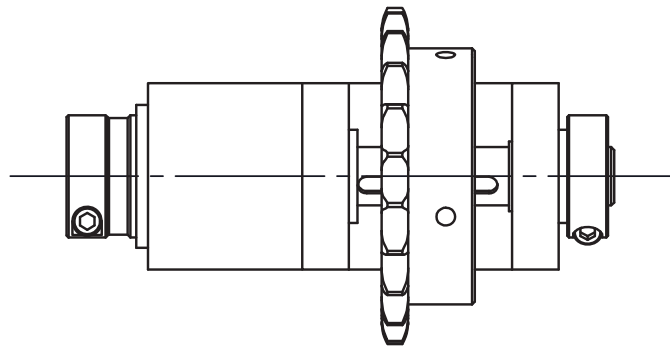
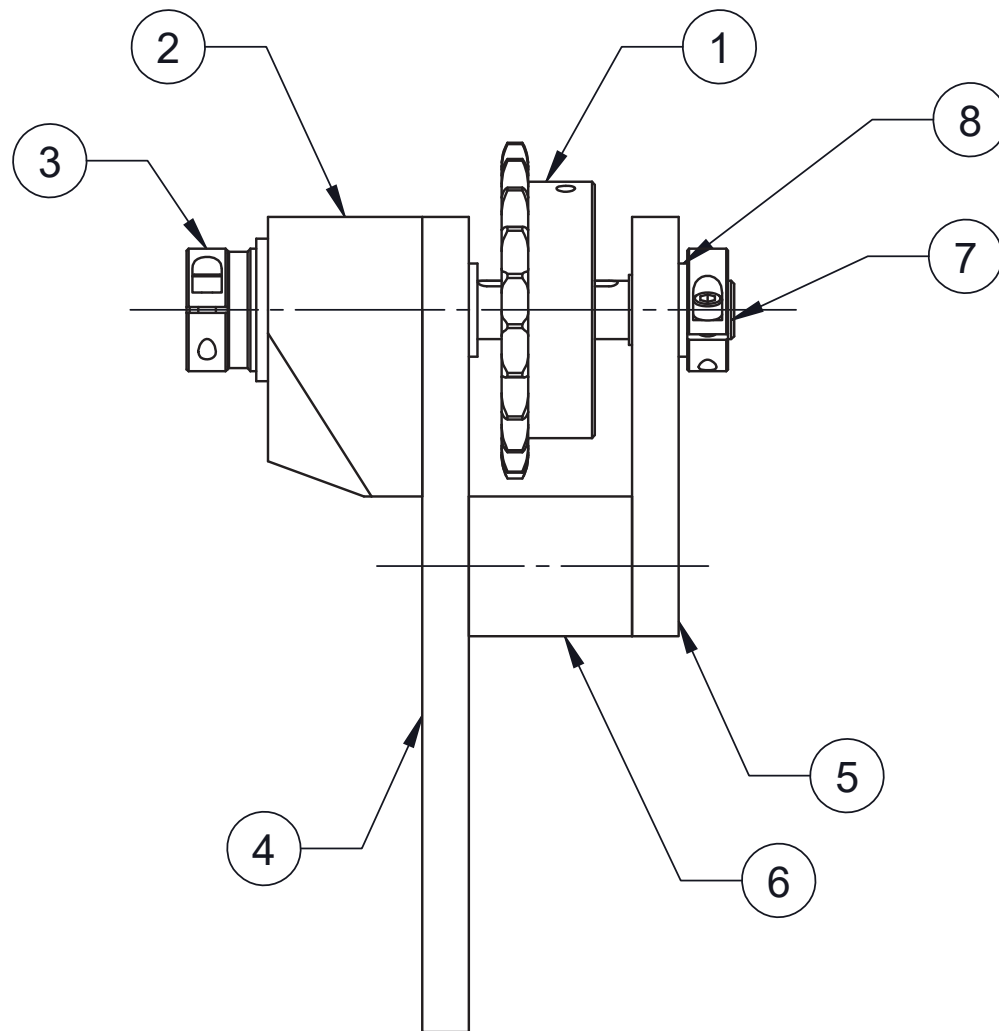
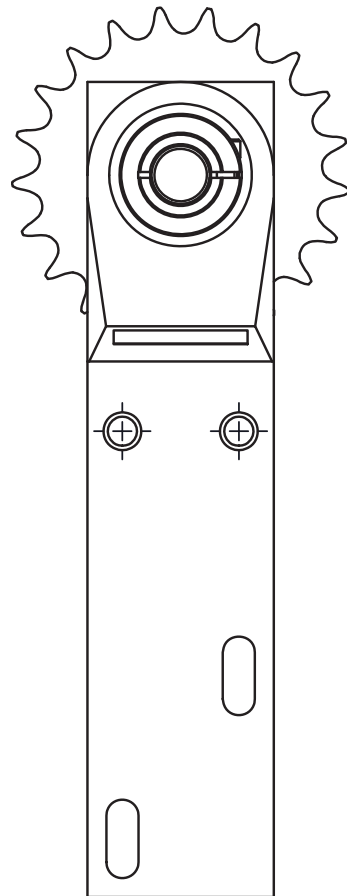
Item	Qty	Arpac Part	Description
1	1.00	107149	SHAFT WEIGHT COUNTER
2	1.00	107147	WEIGHT COUNTER
3	2.00	800424	BUSH, OILITE, FLG, 0.252 X 0.3775 X 1/4, 15/32 OD X 1/16 THK FLG
4	1.00	291031	BRACKET, PROD DETECTOR, ACCUM
5	1.00	323269	BRKT, FRAME, PRD DTCTR, ACCUM, ADJ
6	4.00	801359	CLAMP, RAIL, SINGLE,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

Arpac BOM

Parent Number: 17220 Parent Revision: A
Description: ASSY, FINAL, MACH, EL-2200
Model:

Assembly Part Number: 367322
Assembly Drawing Number: 367322
Description: KIT, GUARD, SPLASH
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	367319	ASSY, GUARD, SPLASH
2	1.00	367316	ASSY, COVER, BANK, SOLENOID
3	1.00	367312	GUARD, SENSOR, PROX, STEP-BACK
4	1.00	367301	GUIDE, SIDE, PRODUCT
5	1.00	367302	BKT, MTG, GUIDE



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

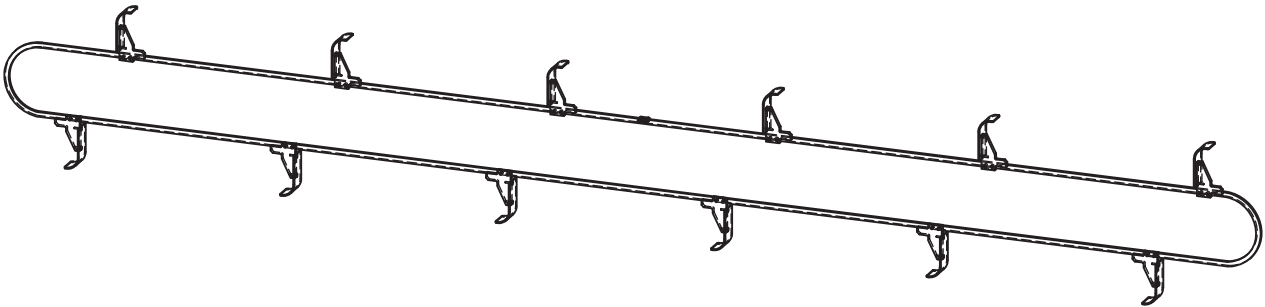
BILL OF MATERIALS			
ARPAC		9511 WEST RIVER ST. SCHILLER PARK, IL 60176	
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONAL TOLERANCES:		FRACTIONS ± 1/64 TWO (2) DECIMALS ± 0.010 THREE (3) DECIMALS ± 0.005 ANGLES ± 0.5°	
DRAWN:	6/14/2004	BY:	HHG
RELEASED:	6/14/2004	FILENAME:	227062
DESCRIPTION:		SCALE:	0.375:1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

Arpac BOM

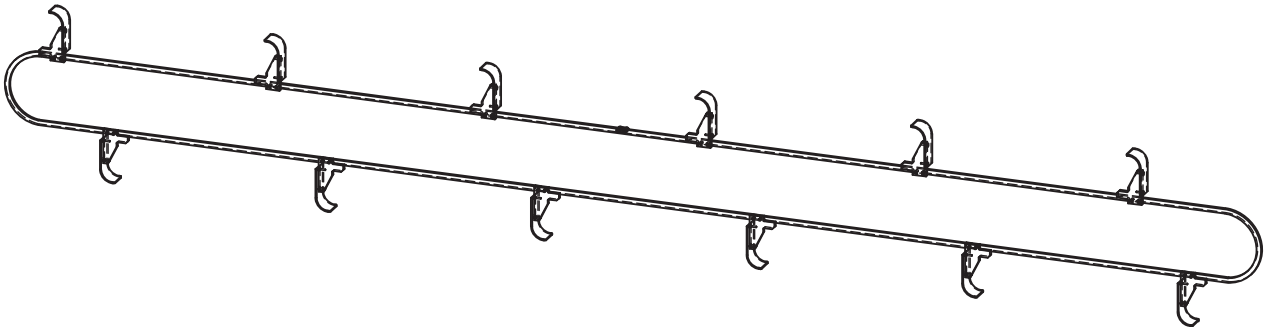
Parent Number: 17220 Parent Revision: A
Description: ASSY, FINAL, MACH, EL-2200
Model:

Assembly Part Number: 227062
Assembly Drawing Number: 227062
Description: ASSY, COUNTER
Quantity: 1.00

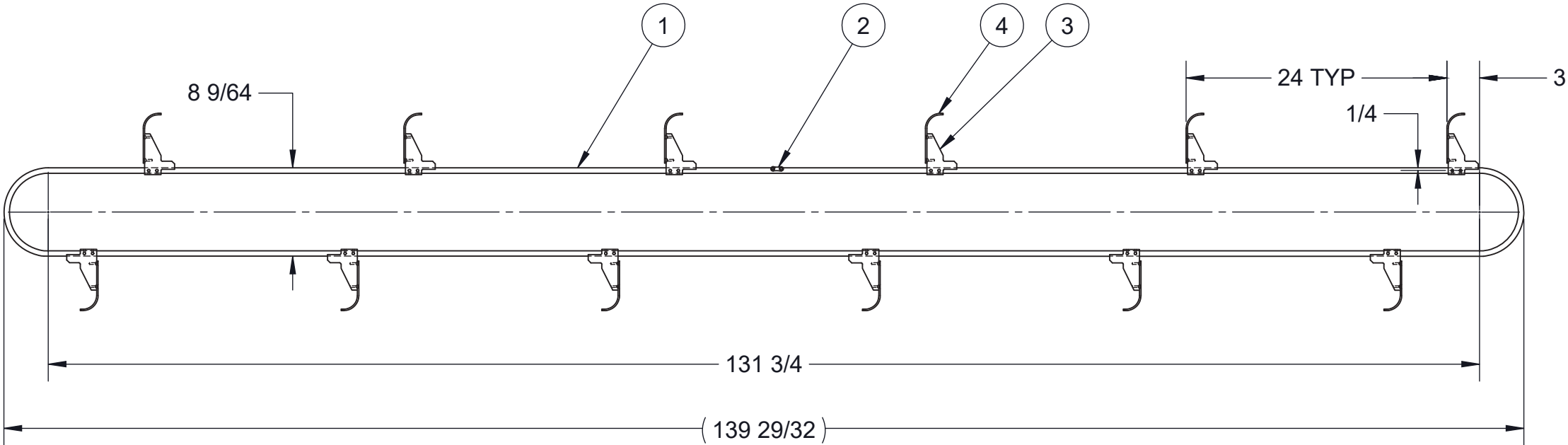
Item	Qty	Arpac Part	Description
1	1.00	227066	SPKT, 40B21, MOD, 0.625 BORE
2	1.00	822769	COUNTER, POSITION, 0.625 BORE
3	2.00	806983	COLLAR, SHAFT, CLAMP, 1-PIECE, 5/8, SS
4	1.00	227056	PLT, MTG, COUNTER
5	1.00	227057	PLT, SUPPORT
6	1.00	227058	SPACER
7	1.00	227059	SHAFT, COUNTER
8	2.00	800395	BUSH,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



297584-001



297584-002
OPPOSITE



4	12	132932-001	FACE, FLIGHT, RH
3	12	122113	FLIGHT
2	1	809950	LINK, CONN. #60, COATED
1	24	809948	CHAIN, 60SBR NEO PERFEC, W/ D-3, 2 & 4 P ON A 32 PITCH REPEAT
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	SCALE: 2:25
		FILENAME: 297584	SIZE: B
DESCRIPTION: ASSY, FLIGHT, TRAILING			
			DRAWING NUMBER: 297584

Arpac BOM

Parent Number: 17220 Parent Revision: A

Description: ASSY, FINAL, MACH, EL-2200

Model:

Assembly Part Number: 297584-001

Assembly Drawing Number: 297584

Description: ASSY, FLIGHT, TRAILING, RH

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	24.00	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	12.00	122113	FLIGHT
4	12.00	132932-001	FACE FLIGHT, RH,

Arpac BOM

Parent Number: 17220 Parent Revision: A

Description: ASSY, FINAL, MACH, EL-2200

Model:

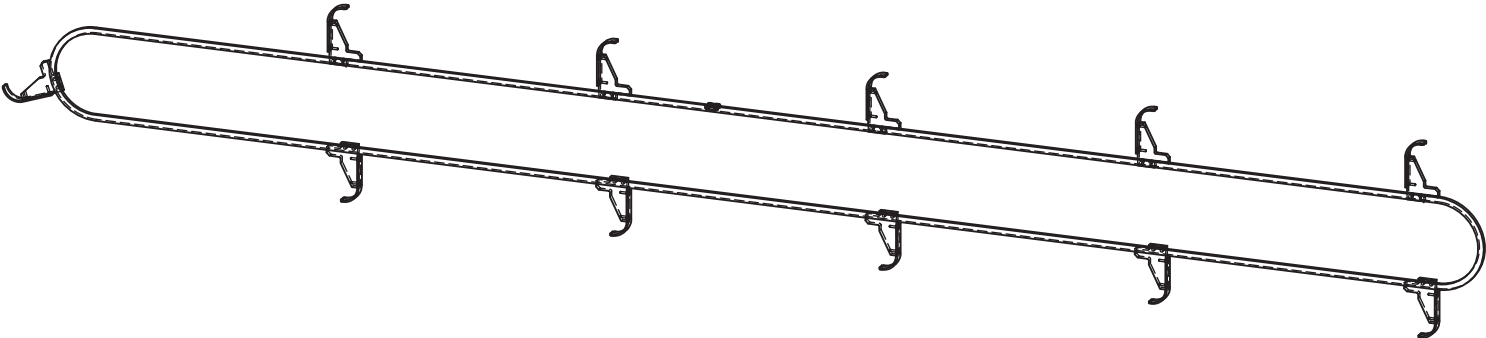
Assembly Part Number: 297584-002

Assembly Drawing Number: 297584

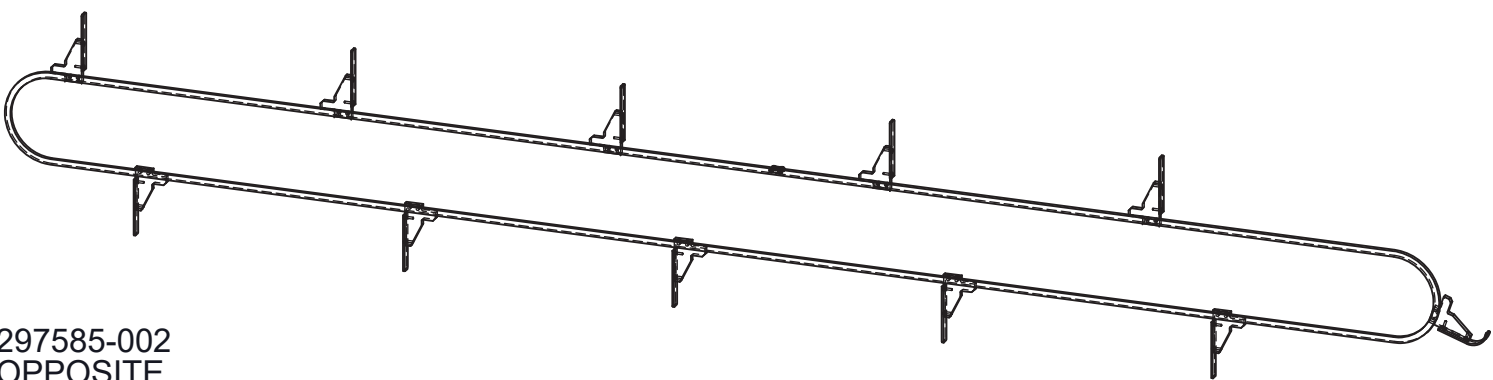
Description: ASSY, FLIGHT, TRAILING, LH

Quantity: 1.00

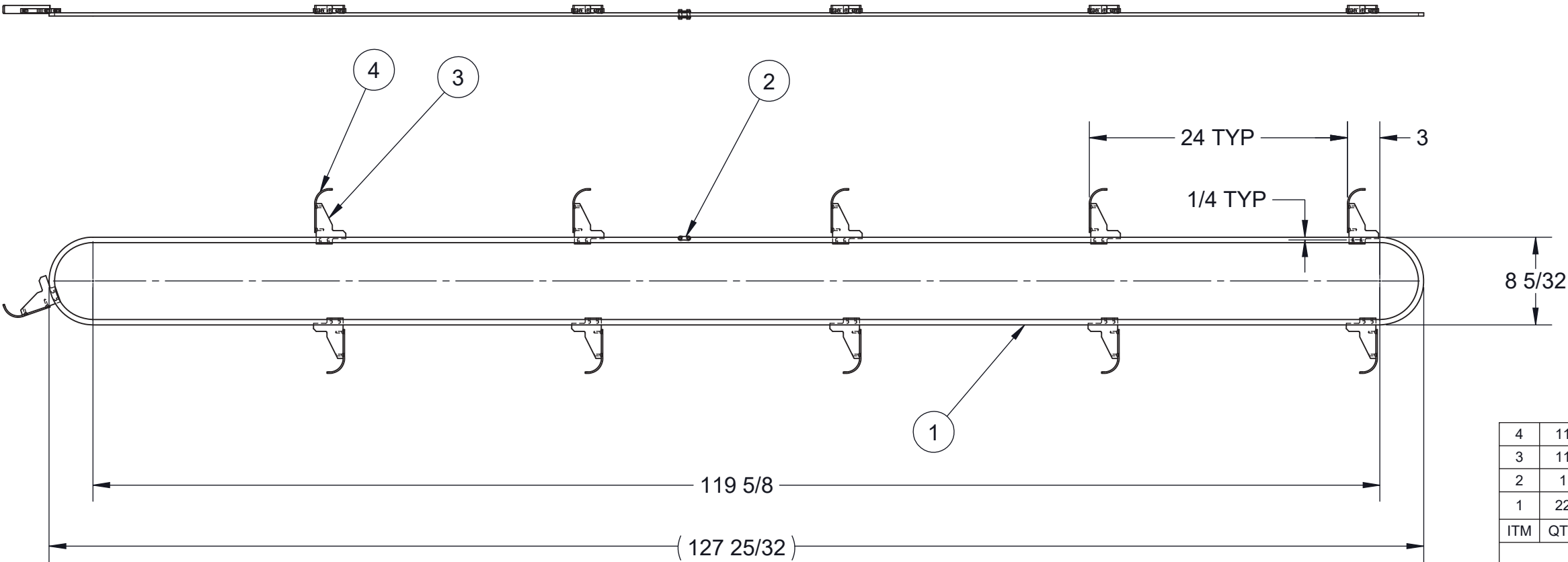
Item	Qty	Arpac Part	Description
1	24.00	809948	CHAIN, 60SBR NEO PERFEC, W/ D-3 @ 2 & 4 P ON A 32 PITCH REPEAT
2	1.00	809950	LINK, CONN, #60, NEO PERFECT COAT
3	12.00	122113	FLIGHT
4	12.00	132932-002	FACE FLIGHT, LH,



297585-001



297585-002
OPPOSITE



4	11	132931-001	FACE, FLIGHT, RH
3	11	122113	FLIGHT
2	1	809950	LINK, CONN. #60, COATED
1	22	809948	CHAIN, 60SBR NEO PERFEC, W/ D-3, 2 & 4 P ON A 32 PITCH REPEAT
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	SCALE: 1:12	SIZE: B
		FILENAME: 297585		
DESCRIPTION: ASSY, FLIGHT, LEADING				
				
			DRAWING NUMBER: 297585	

Arpac BOM

Parent Number: 17220 Parent Revision: A

Description: ASSY, FINAL, MACH, EL-2200

Model:

Assembly Part Number: 297585-001

Assembly Drawing Number: 297585

Description: ASSY, FLIGHT, LEADING, RH

Quantity: 1.00

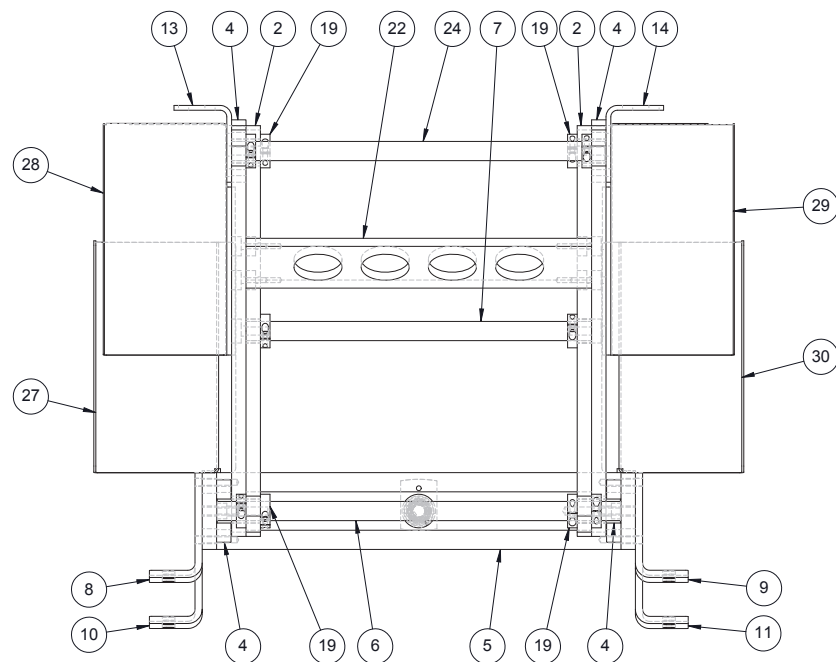
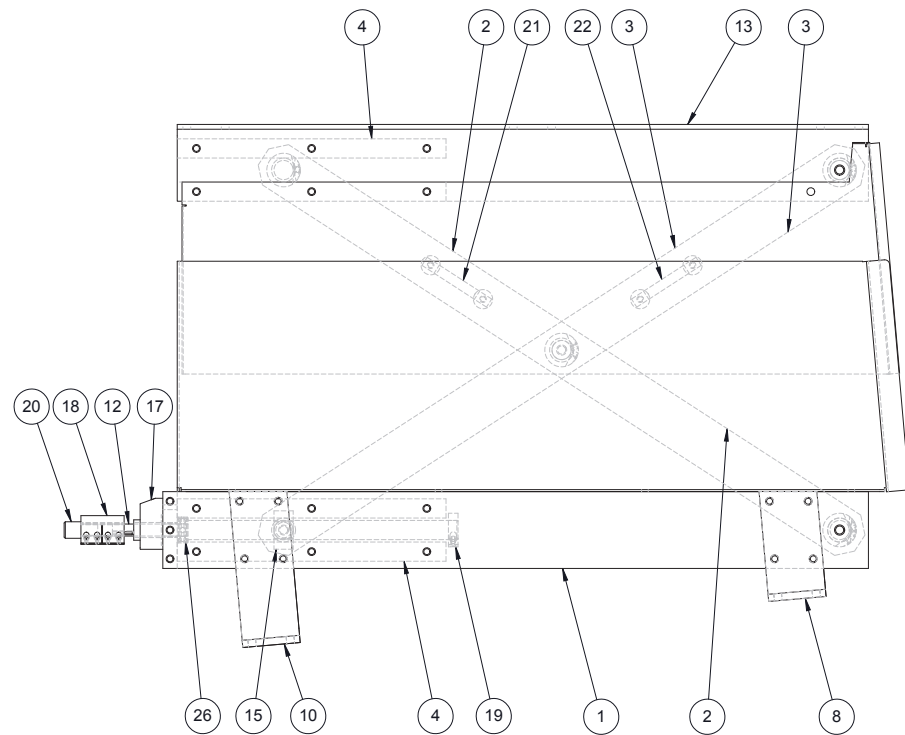
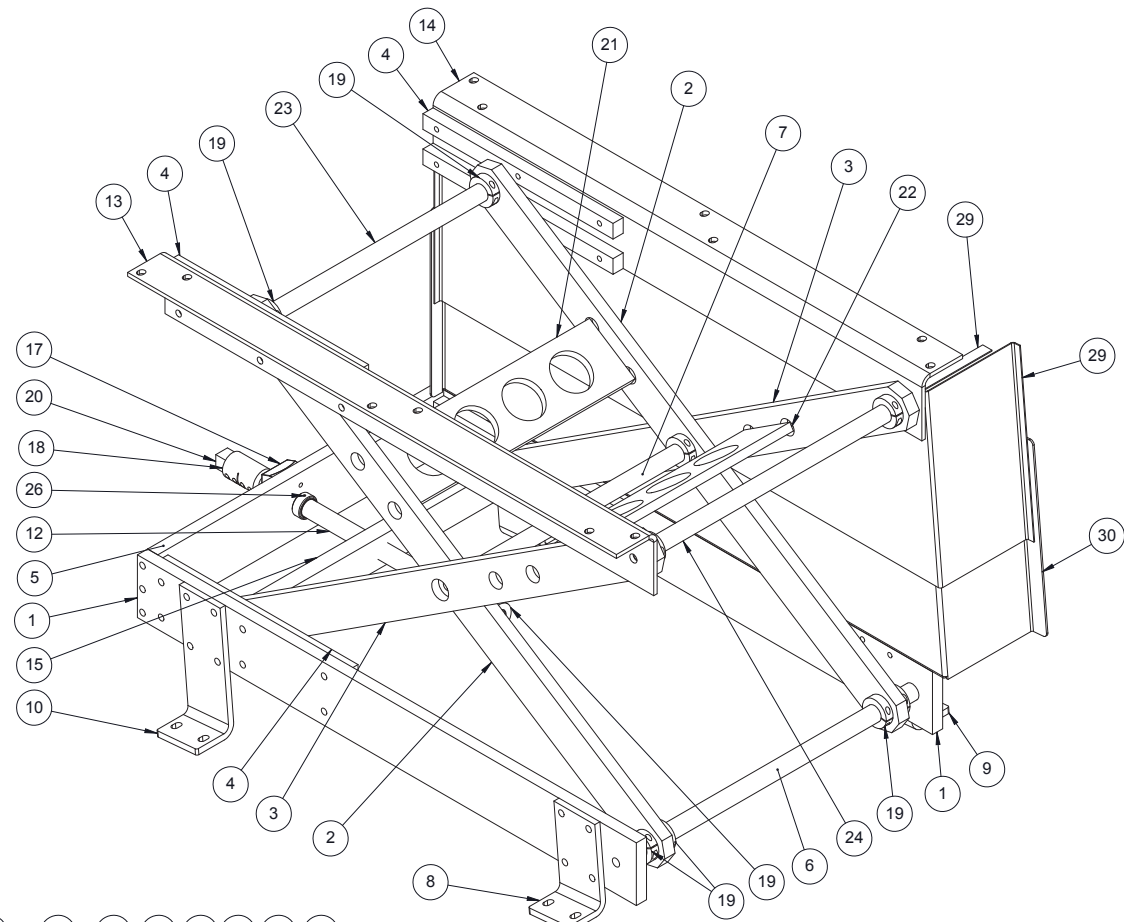
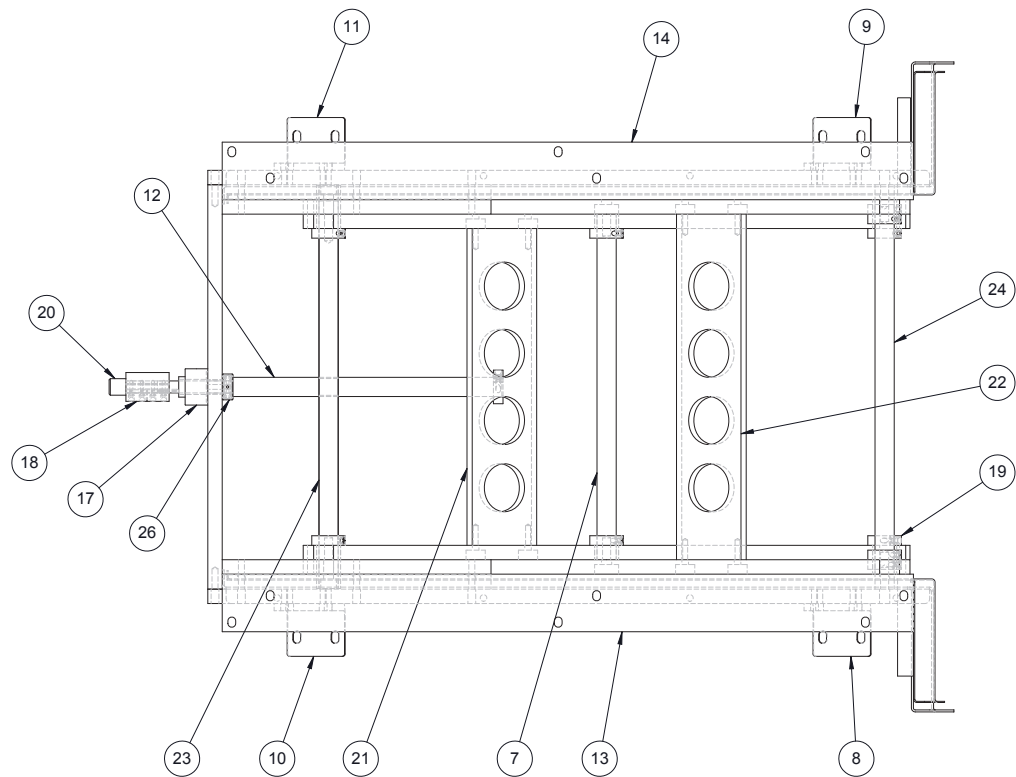
Item	Qty	Arpac Part	Description
1	22.00	809948	CHAIN, 60SBR NEO PERFEC, W/ D-3 @ 2 & 4 P ON A 32 PITCH REPEAT
2	1.00	809950	LINK, CONN, #60, NEO PERFECT COAT
3	11.00	122113	FLIGHT
4	11.00	132931-001	FACE FLIGHT, RH

Arpac BOM

Parent Number: 17220 Parent Revision: A
Description: ASSY, FINAL, MACH, EL-2200
Model:

Assembly Part Number: 297585-002
Assembly Drawing Number: 297585
Description: ASSY, FLIGHT, LEADING, LH
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	22.00	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	11.00	122113	FLIGHT
4	11.00	132931-002	FACE FLIGHT, LH



30	1	342753-001	PLT, GUARD, MAGAZINE, LOWER
29	1	342752-001	PLT, GUARD, MAGAZINE, UPPER
28	1	342752	PLT, GUARD, MAGAZINE, UPPER
27	1	342753	PLT, GUARD, MAGAZINE, LOWER
26	1	833000	BRG, THRUST, 5/8 ID X 1 11/32 OD X 9/16, SHIELDED
25	4	807110	BUSH, OILITE, 1.0010 X 1.2520 X 3/4 LG.
24	1	224123-002	ROD, SS, 1.000, TAPPED, 1/2-13
23	1	226283	SHAFT, PIVOT
22	1	238403	PLT, STIFF
21	1	238402	PLT, STIFF
20	1	226918	ADAPTER, WRENCH
19	11	800600	COLLAR, SHAFT, CLAMP, 1-PIECE
18	1	822743	CPLG, 5/8 X 5/8 X 1.5 OD X 2.25 LG 4-BOLT CLAMP
17	1	822652	COUNTER, POSITION, 5/8 BORE, 0.01 RES, CLOCKWISE ROTATION
16	2	224129	ROD, END, BAR, TAKE-UP
15	1	328384	BAR, CROSS, NUT
14	1	224126-002	ANGLE, MTG, SIDE, MAGAZINE, LH
13	1	224126-001	ANGLE, MTG, SIDE, MAGAZINE, RH
12	1	354530	SHAFT, THREADED, ACME, ADJ, VERT, MAG
11	1	224125-002	BKT, MTG, SIDE, MAGAZINE
10	1	224125-001	BKT, MTG, SIDE, MAGAZINE
9	1	224124-002	BKT, MTG, SIDE, MAGAZINE
8	1	224124-001	BKT, MTG, SIDE, MAGAZINE
7	1	224123-001	ROD, SS, 1.000, TAPPED, 1/2-13
6	1	224123	ROD, SS, 1.000, TAPPED, 1/2-13
5	1	224122	XBAR, ADJ, MAGAZINE
4	8	224121	BLK, GUIDE, ADJ, MAGAZINE
3	2	224120	ARM, ADJ, MAGAZINE
2	2	224119	ARM, ADJ, MAGAZINE
1	2	224118	PLT, MTG, ADJ, MAGAZINE

ITEM	QTY	PART NUM	DESCRIPTION
BILL OF MATERIALS			
		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: 2/26/2016	BY: HG	SCALE: 1:5	SIZE: D
FILENAME: 342762			
DESCRIPTION: ASSY, ADJ, VERT			
			DRAWING NUMBER: 342762

Arpac BOM

Parent Number: 17220 Parent Revision: A

Description: ASSY, FINAL, MACH, EL-2200

Model:

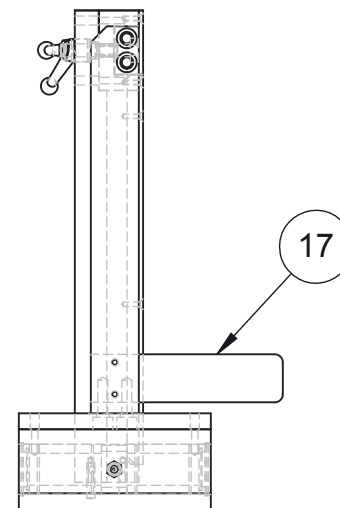
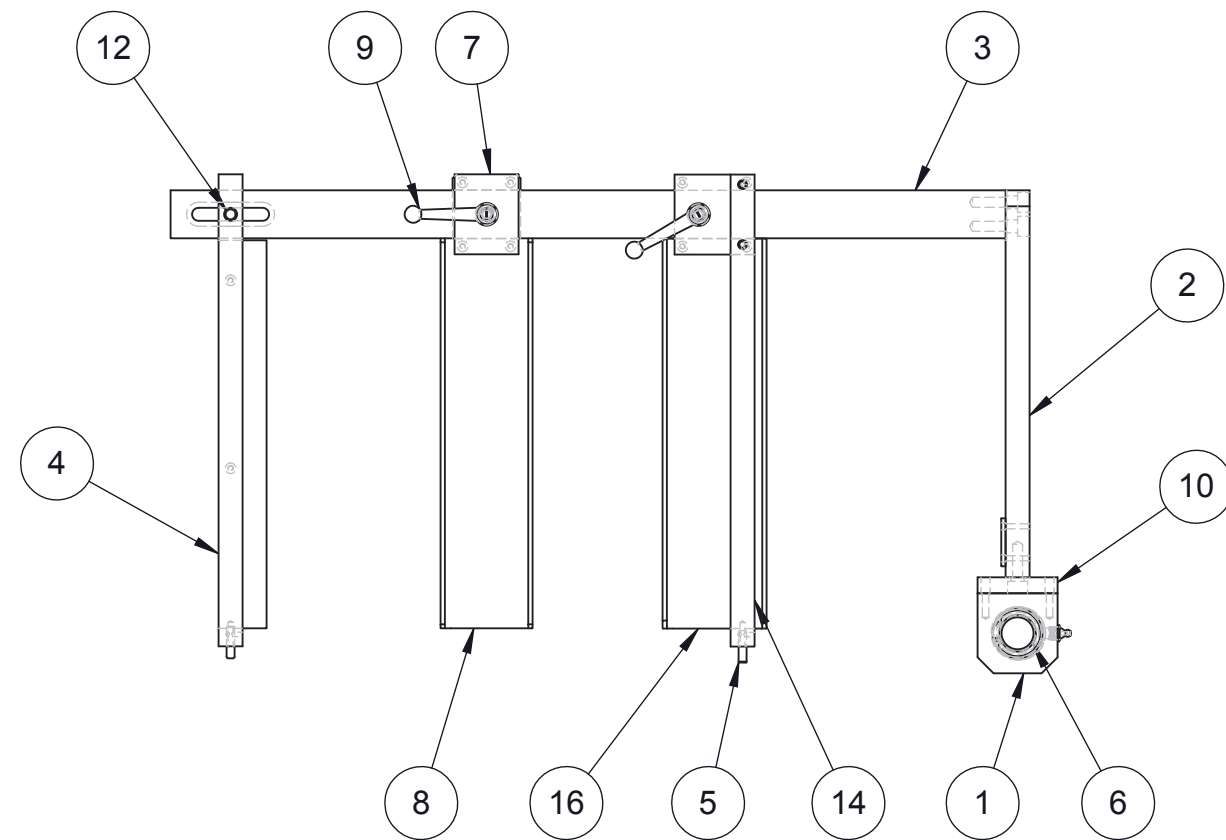
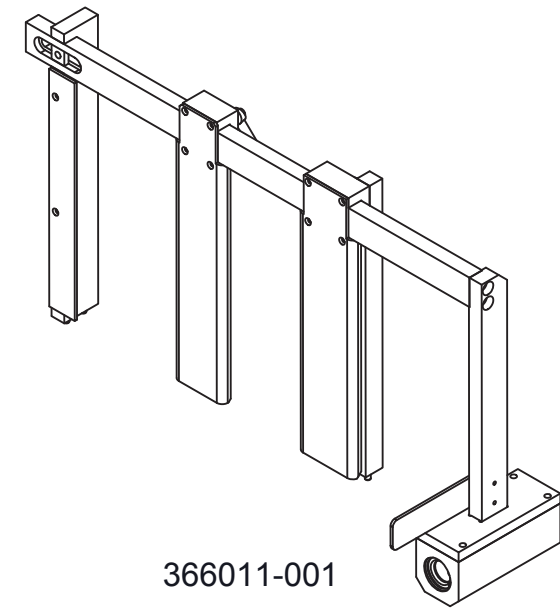
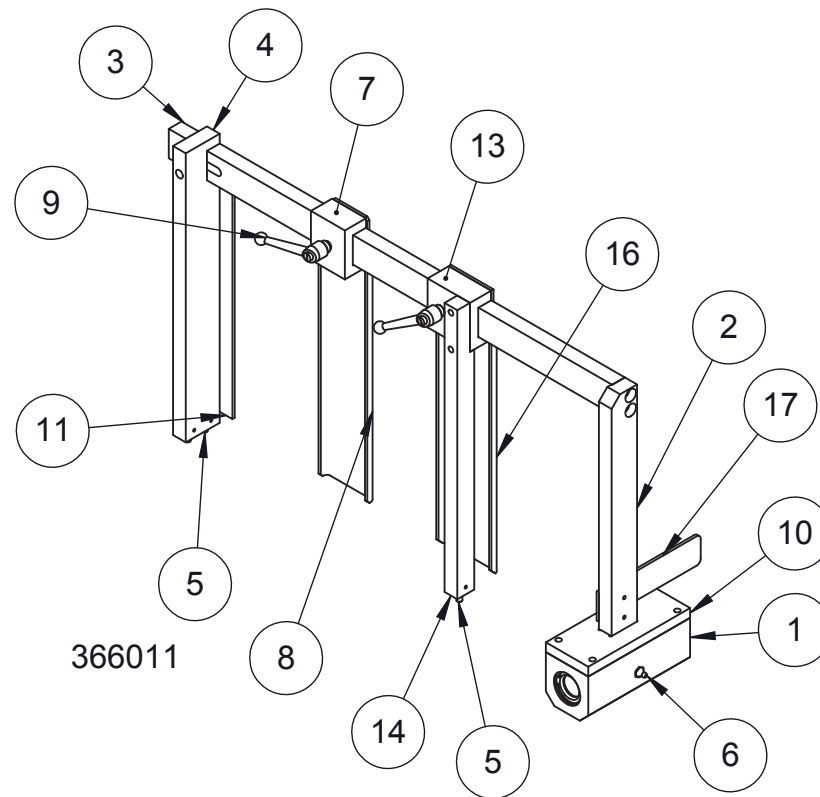
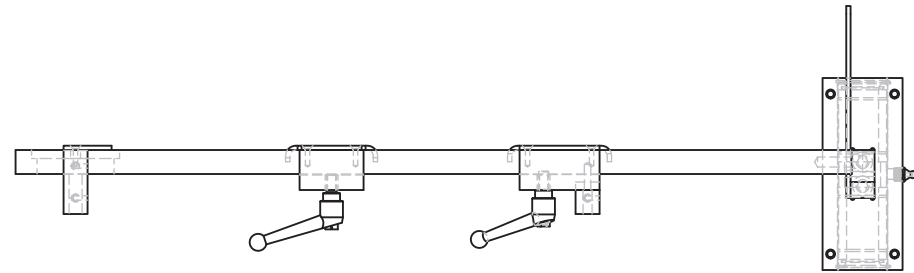
Assembly Part Number: 342762

Assembly Drawing Number: 342762

Description: ASSY, ADJ, VERT

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	2.00	224118	PLT, MTG, ADJ, MAGAZINE
2	2.00	224119	ARM, ADJ, MAGAZINE
3	2.00	224120	ARM, ADJ, MAGAZINE
4	8.00	224121	BLK, GUIDE, ADJ, MAGAZINE
5	1.00	224122-000B	XBAR, ADJ, MAGAZINE
6	1.00	224123	ROD, SS, 1.000, TAPPED, 1/2-13, 21.063LG
7	1.00	224123-001	ROD, SS, 1.000, TAPPED, 1/2-13, 18.000LG
8	1.00	224124-001	BKT, MTG, SIDE, MAGAZINE, RH
9	1.00	224124-002	BKT, MTG, SIDE, MAGAZINE, LH
10	1.00	224125-001	BKT, MTG, SIDE, MAGAZINE, RH
11	1.00	224125-002	BKT, MTG, SIDE, MAGAZINE, LH
12	1.00	354530	SHAFT, THREADED, ACME, ADJ, VERT, MAG
13	1.00	224126-001	ANGLE, MTG, SIDE, MAGAZINE, RH
14	1.00	224126-002	ANGLE, MTG, SIDE, MAGAZINE, LH
15	1.00	328384	BAR, CROSS, NUT
16	2.00	224129	ROD, END, BAR, TAKE-UP
17	1.00	822652	COUNTER, POSITION, 5/8 BORE, 0.01 RES CLOCKWISE ROTATION
18	1.00	822743	CPLG, 5/8 X 5/8 X 1.5 OD X 2.25 LG 4-BOLT CLAMP
19	11.00	800600	COLLAR, SHAFT, CLAMP, 1-PIECE, 1
20	1.00	226918	ADAPTER, WRENCH
21	1.00	238402	PLT, STIFF 16.5 LG
22	1.00	238403	PLT, STIFF 18 LG
23	1.00	226283	SHAFT, PIVOT, 19 7/16 LG
24	1.00	224123-002	ROD, SS, 1.000, TAPPED, 1/2-13, 19.500LG
25	4.00	807110	BUSH, OILITE, 1.0010 X 1.2520 X 3/4 LG,
26	1.00	833000	BRG, THRUST, 5/8 ID X 1 11/32 OD X 9/16, SHIELDED
27	1.00	342753	PLT, GUARD, MAGAZINE, LOWER
28	1.00	342752	PLT, GUARD, MAGAZINE, UPPER
29	1.00	342752-001	PLT, GUARD, MAGAZINE, UPPER, LH
30	1.00	342753-001	PLT, GUARD, MAGAZINE, LOWER, LH



ITEMS 15 & 18 NOT SHOWN

18	1	132401	SHOE, ADJ
17	1	220240	FLAG, PROX
16	1	366012	FINGER, BLANK
15	2	807151-001	INSERT, HELICAL, 5/16-18 X 0.469, SS
14	1	291893	SUPPORT, BLANK
13	1	291894	FINGER ADJ. BLOCK
12	1	119857	SEAL HEAD ADJ. NUT
11	1	366013-001	FINGER, BLANK, FIXED
10	1	132989	MTG, BKT
9	2	808027	HDL, ADJ, ZINC, 2-1/2 LG 5/16-18 X .59 STUD
8	1	132399-002	FINGER, BLANK, A=14.19
7	1	132398	FINGER ADJ. BLOCK
6	1	101092-003	ASSY, BLK, BUSH, SHAFT, 1"
5	3	808260	PIN, DOWEL, 5/32 DIA X 1 LG
4	1	132945	SUPPORT, BLANK
3	1	138801-002	BLANK, SUPPORT, HORIZ
2	1	219681-001	SUPPORT, BLANK, VERTICAL
1	1	132987	BLK, BSG, SHAFT 1.000, 6" 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 ± 1/64
THREE (3) DECIMALS ± 0.010
ANGLES ± 0.005
± 0.5°

DRAWN: 6/10/2019 BY: SRA SCALE: 1:6 SIZE: B

FILENAME: 366011

DESCRIPTION: ASSY, PUSHER, BLANK



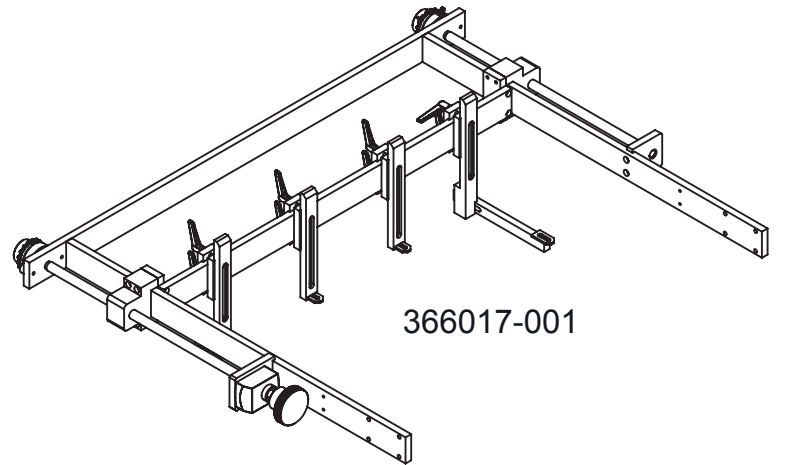
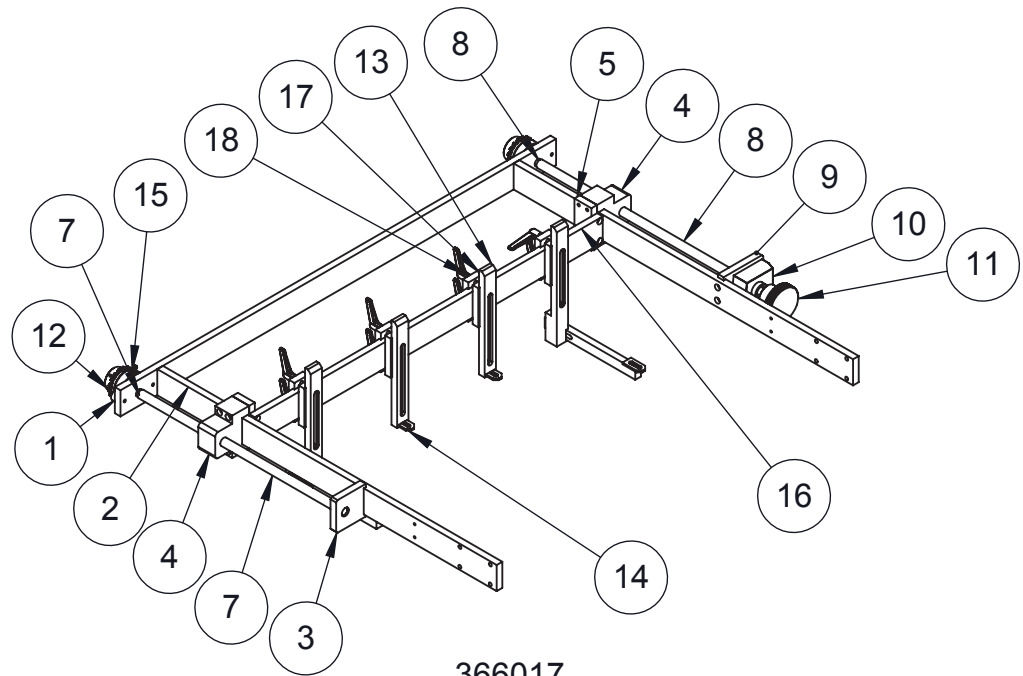
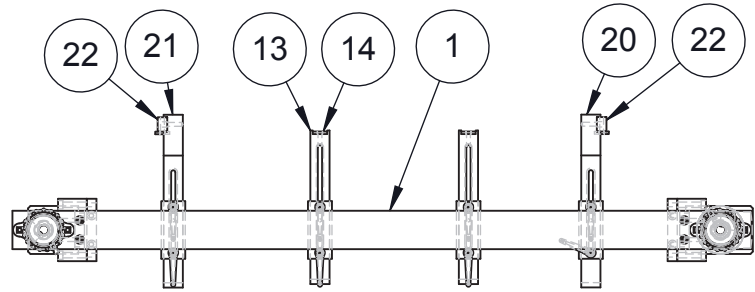
DRAWING NUMBER:
366011

Arpac BOM

Parent Number: 17220 Parent Revision: A
Description: ASSY, FINAL, MACH, EL-2200
Model:

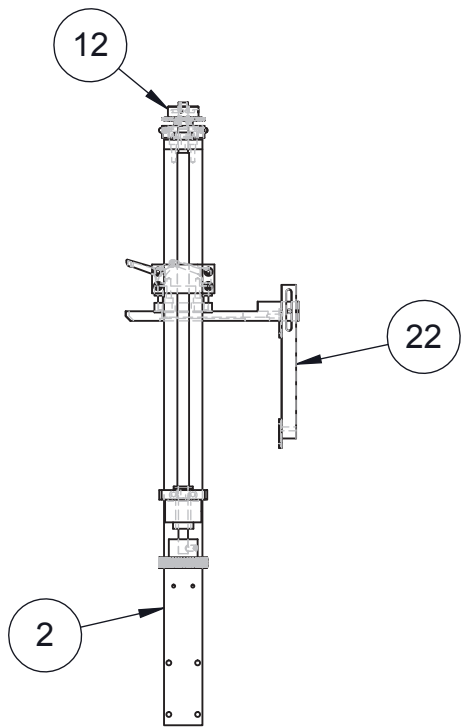
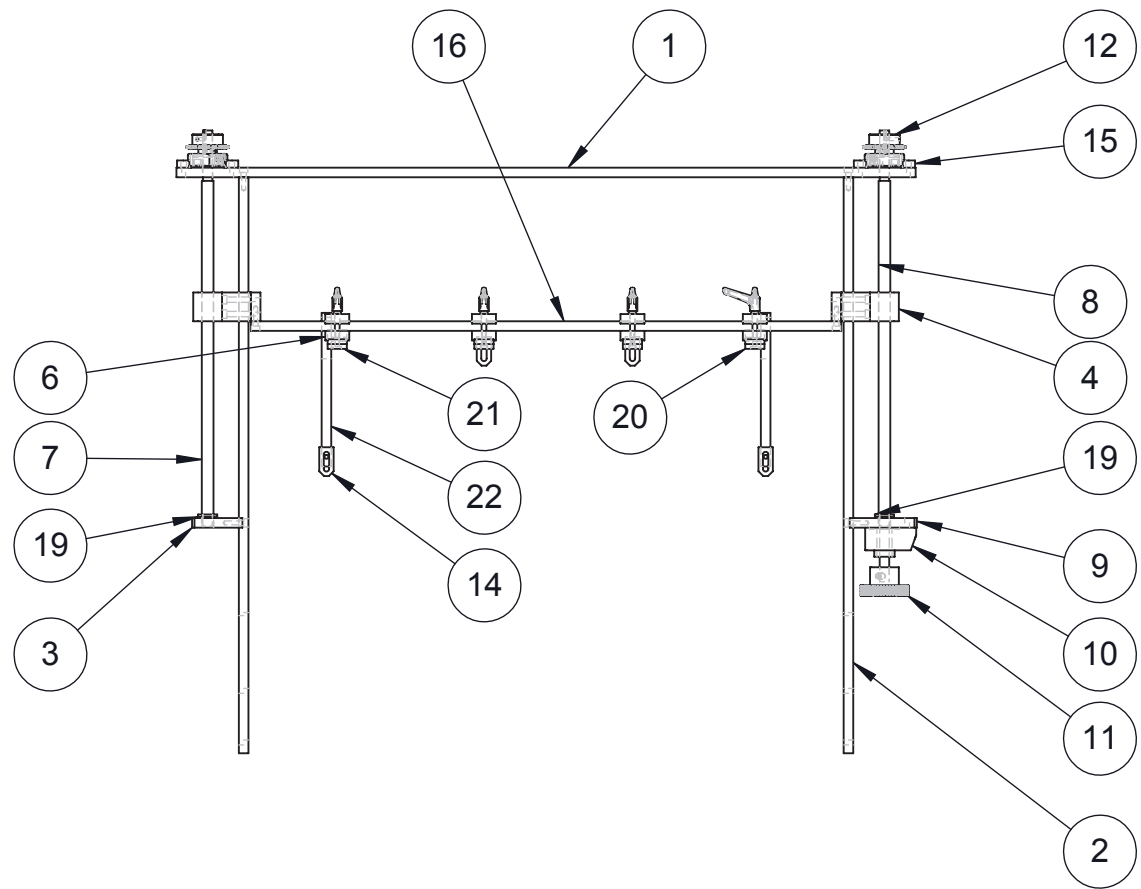
Assembly Part Number: 366011-001
Assembly Drawing Number: 366011
Description: ASSY, PUSHER, BLANK
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	132987	BLK, BUSH, SHAFT, 1.000, 6" LG. CP-25
2	1.00	219681-001	SUPPORT, BLANK, VERT. RH
3	1.00	138801-002	BLANK, SUPPORT/HORIZONTAL, BLANK MAGAZINE
4	1.00	132945	ARM, SUPPORT BLANK
5	3.00	808260	PIN, DOWEL, 5/32 DIA X 1 LG,
6	1.00	101092-003	(SEE COMMENTS) ASSY, BLK, BUSH, SHAFT, 1
7	1.00	132398	BLK, ADJ, FINGER
8	1.00	132399-002	FINGER, BLANK, A=14.19
9	2.00	808027	HDL, ADJ, ZINC, 2-1/2 LG 5/16-18 X .59 STUD
10	1.00	132989	BKT, MTG CP-25 BLANK MAGAZINE
11	1.00	366013	FINGER, BLANK, FIXED
12	1.00	119857	NUT, ADJ, SQ
13	1.00	291894	BLK, CLAMP
14	1.00	291893	POST, SUPPORT, BLANK
15	2.00	807151-001	INSERT, HELICAL, 5/16-18 X 0.469LG, SS FREE RUNNING
16	1.00	366012	FINGER, BLANK
17	1.00	220240	FLAG, PROX, BLANK MAGAZINE, 6" LG
18	1.00	132401	SHOE, ADJ



366017-001

366017



22	2	366014	BAR, VERT, HOLDER, BLANK
21	1	242629-001	ARM, HLDER, BLANK, RH
20	1	242629-002	ARM, HLDER, BLANK, LH
19	2	800442	WSHR, OILITE, 0.510 X 1.000 X 1/8 THK
18	8	802676	HDL, ADJ, ZINC, 1.77 LG 1/4-20 X 1.18 STUD
17	4	322551	PLT, CLAMP
16	1	322548	BAR, CROSS, TOP
15	2	827118	BRG, FLG, 1/2 ID, 2 BOLT, 2.50 MTG HOLES
14	4	126068	BLANK RETAINER
13	2	123823	BLANK FINGER
12	2	125227	SPKT, 35B17, MOD, 0.005 BORE
11	1	849688	KNOB, STEEL KNURLED-RIM, W/SET SCREW
10	1	836881	COUNTER, POSITION, 1/2 ID, COUNTERCLOCKWISE INCREMENT
9	1	227001	PLT, BRG & COUNTER
8	1	218190	VERT. THREADED SHAFT
7	1	218698	VERT. THREADED SHAFT
6	4	322546	PLT, CLAMP
5	2	322547	PLT, MTG, NUT
4	2	227012	NUT, ADJ. VERT
3	1	227000	PLT, BRG
2	2	132991-002	BAR, VERTICAL
1	1	227002	TOP CROSSBAR
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: 6/10/2019

BY: SRA

SCALE: 1:10

SIZE: B

FILENAME: 366017

DESCRIPTION:

ASSY, HOLDER, BLANK, ADJ, VERT



DRAWING NUMBER:

366017

Arpac BOM

Parent Number: 17220 Parent Revision: A

Description: ASSY, FINAL, MACH, EL-2200

Model:

Assembly Part Number: 366017-001

Assembly Drawing Number: 366017

Description: ASSY, HOLDER, BLANK, ADJ, VERT

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	227002	CROSSBAR, TOP
2	2.00	132991-002	BAR, VERTICAL CP-25 BLANK MAGAZINE
3	1.00	227000	PLATE, BEARING
4	2.00	227012	NUT, ADJ, VERT 3/4-6 ACME
5	2.00	322547	PLT, MTG, NUT
6	4.00	322546	BKT, CLAMP
7	1.00	218698	SHAFT, THREAD, VERT.
8	1.00	218190	SHAFT, THREAD, VERT.
9	1.00	227001	PLATE, BEARING & COUNTER
10	1.00	836881	COUNTER, POSITION, 1/2 ID, COUNTERCLOCKWISE INCREMENT
11	1.00	849688	KNOB, STEEL KNURLED-RIM, W/SET SCREW
12	2.00	125227	SPKT, 35B17, MOD, 0.500 BORE , W/KEYWAY, SET SCR
13	2.00	123823	FINGER, BLANK
14	4.00	126068	RETAINER, BLANK
15	2.00	827118	BRG, FLG, 1/2 ID, 2 BOLT, 2.50 MTG HOLES
16	1.00	322548	BAR, CROSS
17	4.00	322551	PLT, CLAMP
18	8.00	802676	HDL, ADJ, ZINC, 1.77 LG 1/4-20 X 1.26 STUD
19	2.00	800442	WSHR, OILITE, 0.510 X 1.000 X 1/8 THK
20	1.00	242629-002	ARM, HOLDER, BLANK, LH
21	1.00	242629-001	ARM, HOLDER, BLANK, RH
22	2.00	366014	BAR, VERT, HOLDER, BLANK

ARPAC B SIZE FORMAT R5

2

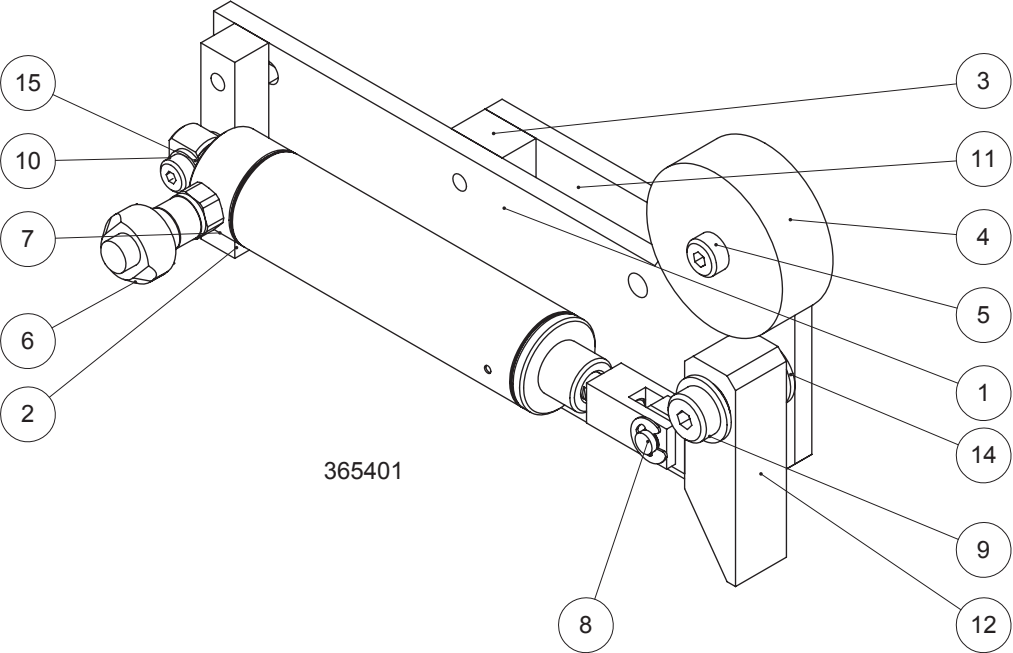
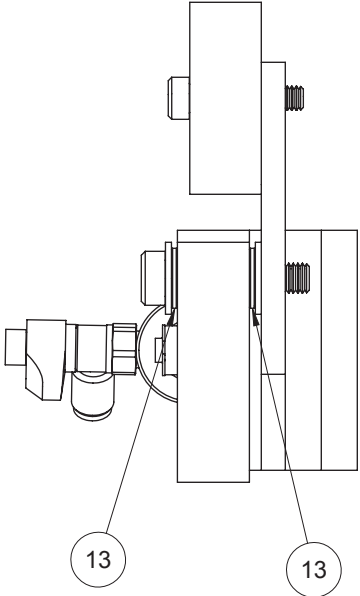
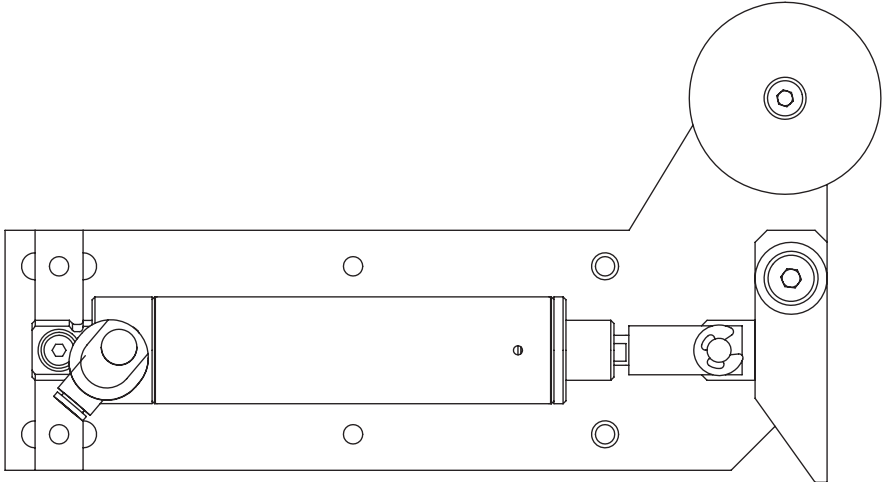
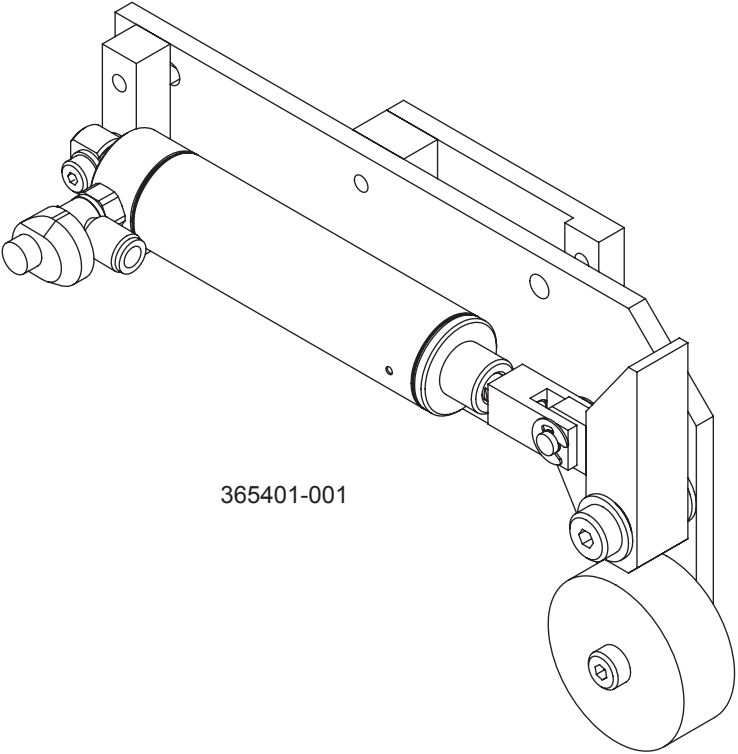
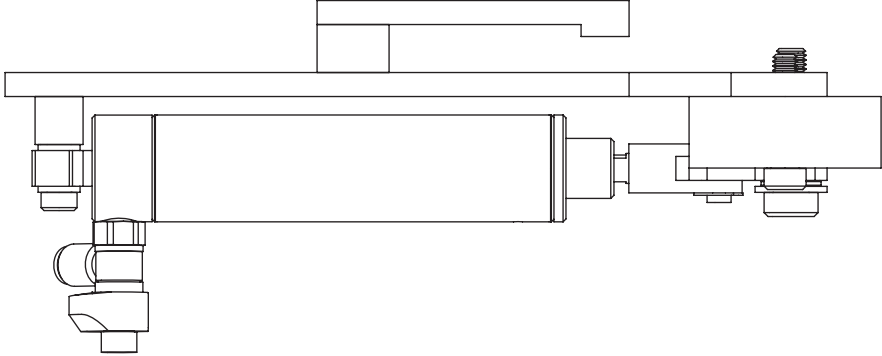
1

D

C

B

A



BILL OF MATERIALS			
ITEM	QTY	NUMBER	DESCRIPTION
1	1	214291	PLATE, MTG, CYL
2	1	214292	SPACER, MTG, CYL
3	1	132966	SPACER, SLIDE, SQUARE CYL.
4	1	139121	ROLLER, TRANSFER
5	1	800322-008	FSNR, BOLT, SHLDR, 5/16 DIA X 3/4 LG, SS, 1/4-20
6	1	825362-001	VALVE, CONTROL, FLOW, 1/8 NPT X 1/4 TUBE 90DEG, NUMERIC INDICATOR, MTR OUT
7	1	816113-001	CYL, AIR, 1-1/16 BORE, 1.5 ST, SPRNG RT. PIVOT MTG, STAINLESS STEEL ROD
8	1	839340	CLEVIS, ROD, 5/16-24
9	1	800323-008	FSNR, BOLT, SHLDR, 3/8 DIA X 1 LG
10	1	800321-015	FSNR, BOLT, SHLDR, 1/4 DIA X 3/8 LG, SS,
11	1	132967	CLAMP, SLIDE, SQUARE CYL.
12	1	365399	FINGER, SQUARING, CASE
13	2	800398	BUSH, OILITE, FLG, 0.3765 X 0.502 X 3/8 5/8 OD X 1/16 LG FLG
14	2	800443	WSHR, OILITE, 0.377 X 0.750 X 1/16 THK
15	2	808218	WSHR, OILITE, 0.2550 X 0.4375 X 1/16 THK

REV	DATE	BY	NOTE
REVISIONS			

NOTES	CREATED IN SOLIDWORKS 2013		ARPAC A DURAVANT COMPANY	9555 W. Irving Park Rd. Schiller Park, IL 60176 www.arpac.com	SIZE	SCALE	MATERIAL SEE BILL OF MATERIALS	DESCRIPTION ASSY, HOLDER, TOP SQUARE
	MODEL	FILE \ CONFIG SIMILAR TO DATE CREATED DATE UPDATED UPDATED BY			365401\365401	3RD ANGLE		
DRAFT	DATE CREATED	Monday, November 6, 2017 2:14:36 PM	sarcher	TOLERANCES		FINISH NONE	NUMBER 365401	
	DATE UPDATED	Tuesday, June 4, 2019 11:59:27 AM		X/X: ±1/32 X.XX: ±.015 X.XXX: ±.005 ANGLES: ±1°				

D

C

B

A

"C:\ARPAC_VAULT\Designs\CORRUGATED\EL-2200\17220\365401.sldrw" accessed Tuesday, June 4, 2019.

SHEET 1 OF 1

Arpac BOM

Parent Number: 17220 Parent Revision: A
Description: ASSY, FINAL, MACH, EL-2200
Model:

Assembly Part Number: 365401-001
Assembly Drawing Number: 365401
Description: ASSY, HOLDER, TOP SQUARE
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	214291	PLATE, MTG, CYL
2	1.00	214292	SPACER, MTG, CYL CRS
3	1.00	132966	SPACER, SLIDE, SQAURE CYL. ALUM.
4	1.00	139121	ROLLER TRANSFER
5	1.00	800322-008	FSNR, BOLT, SHLDR, 5/16 DIA X 3/4 LG, SS
6	1.00	825362-001	VALVE, CONTROL, FLOW, 1/8 NPT X 1/4 TUBE 90DEG, NUMERIC INDICATOR, MTR OU
7	1.00	816113-001	CYL, AIR, 1-1/16 BORE, 1.5 ST, SPRNG RT. PIVOT MTG, STAINLESS STEEL ROD
8	1.00	839340	CLEVIS, ROD, 5/16- 24, CYL, AIR, REPLACES 801759
9	1.00	800323-008	FSNR, BOLT, SHLDR, 3/8 DIA X 1 LG
10	1.00	800321-015	FSNR, BOLT, SHLDR, 1/4 DIA X 1/2 LG SS
11	1.00	132967	CLAMP, SLIDE, SQUARE CYL. CRS
12	1.00	365399-001	FINGER, SQUARING, CASE
13	2.00	800398	BUSH, OILITE, FLG, 0.3765 X 0.502 X 3/8 5/8 OD X 1/16 LG FLG
14	2.00	800443	WSHR, OILITE, 0.377 X 0.750 X 1/16 THK
15	2.00	808218	WSHR, OILITE, 0.2550 X 0.4375 X 1/16 THK

Arpac BOM

Parent Number: 17220 Parent Revision: A
Description: ASSY, FINAL, MACH, EL-2200
Model:

Assembly Part Number: 365401
Assembly Drawing Number: 365401
Description: ASSY, HOLDER, TOP SQUARE
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	214291	PLATE, MTG, CYL
2	1.00	214292	SPACER, MTG, CYL CRS
3	1.00	132966	SPACER, SLIDE, SQAURE CYL. ALUM.
4	1.00	139121	ROLLER TRANSFER
5	1.00	800322-008	FSNR, BOLT, SHLDR, 5/16 DIA X 3/4 LG, SS
6	1.00	825362-001	VALVE, CONTROL, FLOW, 1/8 NPT X 1/4 TUBE 90DEG, NUMERIC INDICATOR, MTR OU
7	1.00	816113-001	CYL, AIR, 1-1/16 BORE, 1.5 ST, SPRNG RT. PIVOT MTG, STAINLESS STEEL ROD
8	1.00	839340	CLEVIS, ROD, 5/16- 24, CYL, AIR, REPLACES 801759
9	1.00	800323-008	FSNR, BOLT, SHLDR, 3/8 DIA X 1 LG
10	1.00	800321-015	FSNR, BOLT, SHLDR, 1/4 DIA X 1/2 LG SS
11	1.00	132967	CLAMP, SLIDE, SQUARE CYL. CRS
12	1.00	365399	FINGER, SQUARING, CASE
13	2.00	800398	BUSH, OILITE, FLG, 0.3765 X 0.502 X 3/8 5/8 OD X 1/16 LG FLG
14	2.00	800443	WSHR, OILITE, 0.377 X 0.750 X 1/16 THK
15	2.00	808218	WSHR, OILITE, 0.2550 X 0.4375 X 1/16 THK

Arpac BOM

Parent Number: 17220 Parent Revision: A
Description: ASSY, FINAL, MACH, EL-2200
Model:

Assembly Part Number: 365401-001
Assembly Drawing Number: 365401
Description: ASSY, HOLDER, TOP SQUARE
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	214291	PLATE, MTG, CYL
2	1.00	214292	SPACER, MTG, CYL CRS
3	1.00	132966	SPACER, SLIDE, SQAURE CYL. ALUM.
4	1.00	139121	ROLLER TRANSFER
5	1.00	800322-008	FSNR, BOLT, SHLDR, 5/16 DIA X 3/4 LG, SS
6	1.00	825362-001	VALVE, CONTROL, FLOW, 1/8 NPT X 1/4 TUBE 90DEG, NUMERIC INDICATOR, MTR OU
7	1.00	816113-001	CYL, AIR, 1-1/16 BORE, 1.5 ST, SPRNG RT. PIVOT MTG, STAINLESS STEEL ROD
8	1.00	839340	CLEVIS, ROD, 5/16- 24, CYL, AIR, REPLACES 801759
9	1.00	800323-008	FSNR, BOLT, SHLDR, 3/8 DIA X 1 LG
10	1.00	800321-015	FSNR, BOLT, SHLDR, 1/4 DIA X 1/2 LG SS
11	1.00	132967	CLAMP, SLIDE, SQUARE CYL. CRS
12	1.00	365399-001	FINGER, SQUARING, CASE
13	2.00	800398	BUSH, OILITE, FLG, 0.3765 X 0.502 X 3/8 5/8 OD X 1/16 LG FLG
14	2.00	800443	WSHR, OILITE, 0.377 X 0.750 X 1/16 THK
15	2.00	808218	WSHR, OILITE, 0.2550 X 0.4375 X 1/16 THK

Arpac BOM

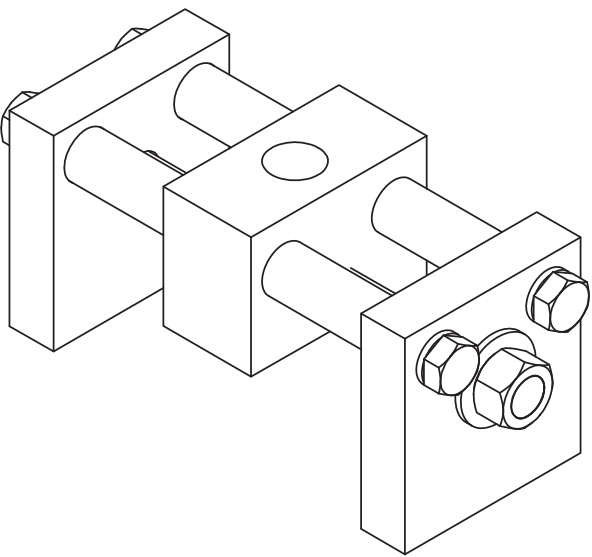
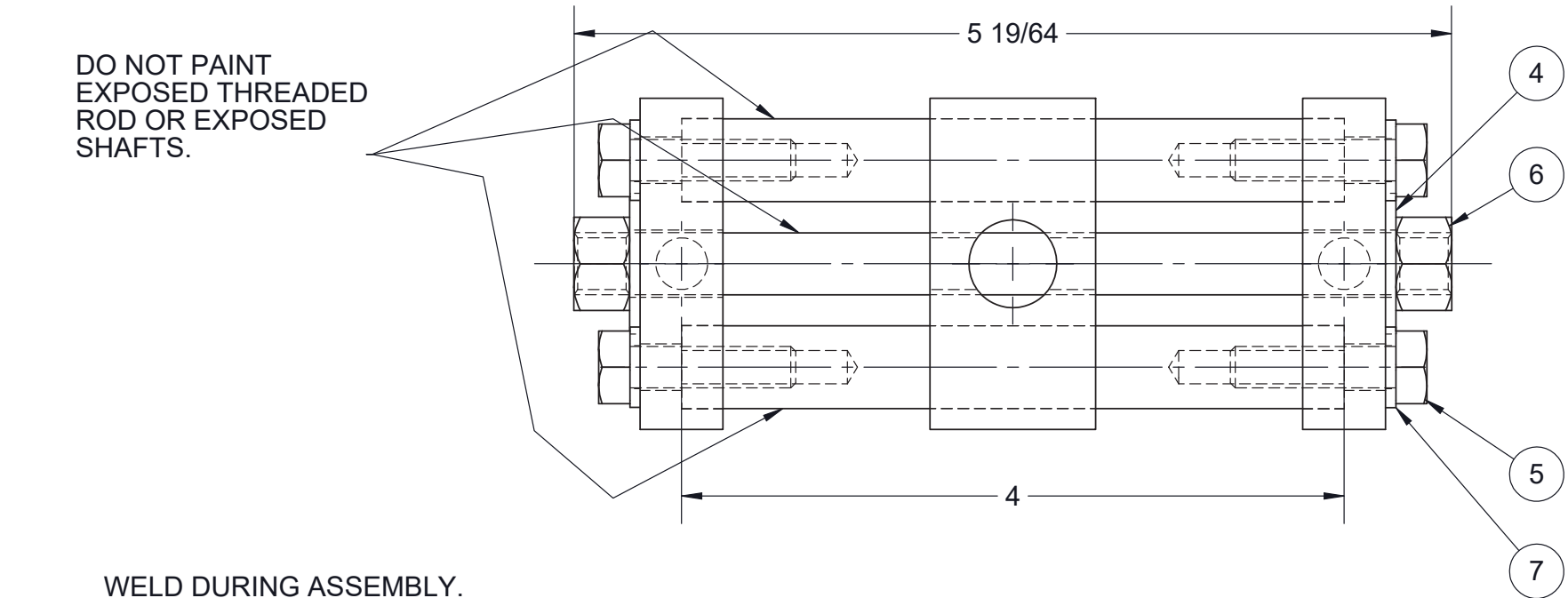
Parent Number: 17220 Parent Revision: A
Description: ASSY, FINAL, MACH, EL-2200
Model:

Assembly Part Number: 365401
Assembly Drawing Number: 365401
Description: ASSY, HOLDER, TOP SQUARE
Quantity: 1.00

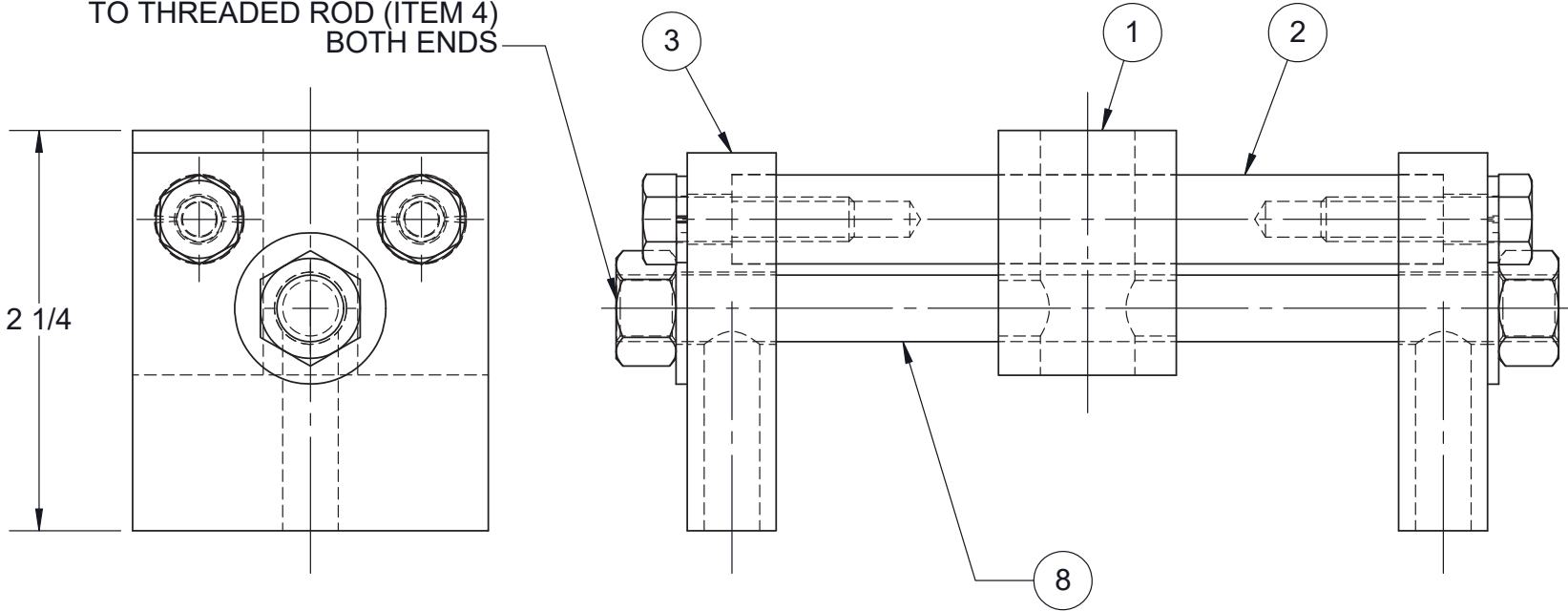
Item	Qty	Arpac Part	Description
1	1.00	214291	PLATE, MTG, CYL
2	1.00	214292	SPACER, MTG, CYL CRS
3	1.00	132966	SPACER, SLIDE, SQAURE CYL. ALUM.
4	1.00	139121	ROLLER TRANSFER
5	1.00	800322-008	FSNR, BOLT, SHLDR, 5/16 DIA X 3/4 LG, SS
6	1.00	825362-001	VALVE, CONTROL, FLOW, 1/8 NPT X 1/4 TUBE 90DEG, NUMERIC INDICATOR, MTR OU
7	1.00	816113-001	CYL, AIR, 1-1/16 BORE, 1.5 ST, SPRNG RT. PIVOT MTG, STAINLESS STEEL ROD
8	1.00	839340	CLEVIS, ROD, 5/16- 24, CYL, AIR, REPLACES 801759
9	1.00	800323-008	FSNR, BOLT, SHLDR, 3/8 DIA X 1 LG
10	1.00	800321-015	FSNR, BOLT, SHLDR, 1/4 DIA X 1/2 LG SS
11	1.00	132967	CLAMP, SLIDE, SQUARE CYL. CRS
12	1.00	365399	FINGER, SQUARING, CASE
13	2.00	800398	BUSH, OILITE, FLG, 0.3765 X 0.502 X 3/8 5/8 OD X 1/16 LG FLG
14	2.00	800443	WSHR, OILITE, 0.377 X 0.750 X 1/16 THK
15	2.00	808218	WSHR, OILITE, 0.2550 X 0.4375 X 1/16 THK

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

DO NOT PAINT
EXPOSED THREADED
ROD OR EXPOSED
SHAFTS.



WELD DURING ASSEMBLY.
PLUG WELD NUT (ITEM 6)
TO THREADED ROD (ITEM 4)
BOTH ENDS



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
		SIZE:	A
DESCRIPTION:		APPROVED BY:	JPC
		ASSY, SLIDE, TAKE-UP, CHAIN, 2.250, STD	
		DRAWING NUMBER:	
		101965	

Arpac BOM

Parent Number: 17220 Parent Revision: A

Description: ASSY, FINAL, MACH, EL-2200

Model:

Assembly Part Number: 101965

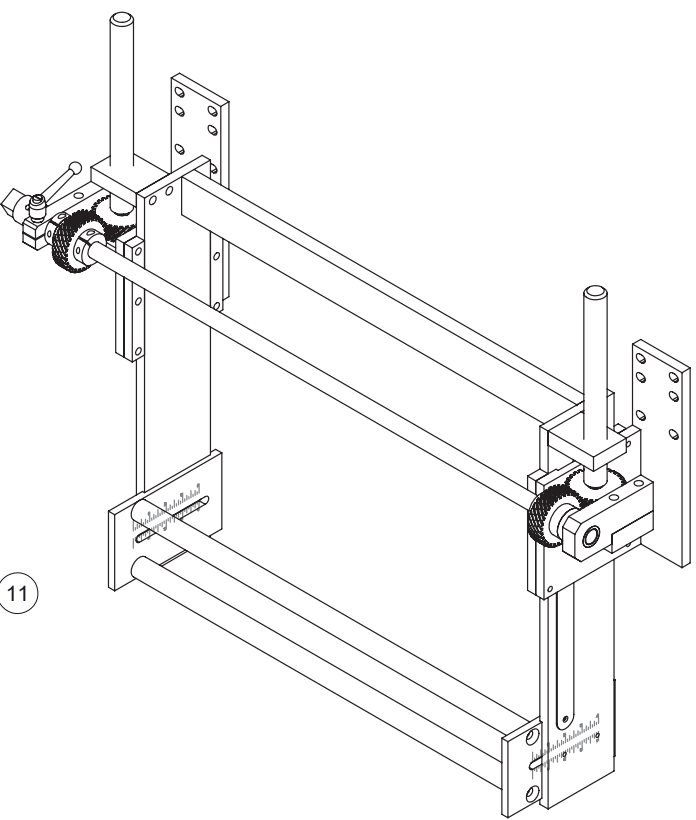
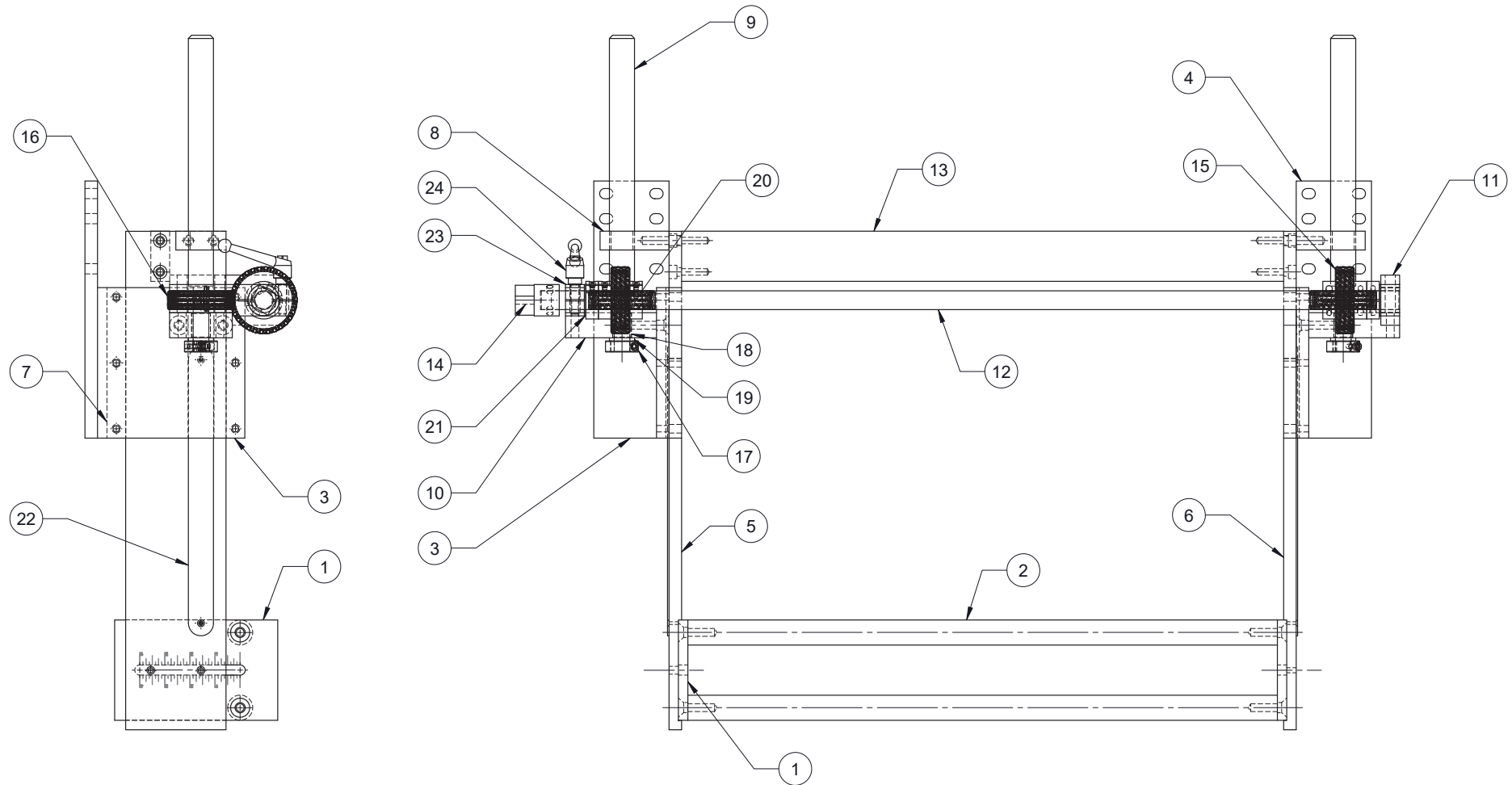
Assembly Drawing Number: 101965

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

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: 17220 Parent Revision: A

Description: ASSY, FINAL, MACH, EL-2200

Model:

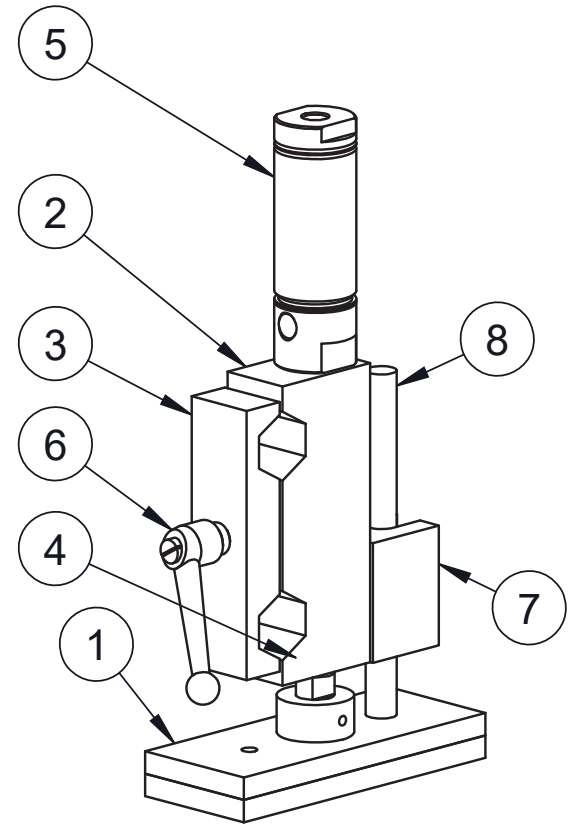
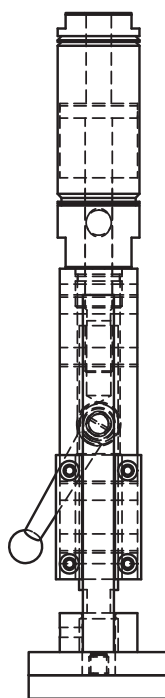
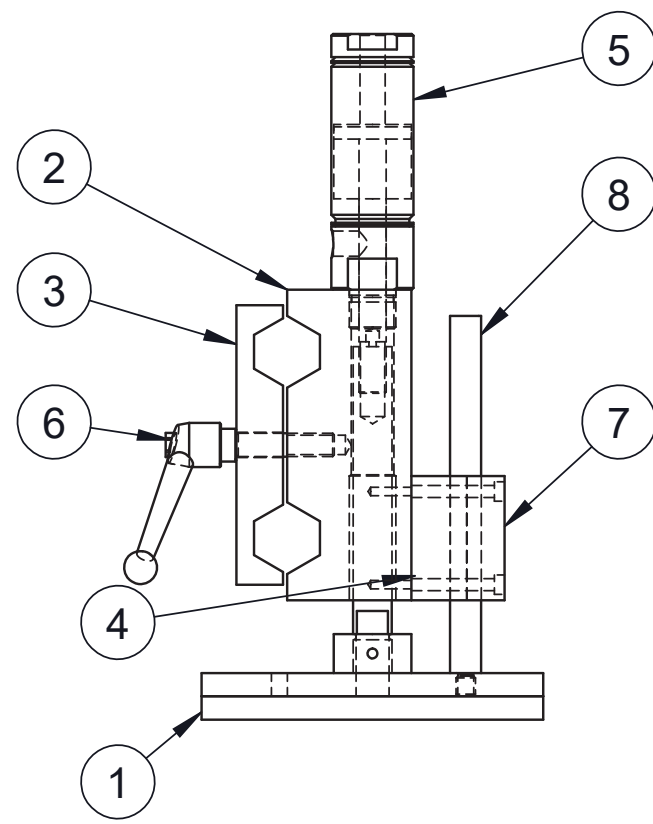
Assembly Part Number: 243312-001B

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



8	1	223575	ROD, SS 0.500, TAPPED
7	1	223560	BLK, GUIDE
6	1	802678	HDL, ADJ, ZINC, 2-1/2 LG 3/8-16 X 1.57 STUD
5	1	825526	CYL, AIR, 1-1/4 BORE, 1 STROKE, ROUND, NOSE MTG
4	1	122151-002	SHAFT, CAN STOP 5 1/4 LG
3	1	243425	CLAMP, CAN STOP
2	1	261117	CAN, STOP, BARREL
1	1	316362	ASSY, CLAMP, STOP, PRODUCT
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: 11/04/15

BY: JW

SCALE: 1:4

SIZE: A

RELEASED: 11/04/15

FILENAME: 316361

APPROVED BY: JW

DESCRIPTION:

ASSY, CLAMP, PRODUCT STOP

DRAWING NUMBER:
316361

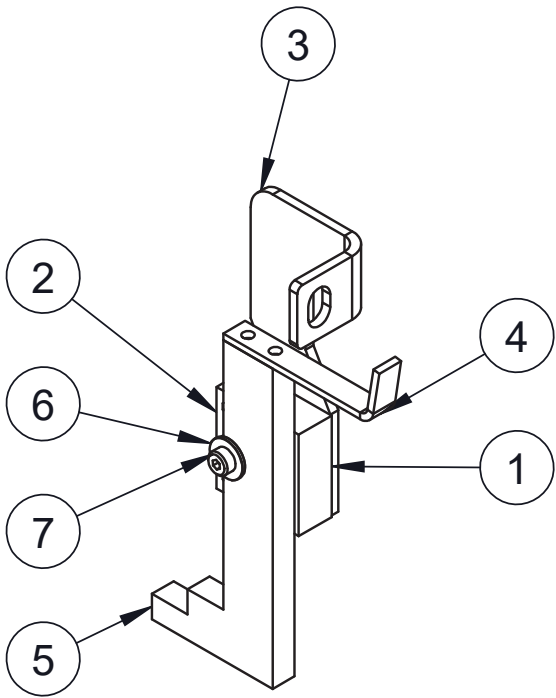
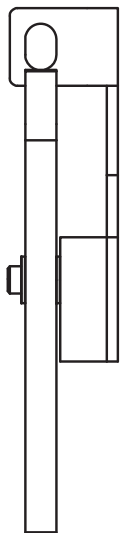
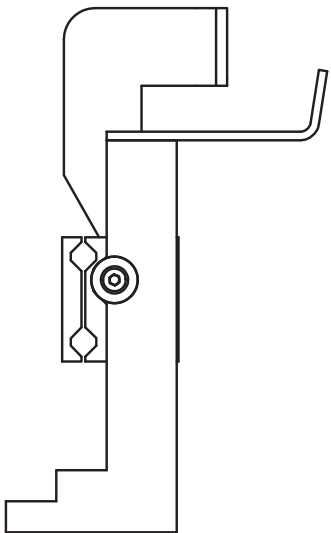
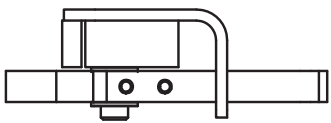
Arpac BOM

Parent Number: 17220 Parent Revision: A
Description: ASSY, FINAL, MACH, EL-2200
Model:

Assembly Part Number: 316361

Assembly Drawing Number: 316361
Description: ASSY, CLAMP, PRODUCT STOP
Quantity: 4.00

Item	Qty	Arpac Part	Description
1	1.00	316362	ASSY, CLAMP, STOP, PRODUCT, 2 1/4 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
9	0.75	900095	AL FLAT 1/2 X 15-1/2, 6061-T6511
10	5.63	900077	AL FLAT 3/8 X 3, 6061-T6511
11	5.13	900562	CRS FLAT 1-1/4 X 2, 1018
12	55.00	plating	PLATING FOR PARTS
13	4.63	900531	CRS FLAT 3/4 X 1-1/4, 1018
14	5.38	900323	SS SHAFT G&P 5/8, 304/304L, -.0005/-.0015 (CUSTOM TOLERANCE)
15	1.63	900817	PL ACETAL CO-POLYMER SQ 2, WHITE/NATURAL
16	6.00	900322	SS SHAFT G&P 1/2, 303 BEARING SHAFT QUALITY, 0.4995/0.4985 (STANDARD TOLE



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

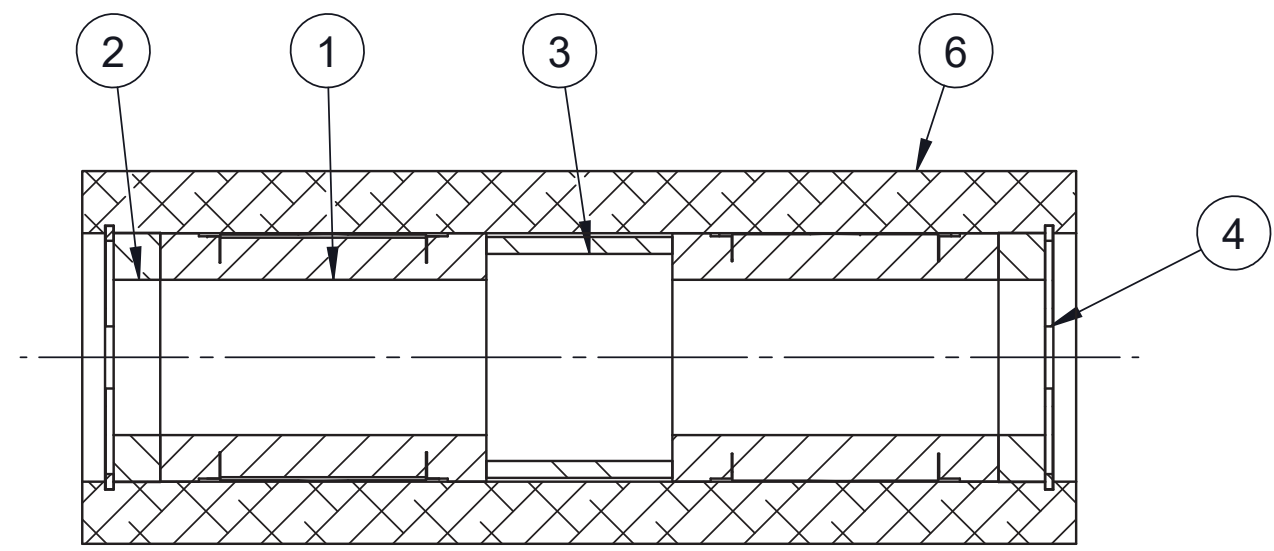
Arpac BOM

Parent Number: 17220 Parent Revision: A
Description: ASSY, FINAL, MACH, EL-2200
Model:

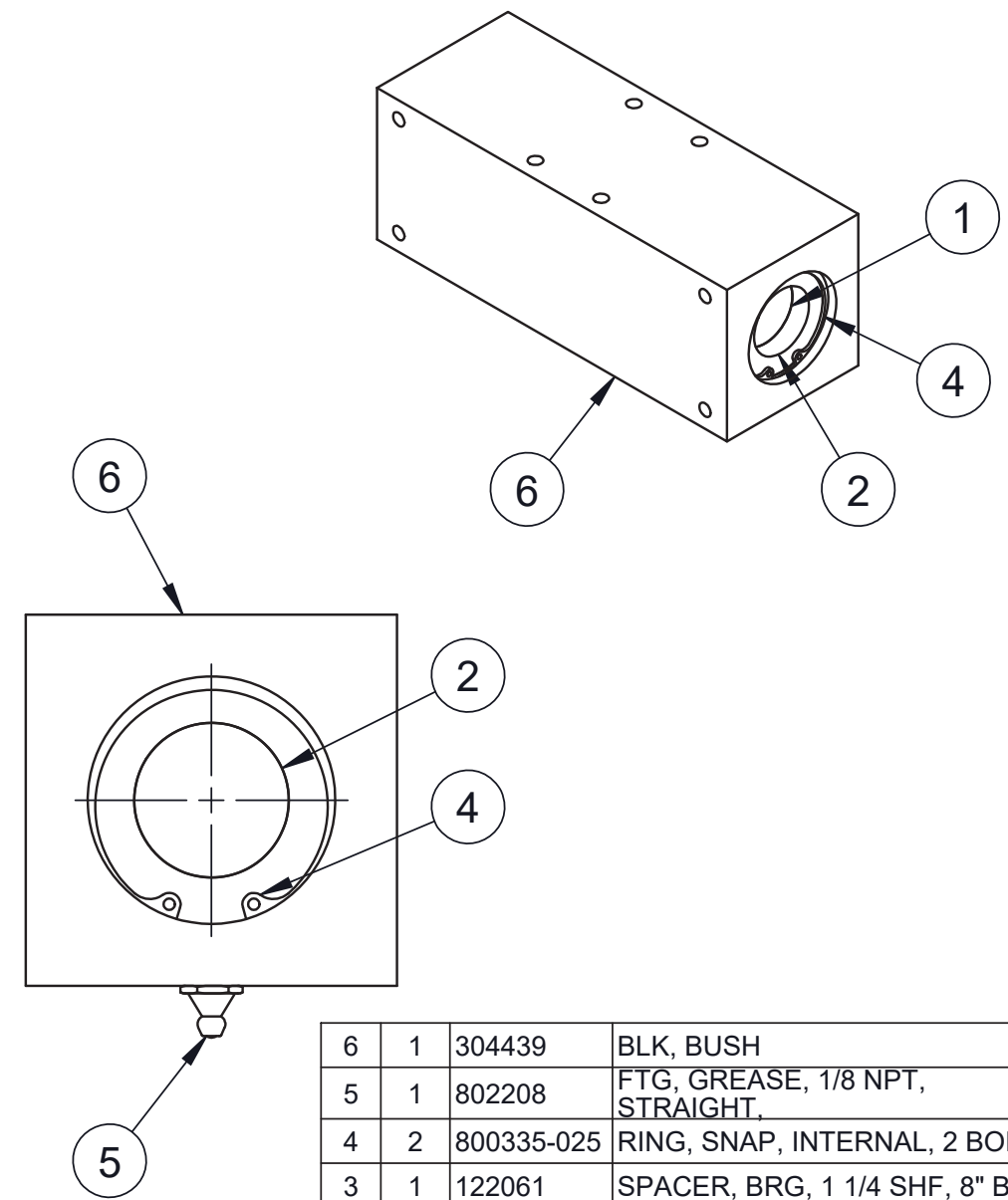
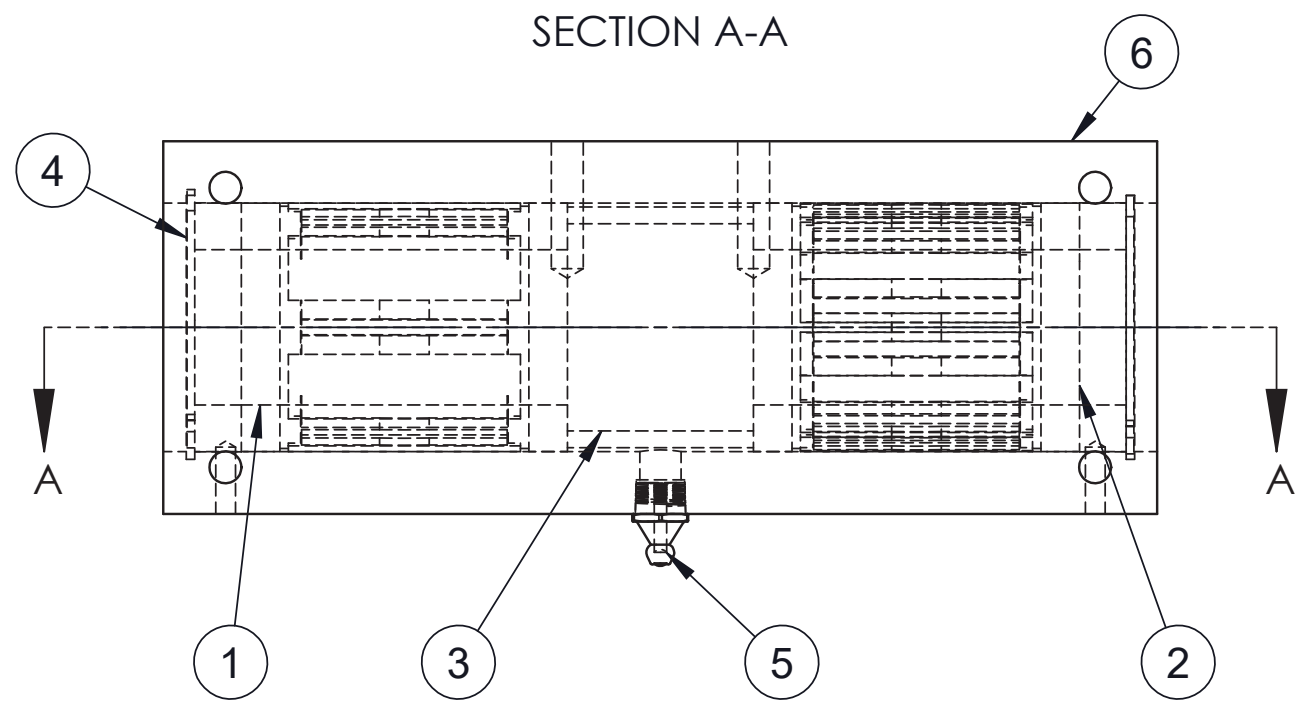
Assembly Part Number: 300784

Assembly Drawing Number: 300784
Description: ASSY, FINGER DETECTOR
Quantity: 4.00

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



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 FRACTIONS ± 1/64
TWO (2) DECIMALS ± 0.010
ALL DIMENSIONAL TOLERANCES: THREE (3) DECIMALS ± 0.005
ANGLES ± 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,

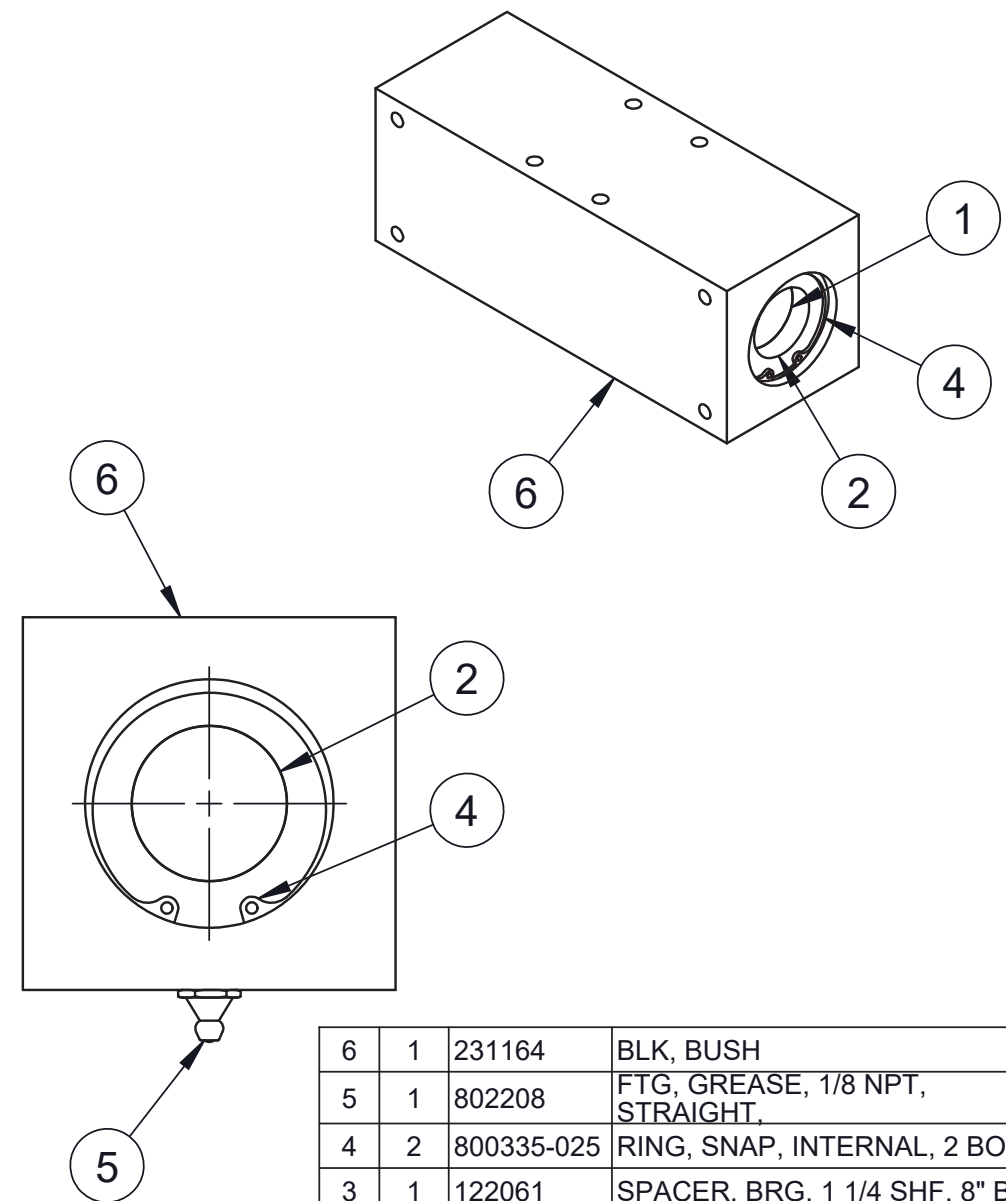
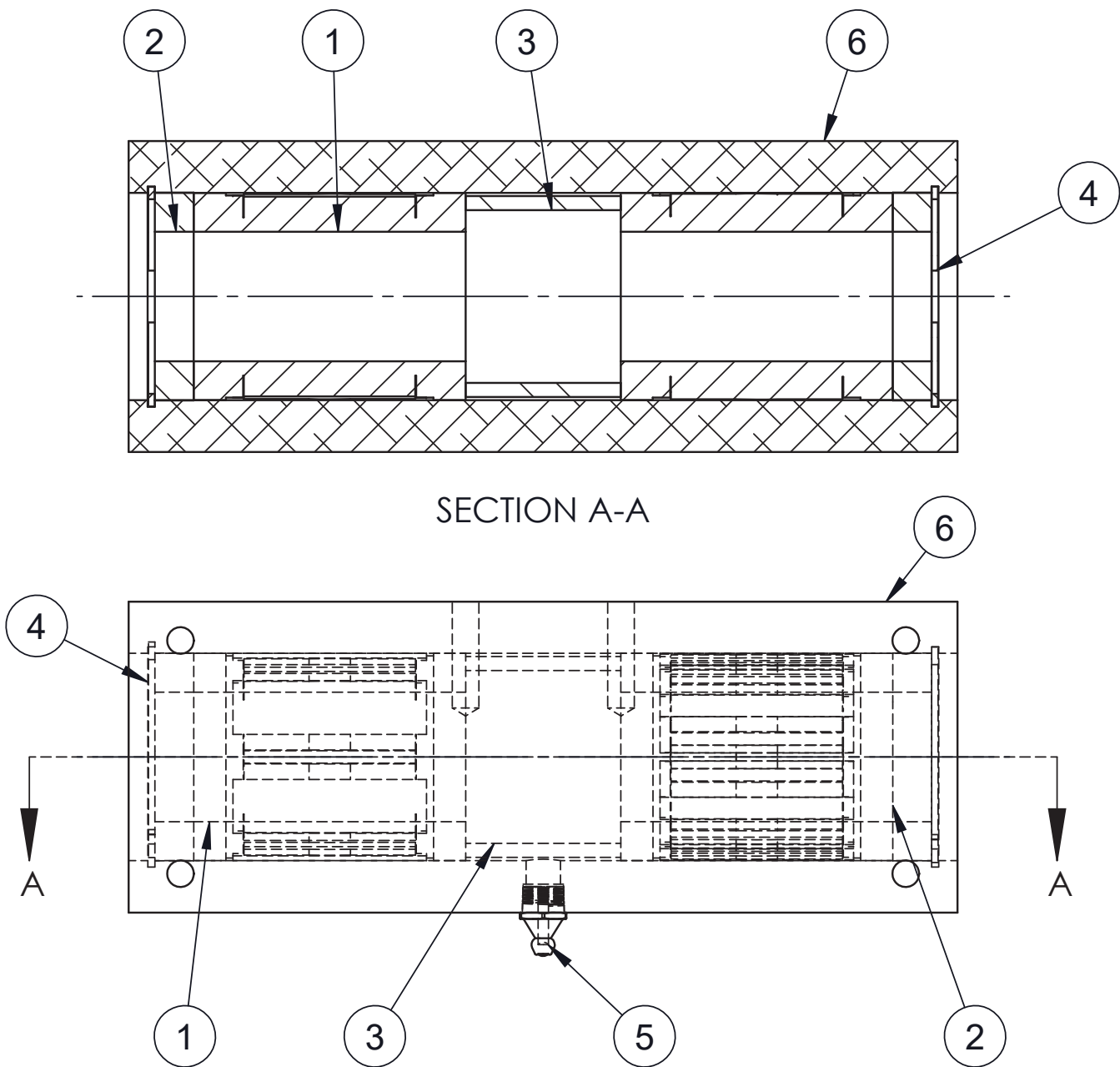
DRAWING NUMBER:
304441

Arpac BOM

Parent Number: 17220 Parent Revision: A
Description: ASSY, FINAL, MACH, EL-2200
Model:

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



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

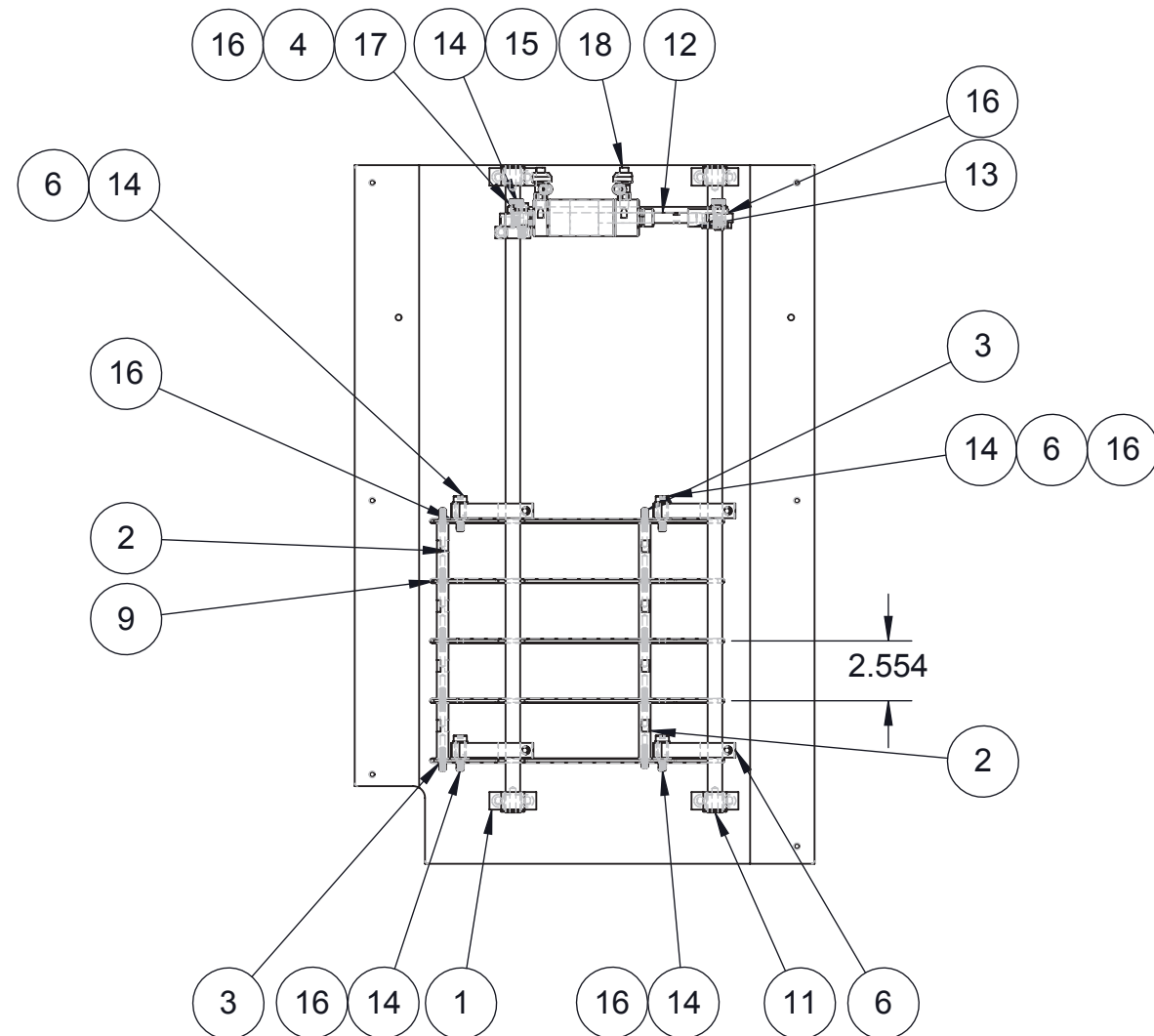
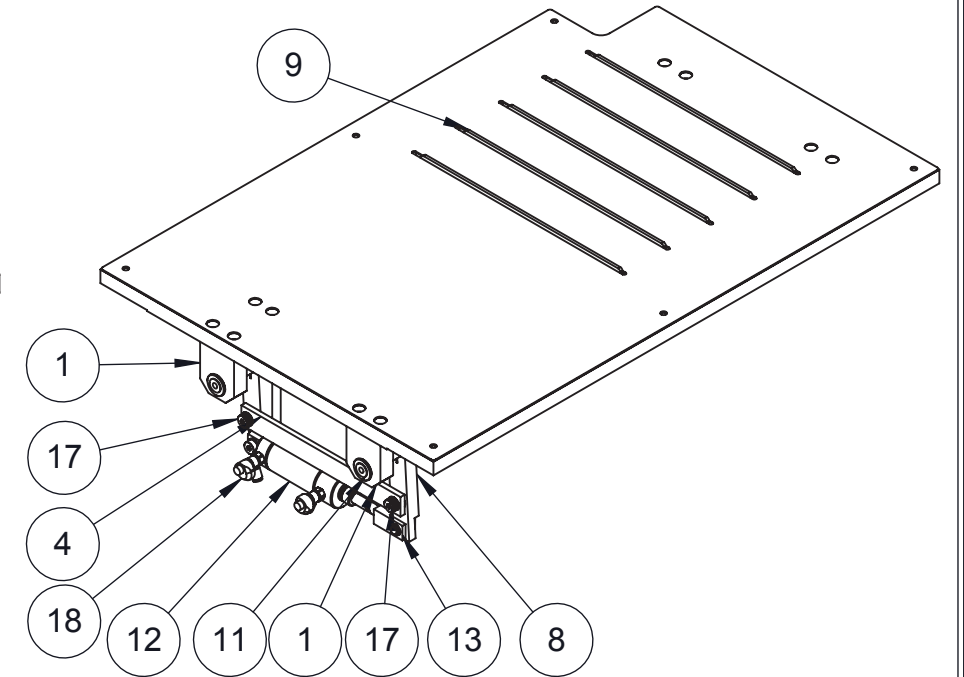
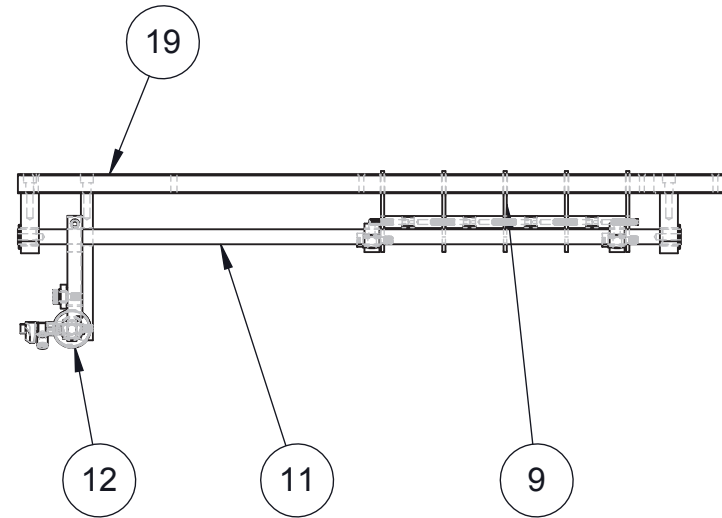
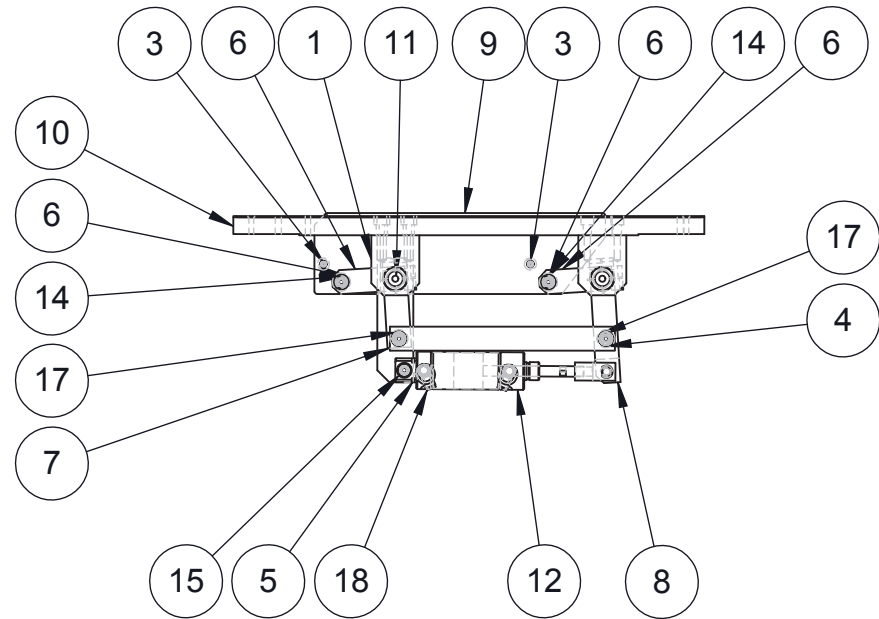
BILL OF MATERIALS			
ARPAC		9511 WEST RIVER ST. SCHILLER PARK, IL 60176	
UNLESS OTHERWISE SPECIFIED		FRACTIONS	± 1/64
ALL DIMENSIONAL TOLERANCES:		TWO (2) DECIMALS	± 0.010
		THREE (3) DECIMALS	± 0.005
		ANGLES	± 0.5°
DRAWN:	3/31/14	BY:	HG
		SCALE:	1:2
		SIZE:	A
		FILENAME:	231163
DESCRIPTION: ASSY, BLK,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

Arpac BOM

Parent Number: 17220 Parent Revision: A
Description: ASSY, FINAL, MACH, EL-2200
Model:

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



19	1	367307	COVER, PLT, DEAD, GUIDE, POP-UP
18	2	825362-001	VALVE, CONTROL, FLOW, 1/8 NPT X 1/4 TUBE 90DEG, NUMERIC INDICATOR, MTR OUT
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	367308	PLT, DEAD, GUIDE, POP-UP, 4-LANE, 2.25 DIA PROD
9	5	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	10	800342-011	FSNR, SCREW, SET, 1/4-20 X 1, SS
2	8	197925-010	SPACER, POP-UP
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
TWO (2) DECIMALS ± 1/64
THREE (3) DECIMALS ± 0.010
ANGLES ± 0.005
± 0.5°

DRAWN: 6/24/2019

BY: SRA

SCALE: 1:8

SIZE: B

FILENAME: 367309

DESCRIPTION:

ASSY, GUIDE, POP-UP, 4-LANE, 2.25 DIA PROD

3

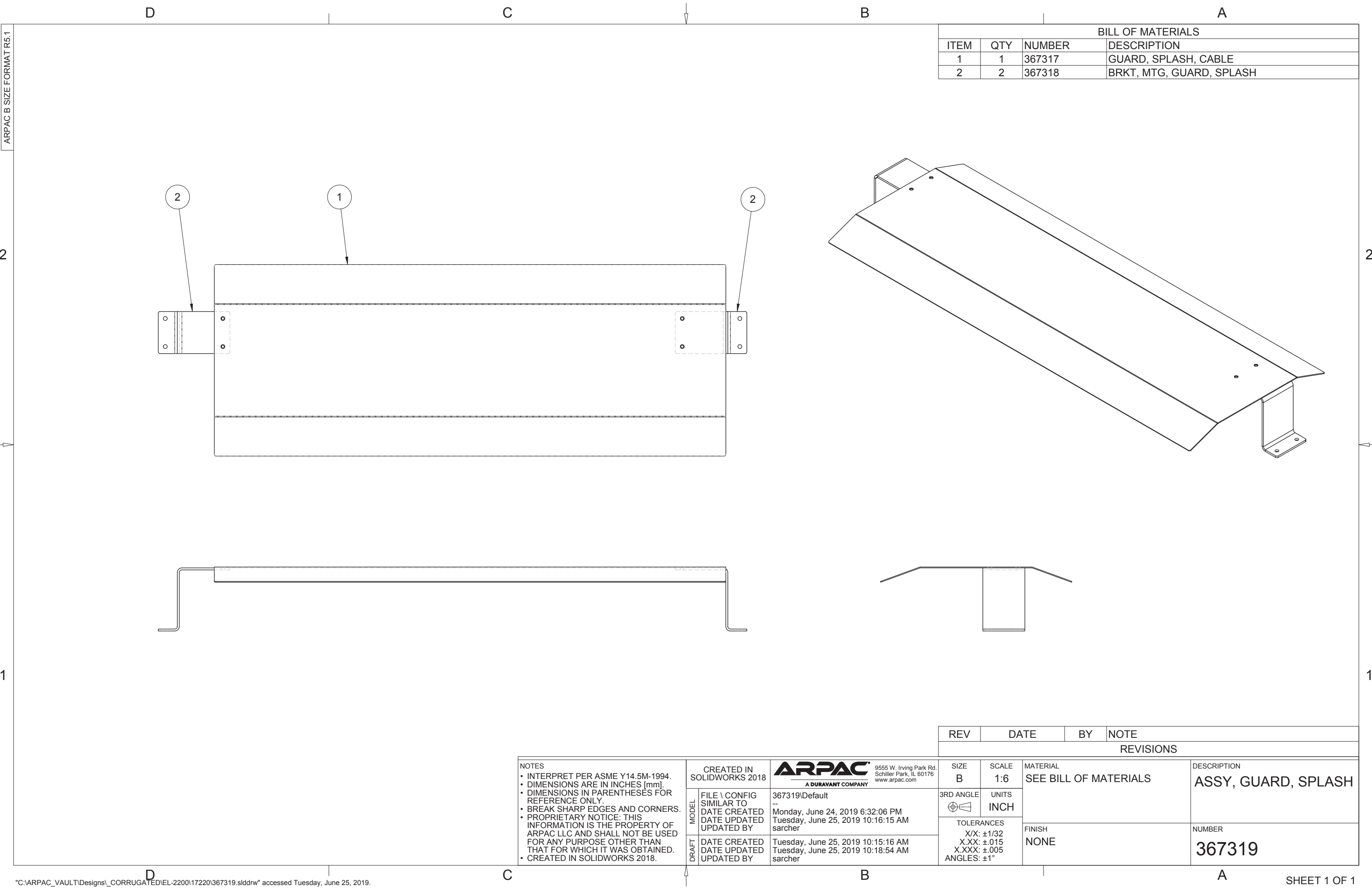
DRAWING NUMBER:

367309

Arpac BOM

Parent Number: 17220 Parent Revision: A
Description: ASSY, FINAL, MACH, EL-2200
Model:
Assembly Part Number: 367309
Assembly Drawing Number: 367309
Description: ASSY, GUIDE, POP-UP, 4-LANE, 2.25 DIA PROD
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	4.00	186781	PIVOT, SIDE
2	8.00	197925-010	SPACER, LANE, POPUP, L=2.419 CHANGE PART
3	10.00	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	5.00	215217	GUIDE, POPUP, SS
10	1.00	365128	PLT, DEAD, GUIDE, POP-UP, 4-LANE. 2.25 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	825362-001	VALVE, CONTROL, FLOW, 1/8 NPT X 1/4 TUBE 90DEG, NUMERIC INDICATOR, MTR OU
19	1.00	367307	COVER, PLT, DEAD, GUIDE, POP-UP



ARPAC B SIZE FORMAT R5.1

BILL OF MATERIALS			
ITEM	QTY	NUMBER	DESCRIPTION
1	1	367317	GUARD, SPLASH, CABLE
2	2	367318	BRKT, MTG, GUARD, SPLASH

REV	DATE	BY	NOTE
REVISIONS			
SIZE	SCALE	MATERIAL	DESCRIPTION
B	1:6	SEE BILL OF MATERIALS	ASSY, GUARD, SPLASH
3RD ANGLE	UNITS	FINISH	NUMBER
	INCH	NONE	367319
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 2018.		CREATED IN SOLIDWORKS 2018		 A DURAVANT COMPANY 9555 W. Irving Park Rd. Schiller Park, IL 60176 www.arpac.com
		MODEL	FILE \ CONFIG SIMILAR TO DATE CREATED DATE UPDATED DATE UPDATED BY	
		DRAFT	DATE CREATED DATE UPDATED DATE UPDATED BY	
			367319\Default	
			Monday, June 24, 2019 6:32:06 PM	
			Tuesday, June 25, 2019 10:16:15 AM	
			sarcher	
			Tuesday, June 25, 2019 10:15:16 AM	
			Tuesday, June 25, 2019 10:18:54 AM	
			sarcher	

Arpac BOM

Parent Number: 17220 Parent Revision: A
Description: ASSY, FINAL, MACH, EL-2200
Model:

Assembly Part Number: 367319
Assembly Drawing Number: 367319
Description: ASSY, GUARD, SPLASH
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	367317	GUARD, SPLASH, CABLE
2	2.00	367318	BRKT, MTG, GUARD, SPLASH

ARPAC B SIZE FORMAT R5.1

2

1

D

C

B

A

BILL OF MATERIALS			
ITEM	QTY	NUMBER	DESCRIPTION
1	1	367314	PANEL, MTG, BANK, SOLENOID
2	1	367315	COVER, BANK, SOLENOID

NOTE: ITEMS 3, 4, AND 5 NOT SHOWN

REV	DATE	BY	NOTE
REVISIONS			

NOTES	CREATED IN SOLIDWORKS 2018		ARPAC A DURAVANT COMPANY	9555 W. Irving Park Rd. Schiller Park, IL 60176 www.arpac.com	SIZE	SCALE	MATERIAL SEE BILL OF MATERIALS	DESCRIPTION ASSY, COVER, BANK, SOLENOID
	MODEL	FILE \ CONFIG SIMILAR TO DATE CREATED DATE UPDATED UPDATED BY			367316\Default -- Monday, June 24, 2019 3:53:29 PM Monday, June 24, 2019 4:49:52 PM sarcher	3RD ANGLE		
DRAFT	DATE CREATED	Monday, June 24, 2019 4:18:35 PM	TOLERANCES X/X: ±1/32 X.XX: ±.015 X.XXX: ±.005 ANGLES: ±1°	FINISH NONE	NUMBER 367316			
	DATE UPDATED	Monday, June 24, 2019 4:49:52 PM						

"C:\ARPAC_VAULT\Designs\CORRUGATED\EL-2200\17220\367316.slddrw" accessed Monday, June 24, 2019.

D

C

B

A

SHEET 1 OF 1

Arpac BOM

Parent Number: 17220 Parent Revision: A

Description: ASSY, FINAL, MACH, EL-2200

Model:

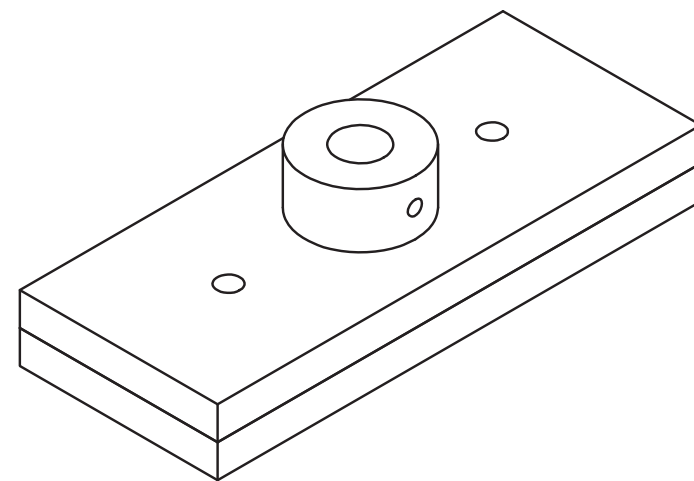
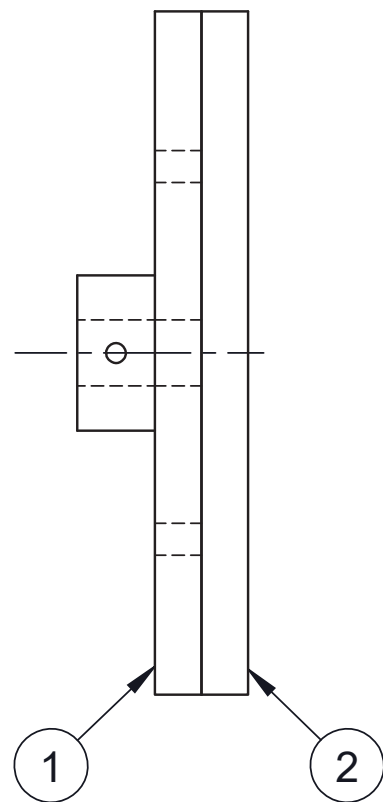
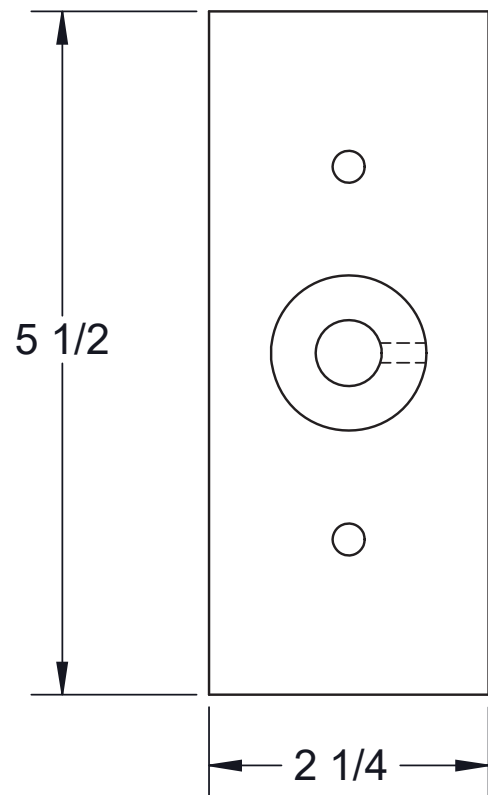
Assembly Part Number: 367316

Assembly Drawing Number: 367316

Description: ASSY, COVER, BANK, SOLENOID

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	367314	PANEL, MTG, BANK, SOLENOID
2	1.00	367315	COVER, BANK, SOLENOID
3	20.00	870503	GROMMET, 1/4" ID, 5/8" OD, 3/16" PANEL THK, 7/16" HOLE, BUNA-N
4	3.00	870504	GROMMET, 3/8" ID, 7/8" OD, 3/16" PANEL THK, 5/8" HOLE, BUNA-N
5	2.00	870505	GROMMET, 1/2" ID, 1 1/16" OD, 3/16" PANEL THK, 13/16" HOLE, BUNA-N



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

316363-100	316362-100
316363	316362
ITEM 1	P/N

FINISH- NONE

2	1	803375	RUBBER, SPONGE SILICONE SH 3/8 X 36 X 36
1	1	316363	WLDMT, PLT, CLAMP, PRODUCT, 2-1/4 X 5-1/2
ITM	QTY	PART NUM	DESCRIPTION
BILL OF MATERIALS			
<i>ARPAC</i>		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:	11/04/15	BY:	JW
RELEASED:	11/4/15	FILENAME:	316362
DESCRIPTION: ASSY, CLAMP, STOP, PRODUCT			
			DRAWING NUMBER: 316362

Arpac BOM

Parent Number: 17220 Parent Revision: A
Description: ASSY, FINAL, MACH, EL-2200
Model:
Assembly Part Number: 316362
Assembly Drawing Number: 316362
Description: ASSY, CLAMP, STOP, PRODUCT, 2 1/4 X 5 1/2
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	316363	WLDMT, PLT, CLAMP, PRODUCT, 2 1/4 X 5 1/2
2	0.01	803375	RUBBER, SPONGE SILICONE SH 3/8 X 36 X 36 (SEE COMMENTS)
3	0.75	900905	AL RND 1-1/4, 6061-T6511
4	5.63	900077	AL FLAT 3/8 X 3, 6061-T6511

Arpac BOM

Parent Number: 17220 Parent Revision: A

Description: ASSY, FINAL, MACH, EL-2200

Model:

Notes

This image shows a full page of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page, providing a template for writing. There are no margins, text, or other markings on the paper.

This image shows a full page of blank white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page, providing a template for writing or drawing. There are no margins, text, or other markings present.

Notes

[illegible]

Distributor Information

This product was manufactured by:

ARPAC

9555 Irving Park Rd.
Schiller Park, IL 60176 U.S.A.

(847) 678-9034

www.arpac.com

