



# USER MANUAL USA 2024-SBSS



For Serial Numbers:  
TM191 or TM691 XX X XXX



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# REVISION CONTROL

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## REVISION CONTROL

REV00

Initial Release

# TECHNICAL ASSISTANCE

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## Technical Support

This is the Interpack Model USA 2024-SB SS Uniform Side Belt Case Sealer you ordered. It has been set up and tested in our factory with Intertape manufactured pressure sensitive tapes. If any problems occur when setting up or operating this equipment, please contact the authorized distributor from where you purchased this item.

Should you need to contact **Interpack Technical Support**, please have the Case Sealer **model number and serial number** available. This information can be found on the nameplate of the side panel of the machine. Interpack Technical Support is available during normal business hours (Eastern Time).

### **PHONE 813-621-8410 x101**

If you have a technical question that does not require an immediate response, you may contact Interpack by fax.

### **FAX 813-621-8449**

## Replacement Parts

Order parts by item number, part name and quantity required. Replacement parts are available from your Authorized Interpack Distributor exclusively.

Should you require assistance selecting the correct part, you may call:

Intertape Polymer Group  
Interpack Machinery  
9940 Currie Davis Drive, Suite B23  
Tampa, FL, 33619

Tel: 1-800-474-8273 Option 3  
Fax: 1-800-462-1293

MODEL: \_\_\_\_\_

SERIAL NUMBER: \_\_\_\_\_

DISTRIBUTOR PURCHASED FROM: \_\_\_\_\_

DATE OF PURCHASE: \_\_\_\_\_

## **FIELD SERVICE ASSISTANCE**

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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 Trouble Shooting section of this manual.

However, after consulting the Trouble Shooting Section of this manual, you cannot remedy the problem, customer paid service support is available from your Authorized Interpack Distributor.

# WARRANTY

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**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 USAGE OF TRADE:

INTERTAPE SELLS ITS INTERPACK TAPE HEADS, CASE TAPERS AND CASE ERECTORS WITH THE FOLLOWING WARRANTIES:

1. THE HSD<sup>®</sup> 2000 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 HSD<sup>®</sup> 2000 TAPE HEAD PARTS WILL BE FREE FROM ALL DEFECTS FOR ONE (1) YEAR AFTER DELIVERY.
3. WATER ACTIVATED TAPERS' BLADES AND BRUSHES 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.

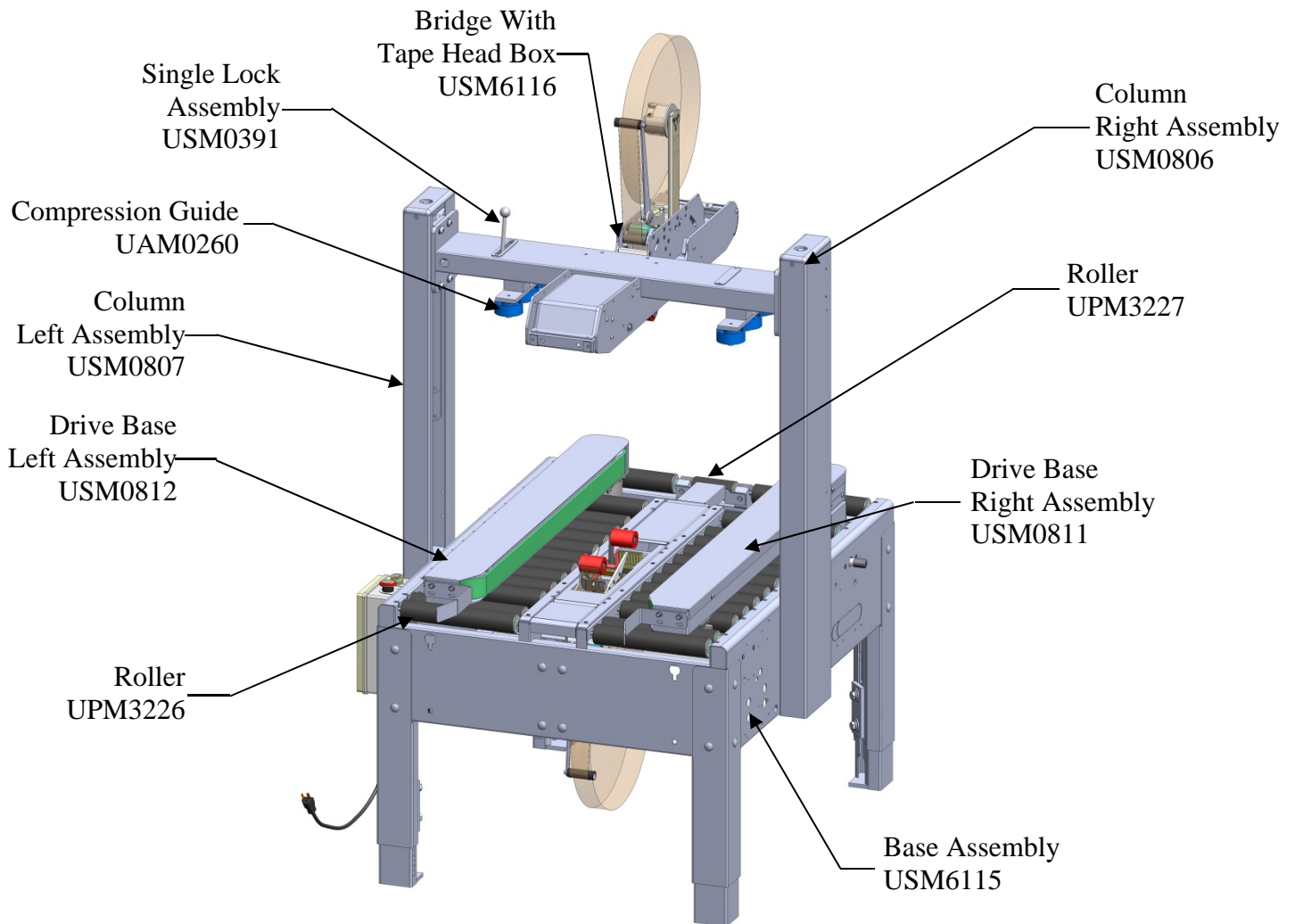
INTERTAPE SHALL HAVE NO OBLIGATION TO PROVIDE OR PAY FOR THE LABOR REQUIRED TO INSTALL THE REPAIRED OR REPLACEMENT PART. INTERTAPE SHALL HAVE NO OBLIGATION TO REPAIR OR REPLACE (1) THOSE PARTS FAILING DUE TO: OPERATOR MISUSE, CARELESSNESS, OR DUE TO ANY ACCIDENTAL CAUSE OTHER THAN EQUIPMENT FAILURE, 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.

# DESCRIPTION OF USA 2024-SB SS CASE SEALER



**Figure 1**

The Interpack USA 2024-SB SS Carton Sealing Machine with HSD® 2000 SS ETII Tape Heads is designed to apply Intertape brand pressure sensitive carton sealing tape to the top and bottom center seam of regular slotted corrugated cartons. The USA 2024-SB SS is manually adjustable to a wide range of carton sizes (**see Carton Size Capacity, page 20**). Multi-Wheel Top Squeezers compress the top major flaps ensuring superior seal. The USA 2024-SB SS Carton Sealer features reversible operator controls to facilitate its adaptation into an existing conveyor line.

## Important Safeguards

There are a number of safety labels used on Interpack Carton Sealers. These labels are placed at different locations (refer to **Figure 2**) on the machine to warn operators and service personnel of possible dangers. 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 covers and guards must be in place before operating.**
- ✓ **Stay clear of moving parts which can shear and cut.**
- ✓ **Never operate the Tape Heads with the Knife Guard removed.**

***Note: Should any of the safety labels placed on the Case Sealer be damaged or destroyed, replacements are available through your distributor.***



# Important Safeguards

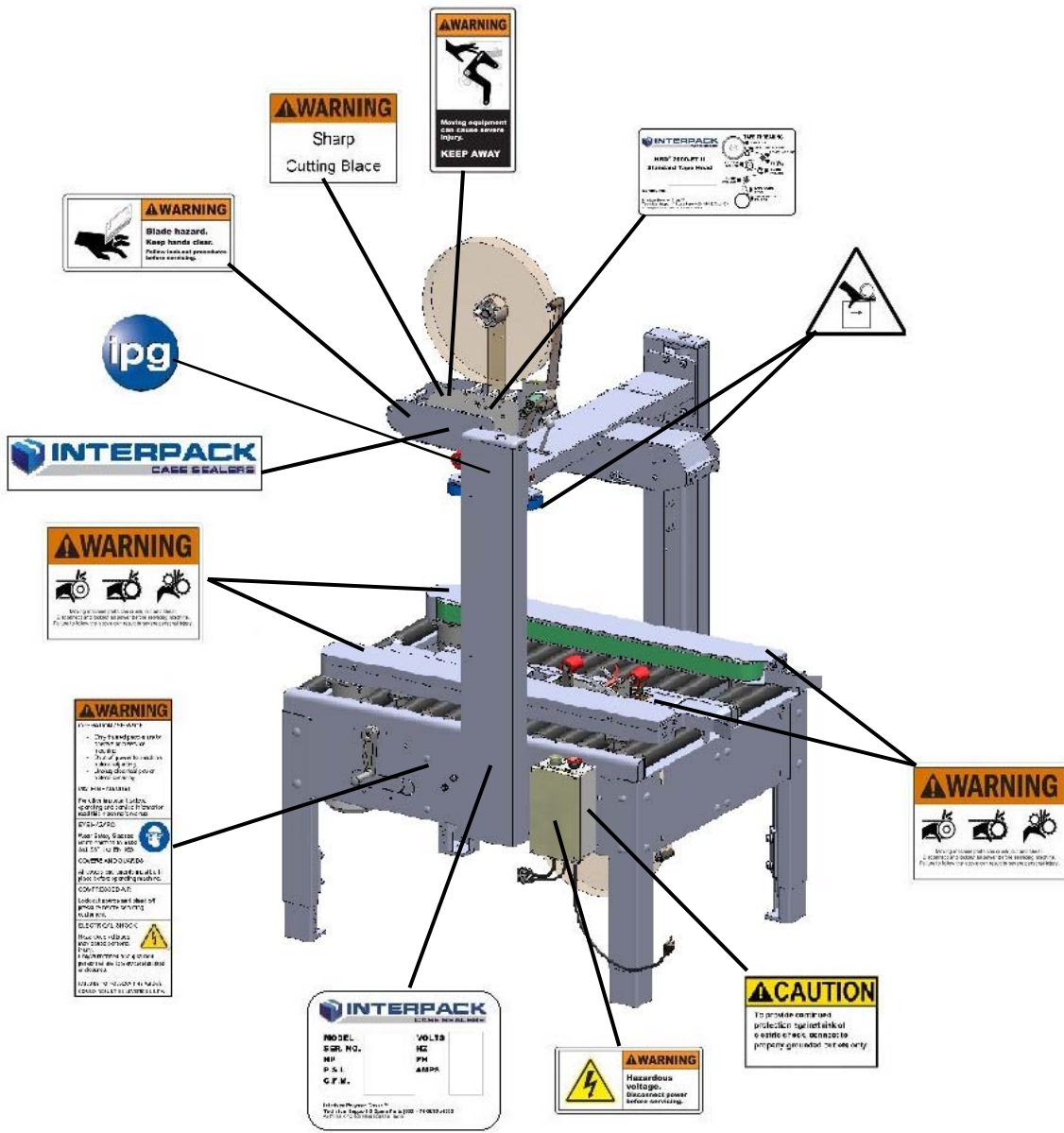



Figure 2

## Important Safeguards

### There Are A Number Of Safety Labels Used On Intertape Carton Sealers.


<p>The illustrated label as shown is attached to the Knife Guard inside the upper and lower HSD2000 ET II Tape Head. The label warns operators and service personnel of the very sharp knife used to cut the tape at the end of the tape application.</p> <p>The HSD2000 ET II Tape Heads are equipped with a Knife guard that covers the blade. <b>The Tape Heads should never be operated with the blade guards removed.</b></p> <p>Turn air and electrical supplies off before servicing the tape heads.</p>	 <p>A rectangular warning label with a white background and a black border. At the top, there is an orange horizontal bar containing a black exclamation mark inside a triangle and the word "WARNING" in bold black capital letters. Below this bar, the text "Sharp Cutting Blade" is centered in a large, black, sans-serif font.</p>
<p>The label shown is affixed to the upper tape head assembly on either side of the machine. 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</p>	 <p>A rectangular warning label with a white background and a black border. On the left side, there is a black silhouette of a hand reaching towards a jagged, saw-like blade. On the right side, there is an orange horizontal bar with a black exclamation mark in a triangle and the word "WARNING" in bold black capital letters. Below the bar, the text "Blade hazard. Keep hands clear. Follow lock-out procedures before servicing." is written in a smaller black font.</p>
<p>The label shown alerts the operator of a potential pinch point when a case processes through the machine. Caution should be exercised when approaching this area</p>	 <p>A vertical rectangular warning label with a white background and a black border. At the top, there is an orange horizontal bar with a black exclamation mark in a triangle and the word "WARNING" in bold black capital letters. Below the bar is a black silhouette of a hand reaching towards a mechanical part of a machine. At the bottom, there is a black rectangular area with the text "Moving equipment can cause severe injury." in white, and "KEEP AWAY" in bold white capital letters below it.</p>

## Important Safeguards

<p>The label shown is affixed to the top squeezer assembly brackets on either side of the machine. They warn the operator of a potential pinch point between the top of the case and the top squeezer rollers. Keep hand away from this area when processing a case</p>	
<p>This label affixed to the electrical control box advises service personnel to connect the machine to a properly grounded outlet.</p>	
<p>The label shown is attached to the control box next to the on/off switch. The label warns the service personnel to unplug the power supply before attempting any service work on the carton sealer.</p>	
<p>The illustrated label shown is located on the "infeed and exit" ends of the machine belt drives. The label warns the operators and service personnel of the pinch point at each end of the belt drives.</p>	

## Important Safeguards

The illustrated 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 Intertape Carton Sealing Equipment.

<b>! WARNING</b>	
<b>OPERATION / SERVICE</b>	
<ul style="list-style-type: none"> <li>Only trained people are to operate and service machine.</li> <li>Shut off power to machine before adjusting.</li> <li>Unplug electrical power before servicing.</li> </ul>	
<b>MACHINE MANUAL</b>	
For other important safety, operating and service information read this machine's manual.	
<b>EYE HAZARD</b>	
Wear Safety Glasses which conform to ANSI Std. Z87.1 or EN 166	
<b>COVERS AND GUARDS</b>	
All covers and guards must be in place before operating machine.	
<b>COMPRESSED AIR</b>	
Lock-out source and bleed off pressure before servicing equipment.	
<b>ELECTRICAL SHOCK</b>	
Hazardous voltages may cause personal injury. Only authorized and qualified personnel are to service electrical enclosures.	
<b>FAILURE TO FOLLOW THE ABOVE COULD RESULT IN SEVERE INJURY.</b>	

**Note: Should Any Of The Safety Labels Placed On The Machine Be Damaged Or Destroyed, Replacements Are Available.**

## 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**

- **To Reduce The Risk Associated With Mechanical And Electrical Hazards:**
  - a. Read, Understand, And Follow All Safety And Operating Instructions Before Operating Or Servicing The Case Sealer.
  - b. Allow Only Properly Trained And Qualified Personnel To Operate And Service This Equipment.
- **To Reduce The Risk Associated With Pinches, Entanglement And Hazardous Voltage:**
  - a. Turn Electrical Supply Off And Disconnect Before Performing Any Adjustments, Maintenance Or Servicing The Machine Or Taping Heads.
- **To Reduce The Risk Associated With Pinches And Entanglement Hazards:**
  - a. Do Not Leave The Machine Running While Unattended.
  - b. Turn The Machine Off When Not In Use.
  - c. Never Attempt To Work On Any Part Of The Machine, Load Tape, Or Remove Jammed Boxes From The Machine While The Machine Is Running.
- **To Reduce The Risk Associated With Hazardous Voltage:**
  - a. Position Electrical Cord Away From Foot And Vehicle Traffic.
- **To Reduce The Risk Associated With Sharp Blade Hazards:**
  - a. Keep Hands And Fingers Away From Tape Cutoff Blades Under Orange Blade Guards. The Blades Are Extremely Sharp.
- **To Reduce The Risk Associated With Fire And Explosion Hazards:**
  - a. Do Not Operate This Equipment In Potentially Flammable/Explosive Environments.
- **To Reduce The Risk Associated With Muscle Strain:**
  - a. Use The Appropriate Rigging And Material Handling Equipment When Lifting Or Repositioning This Equipment.
  - b. Use Proper Body Mechanics When Removing Or Installing Taping Heads That Are Moderately Heavy Or May Be Considered Awkward To Lift.

### **Caution**

- **To Reduce The Risk Associated With Pinch Hazards:**
  - a. Keep Hands Clear Of The Upper Head Support Assembly As Boxes Are Transported Through The Machine.
  - b. Keep Hands, Hair, Loose Clothing, And Jewelry Away From Box Compression Rollers.
  - c. Always Feed Boxes Into The Machine By Pushing Only From The End Of The Box.
  - d. Keep Hands, Hair, Loose Clothing, And Jewelry Away From Moving Belts And Taping Heads.

## Important Safeguards

### Warning

- **To Reduce The Risk Associated With Mechanical And Electrical Hazards:**
  - a. Allow Only Properly Trained And Qualified Personnel To Operate And Service This Equipment.

### Operator Skill Level Descriptions

#### **Skill “A”: Machine Operator**

This Operator Is Trained To Use The Machine With The Machine Controls, To Feed Cases Into The Machine, Make Adjustment For Different Case Sizes, To Change The Tape And To Start, Stop, And To Re-Start Production

**Important: The Area Supervisor Must Ensure That The Operator Has Been Properly Trained On All Machine Functions Before Operating The Machine.**

#### **Skill “B” Mechanical Maintenance Technician**

This Technician Is Trained To Use The Machine As The Machine Operator 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 Machine. He Is Not Allowed To Work On Live Electrical Components

#### **Skill “C” Electrical Maintenance Technician**

This Technician Is Trained To Use The Machine As The Machine Operator 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 Machine. He Is Allowed To Work On Live Electrical Panels, Terminal Blocks And Control Equipment.

#### **Skill “D” Manufacturers Technician**

Skilled Technician Sent By The Manufacturer Or Its Agent To Perform Complex Repairs Or Modifications, When Agreed With The Customer

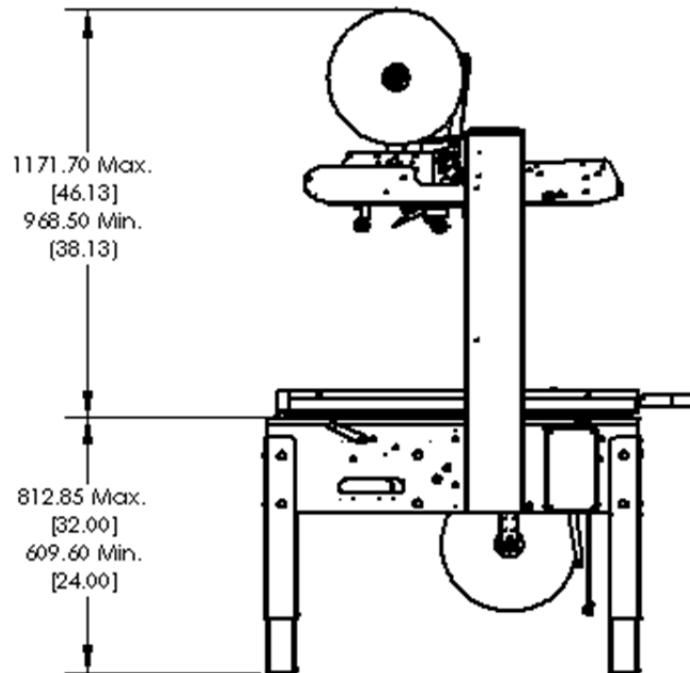
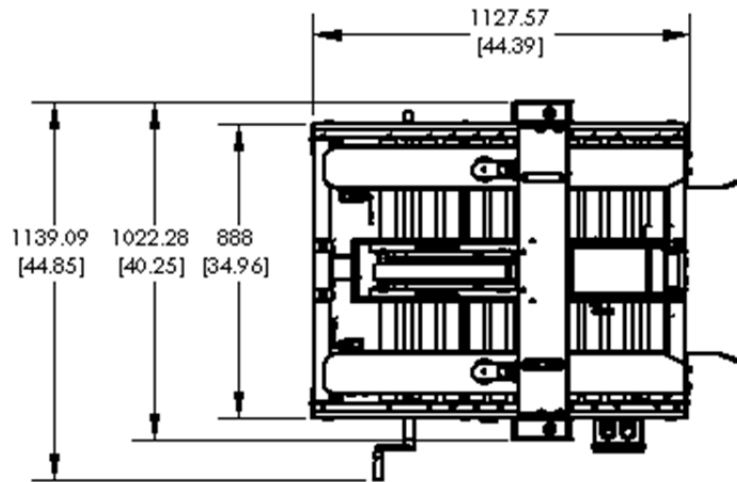
## Important Safeguards

### Operators Skill Level Required To Perform The Following Tasks On The Machine

Operation	Machine Condition	Operator Skill Level	Number Of Operators
Machine Installation & Set Up	Running With Safety Protections Disabled	B & C	2
Adjusting Case Size	Stopped By Pressing The Emergency Stop Button	A	1
Tape Roll Replacement	Stopped By Pressing The Emergency Stop Button	A	1
Blade Replacement	Electrical Power Disconnected	B	1
Drive Belt Replacement	Electrical Power Disconnected	B	1
Ordinary Maintenance	Electrical Power Disconnected	B	1
Extraordinary Mechanical Maintenance	Running With Safety Protections Disabled	D	1
Extraordinary Electrical Maintenance	Running With Safety Protections Disabled	C	1

# SPECIFICATIONS

## USA 2024-SB SS Machine Dimensions



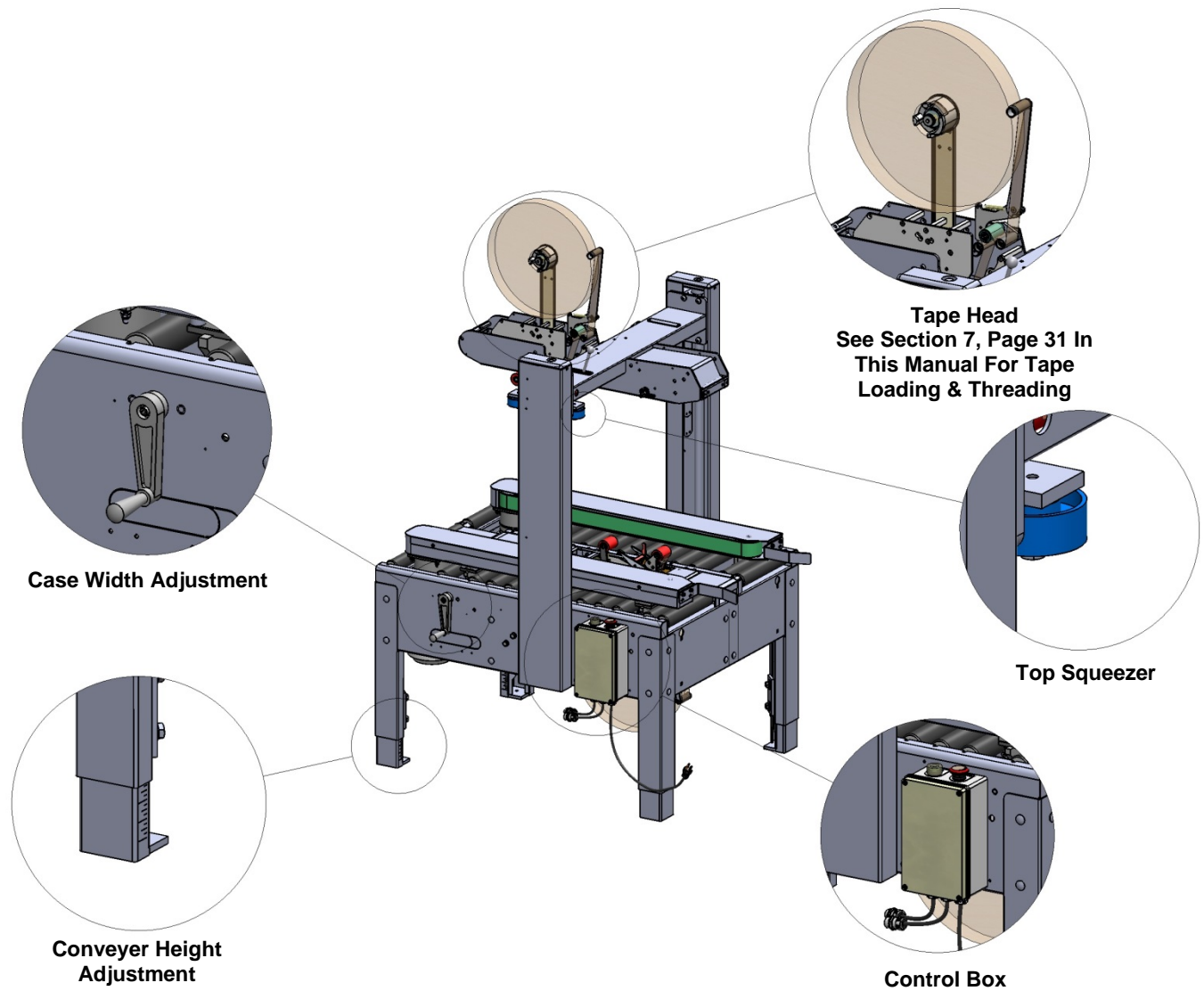
**Figure-3**

**Machine Weight:** 560 lbs. (159 kg) crated



# SPECIFICATIONS

## USA 2024-SB SS Machine Components



**Figure-4**

# SPECIFICATIONS

## 1. Operating Conditions

Use in a dry, relatively clean environment at 40° to 105° F (5° to 40° C) with clean dry cartons.

