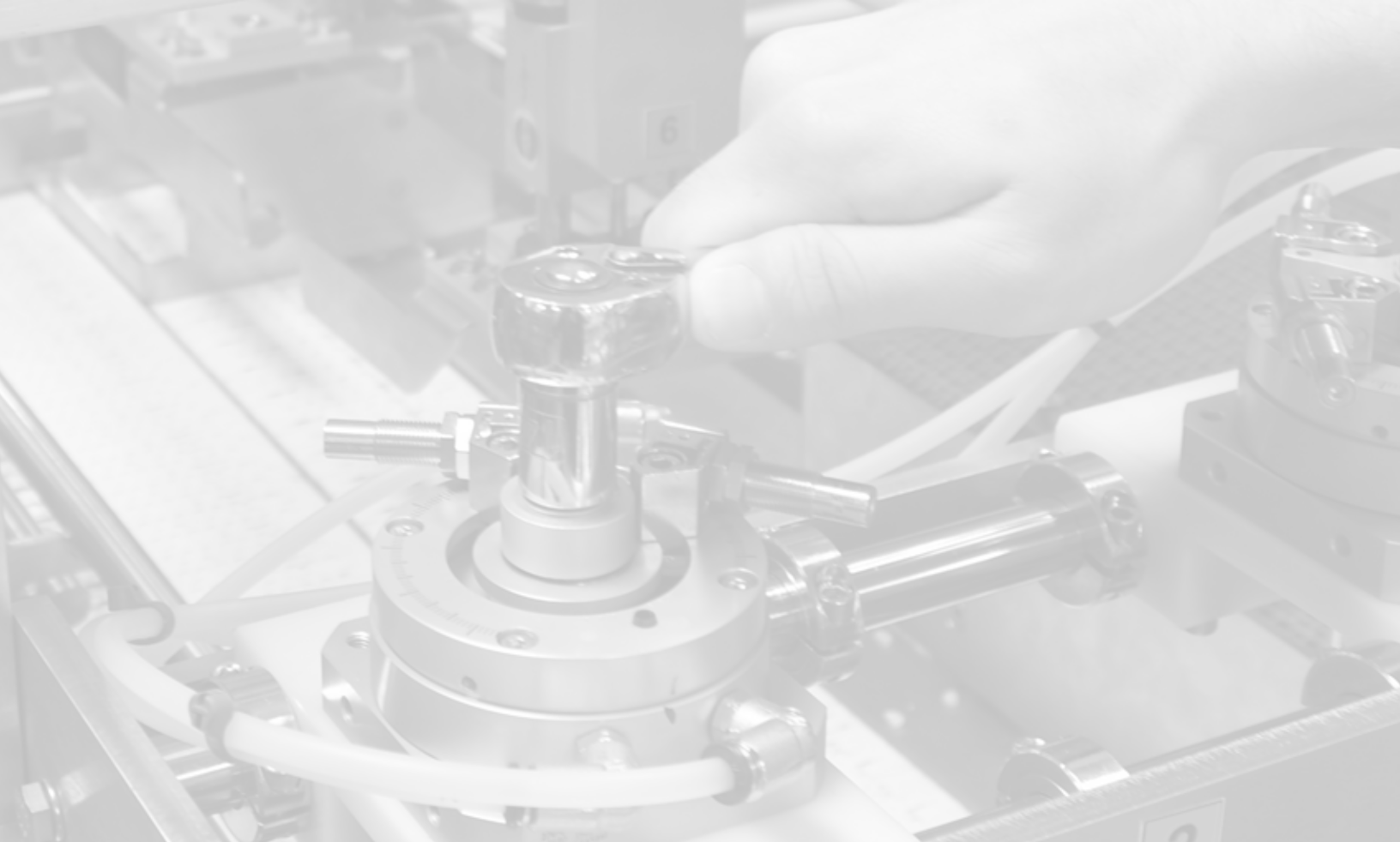




**OPERATION AND
MAINTENANCE**

MANUAL

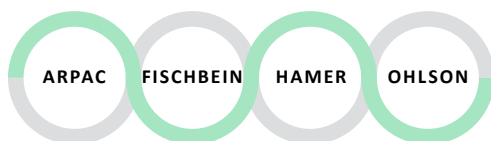
ARPAC BRAND

MODEL: TS-2200-104208

SN: 210057

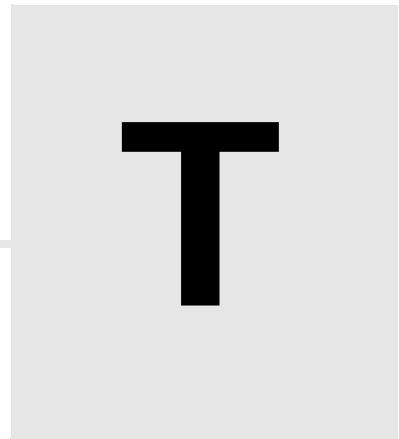
JOB: 222173-1-1

The nVenia
Family of
Brands



NVENIA
A DURAVANT COMPANY

Table of Contents



Prelude i - Record of Revision

Revision History	ii-1
Warranty Information	ii-1

Prelude ii - Project Layout & Specifications

ii 1.1 Overview	ii-1
ii 1.2 Layout	ii-2
ii 1.3 Project Specifications.....	ii-3

Chapter 1 - Introduction

1.1 Introduction	1-1
1.2 Using This Manual	1-2
1.2.1 Graphical Notations	1-2
1.2.2 Photo's & Illustrations	1-3
1.2.3 Manual Design & Layout	1-4
1.3 TrayStar™ Series Design Features	1-6
1.4 TrayStar™ Series Concept of Operations.	1-7

Chapter 2 - Safety

2.1 Safety	2-1
2.1.1 Statement of Liability	2-1
2.2 Safety Precautions	2-2
2.1.1 Interfacing Equipment	2-2
2.1.2 Dressing for Safety	2-2
2.1.3 Maintaining a Clean Work Area	2-2
2.3 Personnel Instructions (PPE)	2-3
2.4 Safety Labels	2-4
2.5 Energy Isolation Devices	2-5
2.5.1 Main Disconnect Switch	2-5
2.2.2 Emergency Stop Pushbuttons	2-6
2.5.3 Chain Guards & Guard Doors	2-8
2.5.4 Motor Disconnects (If Equipped)	2-9
2.6 Lockout / Tagout	2-10
2.6.1 Electrical LOTO	2-11
2.6.2 Pneumatic LOTO	2-12
2.6.3 Restoring Power	2-12

Chapter 3 - Mechanical Assemblies

3.1 Overview	3-1
3.2 Product Handling	3-5
3.2.1 In-feed Conveyor	3-5
3.2.2 Product Agitator & Min. Accumulation Sensor	3-9
3.2.3 Product Collator	3-11
3.2.4 Collator Escapement Flight Bars	3-14
3.2.5 Pacing Flight Bars	3-17

3.3 Tray Handling / Tray Forming	3-22
3.3.1 Extended Tray Magazine	3-22
3.3.2 Blank Feed Magazine	3-26
3.3.3 Lugged Blank Feed Conveyor	3-30
3.3.4 Tray Former Assemblies	3-32
3.3.5 Hot Melt System	3-36
3.3.6 Compression Section	3-37

Chapter 4 - Operator Controls

4.1 Main disconnect (Power On) Switch	4-1
4.2 Main Control Panel (Operator's Station)	4-2
4.2.1 HMI	4-2
4.2.2 Push Button Controls	4-3
4.2.3 Status Beacon Indicator	4-4
4.3 Blank Magazine Control Panel	4-5
4.4 HMI (Human Machine Interface)	4-6
4.4.1 Screen Layouts	4-7
4.4.2 Data Entry & Navigation	4-9
4.4.3 Security Levels	4-11
4.5 HMI Menu Groups	4-12
4.5.1 Overview Menu Group	4-12
4.5.2 Recipes Menu Group	4-14
4.5.3 Set Points Menu Group	4-16
4.5.4 Maintenance Menu group	4-18
4.5.5 Production Menu Group	4-23

4.6 Using the HMI	4-25
4.6.1 Logging In	4-25
4.6.2 Loading & Copying Recipes	4-26
4.6.3 Changing Values	4-28

Chapter 5 - Operating Procedures

5.1 Applying Power	5-1
5.2 Loading Consumables	5-3
5.2.1 Loading Blanks	5-3
5.3 Startup & Shutdown Procedures	5-4
5.3.1 Pre-Start Inspection	5-4
5.3.2 Power On	5-4
5.4 Putting the TrayStar™ Into Cycle ..	5-5
5.5 Stopping the TrayStar™	5-6
5.5.1 Performing an Emergency Stop	5-6
5.5.2 Stopping Under Normal Conditions	5-6
5.5.3 Short Term Shutdown	5-6
5.5.4 Long Term Shutdown	5-6
5.6 Clearing Jams	5-7
5.6.1 Identifying the Jam	5-7
5.6.2 Clearing	5-7
5.7 Resetting Torque Limiters	5-9

Chapter 6 - Troubleshooting

6.1 Overview	6-1
6.2 Fault Messages	6-2
6.3 Abnormal Running Conditions	6-8

Chapter 7 - Maintenance

7.1 PM Schedule	7-1
7.2 Daily Tasks	7-3
7.2.1 Work Around Safety Inspection ...	7-3
7.2.2 Cleaning External Surfaces	7-4
7.2.3 Check Emergency Stop Buttons ...	7-4
7.2.4 Inspect Vacuum Cup Filters	7-5
7.3 Weekly Tasks	7-6
7.3.1 Cleaning Photo-Eyes	7-6
7.3.1 Inspect Glue Guns & Hoses	7-6
7.4 Quarterly Tasks	7-7
7.4.1 Inspect & Clean Conveyor Belts ...	7-7
7.4.2 Clean & Lubricate Drive Chains ...	7-8
7.4.3 Inspect Compression Section Chain Tension	7-9
7.5 Bi-Annual	7-10
7.5.1 Check Fastners for Tightness	7-10
7.5.2 Inspect Gerarbox Seals	7-10
7.6 Chain & Bearing Maintenance	7-11
7.6.1 Chain Lubrication & Care	7-11
7.5.2 Bearing Lubrication & Care	7-11

Chapter 8 - Service / Support Information

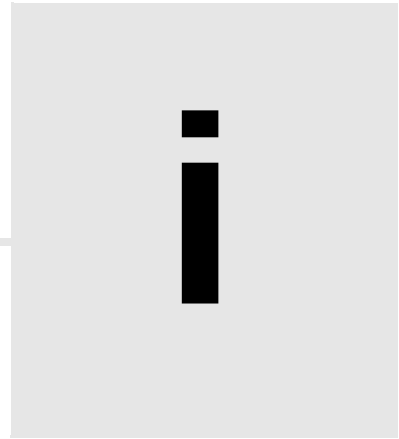
8.1 Service Information Introduction	8-1
8.2 Objective	8-1
8.3 Service Personnel	8-1
8.4 Training	8-1
8.5 ARPAC & SUPPORTPRO Commitment	8-2
8.6 Technician Scheduling	8-2
8.7 Installation Policy	8-2
8.8 The SUPPORTPRO Advantage	8-2

Appendix A - Illustrated Assembly Drawings and Mechanical BOM

Appendix B - Electrical Schematics

Appendix C - OEM Vendor Information CD

Record of Revision



i.1. Record of Revisions

i.1.1. Revision History

REV	Date	Reason for Change
A	Oct 2009	Original
B	Mar 2010	Series Update
C	Sep 2011	Series Update
D	Jul 2017	Series Update

Table i-1. Revision History

i.1.2. List of Affected Pages

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

Table i-2. List of Affected Pages



1

Introduction

1.1. Introduction

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

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

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

Corporate Office

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

ARPAC
9555 Irving Park Road
Schiller Park, IL 60176
www.arpac.com
847-678-9034

A Duravant Company

1.2. Using this Manual

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

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

1.2.1. 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

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

Non-Hazard Alerts



Indicates information considered important



Indicates detailed on complex or difficult procedures.



**Required
Tools**

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

1.2.2. Photo's & illustrations

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

NOTICE

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



Some photo's may show safety guarding and fencing removed for illustration purposes only.
Never operate equipment with safety devices damaged, removed or modified.

1.2.3. Manual Design & Layout

This manual is organized into the following sections:

#	Description	Comments
TOC	Table of Contents	The table of contents is the directory of this manual.
i	Prelude i	Record of Revisions
ii	Machine Layout Drawing & Spec Sheet	The layout and spec sheet provide machine specific information. Use this information to identify your machine's specific serial and model numbers.
iii	Warranty Statement	This section includes the equipment Warranty Statement.
1	Introduction	This section introduces the end user to Arpac, the equipment purchased. Explaining how to use the manual is also covered.
2	Safety	Describes the safety precautions that should be followed when working with, on or around the equipment.
3	Mechanical Sub-Assemblies	Identifies and describes the individual mechanical assemblies, their functions and how they interact.
4	Operator Controls	Explains the purpose and location of all the controls used to operate the machine, including detailed instructions on how to use the HMI.
5	Operating Procedures	This section is dedicated to the operator. It describes in detail step-by-step procedures for starting, stopping and operating the equipment including such operator functions as changeovers, if applicable.
6	Troubleshooting & Corrective Maintenance	This section was designed to help the operator and the maintenance personnel understand and resolve possible problems with the machine. Abnormal running conditions and error messages are covered in this section.
7	Preventive Maintenance	Explains the tasks maintenance personnel should do in order keep the machine in top running condition.
8	Glossary of Terms	This section contains words that pertain to the equipment, which the operator may not be familiar with.
9	Parts & Service Support Information	This section contains an overview of ARPAC's service. Included are a field service policy, installation policy and parts ordering information with an order form.
A1	Mechanical Assembly Drawings / Spare Parts Lists	The mechanical assembly drawings are the prints for all of the major assemblies on your machine with the complete mechanical bill of material.

#	Description	Comments
A2	Electrical Information	Included are electrical schematics and complete electrical bill of material.
A3	Installation Considerations	Installation of complex systems should only be performed by qualified personnel with heavy equipment rigging experience. This section provides considerations that should be taken into account for planning purposes. Step by step instruction are not included. For more information, contact our Technical Service Department.
A4	Vendor Information	Here you will find manufacturer's manuals for certain components.

1.3. Design Features of the TrayStar™ 2000 Series

ARPAC'S TrayStar™ 2000 Series continuous motion tray loaders make tray loading a variety of products fast and easy. The TrayStar™ line integrates tray erecting, product loading, and sealing, into one inline continuous motion packing machine. Wrap-around trays ensure that the product is tightly fit preventing scuffing and product damage.

ARPAC'S TrayStar™ 2000 Series collates a variety of product shapes and sizes, such as: bottles, cans, bundles and cartons or jars, and loads them onto a wrap-around tray at speeds ranging from 35 to 60 trays a minute. The machine features gentle product handling and loading and can be easily integrated with other equipment, including tray wrappers, turners and stackers.

- Continuous motion wrap-around tray former/loader
- Simple machine adjustments and quick change capabilities for fast product changeovers
- Speeds up to 60 trays per minute
- Heavy-duty rugged construction designed for durability and around-the-clock operation
- Laser cut and CNC machined components for maximum precision
- Baked on powder coat finish provides a durable scratch resistant surface and prevents corrosion
- Nordson ProBlue® hot melt glue unit for superior application flexibility and adhesion
- Rolling canopy guarding provides safe, easy access to the machines interior
- Allen-Bradley® programmable logic controller with ARPAC standard operator interface
- User-friendly ARPAC operator interface with message display and self diagnostics
- NEMA 12 electrical cabinet and controls
- Low blank alert
- Gentle product handling
- Central point lubrication simplifies periodic maintenance
- User-Friendly Operator Interfaces Rapid Changeover with Color Coded Spacers
- Product Grouper
- Folding Section
- Flight Bar Section

1.4. TrayStar™ 2000 Series Concept of Operation

The system operation begins when the product is transferred onto the In-feed conveyor and separated into lanes. The product is fed into the collator and arranged into the desired configuration. Product is then conveyed into the flight bar assembly and the configuration is pulled together with the aid of product guides.

Simultaneously, a tray blank is pulled by a vacuum pick off unit from a side mounted vertical hopper and transferred through pinch rollers to a blank lug conveyor located beneath the product flight bar assembly. The tray blank is advanced by a lug conveyor in sync with the product being pushed by flight bars. The product configuration is pushed by the flight bar onto the tray blank as both are entered into the tray pocket conveyor.

The blanks are then folded by the cam closing pocket conveyor around the product. The trailing edge minor flap is tucked into place by rotary fingers. The side flaps of the carton are lifted and held by guides while hot melt glue is applied by controlled applicators. Pressure is applied to the glue flaps by a horizontal compression section, and a tight, squarely formed tray exits the compression section.

TrayStar™ 2000 Series consists of mechanical assemblies, motion control devices such as air cylinders, servo motors, AC motors and VFD's (Variable Frequency Drives), a number of photo-cell and proximity sensors to detect and control the product throughout the process and a single PLC (Programmable Logic Controller) that integrates all of these components together. The Operator Control Station provides one centralized point to monitor and effect the performance of the machine.

Safety

2

2.1. 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.

2.1.1. *Statement of Liability*

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

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

2.2. Safety Precautions

2.2.1. Interfacing Equipment

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

2.2.2. Dressing for Safety

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

2.2.3. Maintaining a Clean Work Area

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

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

2.3. Personnel Instructions

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

PPE

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

Disconnect Power Before Servicing

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

Proper Cleaning Solvents

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

Keep Hands and Other Body Parts Clear

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

Ensure Safety Devices are Operational

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

Never Reach Into Equipment

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

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

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

2.4. Safety Labels

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



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

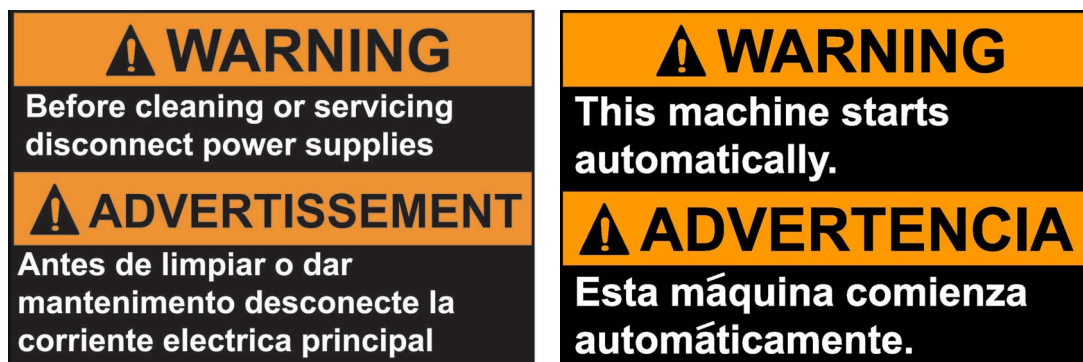


Figure 2-2 - Orange & Black labels indicate WARNING hazards



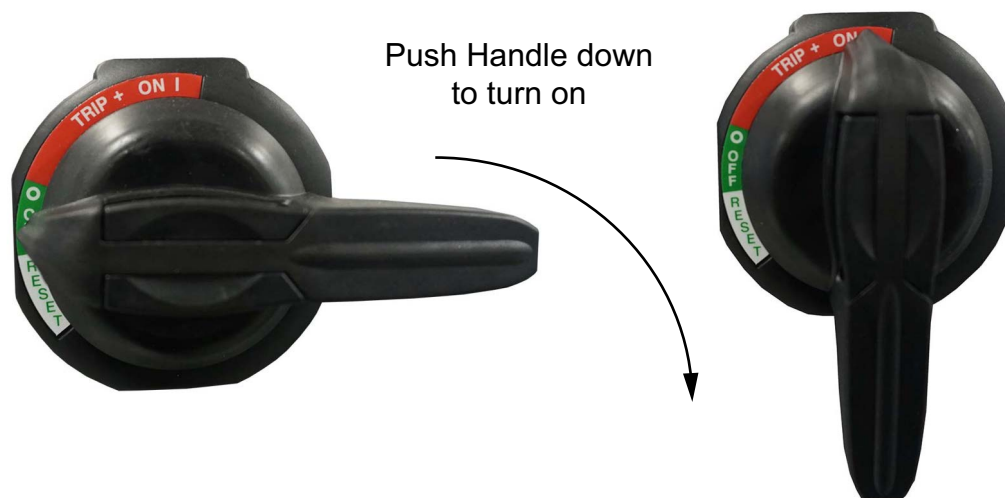
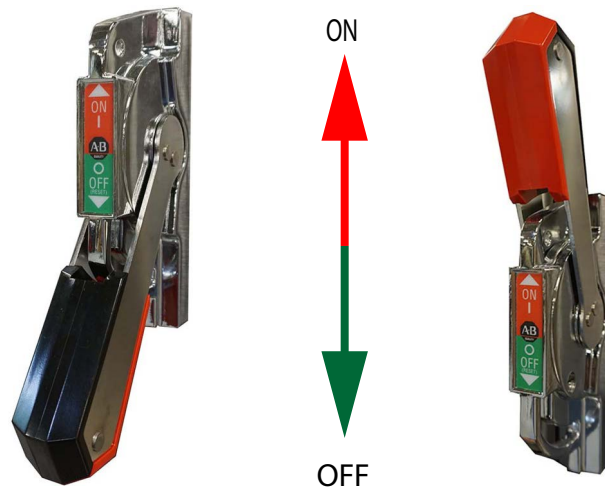
Figure 2-3 - Yellow & Black labels indicate a Caution hazardous situation

2.5. Energy Isolating Devices

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

2.5.1. Main Disconnect Switch

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



2.5.2. 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. Below is a map showing the typical locations of the E-Stops for this Series of equipment.

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.

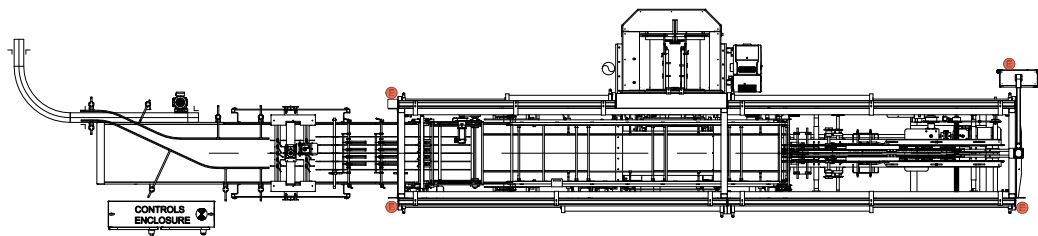


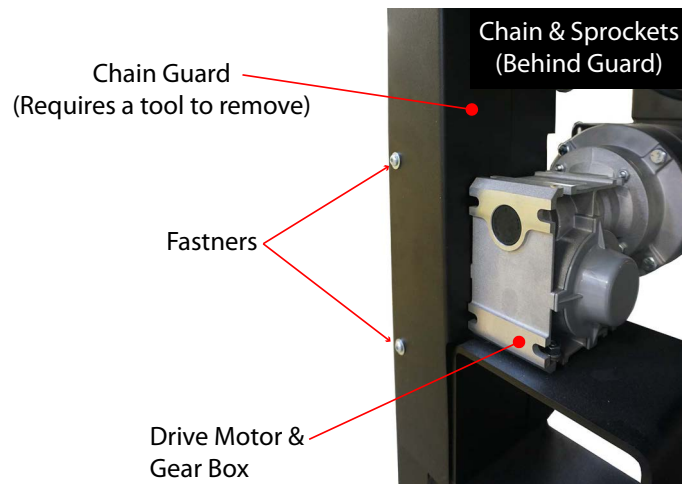
Figure 2-4 - Typical E-Stop Locations

2.5.3. Chain Guards and 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.



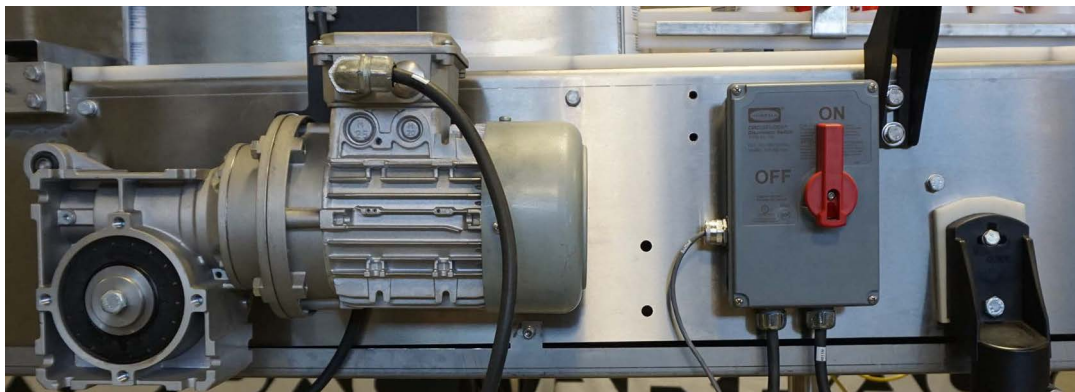
2.5.4. Motor Disconnects (If equipped)

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



Figure 2-5 - 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.



2.6. 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 2-6 - Typical LOTO Kit

2.6.1. Electrical LOTO

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

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

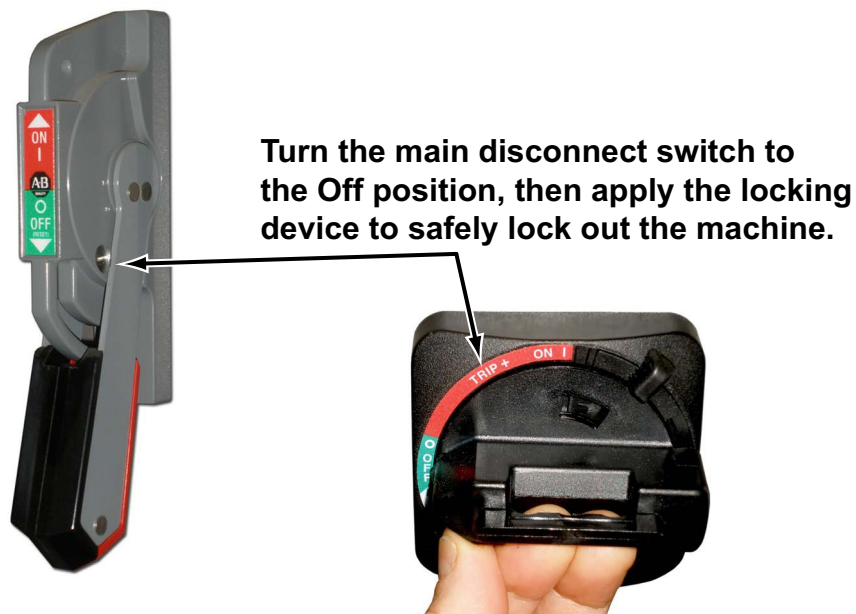


Figure 2-7 - Lockout/Tagout at Main Disconnect



Never assume power has been isolated. Always verify.

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

2.6.2. Pneumatic Lockout/Tagout

To lock out the air supply:

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

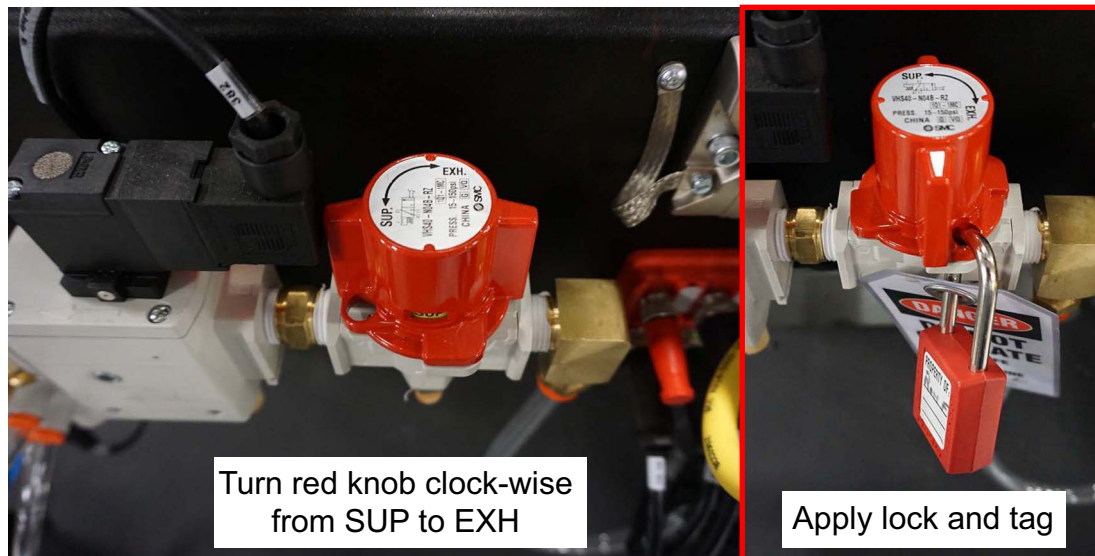


Figure 2-8 - Lockout/Tagout at Pneumatic Regulator

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

2.6.3. 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.

Mechanical Assemblies

3.1. Overview

nVenia's ARPAC Brand TrayStar Series is a high speed continuous motion tray packing machine. It's excellent flexibility, reliable performance and ease of use make it well suited to handle a wide range of product configurations and applications including: plastic bottles, cans, boxes, glass jars and more.

The TrayStar Series combines a number of mechanical assemblies to accept individual loose product from a customer's upstream processes and equipment and collates them into user defined configurations in order to place them in a cardboard trays.

This section identifies and explains the major assemblies and components of the equipment and how they work together.

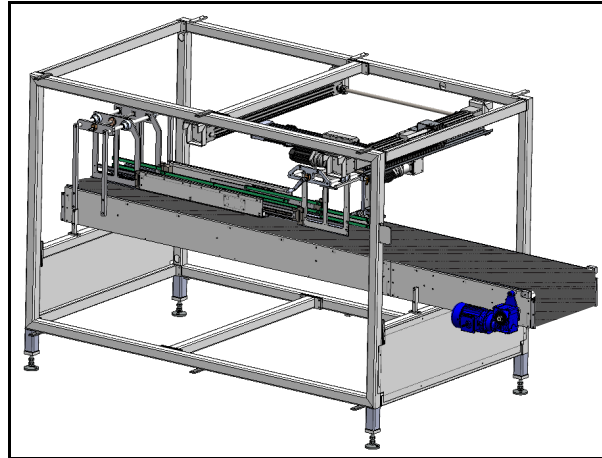


The Machine Controls and Operating Procedure sections of this manual - that explain how the TrayStar Series constantly monitors and controls the product throughout the process and how to operate the machine - also contain information related to these assemblies. Be sure to review those manual sections as well for a complete understanding.

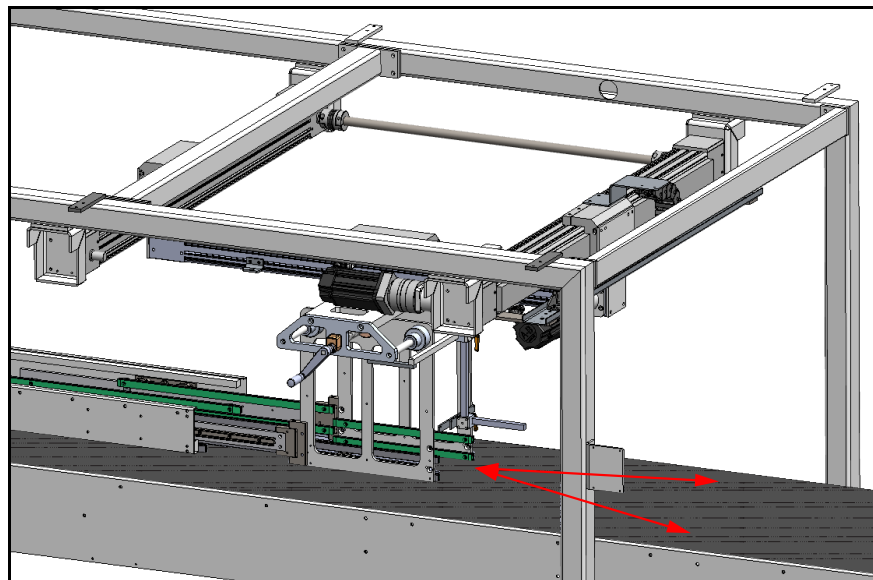
3.2. Product Handling / Delivery Group

3.2.1. Dynamic Lane Divider

This system includes a dynamic lane divider that receives product single file from an upstream process conveyor and distributes the product into two lanes.



The product guides of the linear slide are servo motor controlled for precision. As a slug of product conveys single file through the divider, the slide advances with the product while also sliding to one side to guide that slug into a lane. The slide then returns to its starting position and the process repeats to a different lane.



3.2.2. In-feed Conveyor

The In-feed conveyor receives the product from the customer's conveyor and advances it to the Collator so that the individual products can be configured to fit the tray.



- The In-feed conveyor is a vital part to the machine's consistent operation by providing constant control of the product as it is being configured. It consists of several assemblies designed to delivery product to the Collator assembly.

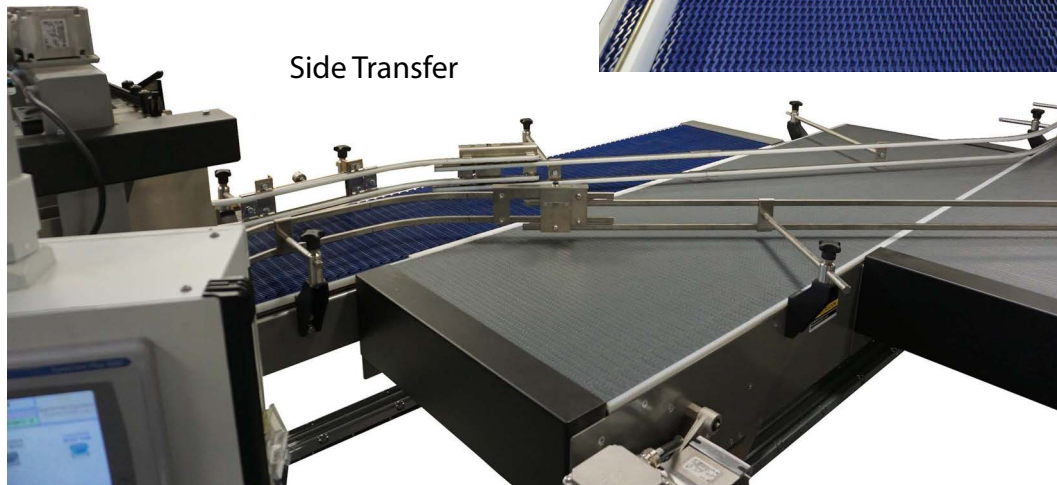
Mechanical Design Features



Divided Lanes



Flood Feed



Side Transfer

- Conveyor belting is typically modular plastic selected to fit the application.
- Conveyor configurations also vary depending on the application.
- Provided lane guides control product position as required.

Control Features - Independently Driven

#	SETPOINT	UNITS	VALUE	SAVE
	Infeed Conveyor Speed	%	100	

- The In-feed conveyor receives the signal from the PLC to start running once the *CYCLE START* push button is pressed, assuming the machine is in a “Ready To Run” state.
- Capable of sending a signal to upstream equipment (Upstream Interlock) about it’s status.

COLLATOR MODE: HALT

TRAYLOADER PURGE MODE

COLLATOR FLIGHT BAR TO PRODUCT POSITION

START INFEEED CONVEYOR

JOG COLLATOR FLIGHT BAR FORWARD

JOG COLLATOR FLIGHT BAR REVERSE

STOP INFEEED CONVEYOR

Low Blank Supply

OVERVIEW RECIPES SETPOINTS MAINTENANCE PRODUCTION DATA

Door #2 Open 00 hr 00 min 41 sec

- The In-feed push buttons provided on the *Machine Controls* screen in the HMI can be used to run the In-feed when the machine is NOT in cycle.

Control Features - Main Drive

ARPAC

SETPOINT MODIFY 1

RECIPE #5 select spicy vodka

8:02:13 AM 7/28/2017 SECURITY: 4

#	SETPOINT	UNITS	VALUE	SAVE
1	Machine Rate	PPM	50	
2	Product Length	0.01"	630	

Override All Interlocks Mode Selected

OVERVIEW RECIPES SETPOINTS MAINTENANCE PRODUCTION DATA

E-Stop #1 Pressed 00 hr 00 min 55 sec

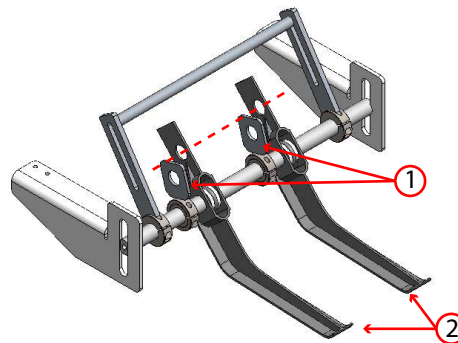
- The In-feed conveyor is driven via a gearbox arrangement that is part of the Main drive. When the PLC sends the signal to start running once the *CYCLE START* push button is pressed (assuming the machine is in a “Ready To Run” state) the blue belt that runs from the start of the equipment to the dead plate comes up to speed. Speed is determined by the PLC, based off the user defined parameters shown above.

Related Sensors

The In-feed conveyor has multiple product sensors to control the flow of product.



- **Accumulation Sensors** - Shown above is a “Maximum” accumulation sensor. When product accumulates on the In-feed to the point where there is sufficient back pressure for the collator to function properly, it will push against a cantilevered L-shaped metal plate (1). When the plate pushes back far enough, it energizes a proximity switch (2) that sends a signal to the PLC that product is in position. The counter weight (3) returns the plate back to its original position when no product is present.



- Often, a “Fallen Product” sensor is included. The beam (dotted line) from a photo-eye mounted to the assembly (1) is interrupted if a product falls over when one the fingers (2) to drops.

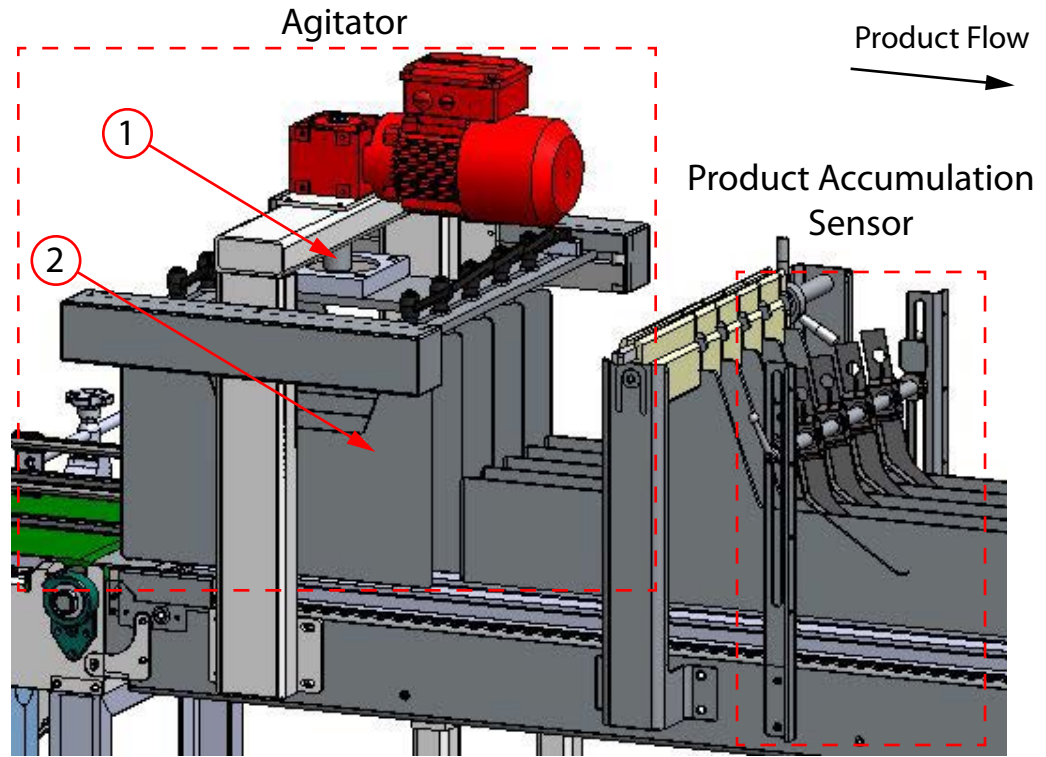
3.2.3. Product Agitator (If Equipped) & Minimum Accumulation Sensor

An oscillating Product Agitator, if required, 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. When enough product accumulates on the In-feed to create sufficient back-pressure at the Collator, the Product Accumulation Sensor is made.

Mechanical Design Features



- A cam assembly connected to the motor (1) creates the oscillation of the set of plates (2).
- Tool less kip handles are provided for adjustment and quick changeovers.

Control Functions

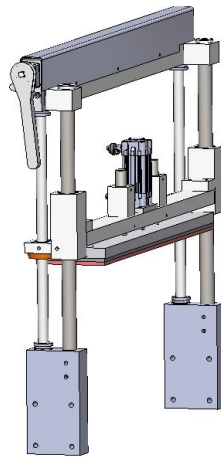
- Product flows from the agitator in their respective lanes past another sensor called the Product Accumulation sensor. This sensor sends a signal to the PLC that the lanes are properly filled in order for there to be the correct amount of back pressure at the Collator. The machine will not release product at the collator unless this sensor is made.

3.2.4. Product Collator Clamp

Creation of bundles is done at the Product Collator Clamp. Full lanes of product presented to the Collator are grouped together and released to the Collator Escapement Flight Bar assembly.



Mechanical Design Features

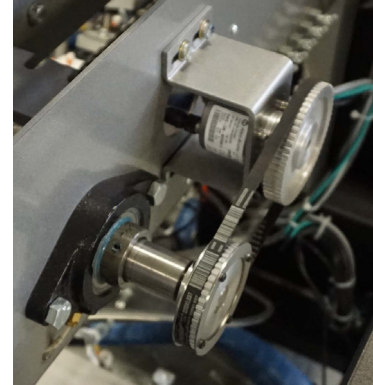
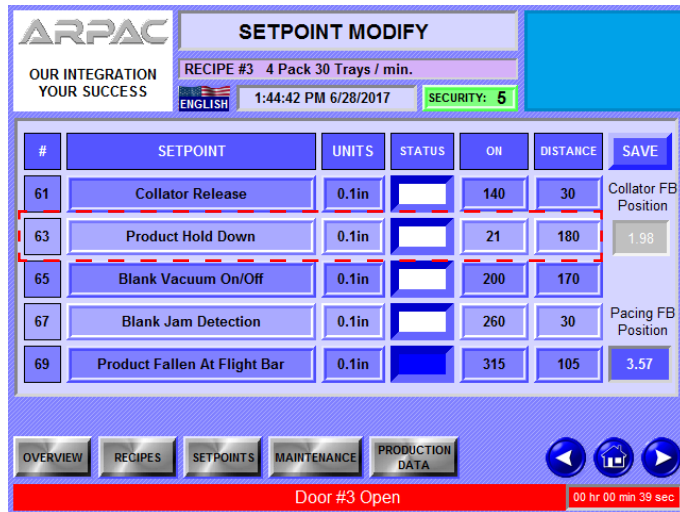


- Silicone sponge pad covers the clamp to prevent damage to product.
- Air operated



- Height adjustment screw with ratchet

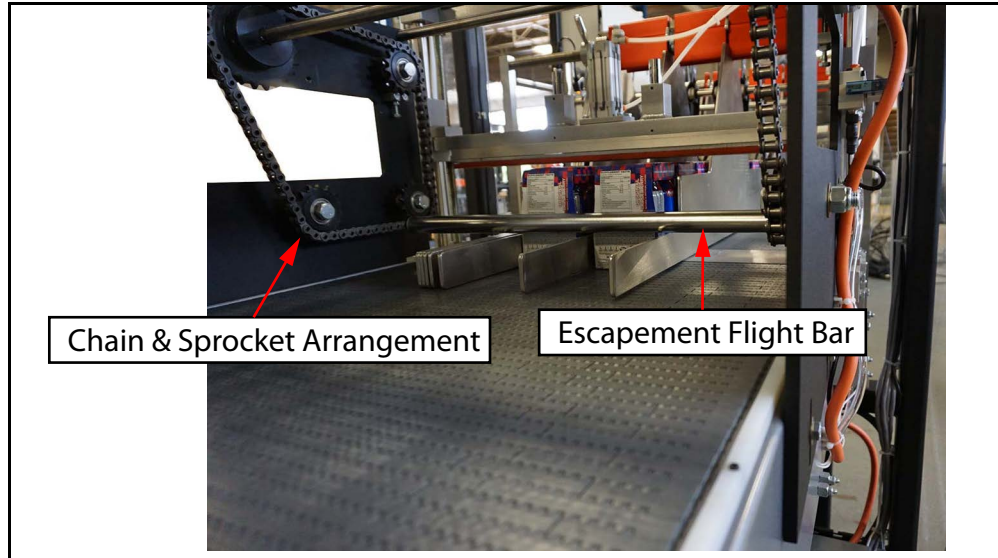
Control Functions



- Lifting and lowering of the clamp is control by user defined inputs. From the HMI, an operator can determine when the clamp turns ON and for how long, based off pulses from the Encoder.

3.2.5. Collator Escapement Flight Bars

The Collator Escapement Flight Bars collate and release the product, now formed into “groups” to the Pacing Flight Bars. As the Escapement Flight Bar rotates, the Clamps retract long enough to allow the required number of rows to be released to the Escapement.



Mechanical Design Features

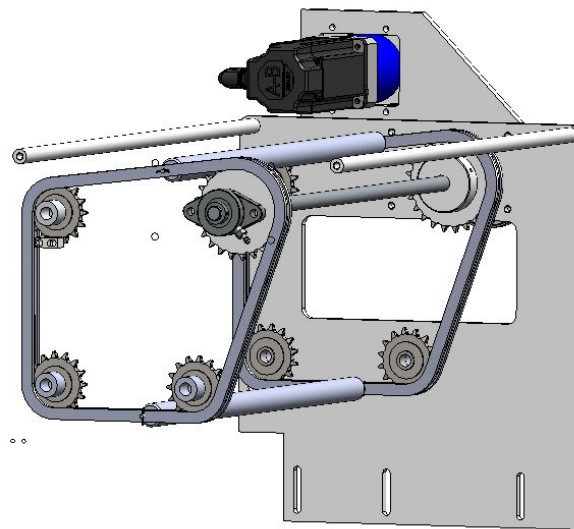
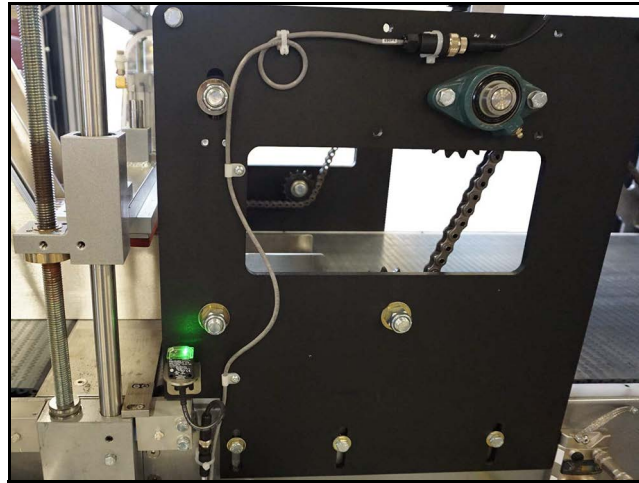


Figure 3-1 - Escapement Flight Bar Assembly (shown with side plate removed)

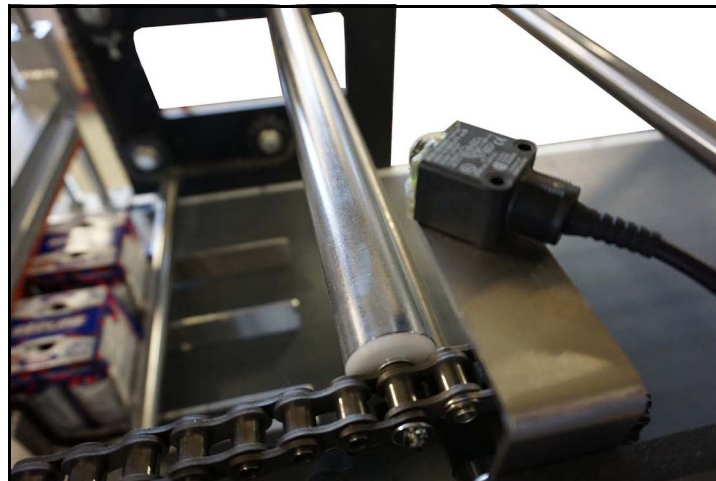
- Servo motor driven flight bars connected via a chain and sprocket arrangement.

Control Functions

The timing is determined by the encoder. After a predetermined number of pulses and timed with the Pacing Flight Bars immediately following the Escapement, the Escapement Flight Bars rotate for “X” # of pulses. As the Escapement Flight Bar rotates, the Clamps retract long enough to allow the required number of rows to be released to the Escapement.



- The Collator Flight Bar Clear PE located at the upstream end of the assembly is used to ensure the flight bars are clear.



- Photo eye that is used to determine the Escapement flight Bars “home” and “off set” positions.



OUR INTEGRATION
YOUR SUCCESS

SETPOINT MODIFY

RECIPE #3 4 Pack 30 Trays / min.

 ENGLISH
 1:43:32 PM 6/28/2017
 SECURITY: 5

#	SETPOINT	UNITS	VALUE	SAVE
2	Collator Flight Bar Product Position	0.1"	20	Collator FB Position 1.98
3	Collator Flight Bar Release Speed	%	150	
4	Collator Flight Bar Release Speed Distance	0.1"	0	
5	Collator Flight Bar Finishing Speed	%	1600	
10	Collator Flight Bar Clear		18	

- The *Collator Flight Bar Product Position* parameter, also referred to as the “Off-set” position, sets the starting position of the escapement flight bars.
- The *Collator Flight Bar Release Speed* determines how fast the escapement flight bars move during the RELEASE portion.
- The *Collator Flight Bar Release Speed Distance* determines how long the escapement flight bars run at the release speed.
- The *Collator Flight Bar Finishing Speed* determines how fast the escapement flight bars move during the FINISHING portion.
- The *Collator Flight Bar Clear* parameter set the window for when the PLC looks to make sure product is clear of the escapement flight bars to prevent a jam.

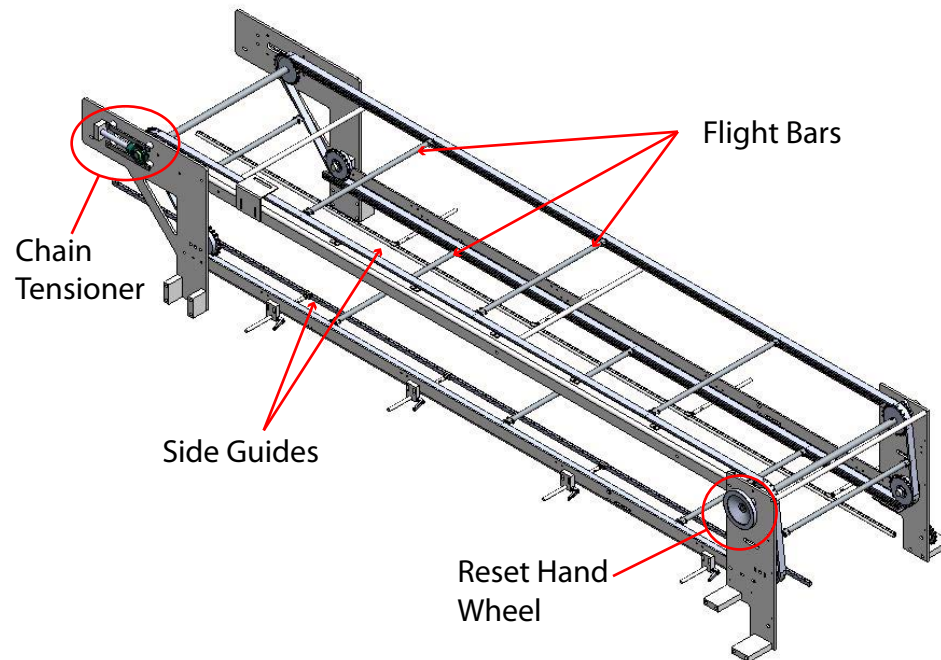
3.2.6. Pacing Flight Bars

Product released by the Collator Escapement enters the Pacing Flight Bar area where the flight bars drop down behind them.

The pacing flight bar assembly is used to square the collated products and move them across a transfer plate and onto a tray blank at the beginning of the tray-forming conveyor.



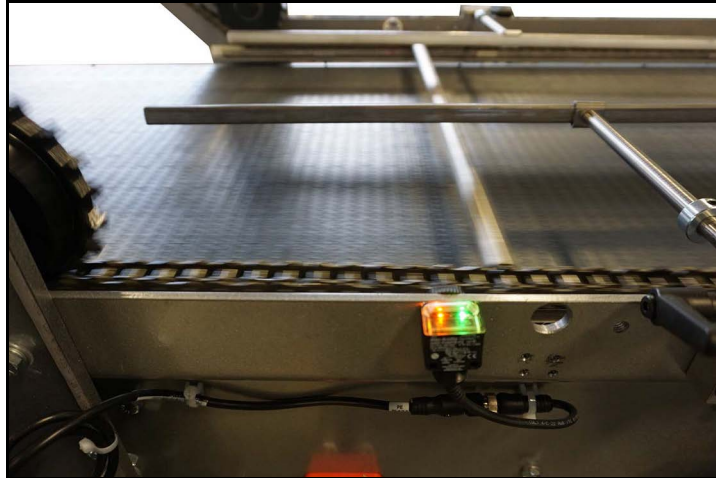
Mechanical Design Feature



- The flight bars are specifically spaced bars driven by a chain and sprocket arrangement, attached to the main drive.
- The flight bars travel slightly faster than the conveyor belt therefore squaring the product group front to back.
- Side guides are used to hold the product square side to side as the flight bars move the product over a dead plate and onto a tray blank entering the main tray-forming conveyor. This ensures the product driven by the pacing flight bars correctly merge with an emerging tray blank from the blank lug conveyor.
- The pacing flight bars are equipped with a single point engagement torque limiter that operates a proximity switch that stops the machine if tripped.
- The flights bars must be manually advanced to reset the torque limiter if it trips.

Control Functions

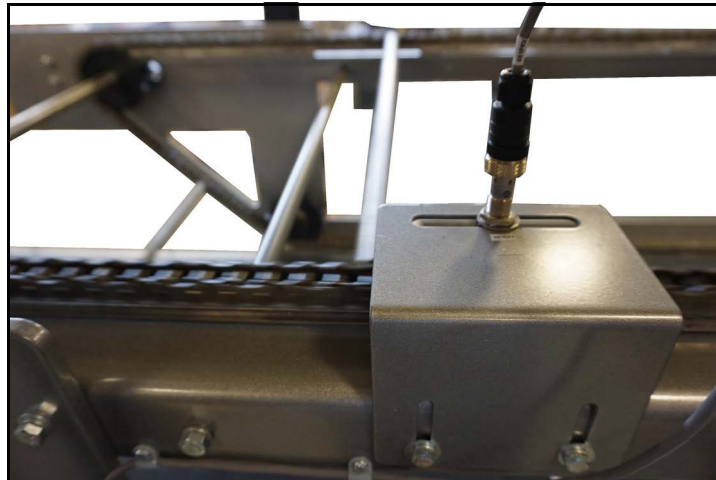
- The pacing flight bars begin moving when the machine is put into cycle.
- Timing of a flight bar making contact with the product group should be just prior to the product making it to the dead plate.



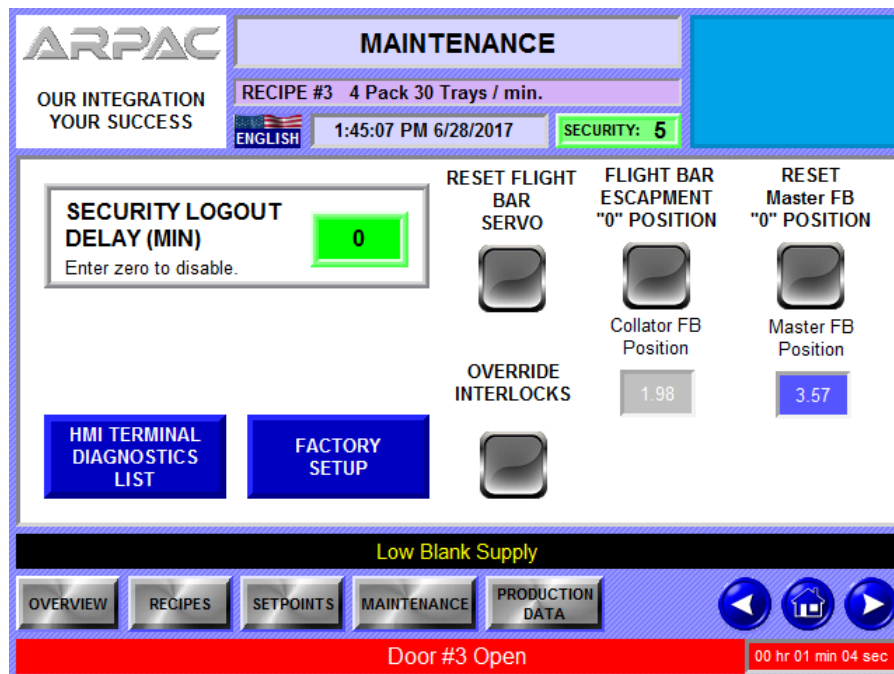
- Photo eyes mounted above the dead plate area detect product and initiate the tray blank feed. This ensures the product driven by the pacing flight bars correctly merge with an emerging tray blank from the blank lug conveyor.



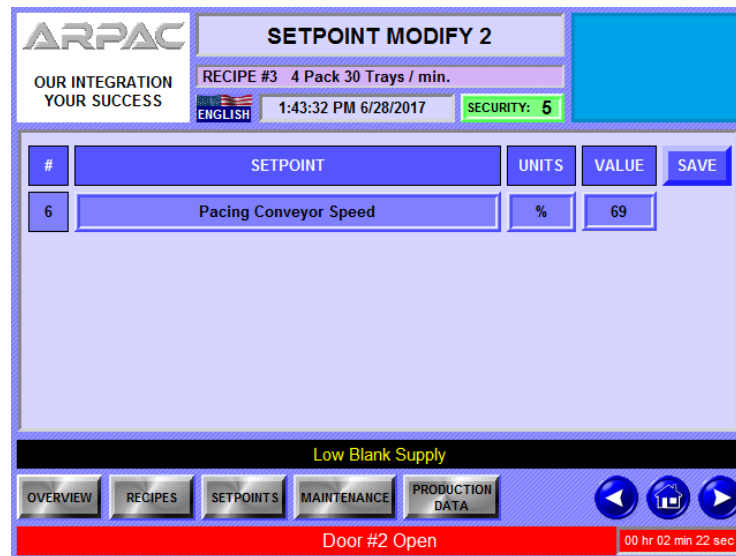
- The photo eye location at the down stream end, near the dead plate, looks for fallen product, based of the user defined “window” entered in the HMI.



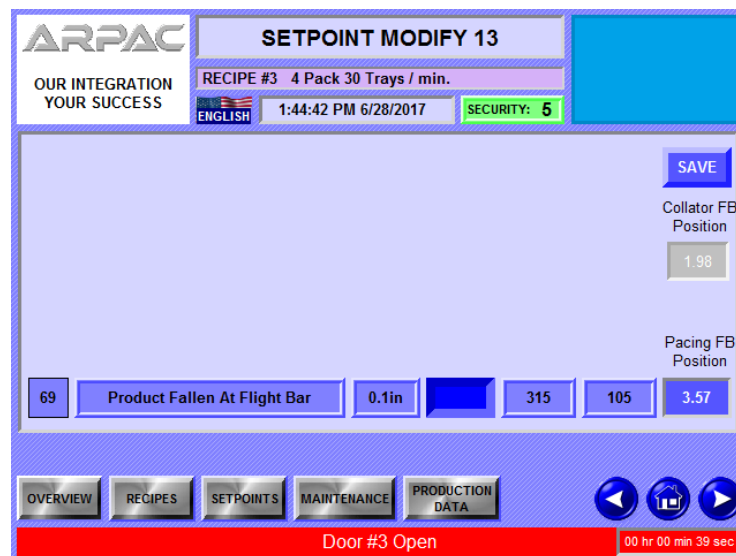
- The proximity switch located at the top of the upstream end is used to zero the Pacing flight bars.



- A Set Point Modify screen accessed from the Maintenance screens of the HMI allow for resetting the flight bars zero position.



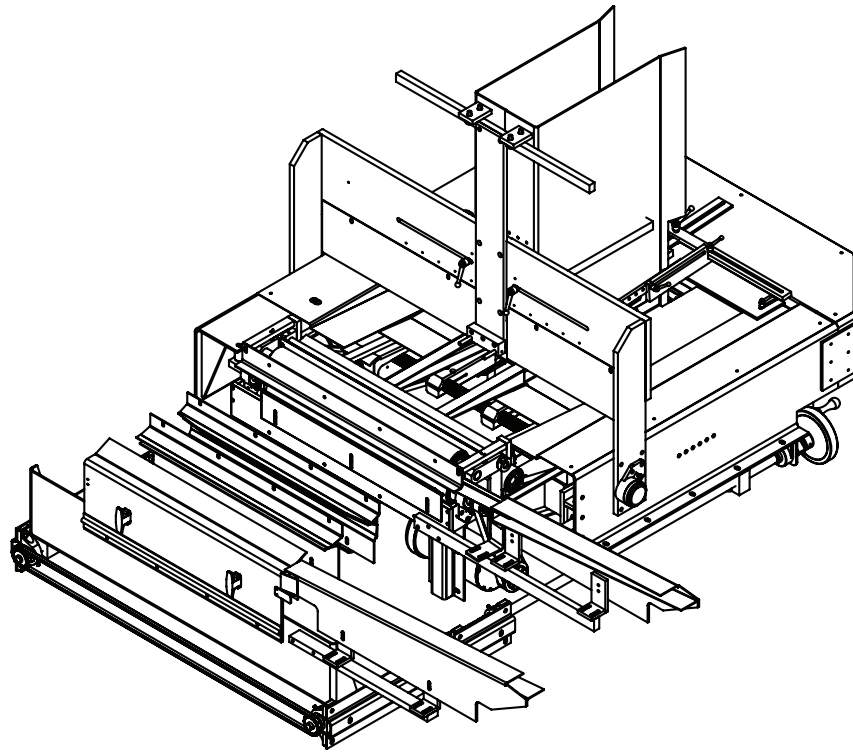
- For machines with an independently driven Pacing Conveyor, the speed of the is set as a % of the Main Drive speed.



- The window for when the PLC looks for fallen product on the Pacing Flight Bar Conveyor is set in one of the MAINTENANCE screens in the HMI.

3.3. Tray Handling / Delivery & Forming Group

The machine has a blank magazine storage assembly and blank feeding assemblies that store and feed corrugate sheets called blanks to the compression section.

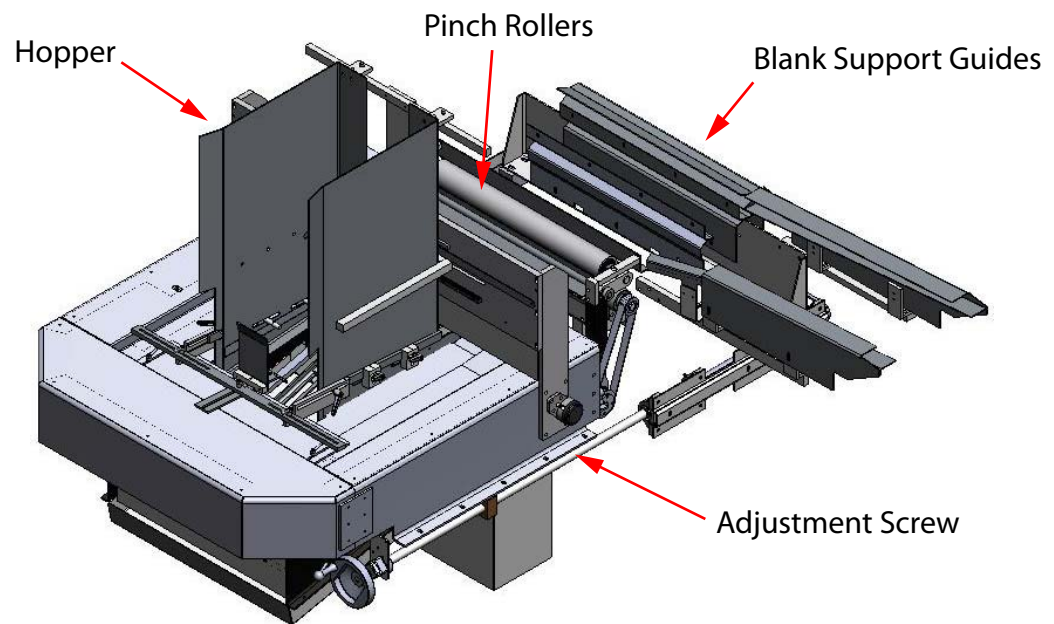


3.3.1. Blank Magazine

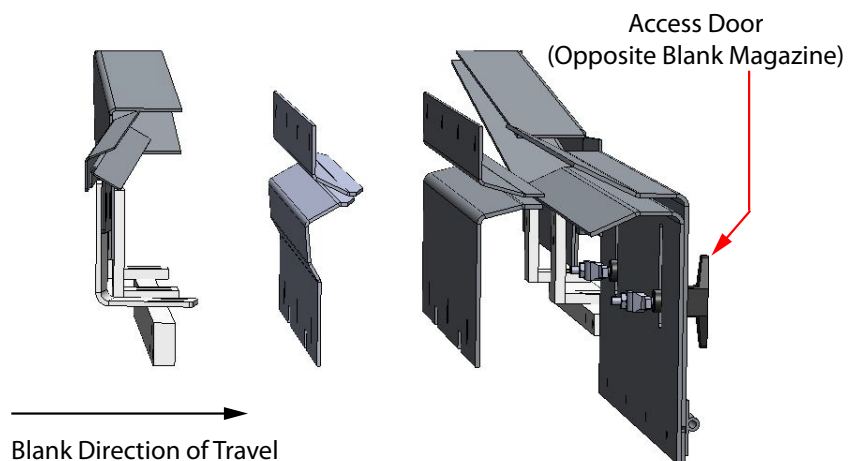
The Blank Feed Magazine is positioned at a right angle to the machine, directly across from the Pacing Flight Bar assembly.



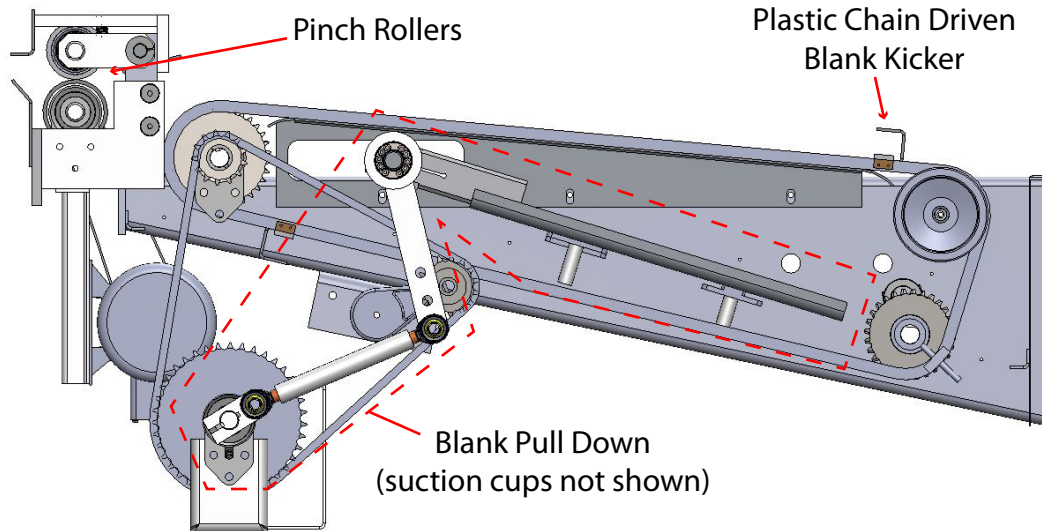
Mechanical Design Feature



- Two assembled “L” shaped stainless steel plates form a vertical chute, referred to as the “Hopper”. The magazine will hold approximately 200 (1/8” thick) tray blanks.
- Adjustable supports at the bottom of the magazine hold the column of tray blanks and provide resistance for the blank vacuum pull down system located below the magazine.

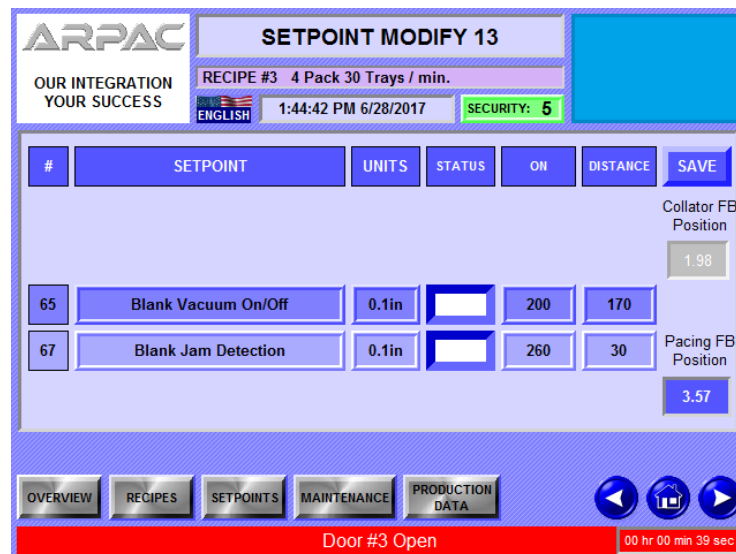


- Support Guides that follow the Pinch Rollers position the blank for the Lugged Blank Feed Conveyor.



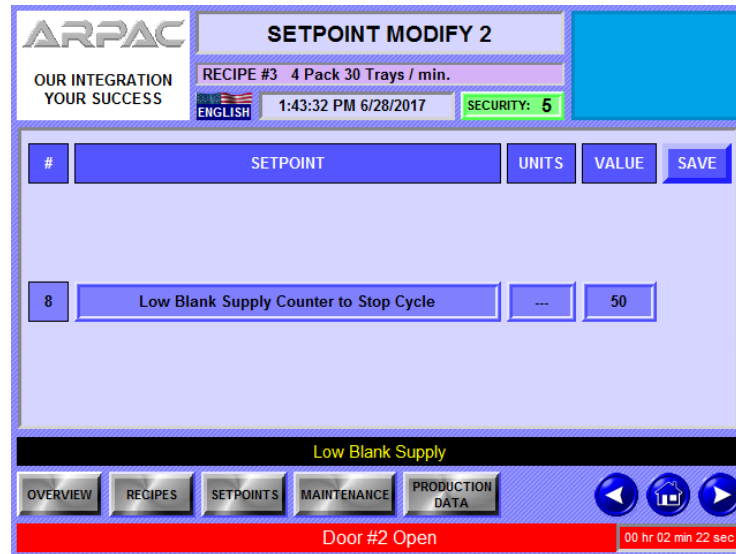
- The blank pull-down mechanism is located below the blank magazine. This mechanism pulls individual blank trays from the blank magazine and transfers them to the blank lug conveyor. Two vacuum cup arms attached to a spline shaft each hold two vacuum cup assemblies.

Control Functions



- Photo eyes located on the pacing flight bar conveyor detect the presence of product and send a signal to the PLC to start a timing sequence for the blank pull-down mechanism. As soon as the vacuum cup assembly has almost reached the blanks in the magazine, the vacuum suction is turned on. The cups then suction a blank, pulling it down toward the blank shelf. The suction

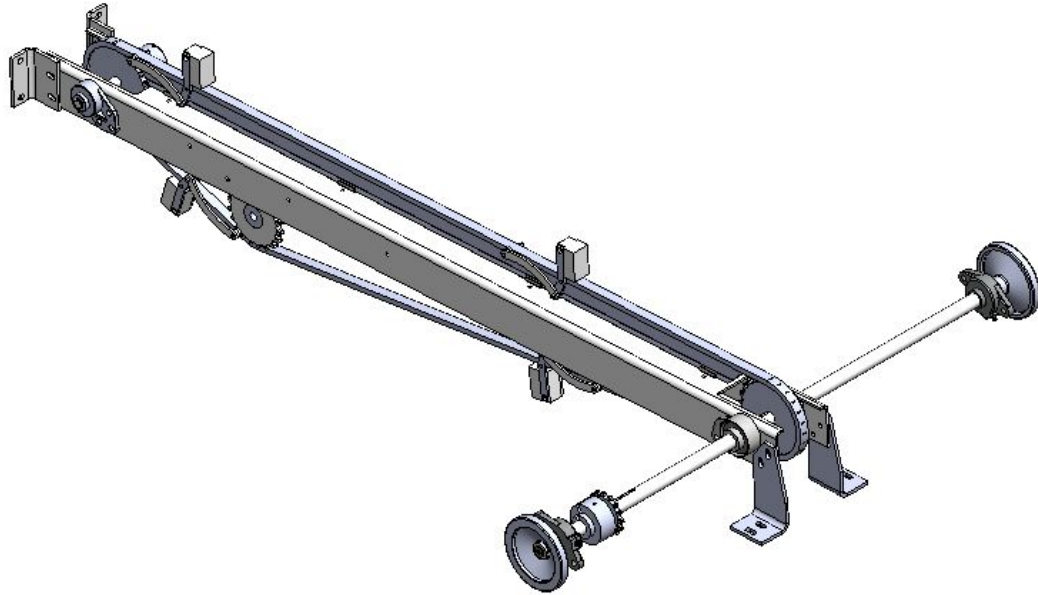
stays on until the blank and the arm is almost back to the home position. As the arm completes its cycle to the home position, the blank falls to the blank shelf where it is swept away by the blank ejector conveyor.



- A photo eye mounted to the magazine detects a low supply of blanks that sends a signal to the Extended Blank Magazine to feed another stack of blanks. An operator can set the number of cycles the machine will continue to run AFTER the PLC receives the signal from the Low Blank Detection PE.
- The blank pull down mechanism begins operating when the machine is put into the cycle start mode. The vacuum arms raise and lower whether or not a blank is present. This movement is mechanical in nature. Suction will only be generated if the product detect photo eye on the pacing flight bar assembly is tripped.

3.3.2. Lugged Blank Feed Conveyor

The blank lug conveyor is located below the pacing flight bar assembly. This conveyor is constantly driven by and timed off of the main drive. It extends from the blank pull-down mechanism to the exit end of the pacing flight bar assembly.



Mechanical Design Features

- Once the tray blank reach the end of the blank lug conveyor under the dead plate area, they are propelled out from below the dead plate area. Product being swept off the dead plate area by the pacing flight bars is merged with the tray blank as they meet at the beginning of the main tray-forming conveyor.

Control Functions

ARPAC **SETPOINT MODIFY 13**

OUR INTEGRATION
YOUR SUCCESS

RECIPE #3 4 Pack 30 Trays / min.

ENGLISH 1:44:42 PM 6/28/2017 SECURITY: 5

#	SETPOINT	UNITS	STATUS	ON	DISTANCE	SAVE
65	Blank Vacuum On/Off	0.1in		200	170	
67	Blank Jam Detection	0.1in		260	30	

Collator FB Position: 1.98

Pacing FB Position: 3.57

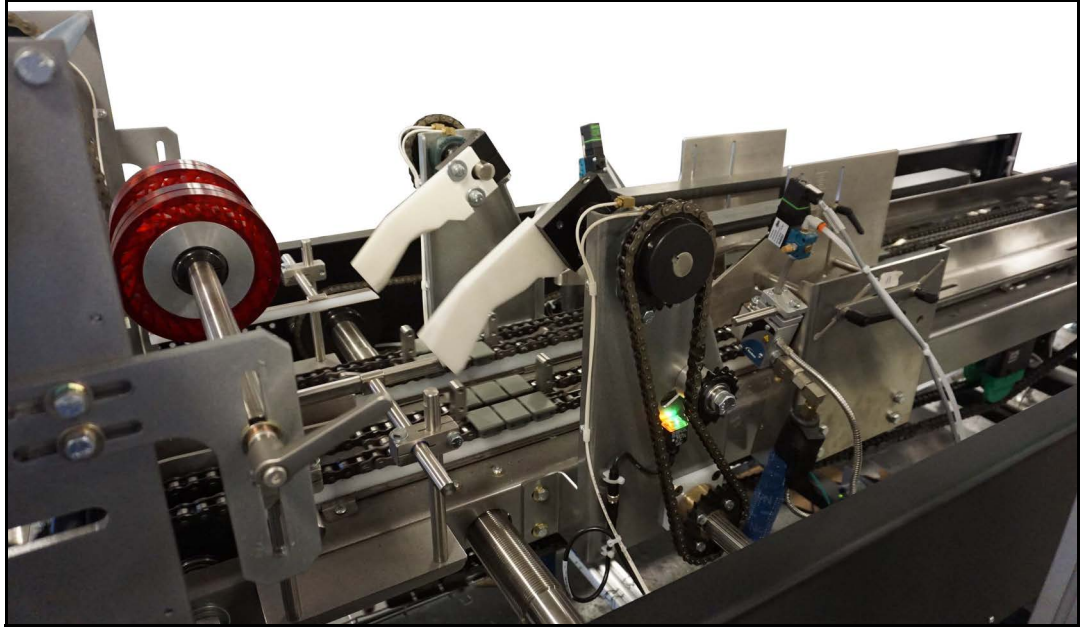
OVERVIEW RECIPES SETPOINTS MAINTENANCE PRODUCTION DATA

Door #3 Open 00 hr 00 min 39 sec

- Timing of feeding of blanks from the Blank Magazine via the pinch rollers is determined by the *Blank Vacuum On/off* “window” set in the HMI. Feeding a blank needs to be timed with the Lugged Blank Feed conveyor.

3.3.3. Tray Former Assemblies

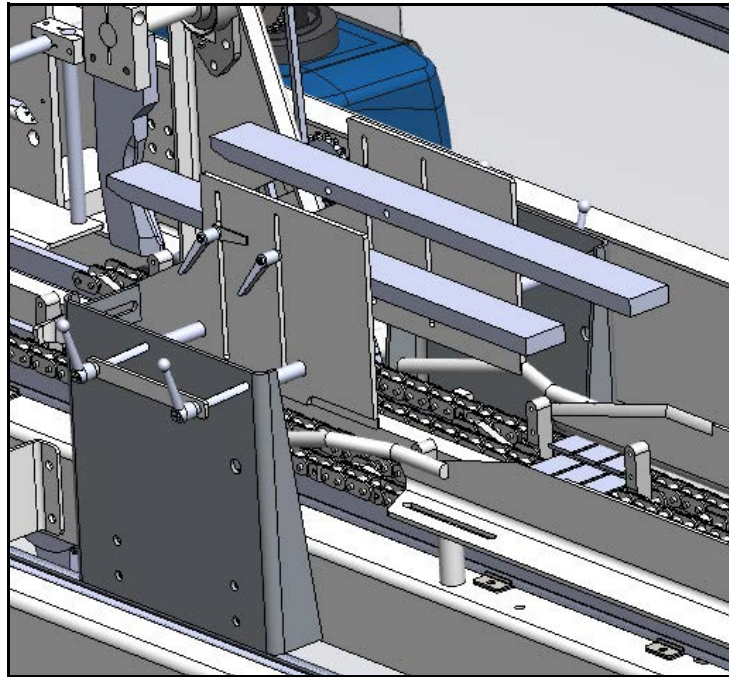
The Tray Forming conveyor and assemblies are located after the Pacing Flight Bar area and extend to the exit end of the machine. The main tray forming conveyor forms and glues the tray blank around the product.



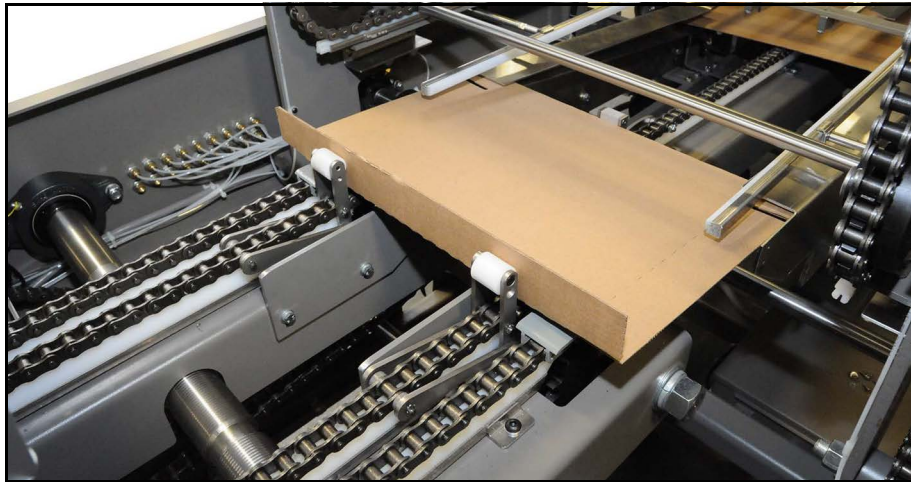
Mechanical Design Features

- The bundle and blank converge simultaneously after the Dead Plate. Here, the lugs on the Lug conveyor fold the long sides of the tray up as the bundle is slid onto the tray.

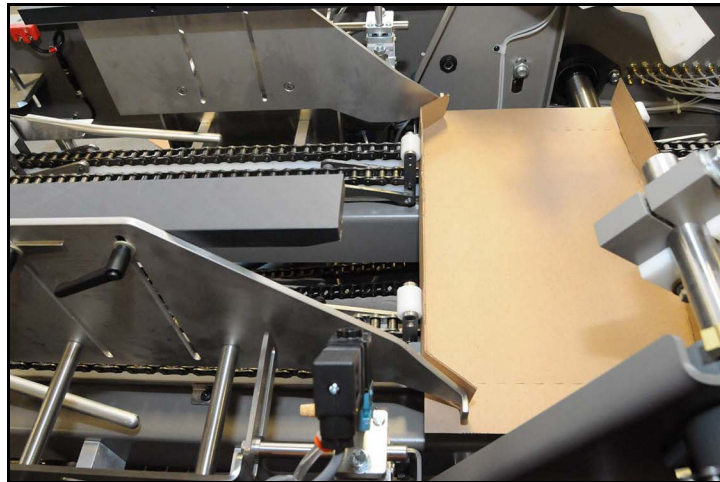
- Provided hold downs keep product on the tray blank.



- The loaded tray is advanced and the minor flaps are folded in. The tray is advanced further and a bead of glue is applied to all the minor flaps. The major flaps are then folded and pressed into the minor flaps.
- Four roller chain assemblies (left and right Leading Lug & left and right Trailing Lugs) form the pocket. Each roller chain has a set of articulated lugs mounted to the top of the chain. Two of the roller chains are positioned so the lugs are in a leading position and the other two chains are positioned in a trailing position. This chain and lug configuration holds the product and trays in place as the assembly folds and glues the tray. The distance between lugs can be adjusted to accommodate different size trays.



- At the point where product and blank merge on the main tray-forming conveyor, the flap of the tray's leading edge is folded up.



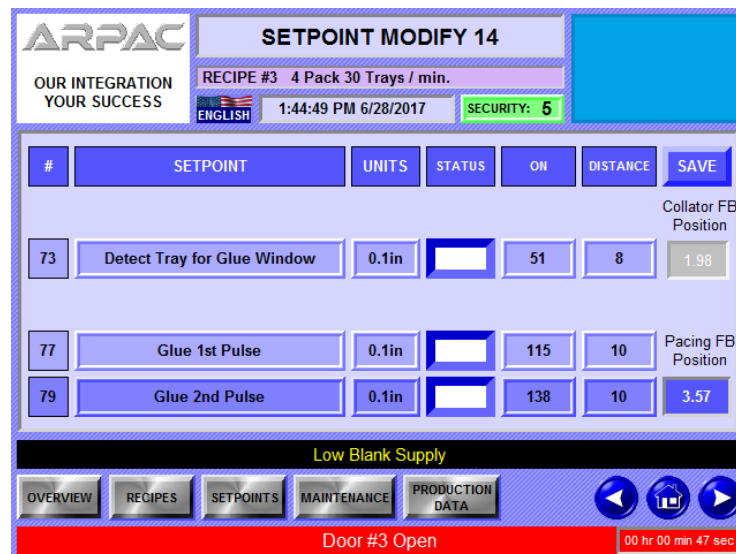
- As the tray and product continue moving forward, minor flap tuckers fold in the tray's trailing minor flaps.
- The horizontal side guides keep the flaps in place while the glue guns apply a glue pattern on each minor flap.



- Immediately after the glue is applied to the tray's minor flaps, an angled guide on each side of the conveyor folds the major flap up to meet the minor flaps. Once folded, the flaps are held closed by the compression. By the time the tray reaches the end of the compression rails the glue is set.

Control Functions

- Open flap photo eyes mounted to each side of the main tray forming conveyor after the compression section identify if flaps have not been glued properly. If these photo eyes are blocked they send a signal to the PLC to stop the machine cycle and an error message is displayed on the operator interface.
- If the flaps jam, the machine will trip the torque limiter and an error message will appear on the operator interface indicating that the torque limiter must be reset.



- The glue gun nozzle heads point down toward the major flaps to spray glue as the tray passes.
- Application of glue to the minor flaps of the blank is determined by the values of the *1st And 2nd Glue Pulse* settings.

