BETTER PACKAGES, Inc.

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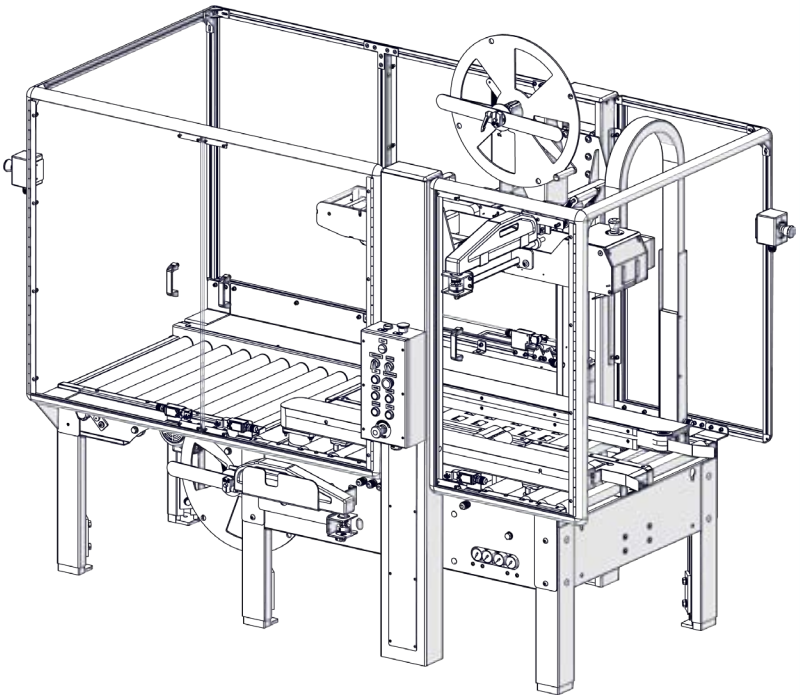
# USER MANUAL
# RSA 2024-WAT



For Serial Numbers:
TM904 XX X XXX

ipg

www.itape.com
800-474-8273

ipg

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800-474-8273

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UDM0186 REV 3.0 01242025

# User Notes

For all IPG product manuals please visit www.itape.com/systems-manual or use this QR code

# Table of Contents

# Technical Assistance

This is the Interpack Model **AUTO H2O Random Semi-Automatic-Water Activated Tape (RSA 2024-WAT)** Side-Belt Case Sealer you ordered. It has been set up and tested in our factory with IPG manufactured Water Activated Tape. If any problems occur when setting up or operating this equipment, please contact the authorized distributor from where you purchased this item.

If contact with the authorized distributor is not possible, **IPG Machinery Support** is available. Should the need to contact **IPG Machinery Support** arise, **please have the equipment model and serial number available prior to contact.** This information can be found on the nameplate of the tape head as well as on the machine, both sets of information may be necessary to assist. A section at the bottom of this page is available to write this information down. **IPG Machinery Support** is available during normal business hours (M-F 8am-7pm) Eastern Time.

Phone: 813-345-3070

Email: machsupp@itape.com

## Replacement Parts

A breakdown of parts, including part numbers, can be found in the appendix of this manual. If you know the part number that you require please contact your authorized distributor or IPG Customer Service 877-447-4832 Option 3

Please use this area to enter the detailed information on your Case Sealer and Tape Heads. This should be filled out at the time of install. This information can be found on the nameplate of the machine, typically on the side the operator controls are on. On the WAT Tape Heads serial information can be found near the air intake of the head.

### Machine

**Model**

**Serial**

### Tape Head Top

**Model**

**Serial**

### Tape Head Bottom

**Model**

**Serial**

### Distributor

**Name**

**Phone/Email**

**Date of Purchase**

**Date of Install**

# Field Service Assistance

Your Interpack Case Sealer and Tape Heads are designed to provide years of trouble free operation. This is not without proper preventative maintenance, a recommended schedule can be located in the maintenance section of this manual, performed by then end user of the equipment. If any problems arise with this machine during the normal course of operation, your properly trained and qualified internal service personnel should be able to repair any issues after consulting the troubleshooting section of this manual in conjunction with phone and/or email support from IPG Machinery Support.

Field Service Support is available from your IPG Authorized Distributor at additional cost if the problem cannot be remedied after consulting the troubleshooting section of this manual.

IPG offers comprehensive programs that help keep your equipment up and running.

Proactive maintenance efforts help to prevent equipment failures and costly emergency repairs. Keeping your machine in optimal working condition also enhances employee safety, reduces facility downtime and efficiently allocates internal resources.

Please contact your IPG Representative to discuss the best options for your IPG equipment.

## Refurbishment of WAT Tape Heads

IPG offers a factory repair and refurbishment program. This program will allow end users of IPG WAT Case Sealers to ship their Water Activated Tape Heads back to the factory where trained Factory Technicians will service and repair the tape heads to as close to factory new as possible. To learn more about this program contact your Authorized IPG Representative.

# Warranty Information

EQUIPMENT WARRANTY AND LIMITED REMEDY: The following warranty is made in lieu of all other warranties, express or implied, including, but not limited to, the implied warranty of merchantability, the implied warranty of fitness for a particular purpose, and any implied warranty arising out of a course of dealing, a custom or RSAge of trade:

Intertape sells its Interpack Tape Heads, Case Tapers and Case Erectors with the following warranties:

1. The IPG Pressure Sensitive Tape Heads' knife blades, springs and wipe down rollers will be free from all defects for a period of ninety (90) days.
2. All other IPG Pressure Sensitive Tape Head parts will be free from all defects for one (1) year after delivery.
3. Water Activated Tape Heads' blades will be free from defects for ninety (90) days after delivery.
4. Drive Belts will be free from defects for ninety (90) days after delivery
5. The Gear Motors will be free from defects for one (1) year after delivery.
6. All other components for Case Tapers and Case Erectors will be free from defects for one (1) year after delivery.

If any part is proven defective within its warranty period, then the exclusive remedy and Intertape' s and the seller's sole obligation shall be, at Intertape' s option, to repair or replace the part, provided the defective part is returned immediately to Intertape' s factory or an authorized service station designated by Intertape.

A part will be presumed to have become defective after its warranty period unless the part is received or Intertape is notified of the problem no later than five (5) calendar days after the warranty period.

If Intertape is unable to repair or replace the part within a reasonable time, then Intertape, at its option, will replace the equipment or refund the purchase price. Intertape shall have no obligation to install the repaired or replacement part.

Intertape shall have no obligation to provide or pay for the labor required to install the repaired or replacement part.

Intertape shall have no obligation to repair or replace (1) those parts failing due to: operator misuse, carelessness, or due to any accidental cause other than equipment failure, or (2) parts

1. Failure or damage is due to misapplication, lack of proper maintenance, abuse, improper installation or abnormal conditions such as temperature, moisture, dirt or corrosive matter, etc.
2. Failure due to inadequate cleaning, improper operating environment, improper utilities or operator error.
3. Failure due to operations above the rated capacities, or in any other improper manner, either intentional or otherwise.
4. Failure is due to equipment, which has been altered by anyone other than an authorized representative of Intertape Polymer Group.
5. Failure is due to an attempt by the purchaser to correct alleged defective equipment. In this event the purchaser is responsible for all expenses incurred.

LIMITATION OF LIABILITY: Intertape and seller shall not be liable for direct, indirect, special, incidental or consequential damages based upon breach of warranty, breach of contract, negligence, strict liability or any other legal theory.

The foregoing Equipment Warranty and Limited Remedy and Limitation of Liability may be changed only by written agreement signed by authorized officers of Intertape and seller.

# General Information

## Description of RSA 2024-WAT

This machine is designed to provide years of trouble free operation. If any problems arise with this machine during the normal course of operation, your properly trained and qualified internal service personnel should be able to repair any issues after consulting the Troubleshooting section of this manual.

The **RSA 2024-WAT** Case Sealer is designed to apply IPG brand water activated tape (WAT) to the top and/or bottom center seam of regular slotted corrugated cartons. The **RSA 2024-WAT** Case Sealer automatically adjusts to a variety of case sizes.

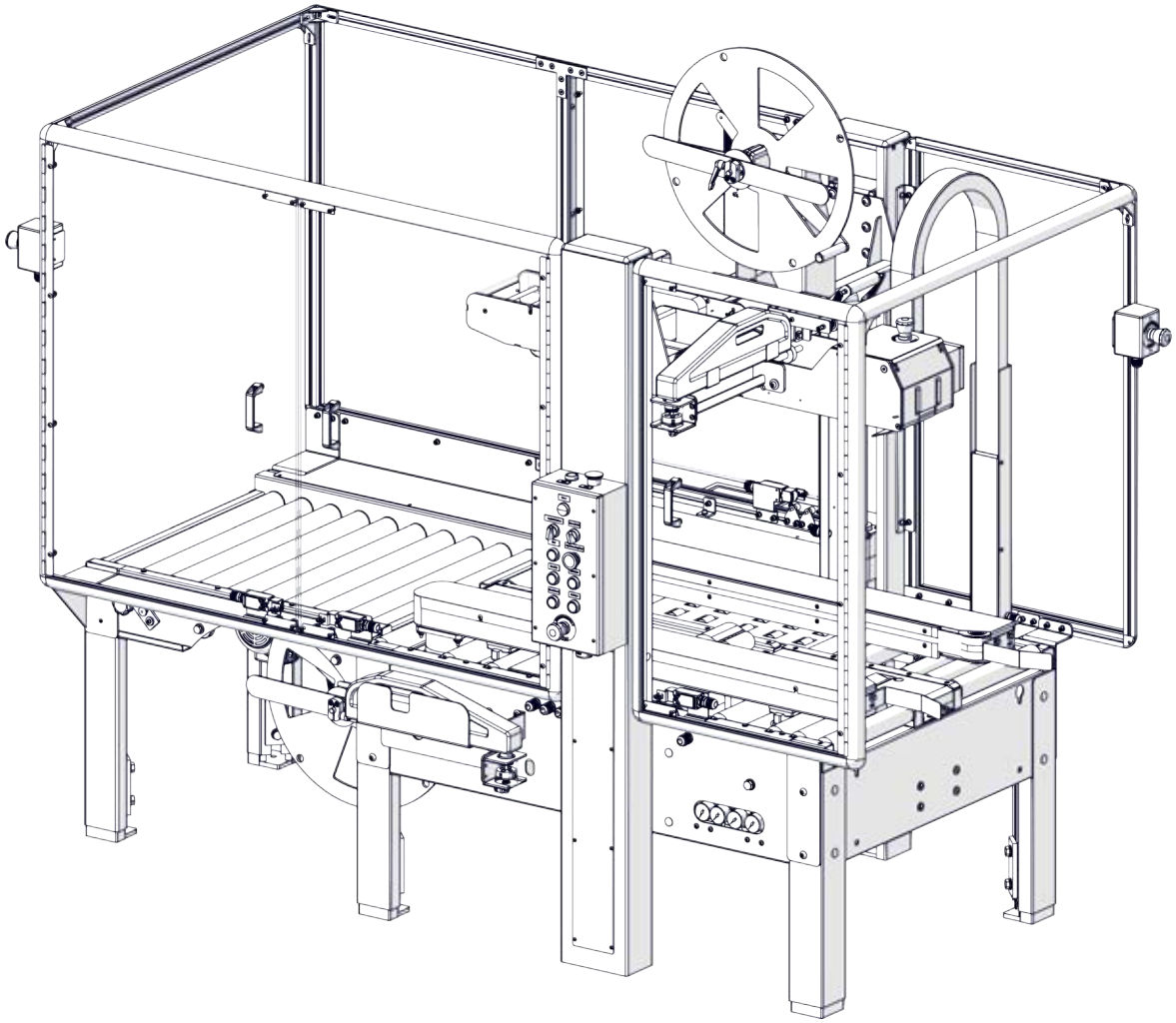


**Figure 1: RSA 2024-WAT**

## Definitions

Common terms that will be used throughout this manual.

**Tape Head** – This will refer to the WAT Top and/or Bottom tape heads for the remainder of this manual

**Case Sealer** – Refers to IPG manufactured Case Sealers

**Machine System** – Refers to the fully assembled Case Sealer with the Tape Head(s) installed

**User/Operator** – The individual who has been trained on the daily use of the Machine System

**Maintenance Champion** – The individual(s) who work for the end user of the Machine System who are responsible for conducting general and preventative maintenance

# Optional Equipment

The **RSA 2024-WAT** can be outfitted with a variety of optional equipment. The below list is **not** standard and should be discussed with your distributor or authorized IPG representative if you would like them to be added to your machine.

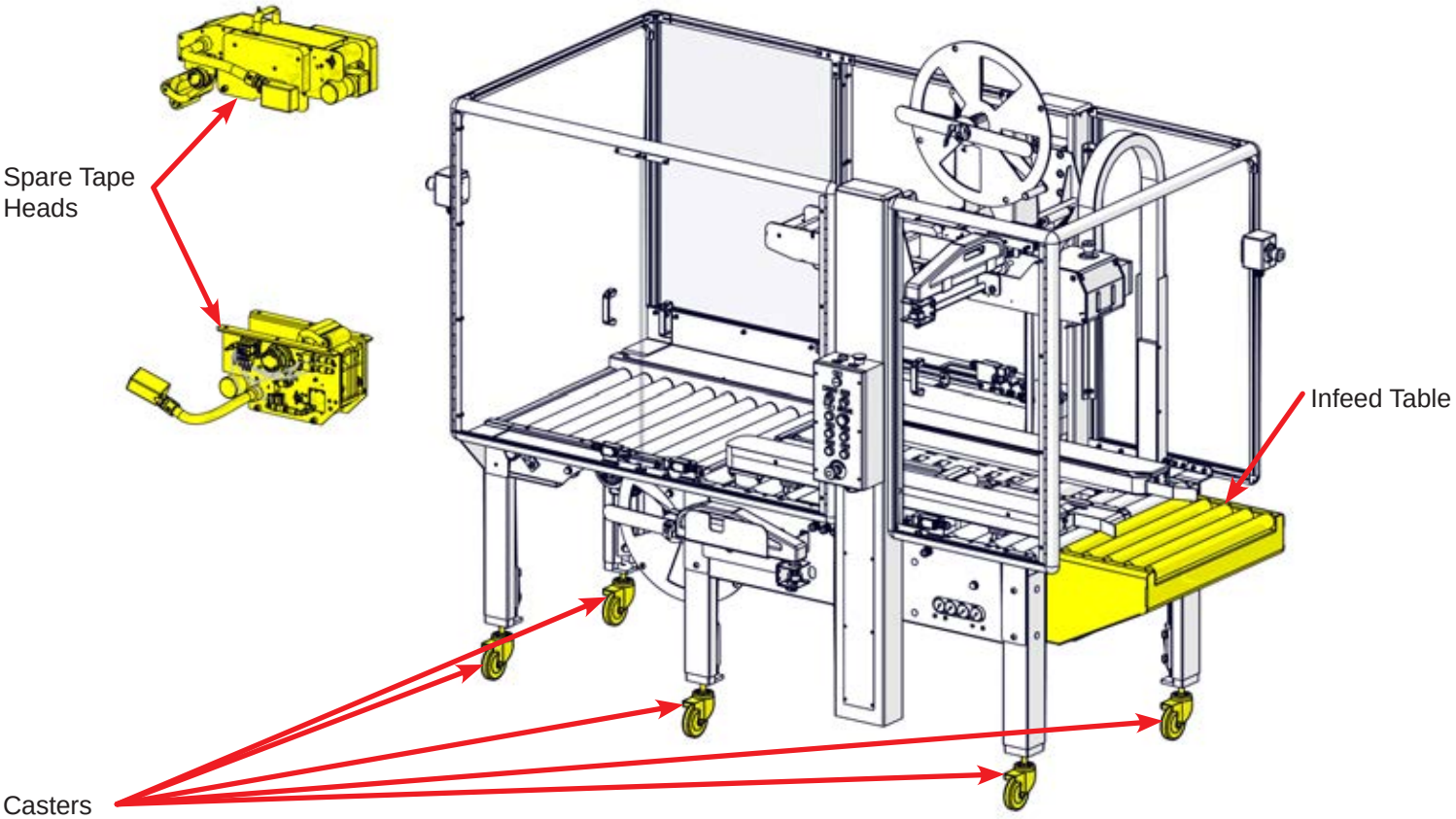



**Figure 2: Optional Equipment**

## Additional Tape Heads

It is recommended to keep a spare top and/or bottom tape head in the event any failure or malfunction causes the machine to stop production. This is to help reduce any possible downtime.

## Can be installed on site

| Description | Item Number | Quantity Per Machine |
|---|---|---|
| Infeed Table .4M (16") | UM894T | 1 |
| Infeed Table .6M (24") | UM998T | 1 |
| Infeed Table .9M (36") | UM898T | 1 |
| Casters | UM708 | 1 set of 6 (36" Feed Table will require 2 additional casters) |

| Description | Item Number |
|---|---|
| Top WAT Head | UH126TW |
| Bottom WAT Head | UH125TW |
| Refurbished Top WAT Head | UH126TWR |
| Refurbished Bottom WAT Head | UH125TWR |

## Cannot be installed on site

The reversal of the electrical cabinet and operator controls is possible but is only recommended to be done at the factory prior to shipment. Additional Emergency-Stop buttons can also be added by the factory prior to shipment.

# Important Safeguards

There are a number of safety labels used on the **RSA 2024-WAT** Case Sealer. These labels are placed at different locations on the machine to warn operators and service personnel of possible dangers (refer to Figure 3). Please read the labels on the machine and the following safety precautions before using the machine.

**Read this manual for other important safety operating and service information.**

**Only trained personnel are to operate machine.**

**Only fully qualified technicians are to service this machine.**

**Wear safety glasses.**

**Shut off power to machine before adjusting machine or loading & threading Tape Heads.**

**Disconnect electrical power and compressed air (where applicable) before servicing.**

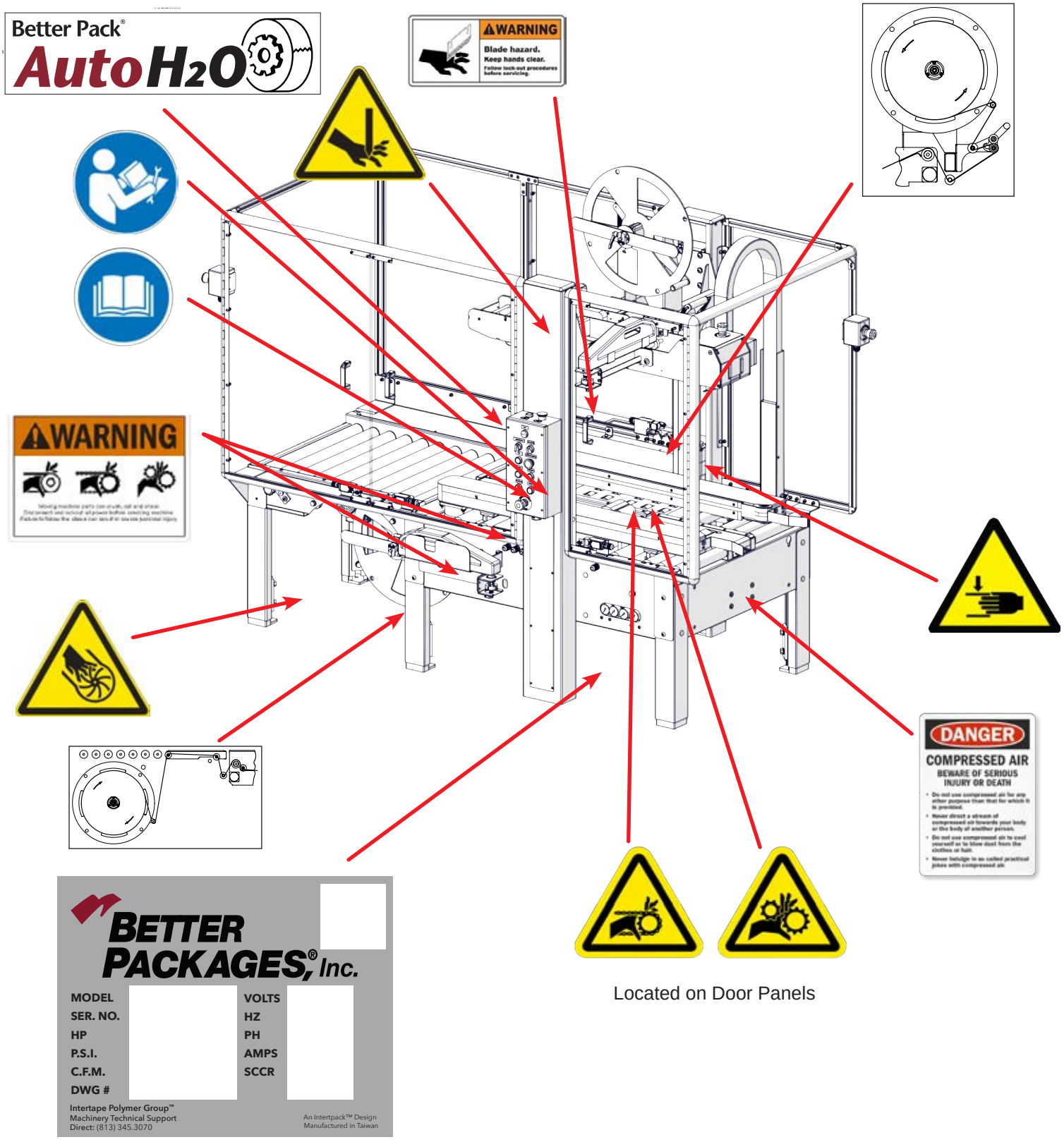
**Follow Lock Out / Tag Out Procedures BEFORE servicing any machinery.**

**All factory installed covers and guards must be in place before operating.**

**Stay clear of moving parts which can shear and cut.**

Should any of the safety labels on the Case Sealer be damaged or destroyed, replacements can be ordered through your distributor.

# Label Placement




Located on Door Panels

**Figure 3: Label Placement 1**

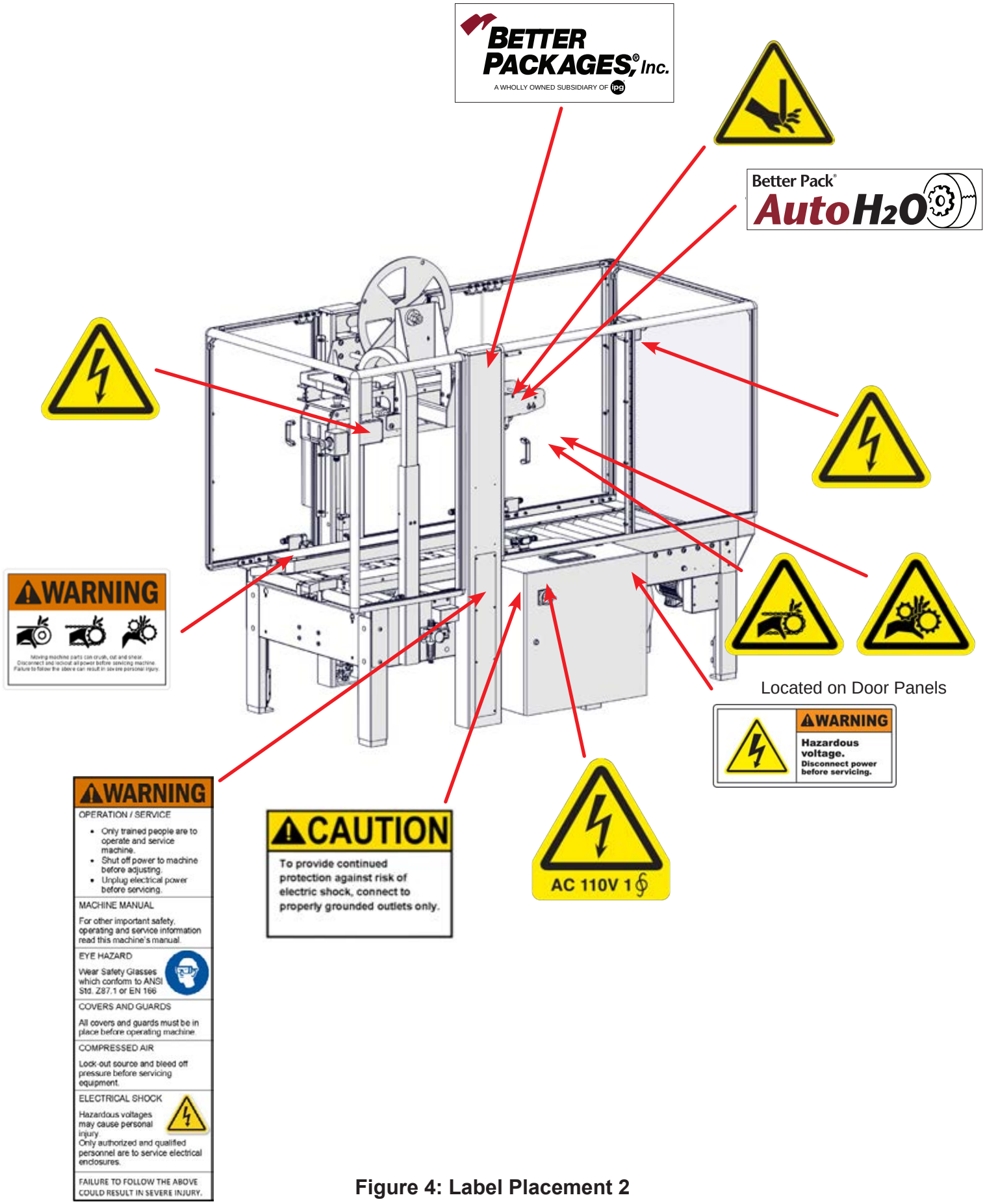



**Figure 4: Label Placement 2**

# Safety Label Descriptions

| | |
|---|---|
| The labels shown is affixed to the upper tape head.<br><br>It warns operators and service personnel of the presence of the cutting blade that may not be visible. Caution should be exercised when approaching this area.<br><br>Replacement number: UPM8174 |  <br>**Figure 5: Blade Hazard** |
| The labels shown is affixed to both sides of the bridge frame nearest to the tape head.<br><br>It warns operators and service personnel of the presence of the cutting blade that may not be visible. Caution should be exercised when approaching this area.<br>Replacement number: UPM8205 |  <br>**Figure 6: Blade Hazard** |
| The label shown is affixed to the upper tape head assembly on either side of the machine.<br><br>It warns operators and service personnel of a potential crush hazard when cases are moving through the case sealer.<br><br>Replacement number: UPM8206 |  <br>**Figure 7: Crush Hazard** |
| The label shown is located on the in-feed and exit ends of the machine belt drives and on the powered outfeed table.<br><br>The label warns the operators and service personnel of the pinch points at each end of the belt drives.<br><br>Replacement number: UPM2220 |  <br>**Figure 8: Drive Base Hazard** |
| The label shown is affixed to the electrical control box.<br><br>The label advises service personnel of live electrical current when the machine is plugged in.<br><br>Replacement number: UPM2011 |  <br>**Figure 9: Hazardous Voltage** |
| The label shown is affixed to the electrical control box, and all area where live electrical current is present when the machine is in operation.<br><br>The label advises service personnel of live electrical current when the machine is plugged in.<br>Replacement number: UPM8207 |  <br>**Figure 10: Hazardous Voltage** |

Should any of the safety labels on the Case Sealer be damaged or destroyed, replacements can be ordered through your distributor.

# Safety Label Descriptions Continued

The label shown is located on the side of the column.

This label provides convenient safety instructions for the operator and service personnel in the operation of the IPG Case Sealing Equipment.

Replacement number: UPM2012


**Figure 11: Safety Instructions**

The label shown is located on the in-feed end

of the machine. The label advises personnel about the dangers of the machine due to compressed air used in the system. Be aware of warnings and proper procedures when running and/or servicing the machine.

Replacement number: UPM8208


**Figure 12: Compressed Air**

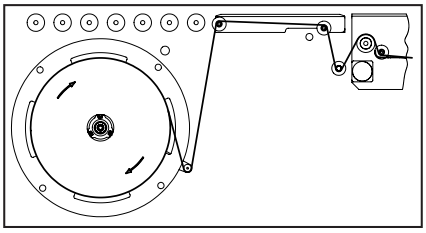
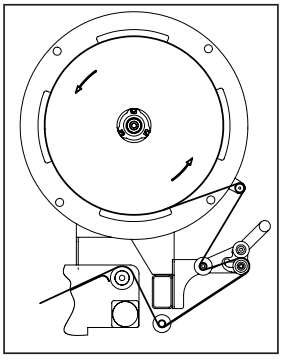
Should any of the safety labels on the Case Sealer be damaged or destroyed, replacements can be ordered through your distributor.

# Safety Label Descriptions Continued

| | |
|---|---|
| The label shown is located on the in-feed and exit ends of the machine belt drives.<br><br>The label advises operators to keep their hands clear of moving chain components.<br><br>Replacement number: UPM8209 |  <br>**Figure 13: Chain Hazard** |
| The label shown is located on the in-feed and exit ends of the machine belt drives.<br><br>The label advises operators to keep their hands clear of moving gear components.<br><br>Replacement number: UPM8210 |  <br>**Figure 14: Gear Hazard** |
| The label shown is located on the left machine column above the operator control box.<br><br>The label advises service personnel to read the maintenance instructions thoroughly before conducting any work.<br><br>Replacement number: UPM8211 |  <br>**Figure 15: Read Service Manual** |
| The label shown is located on the left machine column above the operator control box.<br><br>The label advises operators to read the user manual thoroughly before operating the machinery.<br><br>Replacement number: UPM8212 |  <br>**Figure 16: Read Operator Manual** |

Should any of the safety labels on the Case Sealer be damaged or destroyed, replacements can be ordered through your distributor.

# Label Descriptions

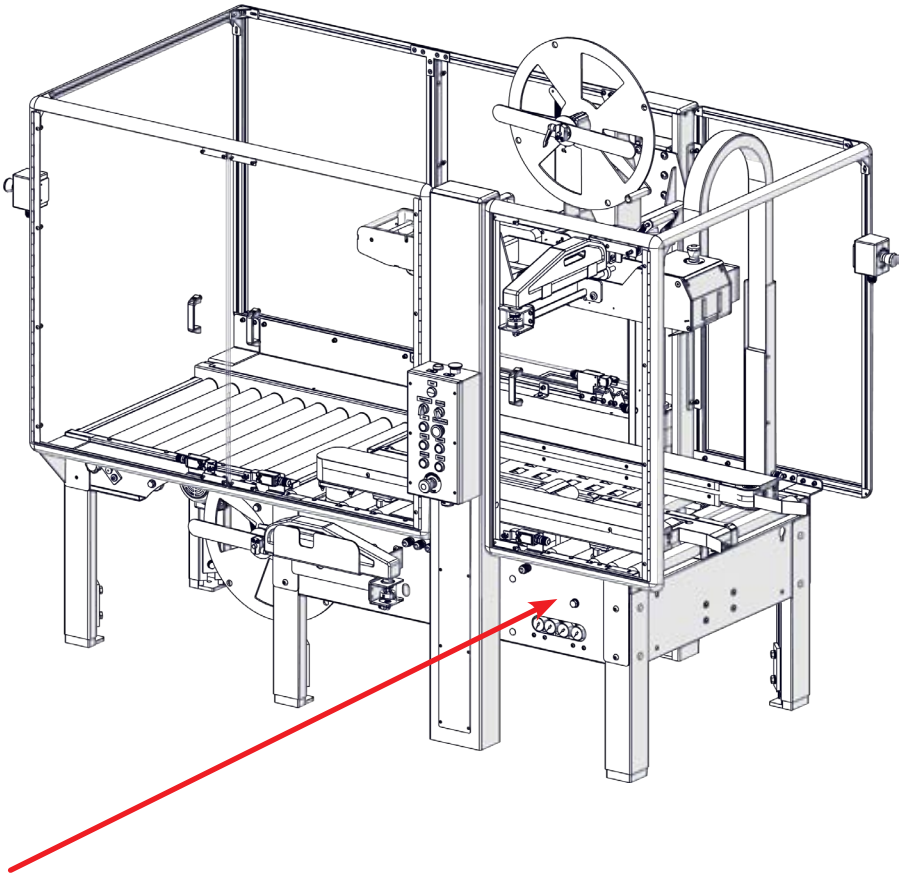
| | |
|---|---|
| The labels shown is affixed to electrical cabinet. It alerts the operators to always plug the equipment into a properly grounded outlet.<br><br>Replacement number: UPM8222 |  <br>**Figure 17: Ground Connection** |
| The labels shown is affixed to electrical cabinet. It alerts the operators that the equipment is rated for 110V AC single phase power.<br><br>Replacement number: UPM8219 |  <br>**Figure 18: AC Electrical Label** |
| The labels shown is affixed to the frame of the powered outfeed table. This shows the operator the tape threading path for the bottom tape.<br><br>Replacement number: UPM8217 |  <br>**Figure 19: Bottom Tape Thread Path** |
| The labels shown is affixed to the side of the bridge. This shows the operator the tape threading path for the top tape.<br><br>Replacement number: UPM8218 |  <br>**Figure 20: RSA Top Tape Thread Path** |

Should any of the safety labels on the Case Sealer be damaged or destroyed, replacements can be ordered through your distributor.

# Label Descriptions

| | |
|---|---|
| The labels shown is affixed to both sides of the bridge frame nearest to the tape head.<br><br>It is the Better Pack Auto H2O logo.<br><br>Replacement number: UPM8213 | Figure 21: Auto H2O Logo |
| The labels shown is affixed to the top of both of the columns.<br><br>It is the Better Packages logo.<br><br>Replacement number: UPM8214 | Figure 22: Better Packages Logo (column) |
| The labels shown is affixed to the top of the tape head. This is a smaller version of the logo on that is on the machine columns.<br><br>It is the Better Packages logo.<br><br>Replacement number: UPM8215 | Figure 23: Better Packages Logo (tapehead) |
| The labels shown is affixed to the left side frame of the machine on the infeed side of the operator control box.<br><br>It is the Better Packages nameplate for the Auto H2O line of machinery.<br><br>Replacement number: UPM8216<br><br>If reordering please have the serial number available for a reprint. | Figure 24: Machine Nameplate |

# Machine Nameplate



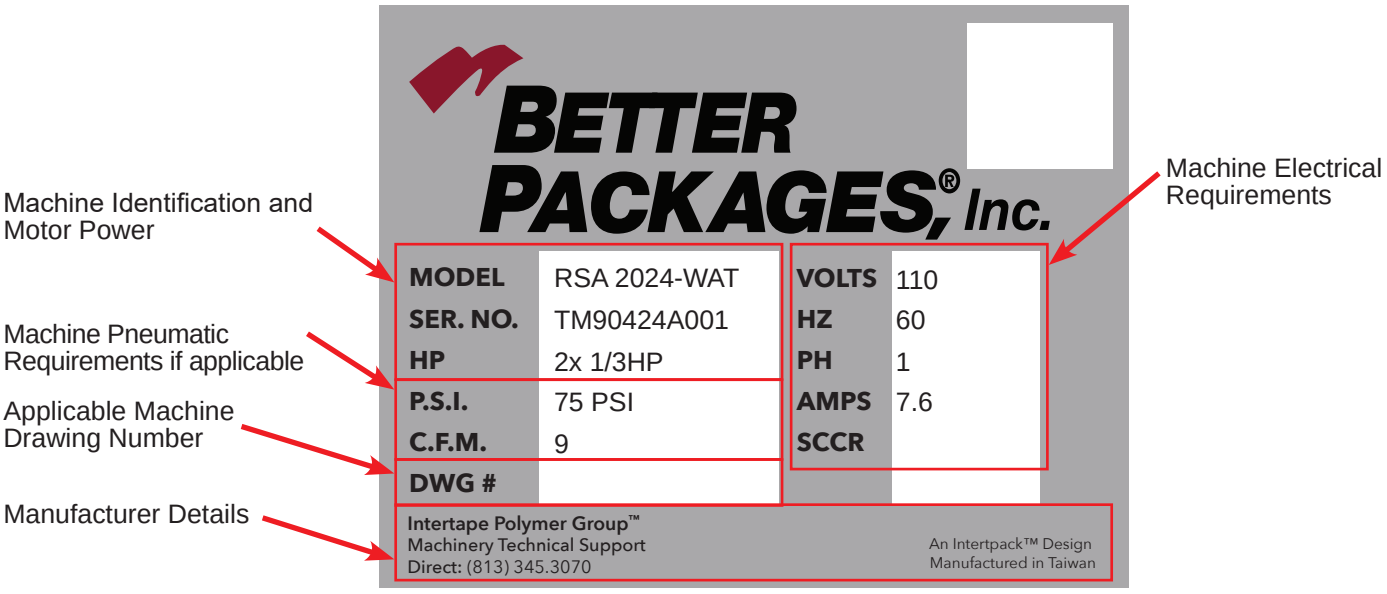
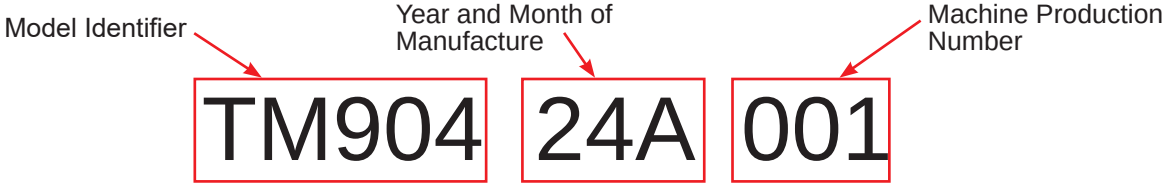



**Figure 25: Machine Nameplate**

## Reading Interpack Serial Numbers



# Important Safeguards

## Explanation of Signal Word Consequences

**WARNING: INDICATES A POTENTIALLY HAZARDOUS SITUATION, WHICH IF NOT AVOIDED COULD RESULT IN DEATH OR SERIOUS INJURY OR PROPERTY DAMAGE**

**CAUTION: INDICATES A POTENTIALLY HAZARDOUS SITUATION, WHICH IF NOT AVOIDED COULD RESULT IN MINOR OR MODERATE INJURY OR PROPERTY DAMAGE**

### WARNING

1. **To reduce the risk associated with mechanical, pneumatic, and electrical hazards:**
   - Read, understand, and follow all safety and operating instructions before operating or servicing the Case Sealer and/or Tape Head(s)
   - Allow only properly trained and qualified personnel to operate and service this equipment
2. **To reduce the risk associated with pinches, entanglement, and hazardous voltage:**
   - Turn electrical supply off and disconnect before performing any adjustments, maintenance, or servicing the Case Sealer or Tape Head
3. **To reduce the risk associated with pinches and entanglement hazards:**
   - Do not leave the Case Sealer running while unattended
   - Turn the Case Sealer off when not in use
   - Never attempt to work on any part of the Case Sealer, Tape Head, load tape, or remove jammed boxes from the Case Sealer while the machine is running
4. **To reduce the risk associated with hazardous voltage**
   - Position electrical cord away from foot traffic and vehicle traffic
   - Do not operate the Case Sealer with a damaged power cord
5. **To reduce the risk associated with sharp blades hazards:**
   - Keep hand and fingers away from the tape cutoff blades, the blades are very sharp
6. **To reduce the risk associated with fire and explosion hazards:**
   - Do not operate this equipment in potentially flammable and/or explosive environments
7. **To reduce the risk associated with muscle strain:**
   - Use the appropriate rigging and material handling equipment when lifting or repositioning this equipment
   - Use proper body mechanics when removing or installing Tape Heads that are moderately heavy or may be considered awkward to lift
8. **To reduce the risk associated with mechanical, pneumatic, and electrical hazards:**
   - Allow only properly trained and qualified personnel to operate and service this equipment

### CAUTION

1. **To reduce the risk associated with pinch hazards:**
   - Keep hands clear of the upper head support assembly as boxes are transported through the Case Sealer
   - Keep hands, hair, loose clothing, and jewelry away from box compression rollers, moving belts, and Tape Heads
   - Always feed boxes into the Case Sealer by pushing only from the end of the box

## Operator Skill Level Descriptions

These descriptions and levels are uniform across all IPG Case Sealers

**Skill "A" Machine Operator**

This operator is trained to use the Case Sealer with the machine controls, to feed cases into the machine, make adjustments for different case sizes (RSA series machines), to change tape, to start, stop, and restart production, and to clear jams and perform basic troubleshooting.

***Important:*** *The end user area supervisor must ensure that the operator has been properly trained on all machine functions before operating the machine.*

**Skill "B" Mechanical Maintenance Technician**

Also referred to as the Maintenance Champion, this technician, is trained to use the Case Sealer as the Operator is able and in addition is able to work with the safety protection disconnected to check and adjust mechanical components, to perform maintenance operations and repair the Case Sealer. A skill "B" operator is not allowed to work on live electrical components.

**Skill "C" Electrical Maintenance Technician**

This technician is trained to use the Case Sealer as the Operator is able and in addition is able to work with the safety protection disconnected, to check and adjust mechanical components, to perform maintenance operations and repair the Case Sealer. A skill "C" operator is allowed to work on live electrical panels, terminal blocks, and control equipment.

**Skill "D" Manufacturer Technician**

Skilled technician sent by the manufacturer or its agent (distributors) to perform complex repairs of modifications, when agreed with the customer.

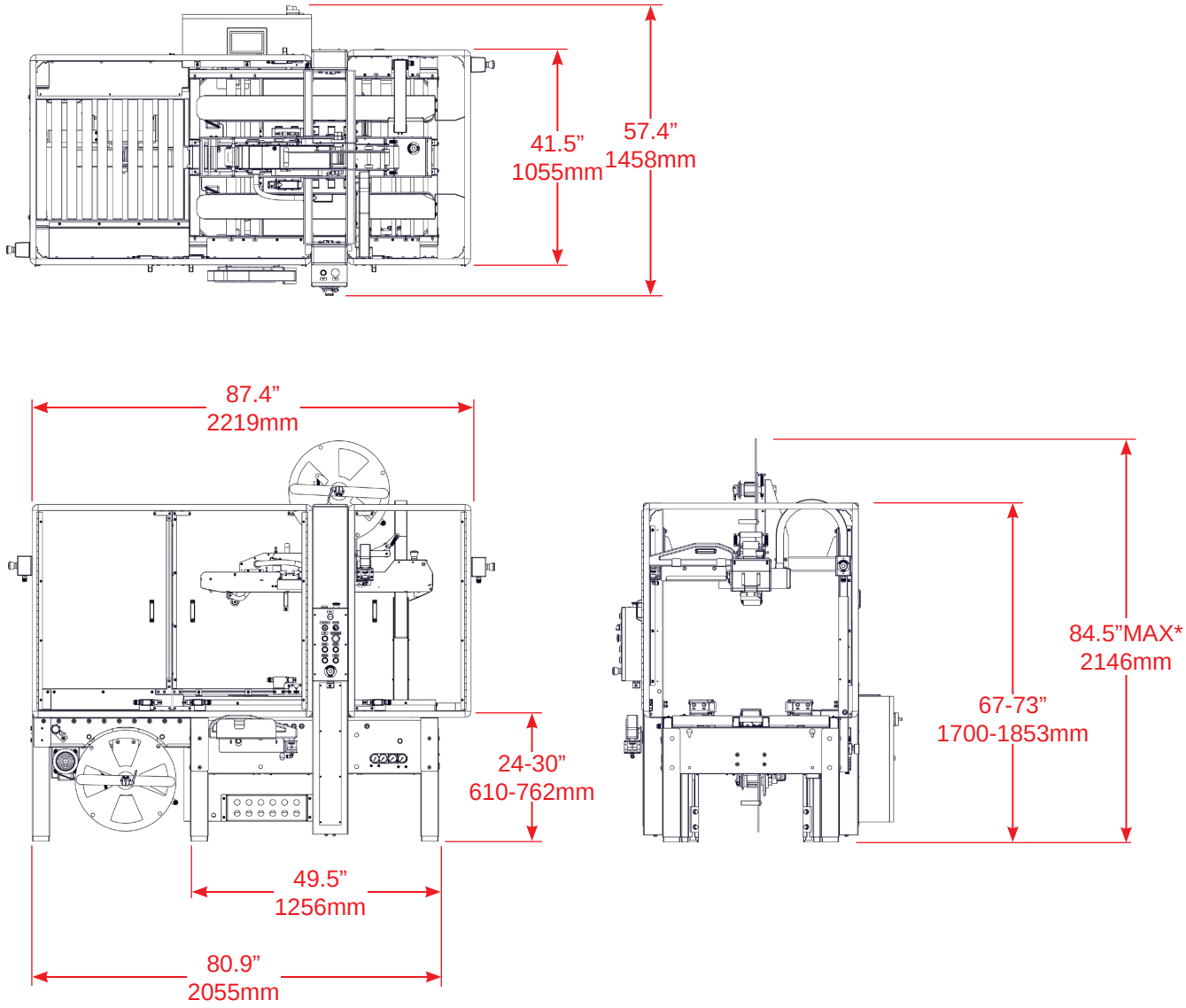
**Operators skill level required to perform the following tasks on the Machine System**

| OPERATION | MACHINE CONDITION | OPERATOR SKILL LEVEL | NUMBER OF OPERATORS |
|---|---|---|---|
| Tape Roll Replacement | Stopped by pressing the Emergency Stop Button | A | 1 |
| Blade Replacement | Electrical Power Disconnected | B | 1 |
| Ordinary Maintenance and Preventative Maintenance | Electrical Power Disconnected | B | 1 |
| Extraordinary Electrical Maintenance | Running with Safety Protections Disabled | C | 1 |
| Extraordinary Mechanical Maintenance | Running with Safety Protections Disabled | D | 1 |
| Drive Belt Replacement | Electrical Power Disconnected | B | 1 |
| Machine Installation & Set-Up | Running with Safety Protections Disabled | B & D | 2 |

**Proper Electrical Disconnect is achieved when the machine is unplugged from the electrical socket.**

## RSA 2024-WAT Dimensions

Machine Weight: 950 lbs. (431kg)




* Height notated is with standard legs. If a different range is necessary please contact your Authorized IPG Representative for additional conveyor height options. If optional casters are added they will add 4” (102mm) to the conveyor height.

**Figure 26: Machine Dimensions**

## Machine Components

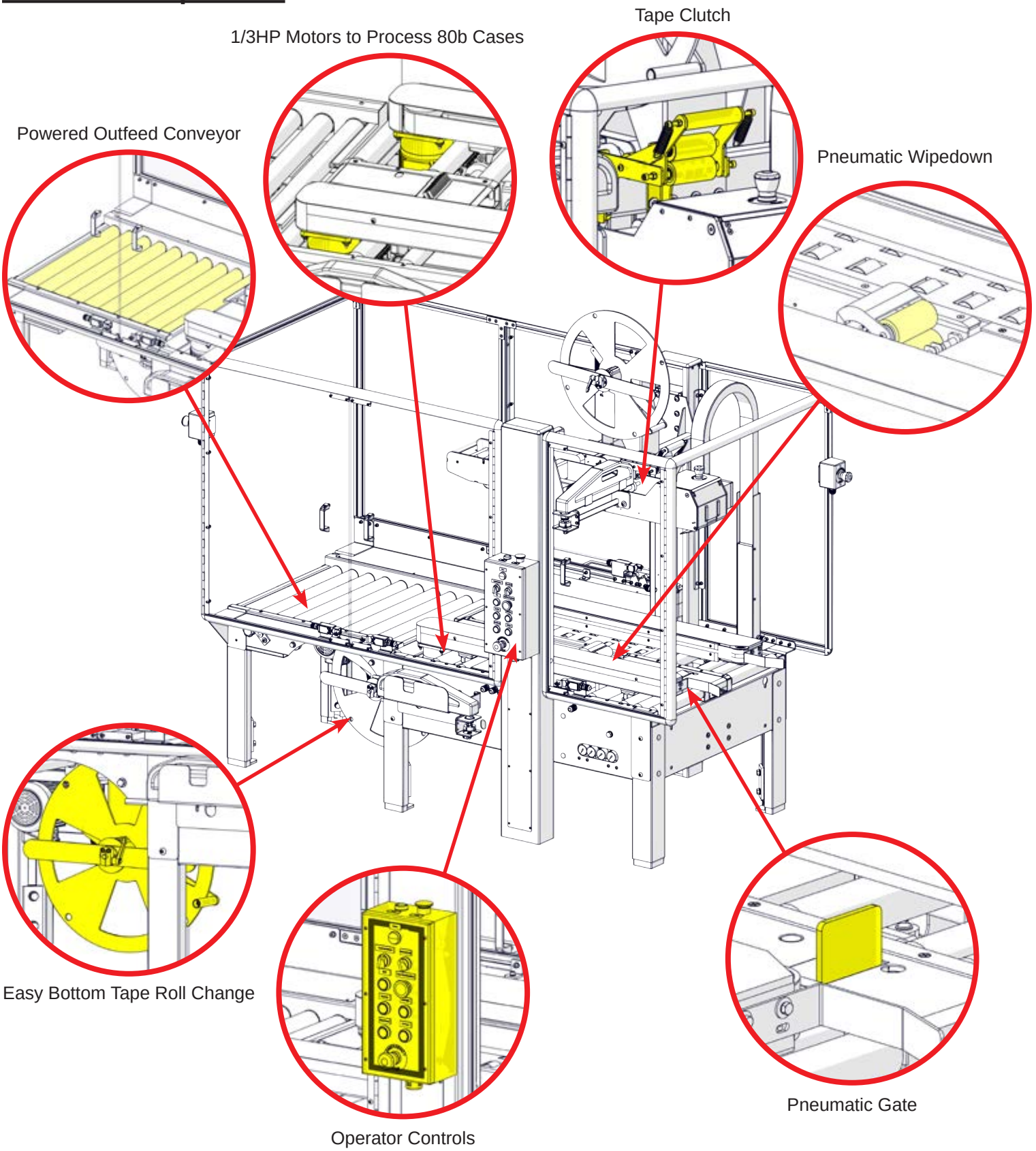



**Figure 27: Machine Components**

# Specifications

## Power Requirements

Electrical: **110v, 60HZ, 15A (1650 Watts)**

This machine comes standard with three gear motors, one on each drive base and one powered outfeed conveyor, an electrical box, and a control box.

The electrical box contains a HMI for machine adjustments. The control box contains the **Clear** button, **Power Lamp**, a **Manual/ Auto** switch, a **Tape Threading/Stop** button, a **Tape Cut** button, a **Tape Feed** button, an **Emergency Stop** switch, a **Start** button, and a **Reset** button.

A 12 ft. (3.6 m) standard, three-conductor power cord with plug is provided for **110V, 60HZ, 15A** service. The receptacle providing this service **must** be properly grounded and installed by a licensed electrician.

## Pneumatic Requirements

Compressed Air Supply: 9CFM at 90 PSI (28.3 Liter/min at 620.5 kPa)

This machine comes standard with one main regulator and four sub regulators. This main regulator should be set to a maximum of 75 PSI (512.1 kPa). The sub regulators should be set to UP: 65psi, DOWN: 35psi, OPEN: 30psi, CLOSE: 30psi.

Air must be clean and dry. If moisture enters the system valves can begin to degrade and lines slowly clog. This can cause reduced flow resulting in undesired machine behavior. If moisture is detected in the air lines an in-line air dryer may be used. IPG does not supply in-line air dryers.

## Operating Speed

Belt speed is 82 ft./min (24.9 m/min). Boxes must be separated by 14 in. (356mm).

# Specifications

## Tape Specifications

Use only **IPG Water-Activated Tape.** The machine can accommodate tape widths of 3 in. (70 - 75mm).

A maximum tape roll length of 4500 ft. (1371.6m) can be installed on the tape heads. This machine can accommodate all IPG brand, water-activated tape within listed specifications.

The standard tape leg length of 3 in. (75mm) is factory set. The standard tape leg length may vary up to ¼ in. (6mm) based on tape tension and line speed.

The standard tape leg length is adjustable via the HMI on the electrical box. The minimum tape leg length recommended is 2 in. (48mm) and the maximum recommended is 3 in. (75mm).

## Operating Conditions

Use in a dry, relatively clean environment at 40° to 105° F (5° to 40° C) with clean dry cartons. Maximum sound pressure level is less than 70dBA.

**CAUTION: MACHINE SHOULD NOT BE WASHED DOWN OR SUBJECTED TO CONDITIONS CAUSING CONDENSATION ON COMPONENTS. FOLLOW CLEANING INSTRUCTIONS.**

**CAUTION: TO PREVENT INJURY KEEP AN AREA WITH A MINIMUM OF 36 IN. (915MM) OF SPACE CLEAR, CLEAN, AND DRY ON THE OPERATOR AND CONTROL BOX SIDES OF THE MACHINE.**

## Carton Specifications

**Type**

- Regular Slotted Containers (RSC)
- Other styles may be processed. Consult factory.

**Material**

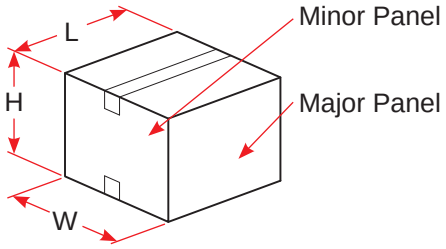
- 125 to 175 PSI bursting test, single or double wall, B or C flutes
- Other styles may be processed. Consult factory.

**Weight**

- 0 to 38.5 kg (0 to 85 lbs.) Max

**Size**

| Carton Size | Length | Width | Height |
|---|---|---|---|
| **Minimum** | 6” (152mm)* | 6.5” (165mm)* | 5” (127mm) |
| **Maximum** | Infinite | 20” (508mm) | 24” (610mm) |




However, if the box length (in the direction of the seal) to box height ratio is 0.75 or less, several boxes should be test run to assure proper machine performance. The formula is as follows:

$$\frac{\text{Carton Length in direction of seal}}{\text{Carton Height}} > 0.75$$

# Set-up Procedure

## Receiving and Handling

The Interpack **RSA 2024-WAT** is shipped to the customer in a box and fixed to a pallet. The machine is enclosed with either a corrugated sleeve and cap or an HSC corrugated box. The sequence below is step by step instructions to remove all packing materials.

**PRIOR TO SIGNING FOR THE MACHINE INSPECT IT FOR ANY DAMAGE THAT MAY HAVE OCCURRED DURING SHIPPING**

1. Remove the strapping and/or staples at the bottom of the box
2. Lift the box cover off of the machine, use caution and team lift
3. Remove any bubble wrap or protective wrapping
4. Inspect the machine for any damage that may have occurred during shipping
5. Remove the mounting bolts and nuts that secure the machine to the pallet
6. Using a forklift or other lifting device, lift the machine off the pallet
   - Install any optional casters at this point as well as adjusting leg height for desired conveyor height
7. Position the machine in its desired location
8. Remove any remaining tie wraps and shipping materials
9. Install the included Carton Retainers
10. Install any optionally ordered equipment

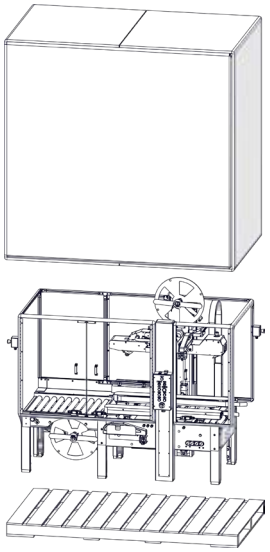


**Figure 28: Unboxing**

After unpacking the Case Sealer, look for any damage that may have occurred during shipping. Should the Case Sealer be damaged, file a claim with the transport company and notify your IPG representative as soon as possible.

## Set up

The Case Sealer must be installed on a near level ground. Use the adjustable legs to ensure the machine is level and firmly planted on the ground (no rocking). Adjust the leg height with the six (6) telescopic adjustment legs to accommodate conveyor heights from 24 in. to 30 in. Consult with the factory for any other conveyor heights that may be required. Optional Casters add 4 in. to the conveyor height. If noted in the purchase order the case sealer can be shipped pre-configured for the desired conveyor height.

To adjust the Case Sealer height, jack up the machine to give ample room to extend the legs. Using a 19mm box end wrench, loosen the eight (8) M12mm hex bolts. Adjust the legs to the desired conveyor height and tighten the bolts. Etched lines on the legs ease leveling. The machine must be properly supported prior to any leg adjustment.

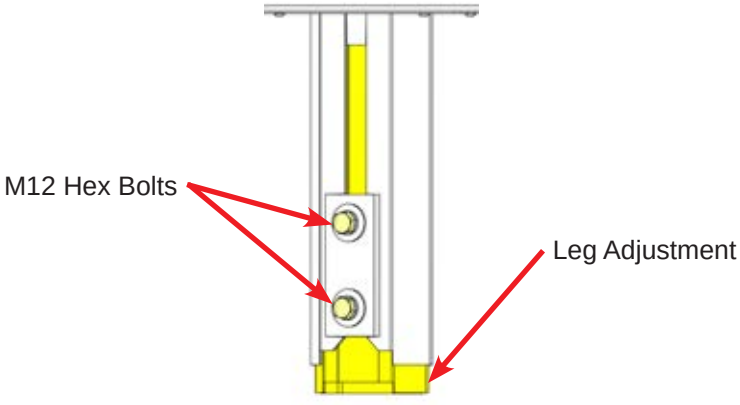



**Figure 29: Leg Adjustment**

Customer supplied exit conveyor (if used) should be straight and declined no more than 1 in./yard (5 cm/meter) away from the Case Sealer to convey the sealed cartons away from the machine.

## Optional Equipment: Caster Installation

**WARNING: CASTER INSTALLATION REQUIRES RAISING THE MACHINE TO ACCESS THE BOTTOM OF EACH LEG. FOLLOW ALL POSSIBLE SAFETY PROCEDURES PRIOR TO AND DURING THIS PROCESS.**

Be advised there are several ways to install the casters on IPG Case Sealers. Consult your company's safety practices after reading through the below directions. Take all precautions necessary.

1. Raise the machine to allow access to the bottom of each leg.
2. By hand, screw the caster into each leg.
3. Using a wrench, verify each caster is firmly seated to the bottom of the legs.
4. Lower the machine back down until it is resting on the casters.
5. Adjust the legs as necessary to achieve proper level of the machine.

**CAUTION: DO NOT ADJUST THE HEIGHT USING THE CASTERS. HEIGHT CHANGES ARE TO ONLY BE MADE BY ADJUSTING THE LEG EXTENSIONS.**

6. Position the machine in its desired location.
7. Lock the casters.

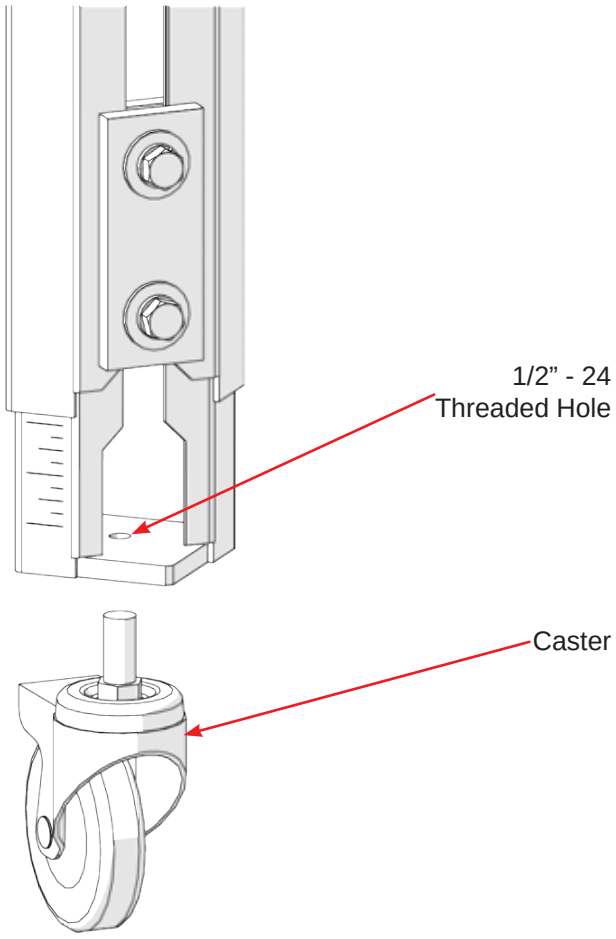



**Figure 30: Caster Installation**

## Optional Equipment: Infeed Table Installation

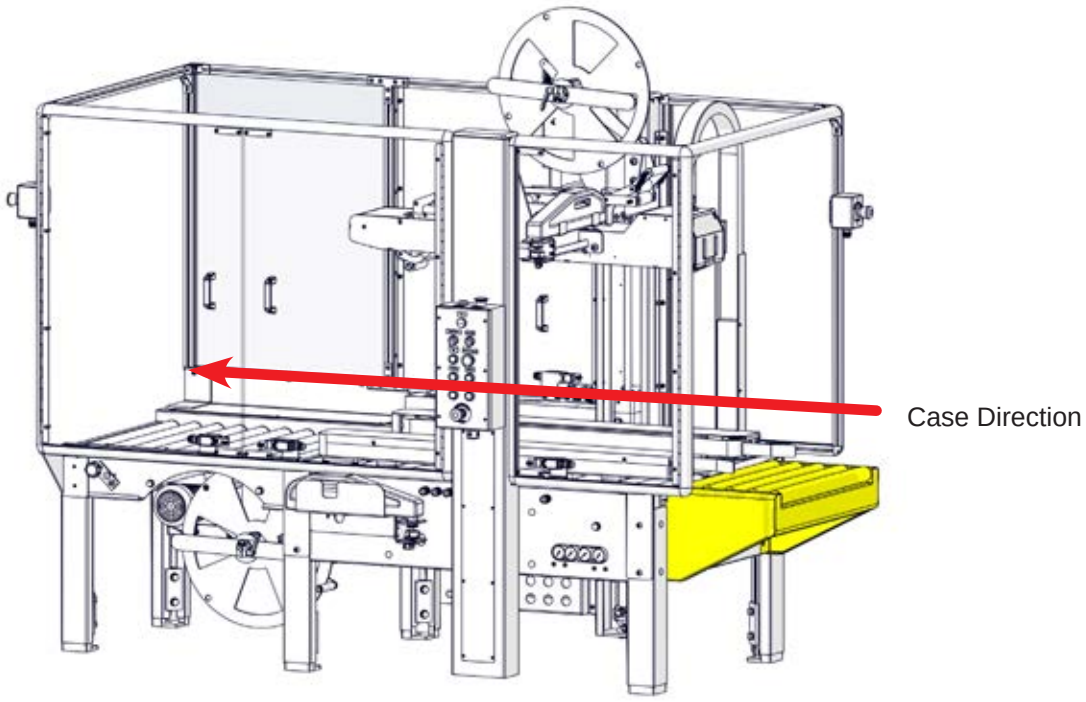



**Figure 31: Case Direction**

The RSA 2024-WAT can only accept an Infeed Table. Where a traditional Outfeed Table would be mounted a powered outfeed table comes standard.

IPG Case Sealers come with the necessary mounting points for in-feed tables. The optional in-feed tables will come with all necessary hardware to mount to the machine. The case sealers can accept a variety of table sizes. Please consult with the factory on the best size table for your application.

1. Loosely install two carriage bolts into top two mounting holes on roller table with hardware included.

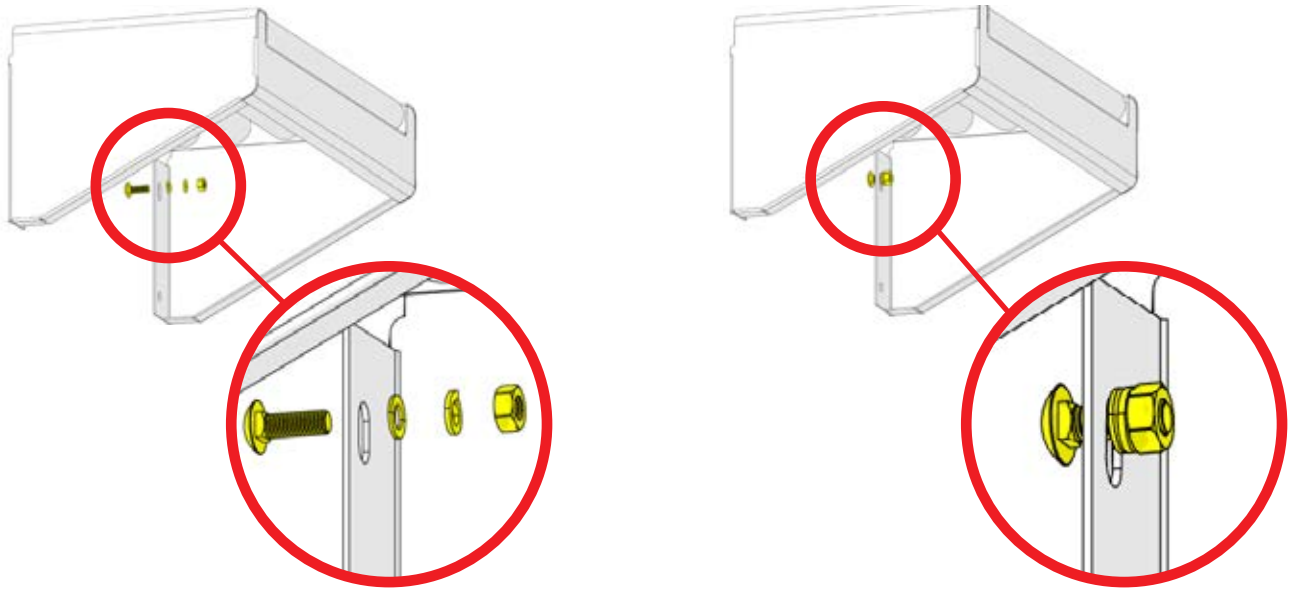


**Figure 32: Carriage Bolt Assembly**

## Optional Equipment: In-feed Table Installation (Continued)

1. Utilizing the slots on the machine base, attach roller table to machine base by locating carriage bolts in slots on machine base and push down to lock in place. Make sure carriage bolts are properly aligned into the slot when pushed down to lock in place before proceeding.

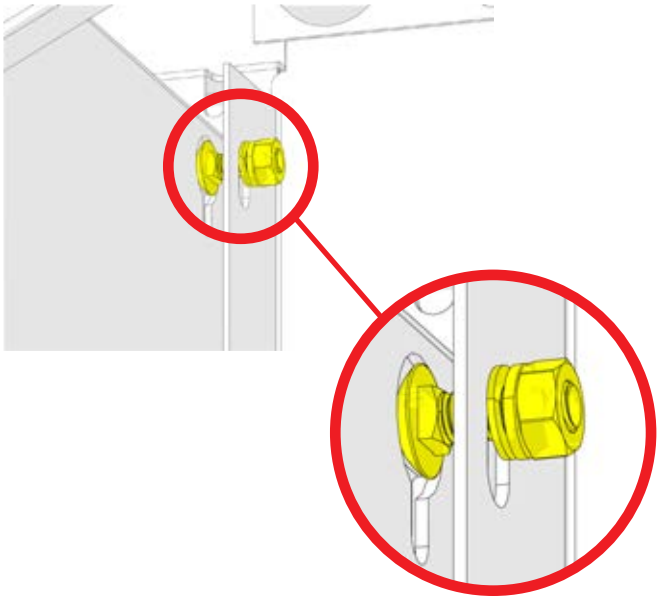


**Figure 33: Table to Machine Base Installation**

2. Once roller table is attached to the machine base using the two carriage bolts, install remaining two carriage bolts with hardware included through the bottom two holes on the machine base and roller table.
3. After all four mounting studs and included hardware have been installed, tighten all hardware to avoid roller table instability then install rollers on table.

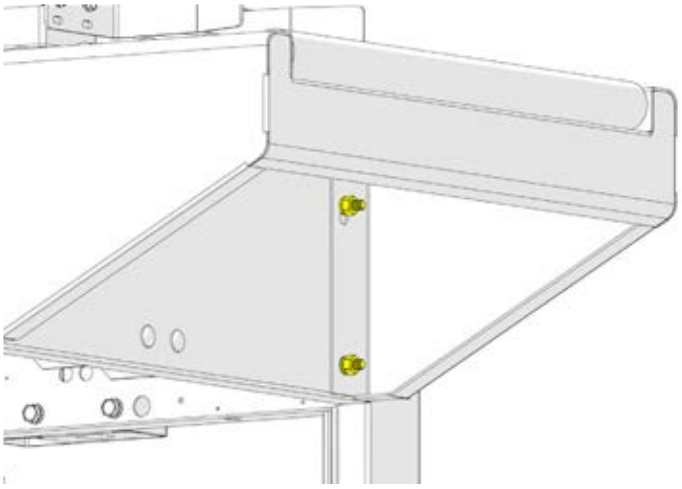


**Figure 34: Remaining Carriage Bolt Installation**

## Optional Equipment: Installation of External In-feed and Exit Conveyors

IPG does not supply conveyors. All conveyors are to be customer supplied.

1. Customer supplied gravity exit conveyor (if used) should be straight and declined no more than 1 in./yard (5 cm/meter) away from the machine to convey the sealed cartons away from the machine.
2. Customer supplied powered exit conveyor should be straight and level to convey the sealed cartons away from the machine.

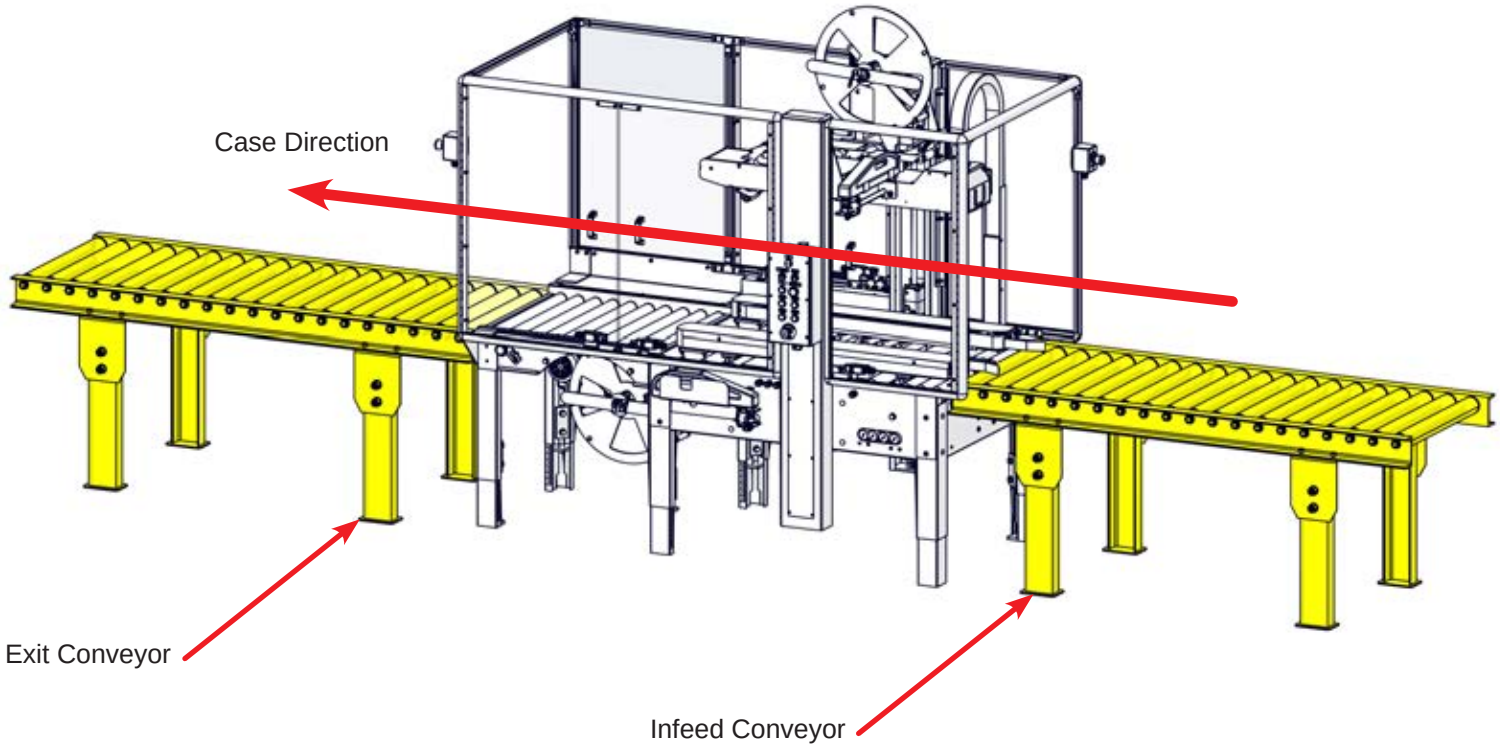



**Figure 35: Installing Conveyors**

# Connecting Utilities

## Electrical Utilities

A 12 ft. (3.6m) standard three-conductor power cord with plug is provided for **110V, 60HZ, 15A** electric service. The receptacle must be properly grounded. Before the machine is plugged into the receptacle, ensure that all materials are removed from the machine. The electrical control is protected with an automatic circuit breaker with resettable overload and fuses. Do not use an extension cord or power-strip.