## 2. Power Requirements

Electrical - 115 VAC, 60 HZ, 5.0 A (560 Watts)

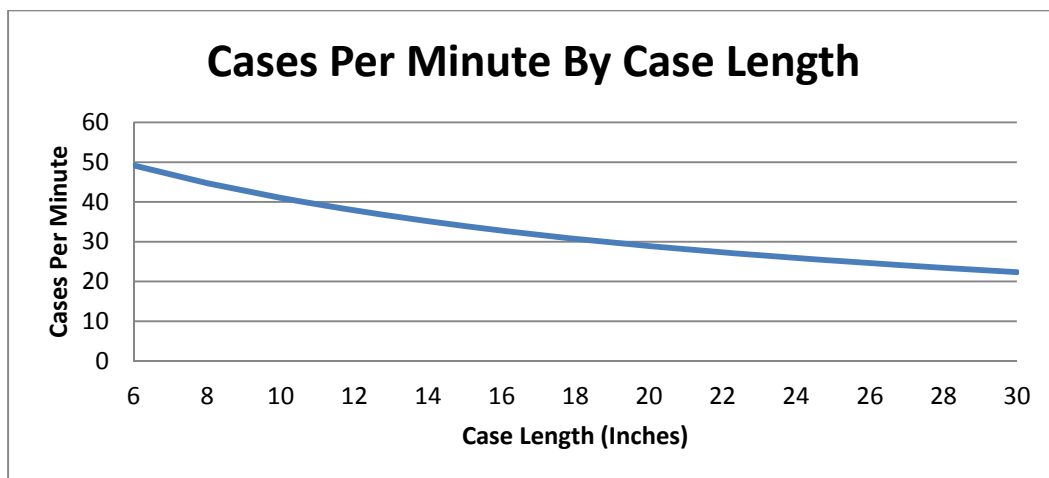
Compressed Air – N/A

This machine comes standard with two gear motors, one on each drive base and an electrical box.

The electrical box contains a **Start** switch, the **Emergency Stop** switch, and a starting relay with a thermal over load. A twelve foot (12') standard three conductor power cord with plug is provided for **115V, 60HZ, 15 Amp** service. The receptacle providing this service **must** be properly grounded.

## 3. Operating Speed

Actual production rate is dependent on operator's dexterity and the case size mix. Boxes must be 14 inches apart. Belt Speed is 82 Ft/min.



**Figure-5**

## 4. Tape Specifications

Use **Intertape Brand** Pressure Sensitive Carton Sealing Tape.

The machine can accommodate 2" (48mm) or 3" (72mm) wide tape, depending on tape heads supplied.

A maximum tape roll diameter of 16" (406 mm) on a 3" (76 mm) diameter core can be installed on the tape head. (Accommodates all Intertape brand film tape machine roll lengths).

The standard Tape Leg Length of 2.25 inches (57.2 mm) is factory set. The standard tape leg length may vary up to ¼" (6mm) based on tape tension and line speed.

The standard tape leg length is adjustable +/- ¼. Refer to the tape head manual for adjustment of tape leg length.

**Note: For Further Specifications On The Tape Heads, Consult The Tape Head Manual For Your Specific Tape Head.**

## 5. Carton Specifications

### Type

- Regular Slotted Containers (RSC)
- Other Style Cases May Be Processed. Consult Factory For Details.

### Material

125 To 275 PSI Bursting Test, Single Or Double Wall B Or C Flutes.

### Weight

0 to 65 lbs. (0 to 29.5 kg)

### Size

- The case sealer can accommodate most cartons within the size ranges listed below.

<b>Machines Equipped With 2" Tape Heads</b>			
<b>Carton Size</b>	<b>Length</b>	<b>Width</b>	<b>Height</b>
<b>Minimum</b>	150mm (203mm Opt.) 6" (8" Opt.)	89mm (203mm Opt.) 3.5" (8" Opt.)	89mm (51mm Opt.) 3.5" (2" Opt.)
<b>Maximum</b>	Infinite	508mm 20"	610mm 24"

<b>Machines Equipped With 3" Tape Heads</b>			
<b>Carton Size</b>	<b>Length</b>	<b>Width</b>	<b>Height</b>
<b>Minimum</b>	150mm (203mm Opt.) 6" (8" Opt.)	114mm (203mm Opt.) 4.5" (8" Opt.)	89mm (51mm Opt.) 3.5" (2" Opt.)
<b>Maximum</b>	Infinite	508mm 20"	610mm 24"

### Case Processing Stability

For optimal performance, the cases should be stable when processing through the machine. Unstable cases may tilt backwards upon contact with the upper tape head causing the machine to jam.

If the box length (in direction of seal) to box height ratio is .75 or less, then several boxes should be test run to assure proper machine performance. The formula is as follows;

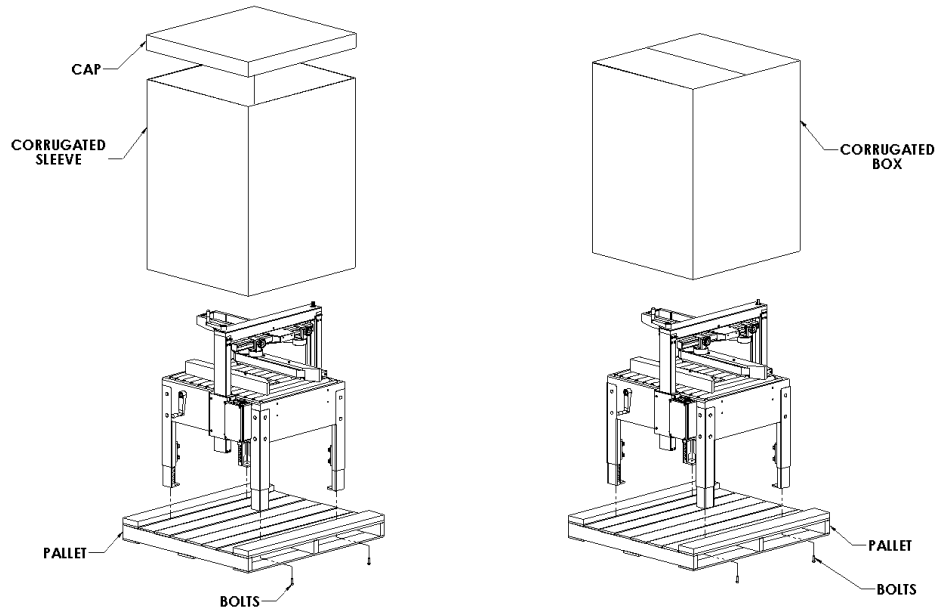
$$\frac{\text{CARTON LENGTH IN DIRECTION OF SEAL}}{\text{CARTON HEIGHT}} > .75$$

# SET-UP PROCEDURES

## 1. Receiving and Handling

The machine is shipped to the customer 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.

- Remove the strapping securing the corrugated sleeve and cap or HSC corrugated box to the pallet.
- Lift off the cap and corrugated sleeve or HSC corrugated box.
- Remove protective wrapping from machine.
- Remove or relocate all securing devices such as tie wraps or locking collars.
- Remove the mounting bolts, which secure the machine to the shipping pallet.
- Remove machine from the pallet and re-locate to an area to prepare for final installation.



**Figure-6**

All contents must be verified upon reception. The following items are included with each machine.

- **USA 2024-SB SS**
- **Operators Manual Machine**
- **Operators Manual Tape Head**
- **Plastic bag containing tape head spare parts.**

**Note: 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 Authorized Intertape Distributor.**

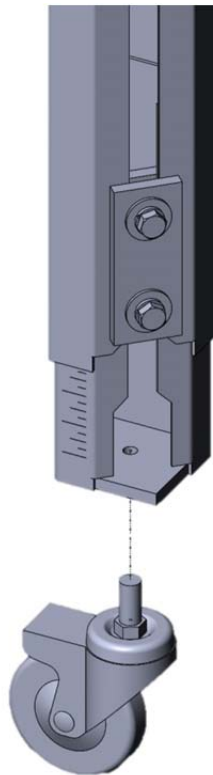
## SET-UP PROCEDURES

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### 2. Caster Installation (If Purchased)

**Caster Installation Requires Raising The Machine To Access The Bottom Of Each Leg. Please Follow All Possible Safety Procedures Prior To And During This Process**

- A. With A Fork Lift, Raise The Machine To Allow Access To The Bottom Of Each Leg
- B. Screw In A Caster Into A Leg Until It Is Firmly Seated To The Bottom Of The Leg.
- C. Tighten Each Caster
- D. Do Not Adjust The Conveyor Height By Adjusting The Caster. Proper Conveyor Height Must Be Achieved By Adjusting The Leg Extension Of Each Leg. **(See Figure-7)**



**Figure-7**

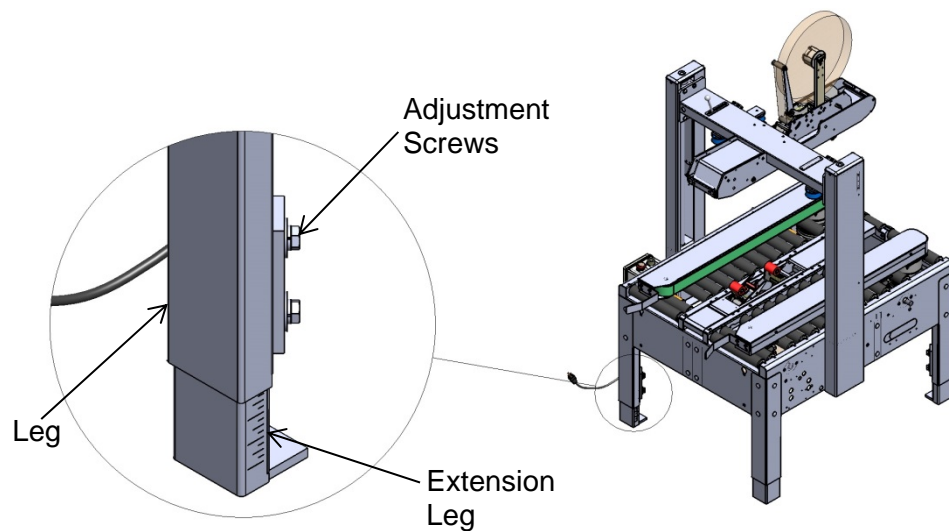
# SET-UP PROCEDURES

## 3. Machine Height Adjustment

**Machine Height Adjustment Requires Raising The Machine To Adjust Each Leg. Please Follow All Possible Safety Procedures Prior To And During This Process.**

The Carton Sealer must be installed on near level ground. Use the adjustable legs to ensure that the machine is level and firmly on the ground (no rocking). Adjust the leg height with the four (4) telescopic extension legs to accommodate conveyor heights from 24 to 30 inches.

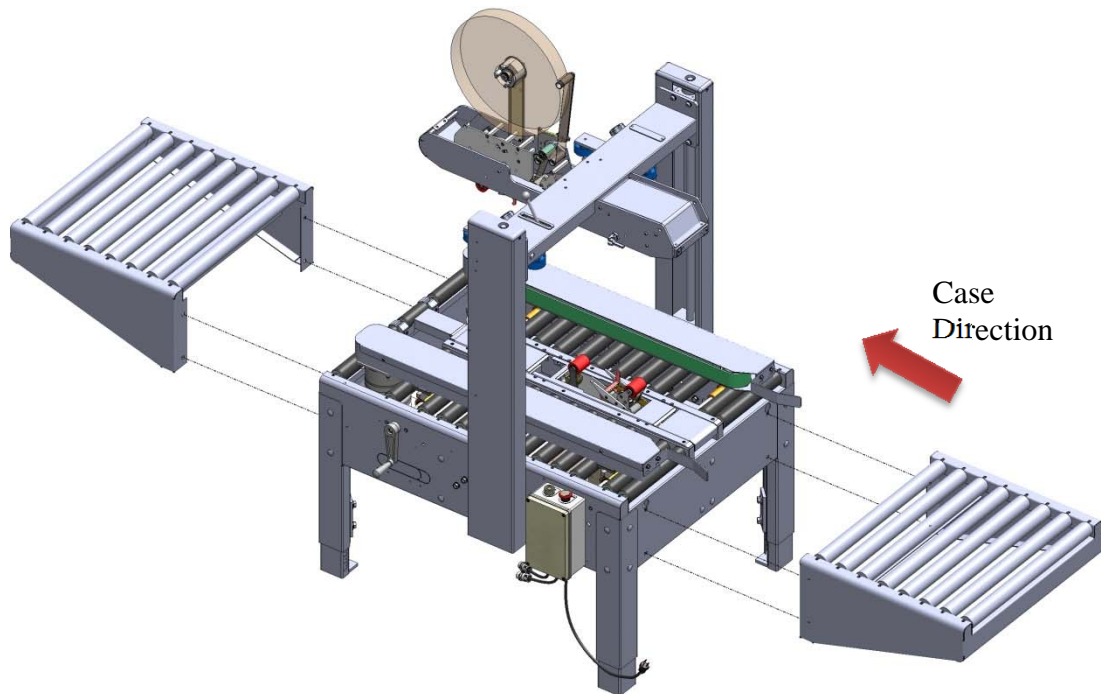
To adjust the Case Sealer height, lift the machine to give ample room to extend the legs. Using a 19 mm box end wrench, loosen the eight (8) 12mm hex head bolts. Adjust the legs to the desired conveyor height and re-tighten the bolts. Etched lines on the legs ease leveling.



**Figure 8**

# SET-UP PROCEDURES

## 4. Installation of Interpack Brand In-Feed and Exit Roller Tables (If Purchased)



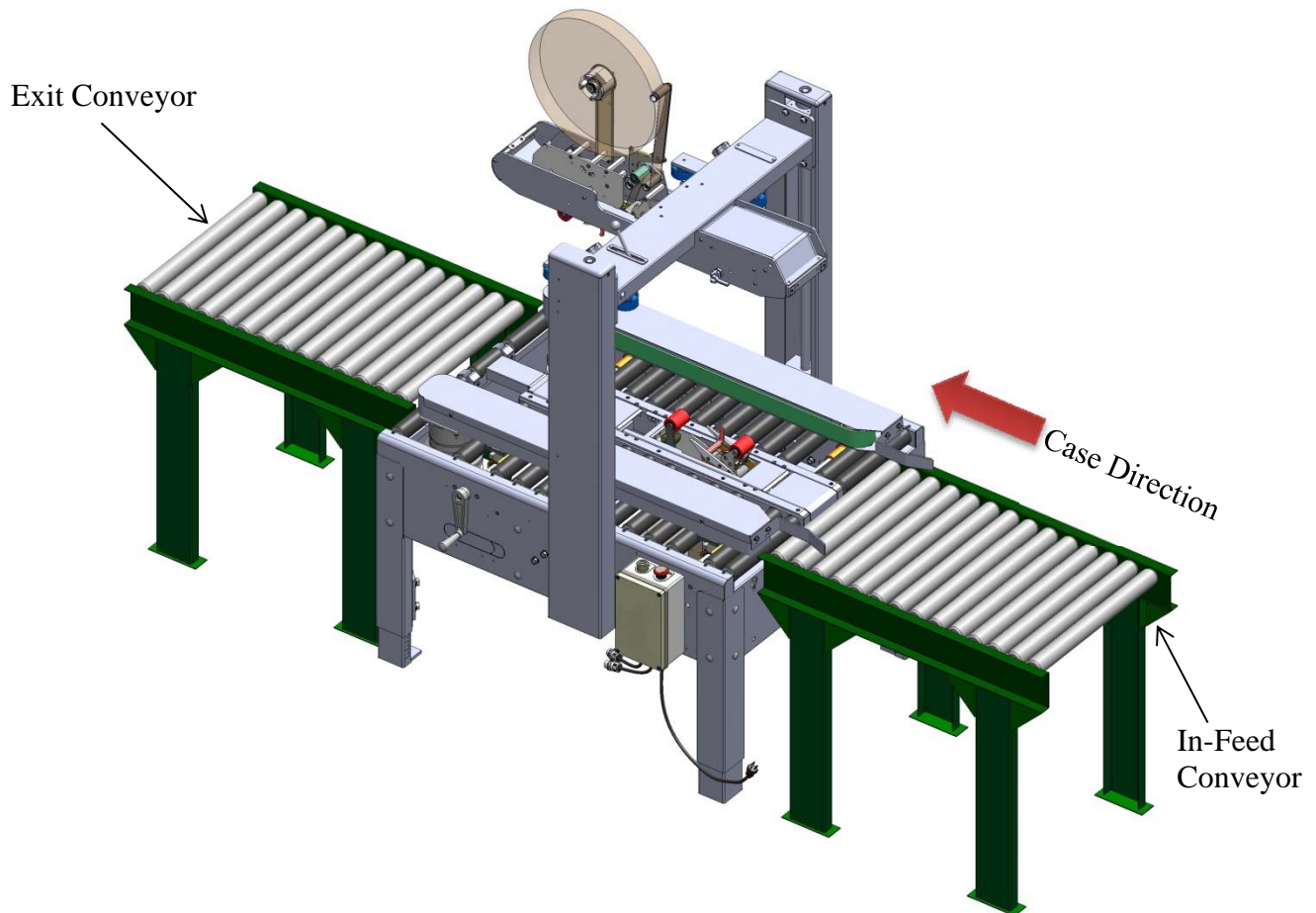
**Figure-9**

- a. Install Four (4) Mounting Studs Into Machine Base With Hardware Included With Roller Table. Per **Figure-9**.
- b. Utilizing The Slots In The Roller Table, Attach Roller Table To Machine Base By Locating Mounting Studs In Slots On Roller Table And Push Down To Lock In Place.



# SET-UP PROCEDURES

## 5. Installation of External In-Feed and Exit Conveyors



**Figure-10**

1. Customer supplied in-feed conveyor (if used) should provide straight and level entry into the case sealer.
2. Customer supplied gravity exit conveyor (if used) should be straight and declined no more than 20mm/meter away from the machine to convey the sealed cartons away from the machine.
3. Customer supplied powered exit conveyor should be straight and level to convey the sealed cartons away from the machine.

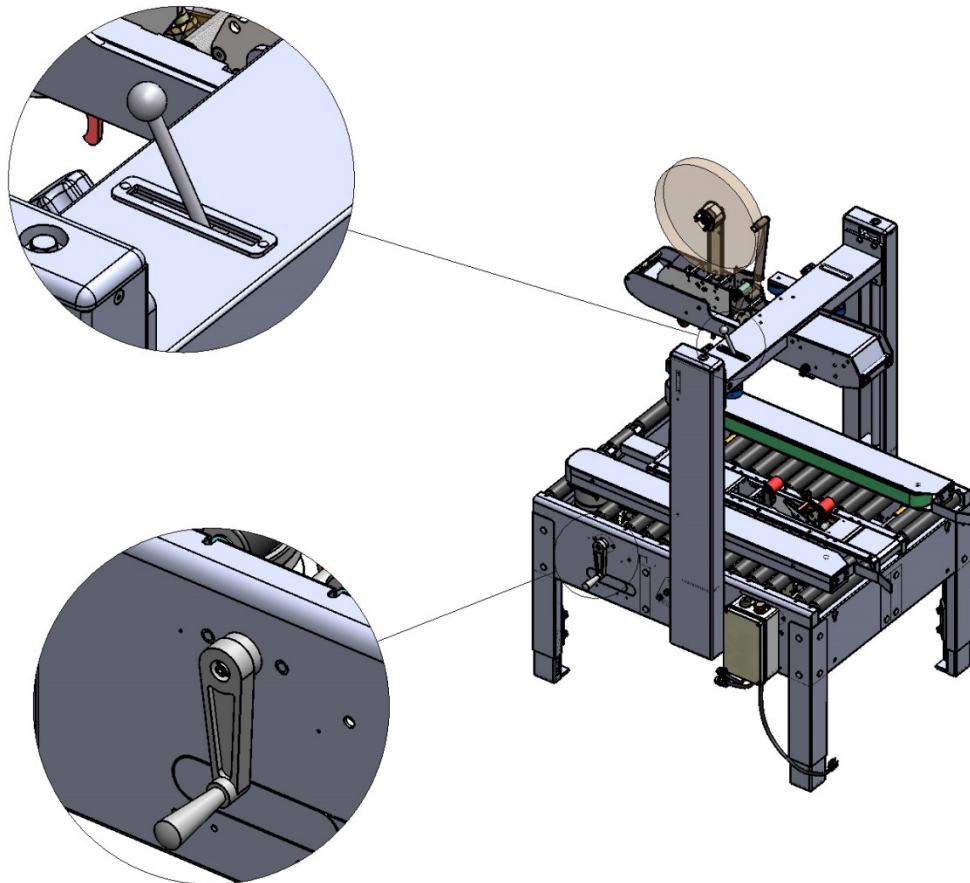
# SET-UP PROCEDURES

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## 6. Machine Final Assembly

The machine is shipped with all adjustment handles installed.