3.3.4. Hot Melt Glue System



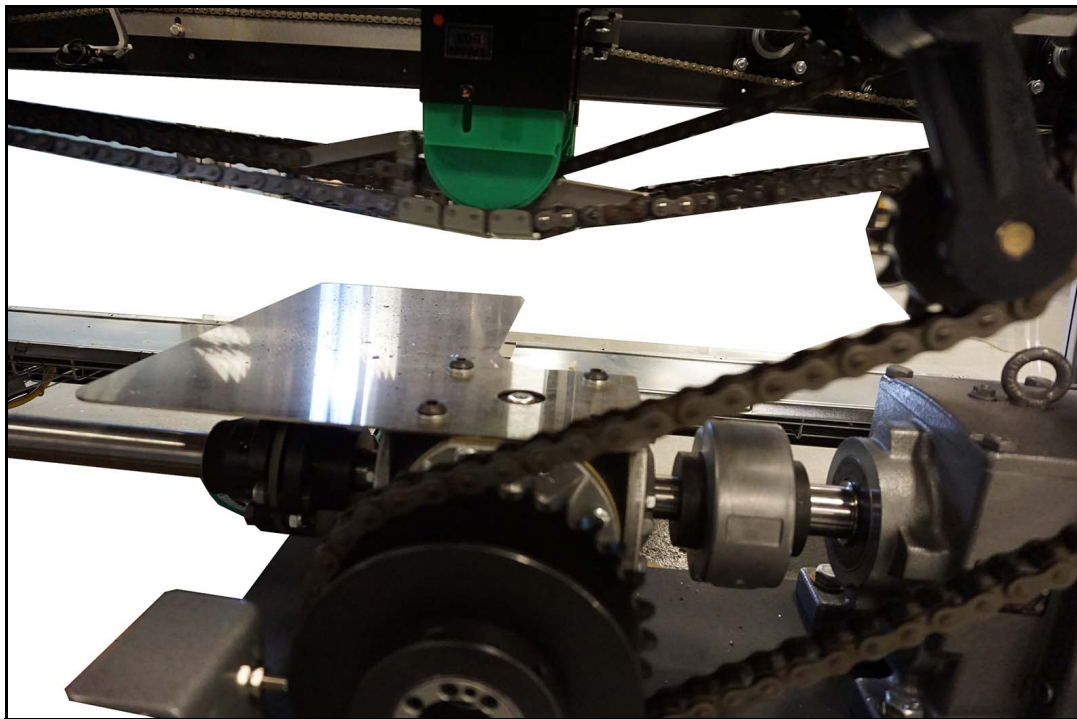
A hot melt glue system consisting a melt tank, hoses, glue guns and nozzles apply a predetermined amount of glue to the trays.

3.3.5. Compression Section

The final assembly of the machine is the Compression Section.



- Angled guides hold the front and back panels in place while the glue sets.



A chain tensioner located under the conveyor is provided due to normal stretching of the chain.

Operator Controls

4.1. Main Disconnect (Power On) Switch

The Main Disconnect Switch, located on the Main Control Cabinet supplies power to the equipment.

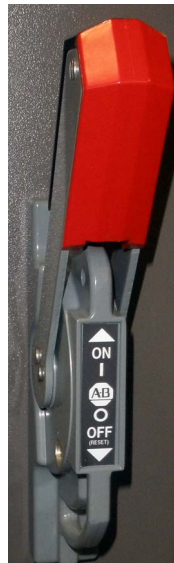


Figure 4-1 - Main Disconnect

4.2. Main Control Panel (Operator's Station)

The Main Control Panel, referred to as the Operator's Station, includes the HMI (Human Machine Interface) and push button controls. It is from here that an operator can monitor and effect the operation of the equipment.

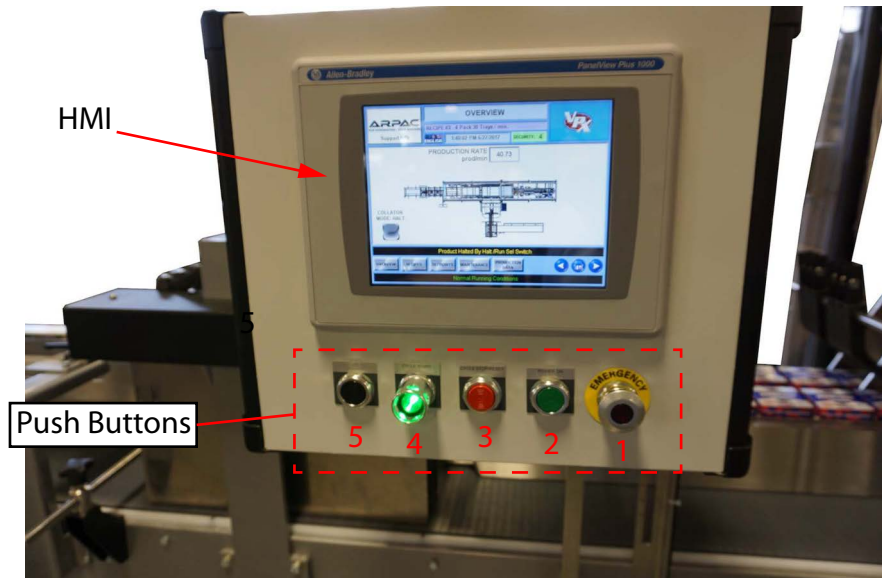


Figure 4-2 - Operator's Station

4.2.1. Push Button Controls

1. **EMERGENCY STOP Push-Pull Button** - Pressing this button will immediately shut down the machine. The button must be pulled out before restarting the machine. This button is also located at various points around the machine.
2. **POWER ON** - Pressing this button turns the machine on.
3. **CYCLE STOP RESET Button** - Pressing this button stops the machine after it has completed a full cycle. Pressing this button will also clear error messages on the machine's interface after the problem that caused the message has been resolved.
4. **CYCLE START Button** - Pressing this button will start the normal production cycling of the machine.
5. **JOG Button** - Pressing and holding this button will jog the machine's conveyors without feeding blanks. The machine will stop when the button is released. This button can only be used when the machine is not in cycle.

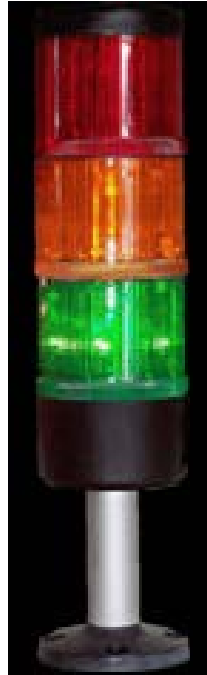
4.2.2. HMI (Human Machine Interface)

The HMI, also referred to as the operator interface is a touch screen panel is used to change various settings of the machine. It also displays error messages when the machine experiences a fault or jam. Its use is covered more thoroughly later in this chapter.



4.2.3. Status Indicator Beacon

The stack light shows the status of the machine and warns the operator of problems.



- Solid Red indicates an emergency stop push-pull button is tripped.
- Flashing Red indicates a fault or alarm situation.
- Solid Amber indicates the blank magazine is getting low.
- Flashing Amber indicates the machine is in the override or interlock mode.
- 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. Also indicates that machine is in standby mode because it received an outside signal from an upstream or downstream sensor to stop.

4.3. HMI (Human Machine Interface)

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

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



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

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

4.3.1. Screen Layouts & General Operation

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

Screen Layouts

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

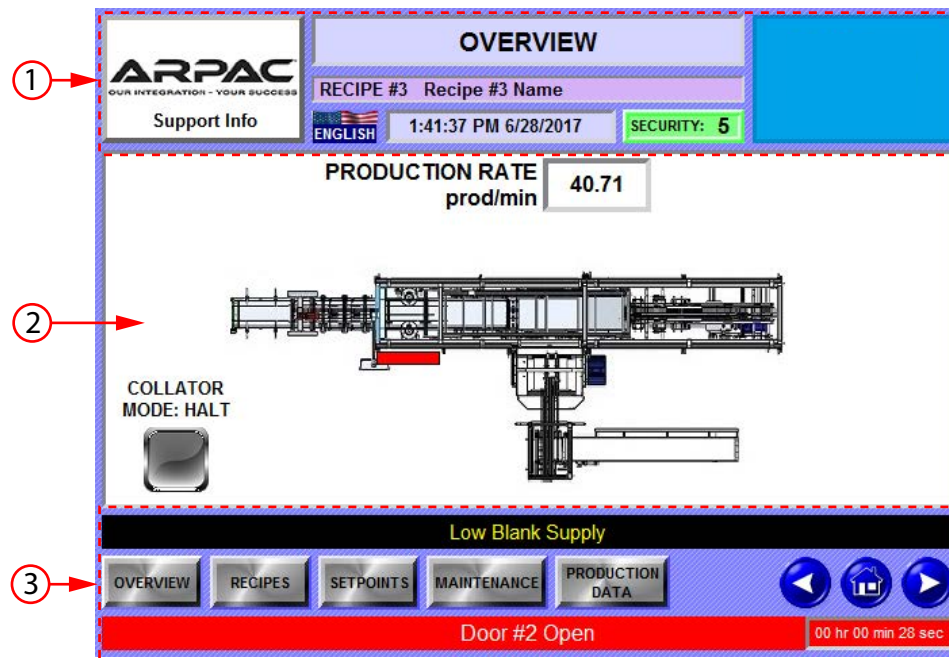


Figure 4-3 - Screen Layouts

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. Push Buttons - there are two types of push buttons used; "momentary" and "maintaining".

- Momentary buttons change "states" (on/off) as soon as the are released
- Maintaining buttons, when pressed, maintain that state until pressed again. These buttons may also change color, for example, from gray to white or green to red.
- Grey-ed out push button, like the "Jog Selection" boxes in the example above are disabled, meaning they are currently inactive.

3. Menu Group Buttons & Message Banners

The bottom of the screen contains a button for each menu group, a message banner and toggle buttons. Pressing one of the menu group buttons will navigate to and open the first screen (some menu groups have multiple screens) for that group. The menu groups are password protected. The Over View and Set Point menu groups contain the control functions and parameter settings to effect the operation of the equipment. The Maintenance menu group contains diagnostic data and high level settings. The Maintenance menu group should only be accessed by qualified individuals. The Production Data menu group contains production efficiency data and should only be accessed by supervisory/management personnel. Menu groups are discussed in greater detail later in the chapter.

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

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

4.3.2. Data Entry & Navigating to Different Screens

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

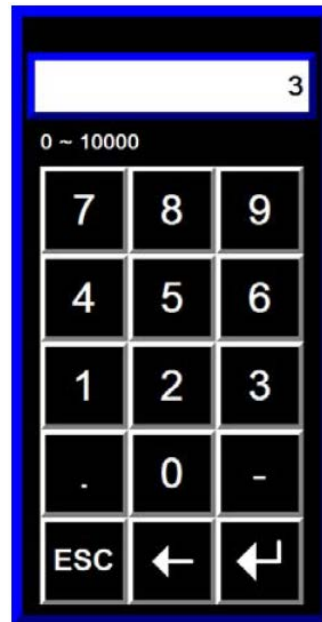


Figure 4-4 - Numeric Keypad

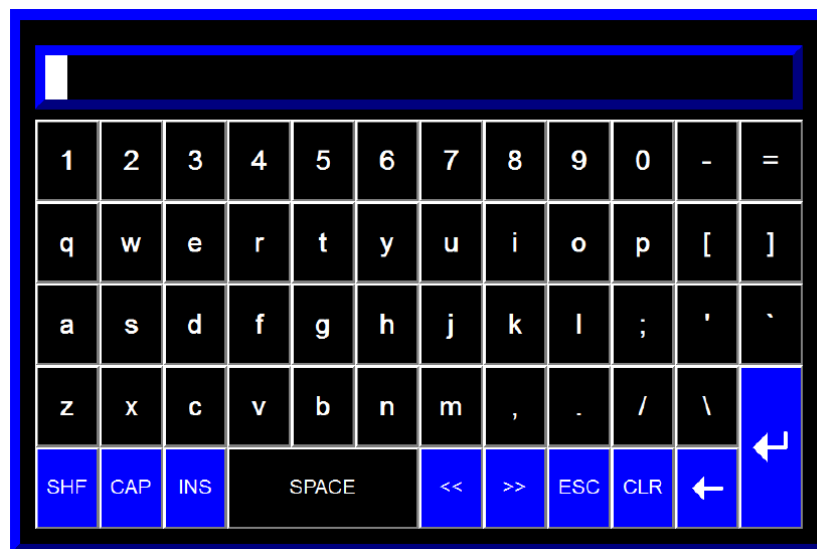


Figure 4-5 - Alpha-numeric Keypad

Navigation Tools

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

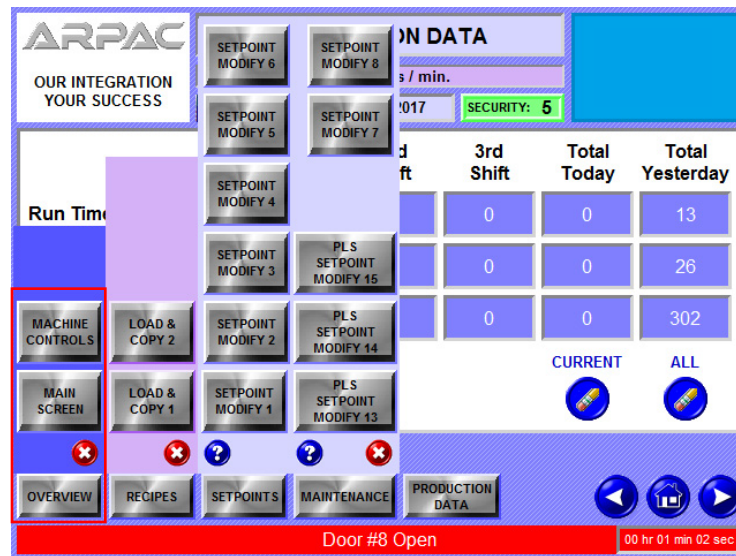


Figure 4-6 - Expandable Screen Menu Pop-Ups

4.3.3. Security Levels

There are three different 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 levels are as follows:

1. **Operator (O):** This gives access to basic running conditions; starting/stopping recipes, wrap mode, jogging functions.
2. **Maintenance (M):** This level is available to trained operators of the machine. It allows the operator to modify existing and make new recipes for different products into the machine and to change setpoints in the machine’s operation. The operator must login to the machine and enter a password to gain access to this level
3. **Supervisor/Manager (S):** This level is available to trained maintenance technicians. It allows access to all functions of the machine. The technician must login to the machine and enter an password to gain access to this level.

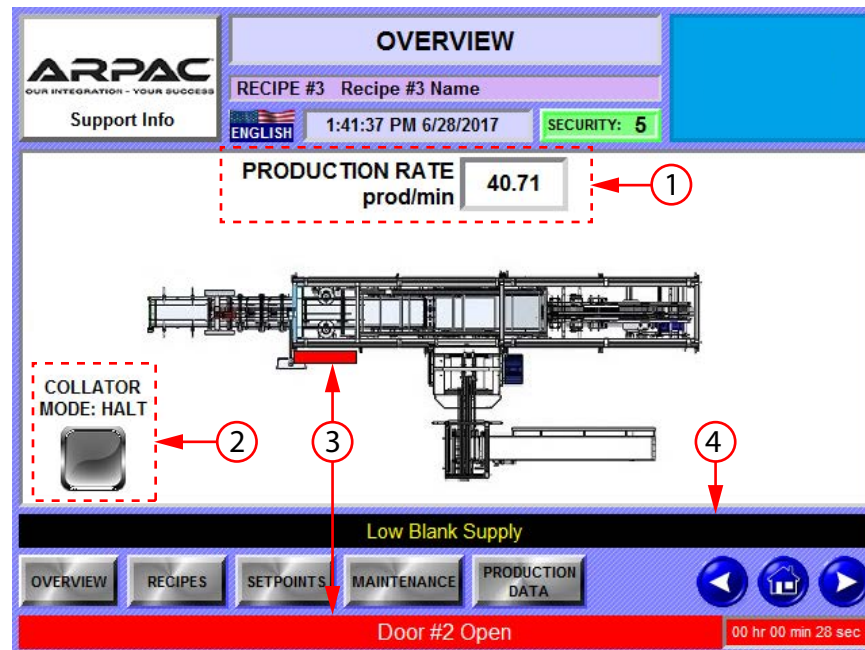


The default security level, Level 0, is available to all users and is active when the machine is first turned on. This level does not allow anyone to change anything, but it does allow the operator to view basic machine messages.

4.4. HMI Menu Groups

There are four available Menu Groups for this machine; the Over View group, the Set Points group, the Maintenance group and the Production Data group. The following sections go into detail on the specific functions of each group.

4.4.1. The Over View Menu Group



The Overview screen, in addition to being the “home” or “default” screen, is where an operator can monitor the performance of the equipment. Security level 1 or higher is required to change these settings.

Key Screen Components

1. Production Rate - Based off user defined parameters.
2. Machine Status - In this example, guard door #2 is open.
3. Collator Mode - The text above the button indicates the mode. The two available modes are; Halt and Run.
4. Warning Messages - If applicable, warnings will be displayed. In this example, the Blank magazine is low.

Machine Controls Screen

The Control screen, the second screen within the Overview sub menu is used to enable individual conveyors so they can be jogged. Security level 1 or higher is required to change these settings.

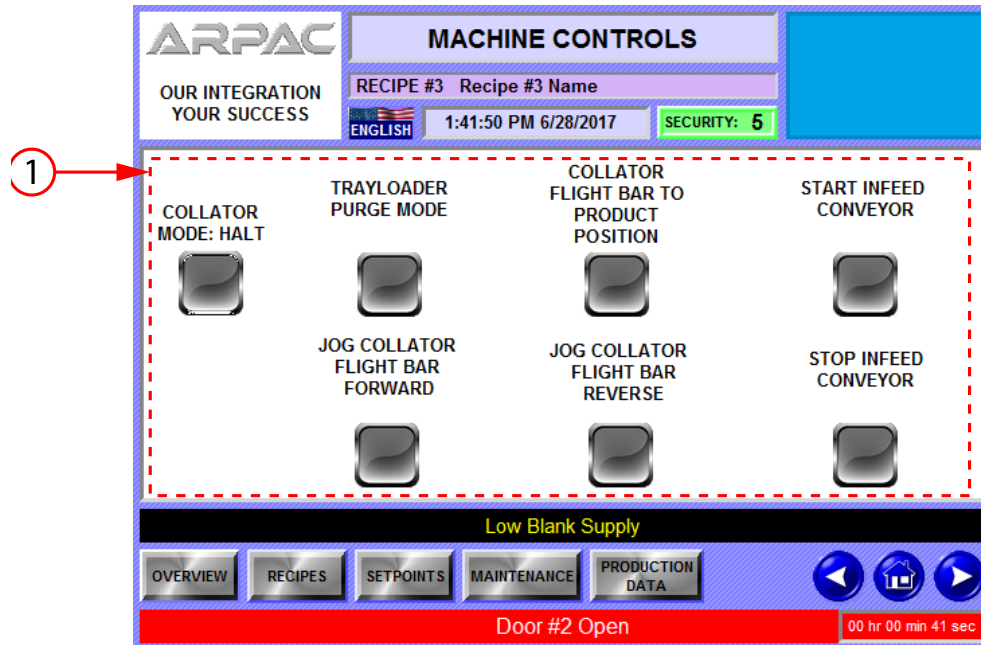
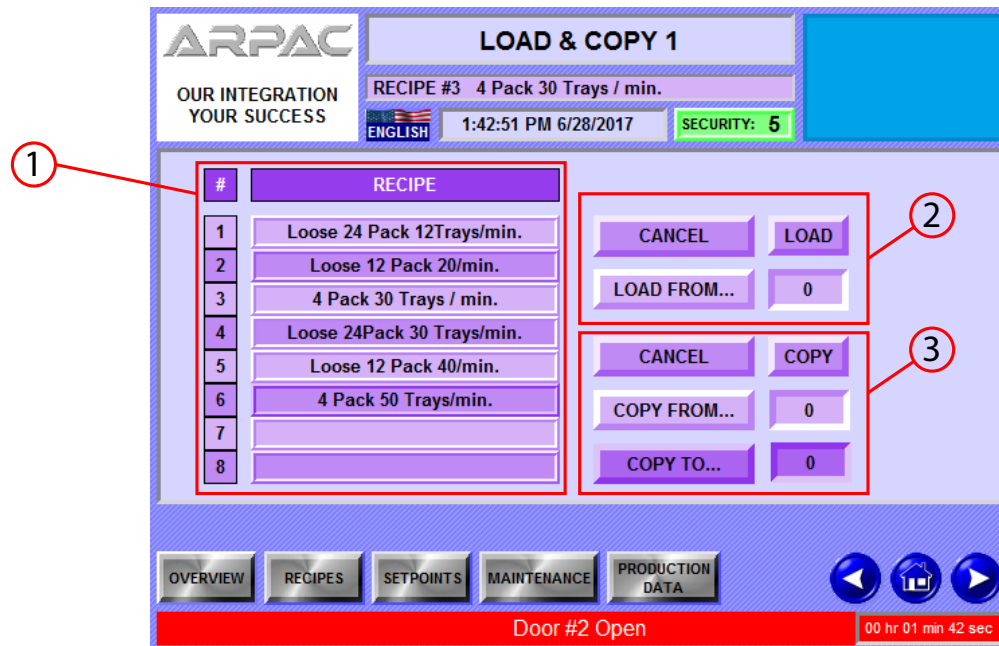


Figure 4-7 - Machine Controls Screen

- Collator Halt
- Tray Loader Purge Mode
- Collator Flight Bar to Product Position
- Start In-feed Conveyor
- Jog Collator Flight Bar Forward
- Jog Collator Flight Bar Reverse
- Stop In-feed Conveyor

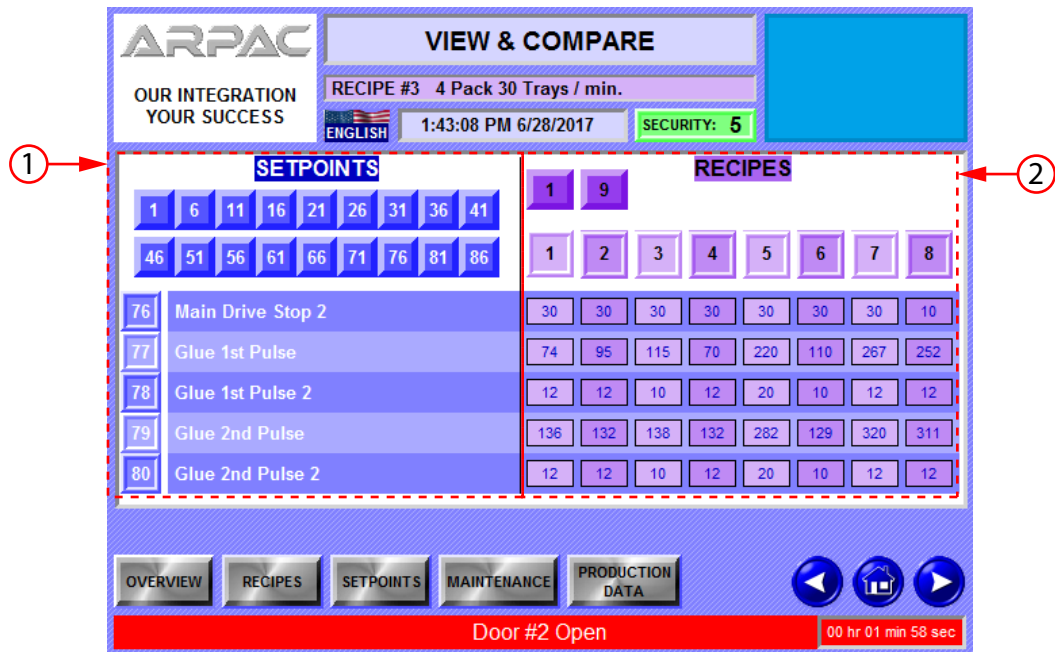
4.4.2. Recipes Menu Group

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



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

View & Compare Screen



The View & Compare screen is used to compare recipe set-ups.

1. Select a group of parameters
2. Select two Recipes to compare

4.4.3. The Set Points Menu Group

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

#	SETPOINT	UNITS	VALUE	SAVE
1	Machine Rate	PPM	40	
2	Collator Flight Bar Product Position	0.1"	20	1.98
3	Collator Flight Bar Release Speed	%	150	
4	Collator Flight Bar Release Speed Distance	0.1"	0	
5	Collator Flight Bar Finishing Speed	%	1600	

Low Blank Supply

VIEW RECIPES SETPOINTS MAINTENANCE PRODUCTION DATA

Door #2 Open 00 hr 02 min 14 sec

Figure 4-8 - 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 actual setting value



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

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

#	SETPOINT	UNITS	VALUE	SAVE
16	Changeover Point #1	#	168	
17	Changeover Point #2	0.1"	2	
18	Changeover Point #3	0.1"	9	
19	Changeover Point #4	0.1"	139	
20	Changeover Point #5	0.1"	82	

OUR INTEGRATION
YOUR SUCCESS

RECIPE #3 4 Pack 30 Trays / min.

ENGLISH 1:43:46 PM 6/28/2017 SECURITY: 5

OVERVIEW RECIPES SETPOINTS MAINTENANCE PRODUCTION DATA

Door #2 Open 00 hr 02 min 36 sec

4.4.4. The Maintenance Menu Group

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

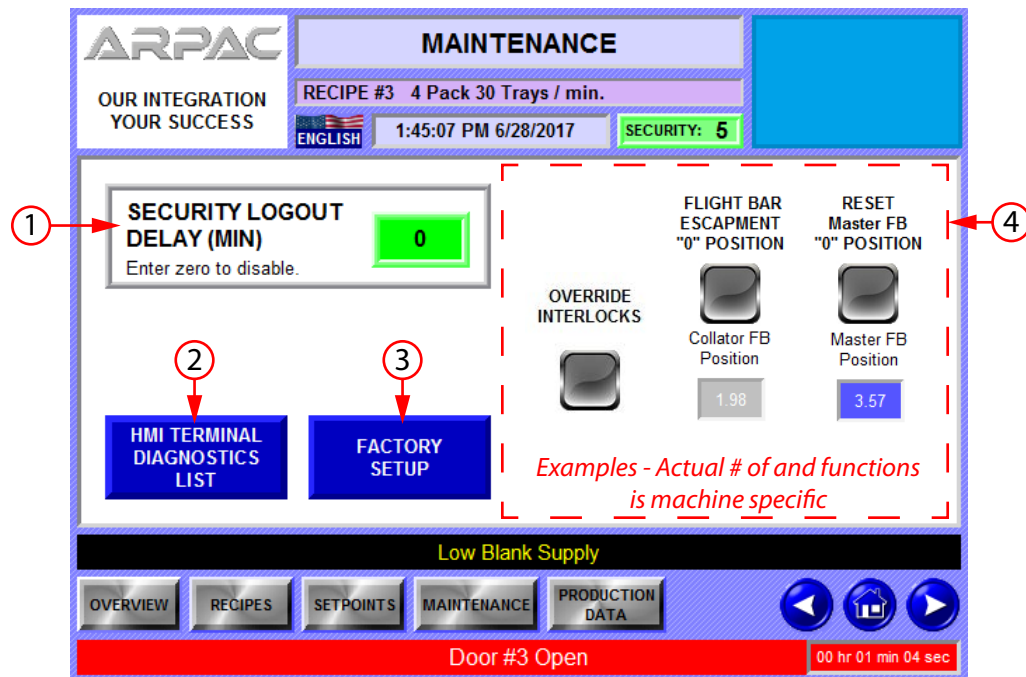


Figure 4-9 - 1st Maintenance Screen

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

1. **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
2. **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
3. **Diagnostics List:** This button is used to view the communication protocol messages between the HMI and the PLC
4. Reset Master FB "0" Position
5. The Timers & Counters screen allows one to see preset values and accumulated values, but does not list what the specific timer description.

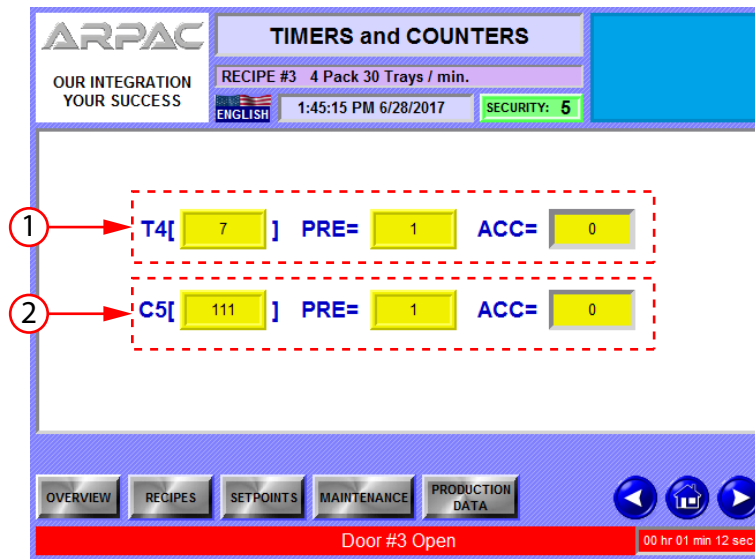


Figure 4-10 - Timer Screen

Alarm history shows alarms and faults that occurred on the system.

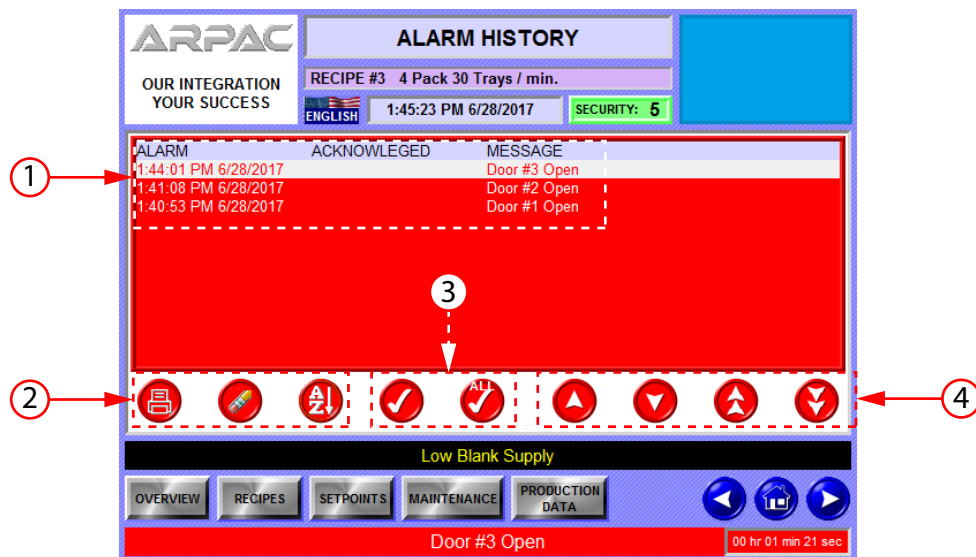


Figure 4-11 - Alarm History Screen

1. Clears the existing messages when pressed
2. Cycle or page up and down between messages

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.

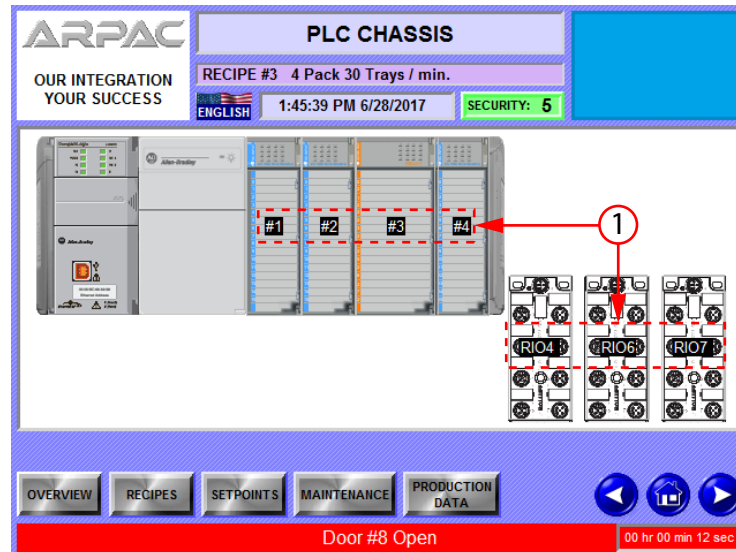


Figure 4-12 - PLC Chassis Screen

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

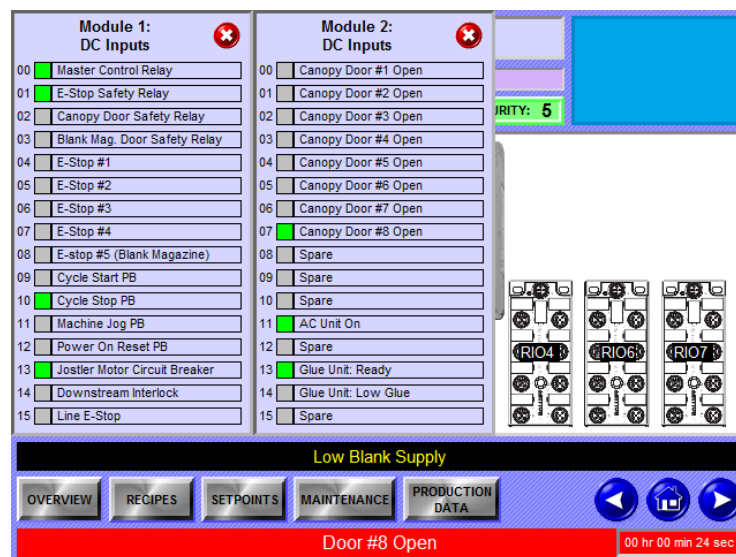


Figure 4-13 - DC Input Screen

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.

ARPAC
OUR INTEGRATION
YOUR SUCCESS

SETPOINT MODIFY 14

RECIPE #3 4 Pack 30 Trays / min.
ENGLISH 1:44:49 PM 6/1/2017 SECURITY

#	SETPOINT	UNITS	STATUS	ON	DISTANCE	
71	Infeed Conveyor Stop	0.1in		30	30	Collator FB Position
73	Detect Tray for Glue Window	0.1in		51	8	1.98
75	Main Drive Stop	0.1in		320	30	
77	Glue 1st Pulse	0.1in		115	10	Pacing FB Position
79	Glue 2nd Pulse	0.1in		138	10	3.57

Low Blank Supply

OVERVIEW RECIPES SETPOINTS MAINTENANCE PRODUCTION DATA

Door #3 Open 00 hr 00 min 47 sec

4.4.5. The Production Data Menu Group

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

Production Data

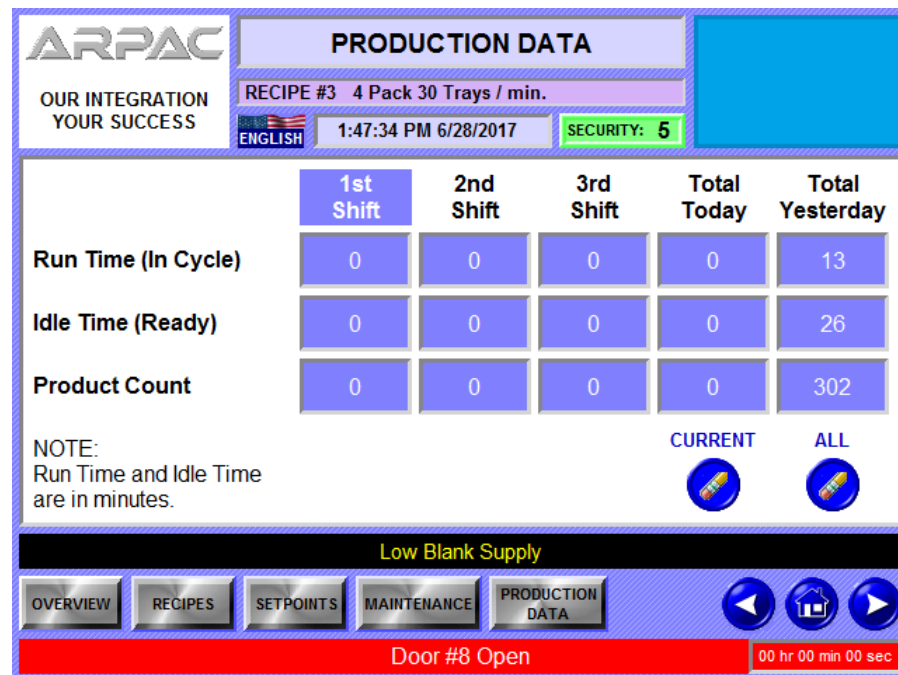


Figure 4-14 - Production Data Screen

1. Data values related to the number of loads wrapped are displayed here.
2. 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.
3. 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

The screenshot shows the ARPAC SETTINGS screen. At the top left is the ARPAC logo and the text "OUR INTEGRATION YOUR SUCCESS". To the right, under the "SETTINGS" title, are fields for "RECIPE #3 4 Pack 30 Trays / min.", "ENGLISH" with a flag icon, "1:47:44 PM 6/28/2017", and "SECURITY: 5". The main area contains a table for shift settings:

	Start	Finish
Shift #1	7:00 am	7:00 pm
Shift #2	7:00 pm	7:00 am
Shift #3	DISABLED	DISABLED

Below the table is a note: "NOTE: Set Start and Finish to zero to disable Shift." At the bottom, there is a navigation bar with buttons for "OVERVIEW", "RECIPES", "SETPOINTS", "MAINTENANCE", and "PRODUCTION DATA". To the right of these buttons are three circular icons: a left arrow, a house icon, and a right arrow. A red status bar at the very bottom displays "Door #8 Open" and a timer "00 hr 00 min 10 sec".

Figure 4-15 - Production Data Settings Screen

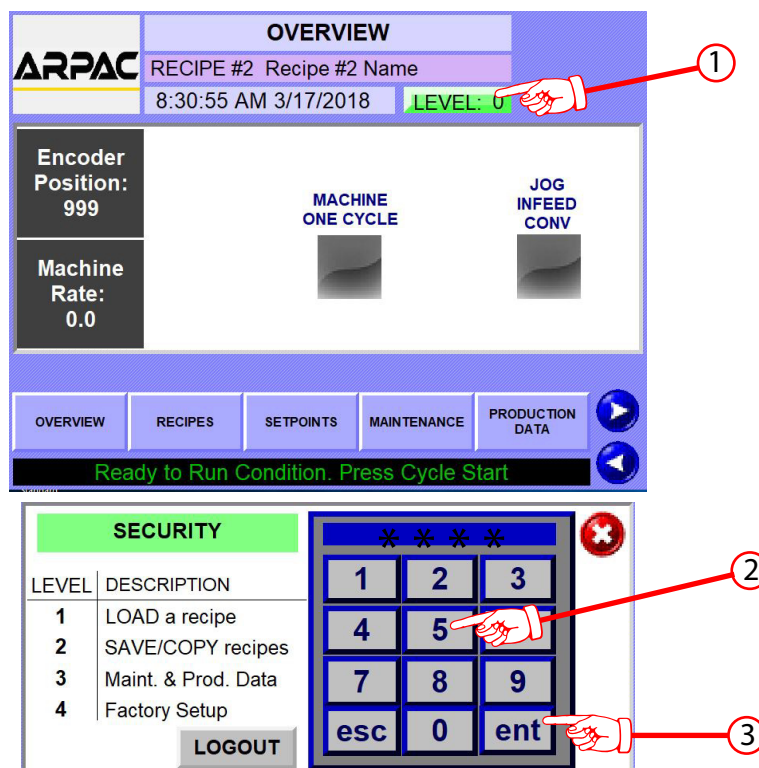
1. Press inside any of the boxes for **Start** or **Finish** to change the setting. The numeric key pad will pop-up. Enter the new value and press the ENTER key.

4.5. Using the HMI

The following describes how to use the HMI.

4.5.1. Logging In

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



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

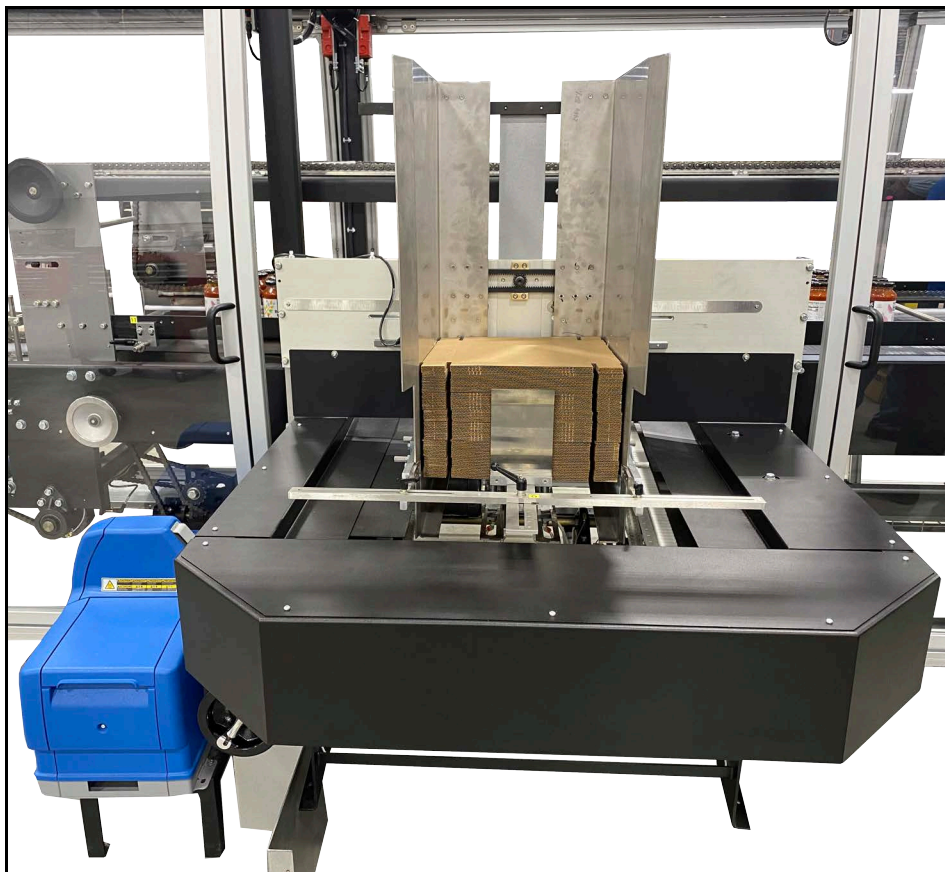
NOTICE

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

Operating Procedures

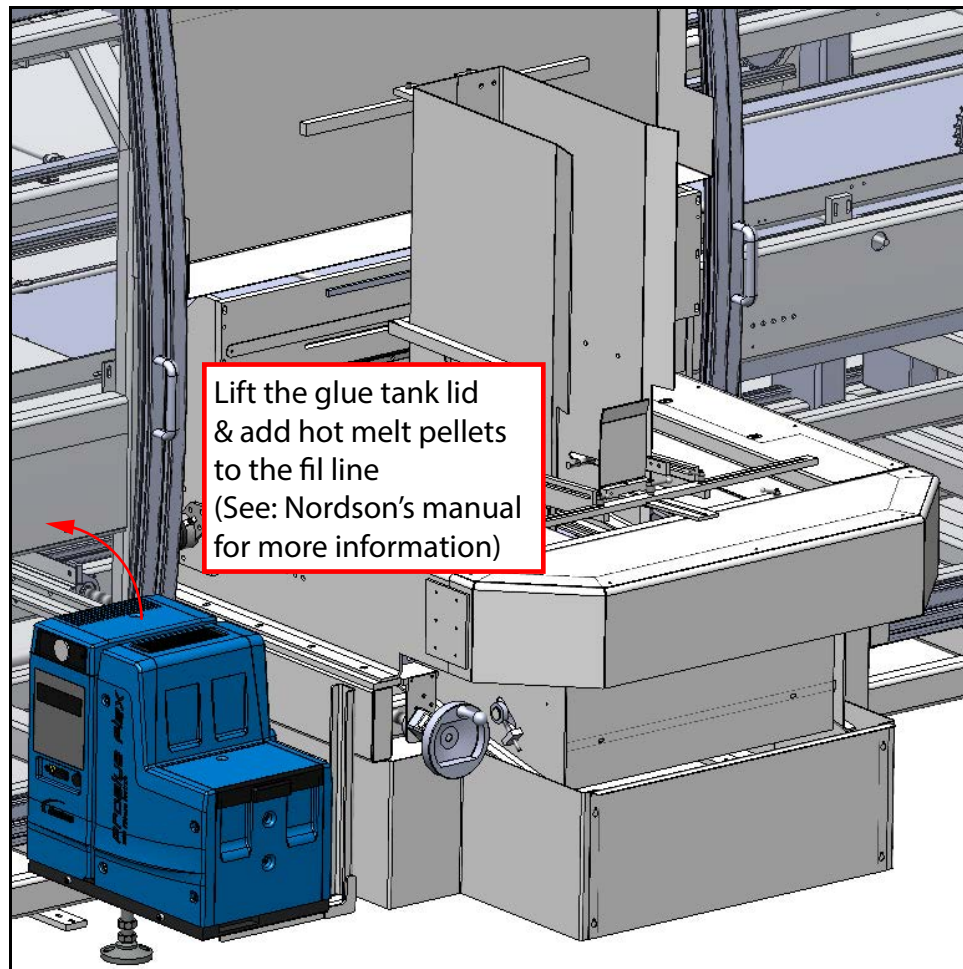
5.1. Loading Consumables

5.1.1. 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. Make sure that the score line side is up. Some stacks may have blanks upside down. Always watch for these and position them properly or the blanks will jam.
3. Load the blank magazine. Do not allow the height of the blank stack to exceed the height of the side guides.
4. Load the blanks stacks onto the conveyor as shown. Make sure that the stacks are square and oriented in the correct direction.

5.1.2. Adding Hot Melt



5.2. Power ON

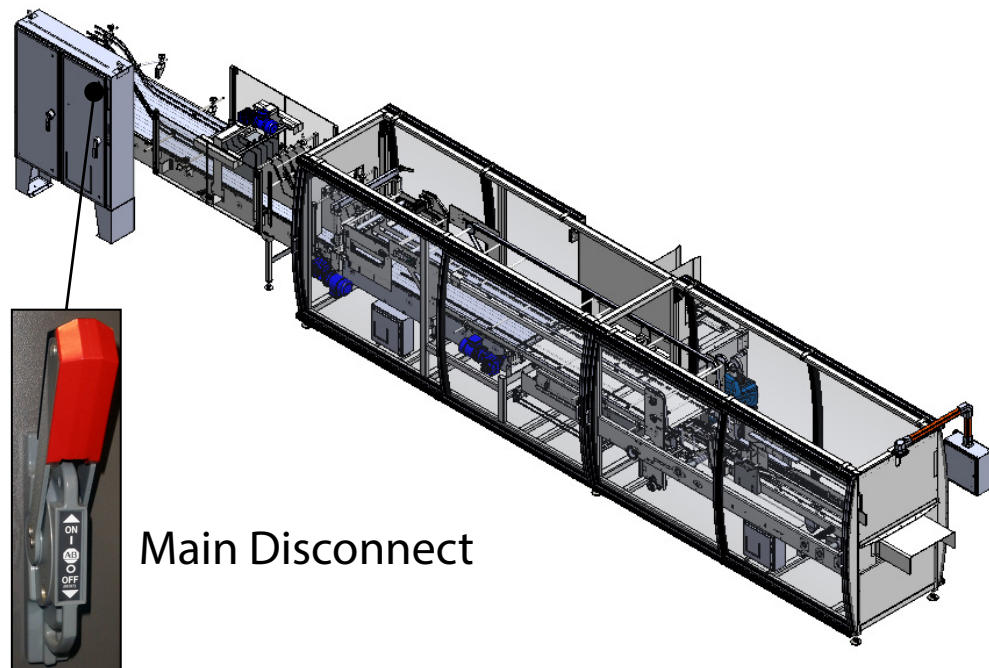
5.2.1. Pre-Start Inspection

Before starting the machine, check for the following:

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

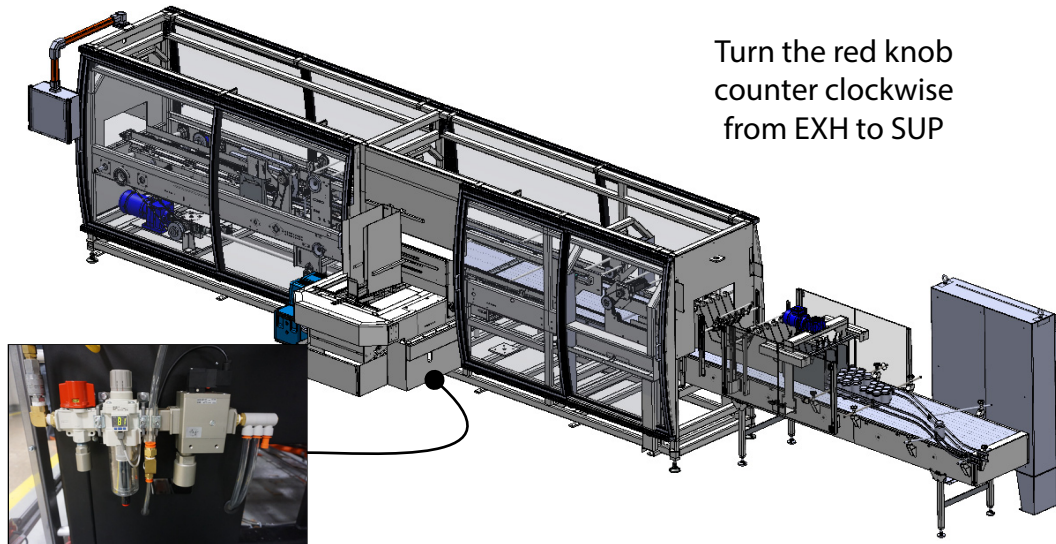
5.2.2. Apply Power

1. Place the Main Power Disconnect switch to the ON position at the Main Electrical Cabinet.



5.2.3. Apply Pneumatic Power

1. Open the Master Air Supply Regulator valve. Verify that the air regulator gauge is at least 80psi.



5.2.4. Power Up

1. Pull out all Emergency Stop buttons.
2. Press the Power On button. This will enable the glue unit to be turned on.
3. Turn the glue unit on (see the OEM vendor information for specific instructions).

5.3. Putting Machine Into Cycle



Make sure all personnel are clear from machine before putting the machine in cycle. Press the EMERGENCY STOP button to stop the machine if a hazard appears to personnel or the machine.



Power has to be applied and all faults must be cleared before the machine can be put into cycle.

1. Make sure consumables have been loaded.
2. Make sure that proper recipe for the product has been selected.
3. Press the **CYCLE STOP/RESET** button to clear any previous fault messages.
4. Press the **CYCLE START** button.

5.4. Stopping the TrayStar™

5.4.1. Performing an Emergency Stop

In case of an emergency, press any one of the Emergency Stop push buttons to stop the machine immediately.

Recovering from an Emergency Stop

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

1. Remove all product from machine.
2. Remove or resolve the cause of the emergency stop action.
3. Pull all the **EMERGENCY STOP** buttons out.
4. Press the **POWER ON** button.
5. Press the **CYCLE STOP/RESET** button.
6. Press the **CYCLE START** button.

5.4.2. Stopping Under Normal Conditions

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.

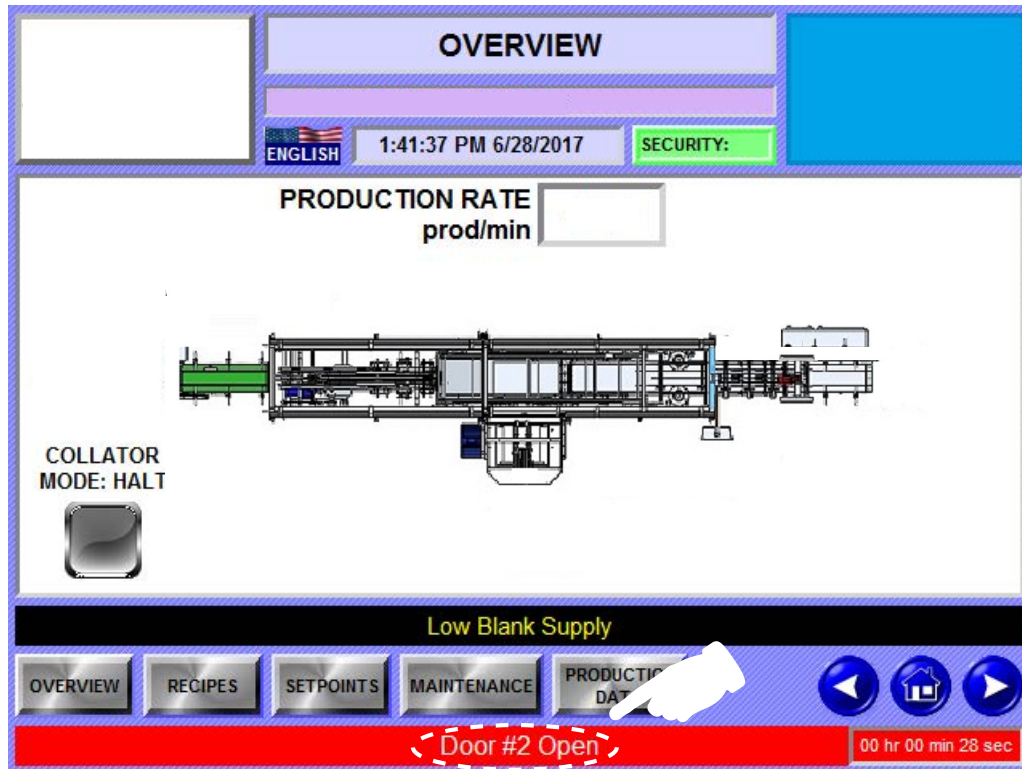
NOTICE
Opening a guard door will also stop the machine, but this method isn't a controlled stop and removal of some product will be necessary, increasing the amount of time the machine will be out of cycle.

5.5. Clearing Jams/ Recovering from a Fault

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

5.5.1. Identifying the Fault

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



5.5.2. Address the Cause

1. Remove product, if necessary
2. Reset any torque limiters, if necessary
3. Prep the machine for a restart by adding or removing product, if necessary.
4. Close the guard door.
5. Press the **CYCLE STOP / RESET** button.
6. Press the **CYCLE START** button when ready.

5.6. Shutting Down

5.6.1. Short Term Shut Down

To stop the machine for a short period of time (lunch break, product changeover, etc), press the **CYCLE STOP / RESET** button.

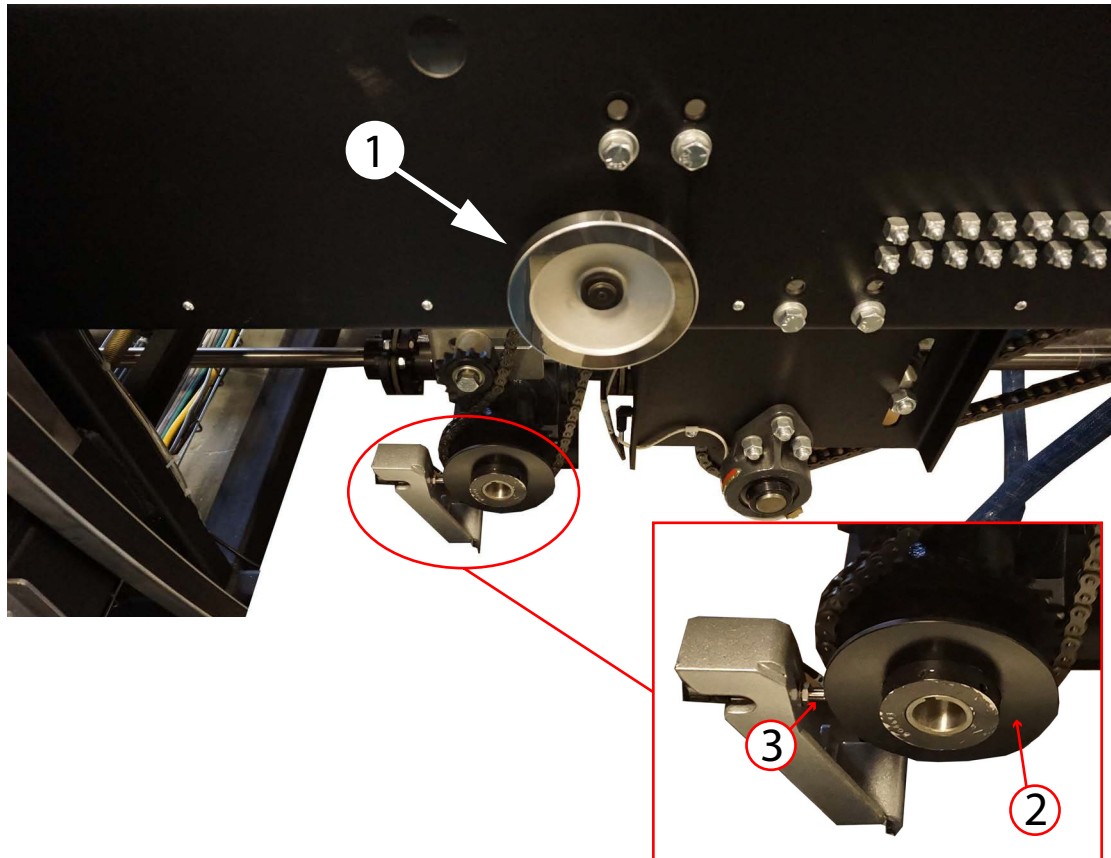
5.6.2. Long Term Shut Down

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

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

5.7. Resetting Torque Limiters

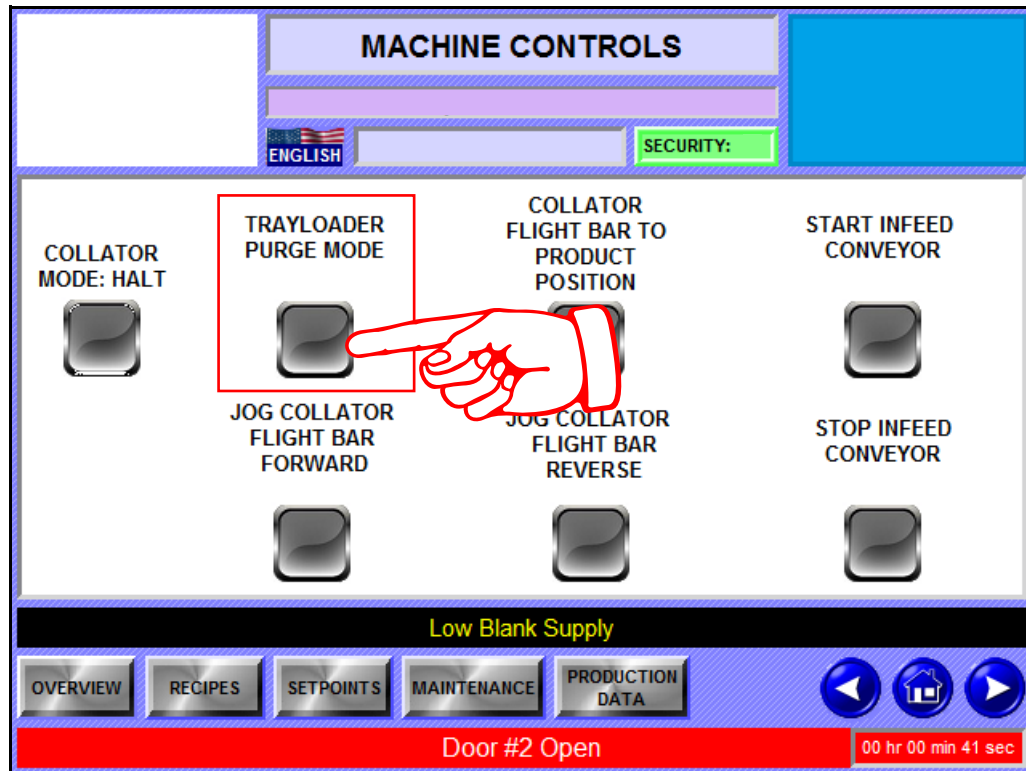
Chain driven assemblies come equipped with a torque limiter that trips and disengages the assembly due to excessive force caused by a jam.



All torque limiters, like the *Flap Tucker* torque limiter (2) shown here, have a spring loaded plate that energizes a prox switch (3) when tripped. A corresponding input is sent to the PLC to stop the machine and display a fault message.

- With the machine cycle stopped, use the adjustment hand wheel (1) to reengage the torque limiter.
- Press a Cycle Stop/Reset button to clear the fault.

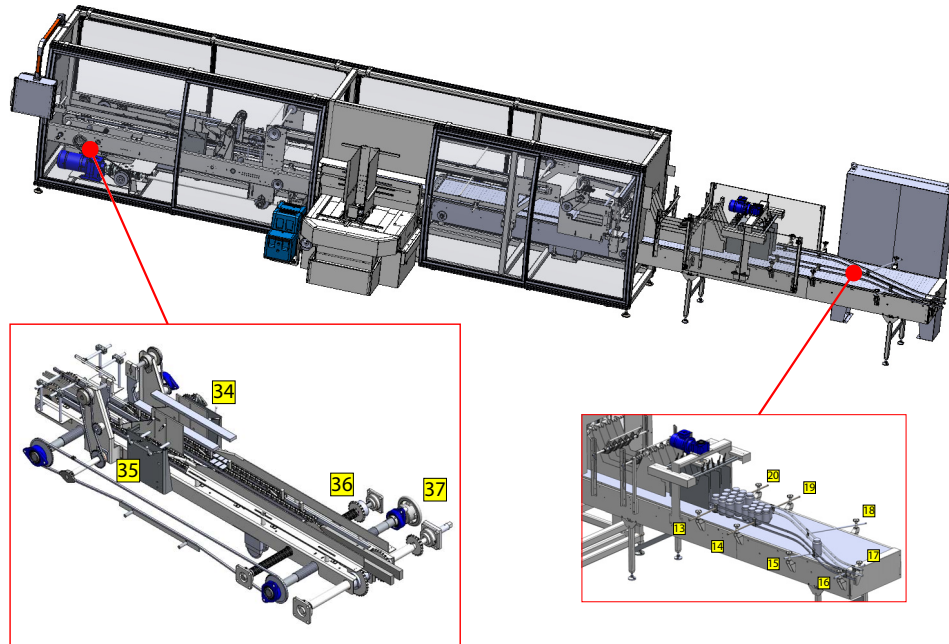
5.8. Safe Removal (Purge) of Product



1. Take the machine out of cycle.
2. Navigate to the *MACHINE CONTROLS* screen on the HMI.
3. Press and HOLD the **TRAYLOADER PURGE MODE** button until all product in the in-feed advances past the collator and through the compression section.

5.9. Changeover

The following is a guide for changing the machine over to run a different product size/configuration. Your specific machine may have different changeover points, but the general concept is covered here.



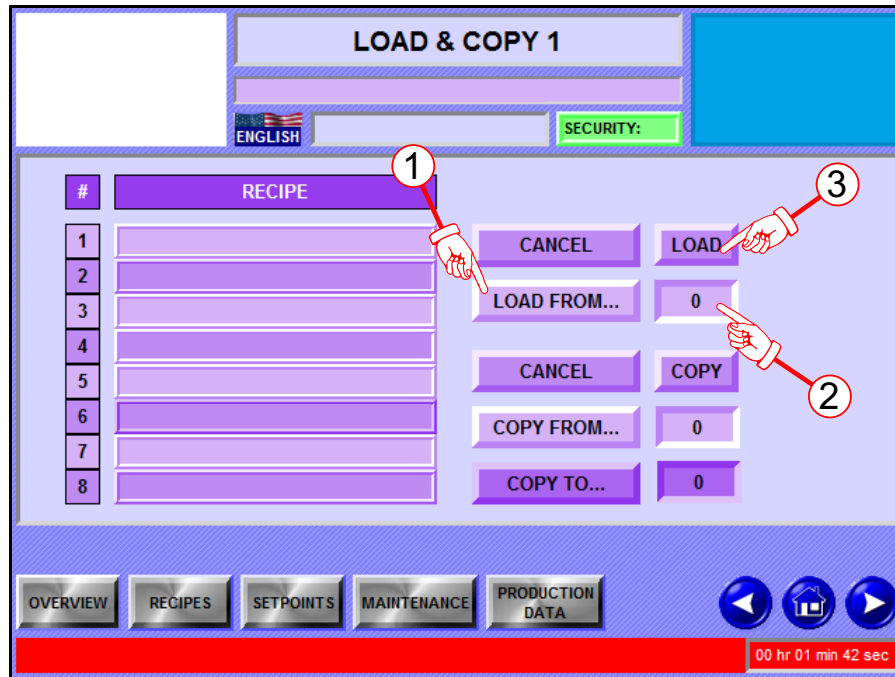
Remove All Product and Blanks

There cannot be any product or blanks in the machine when starting a changeover. If there is any product in the machine from the previous production run:

1. Remove any product prior to the agitator on the in-feed conveyor.
2. Purge any product in the machine from the agitator to the collator clamp. See: *section 5.9 - Safe Removal (Purge) of Product.*
3. Remove any blanks in the blank feed hopper.

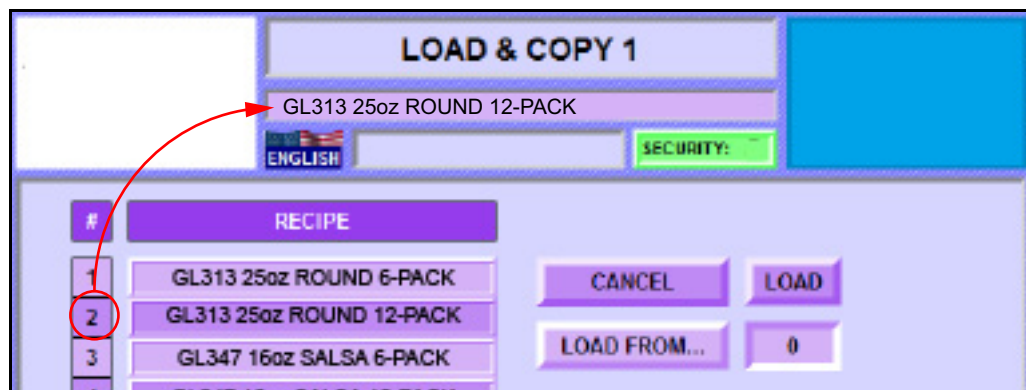
Load the Recipe for the Product Configuration Into the HMI

Navigate to Recipe Menu Group on the HMI and load the saved recipe that was created for the desired product configuration.



1. Press the LOAD FROM button
2. Enter the number of the desired recipe
3. Press the LOAD button

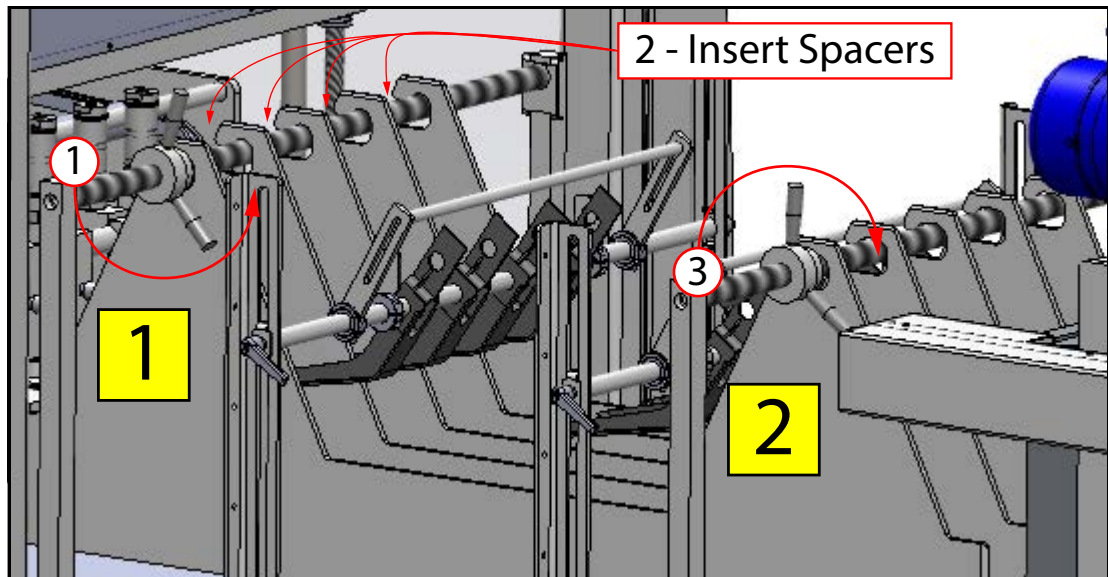
The recipe description appearing in the title block is verification that it loaded correctly.



5.9.1. Swap out the Collator Lane Guide Rail Spacers

The first step of the changeover process is setting the width of the collator product lanes. The lane guide set-up is dependent on the product diameter and required configuration.

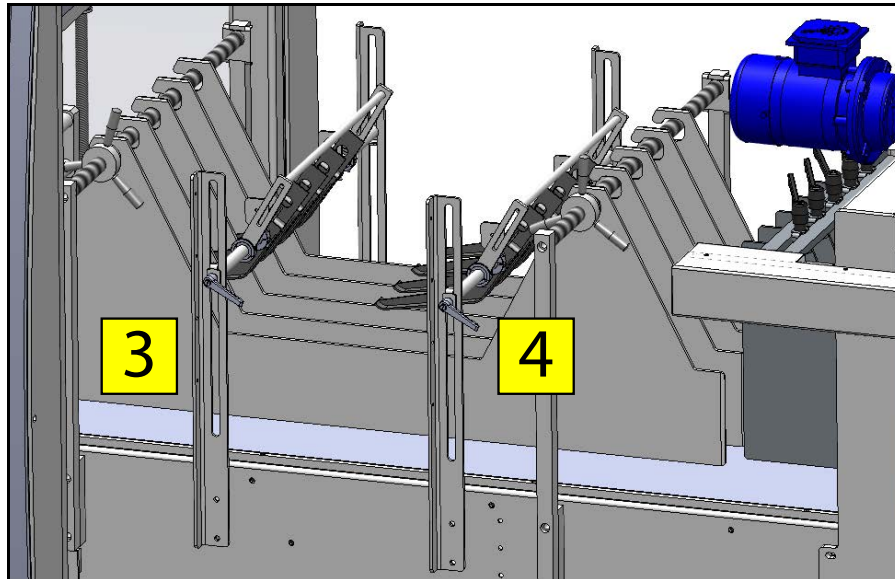
Change Over Points 1 & 2



1. Turn the handle counter clock-wise to loosen the clamp (2 places)
2. Insert the desired spacers (2 places)
3. Turn the handle clock-wise to tighten the clamp (2 places)

5.9.2. Set The Height Of The Fallen Product Detect And The Minimum Product Detect

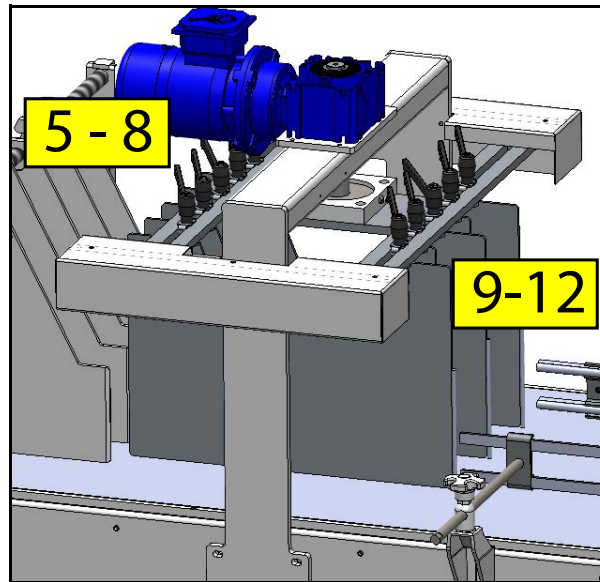
Set the heights of the Minimum Product Detect and the Fallen Product Detect assemblies.



5.9.3. Set The Width Of The Agitator Lane Guides

Set the lanes of the agitator to match the spacing between the collator lane guides.

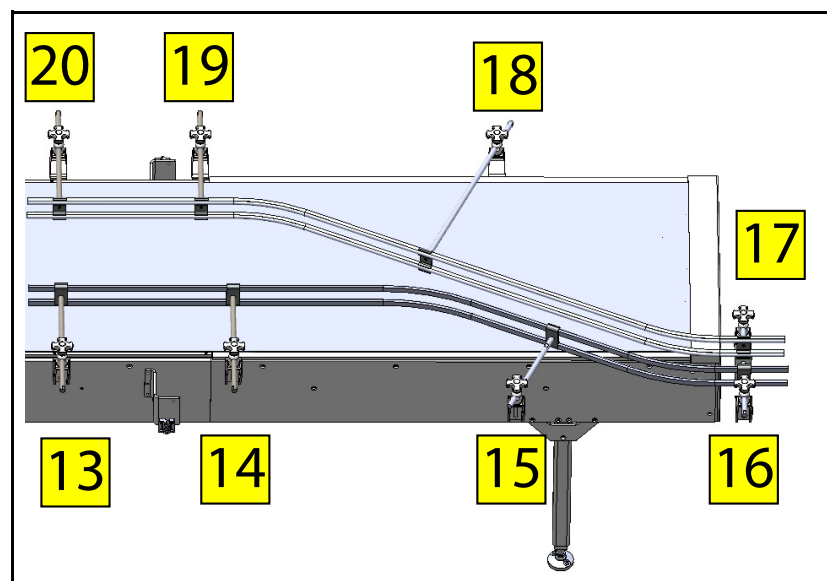
Changeover Points 5-12



5.9.4. Set The Side Transfer Guides

Set the side transfer guides to match the opening at the agitator.

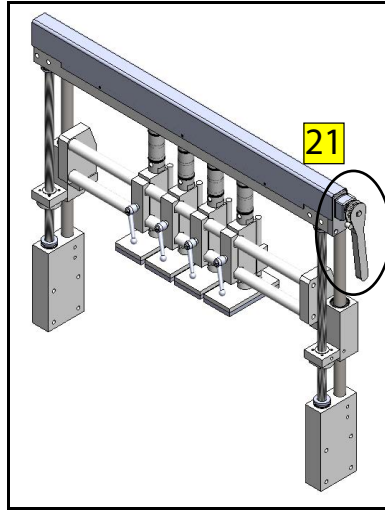
Changeover Points 13-20



5.9.5. Adjust The Height Of The Collator Clamp

Set the Height of the collator clamp.

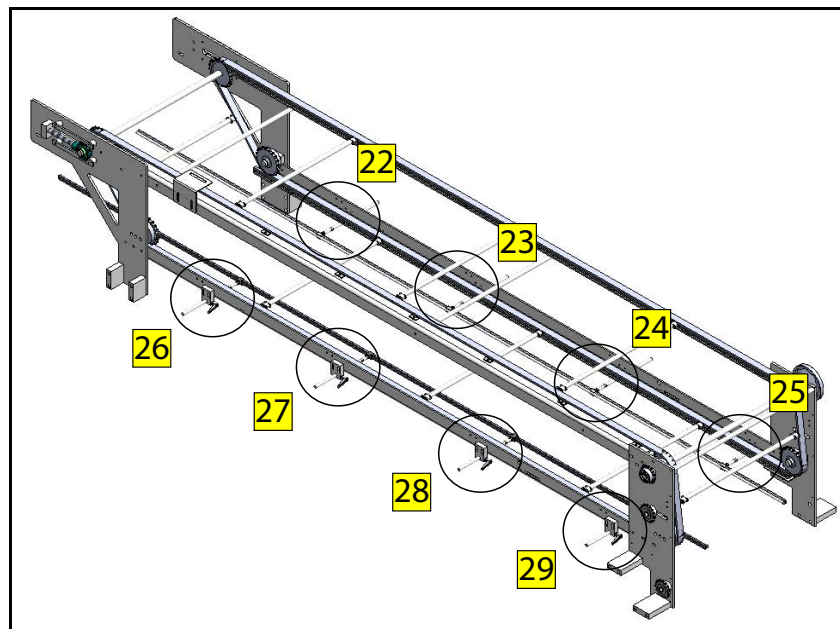
Changeover Point 21



5.9.6. Set The Flight Bar Product Guides

Set the flight bar product guides to maintain the rows of product.

Changeover Points 22-29

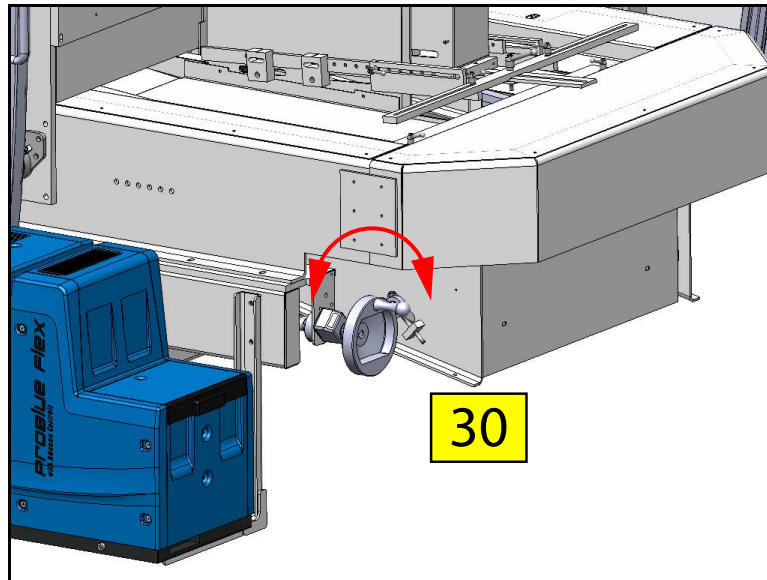


This completes the portion of the changeover related to product handling

5.9.7. Set The Blank Lug Conveyor Width

Set the width of the blank lug conveyor to match the width of the blank.

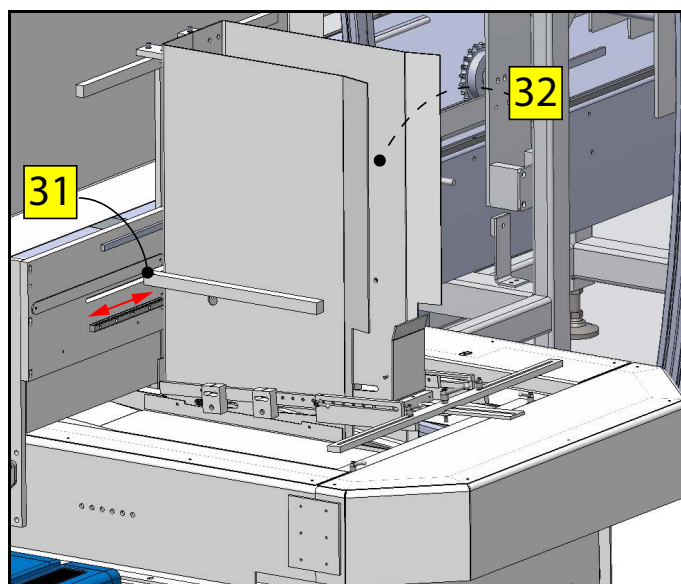
Changeover Point 30



5.9.8. Set The Blank Hopper Width

Adjust the width of the blank hopper to fit the blank.

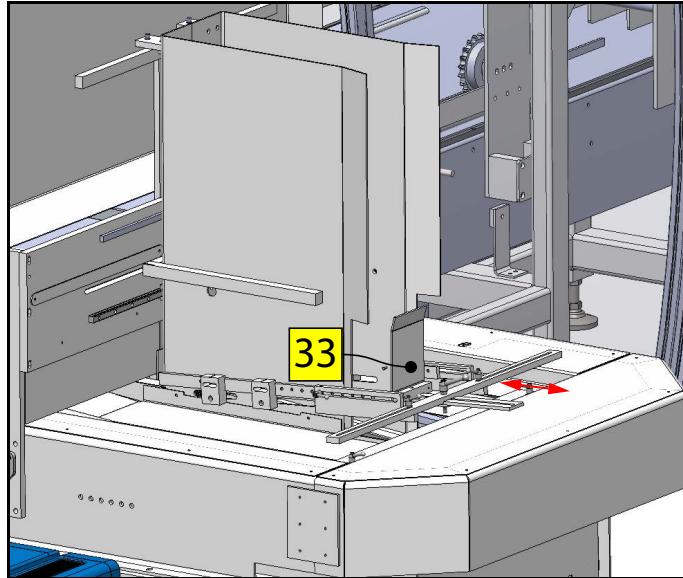
Changeover Points 31 & 32



5.9.9. Set The Position Of The Rear Blank Support

Adjust the rear support for the blank.

Changeover Point 33

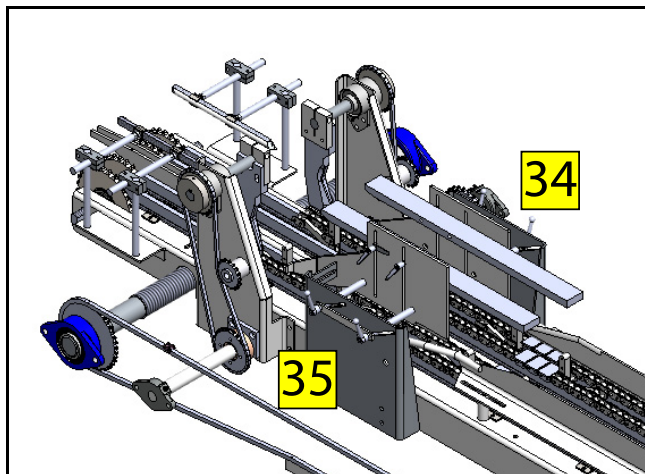


This completes the portion of the changeover related to Blank Magazine

5.9.10. Set The Compression Section Product Hold-Downs Height

Adjust the height of the compression section's hold-downs.

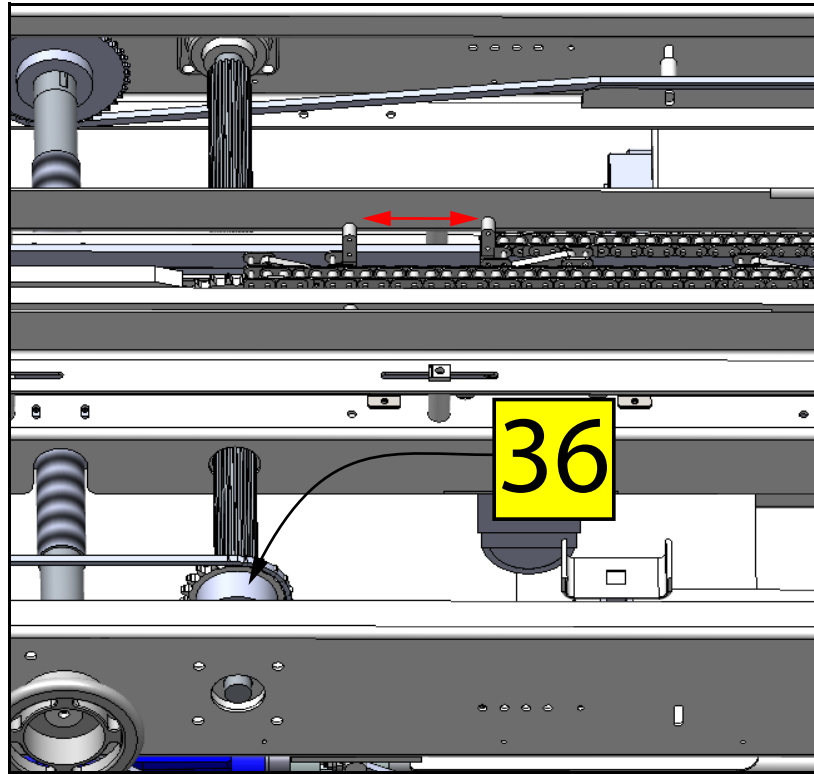
Changeover Points 34 & 35



5.9.11. Set The Compression Lug Depth

Turn phaser wheel until folded tray fits snugly between lugs.

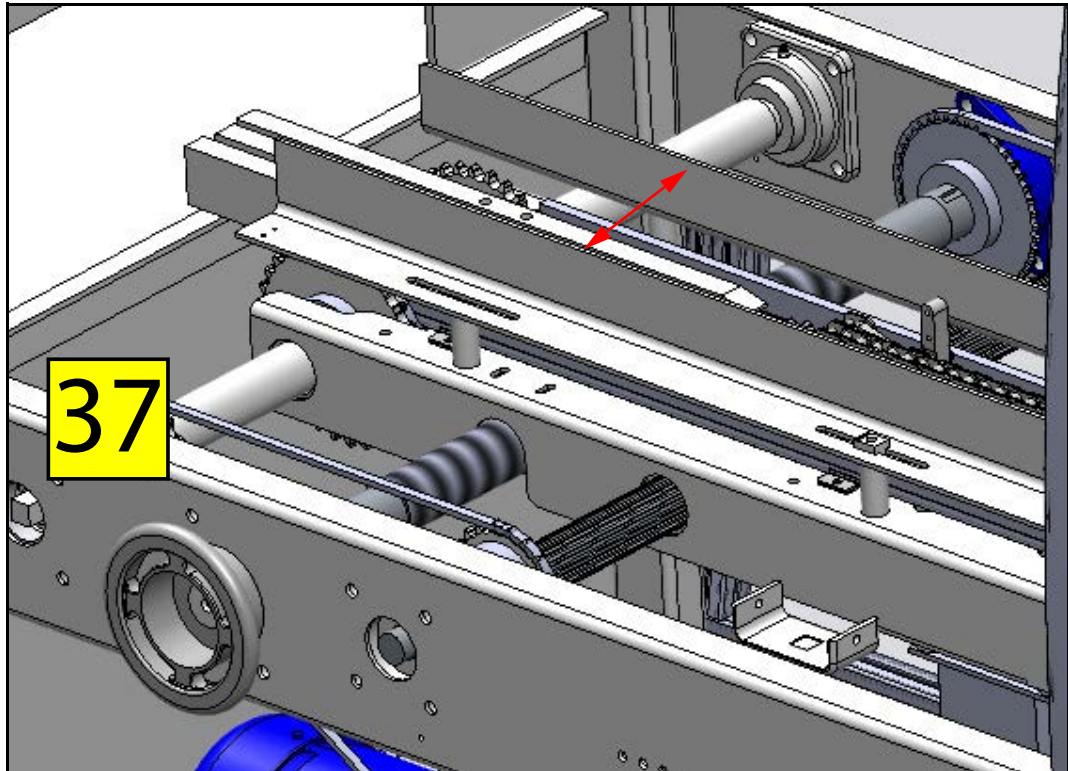
Changeover Point 36



5.9.12. Set The Compression Section Width

Turn guide adjustment wheel until folded tray fits snugly between guide rails.