The electrical box is located on one side of the **RSA 2024-WAT** Case Sealer. It also contains the HMI that is used for some basic controls and altering machine settings.

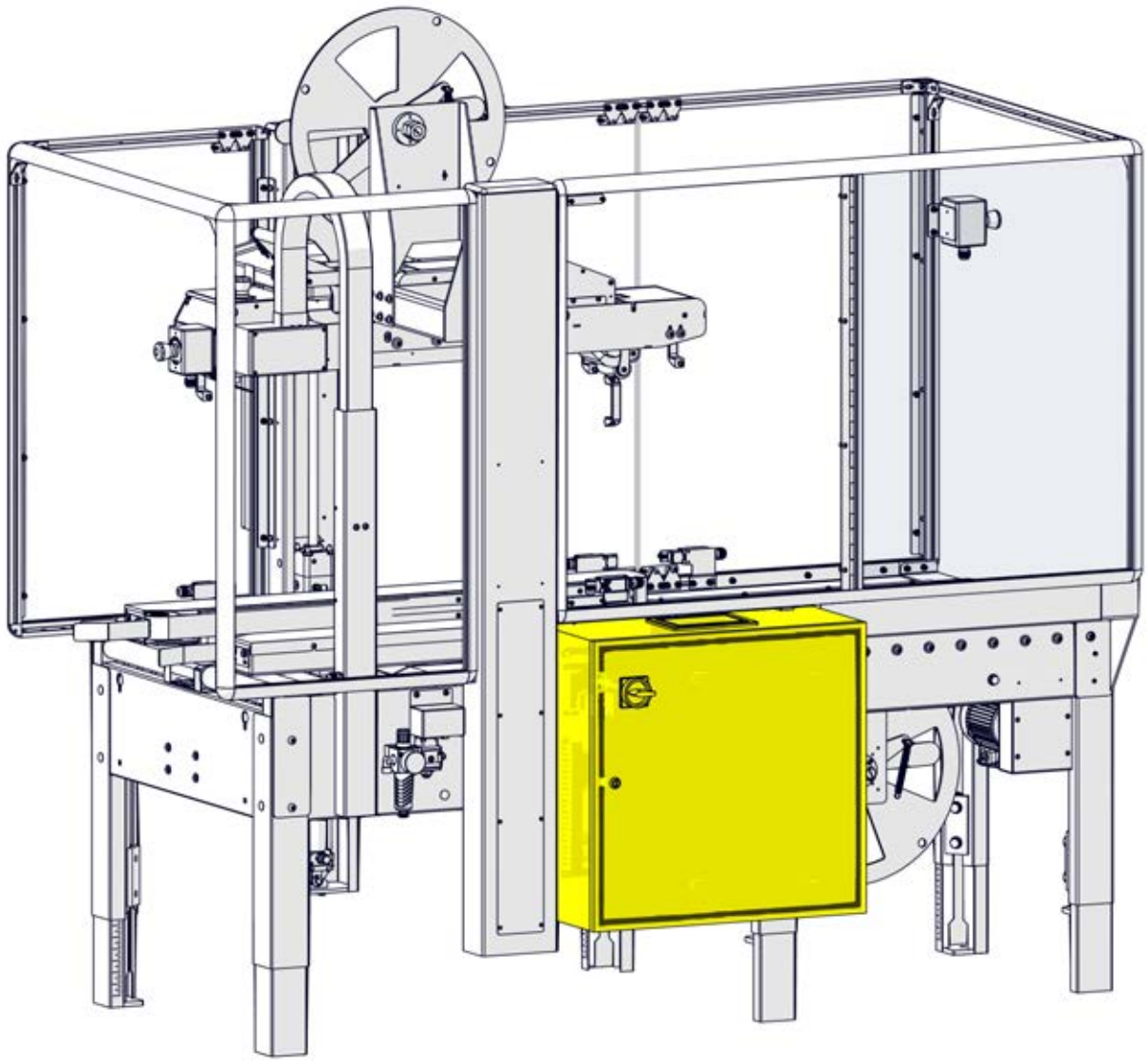


**Figure 36: Electrical Utilities**

The electrical box and pneumatic input can be reversed but this is recommended to be done at the factory.

# Connecting Utilities

## Pneumatic Utilities

The pressure setting for the main air regulator is factory set. The values will need to be adjusted as needed by customer supplied pressure and volume.

The main air regulator has a male quick disconnect adapter. Connect clean dry compressed air to this adapter. The **RSA 2024-WAT** Case Sealer requires a minimum of **9 CFM** at **90 PSI** (28.3 Liter/min at 689 kPa). It is connected to an electronic dump valve prior to any connection into the machine.

To regulate the main air pressure, pull on the knob located on the top of the main air regulator. Turn the knob clockwise for more pressure and counterclockwise for less. When the air pressure is at 75 PSI, push back down on the button until a “click” is felt to lock it in position. The thread size is 3/8 in NPT.

Should the supplied airline or pressure be unplugged, cut, or pressure drop for any reason, tape will not feed and rollers will not be activated if box is processed.

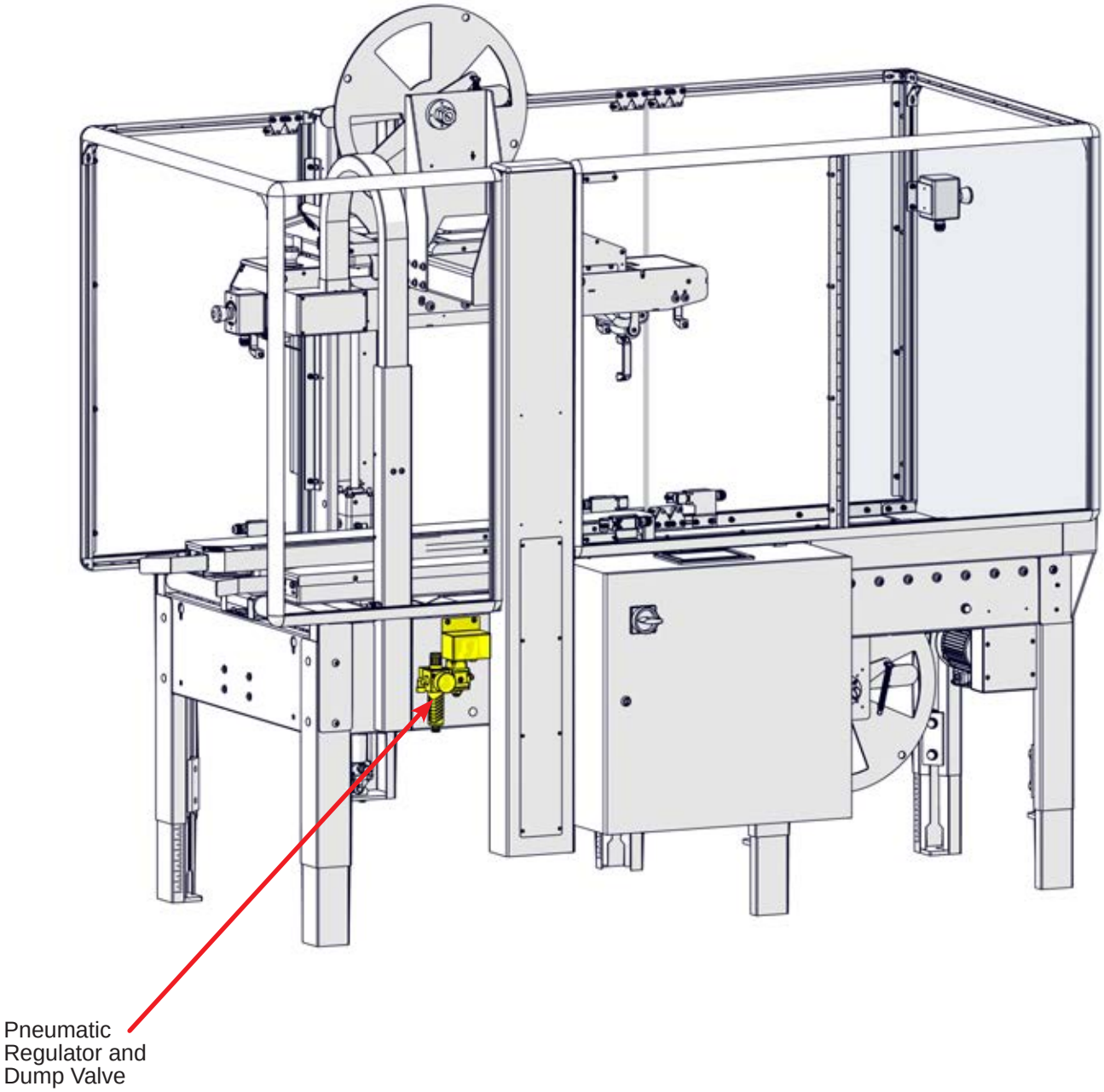



**Figure 37: Pneumatic Utilities**

# Operator Controls

Make sure machine is connected to air supply of at least 90 PSI (660.5 kPa) and machine regulator is set at 75 PSI. The following describes the use of control box buttons:

1. **Reset button** - Used to reset machine after power up or to reset after all E-Stops have been cleared.
2. **Clear button** (Operational in Auto Mode only). This button is used to simplify clearing a jam during production. When pressed down, belt drive motors stop, belts open, the bridge raises, air supply is dumped, and cutting mechanism is engaged if tape was dispensed.
3. **Manual/Auto** switch
   - Auto mode is for normal machine operation.
   - Manual mode is for tape threading/troubleshooting.
4. **Tape Threading/Stop** button
   - In Auto Mode, stops machine operation.
   - In Manual Mode, engages/disengages pinch roller which drives the tape.
5. **Tape Feed** button
   - No function in Auto Mode.
   - In Manual Mode, feeds a length of tape and cuts it.
6. **Tape Cut** button
   - No function in Auto Mode.
   - In Manual Mode, engages cutting mechanism in tape head to cut tape.
7. **Emergency Stop** button
   - In Auto Mode, de-energizes machine.
   - In Manual Mode, de-energizes machine.
8. **Head Down** button
   - No function on Auto mode.
   - In Manual mode, press and hold to lower the bridge.
9. **Head Up** button
   - No function on Auto mode.
   - In Manual mode, press and hold to raise the bridge
10. **Start** button
    - In Auto mode this will start normal operation of the machine as long as all prerequisite conditions are satisfied.
    - No function in Manual mode.
11. **Top/Bottom/Both** switch
    - Top - when switched to top the machine will operate in top only mode.
    - Bottom - when switched to bottom the machine will operate in bottom only mode.
    - Both - when switched to both the machine will seal both the top and bottom.
12. **Power Lamp** - Illuminated when power is being delivered throughout the machine.

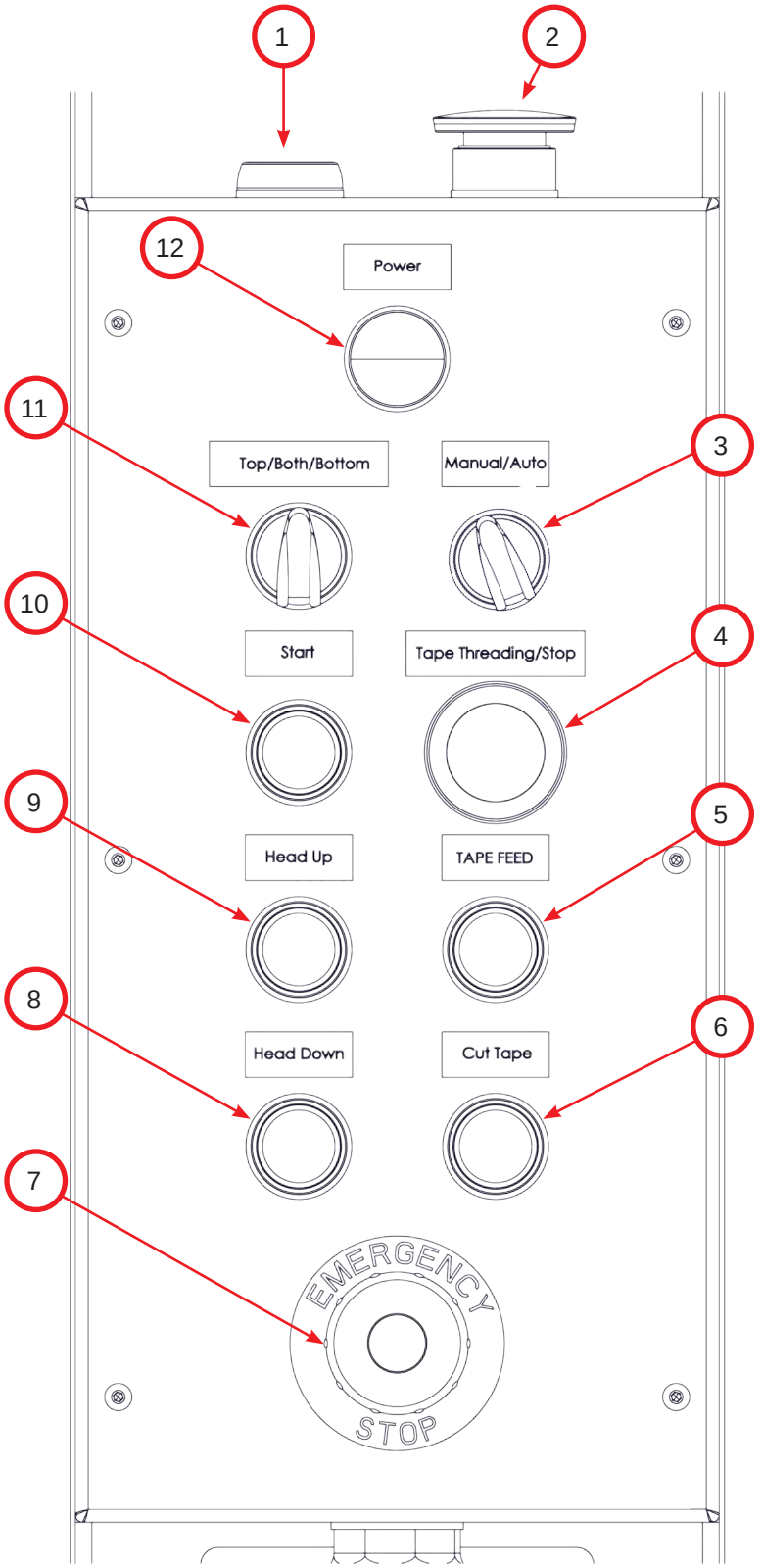



**Figure 38: Operator Controls**

# Bottom Tape Head Loading/Threading

## Direction of Bottom Tape Unwind

As shown in the diagram below, tape should be mounted with a clockwise, unwind direction. The adhesive side of tape will be facing down as it goes around the peel-off roller.

## Bottom Tape Path

The diagram below shows the threaded tape path using the red line/arrow as the tape. For proper threading of tape use the steps in the next section. The order in which the tape passes the rollers starts at the peel-off roller, travels through three guide rollers, as labeled below, then over powered roller, and under a fourth guide roller.

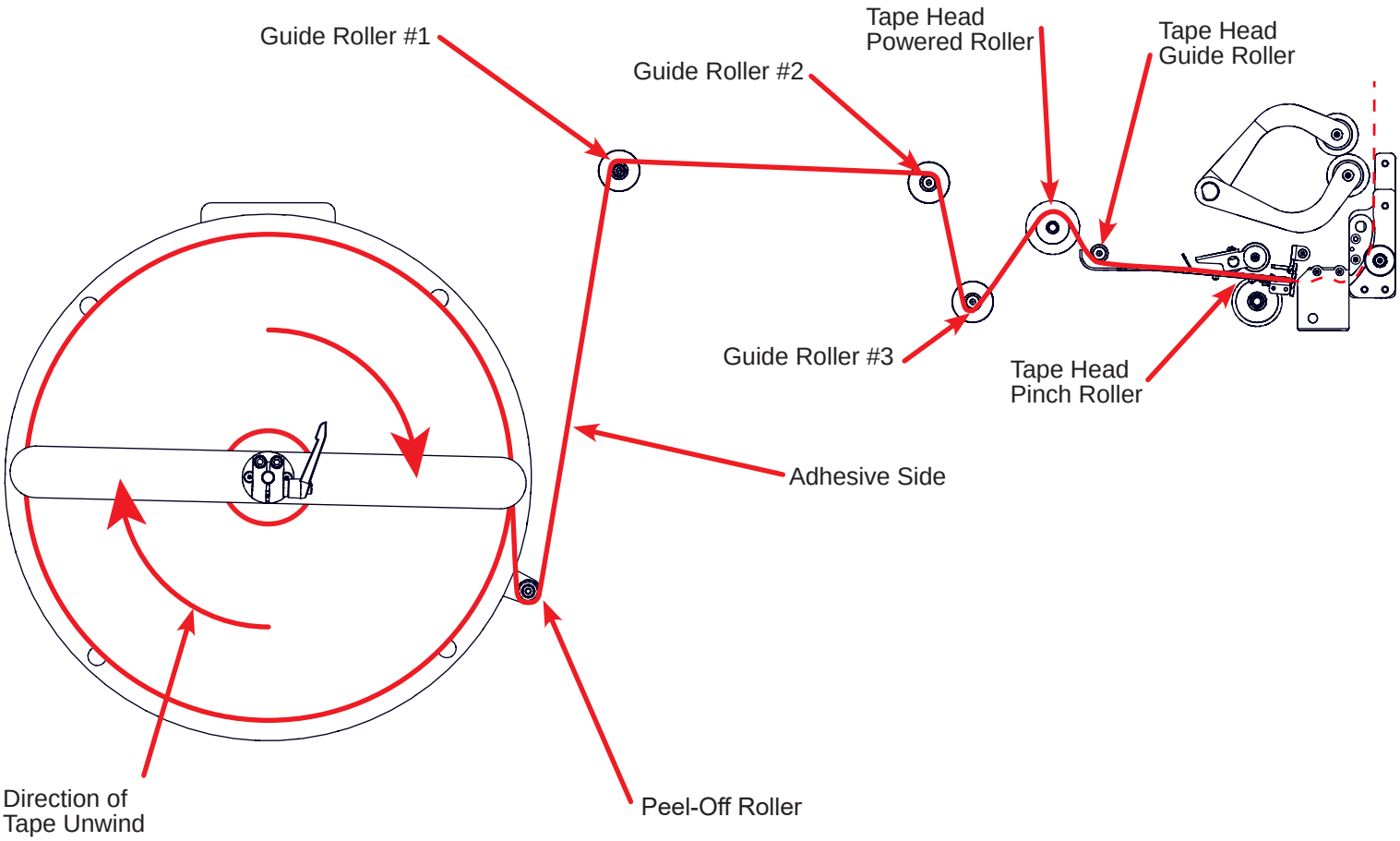


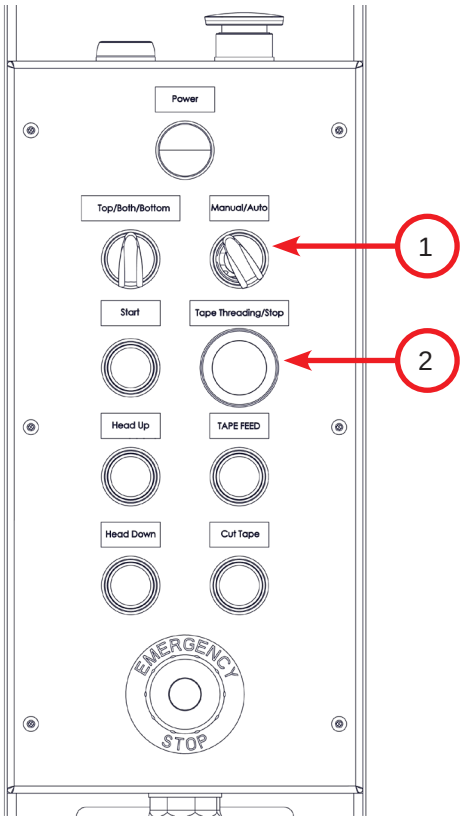

**Figure 39: Bottom Tape Path**

# Bottom Tape Head Loading/Threading

## Bottom Tape Loading/Threading Instructions

The instructions below will assist in threading tape on the bottom tape head. Bottom Threading diagram is located on page 30.

1. Put machine in Manual Mode using Manual/Auto selector switch (Item 1).
2. Press the Tape Threading Button (Item 2).
3. Unlock the tape carriage retaining bracket and pull it out away from the machine (Item 3). When fully extended lock the bracket to prevent unwanted movement of the bottom tape mandrel.
4. Loosen the handle on the tape mandrel and remove the Cross Bar Assembly (Item 4).
5. Remove the old tape core and any remaining tape in the tape path.
6. Install a new roll of tape. The tape peel-off direction should be clockwise.
7. Peel back the tape and have it go under the Peel-off Roller (Item 5).
8. Unlock the tape carriage and while holding the end of tape in one hand push the tape carriage back to its home position and lock the carriage in place (Item 3).
9. Slip the tape up between the machine frame and the first powered outfeed roller. Grasp it with your free hand on the top side of the powered conveyor (Item 6).
10. Remove the rear cover to expose the tape guide rollers.
11. Pull the tape over the two (2) guide rollers (#1 and #2) (Item 7) (Some models may have a clutch roller).
12. The tape must then pass under the #3 guide roller (Item 8) before being pulled up over the first roller in the tape head (Item 9).
13. At this time, use scissors to trim any of the damaged tape off allowing for a clean edge.
14. After being pulled over the powered tape head roller pass the tape under the tape head guide roller (Item 10).
15. Lastly make sure the tape is under the tape head pinch roller and the guide plate (Item 11).
16. Clear all faults and press the “Reset” button.
17. Press the “Tape Feed” button and remove the dispensed tape.



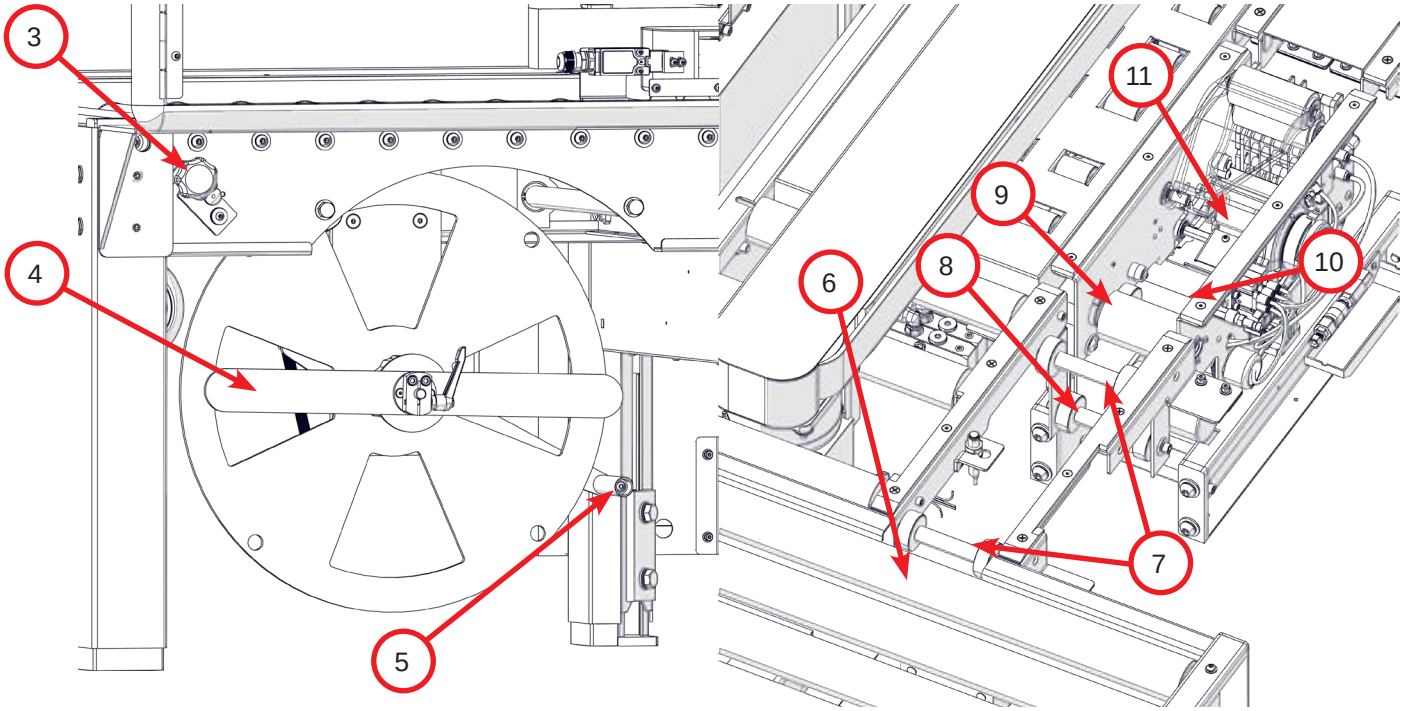




**Figure 40: Bottom Tape Loading Procedure**

# Top Tape Head Loading/Threading

## Direction of Top Tape Unwind

As shown in the diagram below, tape should be mounted with a counterclockwise, unwind direction. The adhesive side of tape will be facing up as it goes around the peel-off roller.

## Top Tape Path

The diagram below shows the threaded tape path using the red line/arrow as the tape. For proper threading of tape use the steps in the following section. The order in which the tape passes the rollers starts at the peel-off roller, travels under the center roller, through the clutch roller, under the third roller, over the tape head powered roller, finally under the tape head pinch roller.

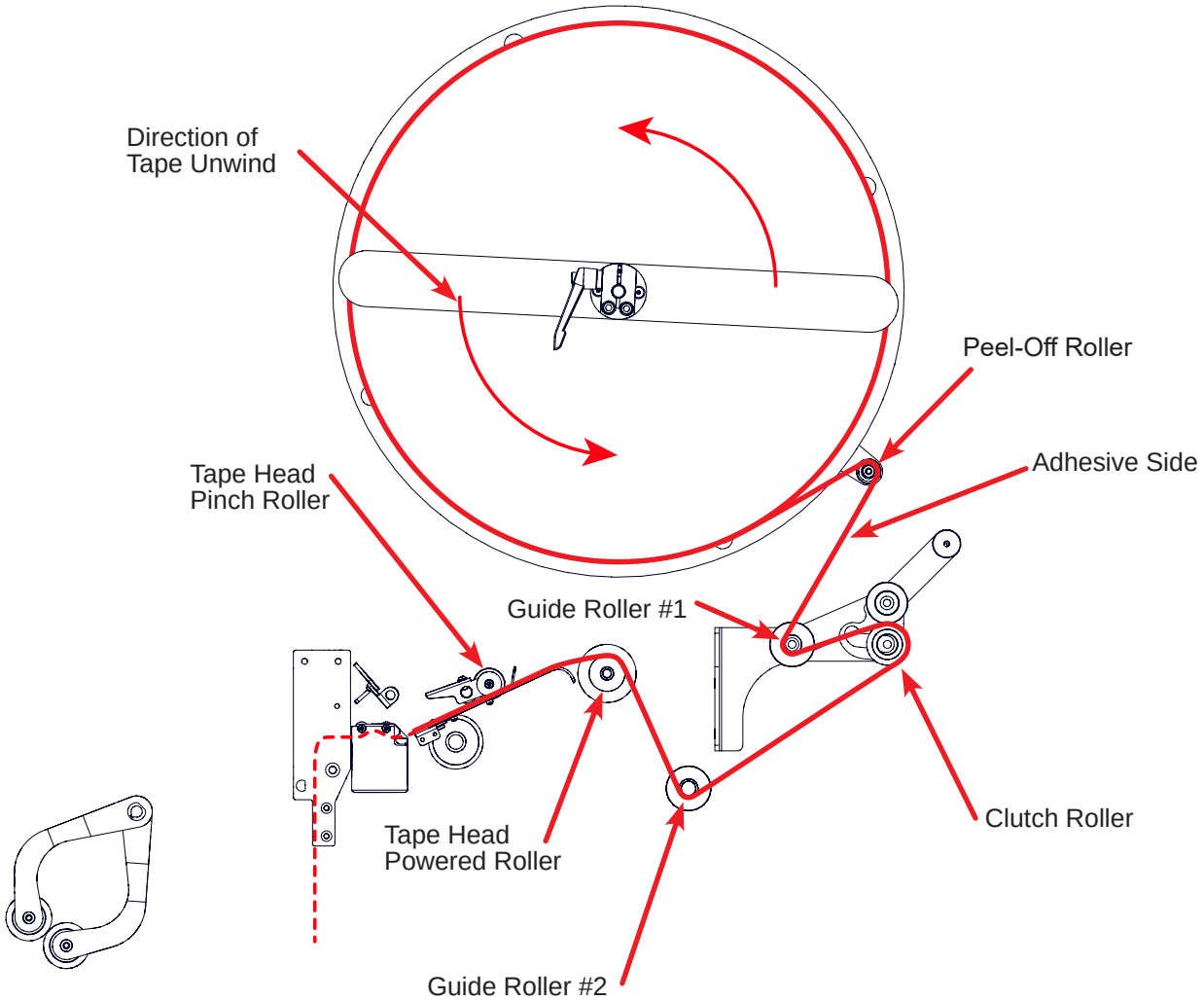


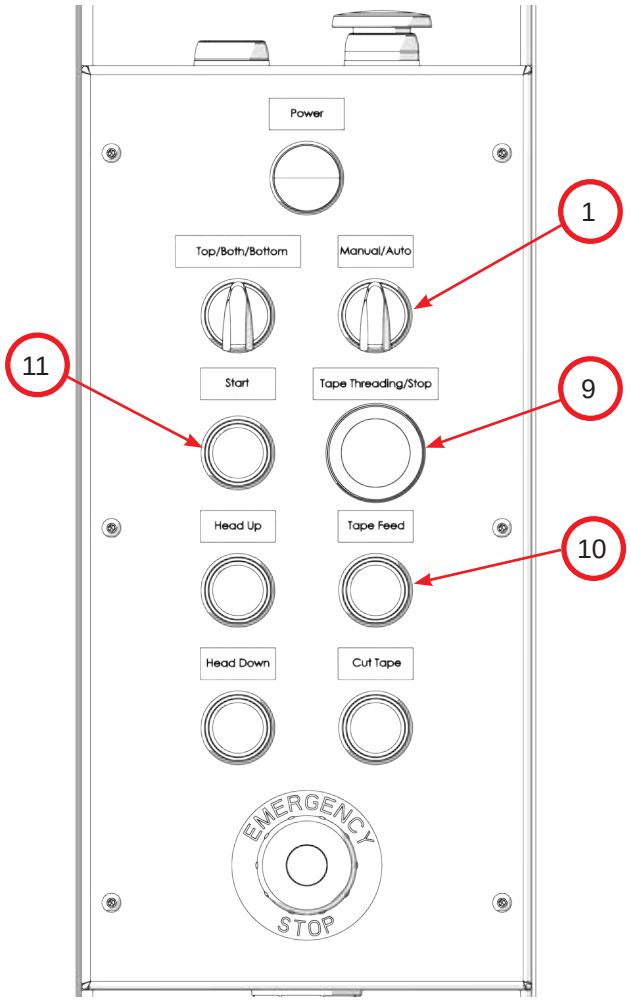

**Figure 41: Top Tape Path**

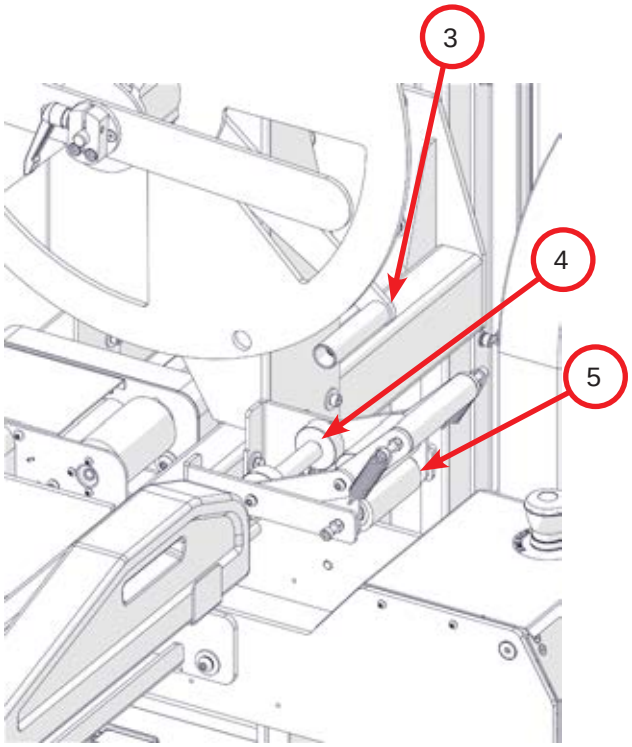
# Top Tape Head Loading/Threading

## Top Tape Loading/Threading Instructions

The instructions below will assist in threading tape on the top tape head.

1. Put machine in Manual Mode using Manual/Auto selector switch (Item 1).
2. Install tape roll on to mandrel (Item 2) making sure the unwind direction is counterclockwise.
3. Pull tape around the top of the peel-off roller and towards the rear of the machine, under the tape roll (Item 3).
4. Bring tape under Guide Roller #1 (Item 4) followed by opening the clutch then bringing the tape through the clutch roller (Item 5). Once through the clutch close the clutch.
5. Pass the tape under the bridge support beam and Idle Roller #2 (Item 6) before pulling the tape upward into the tape head.
6. Bring the tape over the powered drive roller (Item 7) and towards pinch roller (Item 8).
7. Thread tape under guide plate until it reaches the pinch roller. During this process, make sure pinch roller is not engaged. To engage/disengage the pinch roller, use the Tape Threading/Stop button (Item 9) located on the control box.
8. Once tape has been passed under the pinch roller, engage pinch roller using Tape Threading/Stop button (Item 9).
9. Press down the Tape Feed button (Item 10) to allow machine to pass tape through tape shoe and feed out of the tape head.
10. If tape passes with no jams, remove tape from tape shoe guide. Flip the Manual/Auto switch (Item 1) to Auto and press Start button (Item 11) to begin machine operation. If you encounter a jam, see Clear Mode (Clear Jam).



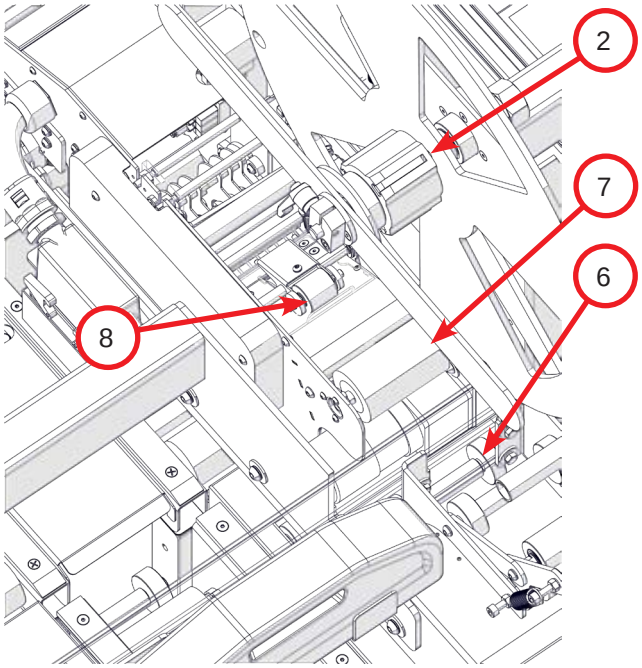




**Figure 42: Top Tape Loading Procedure**

# Removing/Replacing The Top Tape Head

The tape head is 36lbs (16kg). Use proper lifting techniques to reduce the risk of strain.

1. Switch the machine into Manual Mode.

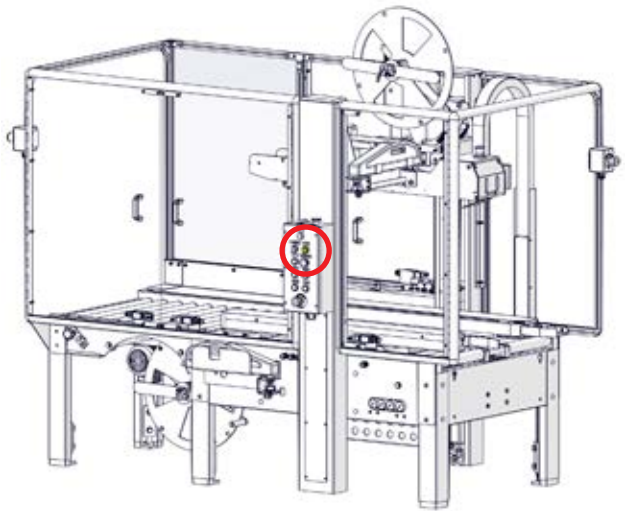


**Figure 43: Top Tape Head Removal 1**

2. Press and hold the “Head Down” button to lower the bridge as low as it will go.

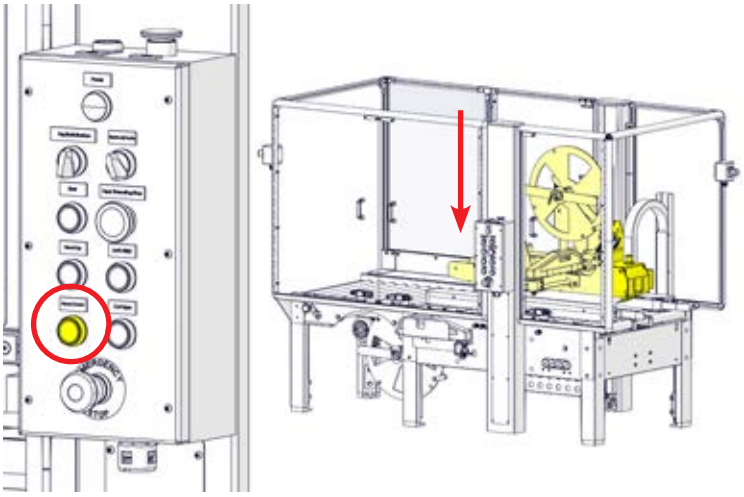


**Figure 44: Top Tape Head Removal 2**

3. Open the machine doors to access the tape head.

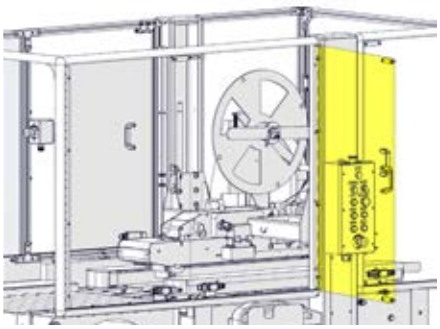


**Figure 45: Top Tape Head Removal 3**

4. Disconnect the industrial power connector.

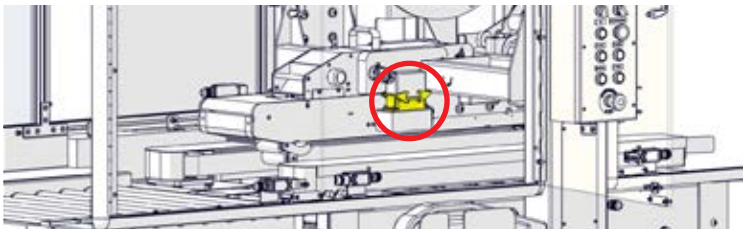


**Figure 46: Top Tape Head Removal 4**

5. Turn the valve on the water pot to stop the flow.
6. Disconnect the water line and remove the water pot.
7. Disconnect the air line.

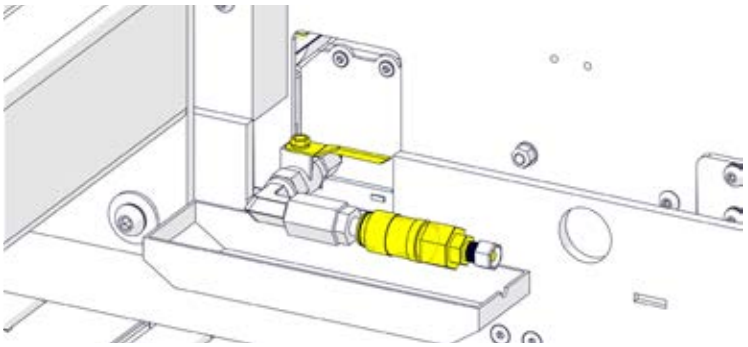


**Figure 47: Top Tape Head Removal 5**

8. Lift the tape head locking plate. You may need to push the tape head toward the front of the machine.

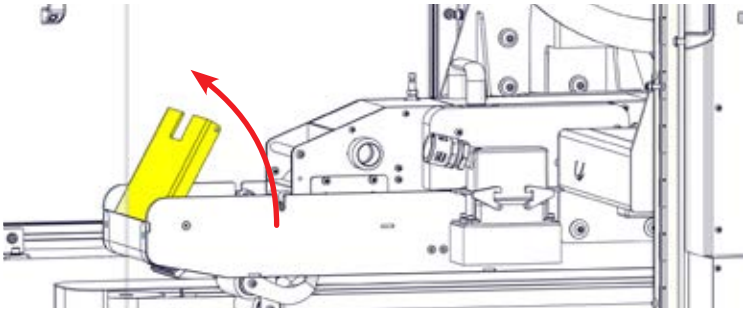


**Figure 48: Top Tape Head Removal 6**

9. Remove any tape that is threaded into the tape head.
10. Lift the tape head out of the tape cavity.

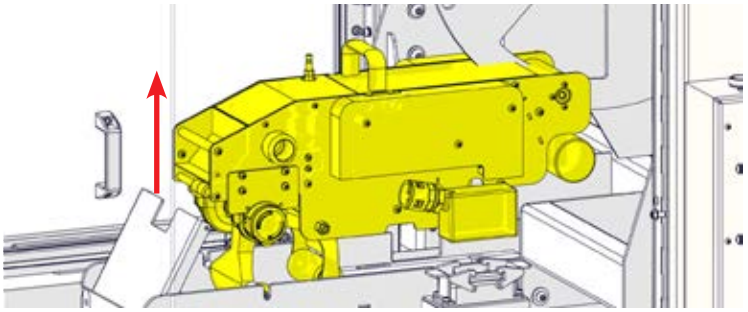


**Figure 49: Top Tape Head Removal 7**

# Removing/Replacing The Bottom Tape Head

The tape head is 36lbs (16kg). Use proper lifting techniques to reduce the risk of strain. Press the Emergency-Stop before removing the tape head.

1. Bottom Tape Heads are held in place by gravity.
2. If the bridge is not raised switch the machine into Manual Mode.
3. Press and hold the “Head Up” button.

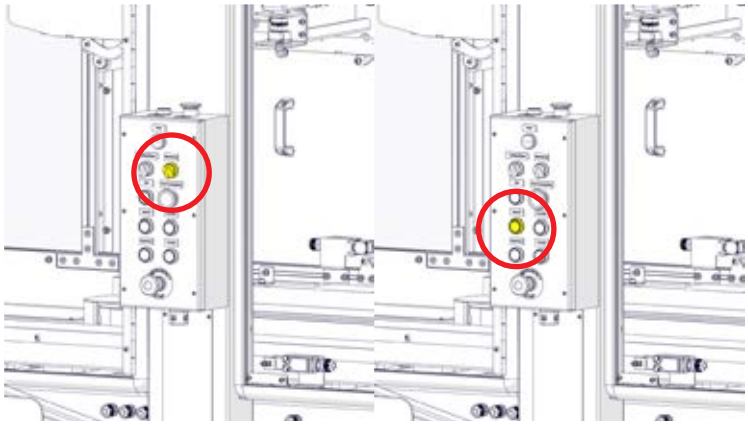


**Figure 50: Bottom Tape Head Removal 1**

4. Open the machine doors.

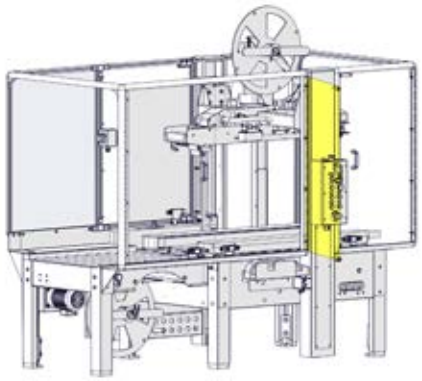


**Figure 51: Bottom Tape Head Removal 2**

5. Remove the two (2) roller fill plates on either side of the bottom tape head.

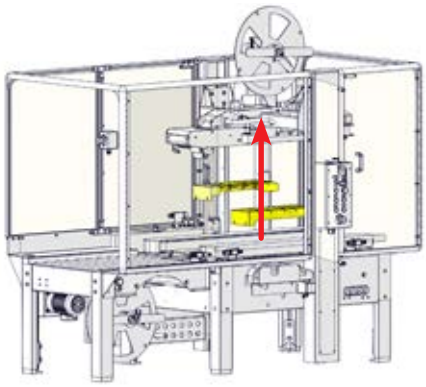


**Figure 52: Bottom Tape Head Removal 3**

6. Disconnect the tape head from all energy sources.
7. Unlock the large electrical connector and pull it straight out.

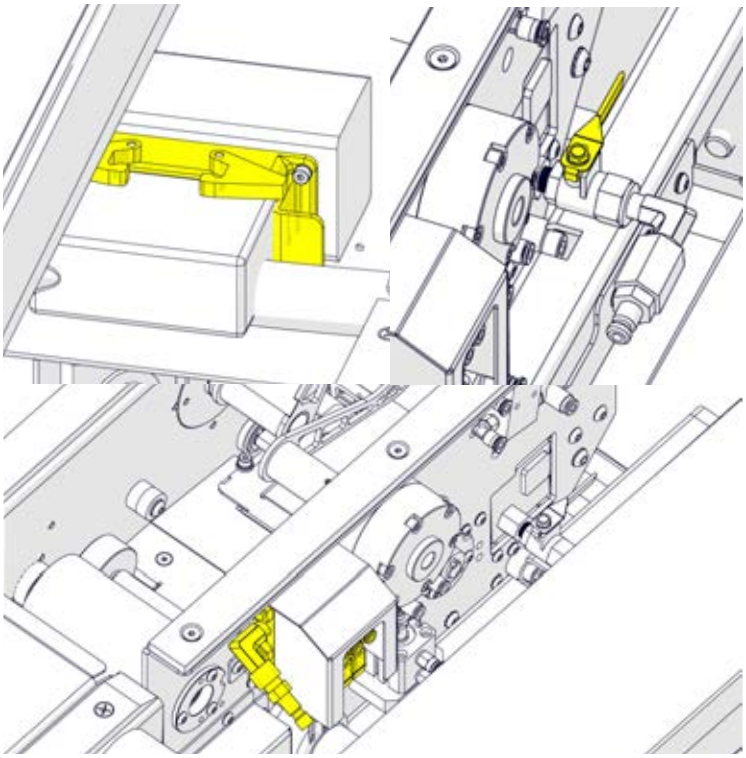


**Figure 53: Bottom Tape Head Removal 4**

8. Disconnect the air supply to the bottom tape head.
9. Close the valve on water pot and disconnect the water supply and remove the water pot.
10. Pull the tape head straight out of the cavity.

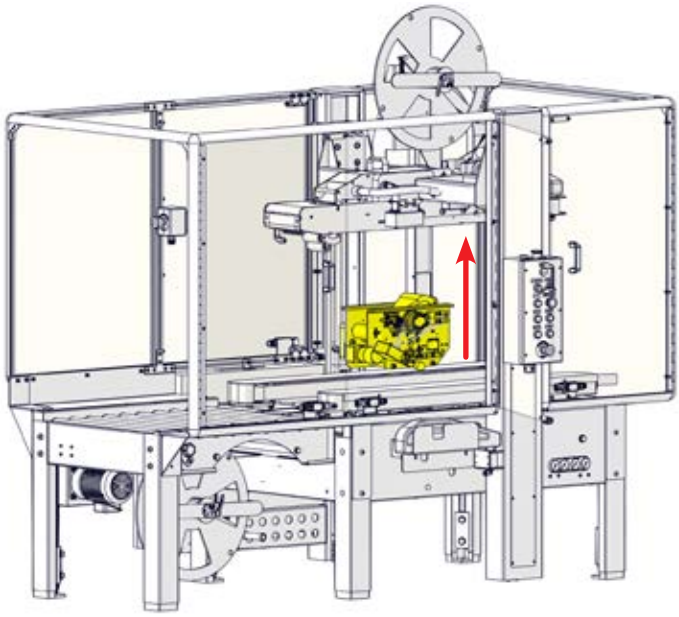


**Figure 54: Bottom Tape Head Removal 5**

# Adding Water to the System

The **RSA 2024-WAT** comes equipped with two 64oz water bottles to supply the tape heads with water.

1. Remove the water bottle by pulling them straight up from support bracket.
2. Turn the bottles over so the water will not spill.
3. Unscrew the water bottle cap.
4. Fill the bottle with warm water, distilled or filtered water is preferred when tap water contains excess minerals.
5. Replace the water cap.
6. Install the water bottle by inserting it over the water cup post and into the support bracket on the side of the machine.

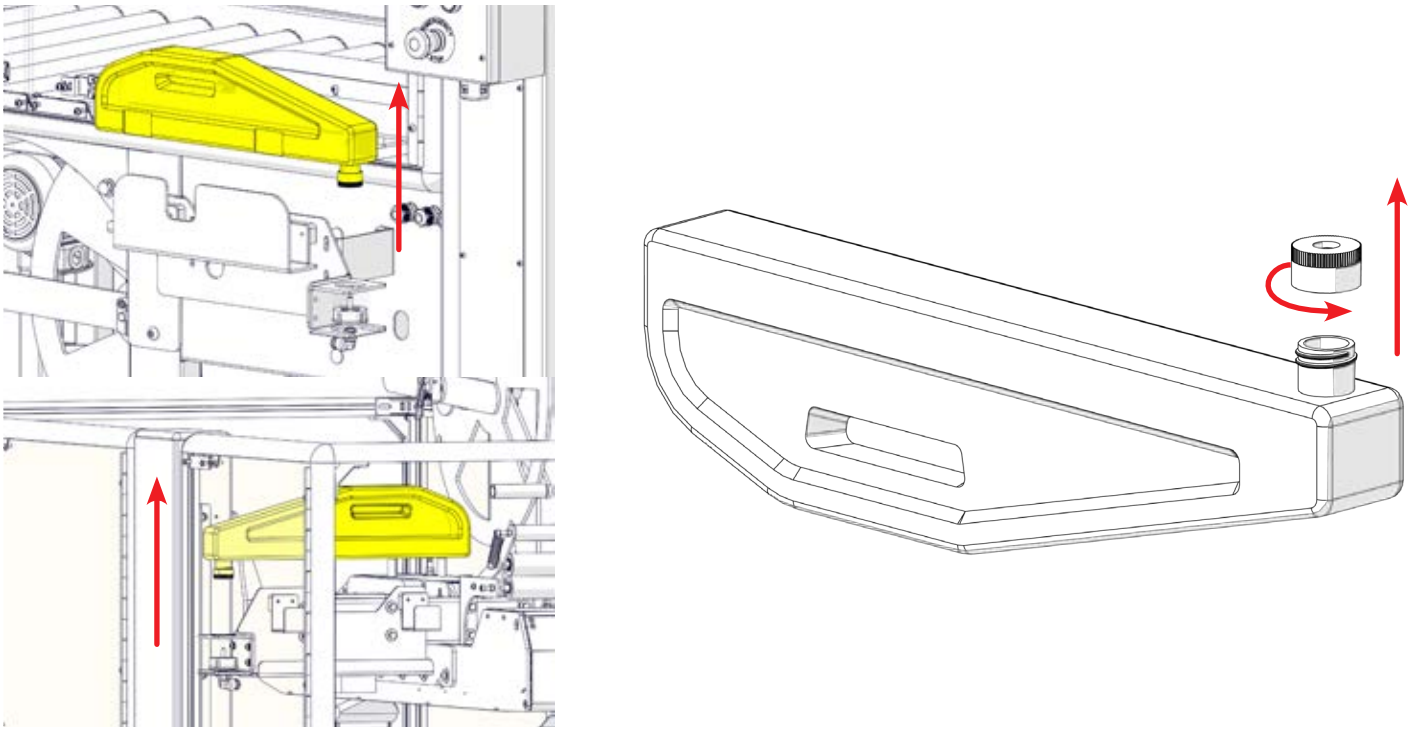


**Figure 55: Adding Water to the System**

# Adjusting the Water Level

Depending on volume of cartons that are being processed through the RSA 2024-WAT the water level may need to be adjusted. Water is transported into the water pot through a gravity fed line. The water level is controlled by raising and lowering the water bottle assemblies.

## Adjusting the top water level

1. Remove the top water bottle.
2. To adjust the water level on the top loosen the four (4) 10mm bolts on the water bottle retainer.

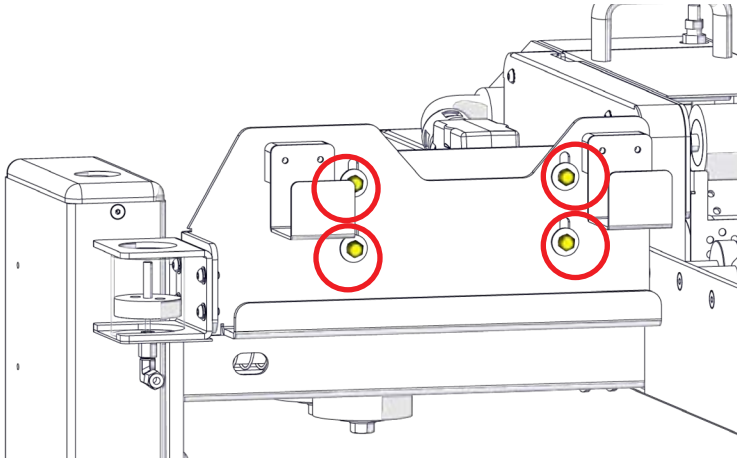


**Figure 56: Top Water Level Adjustment 1**

3. The water bottle retainer has slotted holes allowing for it to slide.
4. Shift the water bottle retainer up to raise the water level in the water pot.
   - If the water level is raised all the way up some splashing may occur and can cause water to drip into the lower part of the machine.
5. Shift the water bottle retainer down to lower the water level in the water pot.

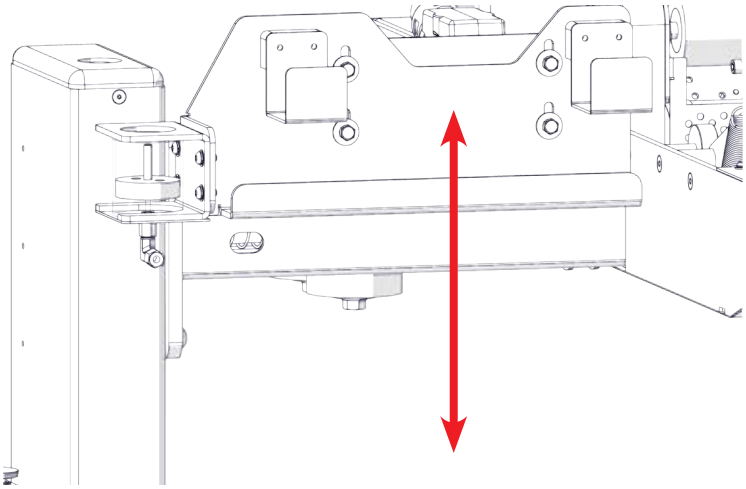


**Figure 57: Top Water Level Adjustment 2**

## Adjusting the bottom water level

1. Remove the top water bottle.
2. To adjust the water level on the bottom loosen the four (4) 10mm bolts on the water bottle retainer.

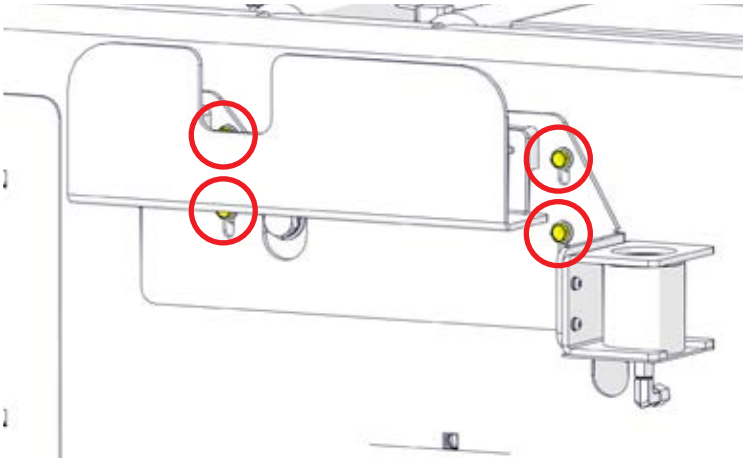


**Figure 58: Bottom Water Level Adjustment 1**

3. The water bottle retainer has slotted holes allowing for it to slide.
4. Shift the water bottle retainer up to raise the water level in the water pot.
   - If the water level is raised all the way up some splashing may occur and can cause water to drip onto the floor under the machine.
5. Shift the water bottle retainer down to lower the water level in the water pot.

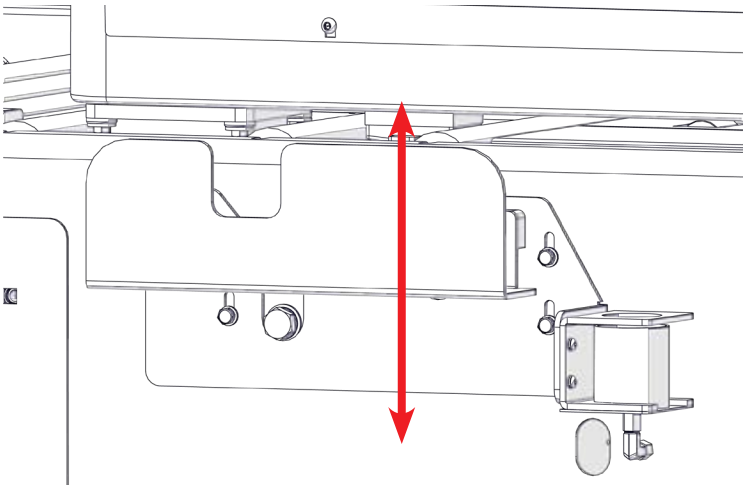


**Figure 59: Bottom Water Level Adjustment 2**

# Case Processing Procedure

Processing a case on the **RSA 2024-WAT** is simple and easy as the machine does not require any manual actions to process a case. The machine will move automatically to each case.

**WARNING: ENSURE THAT THE OPERATOR'S HANDS ARE AWAY FROM THE CONTACT AREA BETWEEN THE BOTTOM OF THE CARTON AND THE MOVING BELTS. OPERATORS SHOULD GRIP THE CASE AT THE REAR AND LET GO ONCE THE MACHINE HAS TAKEN THE CASE. IMPROPER HANDLING CAN LEAD TO INJURY.**

**WARNING: KEEP HANDS, HAIR, LOOSE CLOTHING, AND JEWELRY AWAY FROM MOVING BELTS, AND TAPE HEADS**

**WARNING: KEEP HANDS AND OTHER BODY PARTS CLEAR OF THE BOTTOM OF THE MACHINE BRIDGE. THIS MAY POSE A MINOR CRUSH HAZARD.**

**WARNING: DO NOT ATTEMPT TO REMOVE ANY JAMMED CASE FROM A CASE SEALER THAT IS CURRENTLY ON. DO NOT ATTEMPT TO PUSH A JAMMED CASE THROUGH THE MACHINE. THE MACHINE HAS COMPONENTS UNDER PNEUMATIC PRESSURE. NOT FOLLOWING THE PROPER CASE JAM CLEARING METHODS CAN RESULT IN INJURY.**

1. Connect air supply and power.
2. The operator will close all flaps of the carton they wish to process.
3. The operator will present the case up to the gate of case sealer.
   - If the bridge is positioned lower than the top of the box the operator will need to press the case into the front paddle to raise the bridge.

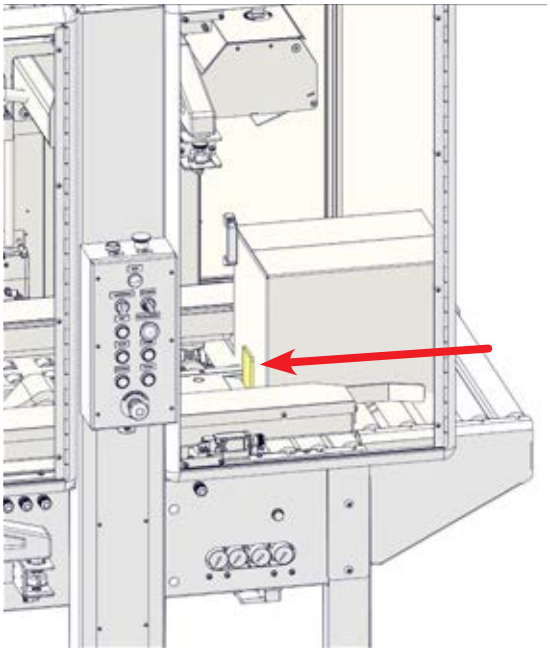


**Figure 60: Place Carton in Machine**

4. The bridge will automatically drop onto the top of the carton. It will stop when the bottom paddle is tripped.
5. At this time the operator can let go of the carton.
6. Once the sensor in the bridge sees the carton the belts will begin to move in until they grip the carton.

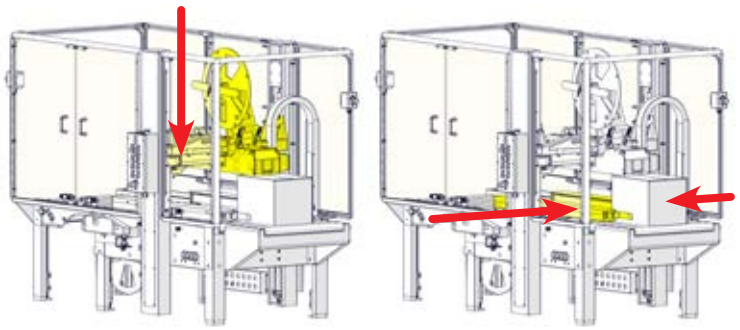


**Figure 61: Automatic Machine Adjustment**

7. The case sealer will take the carton and apply a single strip of Water Activated Tape to the top and/or bottom center seam.
8. When the case has finished processing the belts will automatically open and the bridge will raise a small amount to release the case.
9. The powered outfeed table will move the processed carton out of the machine.

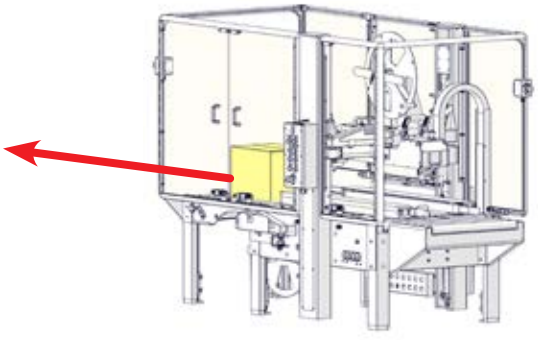


**Figure 62: Case Leaving Machine**

# Operating Instructions

The following instructions are presented in the order recommended for processing cases through the **RSA 2024-WAT** Case Sealer.

1. Install and thread tape on the tape head(s) (refer to the tape threading section).
2. Supply or connect the machine to 110V Electrical Supply (refer to Electrical Utilities).
3. Supply or connect the machine to Pneumatic Supply (refer to Pneumatic Utilities).
4. Verify that all Emergency-Stops are disengaged.
5. If not done so, press the Reset Button (if engaged the Reset Button will be illuminated solid, otherwise it will be blinking).
6. Verify the machine is in Auto Mode.
7. Press the Green Start button to begin machine operation.
8. The operator will need to manually fold all the carton's flaps.
9. The operator should present the carton to the up to the machine's gate as centered as possible, holding the top rear of the carton. If the bridge is too low press the case into the front paddle to raise the bridge.
10. Once the carton is up to the gate the bridge will lower onto the top of the carton.
11. When the bridge is close to the carton the belts will automatically close.
12. When the belts grip the case the operator should allow the machine to take the carton. It is not necessary for the operators hands to be near the moving components.

**WARNING: ENSURE THAT THE OPERATOR'S HANDS ARE AWAY FROM THE CONTACT AREA BETWEEN THE BOTTOM OF THE CARTON AND THE MOVING BELTS. OPERATORS SHOULD GRIP THE CASE AT THE REAR AND LET GO ONCE THE MACHINE HAS TAKEN THE CASE. IMPROPER HANDLING CAN LEAD TO INJURY.**

**WARNING: KEEP HANDS, HAIR, LOOSE CLOTHING, AND JEWELRY AWAY FROM MOVING BELTS, AND TAPE HEADS**

**WARNING: KEEP HANDS AND OTHER BODY PARTS CLEAR OF THE BOTTOM OF THE MACHINE BRIDGE. THIS MAY POSE A MINOR CRUSH HAZARD.**

When feeding cartons into the Case Sealer all flaps must be closed prior to entering the belts. Be sure that all cases are fed squarely and straightly into the Case Sealer, feeding cases crooked can result in poor seals or case jams.

In the event of a case jam follow the below procedure. Do not attempt to clear a jam while the case sealer is on. Press the Emergency Stop button before proceeding.

**WARNING: DO NOT ATTEMPT TO REMOVE ANY JAMMED CASE FROM A CASE SEALER THAT IS CURRENTLY ON. DO NOT ATTEMPT TO PUSH A JAMMED CASE THROUGH THE MACHINE. THE MACHINE HAS COMPONENTS UNDER PNEUMATIC PRESSURE. NOT FOLLOWING THE PROPER CASE JAM CLEARING METHODS CAN RESULT IN INJURY.**

## Carton Jam Clearing

1. Keeping hands clear of moving components the operator should press the "Clear" button.
2. Pressing this button will cause the bridge to raise up all the way and the belts to automatically open.
3. If tape has been dispensed it will automatically be cut.
4. Once the machine has stopped moving on its own it will dump air.
5. The operator can open any necessary doors to remove the case in a safe manner.
6. With the case removed from the machine clean any debris that was cause by the jam.
7. The operator can close the door at this time. Verify the interlock latch is fully seated in the safety interlock.
8. Press the blue "Reset" button to re-energize the machine, both electrically and pneumatically.
9. Press the "Tape Feed" button to prime the tape heads and verify there is no obstruction in the tape path.
10. Remove the dispensed tape.
11. Pressing the "Start" button will return the RSA 2024-WAT to normal operations.