**Location of Adjustment Handles.**

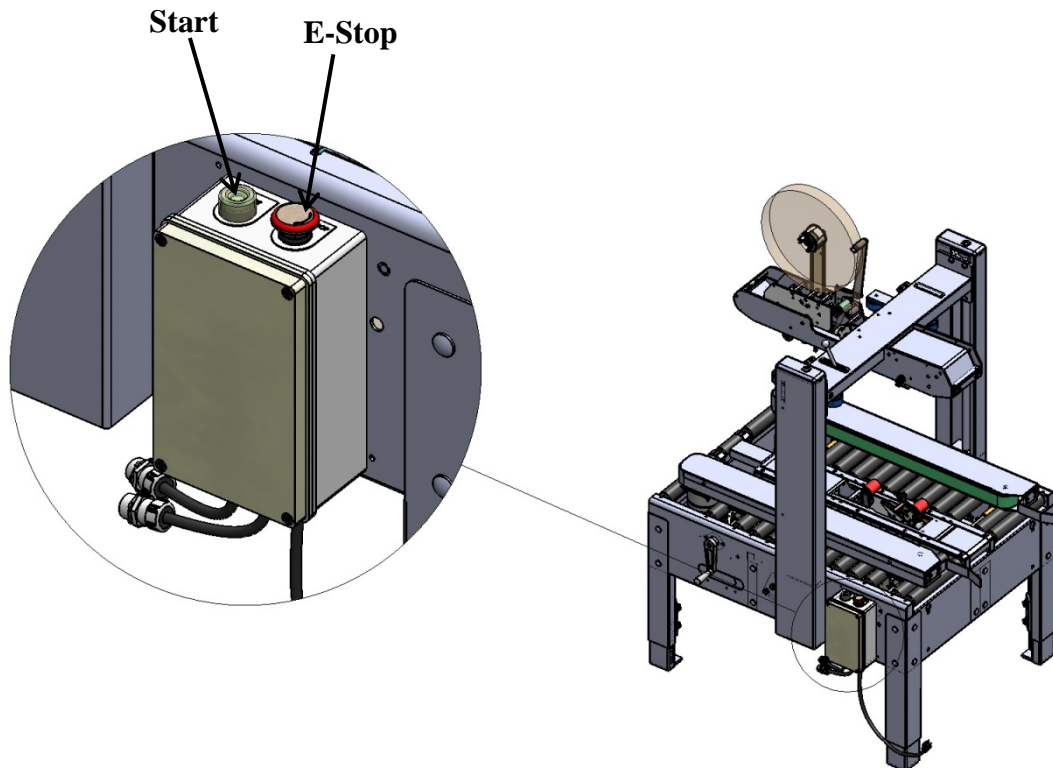


**Figure-11**

# SET-UP PROCEDURES

## 7. Connecting Utilities

### a. Electrical



**Figure-12**

An eleven foot (11') standard three conductor power cord with plug is provided for 115 V, 60 Hz, 15 amp electrical 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.

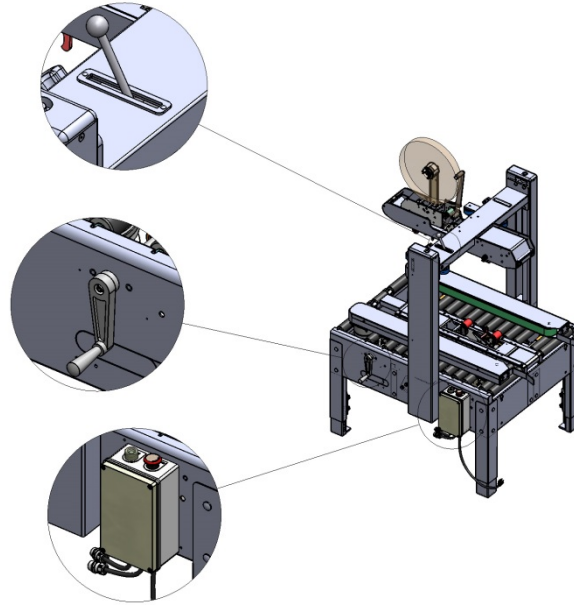
The electrical control box can be located on either side of the Carton Sealer for customer convenience. It contains the green "on" push button and the red "E-Stop" re-settable push button, which is to be used both for emergency stops as well as a stop button, The E-Stop button requires a ¼ turn to release.

**Moving the control box to the opposite side of the machine requires disconnecting and reconnecting electrical wires and components. Only trained and qualified service technicians should access an open control box. Please Follow All Possible Safety Procedures Prior To And During This Process**

# SET-UP PROCEDURES

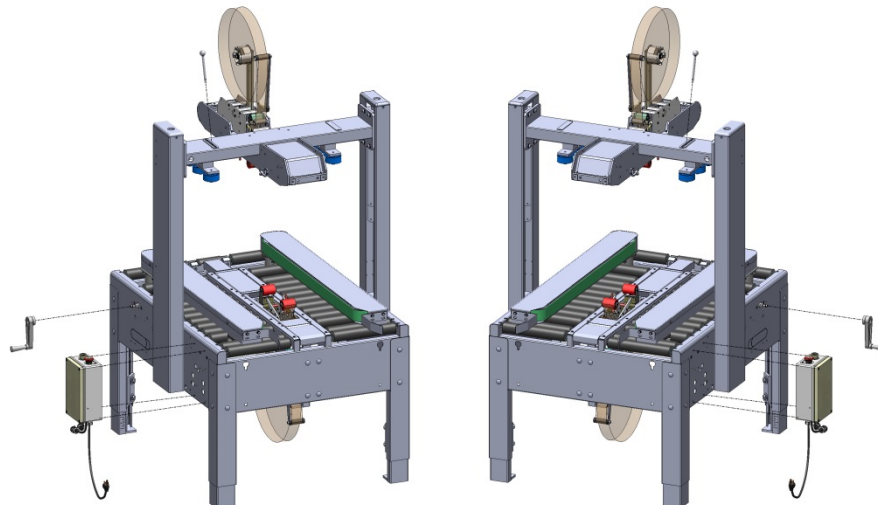
## 8. Relocating Operator Controls

This case sealer is shipped with the operator controls mounted on the left hand side of the machine (when viewed from the in feed of the machine). Certain machines have the ability to relocate the operator controls to the opposite side.



**Figure-13**

### Re-Locating Adjustment Handles.

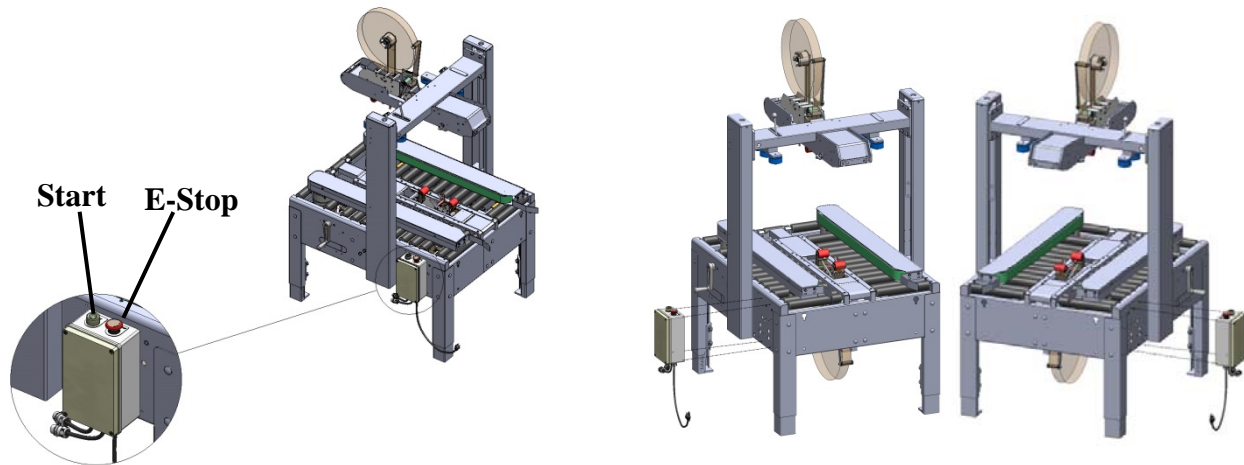


**Figure-14**

- Loosen 3 mm Allen Screw to allow removal of Handle from Square Shaft.
- Remove Adjustment Handle from Square Shaft and re-locate to Right Side.
- Re-Tighten Allen Screw to lock Adjustment Handle to Square Shaft.

# SET-UP PROCEDURES

## Re-Locating Electrical Control Box



**Figure-15**

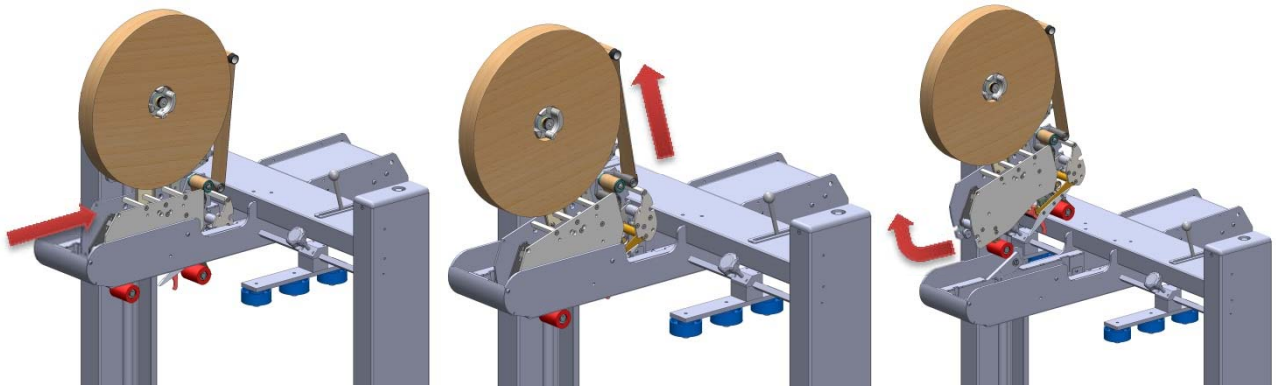
**Moving the control box to the opposite side of the machine requires disconnecting and reconnecting electrical wires and components. Only trained and qualified service technicians should access an open control box. Please follow all possible safety procedures prior to and during this process.**

- a. **Disconnect** machine from electrical supply.
- b. Remove Cover.
- c. Note the position of the wires to be disconnected to allow for re-location.
- d. Disconnect wires from motor starter.
- e. Disconnect ground Wires.
- f. Remove Lock Nut from Strain Relief (2) inside Electrical Control Box.
- g. Remove Strain Relief (2) and wires from Control Box.
- h. Remove Control Box and Re-Locate to Opposite Side.
- i. Route wires (3) to opposite side of machine.
  - i. Remove wire ties holding wires under machine.
  - ii. Re-locate wires to re-positioned control box.
  - iii. Install new wire ties to secure wires to machine base.
- j. Insert Strain Reliefs (2) and wires into Control Box.
- k. Re-Install Strain Relief Lock Nuts (2).
- l. Re-Connect wires to Motor Starter.
- m. Re-Connect ground Wires.
- n. Re-Install Cover.

# SET-UP PROCEDURES

## 9. Removing Tape Heads Prior to Tape Loading

### Removing Upper Tape Head



**Figure-16**

1. Slide Tape Head Toward The Infeed End Of Machine And Rotate Up.
2. Slide Tape Head Toward The Exit End Of Machine And Lift Out Of Rear Slot.

### Removing Lower Tape Head



**Figure-17**

1. Remove Gap Filler by Lifting Straight Up.
2. Gripping the Stationary Cross Shafts, Lift the Tape Head Straight Up and Out of The Slots.

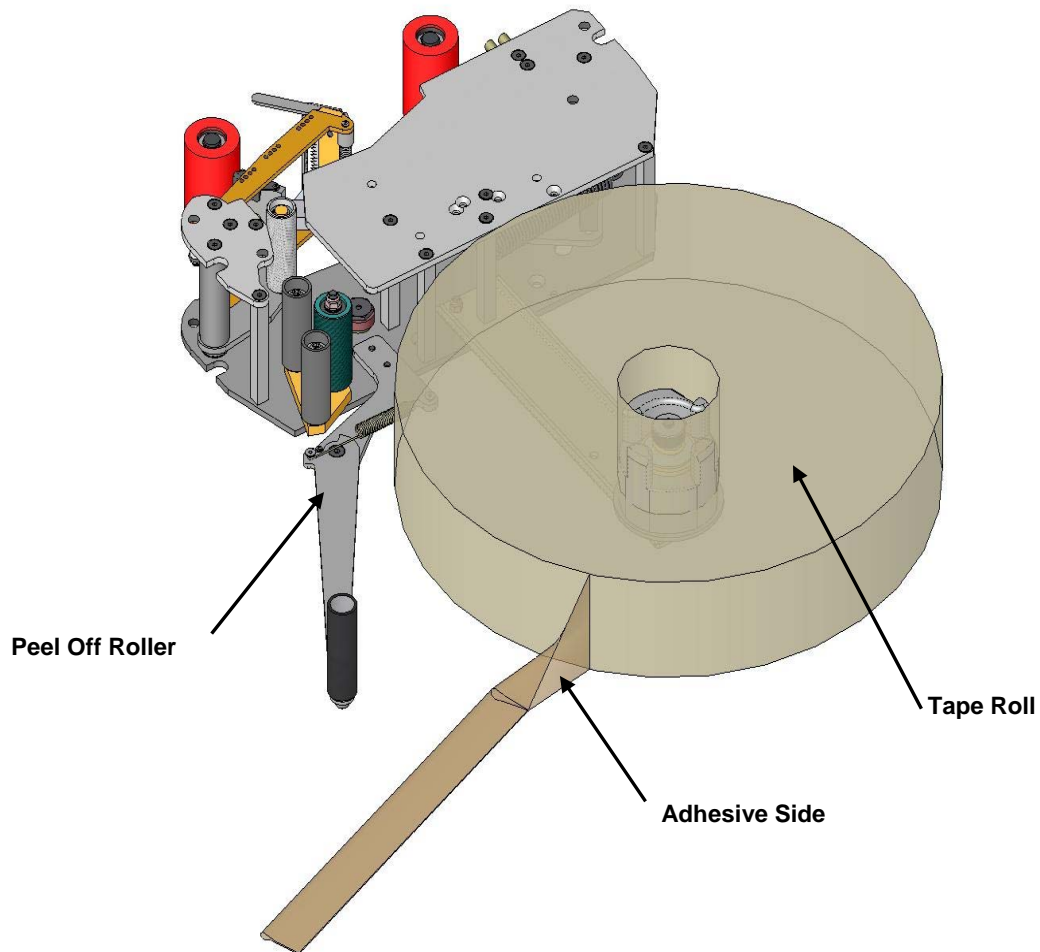


# SET-UP PROCEDURES

## 10. Tape Loading

The HSD 2000-ET II Tape Heads accommodate 2-inch (48mm) wide tape rolls, while the HSD 2000-ET II/3" Tape Heads accommodate 3-inch (72mm) wide rolls.

1. Place the tape head onto a sturdy, flat surface.
2. Move the peel off roller away from the mandrel.
3. Push the roll of tape onto the mandrel with the adhesive side up (refer to **Threading Diagram** under Tape Threading section in this manual) until the core seats against the mandrel flange. This ensures the tape will be aligned when feeding into the tape head.
4. Replace the peel roller against the tape roll.



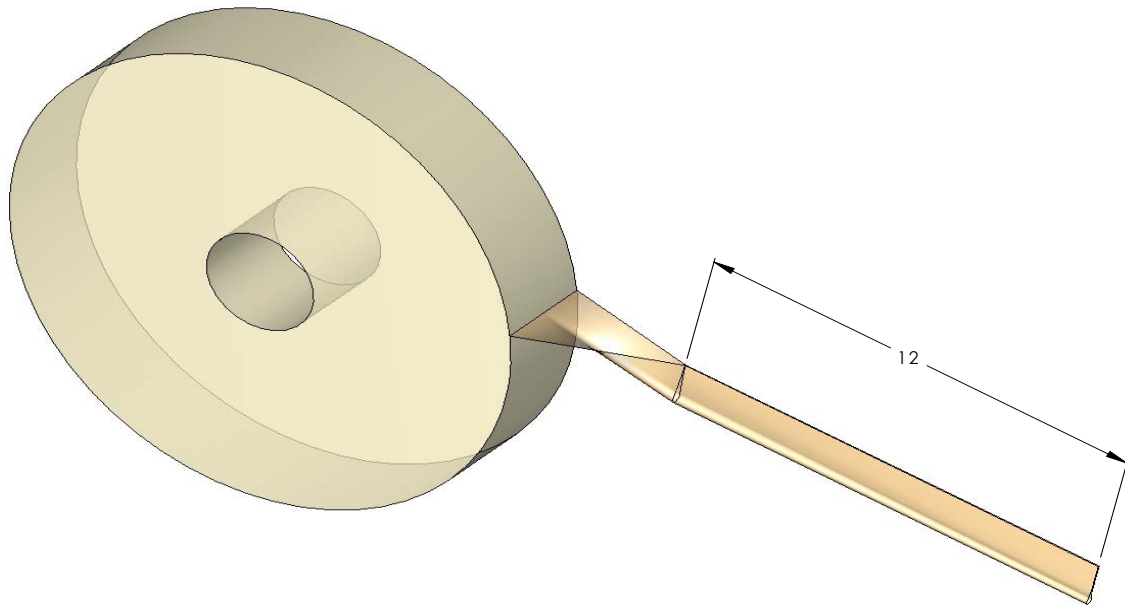
**Figure-18**

## SET-UP PROCEDURES

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**WARNING! THE KNIFE CONTAINED IN THE TAPE HEAD IS EXTREMELY SHARP. USE CAUTION WHEN THREADING THE TAPE TO AVOID PERSONAL INJURY.**

### 11. Tape Threading Preparation



**Figure-19**

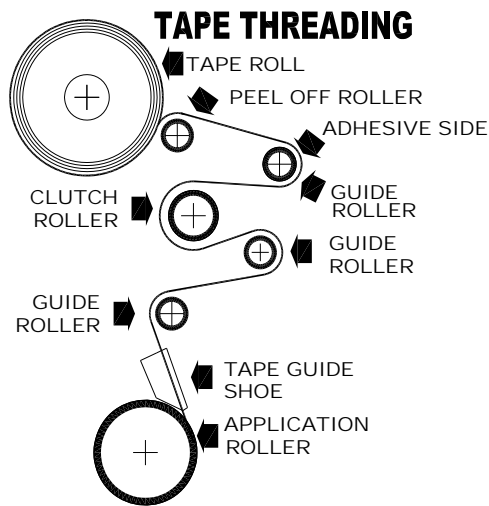
Threading the tape in the Tape Head does not require any special tools.

Pull approximately twelve (12) inches of tape from the roll and fold in half lengthwise, adhesive side to adhesive side. This allows you to thread the tape without it adhering to the guide and clutch rollers inside the Tape Head

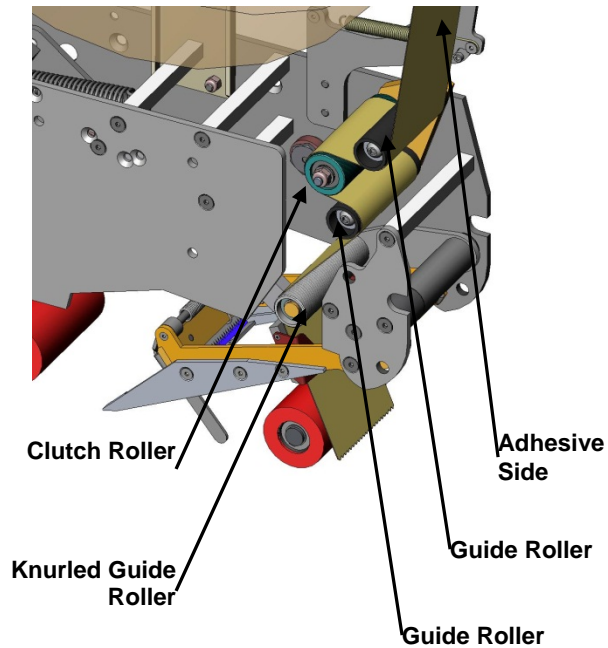


# SET-UP PROCEDURES

## 12. Tape Threading



**Figure-20**



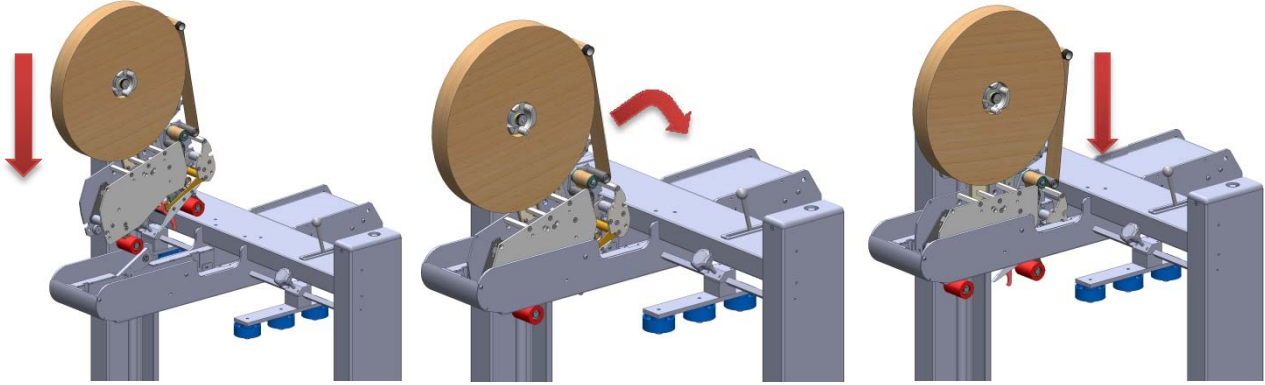
**Figure-21**

1. As Illustrated In **Figure-20**, First Thread The Tape Tail Over The **Peel Off Roller**.
2. As Illustrated In **Figures-20 And 21** Thread The Tape Over And Around The First “Smooth” **Guide Roller**.
3. Continue To Thread The Tape Over And Around The “Knurled” **Clutch Roller**.
4. Then Pass The Tape Up And Over The Second “Smooth” **Guide Roller**.
5. Continue Threading The Tape Over And Behind The Final “Knurled” **Guide Roller**.
6. Thread The Tape Through The Cut-Out Provided In The **Tape Guide Shoe** And Pull The Tape Through The Front **Application Roller**, Ensuring That The Tape Is Retained In The Tape Guide Shoe
7. Cut Off The Folded Tape.
8. Replace The Tape Head To Its Initial Position In The Machine.

## SET-UP PROCEDURES

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### 13. Re-Installing Tape Heads

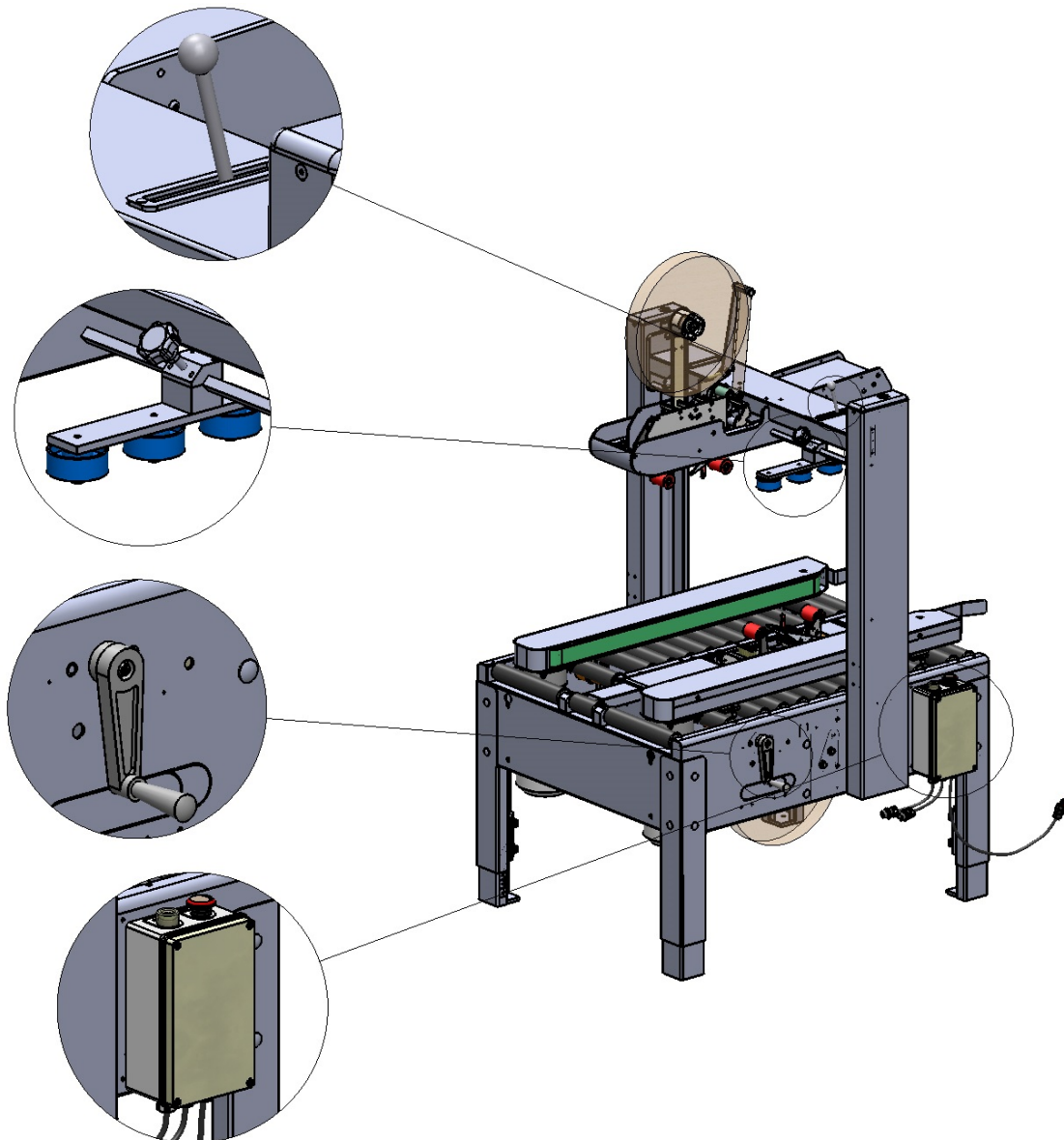


**Figure-22**

1. Insert Exit End of Tape Head into Rear Slots.
2. Rotate Front of Tape Head Down Into Front Slots
3. Push Front of Tape Head Down to Seat in Bottom of Slot.