Changeover Point 37



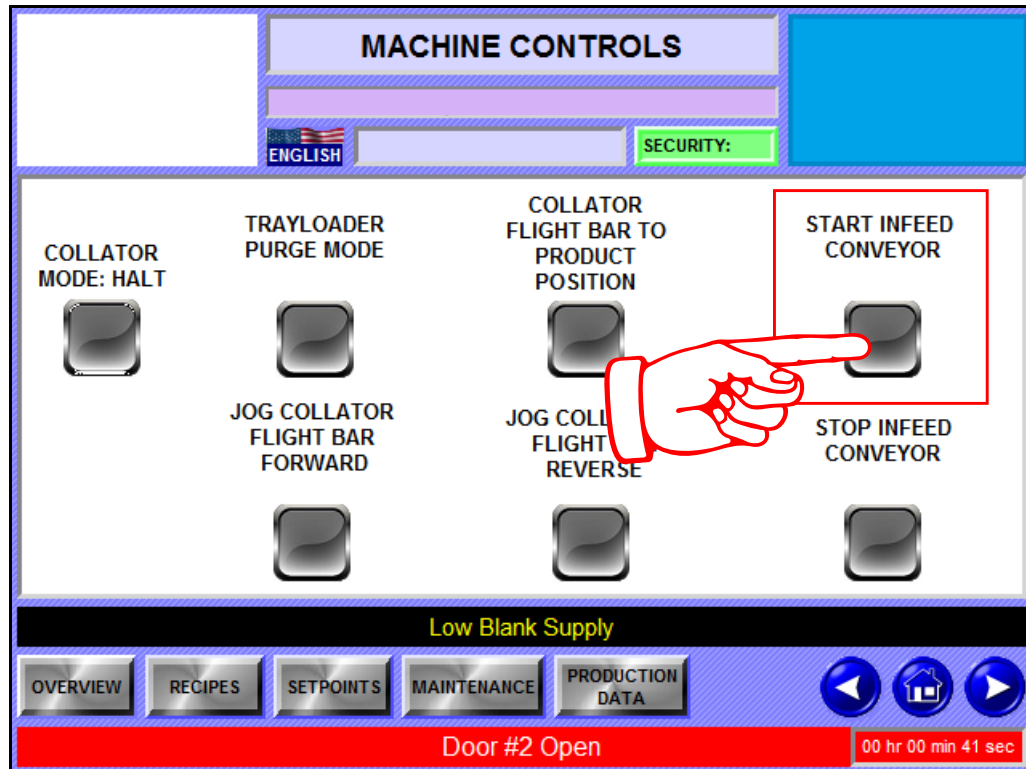
This completes the portion of the changeover related to Compression Section

At this point, all physical changes to the machine should be complete

5.10. Prepare the Machine to Run Production

5.10.1. Prime the Machine with Product

Use the Machine Controls screen to run the infeed conveyor to prime the machine with product up to the collator.



5.10.2. Verify Set-Up

1. While the in-feed is filling with product, observe the flow of product. Verify that product doesn't hang up at the agitator or on any guides.
2. Verify that minimum product and fallen product photo-eye beam sees across the assembly properly.



3. Use the Collator Halt/Run switch to release one group of product at a time through the Flight Bar and Compression sections.
 - a. Verify that the product group maintains its configuration throughout.
 - b. Verify the timing of the blank feed. The blank and the product need to meet at the start of the compression section correctly.
 - c. Verify the timing of the glue guns.
 - d. Confirm that the proper folding of the major and minor flaps.

If acceptable, the changeover process is complete

6

Troubleshooting

6.1. Overview

This chapter includes troubleshooting information, divided into two sections to guide you through getting the machine up and running with minimal downtime.

The first section is a table of fault messages that appear on the HMI. Below that is a list of remedies.

The second section is a compiled list of possible abnormal running conditions and their remedies.



Do not attempt to service equipment that is in cycle. Serious injury or death may occur. Properly stop the equipment when addressing faults. Refer to you specific plant safety protocols required for opening guard doors to clear jams and faults.

Perform LOTO before performing maintenance.

6.2. Faults Messages

Message	Possible Cause	Remedy
Trayloader Low Air Pressure	Air supply is not connected to machine or is OFF. Shut-off Valve is closed. Air regulator is not set correctly. Air filter is clogged. Main air solenoid valve is faulty. Air pressure switch faulty.	Make sure that air line is connected and ON. Make sure that main air valve is in the SUP position. Make sure air regulator is set to 80 PSI. Replace air filter according to Section Check operation of main air solenoid valve. There is a red LED indicator on the valve that will light up when the valve is activated provided that the valve and it's support circuits are working properly Check operation of pressure switch.
Glue Unit Not Ready	The glue hoses, guns and/or tank are not at setpoint temperature.	Wait for temperature to reach setpoint temperature. Refer to glue units instruction manual for more details.

Message	Possible Cause	Remedy
Detect Blank Missed On Blank Feed Conveyor.	Blank not picked and fed. “Detect blank in position” photo eye problems.	Check cups for clogs and cleanliness Check mounting and function of photo eye.
	Damaged or warped corrugated blank.	Remove blank. Inspect blanks in magazine for similar conditions.
Blank Jammed at Blank Feed Conveyor	Blank Feed Torque Limiter tripped.	Clear jam. Reset torque limiter.
Fallen Product - Trayloader Flight Bar Area	Product has fallen in pacing flight area.	Remove product. Check for any obstructions in area.
Blank Feed Conveyor Torque Limiter Tripped	Lugged conveyor is jammed by an obstruction.	Correct jam condition. To reset torque limiter, locate associated handwheel or ratchet point and turn until torque limiter engages.
	Torque limiter not set properly.	If torque limiter disengages under normal or starting load conditions, verify torque setting on limiter. Adjust as needed.
	Torque limiter proximity sensor problems.	Inspect wiring and position of sensor. Adjust or repair as needed.
Trayloader Flight Bar Torque Limiter Tripped	<i>See: Blank Feed Conveyor Torque Limiter Tripped</i>	<i>See: Blank Feed Conveyor Torque Limiter Tripped</i>

Message	Possible Cause	Remedy
Flap Tucker Torque Limiter Tripped	<i>See: Blank Feed Conveyor Torque Limiter Tripped</i>	<i>See: Blank Feed Conveyor Torque Limiter Tripped</i>
Trayloader Flight Bar Torque Limiter Tripped	<i>See: Blank Feed Conveyor Torque Limiter Tripped</i>	<i>See: Blank Feed Conveyor Torque Limiter Tripped</i>
Blank Pusher Torque Limiter Tripped	<i>See: Blank Feed Conveyor Torque Limiter Tripped</i>	<i>See: Blank Feed Conveyor Torque Limiter Tripped</i>
Tray Former Torque Limiter Tripped	<i>See: Blank Feed Conveyor Torque Limiter Tripped</i>	<i>See: Blank Feed Conveyor Torque Limiter Tripped</i>
Product Release Gate Jammed	Collator Clamp did not get back to the full down position.	Check for and remove any obstruction.
Main Drive Fault	Drive controller fault.	Shut down the machine for a minimum of 1 minute and restart the machine. Refer to the controller manual on CD for more details.
Collator Servo's Not Ready	Drive controller fault.	Shut down the machine for a minimum of 1 minute and restart the machine. Refer to the controller manual on CD for more details.
Flap Closer Torque Limiter Tripped	<i>See: Blank Feed Conveyor Torque Limiter Tripped</i>	<i>See: Blank Feed Conveyor Torque Limiter Tripped</i>
Collator Must Be Homed	Servo motor has lost track of its position.	Press HOME button on HMI <i>Machine Controls</i> screen.

Message	Possible Cause	Remedy
Collator Jammed	Escapement Flight Bar Clear PE blocked as product is being released	Check for and remove any obstruc- tion.
Reset Door Safety Relay	A guard door was opened, then closed and the CYCLE STOP / RESET button was not pressed.	The guard door safety relay circuit can detect when a door is open and when one is closed. In this situation, the LED on the switch will be flashing green
Blank Roller Drive Fault	Drive controller fault.	Shut down the machine for a mini- mum of 1 minute and restart the machine. Refer to the controller manual on CD for more details.
Open Flap Detected	<i>See: Blank Feed Con- veyor Torque Limiter Tripped</i>	<i>See: Blank Feed Conveyor Torque Limiter Tripped</i>
Main Drive Ratchet Missing	Prox Switch to detect presence of ratchet not made	Replace missing ratchet
		Check for faulty prox sensor
		Check position of prox sensor
Door “#” Open	Canopy door is open.	Close door. Press CYCLE STOP / RESET button
Blank Magazine Door “#” Open	Guard door on Extended Blank Maga- zine is openis open.	Close door. Press CYCLE STOP / RESET button

Message	Possible Cause	Remedy
E-STOP “#” Pressed	Emergency Stop button pressed at location cited.	Make sure all Emergency Stop buttons are pulled up. Press CYCLE STOP/RESET button to clear message
Line E-Stop Engaged	Emergency Stop button on the equipment interconnected to the TrayStar pressed	Make sure all Emergency Stop buttons are pulled up. Press CYCLE STOP/RESET button to clear message
Blank Loader Bridge is Not in the Down Position	Prox Switch to detect down position not made	Replace missing ratchet
		Check for faulty prox sensor
		Check position of prox sensor
Blank Lifter Jammed	The Blank Lift assembly left the DOWN prox and did not make the UP prox in time or did not make it back to the DOWN prox in time	Check for an obstruction
		Check position of prox sensor
		Check for an obstruction
Blank Loader Jammed	The Blank Loader assembly left the HOME prox and did not make the FORWARD prox in time	Check for an obstruction
		Check position of prox sensor
		Check for an obstruction

Message	Possible Cause	Remedy
Blank Magazine Conveyor Drive Fault	Drive controller fault.	Shut down the machine for a minimum of 1 minute and restart the machine. Refer to the controller manual on CD for more details.
Escapement Servo Faulted	Drive controller fault.	Shut down the machine for a minimum of 1 minute and restart the machine. Refer to the controller manual on CD for more details.
Home Escapement Servo	Servo motor has lost track of its position.	Press HOME button on HMI <i>Machine Controls</i> screen.
Escapement Flight Bar Blocked	Escapement Flight Bar Clear PE blocked when Escapement FB's started to move	Remove product, Home servo and press CYCLE STOP/RESET button to clear message and reset the machine

6.3. Abnormal Running Conditions

This section was designed to help the operator and the maintenance personnel understand and resolve abnormalities with the machine.

This section was designed to help the operator and the maintenance personnel understand and resolve any possible abnormalities with the

machine. Abnormal running conditions and operator interface error messages are covered.

Use the following troubleshooting index and troubleshooting charts as an aid in solving your machine's malfunction.

Problem	Possible Cause	Remedy
Product Jams at Infeed Conveyor	Insufficient back pressure. Infeed side guides too loose/tight	Increase speed of upstream conveyor. Set up the product triangle pattern and check for the proper clearance.
Product Jams at Collator	The collator is not set up for the proper width and/or length.	Reset the width of the collator using the operator interface.
Product Escapes From Collator Lugs	The collator is not set to the proper width. The products have loose labels. The center guide is not square with the collator. Is the center support guide mounting tight?	Check the pack pattern and adjust the width accordingly. Correct the problem at labeler. If not, reposition the center guide. Check center support nut for tightness.
Pacing Flight Bar Problems	The flight bar infeed guides are not set properly for the product size being run through the machine. The flight bar conveyor is not set up properly.	Recheck the guides and if wrong, readjust. Verify that the machine is set to mechanical zero.

Problem	Possible Cause	Remedy
Blank Feed Problems	The clearance is not set properly on the blank magazine.	When properly set, the tray should have a maximum 1/16-inch side and end clearance.
Blank Feed Problems (Cont.)	The support pins are not set properly on the blank magazine. The rear “T” support on the blank magazine is not in the correct position.	Check the pins on each side. Center pints should be equal and protrude further than additional pins, which should be set for minimal engagement. Take care not to pre-break minor flaps. The centerline of the front rod of the “T” support should be positioned at the tray edge.
Blank Ejector Problems	Incorrect program setup. The blank ejector lugs are not set to the correct position. Incorrect air pressure.	Recheck the Electro Cam program number and settings for the proper channel. Verify program number and product size. Reset the position of the blank ejector lugs. Check airflow adjustment (solenoid/cylinder). Check for air leakage.

Problem	Possible Cause	Remedy
Blank Conveyor Jams	Loose, broken or worn drive timing belts. Bad tray blanks.	Check and replace worn parts. The trays should be clean, flat and dry. The trays should not be bowed or warped more than 1/4 inch/linear foot. Check to see if the tray blank is in the wrong direction.
	Wrong size tray blank. Parts and/or a damaged tray blank blocking discharge path. Bad or worn bearings. Loose, broken or worn drive timing belts. Blank feed conveyor torque limiter is out of adjustment. Blank feed conveyor synchronizer faulty or out of adjustment.	Measure the trays to see if they are correct. Check the tray blank lower path is clear of debris. Check and replace worn parts. Adjust lubrication schedule. Check for proper alignment. Check that the torque limiter is in proper adjustment Check tightness and/or replace belts. Check for proper roller chain adjustment.

Problem	Possible Cause	Remedy
Blank Pull-Down Problems Blank Pull-Down Problems (cont.)	Blanks are upside-down.	Inspect the blanks in the magazine. Reposition as necessary.
	Incorrect vacuum pressure.	Inspect blow off sensor for proper operation. Adjust or replace, as necessary.
	Defective blow off sensor.	Verify “vacuum blow off” proximity sensor is positioned to release vacuum before blank kicker is actuated.
	Defective vacuum cup.	Inspect vacuum cups for wear. Replace cups or adjust sensor as necessary.
	Improper vacuum cup adjustment.	Inspect the vacuum cup’s position. In the upper position, the cup should barely touch the bottom of the case in the hopper. Verify vacuum cups are NOT aligned to a blank’s score line and adjust individual cups or entire assembly as needed.

Problem	Possible Cause	Remedy
Flap Closure Problems	Flap closure torque limiter not reset.	Check that the torque limiter is in proper adjustment.
	Flap closure out of adjustment.	Flap tucker must engage, tuck and remain engaged until retained by guides allowing a 1/4-inch clearance from tucker to tray on each side.
	Tray/product not centered.	Center tray and or the product.
	Flap closure parts loose, worn or broken	Inspect and replace worn or broken parts.
Glue Guns Not Operating	No or low glue supply.	Check; if low, fill the glue unit.
	Low air supply to the glue unit.	Adjust incoming pressure to 80 psi.
	Low supply of glue.	Inspect glue supply and add glue, if needed.
	Low glue temperature.	Inspect the temperature of the glue and adjust, if needed. Make sure to stop production until the glue temperature is correct.
	Dirty, defective or misaligned glue photo eye.	Inspect the photo eye sensor and wiring. Clean or replace as needed.
	Glue gun/nozzle damaged or clogged.	Clean/replace component.
	Main glue unit not set up properly for the application.	Check glue supplier for correct set up procedure.

Problem	Possible Cause	Remedy
Trays Not Sealing	Glue gun disconnected. Low air supply to the glue unit. Glue gun damaged. Clogged nozzle. Bad or wrong glue Faulty glue photo sensor. Damaged or disconnected hoses.	Check for a broken or disconnected air line to the glue gun; if damaged, replace it. Adjust incoming air pressure to 80 PSI. If damaged, replace glue gun Unclog the nozzle. If the wrong glue type was accidentally added to the glue unit, serious problems could result. Check with the glue manufacturer for glue compatibility and follow their directions. Check for damage and repair.
	Glue guns not properly set up, programmed or adjusted.	If the problem still persists, re-read and follow the Electro cam glue setup procedures. Check glue suppliers. Verify program number and product size.

Problem	Possible Cause	Remedy
Trays Not Sealing (Cont.)	Main glue unit not properly setup for the application.	Re-read and follow directions on the setup of the tray-forming conveyor.
	Wrong tray or product size. Flap closure side rails too high or too low. Compression side rails not properly adjusted. Wrong program Side compression and lug compression not properly adjusted for the required tray size.	Verify program number and product size.

7

Maintenance

7.1. 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



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

Task	When To Do It			
	Daily	Weekly	Quarterly	Every 6 Months
Perform Walk Around Safety Inspection	X			
Clean External Surfaces	X			
Check EMERGENCY STOP Button For Proper Operation	X			
Inspect Vacuum Cup Filters	X			
Clean Photo Eyes		X		
Inspect Glue Gun Nozzles & Hoses		X		
Inspect Conveyor Belts			X	
Lubricate Drive Chains			X	
Inspect Chain Tensions			X	
Check Fastners				X
Grease Zerk Fittings				X
Inspect Gearbox Seals				X

Table 7-1 - Periodic Maintenance Schedule

7.2. Daily Tasks

7.2.1. Walk Around Safety Inspection



Before continuing with any maintenance checks, shut off power supply to machine. You can be severely injured if you do not.

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.

Commodities like rolls of film should be placed conveniently, yet out of the way so an operator can move around safely.

The areas in red represent areas around the machine that should be kept clear so an operator can safely operate the equipment.

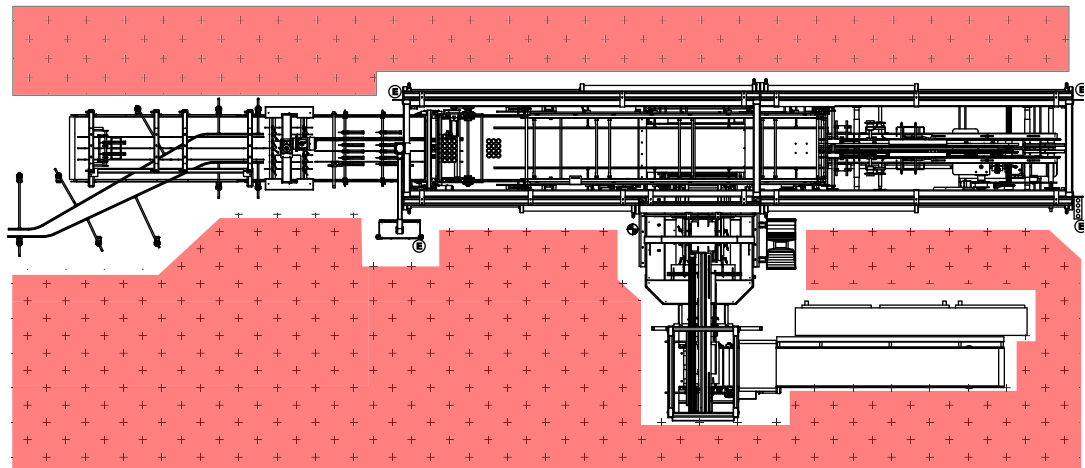


Figure 7-1 - Walk around inspection

7.2.2. Cleaning External Surfaces



Required Tools

You need the following special tools for this procedure:

- cleaning wipes or a soft, damp cloth



Warning

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

1. Use cleaning wipes to clean external surfaces of the machine.

7.2.3. Check Emergency Stop Button

Verify functionality of all Emergency Stop push buttons. With the machine cycling, press the **EMERGENCY STOP** button. The machine should stop immediately. Pull button back up and press RESET button to reset.



E-Stop in normal run state.



E-Stop activated.
(LED illuminated)

Figure 7-2 - Emergency Stop Push Button

7.2.4. Inspect Vacuum Cup Filters

Inspect the vacuum cups for corrugate dust. Use an air nozzle with low pressure to blow away debris.



7.3. Weekly Tasks

7.3.1. Cleaning Photo Eye

To clean the photo eye spray a small amount of window cleaner on it and wipe it clean with a cleaning wipe.

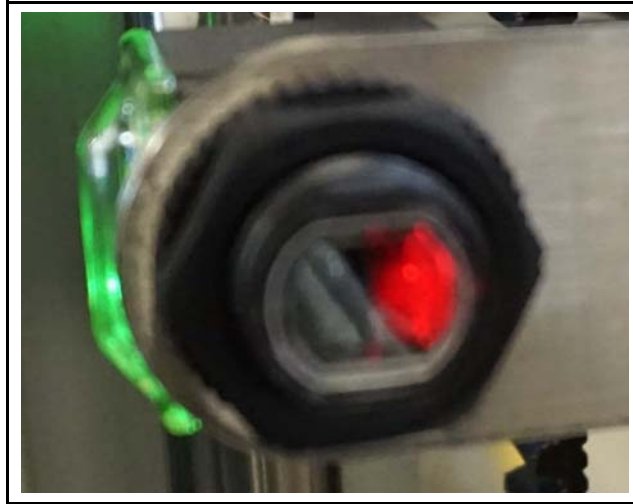
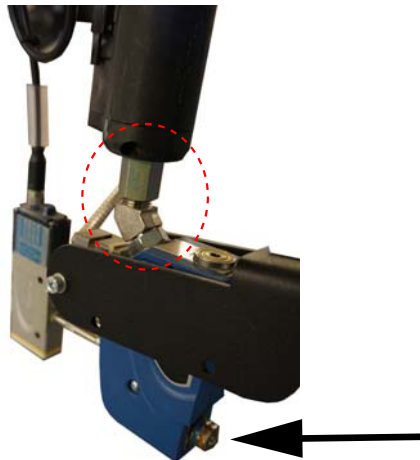


Figure 7-3 - Photo Eye Lens

7.3.2. Inspect Glue Guns & Hoses

The type of glue system depends on the application, but the principal is the same regardless. Inspect and clean as necessary all glue system components; nozzles, glue gun, hoses and connections.



7.4. Quarterly

7.4.1. Inspect & Clean 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, wipe remove any built up debris.



Figure 7-4 - Inspect Modular Belts

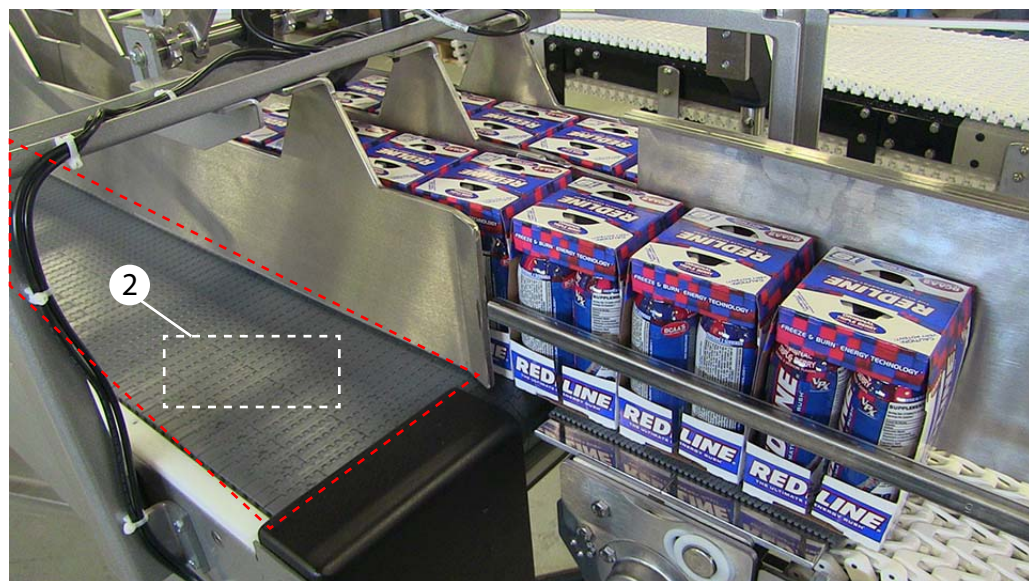


Figure 7-5 - Inspect Table Top In-feed Conveyor Belt

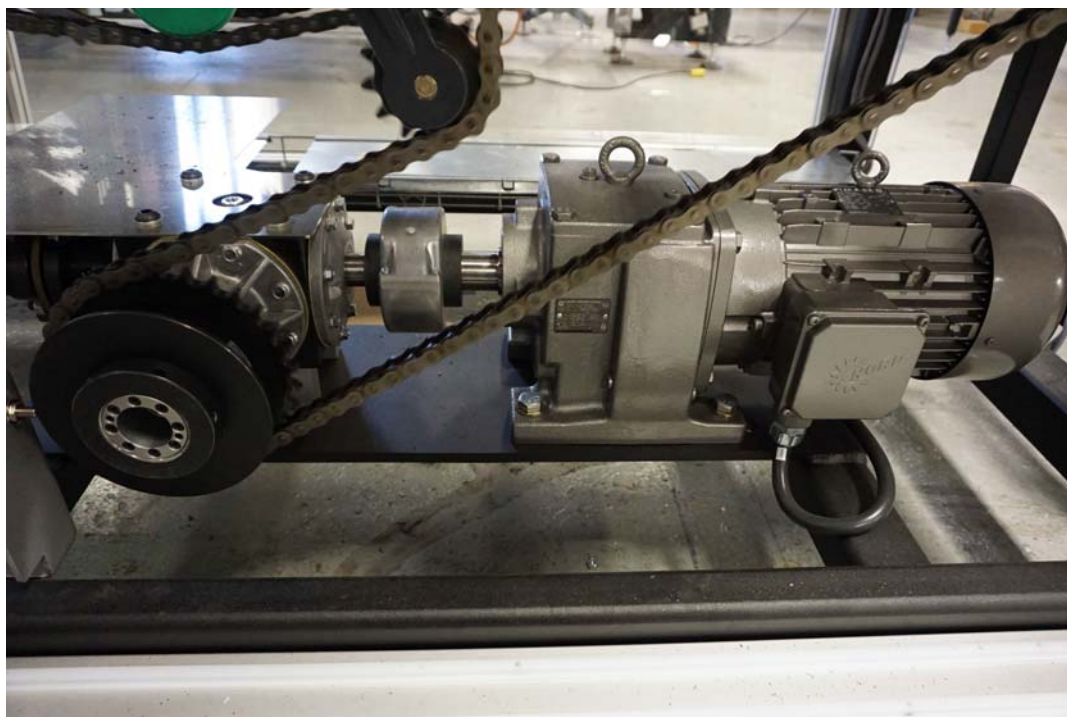
7.4.2. Clean & Lubricate Drive Chains



Required Tools

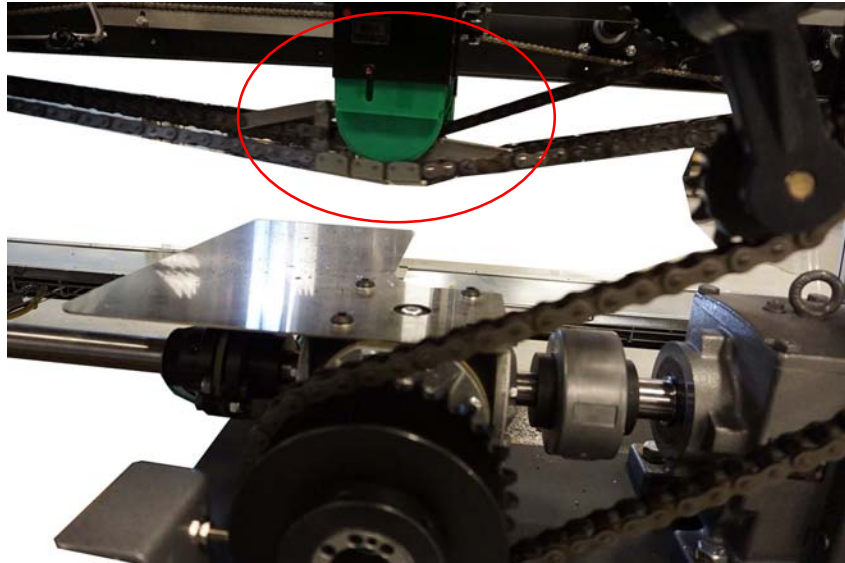
You need the following special tools for this procedure:

- cleaning wipes
- Light weight chain lubricant
- Applicator



7.4.3. Inspect Compression Chain Tension

Each of the Leading and Trailing Compression chains comes with a chain tensioner. Adjust as necessary.



7.5. B-Annual

7.5.1. *Checking Fasteners for Tightness*



Required Tools

You need the following special tools for this procedure:

- Adjustable End Wrench
- Medium Flat Tip Screwdriver
- Medium Phillips Tip Screwdriver
- Set of Hex Wrenches

Check/tighten all exterior fasteners.

7.5.2. *Inspect Gearbox Seals*

The gearbox types used on this equipment are referred to as: “SEALED”, meaning; according to the OEM, the gearboxes are sealed and do not require additional lubrication, but the seals at the motor/gearbox union should be inspected twice a year for leaks.

7.6. Chain & Bearing Maintenance

7.6.1. 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.

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.

7.6.2. Bearing Lubrication & Care

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).

Service/Support Information

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, nation 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

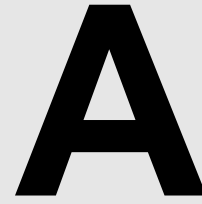
All equipment is unloaded, unpacked and inspected for any damage. If there is any damage, the Bill of Landing will need to be signed describing the damage.

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

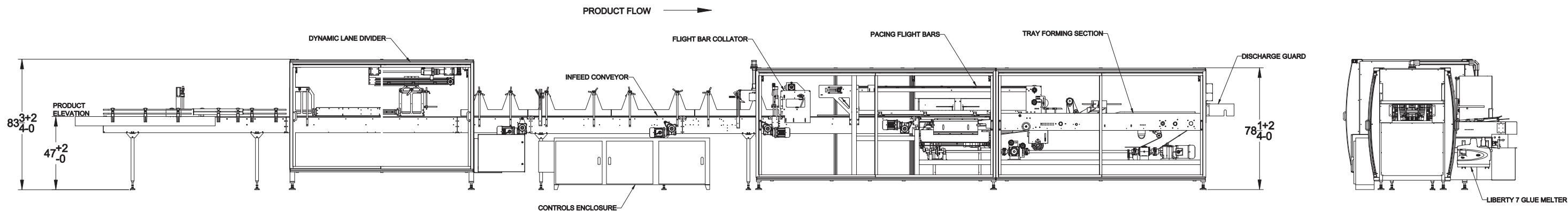
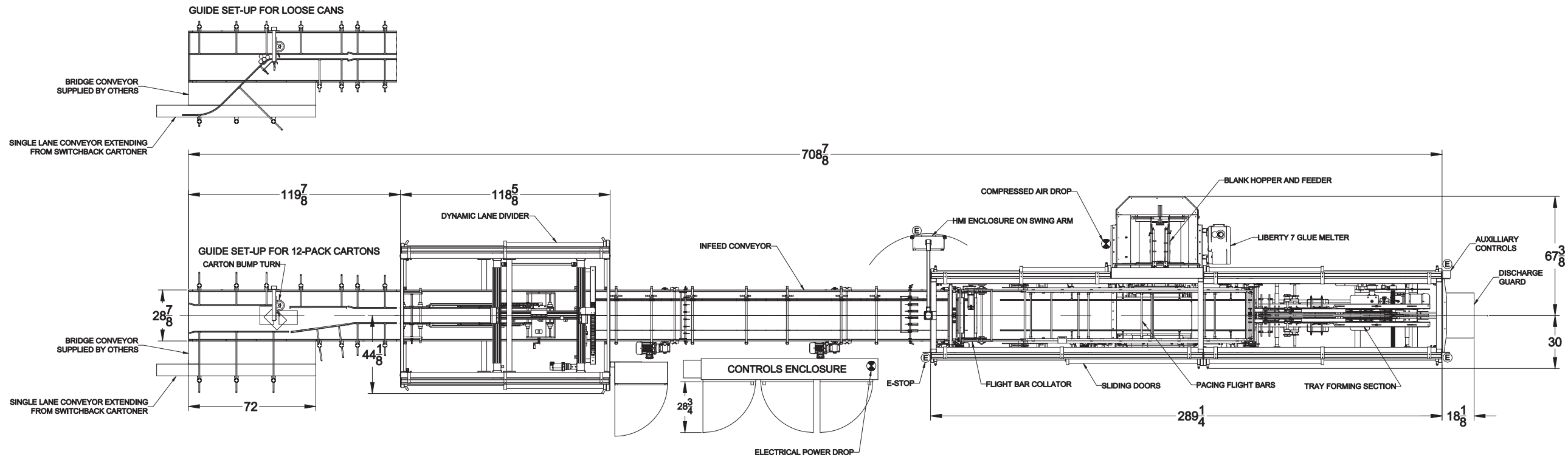
Leverage our aftermarket services. Our secure web portal gives you access to all documentation of your machines. Therefore, no need to reorder any lost manuals, schematics, or bill of materials. In addition, the portal user can access pictures and videos of their machine to visually understand the machine. 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.



Illustrated Assembly Drawings & BOM

A.1. Illustrated Assembly Drawings & BOM

This section contains the bills of materials (BOMs) with mechanical prints. The mechanical print, if available, precedes the corresponding BOM. In some instances, the mechanical print is not available. The BOM, whether a print accompanies it or not, still contains valid descriptions and part numbers for the assemblies.



PRODUCT INFORMATION

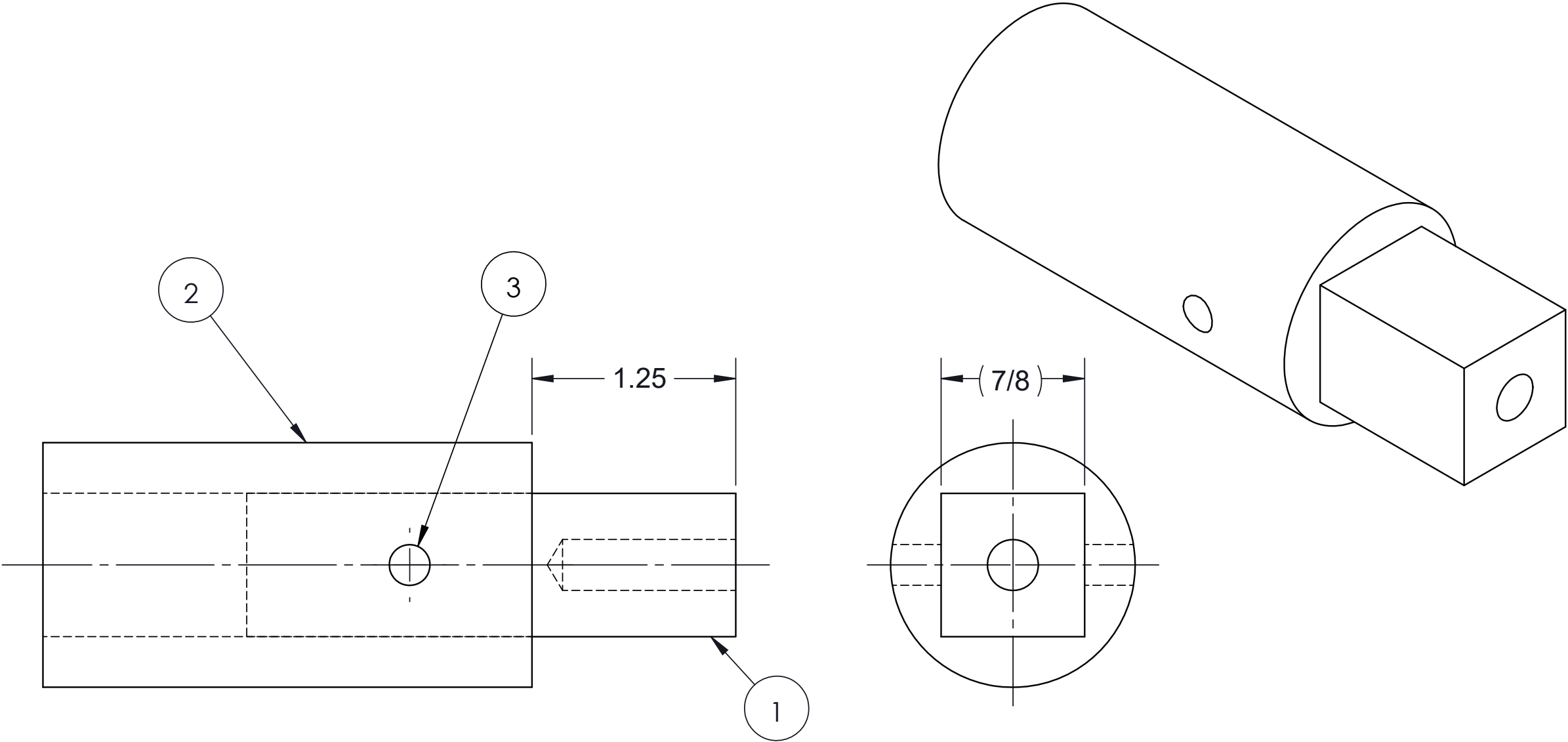
PROD #	PRODUCT DESCRIPTION	WIDTH	LENGTH	HT	RATE	PATTERN	WIDTH	LENGTH	RATE
1	12 OZ 4-PACK CARTON, 6 PER TRAY	5.20	5.20	4.81	90	3 X 2 X 1	15.60	10.40	15
2	12 OZ 6-PACK CARTON, 4 PER TRAY	7.80	7.80	4.81	60	2 X 2 X 1	15.60	10.40	15
3	12 OZ 12-PACK CARTON, 2PER TRAY	10.40	7.80	4.81	30	2 X 1 X 1	15.60	10.40	15
4	355 ML 12 COUNT LOOSE	2.26	2.26	6.13	360	4 X 3 X 1	9.04	6.78	30
5	355 ML 4-PACK CARTON, 6 PER TRAY	4.52	4.52	6.13	90	3 X 2 X 1	13.56	9.04	15
6	355 ML 6-PACK CARTON, 4 PER TRAY	6.78	4.52	6.13	60	2 X 2 X 1	13.56	9.04	15
7	355 ML 12-PACK CARTON, 2 PER TRAY	9.04	6.78	6.13	30	2 X 1 X 1	13.56	9.04	15
8	16 OZ 24 COUNT LOOSE	2.60	2.60	6.13	360	6 X 4 X 1	15.60	10.40	15
9	16 OZ 4-PACK CARTON, 6 PER TRAY	5.20	5.20	6.13	90	3 X 2 X 1	15.60	10.40	15
10	16 OZ 6-PACK CARTON, 4 PER TRAY	7.80	5.20	6.13	60	2 X 2 X 1	15.60	10.40	15

GENERAL NOTES:

PRODUCT ELEVATION: 47" +2/-0
 ELECTRICAL POWER: 460V 60HZ 3PH, 50 FULL LOAD AMPS
 MAIN CIRCUIT BREAKER AMPERAGE: 80A, 5KA SCCR
 COMPRESSED AIR: 80 PSI (OPERATING PRESSURE) 20 SCFM
 AMBIENT TEMPERATURE LESS THAN 95 DEG F
 ARPAC PAINT COLORS: BLACK & SILVER
 IP ADDRESS SCHEME: 10.255.255.XXX
 PLC FIRMWARE VERSION: STUDIO 5000 V30
 HMI FIRMWARE VERSION: FACTORY TALK STUDIO V10

Approved By: _____
 Signature: _____
 Date: _____
 RETURN TO:
 ARPAC

 A DURAVANT COMPANY		9555 WEST IRVING PARK RD. SCHILLER PARK, IL 60176	
DRAWN: 8-26-2020	BY: SRA	SCALE: N/A	SIZE: B
RELEASED:	FILENAME: S17766	APPROVED BY:	
DESCRIPTION: LAYOUT, TRAY LOADER, TS-2200			
BLUE MARBLE PRODUCTIONS		DRAWING NUMBER: S17766	



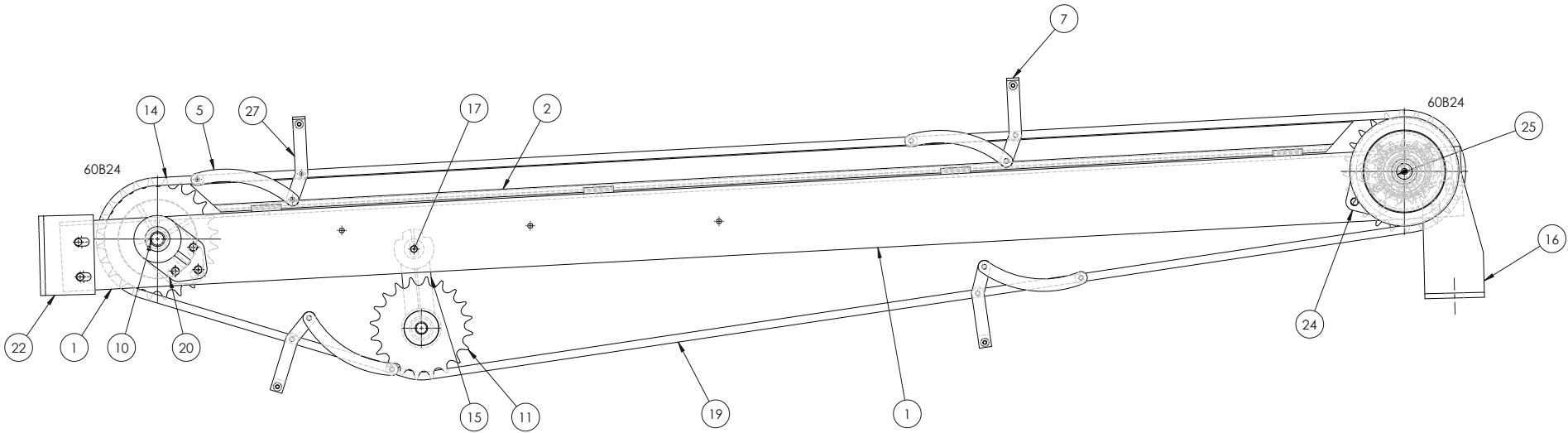
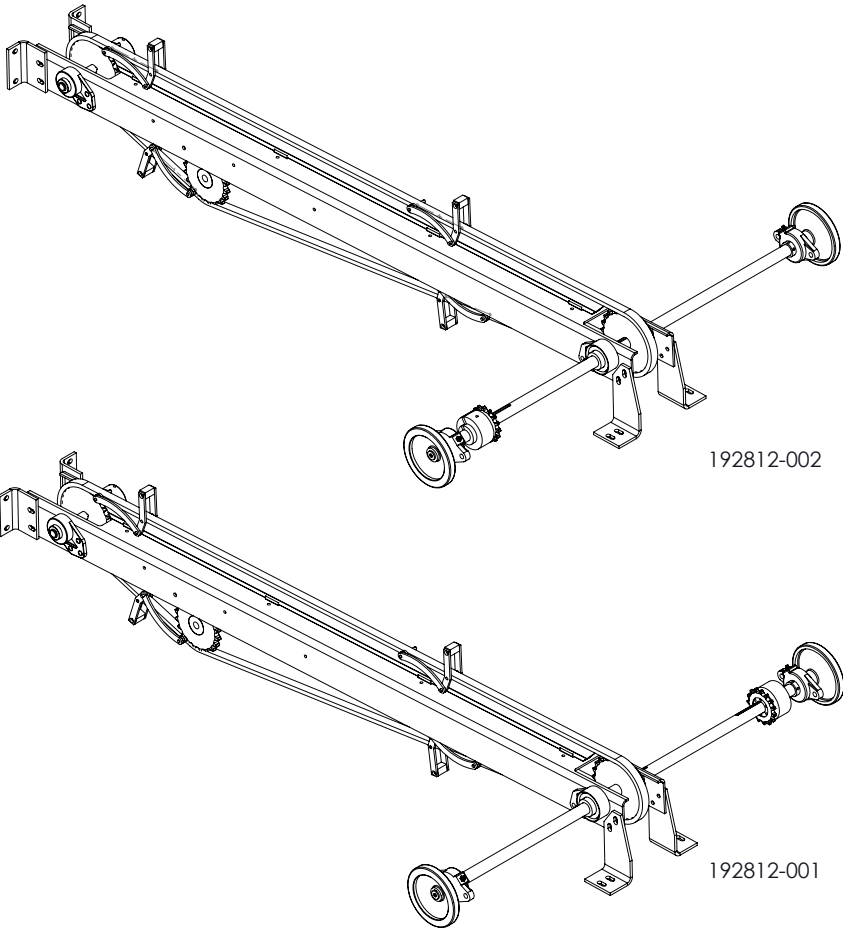
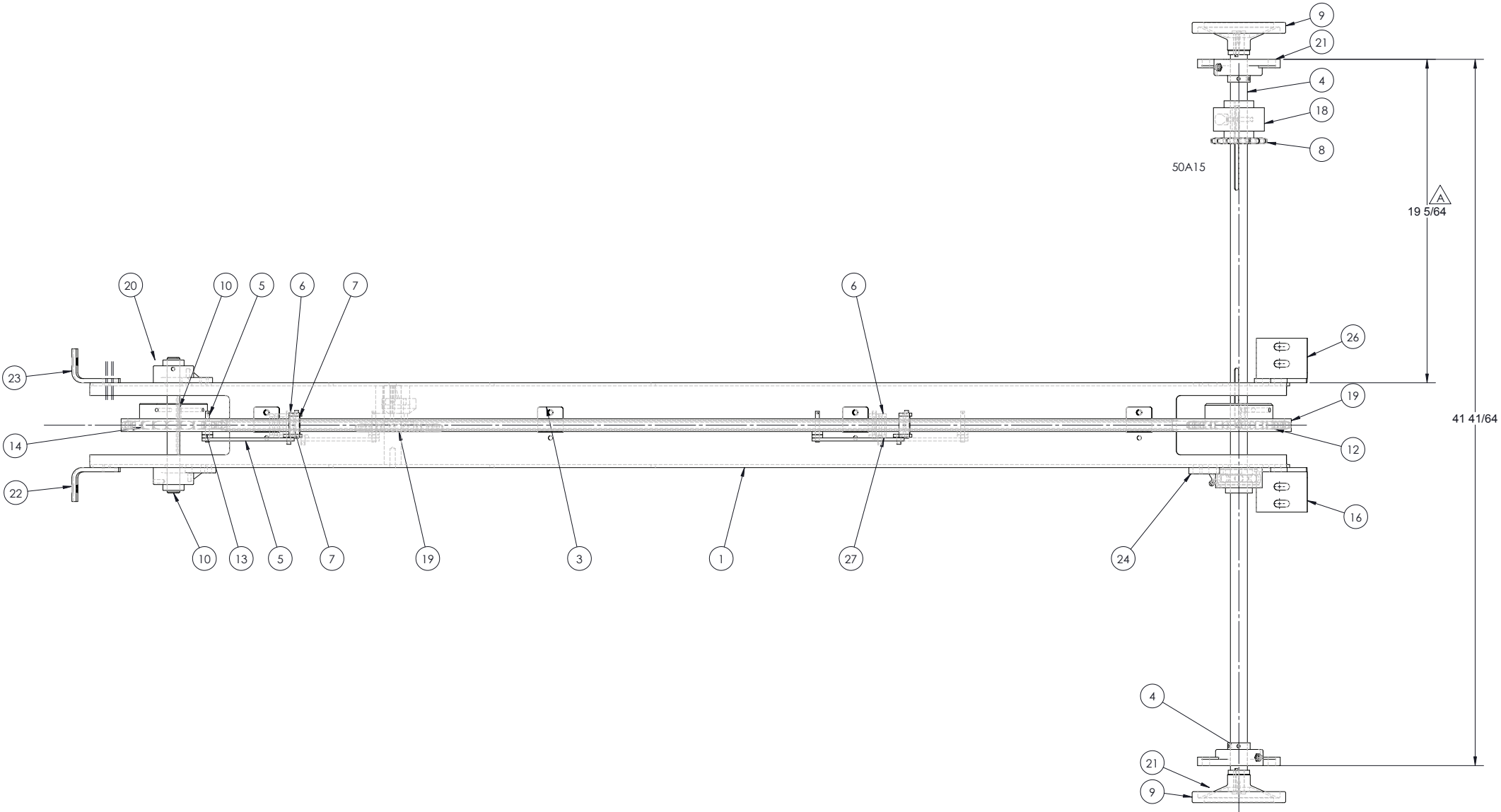
3	1	800318-002	PIN, ROLL, 1/4X3/4 LG
2	1	135004	SLEEVE, 7/8 SQ.
1	1	134996	SHAFT, 7/8 SQ.
ITM	QTY	PART NUM	DESCRIPTION

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:	8-13-99	BY:	FEB
RELEASED:	8-13-99	FILENAME:	135005
DESCRIPTION:		SCALE:	1:1
		APPROVED BY:	FEB
		ASSY, SLEEVE, SQUARE	
		DRAWING NUMBER: 135005	

FINISH- NONE

REVISIONS			
RV	DATE	BY	DESCRIPTION
A	4/23/2018	HG	19-5/64 WAS 18-21/64

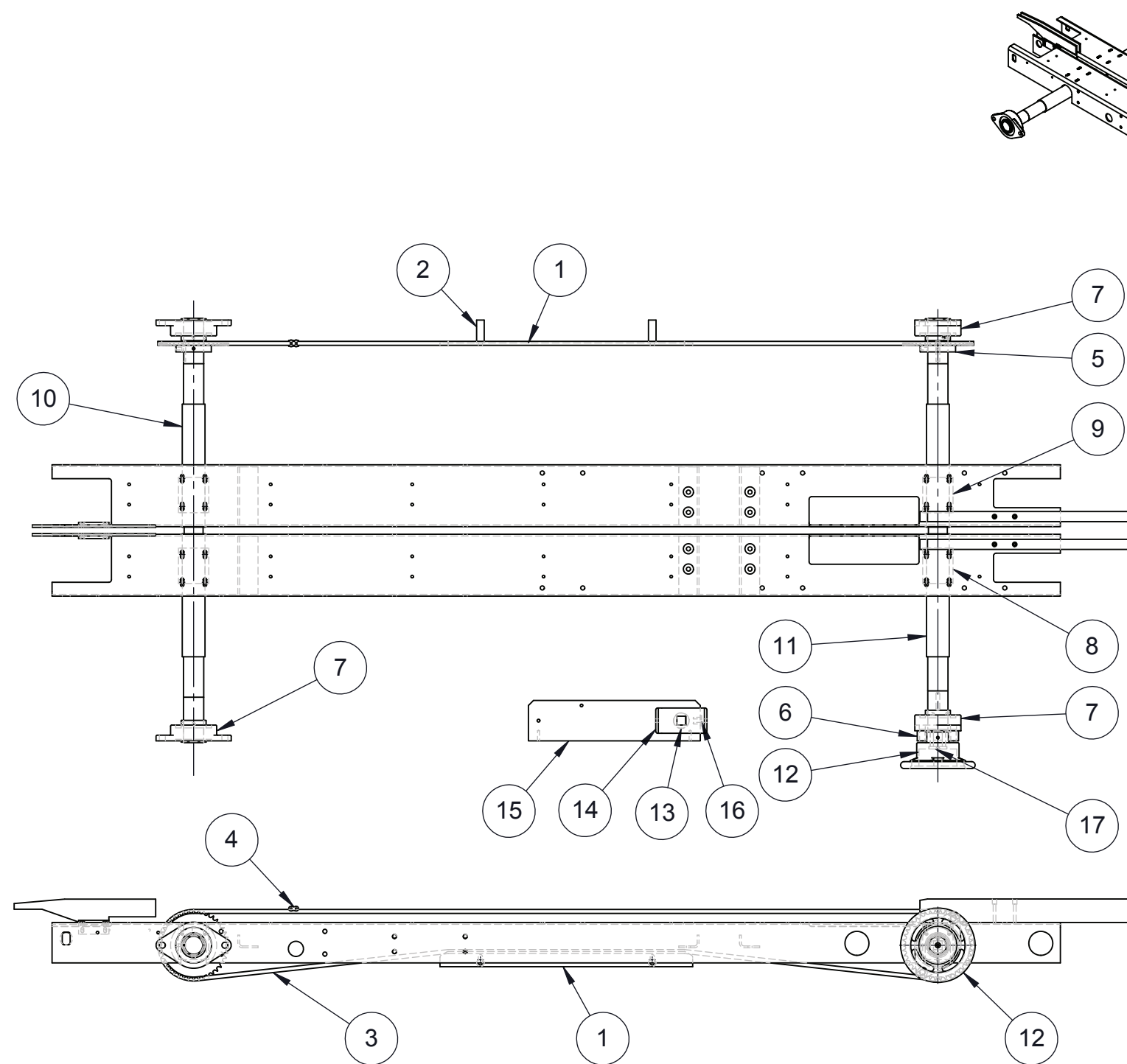


27	4	199589	ARM, LUG W/PINS, BLANK, CONV., LH
26	1	195403-002	MACH
25	2	809370	BKT, FRONT, BLANK CONV, LH
24	1	837218	FSNR, WASHER, C'SINK, 4MM, TYPE GN184
23	1	191144-001	BRG, FLG, 1 ID, 3-BOLT, STD DUTY
22	1	191144	BRACKET, TAIL, BLANK, CONV, LH
21	2	827116	BRG, FLG, 1 ID, 2-BOLT, 3.89 BOLT CNTRS
20	2	306773	BRG, FLG, 3/4 ID, 3-BOLT STANDARD-DUTY
19	12	800489	CHAIN, RLR, #60, HOLLOW PIN
18	1	800609	PLEASE ORDER TSUBAKI ONLY
17	1	191142	CPLG, PHASE-LOCK, HDI-25-1 1 BORE
16	1	195403-001	SHAFT, IDLER CONV., BLANK
15	1	809688	BKT, FRONT, BLANK CONV, RH
14	1	192817	TENSIONER, SATP
13	8	110024	SPKT, 60B24, MOD, 0.750 BORE
12	1	126423	SPACER, TOGGLE, DOG BLANK
11	1	110022-001	SPKT, 60A20, MOD, 1.750 BORE
10	1	191145	SPKT, 60B24
9	2	809078	SHAFT, IDLER
8	1	113060	HD.WH, SAFETY, W/CPLG, 5/8 B., 5 1/2OD
7	4	108844	SPKT, 50A15, MOD, 1.000 BORE
6	4	199591	SPACER, LUG PUSHER
5	4	137849	ARM, LUG
4	1	187247	ARM, PIVOT, LH
3	4	801359	SHAFT, DRIVE, CONV., BLANK
2	1	192598-000A	CLAMP, RAIL, SINGLE, 1.5 LG, SS, ROUND HOLE
1	1	192815	CHAIN, GUIDE #60

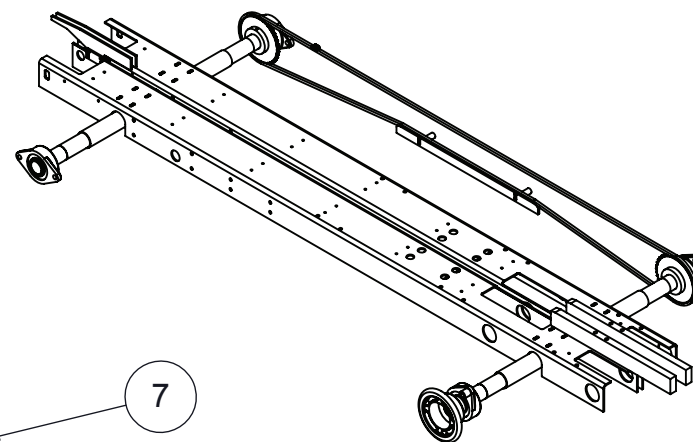
ITM	QTY	PART NUM	DESCRIPTION
BILL OF MATERIALS			

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: 06/14/2001	BY: FEB	SCALE: 0.25:1	SIZE: D
RELEASED: 06/14/2001	FILENAME: 192812	APPROVED BY: FEB	
DESCRIPTION: ASSY, CONV, FEED, BLANK			
			DRAWING NUMBER: 192812

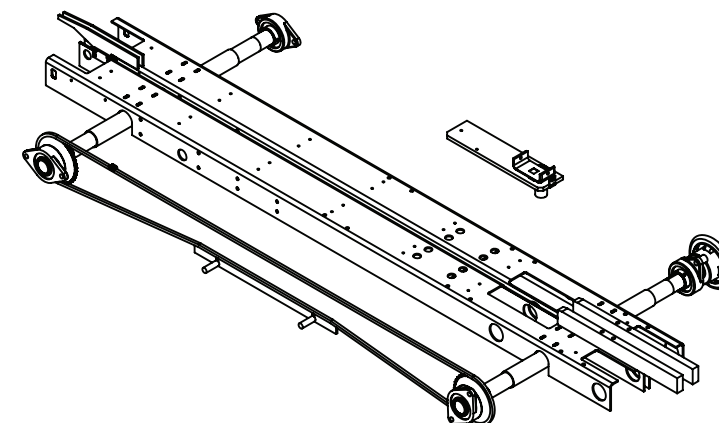
192812-001 LH MACHINE, AS SHOWN
192812-002 RH MACHINE, OPPOSITE



PART NUMBER	CONFIGURATION
220975	LH, AS SHOWN
220975-001	RH, OPPOSITE



220975



220975-001

17	1	324796	WASHER, SPECIAL
16	1	260166	PROX BRACKET
15	1	241985	PLT, MTG, RANGE
14	1	238683	WLDMT, WRENCH, INSERT
13	1	324771	SLEEVE, 7/8 SQ HOLE
12	1	324793	HANWHEEL, WITH INDICATOR
11	1	190806	ADJUST SCREW, W/ HANDLE
10	1	190805	ADJUST SCREW, W/OUT HANDLE
9	2	220981	BLK, LH THREAD, RAIL ADJ
8	2	220980	BLK, RH THREAD, RAIL ADJ
7	4	805929	BRG, FLG, 2 ID, 2-BOLT STANDARD-DUTY
6	2	134997	SPACER, 1" OD X 17/32 ID
5	2	104853	40B-42 SPROCKET, MOD, 2 BORE
4	1	800502	LINK, CONN, #40,
3	1	800462-002	CHAIN, RLR, #40, RLR RVT,
2	2	107918-100	CHAIN TAKE-UP SPACER
1	1	108213	SUPPORT, GUIDE CHAIN
ITM	QTY	PART NUM	DESCRIPTION

BILL OF MATERIALS

ARPAC 9511 WEST RIVER ST.
SCHILLER PARK, IL 60176

UNLESS OTHERWISE SPECIFIED:
ALL DIMENSIONAL TOLERANCES:

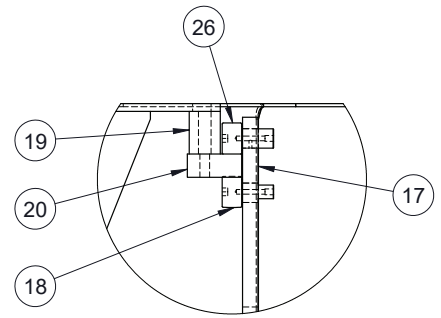
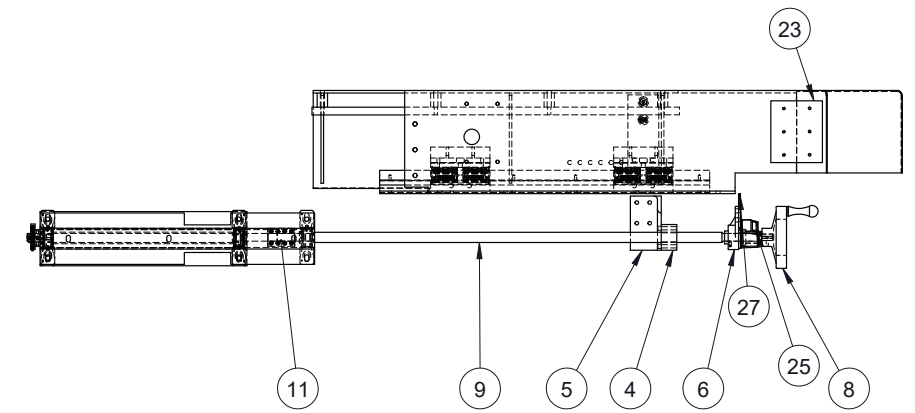
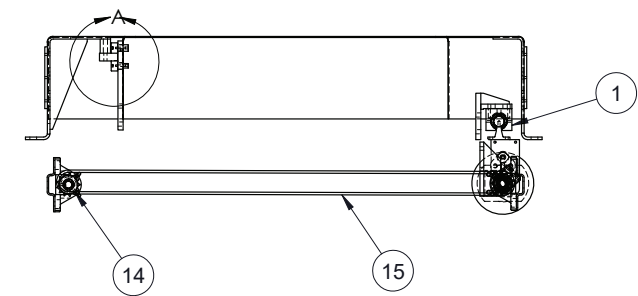
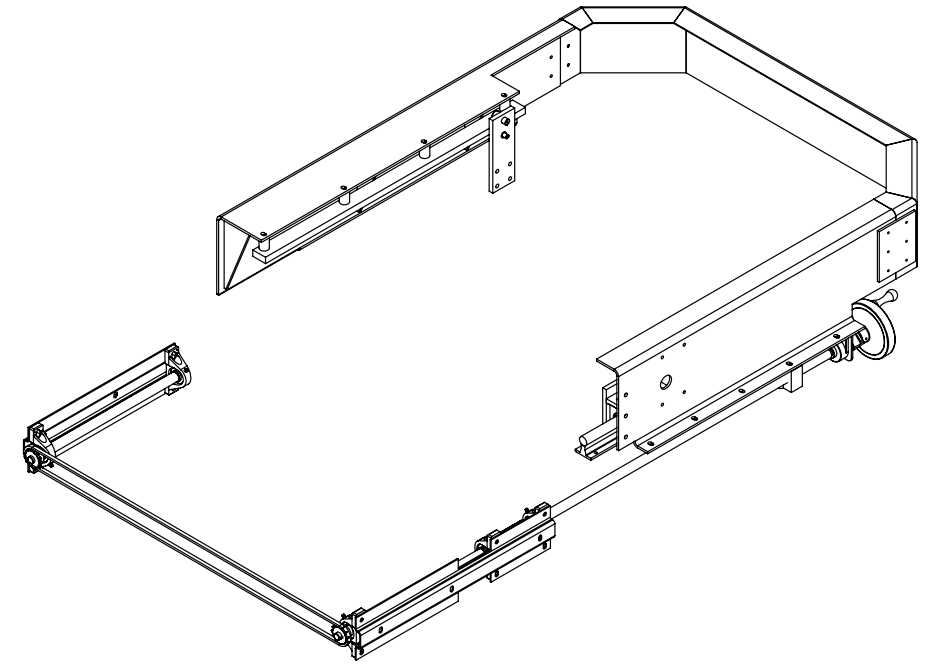
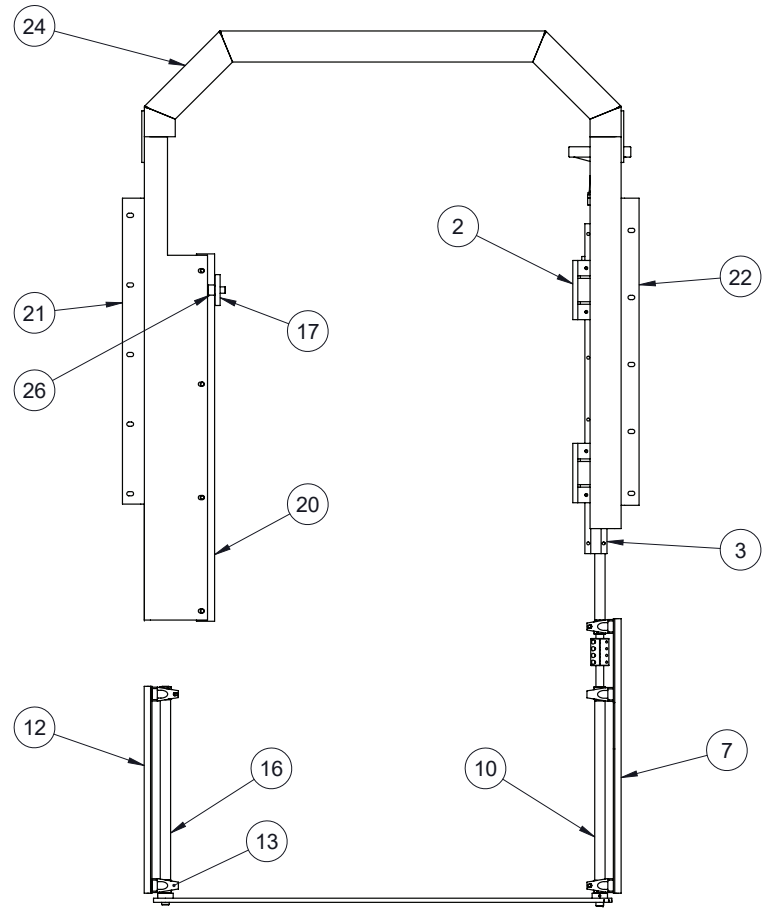
FRACTIONS
TWO (2) DECIMALS ± 1/64
THREE (3) DECIMALS ± 0.010
ANGLES ± 0.5°

DRAWN: 10/03/2001 BY: TTR SCALE: 1:14 SIZE: B

RELEASED: FILENAME: 220975 APPROVED BY: TTR

DESCRIPTION: ASSY, SCREW, ADJ

DRAWING NUMBER:
220975



DETAIL A
SCALE 1 : 4

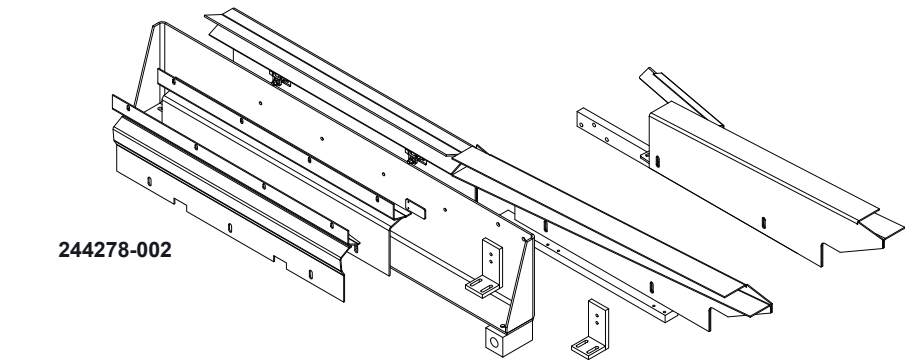
NOTE:
ITEM 28 NOT SHOWN.

27	1	226399	PLT, MTG
26	1	809737	FOLLOWER, CAM, 1 OD, 5/8-18 STUD, W/HEX HOLE, SEALED
25	1	822223	COUNTER, POSITION, CODE: CE986019
24	1	193151	COVER, BACK, MAGAZINE
23	2	188687	PLATE, NUT
22	1	195417	CHANNEL, MAGAZINE, RH. LH MACHINE
21	1	195415	CHANNEL. LH
20	1	189870	RAIL
19	4	189860	SPACER
18	1	802881	FOLLOWER, CAM, 1 OD, 7/16-20 STUD, CROWNED, ECCENTRIC 5/8 O.D
17	1	189859	PLATE, BEARING MTG.
16	1	188681	SHAFT, THREAD, REAR DOOR
15	6	800462	CHAIN, RLR, #40, RLR RVT
14	2	850550	SPKT, 40B13, MOD, 0.750 BORE, AKA 101909
13	5	827113	BRG, BLK, PILLOW, 3/4 ID, INTERMEDIATE DUTY
12	1	193148	SPACER, BRG, MTG
11	1	816364	CPLG, 3/4 BORE, SPLIT CLAMP 8-BOLT CLAMP
10	1	189865	SHAFT, ADJ MAGAZINE
9	1	189864	SHAFT, MAG., ADJ., FRONT
8	1	141354	HAND WHEEL, SPECIAL
7	1	193147	SPACER, BRG, MTG
6	1	306773	BRG, FLG, 3/4 ID, 3-BOLT STANDARD-DUTY
5	1	193146	BKT, MNT, 1" -8 RH NUT
4	1	193145	NUT, 1"-8, RIGHT HAND
3	1	187337	SHAFT, RAIL
2	2	189866	BRACKET, MTG, SLIDE, BEARING
1	2	187346	ASSY, PILLOW BLOCK, OPEN
ITM	QTY	PART NUM	DESCRIPTION
BILL OF MATERIALS			

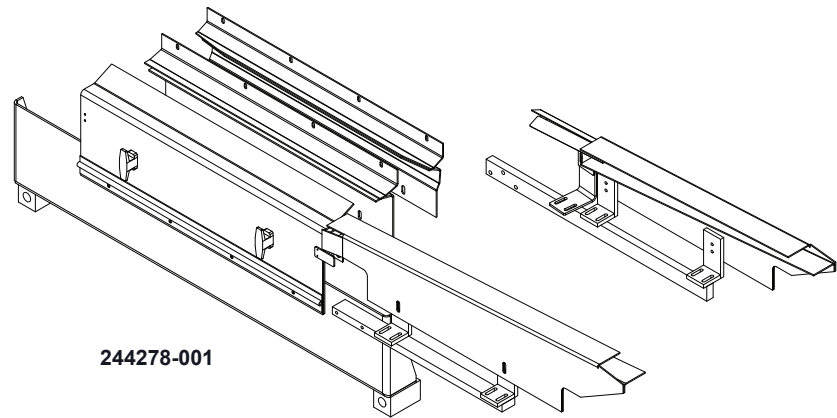
ARPAC

9511 WEST RIVER ST.
SCHILLER PARK, IL 60176

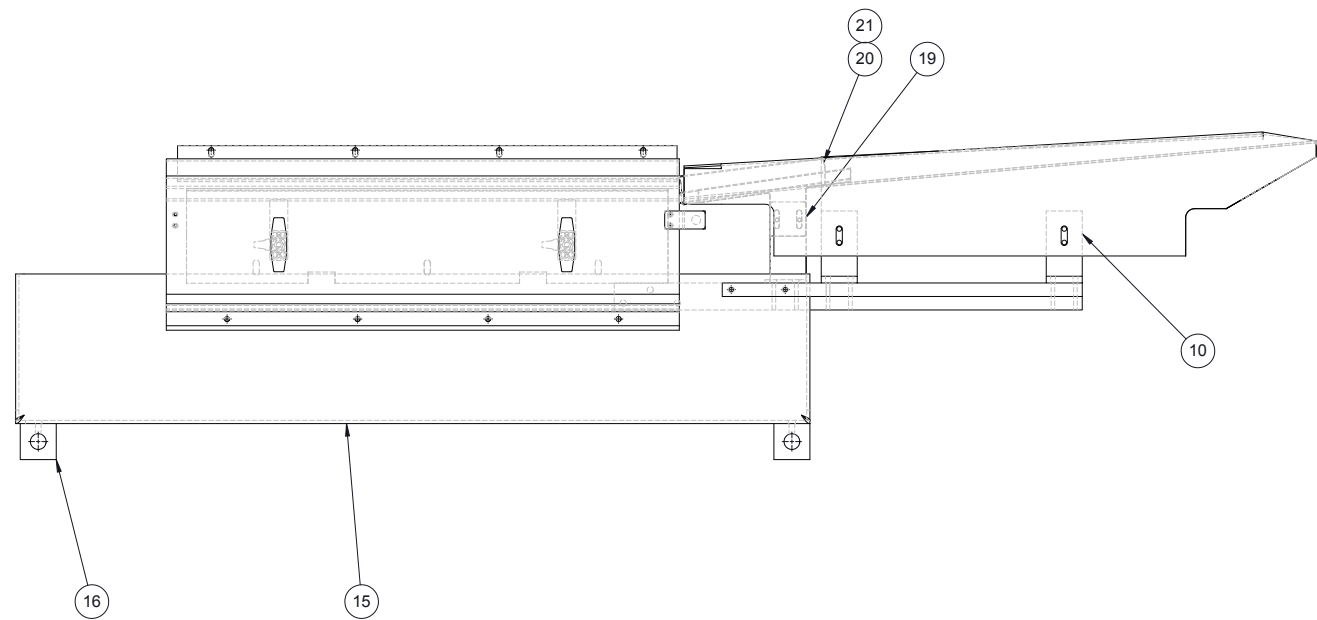
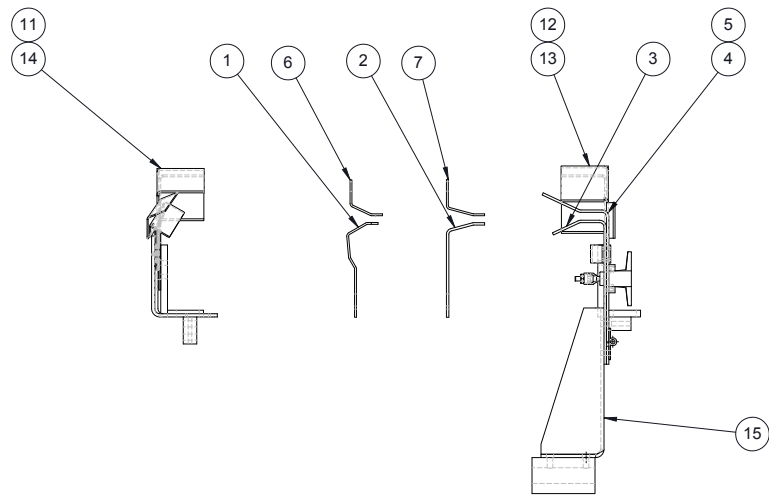
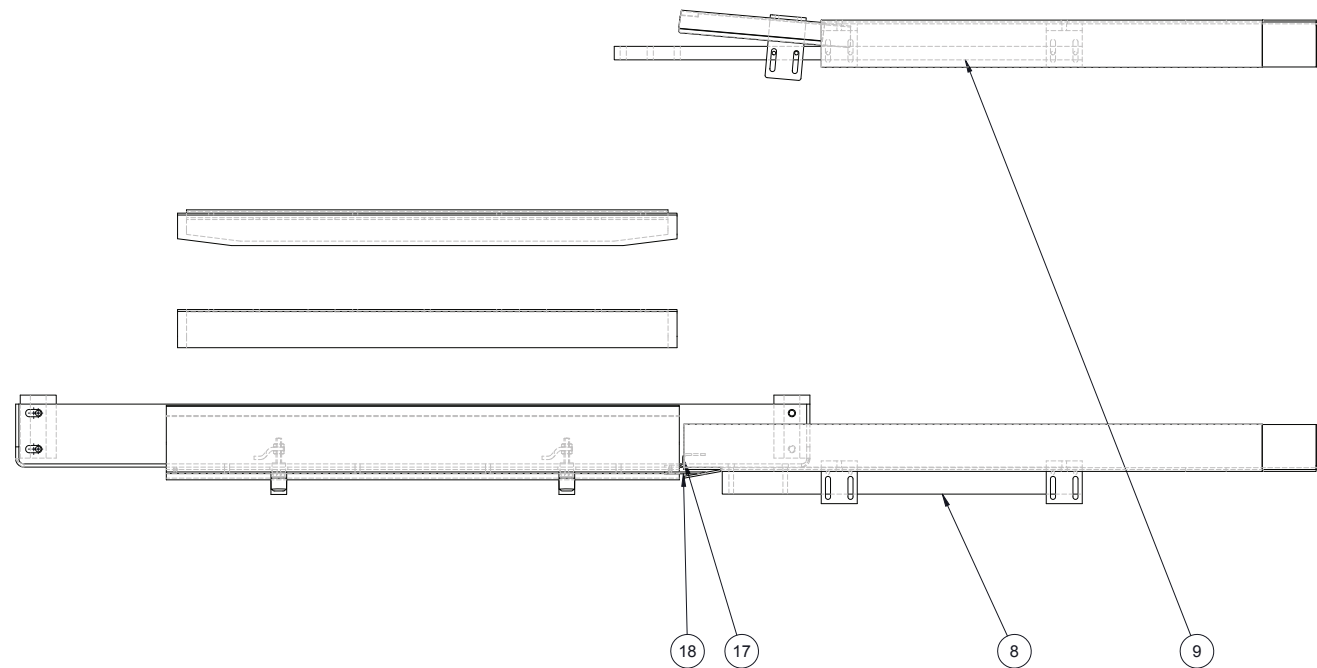
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONAL TOLERANCES:		FRACTIONS TWO (2) DECIMALS THREE (3) DECIMALS ANGLES	± 1/64 ± 0.010 ± 0.005 ± 0.5°
DRAWN: 3/21/2006	BY: YL	SCALE: 0.083:1	SIZE: C
RELEASED: 3/21/2006	FILENAME: 238316	APPROVED BY: YL	
DESCRIPTION: ASSY, MAGAZINE, GUIDE & SUPPORT			
			DRAWING NUMBER: 238316



244278-002



244278-001



PART NUMBER	DESCRIPTION	ITEM 12	PART DESCRIPTION	ITEM 13	PART DESCRIPTION
244278-001	LH, AS SHOWN	193138	BLANK, SUPPORT, BOTTOM, MAGAZINE SIDE	193139	BLANK, SUPPORT, BOTTOM, DOOR SIDE
224278-002	RH, OPPOSITE	193141	GUIDE, SIDE, BLANK, MAGAZINE SIDE	193140	GUIDE, SIDE, BLANK, DOOR SIDE

21	1	244294-001	BLANK GUIDE, BOTTOM,LH
20	1	244293-001	BLANK GUIDE, TOP, LH
19	1	244292	BKT, BLANK GUIDE
18	1	242173	BKT, PROX, TARGET
17	1	242172	BKT, PROX
16	2	193143	NUT, REAR DOOR, LH THD.
15	1	193142-002	MNT, DOOR, RH MACH
14	1	244266-002	GUIDE, SIDE, BLANK, LH
13	1	193141	GUIDE, SIDE, BLANK
12	1	193138	BLANK SUPPORT, BOTTOM
11	1	244267-002	SUPPORT, BOTTOM, BLANK, LH
10	4	187499	BRACKET
9	1	193137	BAR, BLANK GUIDE HOLDER
8	1	193136	BAR, BLANK GUIDE SUPPORT
7	1	193174	LIMITOR, TOP, BLANK
6	1	193173	LIMITOR, TOP, BLANK
5	2	802653	LATCH, VISE-ACTION
4	1	187546	DOOR
3	1	187545	SUPPORT LOWER DOOR
2	1	193135	SUPPORT, BLANK
1	1	193134	SUPPORT, BLANK
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: 4/09/2007

BY: LLS

SCALE: 0.1875:1

SIZE: D

RELEASED: 4/09/2007

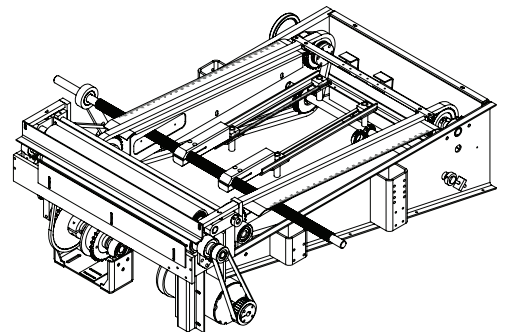
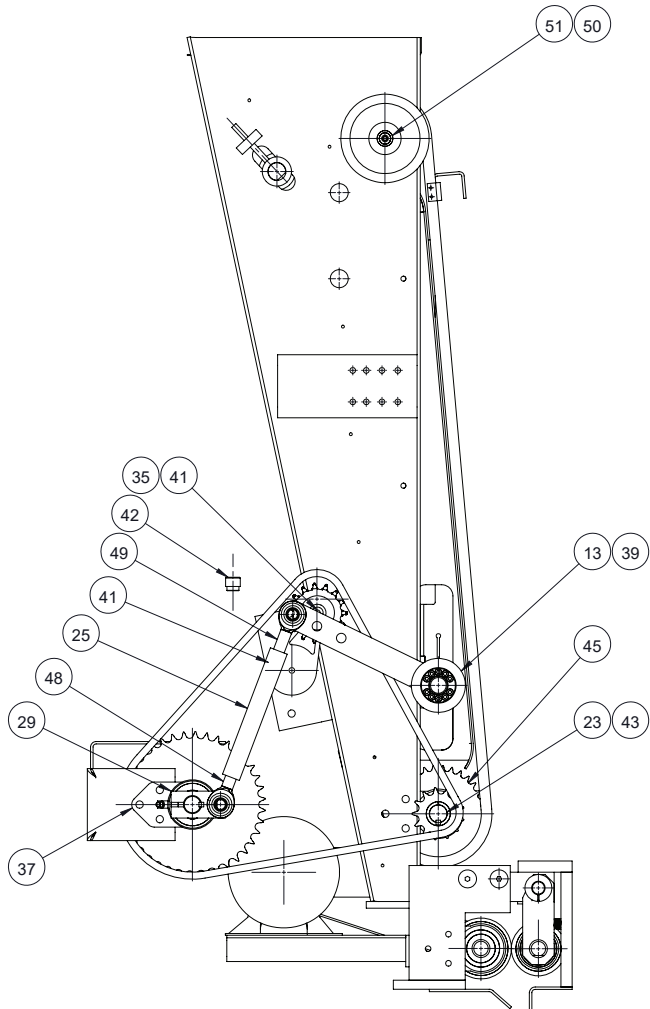
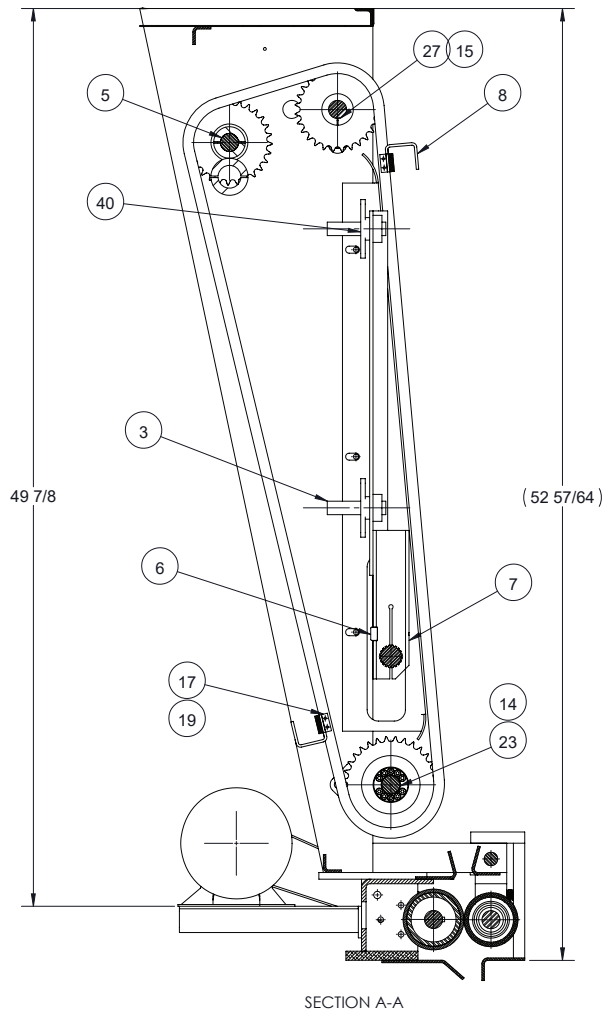
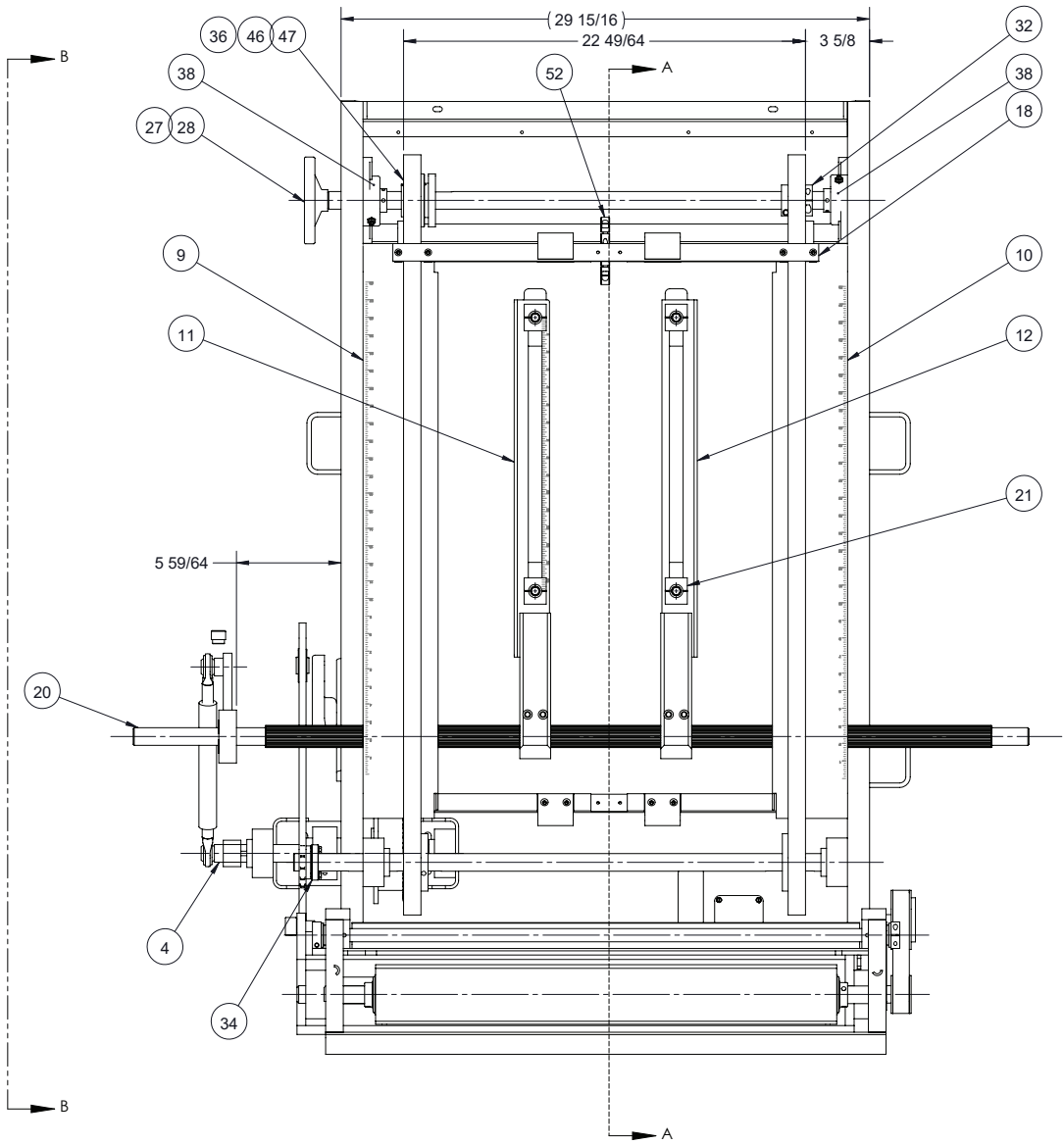
FILENAME: 244278

APPROVED BY: LLS

DESCRIPTION:

ASSY, BLANK, SUPPORT & GUIDE

DRAWING NUMBER:
244278

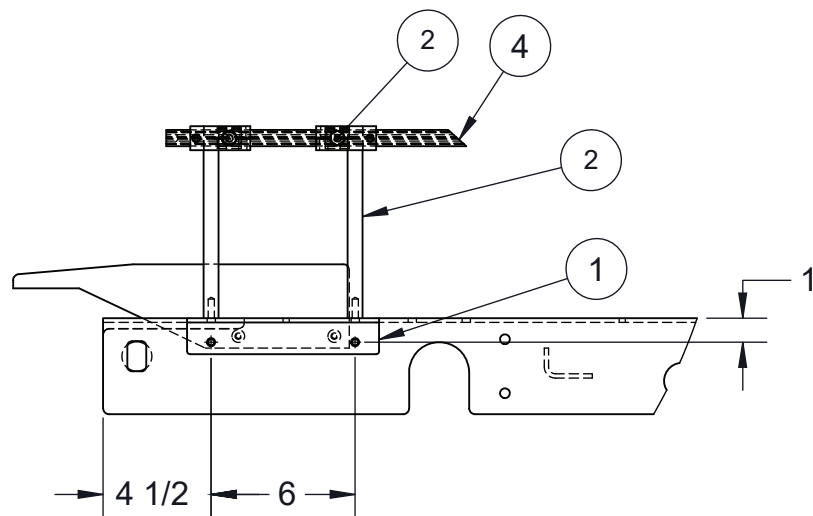
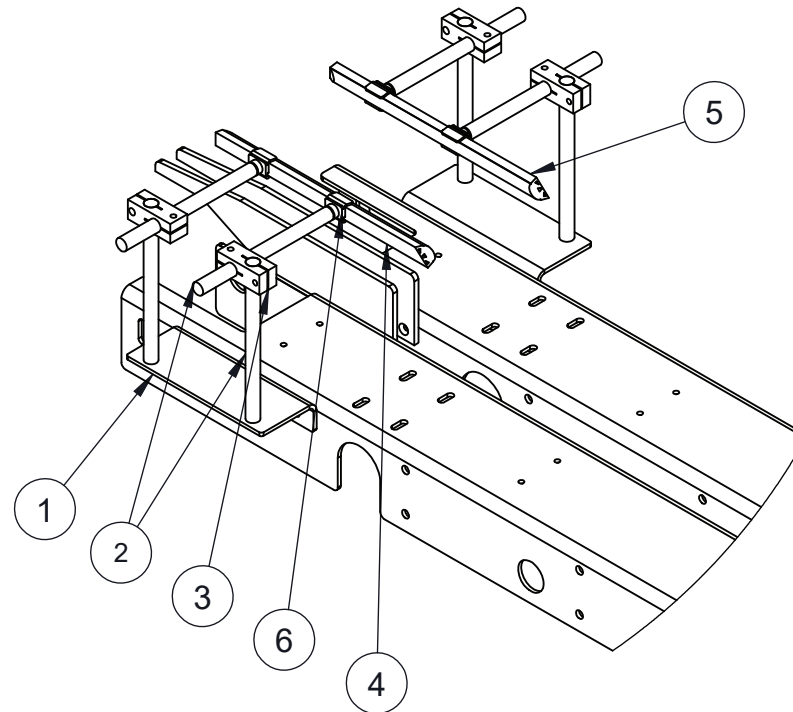
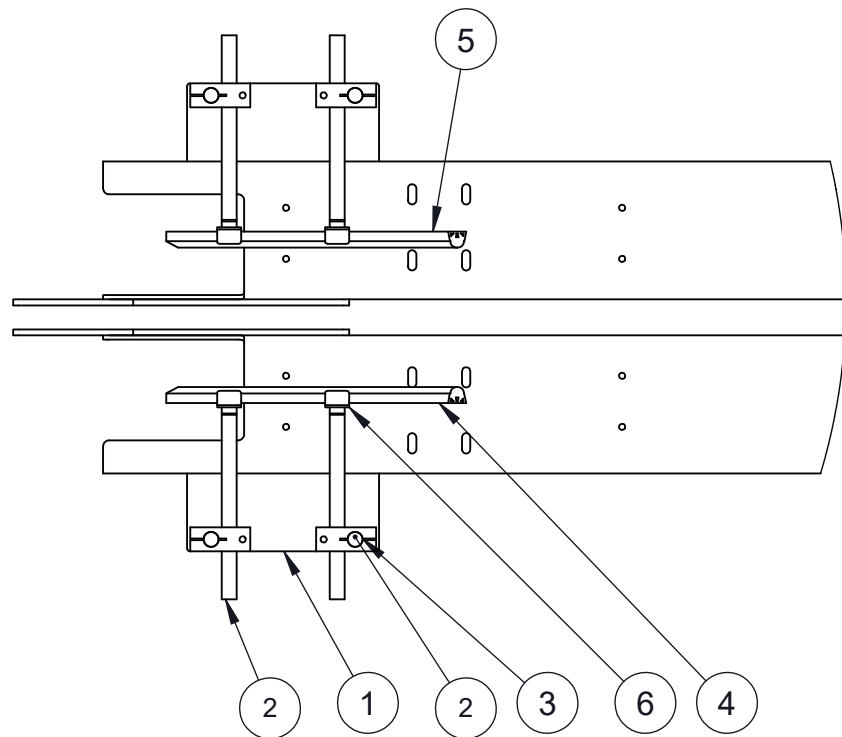


NOTE: ITEM 53 IS NOT SHOWN

52	1	214933	WLDMT, MNT, VACUUM PUMP
51	1	823057	CLUTCH, ROLLER, DC 5/8 ID X 7/8 OD X 58 LG (NOM)
50	1	823055	RING, INNER .375 ID X .625 OD X .765 LG
49	1	822522	ROD END, 5/8-18, MALE, LH THREAD
48	1	822521	ROD END, 5/8-18, MALE, RH THREAD
47	16	821600	CHAIN, DELRIN, #40 WITH SST PIN
46	1	821596	SPKT, D40P28, REQUIRE P1 BUSHING
45	1	282754	SPKT, D40B32, 32 TEETH, 1" P TYPE B
44	1	816285	CLUTCH, OVERLOAD, BORE 1", PROX PLT, SET TO 75 IN-# WARPAC#
43	1	809446	SPKT, 50JA13 H, QD BUSH, HARDENED TEETH
42	1	807281	IDLER, PULLEY, CLEVIS ADAPTERS
41	1	807279-001	TENSIONER, SPRING, ROTARY 20-45 LBS
40	4	283409	NUT, HANDLE
39	2	803668-001	LOCKING DEVICE, KEYLESS 1"
38	2	827116	BRG, FLG, 1 ID, 2-BOLT, 3.89 BOLT CNTRS
37	4	837218	BRG, FLG, 1 ID, 3-BOLT, STD DUTY
36	1	806450	BUSH, TAPER, QD, 1 BORE X 1-15/16 LG, SPLIT TYPE
35	1	800905	SPKT, 50BB15H, IDLER, 5/8 ID, HARDENED TEETH
34	1	800665	BUSH, TAPER, QD, 1 BORE X 1-1/16 LG
33	1	800609	CPLG, PHASE-LOCK, HDI-25-1 1 BORE
32	2	800600	COLLAR, SHAFT, CLAMP, 1-PIECE
31	1	800468	CHAIN, RLR, #50
30	1	243418	SPRKT, DRIVEN
29	1	231440	BKT, CLAMP, PIVOT
28	1	230295	HANDWHEEL, 5" ROLLER CLUTCH
27	1	230293	SHAFT, TAIL CONV
26	1	228962	BKT, MTG, PROX
25	1	223740	ROD, CONNECTING, 1"
24	1	223739	MNT, SHAFT, JACK
23	1	223738	SHAFT, DRIVE
22	1	223735	SHAFT
21	4	221942	KEY, CUP MNT
20	1	220995	SHAFT, VAC., ARM
19	8	213238	PIN
18	2	213237	BAR, PUSHER
17	8	213236	BLOCK
16	2	213235	SPKT WITH BEARING
15	1	213234	SPKT, ASSY
14	1	213233	SPKT, D40B32, 32 TEETH, 1/2" P TYPE B
13	1	197877	PIVOT ARM
12	1	193131-003	LH, OPPOSITE
11	1	193131-002	RH, AS SHOWN
10	1	193126	RAMP, MAGAZINE, BELT, RH
9	1	193125	RAMP, MAGAZINE, BELT, LH
8	4	187536	PUSHER
7	2	186513	VACUUME CUP MNT.
6	2	186490	KEY
5	1	186488	SHAFT, CONV, LWR
4	2	144606-019	SPACER, RND, 1", AL, 0.5LG, 21/32THRU
3	4	142585	VACUUME CUP MNT
2	1	140334	SPKT WITH TLSP5U
1	2	140332	TAKE - UP SCREW

ITEM QTY		PART NUM	DESCRIPTION
BILL OF MATERIALS			
DRAWN: 03/20/2012		BY: HG	SCALE: 0.1875:1 SIZE: D
RELEASED: 03/20/2012		FILENAME: 282752	APPROVED BY: SRA
DESCRIPTION:		ASSY, MAGAZINE, CONV, DRIVE	
DRAWING NUMBER:		282752	

CONVEYOR CHAIN LENGTH=96"



6	4	807831	CLIP, RAIL, SELFTIGHTENING, 5/16 STUD X 5/8 LG, SS, HEAVY DUTY
5	1	283419-002	GUIDE, SIDE, PRODUCT, LH
4	1	283419-001	GUIDE, SIDE, PRODUCT, RH
3	4	283373	BLK, CLAMP
2	8	810231	ROD, ADJ, 5/8 X 8 LG, 5/16-18 TAP, SS
1	2	283368	BKT, MTG, GUIDE
ITM	QTY	PART NUM	DESCRIPTION

BILL OF MATERIALS

ARPAC 9511 WEST RIVER ST.
SCHILLER PARK, IL 60176

UNLESS OTHERWISE SPECIFIED:
ALL DIMENSIONAL TOLERANCES:

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

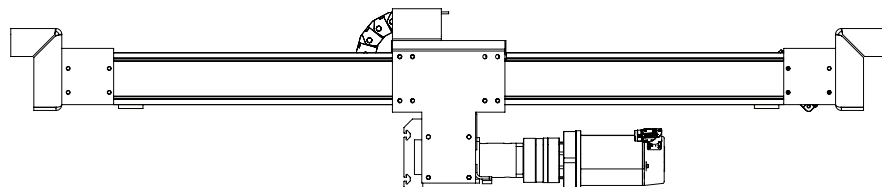
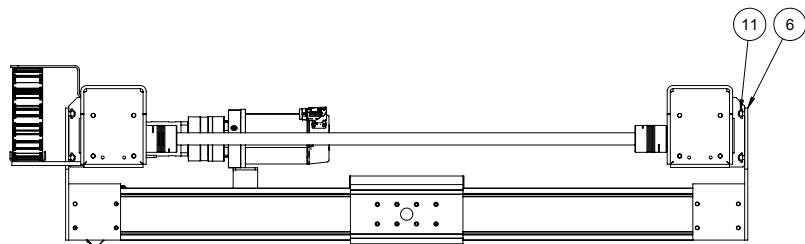
DRAWN: 12/3/2012 BY: SRA SCALE: 1:8 SIZE: B

RELEASED: 12/3/2012 FILENAME: 291515 APPROVED BY: SRA

DESCRIPTION: ASSY, GUIDE, SIDE, PRODUCT

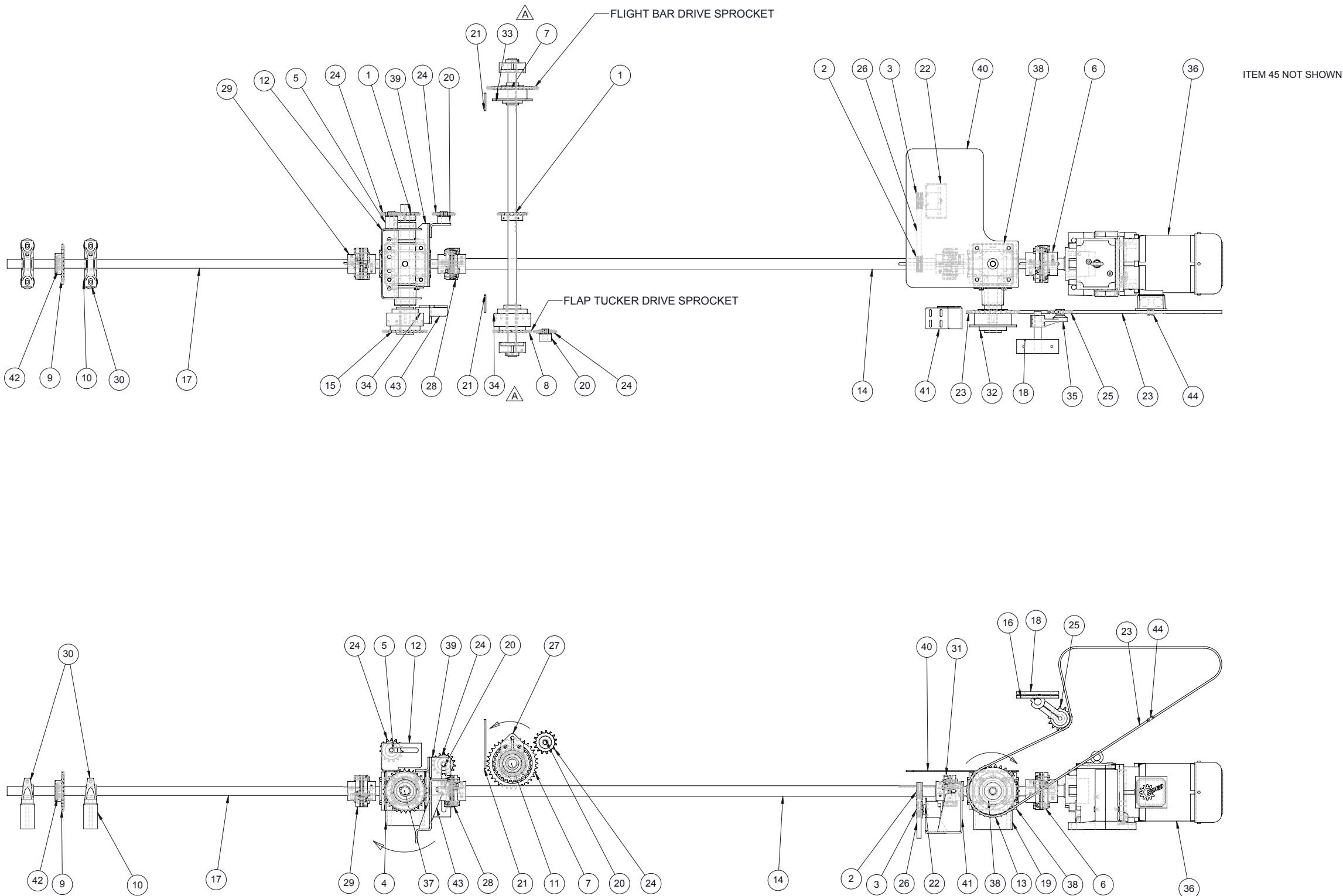
JS

DRAWING NUMBER:
291515



	REV	DATE	BY	NOTE
	REVISIONS			
Rd 76	SIZE C	SCALE 1:10	MATERIAL SEE BILL OF MATERIALS	DESCRIPTION ASSY, SLIDE, LINEAR, DIVIDER, DYNAMIC, 47" EL
	3RD ANGLE 	UNITS INCH		
	TOLERANCES X/X: ±1/32 X.XX: ±0.15 X.XXX: ±0.05 ANGLES: ±1°		FINISH NONE	NUMBER 304067-002

314776-001	LH, OPPOSITE	221623-002	272049-001	272050
314776	RH, AS SHOWN	221623-001	272049	272050-001
ASSY No.	NOTE	ITEM 39	ITEM 41	ITEM 43

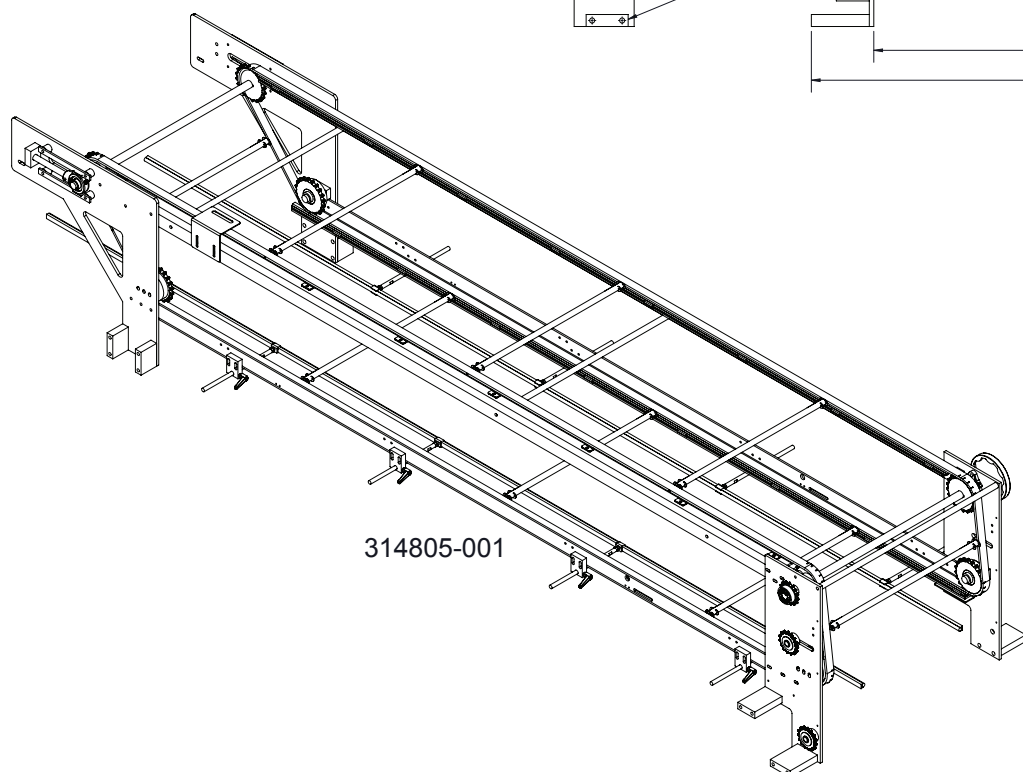
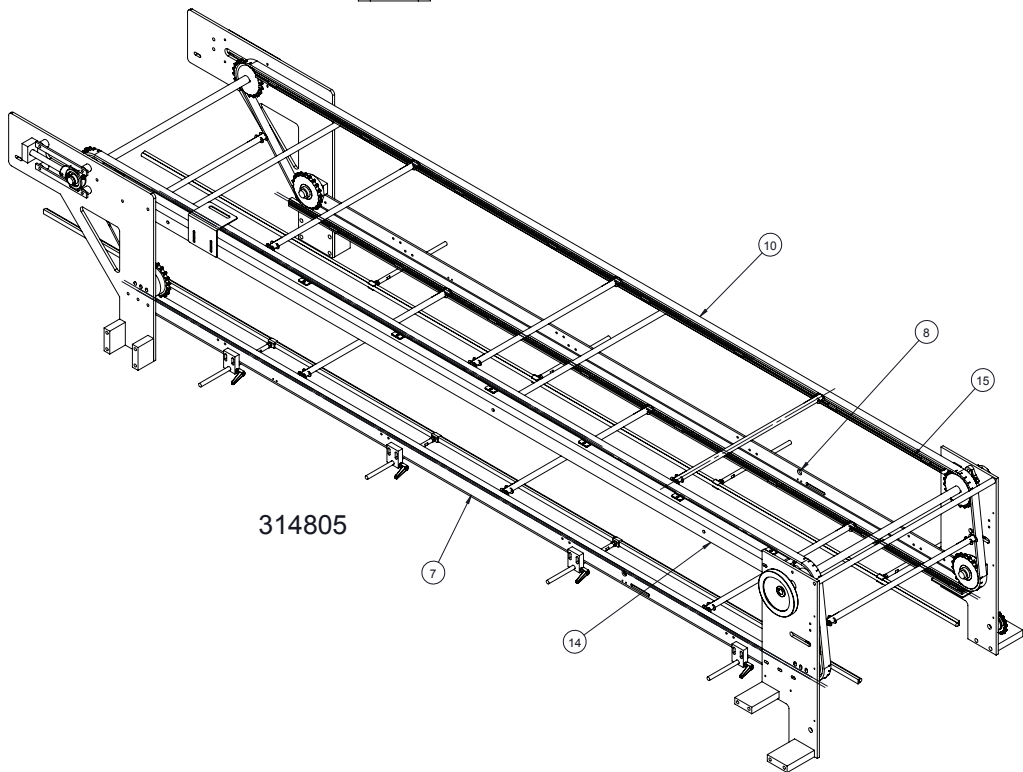
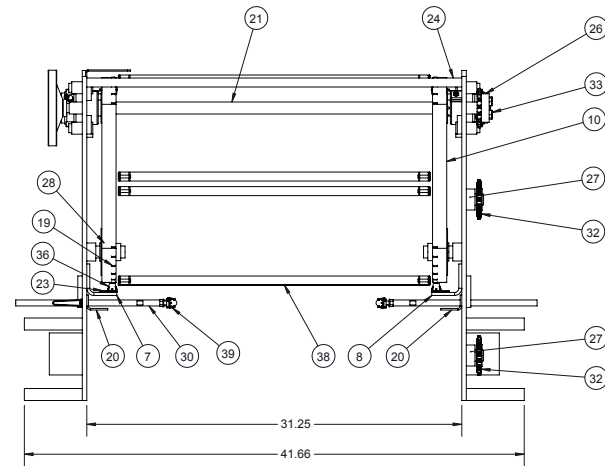
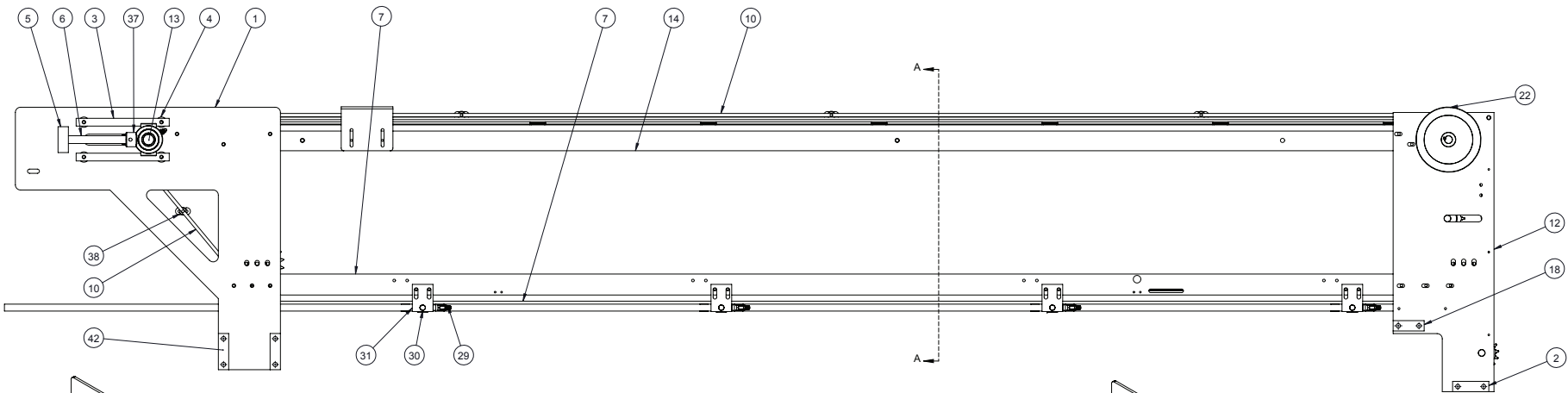
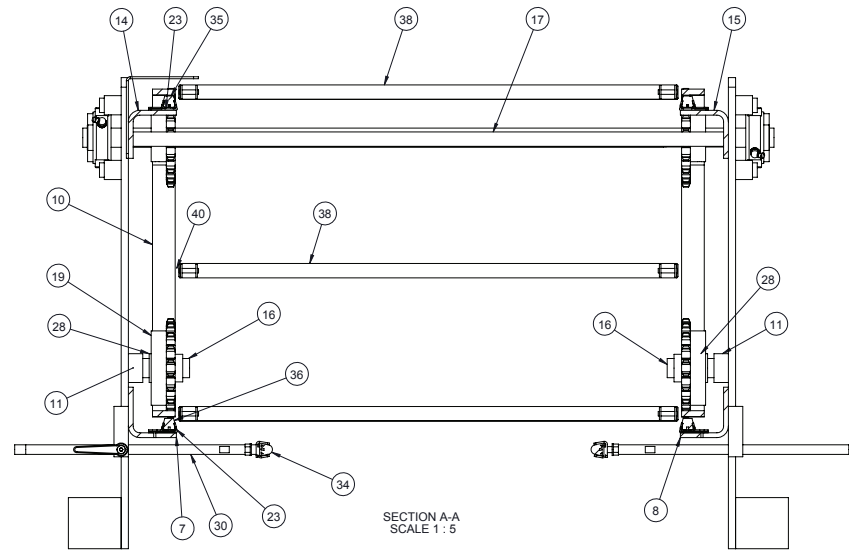
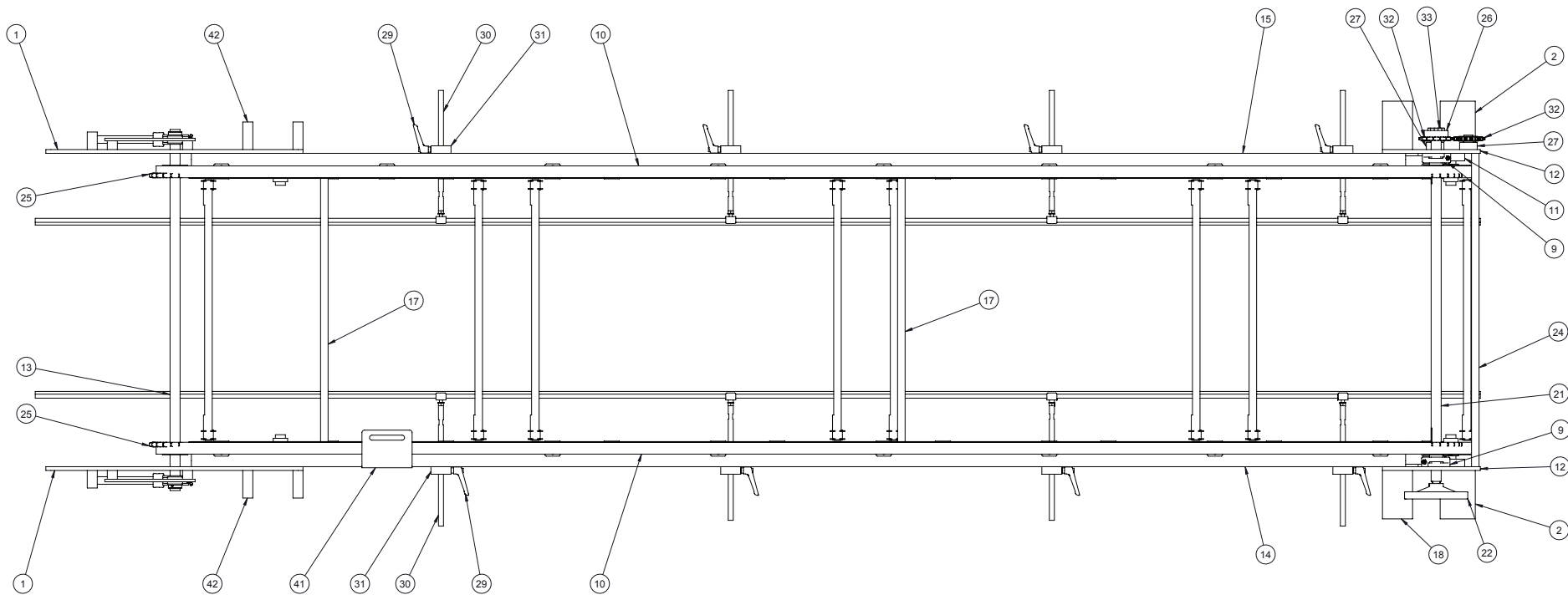


REVISIONS			
RV	DATE	BY	DESCRIPTION
A	8/18/2016	SRA	CHANGED POSITIONS OF ITEMS 7, 8, 33, AND 34
B	11/15/2016	SRA	ITEM 36 WAS PART # 846368
C	4/20/2018	HG	RELACATED ITEM 7,8,33,34

45	1	810218	BUSH, 1-3/8 BORE
44	1	800516	LINK, CONN. #60, COATED
43	1	272050-001	WLDMT, BKT, MTG, PROX
42	1	803668-002	LOCKING DEVICE, KEYLESS 3/4
41	1	272049	BKT, MTG, PROX
40	1	228961-001	GUARD, ENCODER, DRIVE
39	1	221623-001	WLDMT, MTG, IDL, GEARBOX
38	1	825367	GEARBOX, BEVEL, 1:1, SPIRAL GEARS, 1-3/8 DIA. ALL SHAFTS, TYPE E
37	1	823018	GEARBOX, BEVEL, 1:1, SPIRAL GEARS, 1-1/4 D ALL SHAFT, TYPE GG
36	1	851244	GEARMOTOR, HELICAL, INLINE, 5 HP, 230/460V, RATIO: 24.41, 1755 RPM MOTOR SPEED, PREMIUM EFFICIENCY
35	1	809688	TENSIONER, SATP
34	2	808643	CLUTCH, OVERLOAD, BORE 1 1/4, PROX PLT, SET TO 75 IN-#, WARPAC #
33	1	808642	CLUTCH, OVERLOAD, BORE 1 1/4, PROX PLT, SET TO 500 IN-#, WARPAC #
32	1	808641	CLUTCH, OVERLOAD, W/O BUSHING, PROX PLT, SET TO 1000 IN-#, WARPAC #
31	1	808474	CPLG, DISC SINGLE FLEX 1-1/2 X 1-3/8
30	2	807444	BRG, PILLOW BLK, 1-1/4 ID
29	1	807271	CPLG, DISC SINGLE FLEX
28	1	803815	CPLG, DISC SINGLE FLEX 1-1/2 X 1-1/4
27	2	802835	BRG, FLG, 1-1/4 ID, 3-BOLT STANDARD-DUTY
26	1	801160	BELT, TIMING, 5MM P, 15MM W, 670MM LG
25	1	800915	SPKT, 60BB13H, IDLER, 5/8 ID
24	3	800905	SPKT, 50BB15H, IDLER, 5/8 ID, HARDENED TEETH
23	1	800486	CHAIN, RLR, #60
22	1	283170	BKT, MTG, ENCODER
21	2	272670	BKT, PROX.
20	2	226433	SPACER, IDLER
19	2	225523	SPACER, MNT, GEAR BOX
18	1	194537	PLT, NUT
17	1	305216	SHAFT, DRIVE, FEED, BLANK
16	1	194536	BKT, TENSIONER
15	1	193168	SPROCKET, SPECIAL
14	1	193167	SHAFT, DRIVE, MAIN
13	1	193166	SPROCKET, SPECIAL
12	1	191136	BRKT, IDLER, INFEED, & FLIGHT BAR
11	1	191121	JACK SHAFT, 1-1/4 DIA
10	4	187523	SPACER
9	1	187514	SPKT WITH POWER LOCK
8	1	187506	SPROCKET, SPECIAL
7	1	187505	SPROCKET, SPECIAL
6	1	135622	CPLG, DISC SINGLE FLEX, 1.625 X 1.375
5	1	129863-001	SPACER, IDLER, 1-3/4
4	2	113061	SPCR MTG GEAR BOX
3	1	108225	DRIVEN, SPROCKET
2	1	108224	DRIVER, SPROCKET
1	2	107917	SPKT, 50B20, MOD, 1.250 BORE
ITM	QTY	PART NUM	DESCRIPTION

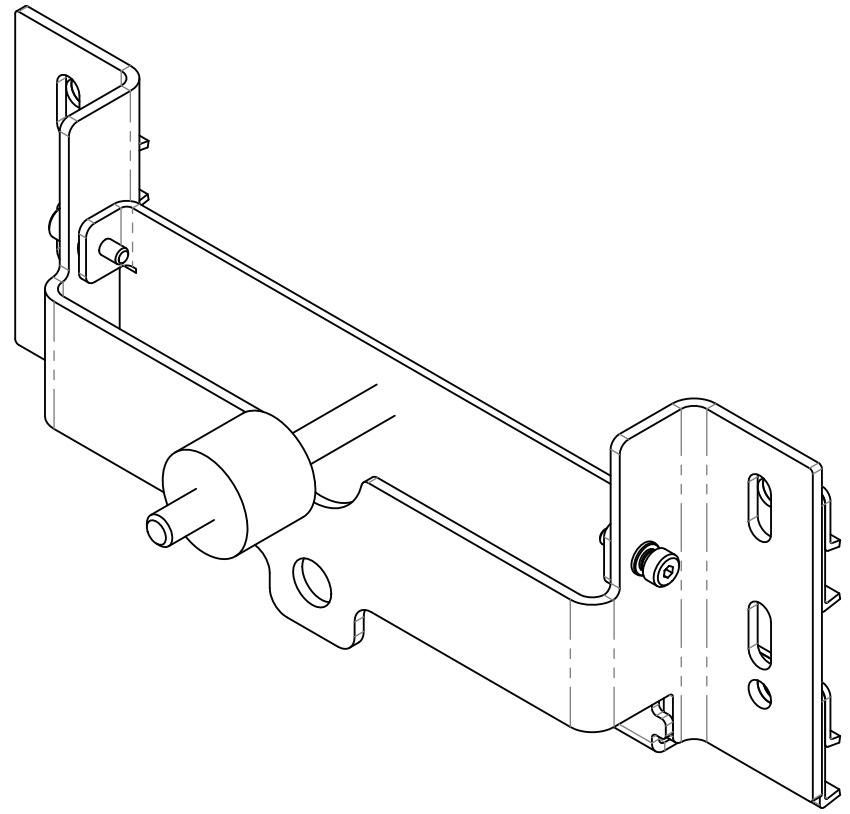
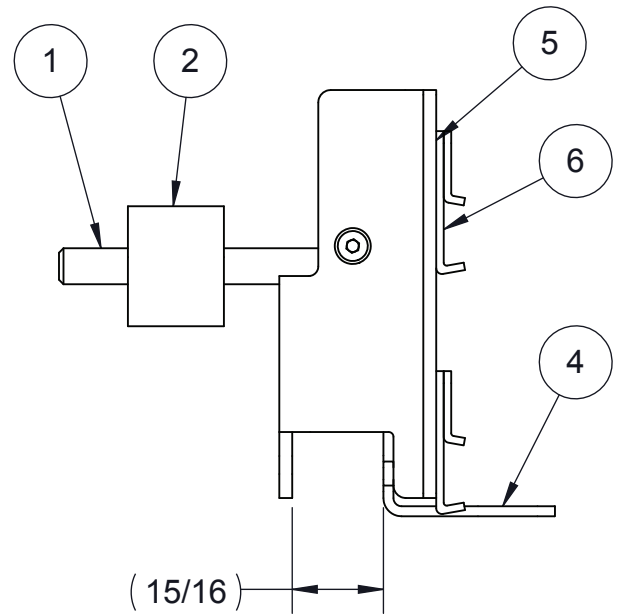
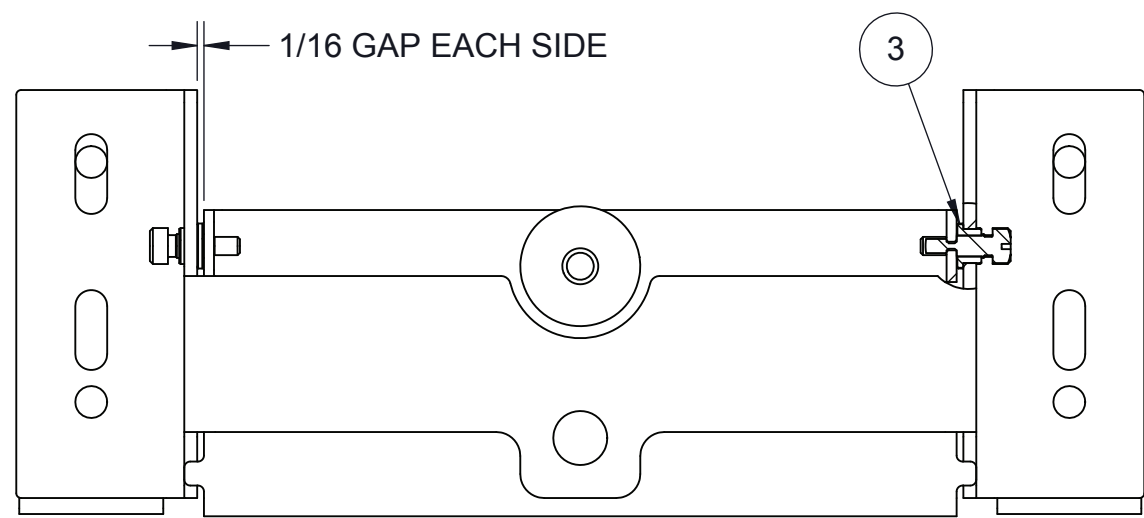
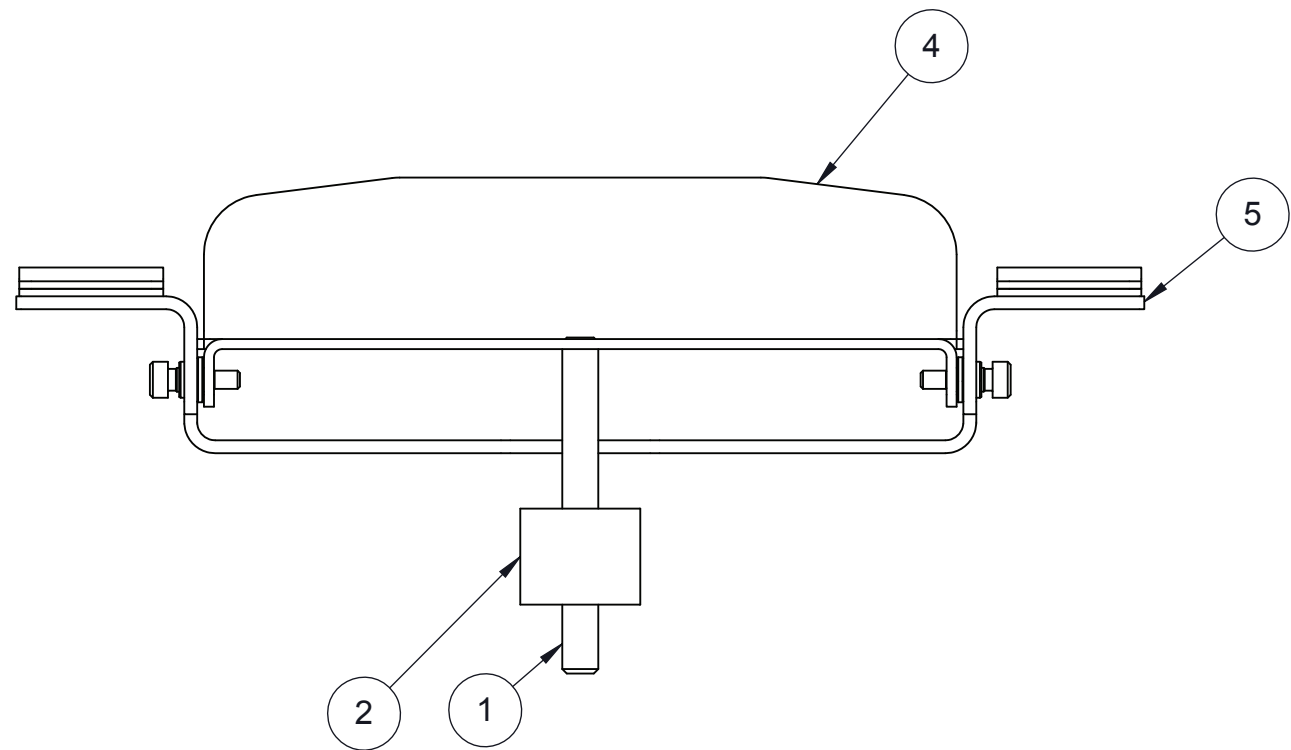
BILL OF MATERIALS

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: 6/2/2015	BY: SRA	SCALE: 1:8	SIZE: D
RELEASED:	FILENAME: 314776	APPROVED BY:	
DESCRIPTION: ASSY, DRIVE, MAIN, TS-2100			
			DRAWING NUMBER: 314776



42	4	300718	MTG. BLOCK, FLIGHT BAR
41	1	282805	BKT, PROX
40	16	807284-001	LINK, CONN, ATTACH, #60, D-1, SPECIAL 1-1/2 LG, EXTENDED PIN
39	8	807831	CLIP, RAIL, SELF-TIGHTENING, 5/16 STUD X 5/8 LG, SS, HEAVY DUTY
38	8	221666	FLIGHT BAR
37	2	802736	BRG, TAKE-UP, 1 ID, 3/4-10 TAPPED END
36	2	187583	GUIDE, CHAIN #60
35	2	187582	GUIDE, CHAIN #60
34	2	815212-003	RAIL, GUIDE, ROUND, SS, 12' LG
33	1	803668-001	LOCKING DEVICE, KEYLESS 1"
32	2	800905	SPKT, 50BB15H, IDLER, 5/8 ID, HARDENED TEETH
31	8	115939	BLOCK, GUIDE, PRODUCT
30	8	845483	ROD, ADJ, 1/2 DIA X 12 LG, 5/16-18 TAPPED THREAD, SS
29	8	823126	HDL, ADJ, ZINC, 2-1/2 LG 5/16-18 X 1.26 STUD
28	4	803841	BRG, CART, 1 X 2.0472 X 1-47/64 LG, SEALED, LOCK COLLAR ID, PRESS FIT OD
27	2	187508	SPACER, TENSIONER, FLIGHT BAR
26	1	188961	SPKT, 50B15, MOD, 1.969 BORE, W/O KEY
25	4	234677	SPKT, 60B20, MOD., 1.000 BORE, SPECIAL
24	1	126781	SUPPORT, ROD
23	32	801359	CLAMP, RAIL, SINGLE, 1.5 LG, SS, ROUND HOLE
22	1	108515	HAND WHEEL COLLATOR
21	1	300150	SHAFT, DRIVE, FLIGHT BAR
20	2	192837	SUPPORT, DEAD, PLT, BAR, FLIGHT
19	4	116067	SPKT, 60B20, MOD., 2.047 BORE
18	2	192836	MTG. BLOCK, FLIGHT BAR
17	2	221933	CROSS MEMBER, FLIGHT BAR
16	4	188684	SHAFT, IDLER
15	1	188679-002	RAIL, GUIDE, TOP, LH
14	1	188679-001	RAIL, GUIDE, TOP, RH
13	1	274433	SHAFT, TAIL
12	2	286508	PLT, VER, TAIL END, RH
11	4	126787	PLT, NUT
10	48	800486	CHAIN, RLR, #60
9	2	827116	BRG, FLG, 1 ID, 2-BOLT, 3.89 BOLT CNTRS
8	1	286509-002	RAIL, GUIDE, BOTTOM, LH
7	1	286509-001	RAIL, GUIDE, BOTTOM, RH
6	2	189379	SHAFT
5	2	192827	BLOCK, GUIDE, TENSION
4	8	193855	SPACER
3	4	112721	TIE, BAR BEARING
2	2	193853	MTG. BLOCK, FLIGHT BAR
1	2	286507	PLT, SIDE

ITEM 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: 6/3/2015		BY: SRA		SCALE: 1:8
RELEASED:		FILENAME: 314805		SIZE: D
APPROVED BY:				
DESCRIPTION: ASSY, FLIGHT BAR, TS-2000, GATE/CLAMP COLLATOR				
				
				DRAWING NUMBER: 314805

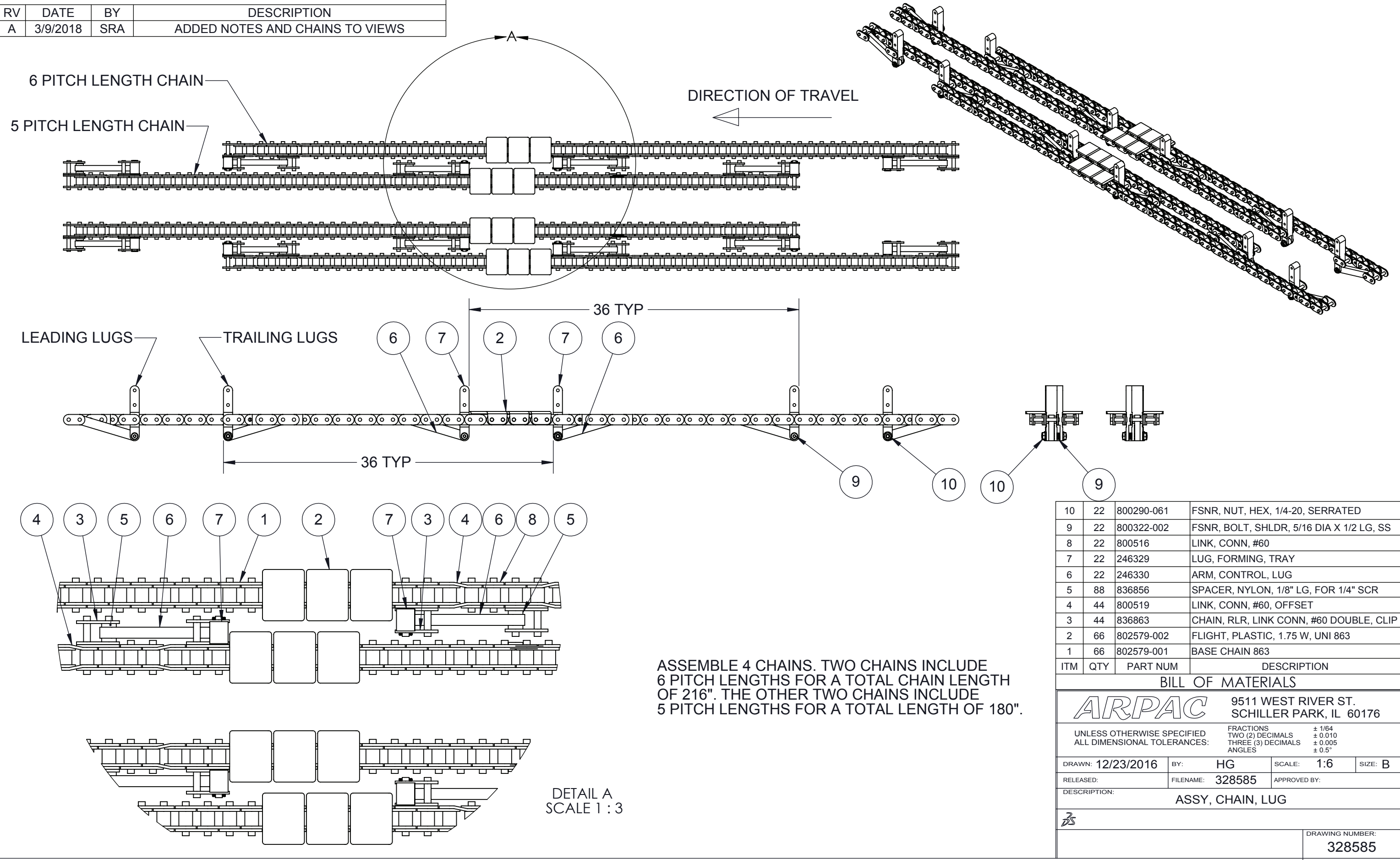


6	4	801359	CLAMP, RAIL, SINGLE, 1.5 LG, SS, ROUND HOLE
5	1	323269	BRKT, FRAME, PRD DTCTR, ACCUM, ADJ
4	1	291031	BRACKET, PROD DETECTOR, ACCUM
3	2	800424	BUSH, OILITE, FLG, 0.252 X 0.3775 X 1/4, 15/32 OD X 1/16 THK FLG
2	1	107147	WEIGHT, COUNTER
1	1	107149	SHAFT, WEIGHT, COUNTER
ITM	QTY	PART NUM	DESCRIPTION

BILL OF MATERIALS

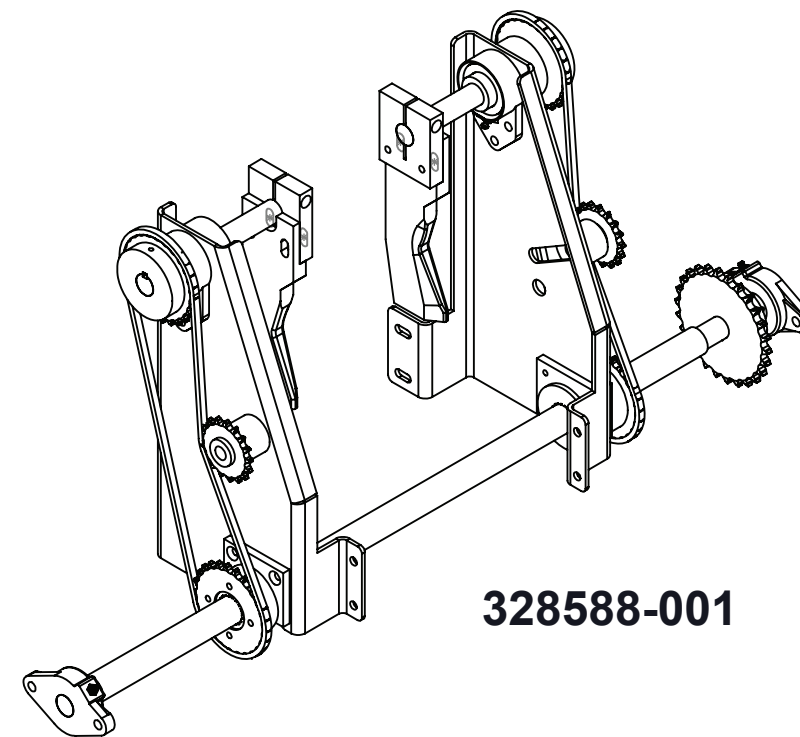
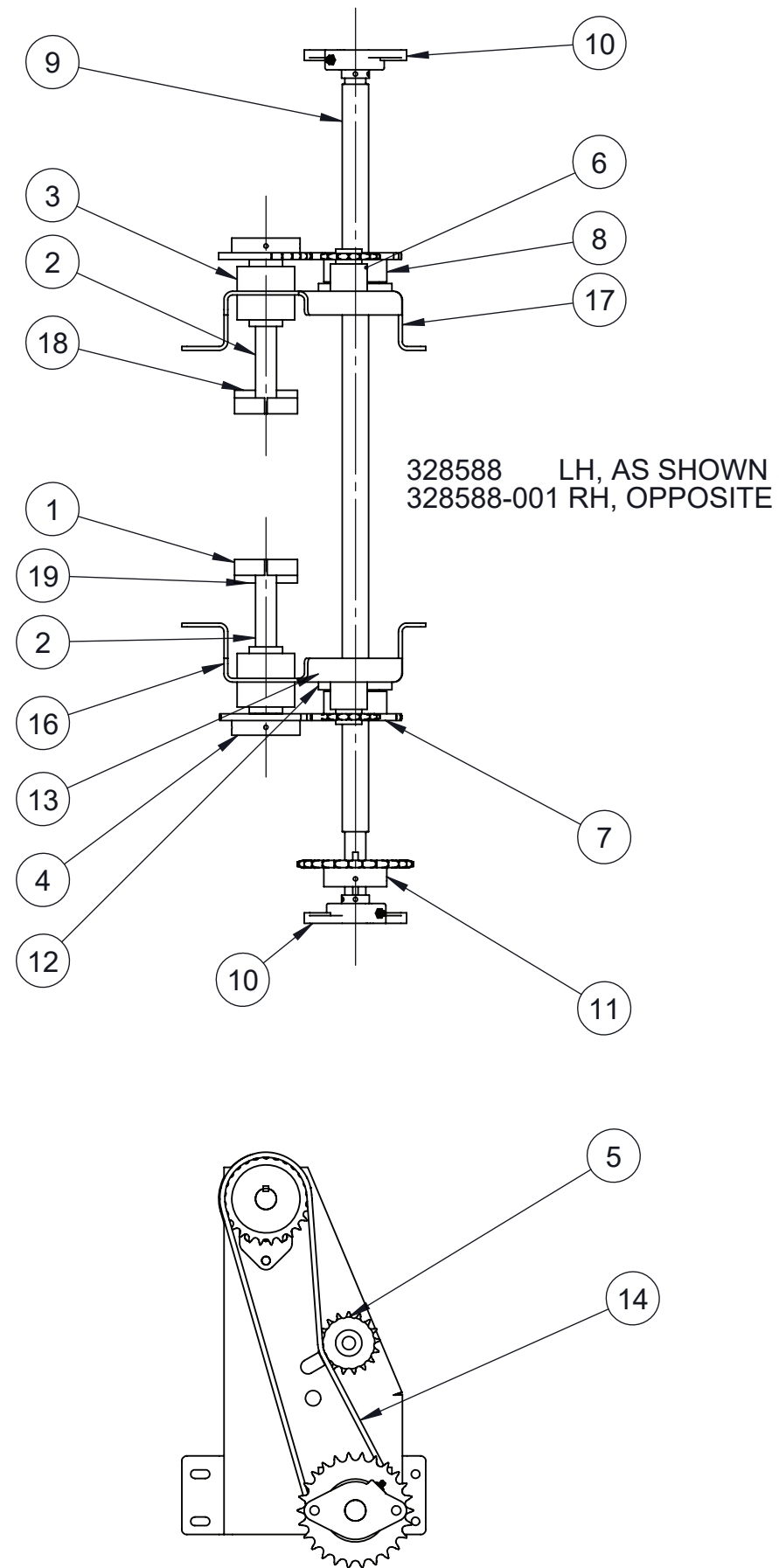
ARPAC		9511 WEST RIVER ST. SCHILLER PARK, IL 60176	
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONAL TOLERANCES:		FRACTIONS TWO (2) DECIMALS THREE (3) DECIMALS ANGLES	± 1/64 ± 0.010 ± 0.005 ± 0.5°
DRAWN: 11/8/2012	BY: SR	SCALE: 1:2	SIZE: B
RELEASED: 11/8/2012	FILENAME: 323268	APPROVED BY: SRA	
DESCRIPTION: ASSY, PRODUCT DETECTOR, ACCUMULATION, ADJ			
			
		DRAWING NUMBER: 323268	

REVISIONS			
RV	DATE	BY	DESCRIPTION
A	3/9/2018	SRA	ADDED NOTES AND CHAINS TO VIEWS

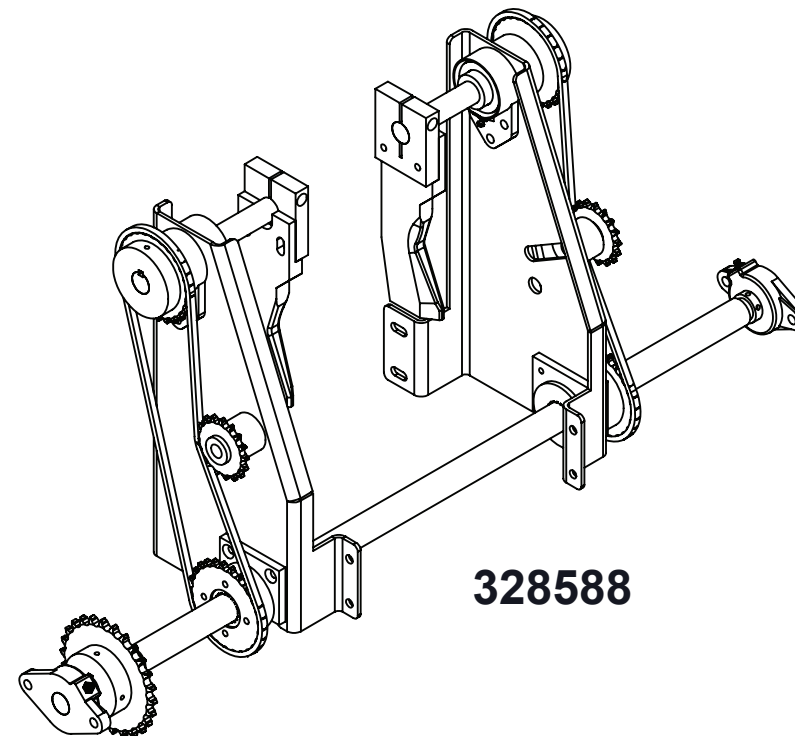


10	22	800290-061	FSNR, NUT, HEX, 1/4-20, SERRATED
9	22	800322-002	FSNR, BOLT, SHLDR, 5/16 DIA X 1/2 LG, SS
8	22	800516	LINK, CONN, #60
7	22	246329	LUG, FORMING, TRAY
6	22	246330	ARM, CONTROL, LUG
5	88	836856	SPACER, NYLON, 1/8" LG, FOR 1/4" SCR
4	44	800519	LINK, CONN, #60, OFFSET
3	44	836863	CHAIN, RLR, LINK CONN, #60 DOUBLE, CLIP
2	66	802579-002	FLIGHT, PLASTIC, 1.75 W, UNI 863
1	66	802579-001	BASE CHAIN 863

ITM	QTY	PART NUM	DESCRIPTION
BILL OF MATERIALS			
ARPAC		9511 WEST RIVER ST. SCHILLER PARK, IL 60176	
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONAL TOLERANCES:		FRACTIONS TWO (2) DECIMALS THREE (3) DECIMALS ANGLES	± 1/64 ± 0.010 ± 0.005 ± 0.5°
DRAWN:	12/23/2016	BY:	HG
RELEASED:		FILENAME:	328585
DESCRIPTION:	ASSY, CHAIN, LUG		
			DRAWING NUMBER: 328585



328588-001



328588

LINK, CONN #40 NOT SHOWN

19	1	104832-002	ROTARY ARM
18	1	104832-001	ROTARY ARM
17	1	328587-001	MNT, ROTARY FOLDER
16	1	328587	MNT, ROTARY FOLDER
15	2	800502	LINK, CONN, #40
14	9	800462	CHAIN, RLR, #40, RLR RVT
13	2	190795	PLT, WEAR, ROTARY SLEEVE
12	2	190794	PLT, WEAR, ROTARY SLEEVE
11	1	104858	50B26 SPROCKET, MOD, 1 BORE TS60
10	2	827116	BRG, FLG, 1 ID, 2-BOLT, 3.89 BOLT CNTRS
9	1	133802	ROTARY FOLDER DRIVE SHAFT
8	2	275921	ROTARY SPLINE SLEEVE
7	2	104857	40A26, SPROCKET, MOD, 1 3/4 BORE
6	2	114201-003	SPACER, IDL SPKT
5	2	800906	SPKT, 40BB17H, IDLER, 0.625 ID
4	2	124817	SPKT, 40B26, 1.00 BORE
3	4	837218	BRG, FLG, 1 ID, 3-BOLT, STD DUTY
2	2	319501	SHAFT, FOLDER, FLAP, ROTARY
1	2	104831	ROTARY ARM MOUNTING

ITM	328588 8/301 112/Q TY.	PART NUM	DESCRIPTION
-----	---------------------------------	----------	-------------

BILL OF MATERIALS

ARPAC

9511 WEST RIVER ST.
SCHILLER PARK, IL 60176

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONAL TOLERANCES:

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

± 1/64
± 0.010
± 0.005
± 0.5°

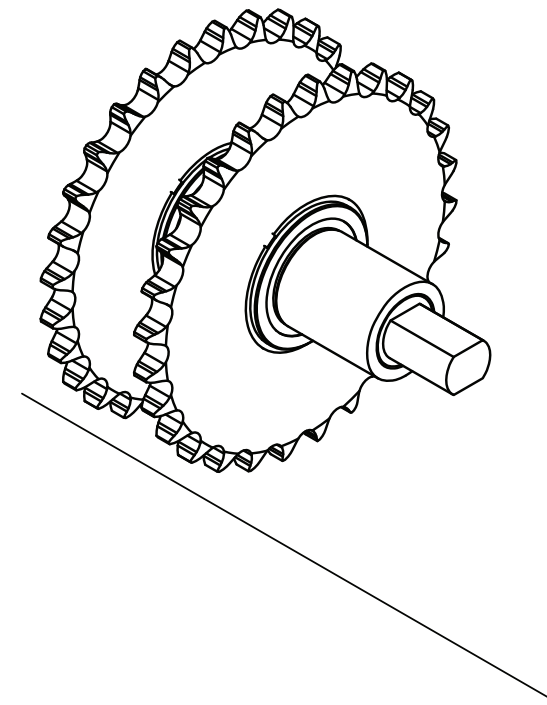
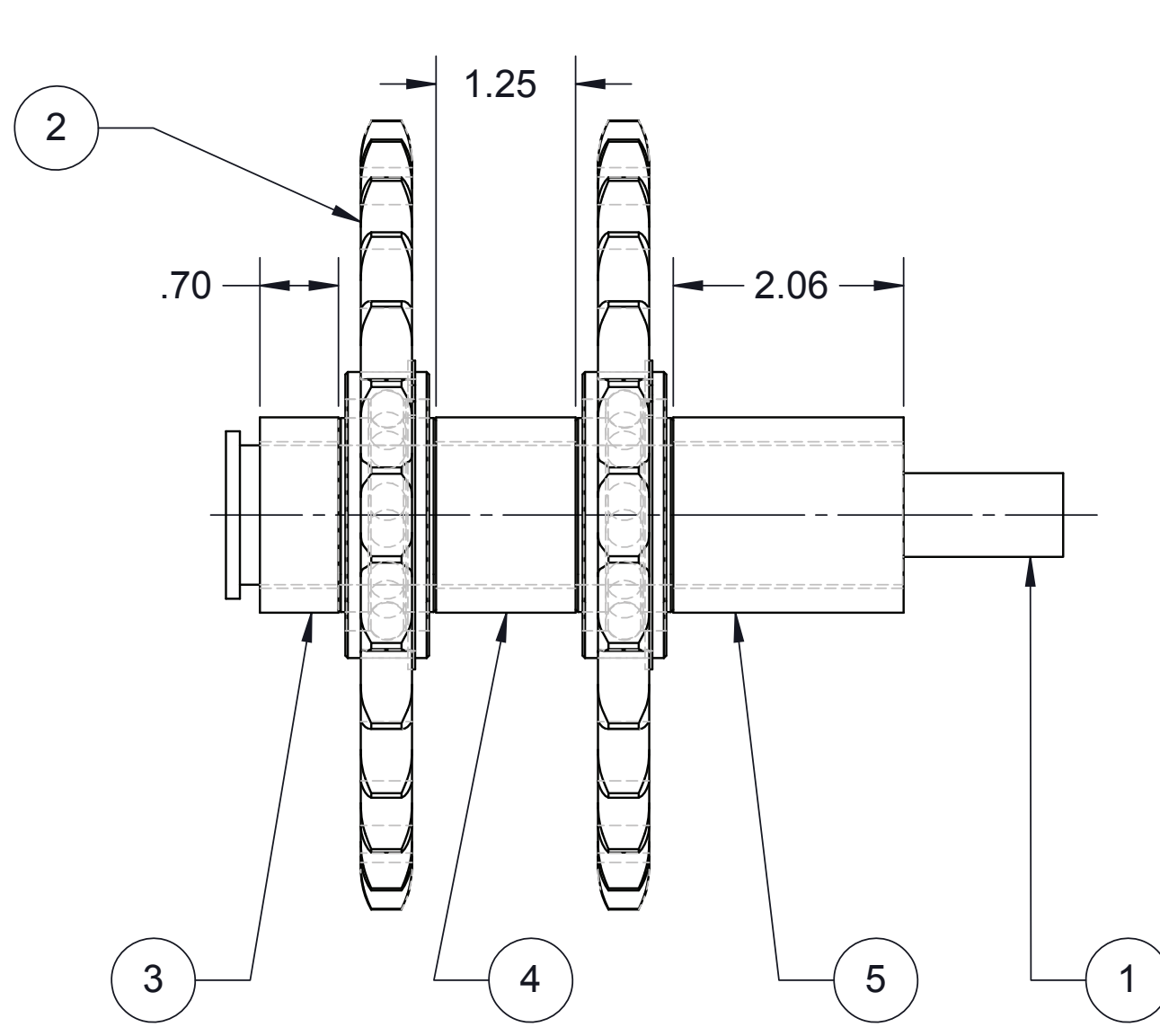
DRAWN: 12/27/2013 BY: SRA SCALE: 1:8 SIZE: B

RELEASED: 12/27/2013 FILENAME: 328588 APPROVED BY: SRA

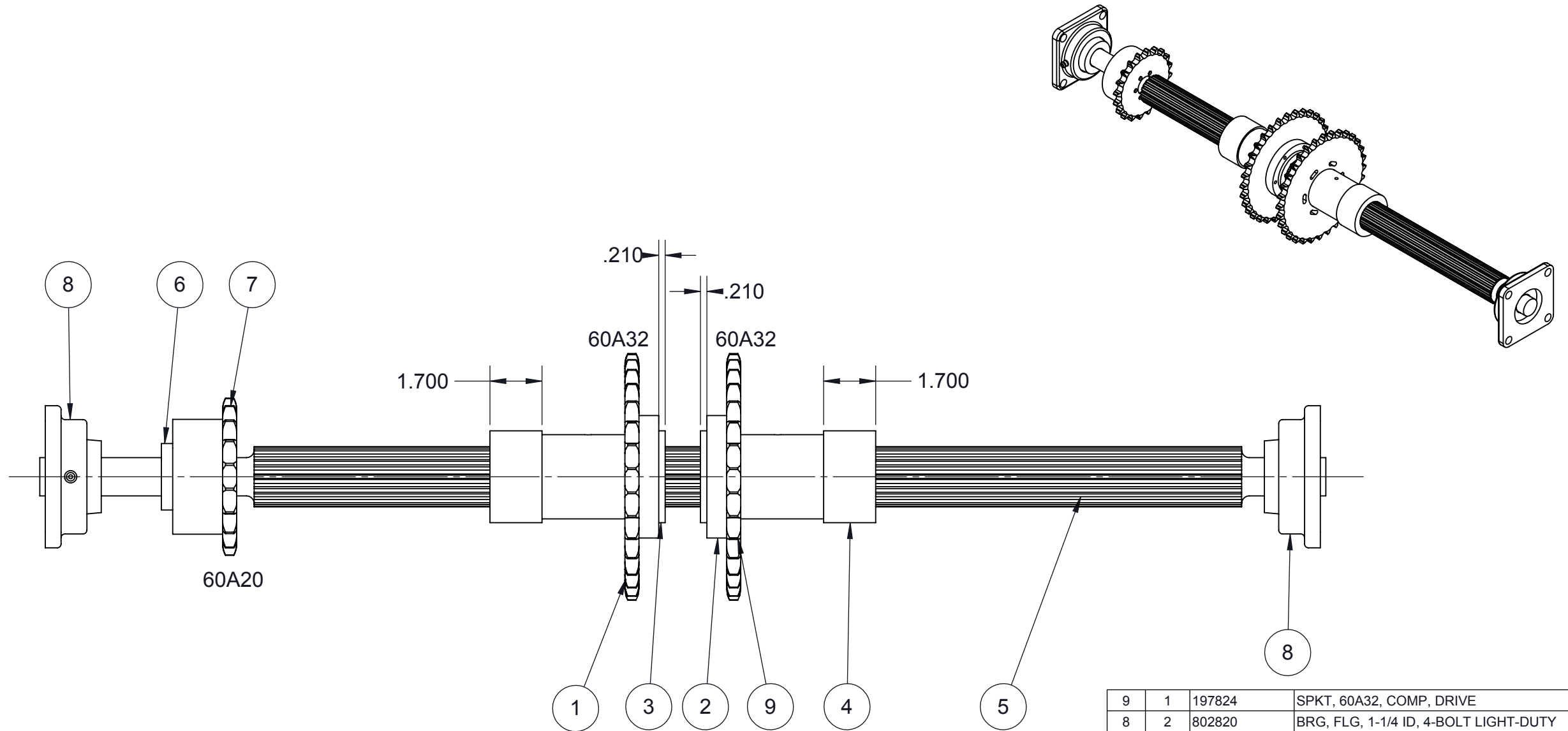
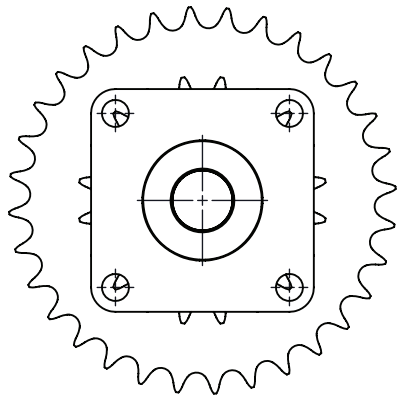
DESCRIPTION: ASSY, FLAP FOLDER, ROTARY

3

DRAWING NUMBER:
328588

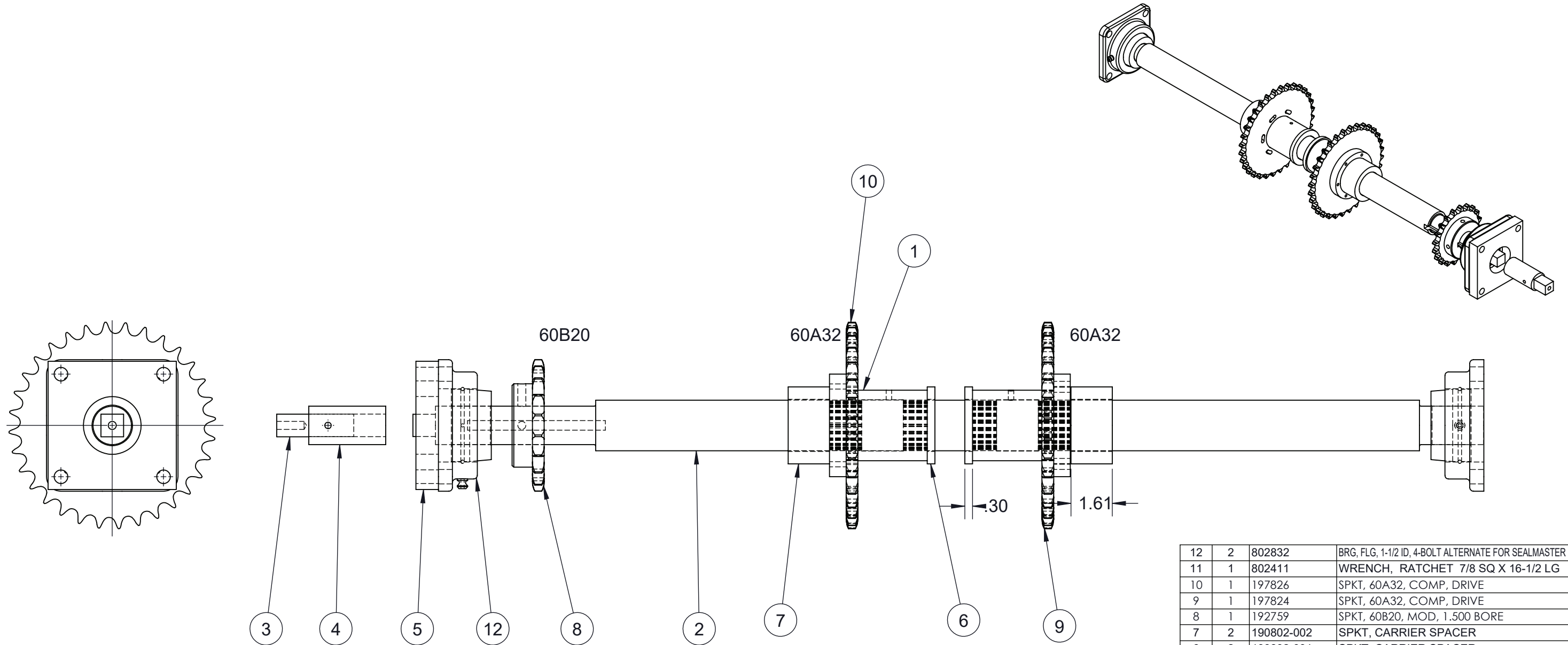


5	1	190809-004	SPACER
4	1	190809-010	SPACER
3	1	190809-011	SPACER
2	2	112726	SPROCKET - MODIFIED
1	1	220971	SHAFT, IDLER, COMPRESSION SECTION
ITM	QTY	PART NUM	DESCRIPTION
BILL OF MATERIALS			
ARPAC		9511 WEST RIVER ST. SCHILLER PARK, IL 60176	
UNLESS OTHERWISE SPECIFIED		FRACTIONS	± 1/64
ALL DIMENSIONAL TOLERANCES:		TWO (2) DECIMALS	± 0.010
		THREE (3) DECIMALS	± 0.005
		ANGLES	± 0.5°
DRAWN:	05/24/2001	BY:	TTR
RELEASED:	05/24/2001	FILENAME:	328589
SCALE:	0.5:1	APPROVED BY:	TTR
DESCRIPTION:	ASSY, IDLER, COMPRESSION SECTION		
			DRAWING NUMBER:
			328589



9	1	197824	SPKT, 60A32, COMP, DRIVE
8	2	802820	BRG, FLG, 1-1/4 ID, 4-BOLT LIGHT-DUTY
7	1	193095	SPKT, 60A20, MOD, 1.250 BORE
6	1	800610	CPLG, PHASE-LOCK 1-1/4 BORE
5	1	195443	SHAFT, SPLINE, LEAD CHAIN DRV
4	2	190799-007	SPKT, CARRIER SPACER
3	2	190799-008	SPKT, CARRIER SPACER
2	2	108850-000C	CONVEYOR DR. SPRKT CARRIER
1	1	197826	SPKT, 60A32, COMP, DRIVE
ITM	QTY	PART NUM	DESCRIPTION

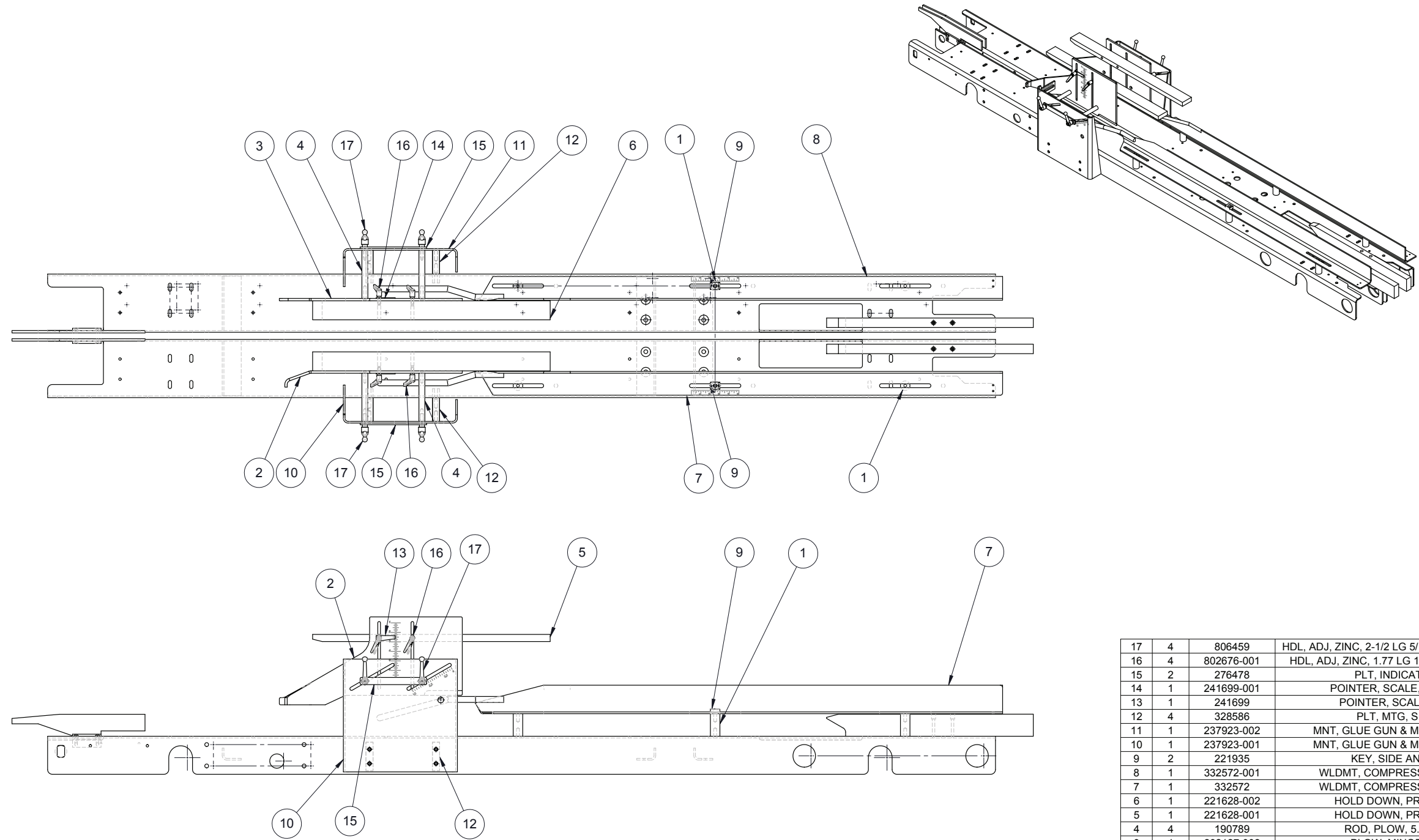
BILL OF MATERIALS			
ARPAC		9511 WEST RIVER ST. SCHILLER PARK, IL 60176	
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONAL TOLERANCES:		FRACTIONS TWO (2) DECIMALS THREE (3) DECIMALS ANGLES	± 1/64 ± 0.010 ± 0.005 ± 0.5°
DRAWN: 10/02/2001	BY: TTR	SCALE: 0.25:1	SIZE: B
RELEASED:	FILENAME: 328590	APPROVED BY: TTR	
DESCRIPTION: ASSY, DRIVE, SPLINE SHAFT, LEAD			
3			
DRAWING NUMBER:			328590



12	2	802832	BRG, FLG, 1-1/2 ID, 4-BOLT ALTERNATE FOR SEALMASTER
11	1	802411	WRENCH, RATCHET 7/8 SQ X 16-1/2 LG
10	1	197826	SPKT, 60A32, COMP, DRIVE
9	1	197824	SPKT, 60A32, COMP, DRIVE
8	1	192759	SPKT, 60B20, MOD, 1.500 BORE
7	2	190802-002	SPKT, CARRIER SPACER
6	2	190802-001	SPKT, CARRIER SPACER
5	1	187303	SPACER, 4 BOLT, BEARING
4	1	135005	SLEEVE, 7/8 SQ.
3	1	134996	SHAFT, 7/8 SQ.
2	1	133803	SHAFT, SPLINE, W/HANDLE
1	2	108850-000C	CONVEYOR DR. SPRKT CARRIER
ITM	QTY	PART NUM	DESCRIPTION

BILL OF MATERIALS

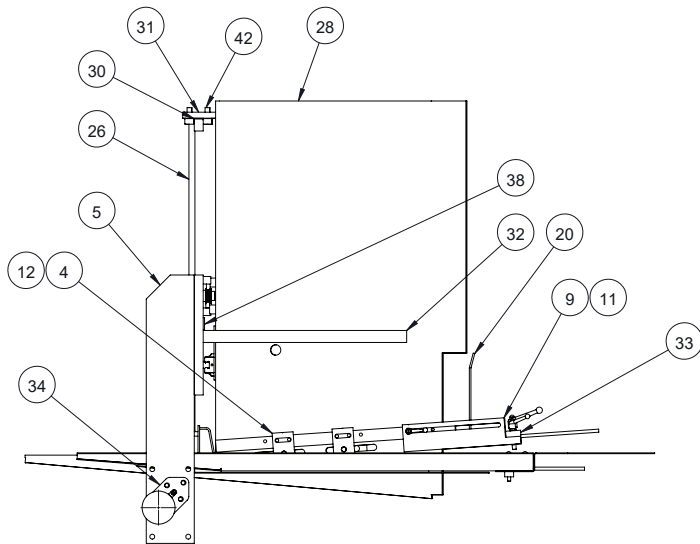
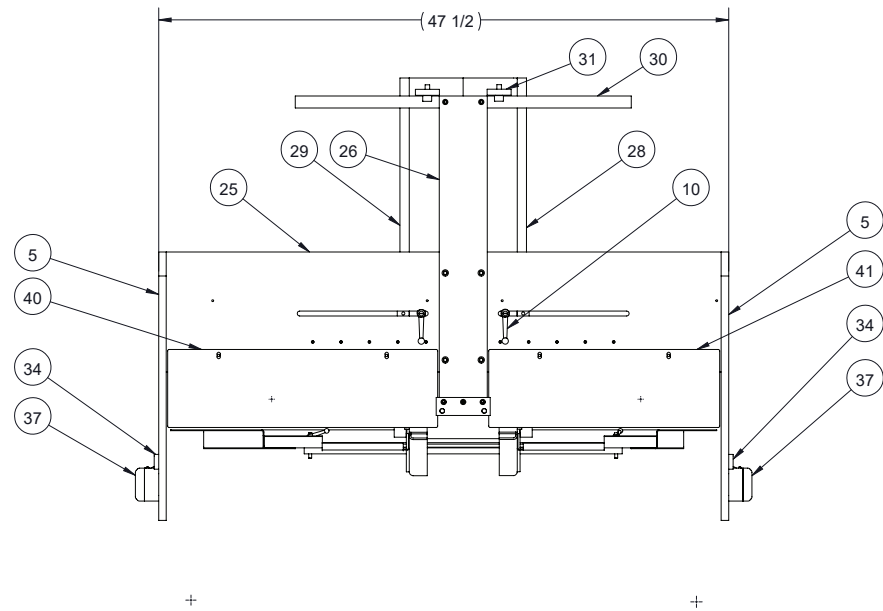
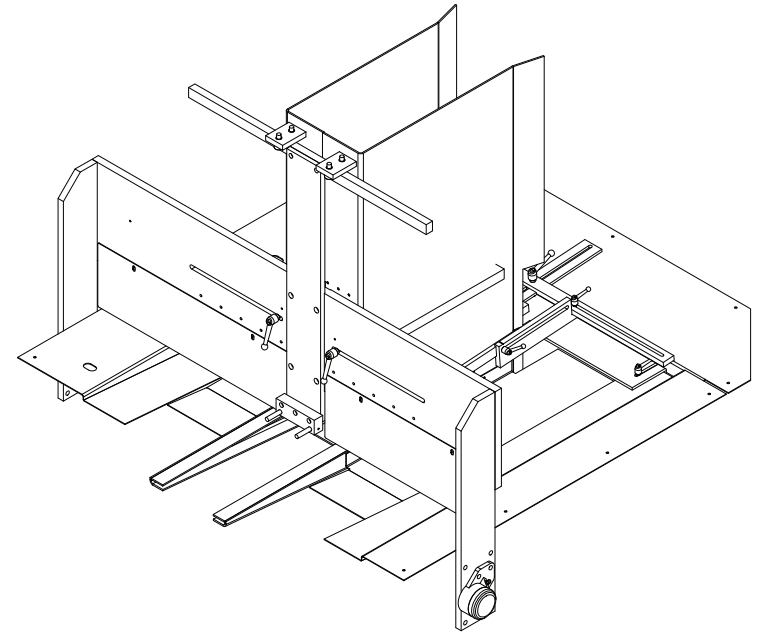
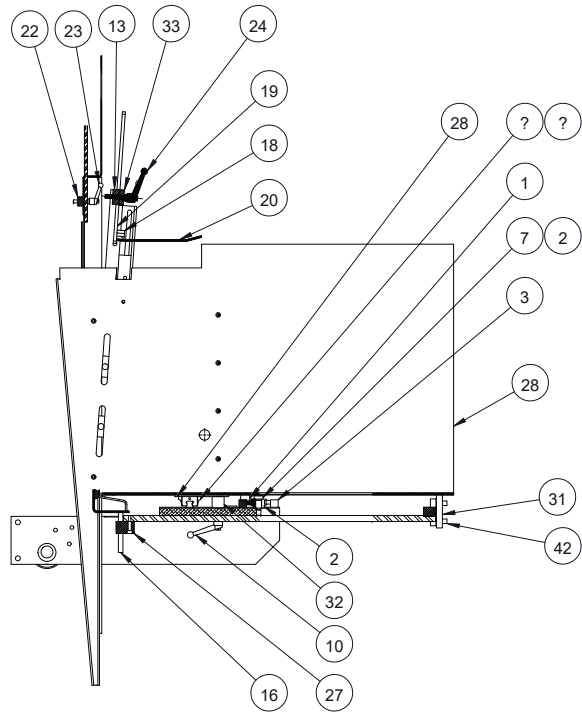
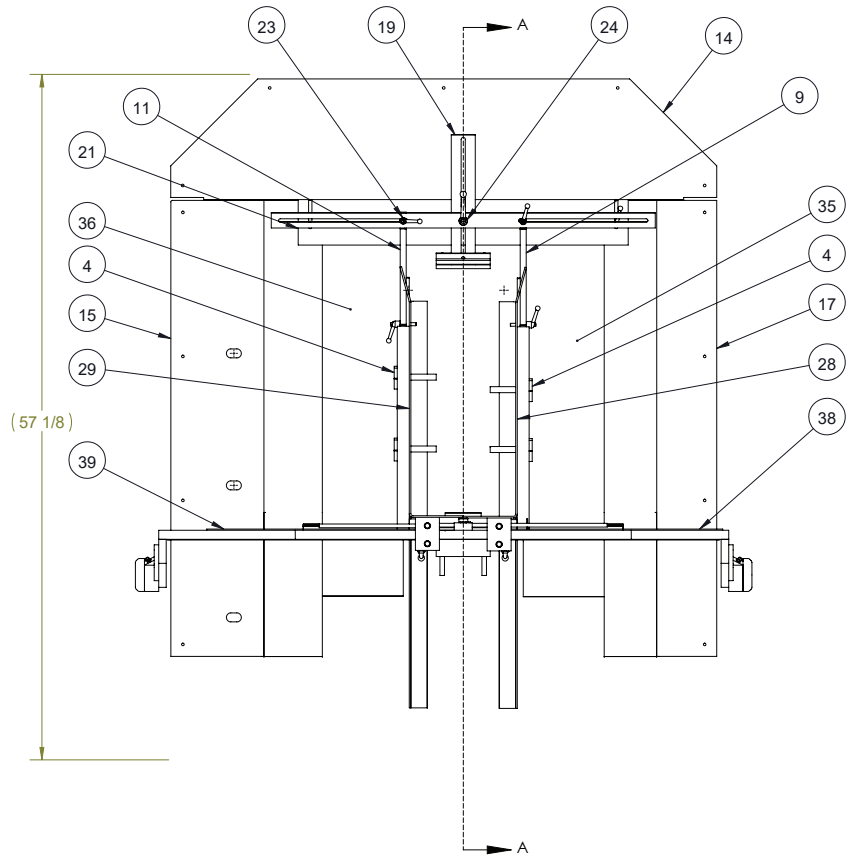
ARPAC		9511 WEST RIVER ST. SCHILLER PARK, IL 60176	
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONAL TOLERANCES:		FRACTIONS TWO (2) DECIMALS THREE (3) DECIMALS ANGLES	± 1/64 ± 0.010 ± 0.005 ± 0.5°
DRAWN: 10/02/2001	BY: TTR	SCALE: 0.25:1	SIZE: B
RELEASED:	FILENAME: 328591	APPROVED BY: TTR	
DESCRIPTION: ASSY, DRIVE, SPLINE SHAFT, TRAIL			
			