## Main Menu

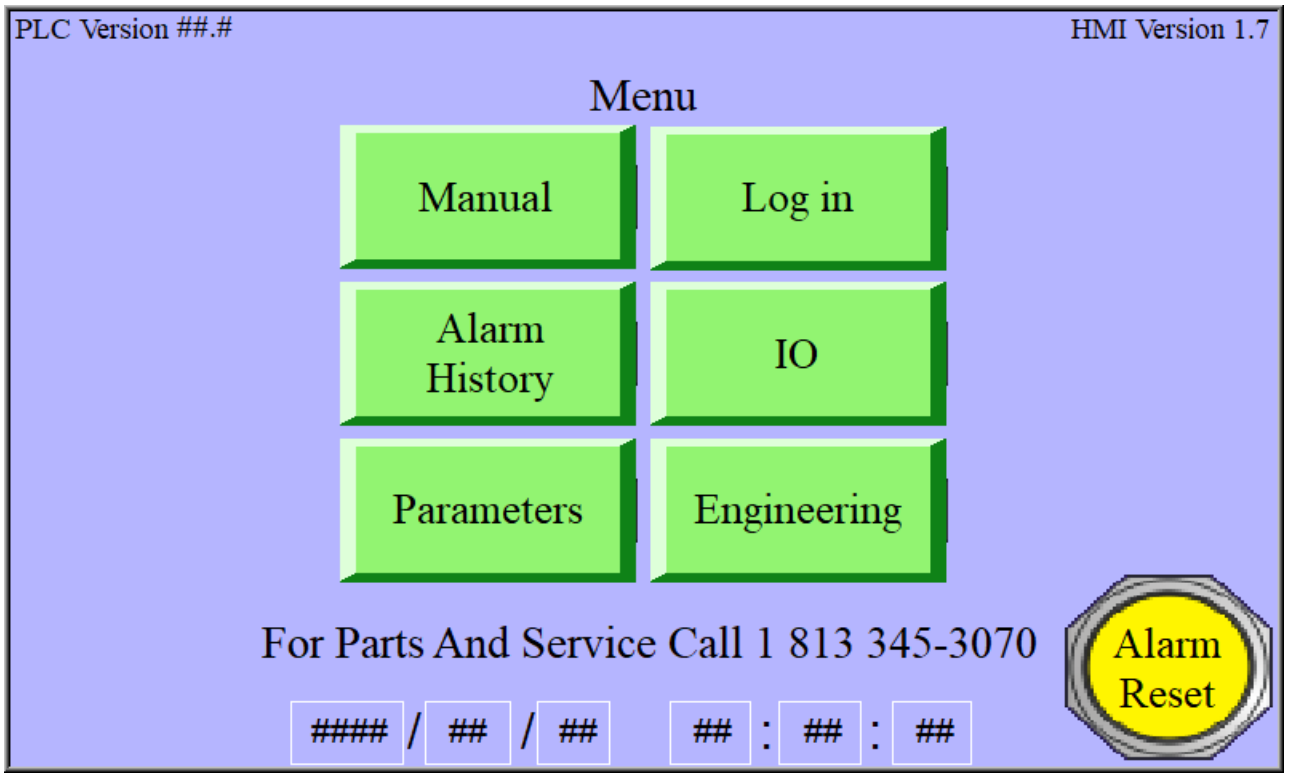



**Figure 63: Main Menu**

| Item | Description |
|---|---|
| PLC Version | This number will display the current version of code installed on the PLC. |
| HMI Version | This number will display the current version of code installed on the HMI. |
| Manual | The operator can press this button to navigate to the manual screens for manual functionality. |
| Log in | The operator can press this button to navigate to the screen where a higher level operator can log in. |
| Alarm History | The operator can press this button to navigate to the alarm history page. |
| IO | The operator can press this button to navigate to the IO screens and cycle/error counts where an operator can view all input/outputs and cycle/error counts. |
| Parameters | A higher level operator can press this button to navigate to the parameters screens. |
| Engineering | An engineering level operator can press this button to navigate to the engineering screens. |
| Alarm Reset | The operator can press this button to silence the current alarm. |

## Manual - Top Tape Head

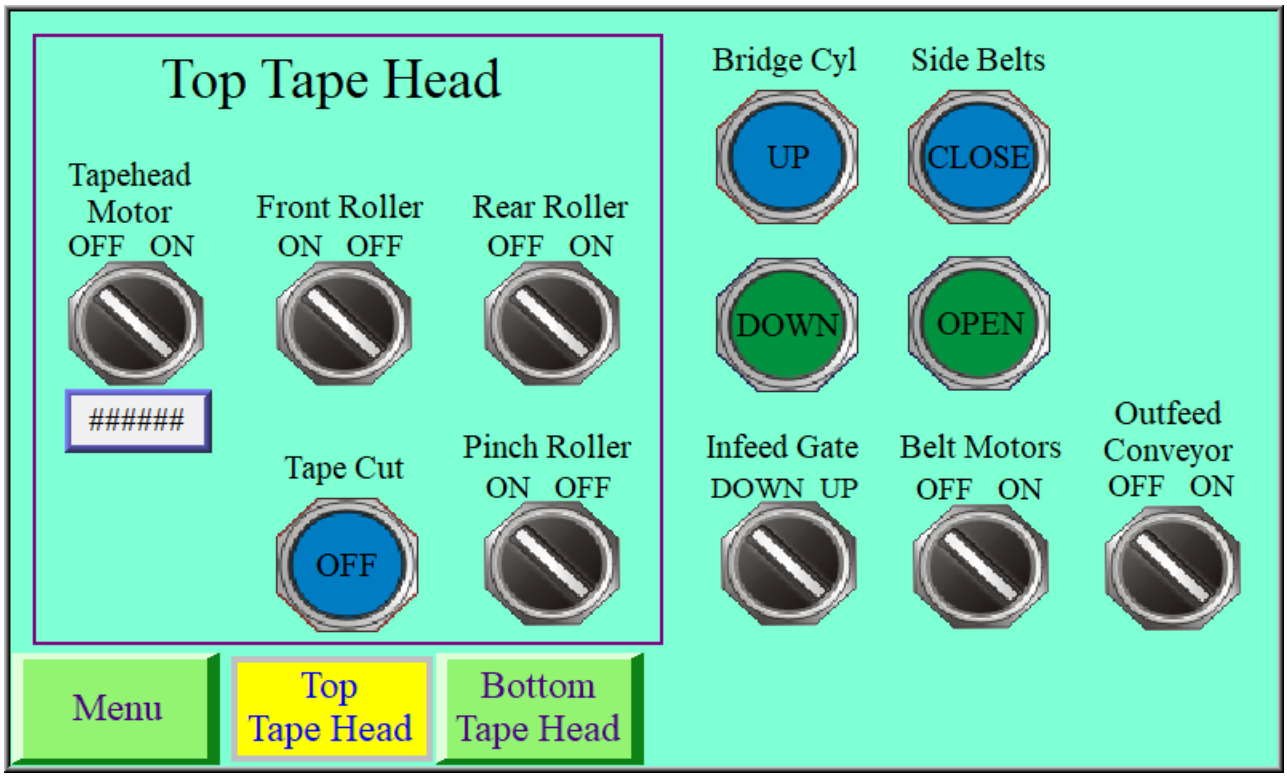



**Figure 64: Manual Top Tape Head**

| Item | Description |
|---|---|
| Tapehead Motor | When in Manual Mode this toggle will turn on/off the tape head motor. |
| Front Roller | When in Manual Mode this toggle will turn on/off the pneumatic actuator for the front roller. |
| Rear Roller | When in Manual Mode this toggle will turn on/off the pneumatic actuator for the rear roller. |
| Tape Cut | When in Manual Mode this toggle will turn on/off the actuator for the tape cutting mechanism. |
| Pinch Roller | When in Manual Mode this toggle will turn on/off the pneumatic actuator for the pinch roller. |
| Bridge Cyl | When in Manual Mode this pair of buttons, when pressed and held, will raise or lower the machine bridge. |
| Side Belts | When in Manual Mode this pair of buttons, when pressed and held, will open or close the machine belts. |
| Infeed Gate | When in Manual Mode this toggle will turn on/off the pneumatic actuator for the infeed gate. |
| Belt Motors | When in Manual Mode this toggle will turn on/off the machine's pair of drive belts. |
| Outfeed Conveyor | When in Manual Mode this toggle will turn on/off the machine's pair of drive belts. |
| Menu | Pressing this button will return the operator to the main menu. |
| Bottom Tape Head | Pressing this button will take the operator to the manual control of the bottom tape head. |

## Manual - Bottom Tape Head

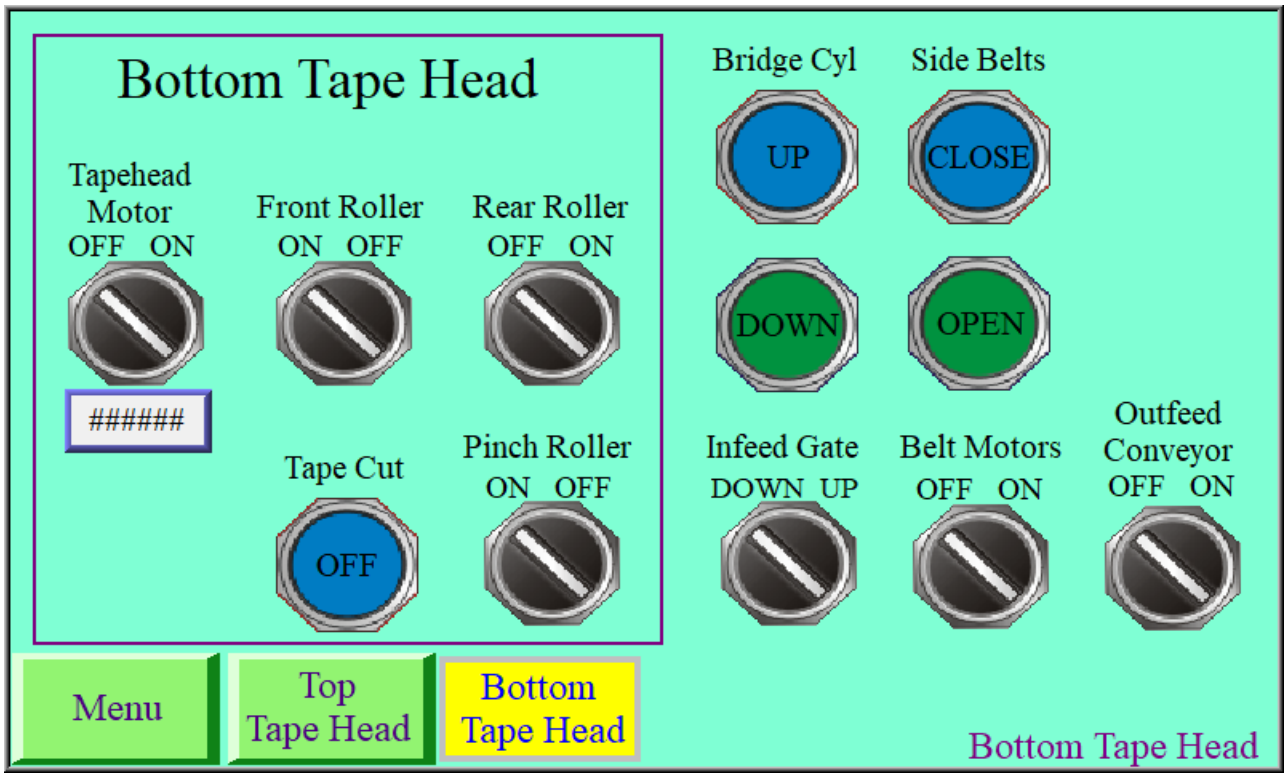



**Figure 65: Manual Bottom Tape Head**

| Item | Description |
|---|---|
| Tapehead Motor | When in Manual Mode this toggle will turn on/off the tape head motor. |
| Front Roller | When in Manual Mode this toggle will turn on/off the pneumatic actuator for the front roller. |
| Rear Roller | When in Manual Mode this toggle will turn on/off the pneumatic actuator for the rear roller. |
| Tape Cut | When in Manual Mode this toggle will turn on/off the actuator for the tape cutting mechanism. |
| Pinch Roller | When in Manual Mode this toggle will turn on/off the pneumatic actuator for the pinch roller. |
| Bridge Cyl | When in Manual Mode this pair of buttons, when pressed and held, will raise or lower the machine bridge. |
| Side Belts | When in Manual Mode this pair of buttons, when pressed and held, will open or close the machine belts. |
| Infeed Gate | When in Manual Mode this toggle will turn on/off the pneumatic actuator for the infeed gate. |
| Belt Motors | When in Manual Mode this toggle will turn on/off the machine's pair of drive belts. |
| Outfeed Conveyor | When in Manual Mode this toggle will turn on/off the machine's pair of drive belts. |
| Menu | Pressing this button will return the operator to the main menu. |
| Top Tape Head | Pressing this button will take the operator to the manual control of the top tape head. |

## Login Screen

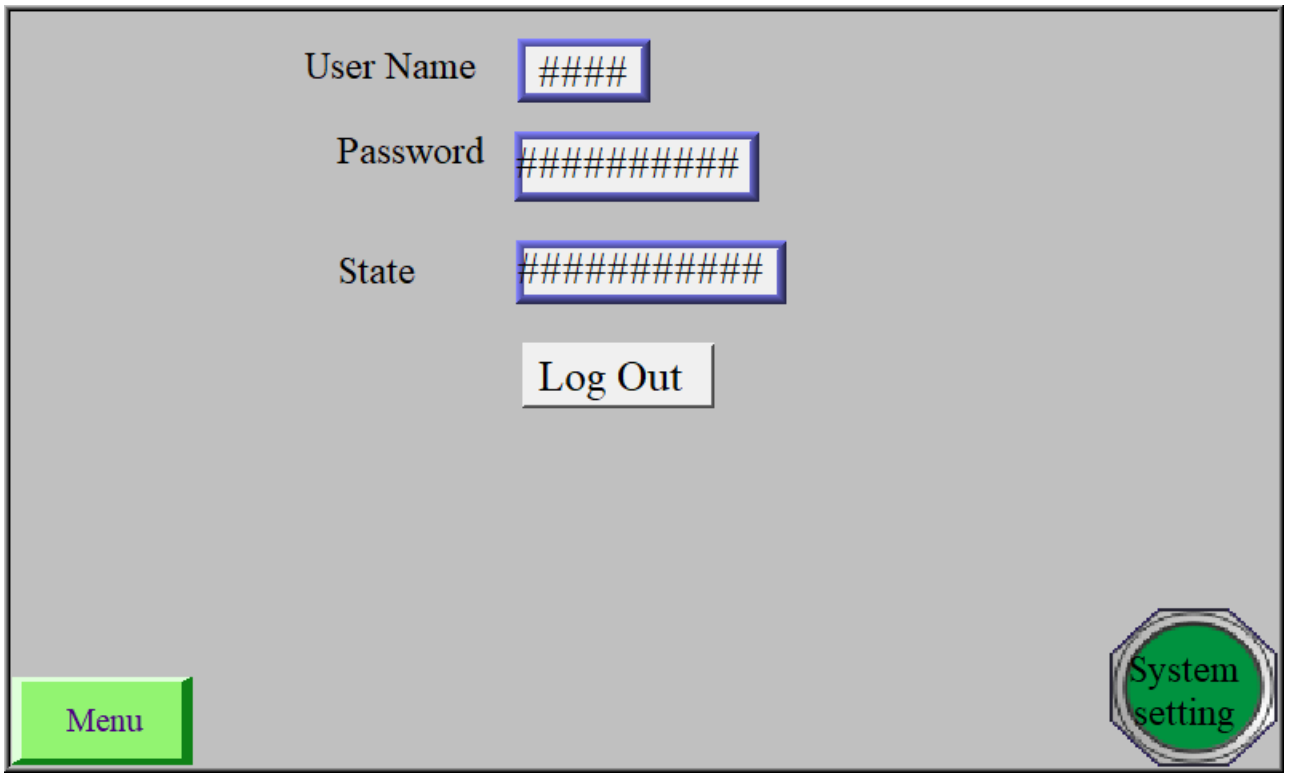



**Figure 66: Login Screen**

| Item | Description |
|---|---|
| User Name | In this field a user can enter the advanced level they wish to log into. |
| Password | In this field the user can enter the password for the user level they wish to log into. |
| State | Displays the current state of the user that is logged in. |
| Log Out | Any logged in user that presses this button will be logged out and returned to the base level user. |
| Menu | Pressing this will take the user to the main menu. |
| System Setting | Pressing this will take a user to the system settings. |

## Alarm History

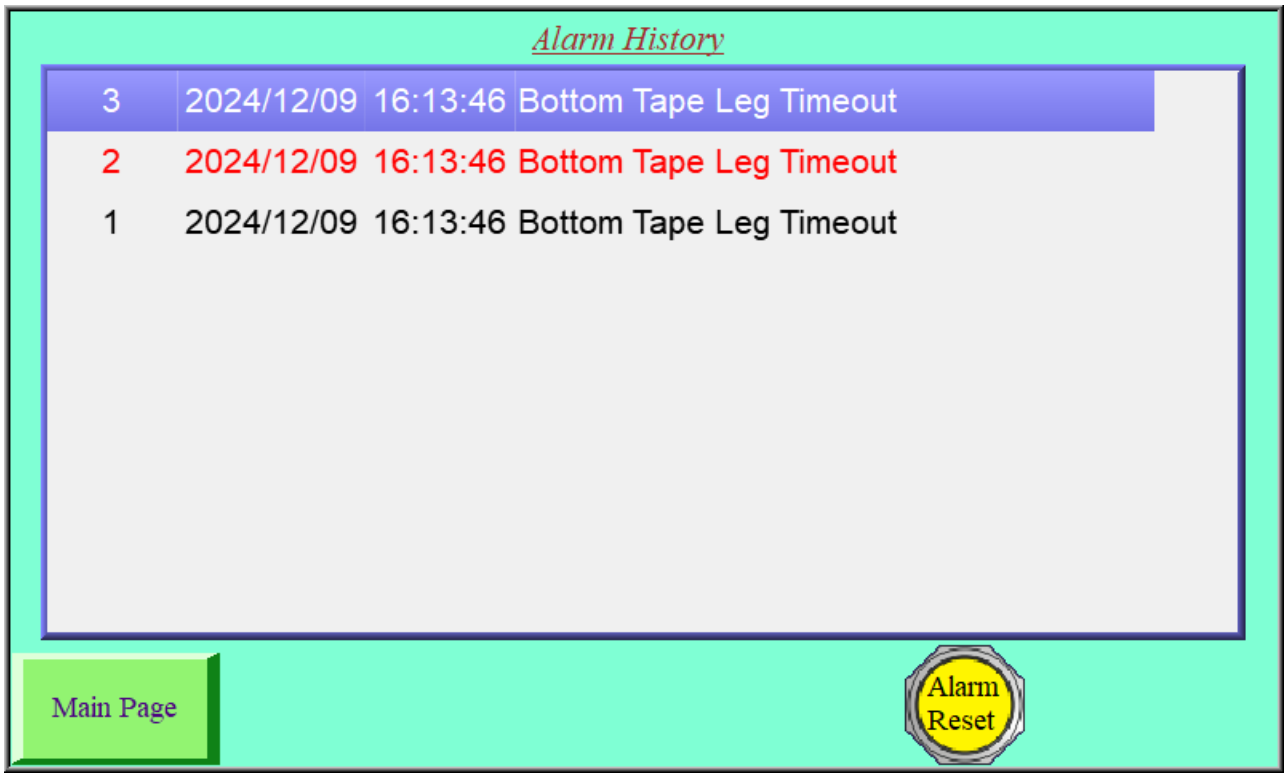



**Figure 67: Alarm History**

| Item | Description |
|---|---|
| Alarm History | This window will display a log of the alarms and time stamps of when they occured. |
| Main Page | This will take the operator to the main menu. |
| Alarm Reset | Pressing this will silence any current alarms. |

## IO - Inputs

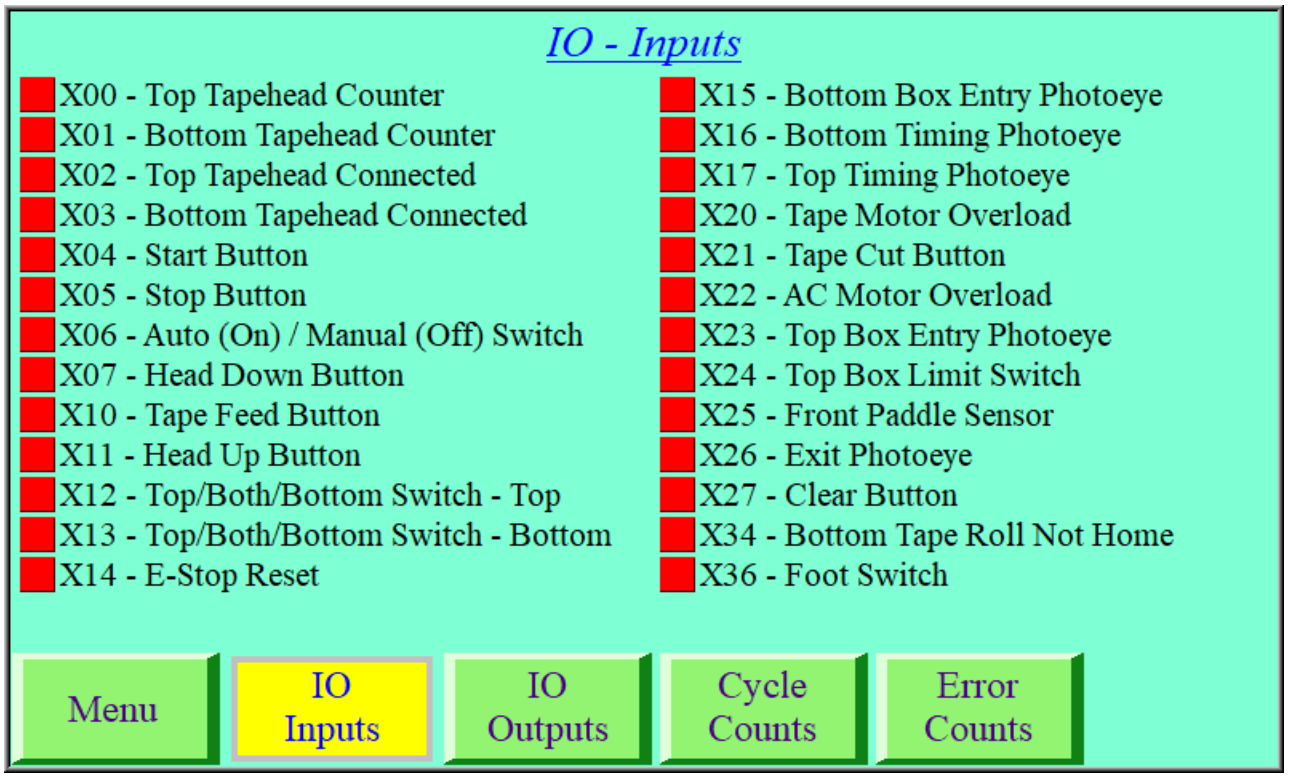



**Figure 68: IO Inputs**

| Item | Description |
|---|---|
| IO Inputs | This will display the current state of all inputs on the PLC, inactive inputs will display as red, active inputs will display as green. |
| Menu | Pressing this will take the operator to the Main Menu. |
| IO Outputs | Pressing this will take the operator to the IO Outputs page. |
| Cycle Counts | Pressing this will take the operator to the Cycle Counts page. |
| Error Counts | Pressing this will take the operator to the Error Counts page. |

## IO - Outputs

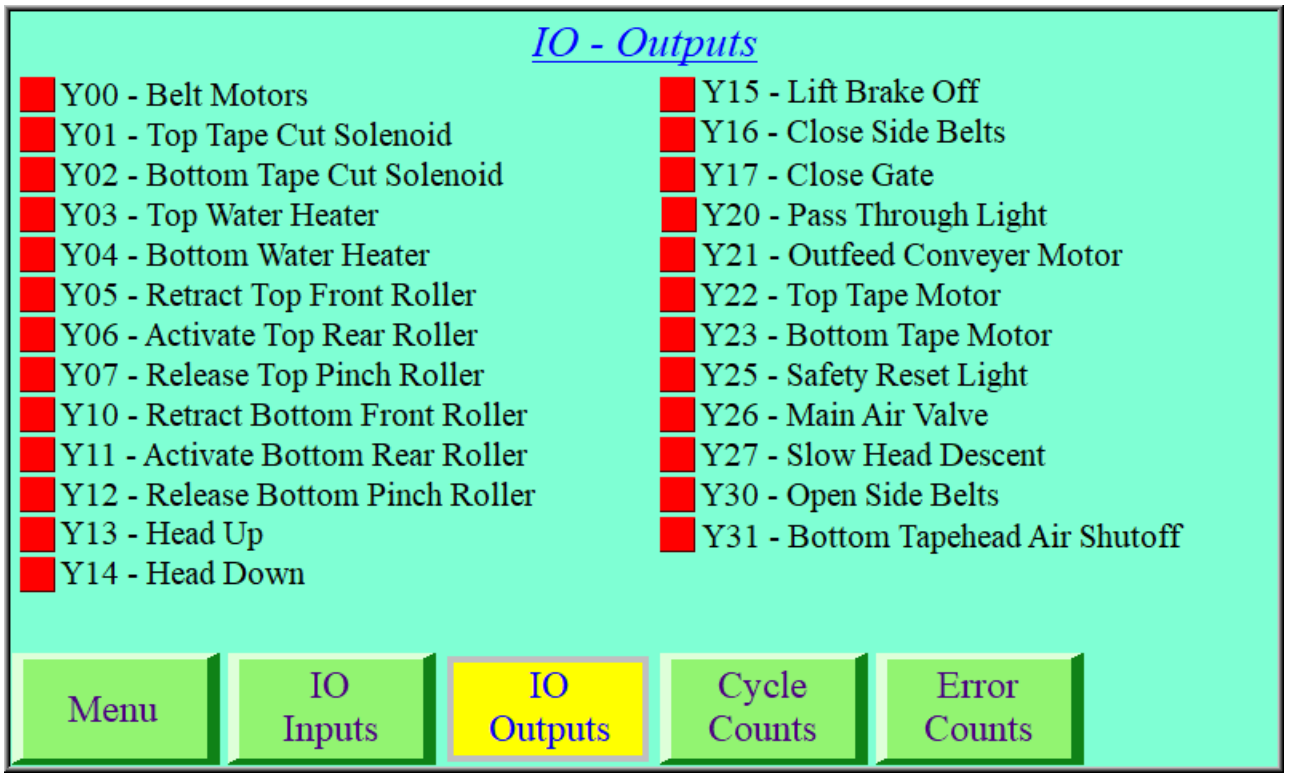



**Figure 69: IO Outputs**

| Item | Description |
|---|---|
| IO Outputs | This will display the current state of all outputs on the PLC, inactive outputs will display as red, active outputs will display as green. |
| Menu | Pressing this will take the operator to the Main Menu. |
| IO Inputs | Pressing this will take the operator to the IO Inputs page. |
| Cycle Counts | Pressing this will take the operator to the Cycle Counts page. |
| Error Counts | Pressing this will take the operator to the Error Counts page. |

## Cycle Counts

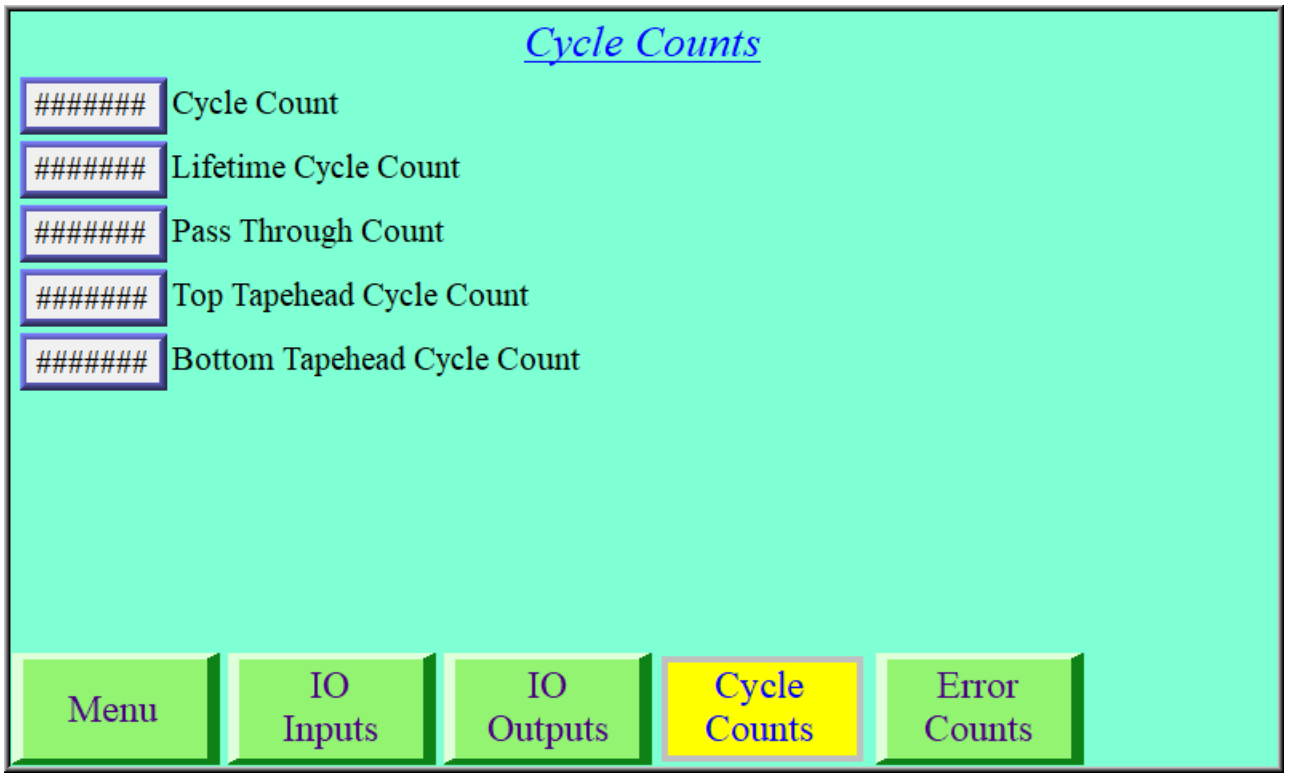



**Figure 70: Cycle Counts**

| Item | Description |
|---|---|
| Cycle Counts | This will display the current number of cycles on the case sealer. |
| Menu | Pressing this will take the operator to the Main Menu. |
| IO Inputs | Pressing this will take the operator to the IO Inputs page. |
| IO Outputs | Pressing this will take the operator to the IO Outputs page. |
| Error Counts | Pressing this will take the operator to the Error Counts page. |

## Error Counts

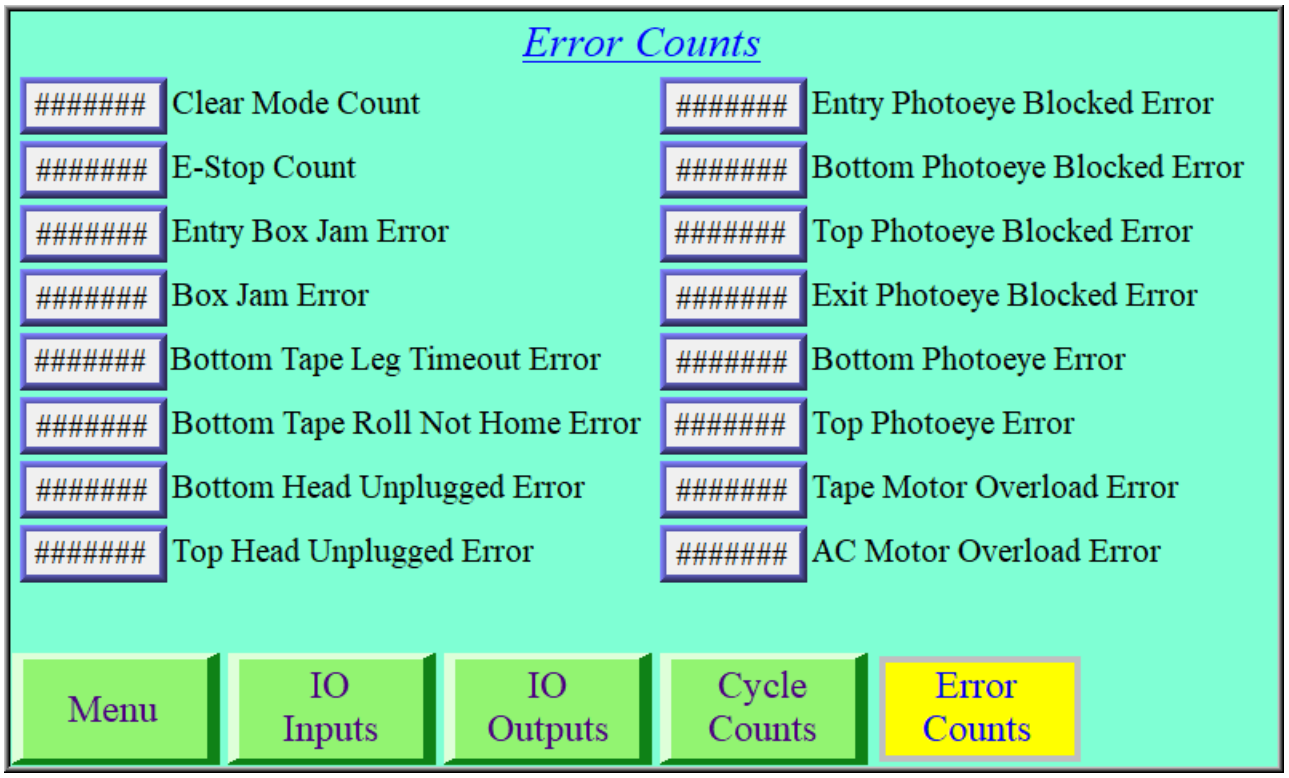



**Figure 71: Error Counts**

| Item | Description |
|---|---|
| Error Counts | This will display the current total number of errors the case sealer has experienced. |
| Menu | Pressing this will take the operator to the Main Menu. |
| IO Inputs | Pressing this will take the operator to the IO Inputs page. |
| IO Outputs | Pressing this will take the operator to the IO Outputs page. |
| Cycle Counts | Pressing this will take the operator to the Cycle Counts page. |

## Top Tape Head Parameters

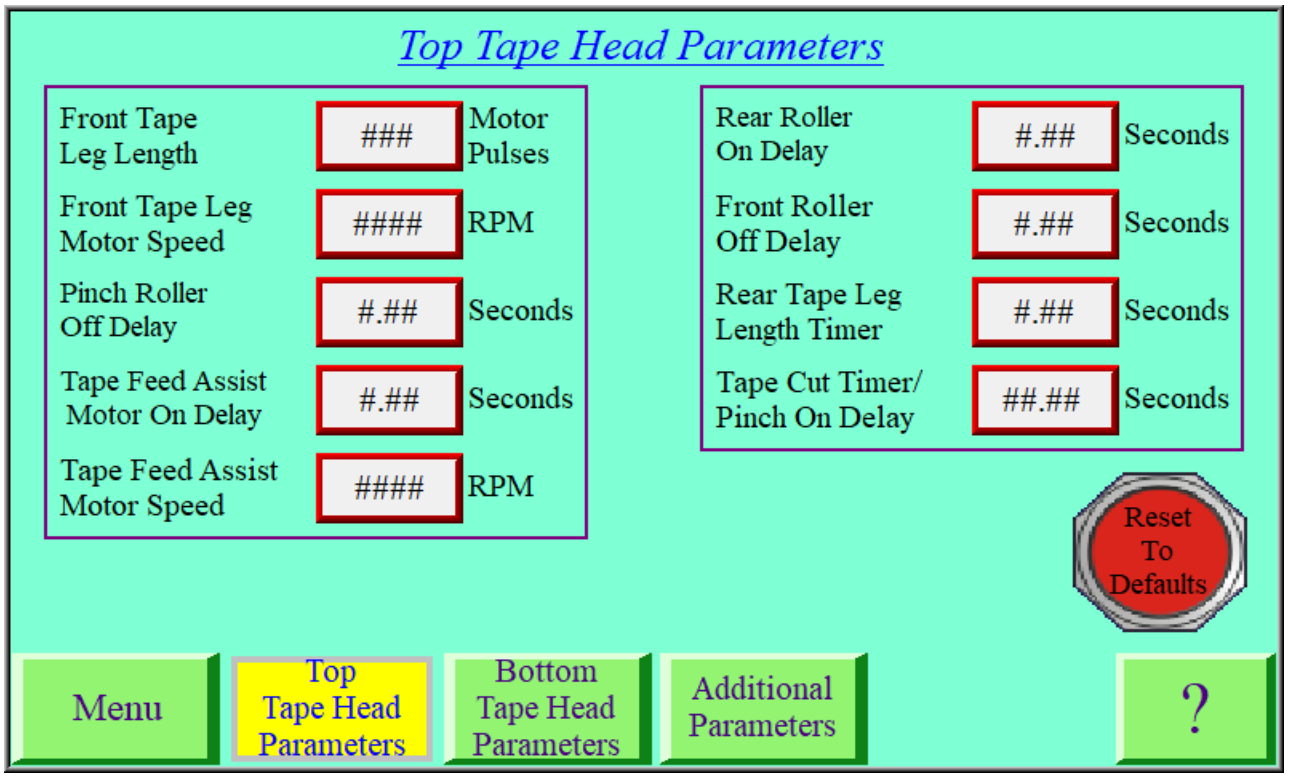



**Figure 72: Top Tape Head Parameters**

| Item | Description |
|---|---|
| Front Tape Leg Length | The length of tape on the front of the box based on the number of pulses output from the tape head motor. Measure in motor pulses. |
| Front Tape Leg Motor Speed | Speed setting of the tape head motor while it is dispensing the front tape leg. This is also the speed setting when in manual mode. Measured in RPM. |
| Pinch Roller Off Delay | Time delay before the pinch roller releases the tape, starting when the front tape leg is finished dispensing. Measured in Seconds. |
| Tape Feed Assist Motor On Delay | Time delay before the tape head motor turns on to assist feeding tape. Timer starts after the front edge of the box trips the top timing photoeye. Measured in Seconds. |
| Tape Feed Assist Motor Speed | Speed setting of the tape head motor while it is turning to assist in the tape feeding process. Measured in RPM. |
| Rear Roller On Delay | Time delay before the rear wipedown roller is pressed against the box. Timing starts after the front edge of the box trips the top timing photoeye. Measured in Seconds. |
| Front Roller Off Delay | Time delay before the front wipedown roller retracts from the box. Timing starts after the rear edge of the box passes the top timing photoeye. Measured in Seconds. |
| Rear Tape Leg Length Timer | Tiimer that sets the length of the tape on the rear of the box. Tape is cut when the timer is done. Timing starts when the rear edge of the box passes the top timing photoeye. Measured in Seconds. |
| Tape Cut Timer/Pinch On Delay | The length of time the tape cut is on and also the time from the start of the tape cut until the pinch roller closes. Measured in Seconds. |
| Reset To Defaults | Pressing this button will set all adjustable elements to those set in the engineering menu. |
| Menu | Pressing this button will return the operator to the main menu. |
| Bottom Tape Head Parameters | Pressing this button will take the operator to the bottom tape head parameters. |
| Additional Parameters | Pressing this button will take the operator to additional machine parameters. |
| “?” | Pressing this button will take the operator to screens explaining the different options. |

## Bottom Tape Head Parameters

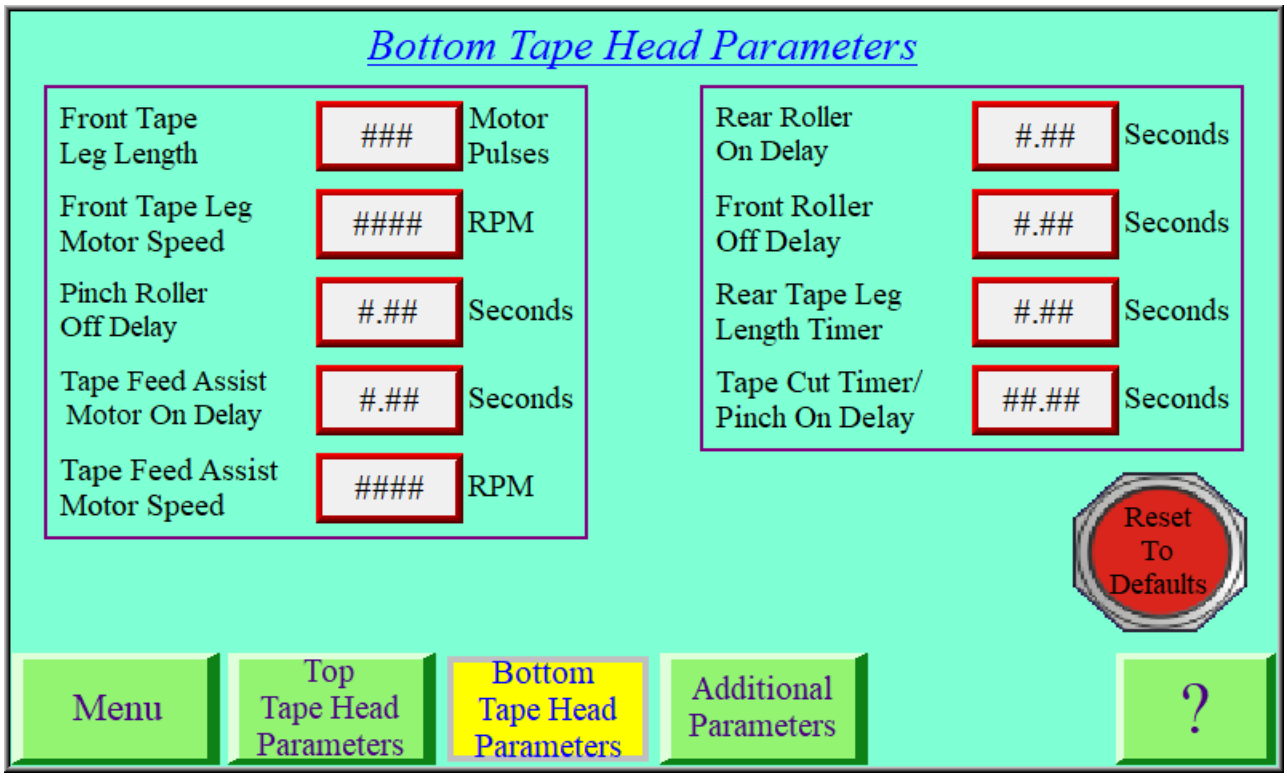



**Figure 73: Bottom Tape Head Parameters**

| Item | Description |
|---|---|
| Front Tape Leg Length | The length of tape on the front of the box based on the number of pulses output from the tape head motor. Measure in motor pulses. |
| Front Tape Leg Motor Speed | Speed setting of the tape head motor while it is dispensing the front tape leg. This is also the speed setting when in manual mode. Measured in RPM. |
| Pinch Roller Off Delay | Time delay before the pinch roller releases the tape, starting when the front tape leg is finished dispensing. Measured in Seconds. |
| Tape Feed Assist Motor On Delay | Time delay before the tape head motor turns on to assist feeding tape. Timer starts after the front edge of the box trips the bottom timing photoeye. Measured in Seconds. |
| Tape Feed Assist Motor Speed | Speed setting of the tape head motor while it is turning to assist in the tape feeding process. Measured in RPM. |
| Rear Roller On Delay | Time delay before the rear wipedown roller is pressed against the box. Timing starts after the front edge of the box trips the bottom timing photoeye. Measured in Seconds. |
| Front Roller Off Delay | Time delay before the front wipedown roller retracts from the box. Timing starts after the rear edge of the box passes the bottom timing photoeye. Measured in Seconds. |
| Rear Tape Leg Length Timer | Tiimer that sets the length of the tape on the rear of the box. Tape is cut when the timer is done. Timing starts when the rear edge of the box passes the bottom timing photoeye. Measured in Seconds. |
| Tape Cut Timer/Pinch On Delay | The length of time the tape cut is on and also the time from the start of the tape cut until the pinch roller closes. Measured in Seconds. |
| Reset To Defaults | Pressing this button will set all adjustable elements to those set in the engineering menu. |
| Menu | Pressing this button will return the operator to the main menu. |
| Top Tape Head Parameters | Pressing this button will take the operator to the top tape head parameters. |
| Additional Parameters | Pressing this button will take the operator to additional machine parameters. |
| “?” | Pressing this button will take the operator to screens explaining the different options. |

## Additional Parameters

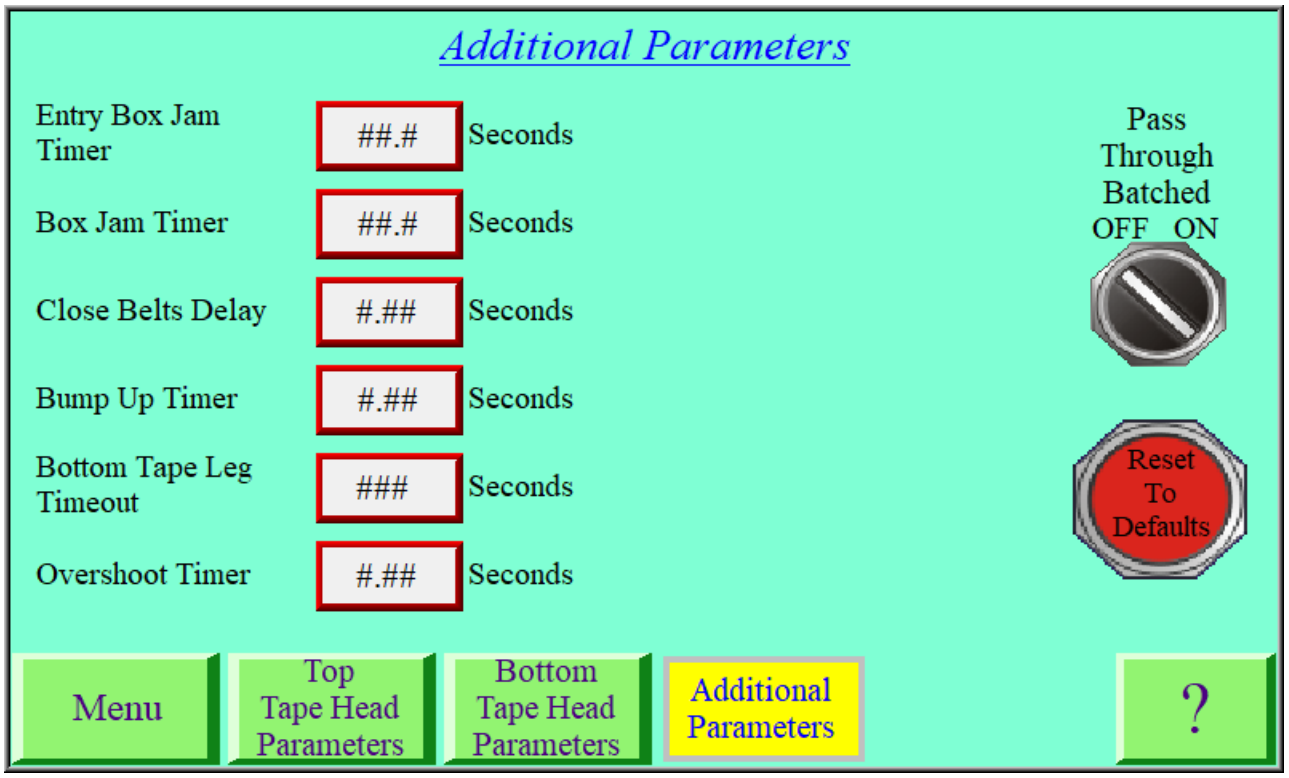



**Figure 74: Additional Parameters**

| Item | Description |
|---|---|
| Entry Box Jam Timer | Sets the time limit for the box to reach the bottom box timing photoeye. Timer starts when the paddle under the bridge is pressed. If the timer finishes an Entry Box Jam Error will stop the machine. Not used in bottom only mode. Measured in Seconds. |
| Box Jam Timer | Sets the time limit to process a box. If the timer finishes a Box Jam Error will stop the machine. Measured in Seconds. |
| Close Belts Delay | Time delay before the side belts close. This timer starts when the top box entry photoeye detects the box. Belts will close when the timer finishes or the Top Box Limit Switch trips. Use this setting if shorter boxes move past the bottom entry photoeye before the Top Box Limit Switch trips. Measure in Seconds. |
| Bump Up Timer | Determines how high the head will rise up after a box exits. Note: The actual height will also depend on the up and down pressure settings. Measured in Seconds. |
| Bottom Tape Leg Timeout | Sets the time limit that the bottom tape leg will sit after being dispensed. This timer starts when the tape finishes dispensing and box enters the machine. When the timer runs out the machine will stop and display the Bottom Tape Leg Timeout error. Measured in Seconds. Set this to “0” to disable this function. |
| Overshoot Timer | Increases the amount of time the bridge will move up after the front paddle is released. Default is 0.2 and Max is 0.3 Seconds. |
| Pass Through Batched | When the optional foot switch is pressed and this setting is on Pass Through Mode will remain active until the foot switch is pressed a second time. |
| Reset To Defaults | Pressing this button will set all adjustable elements to those set in the engineering menu. |
| Menu | Pressing this button will return the operator to the main menu. |
| Top Tape Head Parameters | Pressing this button will take the operator to the top tape head parameters. |
| Bottom Tape Head Parameters | Pressing this button will take the operator to the bottom tape head parameters. |
| “?” | Pressing this button will take the operator to screens explaining the different options. |

## Engineering Home

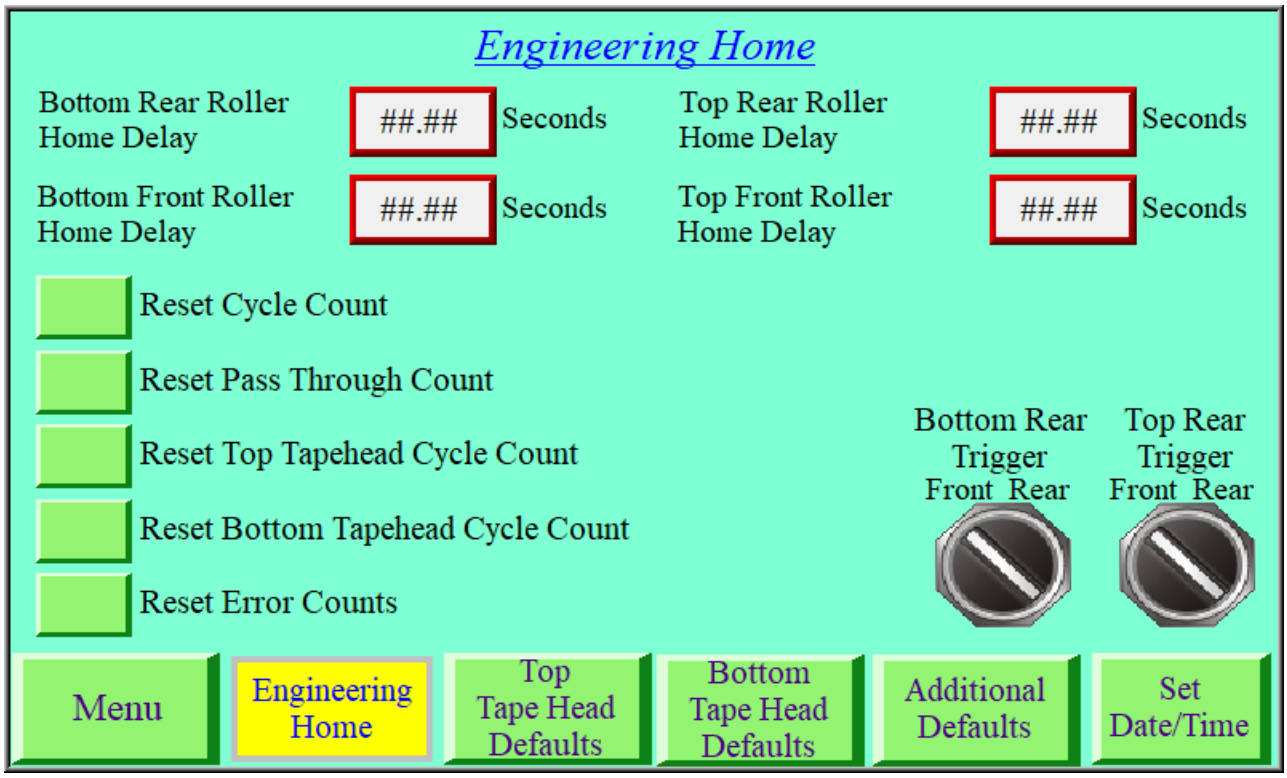



**Figure 75: Engineering Home**

| Item | Description |
|---|---|
| Bottom Rear Roller Home Delay | Sets the time delay when the rear of the box passes the bottom/top timing photoeye. Measured in Seconds. |
| Bottom Front Roller Home Delay | Sets the time delay after the rear roller starts moving home. Measured in Seconds. |
| Top Rear Roller Home Delay | Sets the time delay when the rear of the box passes the bottom/top timing photoeye. Measured in Seconds. |
| Top Front Roller Home Delay | Sets the time delay after the rear roller starts moving home. Measured in Seconds. |
| Reset Cycle Count | When an Engineering user presses this it will reset the machine's cycle count to 0. |
| Reset Pass Through Count | When an Engineering user presses this it will reset the machine's pass through count to 0. |
| Reset Top Tape Head Cycle Count | When an Engineering user presses this it will reset the machine's top tape head cycle count to 0. |
| Reset Bottom Tape Head Cycle Count | When an Engineering user presses this it will reset the machine's bottom tape head cycle count to 0. |
| Reset Error Counts | When an Engineering user presses this it will reset the machine's error counts to 0. |
| Bottom Rear Trigger | When an Engineering user flips this toggle to on it will switch the bottom tape timing for the rear wipedown rollers, all others stay the same to act off of the rear of the box. |
| Top Rear Trigger | When an Engineering user flips this toggle to on it will switch the top tape timing for the rear wipedown rollers, all others stay the same to act off of the rear of the box. |
| Menu | Pressing this will return the operator to the main menu. |
| Top Tape Head Defaults | Pressing this will take the operator to the top tape head deafults page. |
| Bottom Tape Head Defaults | Pressing this will take the operator to the bottom tape head deafults page. |
| Additional Defaults | Pressing this will take the operator to the additional settings deafults page. |
| "?" | Pressing this button will take the operator to screens explaining the different options. |

## Top Tape Head Parameters - Defaults

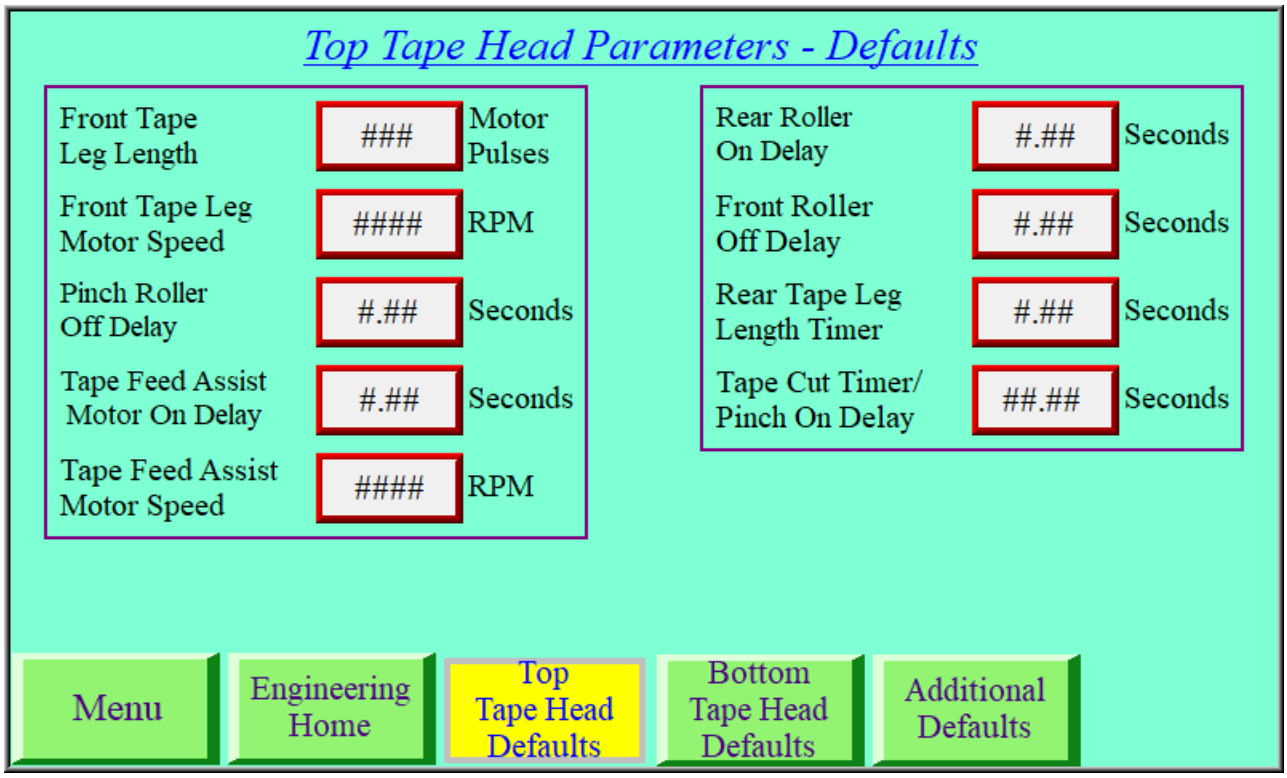



**Figure 76: Top Tape Head Parameters Defaults**

| Item | Description |
|---|---|
| Front Tape Leg Length | The length of tape on the front of the box based on the number of pulses output from the tape head motor. Measure in motor pulses. This option sets the system default. |
| Front Tape Leg Motor Speed | Speed setting of the tape head motor while it is dispensing the front tape leg. This is also the speed setting when in manual mode. Measured in RPM. This option sets the system default. |
| Pinch Roller Off Delay | Time delay before the pinch roller releases the tape, starting when the front tape leg is finished dispensing. Measured in Seconds. This option sets the system default. |
| Tape Feed Assist Motor On Delay | Time delay before the tape head motor turns on to assist feeding tape. Timer starts after the front edge of the box trips the top timing photoeye. Measured in Seconds. This option sets the system default. |
| Tape Feed Assist Motor Speed | Speed setting of the tape head motor while it is turning to assist in the tape feeding process. Measured in RPM. This option sets the system default. |
| Rear Roller On Delay | Time delay before the rear wipedown roller is pressed against the box. Timing starts after the front edge of the box trips the top timing photoeye. Measured in Seconds. This option sets the system default. |
| Front Roller Off Delay | Time delay before the front wipedown roller retracts from the box. Timing starts after the rear edge of the box passes the top timing photoeye. Measured in Seconds. This option sets the system default. |
| Rear Tape Leg Length Timer | Tiimer that sets the length of the tape on the rear of the box. Tape is cut when the timer is done. Timing starts when the rear edge of the box passes the top timing photoeye. Measured in Seconds. This option sets the system default. |
| Tape Cut Timer/Pinch On Delay | The length of time the tape cut is on and also the time from the start of the tape cut until the pinch roller closes. Measured in Seconds. This option sets the system default. |
| Menu | Pressing this button will return the operator to the main menu. |
| Engineering Home | Pressing this button will return the operator to the engineering menu. |
| Bottom Tape Head Defaults | Pressing this button will take the operator to the bottom tape head defaults. |
| Additional Defaults | Pressing this button will take the operator to the additional defaults. |

## Bottom Tape Head Parameters - Defaults

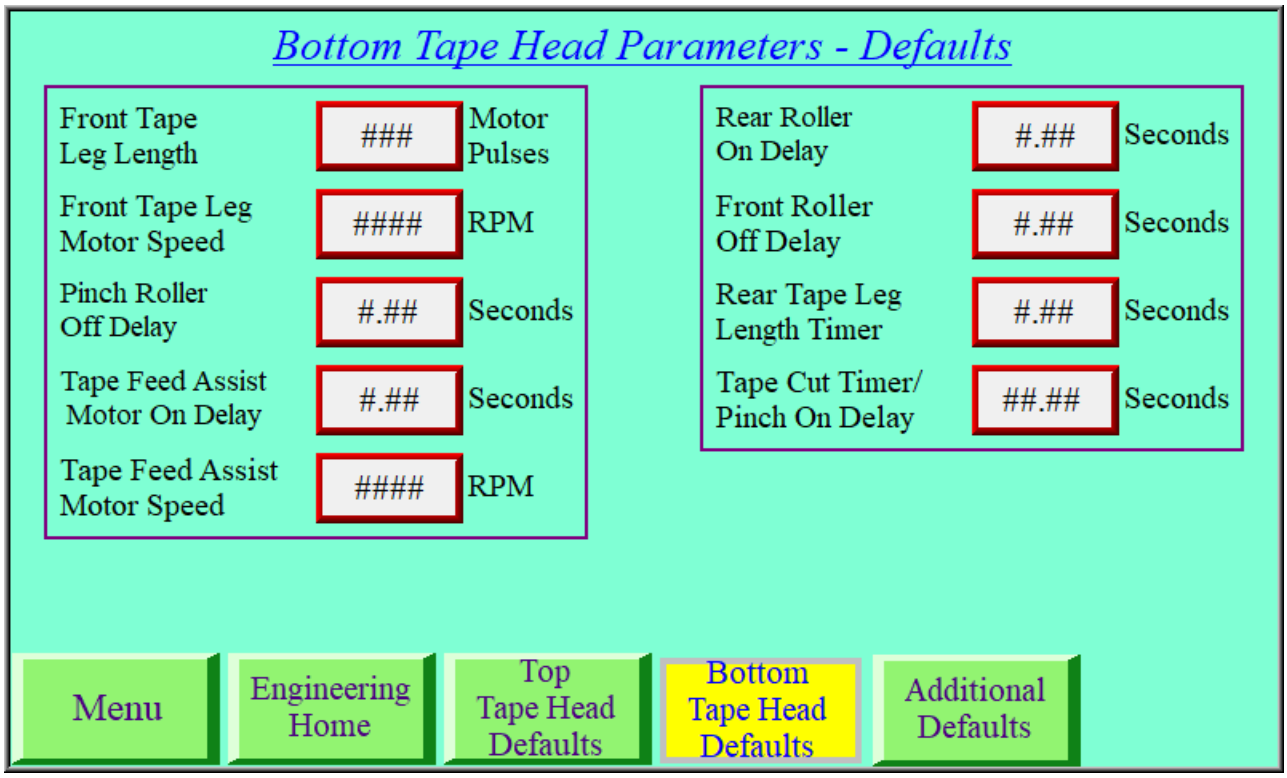



**Figure 77: Bottom Tape Head Parameters Defaults**

| Item | Description |
|---|---|
| Front Tape Leg Length | The length of tape on the front of the box based on the number of pulses output from the tape head motor. Measure in motor pulses. This option sets the system default. |
| Front Tape Leg Motor Speed | Speed setting of the tape head motor while it is dispensing the front tape leg. This is also the speed setting when in manual mode. Measured in RPM. This option sets the system default. |
| Pinch Roller Off Delay | Time delay before the pinch roller releases the tape, starting when the front tape leg is finished dispensing. Measured in Seconds. This option sets the system default. |
| Tape Feed Assist Motor On Delay | Time delay before the tape head motor turns on to assist feeding tape. Timer starts after the front edge of the box trips the bottom timing photoeye. Measured in Seconds. This option sets the system default. |
| Tape Feed Assist Motor Speed | Speed setting of the tape head motor while it is turning to assist in the tape feeding process. Measured in RPM. This option sets the system default. |
| Rear Roller On Delay | Time delay before the rear wipedown roller is pressed against the box. Timing starts after the front edge of the box trips the bottom timing photoeye. Measured in Seconds. This option sets the system default. |
| Front Roller Off Delay | Time delay before the front wipedown roller retracts from the box. Timing starts after the rear edge of the box passes the bottom timing photoeye. Measured in Seconds. This option sets the system default. |
| Rear Tape Leg Length Timer | Tiimer that sets the length of the tape on the rear of the box. Tape is cut when the timer is done. Timing starts when the rear edge of the box passes the bottom timing photoeye. Measured in Seconds. This option sets the system default. |
| Tape Cut Timer/Pinch On Delay | The length of time the tape cut is on and also the time from the start of the tape cut until the pinch roller closes. Measured in Seconds. This option sets the system default. |
| Menu | Pressing this button will return the operator to the main menu. |
| Engineering Home | Pressing this button will return the operator to the engineering menu. |
| Top Tape Head Defaults | Pressing this button will take the operator to the top tape head defaults. |
| Additional Defaults | Pressing this button will take the operator to the additional defaults. |

## Additional Parameters - Defaults

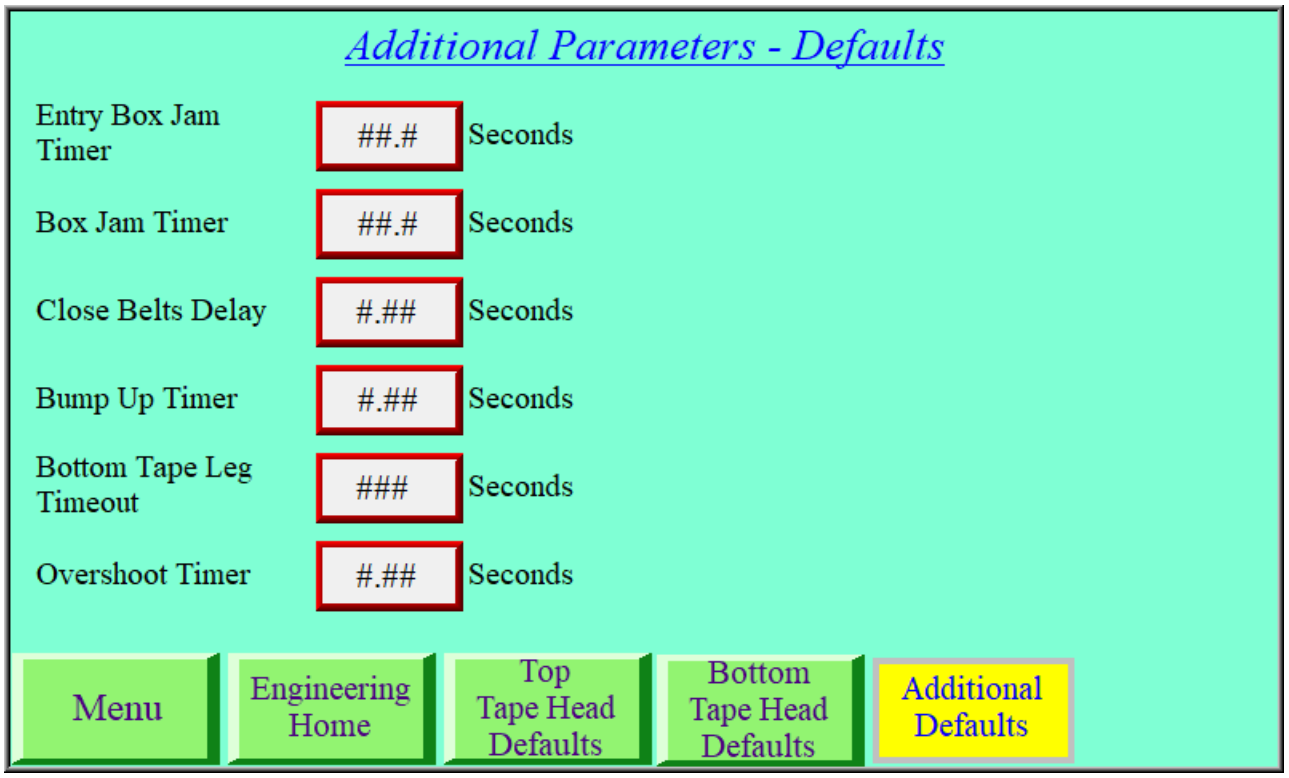



**Figure 78: Additional Parameters Defaults**

| Item | Description |
|---|---|
| Entry Box Jam Timer | Sets the time limit for the box to reach the bottom box timing photoeye. Timer starts when the paddle under the bridge is pressed. If the timer finishes an Entry Box Jam Error will stop the machine. Not used in bottom only mode. Measured in Seconds. This option sets the system default. |
| Box Jam Timer | Sets the time limit to process a box. If the timer finishes a Box Jam Error will stop the machine. Measured in Seconds. This option sets the system default. |
| Close Belts Delay | Time delay before the side belts close. This timer starts when the top box entry photoeye detects the box. Belts will close when the timer finishes or the Top Box Limit Switch trips. Use this setting if shorter boxes move past the bottom entry photoeye before the Top Box Limit Switch trips. Measure in Seconds. This option sets the system default. |
| Bump Up Timer | Determines how high the head will rise up after a box exits. Note: The actual height will also depend on the up and down pressure settings. Measured in Seconds. This option sets the system default. |
| Bottom Tape Leg Timeout | Sets the time limit that the bottom tape leg will sit after being dispensed. This timer starts when the tape finishes dispensing and box enters the machine. When the timer runs out the machine will stop and display the Bottom Tape Leg Timeout error. Measured in Seconds. Set this to “0” to disable this function. |
| Overshoot Timer | Increases the amount the bridge will move up from pressing the front paddle. Default is 0.2 and Max is 0.3 Seconds. This option sets the system default. |
| Menu | Pressing this button will return the operator to the main menu. |
| Engineering Home | Pressing this button will return the operator to the Engineering Menu. |
| Top Tape Head Defaults | Pressing this button will take the operator to the top tape head defaults. |
| Bottom Tape Head Defaults | Pressing this button will take the operator to the bottom tape head defaults. |

## Set Date/Time

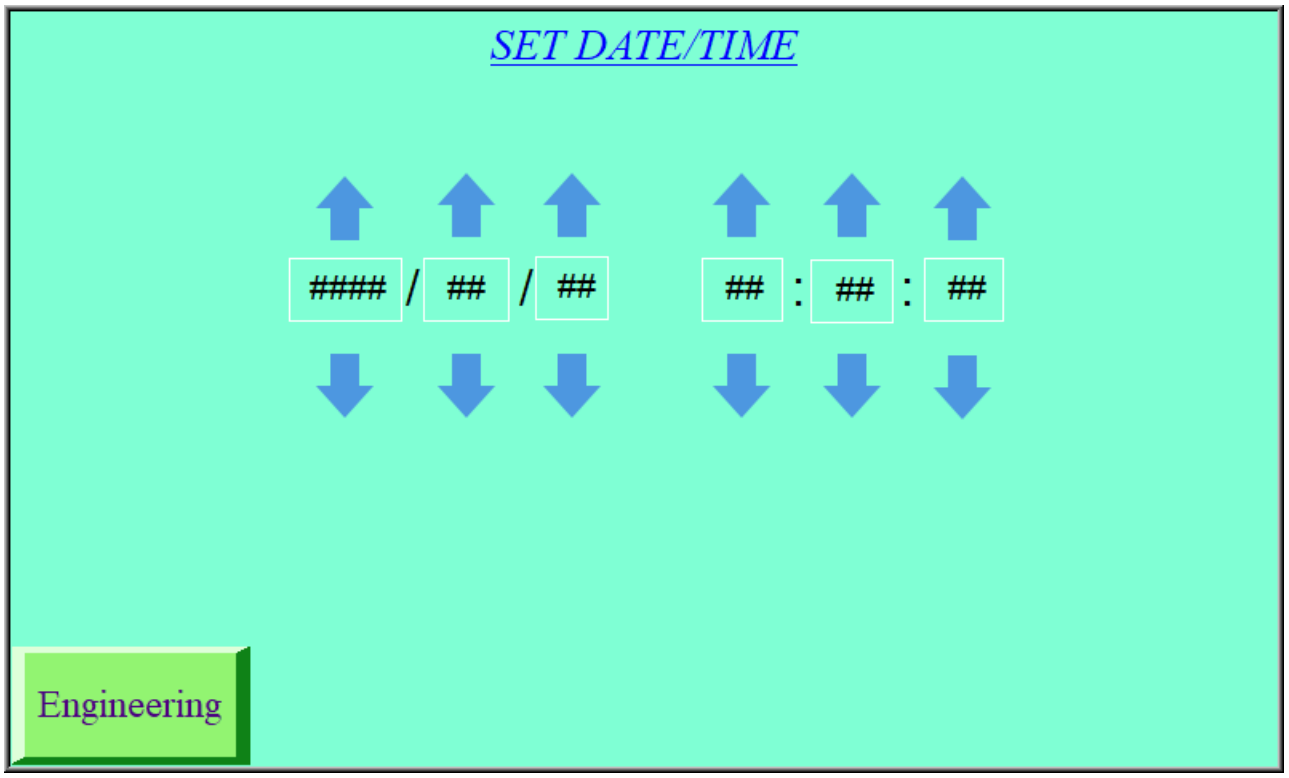



**Figure 79: Set Date/Time**

| Item | Description |
|---|---|
| Engineering | Pressing this will take the operator to the engineering menu. |
| Set Date/Time | Using the arrows the operator can set the system date and time. This should be set to the local time zone of the facility the case sealer is installed into. |

## Flap Folding

The **RSA 2024-WAT** is a top and/or bottom sealer that will apply a single strip of IPG brand water activated tape to the center seams of a regular slotted carton (RSC). Cartons processed through the **RSA 2024-WAT** will need to have all of the flaps closed for proper processing. If flaps are not closed there is a high likelihood that there will be a case jam or tape application error.

1. Fold minor flaps inward as shown in Figure 38
2. Fold major flaps inward, as shown in Figure 39

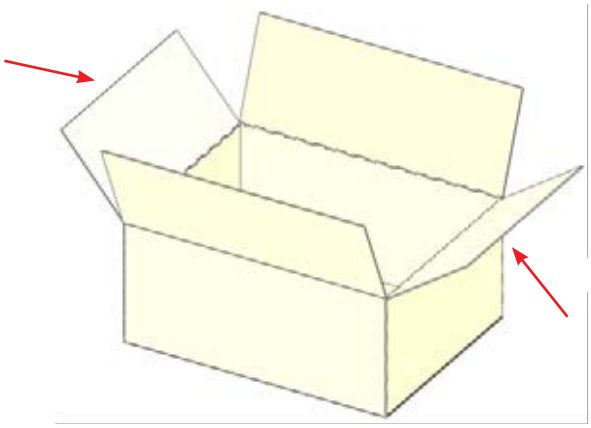


**Figure 80: Folding the Minor Flaps**

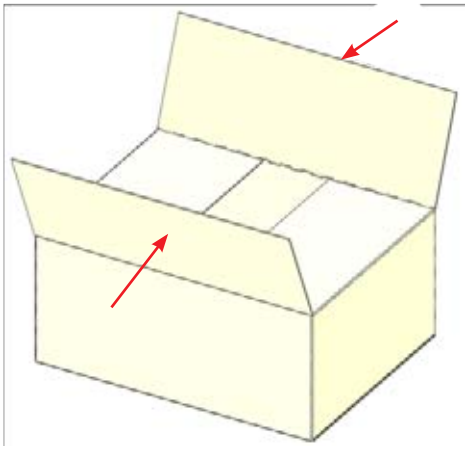


**Figure 81: Folding the Major Flaps**

## Over Filled and Void Filled Cartons

Care should be taken when processing over filled and void filled cartons. Both pose different challenges that may require some adjustments to the case sealer and/or tape heads.

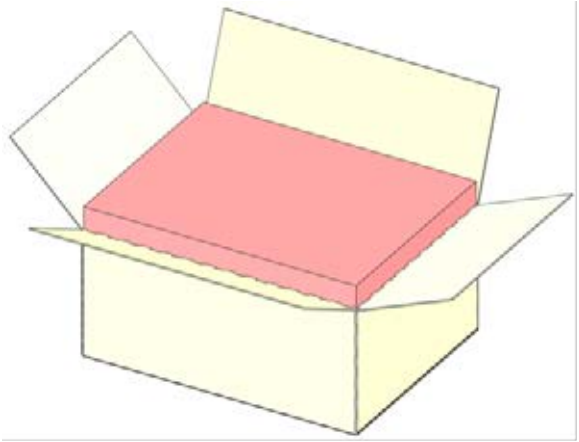


**Figure 82: Over Filled Carton**

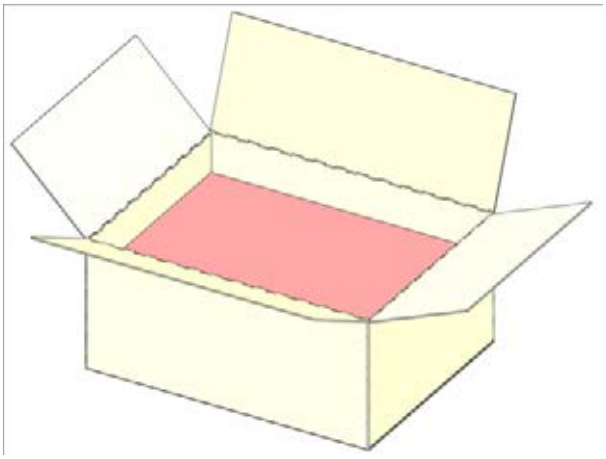


**Figure 83: Void Filled Carton**

# Operation Modes

## Control Box

The **RSA 2024-WAT** Case Sealer has four operating modes. The operator selects these modes, using the 2-position switch, push button on the Control Box, and the optional foot switch.