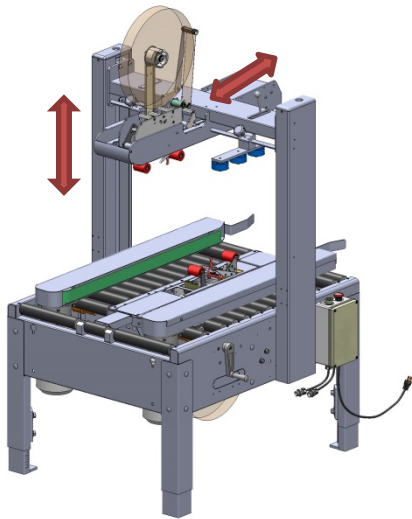
# OPERATING INSTRUCTIONS

## Case Size Set Up Functions

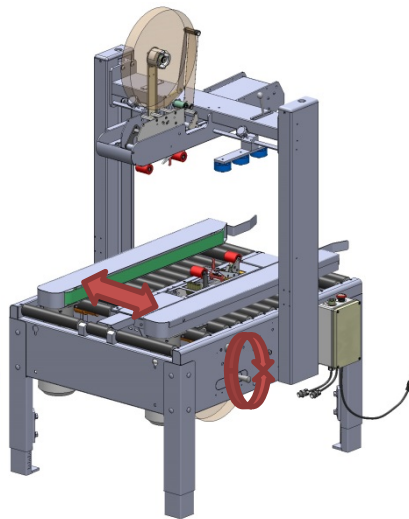


**Figure-23**

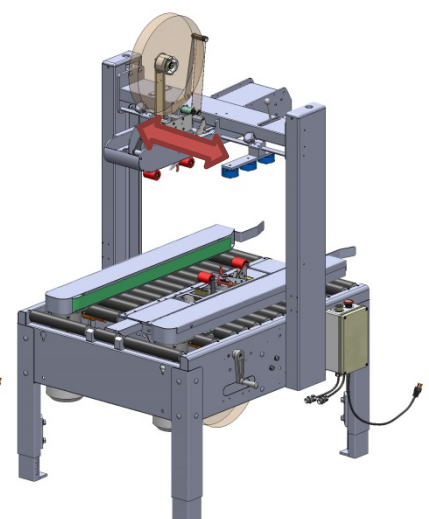
## 1. Initial Condition



**Figure-24**



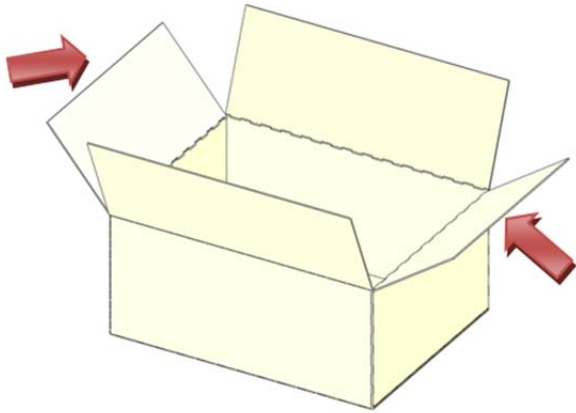
**Figure-25**



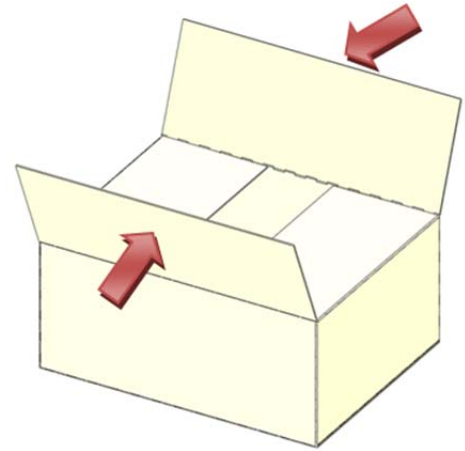
**Figure-26**

- a. Raise the upper head as shown in **Figure-24**
- b. Open Side Drives or Centering Guides as shown in **Figure-25**
- c. Loosen Each Locking Knob And Open Top Squeezers as shown in **Figure-26**

## 2. Preparation Of Case To Be Processed



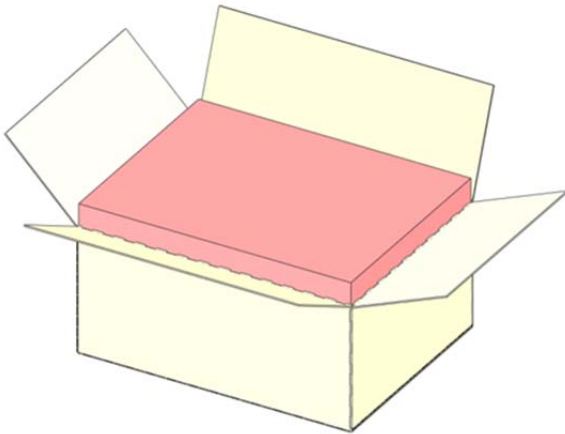
**Figure-27**



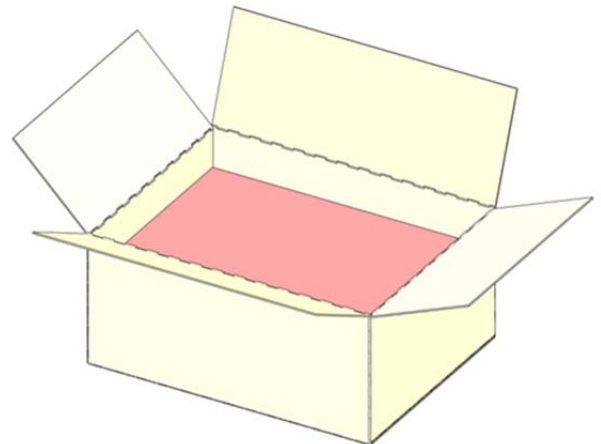
**Figure-28**

### a. Flap Folding

- i. Fold Minor Flaps In As Shown In **Figure-27**
- ii. Fold Major Flaps In As Shown In **Figure-28**



**Figure-29**

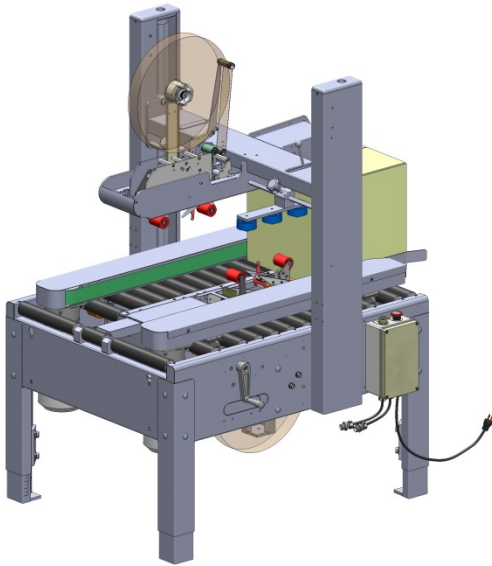


**Figure-30**

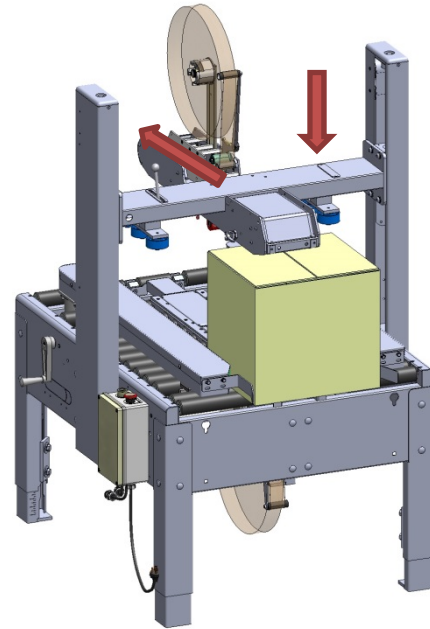
### b. Over Fills And Void Fills.

**Over Fills** As Shown In **Figure-29** And **Void Fills** As Shown In **Figure-30** Should Be Avoided To Assure Proper Processing Of The Corrugated Case. Each Of These Scenarios Put Stress On The Pressure Sensitive Tape Seal Which Could Be Detrimental To The Integrity Of The Closure.

### 3. Case Height Adjustment



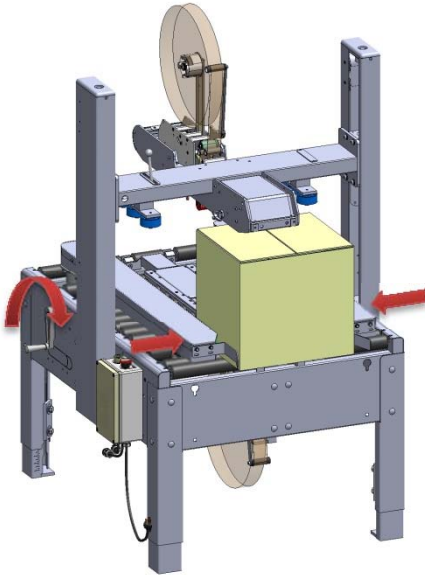
**Figure-31**



**Figure-32**

- a. Insert The Case To Just Before Front Roller Of Lower Tape Head As Shown In **Figure-31**
- b. Move Locking Handle To Unlock Position. Lower Upper Head Until Upper Head Contacts Top Of Case. Upper Head Should Contact Case Firmly Enough To Keep Major Flaps Closed But Not Restrict Processing Of Case Or Score The Top Of Case. Move Locking Handle Back To Locked Position.

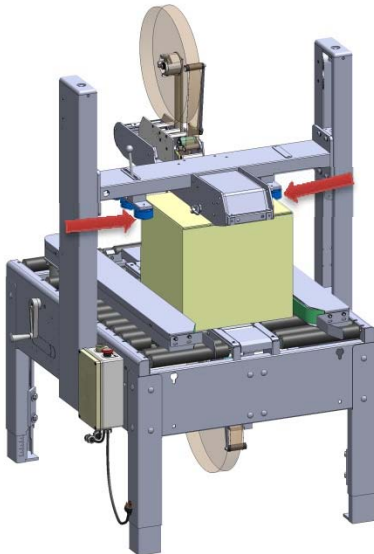
#### 4. Case Width Adjustment



- a. Turn Case Width Handle As Shown in **Figure-33** Until Side Drive Belts Contact Case. Side Drive Belts Should Contact The Case Firmly Enough So Case Processes Smoothly But Not So Firm As To Score The Side Of The Case.

**Figure-33**

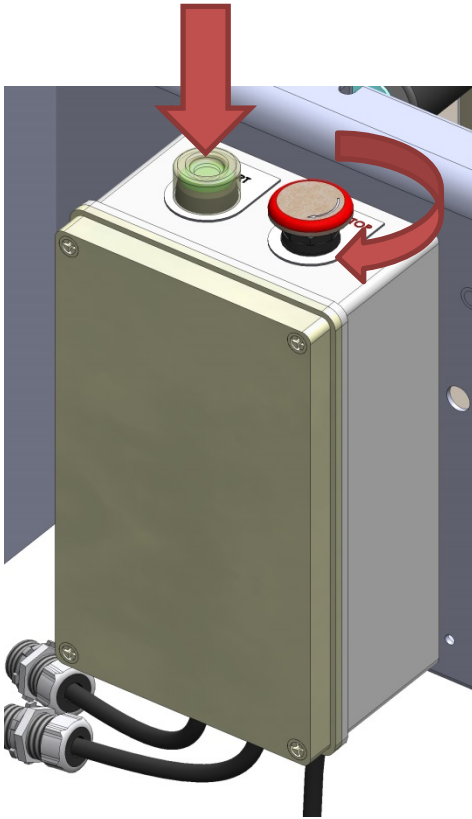
#### 5. Top Squeezer Adjustment



- a. Slide Each Top Squeezer To Contact The Case Firmly And Tighten Each Locking Knob As Shown In **Figure-34**. Each Top Squeezer Should Be Firm Enough On The Case To Completely Close Any Gap On The Center Seam But Not So Firm As To Restrict The Smooth Processing Of The Case

**Figure-34**

## 6. Power On.



- a. Rotate The E Stop Clockwise 1/4<sup>th</sup> Turn To Reset The Knob As Shown In **Figure-35**
- b. Push The Green Start Button To Start The Machine And Process The Case

**Figure-35**

## 7. Review Of Case Processing

Case Should Process Smoothly Through The Machine And Apply The Tape Evenly To Each Top And Bottom Major Flap With A 2 ¼" Tape Leg Applied To Each End Panel.

Should The Case Processing Need Correction Please Refer To The Trouble Shooting Section In This Manual



# TROUBLE SHOOTING

The **USA 2024-SB SS** 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 table. If the problem you encounter is not discussed in this table, call Interpack Technical Support (see page 2 of this document).

Trouble	Possible Causes	Solutions
Green Start Button Depressed But Belts Do Not Turn	E-Stop not Re-Set  Machine Not Plugged In	Rotate E-Stop 1/4 Turn Clockwise.  Plug Machine Into 115 V, 60 Hz, 15 Amp Electrical Service.
Motors Turn But Belts Do Not Turn	Belt Tension Too Low	Re-Tension Drive Belts, See Section 11 page 51
Drive Belts Do Not Process Cases.	Belt tension Too Low  Case Width Adjustment Incorrect.  Case Height Adjustment Incorrect.  Collapsed Leading End Panel On Case.  Case Size Is Out Of Specification.  Top Squeezers Set Incorrectly.	Re-Tension Drive Belts, See Section 11 page51  Re-Adjust Case Width, See Section 8 page 39  Re-Adjust Case Height, See Section 8 page 38  -Install Lighter Gauge Tape Head Main Spring -Reduce Unwind Tension On Tape Roll a. Mandrel Tension b. Clutch Roller Tension  Compare Case Sizes With Machine Specifications, Section 6 page 20  Re-Adjust Top Squeezers, See Section 8 page 39
Case Processes But Top Of Case Is Crushed	Case Height Adjustment Is Incorrect	Re-Adjust Case Height, See Section 8 page 38
Case Processes But Side Of Case Is Crushed	Case Width Adjustment Incorrect	Re-Adjust Case Width, See Section 8 page 39

## TROUBLESHOOTING CONTINUED

Trouble	Possible Causes	Solutions
Case Processes But Leading End Panel Is Crushed	<p>Product Does Not Support The End Panel Of The Case</p> <p>Main Spring Tension On Tape Head Too Strong</p>	<p>Insert Proper Dunnage Material To Provide Support</p> <p>Reduce Main Spring Tension. See Tape Head Manual Provided With Tape Head</p>
Drive Belts Start, Then Stop	Motor Starter Trips	Call Maintenance
Void Fill Cases Do Not Process Properly	Upper Tape Head Wipe Down Rollers Collapse Inside Case.	<p>-Install Lighter Gauge Tape Head Main Spring</p> <p>-Reduce Unwind Tension On Tape Roll</p> <p>    a. Mandrel Tension</p> <p>    b. Clutch Roller Tension</p>
Overfilled Cases Do Not Process Properly	<p>Product Height Exceeds Case Height</p> <p>Excessive Void Fill Dunnage.</p> <p>Top Tape Head Box Is Not Adjusted Properly</p>	<p>-Reduce Product In Case To Match Case height</p> <p>-Increase Case Height To Match Product Height.</p> <p>Reduce Void Fill Dunnage to Match Case Height</p> <p>Readjust Top Tape Head Box To Proper Case Height</p>
Unstable Cases Do not Process Properly	Case Height Exceeds 1 ½ Times The Case Length	<p>-Re-Configure Case Dimensions So That Case Is Not Unstable</p> <p>-Process Case On Top and Bottom Belt Drive Machine</p>
Tape Not Centered on Carton	<p>Tape Roll Mandrel Not Centered on Case.</p> <p>Tape Roll Not Fully Pushed On Tape Mandrel.</p>	<p>Center Tape Roll Mandrel, See Tape Head Manual.</p> <p>Push Tape Roll Completely Onto Tape Mandrel.</p>
Tape Leg Is Too Short / Too Long	<p>Tape Leg Adjustment Not Correct.</p> <p>Tape Head Is Not Threaded Correctly</p> <p>Tape Roll Unwind Tension Is Too Strong Or too Weak.</p>	<p>Adjust Tape Leg, See Tape Head Manual.</p> <p>Thread Tape Head Correctly, See Section 7 page 33.</p> <p>Adjust Unwind Tension, See Tape Head Manual.</p>

## TROUBLESHOOTING CONTINUED

Trouble	Possible Causes	Solutions
Rear Tape Leg Is Folded Or Wrinkled	<p>Tape Threaded Incorrectly</p> <p>Adhesive Build Up In Tape Path</p> <p>Dull Blade</p> <p>Excessive Unwind Tension From Tape Roll</p>	<p>Review Tape Threading <b>Page 33</b></p> <p>Clean Tape Guide Rollers To Provide A Free Rotation</p> <p>Clean Tape Path, Blade</p> <p>Replace Blade</p> <p>Adjust Mandrel Tension And Clutch Roller Tension. See Tape Head Manual Provided With Tape Head</p>
Tape Does Not Cut	<p>Dull Blade</p> <p>Insufficient Tension At The Clutch Roller</p>	<p>Replace Blade</p> <p>Increase Clutch Roller Tension Slightly. See Tape Head Manual Provided With Tape Head</p>
Upper Head Adjustment Difficult To Move	<p>Dust And Dirt On Shaft</p> <p>Upper Head Misaligned.</p>	<p>Clean Shaft, Lubricate With Industrial Grade Silicone.</p>
Drive Base Adjustment Handle Is Hard To Turn	<p>Dust And Dirt On Acme Screw</p> <p>Dust And Dirt On Chain</p>	<p>Clean Acme Screws, Lubricate With Light Machine Grease. See Section 11 pages 47-48</p> <p>Clean Chain And Lubricate With Chain Lube. See Section 11 pages 47-48</p>

## RECOMMENDED SPARE PARTS

This Machine Is Designed To Provide Years Of Trouble Free Operation. However, Maintaining A Small Inventory Of Spare Parts Assures Minimum Downtime In The Event Of A Problem. We Recommend That You Stock The Following Spare Parts.

DESCRIPTION	ITEM NUMBER	RECOMMENDED QUANTITY
BEARING PULLEY 3/4 X 1-5/8 X 7/16 SS	UPM7220	2
BUMPER	UPM2861	8
BELT ENDL.SAG 12E, 2" X 83"	UPM0663	2
LINEAR BEARING 25MM SHAFT	LM25UU	2
CONSTANT FORCE SPRING 33LBS	UPM0740	1
CONSTANT FORCE SPRING 24LBS	UPM2181	1
PLASTIC WHEEL 3"	UPM1679	2
SS SINGLE LOCKING HANDLE	UPM2865	1

### Replacement Parts

Order parts by item number, part name and quantity required. Replacement parts are available from your Authorized Interpack Distributor exclusively.

Should you require assistance selecting the correct part, you may call:

Intertape Polymer Group  
Interpack Machinery  
9940 Currie Davis Drive, Suite 23B  
Tampa, FL, 33619

Tel: 1-800-474-8273 Option 3  
Fax: 1-800-462-1293

### Field Service Assistance

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 Trouble Shooting section of this manual.

However, after consulting the Trouble Shooting Section of this manual, you cannot remedy the problem; customer paid service support is available from your Authorized Interpack Distributor.