DRAWING NUMBER:			328591



17	4	806459	HDL, ADJ, ZINC, 2-1/2 LG 5/16-18 X 1.18 STUD
16	4	802676-001	HDL, ADJ, ZINC, 1.77 LG 1/4-20 X .78 STUD
15	2	276478	PLT, INDICATOR
14	1	241699-001	POINTER, SCALE, 9/32 RH
13	1	241699	POINTER, SCALE, 9/32
12	4	328586	PLT, MTG, SIDE
11	1	237923-002	MNT, GLUE GUN & MINOR PLOW
10	1	237923-001	MNT, GLUE GUN & MINOR PLOW
9	2	221935	KEY, SIDE ANGLE
8	1	332572-001	WLDMT, COMPRESSION, SIDE
7	1	332572	WLDMT, COMPRESSION, SIDE
6	1	221628-002	HOLD DOWN, PRODUCT
5	1	221628-001	HOLD DOWN, PRODUCT
4	4	190789	ROD, PLOW, 5.06 LG
3	1	292127-002	PLOW, MINOR, LH
2	1	292127-001	PLOW, MINOR, RH
1	6	144124-142	SHAFT, 1.000, TAPPED
ITM	QTY	PART NUM	DESCRIPTION

BILL OF MATERIALS

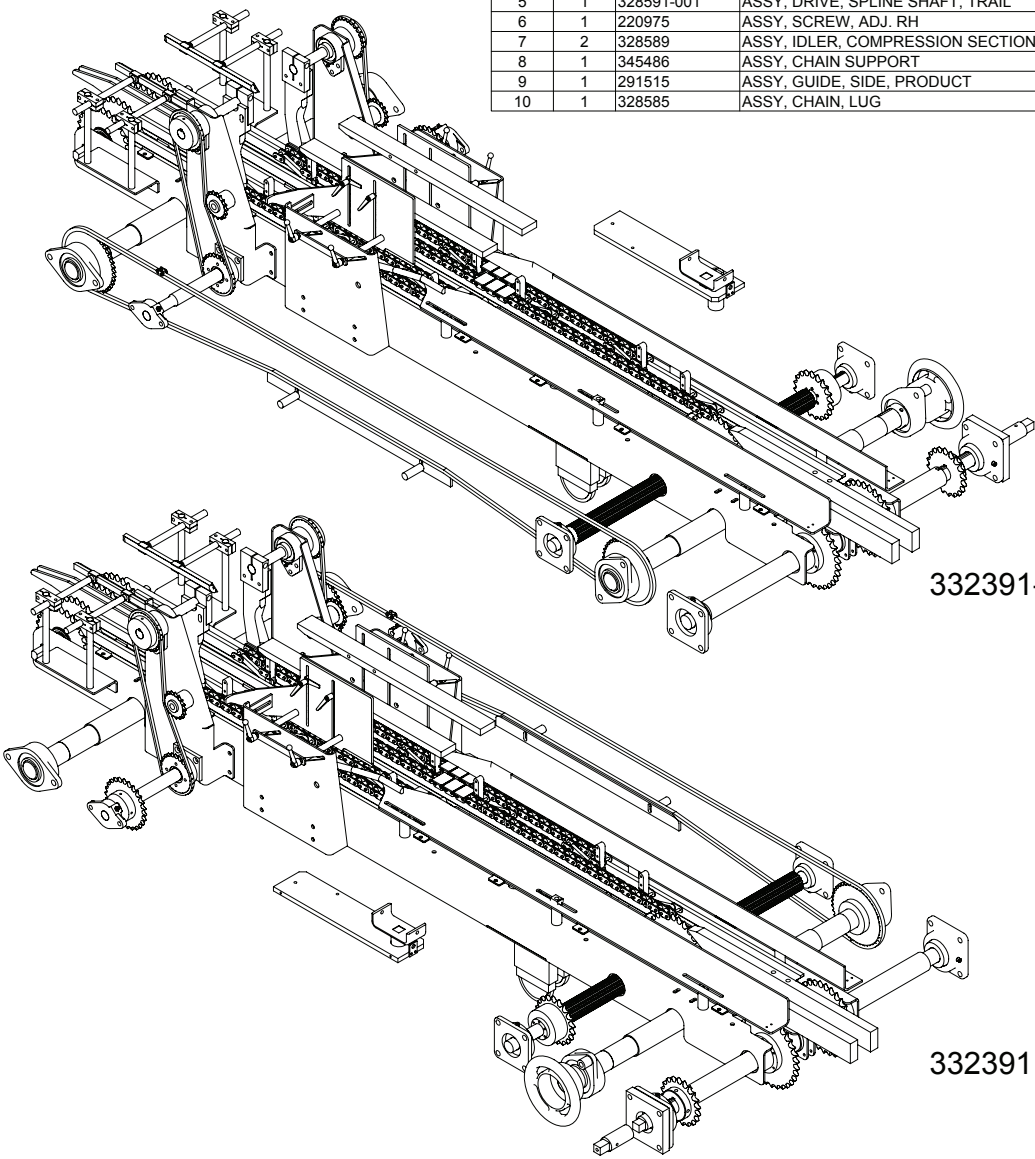
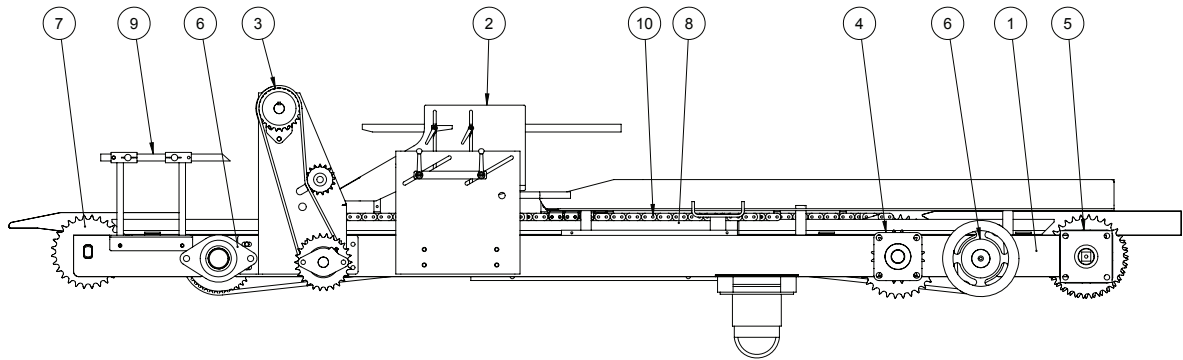
ARPAC		9511 WEST RIVER ST. SCHILLER PARK, IL 60176	
UNLESS OTHERWISE SPECIFIED: ALL DIMENSIONAL TOLERANCES:		FRACTIONS TWO (2) DECIMALS THREE (3) DECIMALS ANGLES	± 1/64 ± 0.010 ± 0.005 ± 0.5°
DRAWN: 09/02/2015	BY: SRA	SCALE: 0.125:1	SIZE: C
RELEASED:	FILENAME: 328592	APPROVED BY: SRA	
DESCRIPTION: ASSY, FORMING, TRAY			
			DRAWING NUMBER: 328592



42	4	851375	FOLLOWER, CAM, 3/4 OD, 3/8-24 STUD, W/HEX HOLE, W/ECCENTRIC STUD
41	1	298216	PLT, GUARD, MAGAZINE, LH SIDE
40	1	298215	PLT, GUARD, MAGAZINE, RH SIDE
39	1	221957	SCALE, 17" LG, RH
38	1	221957-001	SCALE, 17" LG, LH
37	2	845246	COVER, BREARING, CLOSE END, 1"
36	1	282786-001	GUARD, MAGAZINE, RH
35	1	282786	GUARD, MAGAZINE
34	2	837218	BRG, FLG, 1 ID, 3-BOLT, STD DUTY
33	1	298272	SUPPORT, REAR, MAGAZINE
32	2	282742	WLDMT, SPACER
31	2	328783	PLT, MTG, CAM FOLLOWER
30	1	282731	BAR
29	1	282741	WALL, SIDE, L.H.
28	1	282740	WALL, SIDE, RH
27	1	282730	FRONT SUPPORT HOLDER
26	1	282728	PLATE
25	1	282726	LH MACH
24	1	802677	HDL, ADJ, ZINC, 2.56 LG 5/16-18 X 1.57 STUD
23	6	810224	HDL, ADJ, SS, 1.57 LG 1/4-20 X 1.18 STUD
22	1	282749	PLT, NUT
21	1	282750	PLT, SLIDE, GUARD
20	1	122539	REAR, BLANK, SUPPORT
19	1	122551	SIDE, BASE, BLANK
18	1	122524	MTG, PLATE, SUPPORT, BLANK
17	1	282748	COVER, TOP, DOWNSTREAM
16	1	291898	WLDMT, SUPPORT, BLANK
15	1	282747	COVER, TOP, UPSTREAM
14	1	282746	COVER, TOP, END
13	1	282745	NUT, T, 5/16-18
12	4	186703	PIN, SUPPORT, ROD
11	1	282743-001	RH, AS SHOWN
10	2	807154	HDL, ADJ, ZINC, 2-1/2 LG 5/16-18 X .78 STUD
9	1	282743-002	LH, OPPOSITE
8	2	851377	BLK, BRG, LINEAR, 15MM
7	1	800324-007	FSNR, BOLT, SHLDR, 1/2 DIA X 3/4 LG.
6	2	851376	RAIL, GUIDE, 15MM, 280L
5	2	282727	BAR, MTG, HOPPER
4	4	141335	BLOCK
3	2	141330	RACK RETAINER
2	1	141329	GEAR, SPECIAL
1	2	141328	RACK WELDMENT
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 THREE (3) DECIMALS ± 0.005 ANGLES ± 0.5°			
DRAWN: 09/04/13	BY: GGP	SCALE: 0.125:1	SIZE: D
RELEASED: 09/04/13	FILENAME: 328781	APPROVED BY: SRA	
DESCRIPTION: ASSY, HOPPER, LH MACH			
DRAWING NUMBER: 328781			

BLANK WIDTH: 11.0" - 22.0"
BLANK LENGTH: 8.75" - 26"



ARPAC B SIZE FORMAT R5

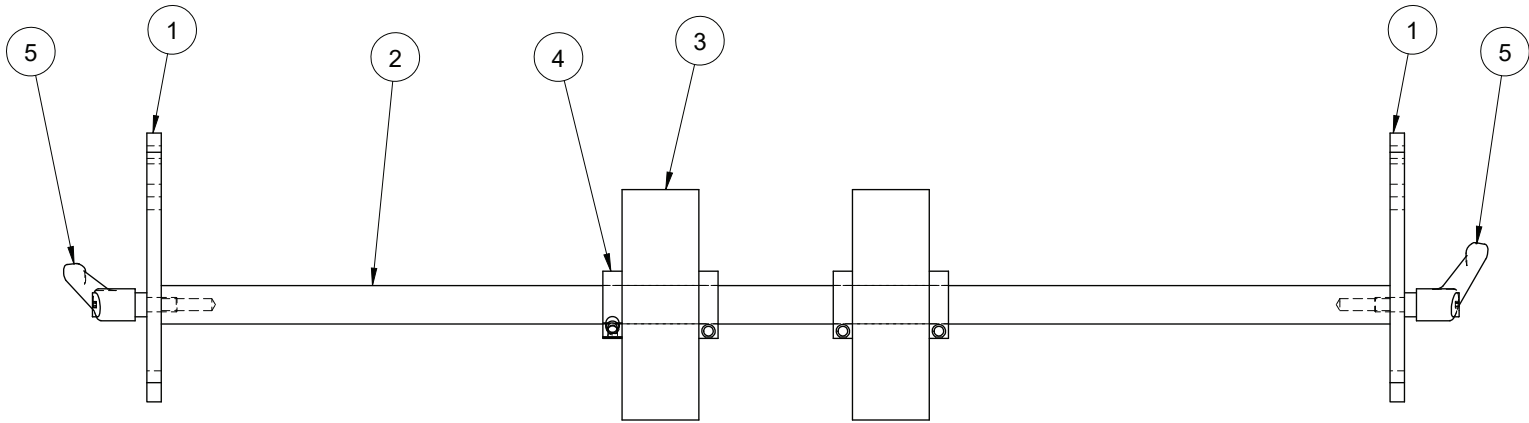
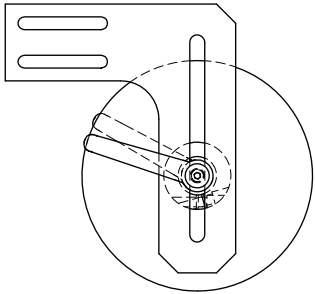
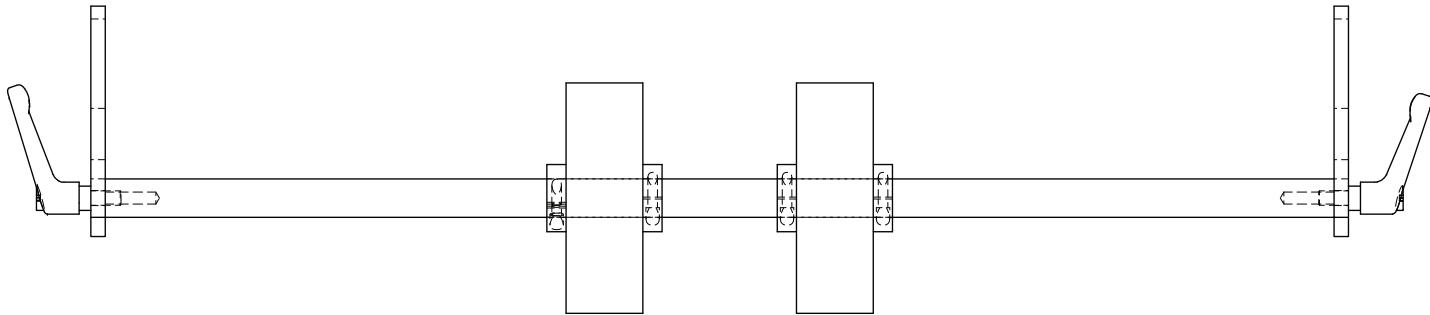
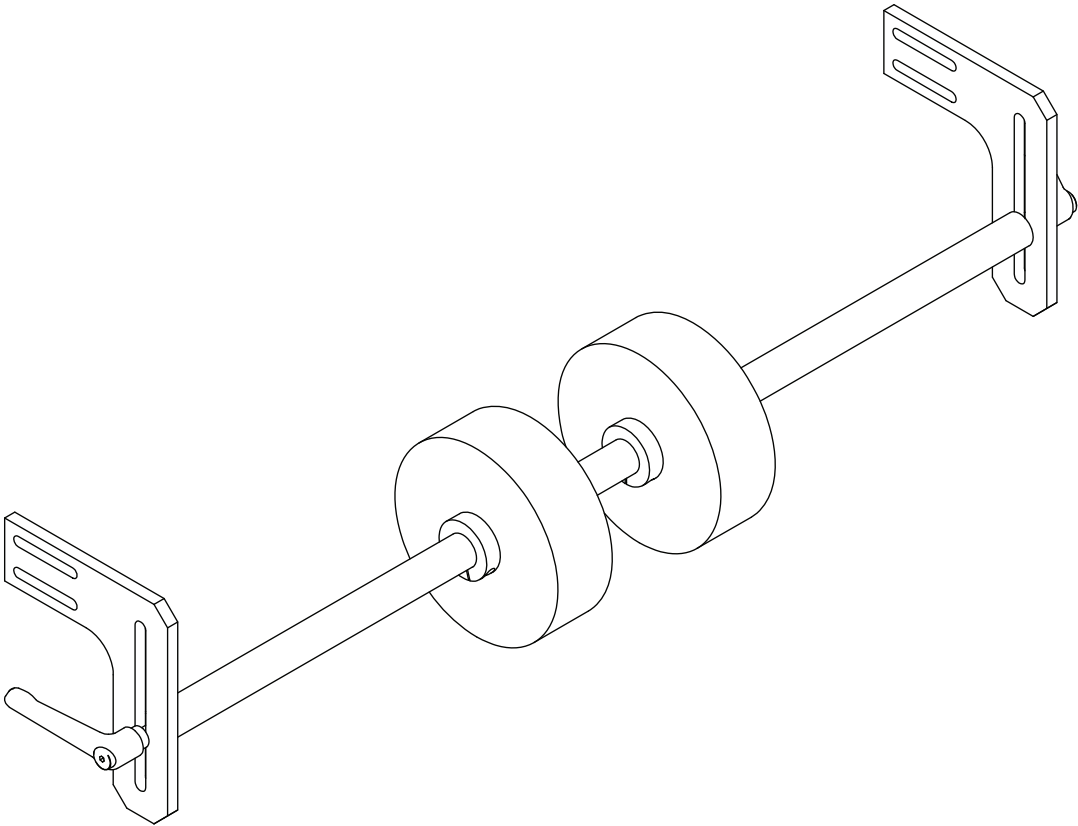
D

C

B

A

BILL OF MATERIALS			
ITEM	QTY	NUMBER	DESCRIPTION
1	2	283366	PLT, MTG, ROLLER
2	1	292552-001	SHAFT, 1.000, TAPPED, 3/8-16, SS, 32 LG
3	2	826950	ASSY, RLR, NO-CRUSH, 6 OD, 2 WD, W/ HUB
4	4	800600	COLLAR, SHAFT, CLAMP, 1-PIECE
5	2	848565	HDL, ADJ, SS, 3.07 LG 3/8-16 X .78 STUD



REV	DATE	BY	NOTE
REVISIONS			
SIZE	SCALE	MATERIAL	DESCRIPTION
B	1:5	SEE BILL OF MATERIALS	ASSY, ROLLER, HOLD-DOWN
3RD ANGLE	UNITS	FINISH	NUMBER
	INCH	NONE	332418
TOLERANCES			
X/X: ±1/32			
X.XX: ±.015			
X.XXX: ±.005			
ANGLES: ±1°			

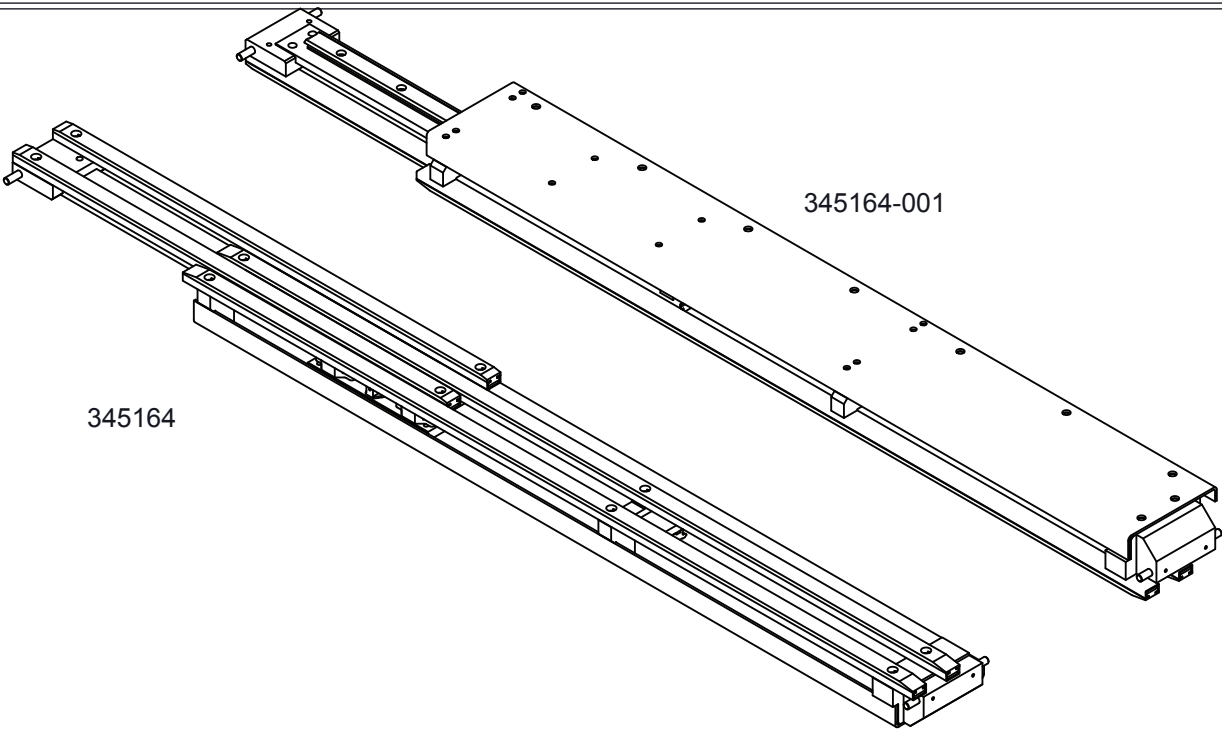
NOTES		CREATED IN SOLIDWORKS 2013		ARPAC A DURAVANT COMPANY	
• INTERPRET PER ASME Y14.5M-1994.		FILE \ CONFIG		9555 W. Irving Park Rd.	
• DIMENSIONS ARE IN INCHES [mm].		SIMILAR TO		Schiller Park, IL 60176	
• DIMENSIONS IN PARENTHESES FOR REFERENCE ONLY.		DATE CREATED		www.arpac.com	
• BREAK SHARP EDGES AND CORNERS.		DATE UPDATED		332418\Default	
• 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.		DATE UPDATED		Thursday, July 28, 2016 11:06:57 AM	
• CREATED IN SOLIDWORKS 2013.		DATE UPDATED		Wednesday, March 29, 2017 4:33:10 PM	
		DATE UPDATED		sarcher	
		DATE UPDATED		Wednesday, March 29, 2017 7:43:57 AM	
		DATE UPDATED		Wednesday, March 29, 2017 7:53:04 AM	
		DATE UPDATED		sarcher	

D

C

B

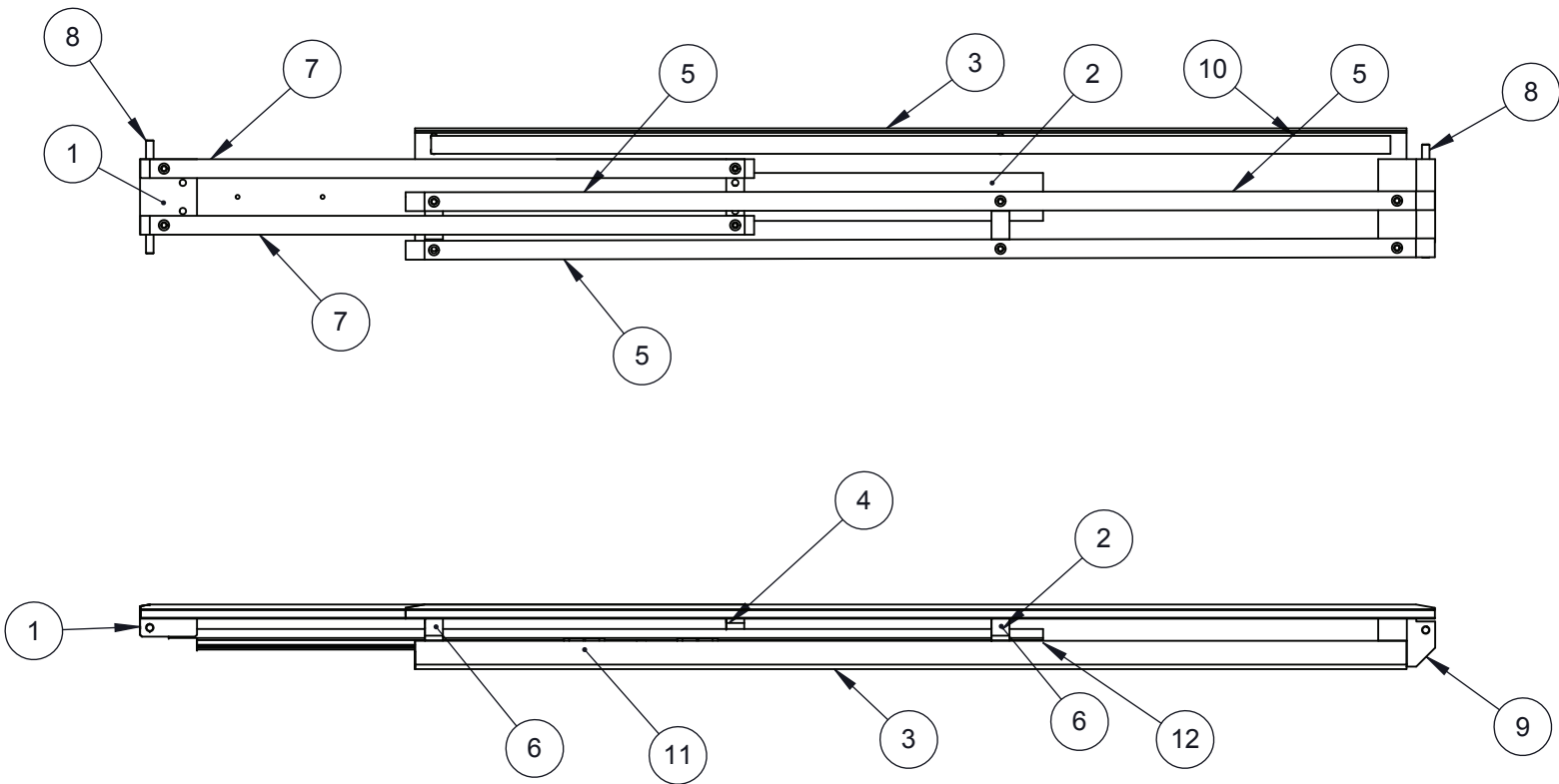
A



345164

345164-001

345164-001	345162-001	345161-001
345164	345162	345161
PART NUMBER	ITEM 3	ITEM 9



12	1	828104	SLIDE, SPACER, SS, B = 896MM OAL, C&D = 43MM
11	1	828103	SYSTEM, SLIDE, BASED, SS
10	1	345163	BAR, STIFFNER, GUIDE, DIVIDER
9	1	SEE TABLE	BLK, MTG, PIVOT, GUIDE, SLIDE
8	2	284071	PIN, MNT, PIVOT, GUIDE, SLIDE
7	2	284069	GUIDE, LANE, SHORT, GUIDE, SLIDE
6	2	345160	BLK, MTG, GUIDE, LONG
5	2	284065	GUIDE, LANE, LONG, GUIDE, SLIDE
4	1	284064	SUPPORT GUIDE
3	1	SEE TABLE	FRAME, SUPPORT, SLIDE, GUIDE, LANE
2	1	284060	GUIDE PROFILE
1	1	284059	BLK, MTG, PIVOT, GUIDE, SLIDE
ITM	QTY	PART NUM	DESCRIPTION

BILL OF MATERIALS

ARPAC

9511 WEST RIVER ST.
SCHILLER PARK, IL 60176

UNLESS OTHERWISE SPECIFIED:
ALL DIMENSIONAL TOLERANCES:

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

DRAWN: 3/5/2018 BY: hhg SCALE: 1:8 SIZE: B

RELEASED: 3/5/2018 FILENAME: 345164 APPROVED BY: hhg

DESCRIPTION: ASSY, GUIDE, SLIDE, GUIDE, LANE

3

DRAWING NUMBER:
345164

ARPAC B SIZE FORMAT R5

D

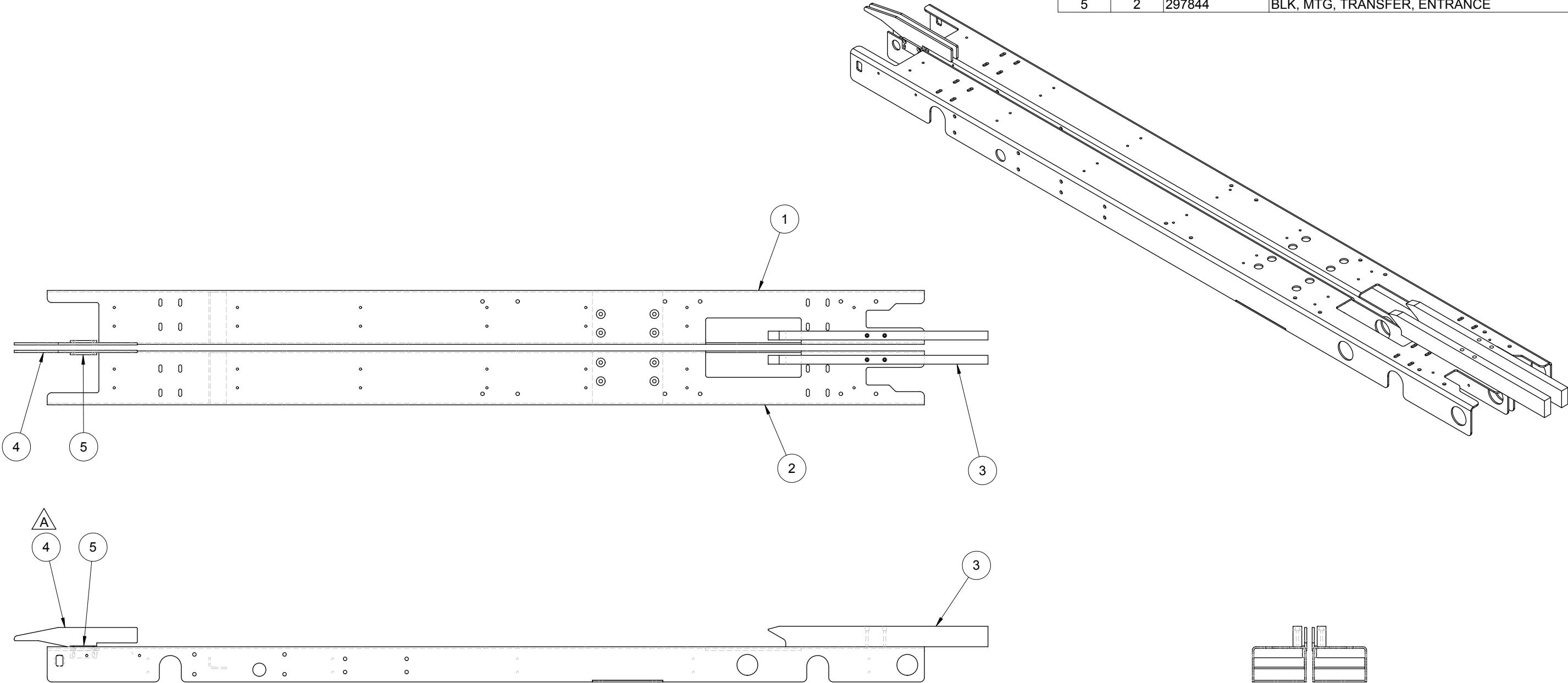
C

B

A

BILL OF MATERIALS			
ITEM	QTY	NUMBER	DESCRIPTION
1	1	345484	WLDMT, RAIL, COMPRESION SECTION
2	1	345484-001	WLDMT, RAIL, LH, COMPRESION SECTION
3	2	333980	RAIL, TRANSFER, TRAY
4	2	369931	PLT, GUIDE, BLANK
5	2	297844	BLK, MTG, TRANSFER, ENTRANCE

A



A	1/6/2020	SRA	PART 3# 369931 WAS 297843
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 2013.		CREATED IN SOLIDWORKS 2013		ARPAC A DURAVANT COMPANY 9555 W. Irving Park Rd. Schiller Park, IL 60176 www.arpac.com	SIZE B	SCALE 1:12	MATERIAL SEE BILL OF MATERIALS	DESCRIPTION ASSY, RAIL
		MODEL	FILE \ CONFIG SIMILAR TO DATE CREATED DATE UPDATED UPDATED BY		3RD ANGLE 	UNITS INCH		
		DRAFT	DATE CREATED DATE UPDATED UPDATED BY		TOLERANCES X/X: ±1/32 X.XX: ±.015 X.XXX: ±.005 ANGLES: ±1°		FINISH NONE	NUMBER 345485

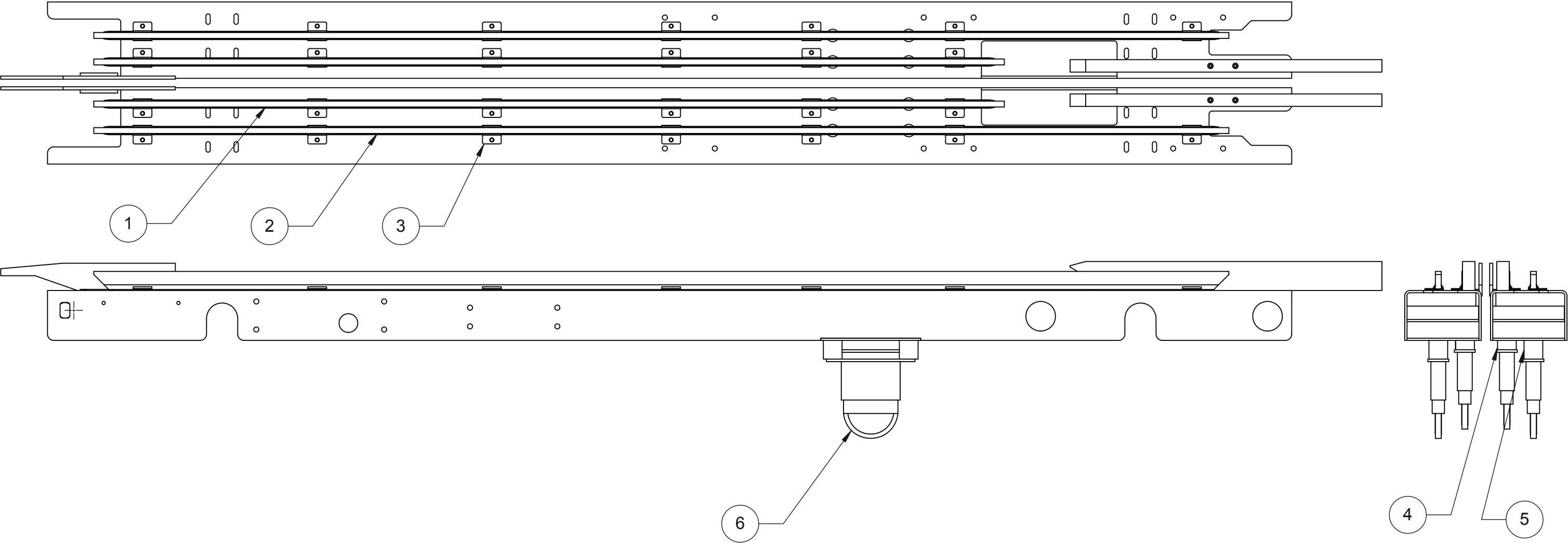
D

C

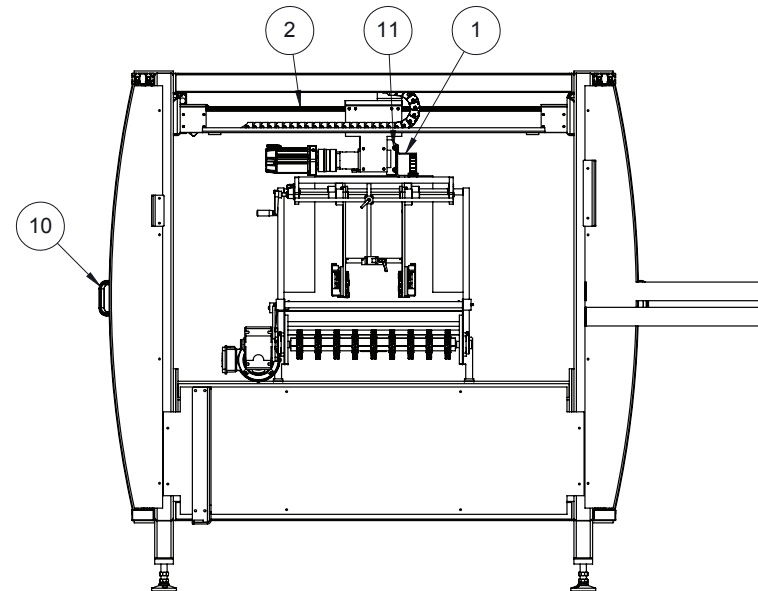
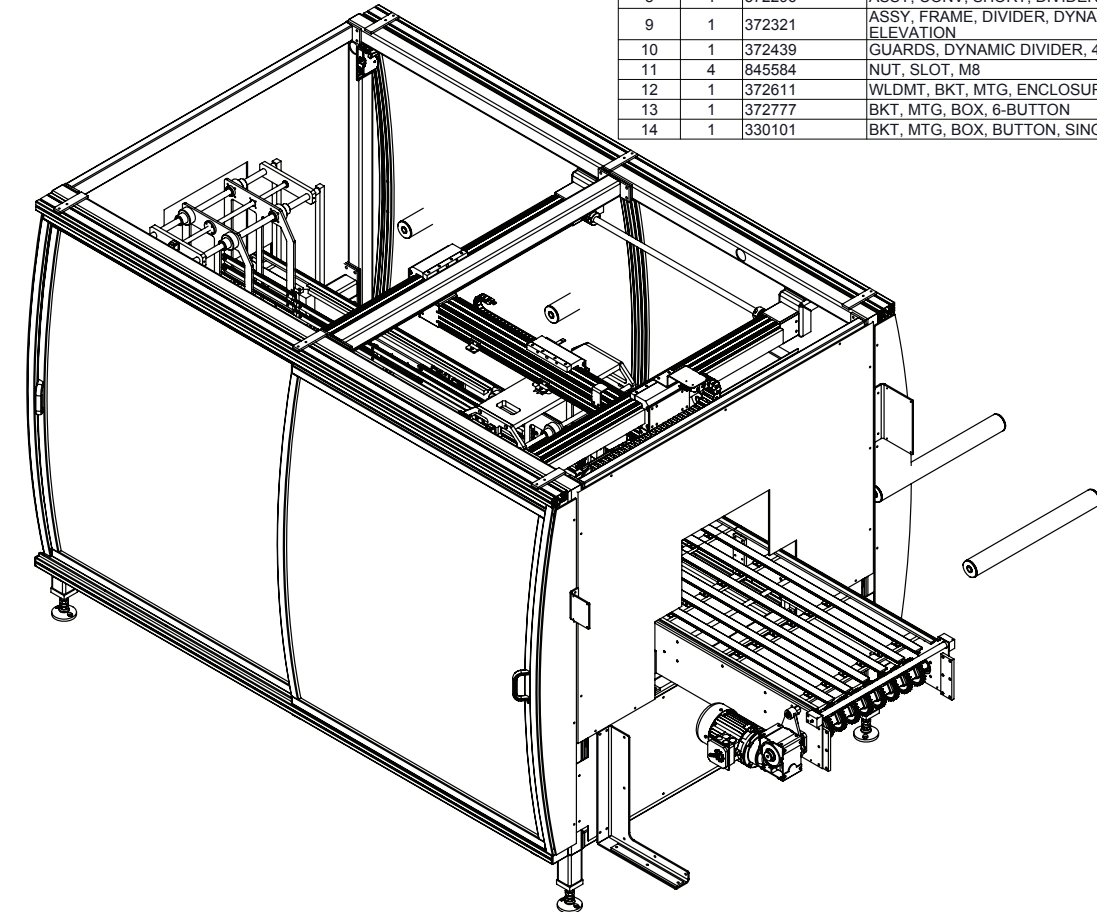
B

A

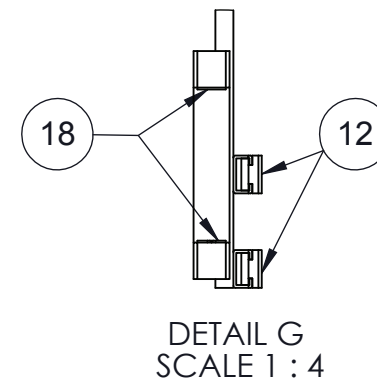
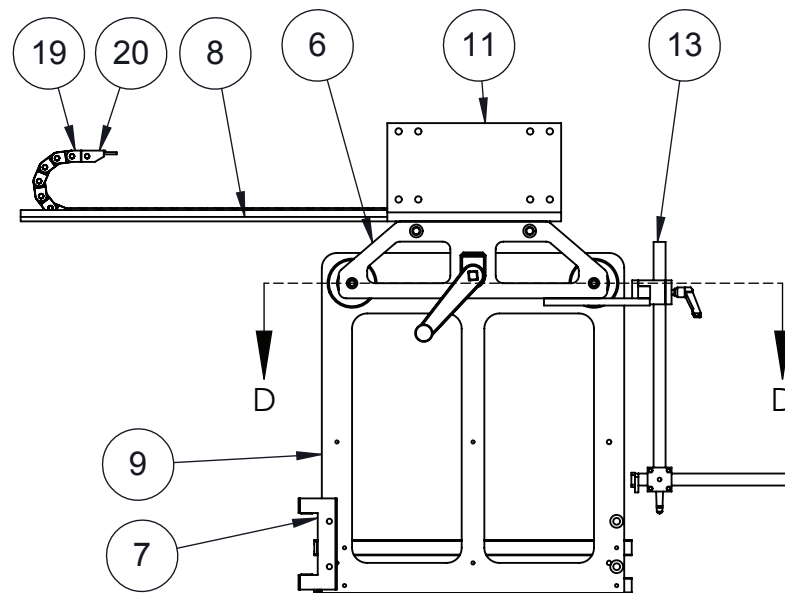
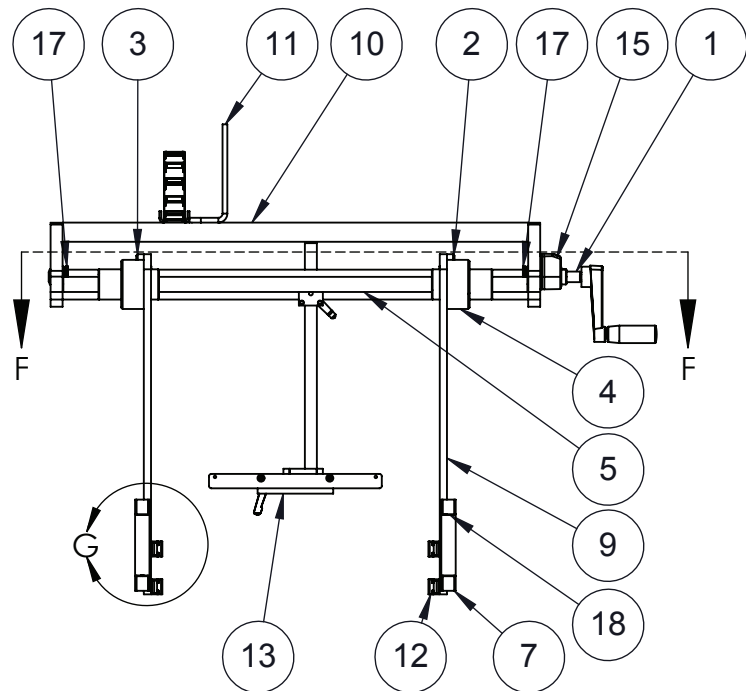
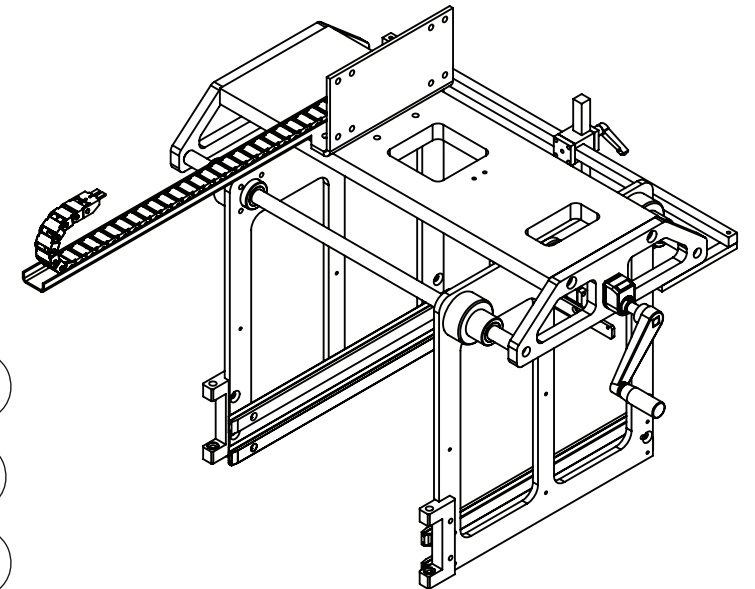
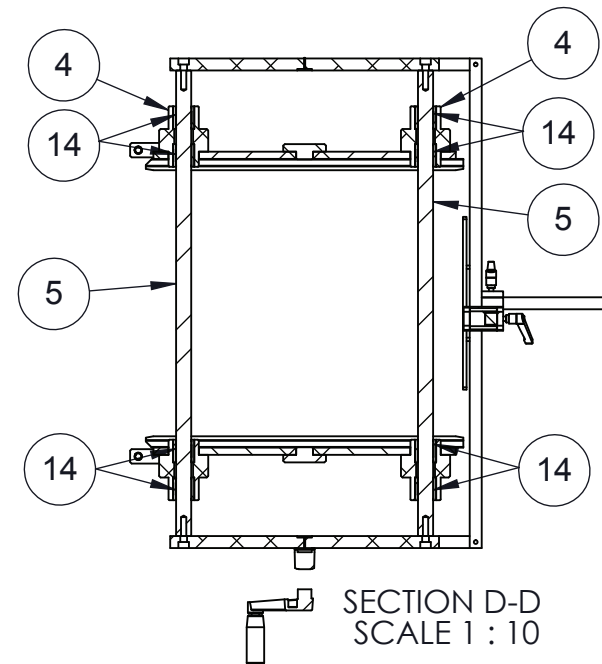
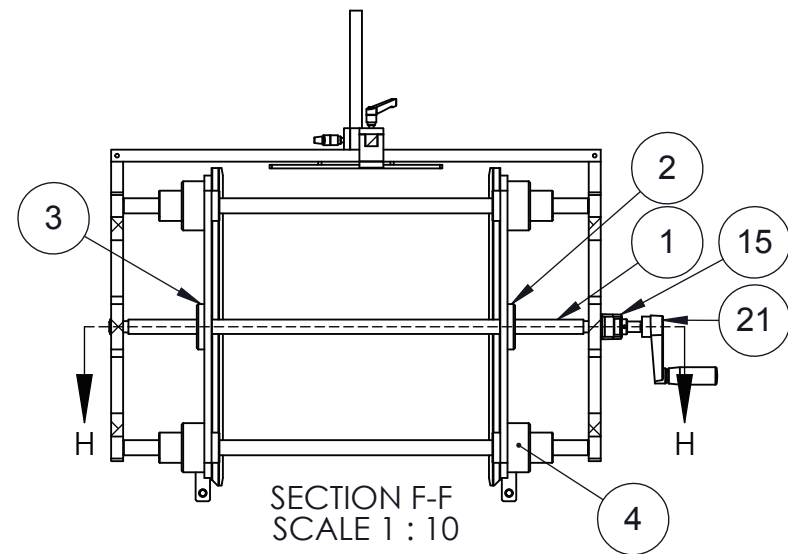
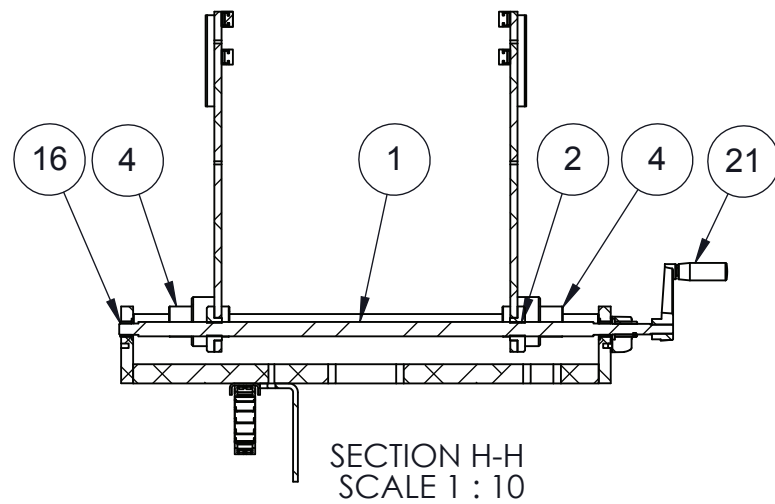
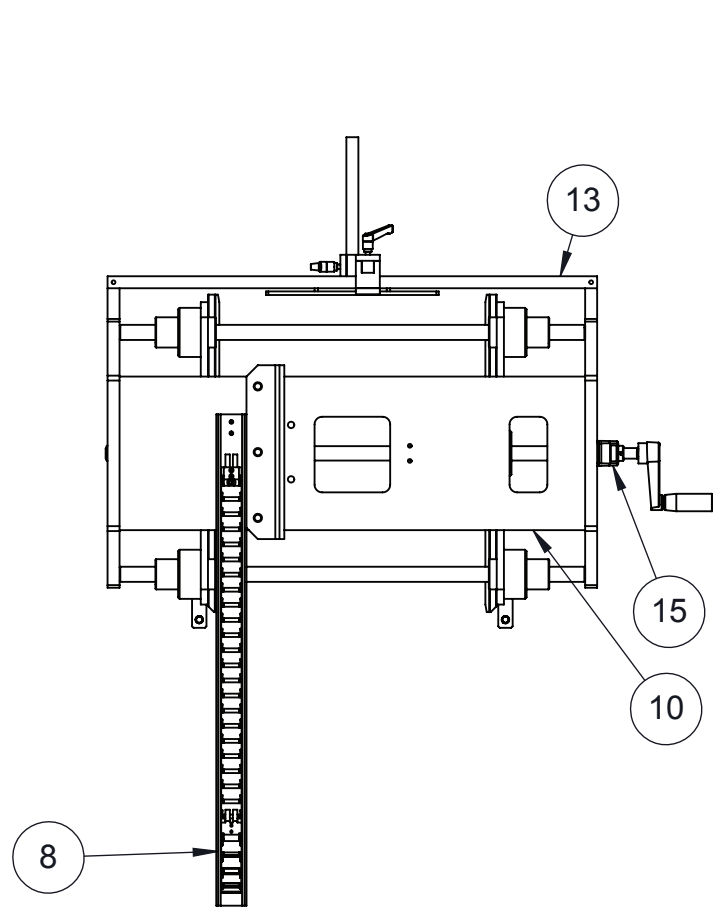
BILL OF MATERIALS			
ITEM	QTY	NUMBER	DESCRIPTION
1	2	190812-000A	CHAIN GUIDE #60 (SHORT)
2	2	190813-000A	CHAIN GUIDE #60 (LONG)
3	26	801359	CLAMP, RAIL, SINGLE, 1.5 LG, SS, ROUND HOLE
4	4	226432-006	SPACER
5	4	226432-005	SPACER
6	4	237912	TENSIONER



ARPA		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: 5/24/2001	BY: TTR	SCALE: 0.125:1	SIZE: B
RELEASED: 5/24/2001	FILENAME: 345486	APPROVED BY: TTR	
DESCRIPTION: ASSY, CHAIN SUPPORT			
			DRAWING NUMBER: 345486

1

SHEET 1 OF 1



21	1	848286	HANDLE, CRANK, AL, 12 MM SQUARE BORE
20	1	845799	MOUNTING BRACKETS, SET, CABLE CARRIER, W/TIE WRAP ENDS
19	1	845798	CABLE CARRIER, INNER WDT 20MM, BEND RADIUS 38MM, LENGTH 2.1067FT
18	4	845590	BUSH, FLG, 8MM ID X 10MM OD X 9.5MM LG X 15MM FLG OD
17	2	845292	BRG, AXIAL, DEEP GROOVE, ID15MM, OD28MM, THK9MM
16	2	845289	BUSH, OILITE, 20MM OD X 15MM ID X 15MM
15	1	827975	INDICATOR, DIGITAL, DIRECT DRIVE, INCLINED UPPER, P4MM, CW
14	8	827905	BRG, BALL, LINEAR, ID20MM, OD28MM, L30MM
13	1	372277	ASSY, PRODUCT COUNT, DYN DIV
12	5	289850	GUIDE, CHAIN, 14X20MM MODIFIED
11	1	284215	MOUNTING BRACKET
10	1	372276	PLT, SUPPORT, TOP, GUIDE, LANE
9	2	284213	PLT, GUIDE, SIDE, GUIDE, LANE
8	1	284212	RAIL CARRIERS
7	2	284201	HINGE
6	2	284200	ENDBELL
5	2	372275	SHAFT, GUIDE, SUPPORT, GUIDE, LANE
4	4	284198	HOUSING, BLK, BRG, GUIDE, LANE
3	1	293305	NUT, GUIDE, SCREW, ADJ, GUIDE, LANE
2	1	293304	NUT, GUIDE, SCREW, ADJ, GUIDE, LANE
1	1	372274	SCREW, ADJ, GUIDE, LANE, 17" OPEN
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: 8/18/2020

BY: JW

SCALE: 1:12

SIZE: B

RELEASED:

FILENAME: 372272

APPROVED BY:

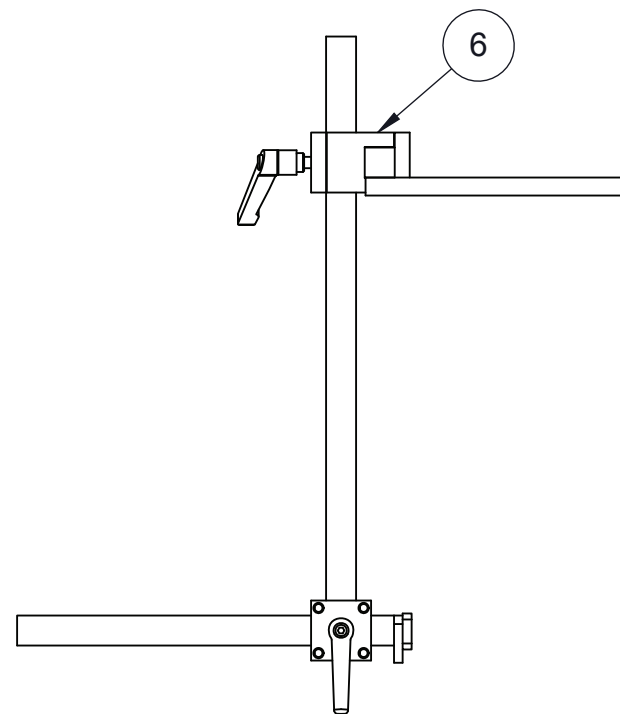
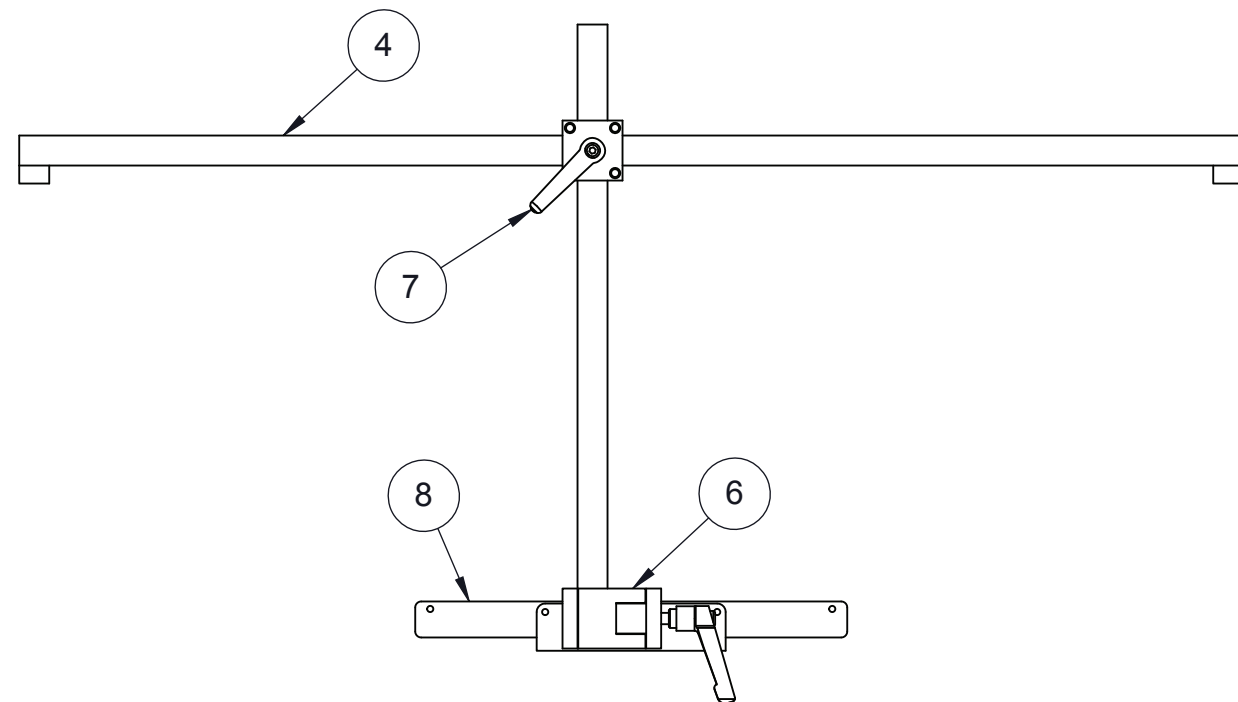
DESCRIPTION:

ASSY, GUIDE, LANE, EXIT, DIVIDER, DYNAMIC

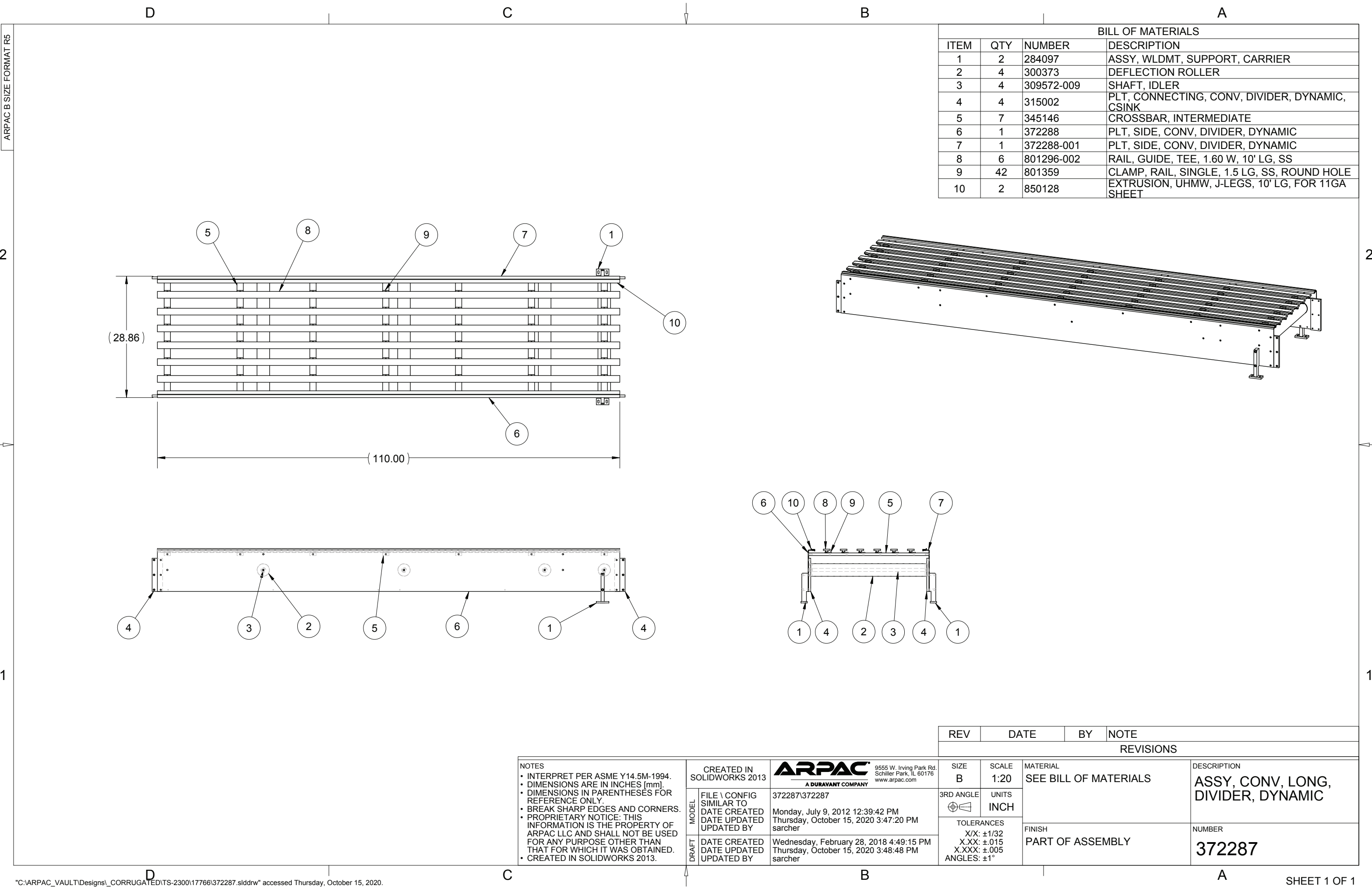
3

DRAWING NUMBER:

372272

[illegible]

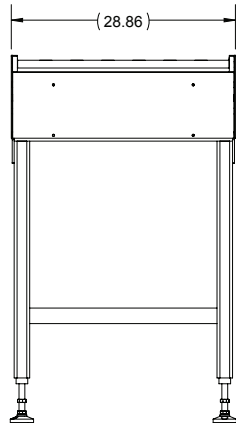
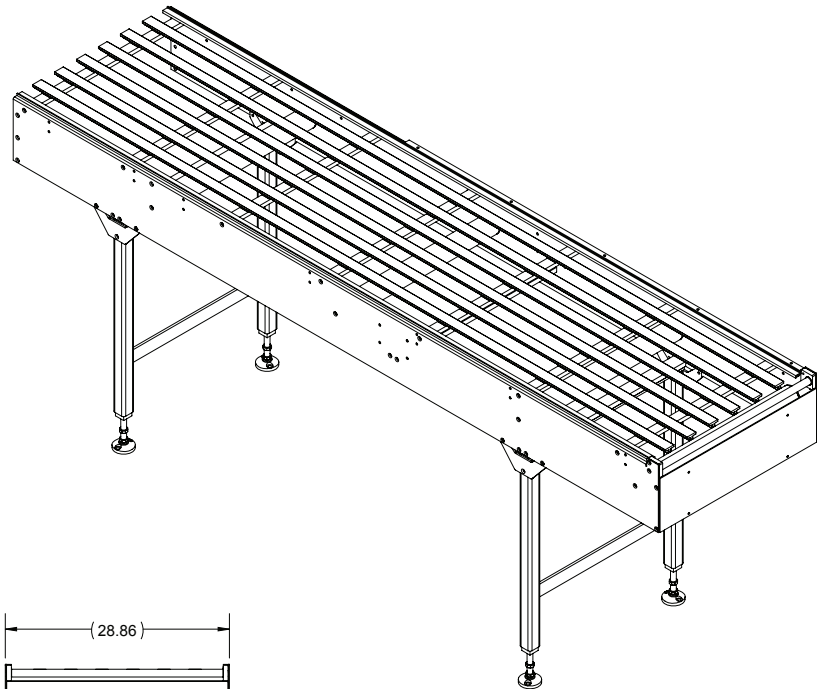
SHEET 1 OF 1

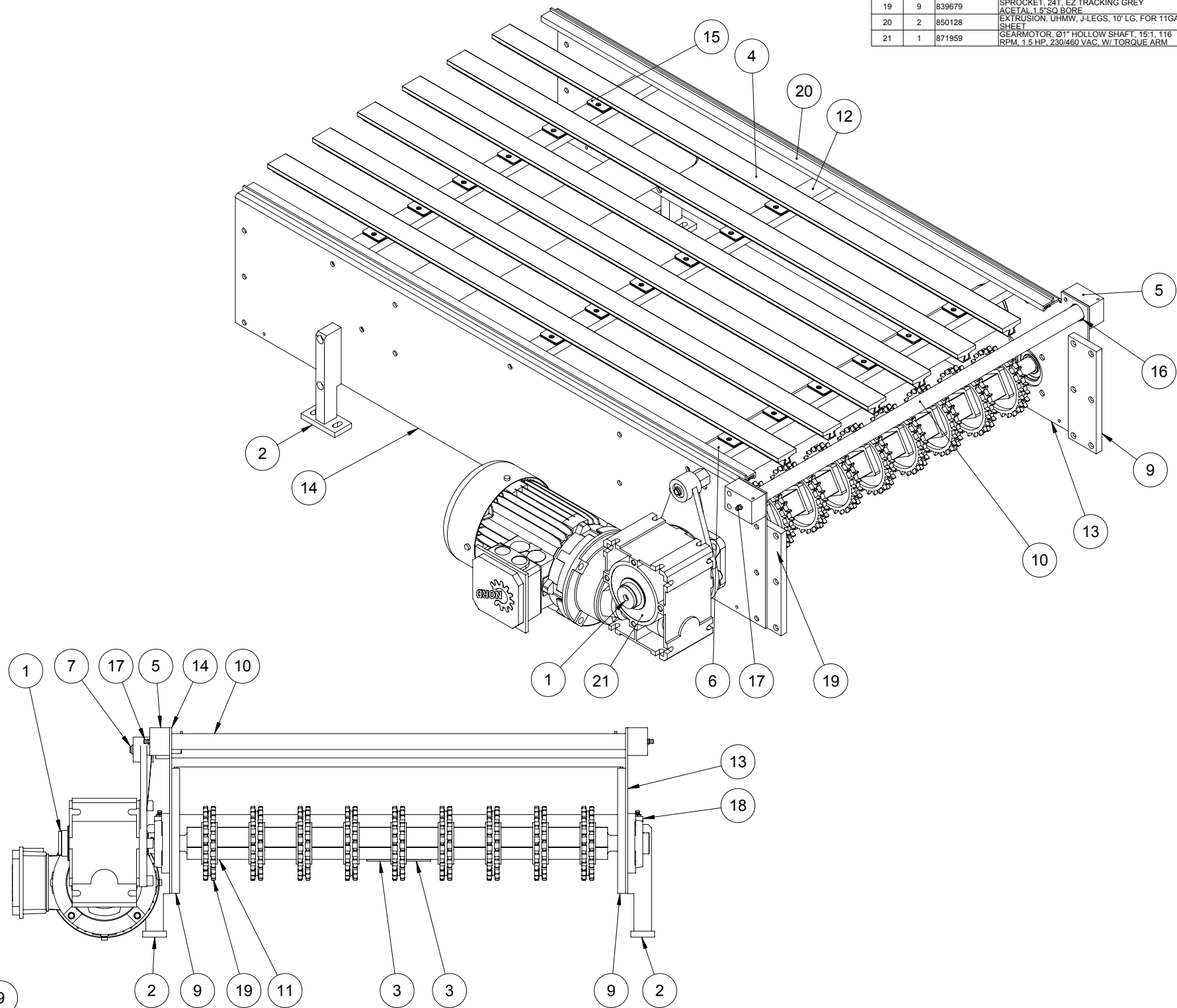
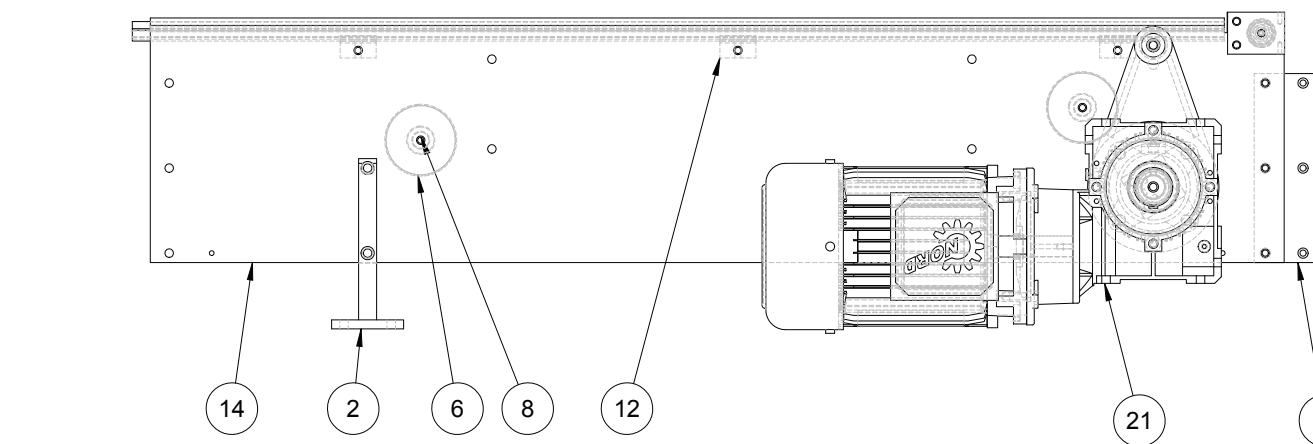


BILL OF MATERIALS			
ITEM	QTY	NUMBER	DESCRIPTION
1	2	284097	ASSY, WLDMT, SUPPORT, CARRIER
2	4	300373	DEFLECTION ROLLER
3	4	309572-009	SHAFT, IDLER
4	4	315002	PLT, CONNECTING, CONV, DIVIDER, DYNAMIC, CSINK
5	7	345146	CROSSBAR, INTERMEDIATE
6	1	372288	PLT, SIDE, CONV, DIVIDER, DYNAMIC
7	1	372288-001	PLT, SIDE, CONV, DIVIDER, DYNAMIC
8	6	801296-002	RAIL, GUIDE, TEE, 1.60 W, 10' LG, SS
9	42	801359	CLAMP, RAIL, SINGLE, 1.5 LG, SS, ROUND HOLE
10	2	850128	EXTRUSION, UHMW, J-LEGS, 10' LG, FOR 11GA SHEET

REV	DATE	BY	NOTE
REVISIONS			
SIZE	SCALE	MATERIAL	DESCRIPTION
B	1:20	SEE BILL OF MATERIALS	ASSY, CONV, LONG, DIVIDER, DYNAMIC
3RD ANGLE	UNITS	FINISH	NUMBER
	INCH	PART OF ASSEMBLY	372287
TOLERANCES			
X/X: ±1/32			
X.XX: ±.015			
X.XXX: ±.005			
ANGLES: ±1°			

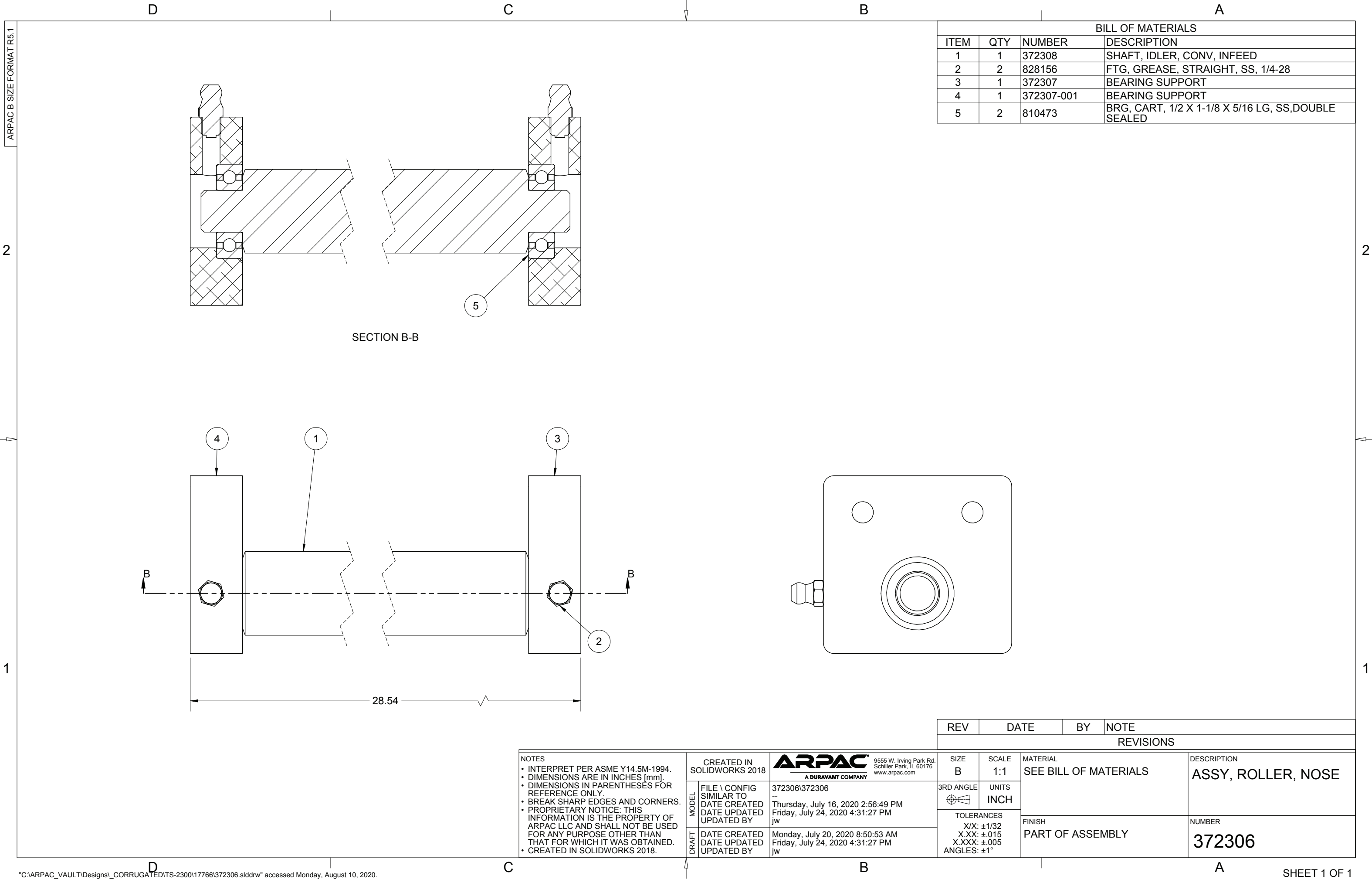
NOTES		CREATED IN SOLIDWORKS 2013		 A DURAVANT COMPANY 9555 W. Irving Park Rd. Schiller Park, IL 60176 www.arpac.com
• INTERPRET PER ASME Y14.5M-1994. • DIMENSIONS ARE IN INCHES [mm]. • DIMENSIONS IN PARENTHESES FOR REFERENCE ONLY. • BREAK SHARP EDGES AND CORNERS. • PROPRIETARY NOTICE: THIS INFORMATION IS THE PROPERTY OF ARPAC LLC AND SHALL NOT BE USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT WAS OBTAINED. • CREATED IN SOLIDWORKS 2013.		MODEL	FILE \ CONFIG SIMILAR TO DATE CREATED DATE UPDATED UPDATED BY	
		DRAFT	DATE CREATED DATE UPDATED UPDATED BY	
			Monday, July 9, 2012 12:39:42 PM Thursday, October 15, 2020 3:47:20 PM sarcher	372287/372287
			Wednesday, February 28, 2018 4:49:15 PM Thursday, October 15, 2020 3:48:48 PM sarcher	

1SHEET 1 OF 1



REV	DATE	BY	NOTE		
REVISIONS					
REV	DATE	BY	NOTE		
SIZE	SCALE	MATERIAL		DESCRIPTION	
D	1:4	SEE BILL OF MATERIALS		ASSY, CONV, SHORT, DIVIDER, DYNAMIC	
3RD ANGLE	UNITS INCH				
		TOLERANCES X.XX: ±1/2 X.XX: ±015 X.XX: ±.005 ANGLES: ±1°		NUMBER	
		FINISH PART OF ASSEMBLY		372296	

DESCRIPTION	ASSY, CONV, SHORT, DIVIDER, DYNAMIC
NUMBER	372296



ARPAC B SIZE FORMAT R5

2

1

D

C

B

A

1

2

3

4

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

1

2

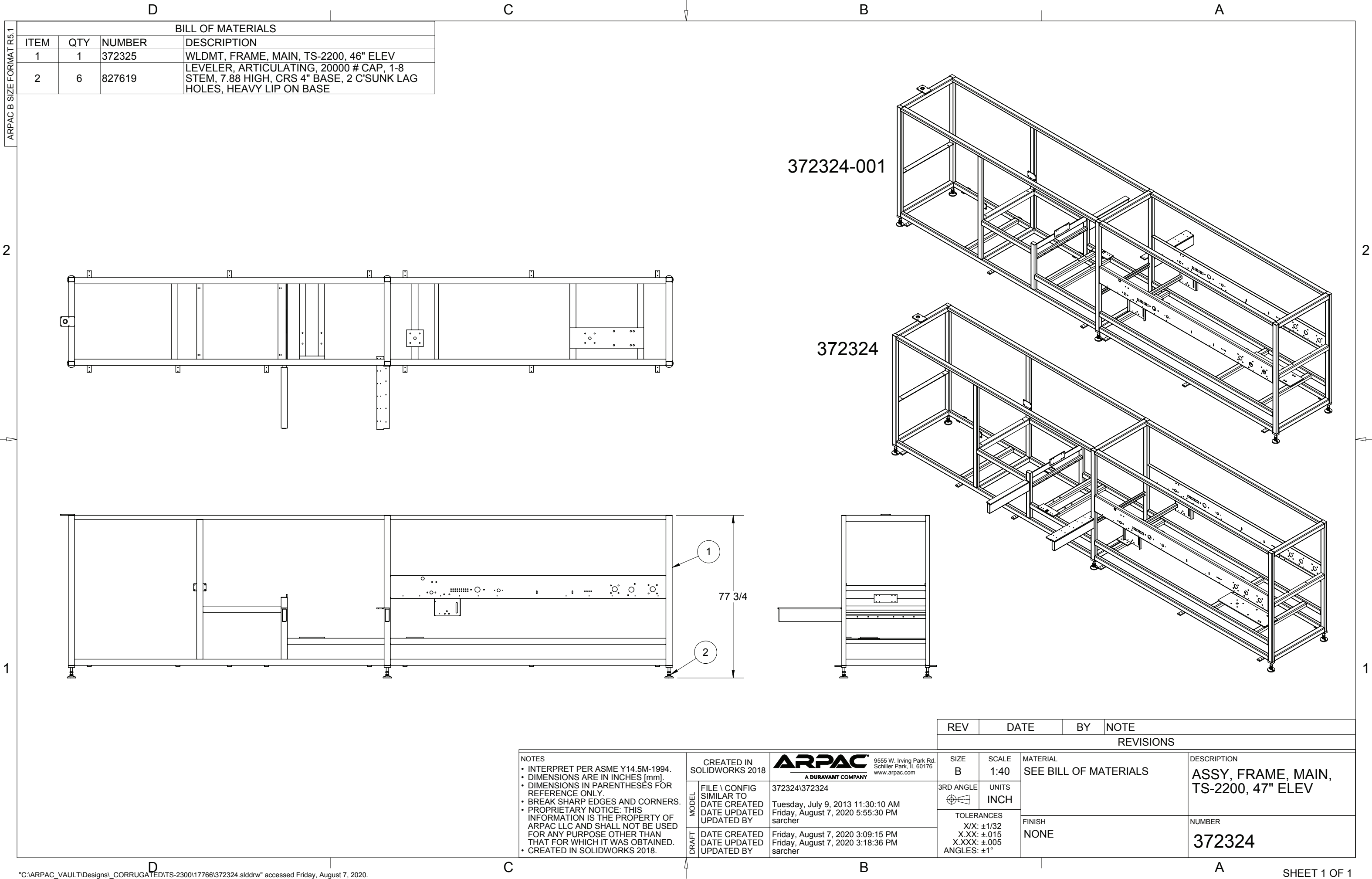
1

2

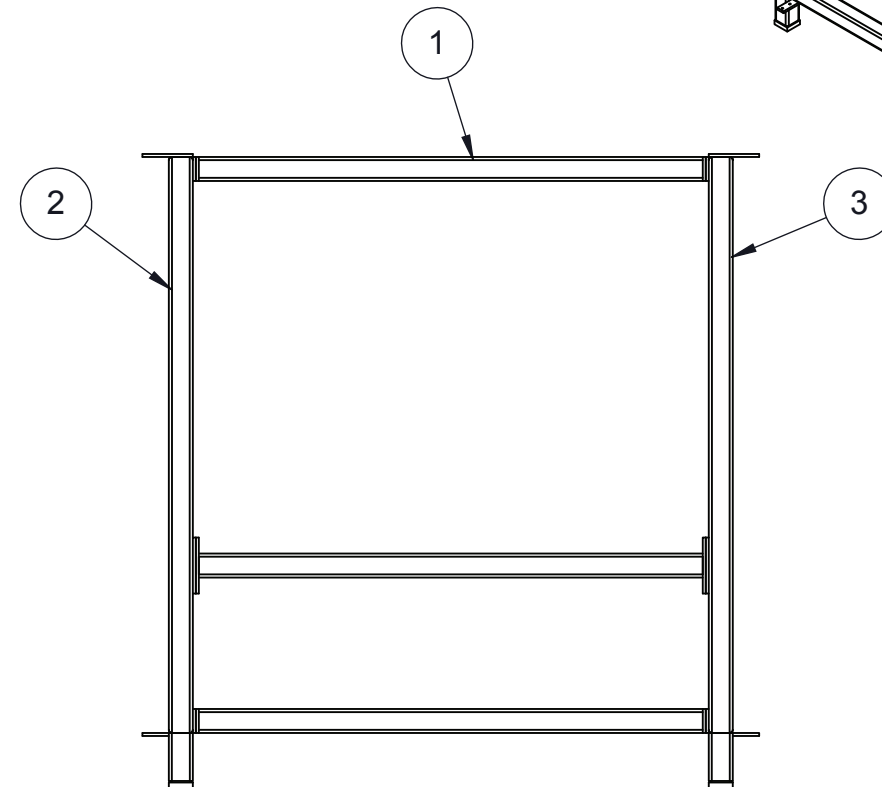
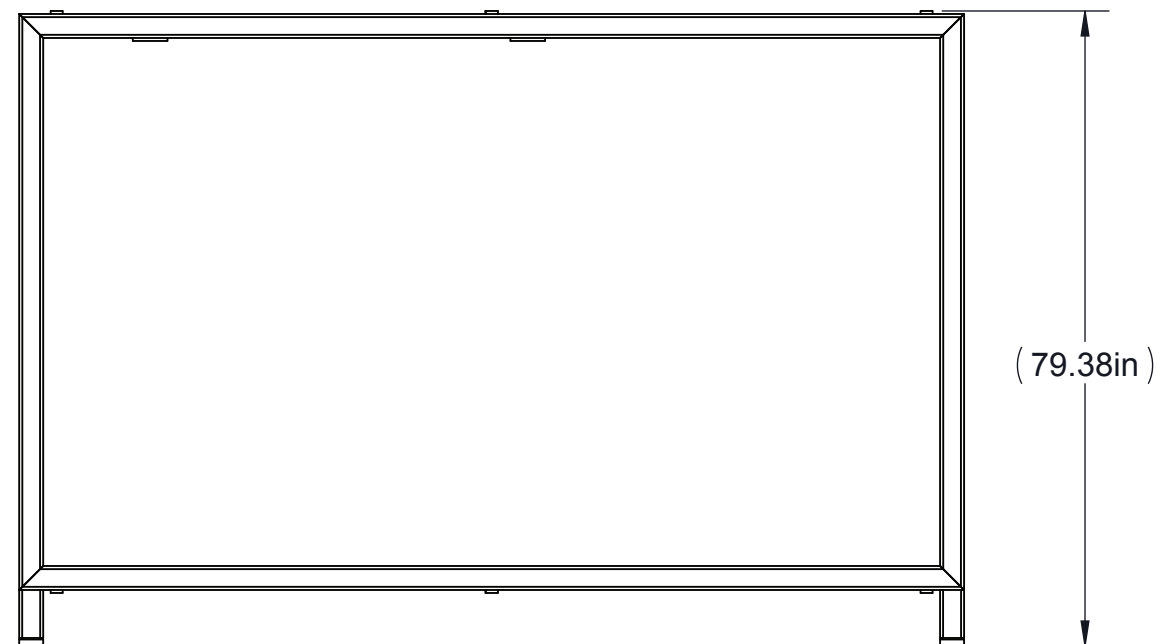
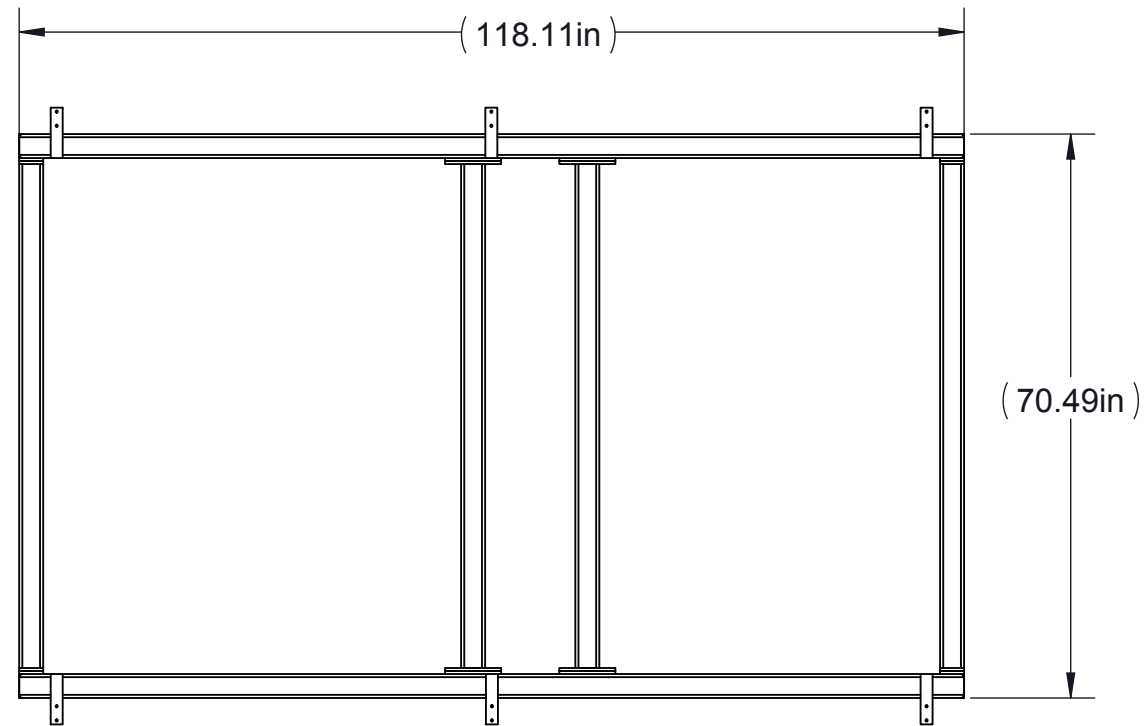
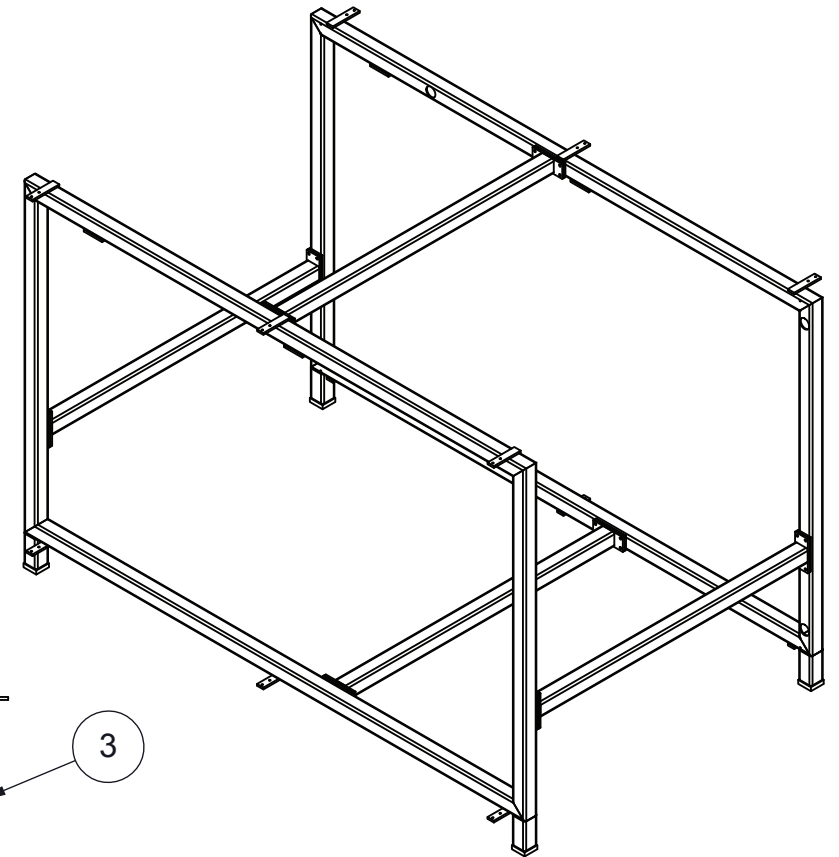
1