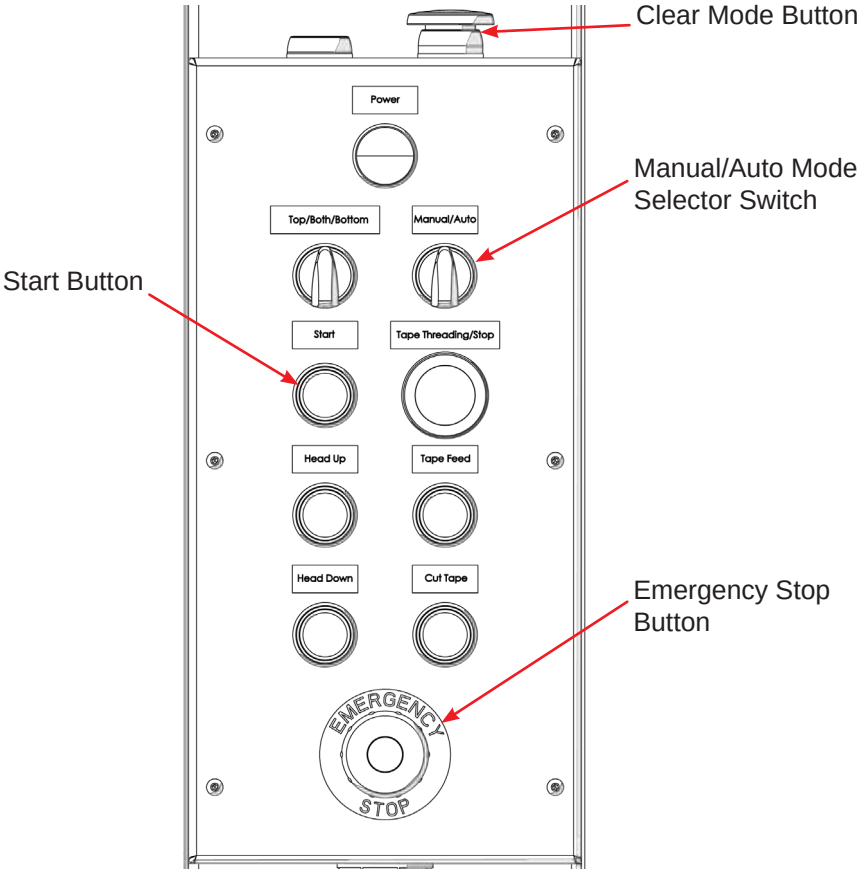



**Figure 84: Operator Controls**

## Manual Mode

This mode is used for troubleshooting and loading tape on to machine. Manual Mode is entered when the operator flips the “Manual/Auto” Switch to Manual. This will stop the belts and if a case was being processed it will stop the sealing procedure.

In Manual Mode an operator can actuate any of the machine’s pneumatic and/or electric movements through selectable options on the Manual Screens of the HMI. For a list of all the functions on the Manual Screen please see the HMI Window Explanations section of this manual.

1. Ensure that the compressed air is plugged in and pressure regulator set at 75 PSI.
2. Turn the control selector to Manual mode.
3. Once set to Manual, buttons on control box can be used for troubleshooting or loading tape.
4. See Operator Control Box, for an explanation of buttons.

# Operation Modes

## Auto Mode

This is the standard operating mode of the machine. In this mode, the belt motors will be active. The bridge will remain in place. When a case is presented to the machine, if it is taller than the current position of the bridge, the operator will need to push the case against the front paddle to raise the bridge. When the case is placed up to the machine's gate the bridge will lower and belts will close automatically. Once the belts make contact with the case it will pull it through the machine to process, applying a single strip of IPG brand water activated tape to the top and/or bottom center seam.

1. Ensure that the compressed air is plugged and pressure regulator set to 75 PSI.
2. Press the Reset button if it is blinking.
3. On the Operator Control Box, press the green Start button, the drive belts will turn on.
4. Introduce a case to the infeed of the case sealer. Grasping the case from the top rear. Do not place hands in front of case or on the sides.
5. Push the case into the case sealer.
6. The case sealer will then take and process the case.

## Clear Mode

Clear Mode is accessed by pressing the blue mushroom button labeled "Clear" on the top of the operator control box. Clear mode is used primarily when there is a case jam. When pressing the Clear button the case sealer's bridge and belts will open to their maximum positions and will cut the tape if it was dispensed.

**WARNING: ENSURE THAT THE OPERATOR'S HANDS ARE AWAY FROM THE CONTACT AREA BETWEEN THE BOTTOM OF THE CARTON AND THE MOVING BELTS. OPERATORS SHOULD GRIP THE CASE AT THE REAR AND LET GO ONCE THE MACHINE HAS TAKEN THE CASE. IMPROPER HANDLING CAN LEAD TO INJURY.**

**WARNING: KEEP HANDS, HAIR, LOOSE CLOTHING, AND JEWELRY AWAY FROM MOVING BELTS, AND TAPE HEADS**

**WARNING: KEEP HANDS AND OTHER BODY PARTS CLEAR OF THE BOTTOM OF THE MACHINE BRIDGE. THIS MAY POSE A MINOR CRUSH HAZARD.**

**WARNING: DO NOT ATTEMPT TO REMOVE ANY JAMMED CASE FROM A CASE SEALER THAT IS CURRENTLY ON. DO NOT ATTEMPT TO PUSH A JAMMED CASE THROUGH THE MACHINE. THE MACHINE HAS COMPONENTS UNDER PNEUMATIC PRESSURE. NOT FOLLOWING THE PROPER CASE JAM CLEARING METHODS CAN RESULT IN INJURY.**

# Operation Modes

## Pass Through Mode (Optional Add On)

Pass Through Mode is an optional add on that requires hardware and software modifications. If you would like this please contact your Authorized IPG Representative.

Pass Through Mode is activated when an operator presses the optional foot switch. This mode will allow for material to process through the case sealer without being taped. There are several variations on Pass Through Mode that are selectable through the settings in the HMI. These may be adjusted at any time by a supervisor with access to the case sealer's setting.

There are two primary methods of setting up Pass Through Mode: Batch and Single.

**Pass Through Batch Mode**

When the Batch Mode is turned on in the case sealer's settings, the operator will enter Pass Through Mode by a single press of the supplied foot switch. This will allow for items to be sent through the case sealer without tape being applied. The case sealer will remain in Pass Through Mode processing every item presented to it without applying tape until the operator presses the foot switch for a second time. On the second press the case sealer will return to Auto Mode and apply tape to the cases presented to it.

**Pass Through Single Mode**

When Batch Mode is turned off in the case sealer's settings, the operator will enter Pass Through Mode by a single press of the supplied foot switch. This will allow for a single item to be sent through the case sealer without tape being applied. Once the item has exited the case sealer it will return to Auto Mode and apply to the cases presented to it.

If an operator holds down the foot switch while in Pass Through Single Mode the case sealer will not apply tape to any item presented to it. The operator will need to release the foot switch to return to Auto Mode.

# TROUBLESHOOTING

The **RSA 2024-WAT** Case Sealer is fabricated with high quality components that provide trouble-free operation for a long period of time. However, should a problem occur, we recommend that you consult the following pages. If the problem you encounter is not discussed in these pages, call IPG Machinery Support at 813-345-3070 or at machsupp@itape.com.

## Electrical Box Components

The below diagram calls out all components within the electrical cabinet of the RSA 2024-SB. If you believe access to the electrical cabinet is necessary please contact IPG Machinery Support at 813-345-3070 or machsupp@itape.com.

**WARNING: ONLY QUALIFIED PERSONNEL SHOULD ACCESS THE ELECTRICAL CABINET. UNDER NO CIRCUMSTANCE SHOULD THE OPERATOR OPEN THE ELECTRICAL CABINET.**

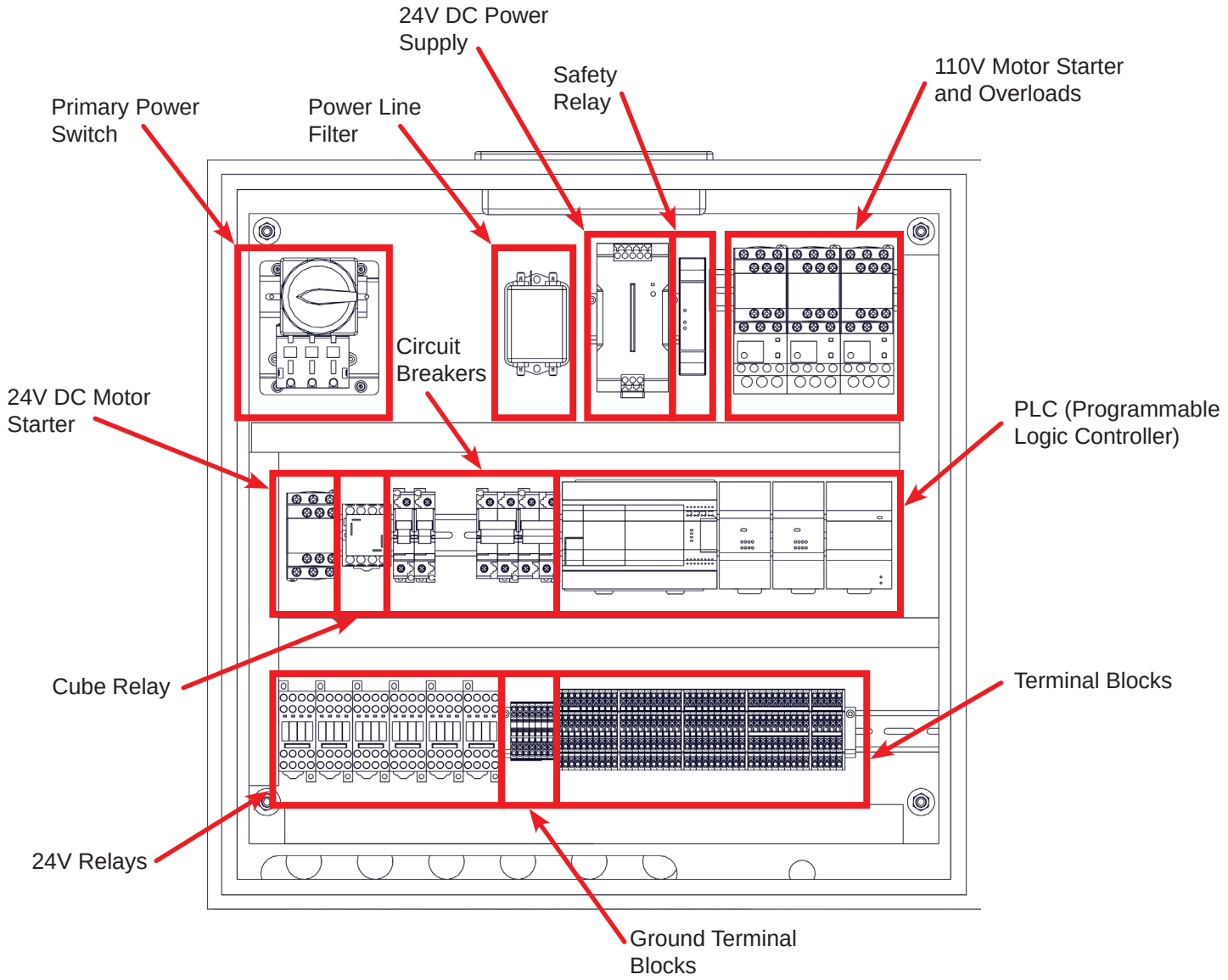



**Figure 85: Electrical Cabinet Components**

## Motor Overload

**WARNING: MAKING ADJUSTMENTS TO MOTOR OVERLOADS OR ANYTHING IN THE ELECTRICAL CABINET SHOULD ONLY BE PERFORMED BY TECHNICIANS WHO HAVE BEEN APPROVED BY AN AUTHORIZED IPG REPRESENTATIVE. RISK OF ELECTRICAL SHOCK AND/OR EXPOSURE TO HIGH VOLTAGE COMPONENTS CAN OCCUR.**

In the event the Start button is pressed, and the machine is in automatic mode, the motors do not start it is recommended to check the motor overloads in the electrical cabinet.

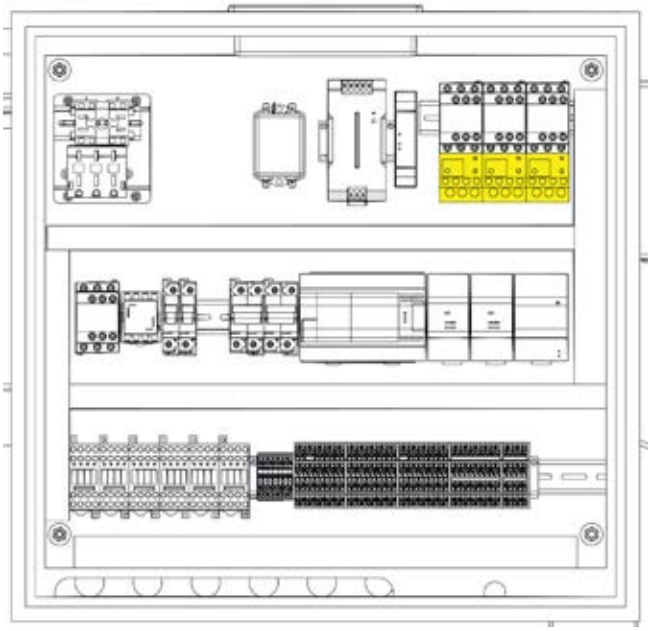


**Figure 86: Motor Overload**

The electric motors are protected with an automatic re-settable overload. Push on the top blue button to reset. The current setting should be set at 110% of the FLA (Full Load Amps) of a single motor.

In the event the motor continues to trip the overload the adjustable scale may be increased a small amount. On the Thermal Overload, protected by the hinged cover, is the adjustable dial.

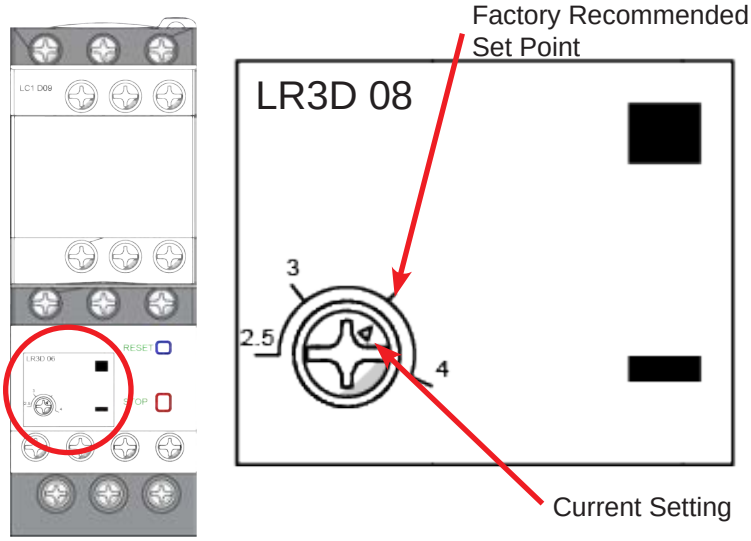



**Figure 87: Overload Adjustment**

From the factory this dial should be set with the arrow pointing towards the shown point above.

In some cases this dial may be set too low resulting in false overloads. This will most likely be noticed when processing cases near the maximum weight limits of the case sealer.

# TROUBLESHOOTING

## Q & A

The following is a short set of brief questions and answers for some mild troubleshooting in WAT case sealers. More in-depth troubleshooting can be found in this section.

**Q: How long is the tape good for once it gets wet?**

It is recommended to process a case within 45 seconds of the initial tape leg being dispensed. Any longer the adhesive will begin to dry and will not stick to the case. Case sealers running the newest software package will have a time out system that will automatically cut the tape and turn off the belts in the event this happens.

**Q: Are the top and bottom tape heads interchangeable?**

IPG Water Activated Tape Heads are manufactured in a top or bottom configuration and are not interchangeable. A top Water Activated Tape Head from one IPG manufactured case sealer can be transferred to another in the top position and the same with the bottom.

IPG manufacturers a 24v version of the WAT heads for adaptation into other equipment. Do not attempt to install a 24v tape head into a machine that is not wired correctly for it.

**CAUTION: BE SURE TO NOT INSTALL 24V TAPE HEADS INTO EQUIPMENT THEY ARE NOT RATED FOR. THIS WILL CAUSE DAMAGE TO THE TAPE HEAD AND MAY RESULT IN INJURY.**

**Q: Can pressure sensitive tape heads replace WAT ones?**

Due to manufacturing differences there is not a way to drop in replace the WAT heads with pressure sensitive counterparts.

**Q: What is the best way to clean the tape heads?**

It is recommended to clean the tape path with a mild detergent and water solution. Do not use any harsh industrial cleaners as they can deteriorate parts quickly. Do not use excessive amounts of water and dry the tape head soon after washing. Be sure the tape path is dry before reinstalling the tape head or rethreading tape.

**Q: Can we reverse the side the tape is loaded on?**

On WAT case sealers it is a special order to reverse the top tape mandrel to allow for it to be loaded from the reverse side. The bottom tape carriage cannot be reversed.

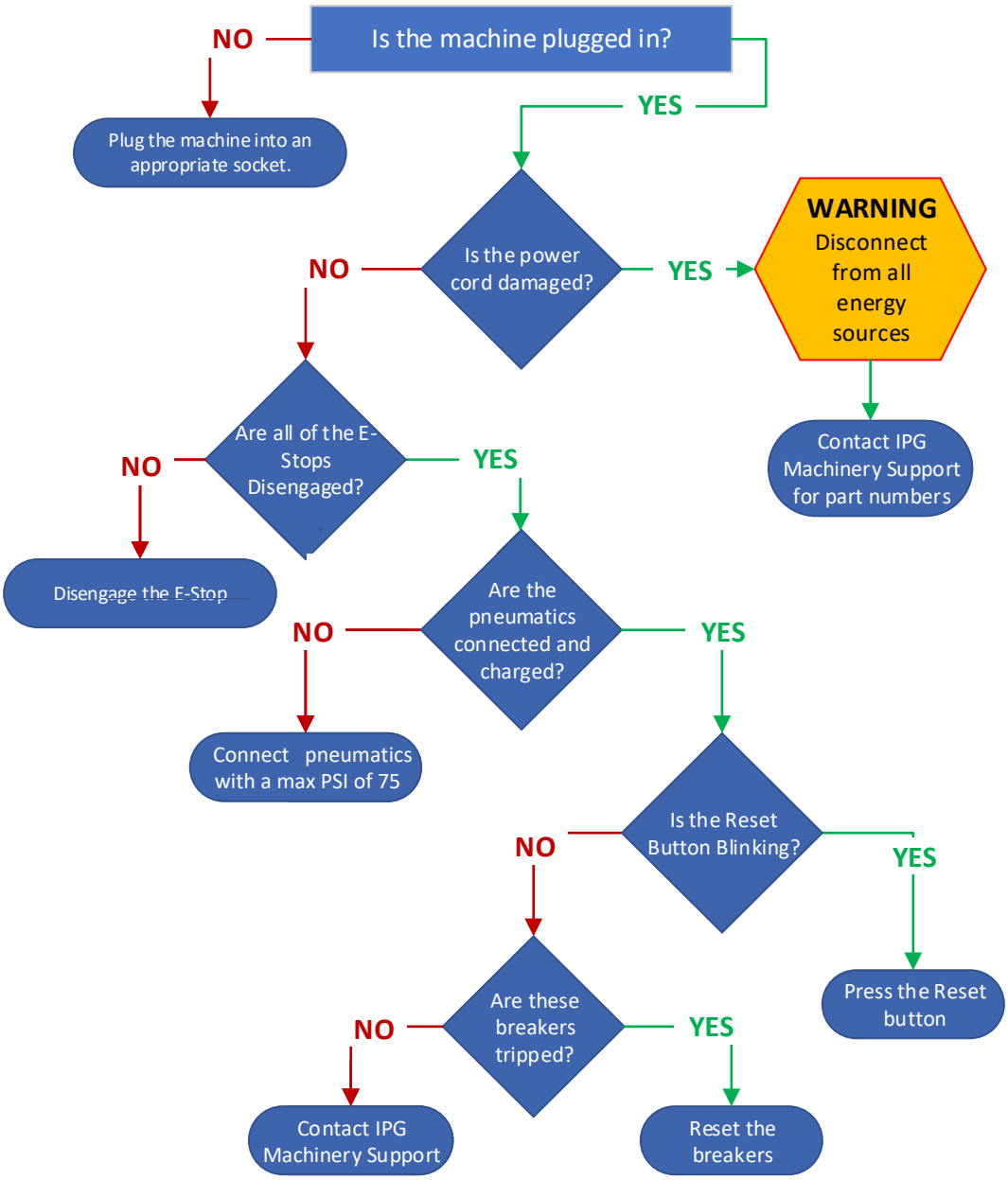
**Q: Can I use a mobile compressor to operate the case sealer?**

It is recommended to use a large compressor capable of producing a sustained 9 CFM at 90 PSI. If a compressor is used that is below this level it is possible to have unintended action, poor taping, or even a lack of pneumatic movement entirely. Smaller compressors are also more likely to introduce moisture into the air lines which can cause a degradation of internal components on the case sealer and tape head(s). Use only clean dry air with IPG manufactured equipment.

**Q: Can I change machine settings?**

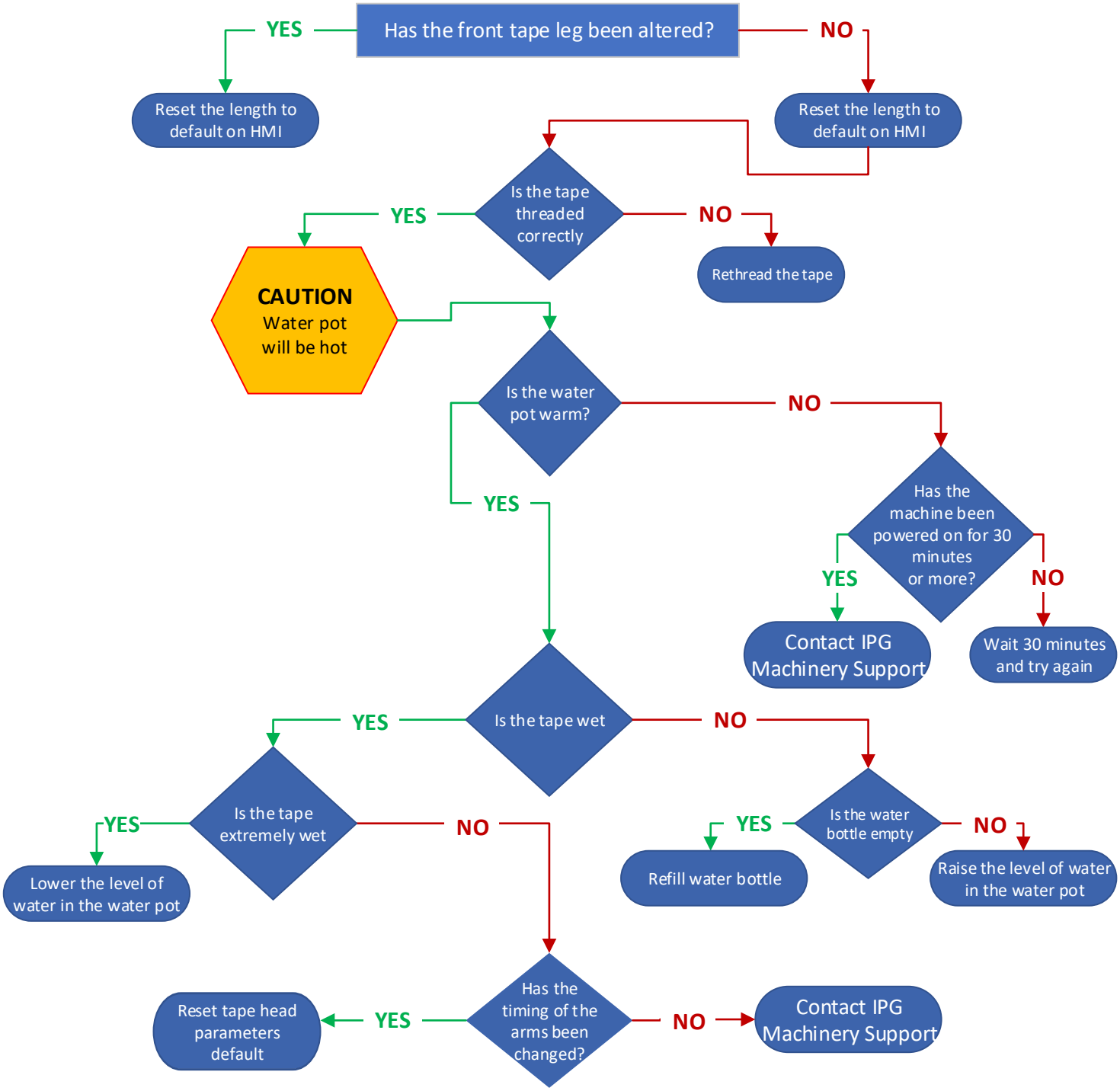
While IPG WAT Case Sealers can have their settings adjusted through a password protected portion of the HMI screen it is recommended to contact IPG Machine Support prior to making any changes. The machine should have been set up by an Authorized IPG Representative and any alterations that would need to have been made on site for your specific box suite would have been saved. Making changes to the settings could result in poor tape application, unintended movement, or potentially damage the equipment.

## The Machine is Turned on and Nothing Happens



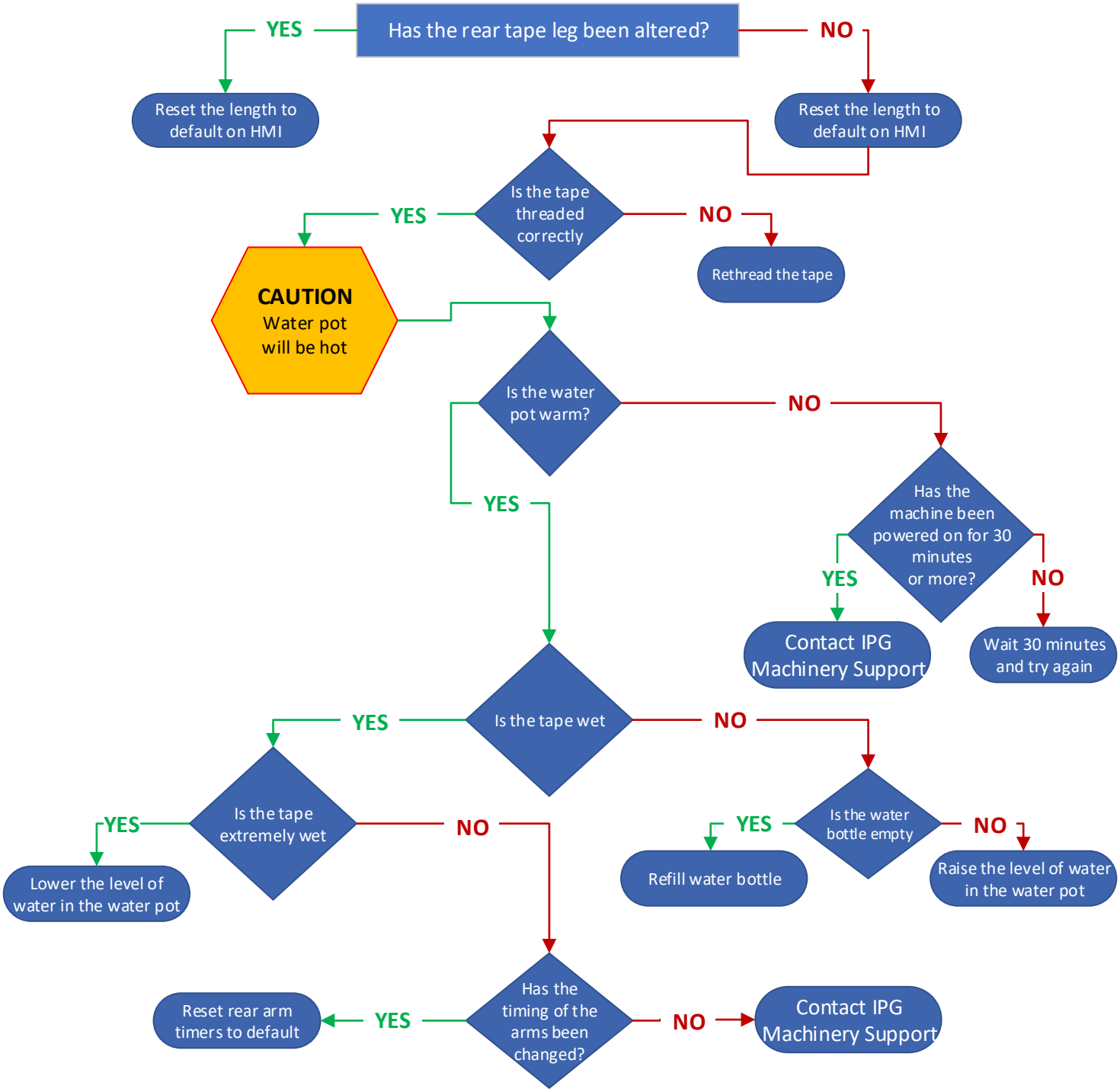

**IPG Machinery Support**
**877-447-4832 Option 4**

## Front Tape Leg Not Sticking



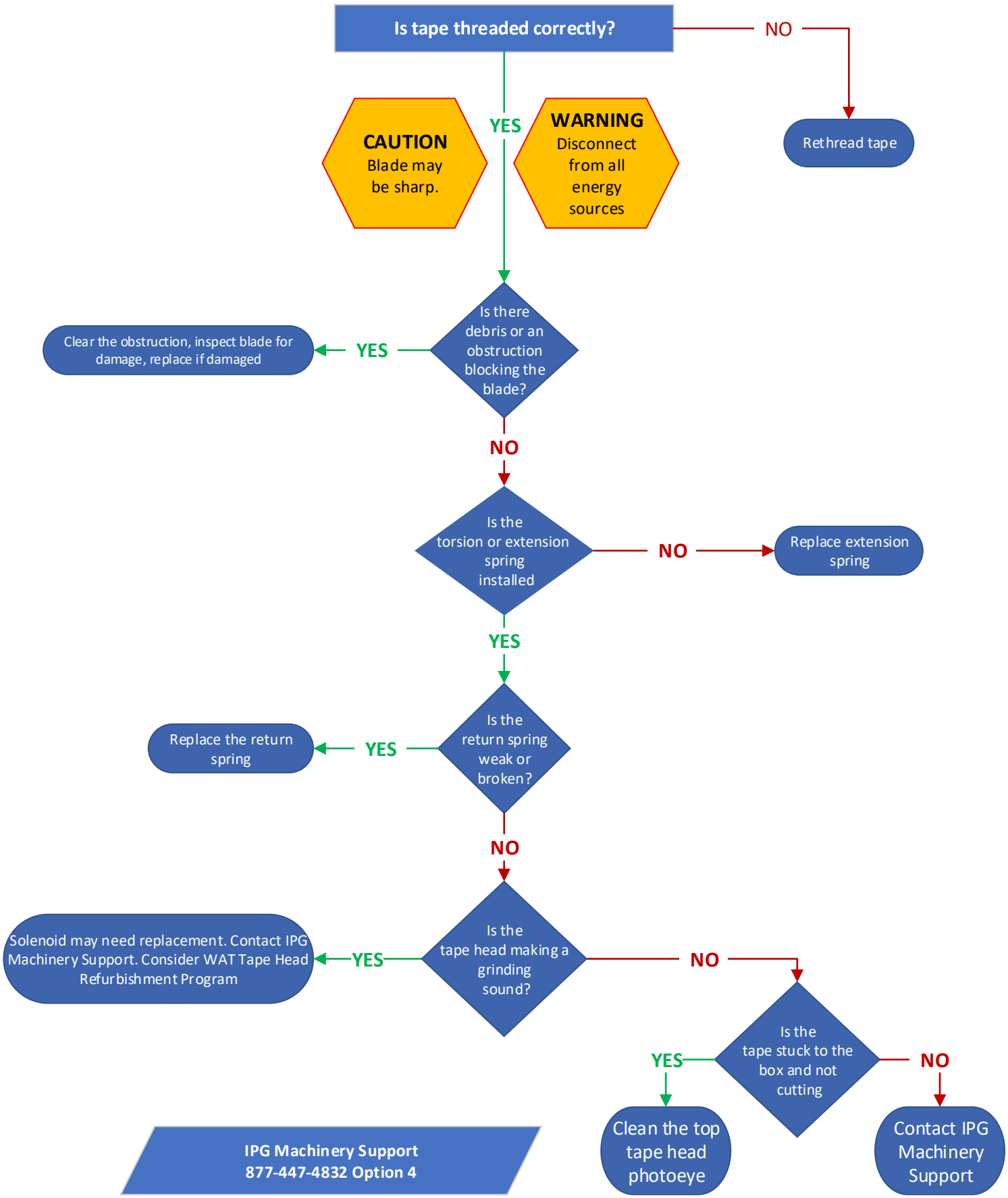

**IPG Machinery Support**
**877-447-4832 Option 4**

## Rear Tape Leg Not Sticking

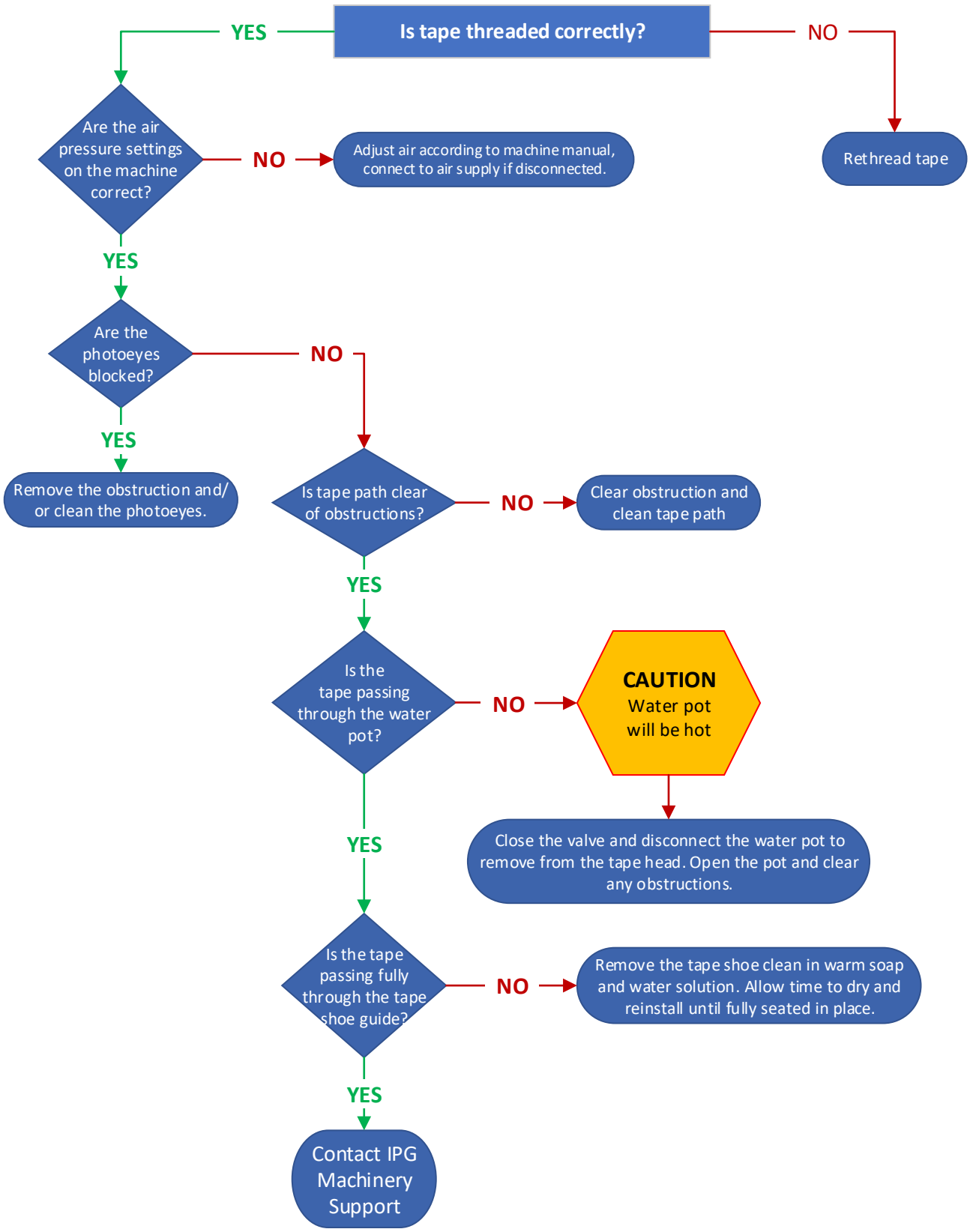



**IPG Machinery Support**
**877-447-4832 Option 4**

## Tape Does Not Cut

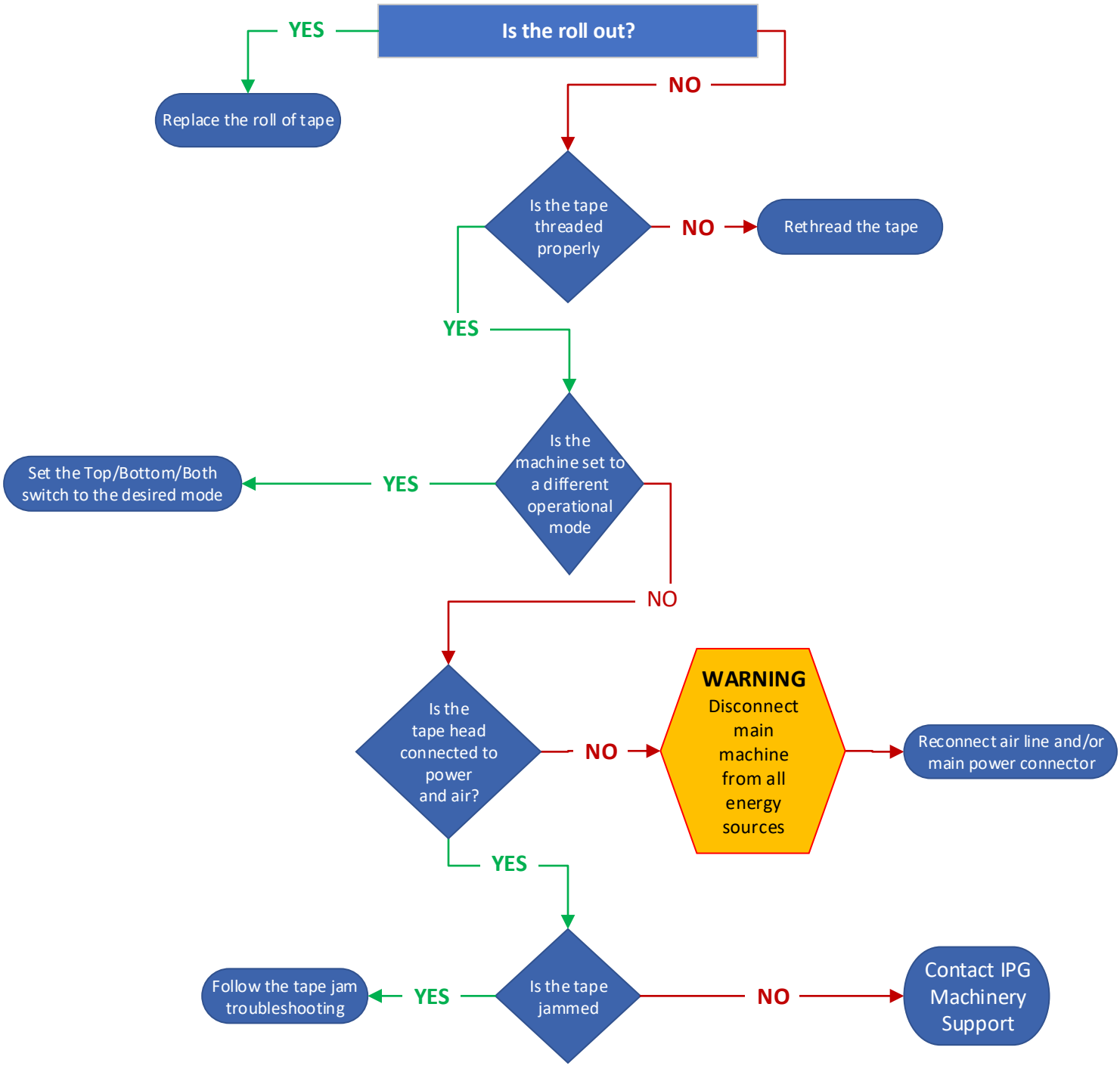


## Tape Jam



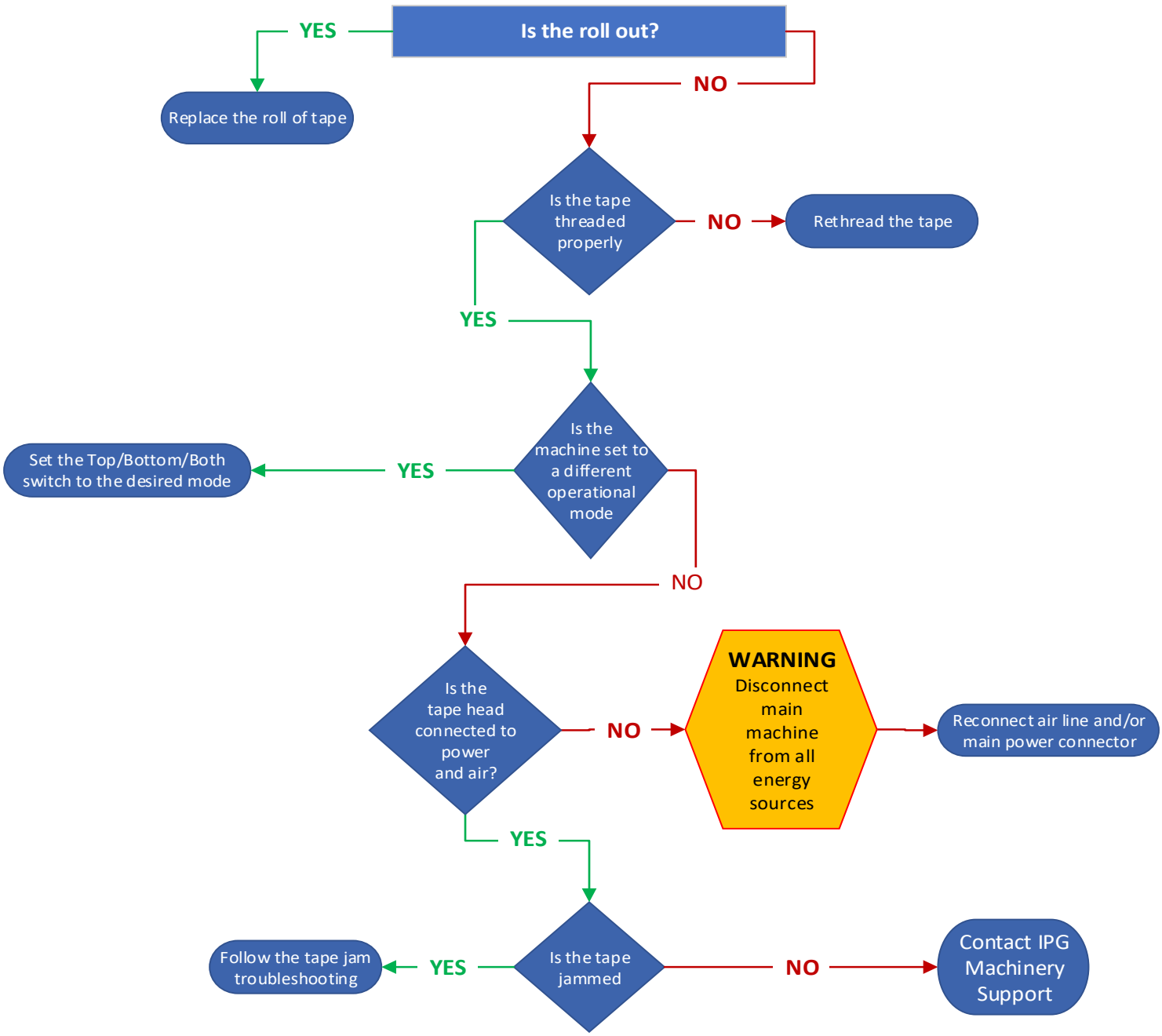

**IPG Machinery Support**
**877-447-4832 Option 4**

## Wrinkles in the Tape




**IPG Machinery Support**
**877-447-4832 Option 4**

## Tape Not Dispensed




**IPG Machinery Support**
**877-447-4832 Option 4**

# Maintenance

The **RSA 2024-WAT** Case Sealer has been designed and manufactured with the finest components to provide long, trouble-free performance. General preventive maintenance will improve performance and prolong the life of the case sealer. Review the illustrations and chart below for information regarding machine maintenance.

**WARNING: TURN OFF ALL ENERGY SOURCES AND LOCK OUT THE ELECTRICAL SUPPLY BEFORE CLEANING OR MAINTENANCE. IF POWER CORDS AND PNEUMATIC CONNECTIONS ARE NOT DISCONNECTED, SEVERE INJURY TO PERSONNEL COULD RESULT.**

## Lubrication:

Spray centering guide shafts and compression guide shafts once a month with a silicone based dry film lubricant. This will not attract dust or lint from the surroundings.

Apply chain lube on the drive and centering guide chain once a month.

No other lubrication is necessary to operate the machine.

## Cleaning:

Cartons produce a sizable amount of dust and paper chips when processed or handled. If this dust is allowed to build up in the machine, it may cause component wear and overheating of motors. Remove the accumulated dust with a shop vacuum. Avoid using compressed air to remove the dust as this may cause the dust to penetrate into components.

| | | | Frequency | | |
|---|---|---|---|---|---|
| **Item** | **Action Required** | **Material** | **Weekly** | **Monthly** | **Quarterly** |
| Carton Dust In/On Machine | Vacuum off machine externally and internally, pay attention to drive base centering chain | Vacuum | X | | |
| Hardware | Re-tighten any loose hardware, replace any missing hardware | | | X | |
| Cross Shafts | Lubricate | Dry PTFE | | X | |
| Centering Chain | Lubricate | Chain Lubricant | | X | |
| Air Regulator Filter | Clean filter | Water, Mild Detergent | | X | |
| Tape Path | Clean to remove adhesive | Water, Mild Detergent | X | | |
| Water Pot/Reservoir | Rinse out thoroughly | Water, Mild Detergent | | X | |
| Wetting Roller | Clean roller | Water, Mild Detergent | | | |
| Wipe Down Drive Rollers | Remove dust | Water, Mild Detergent | X | | |
| Tape Head Assist Roller | Clean roller | Water, Mild Detergent | X | | |

## Recommended Spare Parts:

It is recommended to keep a small supply of spare parts on hand in order to reduce any potential down time for maintenance. The table of parts to the right is the recommended list of spare parts. Different applications of machinery may require some amendments to this list, please consult IPG Machinery Support for any additional recommended material.

| Description | Item Number | QTY |
|---|---|---|
| Peel off Spring | UPH1289 | 1 |
| Emergency Stop Button | UPM4816 | 1 |
| Driving Belts | UPM4884 | 2 |
| Water Pot Roller | WET0071 | 1 |
| WAT Tape Head Roller | WPT0144 | 2 |
| Striker Plate | WPT0044 | 1 |
| Cutter Blade | WPT0050 | 1 |
| Extension Spring | WPT0063 | 1 |

## Changing the Air Regulator Filter

The filter on the air regulator removes dirt and moisture from supplied air before it enters the carton sealer.

1. To remove metal protective guard, press down on locking tab located towards the top of the guard, rotate guard and pull down.
2. The clear reservoir has a threaded top, which is used to attach it to the main regulator assembly. To remove the reservoir, rotate it until unfastened.
3. The air regulator filter is held in place using a threaded cap fastened on to the main assembly. To remove the filter, unfasten the cap and pull down on filter.

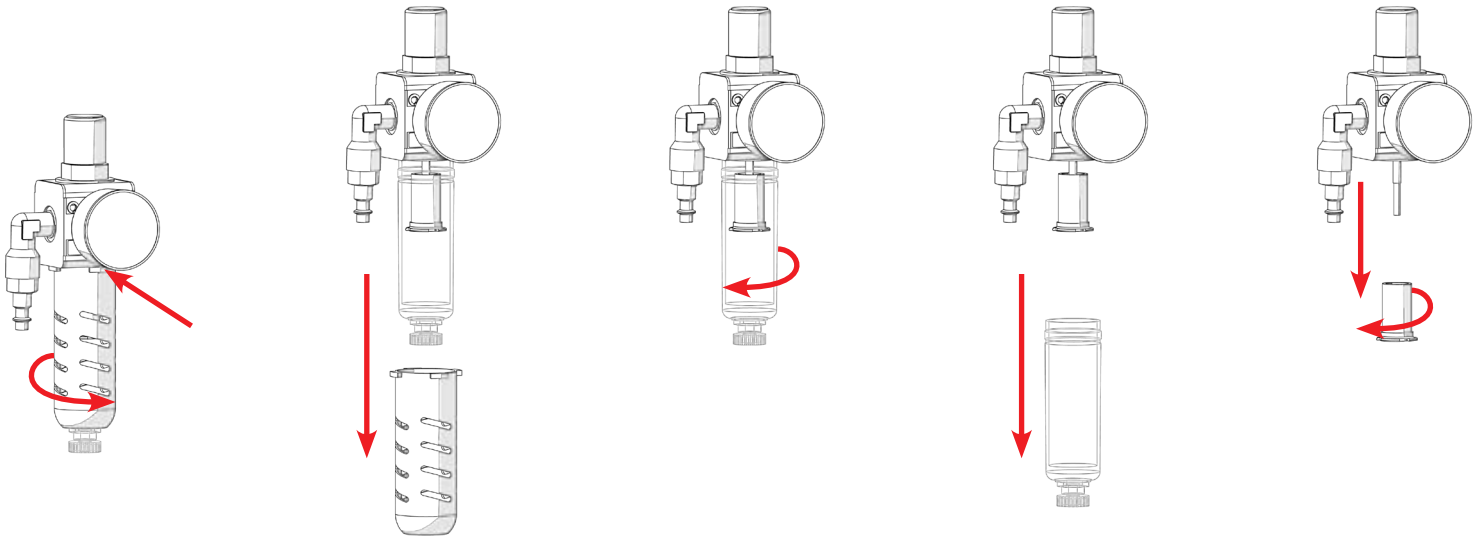


**Figure 88: Air Filter Regulator**

## Drive Belt Replacement

1. Using a 4mm Allen key, remove two screws and remove drive base cover.

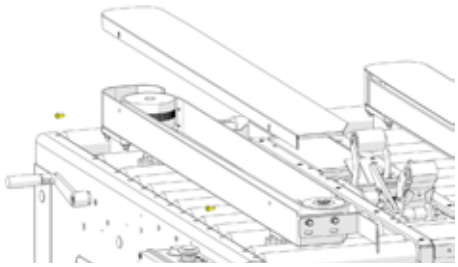


**Figure 89: Drive Base Cover**

2. Using appropriate Allen key and wrench, loosen belt tensioning bolts.

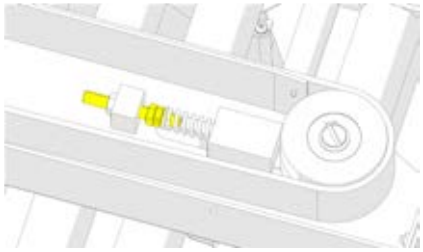


**Figure 90: Loosen Belt Tension Bolt**

3. Remove worn belt and replace with new belt.

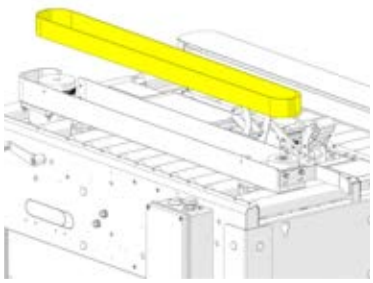


**Figure 91: Replace Belt**

4. Using appropriate Allen key and wrench, tighten belt tensioning bolts. Be sure to equally adjust tensioning bolts for both drive belts.

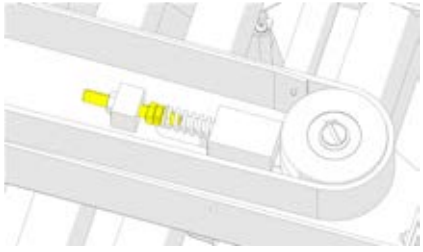


**Figure 92: Tighten Belt Tension Bolt**

5. Proper belt tension is achieved when a 5-pound pull force is used to create a 25mm (1 in.) gap, as shown in the middle of the drive base.

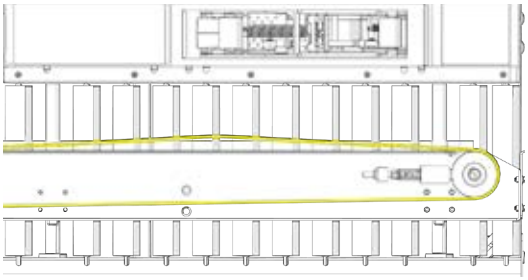


**Figure 93: Proper Belt Tension**

6. Using a 4mm Allen key, replace drive base cover, as shown.

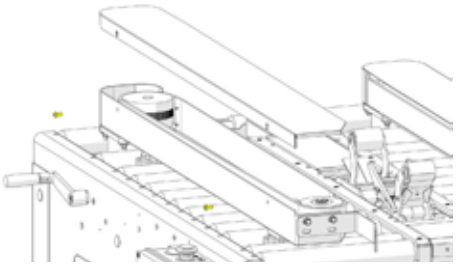


**Figure 94: Drive Base Cover**

## Drive Belt Adjustment

1. Using a 4mm Allen key, remove two screws and remove drive base cover.

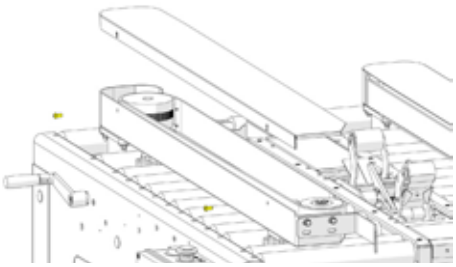


**Figure 95: Drive Base Cover**

2. Using appropriate Allen key and wrench, tighten belt tensioning bolts. Be sure to equally adjust tensioning bolts for both drive belts.

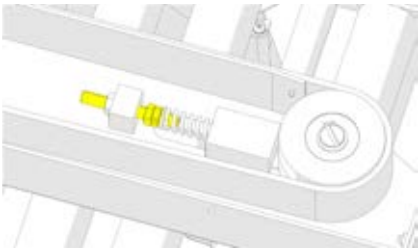


**Figure 96: Tighten Belt Tension Bolt**

3. Proper belt tension is achieved when a 5-pound pull force is used to create a 25mm (1 in.) gap, as shown in the middle of the drive base.

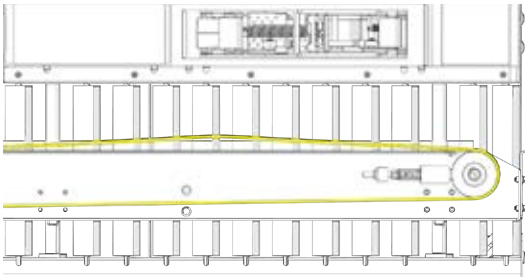


**Figure 97: Proper Belt Tension**

4. Using a 4mm Allen key, replace drive base cover, as shown.

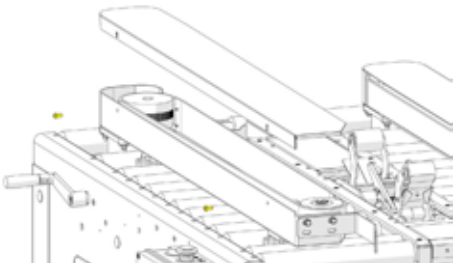
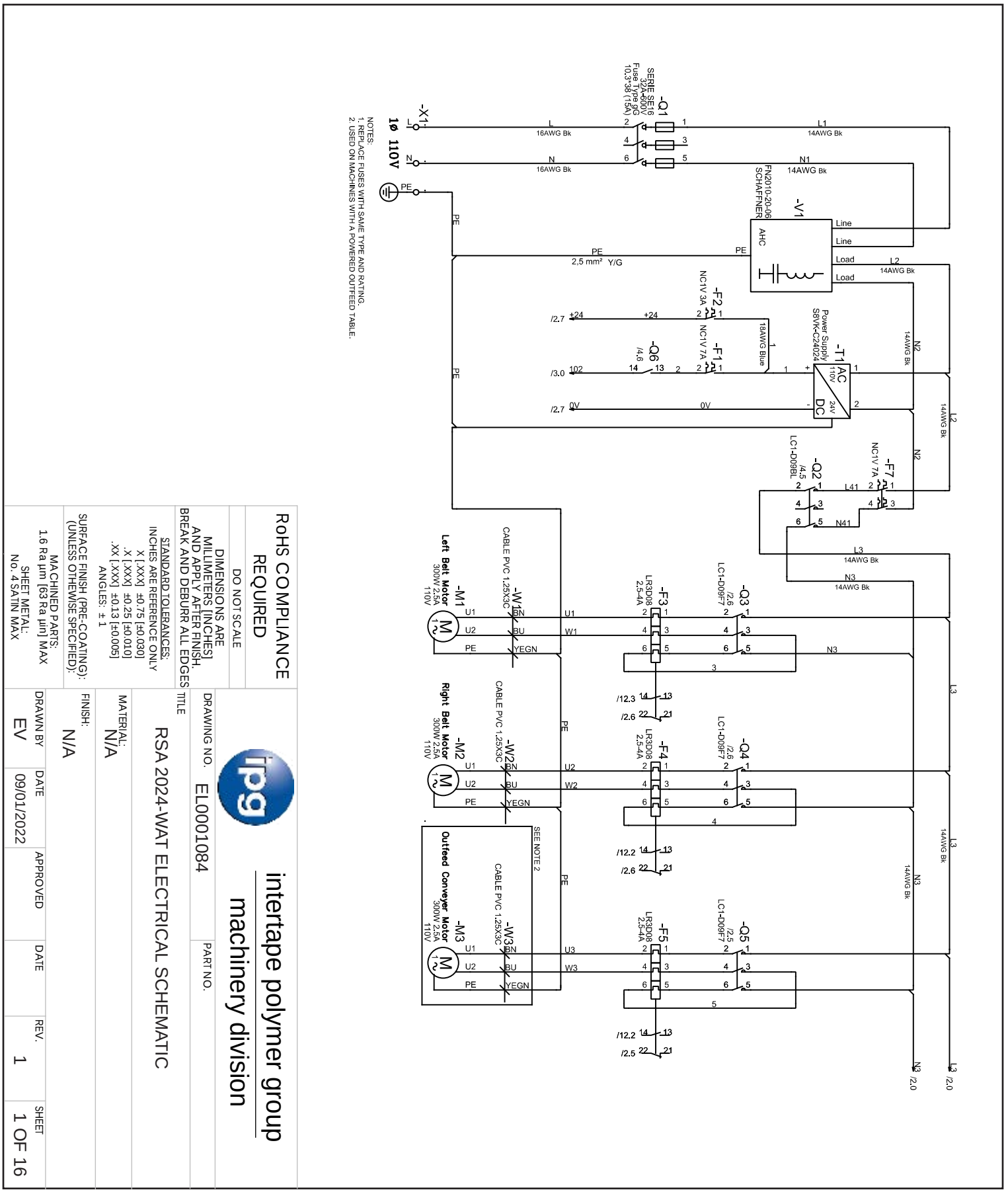


**Figure 98: Drive Base Cover**

# APPENDIX A

## Electrical Drawing




RoHS COMPLIANCE REQUIRED

DO NOT SCALE

DIMENSIONS ARE MILLIMETERS [INCHES] AND APPLY AFTER FINISH. BREAK AND DEBURR ALL EDGES

STANDARD TOLERANCES: INCHES ARE REFERENCE ONLY
X [.XXX] ±0.75 [±0.030]
.X [.XXX] ±0.25 [±0.010]
.XX [.XXX] ±0.13 [±0.005]
ANGLES: ± 1

SURFACE FINISH (PRE-COATING): (UNLESS OTHEWISE SPECIFIED):
MACHINED PARTS:
1.6 Ra µm [63 Ra µin] MAX
SHEET METAL:
No. 4 SATIN MAX

ipg

intertape polymer group
machinery division

DRAWING NO. EL0001084

PART NO.

TITLE
RSA 2024-WAT ELECTRICAL SCHEMATIC

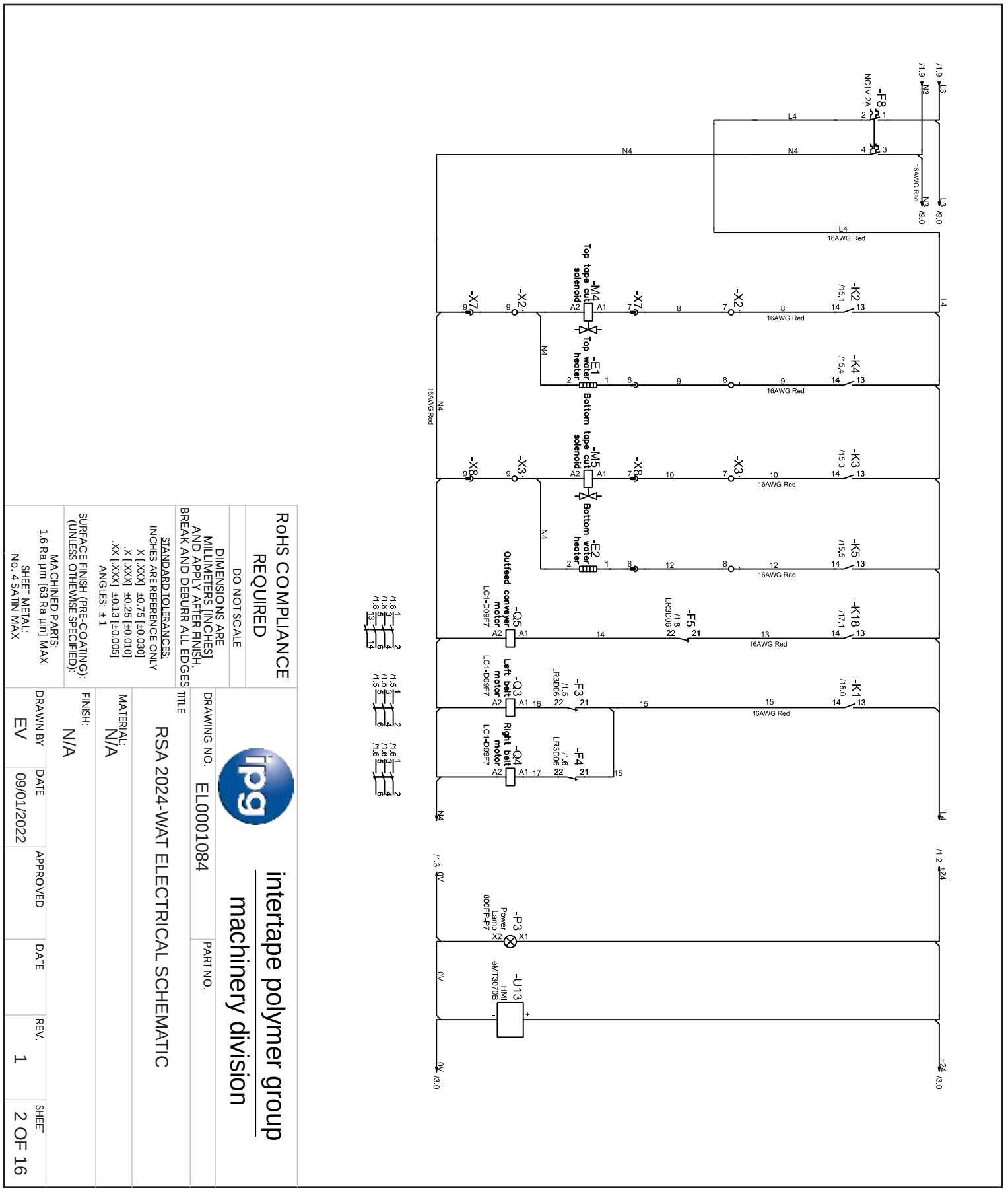
MATERIAL: N/A

FINISH: N/A

| DRAWN BY | DATE | APPROVED | DATE | REV. | SHEET |
|---|---|---|---|---|---|
| EV | 09/01/2022 | | | 1 | 1 OF 16 |

# Appendix A

## Electrical Drawing




RoHS COMPLIANCE REQUIRED

DO NOT SCALE

DIMENSIONS ARE MILLIMETERS [INCHES] AND APPLY AFTER FINISH. BREAK AND DEBURR ALL EDGES

STANDARD TOLERANCES: INCHES ARE REFERENCE ONLY
X [.XX] ±0.75 [±0.030]
.X [.XXX] ±0.25 [±0.010]
.XX [.XXX] ±0.13 [±0.005]
ANGLES: ± 1

SURFACE FINISH (PRE-COATING): (UNLESS OTHEWISE SPECIFIED):
MACHINED PARTS: 1.6 Ra µm [63 Ra µin] MAX
SHEET METAL: No. 4 SATIN MAX

ipg

intertape polymer group
machinery division

| DRAWING NO. | PART NO. |
|---|---|
| EL0001084 | |

TITLE

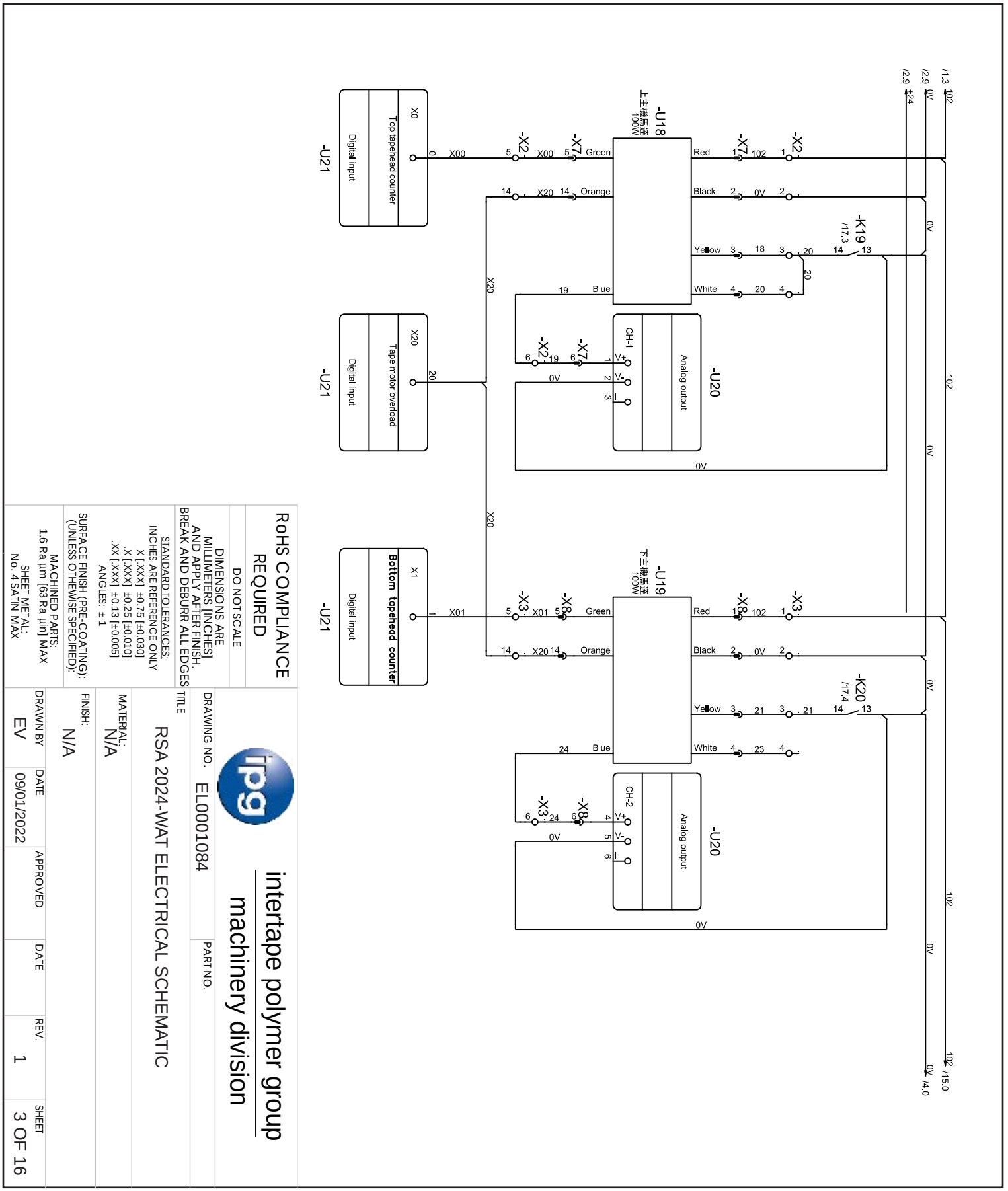
RSA 2024-WAT ELECTRICAL SCHEMATIC

| MATERIAL: | FINISH: |
|---|---|
| N/A | N/A |

| DRAWN BY | DATE | APPROVED | DATE | REV. | SHEET |
|---|---|---|---|---|---|
| EV | 09/01/2022 | | | 1 | 2 OF 16 |

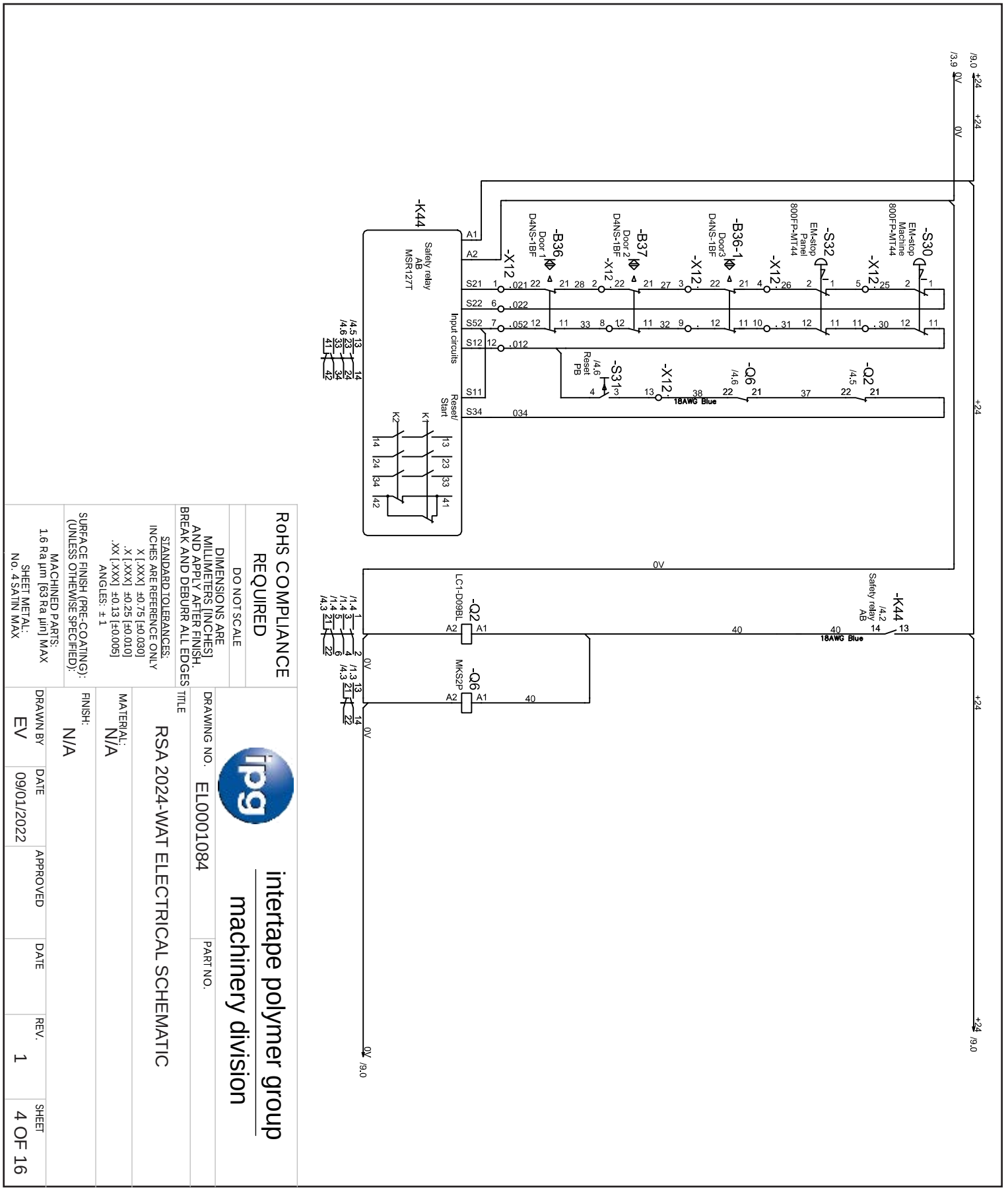
# APPENDIX A

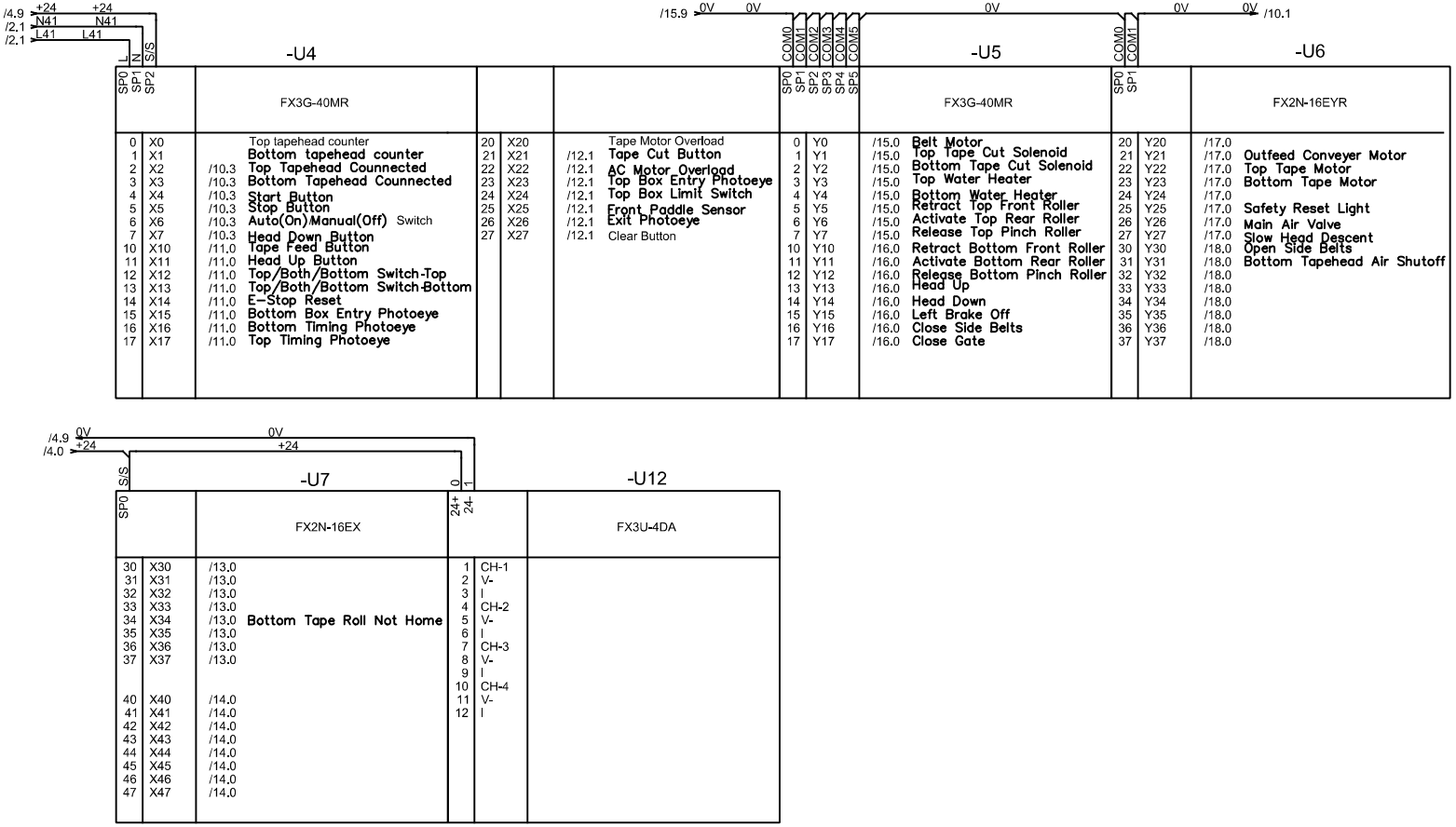
## Electrical Drawing



# Appendix A

## Electrical Drawing

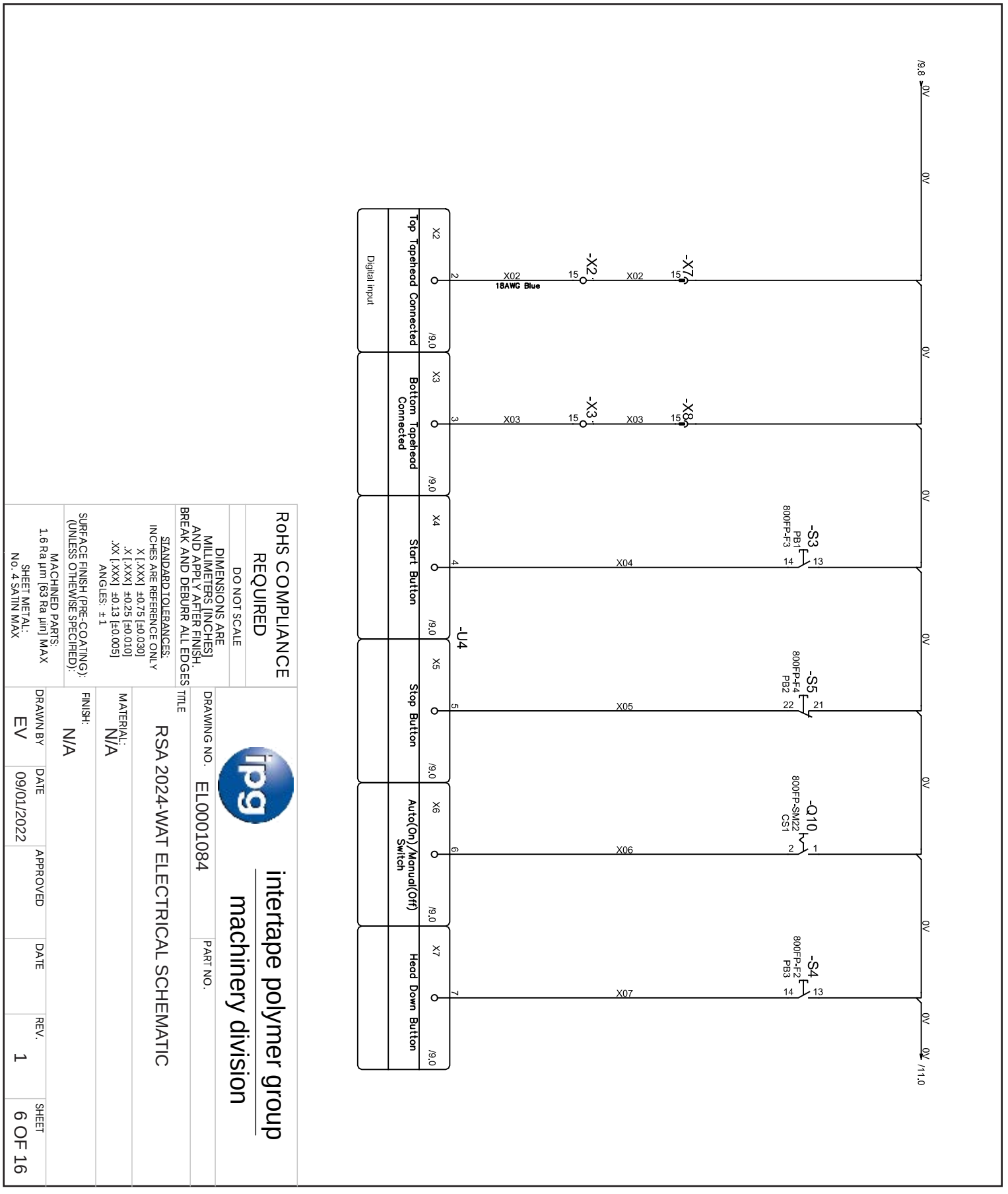





| | | | | | |
|---|---|---|---|---|---|
| RoHS COMPLIANCE REQUIRED | intertape polymer group / machinery division | | | | |
| DO NOT SCALE | DRAWING NO. EL0001084 | PART NO. | | | |
| DIMENSIONS ARE MILLIMETERS [INCHES] AND APPLY AFTER FINISH. BREAK AND DEBURR ALL EDGES | TITLE: RSA 2024-WAT ELECTRICAL SCHEMATIC | | | | |
| STANDARD TOLERANCES: INCHES ARE REFERENCE ONLY X [.XXX] ±0.75 [±0.030] .X [.XXX] ±0.25 [±0.010] .XX [.XXX] ±0.13 [±0.005] ANGLES: ±1 | MATERIAL: N/A | | | | |
| SURFACE FINISH (PRE-COATING): (UNLESS OTHEWISE SPECIFIED): | FINISH: N/A | | | | |
| MACHINED PARTS: 1.6 Ra µm [63 Ra µin] MAX | DRAWN BY | DATE | APPROVED | DATE | REV. / SHEET |
| SHEET METAL: No. 4 SATIN MAX | EV | 09/01/2022 | | | 1 / 5 OF 16 |

# Appendix A

## Electrical Drawing




RoHS COMPLIANCE REQUIRED

DO NOT SCALE

DIMENSIONS ARE MILLIMETERS [INCHES]. AND APPLY AFTER FINISH. BREAK AND DEBURR ALL EDGES

STANDARD TOLERANCES: INCHES ARE REFERENCE ONLY
X [.XXX] ±0.75 [±0.030]
.X [.XXX] ±0.25 [±0.010]
.XX [.XXX] ±0.13 [±0.005]
ANGLES: ±1

SURFACE FINISH (PRE-COATING): (UNLESS OTHEWISE SPECIFIED):
MACHINED PARTS: 1.6 Ra µm [63 Ra µin] MAX
SHEET METAL: No. 4 SATIN MAX

ipg

intertape polymer group
machinery division

DRAWING NO. EL0001084

PART NO.