# PREVENTATIVE MAINTENANCE

The USA 2024-SB SS 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

Please review the illustrations and chart below for information regarding machine And Tape Head maintenance

## Machine Preventative Maintenance Chart

Item	Action Required	Material	Frequency		
			Weekly	Monthly	Quarterly
Carton Dust In/On Machine	Blow Off Machine Externally and Internally	Air hose	X		
	Pay Attention To Drive Base Centering Chain				
Carton Dust Inside Drive Bases	Remove Drive Base Cover	Screw Driver	X		
	Blow Out Carton Dust	Air Hose			
	Replace Cover	Screw Driver			
Hardware	Re-Tighten any Loose Hardware			X	
	Replace any Missing Hardware				
Column Shafts	Lubricate	Industrial Grade Silicone		X	
Cross Shafts	Lubricate	Light Machine Grease		X	
Centering Chain	Lubricate	Chain Lubricant		X	

# PREVENTIVE MAINTENANCE

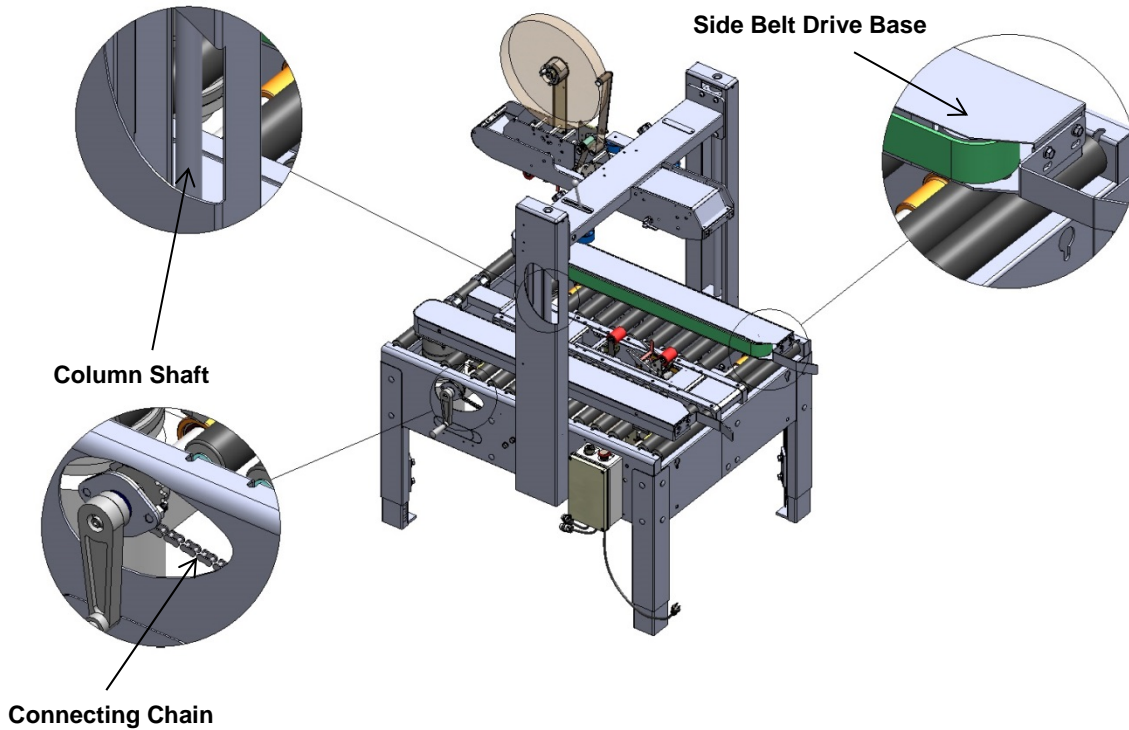
## Tape Head Preventative Maintenance Chart

Item	Action Required	Material	Frequency		
			Weekly	Monthly	Quarterly
<b>Blade Guard Oiler Pad</b>	Lubricate	Lightweight oil	X		
<b>Hardware</b>	Re-tighten any loose hardware				X
	Replace any missing hardware				X
<b>Cutter Blade</b>	Inspect for wear		X		
	Clean	Solvent Cleaner	X		
<b>Mandrel Assembly</b>	Disassemble & Observe				X
Mandrel Spring	Check for weakness	None			X
Mandrel Friction Washer	Clean	Solvent Cleaner			X
Mandrel Metal Washer	None	None			X
Mandrel Shaft	Remove any dust and adhesive build up	Solvent Cleaner			X
Mandrel Bearing	Check for wear	None			X
<b>Peel Roller</b>					X
Delrin Roller	Check for free spinning. Disassemble and remove any adhesive build up	Solvent Cleaner			X
Pivot Shaft	Check for any restriction	Solvent Cleaner			X
Peel Roller Spring	Check for weakness				X
<b>Plastic Guide Rollers</b>	Check for free spinning. Disassemble and remove any adhesive build up	Solvent Cleaner		X	
<b>Knurled PTFE Coated One Direction Clutch Roller</b>	Back off tension. Check for free spinning. Disassemble and remove any adhesive build up	Solvent Cleaner		X	
<b>Knurled PTFE Coated Guide Roller</b>	Rotation should be slightly restricted by Belville washer. Disassemble and remove any adhesive build up if excessive restriction is detected	Solvent Cleaner		X	
<b>Front Red Wipe Down Rollers</b>	Rotation should be slightly restricted by Belville washer. Disassemble and remove any adhesive build up if excessive restriction is detected	Solvent Cleaner		X	
<b>Rear Red Wipe Down Rollers</b>	Check for free spinning. Disassemble and remove any adhesive build up	Solvent Cleaner		X	
<b>Main Spring</b>	Remove and inspect for any wear or weakness. Replace as necessary			X	
<b>Knife Spring</b>	Remove and inspect for any wear or weakness. Replace as necessary			X	
<b>Tape Shoe Guide Flat Spring</b>	Inspect for any wear or weakness. Replace as necessary			X	
<b>Wipe Down Brush</b>	Inspect for any wear or weakness. Replace as necessary			X	
<b>Main Applying And Wipe Down Assembly</b>	Remove <i>Main Spring</i> and check for any restrictions when assembly is in motion	Worn bearings, bent shafts, bent roller arms			X
<b>Knife Arm Assembly</b>	Remove <i>Knife Spring</i> and check for any restrictions when assembly is in motion	Worn bearings, bent shafts, bent arms			X

Refer To Assembly Drawings For Part Numbers Of Replacement Parts If Required

# PREVENTIVE MAINTENANCE

## Cleaning The Machine



**Figure-36**

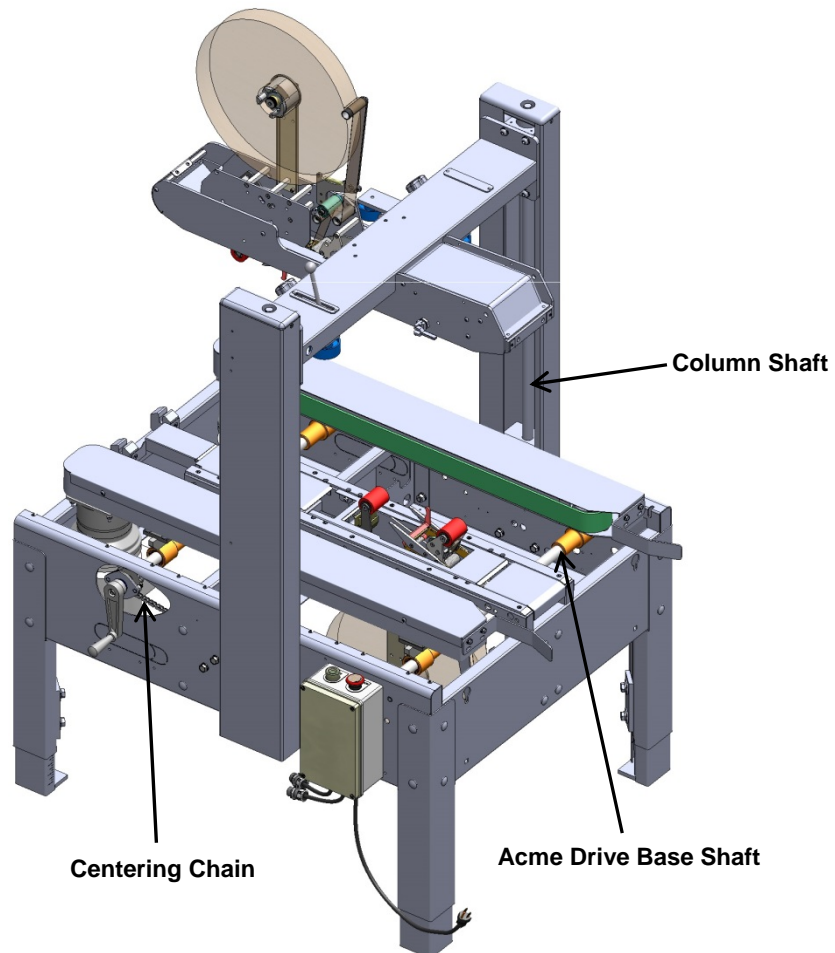
**Warning! Please Exercise All Safety Precautions Prior To Starting This Procedure. Disconnect Electrical Power And Wear Approved Safety Glasses**

- a. **Side Belt Drive Base**
  - i. Insert An Air Nozzle Along The Top Edge Of The Belt Into The Opening Of The Drive Base And Clean Out Any Dust And Dirt
- b. **Column Shaft**
  - i. With A Cloth, Wipe Down Any Accumulation Of Dust And Dirt.
  - ii. Be Sure To Wipe Down Both Columns.
- c. **Connecting Chain For Centering Assembly**
  - i. Blow Off Any Accumulation Of Dust And Dirt From The Connecting Chain

# PREVENTIVE MAINTENANCE

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## Lubricating the Machine



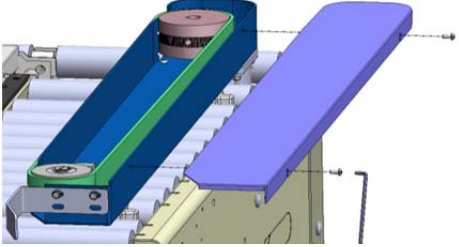
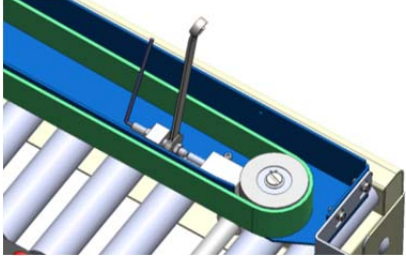
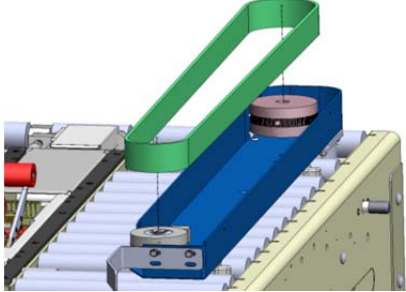
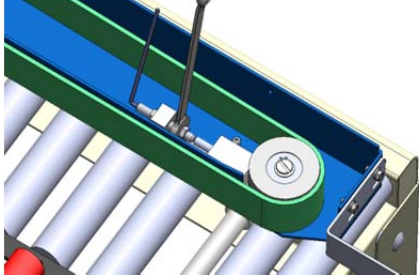
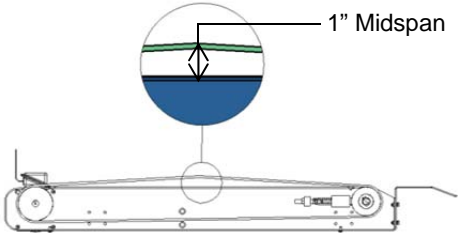
**Figure-37**

- a. **Column Shaft.**
  - i. Lubricate Both Shafts With Industrial Grade Silicone.
- b. **Acme Drive Base Shafts.**
  - i. Lubricate Both Shafts With Light Machine Grease.
- c. **Centering Chain.**
  - i. Lubricate Chain With Chain Lubricant.



# MACHINE MAINTENANCE & ADJUSTMENT

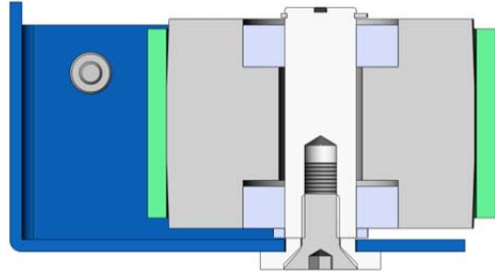
## Drive Belt Replacement

<p>Using a 4mm Allen key, remove screws (2) and remove drive base cover.</p>	
<p>Using appropriate Allen key and wrench, loosen belt tensioning bolts.</p>	
<p>Remove worn belt and replace with new belt.</p>	
<p>Using appropriate Allen key and wrench, tighten belt tensioning bolts.</p> <p>Be sure to adjust both drive belts' tensioning bolts equally.</p>	
<p>Proper belt tension is achieved when a 5 pound pull force is used to create a 1" gap as shown in the middle of the drive base.</p>	

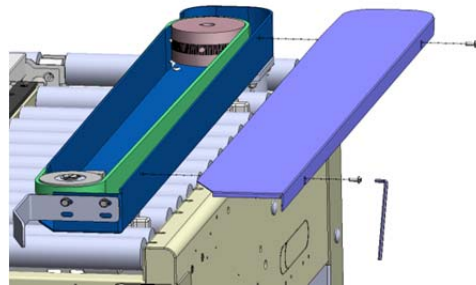
## MACHINE MAINTENANCE & ADJUSTMENT

Intertape S/B drive idler pulleys are engineered to self-track to center.

After tensioning, if the belts do not track on center, contact maintenance or your IPG Distributor.

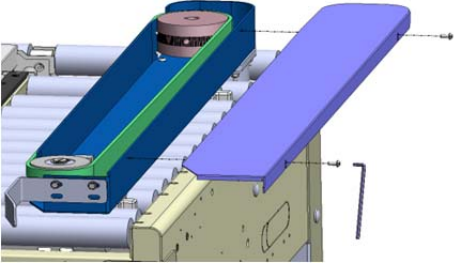
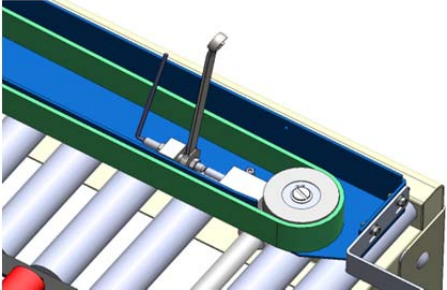
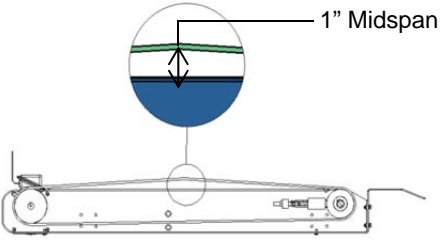
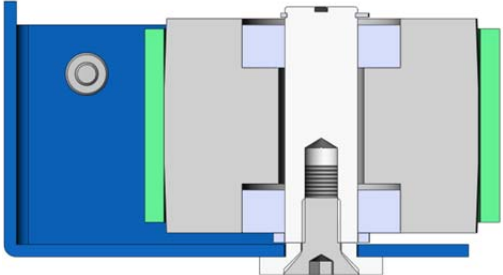
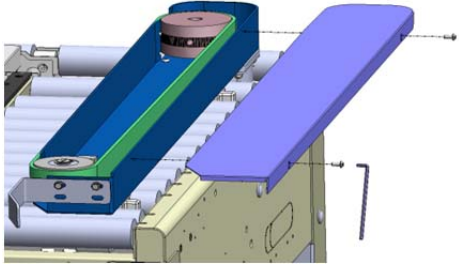


Using a 4mm Allen key, replace drive base cover as shown.

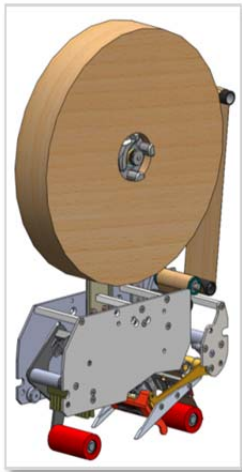


# MACHINE MAINTENANCE & ADJUSTMENT

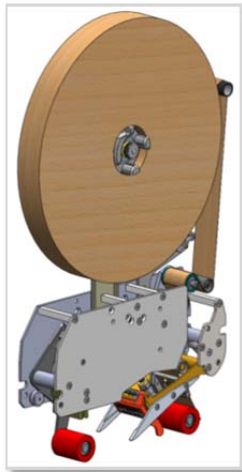
## Drive Belt Adjustment

<p>Using a 4mm Allen key, remove screws (2) and remove drive base cover.</p>	
<p>Using appropriate Allen key and wrench, tighten belt tensioning bolts.</p> <p>Be sure to adjust upper and lower tensioning bolts equally.</p>	
<p>Proper belt tension is achieved when a 5 pound pull force is used to create a 1" gap as shown in the Middle of the drive base.</p>	
<p>Intertape S/B drive idler pulleys are engineered to self-track to center.</p> <p>After tensioning, if the belts do not track on center, contact maintenance or your IPG Distributor.</p>	
<p>Using a 4mm Allen key, replace drive base cover as shown.</p>	