2

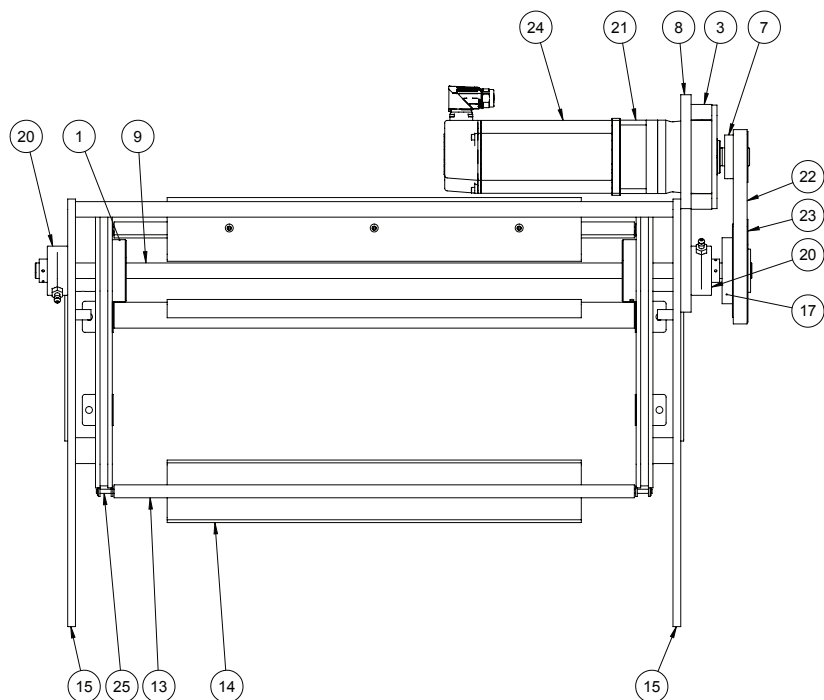
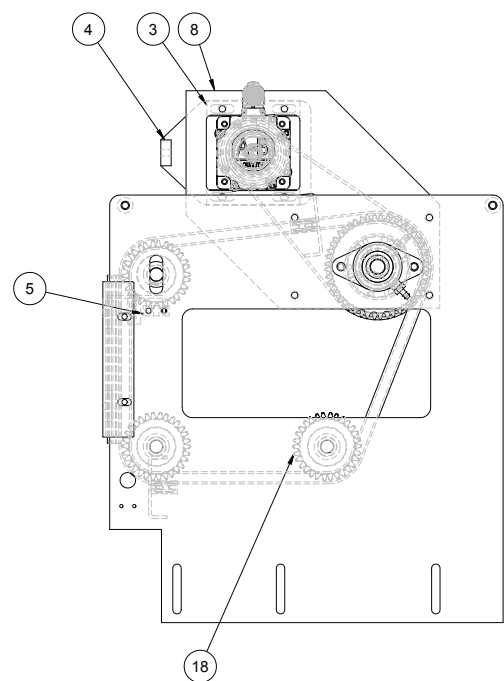
<



BILL OF MATERIALS			
ITEM	QTY	NUMBER	DESCRIPTION
1	4	284169	ASSY, WLDMT, UNION, RAIL
2	1	372328	WLDMT, FRAME, SIDE
3	1	372329	WLDMT, FRAME, SIDE



NOTES • INTERPRET PER ASME Y14.5M-1994. • DIMENSIONS ARE IN INCHES [mm]. • DIMENSIONS IN PARENTHESES FOR REFERENCE ONLY. • BREAK SHARP EDGES AND CORNERS. • PROPRIETARY NOTICE: THIS INFORMATION IS THE PROPERTY OF ARPAC LLC AND SHALL NOT BE USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT WAS OBTAINED. • CREATED IN SOLIDWORKS 2013.	CREATED IN SOLIDWORKS 2013		 4955 W. Irving Park Rd. Schiller Park, IL 60176 www.arpac.com A DURAVANT COMPANY	SIZE B	SCALE 1:32	MATERIAL SEE BILL OF MATERIALS	DESCRIPTION ASSY, FRAME, MAIN, DIVIDER, DYNAMIC, 47" EL
	MODEL	FILE \ CONFIG SIMILAR TO DATE CREATED DATE UPDATED UPDATED BY	372326\372326 -- Wednesday, June 27, 2012 4:27:06 AM Monday, August 17, 2020 5:15:55 PM sarcher	3RD ANGLE 	UNITS INCH		
	DRAFT	DATE CREATED DATE UPDATED UPDATED BY	Thursday, June 28, 2012 10:45:55 PM Monday, August 17, 2020 4:53:52 PM sarcher	TOLERANCES X/X: ±1/32 X.XX: ±.015 X.XXX: ±.005 ANGLES: ±1°		FINISH NONE	NUMBER 372326



#50 HOLLOW PIN CHAIN 47.5" LENGTH EACH SIDE
FLIGHT BAR PITCH = 23.75"
GEARBOX RATIO = 10
PULLEY RATIO = 2
CHAIN DRIVE SPROCKET IS 24 TEETH
31.66 SERVO MOTOR REVOLUTION = 1 FLIGHT BAR PITCH (23.75")
1 MOTOR REVOLUTION = .75 FLIGHT BAR TRAVEL

BILL OF MATERIALS			
ITEM	QTY	NUMBER	DESCRIPTION
1	2	101931	SPKT, 50B24, MOD, 0.750 BORE, W/KWY
2	4	224000-018	SPCR, AL, 21/32 ID X 1-1/4 OD, 1.016 LG
3	2	265558	SPACER, BKT, MTG, SERVO
4	1	265560	WLDMT, PLT, MTG, GEARBOX
5	2	265572	BLK, TENSIONER
6	2	265580	SPCR, AL, 21/32 ID X 1 1/4 OD
7	1	311856	PULLEY, TIMING, 25T, MOD, 22MM BORE
8	1	311892	BKT, MTG, SERVO, SCAPEMENT
9	1	313299	SHAFT, DRIVE, ESCAPEMENT
10	2	314897	SHAFT, 0.750, TAPPED, 3/8-16
11	2	345119	RAIL, GUIDE, CHAIN, #50, SS, 8.13" LG.
12	2	357531	ANGLE, MTG, RAIL, CHAIN
13	2	372333	BAR, FLIGHT
14	2	372334	PLT, FLIGHT BAR
15	2	372438	PLT, SIDE, BAR, FLIGHT, ESCAPEMENT
16	2	800472	CHAIN, RLR, #50, HOLLOW PIN
17	1	800663	BUSH, TAPER, QD, 3/4 BORE X 1-3/8 LG
18	6	800905	SPKT, 50B15H, IDLER, 5/8 ID, HARDENED TEETH
19	4	801359	CLAMP, RAIL, SINGLE, 1.5 LG, SS, ROUND HOLE
20	2	826966	BRG, FLG, 3/4 ID, 2-BOLT, 3.53 MTG HOLES
21	1	848475	GEARBOX, PLANETARY, NP SERIES, 10:1, FOR MPL-B310P
22	1	841291	BELT, TIMMING, 8MM P, 16MM W, 25.2 LG, 80 TEETH, EAGLE PD, HELICAL OFFSET TEETH
23	1	849289	PULLEY, TIMING, 50T, 8 MM P, 17 MM W, SDS BORE
24	1	849460	MOTOR, SERVO, 37 IN-LB, 4750 RPM, 460VAC, W/BRAKE, KINETIX 5000 CONTROLLER
25	4	869213	LINK, CHAIN, 50-D-3

	REV	DATE	BY	NOTE	
	REVISIONS				
Fig 76	SIZE	SCALE	MATERIAL		DESCRIPTION
	C	1:6	SEE BILL OF MATERIALS		ASSY, BAR, FLIGHT, ESCAPEMENT, 28.86" WIDE, 23.75" PITCH
	3RD ANGLE	UNITS			
AM		INCH			
	TOLERANCES		FINISH		NUMBER
	X/X: ±1/32 X.XX: ±0.15 X.XXX: ±.005 ANGLES: ±		PART OF ASSEMBLY		372332

ARPAC B SIZE FORMAT R5.1

2

1

D

C

B

A

372345

24

2

27

26

6

30

4

23

9

18

17

25

3

23

31

15

13

11

21

28

8

7

28.86

19

20

29

14

9

5

10

16

22

12

1

372345-001

BILL OF MATERIALS			
ITEM	QTY	NUMBER	DESCRIPTION
1	2	300306	NUT, FLANGE
2	2	300314	WASHER, CLAMP
3	2	300317	SHAFT, GUIDE
4	1	300322	PLT, MTG, SHAFT
5	1	300323	PLT, MTG, SHAFT
6	1	300326	PLT, MTG, CYL
7	1	300711	NUT, FLOATING
8	1	300712	NUT, SPECIAL
9	4	309590	GEAR, MITER, 12DP, 15T, 0.50B
10	2	309593	BLK, MTG, SHAFT
11	2	309594	SCREW, ADJ, VERT
12	1	309597	WLDMNT, BLK, ADJ. VERT
13	1	309597-001	WLDMNT, BLK, ADJ. VERT
14	2	311965	BLK, MTG, CLAMP
15	1	313273	WLDMNT, BAR, MTG, CYL
16	1	313274	BAR, CROSS, TOP
17	1	313275	COVER, TOP
18	1	313276	SHAFT, CROSS, ADJ.
19	2	313279	SHAFT, SLIDE
20	1	372346	PLT, CLAMP, PRODUCT
21	1	372347	SUBASSY, PLT, CLAMP, RUBBER, EXT
22	6	800366	BUSH, OILITE, 0.6260 X 0.7530 X 1/2 LG
23	2	806159	BUSH, OILITE, FLG, 0.502 X 0.753 X 5/8, 1 OD X 1/8 THK FLG
24	4	819834	BUSH, BALL, 1 X 1-9/16 X 2-1/4 LG WITH TWO INTEGRAL WIPWERS
25	2	825362-001	VALVE, CONTROL, FLOW, 1/8 NPT X 1/4 TUBE 90DEG, NUMERIC INDICATOR, MTR OUT
26	1	828032	SENSOR, AIR CYLINDER
27	4	846871	BRG, LINEAR, BALL, ID20MM, OD28MM, L30MM
28	1	847969	CYL, AIR, 32mm BORE, 25mm STROKE
29	4	848781	BRG, THRUST, BALL, 5/8 ID, 1-11/32 OD, 9/16 TALL
30	1	848782	COUNTER, DIGITAL, 1/2 HOLLOW BORE, CW, 25 COUNTS/TURN, UPSIDE DOWN
31	1	849178	WRENCH, RATCHET 3/8 SQ X 6-15/16 LG

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

9555 W. Irving Park Rd.
Schiller Park, IL 60176
www.arpac.com

MODEL

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

372345\372345
Thursday, June 12, 2014 11:15:32 AM
Thursday, July 30, 2020 11:16:15 AM
jw

DRAFT

DATE CREATED
DATE UPDATED
DATE UPDATED BY

Tuesday, February 10, 2015 4:26:35 PM
Monday, August 10, 2020 3:41:13 PM
jw

SIZE

B

3RD ANGLE

TOLERANCES

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

SCALE

1:10

UNITS

INCH

MATERIAL

SEE BILL OF MATERIALS

FINISH

PART OF ASSEMBLY

DESCRIPTION

ASSY, CLAMP,
PRODUCT, COLLATOR,
28.858" W CONV

NUMBER

372345

D

C

B

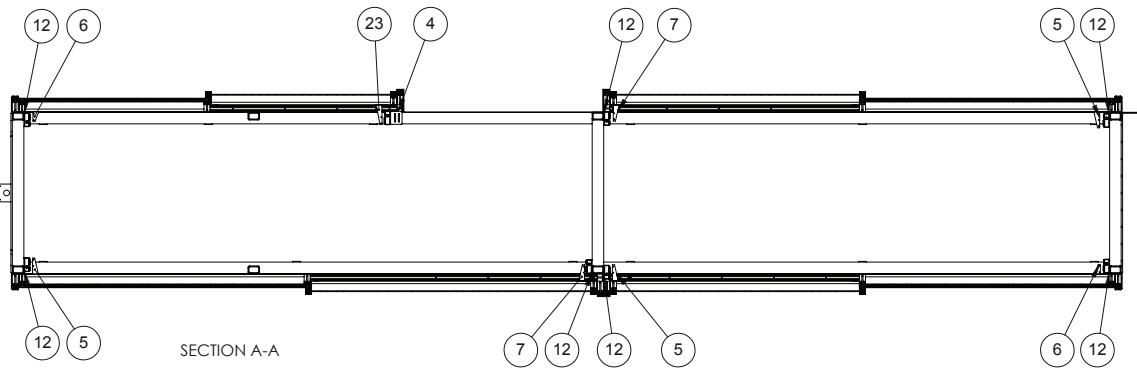
A

1

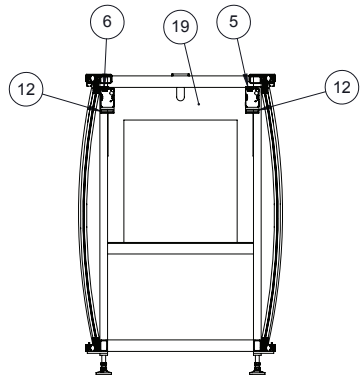
2

"C:\ARPAC_VAULT\Designs_CORRUGATED\ITS-2300\17766\372345.sldrw" accessed Monday, August 10, 2020.

SHEET 1 OF 1



SECTION B-B



SECTION B-B

372431-001

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 2013.

REV	DATE	BY	NOTE
REVISIONS			
SIZE	SCALE	MATERIAL	DESCRIPTION
D	1:25	SEE BILL OF MATERIALS	ASSY, GUARDS, TS-2200, 47" ELEV
3RD ANGLE	UNITS		
	INCH		
TOLERANCES		FINISH	NUMBER
XXX: ±1/32		NONE	372431
XXX: ±0.015			
XXX: ±.005			
ANGLES: ±1°			

ARPAC B SIZE FORMAT R5.1

2

1

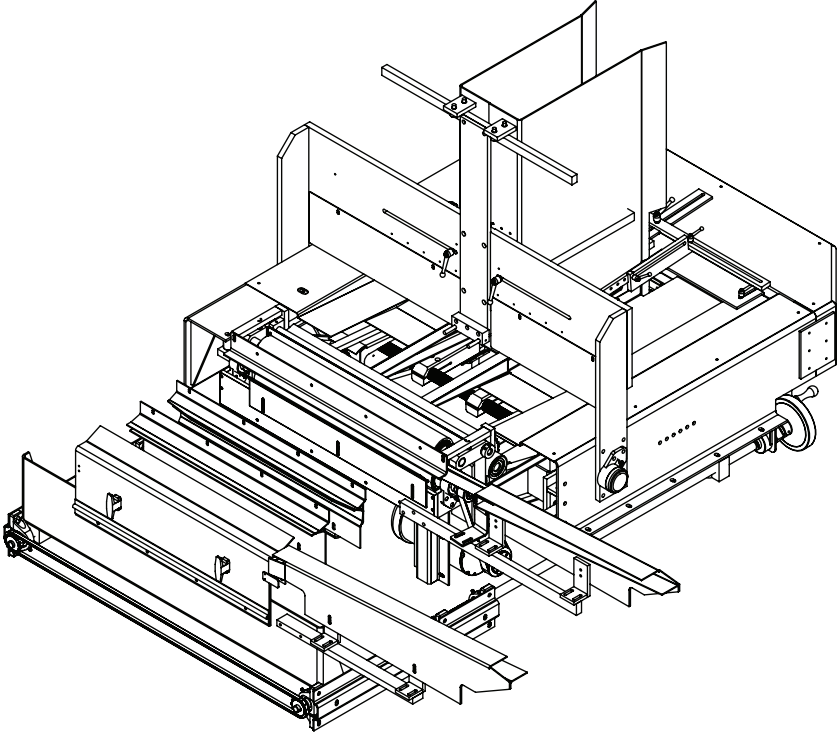
D

C

B

A

BILL OF MATERIALS			
ITEM	QTY	NUMBER	DESCRIPTION
1	1	372602	ASSY, ROLLERS, PINCH, MAGAZINE, LH
2	1	238316-000	ASSY, MAGAZINE, GUIDE & SUPPORT
3	1	244278-001	ASSY, BLANK, SUPPORT & GUIDE, LH
4	1	282752	ASSY, MAGAZINE, CONV, DRIVE
5	1	328781	ASSY, HOPPER, LH MACH



BLANK WIDTH: 11" TO 22"
BLANK LENGTH: 8.75 TO 22"

REV	DATE	BY	NOTE
REVISIONS			

NOTES

- INTERPRET PER ASME Y14.5M-1994.
- DIMENSIONS ARE IN INCHES [mm].
- DIMENSIONS IN PARENTHESES FOR REFERENCE ONLY.
- BREAK SHARP EDGES AND CORNERS.
- PROPRIETARY NOTICE: THIS INFORMATION IS THE PROPERTY OF ARPAC LLC AND SHALL NOT BE USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT WAS OBTAINED.
- CREATED IN SOLIDWORKS 2018.

CREATED IN SOLIDWORKS 2018

ARPAC

A DURAVANT COMPANY

9555 W. Irving Park Rd.
Schiller Park, IL 60176
www.arpac.com

MODEL

FILE \ CONFIG
SIMILAR TO
DATE CREATED
DATE UPDATED
UPDATED BY

372601\372601
Thursday, February 3, 2011 2:12:51 AM
Tuesday, August 11, 2020 3:57:49 PM
sarcher

DRAFT

DATE CREATED
DATE UPDATED
UPDATED BY

Tuesday, August 11, 2020 4:05:30 PM
Tuesday, August 11, 2020 4:31:27 PM
sarcher

SIZE

B

3RD ANGLE

TOLERANCES

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

SCALE

1:20

UNITS

INCH

MATERIAL

SEE BILL OF MATERIALS

FINISH

NONE

DESCRIPTION

ASSY, MAGAZINE,
BLANK FEED, TS-2000,
LH MACHINE

NUMBER

372601

D

C

B

A

1

2

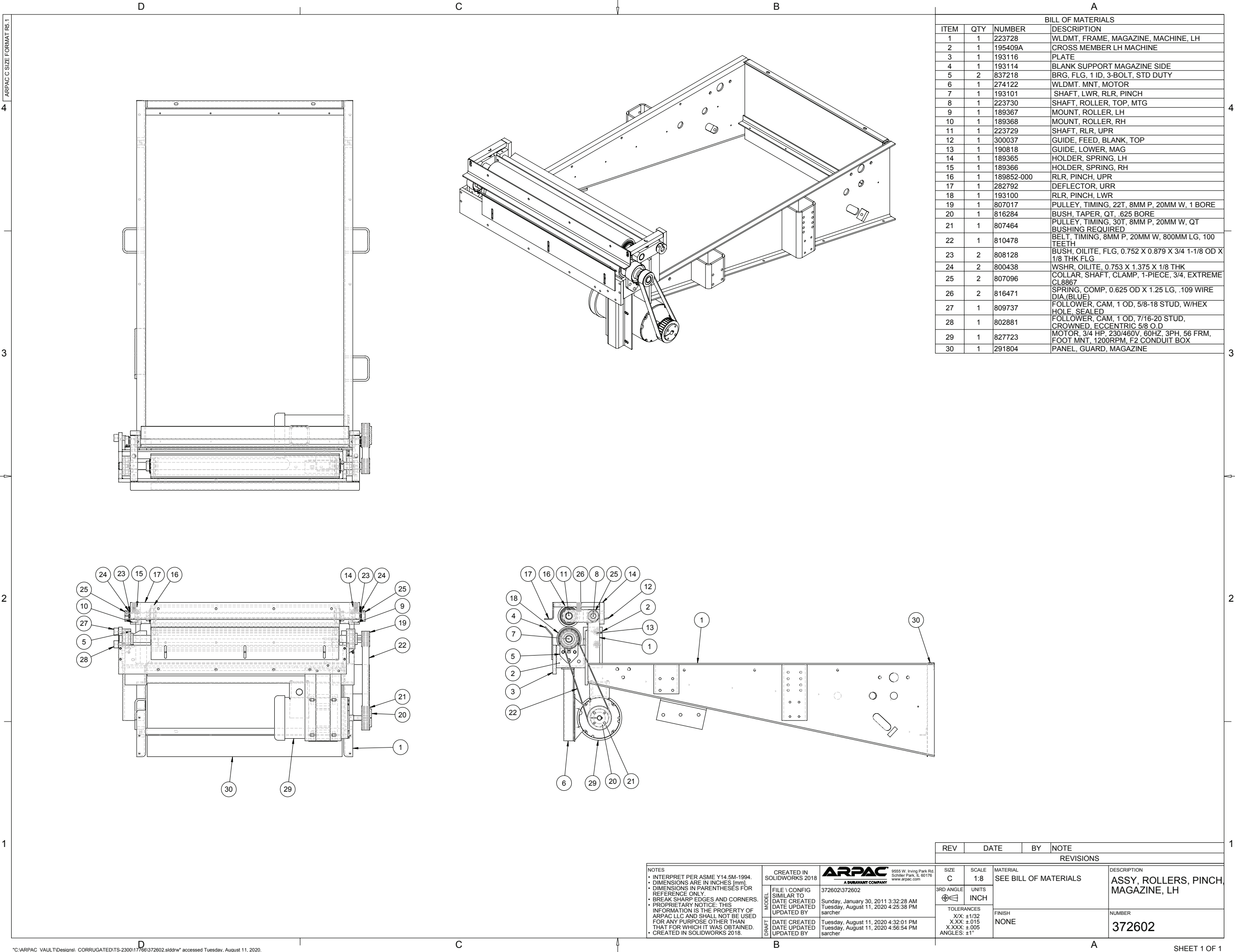
"C:\ARPAC_VAULT\Designs\CORRUGATED\TS-2300\17766\372601.sldrw" accessed Tuesday, August 11, 2020.

C

B

A

SHEET 1 OF 1



1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

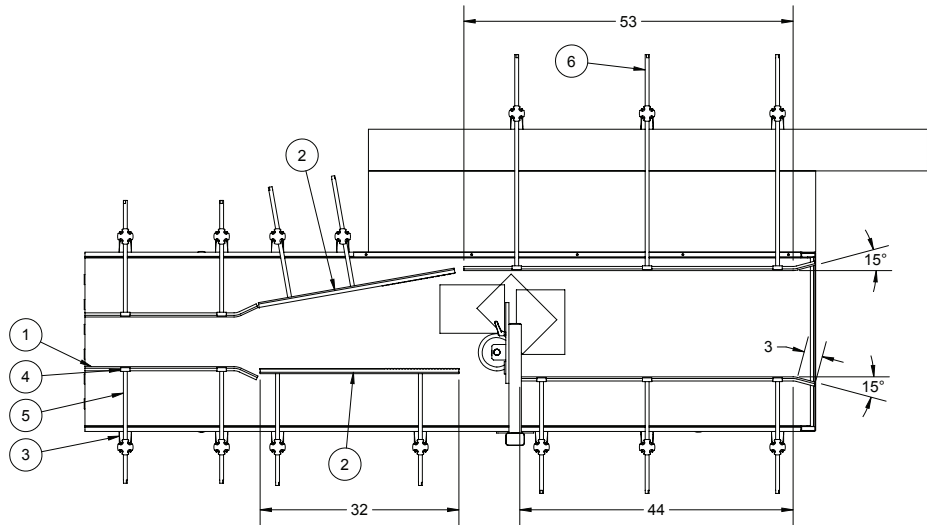
17

18

19

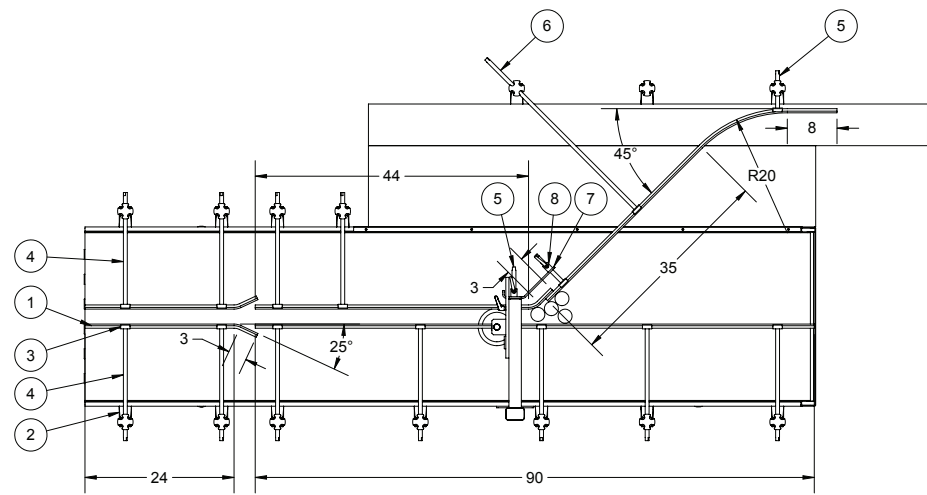
20

21



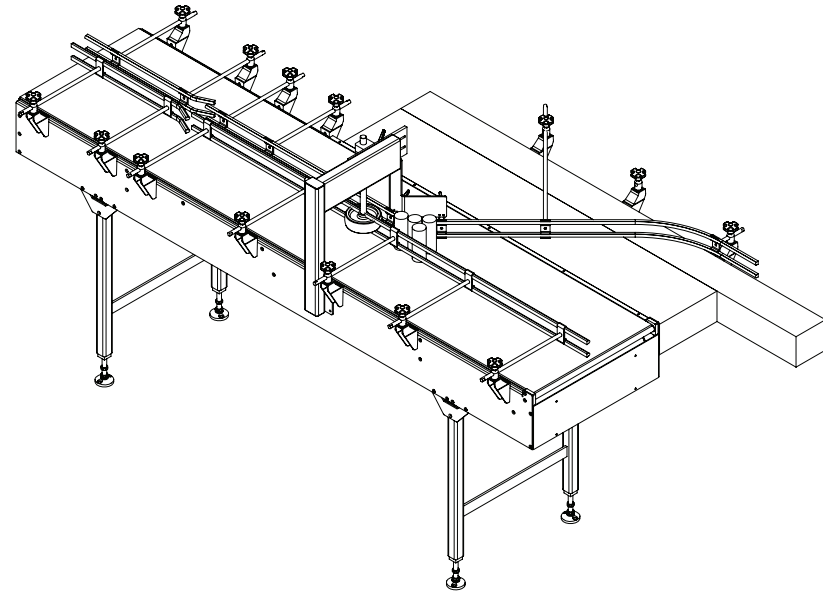
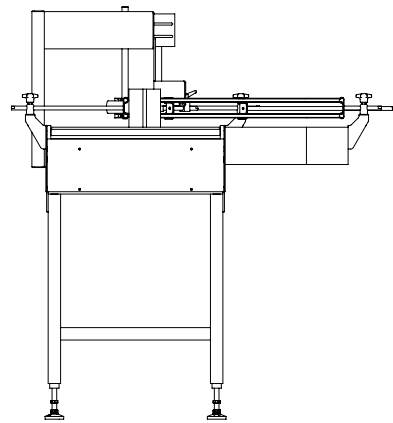
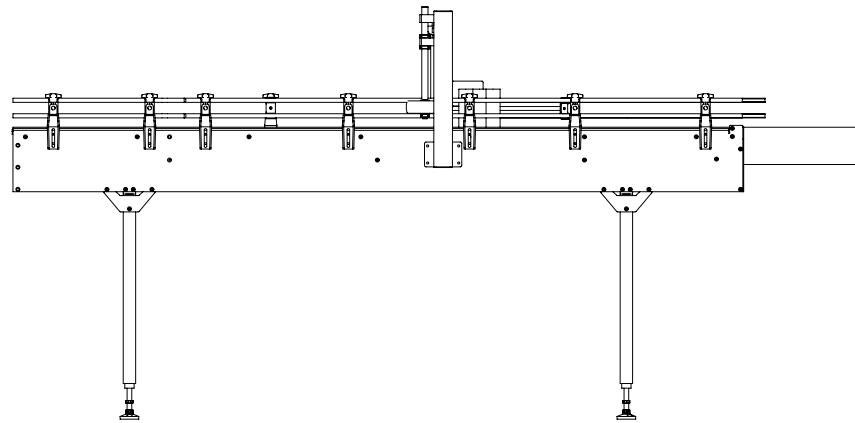
12-PACK CARTONS SET-UP

BILL OF MATERIALS			
ITEM	QTY	NUMBER	DESCRIPTION
1	1	815212-003	RAIL, GUIDE, ROUND, SS, 12' LG
2	1	827493-001	SPEEDRAIL, SB, 2 STRAND, 6' LG
3	14	801340	BKT, SWIVEL, 5/8 ROD, W/KNOB AND EYLET, POLYAMIDE
4	10	801312	CLAMP, RAIL, DOUBLE, 1.5 LG, SS, 2.5 CENTERS, ROUND HOLE
5	11	847447	ROD, ADJ, 5/8 DIA X 18 LG, 3/8-16 TAPPED THREAD, NUMBERED
6	3	372627	ROD, ADJ, 5/8 DIA X 34 LG, 3/8-16 THREAD, SS



LOOSE CANS SET-UP

BILL OF MATERIALS			
ITEM	QTY	NUMBER	DESCRIPTION
1	1	815212-003	RAIL, GUIDE, ROUND, SS, 12' LG
2	14	801340	BKT, SWIVEL, 5/8 ROD, W/KNOB AND EYLET, POLYAMIDE
3	15	801312	CLAMP, RAIL, DOUBLE, 1.5 LG, SS, 2.5 CENTERS, ROUND HOLE
4	11	847447	ROD, ADJ, 5/8 DIA X 18 LG, 3/8-16 TAPPED THREAD, NUMBERED
5	3	808640	ROD, ADJ, 5/8 DIA X 6 LG, 3/8-16 TAPPED THREAD, DD
6	1	372627	ROD, ADJ, 5/8 DIA X 34 LG, 3/8-16 THREAD, SS
7	1	372645	BKT, HANGER, RAIL, GUIDE
8	2	372647	BLK, MTG, SHAFT, ADJ
9	2	809385	HDL, ADJ, ZINC, 2-1/2 LG 5/16-18 X .78 STUD



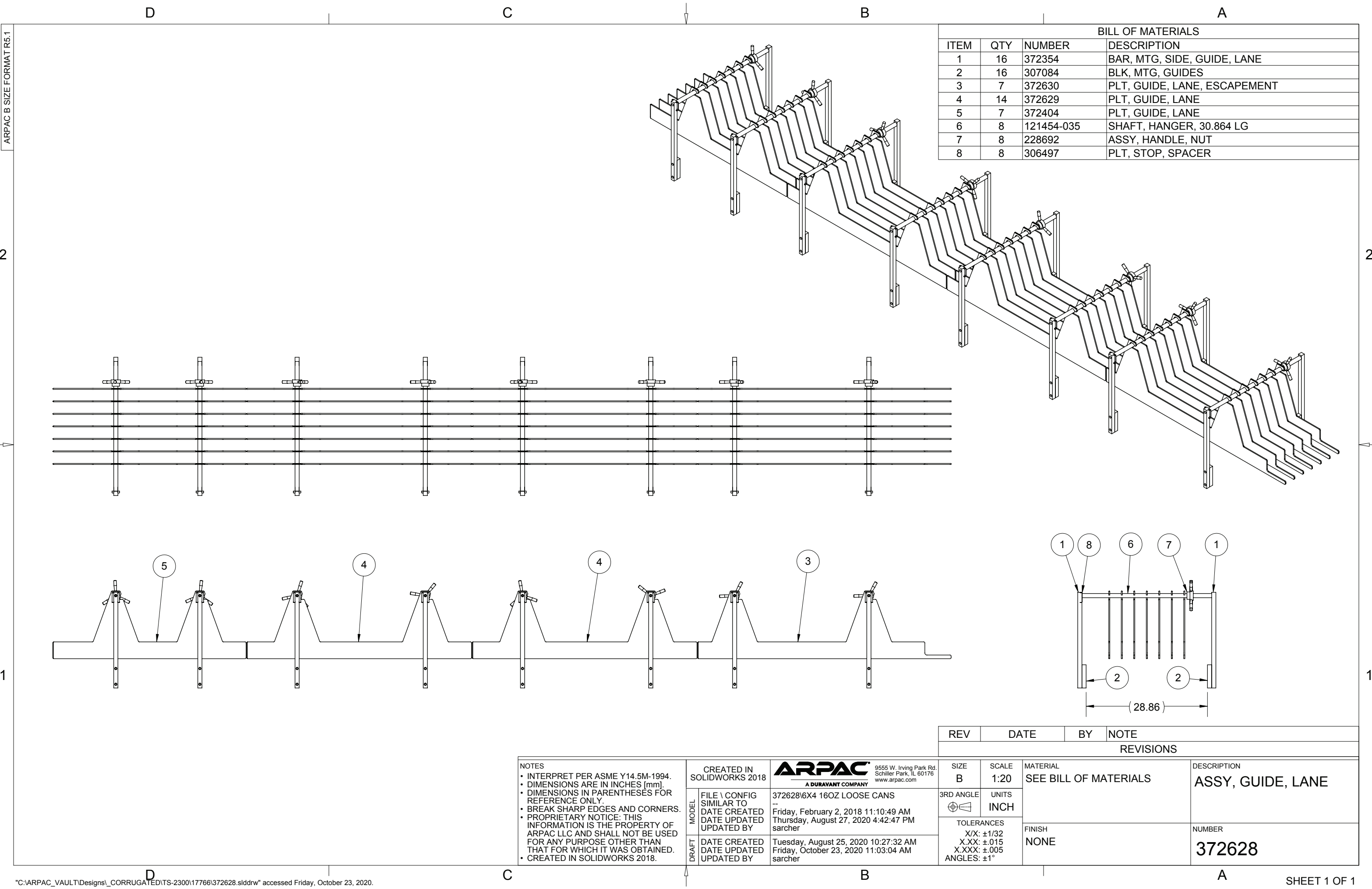
NOTES
• INTERPRET PER ASME Y14.5M-1994.
• DIMENSIONS ARE IN INCHES [mm].
• DIMENSIONS IN PARENTHESES FOR REFERENCE ONLY.
• BREAK SHARP EDGES AND CORNERS.
• PROPRIETARY NOTICE: THIS INFORMATION IS THE PROPERTY OF ARPAC LLC AND SHALL NOT BE USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT WAS OBTAINED.
• CREATED IN SOLIDWORKS 2018.

CREATED IN SOLIDWORKS 2018
FILE \ CONFIG
SIMILAR TO
DATE CREATED
DATE UPDATED
DATE UPDATED BY

372625/355ML LOOSE CANS
Thursday, August 20, 2020 5:07:52 PM
Thursday, August 27, 2020 1:43:34 PM
sarcher
Monday, August 24, 2020 9:57:35 AM
Thursday, August 27, 2020 1:43:36 PM
sarcher

ARPAC
A DURAVANT COMPANY
9555 W. Irving Park Rd.
Schiller Park, IL 60176
www.arpac.com

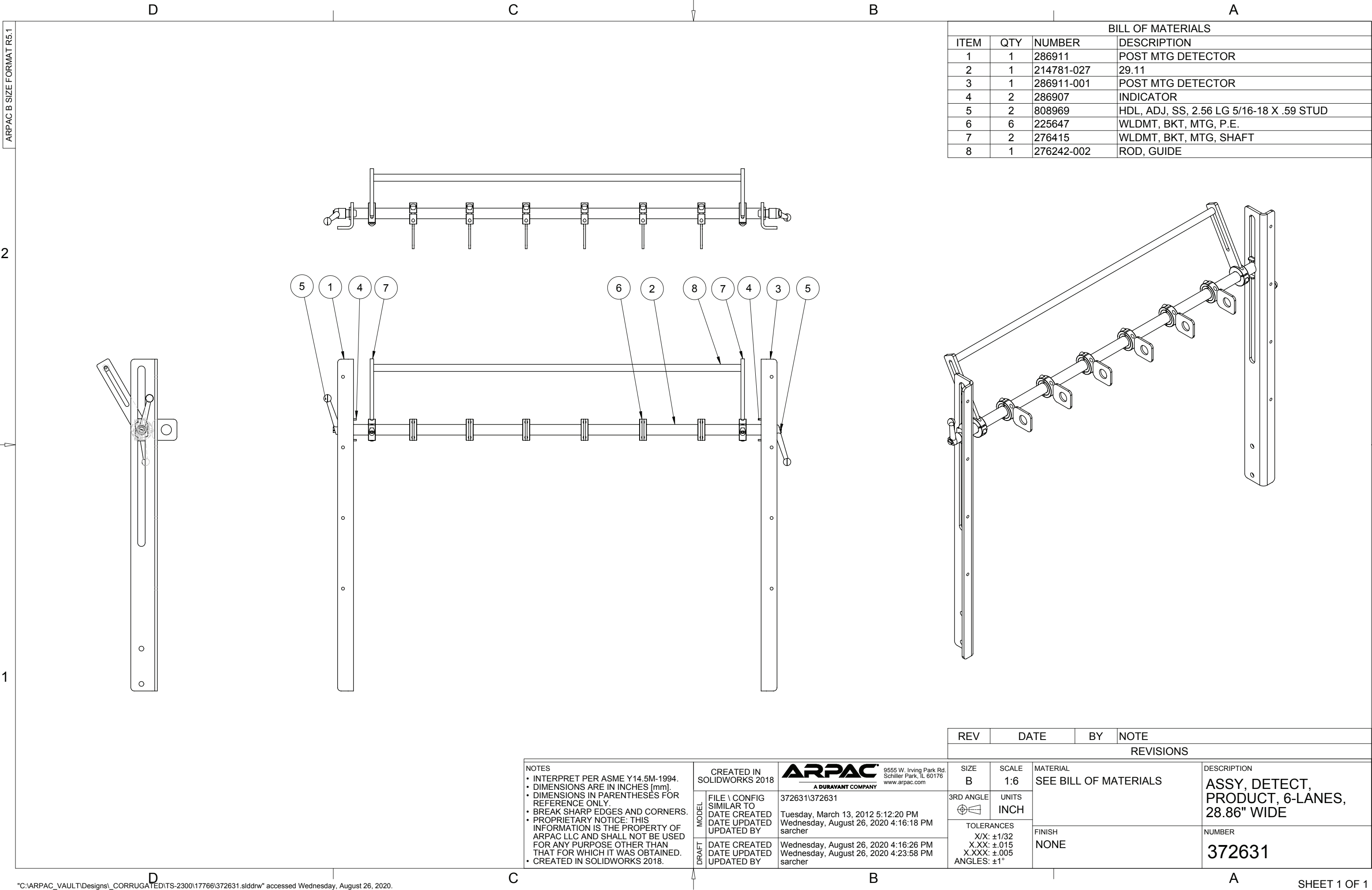
REV	DATE	BY	NOTE
REVISIONS			
SIZE	SCALE	MATERIAL	DESCRIPTION
C	1:20	SEE BILL OF MATERIALS	ASSY, GUIDES, ENTRY, DIVIDER, LANE
3RD ANGLE	UNITS	FINISH	NUMBER
	INCH	NONE	372625
TOLERANCES			
X/X: ±1/32			
X/XX: ±.015			
X/XXX: ±.005			
ANGLES: ±1°			



BILL OF MATERIALS			
ITEM	QTY	NUMBER	DESCRIPTION
1	16	372354	BAR, MTG, SIDE, GUIDE, LANE
2	16	307084	BLK, MTG, GUIDES
3	7	372630	PLT, GUIDE, LANE, ESCAPEMENT
4	14	372629	PLT, GUIDE, LANE
5	7	372404	PLT, GUIDE, LANE
6	8	121454-035	SHAFT, HANGER, 30.864 LG
7	8	228692	ASSY, HANDLE, NUT
8	8	306497	PLT, STOP, SPACER

REV	DATE	BY	NOTE
REVISIONS			
SIZE B	SCALE 1:20	MATERIAL SEE BILL OF MATERIALS	DESCRIPTION ASSY, GUIDE, LANE
3RD ANGLE 	UNITS INCH		
TOLERANCES X/X: ±1/32 X.XX: ±.015 X.XXX: ±.005 ANGLES: ±1°		FINISH NONE	NUMBER 372628

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 UPDATED BY	
	DRAFT	DATE CREATED DATE UPDATED UPDATED BY	Tuesday, August 25, 2020 10:27:32 AM Friday, October 23, 2020 11:03:04 AM sarcher



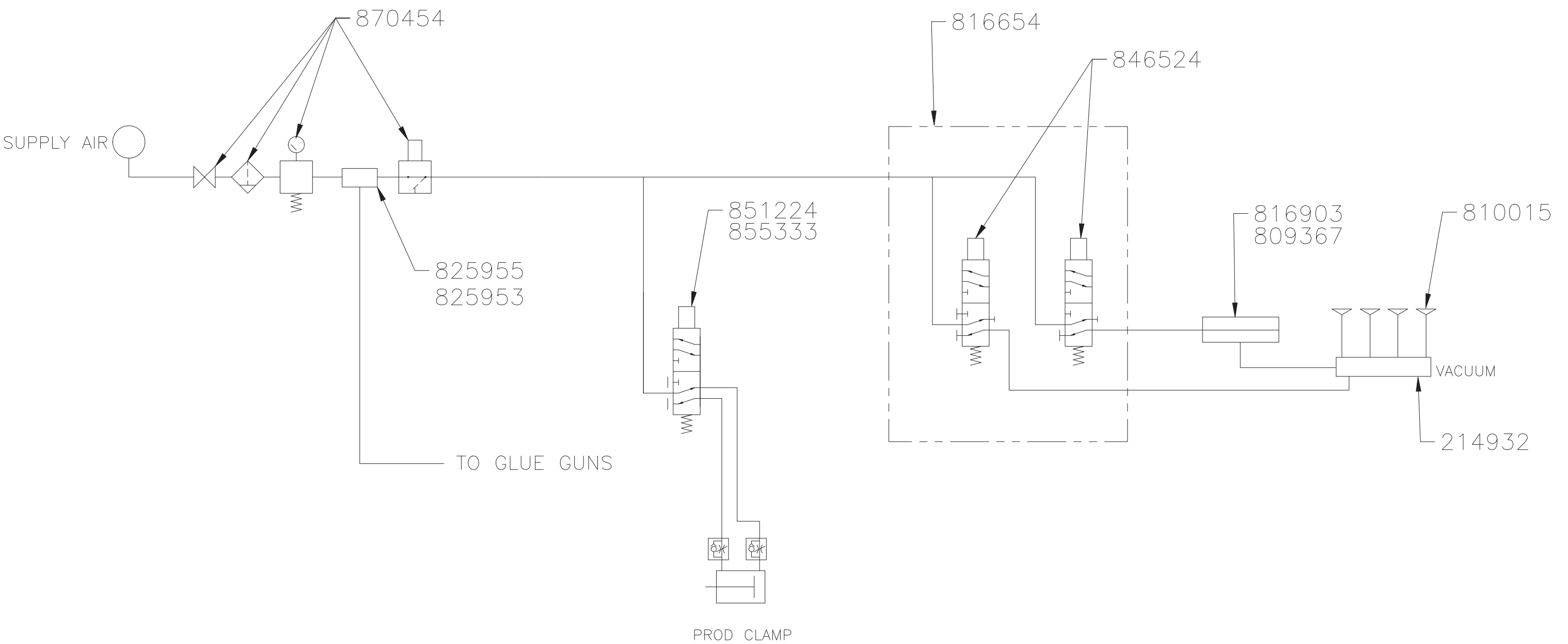
BILL OF MATERIALS			
ITEM	QTY	NUMBER	DESCRIPTION
1	1	286911	POST MTG DETECTOR
2	1	214781-027	29.11
3	1	286911-001	POST MTG DETECTOR
4	2	286907	INDICATOR
5	2	808969	HDL, ADJ, SS, 2.56 LG 5/16-18 X .59 STUD
6	6	225647	WLDMT, BKT, MTG, P.E.
7	2	276415	WLDMT, BKT, MTG, SHAFT
8	1	276242-002	ROD, GUIDE

REV	DATE	BY	NOTE
REVISIONS			
SIZE	SCALE	MATERIAL	DESCRIPTION
B	1:6	SEE BILL OF MATERIALS	ASSY, DETECT, PRODUCT, 6-LANES, 28.86" WIDE
3RD ANGLE	UNITS	FINISH	NUMBER
	INCH	NONE	372631
TOLERANCES			
X/X: ±1/32			
X.XX: ±.015			
X.XXX: ±.005			
ANGLES: ±1°			

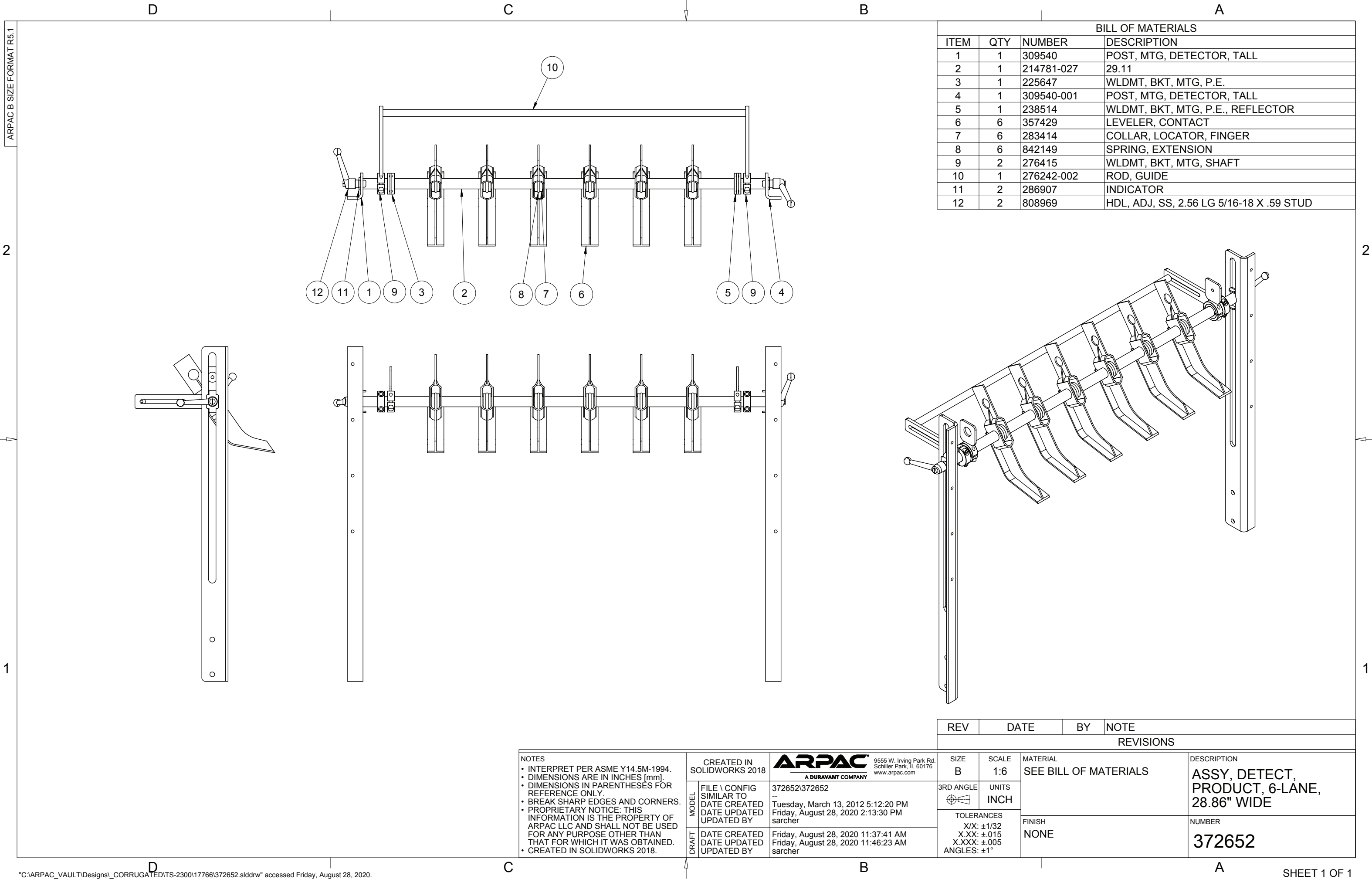
NOTES • INTERPRET PER ASME Y14.5M-1994. • DIMENSIONS ARE IN INCHES [mm]. • DIMENSIONS IN PARENTHESES FOR REFERENCE ONLY. • BREAK SHARP EDGES AND CORNERS. • PROPRIETARY NOTICE: THIS INFORMATION IS THE PROPERTY OF ARPAC LLC AND SHALL NOT BE USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT WAS OBTAINED. • CREATED IN SOLIDWORKS 2018.	CREATED IN SOLIDWORKS 2018		 9555 W. Irving Park Rd. Schiller Park, IL 60176 www.arpac.com A DURAVANT COMPANY	
	MODEL	FILE \ CONFIG SIMILAR TO DATE CREATED DATE UPDATED UPDATED BY	372631\372631	
		Tuesday, March 13, 2012 5:12:20 PM Wednesday, August 26, 2020 4:16:18 PM sarcher		
	DRAFT	DATE CREATED DATE UPDATED UPDATED BY	Wednesday, August 26, 2020 4:16:26 PM Wednesday, August 26, 2020 4:23:58 PM sarcher	

REV	DATE	BY	NOTE
REVISIONS			
Rd. 76	SIZE B	SCALE 1:6	MATERIAL SEE BILL OF MATERIALS
3RD ANGLE 	UNITS INCH		DESCRIPTION ASSY, TURN, BUMP
TOLERANCES X/X: ±1/32 X.XX: ±.015 X.XXX: ±.005 ANGLES: ±1°		FINISH NONE	NUMBER 372643

SHEET 1 OF 1



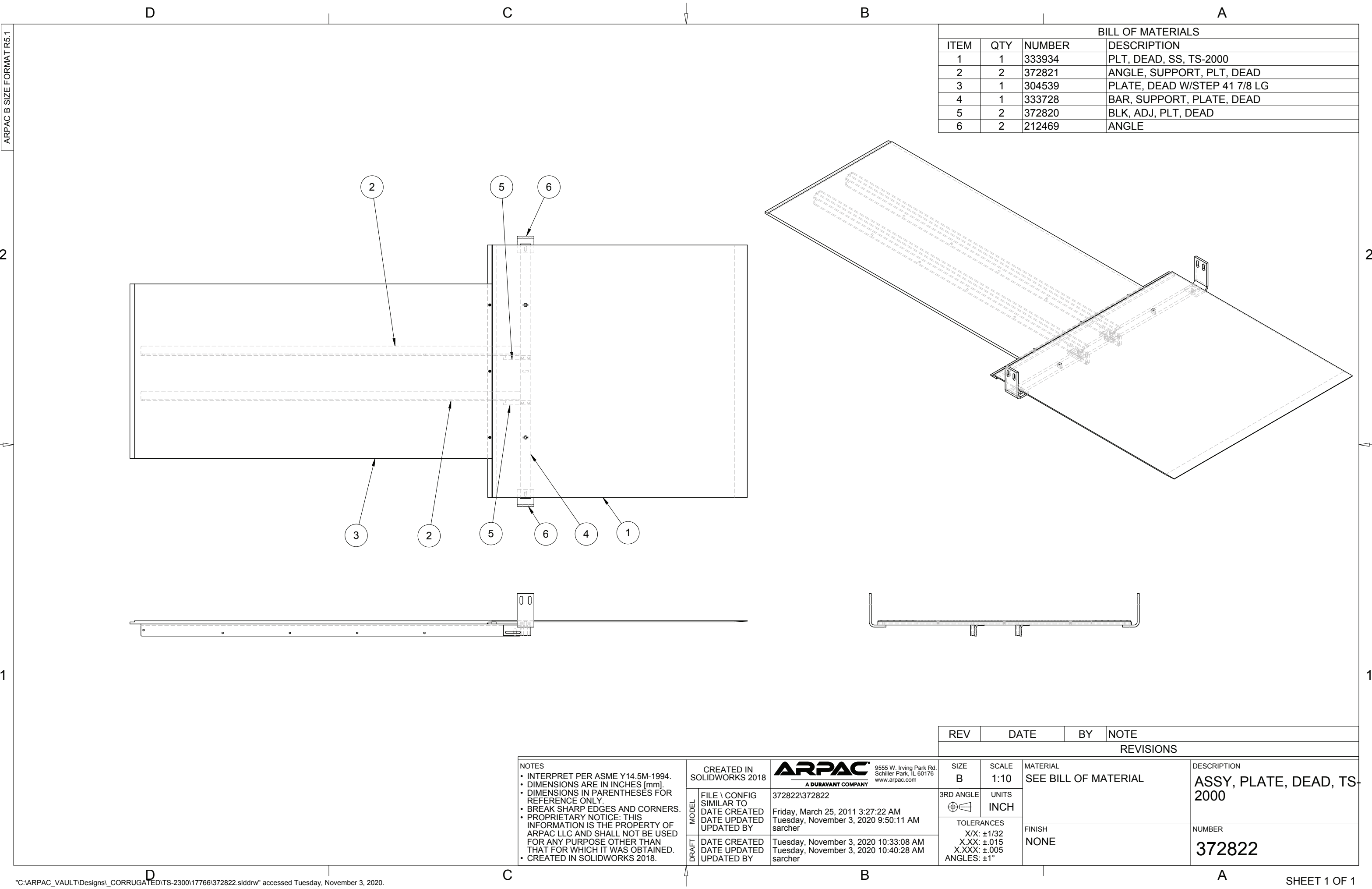
ARPAC		9511 WEST RIVER ST. SCHILLER PARK, IL 60176	
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONAL TOLERANCES:		FRACTIONS TWO (2) DECIMALS THREE (3) DECIMALS ANGLES	± 1/64 ± 0.010 ± 0.005 ± 0.5°
DRAWN: 8/27/2020	BY: SRA	SCALE: NONE	SIZE: B
RELEASED:	FILENAME: 372650	APPROVED BY:	
DESCRIPTION: SCHEMATIC, PNEUMATIC, VACUUM			
24VDC, TS-2300			
		DRAWING NUMBER: 372650	



BILL OF MATERIALS			
ITEM	QTY	NUMBER	DESCRIPTION
1	1	309540	POST, MTG, DETECTOR, TALL
2	1	214781-027	29.11
3	1	225647	WLDMT, BKT, MTG, P.E.
4	1	309540-001	POST, MTG, DETECTOR, TALL
5	1	238514	WLDMT, BKT, MTG, P.E., REFLECTOR
6	6	357429	LEVELER, CONTACT
7	6	283414	COLLAR, LOCATOR, FINGER
8	6	842149	SPRING, EXTENSION
9	2	276415	WLDMT, BKT, MTG, SHAFT
10	1	276242-002	ROD, GUIDE
11	2	286907	INDICATOR
12	2	808969	HDL, ADJ, SS, 2.56 LG 5/16-18 X .59 STUD

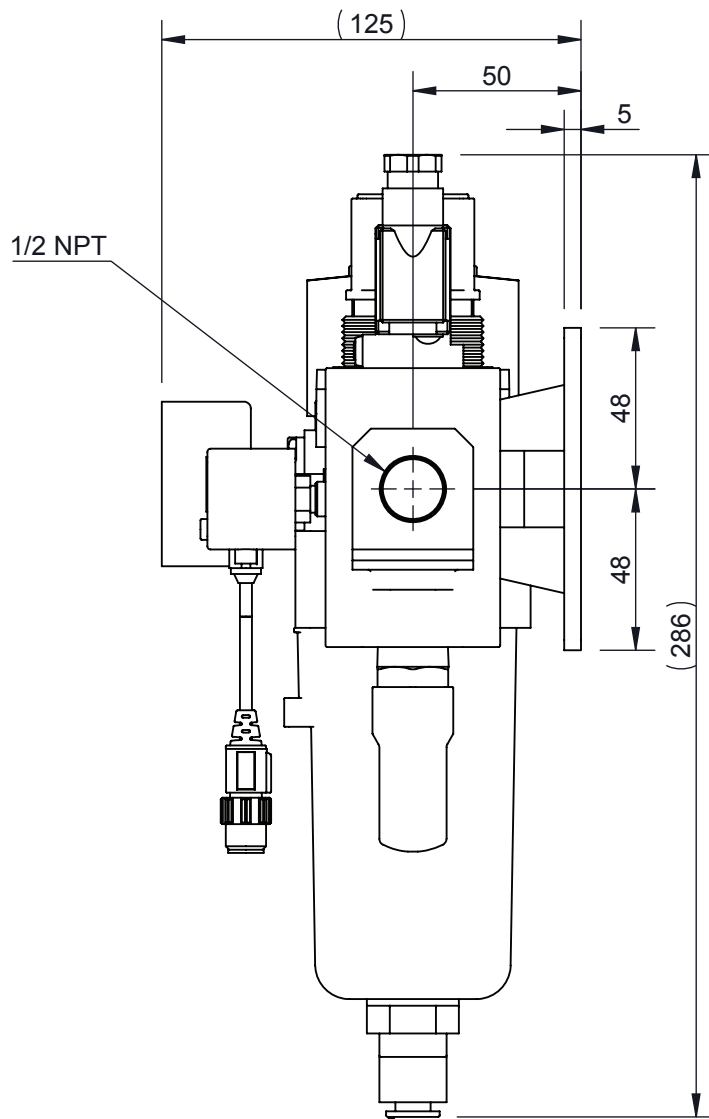
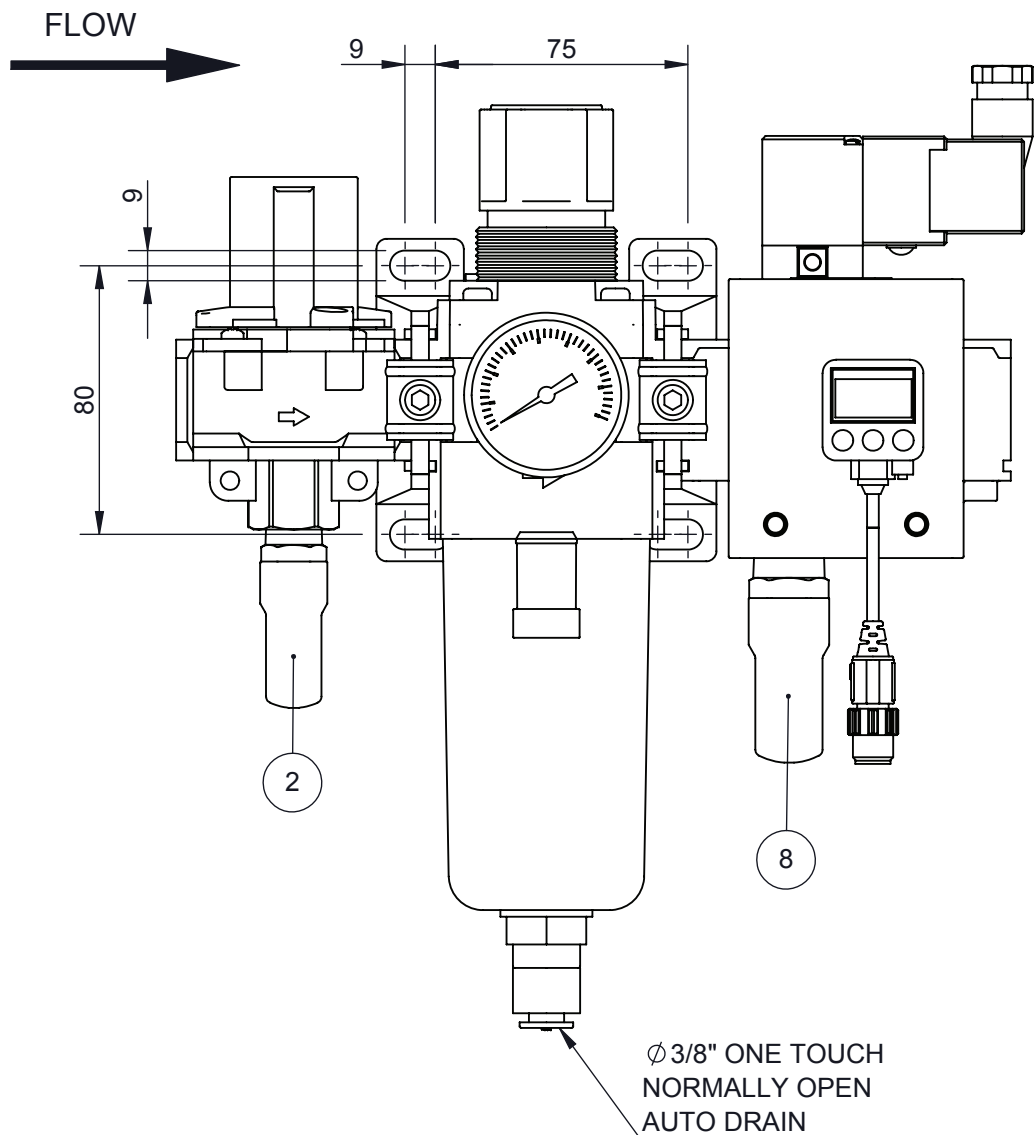
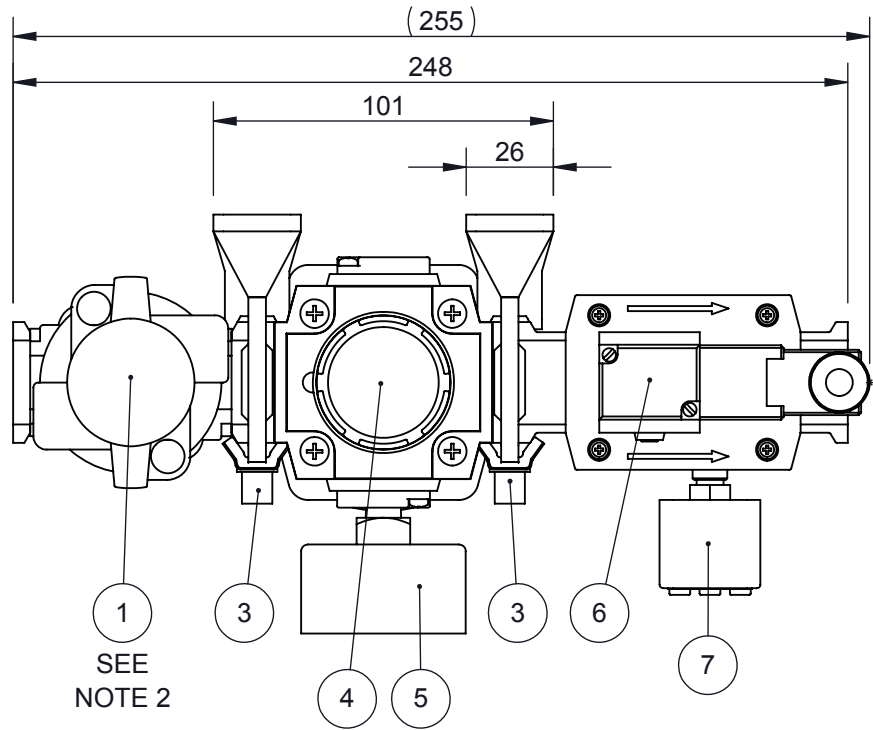
REV	DATE	BY	NOTE
REVISIONS			
SIZE		SCALE	MATERIAL
B		1:6	SEE BILL OF MATERIALS
3RD ANGLE		UNITS	DESCRIPTION
⌀		INCH	ASSY, DETECT, PRODUCT, 6-LANE, 28.86" WIDE
TOLERANCES		FINISH	NUMBER
X/X: ±1/32		NONE	372652
X.XX: ±.015			
X.XXX: ±.005			
ANGLES: ±1°			

NOTES		CREATED IN SOLIDWORKS 2018		ARPAC A DURAVANT COMPANY	
• INTERPRET PER ASME Y14.5M-1994.		FILE \ CONFIG		9555 W. Irving Park Rd.	
• DIMENSIONS ARE IN INCHES [mm].		SIMILAR TO		Schiller Park, IL 60176	
• DIMENSIONS IN PARENTHESES FOR REFERENCE ONLY.		DATE CREATED		www.arpac.com	
• BREAK SHARP EDGES AND CORNERS.		DATE UPDATED			
• 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.		UPDATED BY			
• CREATED IN SOLIDWORKS 2018.		DATE CREATED		372652\372652	
		DATE UPDATED		Tuesday, March 13, 2012 5:12:20 PM	
		UPDATED BY		Friday, August 28, 2020 2:13:30 PM	
				sarcher	
		DATE CREATED		Friday, August 28, 2020 11:37:41 AM	
		DATE UPDATED		Friday, August 28, 2020 11:46:23 AM	
		UPDATED BY		sarcher	



IN9001

REV.	ZONE	ECN	DESCRIPTION	DATE	BY
------	------	-----	-------------	------	----



NOTES:

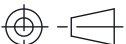
- 1) ALL DIMENSIONS ARE FOR REFERENCE ONLY..
- 2) EXHAUST ALL DOWNSTREAM PRESSURE BEFORE TURNING THE VHS HAND VALVE TO THE CLOSED POSITION.
- 3) GAUGE AND PRESSURE SWITCH NOT INSTALLED, TO PREVENT DAMAGE DURING SHIPPING.

STANDARD SPECIFICATIONS:

PROOF PRESSURE: 1.5 MPa (218 psi)
OPERATING PRESSURE RANGE: 0.2~1.0 MPa (29~145 psi)
FLUID: AIR
AMBIENT AND FLUID TEMPERATURE: 0~50°C (32~122°F) WITH NO FREEZING
NOMINAL FILTRATION RATING: 5 µm
VOLTAGE: 24 VDC

PLEASE SEE WWW.SMCWORLD.COM FOR SPECIFIC PRODUCT INFORMATION

8	AN40-N04	SILENCER	1
7	ISE40A-N01-Y-P-X531	PRESSURE SWITCH	1
6	AV4000-N04-5DZ-X260	SOFT-START VALVE	1
5	K50-MP1.0-N01MS	GAUGE, PRESSURE	1
4	AW40-N04D-Z-B	FILTER/REGULATOR	1
3	Y400T-A	INTERFACE	2
2	AN30-N03	SILENCER WITH 3/8" THREAD	1
1	VHS40-N04B-Z	VALVE, 3 PORT LOCK OUT	1
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.

UNITS mm		SCALE FREE	 SMC Corporation of America THIS DRAWING CONTAINS CONFIDENTIAL INFORMATION PROPRIETARY TO SMC CORPORATION OF AMERICA. IT MUST NOT BE REPRODUCED OR DISCLOSED TO OTHERS OR USED IN ANY OTHER WAY, IN PART OR IN WHOLE, EXCEPT AS AUTHORIZED IN WRITING BY SMC CORPORATION OF AMERICA.	
DRAWN BY DICK A. SHULER		DATE 11/20/2018	DESCRIPTION AIR COMBINATION	
APPROVED BY REFER TO EDM SYSTEM				
PRINTED DOCUMENTS ARE UNCONTROLLED REFER TO EDM SYSTEM FOR CONTROLLED DOCUMENT				
CAD FILE AC40-DUW02467		SIZE B	DRAWING/PART No. AC40-DUW02467	SHEET 1 OF 1 

REFERENCE NUMBER: US132912

Date: 12/1/2020

Time: 1:16:30PM

Arpac BOM

Parent Number: 17766 Parent Revision: A

Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH

Model:

Assembly Part Number: 17766

Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH

Item	Qty	Arpac Part	Description
1	1.00	134464	ASSY, CENTRAL LUBE, TS-2000RC
2	2.00	999999-002	1407 GENERAL NON-BOM CCCC, FSXX, MMSS, PPCN
3	15.00	845767	PAINT BLACK S/G TEXTURE HYBRID
4	15.00	828102	PAINT, POWDER, SILVER, SPARKLE
5	1.00	372324-001	ASSY, FRAME, MAIN, TS-2200, 47" ELEV
6	1.00	314805-001	ASSY, FLIGHT BAR, TS-2000, GATE/CLAMP COLLATOR
7	1.00	372822	ASSY, PLATE, DEAD, TS-2000
8	1.00	314776-001	ASSY, DRIVE, MAIN, TS-2100, LH
9	1.00	372601	ASSY, MAGAZINE, BLANK FEED, TS-2000, LH MACHINE
10	1.00	332391-001A	ASSY, SECTION, COMPRESSION, LH, TS-2000
11	1.00	192812-001A	ASSY, CONV, FEED, BLANK, LH
12	1.00	332418	ASSY, ROLLER, HOLD-DOWN
13	1.00	372431-001	ASSY, GUARDS, TS-2200, 47" ELEV, LH
14	1.00	372332	ASSY, BAR, FLIGHT, ESCAPEMENT, 28.86" WIDE, 24" PITCH
15	1.00	372345	ASSY, CLAMP, PRODUCT, COLLATOR, 28.858" W CONV, LH
16	1.00	372286	ASSY, SYSTEM, APPLICATOR, GLUE, 2-HOSE, LIBERTY 7
17	1.00	372312	ASSY, CONVEYOR, INFEED, TS-2200, 47" ELEV
18	1.00	372269	ASSY, DYNAMIC DIVIDER, SERVO, 47" ELEV, 17" MAX WIDTH
19	1.00	372290	ASSY, CONV, INFEED, DIVIDER, LANE
20	3.00	372652	ASSY, DETECT, PRODUCT, 6-LANE, 28.86" WIDE
21	1.00	372628	ASSY, GUIDES, LANE
22	1.00	372625	ASSY, GUIDES, ENTRY, DIVIDER, LANE
23	1.00	372643	ASSY, TURN, BUMP
24	1.00	372638	KIT, PARTS, CHANGE, TS-2200, SN 17766
25	1.00	372631	ASSY, DETECT, PRODUCT, 6-LANES, 28.86" WIDE
26	1.00	372650	ASSY, PNEUMATIC, VACUUM, 24VDC, TS-2200
27	1.00	323268	ASSY, PRODUCT DETECTOR, ACCUMULATION, ADJ
28	1.00	372784	KIT, BKT, MTG, BLOCK, I/O

Arpac BOM

Parent Number: 17766 Parent Revision: A
Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 134464
Assembly Drawing Number: 134464
Description: ASSY, CENTRAL LUBE, TS-2000RC
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	350.00	800179	TBG, 1/8 OD, NYL, PRESSURE TYPE H, .079" ID
2	25.00	801406	FTG, ELBOW, 1/8 OD TBG COMP X 1/4-28 TAPERED MALE
3	65.00	801449	FTG, CONN, 1/8 OD TBG COMP X 1/4-28, MALE, SILVER BASE
5	45.00	801455	FTG,ADAPTER,1/8 NPT,1/4-28ID,1/8-27 NPSM, USE W/NUT 51055 (801456)
6	45.00	801456	NUT, 1/8 NPSM, USE W/ADAPTER 13154 (801455)
7	45.00	802208	FTG, GREASE, 1/8 NPT, STRAIGHT, ZINC PL
8	85.00	801453	NUT, CPRSN, 1/8 TBG USE WITH 14659 FERRULE
9	85.00	801454	FERRULE, 1/8 TBG USE WITH 14658 NUT

Arpac BOM

Parent Number: 17766 Parent Revision: A
Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:
Assembly Part Number: 372324-001
Assembly Drawing Number: 372324
Description: ASSY, FRAME, MAIN, TS-2200, 47" ELEV
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	372325-001	WLDMT, FRAME, MAIN, TS-2200, 47" ELEV
2	6.00	827619	LEVELER, ARTICULATING, 20000 # CAP, 1-8 STEM, 7.88 HIGH, CRS 4" DIA X 2"

Arpac BOM

Parent Number: 17766 Parent Revision: A

Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 314805-001

Assembly Drawing Number: 314805

Description: ASSY, FLIGHT BAR, TS-2000, GATE/CLAMP COLLATOR

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	2.00	286507	PLT, SIDE
2	2.00	193853	MTG, BLOCK, FLIGHT BAR
3	4.00	112721	TIE, BAR BEARING
4	8.00	193855	SPACER, TENSIONER
5	2.00	192827	BLOCK, CHAIN TENSION
6	2.00	189379	SHAFT
7	1.00	286509-001	RAIL, GUIDE, BOTTOM, RH
8	1.00	286509-002	RAIL, GUIDE, BOTTOM, LH
9	2.00	827116	BRG, FLG, 1 ID, 2-BOLT, 3.89 BOLT CNTRS
10	48.00	800486	CHAIN, RLR, #60
11	4.00	126787	PLT, NUT
12	2.00	286508	PLT, VER, TAIL END
13	1.00	274433	SHAFT, TAIL, SS
14	1.00	188679-001	RAIL, GUIDE, TOP, RH
15	1.00	188679-002	RAIL, GUIDE, TOP, LH
16	4.00	188684	SHAFT, IDLER
17	2.00	221933	CROSS MEMBER, FLIGHT BAR
18	2.00	192836	MTG, BLOCK, BAR, FLIGHT
19	4.00	116067	SPKT, 60B20, MOD, 2.047 BORE
20	2.00	192837	SUPPORT, DEAD, PLT, BAR, FLIGHT
21	1.00	300150	SHAFT, DRIVE, FLIGHT BAR
22	1.00	108515	HANDWHEEL
23	32.00	801359	CLAMP, RAIL, SINGLE, 1.5 LG, SS, ROUND HOLE
24	1.00	126781	ROD, SUPPORT
25	4.00	234677	SPKT, 60B20, MOD, 1.000 BORE, SPECIAL
26	1.00	188961	SPKT, 50B15, MOD, 1.969 BORE
27	2.00	187508	SPACER, TENSIONER FLIGHT BAR
28	4.00	803841	BRG, CART, 1 X 2.0472 X 1-47/64 LG, SEALED, LOCK COLLAR ID, PRESS FIT OD
29	8.00	823126	HDL, ADJ, ZINC, 2-1/2 LG 5/16-18 X 1.26 STUD
30	8.00	845483	ROD, ADJ, 1/2 DIA X 12 LG, 5/16-18 TAPPED THREAD, SS, NUMBERED
31	8.00	115939	BLOCK, GUIDE, PRODUCT
32	2.00	800905	SPKT, 50BB15H, IDLER, 5/8 ID, HARDENED TEETH, 3.006 PD
33	1.00	803668-001	LOCKING DEVICE, KEYLESS 1",
34	2.00	815212-003	RAIL, GUIDE, ROUND, SS, 12' LG
35	2.00	187582-000D	GUIDE, CHAIN #60
36	2.00	187583-000C	GUIDE, CHAIN #60
37	2.00	802736	BRG, TAKE-UP, 1 ID, 3/4-10 TAPPED END
38	8.00	221666	BAR, FLIGHT
39	8.00	807831	CLIP, RAIL, SELFTIGHTENING, 5/16 STUD X 5/8 LG, SS, HEAVY DUTY
40	16.00	807284-001	LINK, CONN, ATTACH, #60, D-1, SPECIAL 1-1/2 LG, EXTENDED PIN
41	1.00	282805	BKT, PROX
42	4.00	300718	MTG, BLOCK, FLIGHT BAR

Arpac BOM

Parent Number: 17766 Parent Revision: A
Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 372822
Assembly Drawing Number: 372822
Description: ASSY, PLATE, DEAD, TS-2000
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	333934	PLT. DEAD, SS, TS-2000
2	2.00	372821	ANGLE, SUPPORT, PLT, DEAD
3	1.00	304539	PLATE,DEAD W/STEP 41 7/8 LG
4	1.00	333728	BAR, SUPPORT, PLATE, DEAD
5	2.00	372820	BLK, ADJ, PLT, DEAD
6	2.00	212469	ANGLE

Arpac BOM

Parent Number: 17766 Parent Revision: A

Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 314776-001

Assembly Drawing Number: 314776

Description: ASSY, DRIVE, MAIN, TS-2100, LH

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	2.00	107917	SPKT, 50B20, MOD, 1.250 BORE
2	1.00	108224	DRIVER SPROCKET
3	1.00	108225	DRIVEN SPROCKET
4	2.00	113061	SPCR MTG GEAR BOX
5	1.00	129863-001	SPACER, IDLER, 1-3/4
6	1.00	135622	ASSY, CPLG, CHAIN, 1-3/8 X 1-5/8 BORE W/KEYWAY, SET SCREW, AND COVER
7	1.00	187505	SPKT, 50A36, 3.25 BORE, SPECIAL
8	1.00	187506	SPKT, 50A26, 3.25 BORE, SPECIAL
9	1.00	187514	SPKT, 50B27, MOD, 2.362 BORE
10	4.00	187523	SPACER
11	1.00	191121	JACK SHAFT, 1 1/4 DIA
12	1.00	191136	BKT, IDLER, SHAFT, JACK
13	1.00	193166	SPKT, 60A30, 4.25 BORE, SPECIAL
14	1.00	193167	SHAFT, DRIVE, MAIN
15	1.00	193168	SPKT, 50A30, 3.25 BORE, SPECIAL
16	1.00	305216	SHAFT, DRIVE, FEED, BLANK
17	1.00	194536	BKT, MTG, TENSIONER
18	1.00	194537	PLT, NUT
19	2.00	225523	SPACER, MTG, GEAR BOX
20	2.00	226433	SPACER, IDLER, DRIVE 1 LG
21	2.00	272670	BKT, PROX.
22	1.00	283170	BKT, MTG, ENCODER
23	1.00	800486	CHAIN, RLR, #60
24	3.00	800905	SPKT, 50BB15H, IDLER, 5/8 ID, HARDENED TEETH, 3.006 PD
25	1.00	800915	SPKT, 60BB13H, IDLER, 5/8 ID
26	1.00	801160	BELT, TIMING, 5MM P, 15MM W, 670MM LG,
27	2.00	802835	BRG, FLG, 1-1/4 ID, 3-BOLT STANDARD-DUTY
28	1.00	803815	CPLG, DISC SINGLE FLEX 1-1/2 X 1-1/4
29	1.00	807271	CPLG, DISC SINGLE FLEX
30	2.00	807444	BRG, PILLOW BLK, 1-1/4 ID
31	1.00	808474	CPLG, DISC SINGLE FLEX 1-1/2 X 1-3/8
32	1.00	808641	CLUTCH, OVERLOAD, W/O BUSHING, PROX PLT, SET TO 1000 IN-LB, W/ARPAC #
33	1.00	808642	CLUTCH, OVERLOAD, BORE 1 1/4, PROX PLT, SET TO 500 IN-LB, W/ARPAC #
34	2.00	808643	CLUTCH, OVERLOAD, BORE 1 1/4, PROX PLT, SET TO 75 IN-LB, W/ARPAC #
35	1.00	809688	TENSIONER, SATP
36	1.00	851244	GEARMOTOR, HELICAL, INLINE, 5 HP, 230/460V, RATIO: 24.41, 1755 RPM MOTOR
37	1.00	823018	GEARBOX, BEVEL, 1:1, SPIRAL GEARS, 1-1/4 D ALL SHAFT, TYPE GG
38	1.00	825367	GEARBOX, BEVEL, 1:1, SPIRAL GEARS, 1-3/8 DIA. ALL SHAFTS, TYPE E
39	1.00	221623-002	WLDMT, BKT, IDL, GEARBOX, LH
40	1.00	228961-001	GUARD, ENCODER, DRIVE LONG
41	1.00	272049-001	BKT, MTG, PROX, RH
42	1.00	803668-002	LOCKING DEVICE, KEYLESS 1-1/4
43	1.00	272050	WLDMT, BKT, MTG, PROX
44	1.00	800516	LINK, CONN, #60,

Arpac BOM

Parent Number: 17766 Parent Revision: A
Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:
Assembly Part Number: 314776-001
Assembly Drawing Number: 314776
Description: ASSY, DRIVE, MAIN, TS-2100, LH
Quantity: 1.00

Item	Qty	Arpac Part	Description
45	1.00	810218	BUSH, 1-3/8 BORE

Arpac BOM

Parent Number: 17766 Parent Revision: A
Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 372601
Assembly Drawing Number: 372601
Description: ASSY, MAGAZINE, BLANK FEED, TS-2000, LH MACHINE
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	372602	ASSY, ROLLERS, PINCH, MAGAZINE, LH
2	1.00	238316-000B	ASSY, MAGAZINE, GUIDE, SUPPORT LH MACHINE
3	1.00	244278-001	ASSY, BLANK SUPPORT & GUIDES, LH
4	1.00	282752A	ASSY, MAGAZINE CONVEYOR & DRIVE, LH
5	1.00	328781	ASSY, HOPPER, LH MACH

Arpac BOM

Parent Number: 17766 Parent Revision: A
Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 332391-001A
Assembly Drawing Number: 332391
Description: ASSY, SECTION, COMPRESSION, LH, TS-2000
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	345485	ASSY, RAIL
2	1.00	328592	ASSY, FORMING, TRAY
3	1.00	328588-001	ASSY, FLAP FOLDER, ROTARY, LH
4	1.00	328590	ASSY, DRIVE, LEAD CHAIN
5	1.00	328591	ASSY, DRIVE, SPLINE SHAFT, TRAIL
6	1.00	220975-001	ASSY, SCREW, ADJ, RH
7	2.00	328589	ASSY, IDLER, COMPRESSION SECTION
8	1.00	345486	ASSY, CHAIN SUPPORT
9	1.00	291515	ASSY, GUIDE, SIDE, PRODUCT
10	1.00	328585	ASSY, CHAIN, LUG

Arpac BOM

Parent Number: 17766 Parent Revision: A

Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 192812-001A

Assembly Drawing Number: 192812

Description: ASSY, CONV, FEED, BLANK, LH

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	192815	CHANNEL, FORMED, CONV, BLANK
2	1.00	192598-000A	CHAIN, GUIDE, #60
3	4.00	801359	CLAMP, RAIL, SINGLE, 1.5 LG, SS, ROUND HOLE
4	1.00	187247	SHAFT, DRIVE, CONV., BLANK
5	4.00	137849	WLDMT, ARM, PIVOT, LH,
6	4.00	199591	ARM, LUG
7	4.00	108844	SPACER, LUG PUSHER,
8	1.00	113060	SPKT, 50A15, MOD, FOR HDI-25-1
9	2.00	809078	HD.WH, SAFETY, W/CPLG, 5/8 B., 5 1/20D
10	1.00	191145	SHAFT, REAR, IDLER
11	1.00	110022-001	SPKT, 60A20, MOD, 1.750 BORE
12	1.00	126423	SPKT, 60B24, MOD, 1.000 BORE
13	8.00	110024	SPACER, TOGGLE DOG BLANK
14	1.00	192817	SPKT, 60B24, MOD, .750 BORE W/KEY
15	1.00	809688	TENSIONER, SATP
16	1.00	195403-001	BRKT,FRONT, BLANK CONV. RH
17	1.00	191142	SHAFT, IDLER, CONV, BLANK
18	1.00	800609	CPLG, PHASE-LOCK, HDI-25-1 1 BORE
19	12.00	800489	** SEE COMMENTS**CHAIN, RLR, #60, HOLLOW PIN, 10FT CONTINUOUS LENGTH, PLI
20	2.00	306773	BRG, FLG, 3/4 ID, 3-BOLT MOD.
21	2.00	827116	BRG, FLG, 1 ID, 2-BOLT, 3.89 BOLT CNTRS
22	1.00	191144	BRACKET, TAIL, BLANK, CONV, RH
23	1.00	191144-001	BRACKET, TAIL, BLANK, CONV, LH
24	1.00	837218	BRG, FLG, 1 ID, 3-BOLT, STANDARD DUTY
25	2.00	809370	FSNR, WASHER, C'SINK, 4MM, TYPE GN184
26	1.00	195403-002	BRKT,FRONT, BLANK CONV. LH
27	4.00	199589	ARM, LUG W/PINS, LH MACH

Arpac BOM

Parent Number: 17766 Parent Revision: A
Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 332418
Assembly Drawing Number: 332418
Description: ASSY, ROLLER, HOLD-DOWN
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	2.00	283366	PLT, MTG, ROLLER
2	1.00	292552-001	SHAFT, 1.000, TAPPED, 3/8-16, SS, 32 LG
3	2.00	826950	ASSY, RLR, NO-CRUSH, 6 OD, 2 WD, W/ HUB
4	4.00	800600	COLLAR, SHAFT, CLAMP, 1-PIECE, 1
5	2.00	848565	HDL, ADJ, SS, 3.07 LG 3/8-16 X .78 STUD

Arpac BOM

Parent Number: 17766 Parent Revision: A

Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH

Model:

Assembly Part Number: 372431-001

Assembly Drawing Number: 372431

Description: ASSY, GUARDS, TS-2200, 47" ELEV, LH

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	846048-001	KIT, AL EXTRUSION, GUARD, 72H X 134 23/32 LG
2	1.00	846048	KIT, AL EXTRUSION, GUARD, 72H X 134 23/32 LG
3	4.00	292137	GUARD, END, DOORS
4	1.00	296167	BKT, MTG, SWITCH, DOOR
5	3.00	291845-001	BKT, MTG, PIN, SWITCH, DOOR, 4.25IN, LH
6	2.00	291848	BKT, MTG, PIN, SWITCH, DOOR, 2.5IN, RH
7	2.00	291845	BKT, MTG, PIN, SWITCH, DOOR, 4.25IN, RH
8	12.00	292478	BKT, MTG, ASSY, DOOR, TOP
9	1.00	372432	PANEL, GUARD, LOWER, DISCHARGE
10	1.00	329576	BKT, MTG, BOX, 4-BUTTON
11	2.00	330101	BKT, MTG, BOX, BUTTON, SINGLE
12	7.00	369962	PLT, MTG, SWITCH, DOOR
13	1.00	372434	GUARD, UPPER, MAGAZINE
14	1.00	372435	PANEL, GUARD, LOWER, MAGAZINE
15	1.00	372436	PANEL, GUARD, UPPER, DISCHARGE
16	1.00	357799	ANGLE, MTG, GUARD, DISCHARGE
17	1.00	372605	GUARD, ACCESS, REACH, DISCHARGE
18	2.00	369916	BKT, MTG, GUARD
19	1.00	372433	PANEL, GUARD, ENTRANCE, LEXAN
20	1.00	372603	GUARD, MAGAZINE, LOWER
21	1.00	372604-001	GUARD, MAGAZINE, LOWER
22	1.00	848004-001	KIT, AL, EXTRUSION, GUARD, 72 H X 101.7 LG
23	1.00	291847-001	BKT, MTG, PIN, SWITCH, DOOR, 5-1/16, LH
24	1.00	848003	KIT, AL, EXTRUSION, GUARD, 72 H X 153.9 LG

Arpac BOM

Parent Number: 17766 Parent Revision: A

Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 372332

Assembly Drawing Number: 372332

Description: ASSY, BAR, FLIGHT, ESCAPEMENT, 28.86" WIDE, 24" PITCH

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	2.00	101931	SPKT, 50B24, MOD, 0.750 BORE
2	4.00	224000-018	SPACER, AL, 21/32 ID X 1 1/4 OD X 1.016 LG
3	2.00	265558	SPACER, BKT, MTG, SERVO
4	1.00	265560	WLDMT, PLT, MTG, GEARBOX
5	2.00	265572	BAR, TENSIONER
6	2.00	265580	SPCR, AL, 21/32 ID X 1 1/4 OD
7	1.00	311856	PULLEY, TIMING, 25T, MOD, 22 MM BORE
8	1.00	311892	BKT, MTG, SERVO, ESCAPEMENT
9	1.00	313299	SHAFT, DRIVE, ESCAPEMENT
10	2.00	314897	SHAFT, THOMSON, 0.750, TAPPED, 3/8-16, 28.86" LG
11	2.00	345119	RAIL, GUIDE, CHAIN, #50, SS, 8.13" LG.
12	2.00	357531	ANGLE, MTG, RAIL
13	2.00	372333	BAR, FLIGHT
14	2.00	372334	PLT, FLIGHT BAR
15	2.00	372438	PLT, SIDE, BAR, FLIGHT, ESCAPEMENT
16	8.00	800472	CHAIN, RLR, #50, HOLLOW PIN
17	1.00	800663	BUSH, TAPER, QD, 3/4 BORE X 1-3/8 LG
18	6.00	800905	SPKT, 50BB15H, IDLER, 5/8 ID, HARDENED TEETH, 3.006 PD
19	4.00	801359	CLAMP, RAIL, SINGLE, 1.5 LG, SS, ROUND HOLE
20	2.00	826966	BRG, FLG, 3/4 ID, 2-BOLT, 3.53 MTG HOLES
21	1.00	848475	GEARBOX, PLANETARY, NP SERIES, 10:1, FOR MPL-B310P
22	1.00	841291	BELT, TIMMING, 8MM P, 16MM W, 28.35 LG, 90 TEETH, EAGLE PD, HELICAL OFFSE
23	1.00	849289	PULLEY, TIMING, 50T, 8 MM P, 17 MM W, SDS BORE
24	1.00	849460	MOTOR, SERVO, 37 IN-LB, 4750 RPM, 460VAC, W/BRAKE.KINETIX 5000 CONTROLLEI
25	4.00	869213	LINK, CHAIN, 50 D-3

Arpac BOM

Parent Number: 17766 Parent Revision: A

Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 372345

Assembly Drawing Number: 372345

Description: ASSY, CLAMP, PRODUCT, COLLATOR, 28.858" W CONV, LH
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	2.00	300306	NUT, FLANGE
2	2.00	300314	WASHER, CLAMP
3	2.00	300317	SHAFT, GUIDE
4	1.00	300322	PLT, MTG, SHAFT
5	1.00	300323	PLT, MTG, SHAFT
6	1.00	300326	PLT, MTG, CYL
7	1.00	300711	NUT, FLOTING
8	1.00	300712	NUT, SPECIAL
9	4.00	309590	GEAR, MITER, 12DP, 15T, 0.50B
10	2.00	309593	BLK, MTG, SHAFT
11	2.00	309594	SCREW, ADJ, VERT
12	1.00	309597	WLMT, BLK, ADJ. VERT
13	1.00	309597-001	WLMT, BLK, ADJ. VERT, LH
14	2.00	311965	BLK, MTG, CLAMP
15	1.00	313273	WLDMNT, BAR, MTG, CYL
16	1.00	313274	BAR, CROSS, TOP
17	1.00	313275	COVER, TOP
18	1.00	313276	SHAFT, CROSS, ADJ.
19	2.00	313279	SHAFT, SLIDE
20	1.00	372346	PLT, CLAMP, PRODUCT
21	1.00	372347	SUBASSY, PLT, CLAMP, RUBBER, EXT
22	6.00	800366	BUSH, OILITE, 0.6260 X 0.7530 X 1/2 LG
23	2.00	806159	BUSH, OILITE, FLG, 0.502 X 0.753 X 5/8, 1 OD X 1/8 THK FLG
24	4.00	819834	BUSH, BALL, 1 X 1-9/16 X 2-1/4 LG WITH TWO INTEGRAL WIPERS
25	2.00	825362-001	VALVE, CONTROL, FLOW, 1/8 NPT X 1/4 TUBE 90DEG, NUMERIC INDICATOR, MTR OL
26	1.00	828032	SENSOR, PROXIMITY, ELECTRICAL, WITH REED CONTACT, 8 MM SENSOR SLOT
27	4.00	846871	BRG, LINEAR, BALL, ID20MM, OD28MM, L30MM
28	1.00	847969	CYL, AIR, 32mm BORE, 25mm STROKE
29	4.00	848781	BRG, THRUST, BALL, 5/8 ID, 1-11/32 OD, 9/16 TALL
30	1.00	848782	COUNTER, DIGITAL, 1/2 HOLLOW BORE, CW, 25 COUNTS/TURN, UPSIDE DOWN
31	1.00	849178	WRENCH, RATCHET 3/8 SQ X 6-15/16 LG

Arpac BOM

Parent Number: 17766 Parent Revision: A

Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 372286

Assembly Drawing Number: 372286

Description: ASSY, SYSTEM, APPLICATOR, GLUE, 2-HOSE, LIBERTY 7

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	871316	MELTER. PROBLUE LIBERTY 7, 2-HOSE
2	1.00	851339	BIN, ADH STORAGE, SF, G3
3	1.00	851340	KIT, FF, ADH TRANS ASSY, 4M CL, G3
4	2.00	850906	APPLICATOR, GLUE, SINGLE, MINIBLUE, MB2-BEL-00AIATTSSPF41-000000
5	2.00	871024	NOZZLE, 15 DEG, DUAL, .020 ORIFICE
6	2.00	806780	NUT, RETAINING
7	1.00	810122	HOSE, 12 FT 230 VAC AUTOMATIC
8	1.00	802513	HOSE, 10 FT 230 VAC 3500
9	2.00	292132	WLDMT, MTG, GLUE UNIT
10	2.00	190788	PIN, MTG, GLUE GUN
11	4.00	802507	STRAP, HANGER HOSE

Arpac BOM

Parent Number: 17766 Parent Revision: A

Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 372312

Assembly Drawing Number: 372312

Description: ASSY, CONVEYOR, INFEED, TS-2200, 47" ELEV

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	212470	BKT
2	3.00	283569	WSHR, SPECIAL, M10
3	6.00	288168	STOP, PINION, CENTRAL
4	2.00	288174	SUPPORT, PLT, TRANSFER
5	4.00	300336	SUPPORT, PLT, TRANSFER
6	12.00	300344	BEARING SUPPORT
7	11.00	300373	RLR, DEFLECTION, L = 28.42
8	6.00	304078	WLDMT, BRKT, MOUNT, INFEED
9	1.00	304532	BKT, SUPPORT, TRANSFER
10	2.00	306379	BKT, SUPPORT, PLATE, DEAD
11	3.00	309302	PIN, HOLDING, TORQUE ARM
12	14.00	309572-009	SHAFT, IDLER, 28.594 LG
13	2.00	311896-004	PLT, TRANSFER, 27.93 LG
14	2.00	314799-015	WLDMT, SUPPORT, CONV
15	2.00	315000-002	CROSSBAR, INTERMEDIATE, CSINK, 28.594 LG
16	2.00	315001	PLT, JOINT, INFEED CONVEYORS, CSINK
17	2.00	315002	PLT, CONNECTING, CONV, DIVIDER, DYNAMIC
18	2.00	315005-003	CROSSBAR, INTERMEDIATE, CSINK, 28.594 LG
19	4.00	315016	PLT, STIFF
20	6.00	316168-006	SHAFT, IDLER, CONV, INFEED, A=28.85
21	1.00	343972	BAR, SUPPORT, PLT, DEAD
22	3.00	345145	SHAFT, DRIVE, SQ, CONVEYOR, 1" DIA
23	14.00	345146	CROSSBAR, INTERMEDIATE
24	1.00	345178	PLT, DEAD, CLAMP, PRODUCT
25	1.00	345487	STRIP, PLT, DEAD
26	1.00	372313	PLT, SIDE, CONV, INFEED
27	1.00	372313-001	PLT, SIDE, CONV, INFEED, LH
28	1.00	372353	PLT, SIDE, CONV, INFEED
29	1.00	372353-001	PLT, SIDE, CONV, INFEED, LH
30	1.00	372405	PLT, SIDE, CONV, INFEED
31	1.00	372405-001	PLT, SIDE, CONV, INFEED, LH
32	18.00	801296-001	RAIL, GUIDE, TEE, 1.60 W, 8' LG, SS
33	86.00	801359	CLAMP, RAIL, SINGLE, 1.5 LG, SS, ROUND HOLE
34	12.00	810473	BRG, CART, 1/2 X 1-1/8 X 5/16 LG, SS, DOUBLE SEALED
35	47.00	828038	BELT, ACETAL, GRAY, FLAT TOP, 1100 SERIES, 27"W(684mm)
36	12.00	828156	FTG, GREASE, STRAIGHT, SS, 1/4-28
37	6.00	839632	BRG, FLG, 1 ID, 4-BOLT
38	27.00	839679	SPKT, 24T, EZ TRACKING GREY ACETAL, 1.5" SQ BORE
39	4.00	841410	LEVELER, ARTICULATING, 7400 # CAP, 3/4-10 STEM, 9.5 HIGH, CRS 3" BASE, 2
40	3.00	849485	GEARMOTOR, Ø1" HOLLOW SHAFT, 20:1, 83 RPM, 1 HP, 230/460 VAC, W/ TORQUE /
41	6.00	850128	EXTRUSION, UHMW, J-LEGS, 10' LG, FOR 11GA SHEET

Arpac BOM

Parent Number: 17766 Parent Revision: A

Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 372269

Assembly Drawing Number: 372269

Description: ASSY, DYNAMIC DIVIDER, SERVO, 47" ELEV, 17" MAX WIDTH

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	292149	BKT, MOUNTING, IGUS TRACK, DIVIDER
2	1.00	304067-002	ASSY, SLIDE, LINEAR, DIVIDER, DYNAMIC, 47" EL
3	1.00	345164	ASSY, GUIDE, SLIDE, GUIDE, LANE
4	1.00	345164-001	ASSY, GUIDE, SLIDE, GUIDE, LANE, LH
5	1.00	372271	ASSY, GUIDE, LANE, ENTRY, DIVIDER, DYNAMIC, MAX 10" W
6	1.00	372272	ASSY, GUIDE, LANE, EXIT, DIVIDER, DYNAMIC
7	1.00	372287	ASSY, CONV, LONG, DIVIDER, DYNAMIC
8	1.00	372296	ASSY, CONV, SHORT, DIVIDER, DYNAMIC
9	1.00	372321	ASSY, FRAME, DIVIDER, DYNAMIC, 47" ELEVATION
10	1.00	372439	GUARDS, DYNAMIC DIVIDER, 47" EL
11	4.00	845584	NUT, SLOT, M8
12	1.00	372611	WLDMT, BKT, MTG, ENCLOSURE
13	1.00	372777	BKT, MTG, BOX, 6-BUTTON
14	1.00	330101	BKT, MTG, BOX, BUTTON, SINGLE

Arpac BOM

Parent Number: 17766 Parent Revision: A

Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 372290

Assembly Drawing Number: 372290

Description: ASSY, CONV, INFEED, DIVIDER, LANE

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	4.00	300373	RLR, DEFLECTION, L = 28.42
2	4.00	309572-009	SHAFT, IDLER, 28.594 LG
3	2.00	314799-015	WLDMT, SUPPORT, CONV
4	3.00	315005-003	CROSSBAR, INTERMEDIATE, CSINK, 28.594 LG
5	4.00	315016	PLT, STIFF
6	7.00	345146	CROSSBAR, INTERMEDIATE
7	1.00	372291	PLT, SIDE, CONV, INFEED
8	1.00	372291-001	PLT, SIDE, CONV, INFEED
9	1.00	372292	STRIP, GUIDE, SIDE, BELT, CONV
10	2.00	372303	XBAR, END, CONV, INFEED
11	1.00	372306	ASSY, ROLLER, NOSE
12	1.00	372311	PLT, END, CONV, NARROW
13	6.00	801296-002	RAIL, GUIDE, TEE, 1.60 W, 10' LG, SS
14	42.00	801359	CLAMP, RAIL, SINGLE, 1.5 LG, SS, ROUND HOLE
15	4.00	841410	LEVELER, ARTICULATING, 7400 # CAP, 3/4-10 STEM, 9.5 HIGH, CRS 3" BASE, 2
16	2.00	850128	EXTRUSION, UHMW, J-LEGS, 10' LG, FOR 11GA SHEET
17	49.00	828038	BELT, ACETAL, GRAY, FLAT TOP, 1100 SERIES, 27"W(684mm)

Arpac BOM

Parent Number: 17766 Parent Revision: A

Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 372652

Assembly Drawing Number: 372652

Description: ASSY, DETECT, PRODUCT, 6-LANE, 28.86" WIDE

Quantity: 3.00

Item	Qty	Arpac Part	Description
1	1.00	309540	POST, MTG, DETECTOR, TALL
2	1.00	214781-027	SHAFT, MTG, DETECTOR, A=28.86
3	1.00	225647	WLDMT, BKT, MTG, P.E., SS
4	1.00	309540-001	POST, MTG, DETECTOR, TALL, LH
5	1.00	238514	WLDMT, BKT, MTG, P.E. REFLECTOR, SS
6	6.00	357429	LEVELER, CONTACT
7	6.00	283414	COLLAR, LOCATOR, FINGER
8	6.00	842149	SPRING, EXTENSION
9	2.00	276415	BKT, MTG, SHAFT
10	1.00	276242-002	ROD, GUIDE, 26" LG
11	2.00	286907	INDICATOR
12	2.00	808969	HDL, ADJ, SS, 2.56 LG 5/16-18 X .59 STUD

Arpac BOM

Parent Number: 17766 Parent Revision: A
Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 372628
Assembly Drawing Number: 372628
Description: ASSY, GUIDES, LANE
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	16.00	372354	BAR, MTG, SIDE, GUIDE, LANE, INCH
2	16.00	307084	BLK, MTG, GUIDES
3	7.00	372630	PLT, GUIDE, LANE, ESCAPEMENT
4	14.00	372629	PLT, GUIDE, LANE
5	7.00	372404	PLT, GUIDE, LANE
6	8.00	121454-035	SHAFT, HANGER 30.864
7	8.00	228692	SUBASSY, HANDLE, NUT 1"-8
8	8.00	306497	PLT, STOP, SPACER

Arpac BOM

Parent Number: 17766 Parent Revision: A
Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 372625
Assembly Drawing Number: 372625
Description: ASSY, GUIDES, ENTRY, DIVIDER, LANE
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	7.00	815212-003	RAIL, GUIDE, ROUND, SS, 12' LG
2	14.00	801340	BKT, SWIVEL, 5/8 ROD, W/KNOB AND EYLET, POLYAMIDE
3	21.00	801312	CLAMP, RAIL, DOUBLE, 1.5 LG, SS, 2.5 CENTERS, ROUND HOLE
4	18.00	847447	ROD, ADJ, 5/8 DIA X 18 LG, 3/8-16 TAPPED THREAD, SS, NUMBERED
5	3.00	808640	ROD, ADJ, 5/8 DIA X 6 LG, 3/8-16 TAPPED THREAD, SS
6	4.00	372627	ROD, ADJ, 5/8 DIA X 34 LG, 3/8-16 THREAD, SS
7	1.00	372645	BKT, HANGER, RAIL, GUIDE
8	2.00	372647	BLK, MTG, SHAFT, ADJ
9	2.00	809385	HDL, ADJ, ZINC, 2-1/2 LG 5/16-18 X .78 STUD
10	1.00	827493-001	SPEEDRAIL, SB, 2 STRAND, 6' LG

Arpac BOM

Parent Number: 17766 Parent Revision: A
Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 372643
Assembly Drawing Number: 372643
Description: ASSY, TURN, BUMP
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	372642	WLDMT, MTG, TURN, BUMP
2	1.00	368012	BLK, GUIDE
3	1.00	372644	PLT, MTG, SHAFT, TURN, BUMP
4	2.00	368433	BLK, MTG, SHAFT, TURN, BUMP
5	1.00	367997	SHAFT, BUMP TURN
6	2.00	800568	COLLAR, SHAFT, CLAMP, 2-PIECE, 1 ID x 1 3/4 OD
7	1.00	870603	WHEEL, RUBBER, 6" DIA, 2" WIDE, 3/4" BORE, 60A DUROMETER
8	1.00	800585	COLLAR, SHAFT, CLAMP, 2-PIECE, 3/4
9	2.00	809385	HDL, ADJ, ZINC, 2-1/2 LG 5/16-18 X .78 STUD

Arpac BOM

Parent Number: 17766 Parent Revision: A
Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 372638
Assembly Drawing Number: 372638
Description: KIT, PARTS, CHANGE, TS-2200, SN 17766
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	372632	SUBASSY, SPACER, GUIDE, 3-LANE, 12OZ AND 16-OZ 4-PACK
2	1.00	372633	SUBASSY, SPACER, GUIDE, 3-LANE, 355ML 4-PACK
3	1.00	372634	SUBASSY, SPACER, GUIDE, 2-LANE, 12OZ AND 16OZ 6-PACK AND 12-PACK
4	1.00	372635	SUBASSY, SPACER, GUIDE, 2-LANE, 355ML 6-PACK AND 12-PACK
5	1.00	372636	SUBASSY, SPACER, GUIDE, 4-LANE, 355ML CANS
6	1.00	372637	SUBASSY, SPACER, GUIDE, 6-LANE, 16OZ CANS

Arpac BOM

Parent Number: 17766 Parent Revision: A
Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 372631
Assembly Drawing Number: 372631
Description: ASSY, DETECT, PRODUCT, 6-LANES, 28.86" WIDE
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	286911	POST MTG DETECTOR, RH
2	1.00	214781-027	SHAFT, MTG, DETECTOR, A=28.86
3	1.00	286911-001	POST MTG DETECTOR, LH
4	2.00	286907	INDICATOR
5	2.00	808969	HDL, ADJ, SS, 2.56 LG 5/16-18 X .59 STUD
6	6.00	225647	WLDMT, BKT, MTG, P.E., SS
7	2.00	276415	BKT, MTG, SHAFT
8	1.00	276242-002	ROD, GUIDE, 26" LG

Arpac BOM

Parent Number: 17766 Parent Revision: A

Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 372650

Assembly Drawing Number: 372650

Description: ASSY, PNEUMATIC, VACUUM, 24VDC, TS-2200

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	870454	ASSY, AIR PREP, FILTER, REG, SWITCH, DUMP VALVE, 1/2 NPT, CAT 1, L TO R,
2	1.00	825953	ATTACHMENT, SPACER
3	1.00	825955	ATTACHMENT, SPACER, "T" TYPE
4	2.00	846524	VALVE, SOLENOID, 24VDC, 1/4 NPTF, LIGHT, SINGLE SOL, DIN CONNECTOR
5	1.00	816654	KIT, PLATE, END, MANIFOLD, VALVE
6	2.00	846254	CABLE, SOL VALVE, B1 11MM DIN TO M12 CONNECTOR, 0.6M LG
7	1.00	816903	GENERATOR, VACUUM, W/SILENCER TOR SEG30
8	1.00	214932	MANIFOLD, CUPS, VACUUM
9	1.00	809367	MUFFLER
10	1.00	851224	VALVE, SOL, 24VDC, 2POS SINGLE
11	1.00	855333	MANIFOLD, VALVE, SINGLE STATION, 3/8 NPT, M12 CONNECTOR
12	1.00	861212	3/8" TO 1/2" Y FITTING REDUCER
13	2.00	809365	FTG, UNION, Y, PUSH-ON 1/4 OD TBG X 3/8 OD TBG
14	10.00	851532	FTG, STRAIGHT, 1/4 OD TBG PUSH-ON X 1/8 UNIVERSAL THRD

Arpac BOM

Parent Number: 17766 Parent Revision: A
Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
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: 17766 Parent Revision: A
Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:
Assembly Part Number: 372784
Assembly Drawing Number: 372784
Description: KIT, BKT, MTG, BLOCK, I/O
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	3.00	370645	BKT, MTG, BLOCK, I/O
2	1.00	370646	BKT, MTG, BLOCK, I/O

Arpac BOM

Parent Number: 17766 Parent Revision: A
Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 135622
Assembly Drawing Number: 135622
Description: ASSY, CPLG, CHAIN, 1-3/8 X 1-5/8 BORE W/KEYWAY, SET SCREW, AND COVER
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	809849	CPLG, CHN, HALF, #50 18T, 1 3/8 BORE W/ KEYWAY, SET SCREW
2	1.00	809850	CPLG, CHN, HALF, #50 18T, 1 5/8 BORE W/ KEYWAY, SET SCREW
3	1.00	809852	CPLG, CHN, CHAIN, #50 CHAIN FOR #50P 18T CHAIN COUPLING
4	1.00	809853	CPLG, CHN, COVER COVER FOR #50P 18T CHAIN COUPLING

Arpac BOM

Parent Number: 17766 Parent Revision: A

Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 372602

Assembly Drawing Number: 372602

Description: ASSY, ROLLERS, PINCH, MAGAZINE, LH

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	223728-000A	WLDMT, FRAME, MAGAZINE, LH MACH
2	1.00	195409A	CROSS MEMBER, LH MACH
3	1.00	193116	PLT
4	1.00	193114	SUPPORT, BLANK, MAGAZINE SIDE
5	2.00	837218	BRG, FLG, 1 ID, 3-BOLT, STANDARD DUTY
6	1.00	274122	WLDMT, MNT, MOTOR
7	1.00	193101	SHAFT, LOWER PINCH ROLLER
8	1.00	223730	SHAFT, ROLLER, TOP, MTG
9	1.00	189367	MNT, ROLLER, LH, A=1"
10	1.00	189368	MNT, ROLLER, RH
11	1.00	223729	SHAFT, ROLLER, UPPER IDLE
12	1.00	300037	GUIDE, FEED, BLANK, TOP
13	1.00	190818	GUIDE, LOWER MAGAZINE
14	1.00	189365	HOLDER, SPRING, LH
15	1.00	189366	HOLDER, SPRING, RH
16	1.00	189852-000	UPPER PINCH ROLLER
17	1.00	282792	DEFLECTOR, UPPER
18	1.00	193100	ROLLER, PINCH, LOWER
19	1.00	807017	PULLEY, TIMING, 22T, 8MM P, 20MM W, 1 BORE
20	1.00	816284	BUSH, TAPER, QT, .625 BORE
21	1.00	807464	PULLEY, TIMING, 30T, 8MM P, 20MM W, QT BUSHING REQUIRED
22	1.00	810478	BELT, TIMING, 8MM P, 20MM W, 800MM LG, 100 TEETH
23	2.00	808128	BUSH, OILITE, FLG, 0.752 X 0.879 X 3/4 1-1/8 OD X 1/8 THK FLG
24	2.00	800438	WSHR, OILITE, 0.753 X 1.375 X 1/8 THK
25	2.00	807096	COLLAR, SHAFT, CLAMP, 1-PIECE, 3/4, EXTREME CL8867
26	2.00	816471	SPRING, COMP, DIE, 0.625 OD X 1.25 LG, 0.109 X 0.069 WIRE DIA, 128 LBS/IN
27	1.00	809737	FOLLOWER, CAM, 1 OD, 5/8-18 STUD, W/HEX HOLE, SEALED
28	1.00	802881	FOLLOWER, CAM, 1 OD, 7/16-20 STUD, CROWNED, ECCENTRIC 5/8 O.D
29	1.00	827723	MOTOR, 3/4 HP, 230/460V, 60HZ, 3PH, 56 FRM, FOOT MNT, 1200RPM, F2 CONDUIT
30	1.00	291804	PANEL, GUARD, MAGAZINE

Arpac BOM

Parent Number: 17766 Parent Revision: A

Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 238316-000B

Assembly Drawing Number: 238316

Description: ASSY, MAGAZINE, GUIDE, SUPPORT LH MACHINE

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	2.00	187346	PILLOW, BLOCK, OPEN
2	2.00	189866-000A	BKT, MTG, SLIDE, BEARING, WLDMT
3	1.00	187337	SHAFT, RAIL, MOD. 32"LG
4	1.00	193145	NUT, 1"-8 RIGHT HAND
5	1.00	193146	BKT, MTG NUT 1-8" RH
6	1.00	306773	BRG, FLG, 3/4 ID, 3-BOLT MOD.
7	1.00	193147	SPACER, BRG, MTG
8	1.00	141354	HANDWHEEL, SPECIAL
9	1.00	189864	SHAFT, MAG., ADJ., FRONT
10	1.00	189865	SHAFT, ADJ. MAGAZINE
11	1.00	816364	CPLG, 3/4 BORE, SPLIT CLAMP 8-BOLT CLAMP
12	1.00	193148	SPACER, BRG, MTG
13	5.00	827113	BRG, BLK, PILLOW, 3/4 ID, INTERMEDIATE DUTY
14	2.00	850550	SPKT, 40B13, MOD, 0.750 BORE, KWT&SS
15	6.00	800462	CHAIN, RLR, #40, RLR RVT
16	1.00	188681	SHAFT, THREADED, REAR DOOR
17	1.00	189859	PLATE, BEARING MTG
18	1.00	802881	FOLLOWER, CAM, 1 OD, 7/16-20 STUD, CROWNED, ECCENTRIC 5/8 O.D
19	4.00	189860	SPACER
20	1.00	189870	RAIL
21	1.00	195415	CHANNEL, LH LH MACHINE
22	1.00	195417	CHANNEL, MAGAZINE, RH LH MACHINE
23	2.00	188687	NUT, PLATE
24	1.00	193151	COVER, BACK, MAGAZINE
25	1.00	822223	COUNTER, POSITION, CODE: CE986019
26	1.00	809737	FOLLOWER, CAM, 1 OD, 5/8-18 STUD, W/HEX HOLE, SEALED
27	1.00	226399	PLT MTG
28	2.00	800568	COLLAR, SHAFT, CLAMP, 2-PIECE, 1 ID x 1 3/4 OD

Arpac BOM

Parent Number: 17766 Parent Revision: A

Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 244278-001

Assembly Drawing Number: 244278

Description: ASSY, BLANK SUPPORT & GUIDES, LH

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	193134	BLANK SUPPORT MAGAZINE SIDE
2	1.00	193135	SUPPORT, BLANK DOOR SIDE
3	1.00	187545	SUPPORT, LOWER, DOOR
4	1.00	187546	DOOR
5	2.00	802653	LATCH, VISE-ACTION
6	1.00	193173	LIMITOR, TOP, BLANK MAGAZINE SIDE
7	1.00	193174	LIMITOR, TOP, BLANK DOOR SIDE
8	1.00	193136	BAR, BLANK GUIDE HOLDER DOOR SIDE
9	1.00	193137	BAR, BLANK GUIDE HOLDER MAGAZINE SIDE
10	4.00	187499	BKT MAGAZINE SIDE
11	1.00	244267-002	SUPPORT, BOTTOM, BLANK, LH MAGAZINE SIDE
12	1.00	193138	SUPPORT, BOTTOM, BLANK MAGAZINE SIDE
13	1.00	193141	GUIDE,SIDE,BLANK MAGAZINE SIDE
14	1.00	244266-002	GUIDE,SIDE,BLANK, LH MAGAZINE SIDE
15	1.00	193142-002	MNT, DOOR, LH
16	2.00	193143	NUT, REAR DOOR, LH THD
17	1.00	242172	BKT, PROX
18	1.00	242173	PLT, TARGET, SWITCH
19	1.00	244292	BKT, BLANK GUIDE
20	1.00	244293-001	BLANK GUIDE, TOP, LH
21	1.00	244294-001	BLANK GUIDE, BOTTOM,LH

Arpac BOM

Parent Number: 17766 Parent Revision: A

Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 282752A

Assembly Drawing Number: 282752

Description: ASSY, MAGAZINE CONVEYOR & DRIVE, LH

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	2.00	140332	TAKE-UP SCREW TS-2212-RC
2	1.00	140334	SPKT WITH TLSP5U TS-2212-RC
3	4.00	142585	VACUUME CUP MNT.
4	2.00	144606-019	SPACER, RND, 1", AL, 0.5LG, 21/32THRU
5	1.00	186488	SHAFT, LOWER, CONVEYOR
6	2.00	186490	KEY
7	2.00	186513-000A	VACUUM CUP MNT BLOCK,
8	4.00	187536	PUSHER
9	1.00	193125-000A	RAMP, MAGAZINE, BELT, LH
10	1.00	193126-000A	RAMP, MAGAZINE, BELT, RH
11	1.00	193131-002	MNT,VAC. CUPS, RH
12	1.00	193131-003	MNT,VAC. CUPS, LH
13	1.00	197877	ARM, PIVOT
14	1.00	213233	SPKT W/POWER LOCK
15	1.00	213234-000B	SPKT W/BRONZE BUSHING
16	2.00	213235	SPKT W/BEARING
17	8.00	213236	BLOCK
18	2.00	213237	BAR, PUSHER
19	8.00	213238	PIN
20	1.00	220995-000A	SHAFT, VAC., ARM
21	4.00	221942	KEY, CUP MNT.
22	1.00	223735	SHAFT, 1.0"
23	1.00	223738	SHAFT, DRIVE, CONVEYOR
24	1.00	223739	MNT, JACK SHAFT
25	1.00	223740	ROD, CONNECTING, 1"
26	1.00	228962	BKT, MTG, PROX
27	1.00	230293	SHAFT, TAIL, CONVEYOR
28	1.00	230295	HANDWHEEL, 5", AL, MOD, W/O HANDLE ROLLER CLUTCH
29	1.00	231440	BKT, CLAMP, PIVOT TS-2000
30	1.00	243418	SPKT, 50A39, SPECIAL
31	4.00	800468	CHAIN, RLR, #50
32	2.00	800600	COLLAR, SHAFT, CLAMP, 1-PIECE, 1
33	1.00	800609	CPLG, PHASE-LOCK, HDI-25-1 1 BORE
34	1.00	800665	BUSH, TAPER, QD, 1 BORE X 1-1/16 LG,
35	1.00	800905	SPKT, 50BB15H, IDLER, 5/8 ID, HARDENED TEETH, 3.006 PD
36	1.00	806450	BUSH, TAPER, QD, 1 BORE X 1-15/16 LG, SPLIT TYPE
37	4.00	837218	BRG, FLG, 1 ID, 3-BOLT, STANDARD DUTY
38	2.00	827116	BRG, FLG, 1 ID, 2-BOLT, 3.89 BOLT CNTRS
39	2.00	803668-001	LOCKING DEVICE, KEYLESS 1",
40	4.00	283409	NUT, HANDLE
41	1.00	807279-001	TENSIONER, SPRING, ROTARY 20-45LBS
42	1.00	807281	IDLER, PULLEY, CLEVIS ADAPTERS
43	1.00	809446	SPKT, 50JA13 H, QD BUSH, HARDENED TEETH
44	1.00	816285	CLUTCH, OVERLOAD, BORE 1", PROX PLT, SET TO 75 IN-#,W\ARPAC\#

Arpac BOM

Parent Number: 17766 Parent Revision: A

Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 282752A

Assembly Drawing Number: 282752

Description: ASSY, MAGAZINE CONVEYOR & DRIVE, LH

Quantity: 1.00

Item	Qty	Arpac Part	Description
45	1.00	282754	SPKT, D40B32, 32 TEETH, 1" P TYPE B
46	1.00	821596	SPKT, D40P28, REQUIRE P1 BUSHING
47	16.00	821600	CHAIN, DELRIN, #40 WITH SST PIN - MUST ORDER IN 10 FOOT SECTIONS
48	1.00	822521	ROD END, 5/8-18, MALE, RH THREAD
49	1.00	822522	ROD END, 5/8-18, MALE, LH THREAD
50	1.00	823055	RING, INNER .375 ID X .625 OD X .765 LG.
51	1.00	823057	CLUTCH, ROLLER, DC 5/8 ID X 7/8 OD X 5/8 LG. (NOM.)
52	1.00	214933-000A	WLDMT, MNT, VACUUME PUMP
53	1.00	121600-001A	ASSY, MAGAZINE PNEUMATICS TS-2000 RC

Arpac BOM

Parent Number: 17766 Parent Revision: A

Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 328781

Assembly Drawing Number: 328781

Description: ASSY, HOPPER, LH MACH

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	2.00	141328	RACK, GEAR, 5/16W X 1/2H X 16DP WLDMT
2	1.00	141329	GEAR,SPECIAL, 1.125PD, 18T, 14.5 DEG.PA
3	2.00	141330	RETAINER, RACK
4	4.00	141335	BLK
5	2.00	282727	BAR, MTG, HOPPER
6	2.00	851378	RAIL, GUIDE, 15MM, 280L
7	1.00	800324-007	FSNR, BOLT, SHLDR, 1/2 DIA X 3/4 LG, 3/8-16
8	2.00	851377	BLK, BRG, LINEAR, 15MM
9	1.00	282743-002	SUPPORT, BLANK, MAG.,LH
10	2.00	807154	HDL, ADJ, ZINC, 2-1/2 LG 5/16-18 X .78 STUD
11	1.00	282743-001	SUPPORT, BLANK, MAG.,RH
12	4.00	186703	PIN, SUPPORT, HOPPER
13	1.00	282745	NUT, T, 5/16-18
14	1.00	282746	COVER, TOP, END
15	1.00	282747	COVER, TOP, UPTREAM, LH
16	1.00	291898	WLDMT, SUPPORT, BLANK
17	1.00	282748	COVER, TOP, DOWNSTREAM, LH
18	1.00	122524	MTG., PLATE, SUPPORT, BLANK
19	1.00	122551	SLIDE, BASE, BLANK
20	1.00	122539	REAR,BLANK, SUPPORT
21	1.00	282750	PLT, SLIDE, GUARD
22	1.00	282749	PLT, NUT
23	6.00	810224	HDL, ADJ, SS, 1.57 LG 1/4-20 X 1.18 STUD
24	1.00	802677	HDL, ADJ, ZINC, 2.56 LG 5/16-18 X 1.57 STUD
25	1.00	282726	PLT, MNT, HOPPER
26	1.00	282728	PLT, BACK
27	1.00	282730	BLK, FRONT SUPPORT HOLDER
28	1.00	282740	WLDMT, WALL, SIDE, RH
29	1.00	282741	WLDMT, WALL, SIDE, LH
30	1.00	282731	BAR, GUIDE, TOP
31	2.00	328783	PLT, MTG, CAM FOLLOWER
32	2.00	282742	WLDMNT, SUPPOORT
33	1.00	298272	SUPPORT, REAR, MAGAZINE
34	2.00	837218	BRG, FLG, 1 ID, 3-BOLT, STANDARD DUTY
35	1.00	282786	GUARD, MAGAZINE, LH
36	1.00	282786-001	GUARD, MAGAZINE, RH
37	2.00	845246	BRG, W/CLOSED END COVER, 3-BOLT, FLG, 1" ID
38	1.00	221957-001	SCALE, 17 LG, LH
39	1.00	221957	SCALE, 17 LG, RH
40	1.00	298215	PLT, GUARD, MAGAZINE, RH SIDE
41	1.00	298216	PLT, GUARD, MAGAZINE, LH SIDE
42	4.00	851375	FOLLOWER, CAM, 3/4 OD, 3/8-24 STUD, W/HEX HOLE, W/ECCENTRIC STUD

Arpac BOM

Parent Number: 17766 Parent Revision: A
Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:
Assembly Part Number: 345485
Assembly Drawing Number: 345485
Description: ASSY, RAIL
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	345484	WLDMT, RAIL, COMPRESSION SECTION
2	1.00	345484-001	WLDMT, RAIL, COMPRESSION SECTION, LH
3	2.00	333980	RAIL, TRANSFER, TRAY
4	2.00	369931	PLT, GUIDE, BLANK
5	2.00	297844	BLK, MTG, TRANSFER, ENTRANCE

Arpac BOM

Parent Number: 17766 Parent Revision: A

Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 328592

Assembly Drawing Number: 328592

Description: ASSY, FORMING, TRAY

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	6.00	144124-142	SHAFT, 1.000, TAPPED, 3/8-16, 2.375 LG CRS
2	1.00	292127-001	PLOW, MINOR, RH
3	1.00	292127-002	PLOW, MINOR, LH
4	4.00	190789	ROD, PLOW 5.06 LG
5	1.00	221628-001	PRODUCT, HOLD DOWN, RH
6	1.00	221628-002	PRODUCT, HOLD DOWN, LH
7	1.00	332572	WLDMT, COMPRESSION, SIDE
8	1.00	332572-001	WLDMT, COMPRESSION, SIDE
9	2.00	221935	KEY, SIDE ANGLE
10	1.00	237923-001	MNT, GLUE GUN & MINOR PLOW, LH
11	1.00	237923-002	MNT, GLUE GUN & MINOR PLOW, RH
12	4.00	328586	PLT, MTG, SIDE
13	1.00	241699	POINTER, SCALE, 9/32 HOLE
14	1.00	241699-001	POINTER, SCALE, 9/32 HOLE, RH
15	2.00	276478	PLT, INDICATOR
16	4.00	802676-001	HDL, ADJ, ZINC, 1.77 LG 1/4-20 X .78 STUD
17	4.00	806459	HDL, ADJ, ZINC, 2-1/2 LG 5/16-18 X 1.18 STUD

Arpac BOM

Parent Number: 17766 Parent Revision: A

Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 328588-001

Assembly Drawing Number: 328588

Description: ASSY, FLAP FOLDER, ROTARY, LH

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	2.00	104831	ROTARY ARM MOUNTING
2	2.00	319501	SHAFT, FOLDER, FLAP, ROTARY
3	4.00	837218	BRG, FLG, 1 ID, 3-BOLT, STANDARD DUTY
4	2.00	124817	SPKT, 40B26, MOD, 1.000 BORE
5	2.00	800906	SPKT, 40BB17H, IDL, 5/8 ID, EXTREME SK9445
6	2.00	114201-003	SPACER, IDLER SPKT, 1.3 LG
7	2.00	104857	SPKT, 40A26, MOD, 1.750 BORE, W/ BOLT HOLES
8	2.00	275921	SLEEVE, SPLINED, ROTARY FOLDER BROACHED FOR SPLINED SHAFT
9	1.00	133802	SHF, DRIVE, ROTARY FOLDER
10	2.00	827116	BRG, FLG, 1 ID, 2-BOLT, 3.89 BOLT CNTRS
11	1.00	104858	SPKT, 50B26, MOD, 1.000 BORE
12	2.00	190794	PLT, WEAR, ROTARY SLEEVE
13	2.00	190795	PLT, WEAR, ROTARY SLEEVE
14	9.00	800462	CHAIN, RLR, #40, RLR RVT
15	2.00	800502	CHN, LINK, CONN, #40
16	1.00	328587	MNT, ROTARY FOLDER, RH
17	1.00	328587-001	MNT, ROTARY FOLDER, LH
18	1.00	104832-001	ROTARY FOLDING ARM, RH
19	1.00	104832-002	ROTARY FOLDING ARM, LH

Arpac BOM

Parent Number: 17766 Parent Revision: A

Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 328590

Assembly Drawing Number: 328590

Description: ASSY, DRIVE, LEAD CHAIN

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	197826	SPKT, 60A32, MOD, 2.753 BORE, W/HOLE
2	2.00	108850-000C	CONVEYOR DR. SPRKT CARRIER,
3	2.00	190799-008	SPACER, SPROCKET CARRIER
4	2.00	190799-007	SPACER, SPROCKET CARRIER
5	1.00	195443	SHF, SPLINE, LEADDING CHAIN DRIVE
6	1.00	800610	CPLG, PHASE-LOCK 1-1/4 BORE
7	1.00	193095	SPKT, 60A20, MOD, 1.313 BORE, SPECIAL FOR PHASE ADJ
8	2.00	802820	BRG, FLG, 1-1/4 ID, 4-BOLT LIGHT-DUTY
9	1.00	197824	SPKT, 60A32, MOD, 2.753 BORE, W/3/4SLOT
10	1.00	808232	SPKT, 60A32
11	2.00	116258-000a	CORE, DRIVE SPOCKET CARRIER, WITH SPLINE
12	42.00	802178	SHAFT, SPLINED, SS, 1.973 X 1.757
13	1.00	800610	CPLG, PHASE-LOCK 1-1/4 BORE
14	1.00	806869-001	SPKT, 60A20

Arpac BOM

Parent Number: 17766 Parent Revision: A

Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 328591

Assembly Drawing Number: 328591

Description: ASSY, DRIVE, SPLINE SHAFT, TRAIL

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	2.00	108850-000C	CONVEYOR DR. SPRKT CARRIER,
2	1.00	133803	SHF, SPLINE, W/ HANDLE
3	1.00	134996	SHAFT,7/8 SQ
4	1.00	135005	ASSY, SLEEVE, SQUARE,
5	1.00	187303	SPACER, 4 BOLTS,
6	2.00	190802-001	SPACER, SPROCKET CARRIER, 0.32 LG
7	2.00	190802-002	SPACER, SPROCKET CARRIER, 1.58 LG
8	1.00	192759	SPKT, 60B20, MOD, 1.500 BORE
9	1.00	197824	SPKT, 60A32, MOD, 2.753 BORE, W/3/4SLOT
10	1.00	197826	SPKT, 60A32, MOD, 2.753 BORE, W/HOLE
11	1.00	802411	WRENCH, RATCHET 7/8 SQ X 16-1/2 LG
12	2.00	802832	BRG, FLG, 1-1/2 ID, 4-BOLT ALTERNATE FOR SEALMASTER

Arpac BOM

Parent Number: 17766 Parent Revision: A

Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 220975-001

Assembly Drawing Number: 220975

Description: ASSY, SCREW, ADJ, RH

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	108213	SUPPORT, GUIDE CHAIN
2	2.00	107918-100	SPACER, CHAIN GUIDE
3	14.00	800462	CHAIN, RLR, #40, RLR RVT
4	1.00	800502	CHN, LINK, CONN, #40
5	2.00	104853	SPKT, 40B42, MOD, 2.000 BORE
6	2.00	134997	SPACER, 1"OD X 17/32 ID
7	4.00	805929	BRG, FLG, 2 ID, 2-BOLT STANDARD-DUTY
8	2.00	220980	BLK, RH THREAD, RAIL ADJ
9	2.00	220981	BLK, LH THREAD, RAIL ADJ
10	1.00	190805	SCREW, ADJ, W/OUT HANDLE
11	1.00	190806	SCREW, ADJ, W/HANDLE
12	1.00	324793	HANWHEEL, WITH INDICATOR
13	1.00	324771	SLEEVE, 7/8 SQUARE HOLE,
14	1.00	238683	WLDMT, WRENCH, INSERT
15	1.00	241985	PLT, HOLDER, WRENCH
16	1.00	260166	BKT, PROX
17	1.00	324796	WASHER, SPECIAL

Arpac BOM

Parent Number: 17766 Parent Revision: A
Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:
Assembly Part Number: 328589
Assembly Drawing Number: 328589
Description: ASSY, IDLER, COMPRESSION SECTION
Quantity: 2.00

Item	Qty	Arpac Part	Description
1	1.00	220971	SHAFT, IDLER, COMPRESSION SECTION
2	2.00	112726	SPKT, 60A28, IDL W/BRG
3	1.00	190809-011	SPACER
4	1.00	190809-010	SPACER
5	1.00	190809-004	SPACER, 2.08 LG

Arpac BOM

Parent Number: 17766 Parent Revision: A
Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:
Assembly Part Number: 345486
Assembly Drawing Number: 345486
Description: ASSY, CHAIN SUPPORT
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	2.00	190812-000A	CHAIN GUIDE(SHORT), RAIL PER 2 PARTS
2	2.00	190813-000A	CHAIN GUIDE(LONG)
3	26.00	801359	CLAMP, RAIL, SINGLE, 1.5 LG, SS, ROUND HOLE
4	4.00	226432-006	SPACER, 1 1/2 DIA, 3/8-16 THREAD, 0.75" LG
5	4.00	226432-005	SPACER, 1 1/2 DIA, 3/8-16 THREAD, 1.50" LG
6	4.00	237912	TENSIONER, CHN # 60

Arpac BOM

Parent Number: 17766 Parent Revision: A
Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:
Assembly Part Number: 291515
Assembly Drawing Number: 291515
Description: ASSY, GUIDE, SIDE, PRODUCT
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	2.00	283368	BKT, MTG, GUIDE
2	8.00	810231	ROD, ADJ, 5/8 DIA X 8 LG, 5/16-18 TAPPED THREAD, SS
3	4.00	283373	BLK, CLAMP
4	1.00	283419-001	GUIDE, SIDE, PRODUCT, RH
5	1.00	283419-002	GUIDE, SIDE, PRODUCT, LH
6	4.00	807831	CLIP, RAIL, SELFTIGHTENING, 5/16 STUD X 5/8 LG, SS, HEAVY DUTY

Arpac BOM

Parent Number: 17766 Parent Revision: A

Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 328585

Assembly Drawing Number: 328585

Description: ASSY, CHAIN, LUG

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	66.00	802579-001	BASECHAIN 863 - SOLD IN 10FT BX (COMES WITH CONNECTING LINK)
2	66.00	802579-002	FLIGHTS, TABLE TOP ONLY REPLACEMENT PIECES
3	44.00	836863	CHAIN, RLR, LINK CONN, #60 DOUBLE,CLIP
4	44.00	800519	LINK, CONN, #60, OFFSET
5	88.00	836856	SPACER, NYLON, 1/8" LG, FOR 1/4" SCR
6	22.00	246330	ARM, CONTROL, LUG
7	22.00	246329	LUG, FORMING, TRAY
8	22.00	800516	LINK, CONN, #60,
9	93.00	904690	SS FLAT 5/8 X 3/4, 303 (TIGHT TOL. BAR THICKNESS TOL +-.002 / WIDTH TOL
10	22.00	800290-061	FSNR, NUT, HEX, 1/4-20, SERRATED FLANGE, SS
11	22.00	800322-002	FSNR, BOLT, SHLDR, 5/16 DIA X 1/2 LG, SS
12	22.00	800290-061	FSNR, NUT, HEX, 1/4-20, SERRATED FLANGE, SS

Arpac BOM

Parent Number: 17766 Parent Revision: A

Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 304067-002

Assembly Drawing Number: 304067-002

Description: ASSY, SLIDE, LINEAR, DIVIDER, DYNAMIC, 47" EL

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	284132	SHAFT, DRIVE, SERVO
2	6.00	284133	ANGLE, MTG, DETECTION
3	1.00	284134	CHANNEL, SUPPORT, CARRIER, CABLE
4	2.00	284135	PLT, SUPPORT, CHANNEL, CARRIER, CALBE
5	1.00	284136	BKT, SUPPORT, CARRIER, CABLE
6	2.00	284137	PLT, MTG, SLIDE, LINEAR
7	1.00	284138	BLK, DETECTION, PROX
8	1.00	284139	ANGLE, FLAG, PROX
9	4.00	304066-002	BRKT, MOUNT, FRAME, X-Y SLIDE, 46" EL
10	2.00	372448	ADAPTER, MTG, GEARBOX 870783
11	20.00	845584	NUT, SLOT, M8
12	2.00	845672	LINEAR DRIVE, TOOTHED BELT, 700MM STROKE, TRUNNION FRONT LEFT AND RIGHT W
13	1.00	845673	LINEAR DRIVE, TOOTHED BELT, 500MM STROKE, TRUNNION MOUNT FRONT RIGHT W/ F
14	2.00	845674	COUPLING, BELLOWS, SS, 25MM D1 AND D2
15	2.00	845794	CHAIN, CABLE CARRIER, 884MM LONG
16	1.00	845801	MOUNTING BRKT, CABLE CARRIER, WIDTH 60.5MM, HOLECNTR = 37MM
17	2.00	851301-005	MOTOR, SERVO, VPL, 29 LB.IN,100MM BC, 4500 RPM, SMOOTH SHAFT
18	2.00	870783	GEARBOX, PLANETARY, INLINE, 10:1 RATIO, SINGLE STAGE, FOR A-B VPL-B1003F
19	2.00	871973	COUPLING, BELLOWS, SS, D1 22MM W KEY WAY, D2 25MM

Arpac BOM

Parent Number: 17766 Parent Revision: A
Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:
Assembly Part Number: 345164
Assembly Drawing Number: 345164
Description: ASSY, GUIDE, SLIDE, GUIDE, LANE
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	284059	BLK, MTG, PIVOT, GUIDE, SLIDE
2	1.00	284060	GUIDE PROFILE
3	1.00	345162	FRAME, SUPPORT, SLIDE, GUIDE, LANE
4	1.00	284064	BLK, MTG, GUIDE, SHORT, GUIDE, SLIDE
5	2.00	284065	GUIDE, LANE, LONG, GUIDE, SLIDE
6	2.00	345160	BLK, MTG, GUIDE, LONG
7	2.00	284069	GUIDE, LANE, SHORT, GUIDE, SLIDE
8	2.00	284071	PIN, MNT, PIVOT, GUIDE, SLIDE
9	1.00	345161	BLK, MTG, PIVOT, GUIDE, SLIDE
10	1.00	345163	BAR, STIFFNER, GUIDE, DIVIDER
11	1.00	828103	SYSTEM, SLIDE, BASED, SS
12	1.00	828104	SLIDE, SPACER, SS, B = 896MM OAL, C&D = 43MM

Arpac BOM

Parent Number: 17766 Parent Revision: A

Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 345164-001

Assembly Drawing Number: 345164

Description: ASSY, GUIDE, SLIDE, GUIDE, LANE, LH

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	284059	BLK, MTG, PIVOT, GUIDE, SLIDE
2	1.00	284060	GUIDE PROFILE
3	1.00	345162-001	FRAME, SUPPORT, SLIDE, GUIDE, LANE, LH
4	1.00	284064	BLK, MTG, GUIDE, SHORT, GUIDE, SLIDE
5	2.00	284065	GUIDE, LANE, LONG, GUIDE, SLIDE
6	2.00	345160	BLK, MTG, GUIDE, LONG
7	2.00	284069	GUIDE, LANE, SHORT, GUIDE, SLIDE
8	2.00	284071	PIN, MNT, PIVOT, GUIDE, SLIDE
9	1.00	345161-001	BLK, MTG, PIVOT, GUIDE, SLIDE, LH
10	1.00	345163	BAR, STIFFNER, GUIDE, DIVIDER
11	1.00	828103	SYSTEM, SLIDE, BASED, SS
12	1.00	828104	SLIDE, SPACER, SS, B = 896MM OAL, C&D = 43MM

Arpac BOM

Parent Number: 17766 Parent Revision: A

Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 372271

Assembly Drawing Number: 372271

Description: ASSY, GUIDE, LANE, ENTRY, DIVIDER, DYNAMIC, MAX 10" W

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	4.00	284073	BAR, SUPOPRT, VER, GUIDE, LANE
2	2.00	372299	BAR, SUPPORT, GUIDE, LANE
3	2.00	284077	PLT, SUPPORT, SCREW, ADJ, GUIDE, LANE
4	4.00	284080	HOUSING, BLK, BRG, GUIDE, LANE
5	2.00	284081	PLT, SIDE, GUIDE, LANE
6	2.00	284082	BLK, SUPPORT, GUIDE, LANE
7	4.00	289850	GUIDE, LANE, SHORT, GUIDE, SLIDE
8	1.00	293304	NUT, GUIDE, SCREW, ADJ, GUIDE, LANE
9	1.00	293305	NUT, GUIDE, SCREW, ADJ, GUIDE, LANE
10	1.00	372274	SCREW, ADJ, GUIDE, LANE, 17" OPEN
11	8.00	827974	BRG, LINEAR, BALL, ID25MM, OD35MM, L40MM
12	1.00	827975	INDICATOR, DIGITAL, DIRECT DRIVE, INCLINED UPPER, P4MM, CW
13	2.00	845289	BUSH, OILITE, 20MM OD X 15MM ID X 15MML
14	2.00	845292	OBSOLETE-USE 846868 (BRG, AXIAL, DEEP GROOVE, ID15MM, OD28MM, THK9MM)
15	4.00	845590	BUSH, FLG, 8MM ID X 10MM OD X 9.5MM LG X 15MM FLG OD

Arpac BOM

Parent Number: 17766 Parent Revision: A

Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 372272

Assembly Drawing Number: 372272

Description: ASSY, GUIDE, LANE, EXIT, DIVIDER, DYNAMIC

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	372274	SCREW, ADJ, GUIDE, LANE, 17" OPEN
2	1.00	293304	NUT, GUIDE, SCREW, ADJ, GUIDE, LANE
3	1.00	293305	NUT, GUIDE, SCREW, ADJ, GUIDE, LANE
4	4.00	284198	HOUSING, BLK, BRG, GUIDE, LANE
5	2.00	372275	SHAFT, GUIDE, SUPPORT, GUIDE, LANE
6	2.00	284200	PLT, SIDE, GUIDE, LANE
7	2.00	284201	BKT, HINGE, GUIDE, LANE
8	1.00	284212	CHANNEL, SUPPORT, CARRIER, CABLE
9	2.00	284213	PLT, GUIDE, SIDE, GUIDE, LANE
10	1.00	372276	PLT, SUPPORT, TOP, GUIDE, LANE
11	1.00	284215	BKT, MTG, GUIDE, LINEAR
12	5.00	289850	GUIDE, LANE, SHORT, GUIDE, SLIDE
13	1.00	372277	ASSY, PRODUCT COUNT, DYN DIV
14	8.00	827905	BRG, BALL, LINEAR, ID20MM, OD28MM, L30MM
15	1.00	827975	INDICATOR, DIGITAL, DIRECT DRIVE, INCLINED UPPER, P4MM, CW
16	2.00	845289	BUSH, OILITE, 20MM OD X 15MM ID X 15MML
17	2.00	845292	OBSOLETE-USE 846868 (BRG, AXIAL, DEEP GROOVE, ID15MM, OD28MM, THK9MM)
18	4.00	845590	BUSH, FLG, 8MM ID X 10MM OD X 9.5MM LG X 15MM FLG OD
19	1.00	845798	CABLE CARRIER, INNER WDT 20MM, BEND RADIUS 38MM, LENGTH 2.1067FT
20	1.00	845799	MOUNTING BRACKETS, SET, CABLE CARRIER, W/TIE WRAP ENDS
21	1.00	848286	HANDLE, CRANK, AL, 12 MM SQUARE BORE

Arpac BOM

Parent Number: 17766 Parent Revision: A

Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 372287

Assembly Drawing Number: 372287

Description: ASSY, CONV, LONG, DIVIDER, DYNAMIC

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	2.00	284097	WLDMT, LEG, CONV, DIVIDER, DYNAMIC
2	4.00	300373	RLR, DEFLECTION, L = 28.42
3	4.00	309572-009	SHAFT, IDLER, 28.594 LG
4	4.00	315002	PLT, CONNECTING, CONV, DIVIDER, DYNAMIC
5	7.00	345146	CROSSBAR, INTERMEDIATE
6	1.00	372288	PLT, SIDE, CONV, DIVIDER, DYNAMIC
7	1.00	372288-001	PLT, SIDE, CONV, DIVIDER, DYNAMIC
8	6.00	801296-002	RAIL, GUIDE, TEE, 1.60 W, 10' LG, SS
9	42.00	801359	CLAMP, RAIL, SINGLE, 1.5 LG, SS, ROUND HOLE
10	2.00	850128	EXTRUSION, UHMW, J-LEGS, 10' LG, FOR 11GA SHEET

Arpac BOM

Parent Number: 17766 Parent Revision: A

Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

Assembly Part Number: 372296

Assembly Drawing Number: 372296

Description: ASSY, CONV, SHORT, DIVIDER, DYNAMIC

Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	283569	WSHR, SPECIAL, M10
2	2.00	284097	WLDMT, LEG, CONV, DIVIDER, DYNAMIC
3	2.00	288168	STOP, PINION, CENTRAL
4	6.00	288207	STRIP, WEAR, CONV, DIVIDER, DYNAMIC
5	2.00	300344	BEARING SUPPORT
6	2.00	300373	RLR, DEFLECTION, L = 28.42
7	1.00	309302	PIN, HOLDING, TORQUE ARM
8	2.00	309572-009	SHAFT, IDLER, 28.594 LG
9	2.00	315002	PLT, CONNECTING, CONV, DIVIDER, DYNAMIC
10	1.00	316168-006	SHAFT, IDLER, CONV, INFEEED, A=28.85
11	1.00	345145	SHAFT, DRIVE, SQ, CONVEYOR, 1" DIA
12	3.00	345146	CROSSBAR, INTERMEDIATE
13	1.00	372298-100	PLT, SIDE, CONV, SHORT, DRIVE, 1.0 HP
14	1.00	372298-101	PLT, SIDE, CONV, SHORT, DRIVE, 1.0 HP
15	18.00	801359	CLAMP, RAIL, SINGLE, 1.5 LG, SS, ROUND HOLE
16	2.00	810473	BRG, CART, 1/2 X 1-1/8 X 5/16 LG, SS,DOUBLE SEALED
17	2.00	828156	FTG, GREASE, STRAIGHT, SS, 1/4-28
18	2.00	839632	BRG, FLG, 1 ID, 4-BOLT
19	9.00	839679	SPKT, 24T, EZ TRACKING GREY ACETAL,1.5"SQ BORE
20	2.00	850128	EXTRUSION, UHMW, J-LEGS, 10' LG, FOR 11GA SHEET
21	1.00	871959	GEARMOTOR, Ø1" HOLLOW SHAFT, 15:1, 116 RPM, 1.5 HP, 230/460 VAC, W/ TORQUE

Arpac BOM

Parent Number: 17766 Parent Revision: A
Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:
Assembly Part Number: 372321
Assembly Drawing Number: 372321
Description: ASSY, FRAME, DIVIDER, DYNAMIC, 47" ELEVATION
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	372326	ASSY, FRAME, MAIN, DIVIDE, DYNAMIC, 47" EL
2	4.00	284186	WLDMT, MBR, FRAME, HOR, UPR
3	2.00	372327	GUARD, END, LWR
5	4.00	827619	LEVELER, ARTICULATING, 20000 # CAP, 1-8 STEM, 7.88 HIGH, CRS 4" DIA X 2"

Arpac BOM

Parent Number: 17766 Parent Revision: A
Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:
Assembly Part Number: 372306
Assembly Drawing Number: 372306
Description: ASSY, ROLLER, NOSE
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	372308	SHAFT, IDLER, CONV, INFEEED
2	2.00	828156	FTG, GREASE, STRAIGHT, SS, 1/4-28
3	1.00	372307	BEARING SUPPORT
4	1.00	372307-001	BEARING SUPPORT
5	2.00	810473	BRG, CART, 1/2 X 1-1/8 X 5/16 LG, SS,DOUBLE SEALED

Arpac BOM

Parent Number: 17766 Parent Revision: A
Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:
Assembly Part Number: 121600-001A
Assembly Drawing Number: 121600
Description: ASSY, MAGAZINE PNEUMATICS TS-2000 RC
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	10.00	808787	OBSOLETE - USE 851532 - FTG, CONN, 1/4 OD TBG PUSH-ON X 1/8 UNI MALE
2	1.00	809364	REPLACED BY 861212***FTG, UNION, Y, PUSH-ON 3/8 OD TBG X 1/2 OD TBG
3	2.00	809365	FTG, UNION, Y, PUSH-ON 1/4 OD TBG X 3/8 OD TBG
6	4.00	810015	CUP, VACUUM, 80MM, 1/4 NPT

Arpac BOM

Parent Number: 17766 Parent Revision: A
Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:
Assembly Part Number: 135005
Assembly Drawing Number: 135005
Description: ASSY, SLEEVE, SQUARE,
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	134996	SHAFT,7/8 SQ
2	1.00	135004	SLEEVE, SQUARE, 7/8 SQ. ID
3	1.00	800318-002	PIN, ROLL, 1/4 DIA X 3/4 LG,
4	3.00	900550	CRS SQ 1, 1018

Arpac BOM

Parent Number: 17766 Parent Revision: A
Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:
Assembly Part Number: 372277
Assembly Drawing Number: 372277
Description: ASSY, PRODUCT COUNT, DYN DIV
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	1.00	284203	WLDMT, SENSOR SUPPORT BRKT
2	1.00	284206-001	BAR, VERTICAL ADJ, 13" LG
3	4.00	284207	PLT, FLANGE, CLMP
4	1.00	372280	BAR, BRIDGE, ADJ
5	2.00	284209	BAR, BRKT, SUPPORT
6	2.00	284210	BLK, CLAMP BODY
7	2.00	845686	HANDLE, ADJ, M6X1, THRD 45MM, HNDL RAD 30MM
8	1.00	306874	PLT, ADAPTOR, MTG, SENSOR

Arpac BOM

Parent Number: 17766 Parent Revision: A
Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:
Assembly Part Number: 372326
Assembly Drawing Number: 372326
Description: ASSY, FRAME, MAIN, DIVIDE, DYNAMIC, 47" EL
Quantity: 1.00

Item	Qty	Arpac Part	Description
1	4.00	284169	WLDMT, MBR, FRAME, HOR, LWR
2	1.00	372328	WLDMT, FRAME, SIDE
3	1.00	372329	WLDMT, FRAME, SIDE

Date: 12/1/2020

Time: 1:17:55PM

Arpac BOM

Parent Number: 17766 Parent Revision: A

Description: ASSY, FINAL MACH, W/LD-400, TS-2200, 47" ELEV, LH
Model:

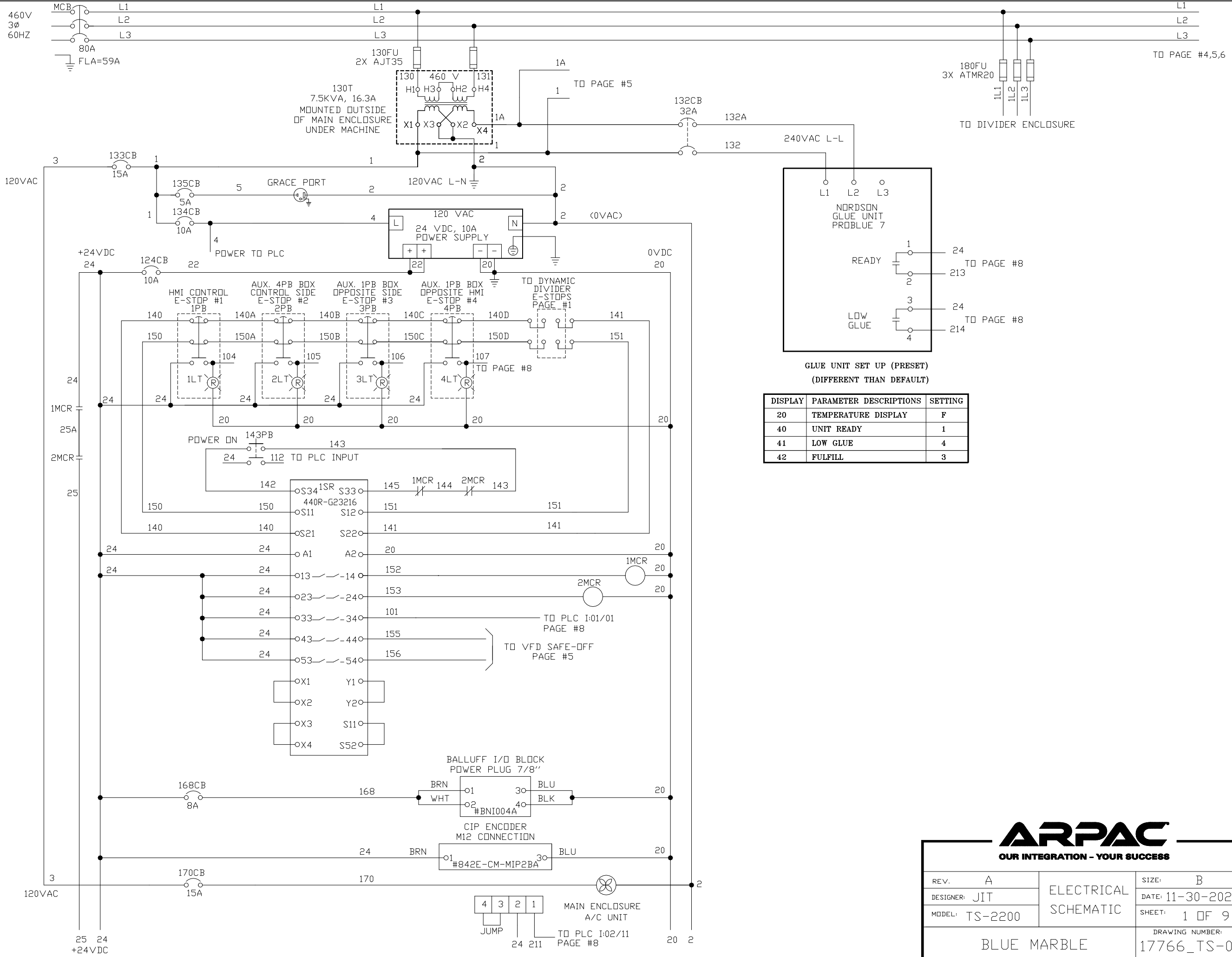


Electrical Schematics

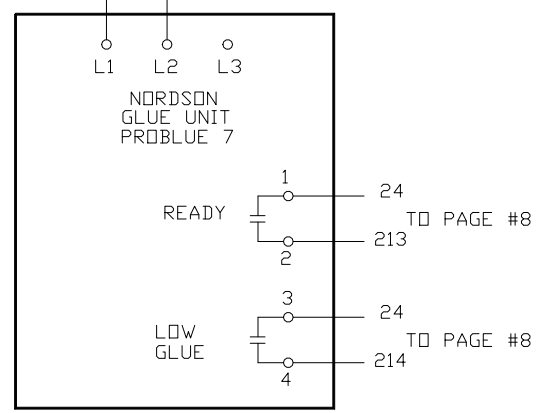
B.1. Electrical Schematics

This section contains the electrical schematics for this machine.

460V
3Ø
60HZ
80A
FLA=59A



180FU
3X ATMR20
1L1
1L2
1L3
TO DIVIDER ENCLOSURE



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

DISPLAY	PARAMETER DESCRIPTIONS	SETTING
20	TEMPERATURE DISPLAY	F
40	UNIT READY	1
41	LOW GLUE	4
42	FULFILL	3



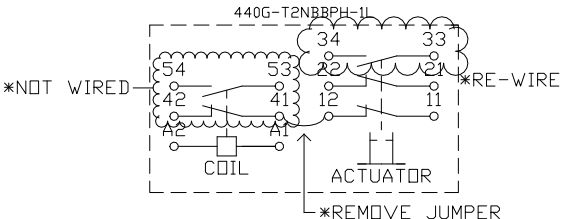
REV. A	ELECTRICAL SCHEMATIC	SIZE: B
DESIGNER: JIT		DATE: 11-30-2020
MODEL: TS-2200		SHEET: 1 OF 9
BLUE MARBLE		DRAWING NUMBER: 17766_TS-01

CANOPY SAFETY ZONE

440G-T2NBBPH-1L LOCKABLE LOCKABLE DOOR SWITCH TERMINAL WIRING

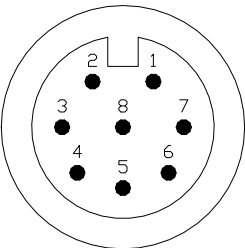
TERMINAL	COLOR	DESCRIPTION
A1	GRN	SOLENOID POWER
A2	BLUE	0VDC
11	RED	SAFETY A
12	RED/BLK	SAFETY A
21	RED/WHT	SAFETY B
22	RED/YEL	SAFETY B
33	BRN	+24 VDC
34	WHT	AUX. CONTACT (TO PLC)
41	N/A	*NOT CONNECTED
42	N/A	*NOT CONNECTED
53	N/A	*NOT CONNECTED
54	N/A	*NOT CONNECTED

```
**REMOVE JUMPER BETWEEN 12 AND 41
```



DOOR SWITCH CABLE
PINS - 440G-T2NBBPH-1L

PIN	CLR	DESCRIPTION
1	WHT	SOLENOID A POWER
2	BRN	+24 VDC
3	GRN	SOLENOID A POWER
4	YEL	SAFETY B
5	GRY	SAFETY A
6	PNK	SAFETY B
7	BLU	+24VDC
8	RED	SAFETY A



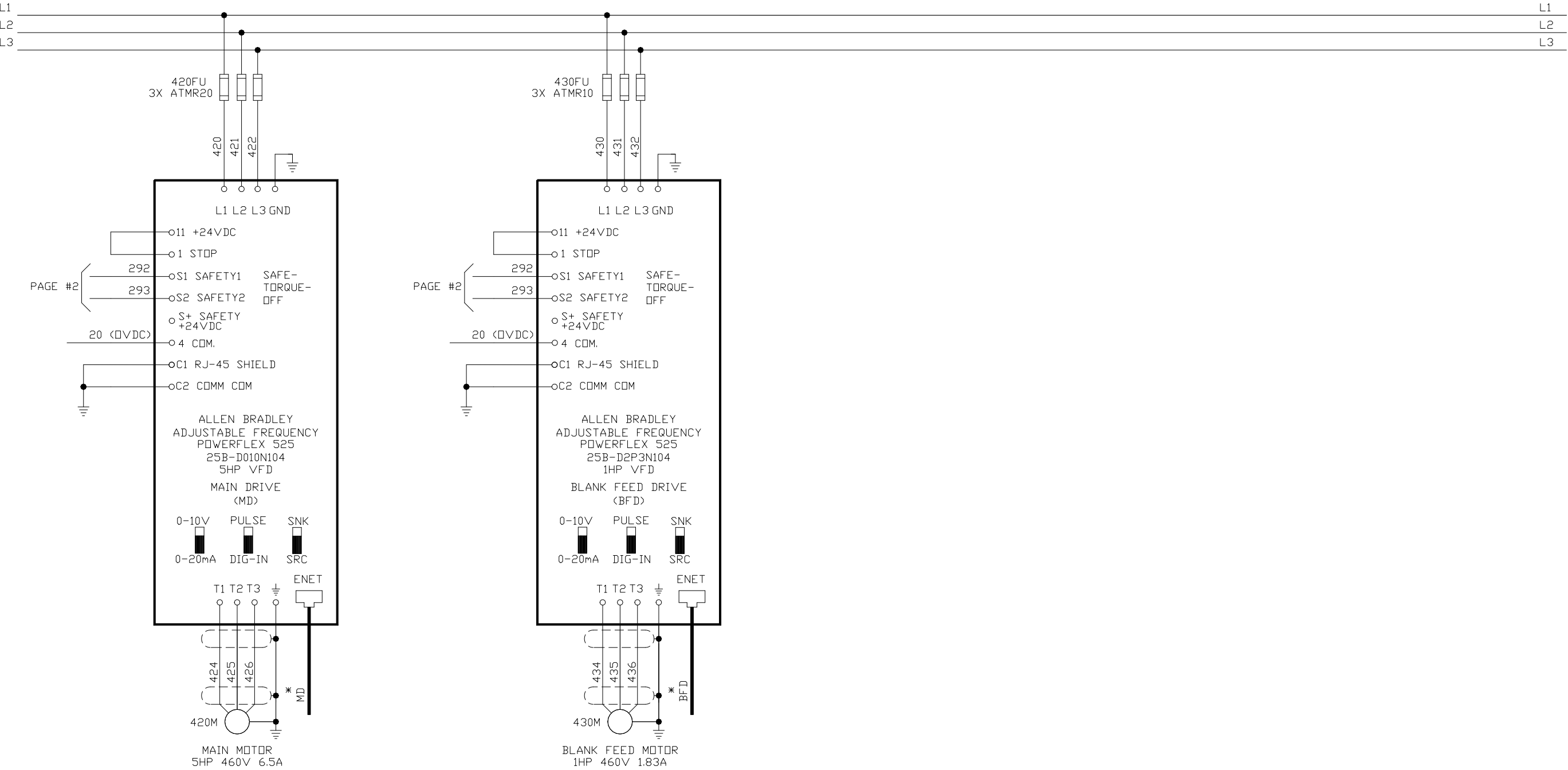
24 25
24 VDC

ARPAC
OUR INTEGRATION - YOUR SUCCESS

REV. A	ELECTRICAL SCHEMATIC	SIZE: B
DESIGNER: JIT		DATE: 11-30-2020
MODEL: TS-2200		SHEET: 2 OF 17
BLUE MARBLE		DRAWING NUMBER: 17766 TS-02

PAGE LEFT INTENTIONALLY BLANK

ARPAC OUR INTEGRATION - YOUR SUCCESS		
REV. A	ELECTRICAL SCHEMATIC	SIZE: B
DESIGNER: JIT		DATE: 11-30-2020
MODEL: TS-2200		SHEET: 3 OF 17
BLUE MARBLE		DRAWING NUMBER: 17766_TS-03



POWERFLEX 525 MAIN DRIVE SET UP (PRESET)
(DIFFERENT THAN DEFAULT)

DISPLAY	PARAMETER DESCRIPTIONS	SETTING
P031	RATED VOLTAGE	460
P033	MOTOR OL CURRENT	*
P046	START SOURCE	5 ETH
P047	SPEED REFERENCE	15 ETH
P041	ACCELERATION TIME	1
P042	ACCELERATION TIME	0.5
P044	MAXIMUM FREQUENCY	90
A543	START AT POWER UP	1.0

* SET TO THE MAXIMUM ALLOWABLE MOTOR CURRENT

ARPAC

OUR INTEGRATION - YOUR SUCCESS

REV. A

DESIGNER: JIT

MODEL: TS-2200

SIZE: B

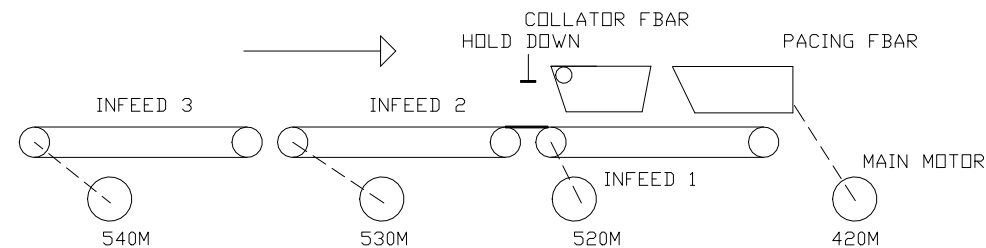
DATE: 11-30-2020

SHEET: 4 OF 17

ELECTRICAL SCHEMATIC

DRAWING NUMBER: 17766_TS-04

BLUE MARBLE



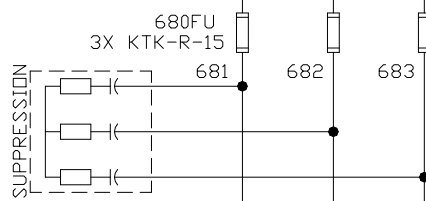
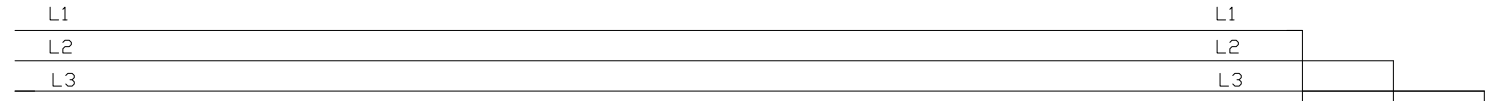
DISPLAY	PARAMETER DESCRIPTIONS	SETTING
P031	RATED VOLTAGE	460
P033	MOTOR OL CURRENT	*
P046	START SOURCE	5 ETH
P047	SPEED REFERENCE	15 ETH
P041	ACCELERATION TIME	1
P042	ACCELERATION TIME	0.5
P044	MAXIMUM FREQUENCY	90
A543	START AT POWER UP	1.0

ARPAC
OUR INTEGRATION - YOUR SUCCESS

REV. A	ELECTRICAL SCHEMATIC	SIZE: B
DESIGNER: JIT		DATE: 11-30-2020
MODEL: TS-2200		SHEET: 5 OF 17
BLUE MARBLE		DRAWING NUMBER: 17766_TS-05

+24VDC
24

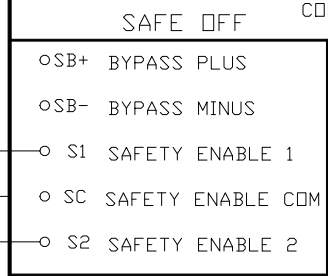
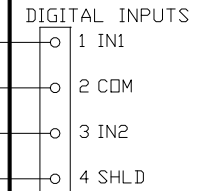
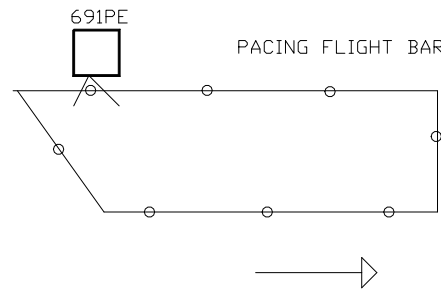
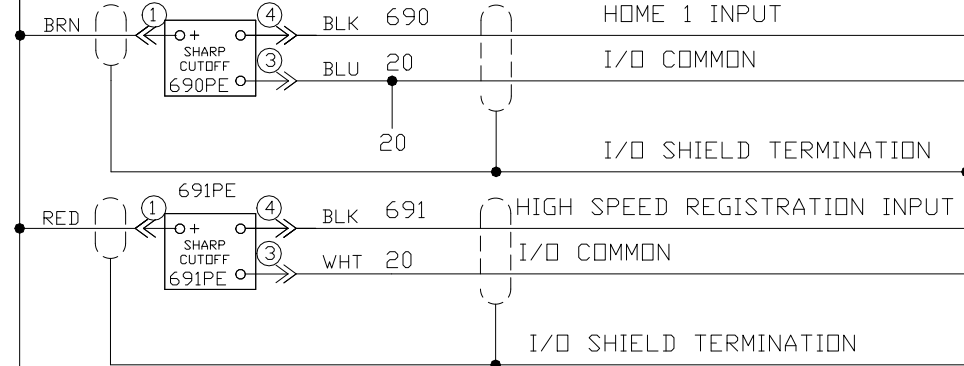
FROM PAGE #1
208VAC



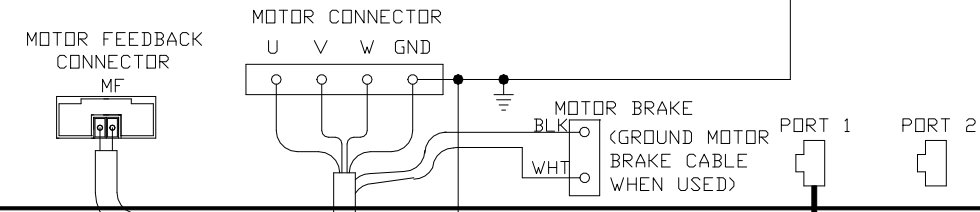
FROM PAGE #1
+24VDC
24 20

PACING FLIGHT BAR DETECTED
<VIRTUAL AXIS "0" POSITION SETTING>

COLLATOR FLIGHT BAR HOME

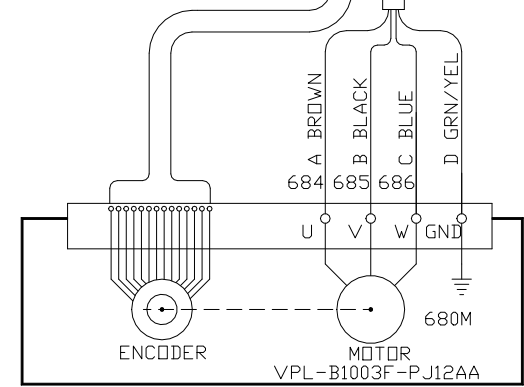


ALLEN BRADLEY
KINETIX 5500
2198-H015-ERS
AXIS MODULE
COLLATOR FLIGHT BAR SERVO CONTROLLER AND DRIVE
<FBSD>



SINGLE CABLE
#2090-CSBM1DF-14AAxx

<CLAMP SHIELDED
CABLE TO SERVO>



*INSTALL WITH 1.6" CLEARANCE TOP AND BOTTOM

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/ORANGE
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

FROM PAGE #16

ARPAC
OUR INTEGRATION - YOUR SUCCESS

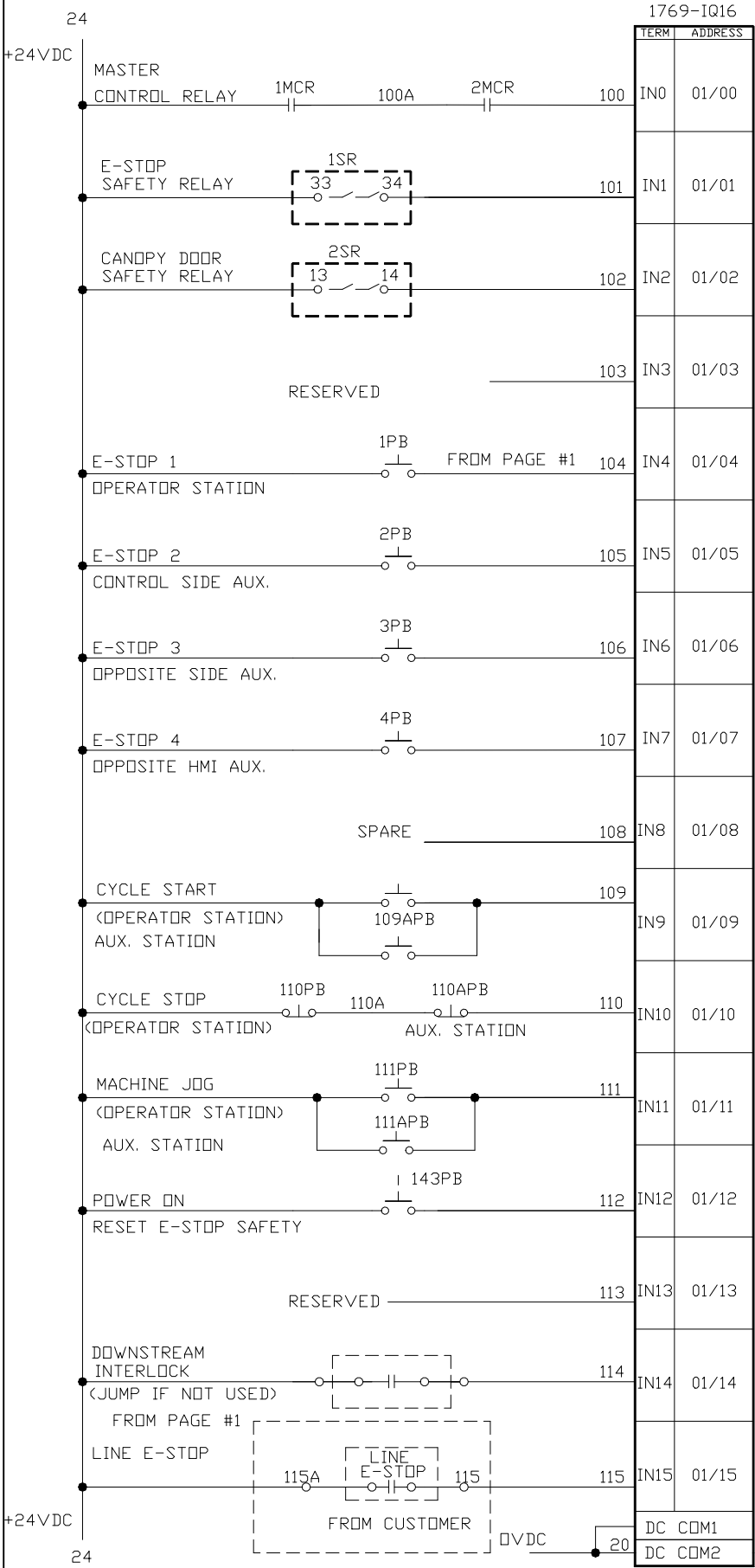
REV. A	ELECTRICAL SCHEMATIC	SIZE: B
DESIGNER: JIT		DATE: 11-30-2020
MODEL: TS-2200		SHEET: 6 OF 17
BLUE MARBLE		DRAWING NUMBER: 17766_TS-06