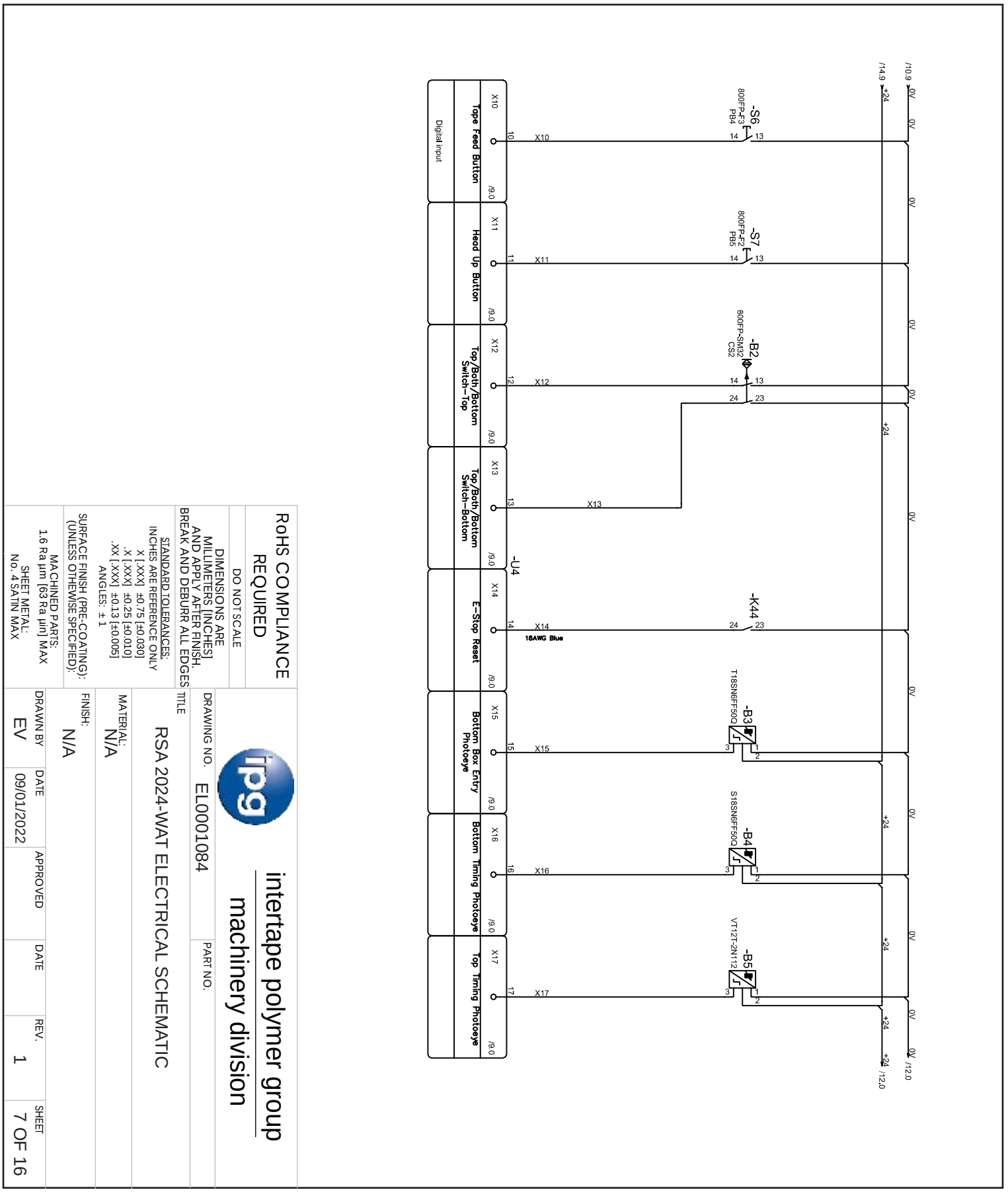
TITLE
RSA 2024-WAT ELECTRICAL SCHEMATIC

MATERIAL: N/A

FINISH: N/A

| DRAWN BY | DATE | APPROVED | DATE | REV. | SHEET |
|---|---|---|---|---|---|
| EV | 09/01/2022 | | | 1 | 6 OF 16 |

## Electrical Drawing




RoHS COMPLIANCE REQUIRED

DO NOT SCALE

DIMENSIONS ARE MILLIMETERS [INCHES] AND APPLY AFTER FINISH. BREAK AND DEBURR ALL EDGES

STANDARD TOLERANCES: INCHES ARE REFERENCE ONLY
X [.XXX] ±0.75 [±0.030]
.X [.XXX] ±0.25 [±0.010]
.XX [.XXX] ±0.13 [±0.005]
ANGLES: ± 1

SURFACE FINISH (PRE-COATING): (UNLESS OTHEWISE SPECIFIED):
MACHINED PARTS: 1.6 Ra µm [63 Ra µin] MAX
SHEET METAL: No. 4 SATIN MAX

ipg
intertape polymer group
machinery division

DRAWING NO. EL0001084

PART NO.

TITLE
RSA 2024-WAT ELECTRICAL SCHEMATIC

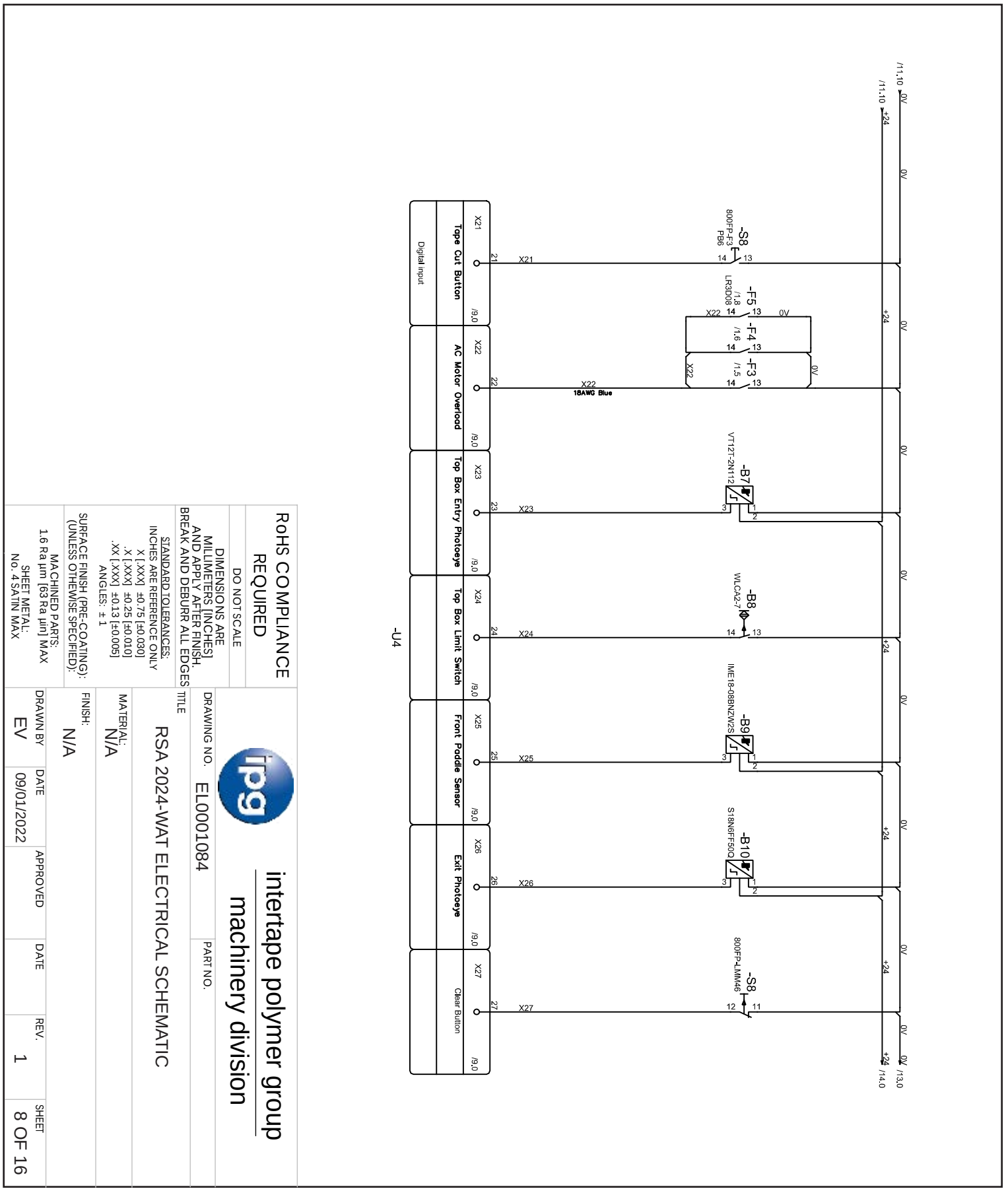
MATERIAL: N/A

FINISH: N/A

| DRAWN BY | DATE | APPROVED | DATE | REV. | SHEET |
|---|---|---|---|---|---|
| EV | 09/01/2022 | | | 1 | 7 OF 16 |

# Appendix A

## Electrical Drawing




RoHS COMPLIANCE REQUIRED

DO NOT SCALE

DIMENSIONS ARE MILLIMETERS [INCHES] AND APPLY AFTER FINISH. BREAK AND DEBURR ALL EDGES

STANDARD TOLERANCES: INCHES ARE REFERENCE ONLY
X [.XX] ±0.75 [±0.030]
.X [.XXX] ±0.25 [±0.010]
.XX [.XXX] ±0.13 [±0.005]
ANGLES: ± 1

SURFACE FINISH (PRE-COATING): (UNLESS OTHEWISE SPECIFIED):
MACHINED PARTS: 1.6 Ra µm [63 Ra µin] MAX
SHEET METAL: No. 4 SATIN MAX

intertape polymer group
machinery division

DRAWING NO. EL0001084

PART NO.

TITLE
RSA 2024-WAT ELECTRICAL SCHEMATIC

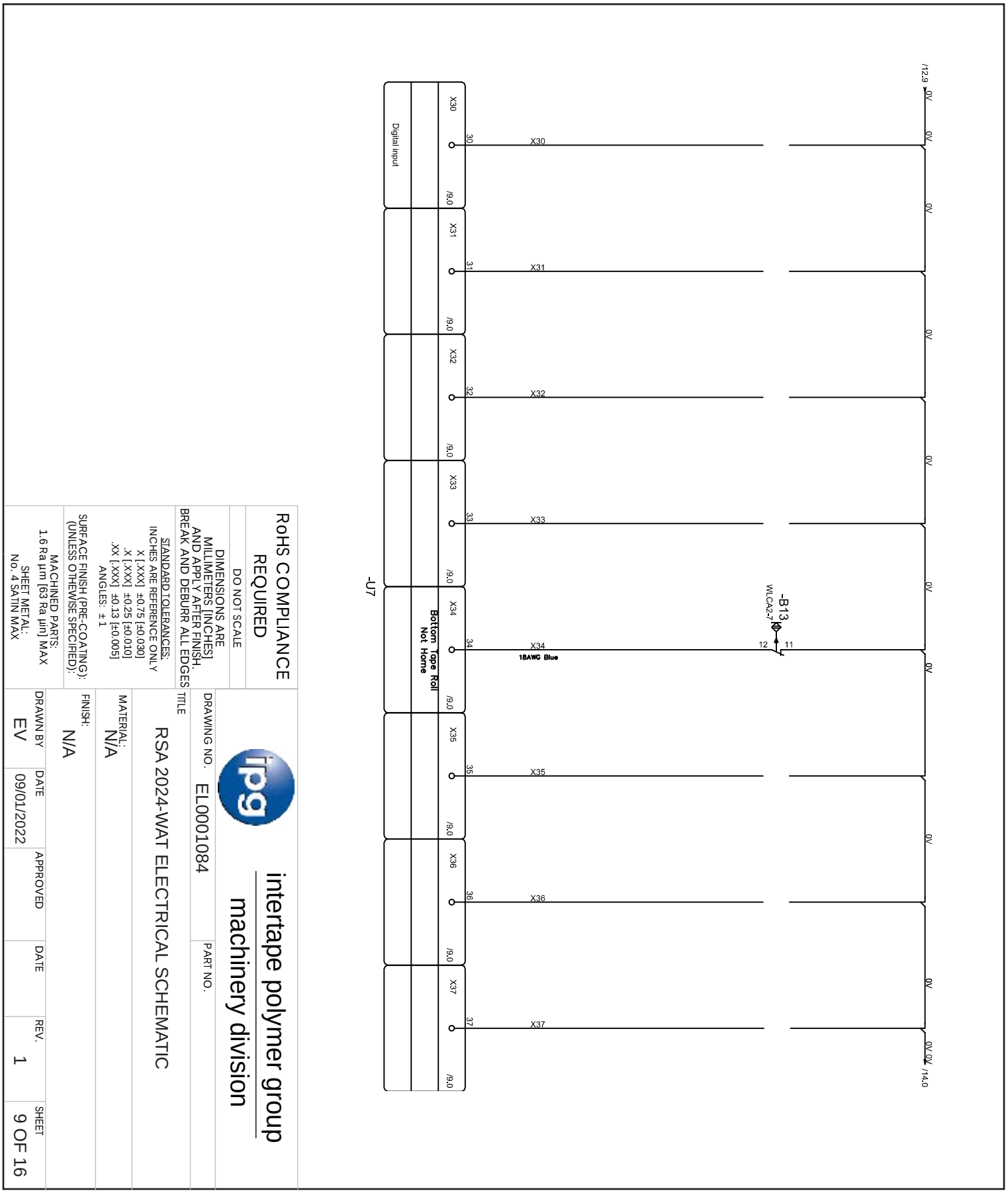
MATERIAL: N/A

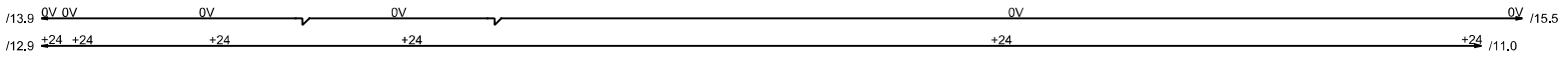
FINISH: N/A

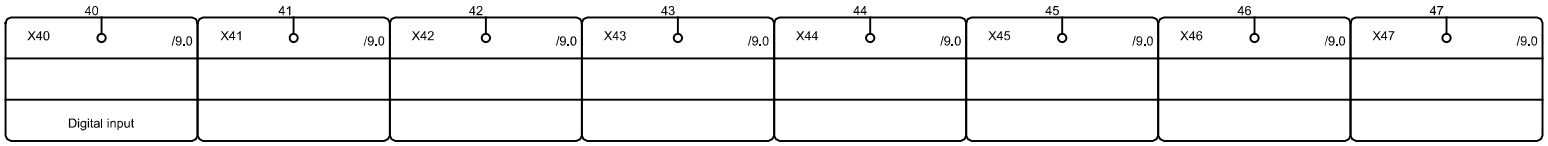
| DRAWN BY | DATE | APPROVED | DATE | REV. | SHEET |
|---|---|---|---|---|---|
| EV | 09/01/2022 | | | 1 | 8 OF 16 |

# Appendix A

## Electrical Drawing





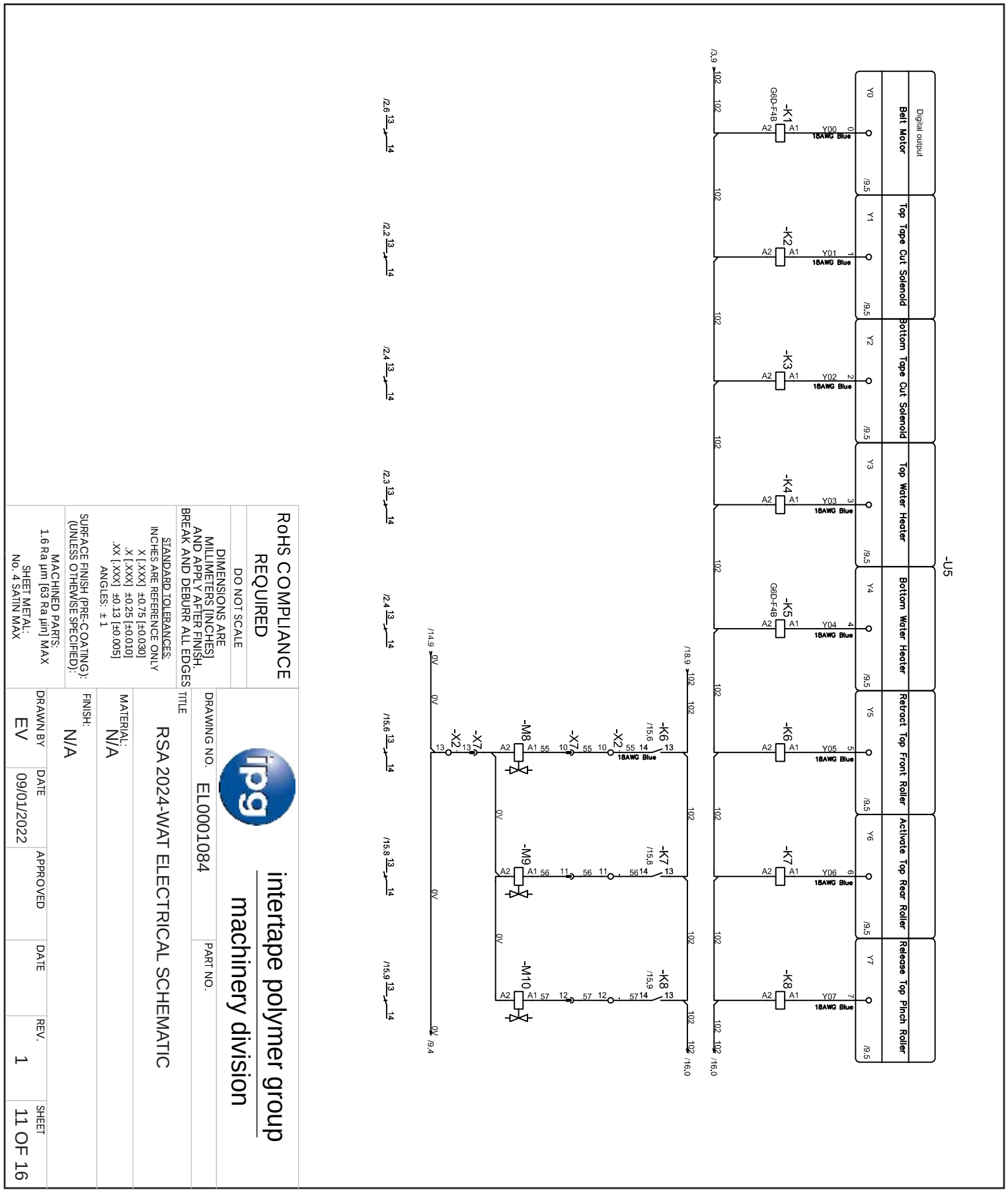



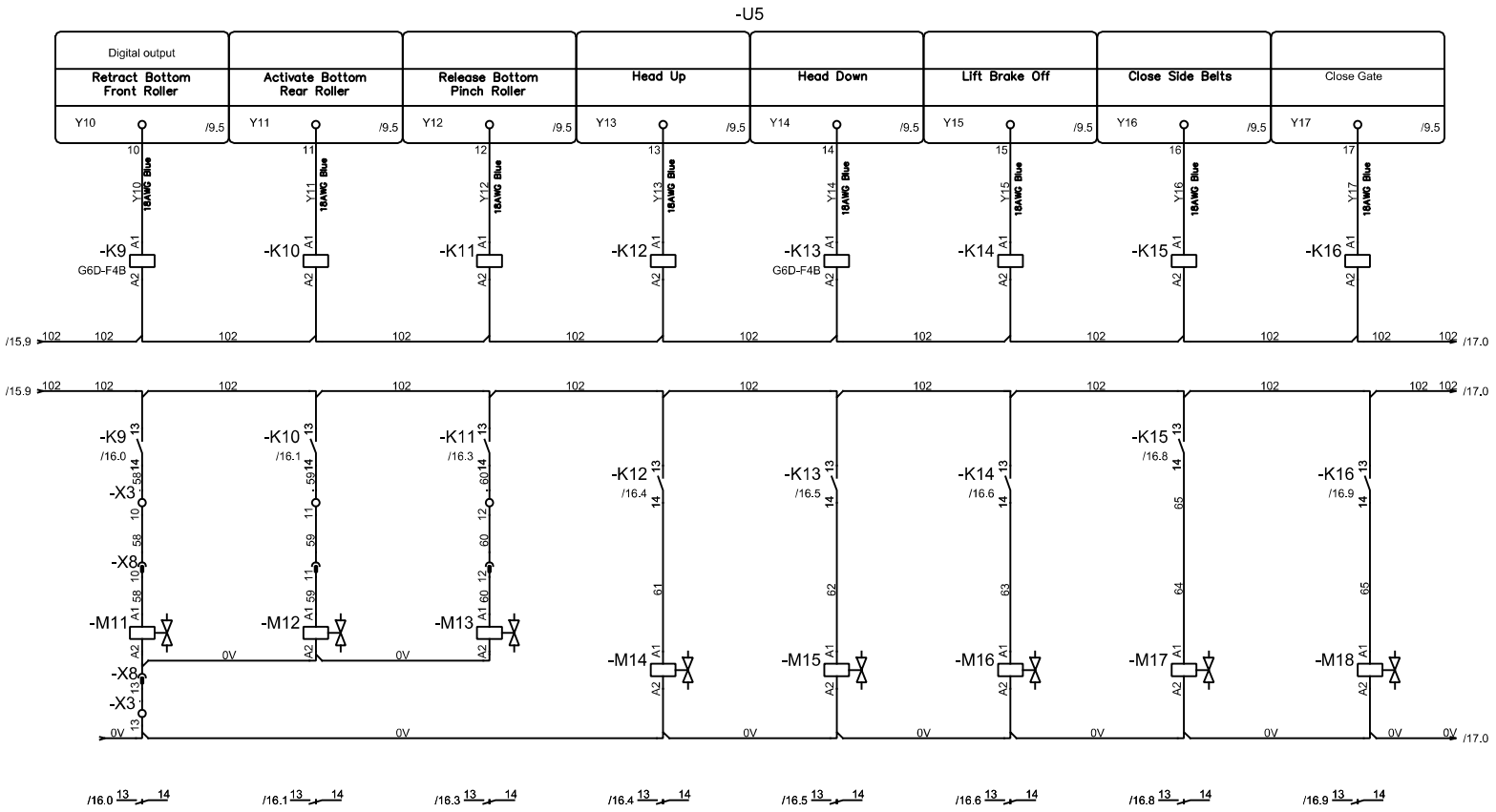

-U7

| | | | | | | |
|---|---|---|---|---|---|---|
| RoHS COMPLIANCE REQUIRED | intertape polymer group machinery division | | | | | |
| DO NOT SCALE | DRAWING NO. EL0001084 | | PART NO. | | | |
| DIMENSIONS ARE MILLIMETERS [INCHES] AND APPLY AFTER FINISH. BREAK AND DEBURR ALL EDGES | TITLE RSA 2024-WAT ELECTRICAL SCHEMATIC | | | | | |
| STANDARD TOLERANCES: INCHES ARE REFERENCE ONLY X [.XXX] ±0.75 [±0.030] .X [.XXX] ±0.25 [±0.010] .XX [.XXX] ±0.13 [±0.005] ANGLES: ±1 | MATERIAL: N/A | | | | | |
| SURFACE FINISH (PRE-COATING): (UNLESS OTHEWISE SPECIFIED): | FINISH: N/A | | | | | |
| MACHINED PARTS: 1.6 Ra µm [63 Ra µin] MAX | DRAWN BY | DATE | APPROVED | DATE | REV. | SHEET |
| SHEET METAL: No. 4 SATIN MAX | EV | 09/01/2022 | | | 1 | 10 OF 16 |

# Appendix A

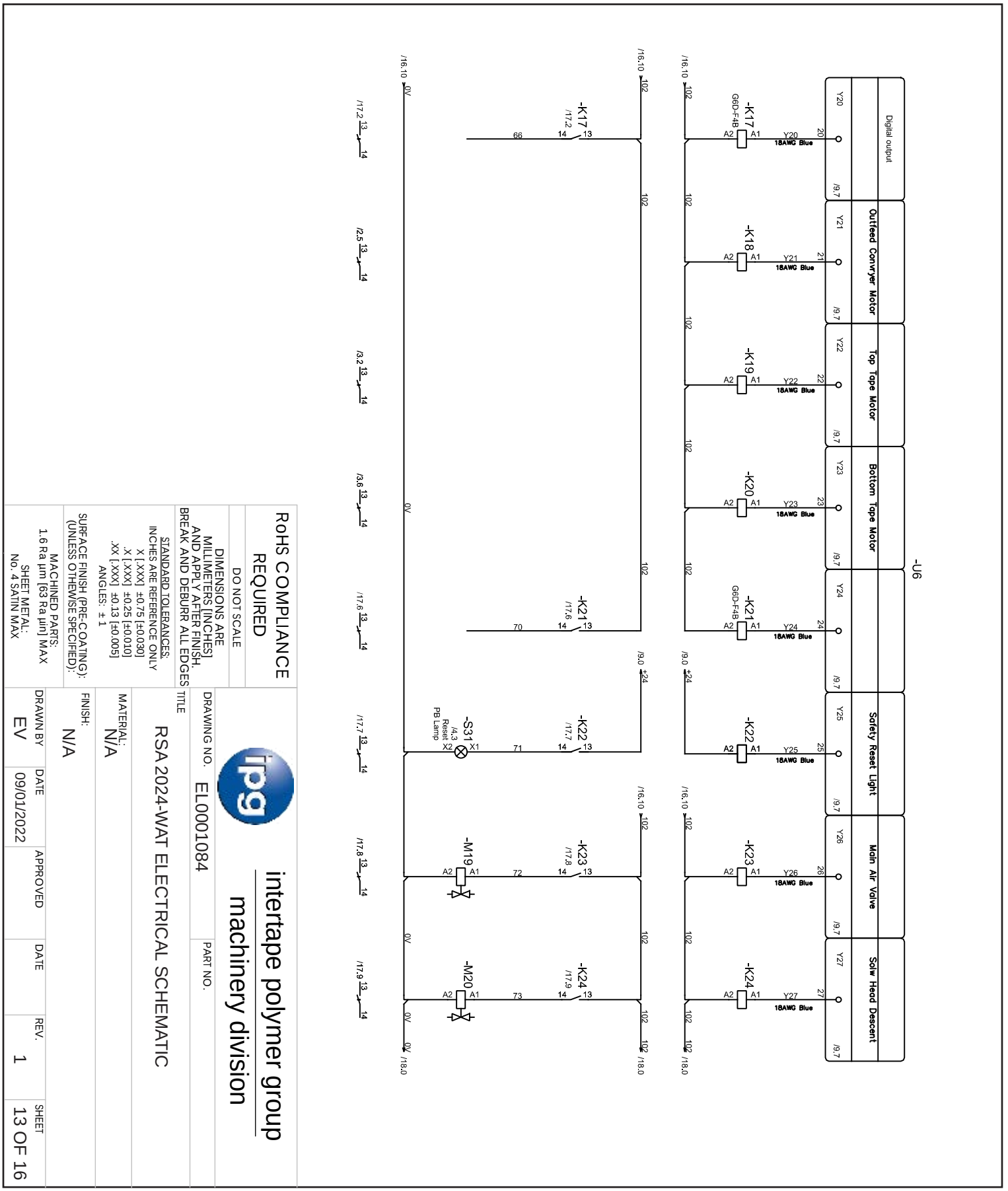
## Electrical Drawing



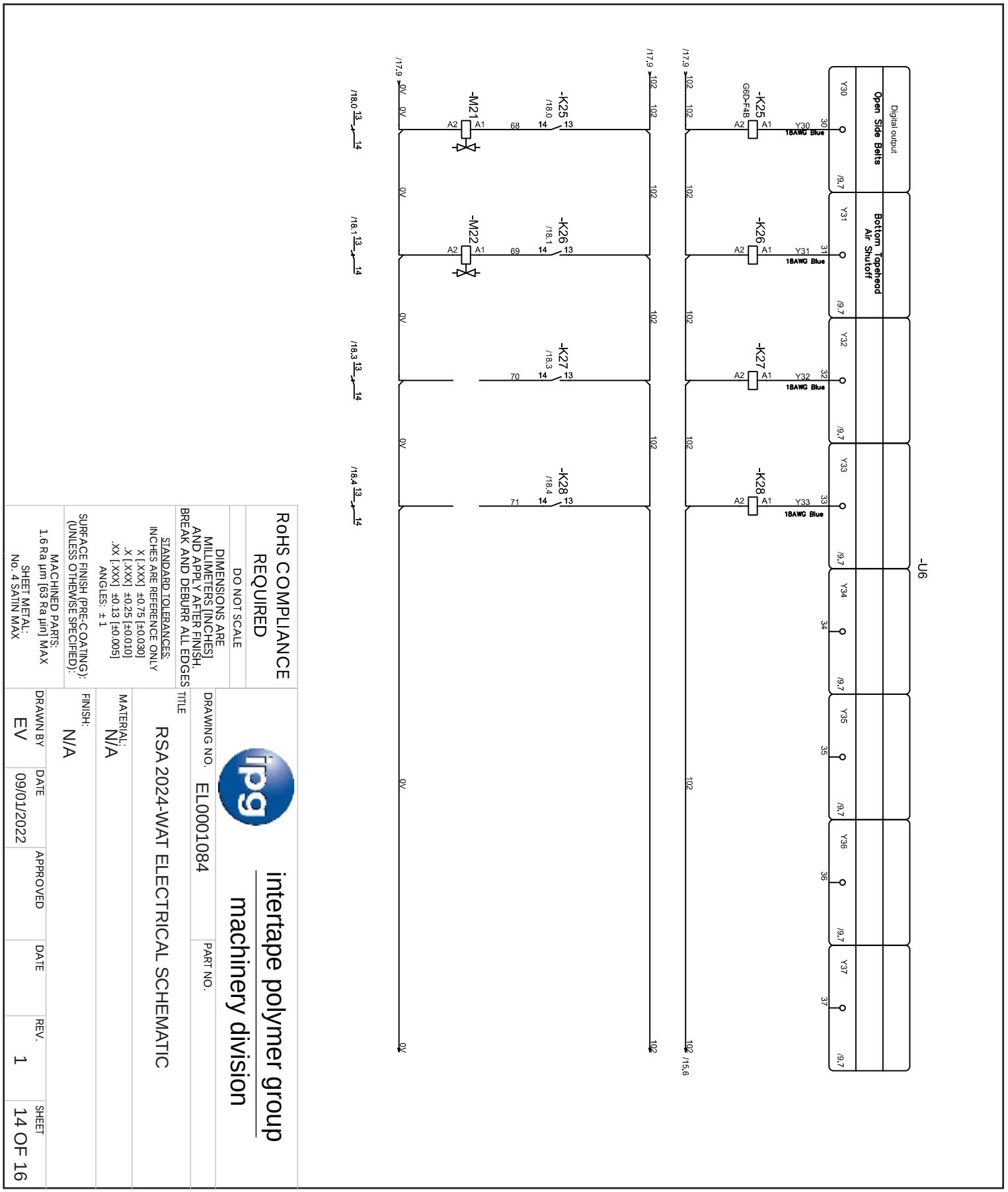



| | | | | | | |
|---|---|---|---|---|---|---|
| RoHS COMPLIANCE REQUIRED | intertape polymer group / machinery division | | | | | |
| DO NOT SCALE | DRAWING NO. EL0001084 | PART NO. | | | | |
| DIMENSIONS ARE MILLIMETERS [INCHES] AND APPLY AFTER FINISH. BREAK AND DEBURR ALL EDGES | TITLE: RSA 2024-WAT ELECTRICAL SCHEMATIC | | | | | |
| STANDARD TOLERANCES: INCHES ARE REFERENCE ONLY X [.XXX] ±0.75 [±0.030] .X [.XXX] ±0.25 [±0.010] .XX [.XXX] ±0.13 [±0.005] ANGLES: ± 1 | MATERIAL: N/A | | | | | |
| SURFACE FINISH (PRE-COATING): (UNLESS OTHEWISE SPECIFIED): | FINISH: N/A | | | | | |
| MACHINED PARTS: 1.6 Ra µm [63 Ra µin] MAX | DRAWN BY | DATE | APPROVED | DATE | REV. | SHEET |
| SHEET METAL: No. 4 SATIN MAX | EV | 09/01/2022 | | | 1 | 12 OF 16 |

## Electrical Drawing



## Electrical Drawing




RoHS COMPLIANCE REQUIRED

DO NOT SCALE

DIMENSIONS ARE MILLIMETERS [INCHES] AND APPLY AFTER FINISH. BREAK AND DEBURR ALL EDGES

STANDARD TOLERANCES: INCHES ARE REFERENCE ONLY
X [.XXX] ±0.75 [±0.030]
.X [.XXX] ±0.25 [±0.010]
.XX [.XXX] ±0.13 [±0.005]
ANGLES: ± 1

SURFACE FINISH (PRE-COATING): (UNLESS OTHEWISE SPECIFIED):
MACHINED PARTS: 1.6 Ra µm [63 Ra µin] MAX
SHEET METAL: No. 4 SATIN MAX

intertape polymer group
machinery division

DRAWING NO. EL0001084

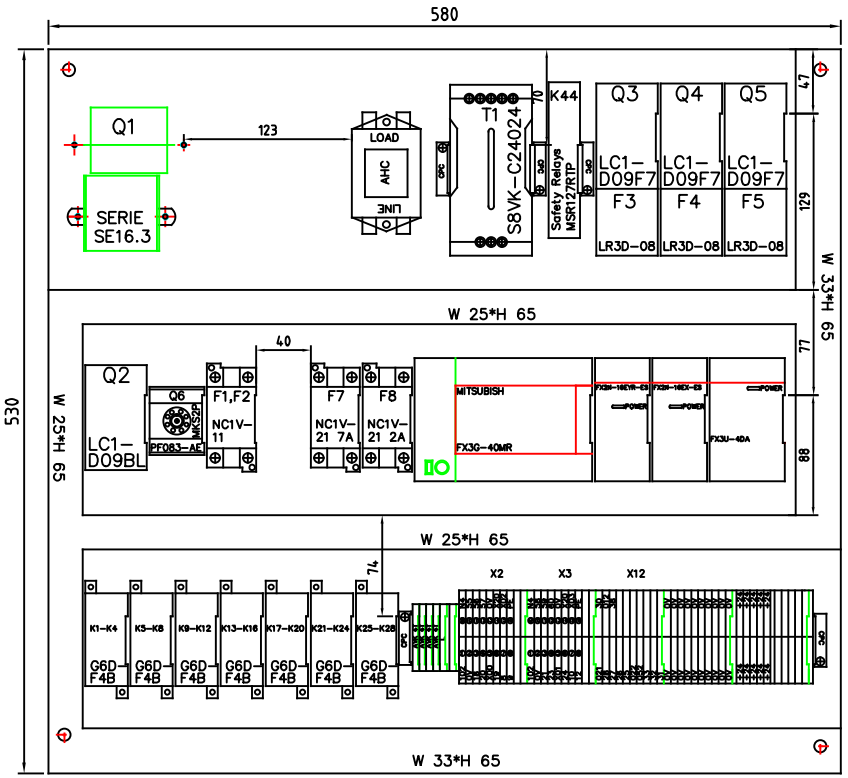
PART NO.

TITLE
RSA 2024-WAT ELECTRICAL SCHEMATIC

MATERIAL: N/A

FINISH: N/A

| DRAWN BY | DATE | APPROVED | DATE | REV. | SHEET |
|---|---|---|---|---|---|
| EV | 09/01/2022 | | | 1 | 14 OF 16 |




| TAG | DESCRIPTION | PART NUMBER | SUPPLIER |
|---|---|---|---|
| Q1 | Power source breaker | SE163003B + COD.TF323 | GIOVENZANA |
| | Fuse | 10*38 (10A) | DEMEX |
| F1 | Electromagnetic contactor | NC1V-1100 7A | idec |
| F2 | Electromagnetic contactor | NC1V-1100 3A | idec |
| F8 | Electromagnetic contactor | NC1V-2100 2A | idec |
| F7 | Electromagnetic contactor | NC1V-2100 7A | idec |
| U4,U5 | PLC Host | FX3G-40MR | MITSUBISH |
| U6 | PLC Expansion module | FX2N-16EX | MITSUBISH |
| U7 | PLC Expansion module | FX2N-16EYR | MITSUBISH |
| U12 | PLC Analog module | FX3U-4DA | MITSUBISH |
| T1 | Power supplier | S8VK-C24024 | OMRON |
| | | | |
| AHC | Filter | FN2010-20-06 | YUNPEN |
| K1-K28 | RELAY | G6D-F4B | OMRON |
| K44 | Security module | MSR127RTP | AB |
| Q2 | Electromagnetic contactor | LC1-D09BL DC24V | TE |
| Q3-Q5 | Electromagnetic contactor | LC1-D09F7 AC110V | TE |
| Q6 | Relay | MKS2P DC24V | OMRON |
| | Relay fixed seat | PF083-AE | TEND |
| F3-F5 | Overload relay | LR3D-08 2.5-4A | TE |
| | Double layer TB | PT 2,5 32 10 567 | PHOENIX CONTACT |
| | Grounded TB | PT 2,5 32 09 536 | PHOENIX CONTACT |
| | | | |
| | | | |

RoHS COMPLIANCE REQUIRED

DO NOT SCALE

DIMENSIONS ARE MILLIMETERS [INCHES] AND APPLY AFTER FINISH. BREAK AND DEBURR ALL EDGES

STANDARD TOLERANCES:
INCHES ARE REFERENCE ONLY
X [.XXX] ±0.75 [±0.030]
.X [.XXX] ±0.25 [±0.010]
.XX [.XXX] ±0.13 [±0.005]
ANGLES: ±1

SURFACE FINISH (PRE-COATING): (UNLESS OTHEWISE SPECIFIED):

MACHINED PARTS: 1.6 Ra µm [63 Ra µin] MAX

SHEET METAL: No. 4 SATIN MAX

intertape polymer group
machinery division

DRAWING NO. EL0001084 | PART NO.

TITLE: RSA 2024-WAT ELECTRICAL SCHEMATIC

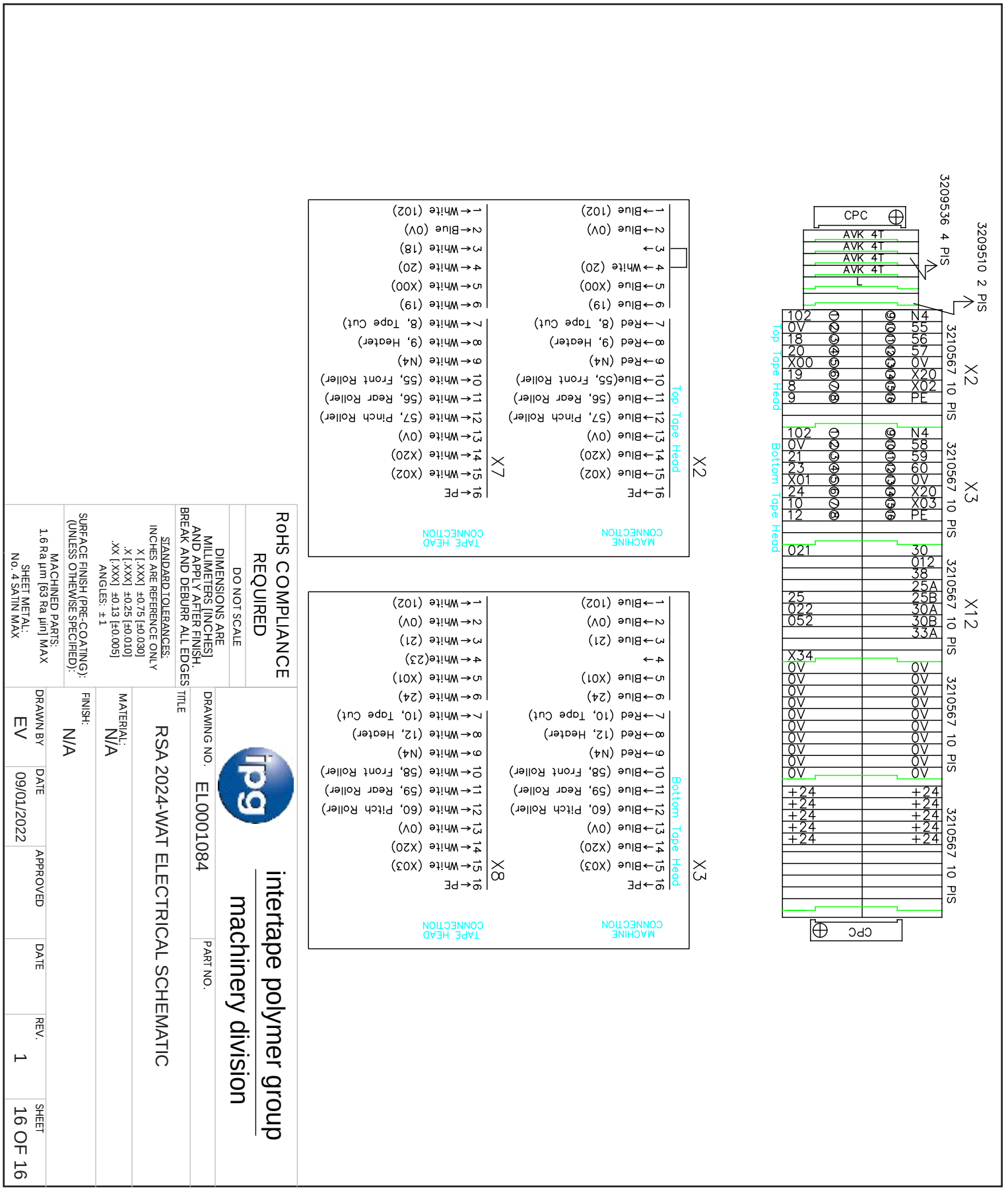
MATERIAL: N/A

FINISH: N/A

| DRAWN BY | DATE | APPROVED | DATE | REV. | SHEET |
|---|---|---|---|---|---|
| EV | 09/01/2022 | | | 1 | 15 OF 16 |

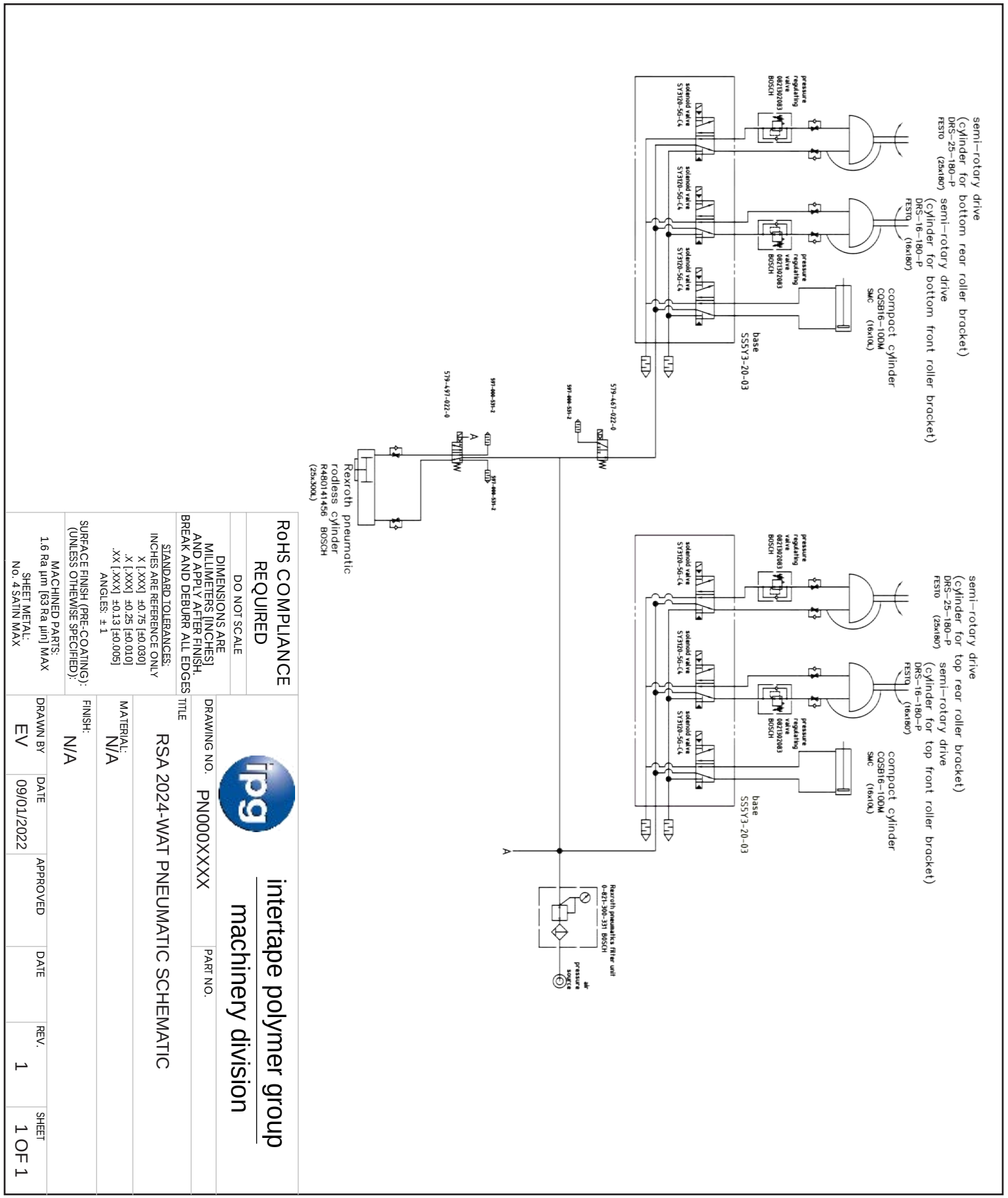
# Appendix A

## Electrical Drawing



# Appendix A

## Pneumatic Drawing

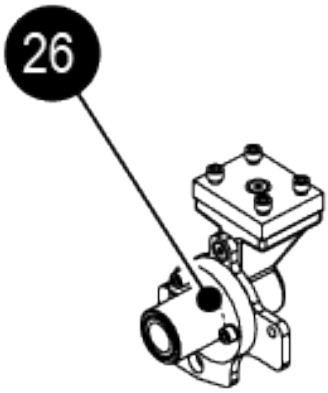


# Appendix B

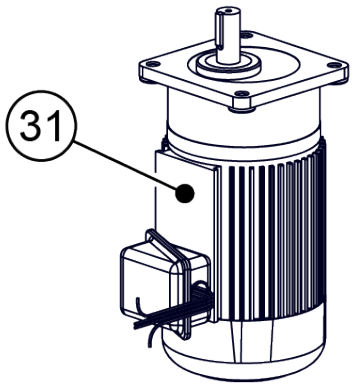
## Parts Listing



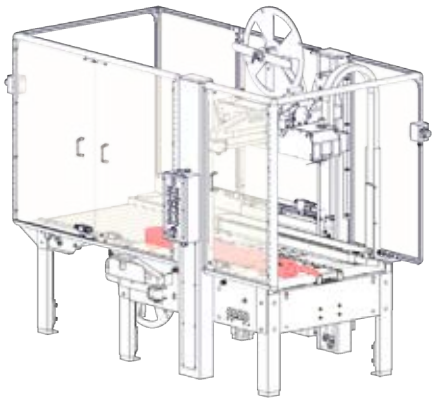
Items with black balloon call outs are assemblies (made of more than one individual part).




Items with white balloon call outs are single parts.



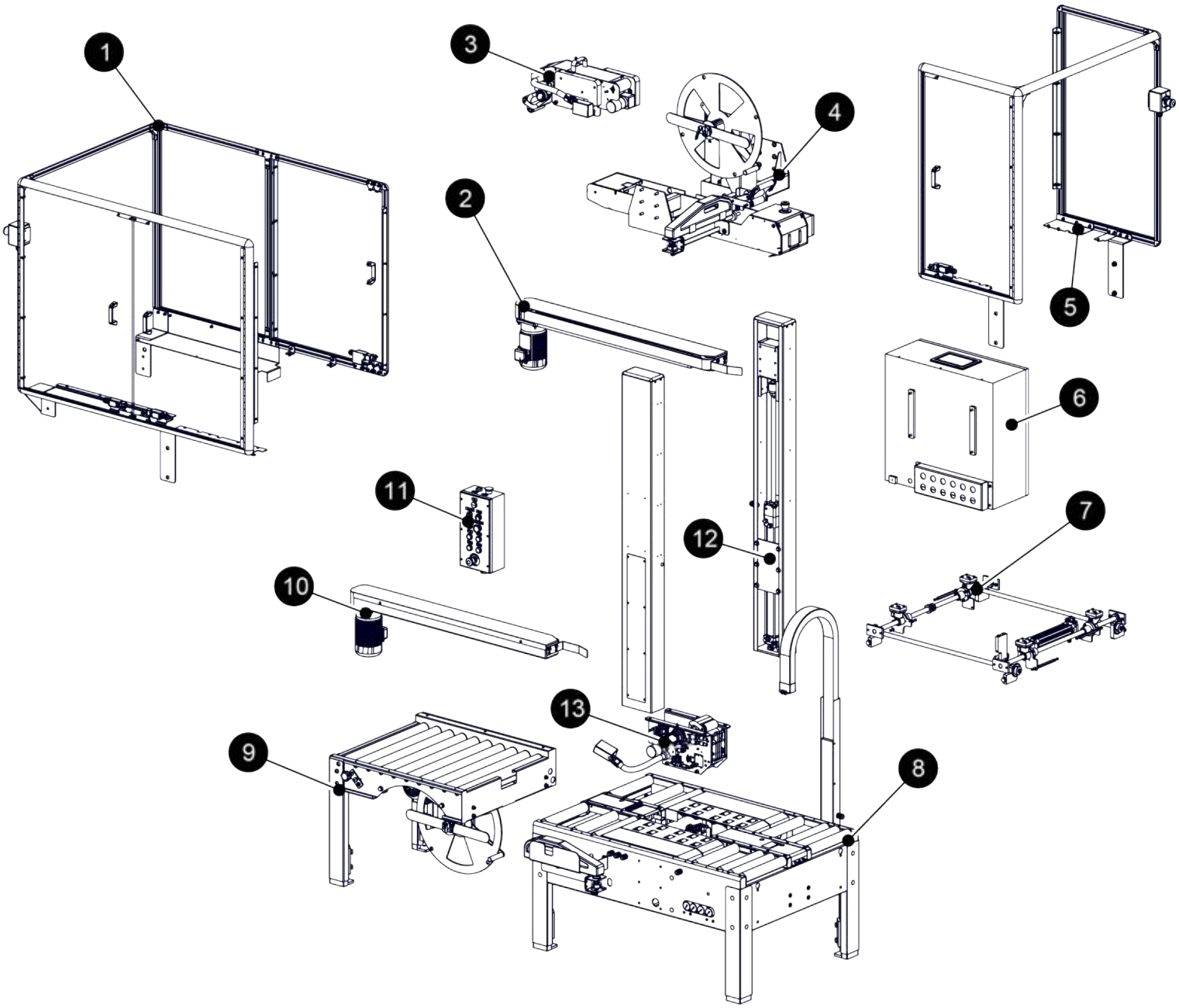

The top right of each page with a parts breakdown will show a red highlighted section of the machine that is being broken out into more detail.



Not all assemblies are sold as assemblies please consult IPG Machine Support for details.

# Appendix B

## RSA 2024-WAT



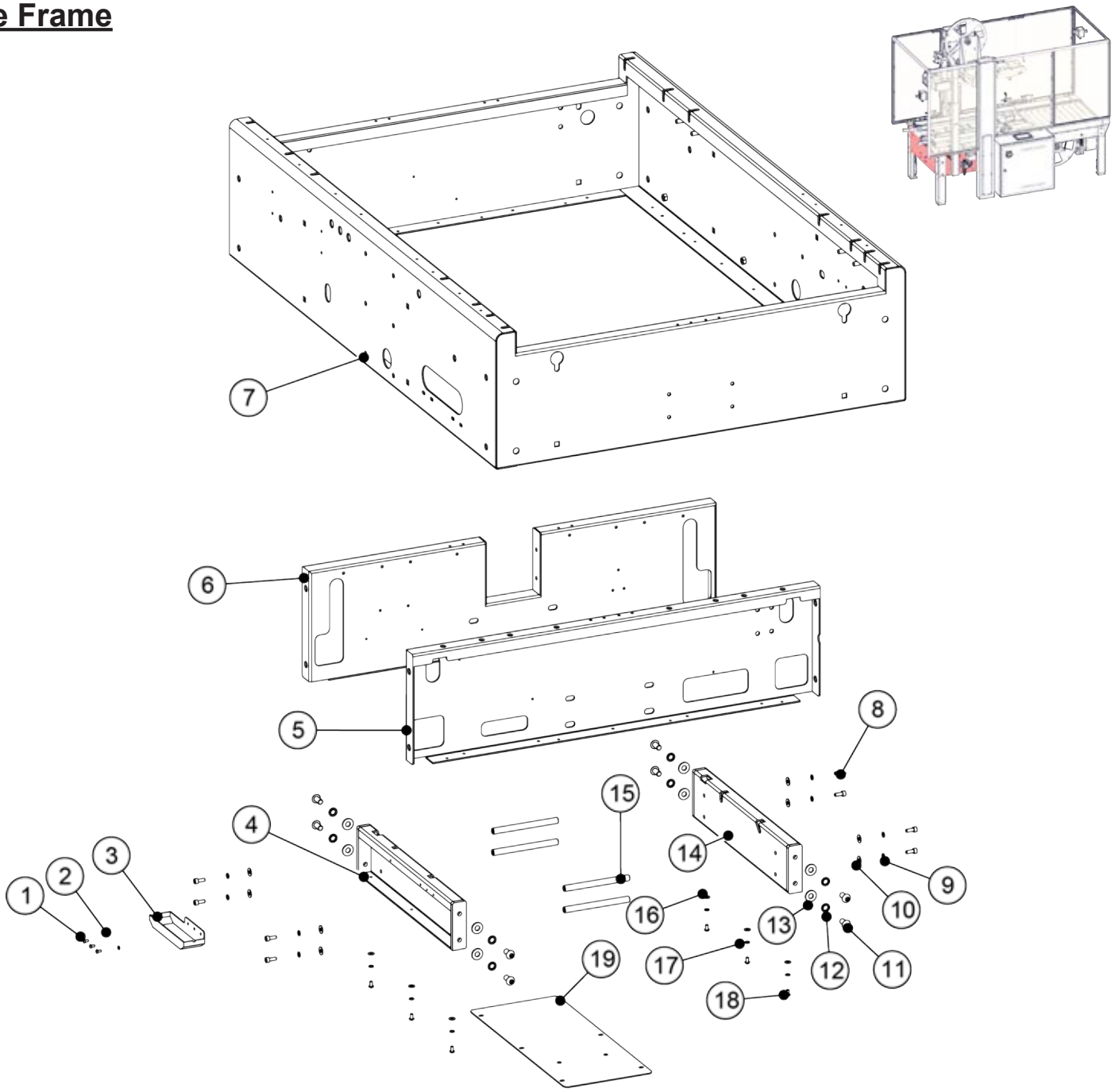

| ITEM | DESCRIPTION |
|---|---|
| 1 | REAR GUARDING |
| 2 | DRIVE UNIT RH |
| 3 | TOP TAPE HEAD |
| 4 | BRIDGE ASSEMBLY |
| 5 | FRONT GUARDING |

| ITEM | DESCRIPTION |
|---|---|
| 6 | ELECTRICAL BOX |
| 7 | CENTERING ASSEMBLY |
| 8 | BASE ASSEMBLY |
| 9 | OUTPUT TABLE |
| 10 | DRIVE UNIT LH |

| ITEM | DESCRIPTION |
|---|---|
| 11 | OPERATOR CONTROLS |
| 12 | COLUMNS |
| 13 | BOTTOM TAPE HEAD |

# Appendix B

## Base Frame

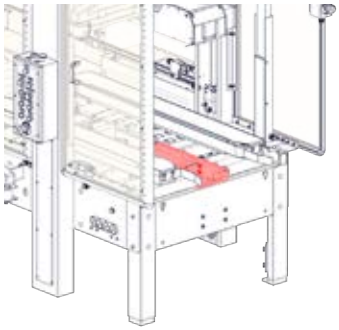


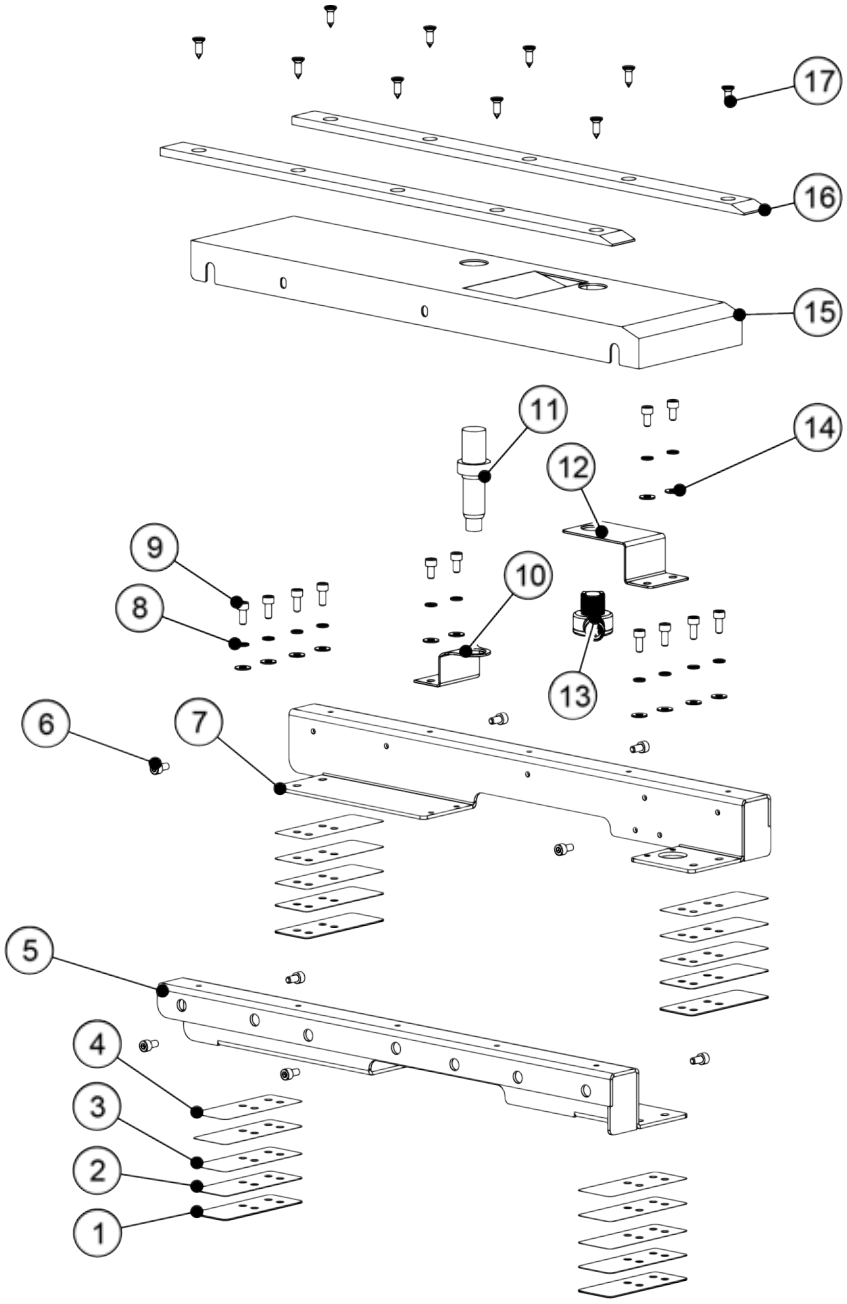

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UF7009 | BHCS M4-0.7x8mm | 6 |
| 2 | UF3749 | LW M4 | 3 |
| 3 | UPM4952 | OVER FLOW TRAY | 1 |
| 4 | UPM6147 | LOWER HOST BASE LH | 1 |
| 5 | UPM6340 | FRONT SUPPORT | 1 |
| 6 | UPM6341 | REAR SUPPORT | 1 |
| 7 | UPM6339 | BASE WELDMENT | 1 |
| 8 | UF3187 | SHCS M6-1.0x16mm | 8 |
| 9 | UF6363 | M6 LW | 8 |
| 10 | UF1828 | M6 FW | 8 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 11 | UF4252 | BHCS M10-1.5x20mm | 8 |
| 12 | UF3743 | M10 LW | 8 |
| 13 | UF3680 | M10 FW | 8 |
| 14 | UPM6148 | LOWER HOST BASE RH | 1 |
| 15 | UPM6252 | SHAFT 140L | 4 |
| 16 | UF1827 | M5 FW | 6 |
| 17 | UF7021 | M5 LW | 6 |
| 18 | UF3686 | BHCS M5-0.8x10mm | 6 |
| 19 | UPM5970 | LOWER HOST COVER | 1 |

# Appendix B

## Entry Plate Assembly



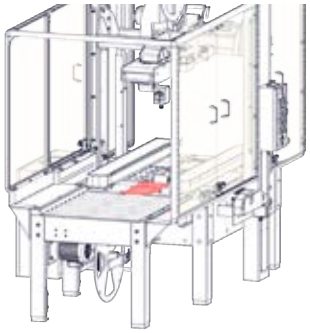


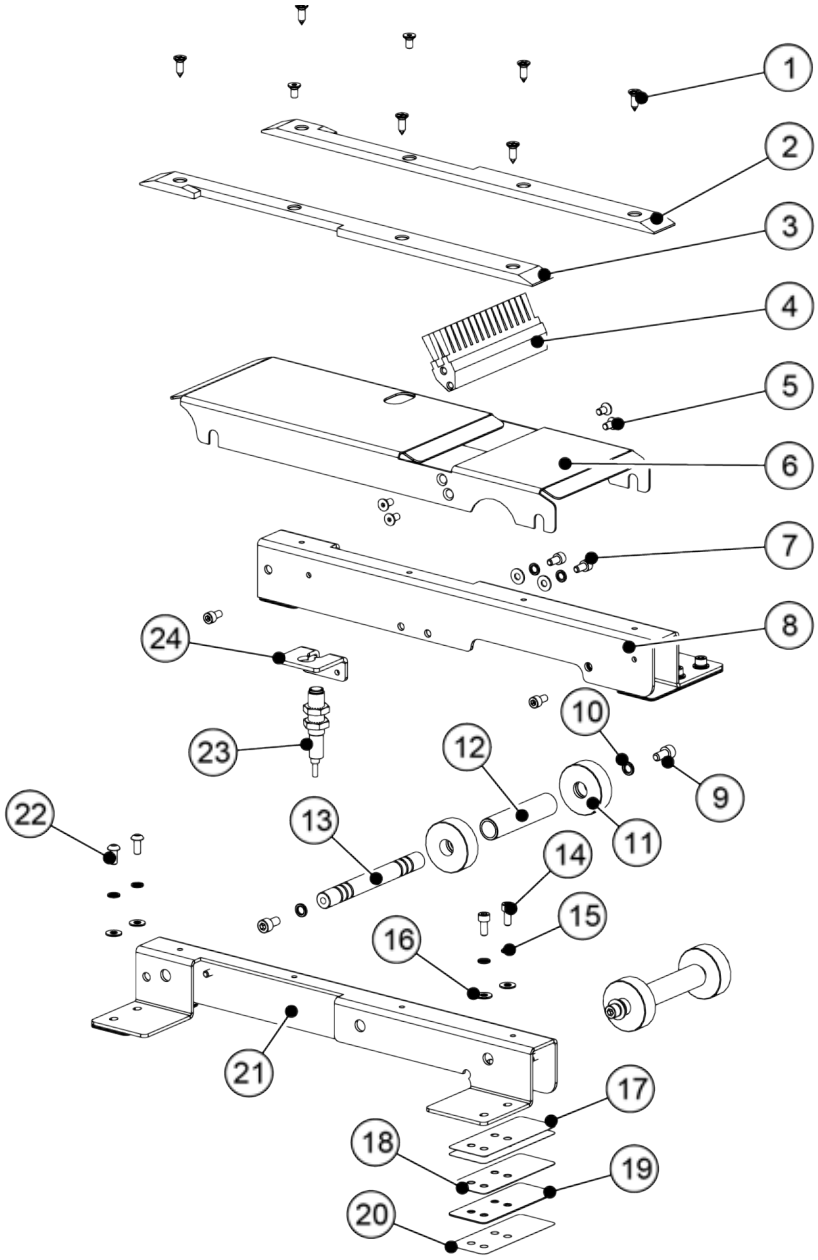

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UPM5953 | SHIM 1.0mm | 4 |
| 2 | UPM6265 | SHIM 0.5mm | 4 |
| 3 | UPM6255 | SHIM 0.2mm | 4 |
| 4 | UPM6254 | SHIM 0.1mm | 8 |
| 5 | UPM5951 | FRONT SEAT LH | 1 |
| 6 | UF0039 | SHCS M5-0.8 x 10mm | 11 |
| 7 | UPM5952 | FRONT SEAT RH | 1 |
| 8 | UF7021 | LW M5 | 12 |
| 9 | UF7003 | SHCS M5-0.8 x 12mm | 8 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 10 | UPM3248 | SENSOR SUPPORT | 1 |
| 11 | UPM0317 | SENSOR | 1 |
| 12 | UPM5956 | FRONT SENSOR SUPPORT | 1 |
| 13 | UPM6384 | SENSOR | 1 |
| 14 | UF6340 | FW M5 | 12 |
| 15 | UPM5954 | COVER PLATE | 1 |
| 16 | UPM4954 | SLIDING PAD | 2 |
| 17 | UF3741 | SELF TAPPING SCREW M5 | 10 |

# Appendix B

## Exit Plate Assembly



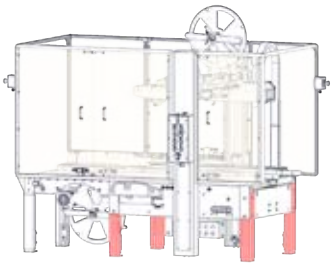


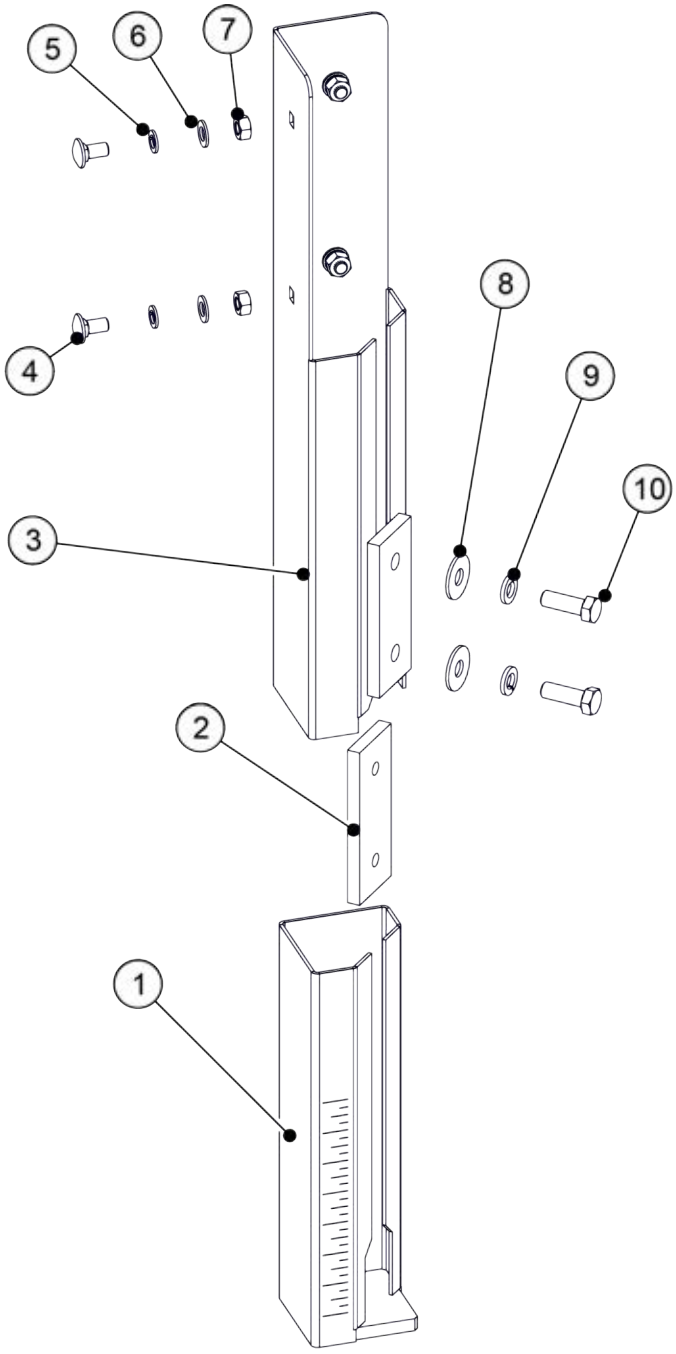

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UF0075 | M5-0.8-SELF TAPPING | 8 |
| 2 | UPM5962 | SLIP PAD, R.H. | 1 |
| 3 | UPM5961 | SLIP PAD, L.H. | 1 |
| 4 | UPY0023 | BRUSH | 1 |
| 5 | UF6305 | FHCS M5-0.8 x 10mm | 4 |
| 6 | UPM5964 | COVER | 1 |
| 7 | UF0039 | SHCS M5-0.8 x 10mm | 6 |
| 8 | UPM5960 | REAR SUPPORT SEAT, R.H. | 1 |
| 9 | UF0038 | SHCS M6-1.0 x 12mm | 4 |
| 10 | UF6363 | M6 LW | 4 |
| 11 | UPM4934 | GUIDE ROLLER, 40OD | 4 |
| 12 | UPM4933 | ROLLER, dia 17, 72L, BLACK | 2 |
| 13 | UPM6228 | SHAFT, 115L, GROOVED | 2 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 14 | UF7003 | SHCS M5-0.8 x 12mm | 4 |
| 15 | UF7021 | M5 LW | 10 |
| 16 | UF1827 | M5 FW | 10 |
| 17 | UPM6255 | SHIM 0.2mm* | 8 |
| 18 | UPM6265 | SHIM 0.5mm* | 4 |
| 19 | UPM5953 | SHIM 1.0mm* | 4 |
| 20 | UPM6254 | SHIM 0.1mm* | 4 |
| 21 | UPM5959 | REAR SUPPORT SEAT, L.H. | 1 |
| 22 | UF3687 | BHCS M5-0.8 x 12mm | 4 |
| 23 | UPM5969 | PHOTOELECTRIC SENSOR | 1 |
| 24 | UPM5963 | SENSOR BRACKET | 1 |

# Appendix B

## Main Leg Assemblies



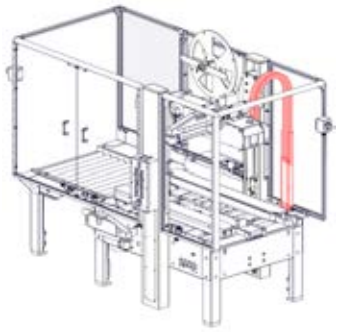


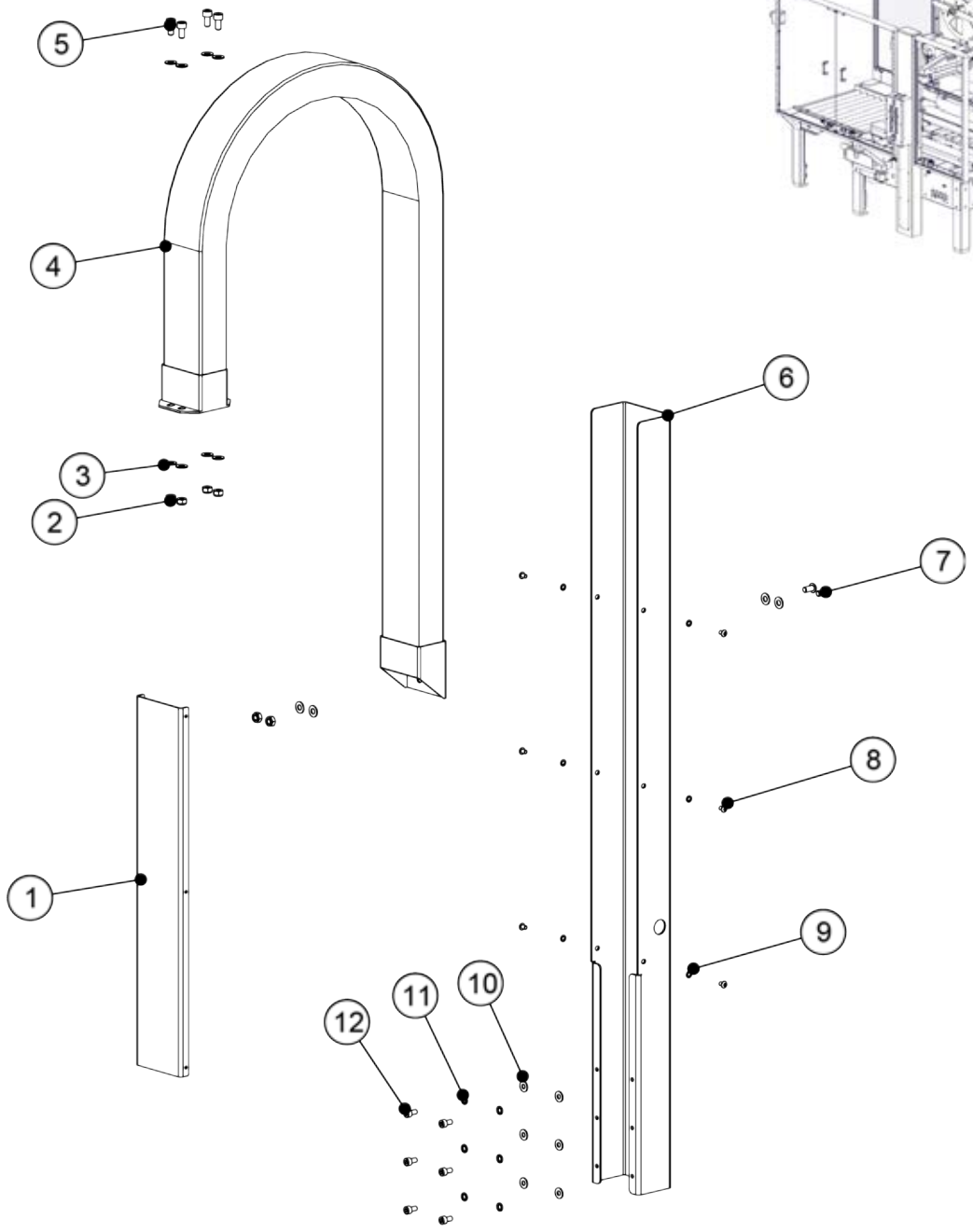

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UMP7641 | LEG ADJUSTMENT | 1 |
| 2 | UPM7642 | LEG FRICTION PLATE | 1 |
| 3 | UPM7640 | LEG WELDMENT | 1 |
| 4 | UF4229 | M10-1.5 x 20-CARRIAGE BOLT | 4 |
| 5 | UF6371 | M10 LW | 4 |
| 6 | UF3680 | M10 FW | 4 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 7 | UF6314 | M10-1.5 HNR | 4 |
| 8 | UF4231 | M12 FW | 2 |
| 9 | UF4230 | M12 LW | 2 |
| 10 | UF6393 | M12-1.75 x 35 HHCS | 2 |

# Appendix B

## Electric Drag Chain



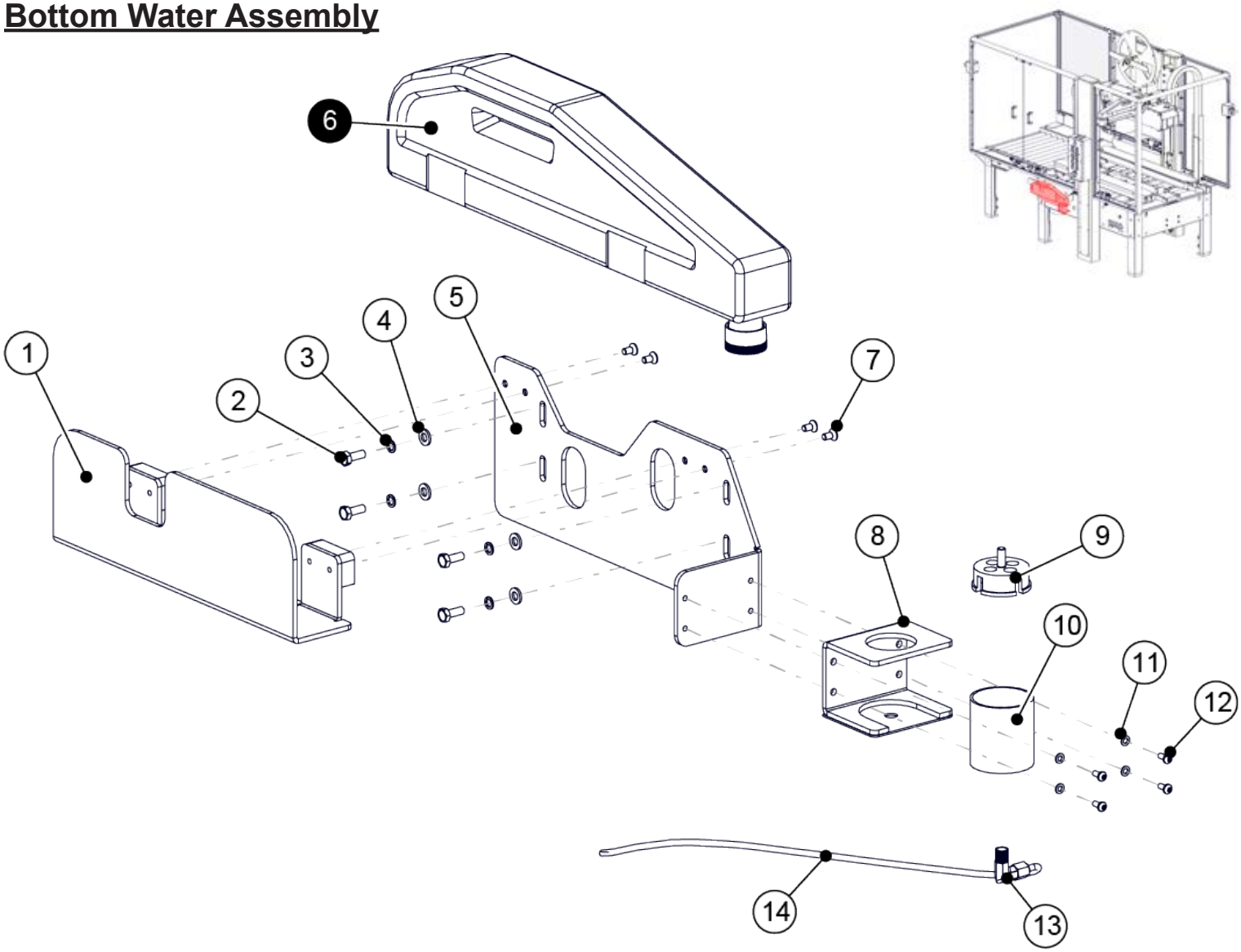



| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UPM4932 | COVER PLATE | 1 |
| 2 | UF3391 | M6 LOCK-NUT | 6 |
| 3 | UF1828 | FW M6 | 12 |
| 4 | UPM4937 | DRAG CHAIN | 1 |
| 5 | UF3183 | SHCS M6-1.0x12mm | 4 |
| 6 | UPM4931 | WIRING COVER | 1 |
| 7 | UF1216 | BHCS M6-1.0x12mm | 2 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 8 | UF7008 | BHCS M4-0.7x6mm | 6 |
| 9 | UF3749 | LW M4 | 6 |
| 10 | UF1827 | FW M5 | 6 |
| 11 | UF7021 | LW M5 | 6 |
| 12 | UF3147 | SHCS M5-0.8x10mm | 6 |

# Appendix B

## Bottom Water Assembly

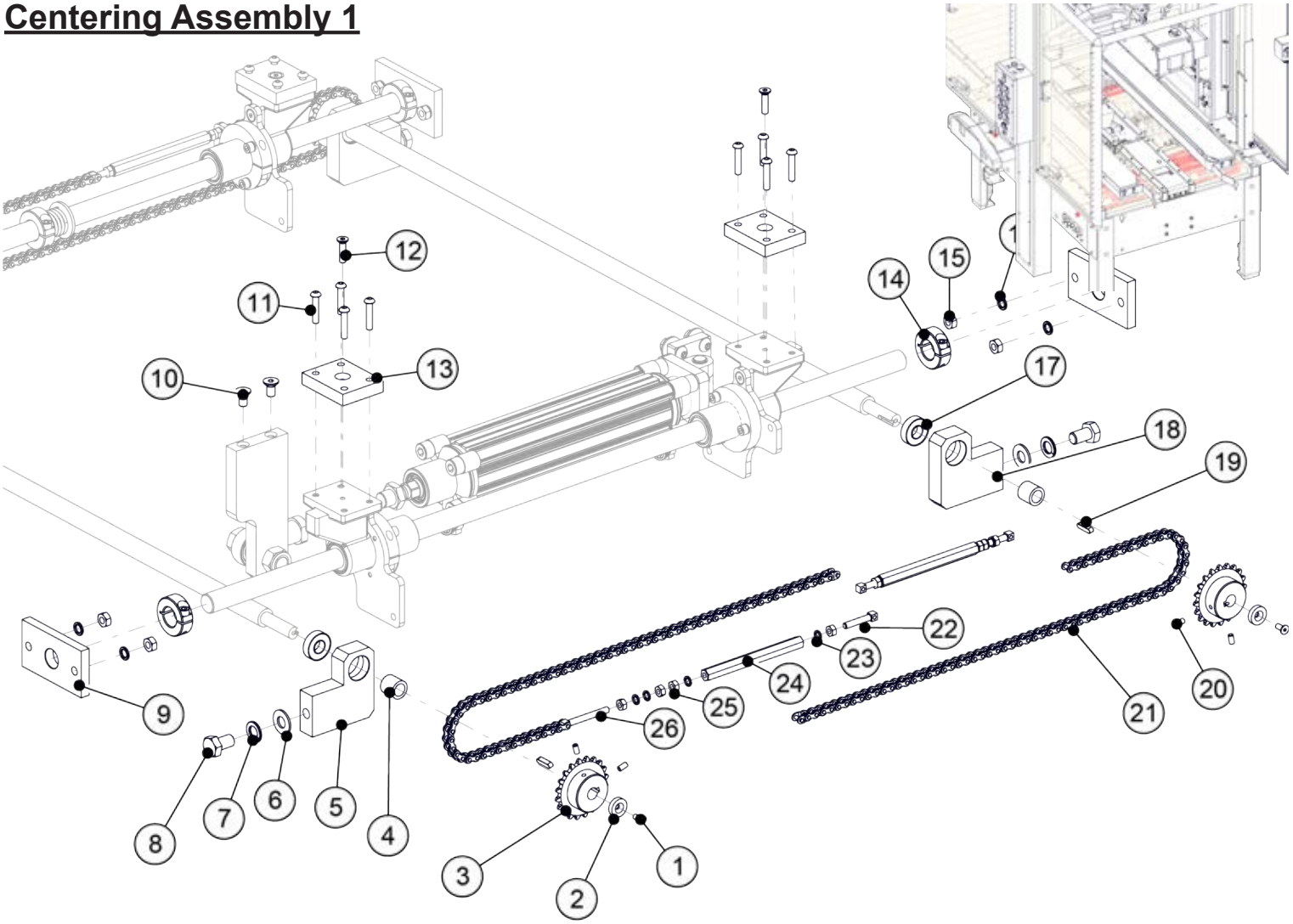



| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UPM4944 | HOLDER BRACKET | 1 |
| 2 | UF3751 | SS HHCS M6-1.0 x 16mm | 4 |
| 3 | UF6411 | SS LW M6 | 4 |
| 4 | UF6341 | SS FW M6 | 4 |
| 5 | UPM4943 | FRAME | 1 |
| 6 | WST1014 | WATER BOTTLE | 1 |
| 7 | UF3262 | SS FHCS M5-0.8 x 10 mm | 4 |
| 8 | UPM4945 | CUP HOLDER | 1 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 9 | UPM5901 | PLUNGER | 1 |
| 10 | UPM4946 | RESERVOIR CUP | 1 |
| 11 | UF6339 | SS FW M4 | 4 |
| 12 | UF6364 | SS BHCS M4-0.7 x 10mm | 8 |
| 13 | UPM5543 | ELBOW FITTING | 1 |
| 14 | UPM5542 | LOWER WATER TUBE | 1 |

# Appendix B

## Centering Assembly 1

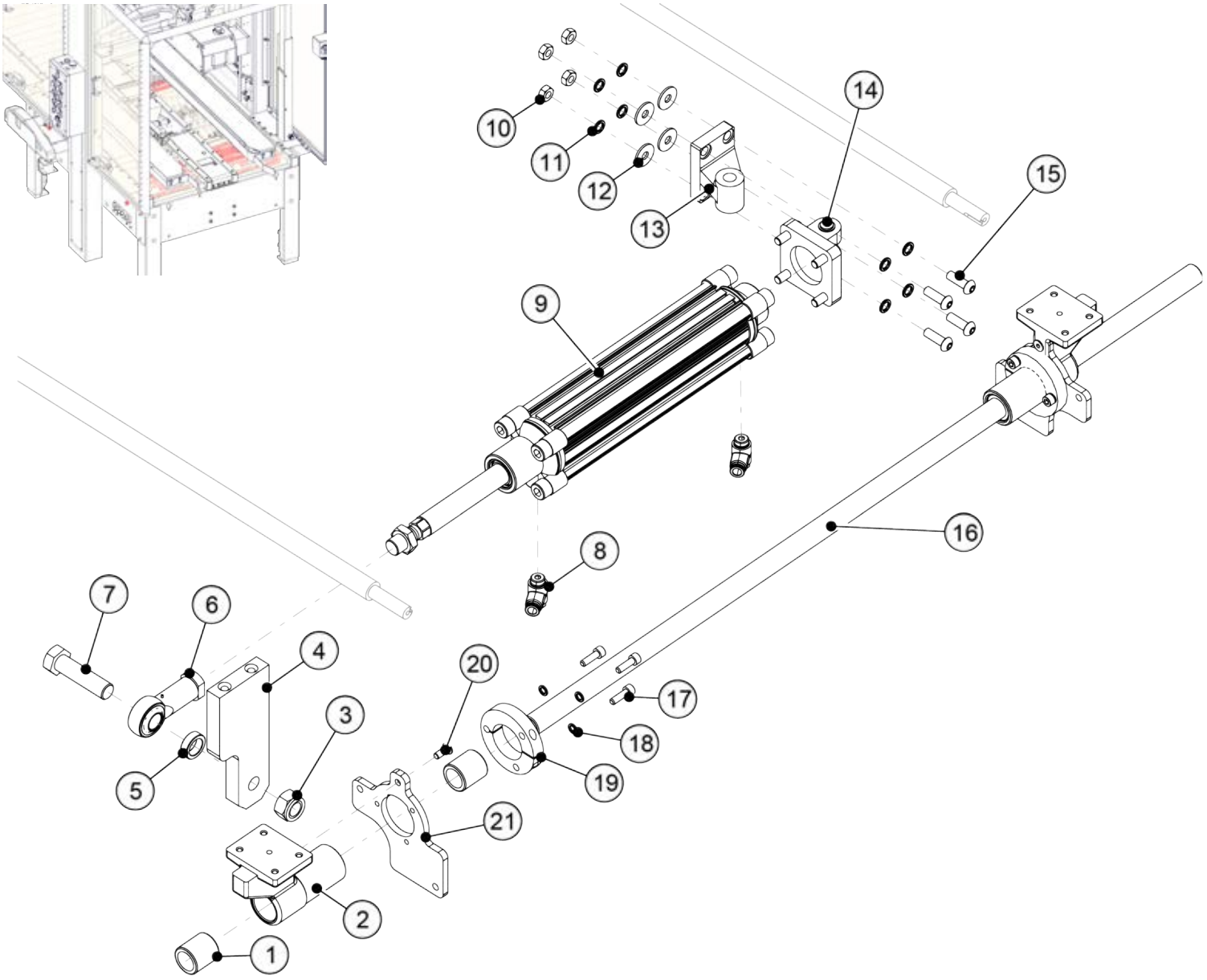



| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UF3282 | FHCS M5-0.8 x 12mm | 2 |
| 2 | UPM0150 | SPROCKET SHAFT WASHER | 2 |
| 3 | UPM0028 | SPROCKET | 2 |
| 4 | UPM1646 | SPROCKET SHAFT SPACER | 2 |
| 5 | UPM3275 | SHAFT BEARING HOUSING RH | 1 |
| 6 | UF6343 | FW M12 | 2 |
| 7 | UF3733 | LW M12 | 2 |
| 8 | UF3754 | HHCS M12-1.75 x 25mm | 2 |
| 9 | UPM3250 | SHAFT ANCHOR PLATE | 2 |
| 10 | UF3684 | FHCS M8-1.25 x 16mm | 2 |
| 11 | UF3752 | BHCS M6-1.0 x 30mm | 8 |
| 12 | UF3275 | FHCS M6-1.0 x 25mm | 2 |
| 13 | UPM3242 | DRIVE SUPPORT SPACER | 2 |
| 14 | UPM3330 | COLLAR 20mm | 2 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 15 | UF3735 | HNR M8-1.25 | 4 |
| 16 | UF3640 | LW M8 | 4 |
| 17 | UPM1637 | BEARING | 2 |
| 18 | UPM3262 | SHAFT BEARING HOUSING RH | 1 |
| 19 | UF6420 | KEY 5x5x20mm | 2 |
| 20 | UF3716 | SSS M5-0.8 x 10mm | 4 |
| 21 | UPM5166 | CHAIN #35, 35 PITCH | 2 |
| 22 | UPM3259EV | CHAIN THREADED LINK LH | 2 |
| 23 | UF6411 | LW M6 | 8 |
| 24 | UPM3255EV | TURNBUCLKE | 2 |
| 25 | UF3361 | JAM NUT M6 | 8 |
| 26 | UPM3260EV | CHAIN THREADED LINK RH | 2 |

# Appendix B

## Centering Assembly 2

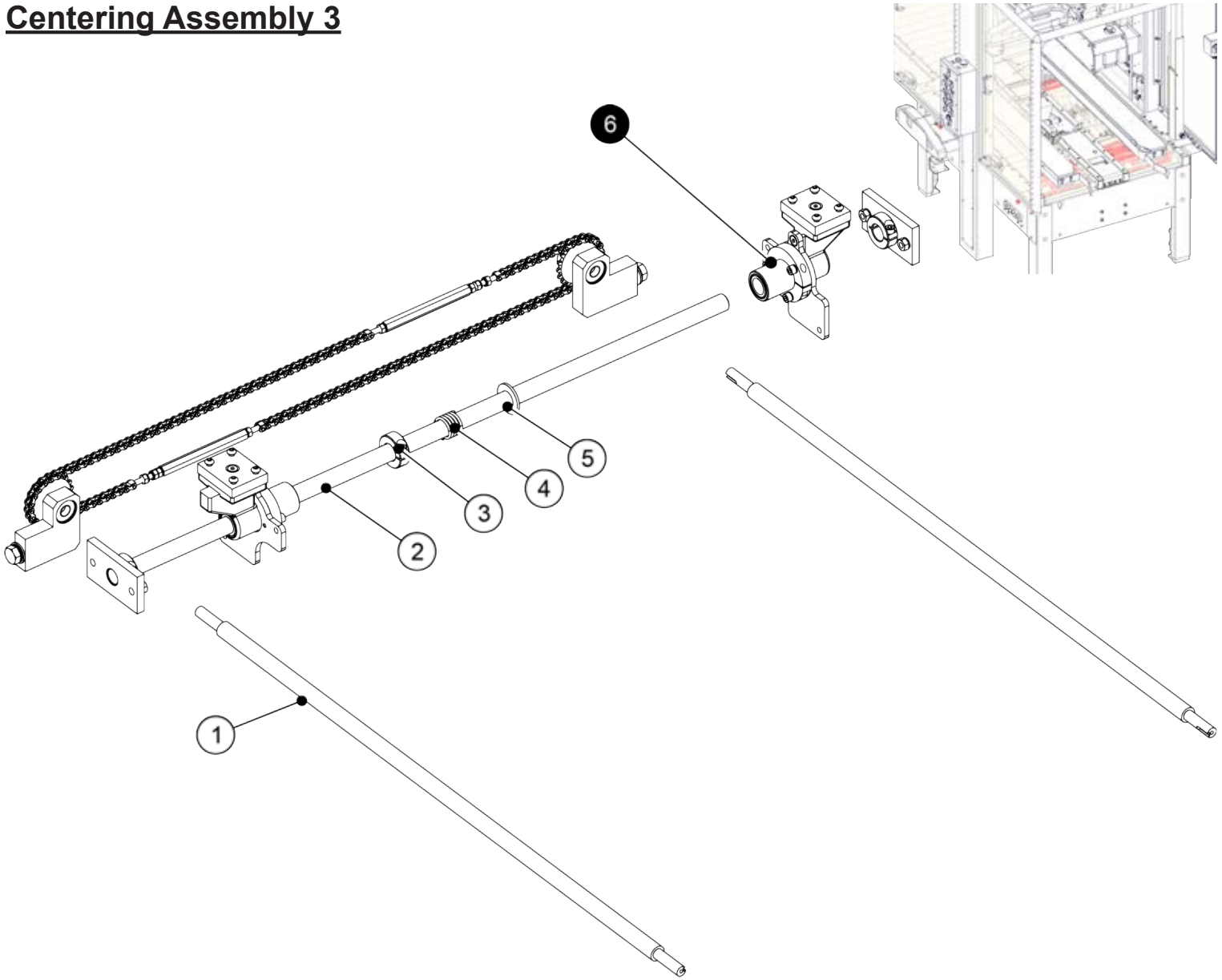



| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UPM3303 | LINEAR BEARING 20mm | 4 |
| 2 | UPM3243 | CASTING FOR DRIVE SUPPORT RSA | 2 |
| 3 | UF3814 | M18 - 2.5 HNR | 1 |
| 4 | UPM4967 | DRIVE BASE ANCHOR PLATE | 1 |
| 5 | UPM4971 | SPACER | 1 |
| 6 | UPM4970 | HINGE EYE | 1 |
| 7 | UF3738 | HHCS M16-2.0 x 40mm | 1 |
| 8 | UPM3787 | 90 DEG CONNECTOR | 2 |
| 9 | UPH4914 | PNEUMATIC CYLINDER | 1 |
| 10 | UF3735 | HNR M8-1.25 | 4 |
| 11 | UF3640 | LW M8 | 8 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 12 | UF3643 | FW M8 | 4 |
| 13 | UPH4915 | CYLINDER MOUNT | 1 |
| 14 | UPH4916 | CLEVIS | 1 |
| 15 | UF0865 | SHCS M8-1.25 X 25mm | 4 |
| 16 | UPM3251 | SHAFT, dia 20mm | 1 |
| 17 | UF0811 | SHCS M6-1.0 x 20mm | 6 |
| 18 | UF6363 | LW M6 | 6 |
| 19 | UPM3266 | SPLIT COLLAR | 2 |
| 20 | UF3216 | FHCS M6-1.0 x 16mm | 2 |
| 21 | UPM3237 | ANCHOR PLATE | 2 |

# Appendix B

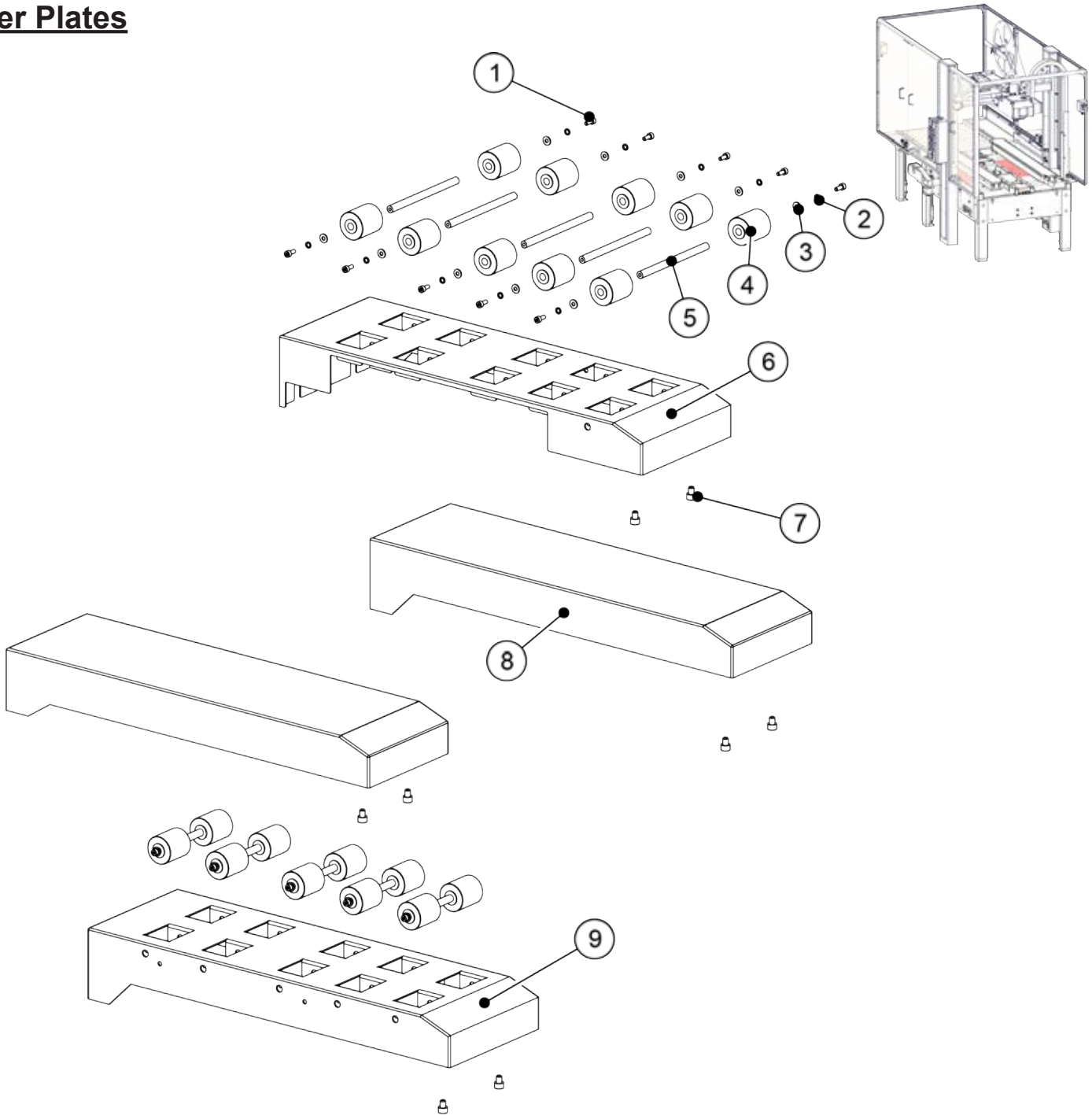
## Centering Assembly 3




| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UPM4966 | SHAFT, dia 19mm | 2 |
| 2 | UPM3251 | SHAFT, dia 20mm | 1 |
| 3 | UPM3330 | COLLAR 20mm | 2 |
| 4 | UPM3401 | SPRING | 1 |
| 5 | UF3736 | FW M20 | 1 |
| 6 | UAM0141 | DRIVE SUPPORT ASSY | 1 |

# Appendix B

## Cover Plates

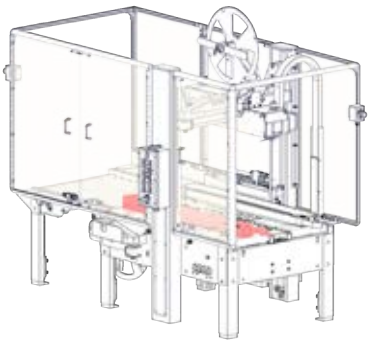


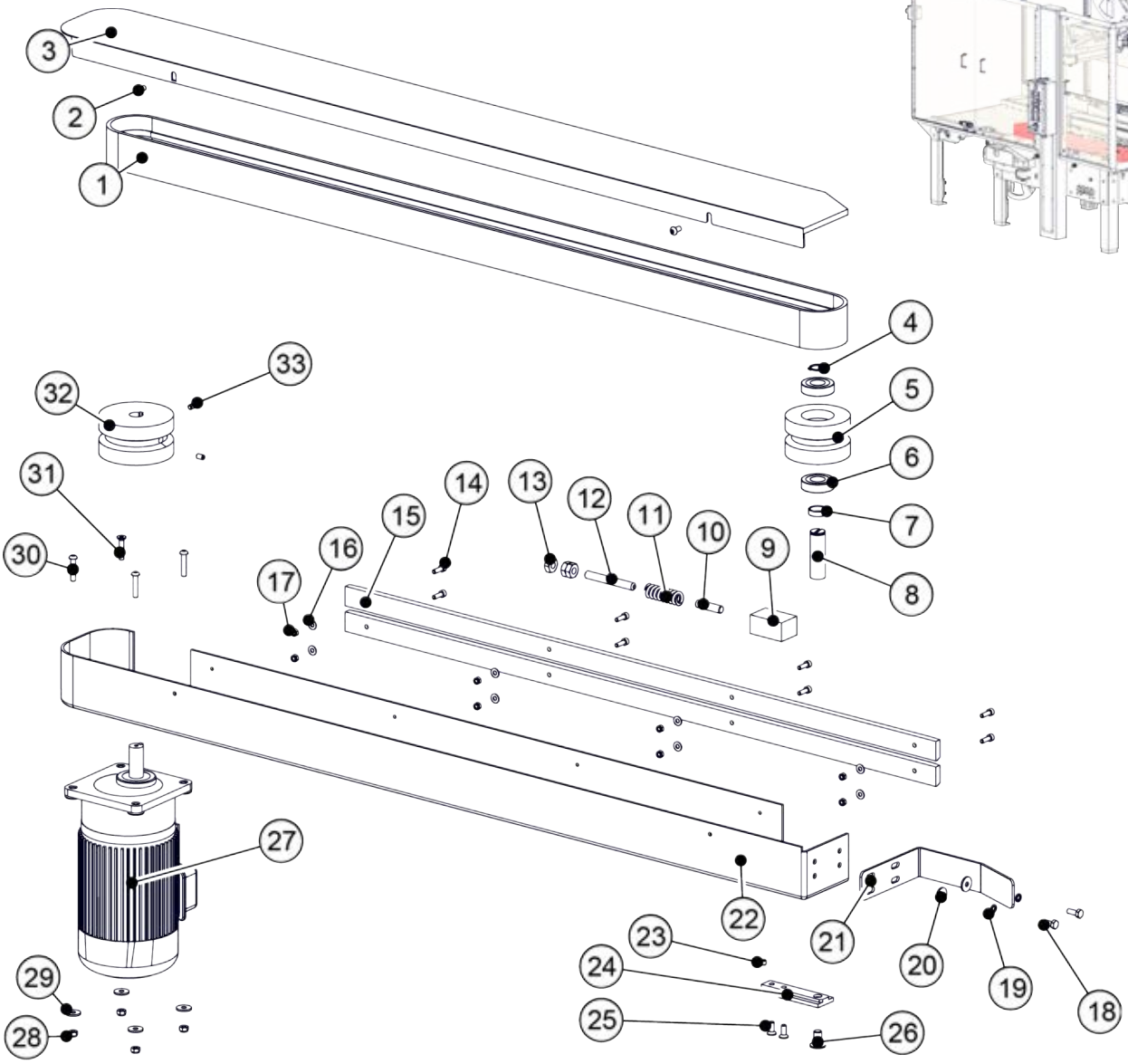

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UF9148 | SHCS M4-0.7 x 10mm | 20 |
| 2 | UF3749 | M4 LW | 20 |
| 3 | UF3710 | M4 FW | 20 |
| 4 | UPM4941 | ROLLER | 20 |
| 5 | UPM4942 | ROLLER SHAFT | 10 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 6 | UPM5958 | ROLLER PLATE RH | 1 |
| 7 | UF3170 | SHCS M6-1.0 x 8mm | 8 |
| 8 | UPM4930 | SIDE COVER, | 2 |
| 9 | UPM5957 | ROLLER PLATE LH | 1 |

# Appendix B

## Left Drive Base



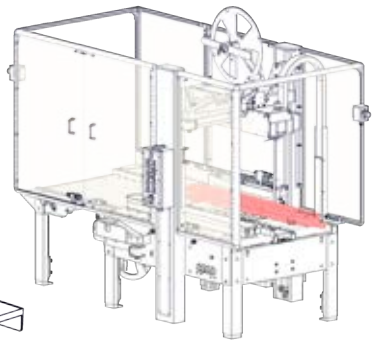


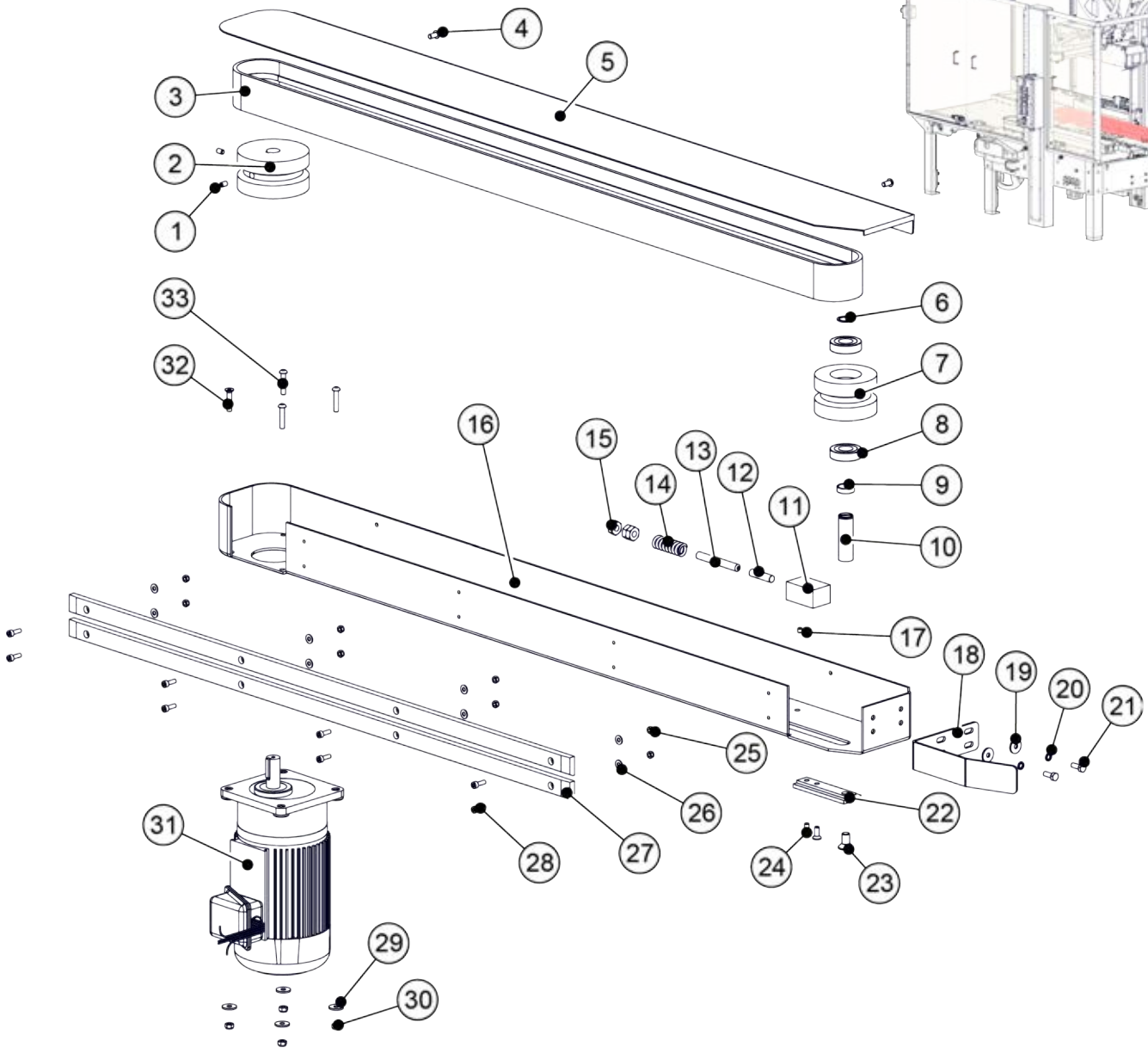

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UPM4884 | DRIVING BELT 50 x 2360L | 1 |
| 2 | UF5600 | BHCS M6-1.0 x 12mm | 2 |
| 3 | UPM4975 | COVER LEFT SIDE | 1 |
| 4 | UF0017 | Ø12MM SNAP RING | 1 |
| 5 | UPM4885 | IDLER PULLEY | 1 |
| 6 | UPM0324 | BEARING PULLEY | 2 |
| 7 | UPM0109 | IDLER PULLEY SPACER | 1 |
| 8 | UPM1233EV | IDLER PULLEY SHAFT | 1 |
| 9 | UPM0101 | TENSIONER BACKING PLATE | 1 |
| 10 | UPM0112 | SPRING LOCATOR PIN | 1 |
| 11 | UPM0038 | DIE SPRING | 1 |
| 12 | UF1400 | SSS HK 3/8-16 X 3" | 1 |
| 13 | UF3377 | 3/8"-16-HNR | 3 |
| 14 | UF3169 | SHCS M5-0.8 x 16mm | 8 |
| 15 | UPM4974 | BELT PAD | 2 |
| 16 | UF1827 | M5 FW | 8 |
| 17 | UF3393 | M5 LOCK-NUT | 8 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 18 | UF0454 | HHCS M6-1.0 x 16mm | 2 |
| 19 | UF6363 | M6 LW | 2 |
| 20 | UF0103 | M6 FW | 2 |
| 21 | UPM0647 | CARTON RETAINER | 1 |
| 22 | UPM6163 | DRIVE WELDMENT, L.H | 1 |
| 23 | UF1411 | SSS M6-1.0 x 6mm | 1 |
| 24 | UPM2156 | TENSIONER ALIGNMENT PLATE | 1 |
| 25 | UF1192 | FHCS M6-1.0 16mm | 2 |
| 26 | UF3748 | FHCS M10-1.5 x 20mm | 1 |
| 27 | UPM3327 | MOTOR 1/3HP 25:1 | 1 |
| 28 | UF5900 | M6 LOCK-NUT | 4 |
| 29 | UF0103 | M6 FW | 4 |
| 30 | UF3752 | BHCS M6-1.0 x 30mm | 3 |
| 31 | UF3712 | FHCS M6-1.0 x 30mm | 1 |
| 32 | UPM4883 | DRIVE PULLEY | 1 |
| 33 | UF3683 | SSS M6-1.0 10mm | 2 |

# Appendix B

## Right Drive Base



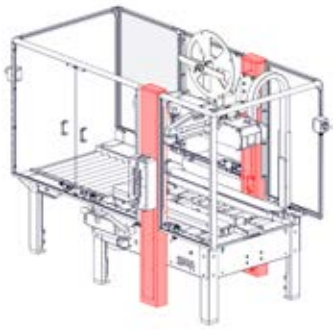


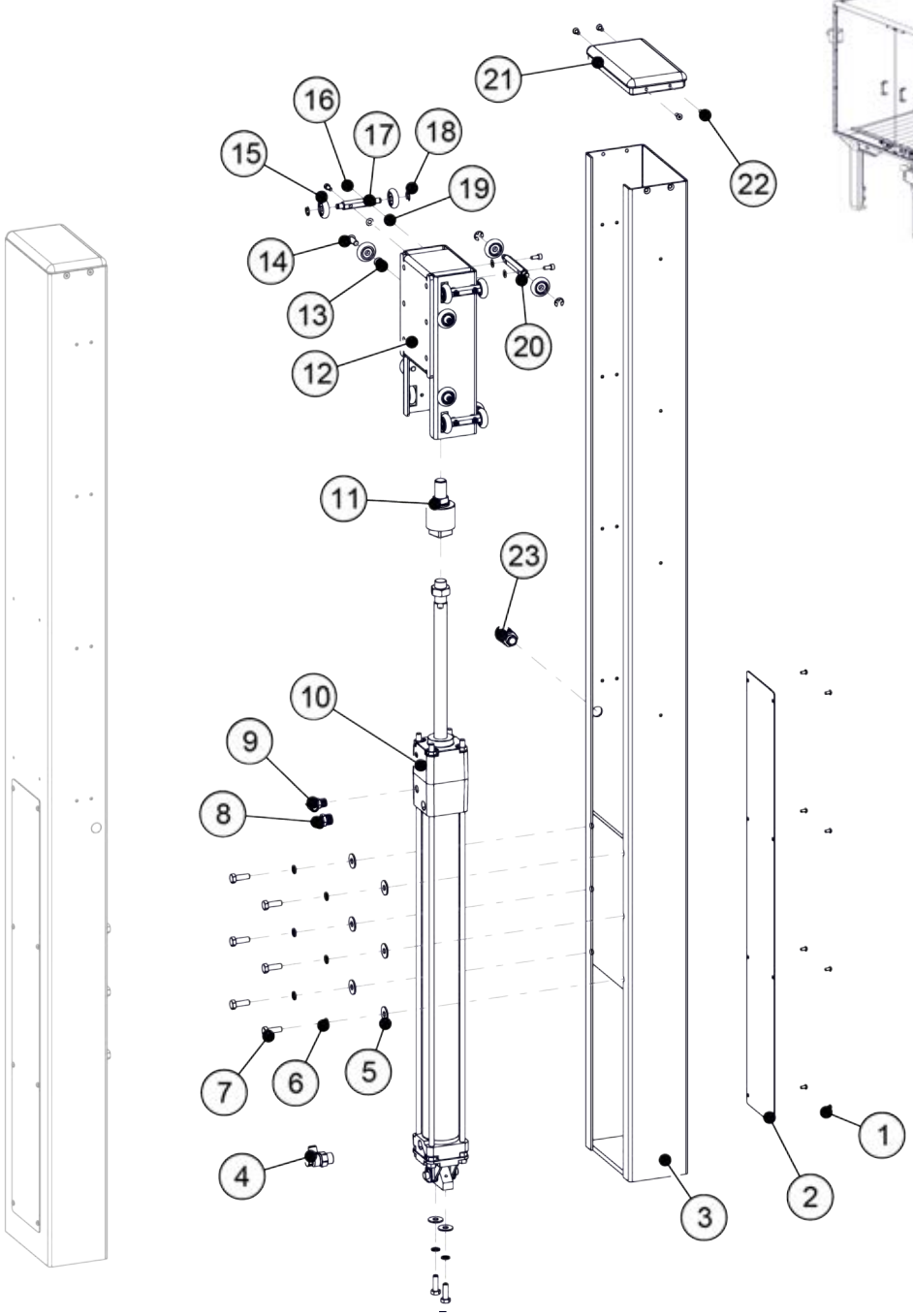

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UF3683 | SSS M6-1.0 x 10mm | 2 |
| 2 | UPM4883 | DRIVE PULLEY | 1 |
| 3 | UPM4884 | DRIVING BELT 50 x 2360L | 1 |
| 4 | UF5600 | BHCS M6-1.0 x 12mm | 2 |
| 5 | UPM4973 | COVER RIGHT SIDE | 1 |
| 6 | UF0017 | Ø12MM SNAP RING | 1 |
| 7 | UPM4885 | IDLER PULLEY | 1 |
| 8 | UPM0324 | BEARING PULLEY | 2 |
| 9 | UPM0109 | IDLER PULLEY SPACER | 1 |
| 10 | UPM1233EV | IDLER PULLEY SHAFT | 1 |
| 11 | UPM0101 | TENSIONER BACKING PLATE | 1 |
| 12 | UPM0112 | SPRING LOCATOR PIN | 1 |
| 13 | UF1400 | SSS HK 3/8-16 X 3" | 1 |
| 14 | UPM0038 | DIE SPRING | 1 |
| 15 | UF3377 | 3/8"-16-HNR | 3 |
| 16 | UPM6164 | DRIVE WELDMENT, R.H | 1 |
| 17 | UF1411 | SSS M6-1.0 x 6mm | 1 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 18 | UPM0647 | CARTON RETAINER | 1 |
| 19 | UF0103 | M6 FW | 2 |
| 20 | UF6363 | M6 LW | 2 |
| 21 | UF0454 | HHCS M6-1.0 x 16mm | 2 |
| 22 | UPM2156 | TENSIONER ALIGNMENT PLATE | 1 |
| 23 | UF3748 | FHCS M10-1.5 x 20mm | 1 |
| 24 | UF1192 | FHCS M6-1.0 x 16mm | 2 |
| 25 | UF3393 | M5 LOCK-NUT | 8 |
| 26 | UF1827 | M5 FW | 8 |
| 27 | UPM4974 | BELT PAD | 2 |
| 28 | UF3169 | SHCS M5-0.8 x 16mm | 8 |
| 29 | UF0103 | M6 FW | 4 |
| 30 | UF5900 | M6 LOCK-NUT | 4 |
| 31 | UPM3327 | MOTOR 1/3HP 25:1 | 1 |
| 32 | UF3712 | FHCS M6-1.0 x 30mm | 1 |
| 33 | UF3752 | BHCS M6-1.0 x 30mm | 3 |

# Appendix B

## Columns



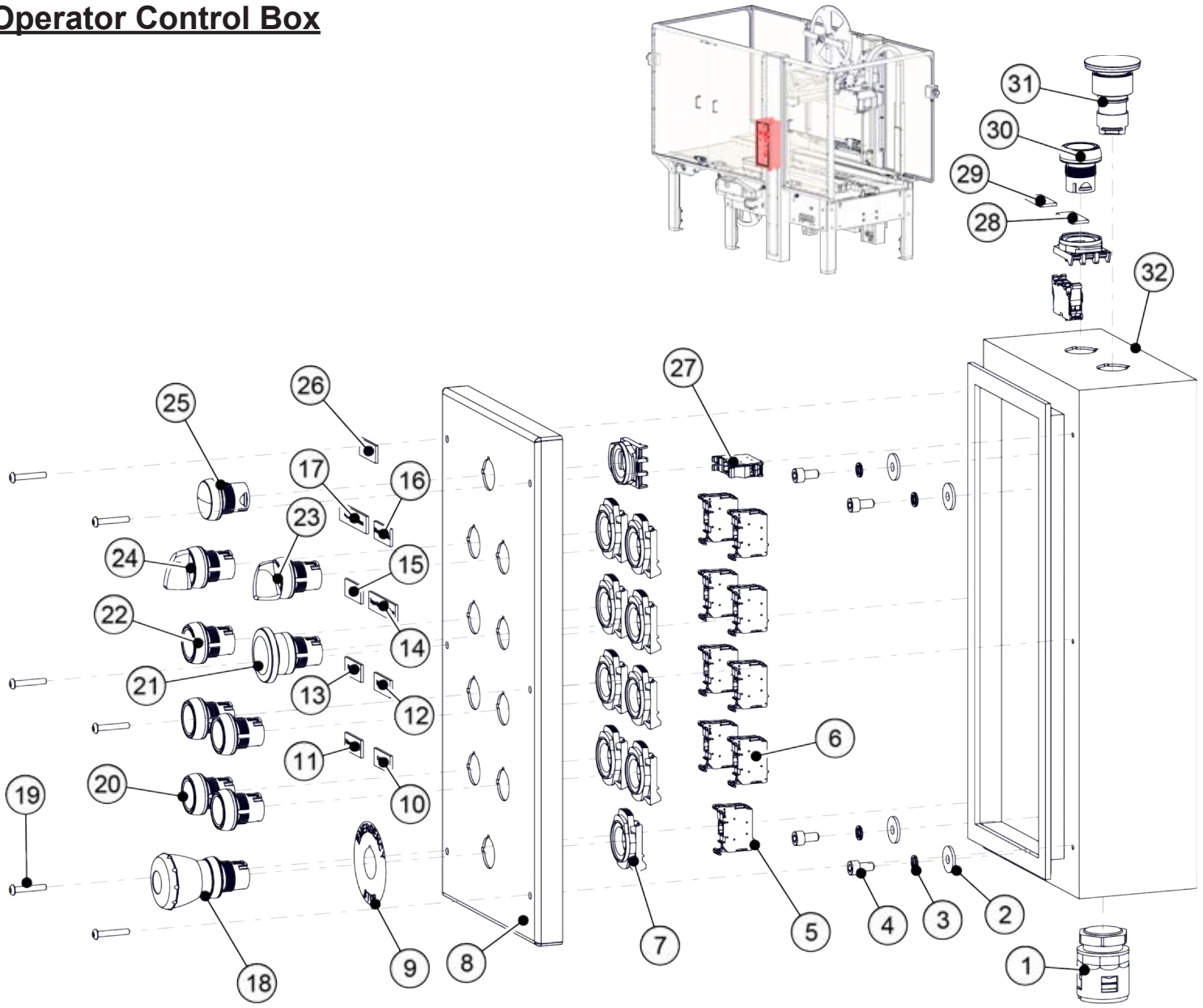



| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UF7009 | BHCS M4-0.7 x 8mm | 8 |
| 2 | UPM4963 | COLUMN ACCESS PANEL | 1 |
| 3 | UPM8223 | WAT RSA COLUMN WELDMENT | 1 |
| 4 | UPM6345 | AIR CYLINDER PNEUMATIC COUPLER | 1 |
| 5 | UF0105 | FW M8 | 8 |
| 6 | UF3640 | LW M8 | 8 |
| 7 | UF3774 | HHCS M8-1.25 × 25mm | 8 |
| 8 | UPM6343 | AIR CYLINDER PNEUMATIC COUPLER | 1 |
| 9 | UPM6344 | AIR CYLINDER PNEUMATIC COUPLER | 1 |
| 10 | UPM9147 | LOCKING CYLINDER | 1 |
| 11 | UPM5145 | FLEXIBLE COUPLING | 1 |
| 12 | UPM4958 | COLUMN BLOCK | 1 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 13 | UPM4961 | SPACER | 4 |
| 14 | UF3802 | BHCS M8-1.25 x 20mm | 4 |
| 15 | UPM4962 | ROLLER WHEEL | 16 |
| 16 | UF7003 | SHCS M5-0.8 x 12mm | 12 |
| 17 | UPM4965 | SHAFT, dia 8, 74 L | 4 |
| 18 | UF3818 | RETAINING RING 8mm | 12 |
| 19 | UF7030 | BRASS WASHER | 12 |
| 20 | UPM4964 | SHAFT, dia 8, 92 L | 2 |
| 21 | UPM4960 | COLUMN CAP | 1 |
| 22 | UF3282 | FHCS M5-0.8 × 12mm | 4 |
| 23 | UPM5873 | CABLE GLAND | 1 |

# Appendix B

## Operator Control Box

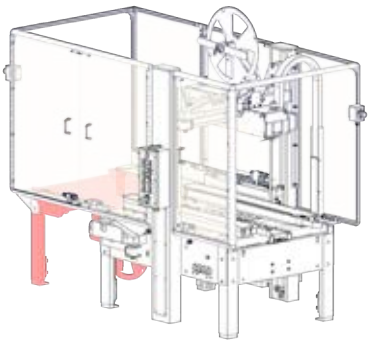


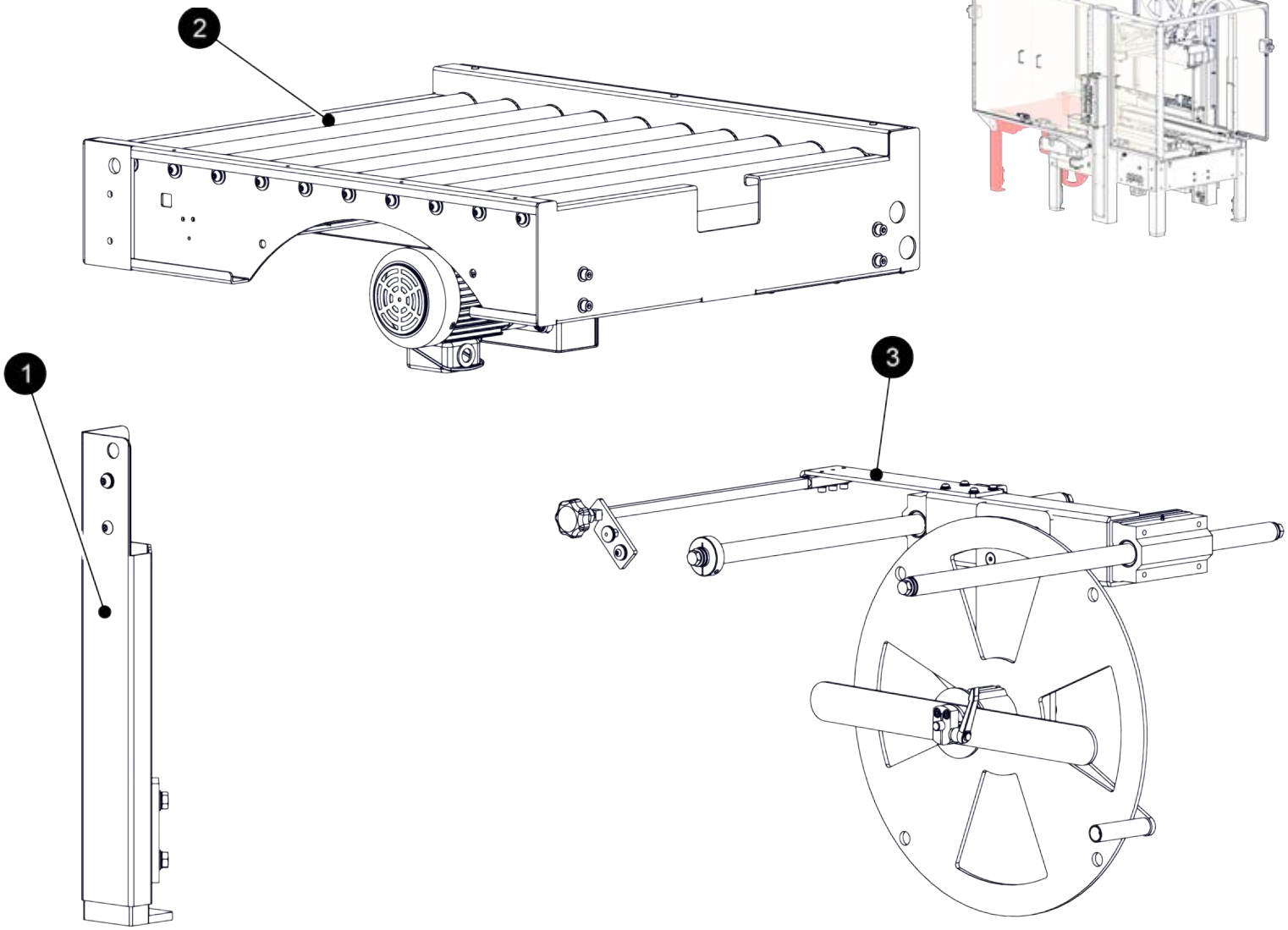

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UPM4905 | CORD GRIP | 1 |
| 2 | UF0103 | M10-23-1.0 | 4 |
| 3 | UF6363 | LW M6 | 4 |
| 4 | UF0038 | SHCS M6-1.0 x 12mm | 4 |
| 5 | UPM4720 | NC CONTACT | 2 |
| 6 | UPM7631 | NO CONTACT | 8 |
| 7 | UPM7630 | LATCH | 11 |
| 8 | UPM6168 | OPERATION BOX COVER | 1 |
| 9 | UPM6045 | E-STOP LABEL | 1 |
| 10 | UPM4900 | LEGENDE PLATE "CUT TAPE" | 1 |
| 11 | UPM4899 | LEGEND PLATE "HEAD DOWN" | 1 |
| 12 | UPM5082 | LEGEND PLATE "TAPE FEED" | 1 |
| 13 | UPM4897 | LEGEND PLATE "HEAD UP" | 1 |
| 14 | UPM4896 | LEGEND PLATE "TAPE THREADING/STOP" | 1 |
| 15 | UPM4895 | LEGEND PLATE "START" | 1 |
| 16 | UPM4893 | LEGEND PLATE "MANUAL/AUTO" | 1 |
| 17 | UPM4898 | LEGEND PLATE "TOP/BOTH/BOTTOM" | 1 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 18 | UPM4816 | EMERGENCY STOP BUTTON | 1 |
| 19 | UF0069 | BHCS M4-0.7 x 25mm | 6 |
| 20 | UPM5709 | PUSH BUTTON BLACK | 4 |
| 21 | UPM6140 | MUSHROOM BUTTON RED | 1 |
| 22 | UPM5734 | PUSH BUTTON GREEN | 1 |
| 23 | UMP6049 | 2 POS SELECTOR SWITCH | 1 |
| 24 | UPM6139 | 3 POS SELECTOR SWITCH | 1 |
| 25 | UPM6048 | POWER LAMP | 1 |
| 26 | UPM4894 | LEGEND PLATE "POWER LAMP" | 1 |
| 27 | UPM0415 | PILOT LAMP | 1 |
| 28 | UPM4903 | LEGEND PLATE "CLEAR" | 1 |
| 29 | UPM6141 | LEGEND PLATE "RESET" | 1 |
| 30 | UPM6047 | PUSH BUTTON BLUE | 1 |
| 31 | UPM4926 | ILLUMINATED PB, MUSHROOM, BLUE | 1 |
| 32 | UPM6273 | CONTROL BOX FRAME | 1 |

# Appendix B

## Exit Table

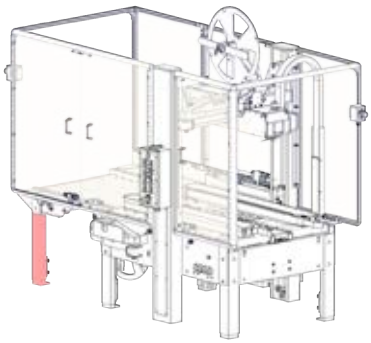


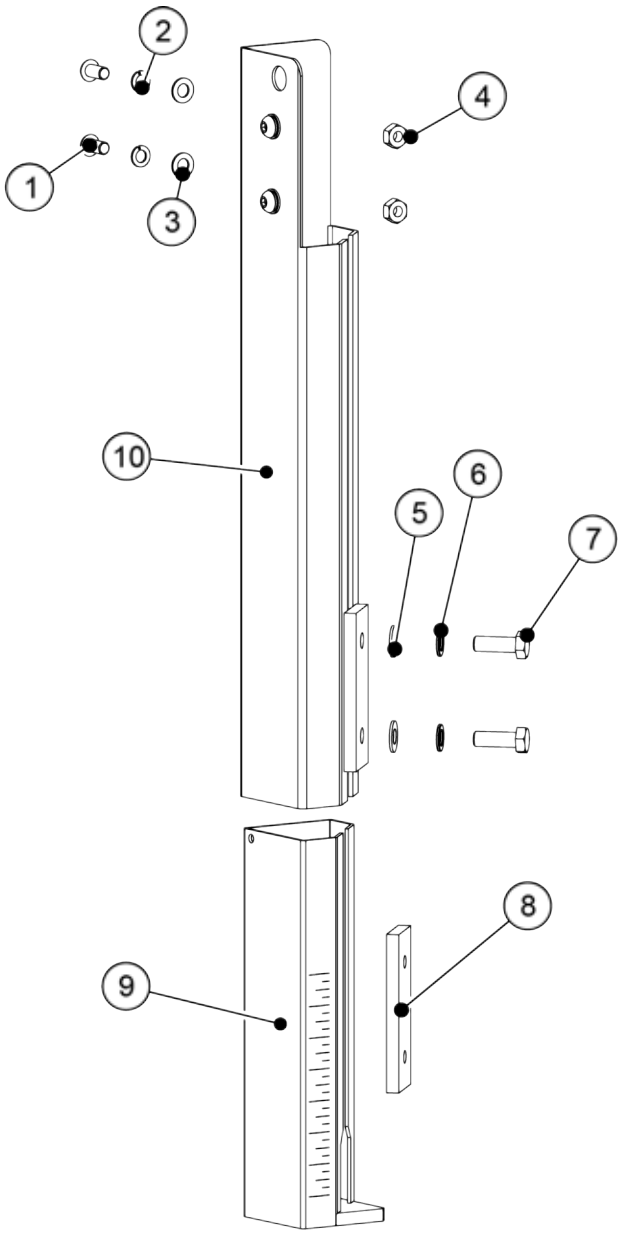



| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | USM0910 | OUTFEED LEG WELDMENT | 1 |
| 2 | USM0964 | OUTPUT TABLE TOP | 1 |
| 3 | UAM0506 | TAPE ROLL CARRIAGE | 1 |
| 4 | USM0963 | OUTFEED LEG W/E-STOP | 1 |

# Appendix B

## Exit Legs



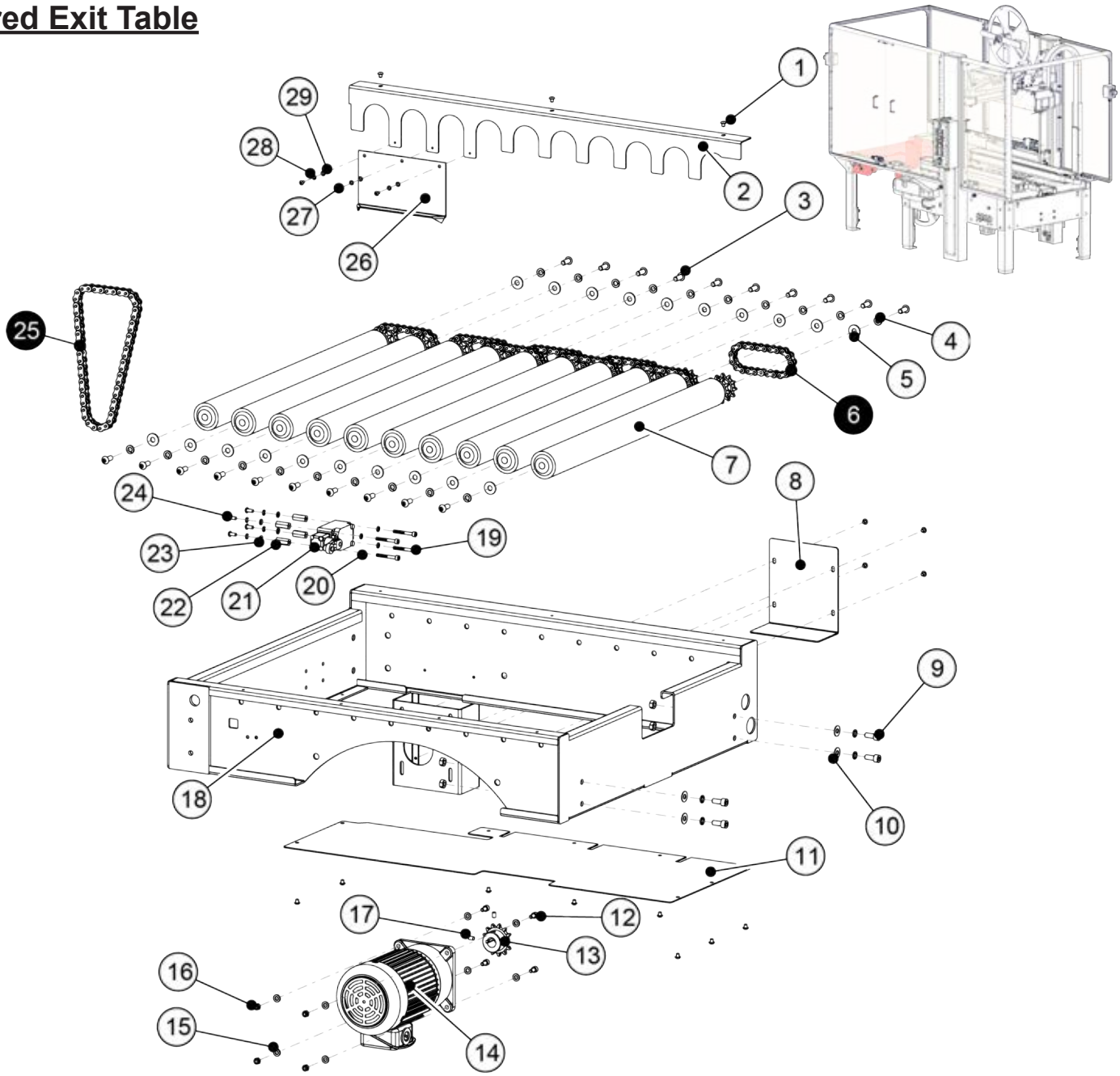



| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UF4252 | BHCS M10-1.5 x 20mm | 4 |
| 2 | UF6371 | LW M10 | 4 |
| 3 | UF3680 | FW M10 | 4 |
| 4 | UF6314 | HNR M10-1.5 | 4 |
| 5 | UF4231 | FW M12 | 2 |
| 6 | UF4230 | LW M12 | 2 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 7 | UF6393 | HHCS M12-1.75 x 35mm | 2 |
| 8 | UPM0931 | LEG FRICTION PLATE | 1 |
| 9 | UPM0847 | LEG ADJUSTMENT | 1 |
| 10 | UPM5142 | LEG WELDMENT | 1 |

# Appendix B

## Powered Exit Table

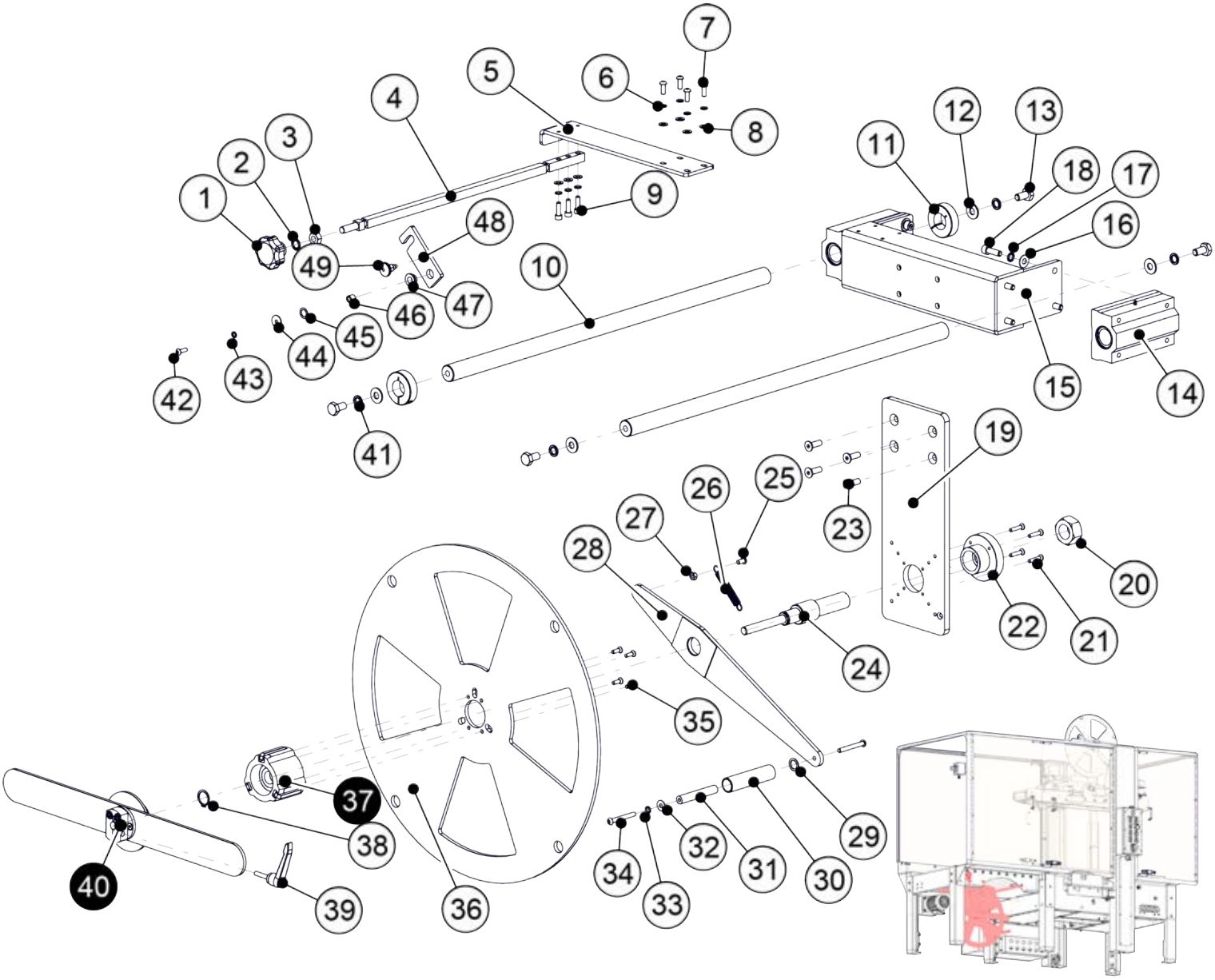



| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UF5601 | M5-0.8-BHCS | 15 |
| 2 | UPM4969 | CHAIN COVER | 1 |
| 3 | UF1318 | BHCS M8-1.25 x 20mm | 20 |
| 4 | UF0867 | M8 LW | 24 |
| 5 | UF1821 | M8 FW | 20 |
| 6 | UPM4891 | CHAIN #40, 12 PITCH | 8 |
| 7 | UPM5125 | POWERED ROLLER | 10 |
| 8 | UPM5124 | CHAIN COVER | 1 |
| 9 | UF0864 | SHCS M8-1.25 × 20MM | 4 |
| 10 | UF0105 | M8 FW | 4 |
| 11 | UPM6038 | BOTTOM COVER | 1 |
| 12 | UF0038 | SHCS M6-1.0 x 12mm | 4 |
| 13 | UPM5126 | SPROCKET | 1 |
| 14 | UPM7874 | MOTOR, 1/3 HP 15:1 | 1 |
| 15 | UF6341 | M6 FW | 8 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 16 | UF3391 | LOCK NUT M6 | 4 |
| 17 | UF3750 | SSS M6 x 10mm | 2 |
| 18 | UAM0505 | OUTPUT TABLE WELDMENT | 1 |
| 19 | UF3776 | SHCS M5 x 0.8 x 35mm | 4 |
| 20 | UF7023 | M5 LW | 8 |
| 21 | UPM5711 | SWITCH SNAP ACTION SPDT | 1 |
| 22 | UPM6037 | POST | 4 |
| 23 | UF6340 | M5 W | 4 |
| 24 | UF3687 | BHCS M5-0.8 x 12mm | 4 |
| 25 | UPM4890 | CHAIN #40, 25 PITCH | 1 |
| 26 | UPM5222 | CHAIN SHIELD | 1 |
| 27 | UF7009 | BHCS M4-0.7 x 8mm | 3 |
| 28 | UF3681 | M4 LW | 3 |
| 29 | UF3710 | M4 FW | 3 |

# Appendix B

## Bottom Tape Carriage



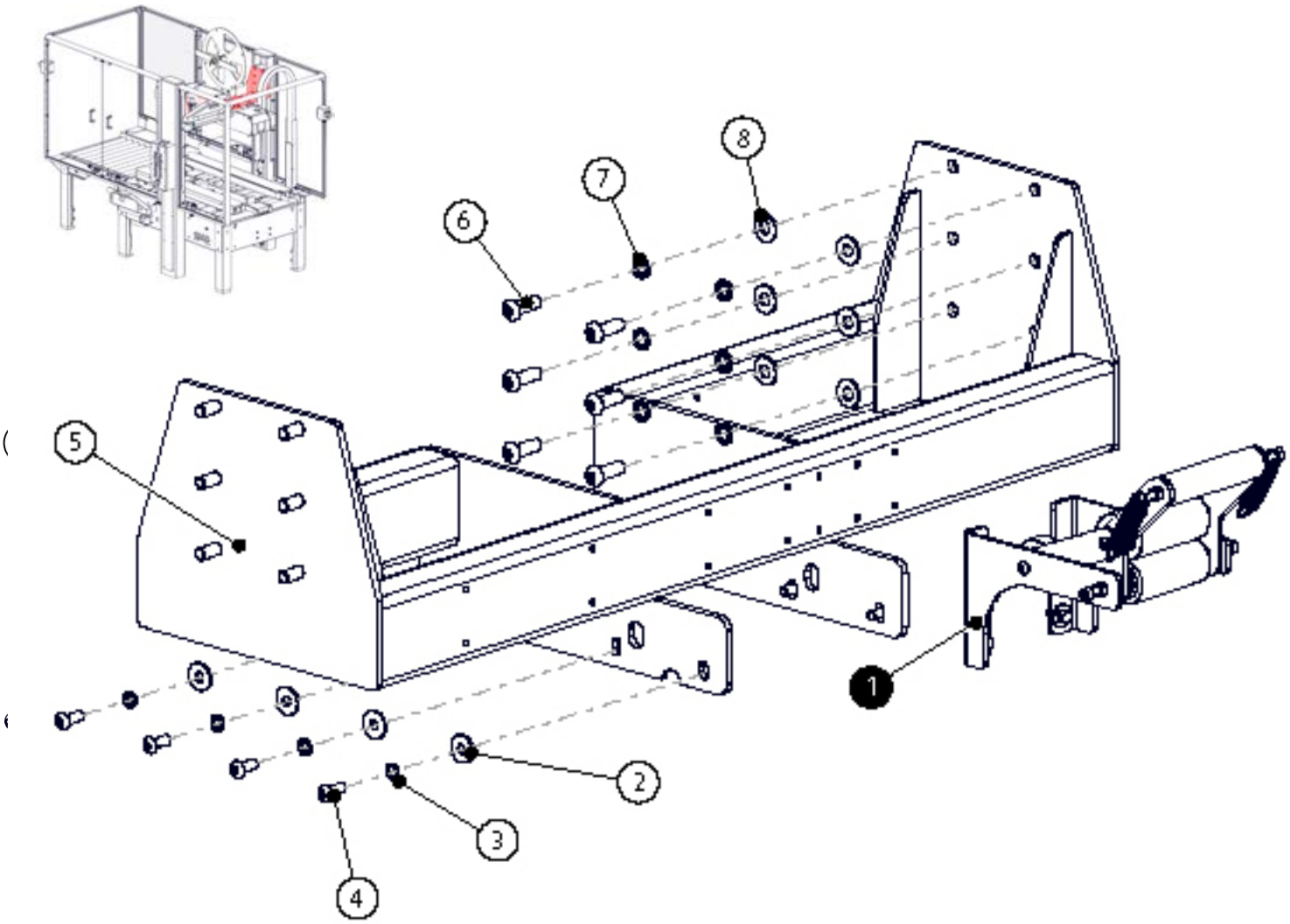

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UPM2784 | HANDLE | 1 |
| 2 | UF0057 | INTERNAL TOOTH LW M10 | 1 |
| 3 | UF0107 | M10 JAM NUT | 1 |
| 4 | UPM6041 | BAR | 1 |
| 5 | UPM6042 | BRACKET | 1 |
| 6 | UF6363 | M6 LW | 7 |
| 7 | UF1250EV | BHCS M6-1.0 x 16mm | 4 |
| 8 | UF1828 | M6 FW | 7 |
| 9 | UF0835 | SHCS M6-1.0 x 20mm | 3 |
| 10 | UPM6043 | SHAFT | 2 |
| 11 | UPM5713 | SHAFT COLLAR | 2 |
| 12 | UF3680 | M10 FW | 4 |
| 13 | UF3679 | HHCS M10-1.5 x 20mm | 4 |
| 14 | UPM6142 | SHUTTLE BLOCK | 2 |
| 15 | UPM6040 | BRACKET | 1 |
| 16 | UF0105 | M8 FW | 8 |
| 17 | UF3640 | M8 LW | 8 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 18 | UF0098 | SHCS M8-1.25 x 25mm | 8 |
| 19 | UPM6143 | BACK FRAME | 1 |
| 20 | UF3816 | M24 NUT | 1 |
| 21 | UF5399 | FHCS M5-0.8 x 25mm | 4 |
| 22 | UPM5114 | HUB | 1 |
| 23 | UF0091 | FHCS M8-1.25 x 25mm | 4 |
| 24 | UPM5109 | STEPPED SHAFT | 1 |
| 25 | UF5600 | BHCS M6-1.0 x 12mm | 1 |
| 26 | UPM2206 | EXTENSION SPRING | 1 |
| 27 | UF0062 | M6 NUT | 1 |
| 28 | UPM8006 | PIVOT ARM | 1 |
| 29 | UF6336 | TEFLON WASHER | 1 |
| 30 | UPH9059 | PEEL OFF ROLLER | 1 |
| 31 | UPH0949 | GUIDE ROLLER SHAFT | 1 |
| 32 | UF1828 | M6 FW | 1 |
| 33 | UF6363 | M6 LW | 1 |
| 34 | UF4052 | BHCS M6-1.0 x 50mm | 2 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 35 | UF5404 | FHCS M5-0.8 x 16mm | 4 |
| 36 | UPM5111 | PANCAKE | 1 |
| 37 | UAM0195 | MANDREL HUB | 1 |
| 38 | UF3815 | RET'G RING, ID 10 | 1 |
| 39 | UPM4889 | HNADLE | 1 |
| 40 | UAM0462 | CROSS BAR ASSY | 1 |
| 41 | UF3743 | M10 LW | 4 |
| 42 | UF0037 | BHCS M5-0.8 x 16mm | 1 |
| 43 | UF7021 | M5 LW | 1 |
| 44 | UF0106 | M5 FW | 1 |
| 45 | UF0108 | SPECIAL WASHER | 1 |
| 46 | UPM2803 | ROTARY SLEEVE | 1 |
| 47 | UPM2539 | BUSHING | 1 |
| 48 | UPM2471 | DRAG LINK | 1 |
| 49 | UPM2792 | DIVIDE POSITIONING PILLAR | 1 |

# Appendix B

## Bridge Support

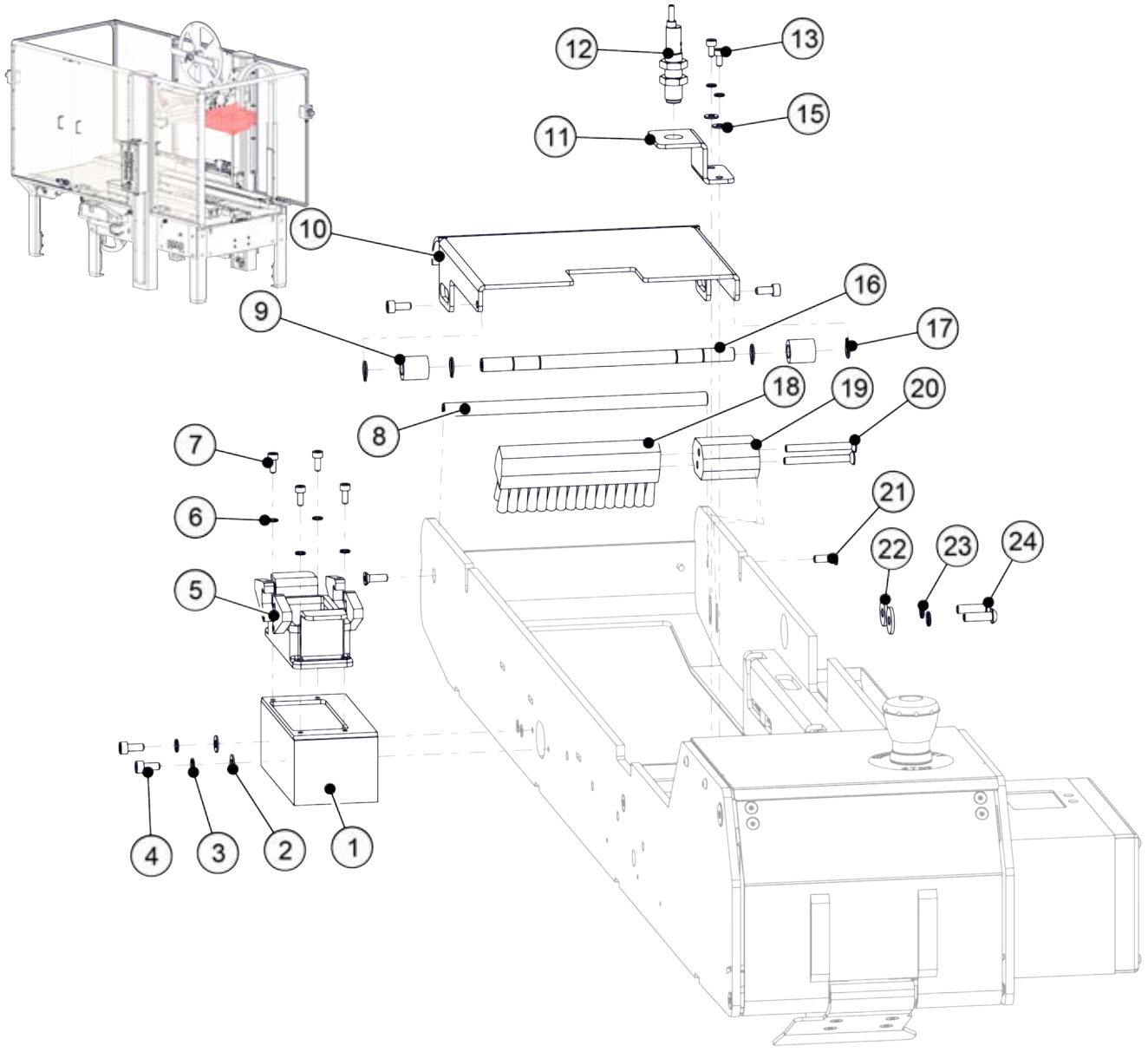



| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UAM0025 | CLUTCH MECHANISM RSA | 1 |
| 2 | UF6342 | FW M8 | 8 |
| 3 | UF3640 | LW M8 | 8 |
| 4 | UF3329 | BHCS M8-1.25 x 20mm | 8 |
| 5 | UPM4977 | BRIDGE WELDMENT | 1 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 6 | UF4310 | BHCS M10-1.5 × 30mm | 12 |
| 7 | UF3743 | LW M10 | 12 |
| 8 | UF7015 | FW M10 | 12 |

# Appendix B

## Bridge Assembly 1

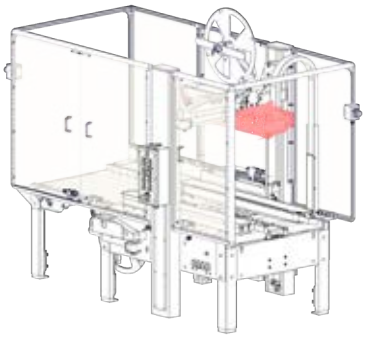


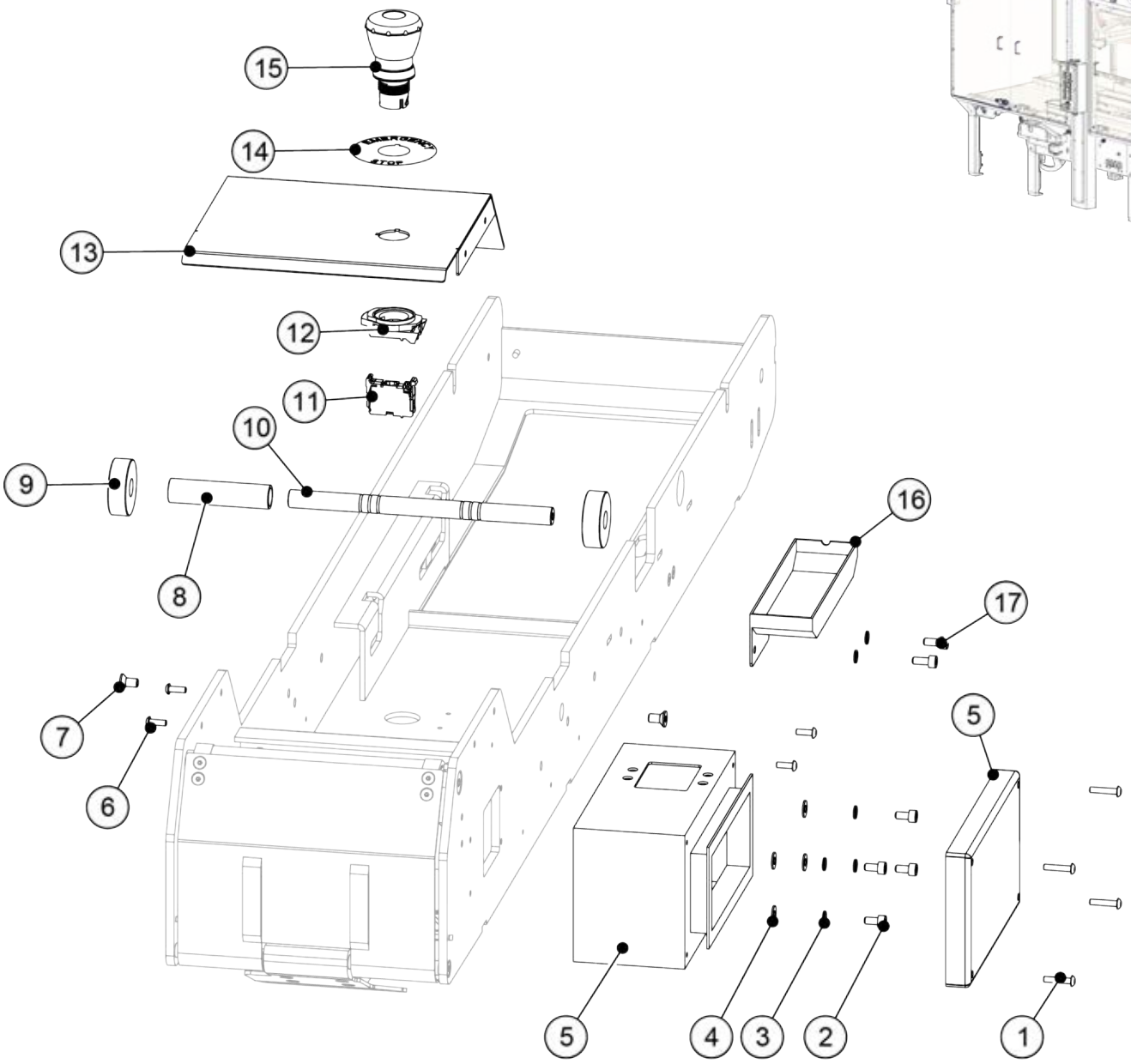

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UPM4980 | ELECTRICAL RECEPTACLE BASE | 1 |
| 2 | UF6340 | FW M5 | 2 |
| 3 | UF7021 | LW M5 | 2 |
| 4 | UF7003 | SHCS M5-0.8 x 12mm | 4 |
| 5 | UPM4938 | RECEPTACLE CONNECTION | 1 |
| 6 | UF3749 | LW M4 | 6 |
| 7 | UF3759 | SHCS M4-0.7 x 10mm | 4 |
| 8 | UPM5102 | SHAFT, dia 9.5 | 1 |
| 9 | UPM4992 | SPACER, 18L | 2 |
| 10 | UPM4989 | TOP COVER | 1 |
| 11 | UPM4997 | BRACKET | 1 |
| 12 | UPM5137 | SENSOR | 1 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 13 | UF3072 | SHCS M4-0.7 x 8mm | 2 |
| 15 | UF6339 | FW M4 | 2 |
| 16 | UPM4991 | SHAFT, dia 9.5, 181L | 1 |
| 17 | UPM6145 | RETAINING RING S10 | 4 |
| 18 | UPH4004 | BRUSH 4" TH | 1 |
| 19 | UPM4968 | BRUSH ADAPTOR | 1 |
| 20 | UF0074 | FHCS M5-0.8 × 50mm | 2 |
| 21 | UF3277 | FHCS M5-0.8 × 16mm | 2 |
| 22 | UF6341 | FW M6 | 2 |
| 23 | UF6411 | LW M6 | 2 |
| 24 | UF6325 | BHCS M6-1.0 x 20mm | 2 |

# Appendix B

## Bridge Assembly 2



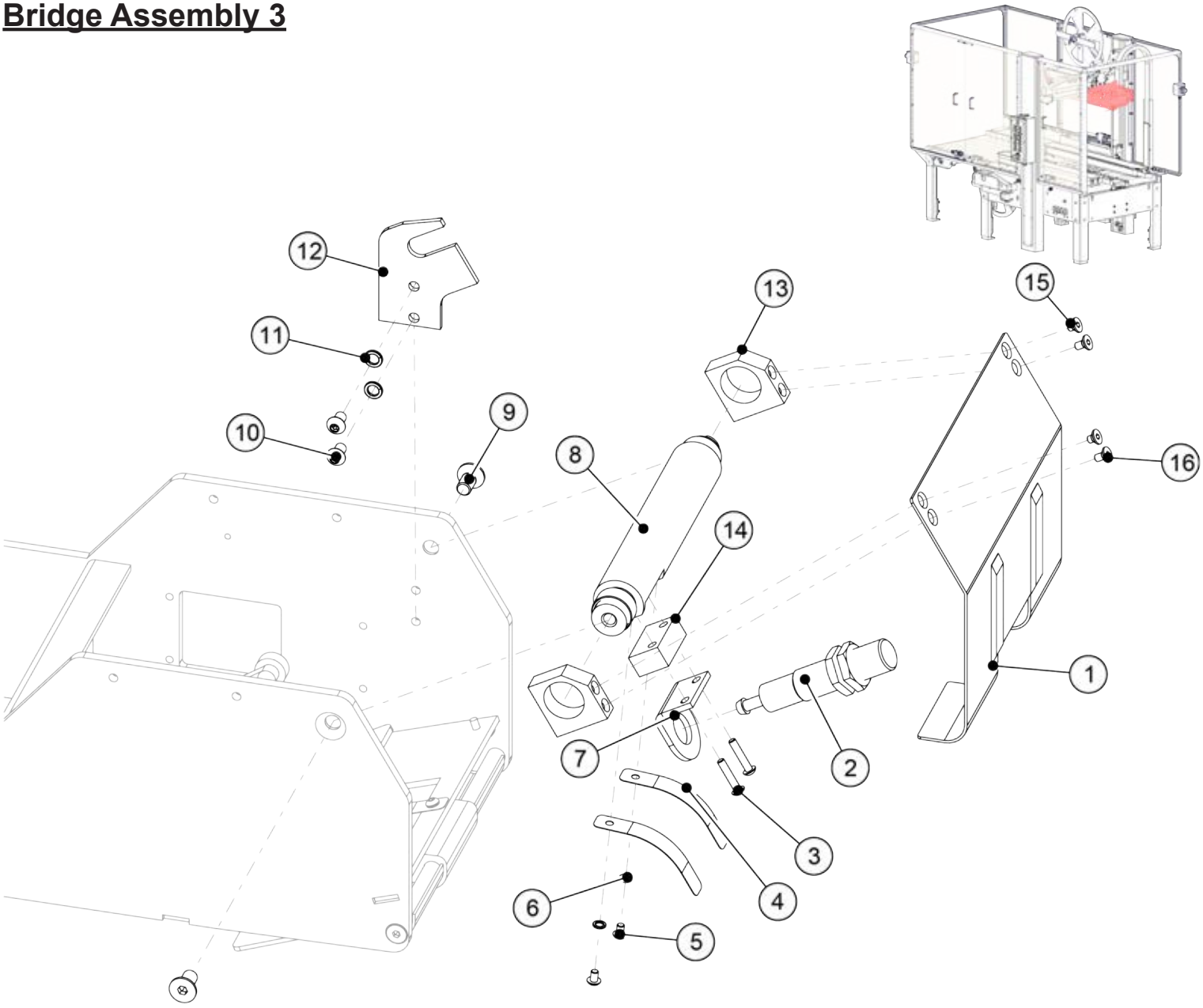



| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UF4323 | BHCS M4-0.7 x 20mm | 4 |
| 2 | UF3147 | SHCS M5-0.8 x 10mm | 4 |
| 3 | UF7021 | LW M5 | 6 |
| 4 | UF6340 | FW M5 | 4 |
| 5 | UPM4988 | COVER | 1 |
| 6 | UF4325 | BHCS M4-0.7 x 12mm | 4 |
| 7 | UF6353 | FHCS M6-1.0 x 12mm | 2 |
| 8 | UPM4933 | ROLLER, dia 17, 72L | 1 |
| 9 | UPM5967 | GUIDE ROLLER, 40OD | 2 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 10 | UPM4993 | SHAFT, dia 12.7, 189L | 1 |
| 11 | UPM4720 | NC LATCH | 1 |
| 12 | UPM7630 | LATCH | 1 |
| 13 | UPM4978 | ELECTRICAL SWITCH COVER | 1 |
| 14 | UPM6045 | E-STOP LABEL | 1 |
| 15 | UPM4816 | EMERGENCY STOP BUTTON | 1 |
| 16 | UPM4990 | OVER FLOW TRAY | 1 |
| 17 | UF7003 | SHCS M5-0.8 x 12mm | 2 |

# Appendix B

## Bridge Assembly 3

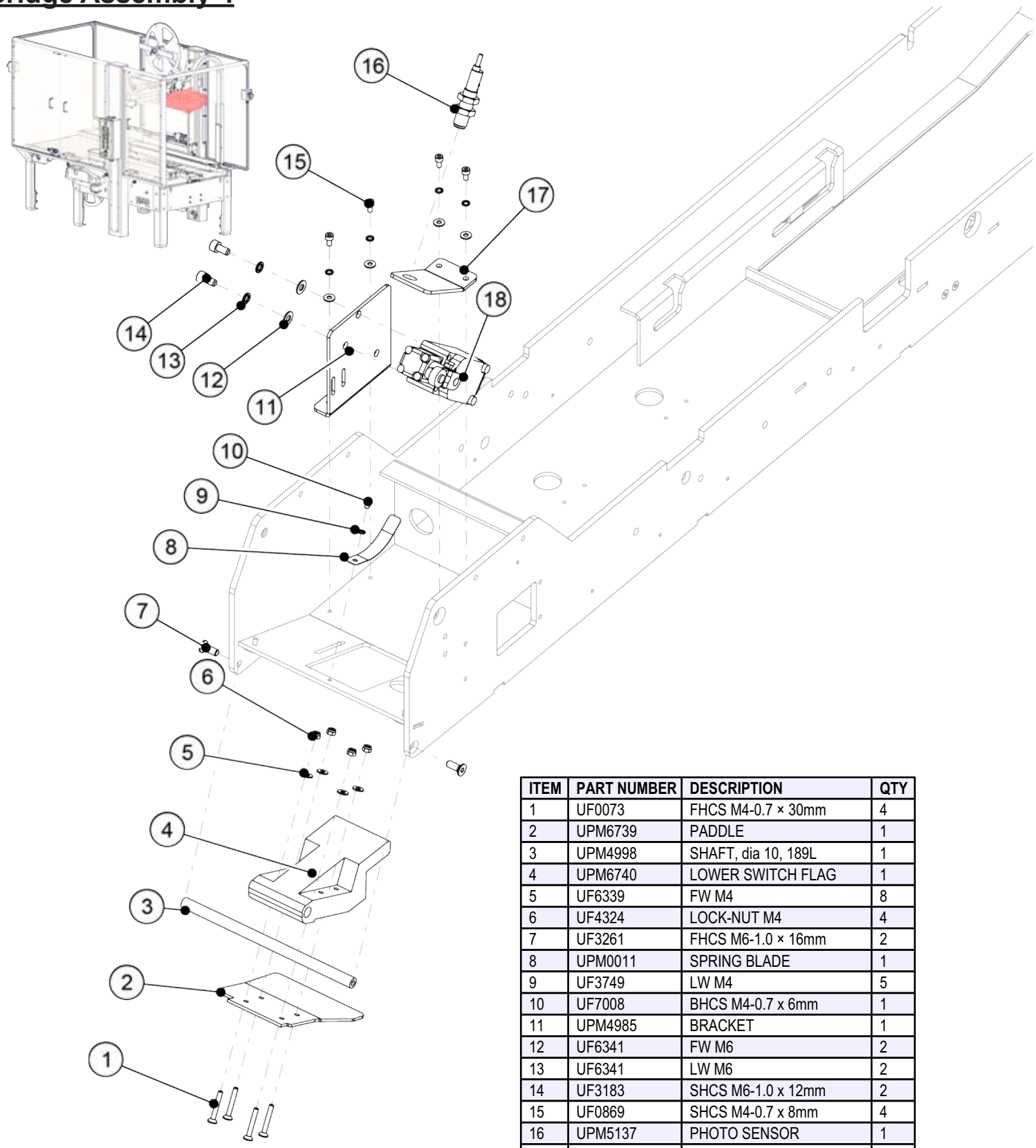



| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UPM5101 | SENSING PADDLE | 1 |
| 2 | UPM0014 | FRONT PADDLE SENSOR | 1 |
| 3 | UF4323 | BHCS M4-0.7 x 20mm | 2 |
| 4 | UPM0011 | SPRING BLADE | 2 |
| 5 | UF6374 | BHCS M4-0.7 x 6mm | 2 |
| 6 | UF3749 | LW M4 | 2 |
| 7 | UPM0733 | MOUNTING BRACKET | 1 |
| 8 | UPM4999 | FRONT SUPPORT SHAFT | 1 |
| 9 | UF3684 | FHCS M8-1.25 x 16mm | 2 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 10 | UF3263 | BHCS M6-1.0 × 10mm | 2 |
| 11 | UF6411 | LW M6 | 2 |
| 12 | UPM5100 | HOLDING BRACKET | 1 |
| 13 | UPM2129 | SENSOR PIVOTBLCK | 2 |
| 14 | UPM3238 | SPACER | 1 |
| 15 | UF4323 | FHCS M4-0.7 × 6mm | 2 |
| 16 | UF5401 | FHCS M4-0.7 × 8mm | 2 |

# Appendix B

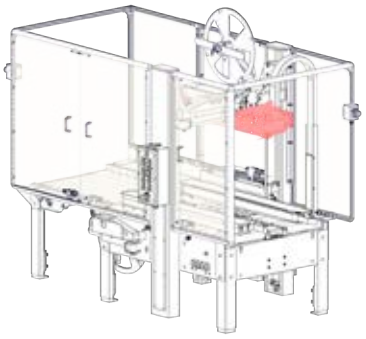
## Bridge Assembly 4

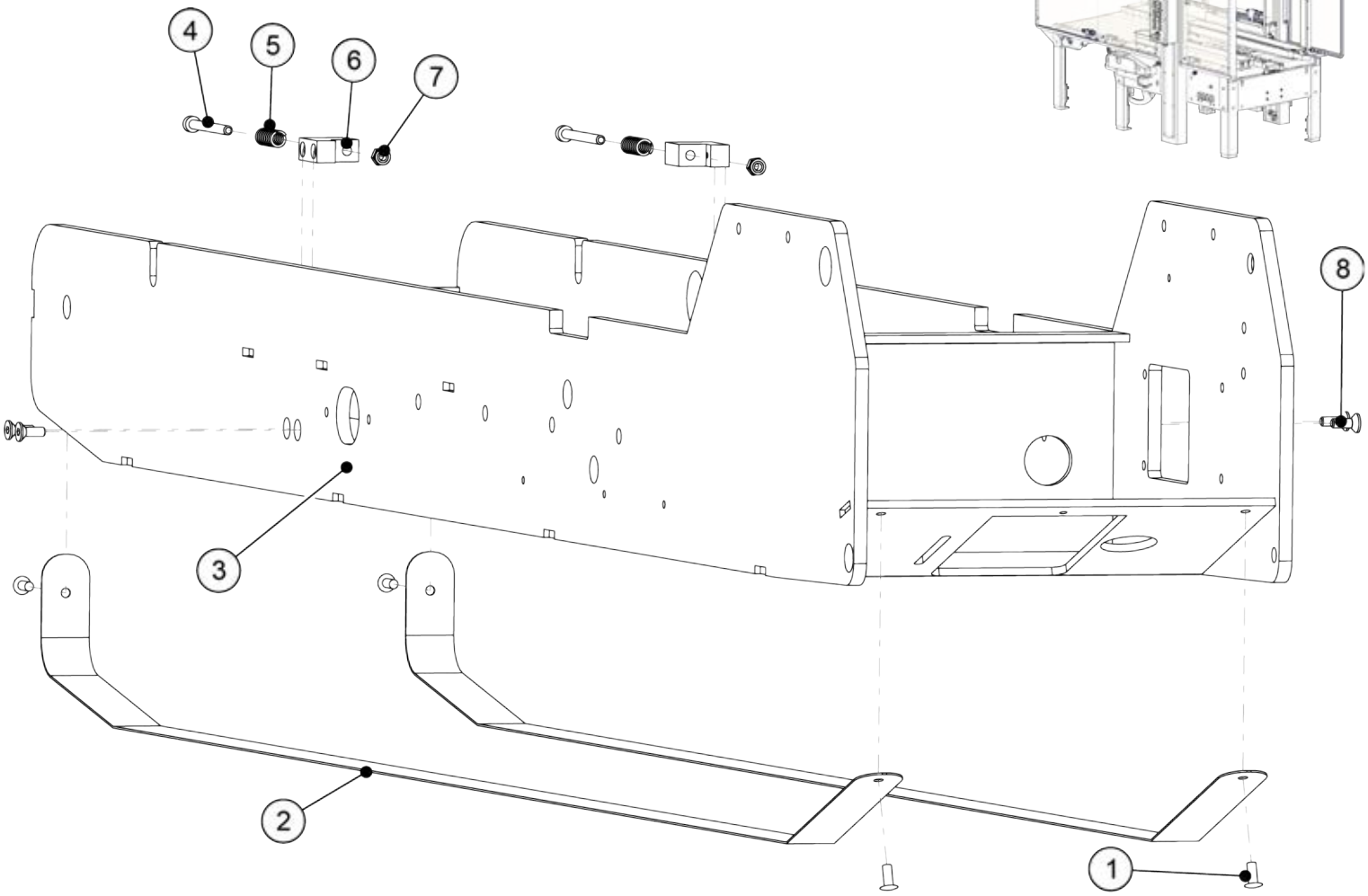



| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UF0073 | FHCS M4-0.7 × 30mm | 4 |
| 2 | UPM6739 | PADDLE | 1 |
| 3 | UPM4998 | SHAFT, dia 10, 189L | 1 |
| 4 | UPM6740 | LOWER SWITCH FLAG | 1 |
| 5 | UF6339 | FW M4 | 8 |
| 6 | UF4324 | LOCK-NUT M4 | 4 |
| 7 | UF3261 | FHCS M6-1.0 × 16mm | 2 |
| 8 | UPM0011 | SPRING BLADE | 1 |
| 9 | UF3749 | LW M4 | 5 |
| 10 | UF7008 | BHCS M4-0.7 x 6mm | 1 |
| 11 | UPM4985 | BRACKET | 1 |
| 12 | UF6341 | FW M6 | 2 |
| 13 | UF6341 | LW M6 | 2 |
| 14 | UF3183 | SHCS M6-1.0 x 12mm | 2 |
| 15 | UF0869 | SHCS M4-0.7 x 8mm | 4 |
| 16 | UPM5137 | PHOTO SENSOR | 1 |
| 17 | UPM6357 | PHOTO SENSOR BRACKET | 1 |
| 18 | UPM4887 | LIMIT SWITCH | 1 |

# Appendix B

## Bridge Assembly 5



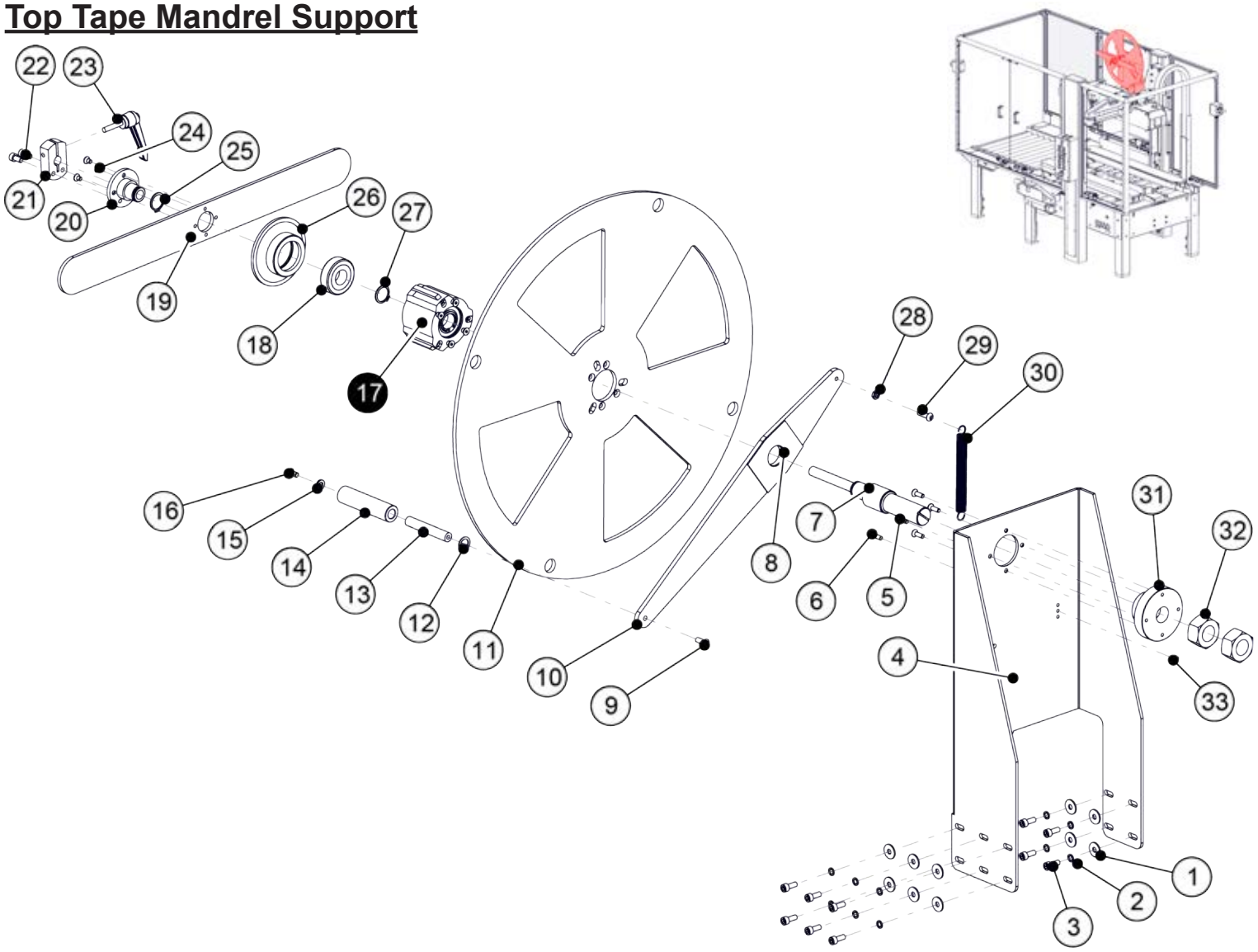



| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UF3691 | POP RIVET | 4 |
| 2 | UPM0029 | UHMW STRIP 1220mm | 2 |
| 3 | UPM4886 | TOP TAPE HEAD WELDMENT | 1 |
| 4 | UF3107EV | SHCS M4-0.7 × 50mm | 2 |
| 5 | UPM1068 | COMPRESSION SPRING | 2 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 6 | UPM7806 | SPRING SUPPORT M4 | 2 |
| 7 | UF4324 | LOCK-NUT M4 | 2 |
| 8 | UF3761 | FHCS M4-0.7 × 12mm | 4 |

# Appendix B

## Top Tape Mandrel Support

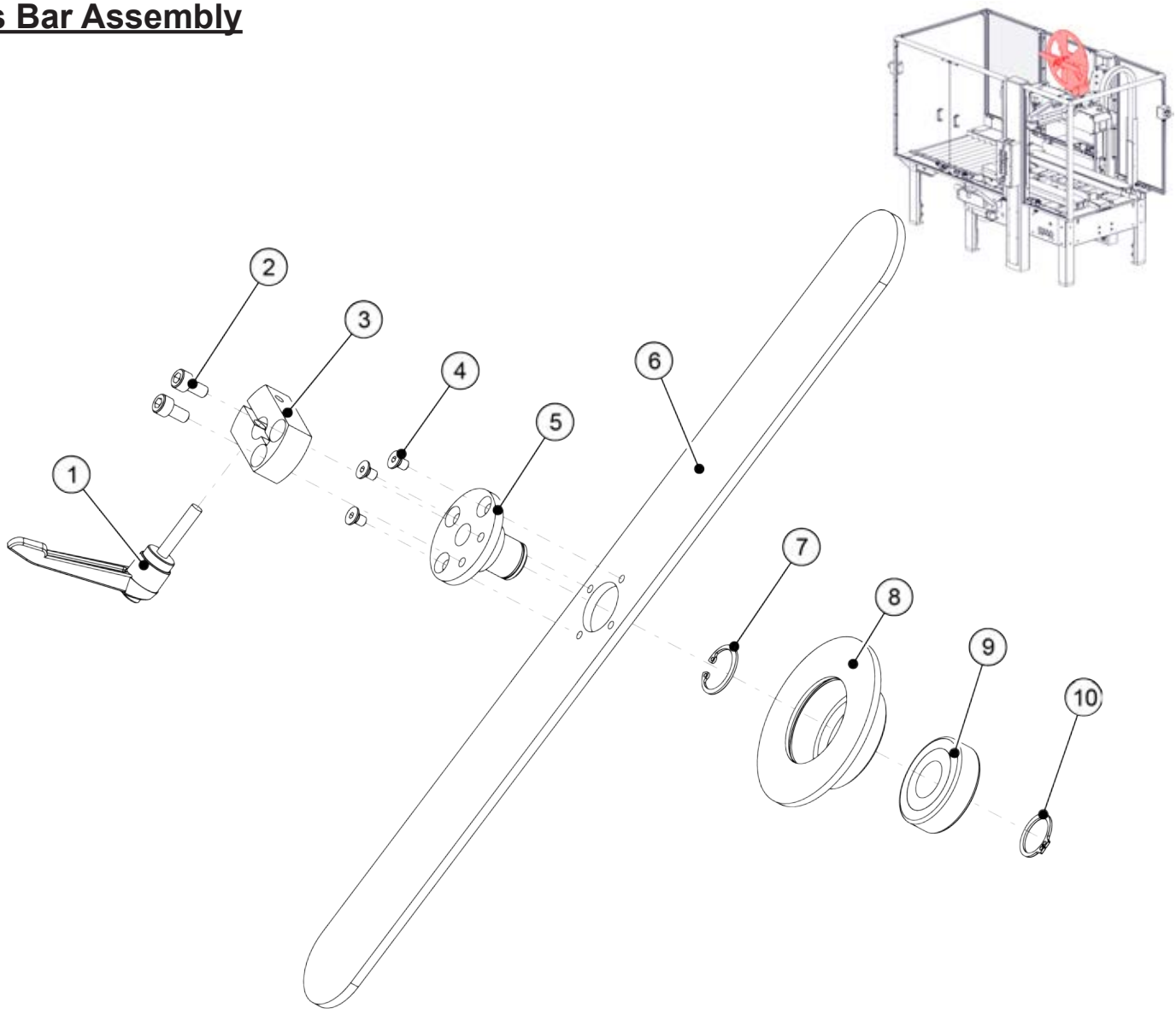



| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UF1890 | FLAT WASHER 1/4 x 3/4 x 1/16 | 10 |
| 2 | UF6411 | LW M6 | 10 |
| 3 | UF3187 | SHCS M6-1 x 16mm | 10 |
| 4 | UPM4979 | MANDREL BRACKET | 1 |
| 5 | UF5404 | FHCS M5-0.8 x 16mm | 4 |
| 6 | UF9172 | BHCS M5-0.8 x 20mm | 1 |
| 7 | UPM5109 | STEPPED SHAFT | 1 |
| 8 | UPM9802 | BREAK PAD | 1 |
| 9 | UF6414 | BHCS M6-1 x 16mm | 1 |
| 10 | UPM6238 | PIVOT ARM | 1 |
| 11 | UPM5111 | PANCAKE | 1 |
| 12 | UF6336 | FW PTFE, 13 x 19 x 1mm | 1 |
| 13 | UPH0949 | GUIDE ROLLER SHAFT | 1 |
| 14 | UPH9059 | PEEL OFF ROLLER | 1 |
| 15 | UF6341 | FW M6 | 1 |
| 16 | UF3278 | BHCS M6-1 x 12mm | 1 |
| 17 | UAM0195 | MANDREL HUB | 1 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 18 | UPM4888 | BALL BEARING | 1 |
| 19 | UPM5108 | CROSS BAR | 1 |
| 20 | UPM5106 | RETAINER | 1 |
| 21 | UPM5107 | CLAMP | 1 |
| 22 | UF3183 | SHCS M6-1 x 12mm | 2 |
| 23 | UPM4889 | HANDLE | 1 |
| 24 | UF7024 | FHCS M5-0.8 x 8mm | 3 |
| 25 | UF3815 | RET'G RING, ID 10 | 1 |
| 26 | UPM5104 | FLANGE MANDREL | 1 |
| 27 | UF3815 | RET'G RING, ID 10 | 1 |
| 28 | UF3361 | JAM NUT M6 | 1 |
| 29 | UF6325 | BHCS M6-1 x 20mm | 1 |
| 30 | UPM4498 | EXTENSION SPRING | 1 |
| 31 | UPM5114 | HUB | 1 |
| 32 | UF3816 | HEX NUT M24-1.5 | 2 |
| 33 | UF6307 | HEX NUT M5 | 1 |

# Appendix B

## Cross Bar Assembly

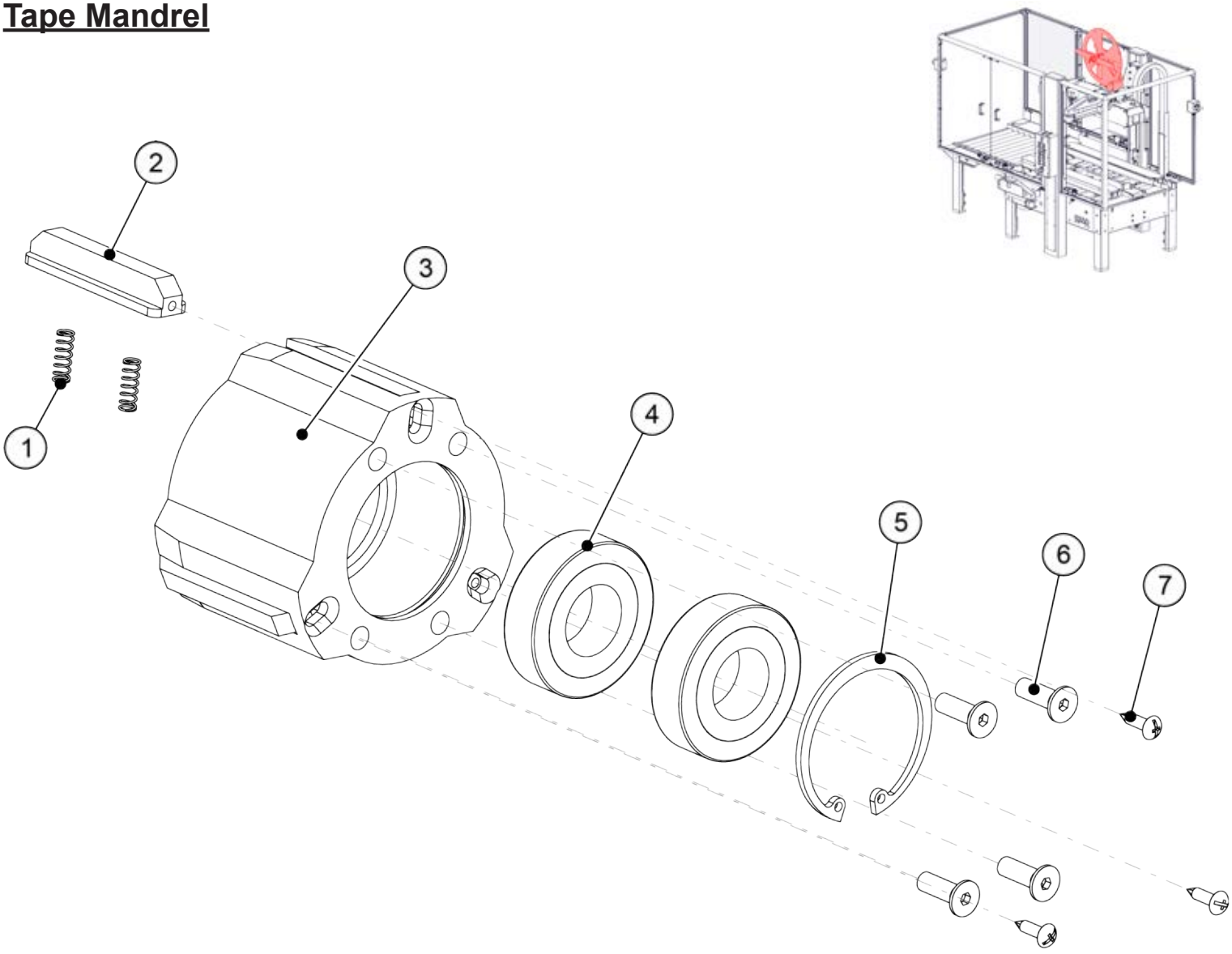



| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UPM4889 | HANDLE | 1 |
| 2 | UF3183 | SHCS M6-1 x 12mm | 2 |
| 3 | UPM5107 | CLAMPING | 1 |
| 4 | UF7024 | FHCS M5-0.8 x 8 mm | 3 |
| 5 | UPM5106 | RETAINER | 1 |
| 6 | UPM5108 | CROSS BAR | 1 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 7 | UF3814 | INTERNAL RET' RING | 1 |
| 8 | UPM5104 | FLANGE MANDREL | 1 |
| 9 | UPM4888 | BALL BEARING | 1 |
| 10 | UF3815 | RET'G RING, ID 10 | 1 |

# Appendix B

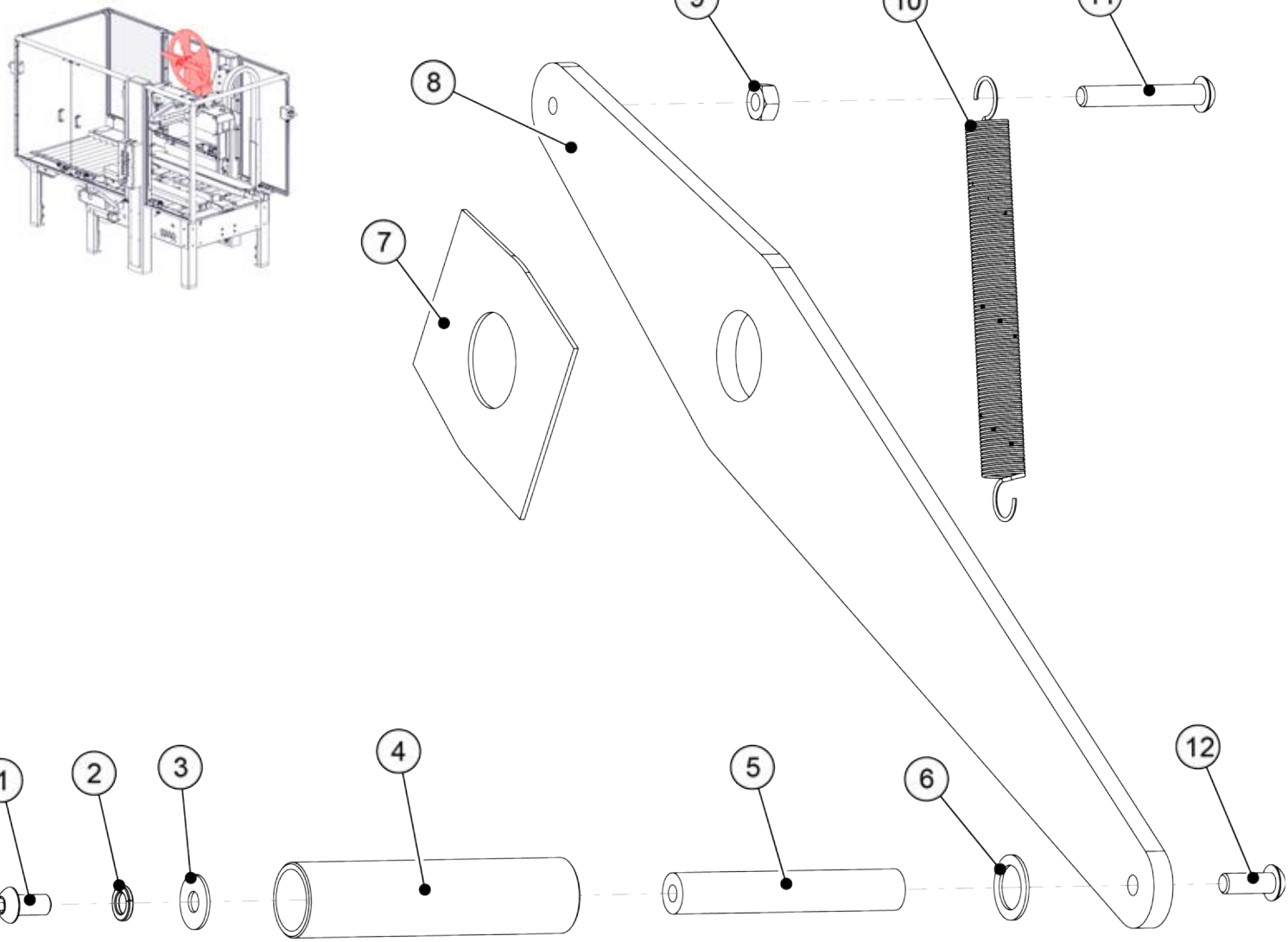
## Tape Mandrel




| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UPH1468 | COMPRESSION SPRING | 6 |
| 2 | UPM5074 | SPRAG | 3 |
| 3 | UPM5073 | MANDREL HUB | 1 |
| 4 | UPM0324 | BEARING | 2 |
| 5 | UF0101 | INTERNAL RETAINING RING, 42mm | 1 |
| 6 | UF5404 | FHCS M5-0.8×16mm | 4 |
| 7 | UF3820 | BHCS M3-0.5 SELF TAPPING | 3 |

# Appendix B

## Tape Peel Off/Brake Arm

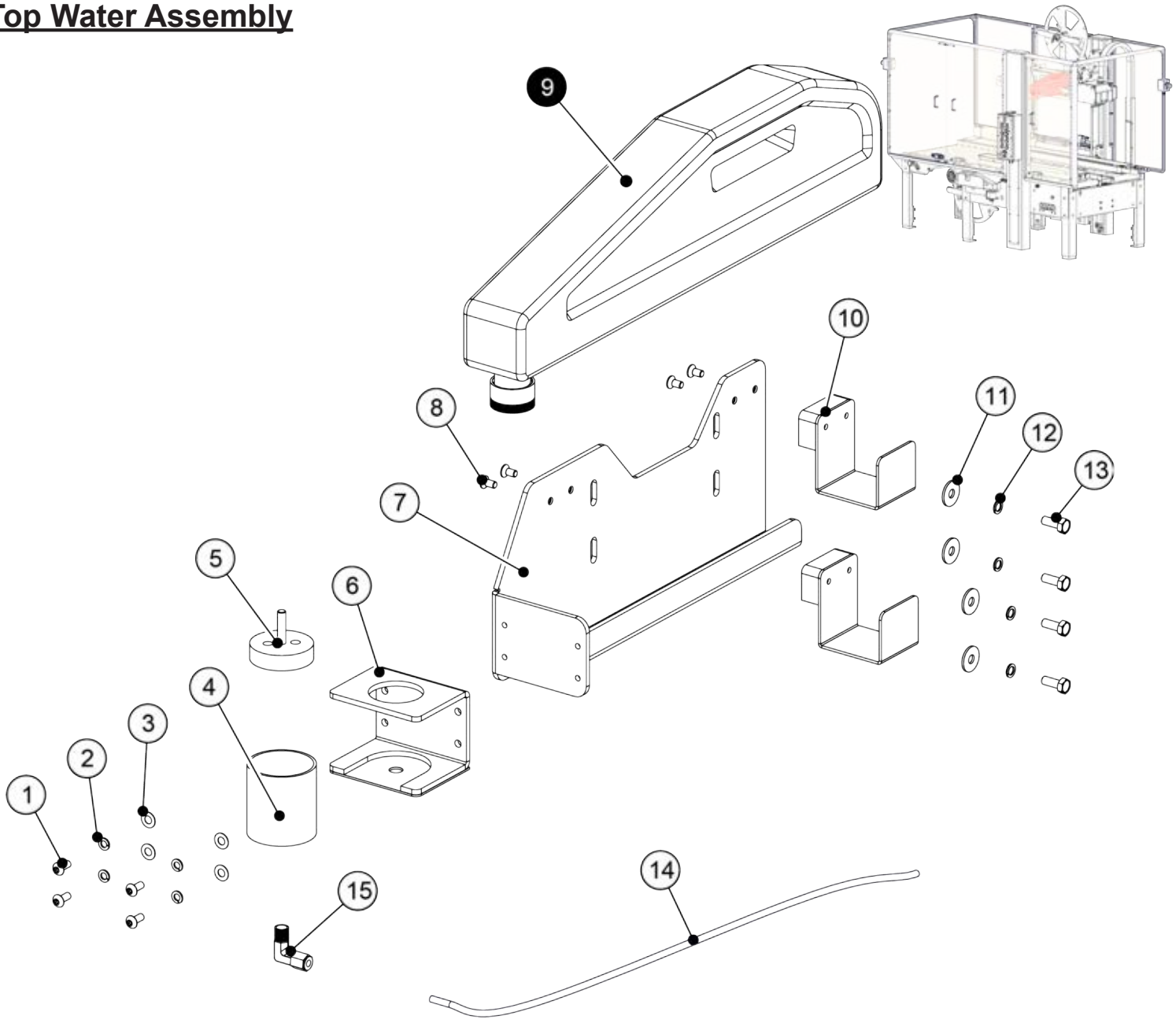



| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UF5600 | BHCS M6-1.0×12mm | 1 |
| 2 | UF6363 | M6 LW | 1 |
| 3 | UF1828 | M6 FW | 1 |
| 4 | UPH9059 | PEEL OFF ROLLER | 1 |
| 5 | UPH0949 | GUIDE ROLLER SHAFT | 1 |
| 6 | UF6336 | F.W. PTFE, 13 x 19 x 1 mm | 1 |
| 7 | UPM9802 | BREAK PAD | 1 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 8 | UPM6238 | PIVOT ARM | 1 |
| 9 | UF3361 | M6-1.0-HNR | 1 |
| 10 | UPM4498 | EXTENSION SPRING | 1 |
| 11 | UF4503 | BHCS M6-1.0×40mm | 1 |
| 12 | UF1250EV | BHCS M6-1.0×16mm | 1 |

# Appendix B

## Top Water Assembly

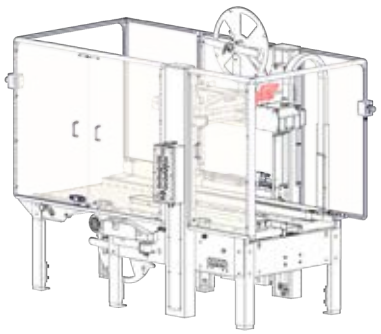


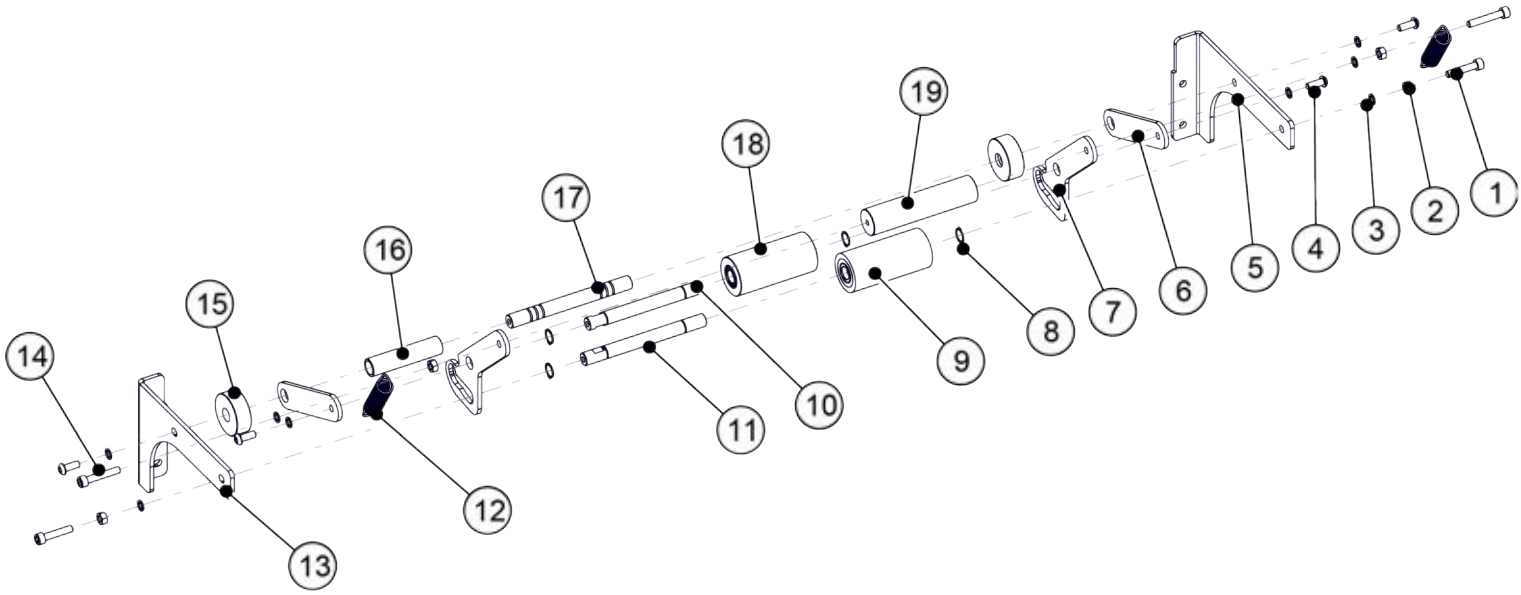

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UF7011 | BHCS M5 X 0.8 X 12mm | 4 |
| 2 | UF7021 | M5 LW | 4 |
| 3 | UF4071 | 6 x 12 x 0.5 FW | 4 |
| 4 | UPM4946 | RESERVOIR CUP | 1 |
| 5 | UPM5901 | PLUNGER | 1 |
| 6 | UPM4945 | CUP HOLDER | 1 |
| 7 | UPM5116 | FRAME | 1 |
| 8 | UF3262 | FHCS M5-0.8 x 10 mm | 4 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 9 | WST1014 | WATER BOTTLE & CAP | 1 |
| 10 | UPM5120 | WT BOTTLE HOLDER | 2 |
| 11 | UF1890 | 1/4 x 3/4 x 1/16 FW | 4 |
| 12 | UF6411 | M6 LW | 3 |
| 13 | UF3751 | HHCS M6-1.0 x 16mm | 4 |
| 14 | UPM5543 | WATER TUBE 22in (559mm) | 1 |
| 15 | UPM5151 | ELBOW FITTING | 1 |

# Appendix B

## Top Tape Clutch



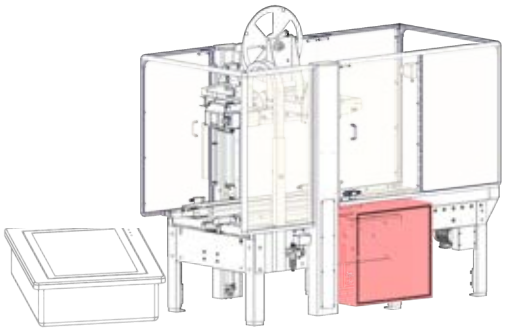


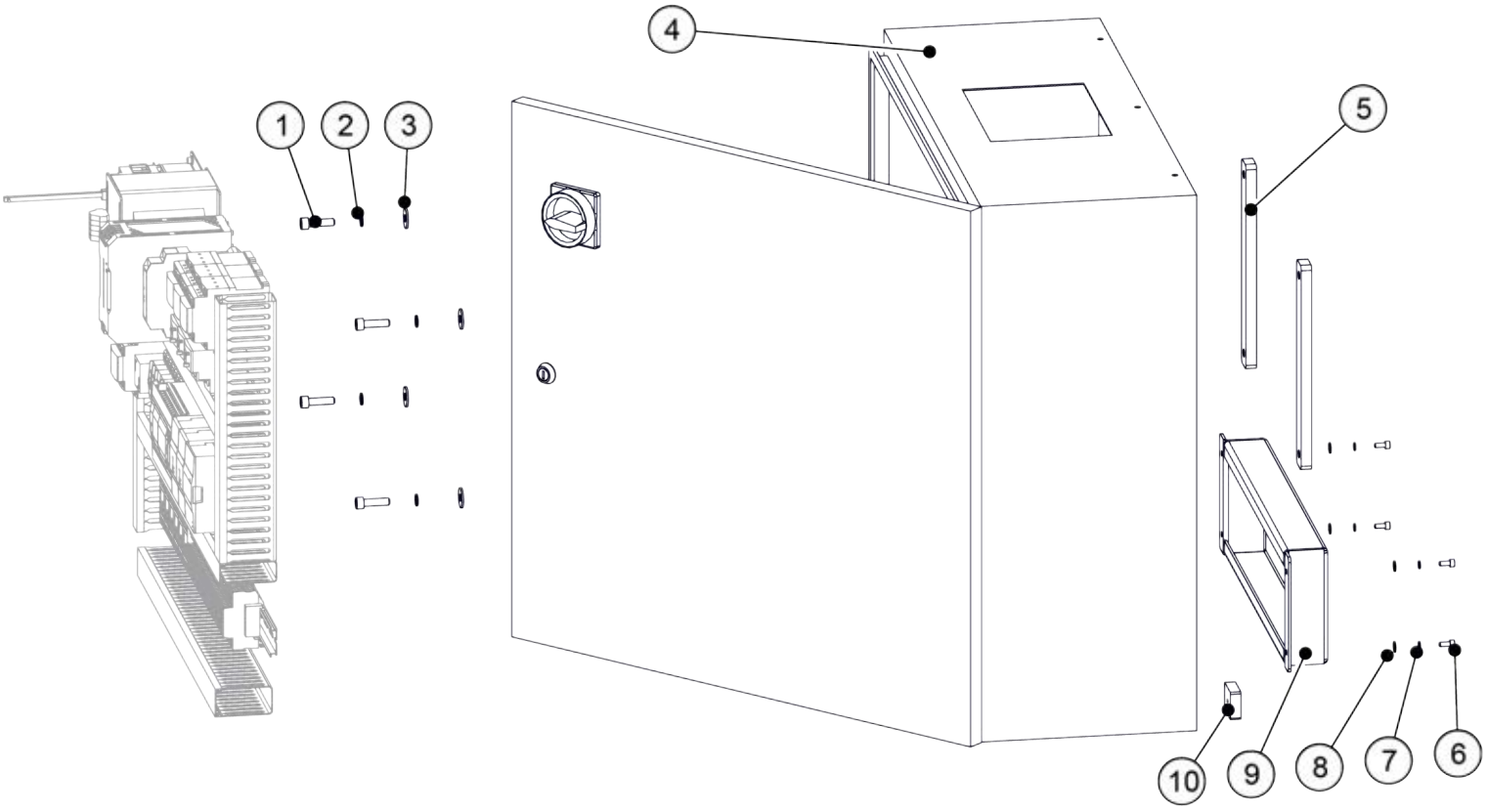

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UF3739 | SHCS M6-1 x 30mm | 2 |
| 2 | UF3637 | HNR M6-1.0 | 4 |
| 3 | UF6363 | LW M6 | 8 |
| 4 | UF6414 | BHCS M6-1 x 16mm | 4 |
| 5 | UPM5904 | RIGHT MOUNT BRACKET | 1 |
| 6 | UPM5908 | PIVOT ARM | 2 |
| 7 | UPM5910 | CLAMP ARM | 2 |
| 8 | UF3558 | RETAINING RING 12mm | 4 |
| 9 | UAM0033 | CLUTCH ROLLER ASSEM | 1 |
| 10 | UPM5907 | PINCH ROLLER SHAFT | 1 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 11 | UPM5906 | CLUTCH ROLLER SHAFT RSA | 1 |
| 12 | UPM5999 | SPRING | 2 |
| 13 | UPM5905 | LEFT MOUNT BRACKET | 1 |
| 14 | UF0850 | SHCS BB M6-1 m 35mm | 2 |
| 15 | UPM2485 | ADJUSTMENT RING | 2 |
| 16 | UPM4667 | IDLER ROLLER | 1 |
| 17 | UPM5903 | PIVOT SHAFT RSA | 1 |
| 18 | UAM0034 | PINCH ROLLER ASSEM | 1 |
| 19 | UPM5909 | CLAMP ARM HANDLE | 1 |

# Appendix B

## Electrical Cabinet



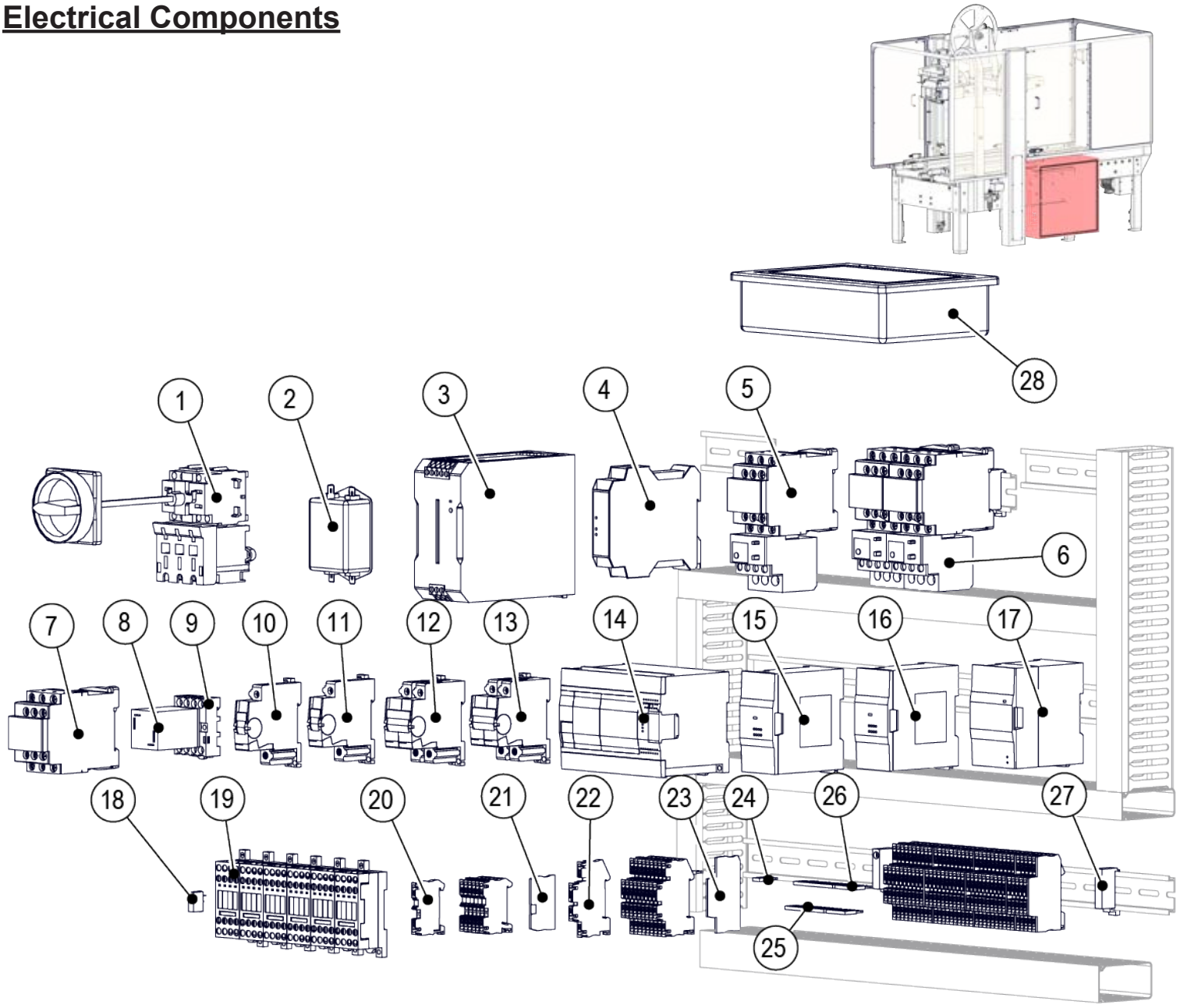



| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UF0099 | SHCS M8-1.25 x 30mm | 4 |
| 2 | UF3640 | M8 LW | 4 |
| 3 | UF0113 | M8 FW | 4 |
| 4 | UPM6173 | ELECTRICAL CABNET | 1 |
| 5 | UPM6174 | ELEC. CAB. MOUNT BAR | 2 |
| 6 | UF7003 | SHCS M5-0.8 x 12mm | 4 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 7 | UF7021 | M5 LW | 4 |
| 8 | UF1827 | M5 FW | 4 |
| 9 | UPM6175 | ELEC. CAB. COVER | 1 |
| 10 | UPM6176 | ELEC. CAB. GROUND BLOCK | 1 |

# Appendix B

## Electrical Components

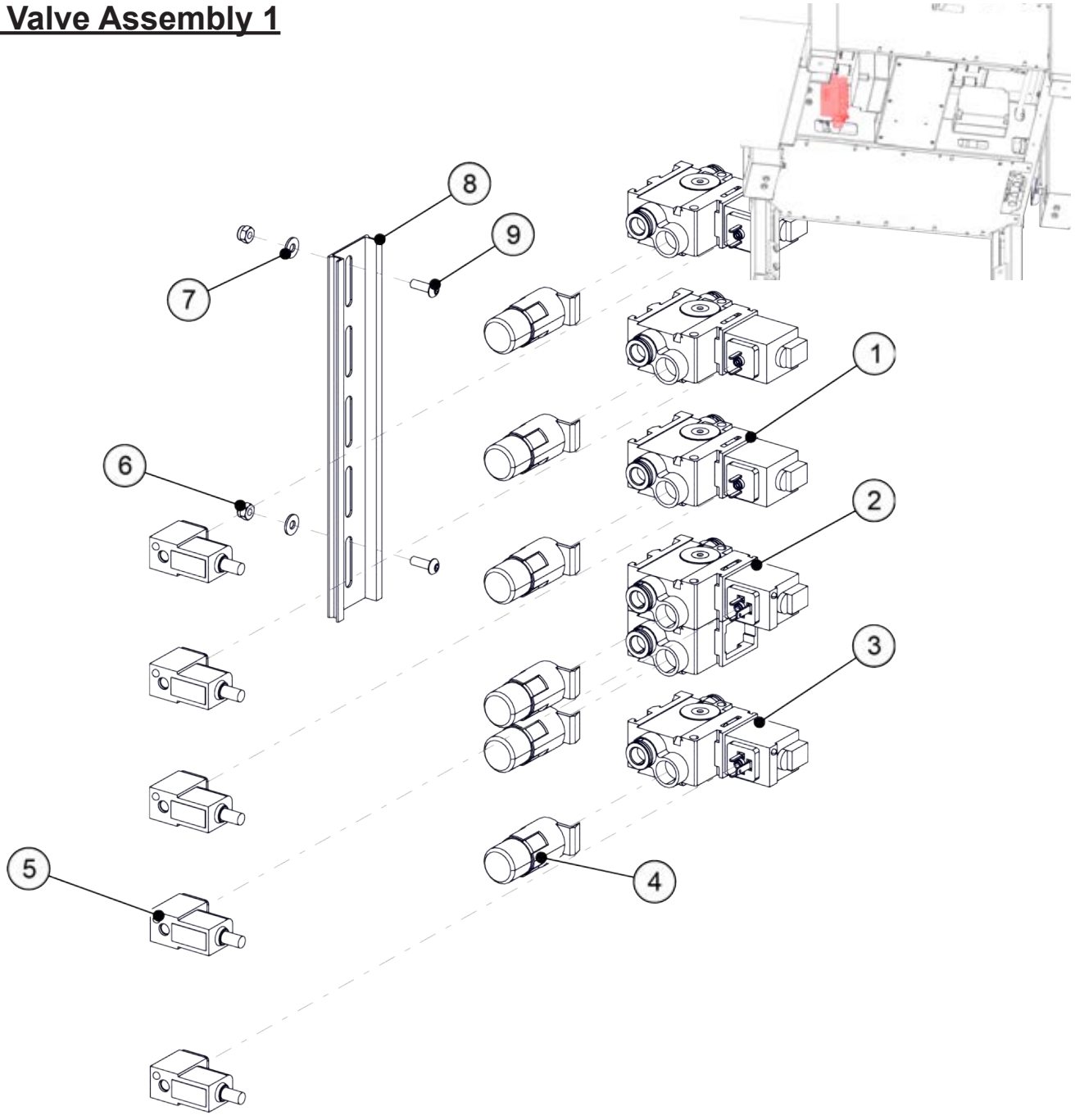



| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UPM6178 | POWER SWITCH | 1 |
| 2 | UPM6186 | FILTER | 1 |
| 3 | UPM4912 | POWER SUPPLY 24V | 1 |
| 4 | UPM6187 | SAFETY MODULE | 1 |
| 5 | UPM6189 | ELECTROMAGNETIC CONTACTOR (AC110V) | 3 |
| 6 | UPM4914 | MOTOR OVERLOAD RELAYS | 3 |
| 7 | UPM6188 | ELECTROMAGNETIC CONTACTOR (DC24V) | 1 |
| 8 | UPM6190 | AC120 RELAY, MECHANICAL INDICATOR | 1 |
| 9 | UPM6191 | RELAY SOCKET, DIN RAIL, 8 PIN | 1 |
| 10 | UPM4911 | MINIATURE CIRCUIT BREAKER 2A | 1 |
| 11 | UPM4910 | MINIATURE CIRCUIT BREAKER 4A | 1 |
| 12 | UPM7635 | MINIATURE CIRCUIT BREAKER 2p, 7A | 1 |
| 13 | UPM7766 | MINIATURE CIRCUIT BREAKER 2p, 3A | 1 |
| 14 | UPM4909 | PLC | 1 |
| 15 | UPM6183 | PLC EXPANSION MODULE | 1 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 16 | UPM6184 | PLC EXPANSION MODULE | 1 |
| 17 | UPM4907 | PLC ANALOG OUTPUT ADD-ON CARD | 1 |
| 18 | UPM4915 | PCB POWER RELAYS | 24 |
| 19 | UPM4922 | RELAY OUTPUT TERMINAL BLOCK | 6 |
| 20 | UPM6194 | TERMINAL BLOCK, GROUND | 7 |
| 21 | UPM6196 | END COVER | 1 |
| 22 | UPM6193 | DOUBLE LEVEL TERMINAL BLOCK | 45 |
| 23 | UPM6195 | END COVER | 5 |
| 24 | UPM6197 | 2 PIN BRIDGE | 1 |
| 25 | UPM6199 | 10 PIN BRIDGE | 2 |
| 26 | UPM6198 | 5 PIN BRIDGE | 2 |
| 27 | UPM7440EV | DIN RAIL ANCHOR | 4 |
| 28 | UPM6177 | HMI, SCREEN | 1 |

# Appendix B

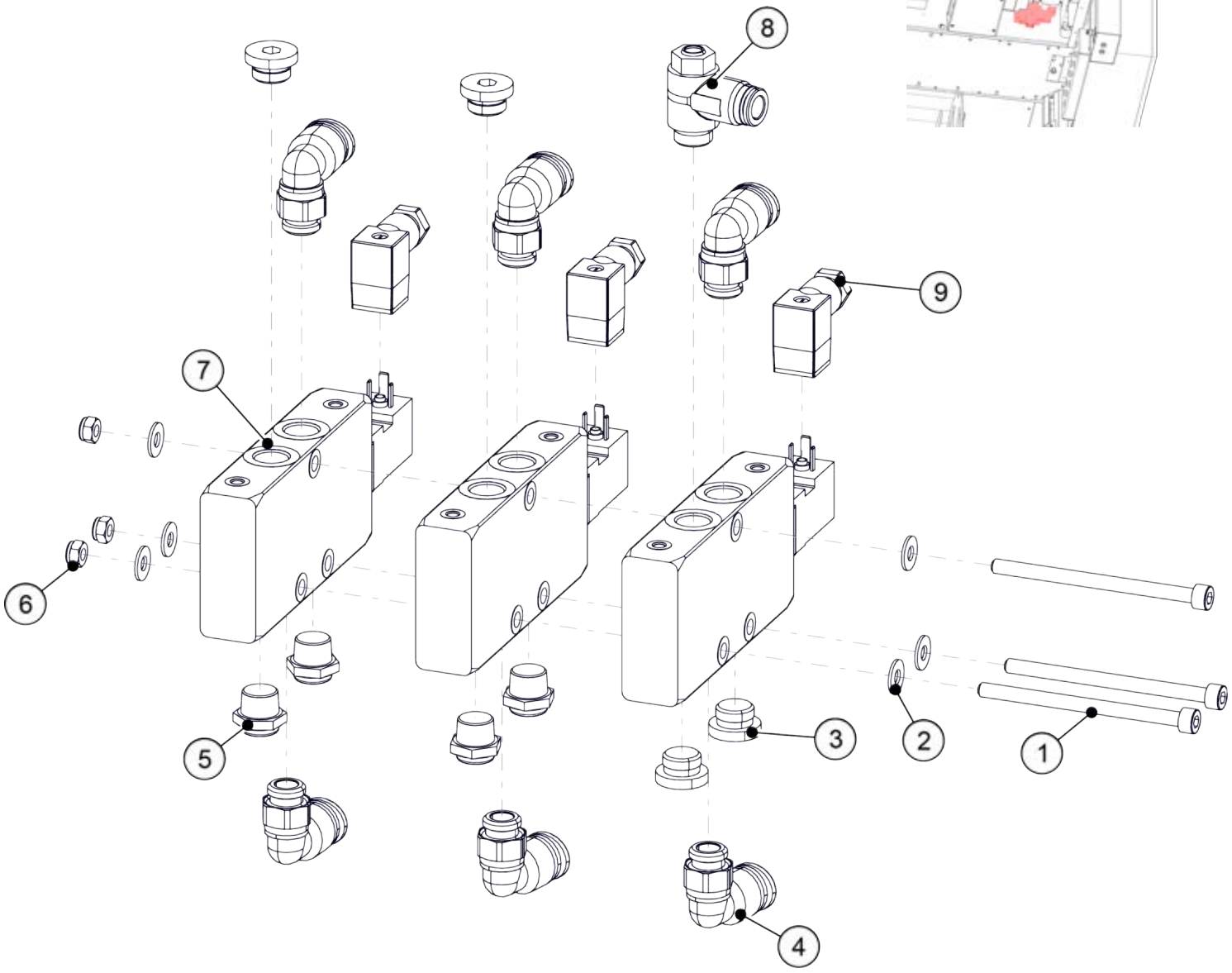
## Pneumatic Valve Assembly 1




| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UPM3395 | VALVE 579 3/2-NC 24VDC | 3 |
| 2 | UPM3394 | VALVE 579 5/2 MONOSTABLE 24 VDC | 1 |
| 3 | UPM3393 | VALVE 579 3/2-NO 24 VDC | 1 |
| 4 | UPM3391 | SILENCER 579 VALVE | 6 |
| 5 | UPM3392 | ELECT. CONN WITH LED 579 VALVE | 5 |
| 6 | UF4324 | LOCK-NUT M4 | 2 |
| 7 | UF6339 | FW M4 | 2 |
| 8 | UPM8080 | DIN RAIL 185mm | 1 |
| 9 | UF4325 | BHCS M4-0.7 x 12mm | 2 |

# Appendix B

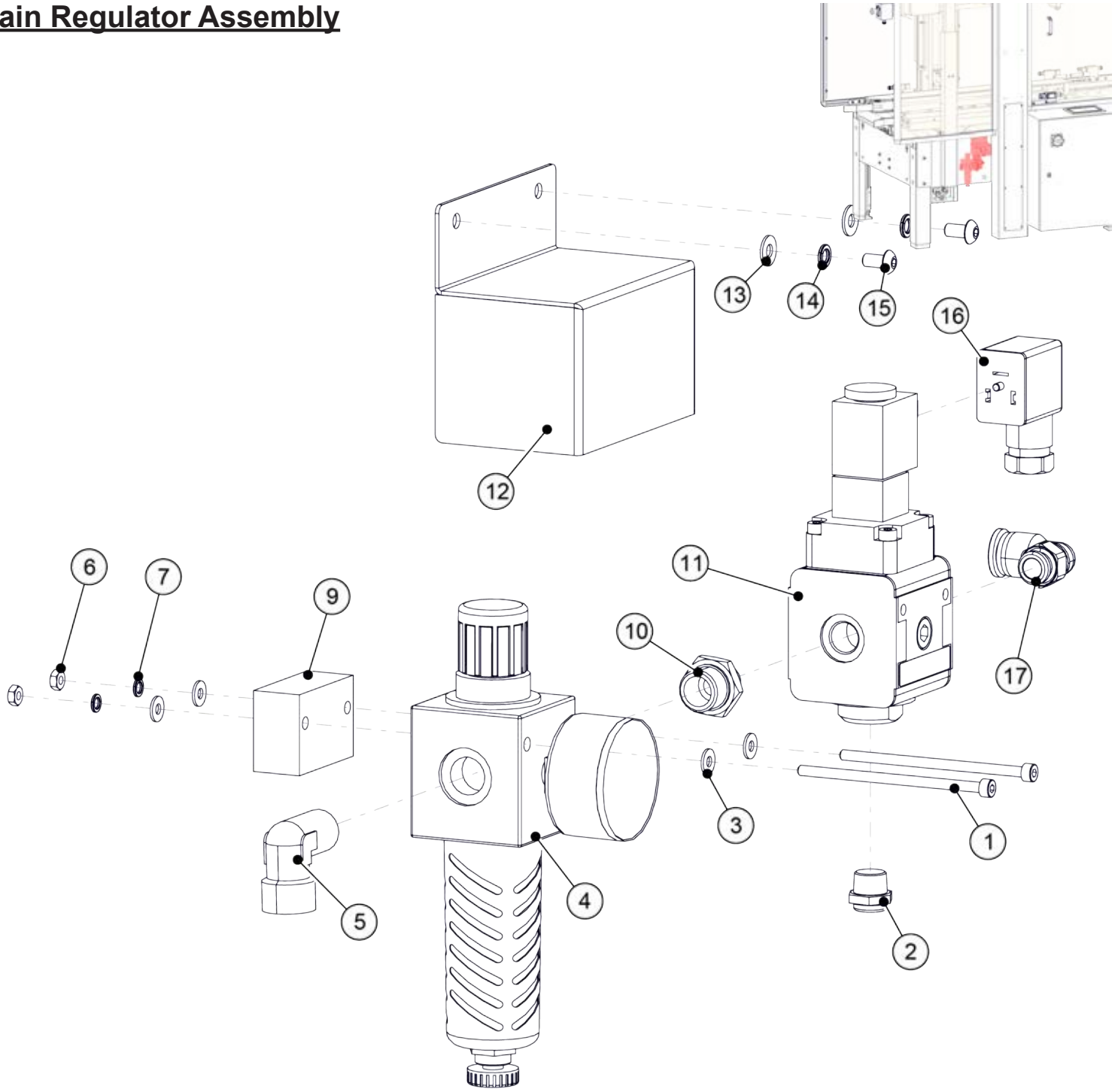
## Pneumatic Valve Assembly 2




| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UF0044 | SHCS M5-0.8 x 75mm | 3 |
| 2 | UF6340 | FW M5 | 6 |
| 3 | UPM3133 | PLUG | 4 |
| 4 | UPM5151 | ELBOW FITTING, 10 ID | 6 |
| 5 | UPM5146 | SILENCER | 4 |
| 6 | UF3393 | LOCK-NUT M5 | 3 |
| 7 | UPM6375 | PNEUMATIC VALVE | 3 |
| 8 | UPM5150 | CHECK VALVE | 1 |
| 9 | UPM6376 | PNEUMATIC 90 DEG QUICK CONNECT | 3 |

# Appendix B

## Main Regulator Assembly

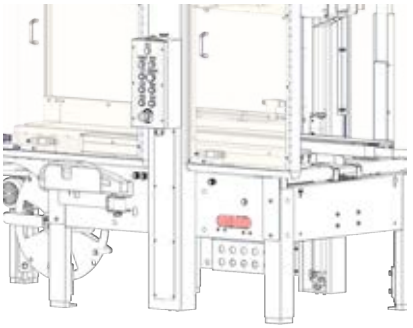


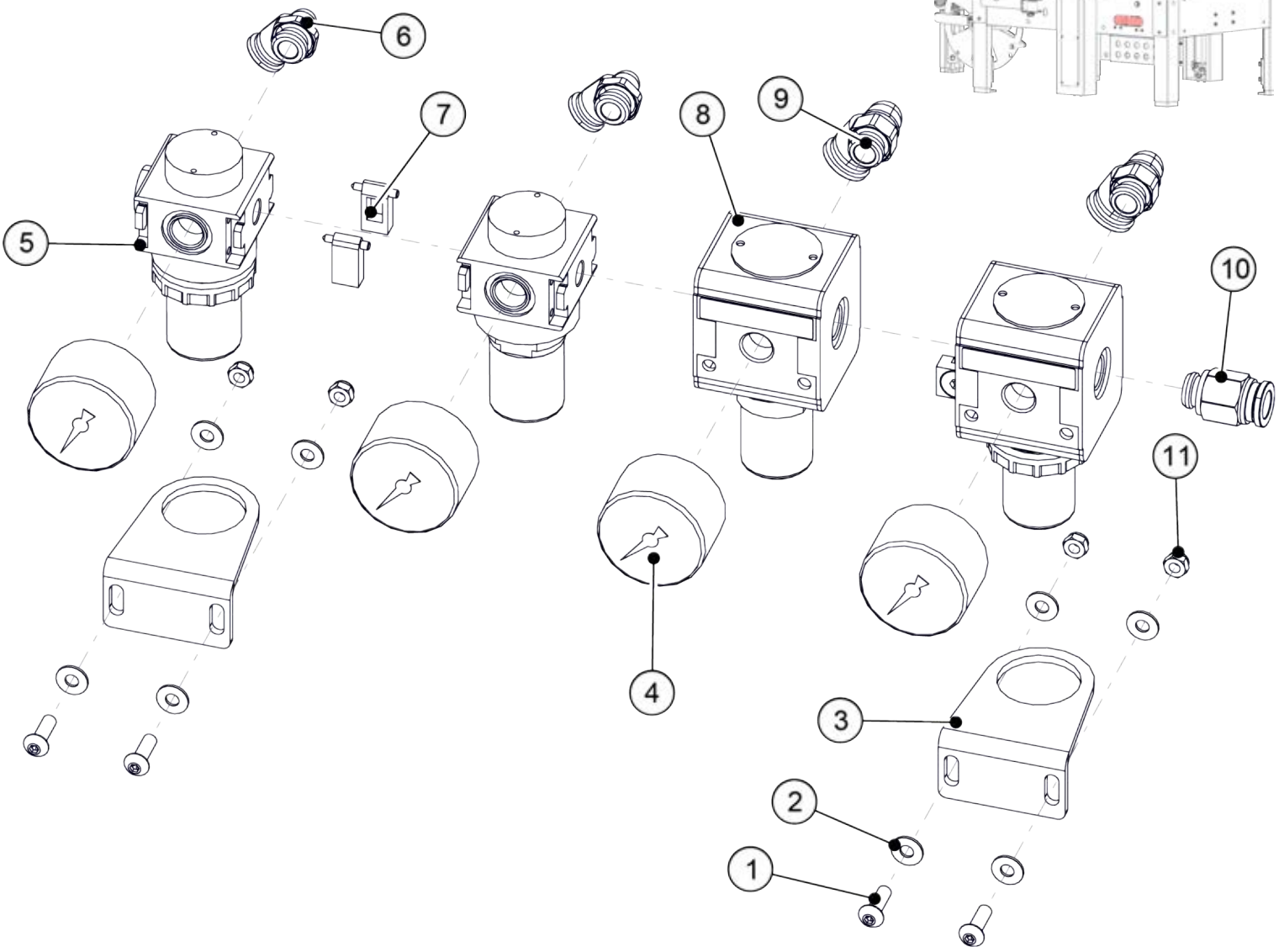

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UF3694 | SHCS M4-0.7 x 80mm | 2 |
| 2 | UPM6171 | SILENCER | 1 |
| 3 | UF3710 | FW M4 | 4 |
| 4 | UPM5977 | REGULATOR | 1 |
| 5 | UPM5982 | 90° ELBOW | 1 |
| 6 | UF6376 | M4 LOCK NUT | 2 |
| 7 | UF3749 | LW M4 | 2 |
| 9 | UPM5976 | SPACER | 1 |
| 10 | UPM5983 | CONNECTOR, STRAIGHT | 1 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 11 | UPM5978 | ELECTRONIC DUMP VALVE | 1 |
| 12 | UPM5975 | COIL CONNECTOR COVER | 1 |
| 13 | UF1827 | FW M5 | 2 |
| 14 | UF7021 | LW M5 | 2 |
| 15 | UF3686 | BHCS M5-0.8 x 10mm | 2 |
| 16 | UPM5979 | ELECTRIC CONNECTOR | 1 |
| 17 | UPM5984 | 90° QUICK CONNECTOR | 1 |

# Appendix B

## Sub Regulator Assembly

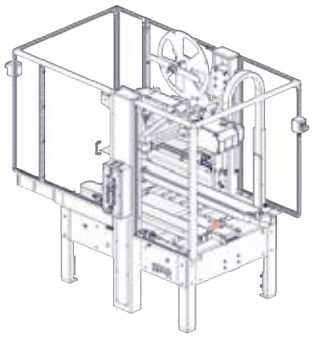


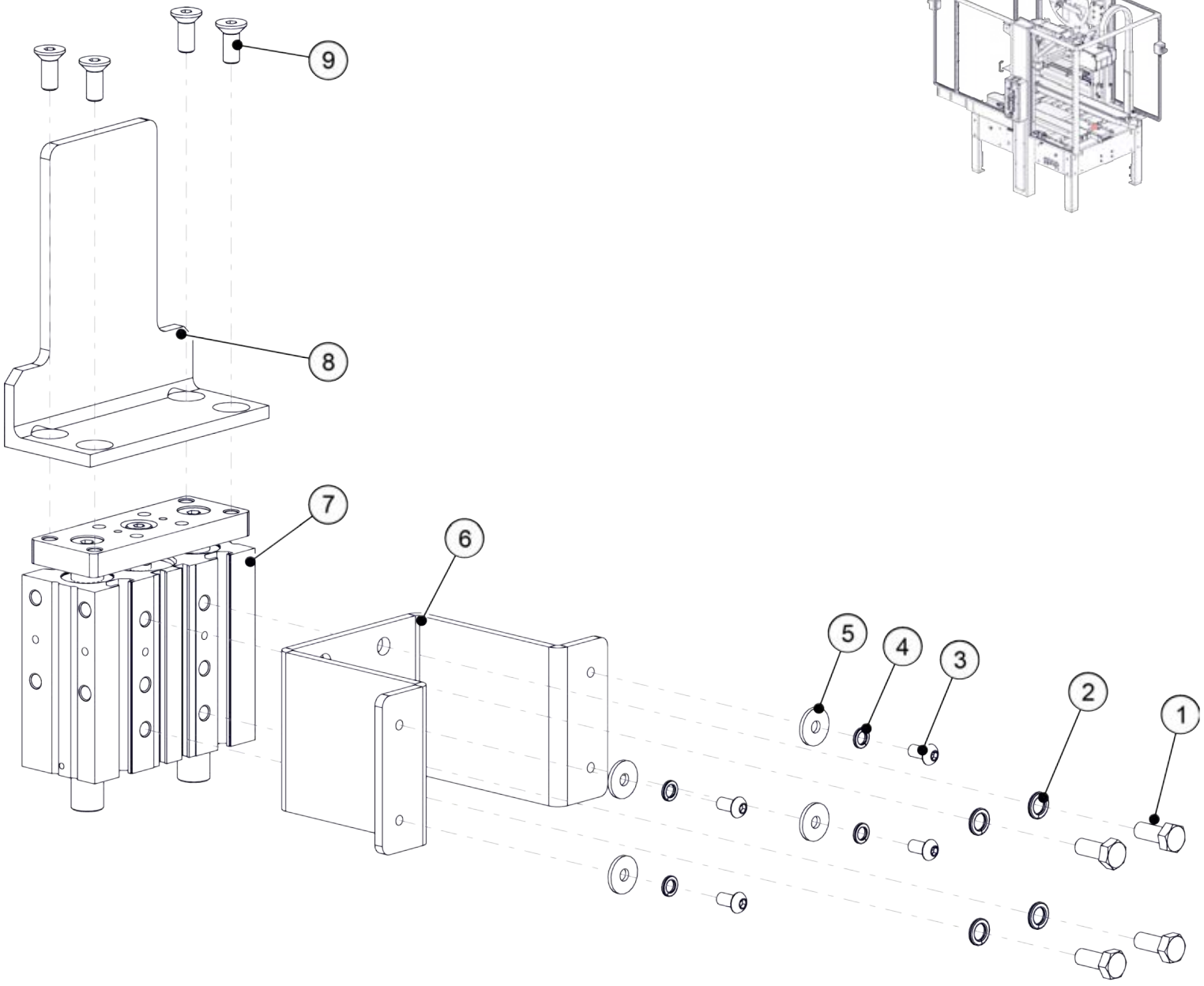



| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UF7035 | BHCS M5-0.8 x 16mm | 4 |
| 2 | UF6340 | FW M5 | 8 |
| 3 | UPM3271 | REGULATOR BRACKET | 2 |
| 4 | UPM3273 | PRESSURE GAUGE G1/8 - 6 BAR | 4 |
| 5 | UPM3268 | PRESSURE REGULATOR SMALL | 2 |
| 6 | UPM3124 | 90 DEG QUICK CONNECT | 2 |
| 7 | UPM3270 | BLOCK ASSEMBLY KIT | 1 |
| 8 | UPM4880 | PRESSURE REGULATOR | 2 |
| 9 | UPM5151 | ELBOW FITTING, 10 ID | 2 |
| 10 | UPM0350 | FITTING STRAIGHT | 1 |
| 11 | UF3394 | LOCK-NUT M5 | 4 |

# Appendix B

## Gate Assembly

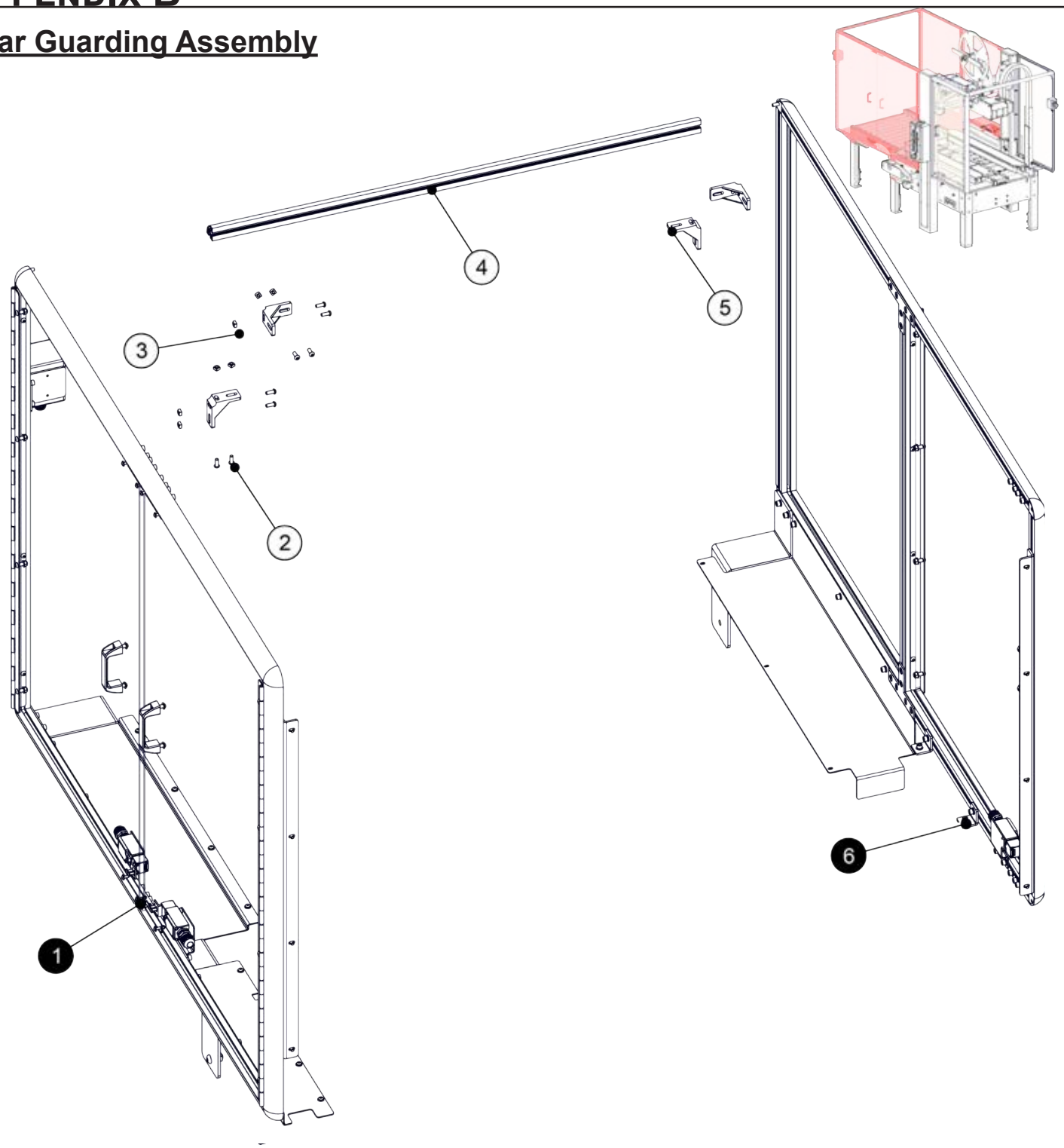





| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UF6309 | HHCS M8-1.25 × 20mm | 4 |
| 2 | UF3640 | LW M8 | 4 |
| 3 | UF3278 | BHCS M6-1.0 x 12mm | 4 |
| 4 | UF6411 | LW M6 | 4 |
| 5 | UF0216 | FW M6 | 4 |
| 6 | UPM5971 | STOP BRACKET | 1 |
| 7 | UPM3804 | GPC GUIDE CYLINDER | 1 |
| 8 | UPM7513 | GATE FOR BOSCH GUIDED CYL | 1 |
| 9 | UF3264 | FHCS M8-1.25 × 20mm | 4 |

# Appendix B

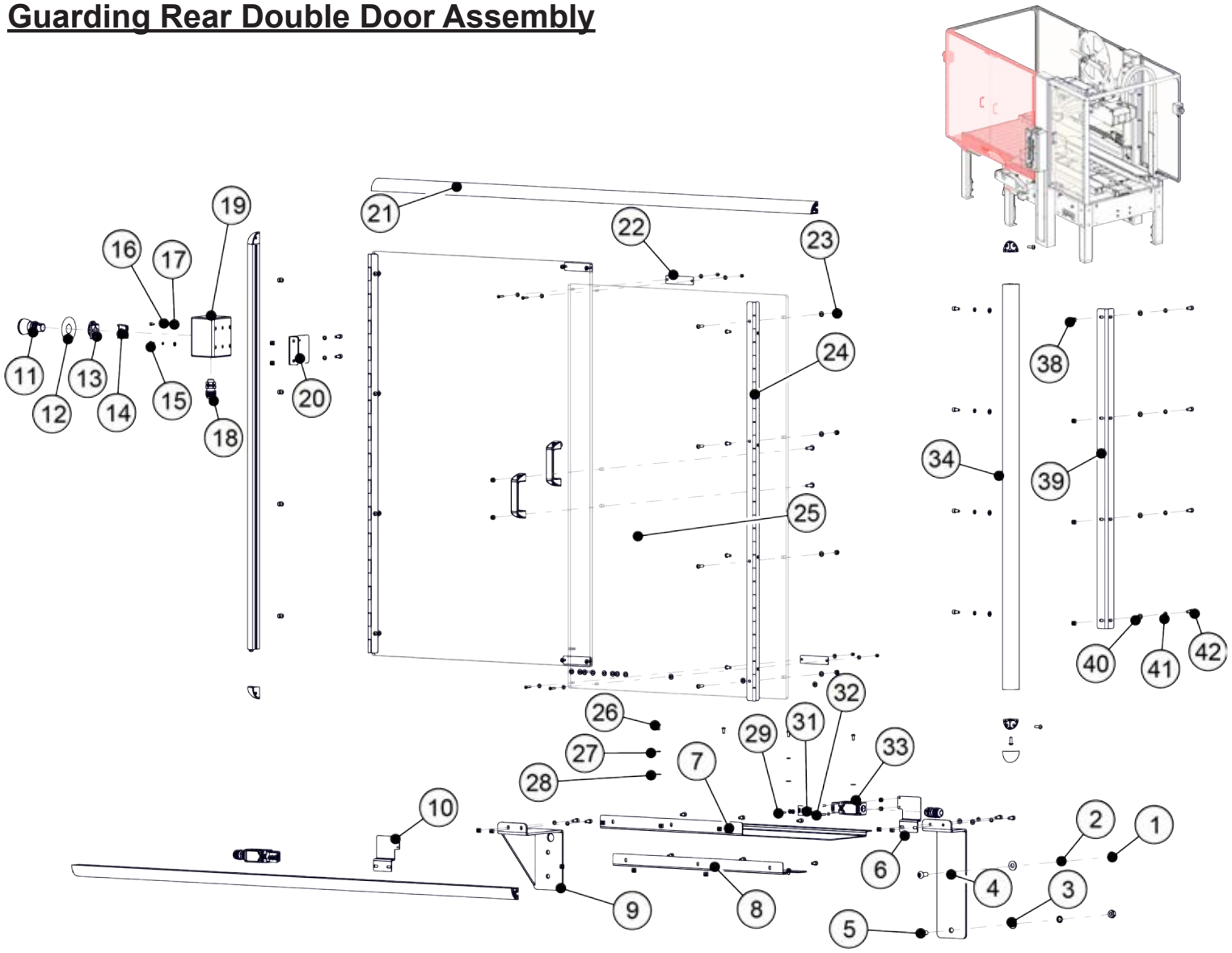
## Rear Guarding Assembly




| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UAM0522 | DOOR GUARDING DOUBLE DOOR ASSEMBLY | 1 |
| 2 | UF6414 | BHCS M6-1.0 x 16mm | 8 |
| 3 | UPM0687EV | DROP IN T-NUT M6 | 8 |
| 4 | UPM8225 | DOOR GUARDING FRAME 1014mm | 1 |
| 5 | UPM4398EV | DOOR GUARDING CORNER BRACKET | 4 |
| 6 | UAM0523 | DOOR GUARDING HALF DOOR ASSEMBLY | 1 |

# Appendix B

## Guarding Rear Double Door Assembly

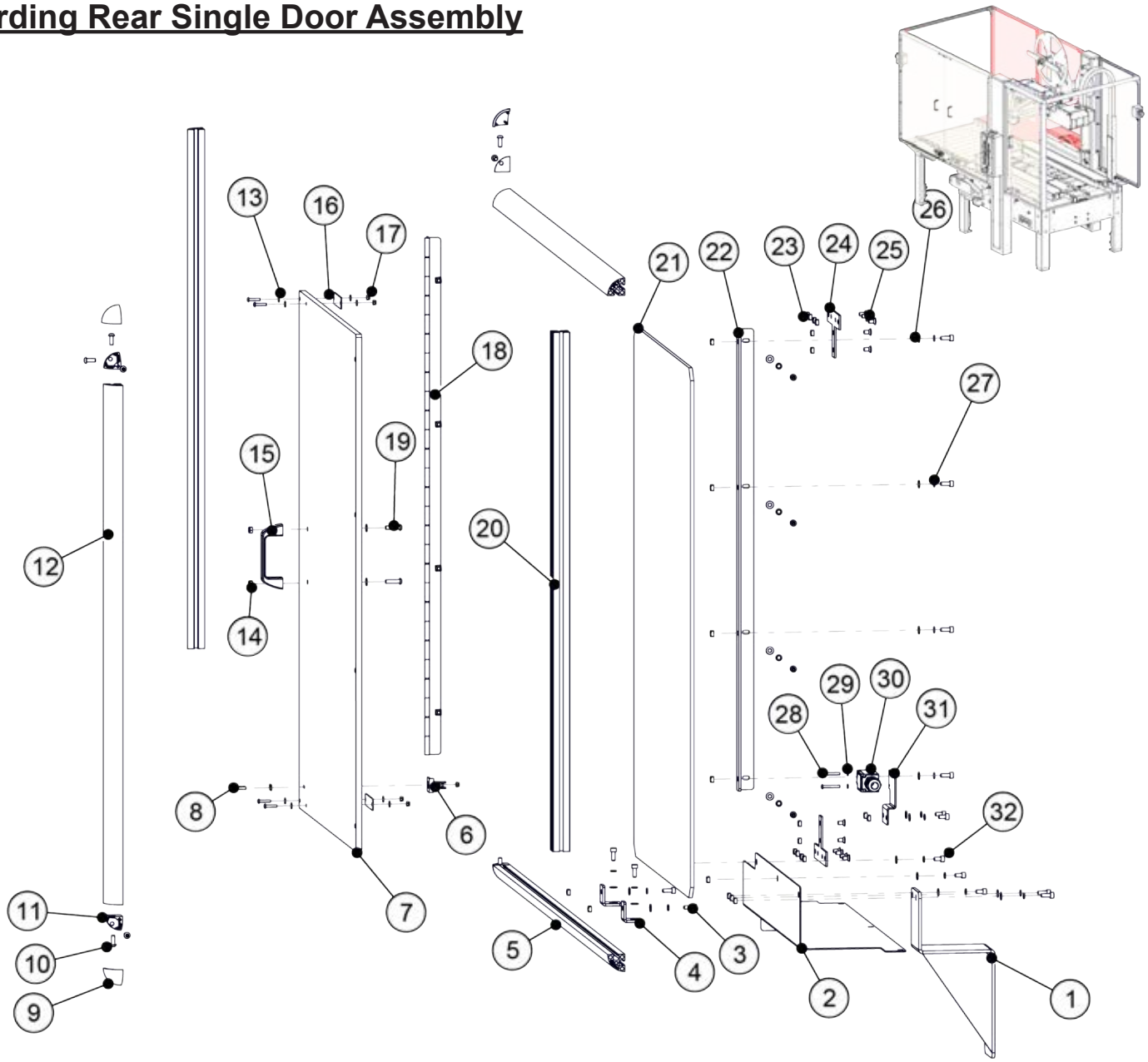



| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UF6314 | HNR M10-1.5 | 2 |
| 2 | UF6371 | LW M10 | 2 |
| 3 | UF3680 | FW M10 | 2 |
| 4 | UPM6289 | DOOR GUARDING LOWER MOUNT | 1 |
| 5 | UF3757 | BHCS M10-1.5 x 25mm | 2 |
| 6 | UPM6288 | GUARDING LOWER MOUNT SM-L | 1 |
| 7 | UPM6289 | DOOR GUARDING LOWER MOUNT LG | 1 |
| 8 | UPM8229 | DOOR GUARDING BTM FILL PLATE | 1 |
| 9 | UPM6287 | DOOR GUARDING LOWER BRACKET | 1 |
| 10 | UPM6828 | GUARDING LOWER MOUNT SM-R | 1 |
| 11 | UPM4816 | EMERGENCY STOP BUTTON | 1 |
| 12 | UPM6045 | E-STOP LABEL | 1 |
| 13 | UPM7630 | LATCH | 1 |
| 14 | UPM4720 | NC CONTACT | 1 |
| 15 | UF0869 | SHCS M4-0.7 x 8mm | 2 |
| 16 | UF3681 | M4 LW | 6 |
| 17 | UF6339 | FW M4 | 20 |
| 18 | UPM5873 | CABLE GLAND | 2 |
| 19 | UPM6170 | BUTTON BOX | 1 |
| 20 | UPM6293 | GUARDING E-STOP MOUNT BRACKET | 1 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 21 | UPM6826 | DOOR GUARDING FRAME 1356mm | 2 |
| 22 | UPM4400EV | MAGNET PLATE | 4 |
| 23 | UF3391 | LOCK-NUT M6 | 4 |
| 24 | UPM6279 | DOOR HINGE | 2 |
| 25 | UPM6287 | DOOR GUARDING DOOR PANEL | 2 |
| 26 | UF7011 | BHCS M5-0.8 x 12mm | 4 |
| 27 | UF7021 | LW M5 | 4 |
| 28 | UF6340 | FW M5 | 4 |
| 29 | UF4323 | BHCS M4-0.7 x 20mm | 4 |
| 31 | UPM6283 | DOOR INTERLOCK KEY | 2 |
| 32 | UF1213 | BHCS M4-0.7 x 30mm | 2 |
| 33 | UPM6286 | DOOR SAFETY INTERLOCK | 2 |
| 34 | UPM8225 | DOOR GUARDING FRAME 1014mm | 2 |
| 37 | UPM2922EV | CORNER CAP FINISHING | 4 |
| 38 | UPM0687EV | DROP IN T-NUT M6 | 30 |
| 39 | UPM6285 | DOOR GUARDING VERTICAL MOUNT | 1 |
| 40 | UF6341 | FW M6 | 25 |
| 41 | UF6411 | LW M6 | 15 |
| 42 | UF0830 | BHCS M6-1.0 x 16mm | 15 |

# Appendix B

## Guarding Rear Single Door Assembly

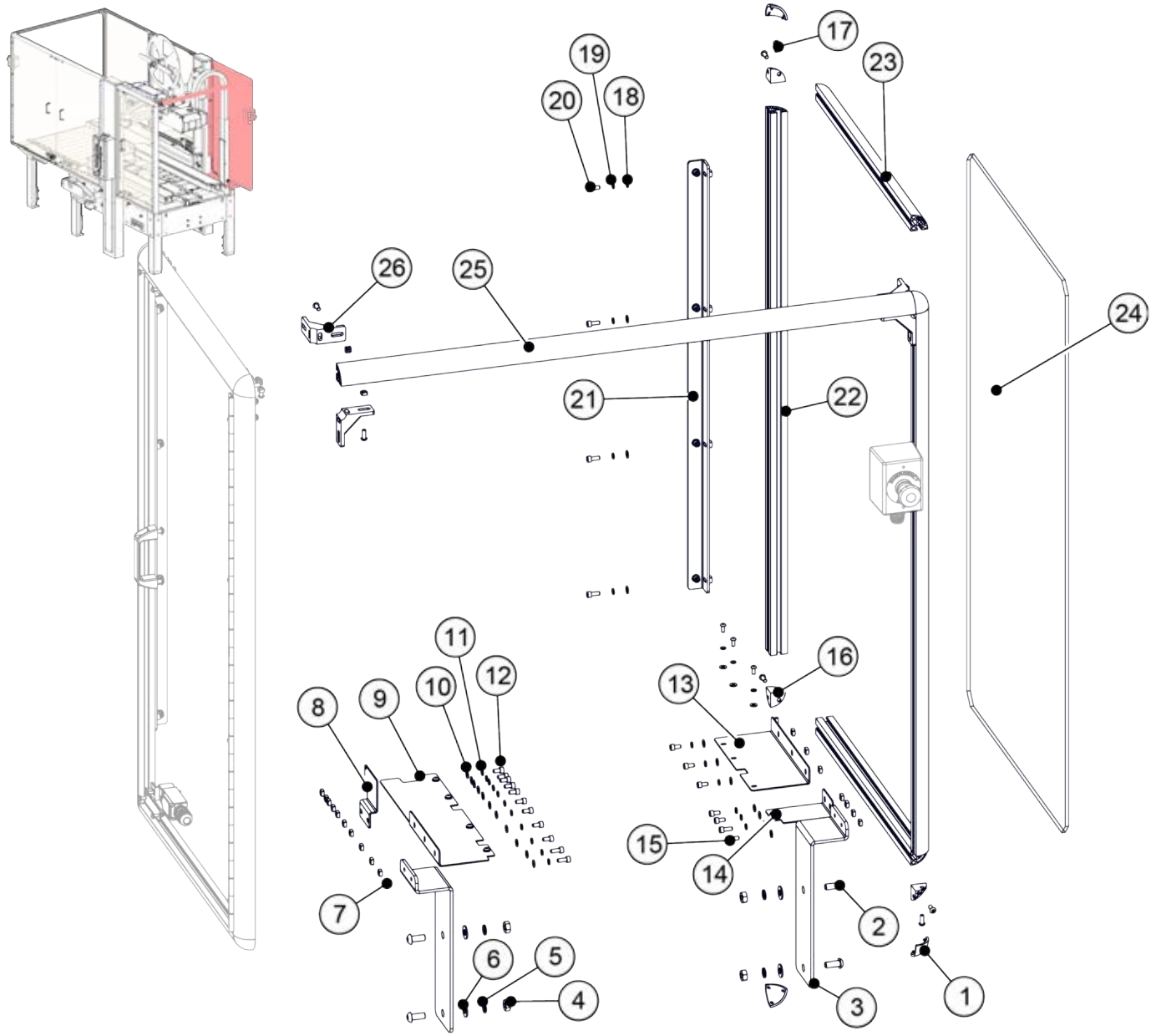



| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UPM8230 | DOOR GUARDING LOWER BRACKET | 1 |
| 2 | UPM8231 | DOOR GUARDING LOWER MOUNT | 1 |
| 3 | UF3187 | SHCS M6-1.0 x 16mm | 14 |
| 4 | UPM8232 | DOOR GUARDING LWR BRACKET SM | 2 |
| 5 | UPM6826 | DOOR GUARDING FRAME 1356mm | 2 |
| 6 | UPM6283 | DOOR INTERLOCK LATCH | 1 |
| 7 | UPM8233 | DOOR GUARDING DOOR PANEL | 1 |
| 8 | UF4323 | BHCS M4-0.7 x 20mm | 6 |
| 9 | UPM2922EV | CORNER CAP FINISHING | 4 |
| 10 | UF1250EV | BHCS M6-1.0 x 16mm | 9 |
| 11 | UPM0614EV | CORNER BLOCK | 4 |
| 12 | UPM8234 | DOOR GUARDING FRAME 901Lmm | 2 |
| 13 | UF6339 | FW M4 | 10 |
| 14 | UF3391 | LOCK-NUT M6 | 2 |
| 15 | UPM0794EV | HANDLE | 1 |
| 16 | UPM4400EV | MAGNET PLATE | 2 |
| 17 | UF4324 | LOCK-NUT M4 | 6 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 18 | UPM6279 | DOOR HINGE | 1 |
| 19 | UF1212 | BHCS M6-1.0 x 25mm | 2 |
| 20 | UPM8235 | CENTER BEAM CONNECTOR 901mm | 1 |
| 21 | UPM8236 | DOOR GUARDING FIXED PANEL | 1 |
| 22 | UPM6285 | DOOR GUARDING VERTICAL MOUNT | 1 |
| 23 | UPM0687EV | DROP IN T-NUT M6 | 28 |
| 24 | UPM6809 | DOOR GUARDING T BRACKET | 2 |
| 25 | UF6353 | FHCS M6-1.0 x 12mm | 12 |
| 26 | UF6341 | FW M6 | 21 |
| 27 | UF6411 | LW M6 | 19 |
| 28 | UF1213 | BHCS M4-0.7 x 30mm | 2 |
| 29 | UF3749 | LW M4 | 2 |
| 30 | UPM6286 | DOOR SAFETY INTERLOCK | 1 |
| 31 | UPM6288 | DOOR GUARDING LOWER MOUNT L | 1 |
| 32 | UF3183 | SHCS M6-1.0 x 12mm | 5 |

# Appendix B

## Guarding Front Fixed Assembly

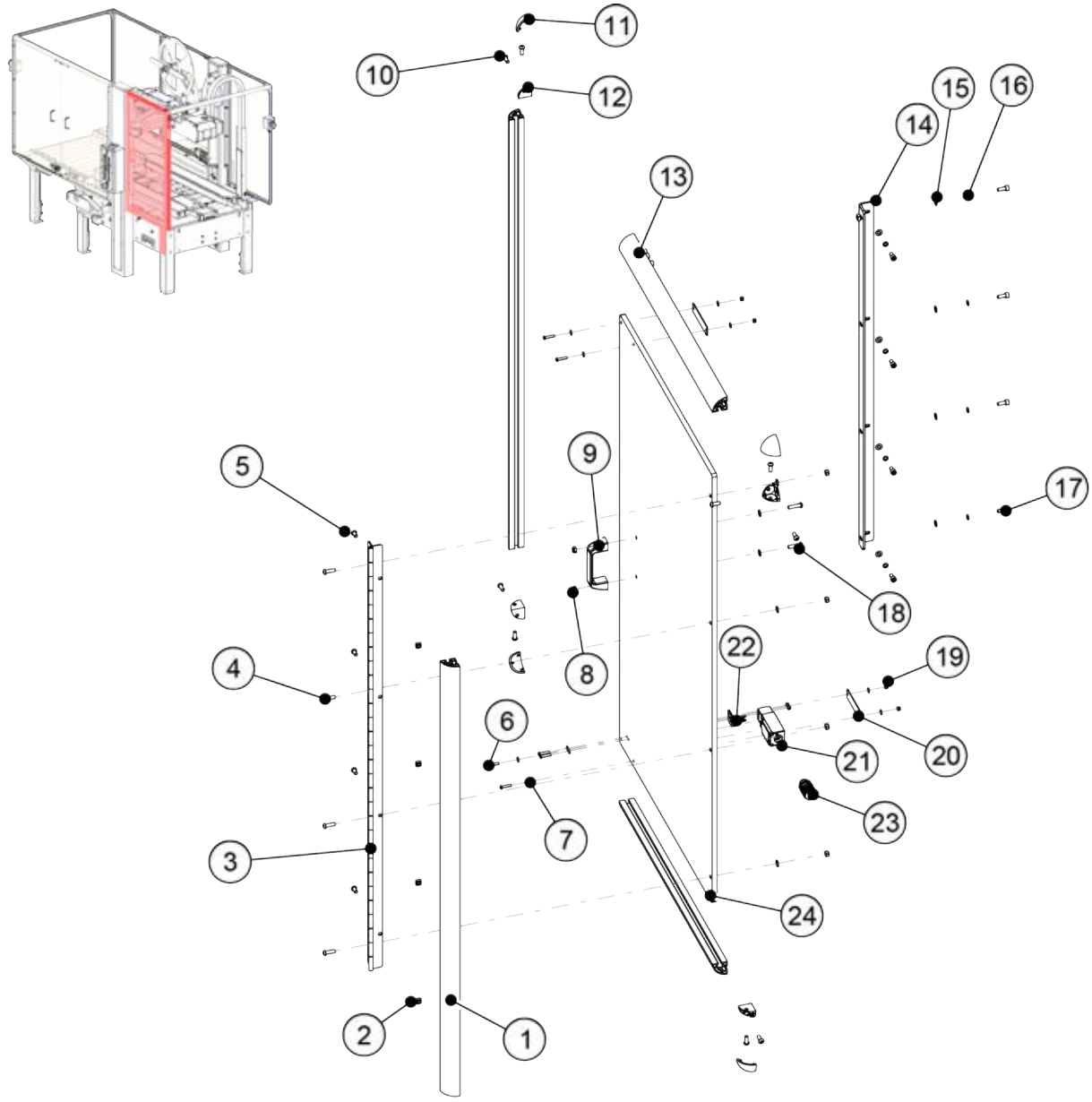



| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UPM2922EV | CORNER CAP FINISHING | 4 |
| 2 | UF3757 | BHCS M10-1.5 x 25mm | 4 |
| 3 | UPM6289 | DOOR GUARDING LOWER MOUNT LG | 2 |
| 4 | UF3709 | NUT M10 | 4 |
| 5 | UF3743 | LW M10 | 4 |
| 6 | UF3680 | FW M10 | 4 |
| 7 | UPM0687EV | M6 INSERT NUT | 30 |
| 8 | UPM8228 | DOOR GUARDING LOWER MOUNT SM-L | 1 |
| 9 | UPM6287 | DOOR GUARDING LOWER BRACKET | 1 |
| 10 | UF6341 | FW M6 | 22 |
| 11 | UF6411 | LW M6 | 18 |
| 12 | UF3183 | SHCS M6-1.0 X 12mm | 14 |
| 13 | UPM6295 | DOOR GUARDING LOWER BRACKET LG | 1 |
| 14 | UPM6294 | DOOR GUARDING LOWER BRACKET SM | 1 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 15 | UF3187 | SHCS M6-1.0 x 16mm | 4 |
| 16 | UPM2922EV | CORNER BLOCK | 4 |
| 17 | UF6414 | BHCS M6-1.0 x 16mm | 8 |
| 18 | UF6340 | FW M5 | 7 |
| 19 | UF6411 | LW M6 | 8 |
| 20 | UF3187 | SHCS M6-1.0 x16mm | 8 |
| 21 | UPM6285 | DOOR GUARDING VERTICAL MOUNT | 1 |
| 22 | UPM6285 | DOOR GUARDING VERTICAL MOUNT | 2 |
| 23 | UPM8225 | DOOR GUARDING FRAME 560L | 2 |
| 24 | UPM8227 | FRONT PANEL FIXED RSA | 1 |
| 25 | UPM8226 | DOOR GUARDING FRAME 1021L | 1 |
| 26 | UPM4398EV | INSIDE CORNER | 4 |

# Appendix B

## Guarding Front Door Assembly

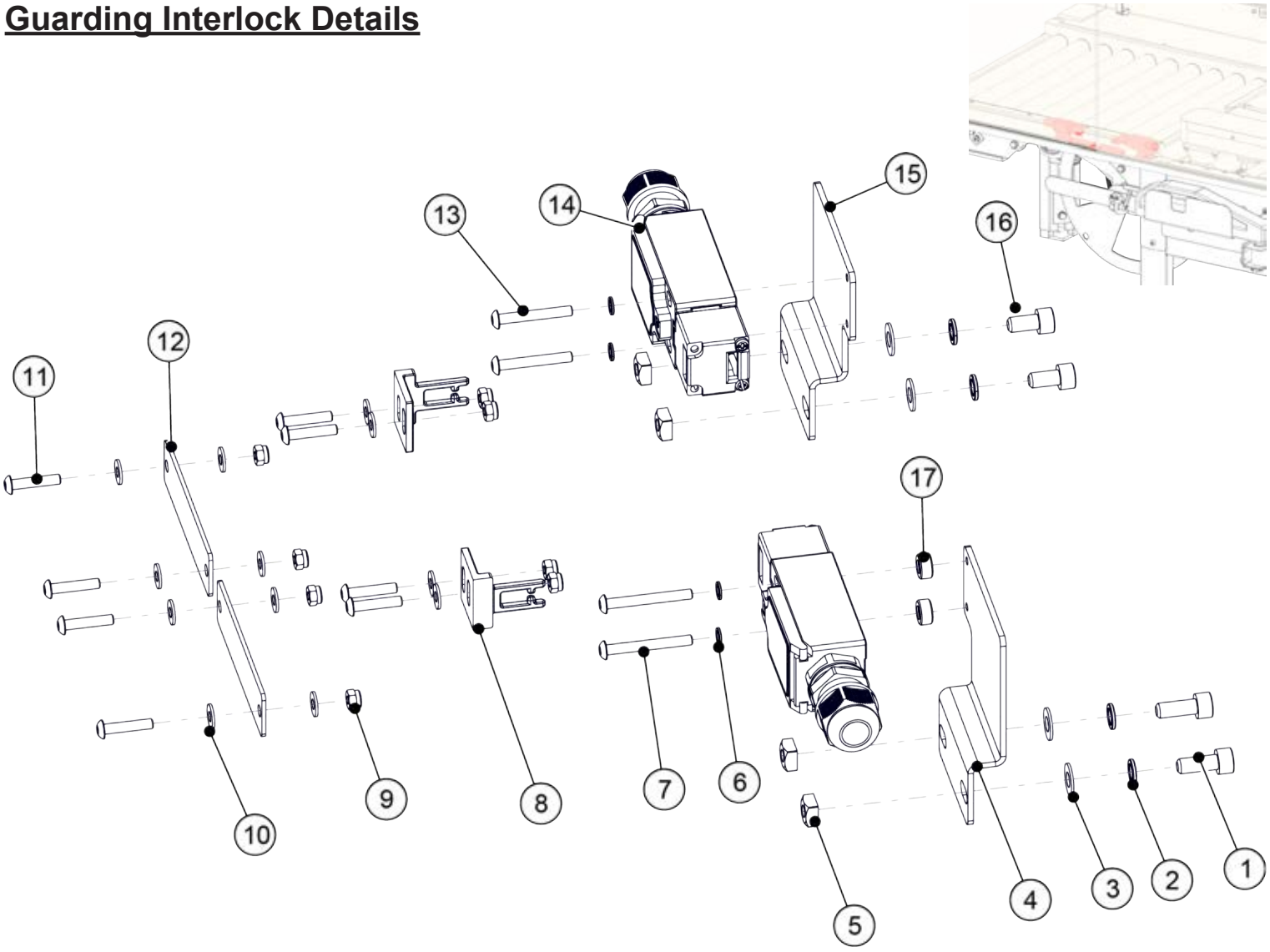



| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UPM6815 | DOOR GUARDING FRAME 1014mm | 2 |
| 2 | UPM0687EV | DROP IN T-NUT M6 | 4 |
| 3 | UPM6279 | DOOR HINGE | 1 |
| 4 | UF6325 | BHCS M6-1.0 x 20mm | 4 |
| 5 | UF3278 | BHCS M6-1.0 x 12mm | 4 |
| 6 | UF4323 | BHCS M4-0.7 x 20mm | 6 |
| 7 | UF6339 | FW M4 | 10 |
| 8 | UF3391 | LOCK-NUT M6 | 6 |
| 9 | UPM0794EV | HANDLE | 1 |
| 10 | UF6414 | BHCS M6-1.0 x 16mm | 9 |
| 11 | UPM2922EV | CORNER CAP FINISHING | 4 |
| 12 | UPM0614EV | CORNER BLOCK | 4 |
| 13 | UPM6813 | DOOR GUARDING FRAME 560mm | 2 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 14 | UPM6277 | DOOR GUARDING VERTICAL MOUNT | 1 |
| 15 | UF6314 | FW M6 | 13 |
| 16 | UF6411 | LW M6 | 8 |
| 17 | UF3187 | SHCS M6-1.0 x 16mm | 8 |
| 18 | UF1212 | BHCS M6-1.0 x 25mm | 2 |
| 19 | UF4324 | LOCK-NUT M4 | 6 |
| 20 | UPM4400EV | MAGNET PLATE | 2 |
| 21 | UPM6286 | DOOR SAFETY INTERLOCK | 1 |
| 22 | UPM6283 | DOOR INTERLOCK KEY | 1 |
| 23 | UPM5873 | CABLE GLAND | 1 |
| 24 | UPM6278 | GUARDING DOOR PANEL | 1 |

# Appendix B

## Guarding Interlock Details

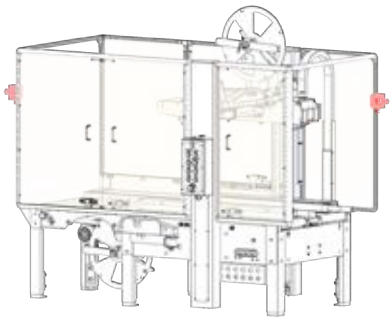


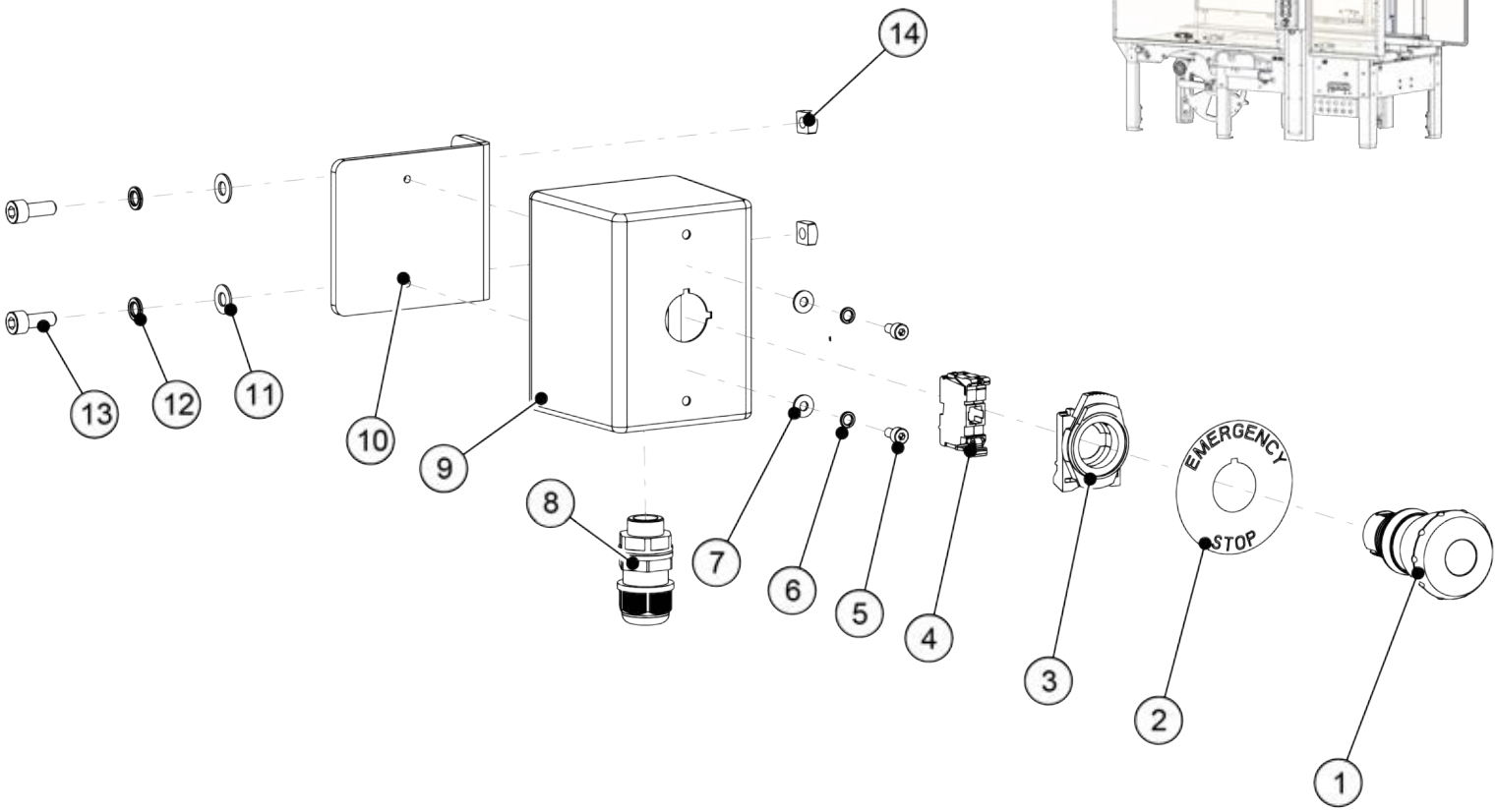

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UF3187 | SHCS M6-1.0 x 16mm | 2 |
| 2 | UF6411 | LW M6 | 4 |
| 3 | UF6341 | FW M6 | 4 |
| 4 | UPM8045 | INTERLOCK BRACKET LEFT | 1 |
| 5 | UPM0687EV | DROP IN T-NUT M6 | 4 |
| 6 | UF3749 | LW M4 | 4 |
| 7 | UF3652 | BHCS M4-0.7 x 35mm | 2 |
| 8 | UPM6283 | DOOR INTERLOCK LATCH | 2 |
| 9 | UF4324 | LOCK-NUT M4 | 8 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 10 | UF6339 | FW M4 | 12 |
| 11 | UF4323 | BHCS M4-0.7 x 20mm | 8 |
| 12 | UPM4400EV | MAGNET PLATE | 2 |
| 13 | UF1213 | BHCS M4-0.7 x 30mm | 2 |
| 14 | UPM6286 | DOOR SAFETY INTERLOCK | 2 |
| 15 | UPM8046 | INTERLOCK BRACKET RIGHT | 1 |
| 16 | UF3183 | SHCS M6-1.0 x 12mm | 2 |
| 17 | UPM8237 | SPACER | 2 |

# Appendix B

## Guarding Emergency Stop Boxes






| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 1 | UPM4816 | EMERGENCY STOP BUTTON | 1 |
| 2 | UPM6045 | E-STOP LABEL | 1 |
| 3 | UPM7630 | LATCH | 1 |
| 4 | UPM4720 | NC CONTACT | 1 |
| 5 | UF3072 | SHCS M4-0.7 x 8mm | 2 |
| 6 | UF3749 | LW M4 | 2 |
| 7 | UF6339 | FW M4 | 2 |
| 8 | UPM5873 | CABLE GLAND | 1 |

| ITEM | PART NUMBER | DESCRIPTION | QTY |
|---|---|---|---|
| 9 | UPM6170 | Buton Box | 1 |
| 10 | UPM6293 | GUARDING E-STOP MOUNT | 1 |
| 11 | UF6341 | FW M6 | 2 |
| 12 | UF6411 | LW M6 | 2 |
| 13 | UF0830 | SHCS M6-1.0 x 16mm | 2 |
| 14 | UPM0687EV | DROP IN T-NUT M6 | 2 |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