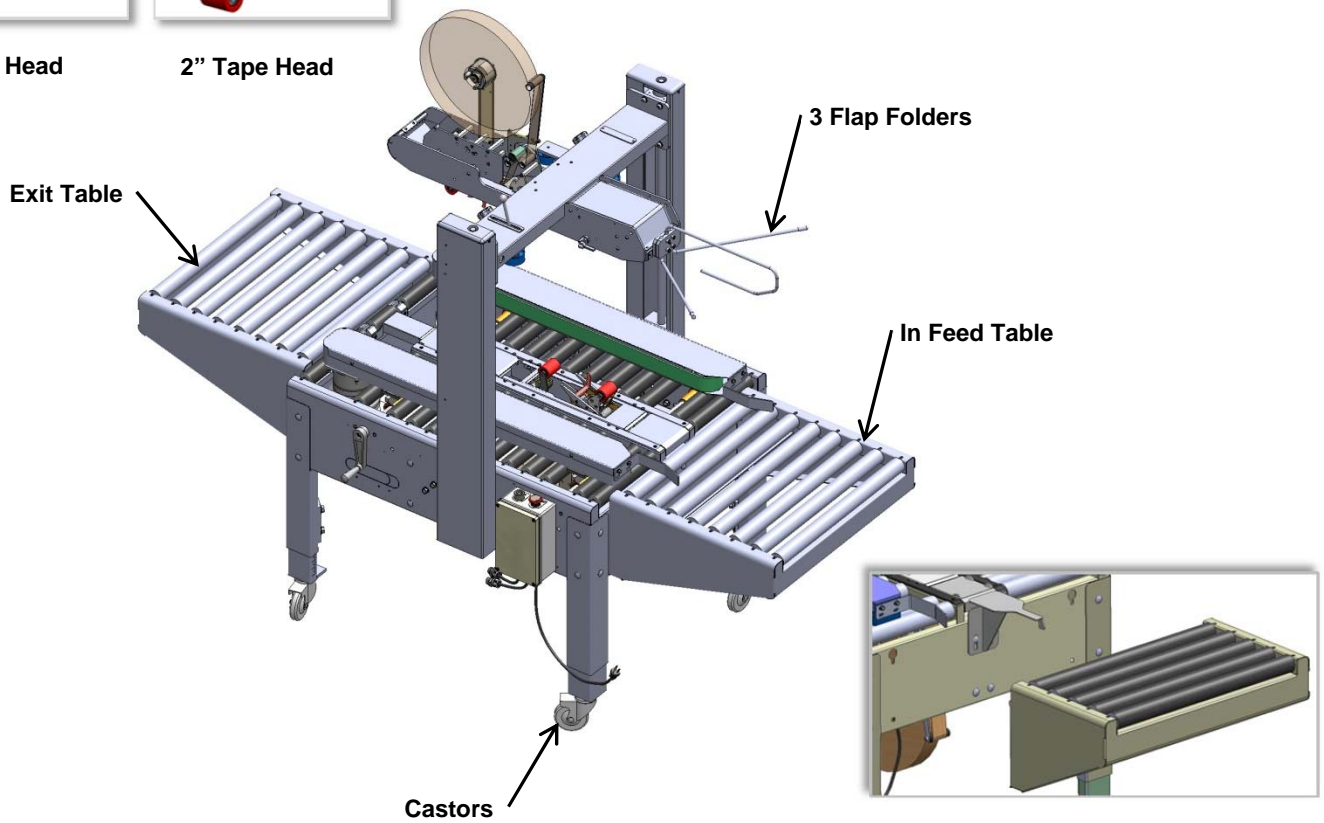
# OPTIONAL EQUIPMENT



3" Tape Head



2" Tape Head



3 Flap Folders

Exit Table

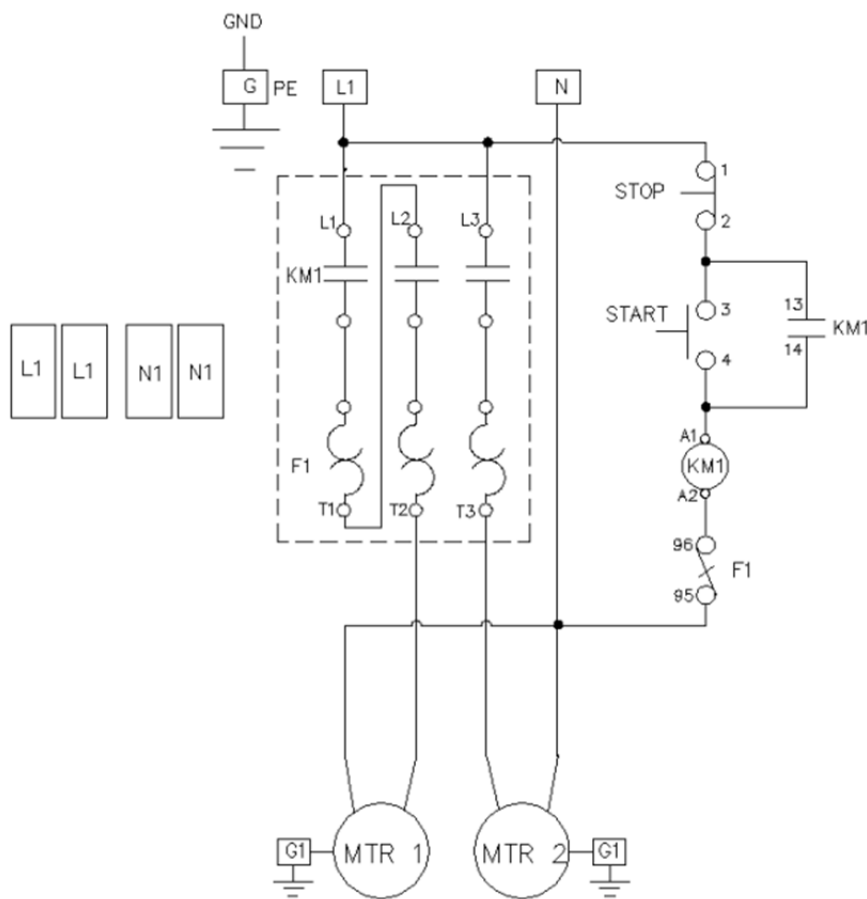
In Feed Table

Castors

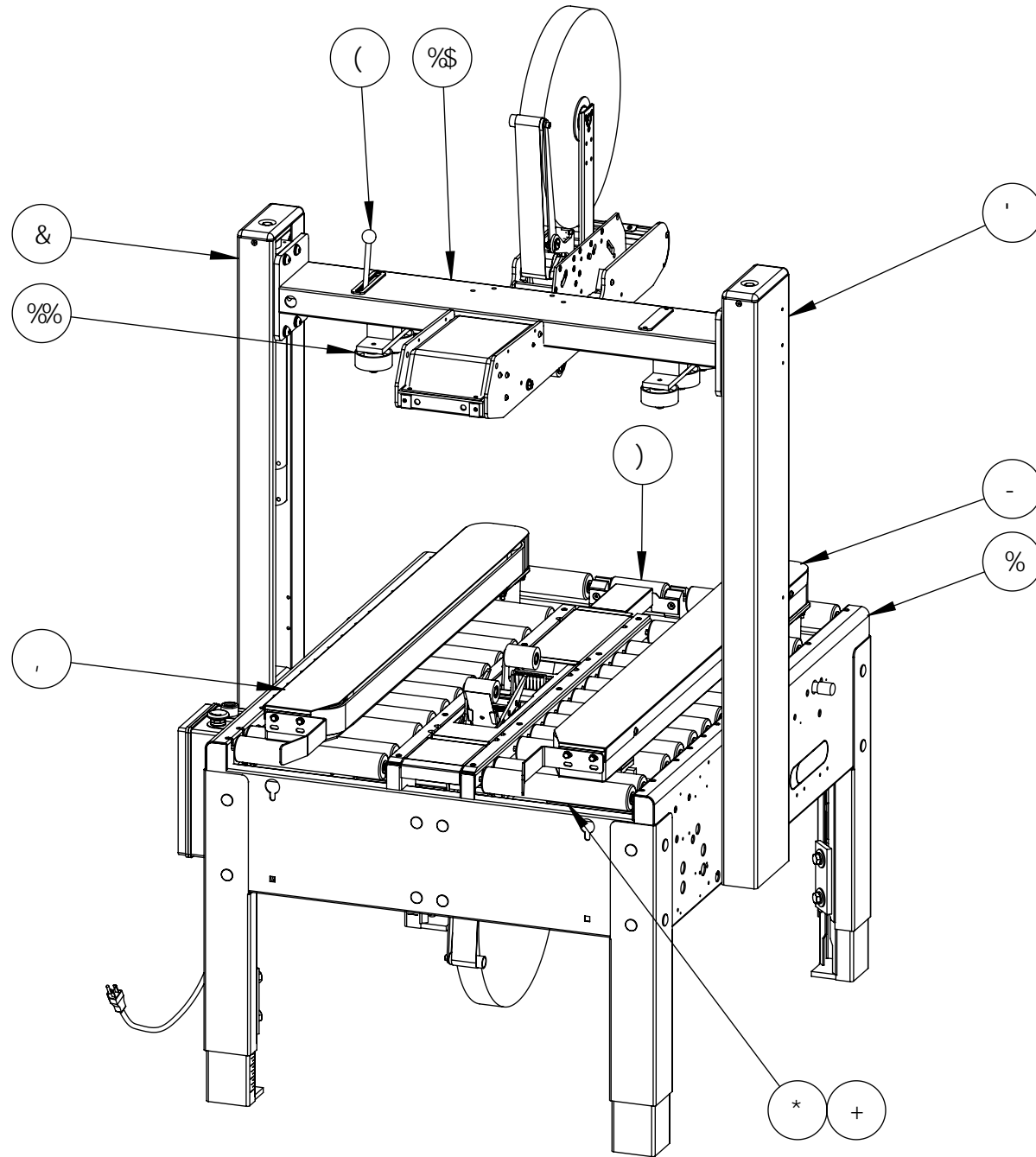
In Feed Table  
With Hold Down Device

# SCHEMATIC DIAGRAMS

## Electrical Drawing



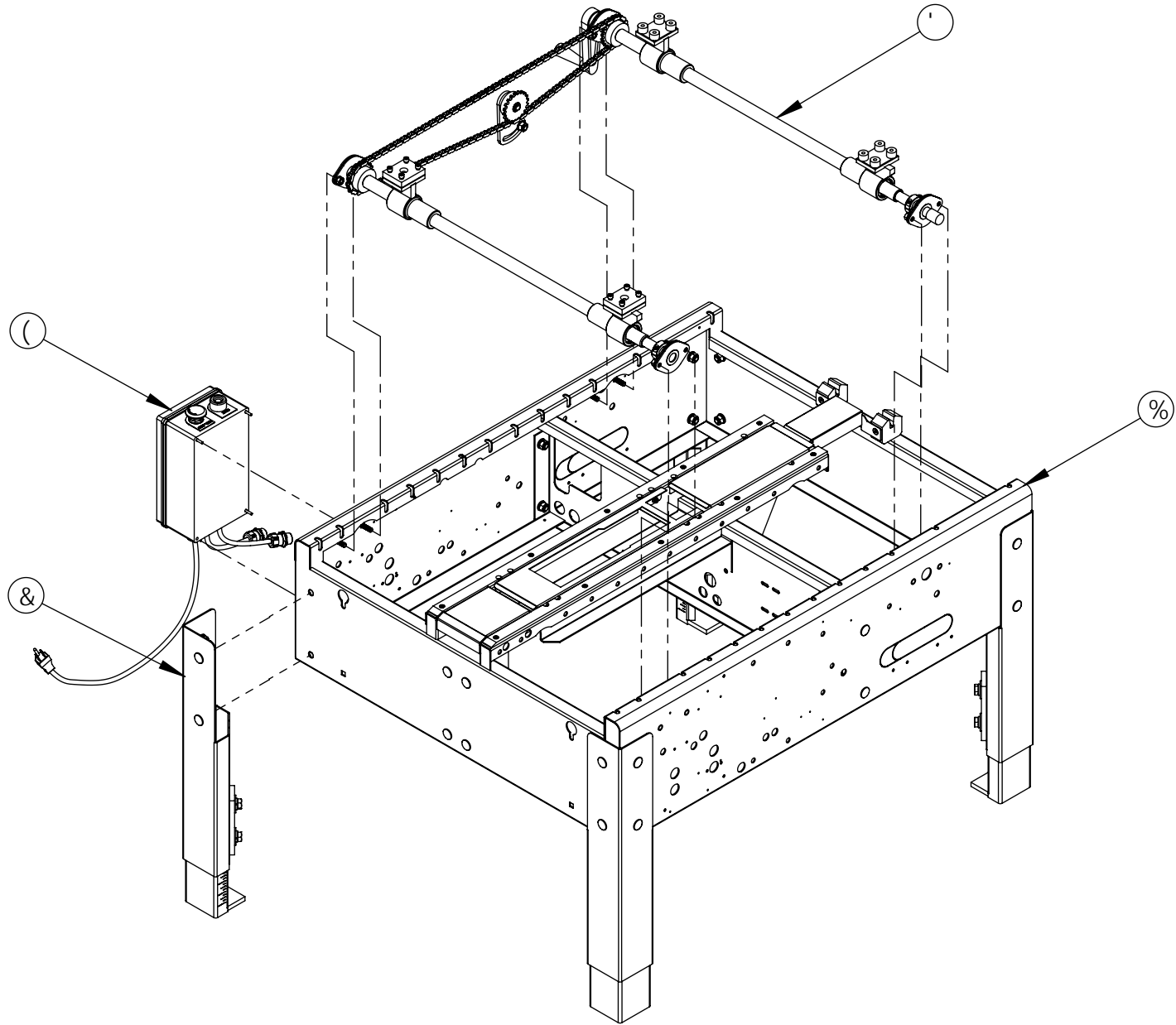
UM191TW  
UM691TW



UM191TW  
UM691TW

#9A	D5 FH.	8 9G7 F ðH€ B	E HM
%	I GA +) +&	65 G9'5 GG9A 6@MI G5 `&\$&(	%
&	I GA %&' %	7 C @ A B `&( '@: H5 GGfM	%
'	I GA %&' \$	7 C @ A B `&( 'F ÷ <H5 GGfM	%
(	I GA \$' - %	G-B; @'@ 7 ?"5 GGfM	%
)	I DA '' &\$	FC @@9F	%
*	I DA '' \$%	FC @@9F	&*
+	I DA '' \$\$	GG: 5GH9B 9F : C F %- 'C 8 'FC @@6@B 8 '<C @9	)(
,	I GA *% -	8F ð 9'65 G9'5 GGM@<	%
-	I GA *%(\$	8F ð 9'65 G9'5 GGMF <	%
%\$	I GA %&&-	6F -8; 9'K #k 'H5 D9< 95 8 '6C L '5 GG9A 6@M	%
%%	I GA \$, &'	GG'7 C A DF 9GG-€ B ; I -8 9'5 GGfM	&

USM7572



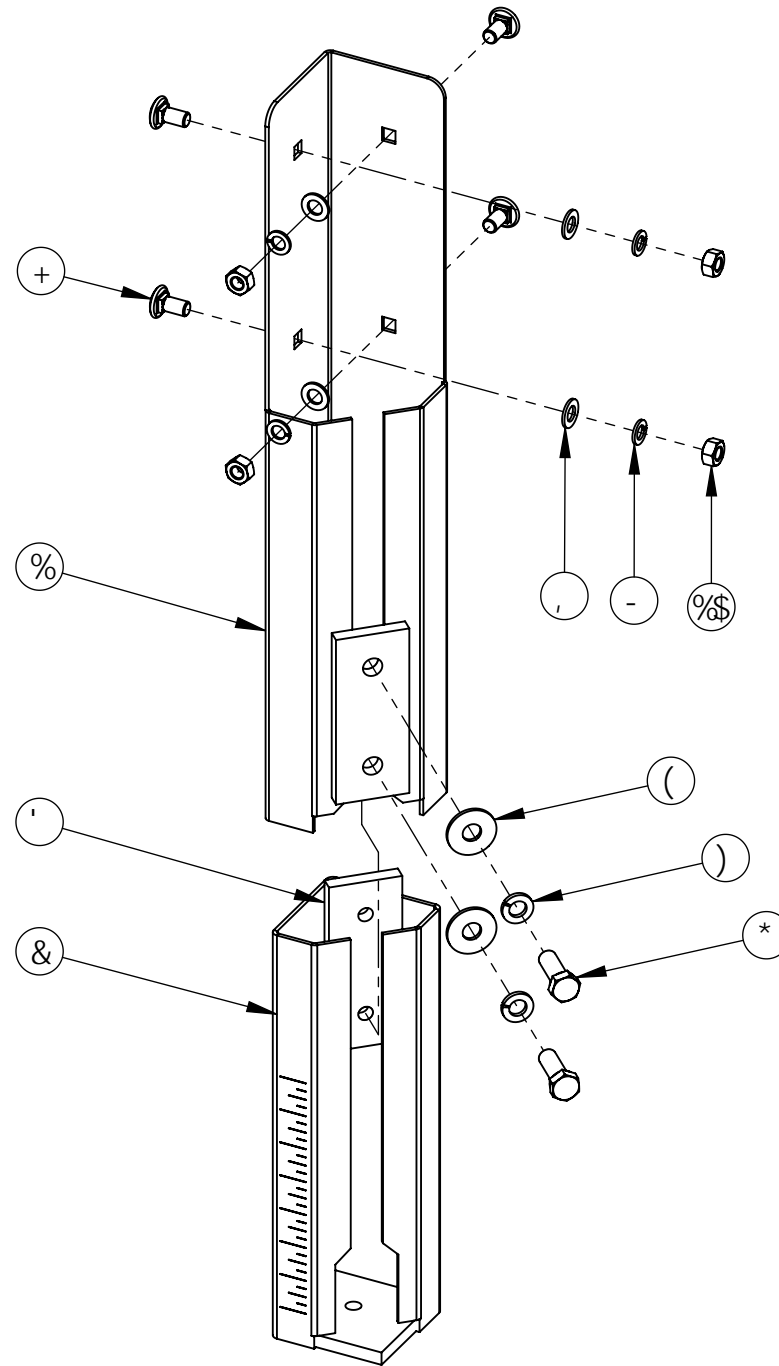


#DA	D5FH.	8 9G7 F DHC B	E HM
%	I 5A \$(%)	GG'65 G9'GI 6!5 GGfM	%
&	I 5A \$(%)	GG'@9, '5 GG9A 6@MA 9HF 7	(
'	I GA +) +'	8F 9'7 9B HF B; '5 GGfM	%
(	I GA %(\$&	9@97 HF 7 5 @5 GG9A 6@M	%



#DA	D5FH	8 9G7 F ðHC B	E HM
%	I DA () +&	C I HG8 9: F5A 9	%
&	I DA () +'	HF5BGJ 9FG9'6F57 ðB;	%
'	I DA ' &' (9J	C I H@HFC @@F '6@ 7 ?	&
(	I DA \$\$\$- 9J	G@8 ðB; 'D58 '@<"	%
)	I DA \$\$\$*9J	G@8 ðB; 'D58 'F"<"	%
*	I DA ' , %)	'H<"' ðB G9FH&"	%
+	I DA (% ')	F95F'; 5D: @@F	%
,	I DA ' & , 9J	C I H@H7 C J 9F 'I G5 'G6	%
-	I DA ' &&-	ðB @H7 C J 9F	%
%%	I : ' ' - %	GG'BM@ C B '@ 7 ? 'BI HA *!%'\$	%(
%%	I : ' %+\$	GG'G<7 G'A *!%'I ' , a a	,
%%	I : ' +( )	GG'7 5FF ð5; 9'6C @HA *!%'I '%&a a	*
%	I : ' &+'	GG': <7 G'A *!%'I '&\$A A	&
%(	I : ' *( %%)	GG'@K 'A *	(
%)	I : ' %+-	GG'G<7 G'A *!%'I '&\$a a	(
%*	I : ' +(&	GG'7 5FF ð5; 9'6C @HA %\$!%) 'I '&\$	,
%+	I : ' +\$%)	GG': K 'A %\$	,
%	I : ' +'	GG'A %\$'@K	,
%-	I : ' +((	GG'<B F 'A %\$'I '%)	,
&\$	I : ' +( %	GG'G9@ 'H5DD ðB; 'G7 F9K 'A ) 'I '%* a a	%%\$

UAM0415



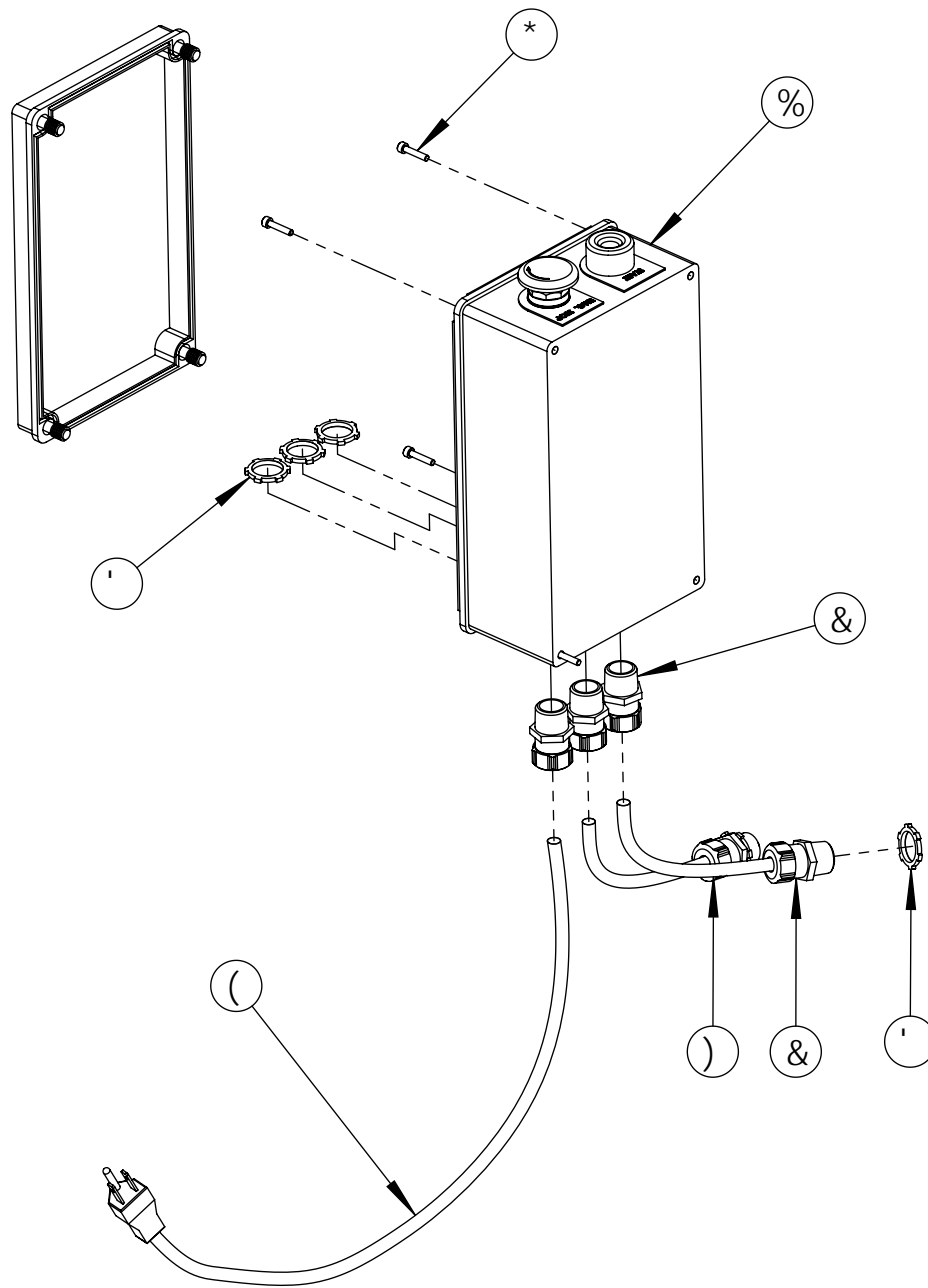
#9A	D5FH,	8 9G7 F ðHC B	E HM
%	I DA & ' \$	@, '65 G9	%
&	I DA \$) (,	@, '58 >I GHA 9B HGG \$(	%
'	I DA () +(	@, ' : F 7 HC B 'D@5H9	%
(	I : '*' ('	GG: K 'A %&	&
)	I : ' + ' '	GG@K 'A %&	&
*	I : ' + ' ('	GG<<7 GA %&!%+) ' ' ) a a	&
+	I : ' + (&	GG7 5FF 5; 9'6C @HA %\$!%) ' ' &\$	(
,	I : + \$%	GG: K 'A %\$	(
-	I : ' + ('	GG'A %\$ @K	(
%\$	I : ' + ((	GG<BF 'A %\$ ' ' %)	(



USM7573

#DA 'BC "	D5FHBI A 69F	8 9G7 F -DH€ B	E HM
%	I DA &+, \$	7 < 5 -B ; ' ) !%*) 'D#7 < 'GG	%
&	I DA &- %	GG'G<5: H7 C @5 F'	&
'	I DA (% ,	GG'8 F = 9'G' DDC FHGD5 7 9F	&
(	I DA & *%	6I A D9F	,
)	I : * (&\$	GG'GE I 5 F9?9MFC I B 8 '9B 8 G') I ' ) I '&\$	%
*	I DA *%%(	GG'8 F = 9'65 G9 < 5 B 8 @9	%
+	I DA &+-	GG'GDFC 7 ?9H' ) 6&\$"+) - 7 #K ' ' #0% ' ?K	'
,	I DA & , ) ,	GG'7 5 GHB ; ' F9D@7 HI G5 &\$&( G6 '@	&
-	I DA & , ) +	GG'7 5 GHB ; ' F9D@7 HI G5 &\$&( G6 'F <	&
%\$	I DA & , ) *9J	GG'5 Wā Y 'G\UZh' B c' < UbX'Y 'HK	%
%%	I DA & , ) ) 9J	GG'5 Wā Y 'G\UZh: cf < UbX'Y 'HK	%
%&	I DA &&\$+	7 5 D'J -B M@6@5 7 ?	%
%	I : ' ) + \$	GE I 5 F9?9MGG' #0% ' I ' ' #0% ' I ' ' # (	&
%(	I DA (%*%	695 F -B ; 'GD5 7 9F	(
%)	I DA (%*\$	695 F -B ; 'GD5 7 9F	(
%*	I DA & , - )	: @B ; 9'695 F -B ;	(
%+	I DA *%%)	H9B G€ B B 9F '6F 5 7 ?9H	%
%	I DA \$* ( \$9J	H9B G€ B B 9F 'D-B	%
%-	I DA & , *'	7 < 5 -B 'H9B G€ B B 9F 'GD5 7 9F	%
&\$	I DA \$*' - 9J	G@99J 9'695 F -B ; '%&'a a -B ' ' # (C 8 ' ' # ( @	%
&%	I : ' ) ) &	GG'%#&'F 9H-B -B ; 'F -B ;	%
&&	I : ' &+'	GG: < 7 G'A *!%I '&\$A A	%
&'	I : ' + ' )	GG' < B F 'A , !%&)'	,
&(	I : ' * ( \$	GG'@K 'A ,	,
&)	I : ( %%)	GG'G< 7 G'G'#!&\$'I '%%#( ffi	,
&*	I : ' % \$	GG'G< 7 G'A *!%L '&) a a '	%
&+	I : *' ( %	GG: K 'A *	%
&,	I : ' + ( ')	GG'A %\$'@K	&
&-	I : *' , ' ,	GG' < < 7 G'A %\$!%) 'I '&) 'a a	&
' \$	I : ' + ( (	GG' < B F 'A %\$'I '%)	&
' %	I : + \$%)	GG: K 'A %\$	(

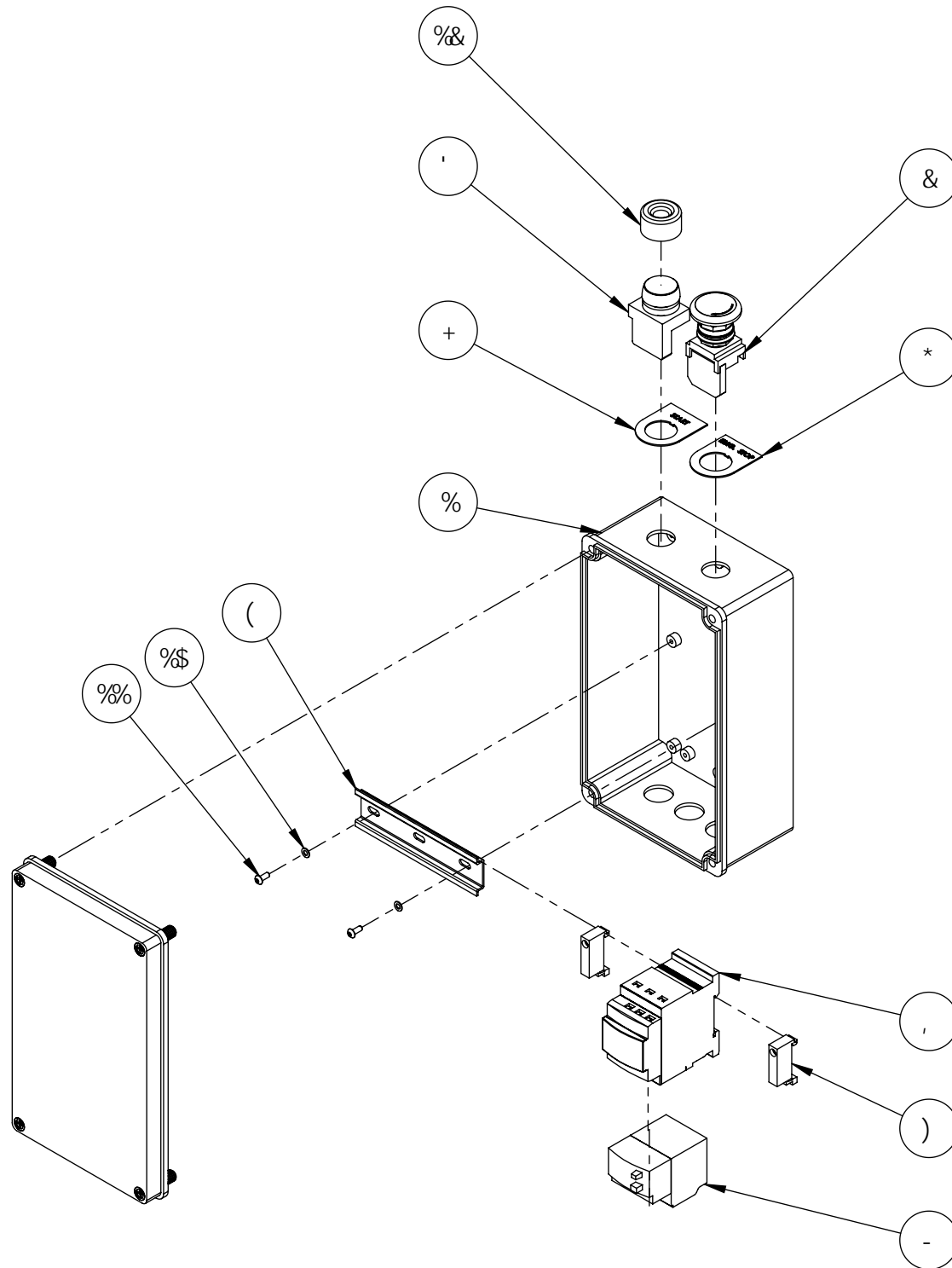
USM1402





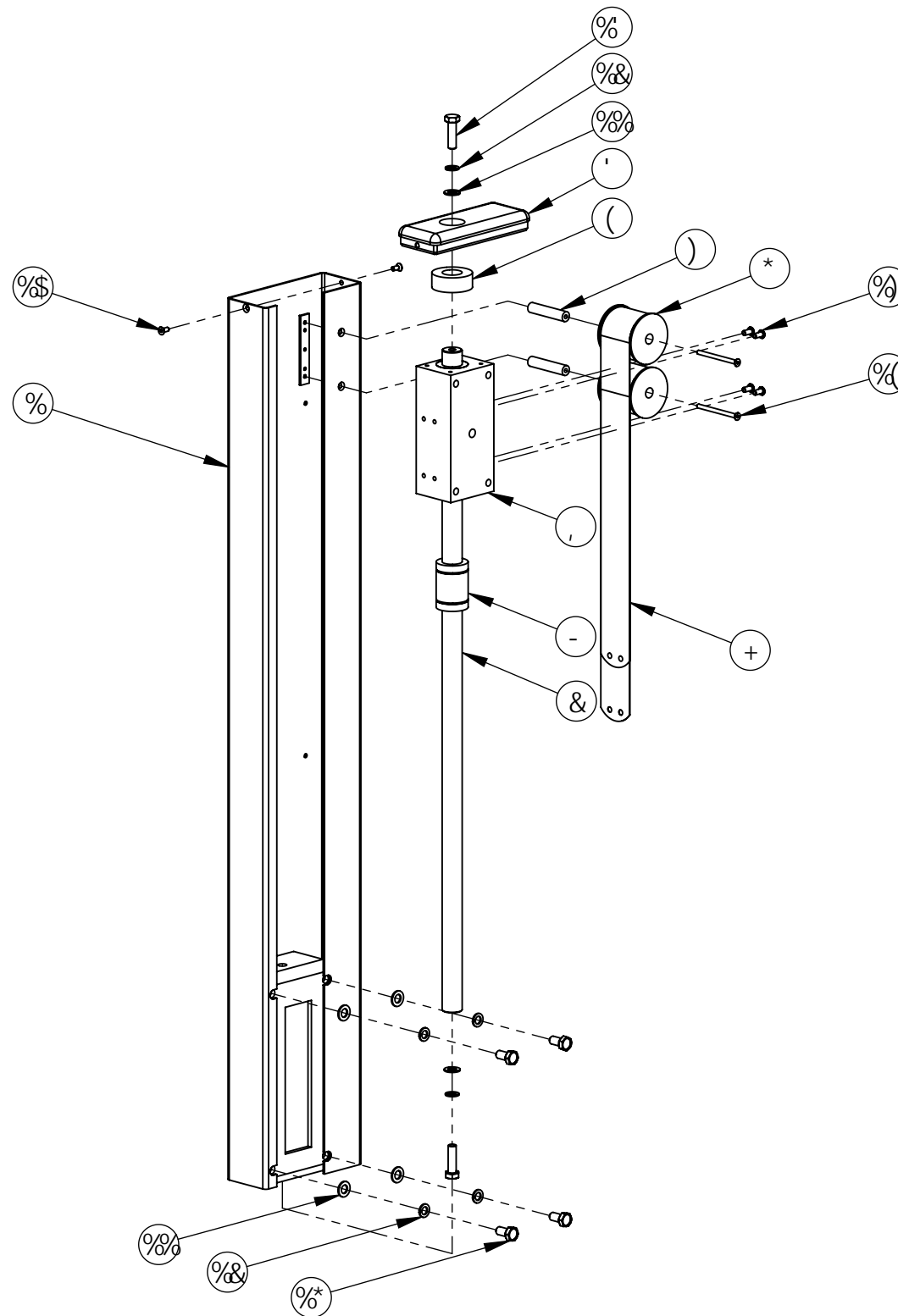
#9A	D5FH,	89G7 F ðH€ B	E HM
%	I 5A \$' ++	9@97 HF ÷ '6C L '5GG9A 6@M	%
&	I DA \$% +	GF "F9@ 'A 9H@E 8H <H%#(!' #,	)
'	I DA \$' (%	@ 7 ?BI H%#&"fI C F 'GF5 ð 'F9@ Ł	)
(	I DA \$\$-\$-	DC K 9F '7 C F 8ž%{ #	%
)	I DA \$\$&)	7 56@9% # 'HMD9'G>	&
*	I : \$+\$%	GG'G< 7 G'A (!\$"+I '&\$a a	('

UAM0377



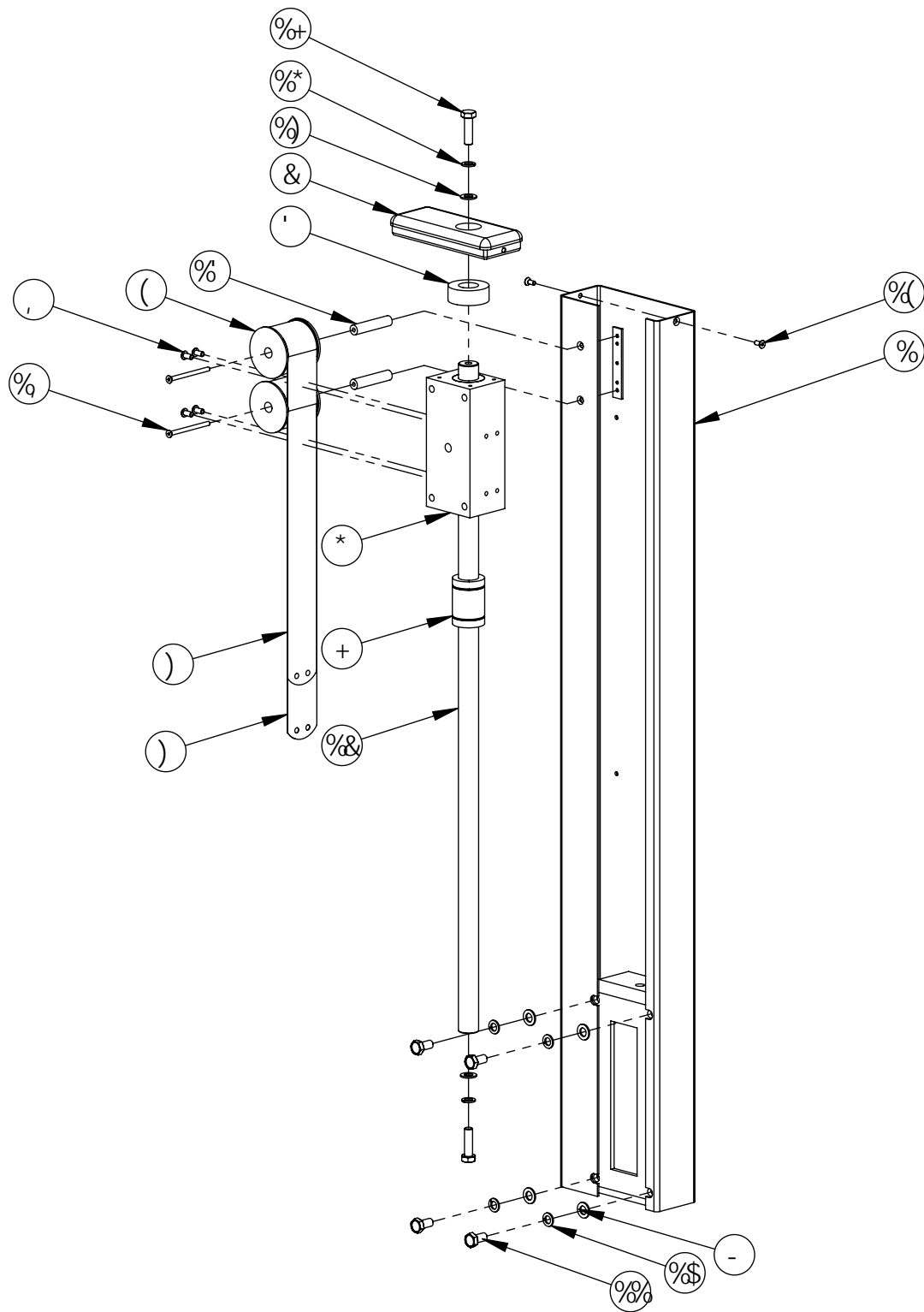
#9A	D5FH,	89G7 F DHC B	E HM
%	I DA +) &+	9@97 HF 7 '6CL '56G	%
&	I DA &&%%	6l HC B 'A I G<FC CA '&&a a '%B"7 "	%
'	I DA &&%&	6l HC B ; F99B '&&a a '%B"C "	%
(	I DA \$( \$+9J	8-B 'F5 @I G5 '&' &(	%
)	I DA +(\$9J	H6'9B8 '5B7 <CF': CF'8B'G9F	&
*	I DA &&\$- 9J	@9, 9B8 'D@5H9''9!GHC D''	%
+	I DA &&%\$9J	@9, 9B8 'D@5H9''G5FH'	%
,	I DA +) &(	A C HC F 'G5FH9F 'H@9A 97 '%%\$J 57	%
-	I DA &&% 9J	A C HC F 'C #@H@9A 97 '&')!("\$5	%
\$\$	I : *' ' -	GG: K 'A (	&
%%	I : *' *(	GG'6<7 G'A ( 'I '\$"+I '%\$a a	&
%&	I DA (+*\$	56'DFC H97 HJ 9'6C C H: @ G<'D6	%

USM1231



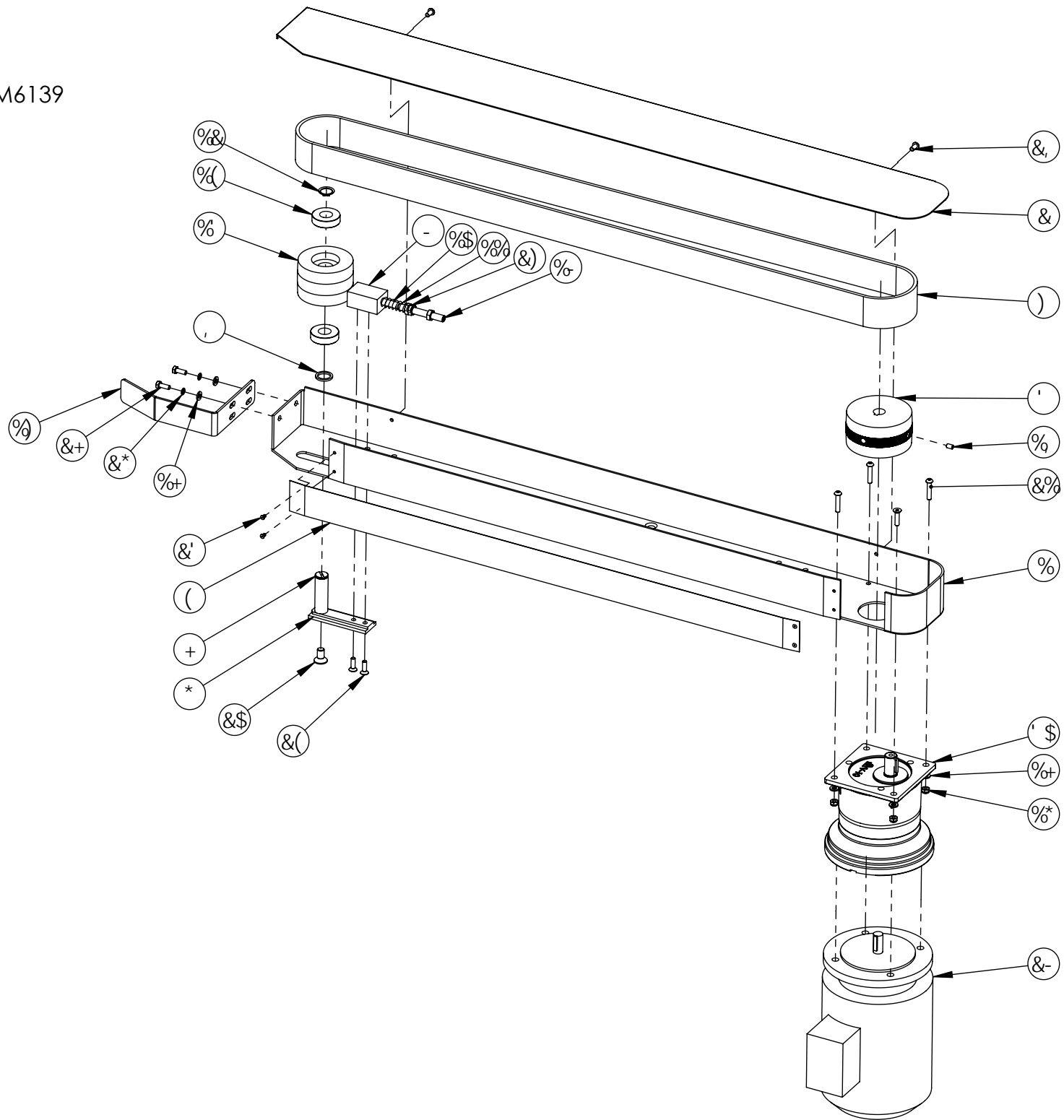
#9A	D5FH,	8 9G7 F ðH€ B	E HM
%	I DA *\$- %	GG7 C @ A B `&( '@: HA 9HF 7	%
&	I DA &, )' 9J	GG7 C @ A B `G<5: H	%
'	I DA \$+(%9J	7 C @ A B `7 5D '@: HG8 9	%
(	I DA &&) %	G5: 9HM6I A D9F	%
)	I DA \$+('	GDF ðB; `A 5 B 8 F 9@G<5: H	&
*	I DA \$+( &	GDF ðB; `GDC C @	&
+	I DA \$+(\$	7 C B G H 5 B H: C F 7 9 GDF ðB;	&
,	I DA - *) %	7 C @ A B `6@ 7? `(\$'a a `6C F 9	%
-	@A `&) I I	@B 95 F `695 F ðB; `&) `a a	&
\$\$	I : ' & , &	GG: <7 G`A )!\$, `I `%&'a a	&
%%	I : +\$%)	GG: K `A %\$	*
%&	I : ' +('	GG`A %\$`@K	*
%	I : '\$' \$&	GG<<7 G`A %\$!%) `I ` )	&
%(	I : %%) *	GG: <7 G`A )!\$, `I `+\$	&
%)	I : ' &+,	GG`6<7 G`A *!%I `%&'a a	(
%*	I : \$( ) ,	GG<<7 G`A %\$!%) `I `&\$'a a	(

USM1230



#9A	D5FH,	8 9G7 F ðH€ B	E HM
%	I DA *\$- &	GG7 C @ A B `&( `F ÷ <HA 9HF ÷	%
&	I DA &% &9J	7 C @ A B `7 5D`F ÷ <HG8 9	%
'	I DA &&) %	G5: 9HM6I A D9F	%
(	I DA \$+( &	GDF ð; `GDC C @	&
)	I DA \$+(\$	7 C BGF5BH: C F7 9`GDF ð;	&
*	I DA -*) %	7 C @ A B `6@ 7?`(\$`a a `6C F9	%
+	@ `&) I I	@B 95F `695F ð; `&) `a a	&
,	I : ` &+,	GG6<7 G`A *!%I `%&`a a	(
-	I : +\$%)	GG: K `A %\$	(
%\$	I : ` +(`	GG`A %\$`@K	(
%%	I : \$(,) ,	GG<<7 G`A %\$!%) `I `&\$`a a	(
%&	I DA \$+' , 9J	7 C @ A B `G<5: H	%
%	I DA (&%\$	GDF ð; `A 5B8F9@G<5: H	&
%{	I :) (\$\$	: <7 G`A )!\$, `I `%&`a a	&
%)	I : ` * , \$	: K `A %\$	&
%*	I : `*` +%	@K `A %\$	&
%+	I : `\$` %\$	<<7 G`A %\$!%) `I ``)	&
%	I : %%) +	: <7 G`A )!\$, `I `+\$	&

USM6139

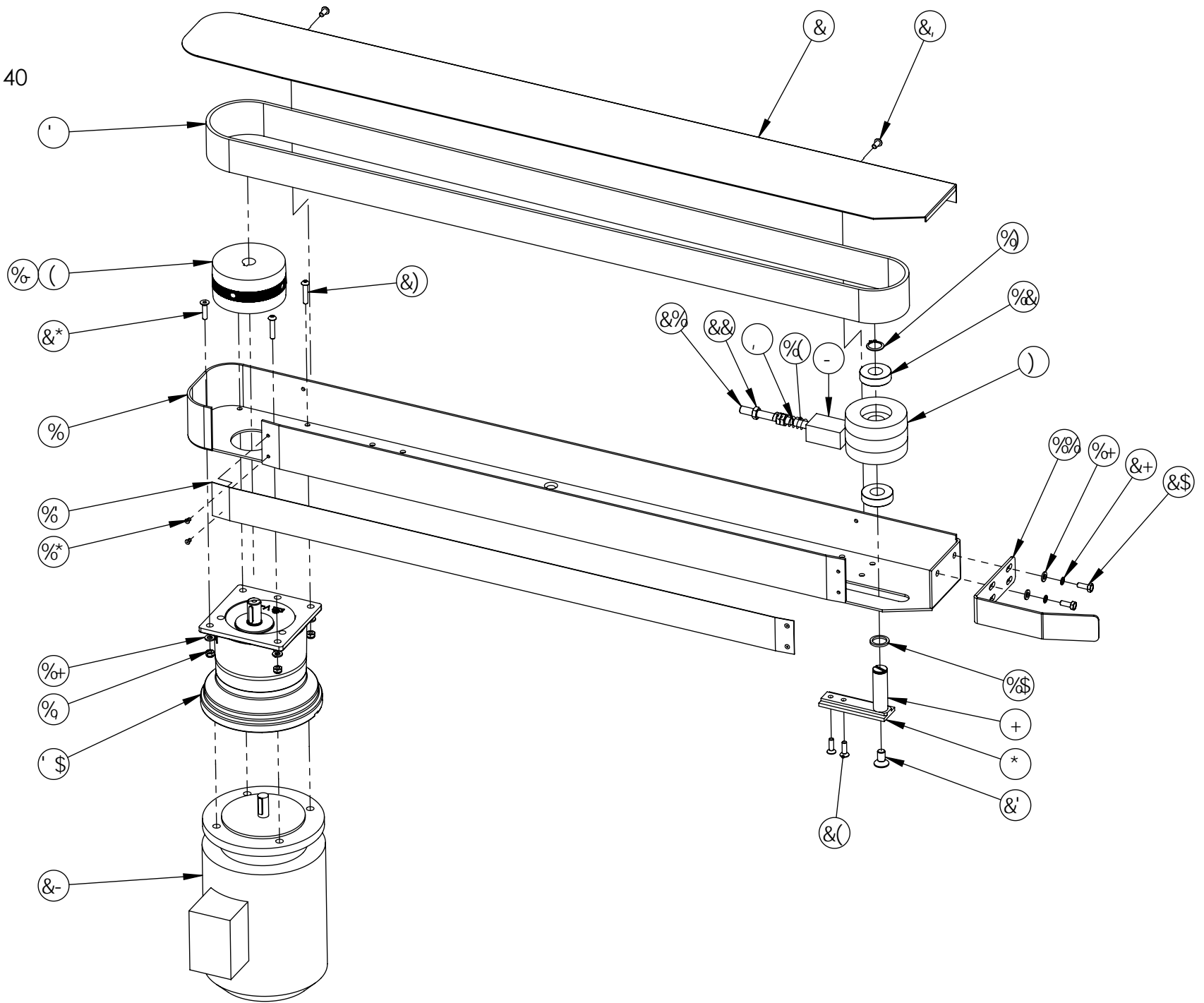




USM6139

#DA	D5FH	8 9G7 F DHC B	E HM
%	I DA *\$- +	GG'8F 9'G97 HC Bž@: HG8 9	%
&	I DA *\$- -	GG'8F 9'65G9'7 C J 9F '@	%
'	I DA \$%&- 9J	8F 9'DI @M) \$a a	%
(	I DA \$\$&-	GF D'I <A K '&"L "\$' 'Hk?	%
)	I DA \$**'	69@H9B 8@GG) \$a a 'I &\$, 'a a	%
*	I DA *%\$'	GG'H9B G€ BB 9F 'G@8 9	%
+	I DA %&' ' 9J	8@F 'DI @MG<5: H) \$a a	%
,	I DA (%*'	8@F 'DI @MGD5 7 9F	%
-	I DA *%\$(	GG'H9B G€ BB 9F 'GDF-B; ' <C @8 9F	%
%\$	I DA %&' +	GG'GDF-B; '@ 7 5 HC F 'D-B	%
%%	I DA \$\$(\$,	GG'8 9'GDF-B; 'BF 9'65G9L	%
%&	I : ')) %	GG'9L HF 9Hfi 'F-B; ' #('G<5: H	%
%	I DA (%*)	8@F 'DI @M	%
%(&	I DA +&&\$	GG'695 F-B; 'DI @M' #('L %) #, 'L '+#%*	&
%)	I DA \$*( +	7 5 FHC B 'F9H5 B 9F	%
%*	I : ' ' - %	GG'BM€ B '@ 7 ? 'BI HA *!%\$	(
%+	I : '* (%	GG: K 'A *	*
%	I : ' +) \$	GG'GG'A * 'L %\$a a	&
%-	I : ' ' ) \$	GG'GG'<? ' #, !%* 'L '	%
&\$	I : ' +(,	GG: <7 GA %\$!%) 'I &\$a a	%
&%	I : ' +) &	GG'6<7 GA *!%  " \$a a	'
&&	I : ' &+)	GG: <7 GA *!%  '&) a a	%
&'	I : ' ) %\$	GG'DC D'F 9HGG((	(
&(	I : ' &+'	GG: <7 GA *!%  '&\$A A	&
&)	I : ' ' * \$	GG'<B>' #, !%*	'
&*	I : * (%%	GG@k 'A *	&
&+	I : ' +) %	GG'<<7 GA *!%\$' ' %* a a	&
&,	I : ' &+,	GG'6<7 GA *!%  '%&' a a	&
&-	I DA ( +, \$	GG'K 5G<8 C K B 'A C HC F	%
' \$	I DA ( +, %	A C HC F 'F98I 7 9F	%

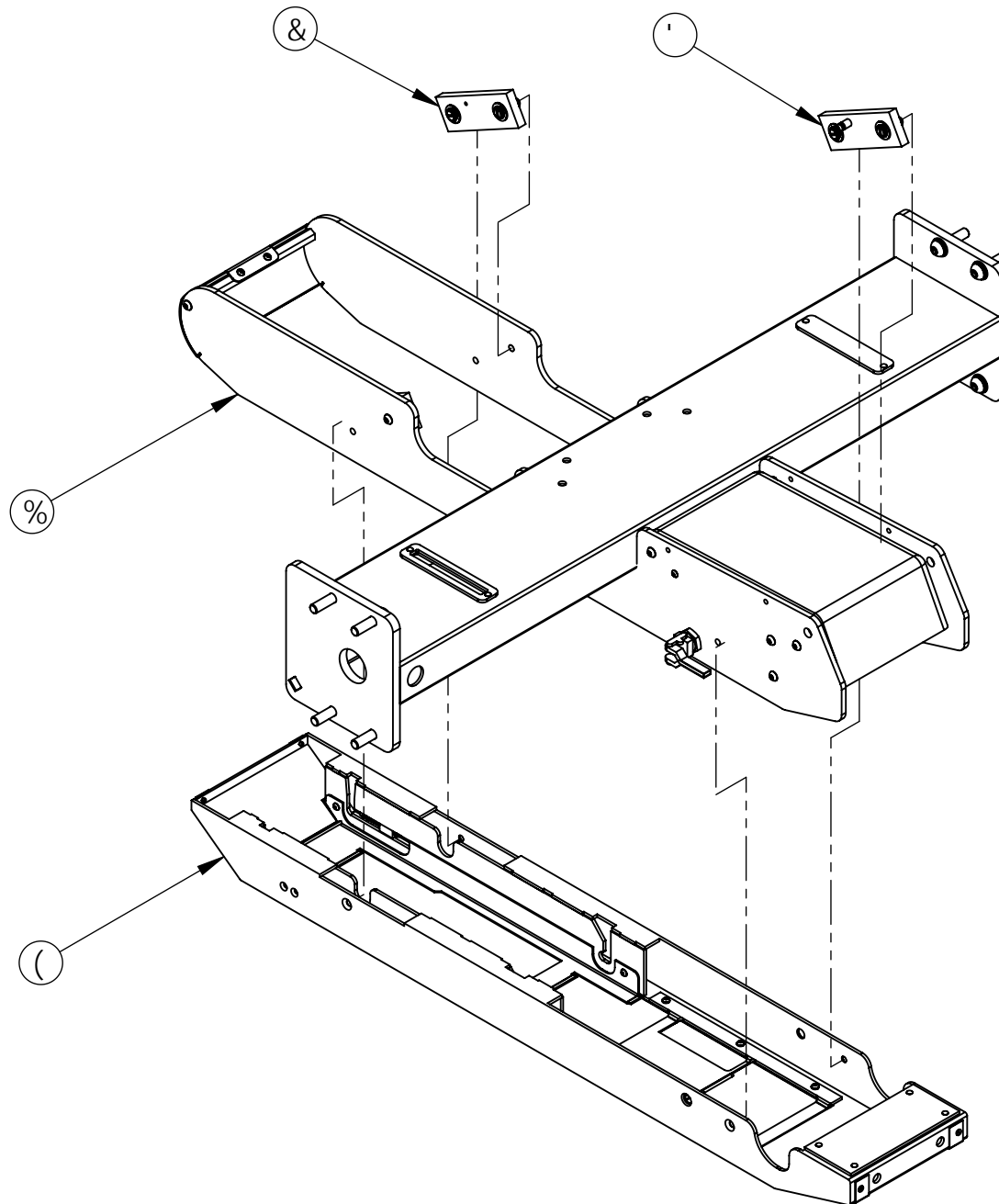
USM6140



USM6140

#PA	D5FH	89G7F-DHC B	E HM
%	I DA *\$- *	GG'8F-J 9'G97 HC BZF ÷ <HG-89	%
&	I DA *\$-,	GG'8F-J 9'65G9'7 C J 9F 'F ÷ <HG-89	%
'	I DA \$**'	69@H9B8@9GG) \$a a 'l'&%, 'a a	%
(	I DA \$%&- 9J	8F-J 9'DI @M) \$a a	%
)	I DA (%*)	8@9F 'DI @M	%
*	I DA *%\$'	GG'H9B G-E B B 9F 'G@89	%
+	I DA %&' ' 9J	8@9F 'DI @M<5: H) \$a a	%
,	I DA %&' +	GG'GDF -B; 'C 7 5 HC F 'D-B	%
-	I DA *%\$(	GG'H9B G-E B B 9F 'GDF -B; ' <C @89F	%
%\$	I DA (%*'	8@9F 'DI @M<5: 7 9F	%
%%	I DA \$*( +	7 5 F HC B 'F 9H5 -B 9F	%
%&	I DA +&&\$	GG'695 F -B; 'DI @M' #('L'%) #, 'L'+#%*	&
%	I DA \$\$&-	GF -D' l <A K '&'L ""\$' 'Hk?	%
%\	I DA \$\$(\$,	GG'8-9'GDF -B; 'FBF-J 9'65G9L	%
%)	I : ')) %	GG'9LHF 9Hfj 'F -B; ' #('G<5: H	%
%*	I : ')) %\$	GG'DC D'F-J 9HGG( (	(
%+	I : '* ( %	GG: K 'A *	*
%	I : '' - %	GG'BM@C B '@ 7 ? 'BI HA *!%'\$	(
%	I : ' +) \$	GG'GGG'A * 'L'%'\$a a	&
&\$	I : ' +) %	GG'<<7 G'A *!%'\$'l'%'a a	&
&%	I : '' ) \$	GG'GGG'<?' #, !%'L ''	%
&&	I : '' * \$	GG'<B>' #, !%'	'
&'	I : ' +(,	GG: <7 G'A %\$!%) 'l' &\$a a	%
&(	I : ' &+'	GG: <7 G'A *!%'l' &\$A A	&
&)	I : ' +) &	GG'6<7 G'A *!%'l' ' \$a a	'
&*	I : ' &+)	GG: <7 G'A *!%'l' &') a a	%
&+	I : * ( %%	GG'@K 'A *	&
&,	I : ' &+,	GG'6<7 G'A *!%'l' %&'a a	&
&-	I DA ( +, \$	GG'K 5G<8 C K B 'A C H C F	%
' \$	I DA ( +, %	A C H C F 'F 98I 7 9F	%

USM1229

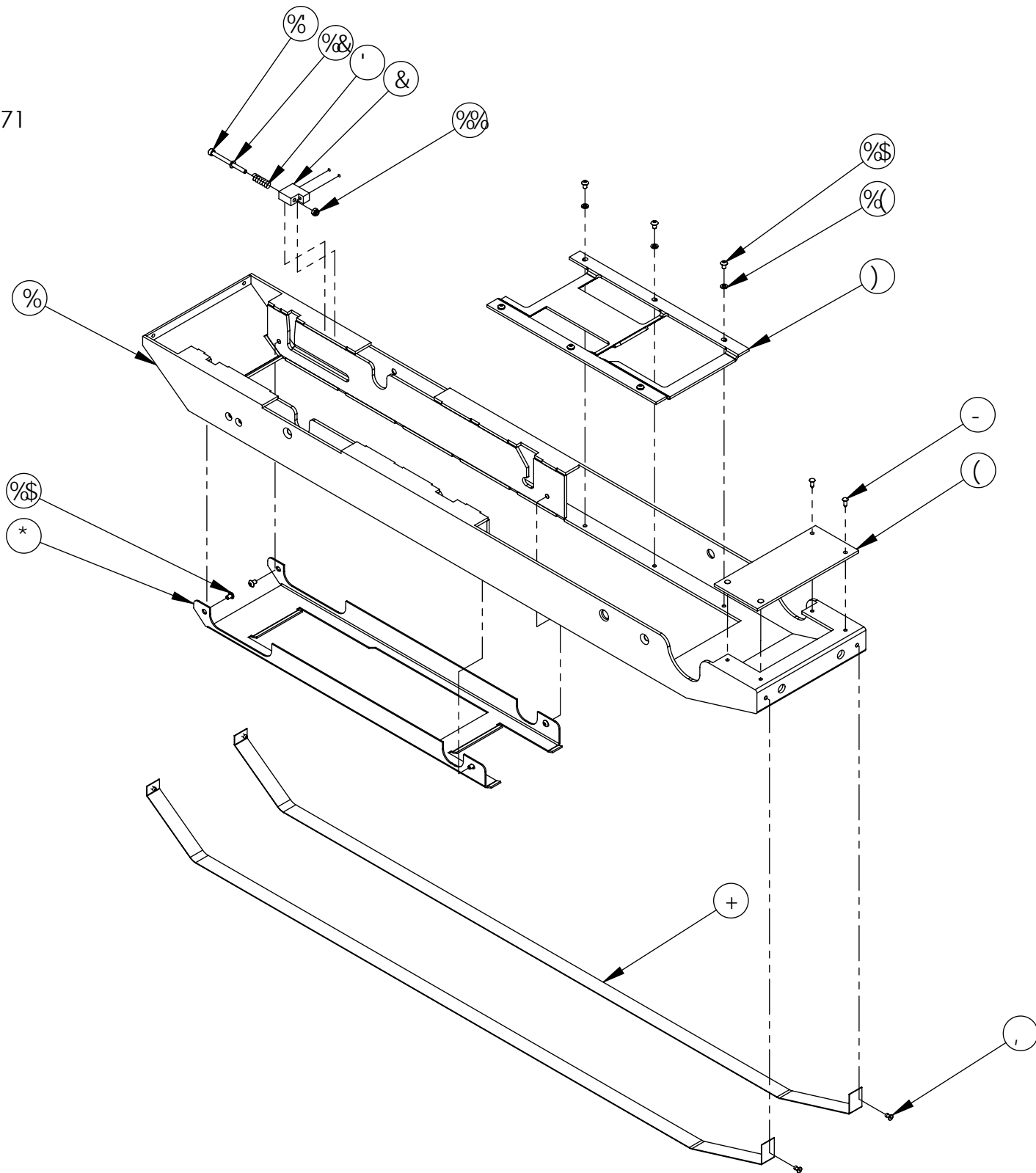


±9A	D5FH <sub>6</sub>	89G7 F ðH€ B	E HM
%	I 5A \$' +(	6F ð; 9'GI 6!5GG9A 6@M	%
&	I 5A \$' +&	GG'D= C H5 GGIM	&
'	I 5A \$' +'	GG'D= C H5 GGIM	&
(	I 5A \$' +%	GG'H5D9<958'6C L	%



#9A	D5FH,	8 9G7 F ĐHC B	E HM
%	I DA & (%9J	GG'6F-B; 9K 9@8A 9BH	%
&	I DA %\$%%	6F-B; 9D@5H9'7 C J 9F 'G@C H98	%
'	I DA %\$\$,	6F-B; 9D@5H9'7 C J 9F	%
(	I DA & (' 9J	GG<9L 'GD5 7 9F '65 F	&
)	I DA (% *	F 95 F '7 C J 9F ; I 5 F 8-B;	%
*	I DA & ,+- 9J	GHC D'F 9H5-B 9F 'Hk '6C L	&
+	I DA & ,+\$	GG'HC ; ; @'7 @5A D	%
,	I DA &&' +	HkF 95 8 98 'D@ ;	%
-	I DA %%- &	6@5 7 ? 'D@ ;	(
%\$	I DA & ,*	GG'9LH9B G€ B 'GDF-B;	&
%%	I DA & ,(\$9J	GDF-B; 'F 9H5-B 9F '@ B;	&
%&	I DA (*- +	GG: FC BH7 C J 9F	%
%	I D<% '	GHC Dž?B ÷ 9'5FA ž% #/% "8"l F9Hk"	*
%{	I : '* &)	GG'6<7 G'A *!%l '&\$a a	,
%}	I : +\$%}	GG: K 'A %\$	,
%*	I : ' +('	GG'A %\$ @K	,
%+	I : ' +*)	GG'6<7 G'A %\$!'%) 'l' (\$a a	,
%	I : ' ' - %	GG'BM@C B '@C 7 ? 'BI HA *!%\$	&
%-	I : (' &'	GG'6<7 G'A (' '\$"+l '&\$a a	&
&\$	I : '* *(	GG'6<7 G'A (' '\$"+l '%\$a a	&

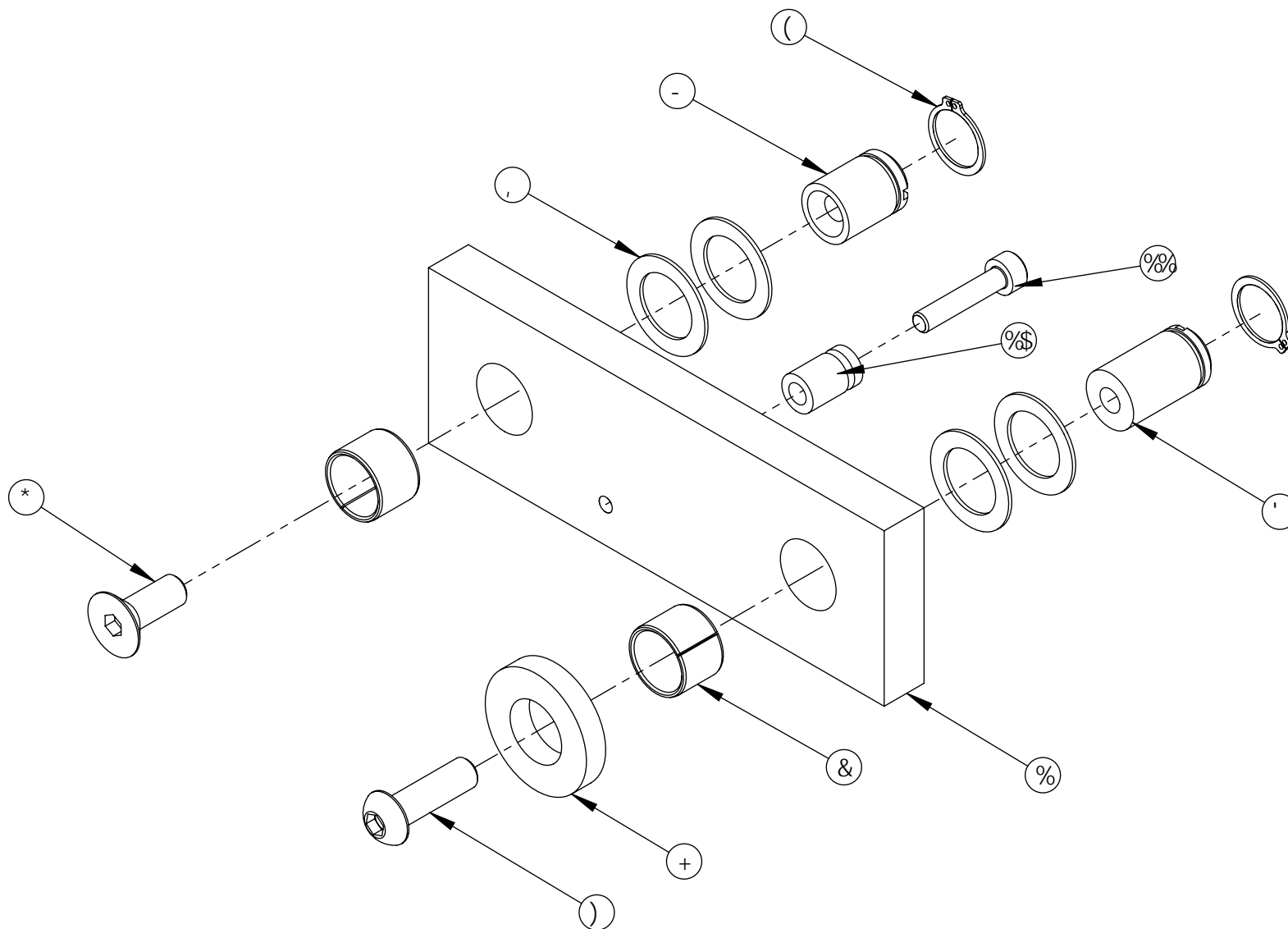
UAM0371





#DA	D5FH	8 9G7 F DHC B	E HM
%	I DA (*-,	GG'Hk '6C L'K 9@BA 9BHI G5 'G6	%
&	I DA +, \$*	GDF B; 'GI DDC FHA (	&
'	I DA &, ')	GG'7 C A D"GDF B; 'GK 9@H<"'5 GGM	&
(	I DA ' *+-	:FC BHD@5H9; I 5F8 B;	%
)	I DA (*- *	GG'HC D: @9F '9HA YHfW	%
*	I DA ' &(*	9HH<"HC D'; 5D: @9F	%
+	I DA \$\$&-	GF DZl <A K ž&"K 'L "\$' "Hk?	&
,	I : ' )%\$	GG'DC D'F 9HGG((	(
-	I DA &% &	6@57?'D@;	(
\$\$	I : +\$\$,	GG'6<7 G'A (!\$+'l '*a a	\$\$
%%	I : (' &(	GG'BM C B '@ 7?BI HA (	&
%&	I : *' ' -	GG': K 'A (	&
%	I : ' +*\$	GG'G<7 G'A (!\$+'l ') \$a a	&
%(	I : ' +(-	GG'@K 'A (	*

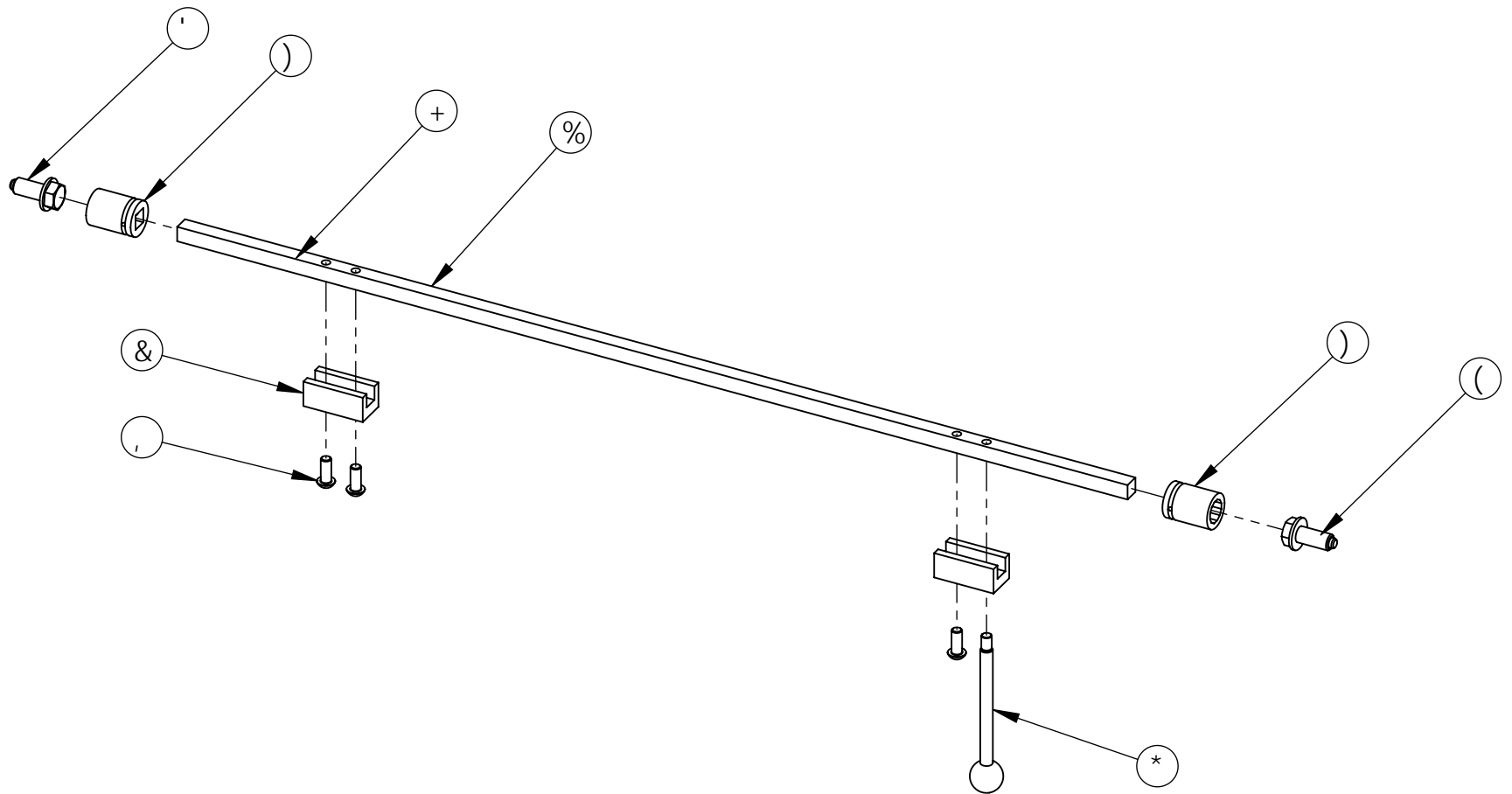
UAM0372  
UAM0373



UAM0372  
UAM0373

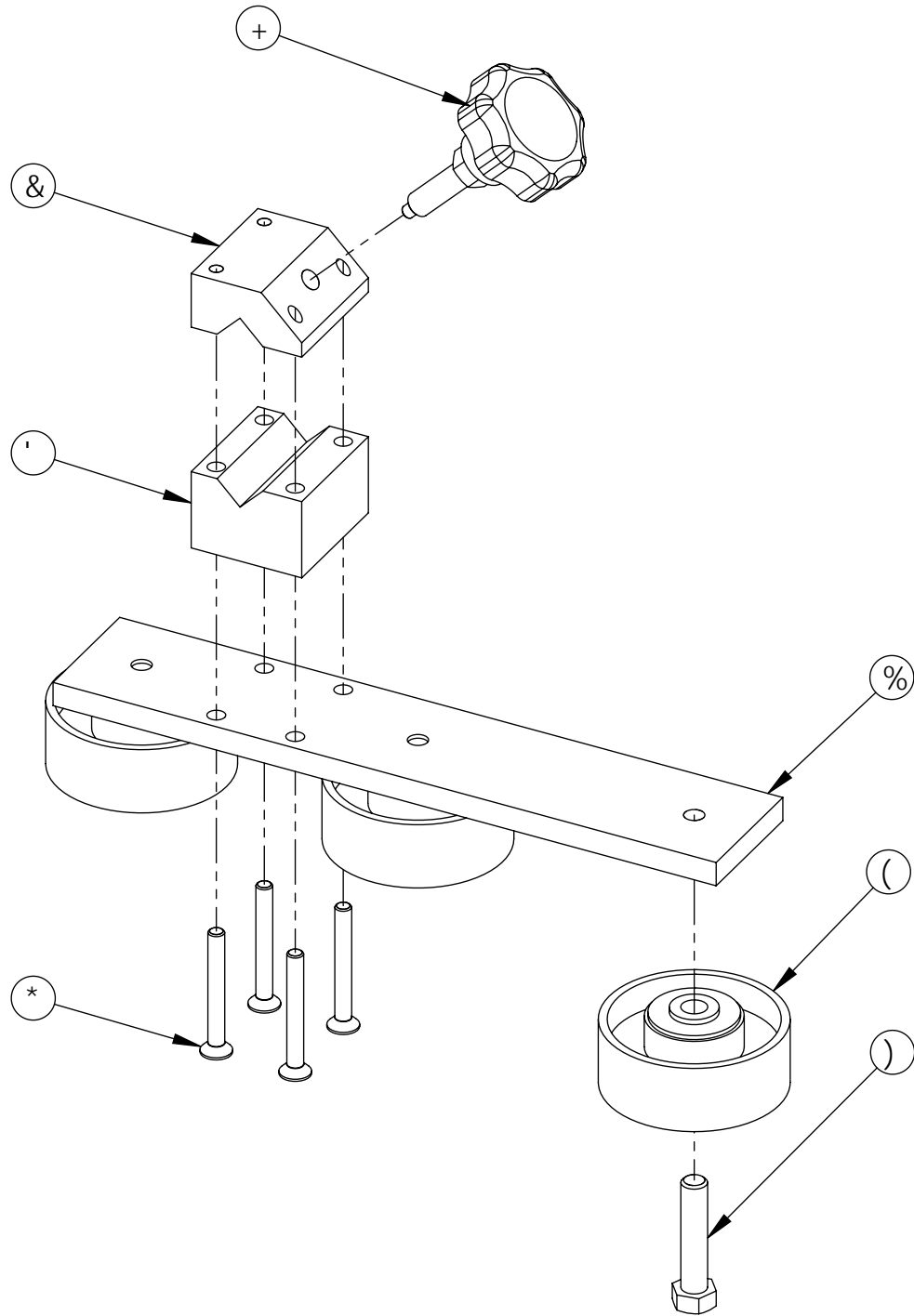
#9A	D5FH,	89G7 F DHC B	I 5A \$' +' #E HM	I 5A \$' +& #E HM
%	I DA & ', 9J	GG'DJ C HD@5H9	%	%
&	I DA -\$+)	695F B; ZD@5 B %( 'I '%&'I '\$	&	&
'	I DA \$- *, 9J	DJ C HG<5: H@C B; 'H<"'6C L '&&&	%	%
(	I : ' ) ,	GGF9H5 B B; 'F B; '%&'a a 'G<5: H	&	&
)	I : *' &)	GG'6<7 GA *!'%I '&\$a a	%	%
*	I : ' &*%	GG: <7 GA *!'%I '%* 'a a	%	%
+	I DA %%,	DJ C HG<5: HGD5 7 9F	%	%
,	I : % ( \$	: "K " "B M@C B %/#&-8I "++&C 8I "\$' &H<	(	(
-	I DA &&( +9J	DJ C HG<5: HG<C FHH<"'6C L '&&&	%	%
\$\$	I DA & ' ' 9J	GG'GDF B; 'F 9H5 B 9F	%	!
%%	I : \$+\$%	GG'G<7 GA (!\$"+I '&\$a a	%	!

USM0391



#9A	D5 FH,	8 9G7 F ðH€ B	E HM
%	I DA & * -	GG'GE I 5 F9'65 F ``\$") \$"	%
&	I DA & **	GG'G-B; @'@ 7 ? -B; '6@ 7 ?	&
'	I DA & (*	GG: @5 B; 98 'G7 F9K '%#&!% 'F"<"	%
(	I DA & ((	GG: @5 B; 98 'G7 F9K '%#&!% '@<"	%
)	I DA \$+\$'	G<C FH6C L ' #("ž%#&"8 Fž%&'DH	&
*	I DA & (*)	GG'G-B; @'@ 7 ? -B; '<5 B8 @	%
+	I DA &- \$*	GG'7 C A DF9GG-€ B 'GDF -B;	&
,	I : ' ' &-	GG'6<7 G'A , !%&) 'I '&\$a a	'

USM0823



#9A	D5FH,	89G7 F-DH€ B	E HM
%	I DA &%t'	K <99@GI DDC FHD@5H9	%
&	I DA +)' ,	; I -89'6@C 7?'HC D	%
'	I DA ' &, )9J	; I -89'6@C 7?	%
(	I DA %* +-	D@5GH7 'K <99@' "8-5"K #k '695F-B;	'
)	I : ' \$&(	GG:<<7 G' #, !%* I '%'+)	'
*	I : ' +* -	GG: <7 GA *!%I ') \$a a	(
+	I 5A \$' +*	?BC 6'7K ')a a 'D-B!GG	%