PAGE LEFT INTENTIONALLY BLANK

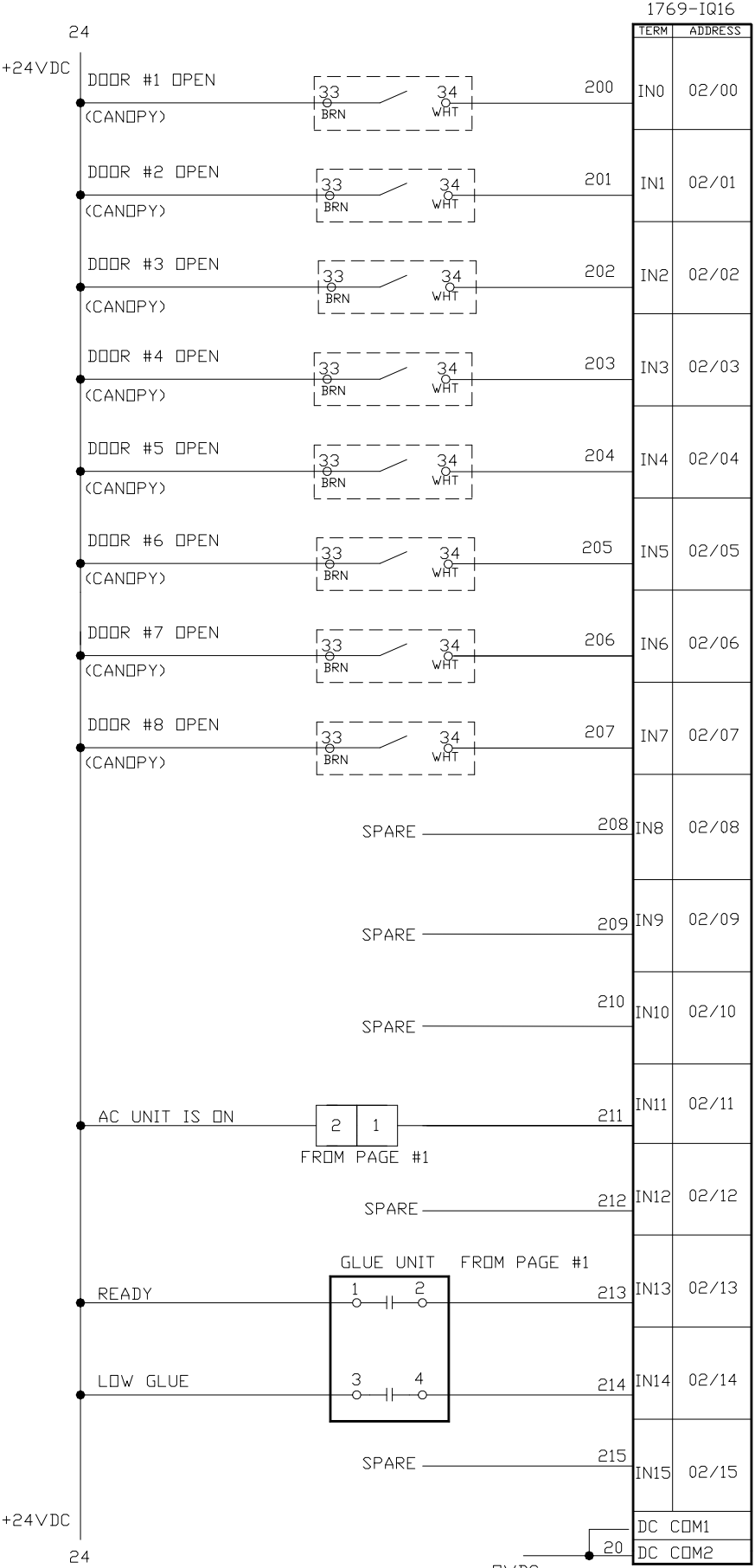


 OUR INTEGRATION - YOUR SUCCESS			
REV. A	ELECTRICAL SCHEMATIC	SIZE: B	
DESIGNER: JIT		DATE: 11-30-2020	
MODEL: TS-2200		SHEET: 7 OF 17	
BLUE MARBLE		DRAWING NUMBER: 17766_TS-07	

INPUT MODULE #1



INPUT MODULE #2

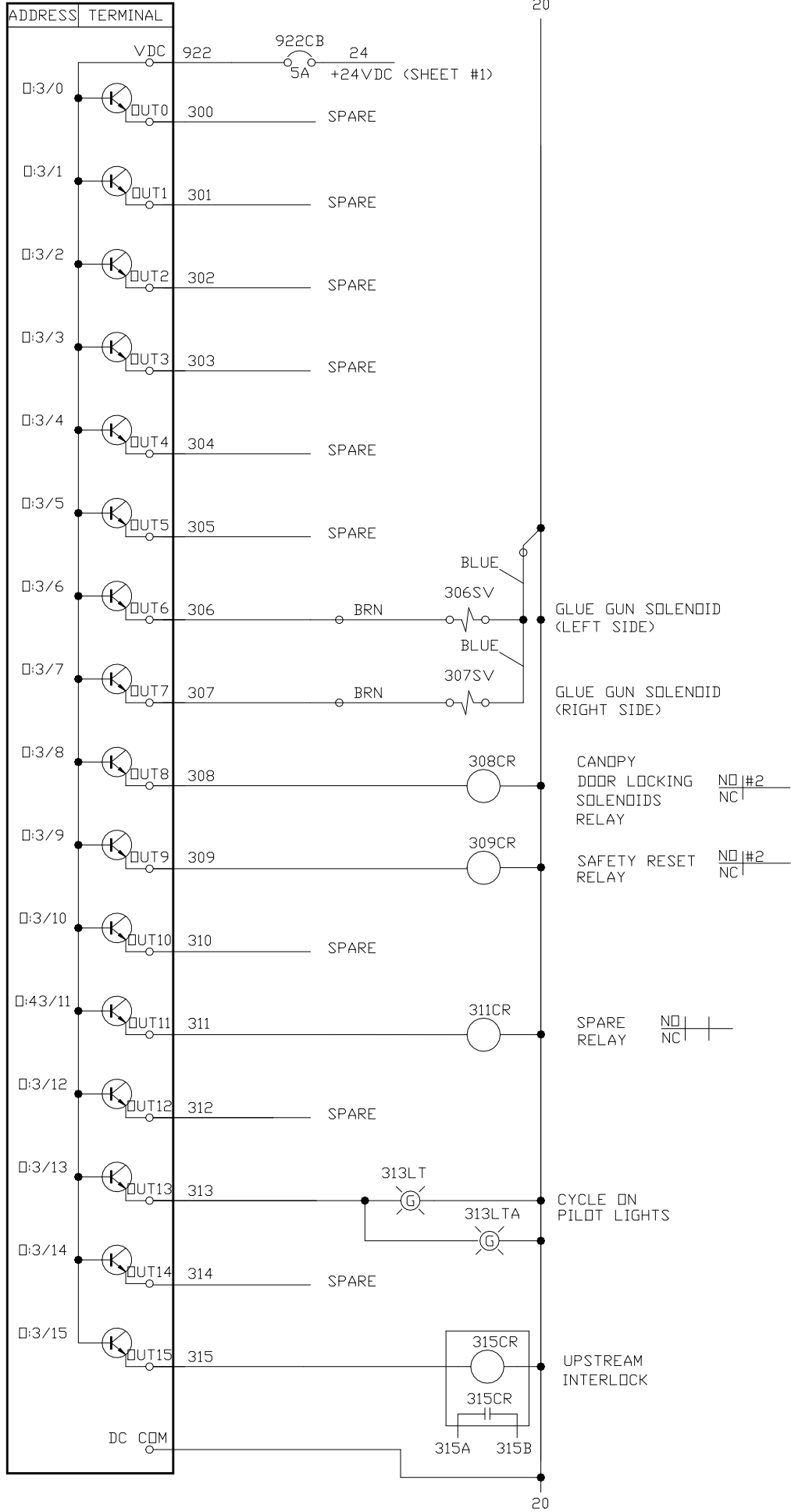


REV. A	ELECTRICAL SCHEMATIC	SIZE: B
DESIGNER: JIT		DATE: 11-30-2020
MODEL: TS-2200		SHEET: 8 OF 17
BLUE MARBLE		DRAWING NUMBER: 17766_TS-08

1769-DB16

OUTPUT MODULE #3

BLANK



REV. A

DESIGNER: JIT

MODEL: TS-2200

ELECTRICAL SCHEMATIC

SIZE: B

DATE: 11-30-2020

SHEET: 9 OF 17

DRAWING NUMBER: 17766_TS-09

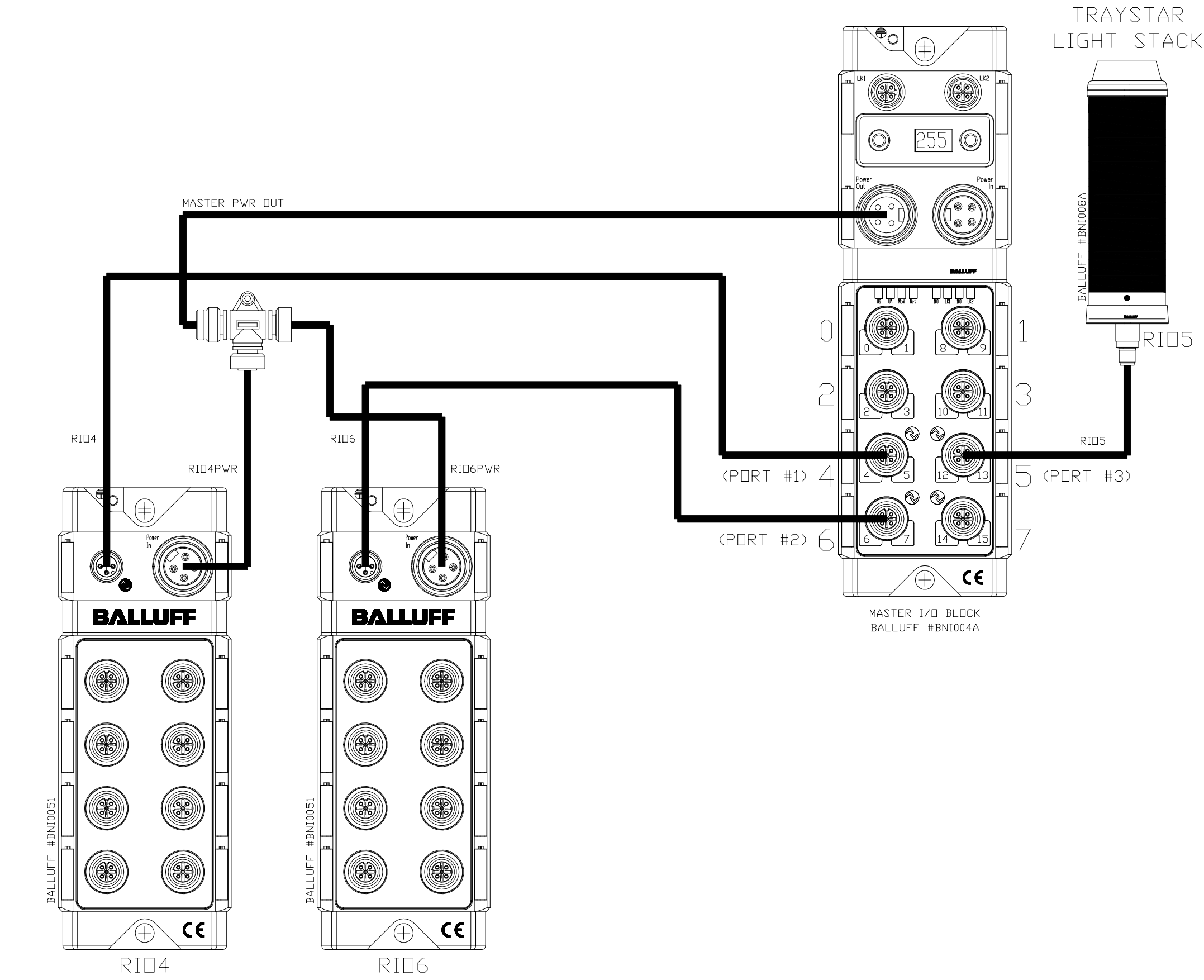
OUR INTEGRATION - YOUR SUCCESS

BLUE MARBLE

PAGE LEFT INTENTIONALLY BLANK

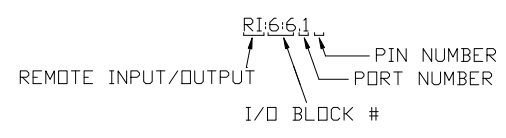
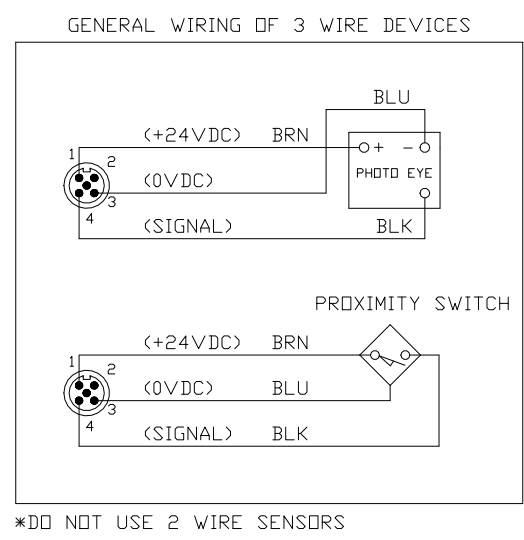
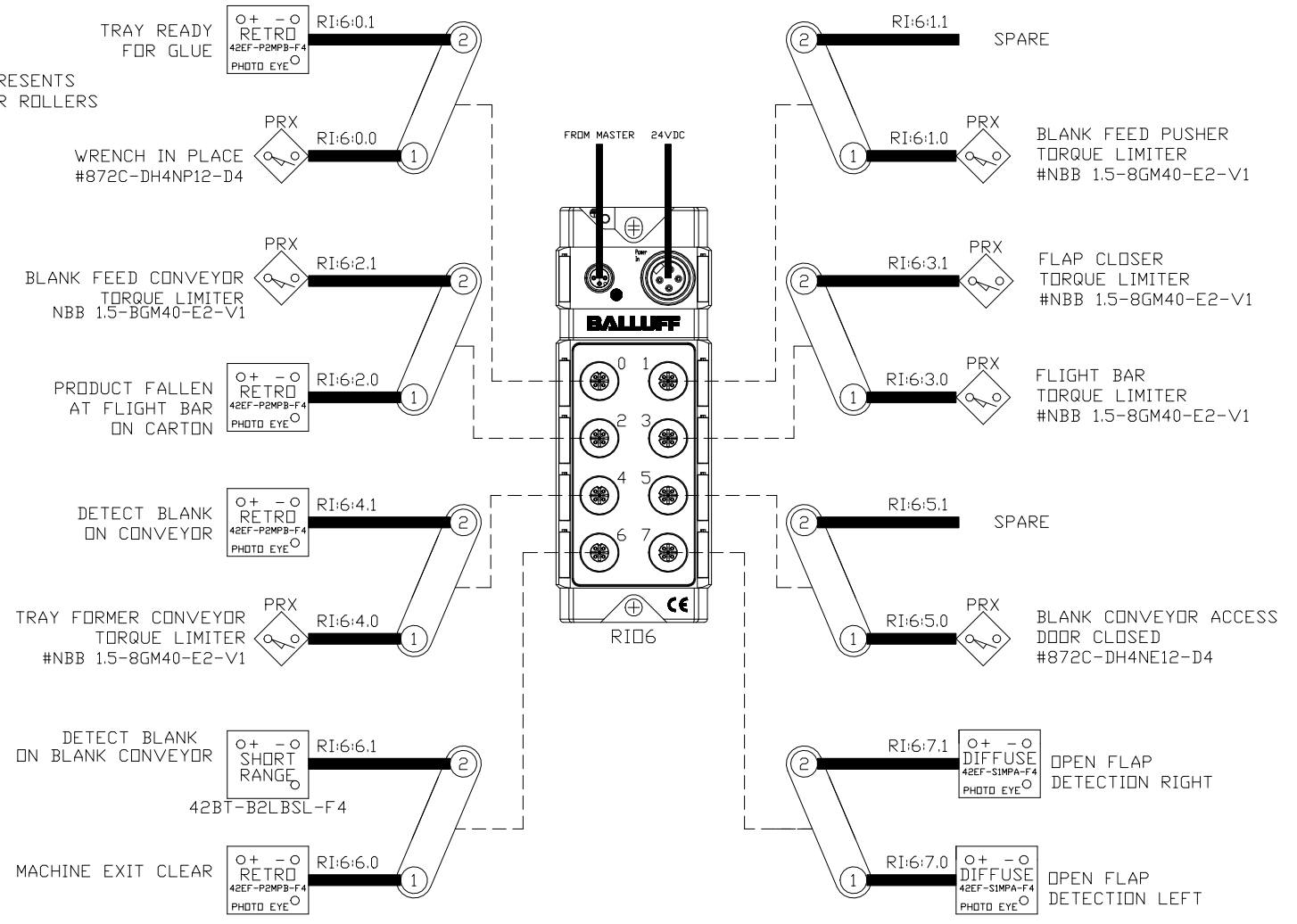
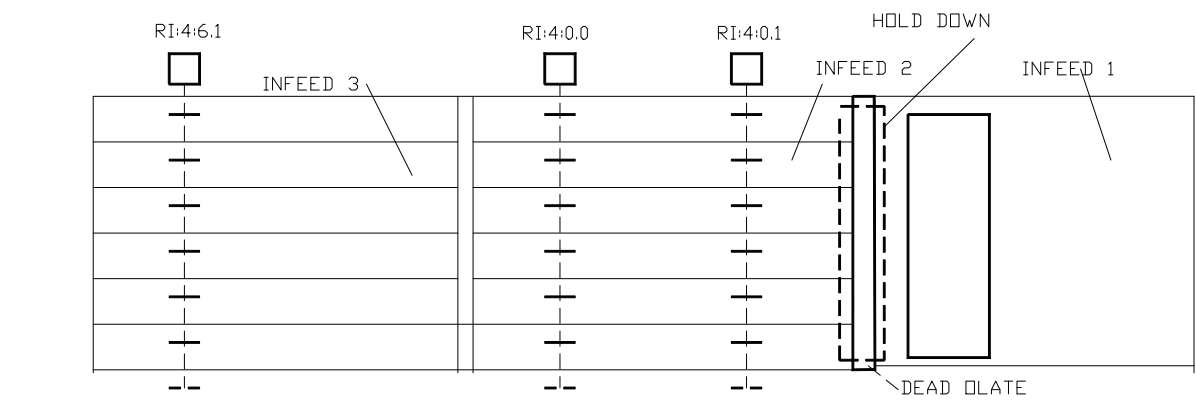
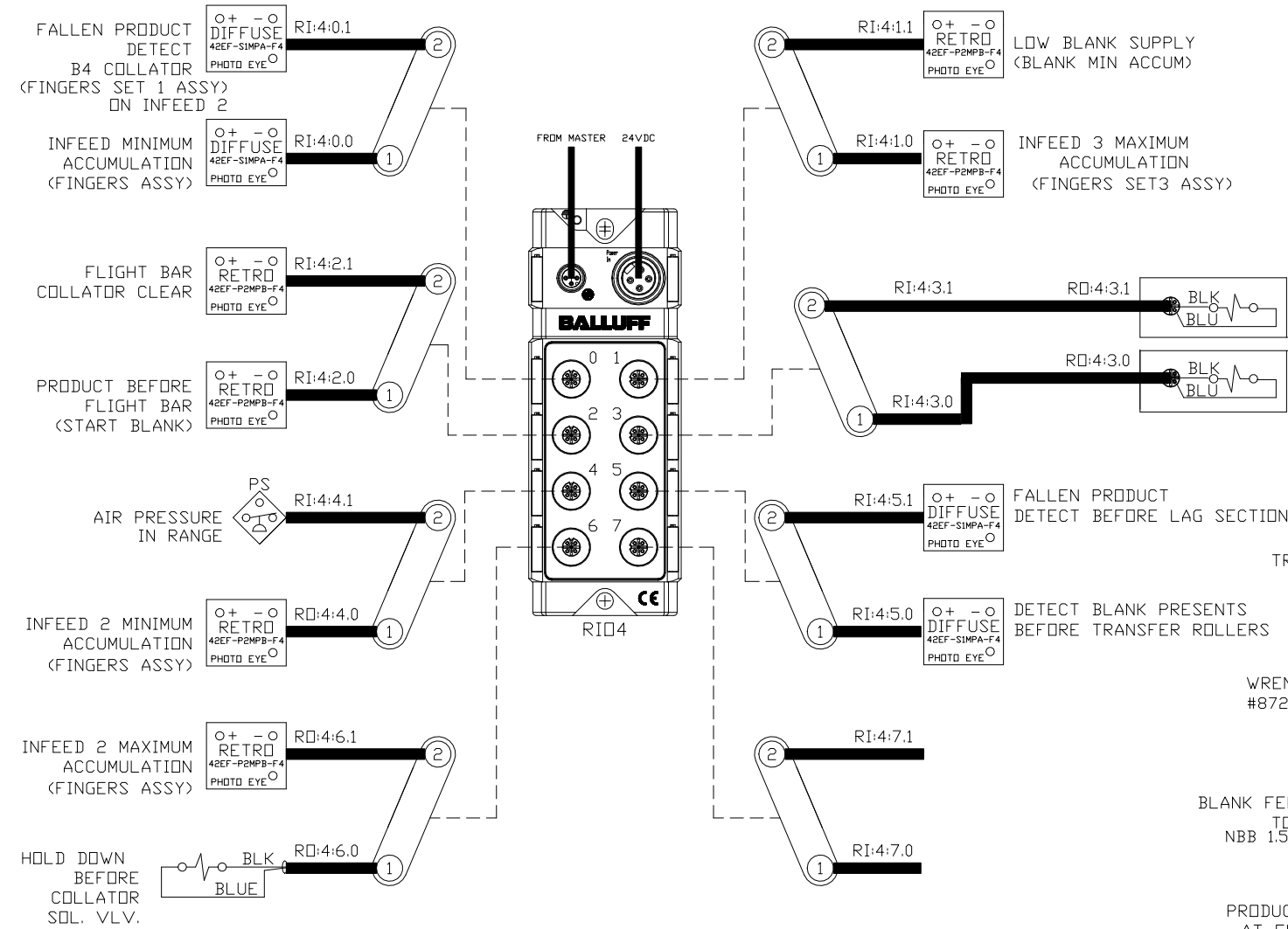


 OUR INTEGRATION - YOUR SUCCESS			
REV. A	ELECTRICAL SCHEMATIC	SIZE: B	
DESIGNER: JIT		DATE: 11-30-2020	
MODEL: TS-2200		SHEET: 10 OF 17	
BLUE MARBLE		DRAWING NUMBER: 17766_TS-10	



I/O BLOCK TOPOLOGY

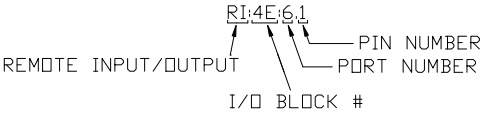
ARPAC OUR INTEGRATION - YOUR SUCCESS			
REV. A		ELECTRICAL SCHEMATIC	SIZE: B
DESIGNER: JIT			DATE: 11-30-2020
MODEL: TS-2200			SHEET: 11 OF 17
BLUE MARBLE			DRAWING NUMBER: 17766_TS-11



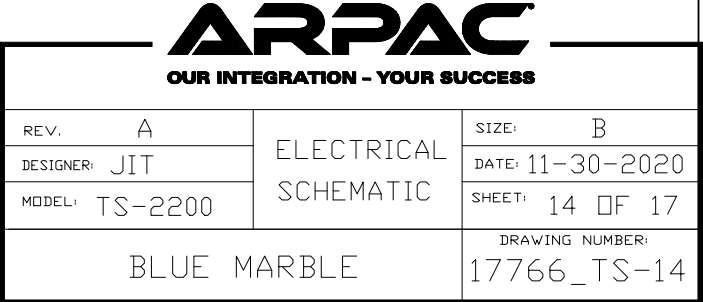
ARPAC
OUR INTEGRATION - YOUR SUCCESS

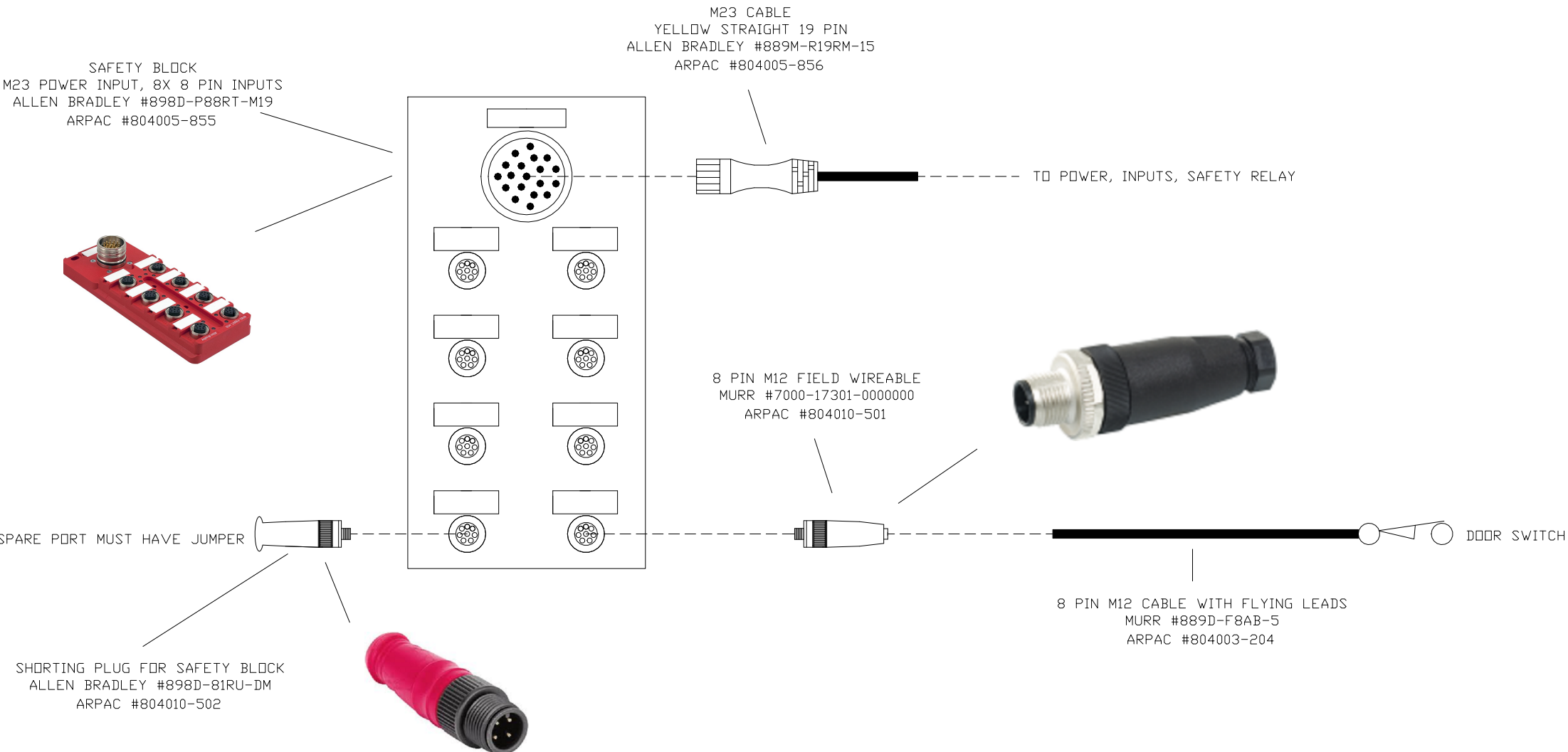
REV. A	ELECTRICAL SCHEMATIC	SIZE: B
DESIGNER: JIT		DATE: 11-30-2020
MODEL: TS-2200		SHEET: 12 OF 17
BLUE MARBLE		DRAWING NUMBER: 17766_TS-12

PAGE LEFT INTENTIONALLY BLANK



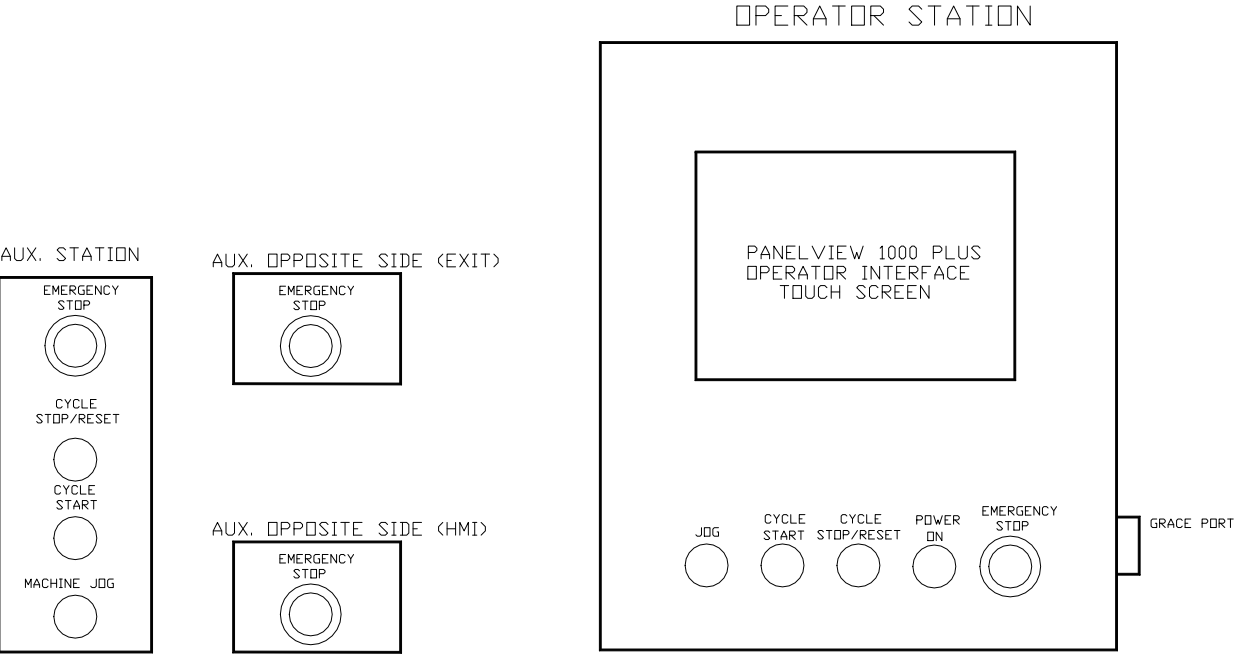
ARPAC OUR INTEGRATION - YOUR SUCCESS			
REV. A	ELECTRICAL SCHEMATIC	SIZE: B	
DESIGNER: JIT		DATE: 11-30-2020	
MODEL: TS-2200		SHEET: 13 OF 17	
BLUE MARBLE		DRAWING NUMBER:	17766_TS-13



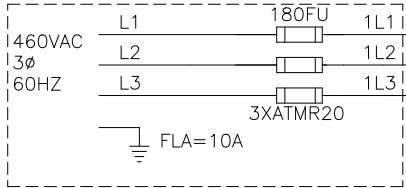


ARPAC
OUR INTEGRATION - YOUR SUCCESS

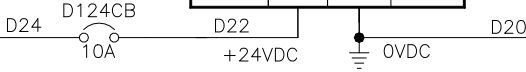
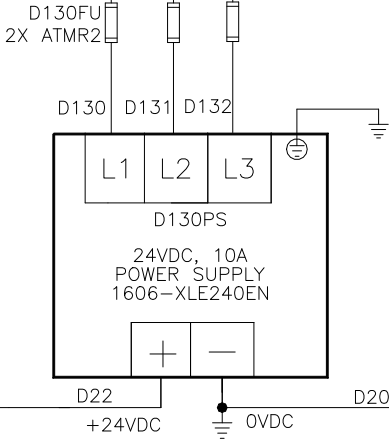
REV. A	ELECTRICAL SCHEMATIC	SIZE: B
DESIGNER: JIT		DATE: 11-30-2020
MODEL: TS-2200		SHEET: 15 OF 17
BLUE MARBLE		DRAWING NUMBER: 17766_TS-15



ARPAC OUR INTEGRATION - YOUR SUCCESS			
REV. A		ELECTRICAL SCHEMATIC	SIZE: B
DESIGNER: JIT			DATE: 11-30-2020
MODEL: TS-2200			SHEET: 17 OF 17
BLUE MARBLE			DRAWING NUMBER: 17766_TS-17

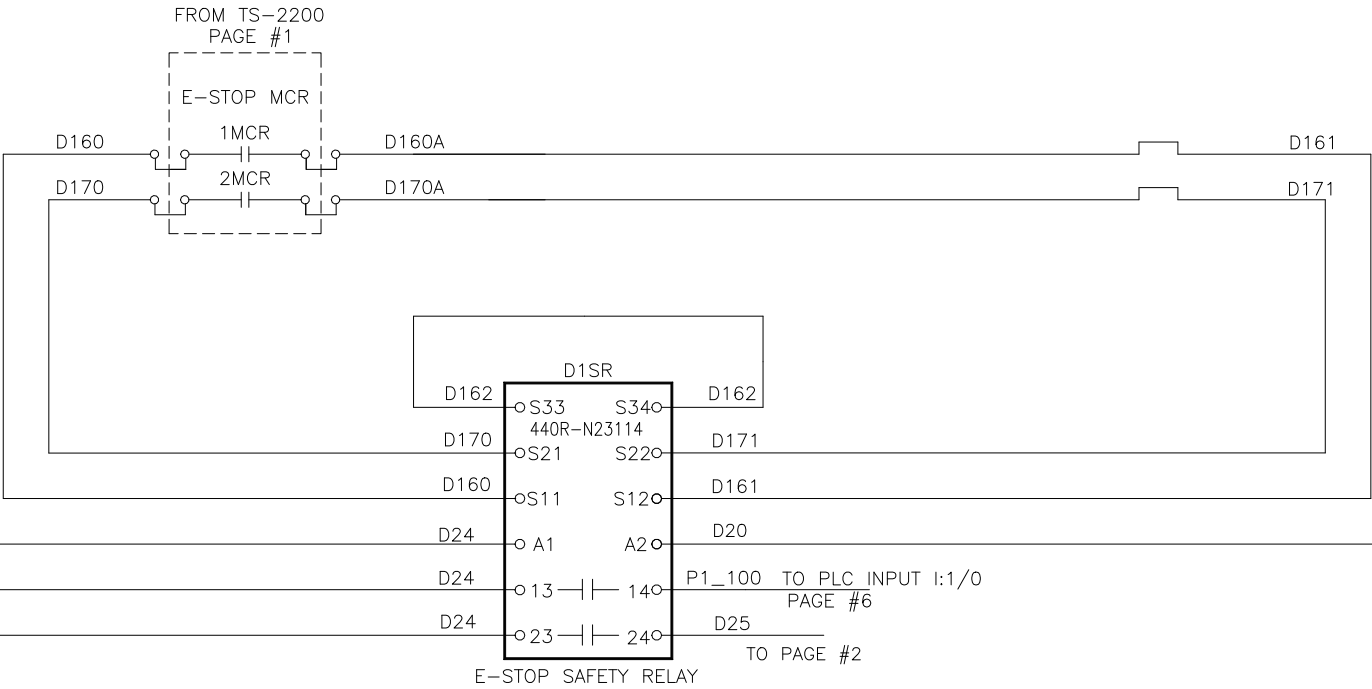


FROM TS-2200 ENCLOSURE

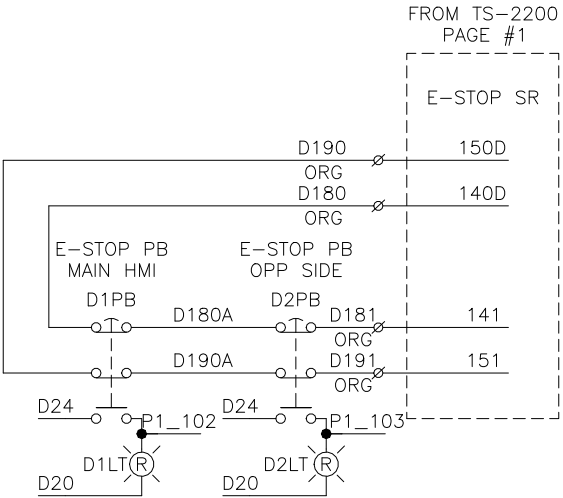


D24 TO POINT I/O PAGE #7
D24 TO ETH SWITCH PAGE #8

POINT I/O POWER SUPPLY
ETHERNET SWITCH



E-STOP SAFETY RELAY



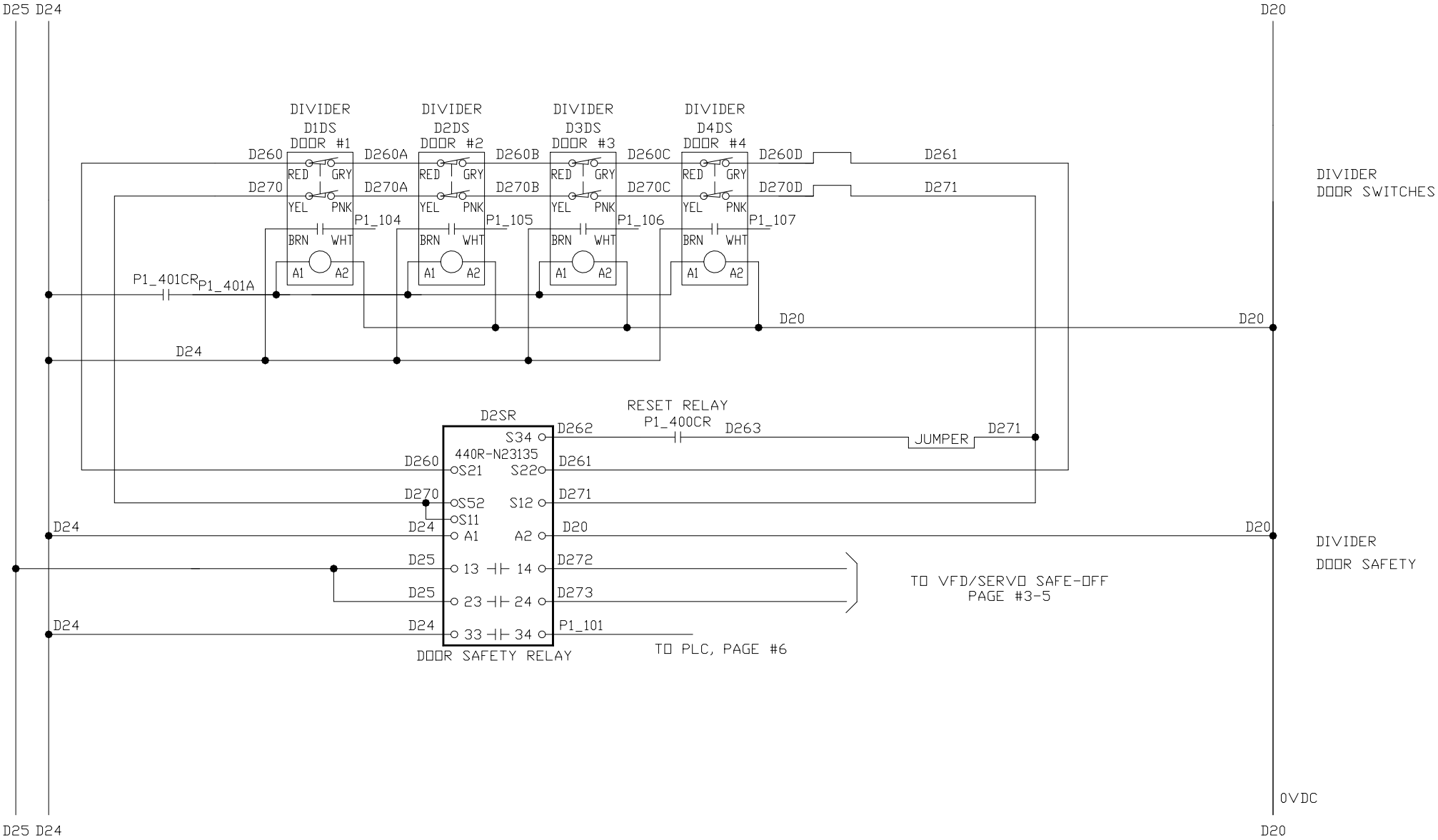
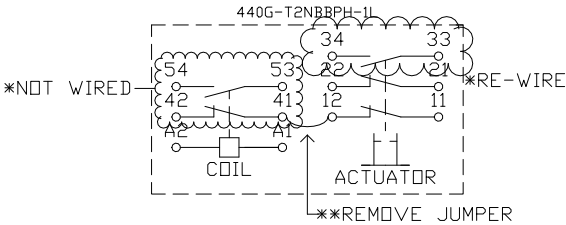
ARPAC
OUR INTEGRATION - YOUR SUCCESS

REV. A	ELECTRICAL SCHEMATIC	SIZE: B
DESIGNER: JIT		DATE:11-30-2020
MODEL: DYNAMIC		SHEET: 1 OF 9
BLUE MARBLE		DRAWING NUMBER: 17766_DD-01

440G-T2NBBPH-1L LOCKABLE
LOCKABLE DOOR SWITCH
TERMINAL WIRING

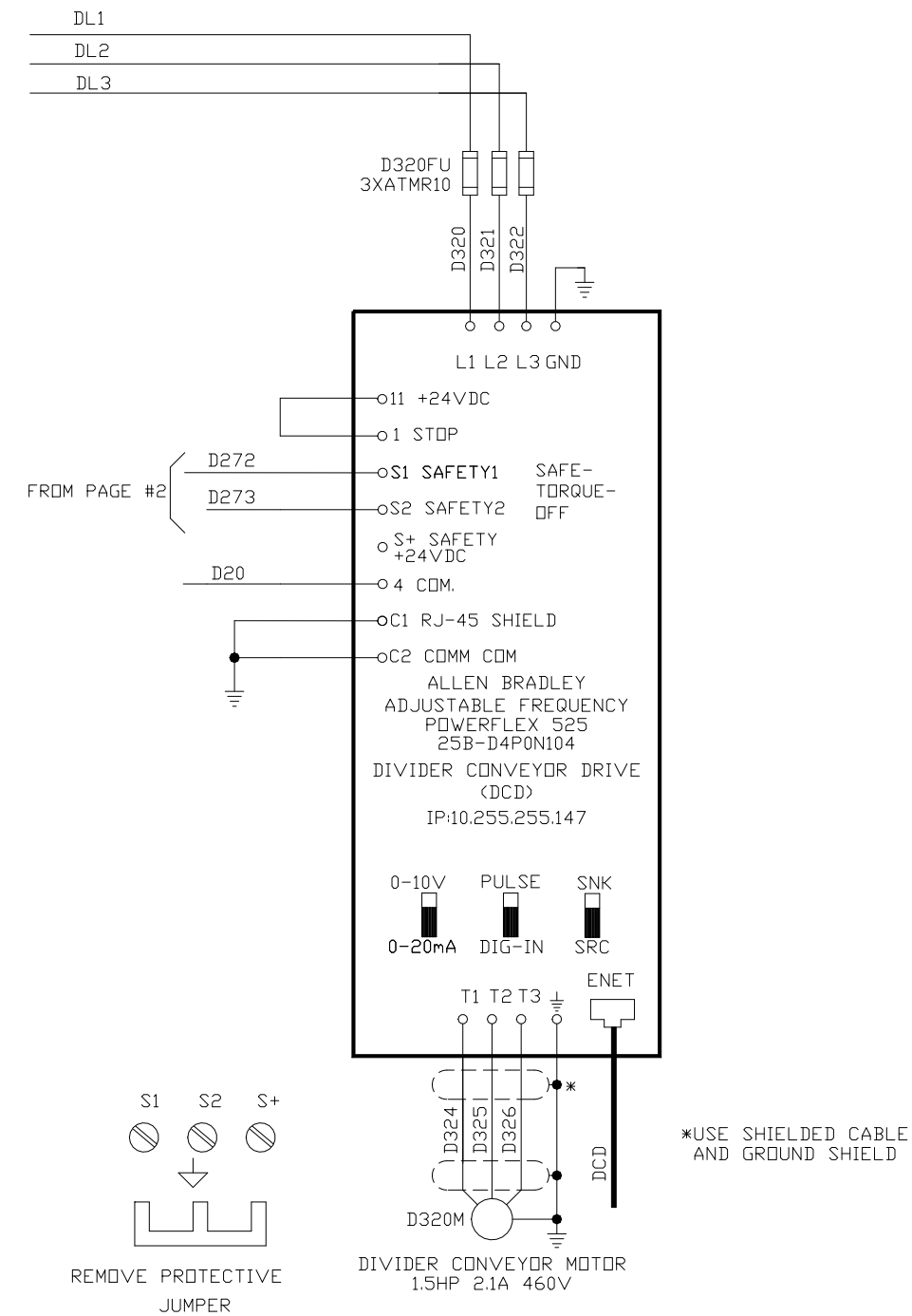
TERMINAL	COLOR	DESCRIPTION
A1	GRN	SOLENOID POWER
A2	BLUE	0VDC
11	RED	SAFETY A
12	RED/BLK	SAFETY A
21	RED/WHT	SAFETY B
22	RED/YEL	SAFETY B
33	BRN	+24 VDC
34	WHT	AUX. CONTACT (TO PLC)
41	N/A	*NOT CONNECTED
42	N/A	*NOT CONNECTED
53	N/A	*NOT CONNECTED
54	N/A	*NOT CONNECTED

**REMOVE JUMPER BETWEEN 12 AND 41



ARPAC
OUR INTEGRATION - YOUR SUCCESS

REV. A	ELECTRICAL SCHEMATIC	SIZE: B
DESIGNER: JIT		DATE: 11-30-2020
MODEL: DYNAMIC		SHEET: 2 OF 9
BLUE MARBLE		DRAWING NUMBER: 17766_DD-02



*USE SHIELDED CABLE
AND GROUND SHIELD

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

POWER FLEX 525 DRIVE SET UP
(DIFFERENT THAN DEFAULT)

DISPLAY	PARAMETER DESCRIPTIONS	SETTING
P031	RATED VOLTAGE	460
P033	MOTOR OL CURRENT	*
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
A541	AUTO RESTART TRIES	0.0
A543	START AT POWER UP	1.0

* SET TO THE MAXIMUM ALLOWABLE MOTOR CURRENT

POWER FLEX 525 DRIVE SET UP
(DIFFERENT THAN DEFAULT)

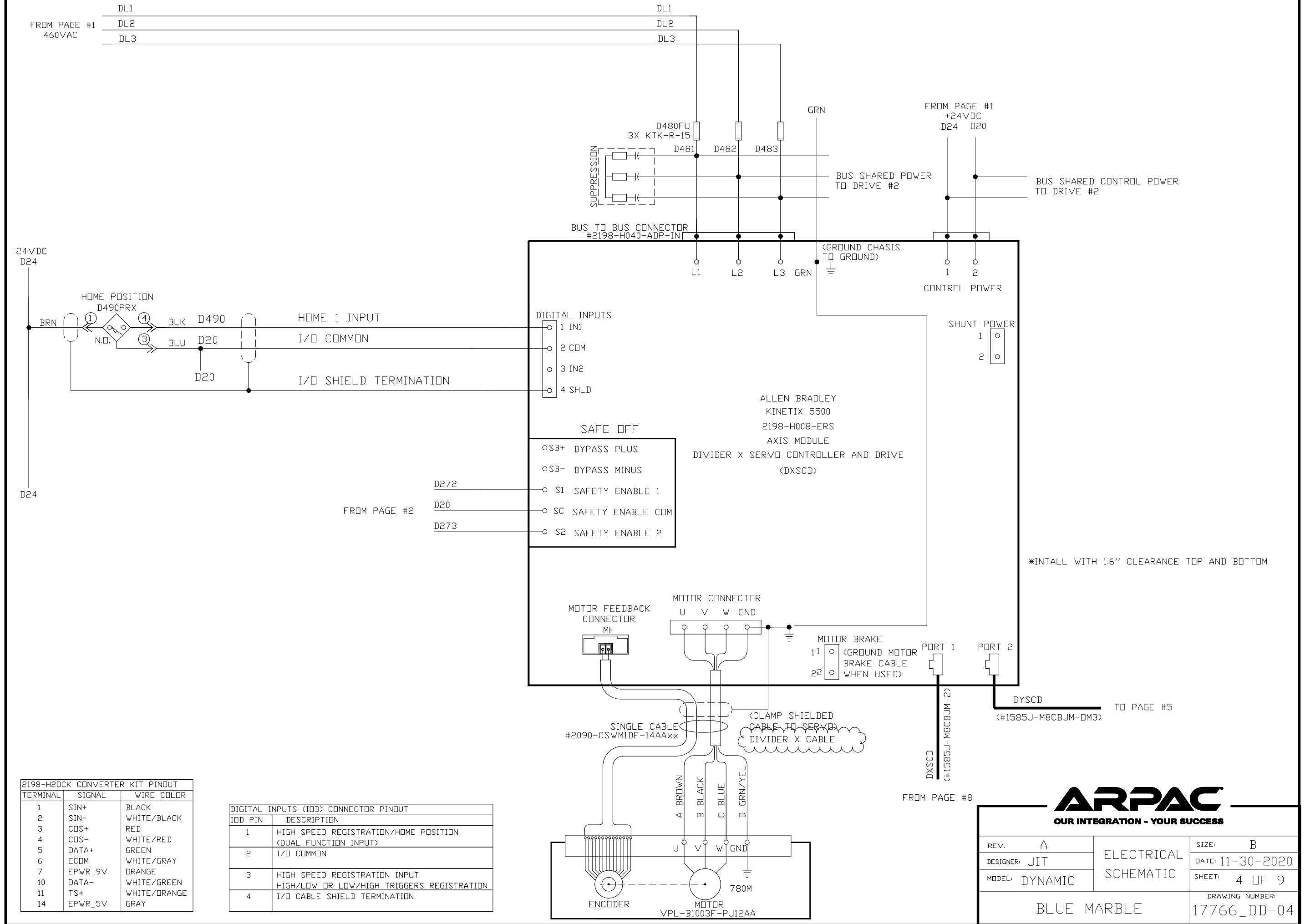
DISPLAY	PARAMETER DESCRIPTIONS	SETTING
C128	EN ADDR SELECT	1
C129	EN IP ADDR CFG 1	10
C130	EN IP ADDR CFG 2	255
C131	EN IP ADDR CFG 3	255
C132	EN IP ADDR CFG 4	**
C133	EN SUBNET CFG 1	255
C134	EN SUBNET CFG 2	255
C135	EN SUBNET CFG 3	255
C136	EN SUBNET CFG 4	0

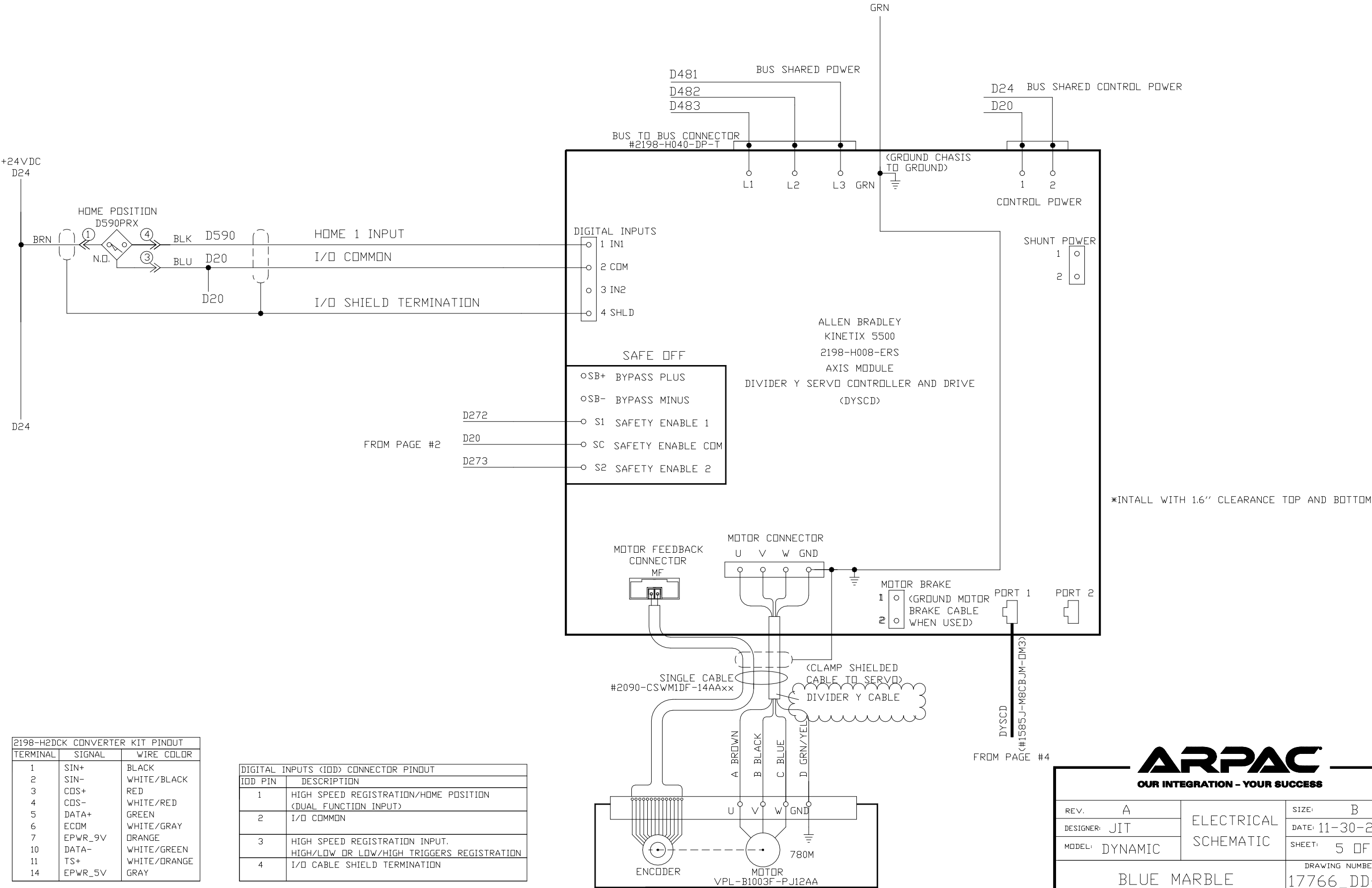
**SEE PAGE #8 FOR LAST IP NUMBER

0103CB
CIRCUIT BREAKER NUMBER
PAGE NUMBER

ARPAC
OUR INTEGRATION - YOUR SUCCESS

REV. A	ELECTRICAL SCHEMATIC	SIZE: B
DESIGNER: JIT		DATE: 11-30-2020
MODEL: DYNAMIC		SHEET: 3 OF 9
BLUE MARBLE		DRAWING NUMBER: 17766_DD-03





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/ORANGE
14	EPWR_5V	GRAY

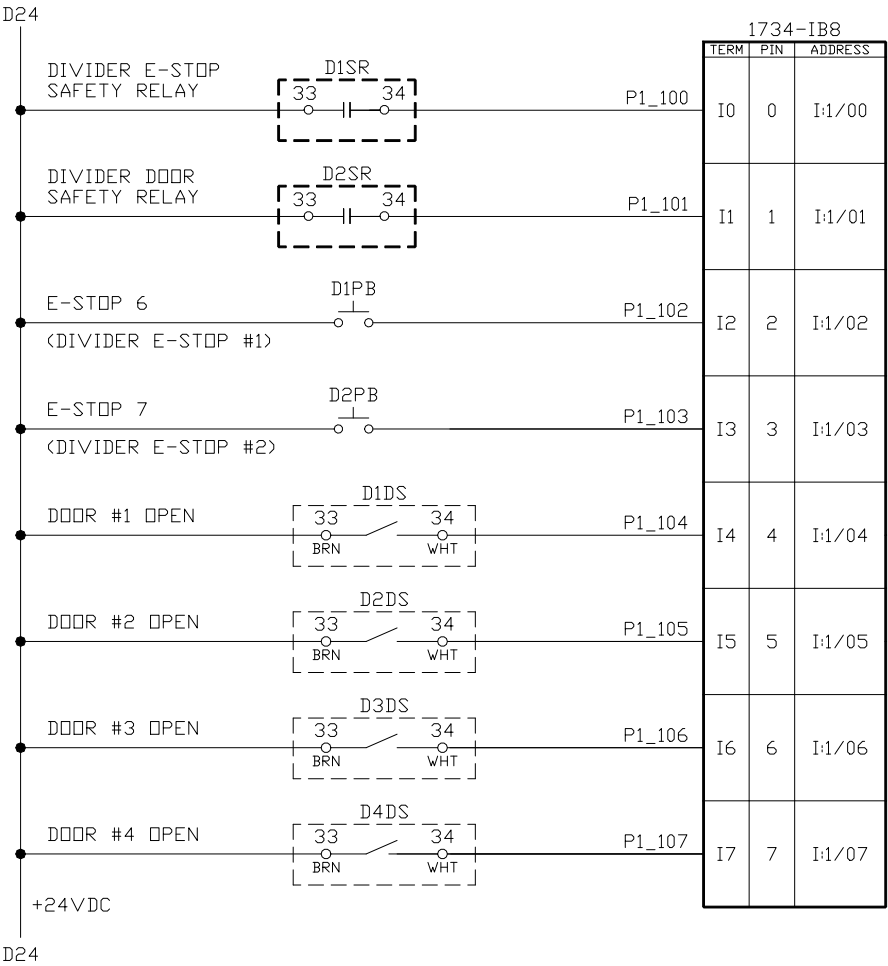
DIGITAL INPUTS (IOD) CONNECTOR PINOUT	
IOD PIN	DESCRIPTION
1	HIGH SPEED REGISTRATION/HOME POSITION (DUAL FUNCTION INPUT)
2	I/O COMMON
3	HIGH SPEED REGISTRATION INPUT. HIGH/LOW OR LOW/HIGH TRIGGERS REGISTRATION
4	I/O CABLE SHIELD TERMINATION

ARPAC

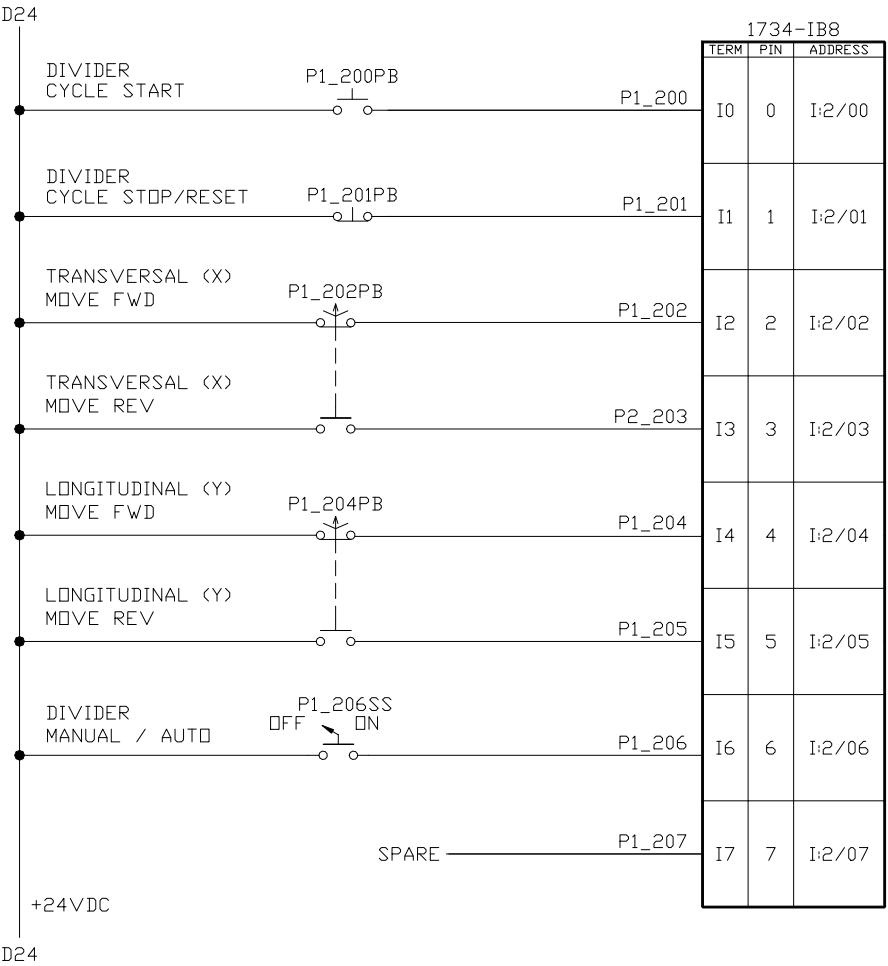
OUR INTEGRATION - YOUR SUCCESS

REV. A	ELECTRICAL SCHEMATIC	SIZE: B
DESIGNER: JIT		DATE: 11-30-2020
MODEL: DYNAMIC		SHEET: 5 OF 9
BLUE MARBLE		DRAWING NUMBER: 17766_DD-05

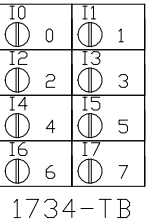
POINT I/O RACK #1 - INPUT MODULE #1



POINT I/O RACK #1 - INPUT MODULE #2



TERMINAL LAYOUT FOR 1734-IB8



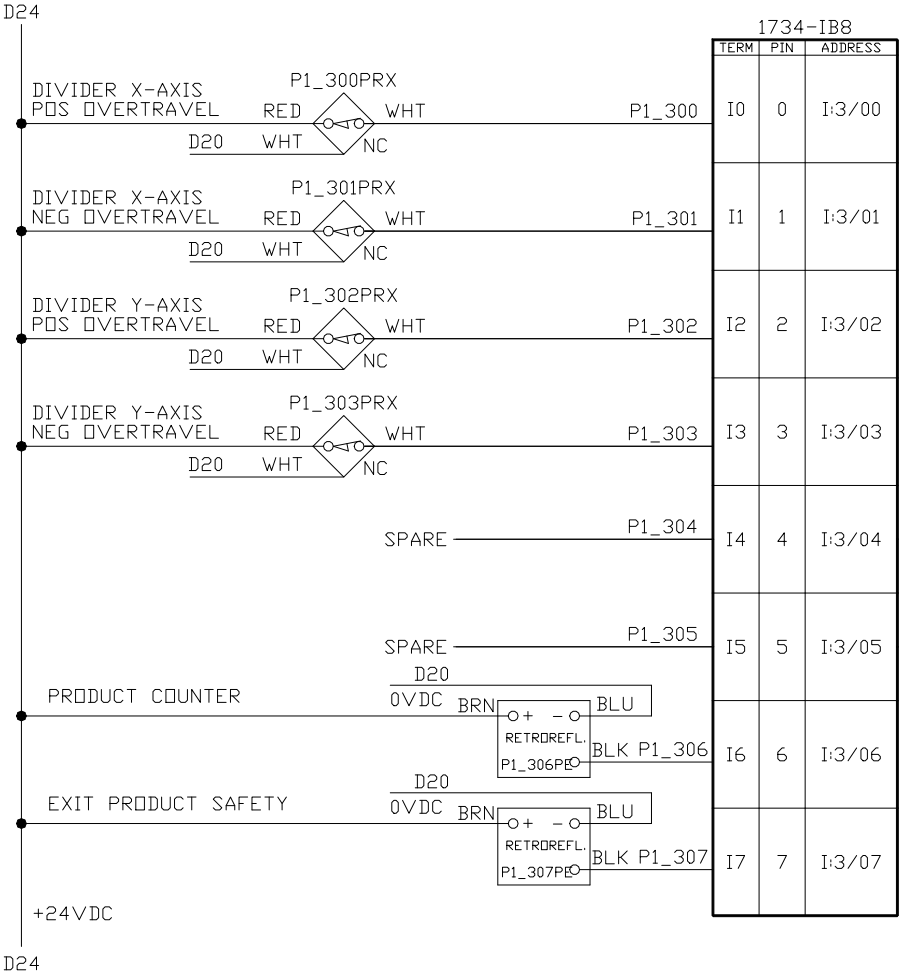
ARPAC

OUR INTEGRATION - YOUR SUCCESS

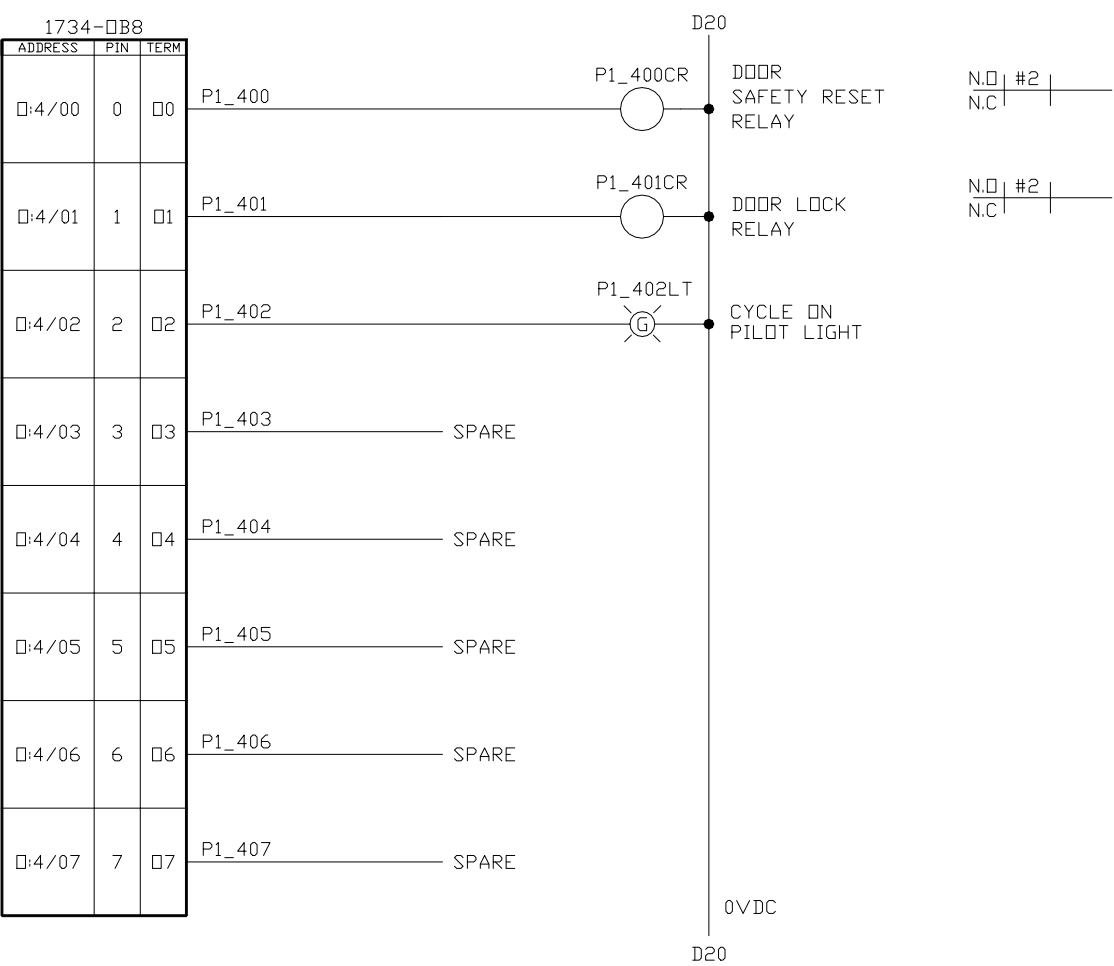
REV. A	ELECTRICAL SCHEMATIC	SIZE: B
DESIGNER: JIT		DATE: 11-30-2020
MODEL: DYNAMIC		SHEET: 6 OF 9

BLUE MARBLE	DRAWING NUMBER: 17766_DD-06
-------------	--------------------------------

POINT I/O RACK #1 - INPUT MODULE #3

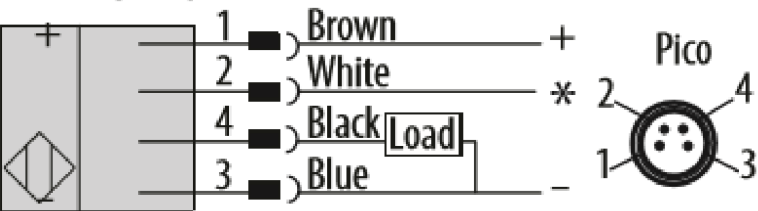


POINT I/O RACK #1 - OUTPUT MODULE #4

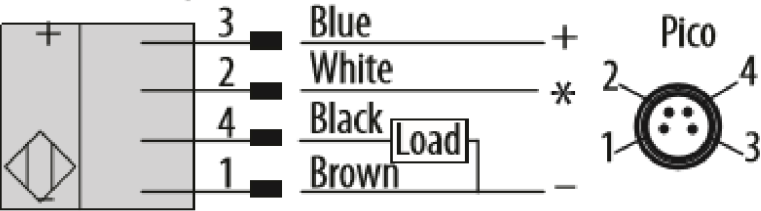


PRODUCT COUNTER P1_306

PNP (Light Operate)



PNP (Dark Operate)



TERMINAL LAYOUT FOR 1734-OB8E

00	01
02	03
04	05
06	07

1734-TB

TERMINAL LAYOUT FOR 1734-IB8

10	11
12	13
14	15
16	17

1734-TB



REV. A	ELECTRICAL SCHEMATIC	SIZE: B
DESIGNER: JIT		DATE: 11-30-2020
MODEL: DYNAMIC		SHEET: 7 OF 9
BLUE MARBLE		DRAWING NUMBER: 17766_DD-07

D24

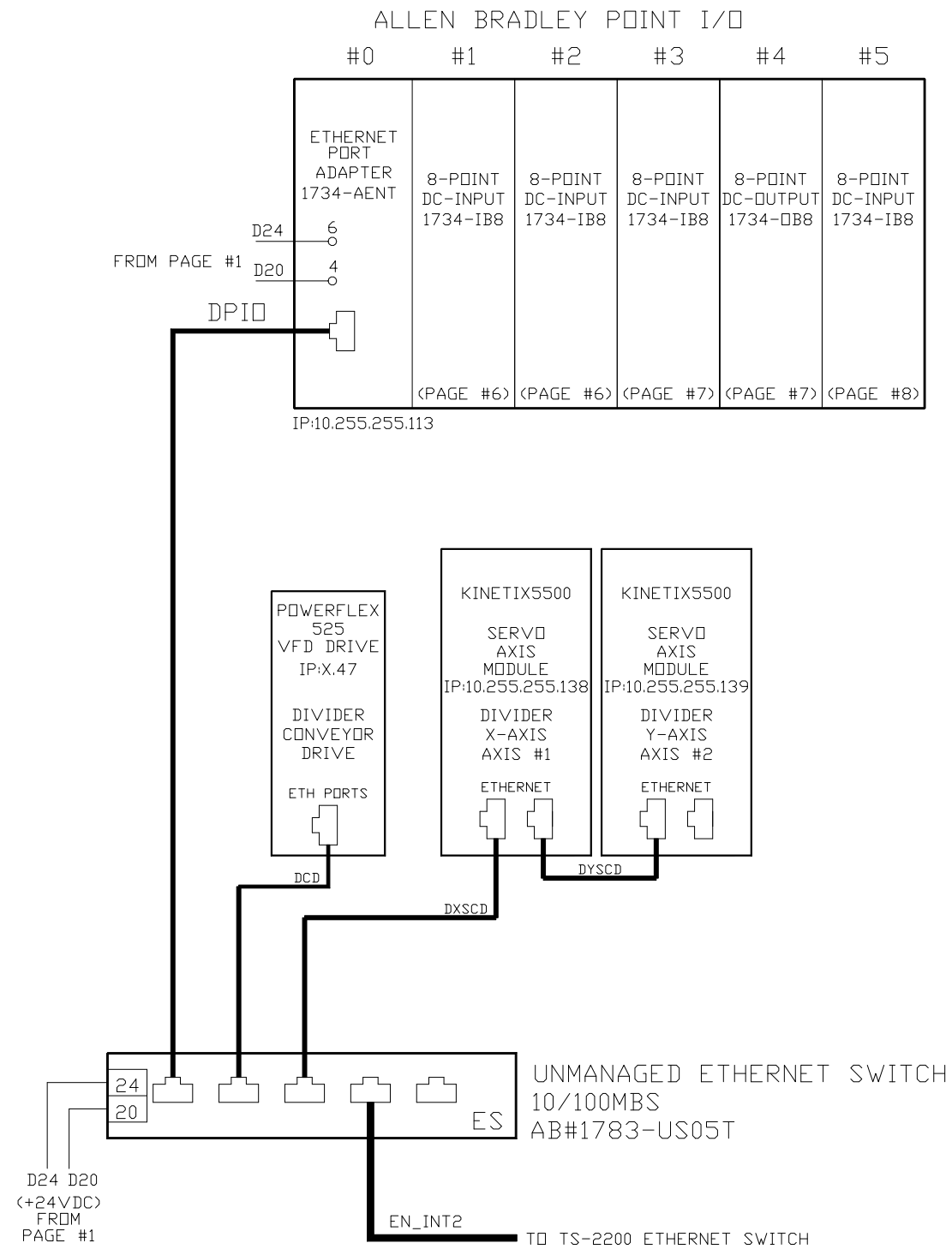
+24VDC

D24

I0 	I1
I2 	I3
I4 	I5
I6 	I7

ARPAC
OUR INTEGRATION - YOUR SUCCESS

REV. A	ELECTRICAL SCHEMATIC	SIZE: B
DESIGNER: JIT		DATE: 11-30-2020
MODEL: DYNAMIC		SHEET: 8 OF 9
BLUE MARBLE		DRAWING NUMBER: 17766_DD-08



Arpac BOM

Parent Number: 17766-e Parent Revision: 0
 Description: ASSY, ELEC, TS-2200, 16445, 460VAC
 Model:

Assembly Part Number: 17766-ELEC-TS
 Description: ASSY, ELEC, TS-2200, 16445, 460VAC

Item	Qty	Arpac Part	Description
4	11.00	804003-139	CABLE, QD, 5M 90-DEGREE MICRO 4-PIN BLK PVC, (USE 848706 FOR STRETCH)
5	18.00	804003-135	CABLE, QD, 5M STRAIGHT MICRO 4-PIN BLK PVC
6	7.00	804003-204	CABLE, QD, 5M STRAIGHT MICRO 8-PIN BLK PVC
7	1.00	804003-323	CABLE, QD, 10M 90-DEGREE MICRO 4-PIN BLK PVC
8	5.00	804003-324	CABLE, QD, 10M STRAIGHT MICRO 4-PIN BLK PVC, Female, Straight, PVC Cabl
9	4.00	804003-212	CABLE, QD, 10M STRAIGHT MICRO 8-PIN BLK PVC
10	40.00	804003-514	CABLE, VFD, 12AWG 4-WIRE XPLE, PVC JACKET, STRAIGHT OVERALL SHIELD W/ DR
11	400.00	804003-500	CABLE, VFD, 14AWG 4-WIRE XPLE, PVC JACKET, STRAIGHT OVERALL SHIELD W/ DR
12	1.00	804000-760	CIRCUIT BREAKER, 1P 5A 277V TRIP=05-10 IR=10KA UL1077 SUPPLEMENTAL PROT
13	1.00	804000-655	CIRCUIT BREAKER, 1P 5A 277V TRIP=05-10 IR=10KA UL489
14	1.00	804000-763	CIRCUIT BREAKER, 1P 8A 277V TRIP=05-10 IR=10KA UL1077 SUPPLEMENTAL PROT
15	1.00	804000-764	CIRCUIT BREAKER, 1P 10A 277V TRIP=05-10 IR=10KA UL1077 SUPPLEMENTAL PROT
16	1.00	804000-657	CIRCUIT BREAKER, 1P 10A 277V TRIP=05-10 IR=10KA UL489
17	2.00	804000-675	CIRCUIT BREAKER, 1P 15A 277V TRIP=10-20 IR=10KA UL489
18	1.00	804000-847	CIRCUIT BREAKER, 2P 32A 240V TRIP=05-10 IR=10KA UL489 "C" TRIP
19	1.00	804000-602	CIRCUIT BREAKER, 3P 80A 480V H-FRAME TRIP(THM/MAG)=NOMIN/0800A IR=25KA
20	1.00	804000-643	CIRCUIT BREAKER, ACCESSORY, H-FRAME, TERMINAL LUG, QTY 3, FCCu 1x14-1/0(2.
21	1.00	804000-800	CIRCUIT BREAKER, ACCESSORY, 1494V VARIABLE-DEPTH FLANGE MOUNTED FOR 140G
22	1.00	804000-621	CIRCUIT BREAKER, ACCESSORY, LUG KIT, H-FRAME 6 WIRES/LUG WITH TERMINAL CO
23	1.00	804000-874	CIRCUIT BREAKER, ACCESSORY, TERMINAL COVER, H-FRAME MCB, 2PC
24	1.00	804000-469	CIRCUIT BREAKER, OPERATING MECHANISM ROD FOR ENCLOSURE DEPTH min 9 1/8 ma
25	1.00	804036-149	DISCONNECT, 1494V COMPONENT, OPERATING HANDLE, PAINTED METAL, FOR 30/60/
25	1.00	804010-035	CONNECTOR, 4P, DC MICRO (M12) FEMALE, STRAIGHT, 4A 250V, FIELD ATTACHABLE
26	1.00	804010-039	CONNECTOR, 4P,FEMALE,90 DEGREE,FIELD WIRABLE
27	1.00	804031-023	COOLING, AIR CONDITIONER, 2700BTU 115VAC, 6A 20 X 10 X 10 WITH CENTER AI
29	1.00	804012-680	DISTRIBUTED I/O, CABLE, 1585 ETHERNET CABLES, 8 CONDUCTORS, RJ45, STRAIGH
30	1.00	804005-837	DISTRIBUTED I/O, ETHERNET PATCHCORD, 15M, 1585 ETHERNET CABLES, 4 CONDUCT
32	1.00	804012-775	DRIVE, AC, 5.00HP 480V 3PH 10.5A POWERFLEX 525 DRIVE
33	4.00	804012-695	DRIVE, AC, 1.00HP 480V 3PH 2.3A POWERFLEX 525 DRIVE
34	1.00	804012-799	DRIVE, SERVO, KINETIX 5500 FRAME 1 AND 2 INPUT CONNECTORS, DC AND HIGH PO
35	1.00	804012-813	DRIVE, SERVO, KINETIX 5500, MID RANGE DRIVE 195-528VAC, 1 OR 3 PHASE, 12.
36	1.00	804012-798	DRIVE, SERVO, MOTOR FEEDBACK AND POWER CBL, 15M, 14AWG, FLYING LEAD, MID
37	1.00	804014-211	ENCLOSURE, 08X 16X 07 NEMA12 CONSL SLOPED-COVER
38	1.00	804014-089	ENCLOSURE, 30X100X 12 FLANGE-DISC W/SUBPANEL (TRAYLOADER) NEMA 12
39	1.00	804014-421	ENCLOSURE, 425X450X180MM NEMA4 EOI FOR-INTERFACE REAR-HINGE BLK-TRIM
40	1.00	804014-567	ENCLOSURE, ACCESSORY, FLOOR-STAND-KIT 6IN-HEIGHT FOR-12IN-DEEP-ENCLOSURE
41	1.00	804014-423	ENCLOSURE, ACCESSORY, MOUNTING BRACKET, FOR 180MM CONCEPT INTERFACE ENCLC
42	1.00	804014-424	ENCLOSURE, ACCESSORY, PENDANT ARM TUBE, 1500MM, COMPACT SERIES 2
43	1.00	804014-606	ENCLOSURE, FLANGE COUPLING 300 DEGREE ROTATING
44	2.00	804014-231	ENCLOSURE, FOR OPERATOR INTERFACE HEAVY DUTY ELBOW
45	1.00	804014-317	ENCLOSURE, PENDANT ROTATIONAL BASE
46	2.00	804996-374	ENCLOSURE, PUSHBUTTON-1, NEMA12, 30MM, 4 X 4 X 4.75, EXTRA DEEP
47	1.00	804014-143	ENCLOSURE, PUSHBUTTON-4, NEMA12, 30MM, 10 X 4 X 4.75, EXTRA-DEEP
48	1.00	804013-025	ENCODER, OPTICAL, ETHERNET/IP, 262,144 PULSES PER REV 5 VDC, P/OUT 3/8 IN
49	1.00	804005-812	ETHERNET SWITCH, 16 PORT (COPPER), UNMANAGED, DIN RAIL MOUNT, STRATIX 200
52	5.00	804036-072	FUSE HOLDER 30A 3 POLE CC CLASS 600V WITH BLOWN FUSE INDICATOR
53	1.00	804036-088	FUSE HOLDER 60A 2 POLE J CLASS 600V WITH BLOWN FUSE INDICATOR
54	1.00	804036-186	FUSE HOLDER 30A 3 POLE J CLASS 600V WITH BLOWN FUSE INDICATOR
54	12.00	804015-013	FUSE, 10A 600V FAST-ACTING CLASS-CC

55	8.00	824755	FAST ACTING FUSES 15A X 600V
56	3.00	804015-062	FUSE, 20A 600V FAST-ACTING CLASS-CC
57	2.00	804015-039	FUSE, 35A 600V TIME-DELAY CLASS-J
58	1.00	804010-228	GRACEPORT, ETHERNET (CAT 5E), SINGLE 120VAC OUTLET, UL TYPE 4
59	5.00	804027-023	LEGEND PLATE, YELLOW E-STOP ROUND FOR 30MM PB
60	1.00	804018-159	OPERATOR INTERFACE, ACCESSORY, 1GB SD MEMORY CARD FOR PVP-6 TERMINALS
61	1.00	804018-250	OPERATOR INTERFACE, PANELVIEW PLUS 7 - 10", PERFORMANCE MODEL, BRANDLESS
62	10.00	804007-136	PHOTO SENSOR, DIFFUSE DC PNP QD RANGE=5IN W/6IN-PIGTAIL SHARP-CU
63	8.00	804007-234	PHOTO SENSOR, REFLECTOR, 1.36" ROUND, W M5 MTG SCREW POST
64	8.00	804007-135	PHOTO SENSOR, RETRO-POLAR DC PNP QD RANGE=3M W/6IN-PIGTAIL NEMA4X/6P
65	1.00	804005-628	PLC, COMPACTLOGIX DUAL ETHERNET w/DLR CAPABILITY, 3MB MEMORY, 30 I/OE
66	1.00	804005-271	PLC, COMPACTLOGIX, ACCESSORY END CAP RIGHT
67	1.00	804005-802	PLC, COMPACTLOGIX, ACCESSORY, IFM CBL 0.2M 1769-0B16 OUTPUTS TO IFM20FN
68	3.00	804005-520	PLC, COMPACTLOGIX, ACCESSORY, IFM CBL 0.2M 1769-IQ16 INPUTS TO IFM20FN
69	1.00	804005-511	PLC, COMPACTLOGIX, ADDRESS RESERVE MODULE
70	1.00	804005-275	PLC, COMPACTLOGIX, DIGITAL 16OUT 24VDC SOURCE
71	2.00	804005-266	PLC, COMPACTLOGIX, DIGITAL 16IN 24VDC SINK/SOURCE
72	1.00	804005-505	PLC, COMPACTLOGIX, POWER SUPPLY, 120/240VAC, 4.0A @ 5VDC, 2.0A @ 24VDC
73	4.00	804993-133	PLC, IFM BASE, DIGITAL, 20PT, 2-LEVEL, NARROW
74	1.00	804019-121	POWER SUPPLY, 24VDC 10A 120VAC, 3.73A INPUT CURRENT
75	2.00	804006-217	PROXIMITY SENSOR, ACCESSORY, MOUNTING STRAP, .984-2.480 IN. 25-63 MM.& CL
76	5.00	804006-371	PROXIMITY SENSOR, DC 3-WIRE 2.0MM NO QD 8MM PNP SHIELDED
77	8.00	804006-170	PROXIMITY SENSOR, DC 3-WIRE 4.0MM NO QD 12MM PNP UNSHIELDED SHORT-BARREL
78	2.00	804006-259	PROXIMITY SENSOR, DC 3-WIRE CYLIN NO WITH MICRO QD PNP W/8" PIGTAIL & LEC
79	2.00	804004-008	PUSH BUTTON, 30MM EXTENDED RED MOMENTARY 1NO/1NC NEMA4
80	5.00	804004-010	PUSH BUTTON, 30MM FLUSH BLK MOMENTARY 1NO/1NC NEMA4
81	1.00	804004-009	PUSH BUTTON, 30MM FLUSH GRN MOMENTARY 1NO/1NC NEMA4
82	3.00	804004-372	PUSH BUTTON, 30MM GUARDED GRN ILL LED 12-130V, MOMENTARY 1NO/1NC, UL TYPE
83	5.00	804004-108	PUSH BUTTON, 30MM MUSHROOM RED ILL LED 12-130V, PUSH-PULL 1NO/1NCLB NE
84	6.00	804004-273	PUSHBUTTON, CONTACT BLOCK FOR 800T/H, SHALLOW, 1NC/1NCLB
85	6.00	804008-071	RELAY, CONTROL 2PDT COIL= 24VDC 10A MINIATURE-SQUARE-BASE W/PILOT-LI
86	6.00	804008-072	RELAY, SOCKET 2PDT 8-BLADE FOR-HF-MINIATURE-SQUARE-BASE-RELAY
86	2.00	804008-301	RELAY, SAFETY MINOTAUR MSR142RTP 24V IN=2NC OUT=7NO MONITORED MANUAL/AUT
89	2.00	804002-138	SAFETY CONTROL RELAY, 8P, 24VDC, 3NO/1NC (SAFE, 20A), 1NO/3NC (AUX, 10A)
90	1.00	804020-004	SUPPRESSOR, SURGE AC (R-C-V) 600 VAC 3 PHASE
91	11.00	804025-261	SWITCH, DOOR, ACCESSORY, Fully-Flexible Actuator (GD2 model only)
92	11.00	804025-260	SWITCH, DOOR, Guard Locking Switch - TLS-GD2: Solenoid Voltage: 24V AC/D
93	1.00	804022-260	TERMINAL BLOCK, GROUND BLOCK WITH RAIL CONTACT 30 TERMINAL 3 TALL
94	1.00	804024-009	TRANSFORMER, 1PH 7.5KVA 240/480 120/240 NEMA3R ENCAPSULATED
98	1.00	804005-998	REMOTE CONNECTION, EWON, FLEXY 205 W/ 4 PORT LAN/WAN CONFIGURABLE
100	1.00	999999-003	WIRING MAT'L PER MACHINE TYPICAL NORMAL USAGE

Arpac BOM

Parent Number: 17766-e1 Parent Revision: 0
Description: ASSY, ELEC, TS-2200, 16445, 460VAC
Model:

Assembly Part Number: 804007-234
Assembly Drawing Number: 804007
Description: PHOTO SENSOR, REFLECTOR, 1.36" ROUND, W M5 MTG SCREW POST
Quantity: 8.00

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

Date: 12/1/2020

Time: 1:22:56PM

Arpac BOM

Parent Number: 17766-e1 Parent Revision: 0

Description: ASSY, ELEC, TS-2200, 16445, 460VAC

Model: