

# User's Guide



## MCSPRO-1020 Tabbing System



**MCS Incorporated**  
8101 Cessna Avenue  
Gaithersburg, MD 20879

REV-AA

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## **Chapter 1 - System Description**

The MCSPRO-1020 Tabbing System is designed to apply pressure sensitive tabs/ labels on to flat product. You can use the system as a wrap around tabbing device or use it as a labeler. The system is made up of two major components, the transport base and the tabbing head. The tabbing head is movable to enable tabbing on either edge of a mail piece. If the system is used as a flat tabber or labeler, the head can be located to position the label anywhere on the piece. Tab/ Label position over the length of the product is adjusted electrically through the operator interface.

The product is introduced into the system by a feeder, conveyor, or ink jet system. The product is justified to a side guide by adjusting the transport table position and the registration wheel assembly. A knob that raises and lowers the height of the tabbing head and the upper output transport assembly adjusts for product thickness.

When the product is transported, it is detected by a through-beam sensor that tells the tabbing head to apply a tab. If more than one tab is to be applied to a product, this can be set at the operator interface. After the tab is applied, the product passes through a number of rollers and guides to ensure that the tab/label is firmly applied and wrapped tight against the product edge.



## Chapter 2 - System Components

### 2.1 Transport Base Component

The transport base is designed to register and tightly control the product for accurate and consistent tab/ label application. When it is used to apply tabs (wafer seals) to the edge of mail pieces it is also responsible for wrapping the tab around the piece. All electrical controls are found on the transport base. The major components of the transport base are shown in Figure 1.

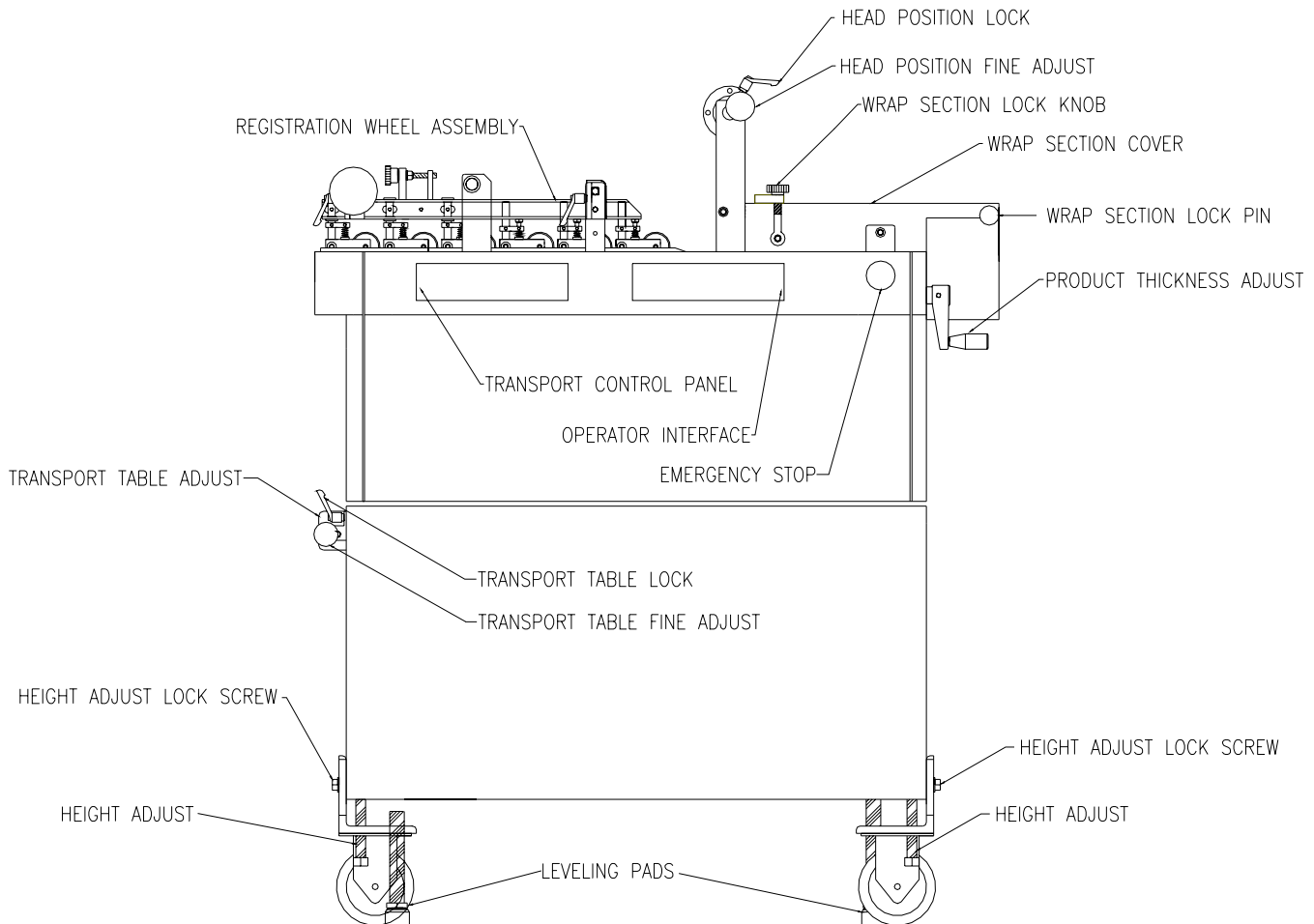


FIGURE 1 – TRANSPORT BASE

## 2.2 Tabbng Head Component

The tabbing head is designed for accurate and high-speed application of pressure sensitive tabs/ labels. It was designed specifically to work in conjunction with the base and is controlled by the interfaces on the base. The major components of the head are shown in Figure 2.

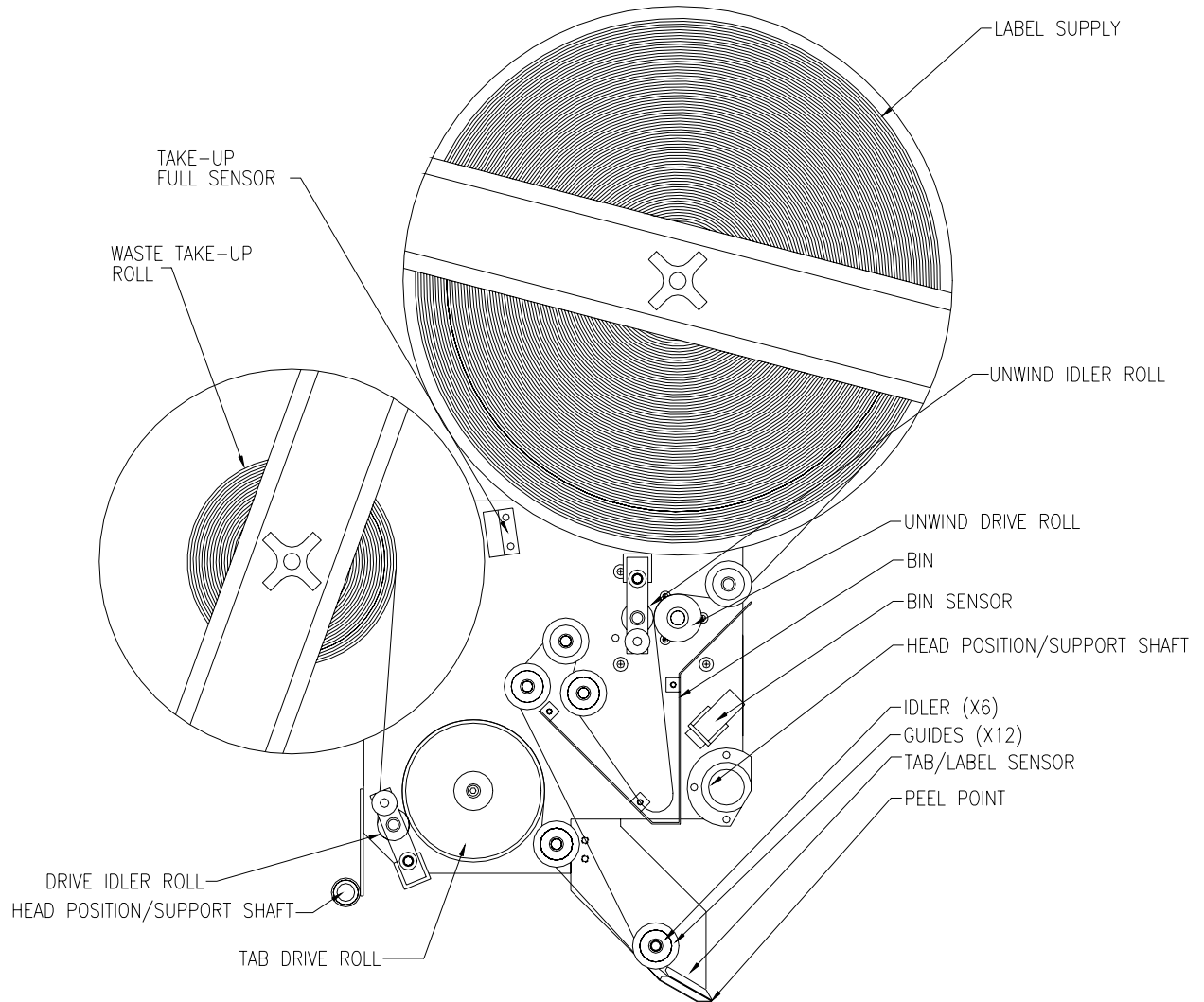


FIGURE 2 - TABBING HEAD



## Chapter 3 - Electronic Controls

### 3.1 Transport Control Panel

The Transport Control Panel is located on the left side of the base front. This panel controls system power and transport base motor condition. Housed on this panel are the following six controls:

- Base Power Rocker Switch
- Head Power Rocker Switch
- Jog Push Button Switch
- Start Push Button Switch
- Transport Speed Potentiometer

#### 3.1.1 Base Power Rocker Switch

This switch controls power to the tabber base. This switch must be on and lit in order for the transport base to function.

#### 3.1.2 Head Power Rocker Switch

This switch controls power to the tabbing head. This switch must be on and lit in order for the tabbing head to function. Since this switch obtains its power from the base, the Base Power Rocker Switch must also be on.

#### 3.1.3 Jog Push Button Switch

This switch is provided to aid operator setup. When depressed the transport base motor will run at the speed set by the speed control pot. The base will stop as soon as the switch is released.

#### 3.1.4 Start Push Button Switch

This switch is used to start the transport base motor. The transport base motor will run at the speed set by the speed control until the Stop Mushroom Cap Switch is depressed or the electronic controls stop the unit.

#### 3.1.5 Transport Speed Potentiometer

The transport speed potentiometer is used to control the speed of the base. Turning this knob clockwise will increase base speed.

### 3.2 Operator Interface

The Operator Interface is located on the right side of the base front. It is used to setup and control the tabbing head and consists of an array of tact-switches and a LCD display. The Operator Interface can be subdivided into the following 5 sections:

- LCD Module
- Online Key
- Menu Scroll Keys
- Numeric Keypad
- Menu Selection Keys

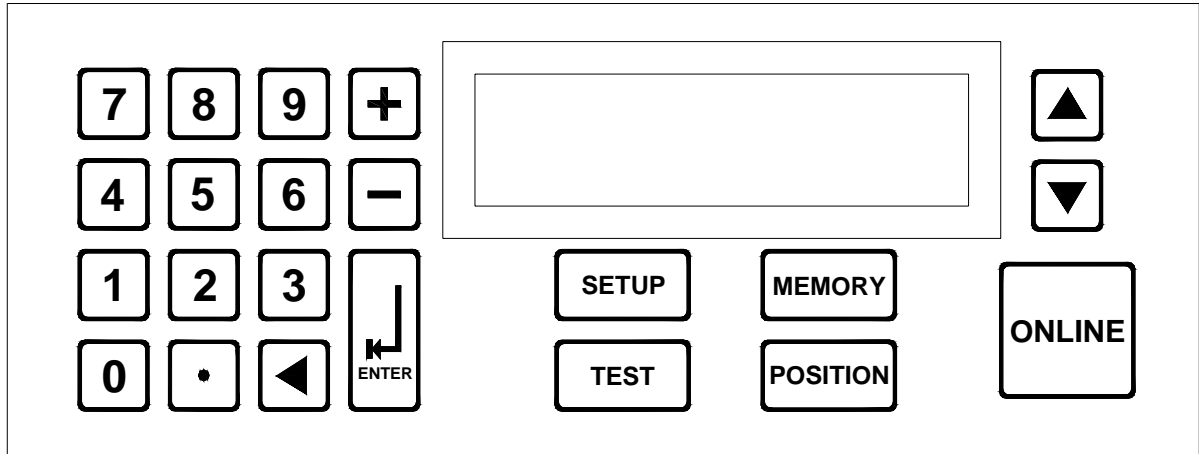


FIGURE 3 - OPERATOR INTERFACE

### 3.2.1 LCD Module

The Operator Interface is equipped with a LCD module used to display controller information to the operator. Setup parameters, error descriptions and controller status can all be viewed through the LCD.

### 3.2.2 Online Key

This key toggles the head condition between online and offline. When offline the head will not dispense any tabs/ labels. The head must be offline to access setup parameters within the controller. The head must be online in order to dispense tabs/ labels. Online/ Offline condition is displayed on the LCD. While online the second line of the LCD displays “NORMAL STATUS”, if offline the first line of the LCD displays “OFFLINE”.

### 3.2.3 Menu Scroll Keys

The ▲ (up arrow) and ▼ (down arrow) keys are used to scroll up and down menus to facilitate menu item selection when used during setup. These keys are also used to control the display of production data when the unit is online. The operator can choose between the following three different production displays:

- Product Count
- Transport Speed
- Production Rate

#### **3.2.3.1 Product Count**

The controller maintains a six-digit product count. The operator through use of the setup key can reset this counter. An example of a typical count display follows.

FORMS DONE: 000123  
NORMAL STATUS

### **3.2.3.2 Transport Speed**

The controller must be aware of the transport speed to accurately locate tabs/ labels on the product. This speed, displayed in feet/ minute, represents the approximate belt speed of the base. An example of a typical speed display follows.

SPEED: 160 FT/M  
NORMAL STATUS

### **3.2.3.3 Production Rate**

Another useful production item is the production rate. The controller can display the approximate real-time production rate of the tabber. Units for the production rate is product #/ hour. An example of a typical rate display follows.

PROD RATE: 24000 PPH  
NORMAL STATUS

### **3.2.4 Numeric Keypad**

A numeric keypad is provided to allow direct entry of settings from the Operator Interface. This keypad is functional for tabber setup only when the unit is offline.

### **3.2.5 Menu Selection Keys**

Beneath the LCD are four menu selector keys. These keys are used to access the different setup and test menus. The four keys are listed below:

- Test
- Position
- Setup
- Mode

## **3.3 Stop Switch (Red Mushroom Cap)**

When depressed, this switch stops the transport base motor. If the stop interlock cable has been used to “tie-in” the tabber with the feeding equipment, then the stop switch will also stop the in-feeding equipment. The operator must twist the switch in order to release the stop condition.



## Chapter 4 – System Setup

### 4.1 Base Set-up

#### 4.1.1 Position Transport Base

The Tabbing Base is designed with two sections, lower fixed base and upper sliding transport table. The sliding transport table allows tabbing or labeling on the operator or non-operator side.

Requirement:

Adjust transport table to begin system setup.

Procedure:

1. Loosen transport table locking lever. (See Figure 5)
2. Position transport table to dimension given. (See Figure 4)

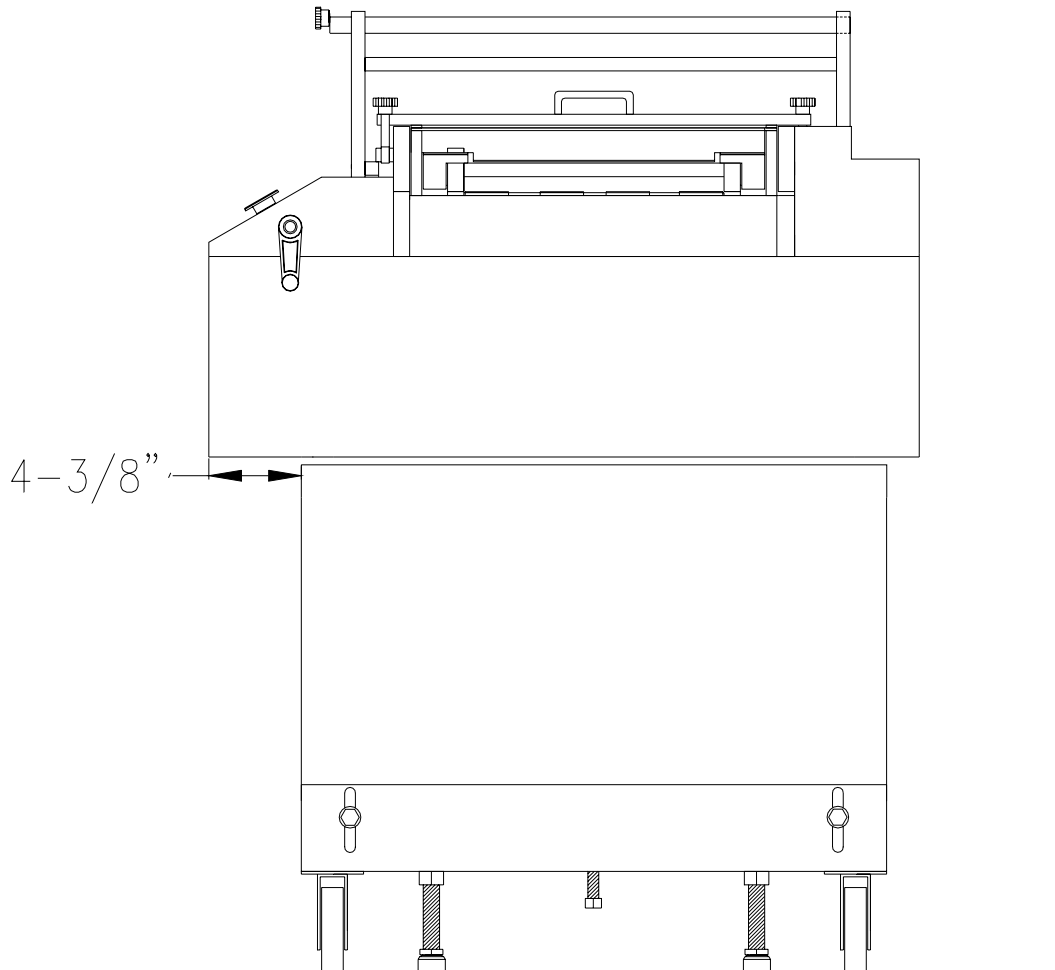


Figure 4

### 4.1.2 Position Base

The Tabbing Base has casters to move the system. Roll the input end of the base up to the output end of the ink jet base.

Requirement:

Position base to ink jet base for product transition and centerline.

Procedure

1. Loosen the four height adjust lock screws (Figure 5)
2. Adjust two height adjust screws up-down until bridge angle (Figure 5) is just below the belts of the ink jet base.
3. Secure the four height adjust locking screws.
4. Position tabber base so the bridge angle is as close to ink jet base belts without touching and position tabber base so the centerline of ink jet base matches the centerline of the transport table (Figure 6).
5. Set four leveling pads (Figure 5) firmly to secure tabber base in final position.
6. Secure leveling pad lock nuts against base bottom.

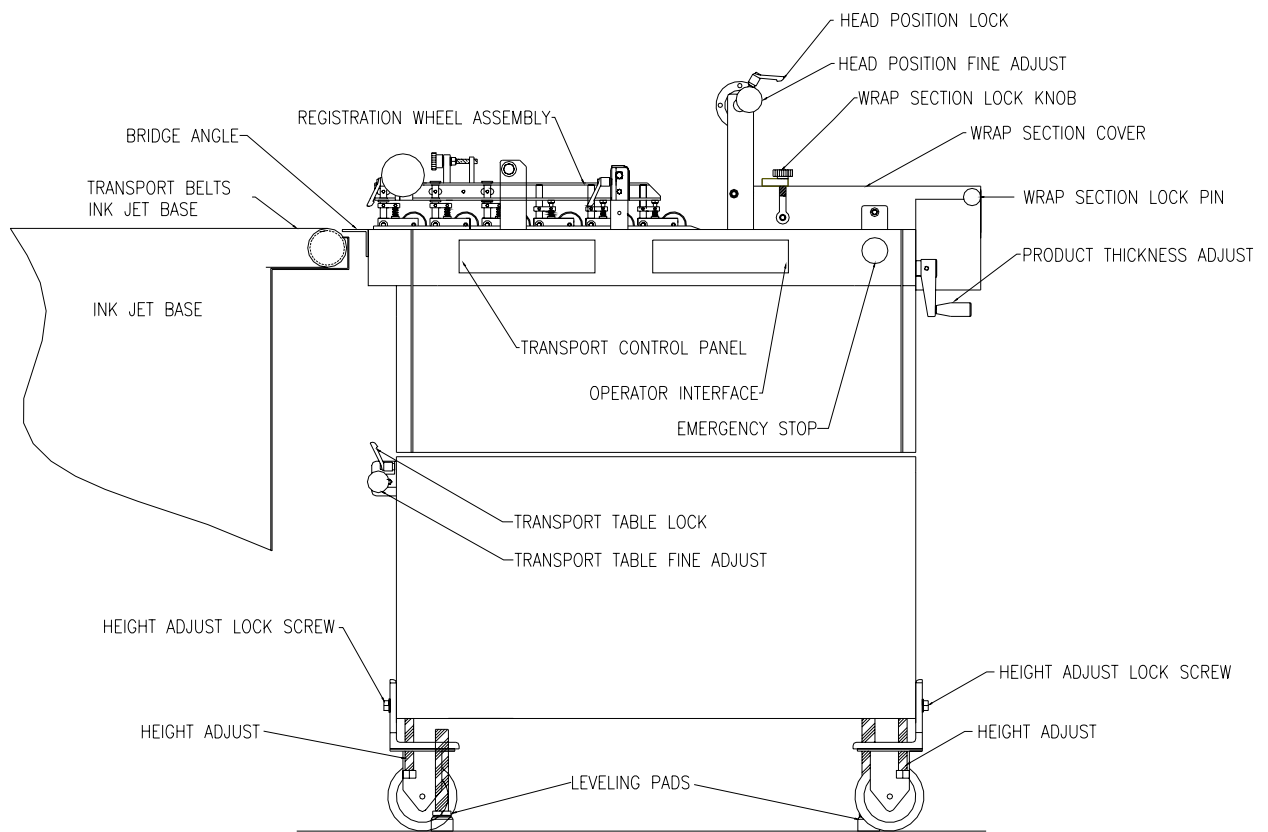
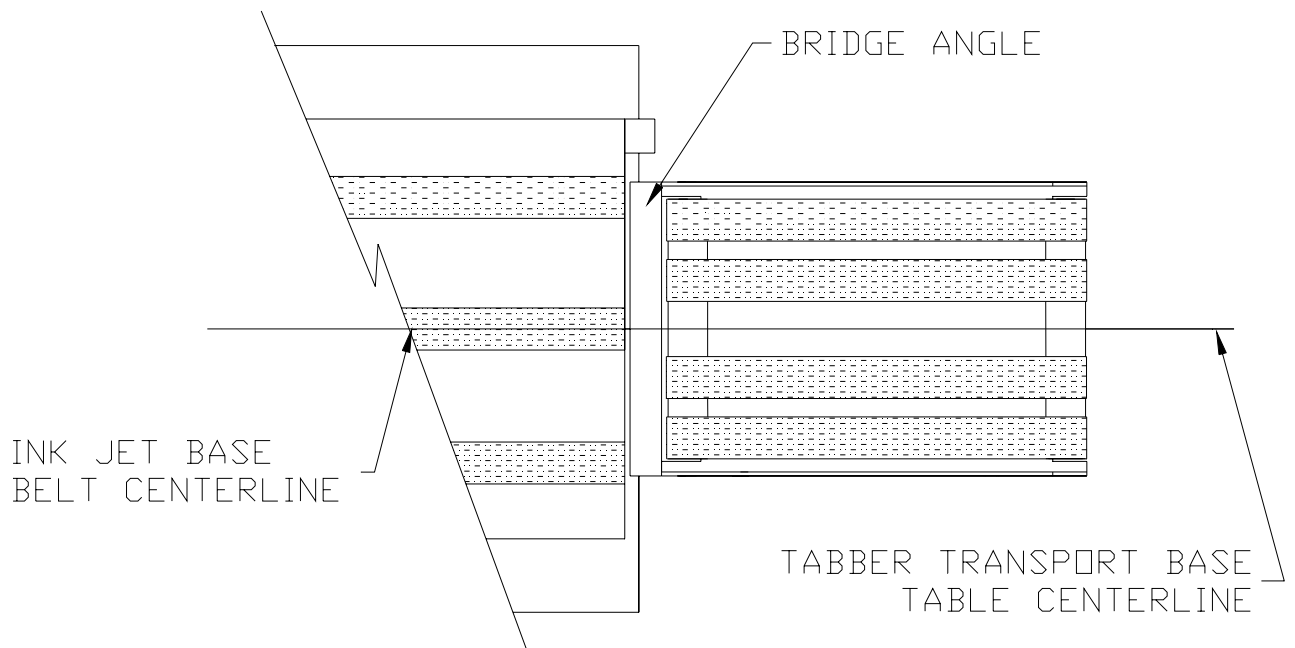


Figure 5



NOTE: SOME ASSMEBLIES REMOVED FOR CLARITY.

FIGURE – 6

#### 4.1.3 Ink Jet Base Setup

All requirements concerning feeding, printing and product position should be met before feeding product through tabber.

#### 4.1.4 Adjust Transport Table Position

Requirement:

Adjust transport table to edge of product path.

Procedure:

1. Feed product from ink jet base to transport table until it just crosses bridge angle. Stop feed.
2. Loosen table lever lock (See Figure 5). Position transport table guide rail 1/8" from product edge (See Figure 7). Lock table lever.
3. Use fine adjust knob (See Figure 5) to complete the adjustment if necessary. The fine adjustment may also be used as a running adjustment to move guide rail towards or away from product edge during operation.

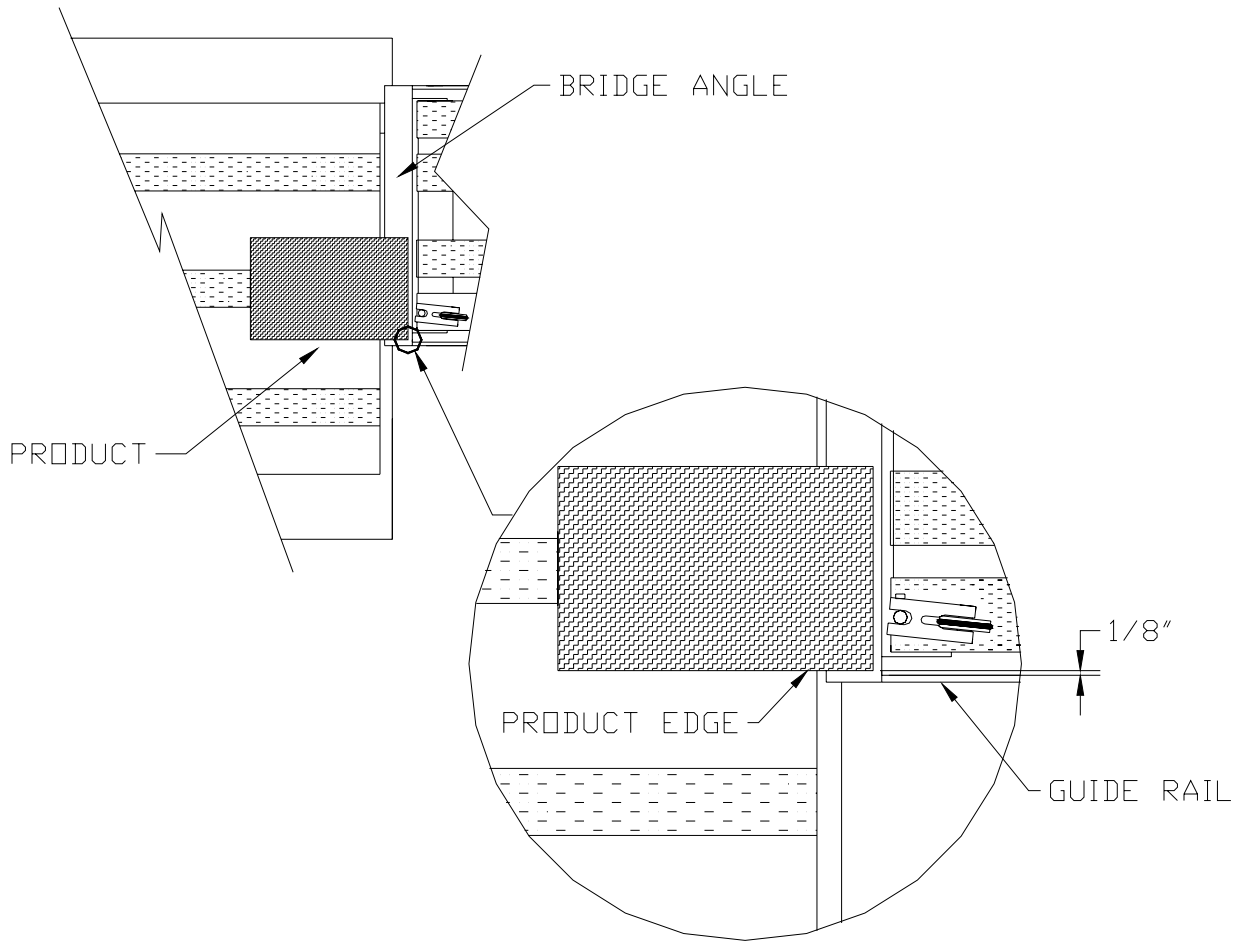


Figure 7

#### 4.1.5 Product Guide and Strap Usage

##### Procedure:

1. Mount strap assemblies (2) provided to square shaft (See Figure 8).

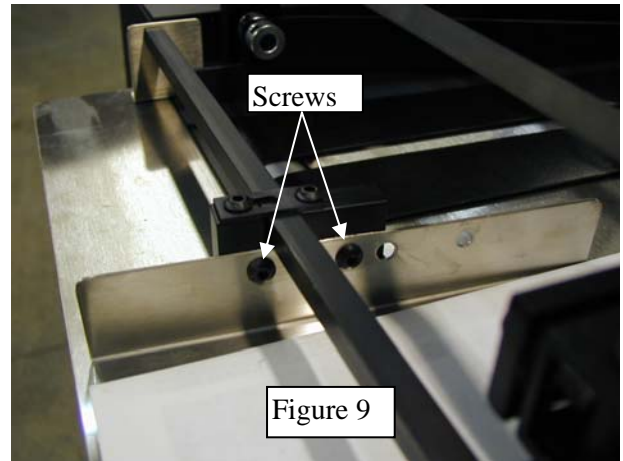
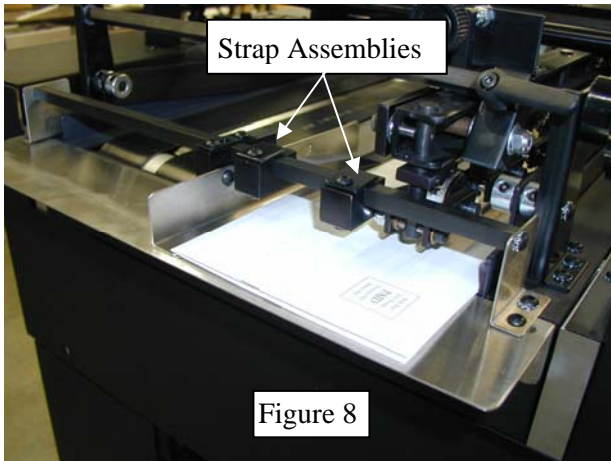
*Note: Straps may be positioned on product to control flatness as desired or removed by loosening screw and rotating retainer cap 180 degrees.*

2. Mount Product Guide (See Figure 9).

*Note: The product guide is provided primarily for use in off line requirements when auxiliary feeders are used. Its purpose is to control product skew that may be experienced using free-standing feeders, normally friction type. Skew is not normally experienced with in line ink jet base use, however guide use may be desirable. The guide is designed with an oversized slot in the mounting block. The assembly may be positioned on any angle to allow entry of skewed product and correct it as it proceeds.*

*Note: The product guide may be mounted on either side of the mounting block to allow use on both the operator's side or non-operator's side. Remove (2) screws (See Figure 9) and reposition guide using the two additional holes provided, on the opposite side of the mounting block.*





#### 4.1.6 Set Gap

The tabbing/labeling system can accept flat product as thick as 5/8 inch. The Product Thickness Adjust Crank controls the gap. Rotate clockwise to increase gap, counterclockwise to decrease gap.

#### Requirement:

The top wrap section must be gapped to product thickness to effectively wrap tabs or secure labels.

#### Procedure:

1. Rotate Product Thickness Crank (See Figure 10) clockwise. Insert product sample to be tabbed between upper output belt and output roller below.
2. Rotate crank counterclockwise until firm pressure is felt by pulling product sample from the belt-roller.

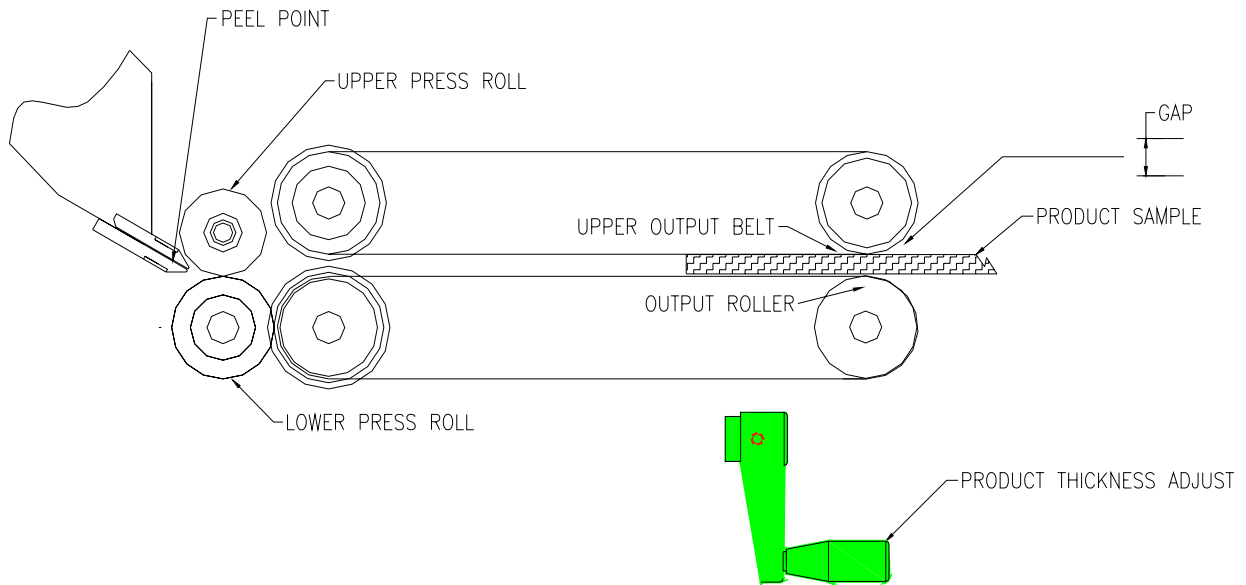


Figure 10

#### 4.1.7 Power-Up System

The tabber control system depends on a small computer processor for its operation. Since electrical line disturbances can adversely affect computers it would be prudent to use a “fairly clean” line to power the tabber. Plug the power cord into a 120VAC 60Hz source. Power-up the base by turning on only the Base Power Rocker Switch. The switch will light up as a confirmation of power application.

#### 4.1.8 Feed Product

Start the base by pressing the Start Pushbutton and adjusting the Speed Control Knob until the speed of tabbing/labeling base matches the speed of the system feeding it. Feed sample product to make sure it enters the transport within 1/8” of the guide rail.

#### 4.1.9 Adjust Registration Wheels

The tabbing/labeling base uses a set of registration wheels to ensure consistent placement and wrap of tabs and labels. The wheels are used to “push” the product against the guide rail guide and secure the product to the transport belt. The first three entry wheels are slaved together on a swivel system that allows angle adjustment to drive the product against the guide rail for registration. The following three drive wheels are fixed in a straight line to maintain registration along the guide rail for accurate tab/label placement on the product.

This registration wheel assembly is designed to function on either side of the transport base. The assembly may be positioned over any portion of the lower transport belts along the square mounting shafts, by loosening lever locks and sliding to desired location. Drive pressure may be increased or decreased by rotating the Wheel Lift Knob. This knob is also used to lift the complete assembly off the lower transport belts for repositioning. The Registration Wheel Assembly functions best when product is delivered 1/8” or less from the guide rail at the entry point. (See Figure 7 of Section 4.1.4)

***Warning: Product feeding and registration must be properly adjusted before tabbing! Turn head power off and move the head aside. Visually check feeding and registration with sample product. Any skew or catch points must be eliminated. A Product Guide and two Hold Down Straps are provided to control the conditions above (See Section 4.1.5)) at the input end of tabber. The primary feeder, free standing friction type, ink jet base friction or vacuum, must also be properly adjusted to eliminate double feeds, product skew or side to side drift.***

Requirement:

Registration wheels must be positioned and adjusted to consistently guide product edge along guide rail, without distorting or causing product stall.

*Note: A fine adjustment limit stop (Figure 13) is provided to control and maintain drive pressure. Turning the knob clockwise limits the down-drive pressure. Turning the knob counterclockwise allows more down-drive pressure to be set. The limit stop allows the assembly to be raised completely from a preset drive position and returned to that position without adjustments.*

Procedure:

1. Loosen lever locks (See Figure 11). Position registration wheel assembly over belt adjacent to guide rail.
2. Adjust angle drive wheel knob to angle three slaved wheels towards guide rail (See Figure 11). Do not adjust wheels to maximum angle. Use minimum angle, increase only as necessary.

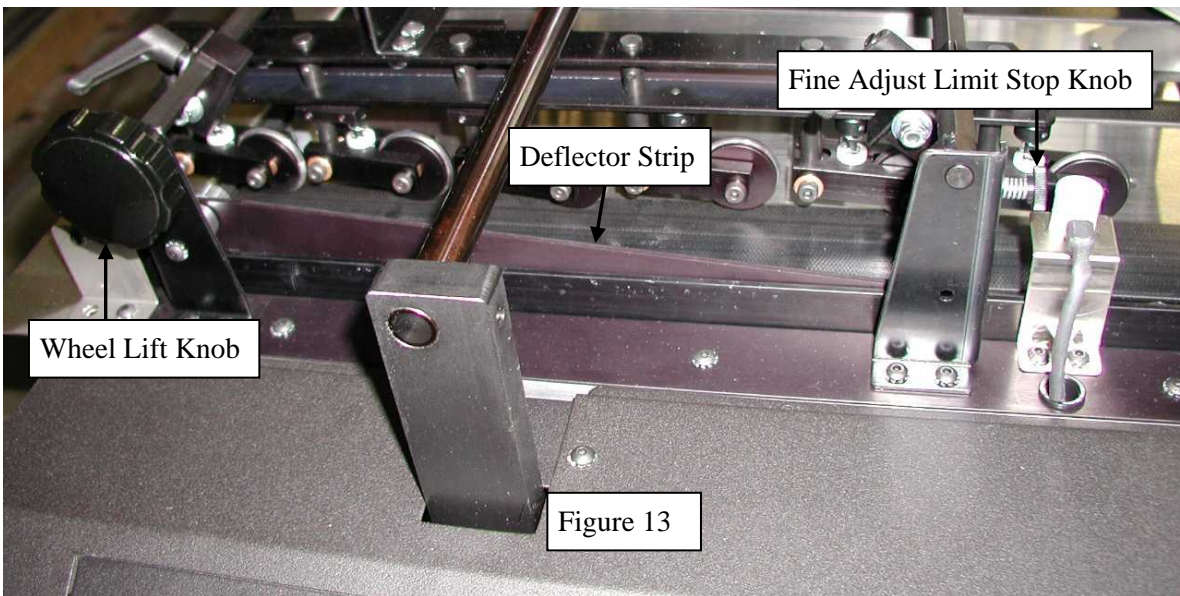
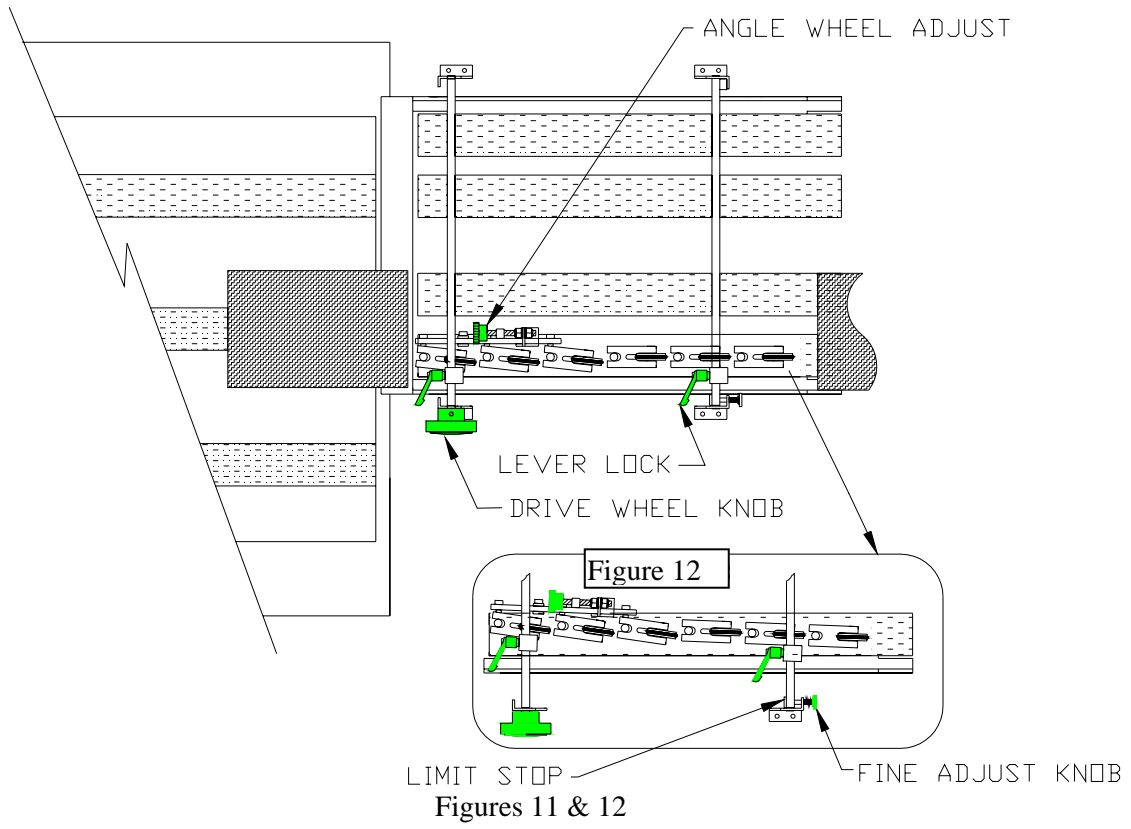
*Note: Occasionally it may be necessary to angle the entire registration system. (See Figure 12) to assure product remains against guide rail. The lever lock mounting assemblies permit a limited amount of misalignment for this purpose.*

Caution:

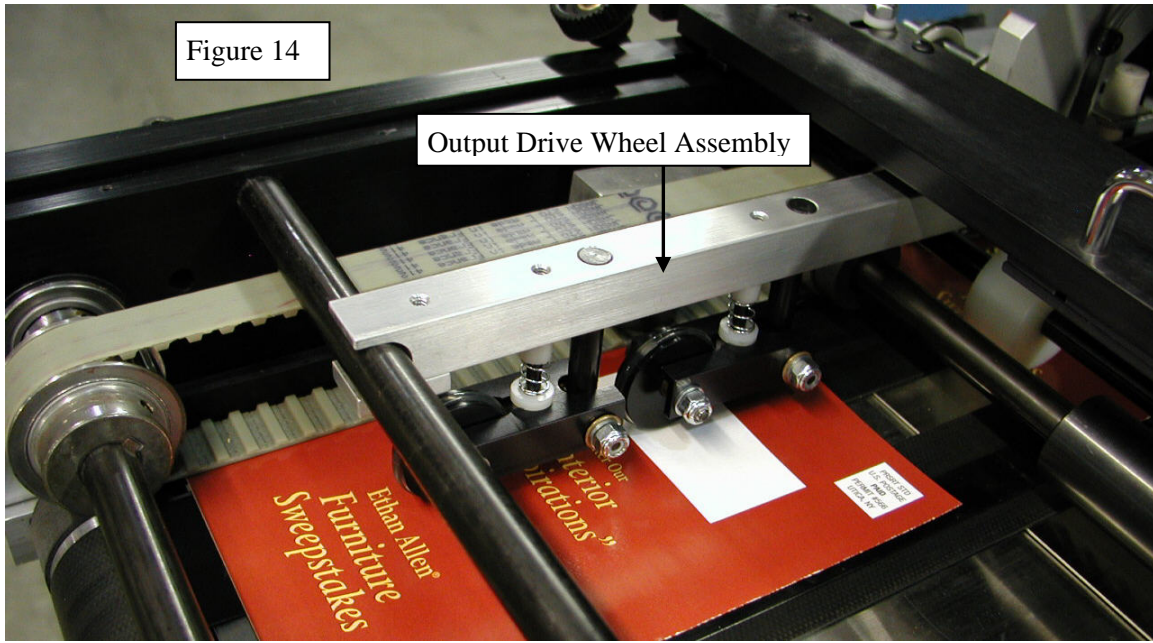
Over adjustment of angle wheels and excessive drive pressure can cause product to ride up guide rail, or cause product to distort or stall. A deflector strip (Figure 13) is provided along each guide rail to help hold down product.

3. Turn base power on and operate base with speed control at slow speed. Rotate drive wheel lift knob (Figure 11) counterclockwise until all drive wheels are turning. Turn fine adjustment knob screw clockwise to meet stop on square shaft (Figure 12).
4. Feed product and visually check to assure product is against the guide rail and not distorted or stalling before entering underneath upper press roll. Further adjust angle wheels and drive wheel down pressure if necessary. Operate at production speed and visually check again.
5. When the requirements above have been met, tabbing operation can proceed.

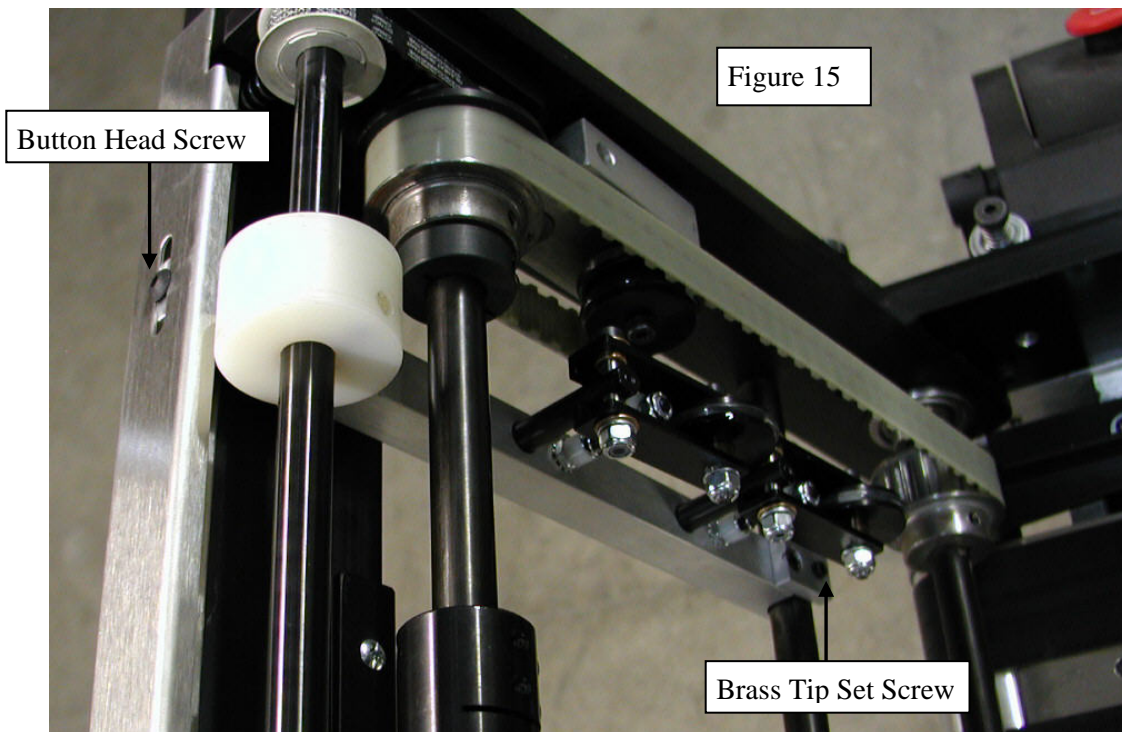
***Warning: For pass thru operation (Not applying tabs), set up as described above. Product conveyed by tabber transport belts only, and not controlled by top drive, can skew and migrate into the gearbelts of the upper wrap section. Severe damage or breakage can occur! When the tabber base is left in-line and used as a conveyor, the same set up procedures for tabbing, labeling or stamp affixing must be used. However, since securing tabs, labels or stamps to the product is not a requirement, the gap setting (See Section 4.1.5) may be opened slightly more than normal for product flow.***



#### 4.1.10 Output Drive Wheels



An Output Drive Wheel Assembly is provided in the Wrap Section (See Figure 14). These wheels assist in controlling the mailpiece when the Wrap Section is gapped.

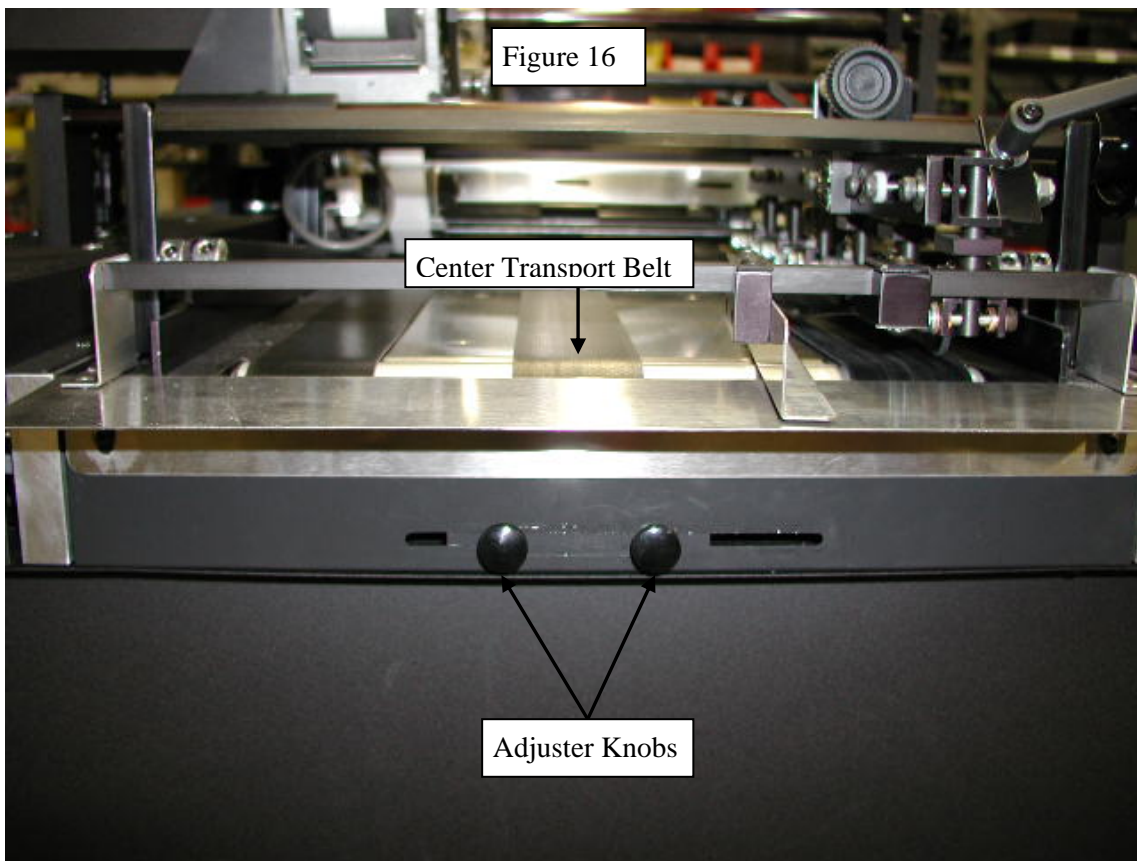


The Output Drive Wheel Assembly may be located on the Operator's Side or Non-Operator's Side. To relocate the Assembly remove Button Head Screw, loosen Brass Tip Set Screw (See Figure 15) and slide assembly to opposite side. Using the other slot provided, replace the Button Head Screw and secure the Brass Tip Set Screw.

Note: The Output Drive Wheel Assembly position may be adjusted within the slots to avoid ink tracking.

**Warning:** For pass thru operation (Not applying tabs), set up as described above. Product conveyed by tabber transport belts only, and not controlled by top drive, can skew and migrate into the gearbelts of the upper wrap section. Severe damage or breakage can occur! When the tabber base is left in-line and used as a conveyor, the same set up procedures for tabbing, labeling or stamp affixing must be used. However, since securing tabs, labels or stamps to the product is not a requirement, the gap setting (See Section 5.1.5) may be opened slightly more than normal for product flow.

#### 4.1.11 Center Belt Adjustment



Requirement: Adjust Center Belt position to support Product Edge.

Note: Transport Base must be powered up to move center belt..

Procedure:

1. Power up Base and operate with Speed Control.
2. Loosen Adjuster Knobs shown in Figure 16.
3. Gently push Adjuster along it's slot to position Center Belt as required.
4. Secure Knobs to maintain belt position.

#### 4.1.12 Position Upper Press Rolls

The upper press rolls, located at the input of the wrap section, may be positioned across their drive shaft to secure tabs for wrap tabbing, labeling or stamp application on the product.

Rolls are provided to meet the requirements, and are designed to move by hand. Two press rolls are provided for systems using the standard 2" head, and four rolls are supplied on the 4" wide head systems.

Requirement: Position upper press rolls for wrap tabbing.

Procedure:

1. Loosen wrap section lock knobs and raise pivoting portion of wrap section (Figure 17).
2. Push press roll (1) for operator side or (4) non-operator side (Figure 18), to the outermost position.
3. Release safety lock pin. Return wrap section to operating position and secure lock knobs. Lock knobs must be secured during operation.

Note:

For labeling or stamp affixing requirements, press rolls (1) through (4) may be positioned in various configurations in front of the peel point to meet size requirements.

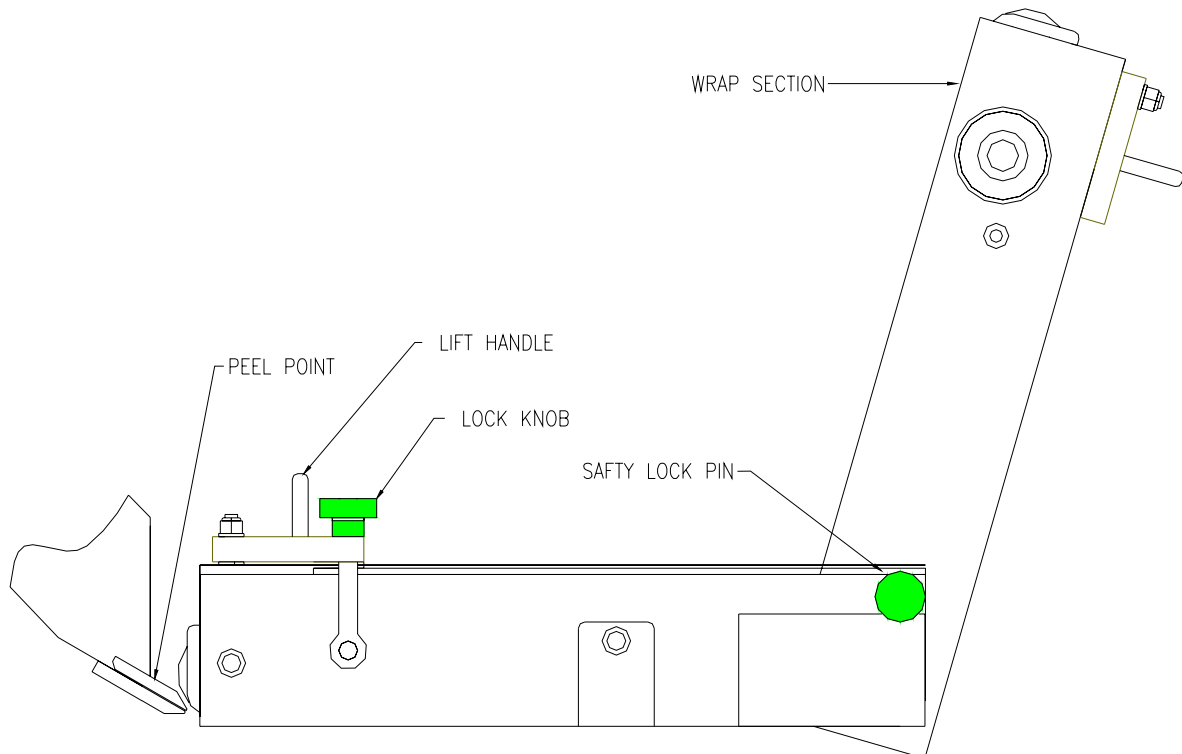


Figure 17

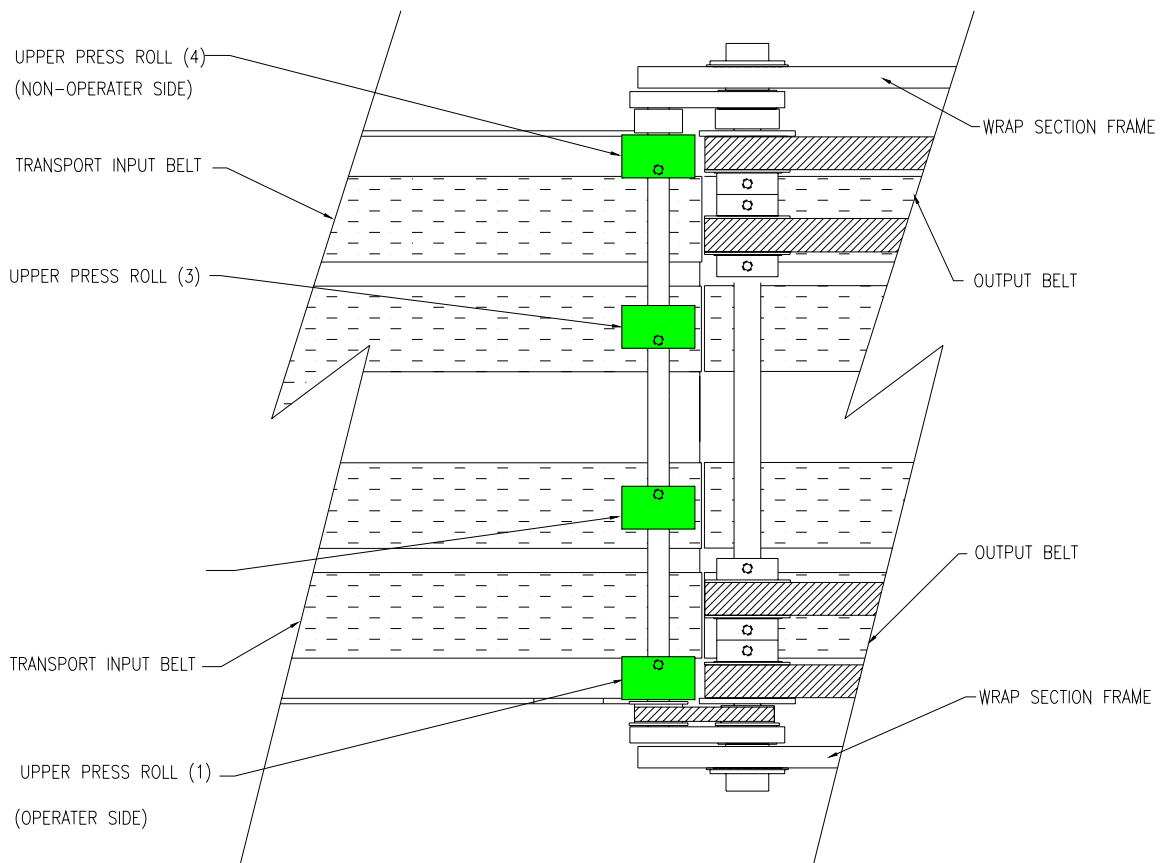


Figure 18

#### 4.1.13 Idler Wheel Adjustments

##### Requirement:

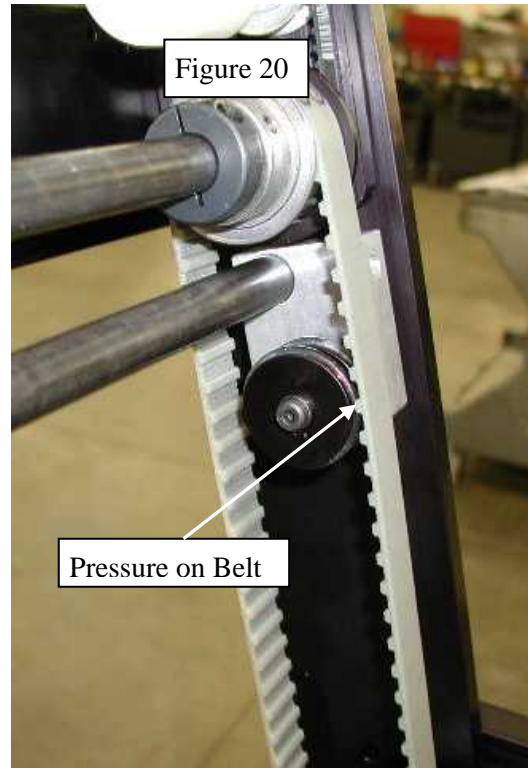
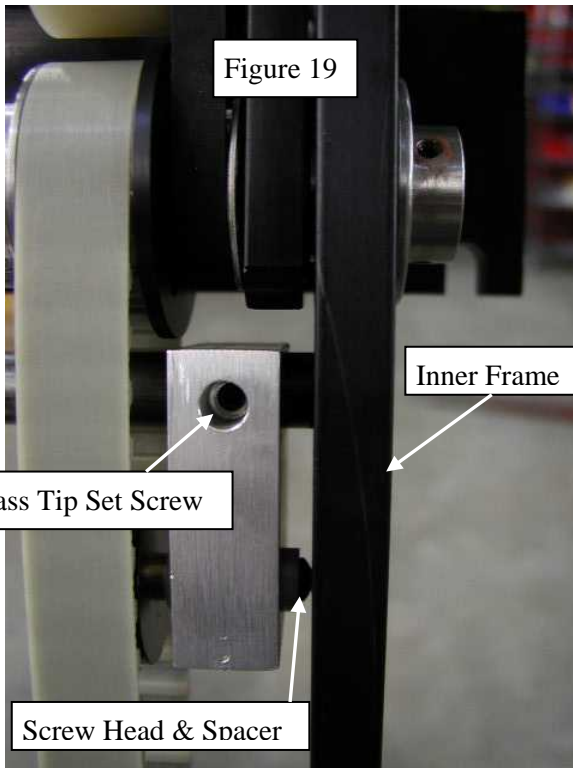
Idler wheel assemblies must be positioned and adjusted correctly to assure tab wrap performance and avoid damage to wrap guide.

*Note: Lexan cover has been removed for clarity. It is not necessary to remove for the following procedure.*

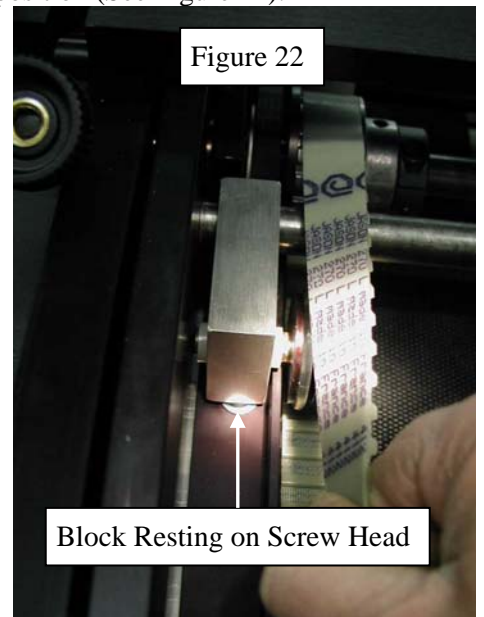
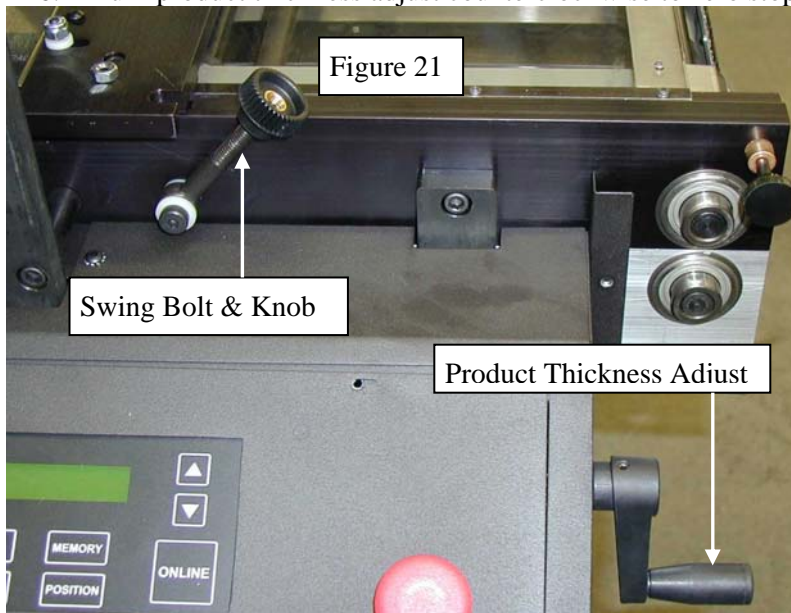
##### Procedure:

1. Raise upper wrap section to lock position.
2. Position block assembly (operator's side shown) with screw head and spacer against inner frame of upper wrap section. See Figure 19.
3. Rotate block wheel assembly on the fixed mounting shaft, causing outward pressure on the belt. See Figure 20.
4. Lightly secure brass tip set screw. See Figure 19.





5. Lower wrap section to operating position and secure with swing bolts and knobs.
6. Turn product thickness adjust counterclockwise to zero stop position (See Figure 21).



*Note: Idler wheel mounting block should be resting firmly on the wrap guide mounting screw head (Figure 22). The block and wheels must straddle the wrap guide right angle, as shown with clearance on each side.*

7. Raise upper wrap section to lock position. Secure brass tip set screw. See Figure 19.
8. Repeat all procedures above for non-operator's side.

*Note: The idler wheel assembly is now adjusted to its correct position and will give tight wrap on all product when the upper wrap assembly is correctly gapped (See Section 4.1.6 Set Gap).*



## 4.2 Head Set-up

The head will be set up differently for different size labels. If the tabs/ labels have a backer width of less than 2 inches, then the head should be set up with the Tab Sensor Assembly and the two “thin” Inner Spool Guides. Labels with a backer width over 2 inches must be set up with the Label Sensor Assembly and the two “wide label” Inner Spool Guides.

The tabbing head utilizes optical sensors to ensure accurate tab/label position. It is important for the tab/ labels to be positioned so their centers run under the optical sensor. When using the label sensor the label threading path is centered on the center of the label guide idlers. When using the Tab Sensor the threading path is centered about 1-3/4” off the main side frame of the head.

### 4.2.1 Install Inner Spool Guides

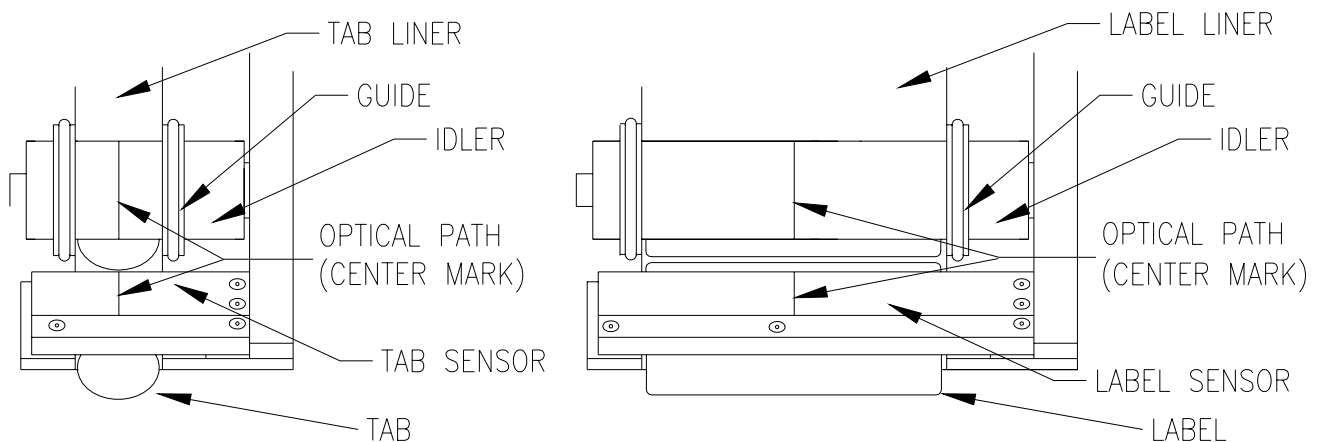
Choose the appropriate spool guides for the tabs/ labels to be run. The exact location of the spool guides depends on the width of the tabs/ labels being run. Keep in mind that it is important for the tabs/labels to be centered on the optical path of the tab/ label sensor. Select the appropriate locating slot on the spool support shaft and engage the locating latch of the guide. The center location is marked on the tab / label sensor and it defines the center for the full threading path.

### 4.2.2 Secure Source Spool

Slip your roll of tabs over the supporting hub of the inner spool support. Push the outer spool support against the side of the source spool, secure with the spool knob. The knob should be tight enough to ensure that the tab/label roll cannot slip on the hub of the inner spool support.

### 4.2.3 Threading

Adjust the tab/label guides on the idlers for the width of the labels to be used. Gap the spring-loaded idlers in both the roll unwind and tab drive sections. Thread according to the figure provided on the main side frame. Note that the unpeeled tabs slide through the tab sensor while the path of the waste liner is under the bottom sensor plate. The Bin Sensor must be located to sense the tab/label liner for proper unwinding.



### 4.2.4 Secure Waste Take-up Spool

Slip an empty tab/label core over the supporting hub of the inner spool support. Secure the threaded end of the liner to the empty core with tape or a label. Push the outer spool support against the side of the core and secure with the spool knob. The knob should be tight enough to

ensure that the take-up roll cannot slip on the hub of the inner spool support. The Take-up Full Sensor must be located to sense the waste tab/label liner for overflow detection.

#### 4.2.5 Adjust Tab Sensor

The tabber uses a pair of optical sensors housed in the tab sensor to register each tab. These sensors are about ½ inch from the “peel point” and “look through” the labels and liner enabling the detection of the tab/label edges. This sensing technique will ensure accurate detection when tuned for the tabs currently being run. Adjustments are made automatically once the operator initiates the tuning process. The adjustment is different for plain paper tabs versus clear plastic or translucent tabs. For paper tabs make sure that only liner is present inside the tab sensor, back feed liner or peel tabs to make this possible. For clear or translucent tabs make sure that the tabs are still attached to the liner, and the lead edge of a liner registration marker must be at the peel point edge.

##### Procedure

- 1) Power-up the head by turning on the Head Power Rocker Switch
- 2) Press the “SETUP” key to access the setup menu. “SETUP” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “ADJUST TAB SENSOR ?” is displayed on the second line of the LCD.
- 4) When using typical paper tabs it is important to have the machine fully threaded, but with no tab present in the tab sensor. It is important to make this setting while only liner is present in the tab sensor. When using translucent or clear tabs it is important to have the machine fully threaded with a tab present in the tab sensor. It is important not to have a liner registration mark directly under the sensor while making the adjustment. Since the optical path of the tab sensor is approximately ½” from the peel point edge, adjusting the sensor after aligning a registration mark with the peel point edge will assure that proper setting will be found.
- 5) The controller will automatically make the optimal sensor adjustment when the “ENTER” key is pressed. The LCD will indicate completion by displaying “TAB SENSOR ADJUSTED”.

“SETTING = xxx% “

The xxx represents the electrical setting used for the sensor. This value should normally range from 70% to 97% when setting with liner in the sensor. A value of 01% indicates sensor disconnection or sensor failure. A value between 01% and 70% probably indicates that the tab sensor requires cleaning. A value of 100% should always be obtained when adjusted with no liner present. A value of less than 100% with no liner would indicate a dirty sensor. The sensor should be adjusted without liner only as a diagnostic tool. The sensor must be readjusted with liner before normal operation.

#### 4.2.6 Adjust Pitch Setting

The distance between the lead edges of two consecutive tabs still attached to release liner defines the Tab Pitch. This is an important value since it defines how far the tab drive will move when it applies tabs. The minimum pitch is 0.75” and the maximum pitch is 7.00”.

**Note:** Since it is difficult for the system to reverse itself, it is always better to enter a lower number for pitch versus a larger number. The system can “self-correct” for any slightly undersized pitch whereas a system with an oversized pitch may never be able to synchronize the tab position. It short, an oversized pitch means bad tab/label placement.

##### Procedure

- 1) Take the system offline.
- 2) Press the “SETUP” key to access the setup menu. “SETUP” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “PITCH: x.xx >\_” is displayed on the second line of the display. The x.xx represents the current setting for tab pitch.
- 4) To increase the Tab Pitch, press the “+” key until the desired location is displayed as the current setting. To decrease the Tab Pitch, press the “-“ key until the desired location is displayed as the current setting.

-Or-

- 5) The desired pitch can be directly entered from the numeric keypad.
- 6) As the new setting is entered it appears to the right of the current setting.
- 7) Once entry of the new value is completed press the “ENTER” key to save the new value. The LCD will indicate completion by replacing the current setting with the new setting.

#### 4.2.7 Select Product Sensor

Through beam type opto-electronic sensors are used to detect the presence of product to be tabbed/ labeled. Since the tabbing takes place at either the front or rear of the unit, product sensors are located at both the front and rear. The operator can select the appropriate product sensor to be active.

##### Procedure

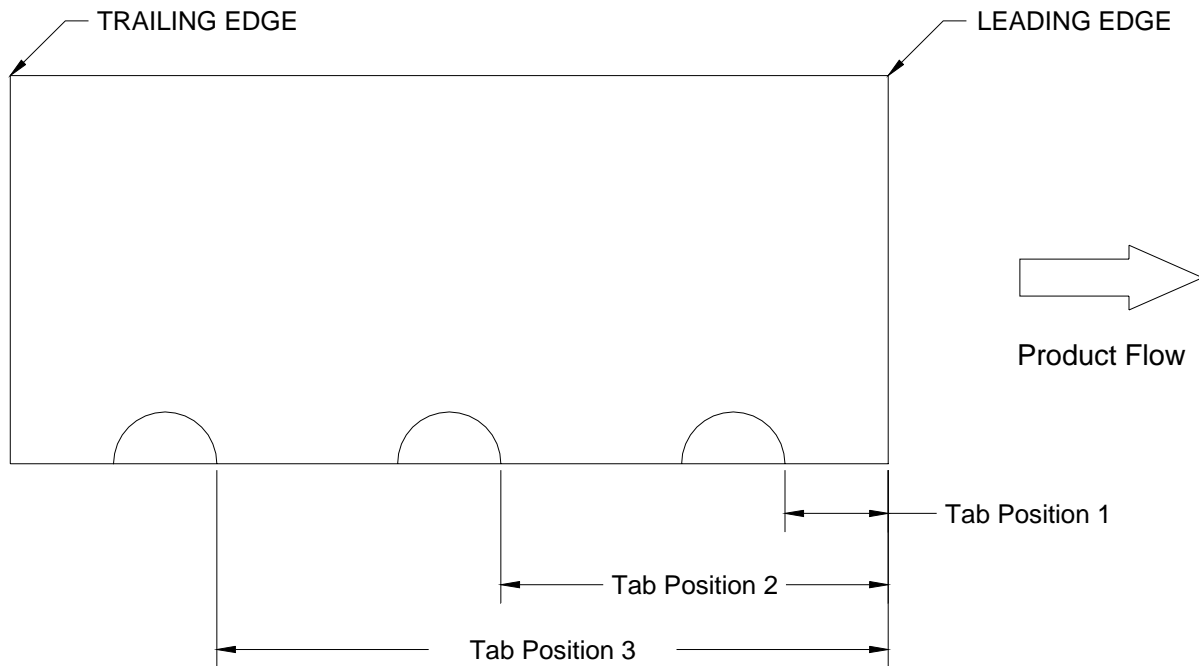
- 1) Take the system offline.
- 2) Press the “SETUP” key to access the setup menu. “SETUP” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “PRODUCT SENSOR: (RIGHT)FRONT or (LEFT)REAR” is displayed on the second line of the LCD. The xxxxxx represent the current count.
- 4) Press the “+” key to change from (RIGHT)FRONT to (LEFT)REAR. Press the “-“ key to change from REAR to FRONT. The LCD will update sensor selection as it is made.

##### Tab/ Label Position Overview

The location and number of tabs/labels to be applied to a single product is controlled by the choices accessed by the “POSITION” key. The “POSITION” key is active only when the unit is offline. The position setting to be displayed and or adjusted is controlled by the “▲” key and or “▼” key. After displaying the setting of interest it can then be adjusted by one of two methods: direct keypad entry or incremental adjustment. The direct keypad entry is accomplished by using the numeric keypad to directly enter the desired position. After the position has been entered the “ENTER” key must be pressed to load the new value into memory. Incremental adjustments are made by using the “+” and or “-“ keys. The current value will be increased by 0.05” every time the “+” key is pressed. The current value will be decreased by 0.05” every time the “-” key is pressed. The maximum number of tabs that can be applied in a single pass is three. The minimum position is 00.00” and the maximum position is 20.00”.

#### 4.2.8 Tab/ Label Position Entry

The distance between the product lead edge and the lead edge of the tab/ label defines the tab/ label positions. The system uses position units measured in inches with a precision on 1/100 of an inch. The three tab positions are defined by their order of application. If only one tab is being applied to a product, then Tab Position # 1 defines its location. If two tabs are applied, then Tab Position # 1 defines the leading edge tab and Tab Position # 2 defines the trailing edge tab. If three tabs are applied, then Tab Position # 1 defines the leading edge tab; Tab Position # 3, and the middle tab is defined by Tab Position #2 define the trailing edge tab. When using more than one tab the second or third tab position must have a value greater than the (previous tab position value + Tab Pitch)



#### Procedure

- 1) Take the system offline.
- 2) Press the “POSITION” key to access the test menu. “POSITION” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “TAB POS x: yy.yy>\_” is displayed on the second line of the display. The x represents the tab position of interest and the yy.yy represents the current setting for that tab position.
- 4) To increase the Tab Position from the leading edge press the “+” until the desired location is displayed as the current setting. To decrease the Tab Position from the leading edge press the “-“ until the desired location is displayed as the current setting.

-Or-

- 5) The desired position can be directly entered from the numeric keypad.
- 6) As the new setting is entered it appears to the right of the current setting.
- 7) Once entry of the new value is completed press the “ENTER” key to save the new value. The LCD will indicate completion by replacing the current setting with the new setting.

#### 4.2.9 Number of Tabs

The unit can apply 1 to 3 tabs on a single product in one pass. The “POSITION” key gives access to this setting.

#### Procedure

- 1) Take the system offline.
- 2) Press the “POSITION” key to access the position menu. “POSITION” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “NUMBER OF TABS: x” is displayed on the second line of the display. The x represents the current setting for the number of tabs to be applied to a given product.
- 4) To increase the Number of Tabs to be applied, press the “+” key until the desired number is displayed as the current setting. To decrease the Number of Tabs to be applied, press the “-“ key until the desired number is displayed as the current setting.

#### 4.2.10 Begin Tabbng

The system should now be ready to apply tabs/labels. Turn the head online by pressing the online key on the operator interface.





## Chapter 5 - Controller Programming/Diagnostics

### 5.1 Setup Programming

The operator can adjust many of the components and parameters necessary to setup the unit, through the operator interface. The “SETUP” key is used to access these adjustments and is active only when the unit is offline. The setup parameter to be displayed and or adjusted is controlled by the “▲” key and or “▼” key. The components/ parameters that can be adjusted are listed below:

- Tab Pitch
- Job Memory
- Auto Tab Calculator Product Size
- Product/ Tab Sensor Offset
- Tab Sensor Sensitivity
- Counter Reset
- Product Sensor Selection

#### 5.1.1 Pitch Setting

The distance between the lead edges of two consecutive tabs still attached to release liner defines the Tab Pitch. This is an important value since it defines how far the tab drive will move when it applies tabs. The minimum pitch is 0.75” and the maximum pitch is 7.00”.

#### Procedure

- 1) Take the system offline.
- 2) Press the “SETUP” key to access the setup menu. “SETUP” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “PITCH: x.xx >\_” is displayed on the second line of the display. The x.xx represents the current setting for tab pitch.
- 4) To increase the Tab Pitch, press the “+” key until the desired location is displayed as the current setting. To decrease the Tab Pitch, press the “-“ key until the desired location is displayed as the current setting.

-Or-

- 5) The desired pitch can be directly entered from the numeric keypad.
- 6) As the new setting is entered it appears to the right of the current setting.
- 7) Once entry of the new value is completed press the “ENTER” key to save the new value. The LCD will indicate completion by replacing the current setting with the new setting.

#### 5.1.2 Save Setup to Memory

Two memory locations are reserved for saving the most frequent job settings. Memory location 1 can retain the Tab Pitch, Tab Position # 1, Tab Position # 2, Tab Position # 3, Number of Tabs, and Product Sensor Selection settings. Memory location 2 can retain the Tab Pitch, Tab Position # 1, Tab Position # 2, Number of Tabs, and Product Sensor Selection settings.

#### Procedure

- 1) Take the system offline.
- 2) Press the “SETUP” key to access the setup menu. “SETUP” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “SAVE(M1 or M2) >\_” is displayed on the second line of the display.
- 4) To save the current settings enter either “1” or “2” from the numeric keypad, then press the “ENTER” key.
- 5) The LCD will display the message “Mx SAVED”. The x represents the number of the memory location selected by the operator.

### 5.1.3 Auto Tab Calculator Product Size

The controller can calculate the proper location(s) for tabs on any given mail piece. The operator must enter the size of the mail piece (product), the number of tabs to be applied, and the tab pitch. The system can then calculate and program the appropriate tab positions. The minimum product size is 05.00” and the maximum is 20.00”.

#### Procedure

- 1) Take the system offline.
- 2) Press the “SETUP” key to access the setup menu. “SETUP” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “AUTO: xx.xx >\_” is displayed on the second line of the LCD. The xx.xx represents the current product size to be used by the calculator.
- 4) Increase the product size by pressing the “+” key until the desired size is displayed as the current setting. Decrease the product size by pressing the “-“ key until the desired size is displayed as the current setting.

-Or-

- 5) The desired size can be directly entered from the numeric keypad. As the new setting is entered it appears to the right of the current setting.
- 6) Once entry of the new value is completed press the “ENTER” key to calculate the new position values. The LCD will indicate completion by displaying the newly calculated positions “TAB 1 TAB 2 TAB 3”

xx.xx yy.yy zz.zz

### 5.1.4 Product/ Tab Sensor Offset

The controller must know the distance between the product sensor and tab sensor (peel point) in order to accurately place tabs at the desired location. When the operator makes small mechanical adjustments of the tab sensor location, the distance between the product and tab sensors will also be changed. This programmed offset must be kept up to date with sensor movements, in order to obtain the highest positional accuracy. Although the minimum offset is 2.00” and the maximum is 9.00”, only small changes to the default offset should be needed.

#### Procedure

- 1) Take the system offline.

- 2) Press the “SETUP” key to access the setup menu. “SETUP” should be displayed on the first line of the display.
  - 3) Press either the “▲” or “▼” until “SENSOR: x.xx >\_” is displayed on the second line of the LCD. The x.xx represents the current setting for sensor offset.
  - 4) To increase the Sensor Offset, press the “+” key until the desired value is displayed as the current setting. To decrease the Sensor Offset, press the “-“ key until the desired value is displayed as the current setting.
- Or-
- 5) The desired offset can be directly entered from the numeric keypad.
  - 6) As the new setting is entered it appears to the right of the current setting.
  - 7) Once entry of the new value is completed press the “ENTER” key to save the new value. The LCD will indicate completion by replacing the current setting with the new setting.

### 5.3.5 Tab Sensor Sensitivity

The controller must know the location of each tab edge in order to place the tab accurately on product. Through beam type opto-electronic sensors are used to “look through” the liner and tabs. The electronics can detect a significant contrast between just liner (found between tabs) and the combination of tabs on top of the release liner. Since this accurate detection is so important, setting the correct setting has been made very simple. This adjustment should be made periodically since dust and debris can block the optical path, thus affecting operation. It is also important to make the adjustment whenever setting up for a different type/ manufacturer of tab.

#### Procedure

- 1) Take the system offline.
- 2) Press the “SETUP” key to access the setup menu. “SETUP” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “ADJUST TAB SENSOR ?” is displayed on the second line of the LCD.
- 4) When using typical paper tabs it is important to have the machine fully threaded, but with no tab present in the tab sensor. It is important to make this setting while only liner is present in the tab sensor. When using translucent or clear tabs it is important to have the machine fully threaded with a tab present in the tab sensor. It is important not to have a liner registration mark directly under the sensor while making the adjustment. Since the optical path of the tab sensor is approximately ½” from the peel point edge, adjusting the sensor after aligning a registration mark with the peel point edge will assure that proper setting will be found.
- 5) The controller will automatically make the optimal sensor adjustment when the “ENTER” key is pressed. The LCD will indicate completion by displaying :  
“TAB SENSOR ADJUSTED”.  
“SETTING = xxx% “

The xxx represents the electrical setting used for the sensor. This value should normally range from 70% to 97% when setting with liner in the sensor. A value of 01% indicates sensor disconnection or sensor failure. A value between 01% and 70% probably indicates that the tab sensor requires cleaning. A value of 100% should always be obtained when adjusted with no liner present. A value of less than 100% with no liner would indicate a dirty sensor. The sensor should be adjusted without liner only as a diagnostic tool. The sensor must be readjusted with liner before normal operation.

### 5.3.6 Counter Reset

The controller displays and records a product count. The operator can reset this count to zero at any time. The current count is retained in memory at power down and recalled at power up.

## Procedure

- 1) Take the system offline.
- 2) Press the “SETUP” key to access the setup menu. “SETUP” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “RESET COUNT ? xxxxxx” is displayed on the second line of the display. The xxxxxx represent the current count.
- 4) Press the “ENTER” key to reset the counter. The LCD will be updated upon reset and now display “RESET COUNT ? 000000”.

### 5.3.7 Product Sensor Selection

Through beam type opto-electronic sensors are used to detect the presence of product to be tabbed/ labeled. Since the tabbing takes place at either the front or rear of the unit, product sensors are located at both the front and rear. The operator can select the appropriate product sensor to be active.

## Procedure

- 1) Take the system offline.
- 2) Press the “SETUP” key to access the setup menu. “SETUP” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “PRODUCT SENSOR: (RIGHT)FRONT or (LEFT)REAR” is displayed on the second line of the LCD. The xxxxxx represent the current count.
- 4) Press the “+” key to change from (RIGHT)FRONT to (LEFT)REAR. Press the “-“ key to change from REAR to FRONT. The LCD will update sensor selection as it is made.

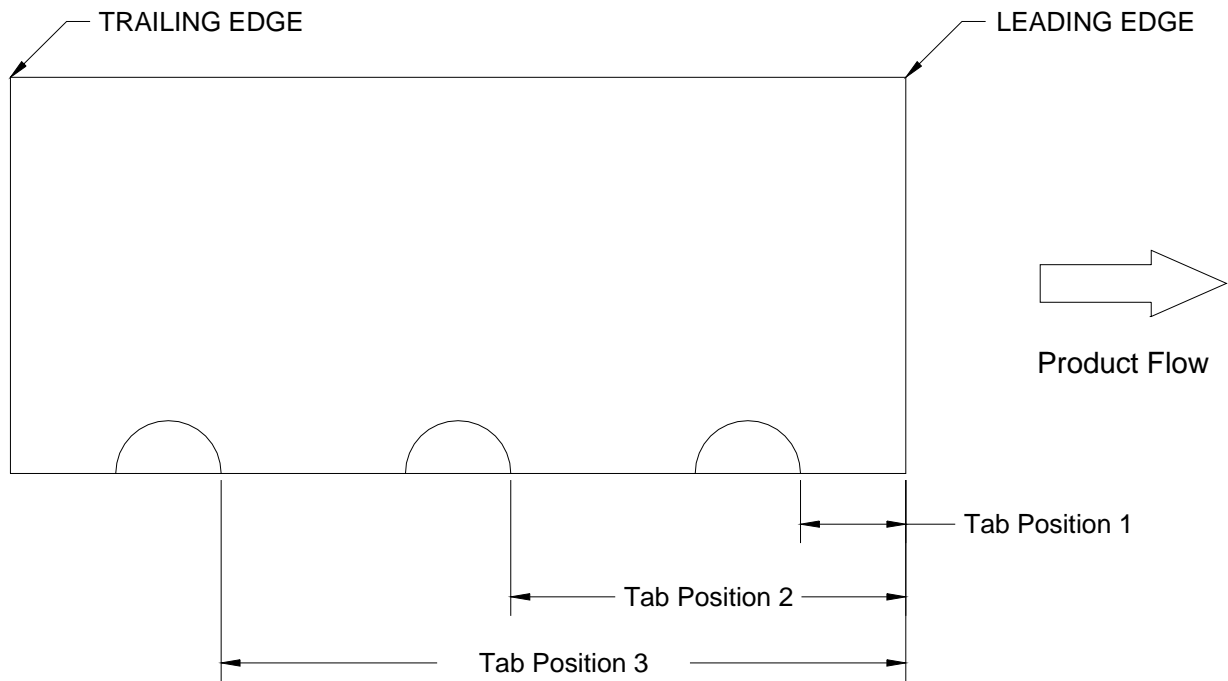
## **5.2 Position Programming**

The location and number of tabs/labels to be applied to a single product is controlled by the choices accessed by the “POSITION” key. The “POSITION” key is active only when the unit is offline. The position setting to be displayed and or adjusted is controlled by the “▲” key and or “▼” key. After displaying the setting of interest it can then be adjusted by one of two methods: direct keypad entry or incremental adjustment. The direct keypad entry is accomplished by using the numeric keypad to directly enter the desired position. After the position has been entered the “ENTER” key must be pressed to load the new value into memory. Incremental adjustments are made by using the “+” and or “-“ keys. The current value will be increased by 0.05” every time the “+” key is pressed. The current value will be decreased by 0.05” every time the “-” key is pressed. The maximum number of tabs that can be applied in a single pass is three. The minimum position is 00.00” and the maximum position is 20.00”.

### 5.2.1 Tab/ Label Position Entry

The distance between the product lead edge and the lead edge of the tab/ label defines the tab/ label positions. The system uses position units measured in inches with a precision on 1/100 of an inch. The three tab positions are defined by their order of application. If only one tab is being applied to a product, then Tab Position # 1 defines its location. If two tabs are applied, then Tab Position # 1 defines the leading edge tab and Tab Position # 2 defines the trailing edge tab. If three tabs are applied, then Tab Position # 1 defines the leading edge tab; Tab Position # 3

defines the trailing edge tab, and the middle tab is defined by Tab Position #2. When using more than one tab the second or third tab position must have a value greater than the (previous tab position value + Tab Pitch).



#### Procedure

- 1) Take the system offline.
- 2) Press the “POSITION” key to access the test menu. “POSITION” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “TAB POS x: yy.yy>\_” is displayed on the second line of the display. The x represents the tab position of interest and the yy.yy represents the current setting for that tab position.
- 4) To increase the Tab Position from the leading edge press the “+” until the desired location is displayed as the current setting. To decrease the Tab Position from the leading edge press the “-“ until the desired location is displayed as the current setting.

-Or-

- 5) The desired position can be directly entered from the numeric keypad.
- 6) As the new setting is entered it appears to the right of the current setting.
- 7) Once entry of the new value is completed press the “ENTER” key to save the new value. The LCD will indicate completion by replacing the current setting with the new setting.

#### 5.2.2 Number of Tabs

The unit can apply 1 to 3 tabs on a single product in one pass. The “POSITION” key gives access to this setting.

#### Procedure

- 1) Take the system offline.

- 2) Press the “POSITION” key to access the position menu. “POSITION” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “NUMBER OF TABS: x” is displayed on the second line of the display. The x represents the current setting for the number of tabs to be applied to a given product.
- 4) To increase the Number of Tabs to be applied, press the “+” key until the desired number is displayed as the current setting. To decrease the Number of Tabs to be applied, press the “-“ key until the desired number is displayed as the current setting.

## 5.4 Head Diagnostics/ Test

The electrical control system of the unit is capable of testing 15 critical components. The operator must select which test is to be performed from the operator interface. The unit must be offline before any tests are run. The components/ parameters that can be tested are listed below:

- Software Version
- Tab Drive Cycle Test
- Stop Relay Test
- Motor / Brake Test (Take-up motor/ Unwind drive motor/ Source spool brake)
- Base Cover Switch Test
- Head Cover Switch Test
- Bin Sensor Test
- Take-up Sensor Test
- Left Product Sensor Test
- Right Product Sensor Test
- Tab Sensor Test
- Encoder Test
- Factory Reset

### 5.4.1 Software Version

It is often important to know the version of the firmware that is running on a system. The firmware version will often determine the capabilities of the unit. This test will simply display the version number of firmware installed on the unit.

#### Procedure

- 1) Take the system offline.
- 2) Press the “TEST” key to access the test menu. “TEST” should be displayed on the first line of the display.

- 3) Press either the “▲” or “▼” until “VERSION X.X” is displayed on the second line of the display. (X.X will be the version number of interest)

#### 5.4.2 Tab Drive Cycle Test

The Tab Drive Cycle Test is used to test the function of the Tab Drive Motor. The Tab Drive Motor is responsible for the accurate application of the tabs/labels.

##### Procedure

- 1) Take the system offline.
- 2) Remove any tabs/ labels from the head before conducting this test.
- 3) Press the “TEST” key to access the test menu. “TEST” should be displayed on the first line of the display.
- 4) Press either the “▲” or “▼” until “TAB DRIVE CYCLE: OFF” is displayed on the second line of the display.
- 5) Start the test by pressing the “ENTER” key.
- 6) While the test is being run the display should read “TAB DRIVE CYCLE: ON” and The Tab Drive Wheel should alternate between 3 different states. The wheel should run forward at high speed (2 second duration), then stop or rotate very slowly (2 second duration), then run reverse at high speed (2 second duration), followed again by a stopped or very slow state. The cycle will continue repeating until the “ENTER” key is used to stop the test.

#### 5.4.3 Stop Relay Test

The Stop Relay allows the control system to shutdown the base whenever serious problems have been detected. This test allows the operator to test the function of this relay.

##### Procedure

- 1) Take the system offline.
- 2) Press the “TEST” key to access the test menu. “TEST” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “STOP RELAY: OFF” is displayed on the second line of the display.
- 4) Run the base by pressing the “START” button. The base should stop if the “ENTER” key is pressed. After the “ENTER” key is pressed STOP RELAY: ON” will display on the second line of the LCD.

#### 5.4.4 Motor/ Brake Test

Three DC gearmotors are used to: 1) unwind the source spool, 2) brake the rotation of the source spool, and 3) take-up the waste liner. The Motor/Brake Test allows the operator to test the fitness of each of these gearmotors.

##### Procedure

- 1) Take the system offline.
- 2) Remove any tabs/ labels from the head before conducting this test.
- 3) Press the “TEST” key to access the test menu. “TEST” should be displayed on the first line of the display.

- 4) Press either the “▲” or “▼” until “MOTOR/ -BRAKE: OFF” is displayed on the second line of the display.
- 5) Press the “ENTER” key to start the test. The second line of the LCD will display “MOTOR/ -BRAKE: ON”. While this test is being run the take-up motor should run continuously. The unwind motor will run when the bin sensor is not blocked and stop when the bin sensor is blocked. The source spool will brake when the bin sensor is blocked; the braking action is released when the bin sensor is not blocked.

#### 5.4.5 Base Cover Test

**Note \*\*\*\*** Due to a change intended to enhance the safety of the tabbing system, this test will now give invalid results. Do not use this test to diagnose the condition of the magnetic switches on the base cover.

#### 5.4.6 Head Cover Test

A magnetic switch senses the condition of the head cover. This switch is used, as a safety interlock that prevents the system from operating while the cover is open. The switch condition is displayed while this test is being run.

Procedure

- 1) Take the system offline.
- 2) Press the “TEST” key to access the test menu. “TEST” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “HEAD COVER: OPEN” or “HEAD COVER: CLOSED” is displayed on the second line of the display.
- 4) The LCD display will indicate the current state of the head cover while this test is being run.

#### 5.4.7 Bin Sensor Test

A retro-reflective sensor is used to determine the state of the tab/label bin. The sensor is used to ensure that some tabs/labels have been unwound from the source spool and are ready for application. The bin condition is displayed while this test is being run.

Procedure

- 1) Take the system offline.
- 2) Press the “TEST” key to access the test menu. “TEST” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “BIN SENSOR: BLOCKED” or “BIN SENSOR: UNBLOCKED” is displayed on the second line of the display.



- 4) The LCD display will indicate the current state of the bin sensor while this test is being run.

#### 5.4.8 Take-up Sensor Test

A reflective sensor is used to determine when the waste take-up spool is filled to capacity. The sensor condition is displayed while this test is being run.

##### Procedure

- 1) Take the system offline.
- 2) Press the “TEST” key to access the test menu. “TEST” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “TAKE-UP : BLOCKED” or “TAKE-UP: UNBLOCKED” is displayed on the second line of the display.
- 4) The LCD display will indicate the current state of the take-up sensor while this test is being run.

#### 5.4.9 Left Product Sensor Test

A “through beam” type opto-electronic sensor is used to sense the edge of the product about to be tabbed/ labeled. The sensor condition is displayed while this test is being run.

##### Procedure

- 1) Take the system offline.
- 2) Press the “TEST” key to access the test menu. “TEST” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “LF PRODUCT: BLOCKED” or “LF PRODUCT: UNBLOCKED” is displayed on the second line of the display.
- 4) The LCD display will indicate the current state of the left product sensor while this test is being run.

#### 5.4.10 Right Product Sensor Test

A “through beam” type opto-electronic sensor is used to sense the edge of the product about to be tabbed/ labeled. The sensor condition is displayed while this test is being run.

##### Procedure

- 1) Take the system offline.
- 2) Press the “TEST” key to access the test menu. “TEST” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “RT PRODUCT: BLOCKED” or “RT PRODUCT: UNBLOCKED” is displayed on the second line of the display.
- 4) The LCD display will indicate the current state of the right product sensor while this test is being run.

#### 5.4.11 Tab/ Label Sensor Test

A “through beam” type opto-electronic sensor is used to sense the edge of the tab/ label about to be dispensed. The sensor condition is displayed while this test is being run.

##### Procedure

- 1) Take the system offline.
- 2) Press the “TEST” key to access the test menu. “TEST” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “TAB SEN: BLOCKED” or “TAB SEN: UNBLOCKED” is displayed on the second line of the display.
- 4) The LCD display will indicate the current state of the tab/label sensor while this test is being run.

#### 5.4.12 Encoder Test

An optical encoder is used to sense product speed and position information. The encoder test displays a running pulsewheel count from the encoder.

##### Procedure

- 1) Take the system offline.
- 2) Press the “TEST” key to access the test menu. “TEST” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “ENCODER: 00000 is displayed on the second line of the display.
- 4) The LCD will display a running count from the encoder. The count overflows to zero after reaching a maximum count of 65,535. The encoder should register approximately 150 counts for every inch of transport belt travel.

#### 5.4.13 Factory Reset

The factory reset allows the operator to reset all operator programmable settings to their original factory settings. This could be necessary if the system memory becomes corrupt. Symptoms that may indicate the need for a factory reset include; tabs/ labels significantly and repeatedly misplaced, or no tabs/ labels applied at all.

##### Procedure

- 1) Take the system offline.
- 2) Press the “TEST” key to access the test menu. “TEST” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “FACTORY RESET ?” is displayed on the second line of the display.
- 4) Press the “ENTER” key to initiate the reset. Upon completion, the LCD will display “FACTORY SETTINGS LOADED TO MEMORY”.

## **Chapter 6 – Troubleshooting**



# Chapter 7 – Appendix

## FIGURE A1 – BASE CONTROL SYSTEM DIAGRAM

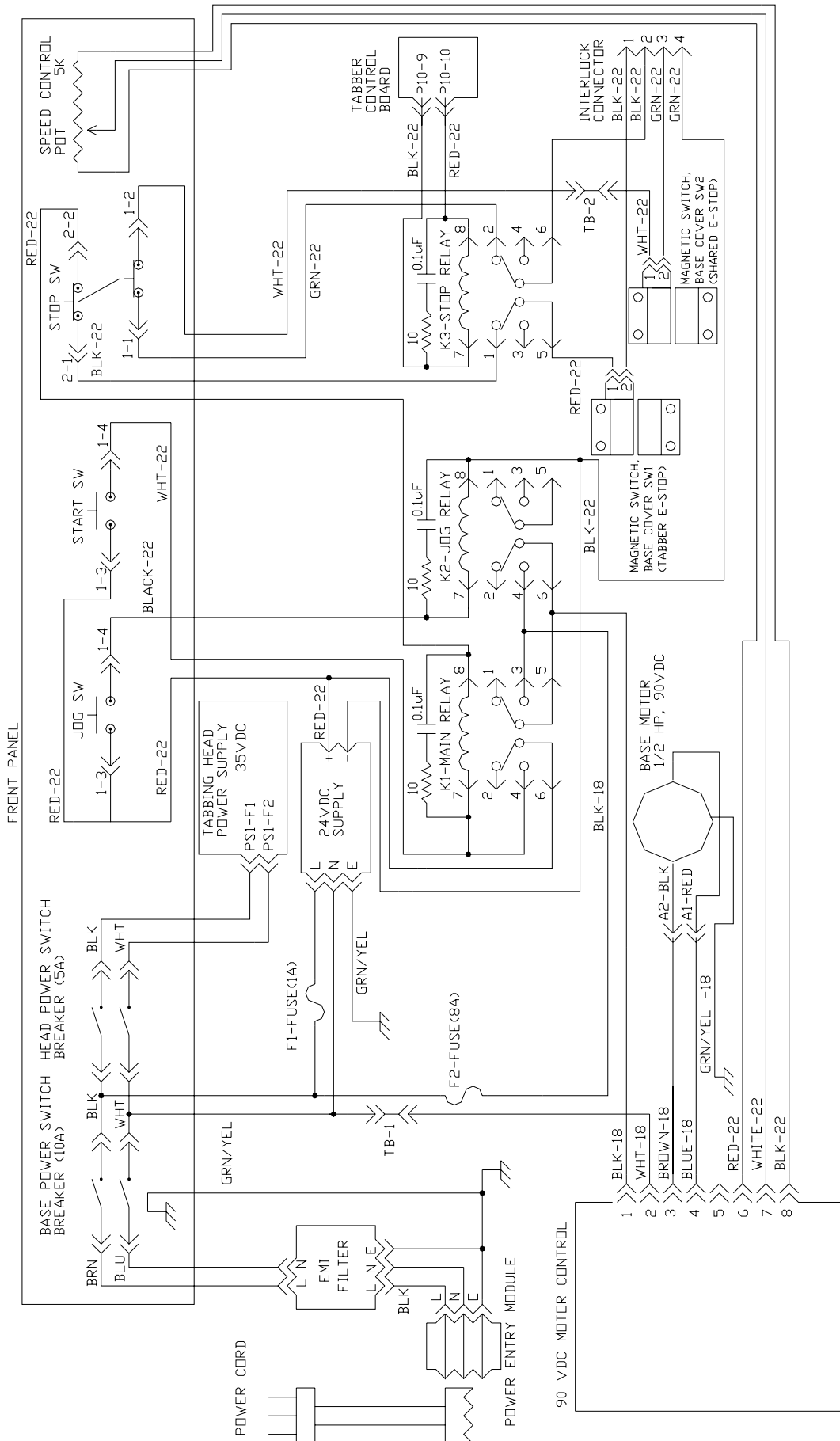


FIGURE A2 – HEAD CONTROL SYSTEM DIAGRAM

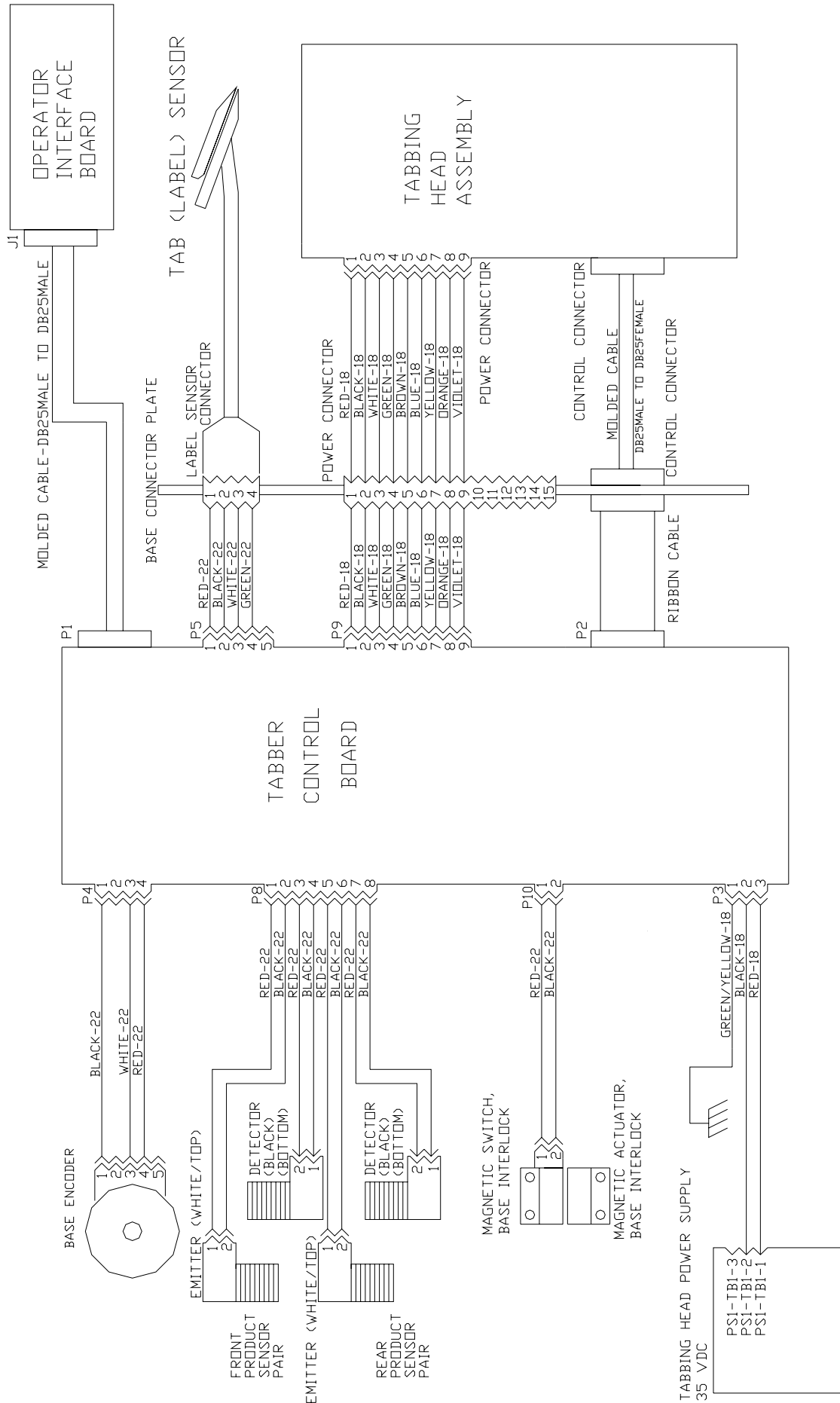
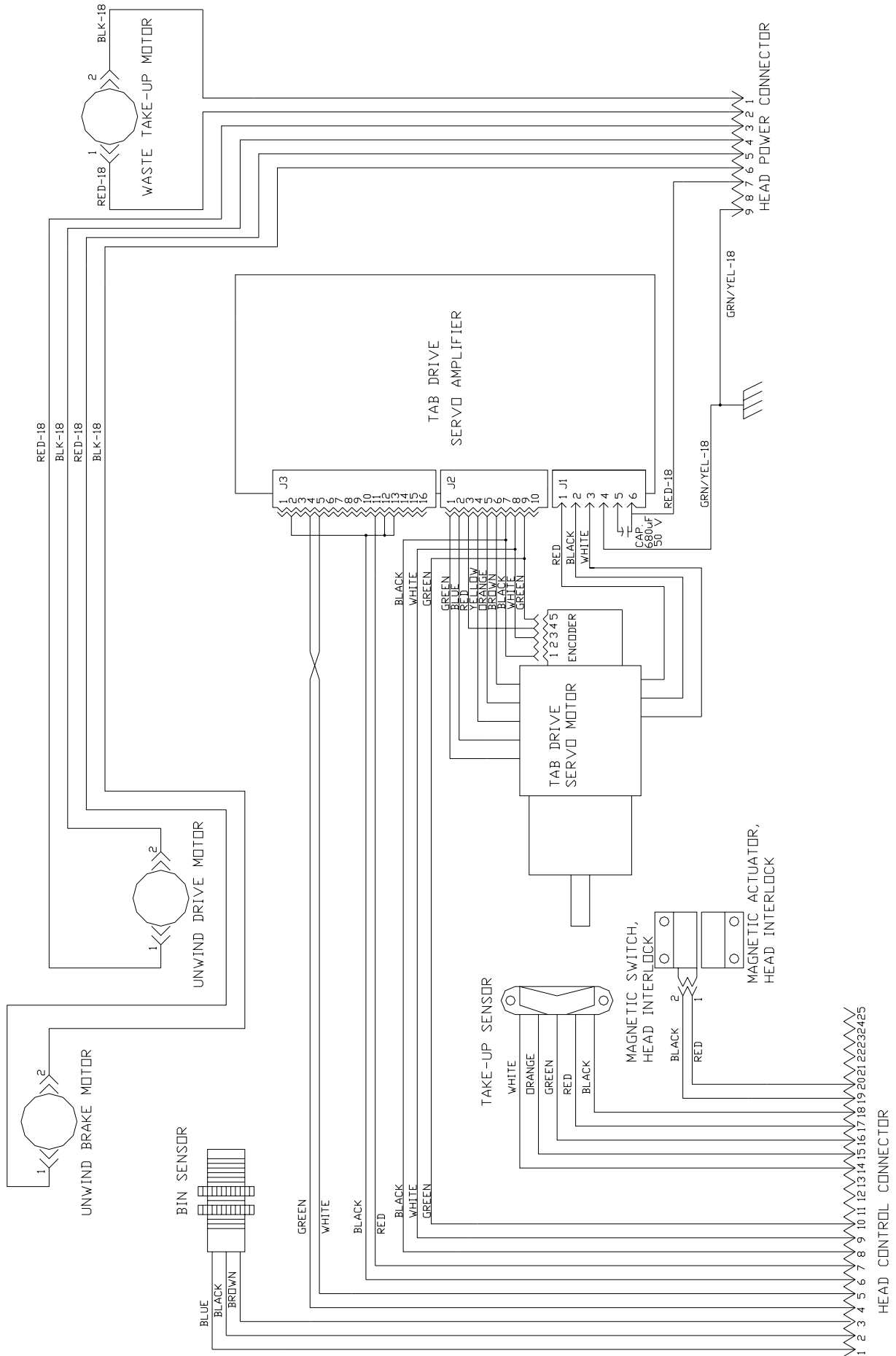


FIGURE A3 – HEAD SYSTEM DIAGRAM



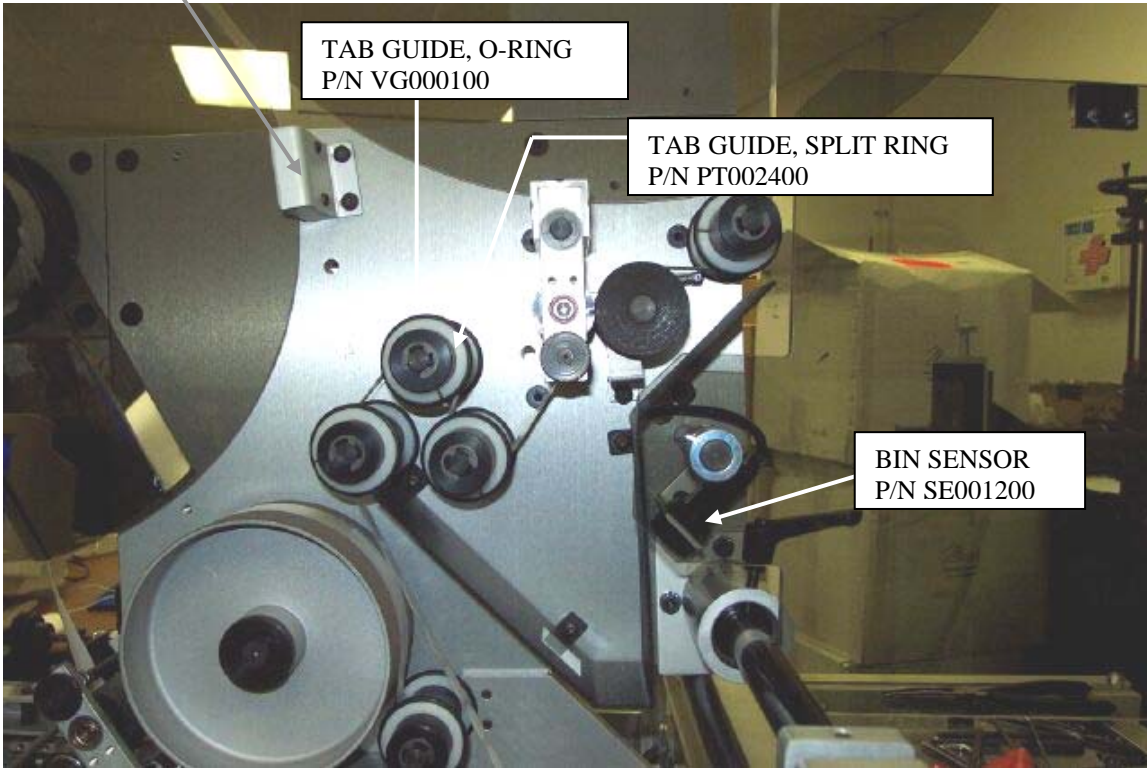
# ILLUSTRATED PART BREAKDOWN

WASTE TAKE-UP SENSOR  
P/N SE001400

TAB GUIDE, O-RING  
P/N VG000100

TAB GUIDE, SPLIT RING  
P/N PT002400

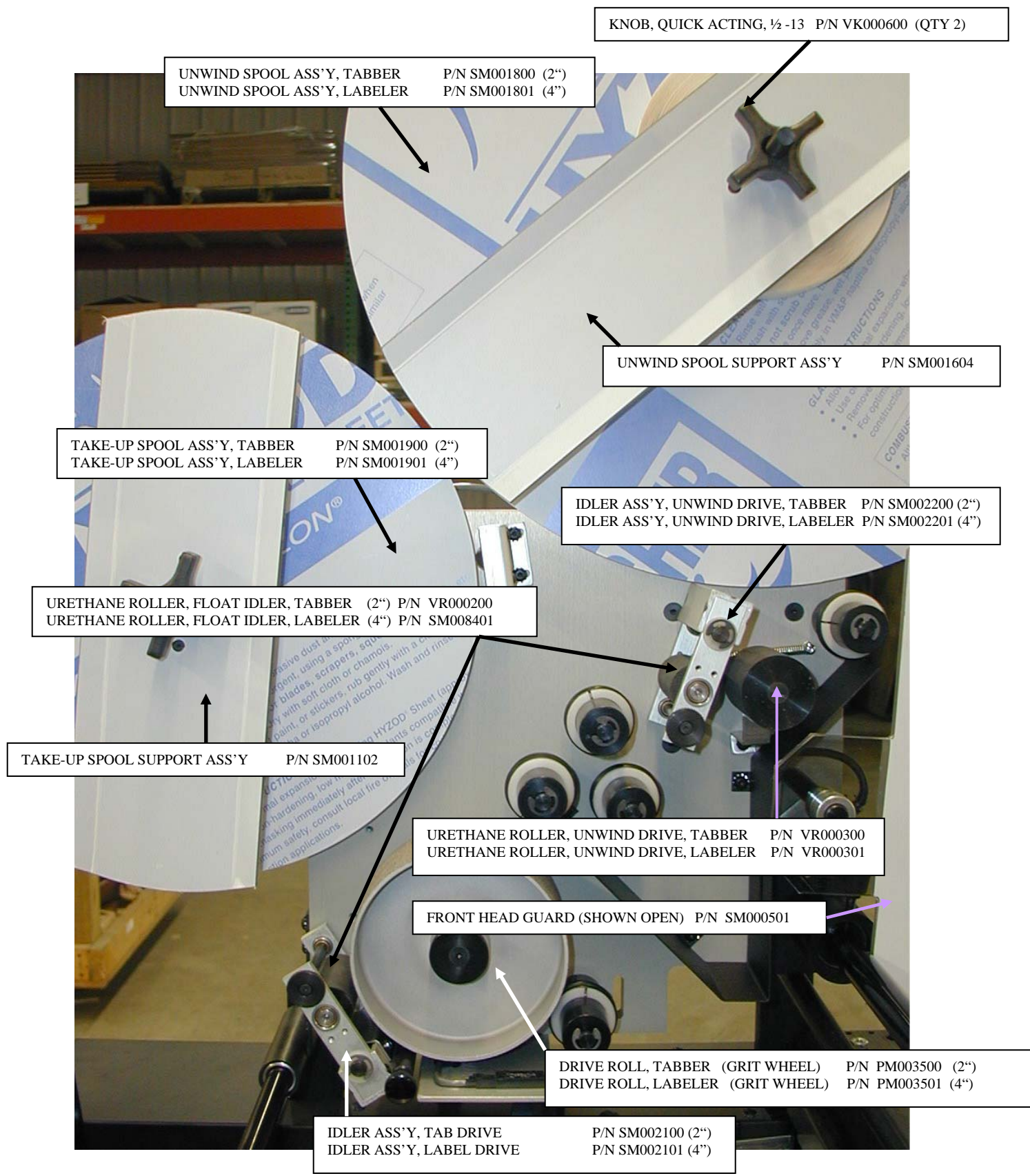
BIN SENSOR  
P/N SE001200

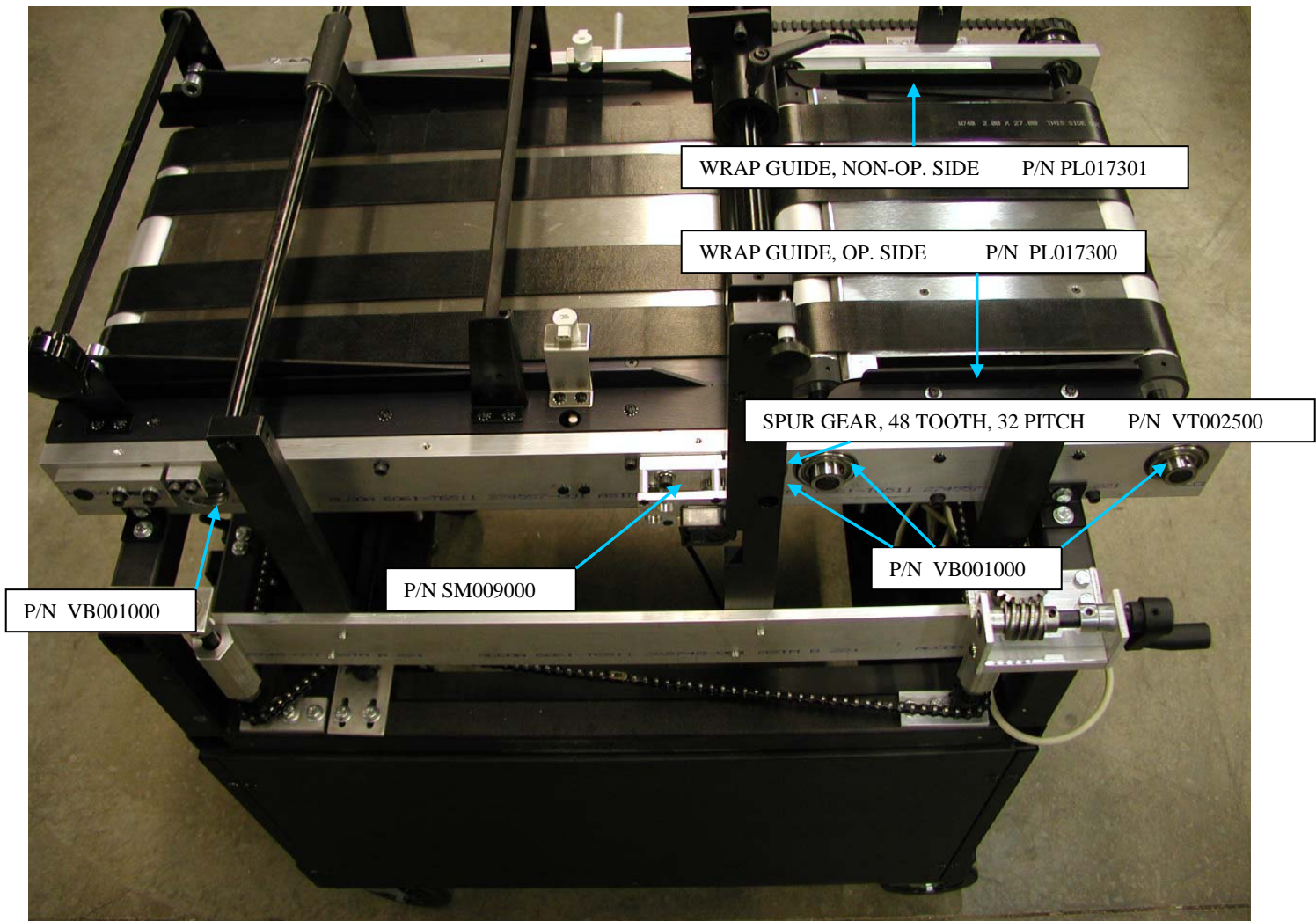
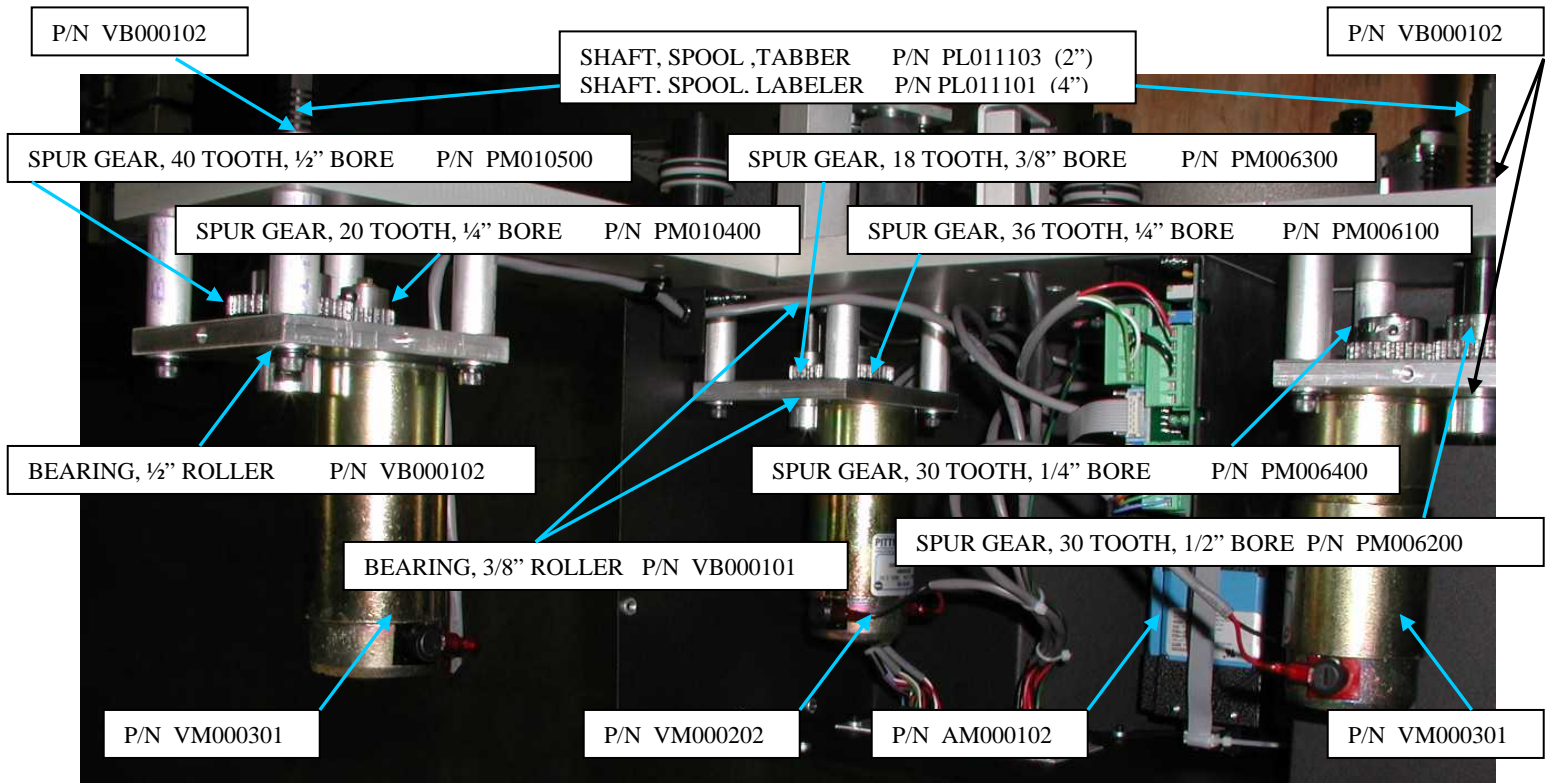


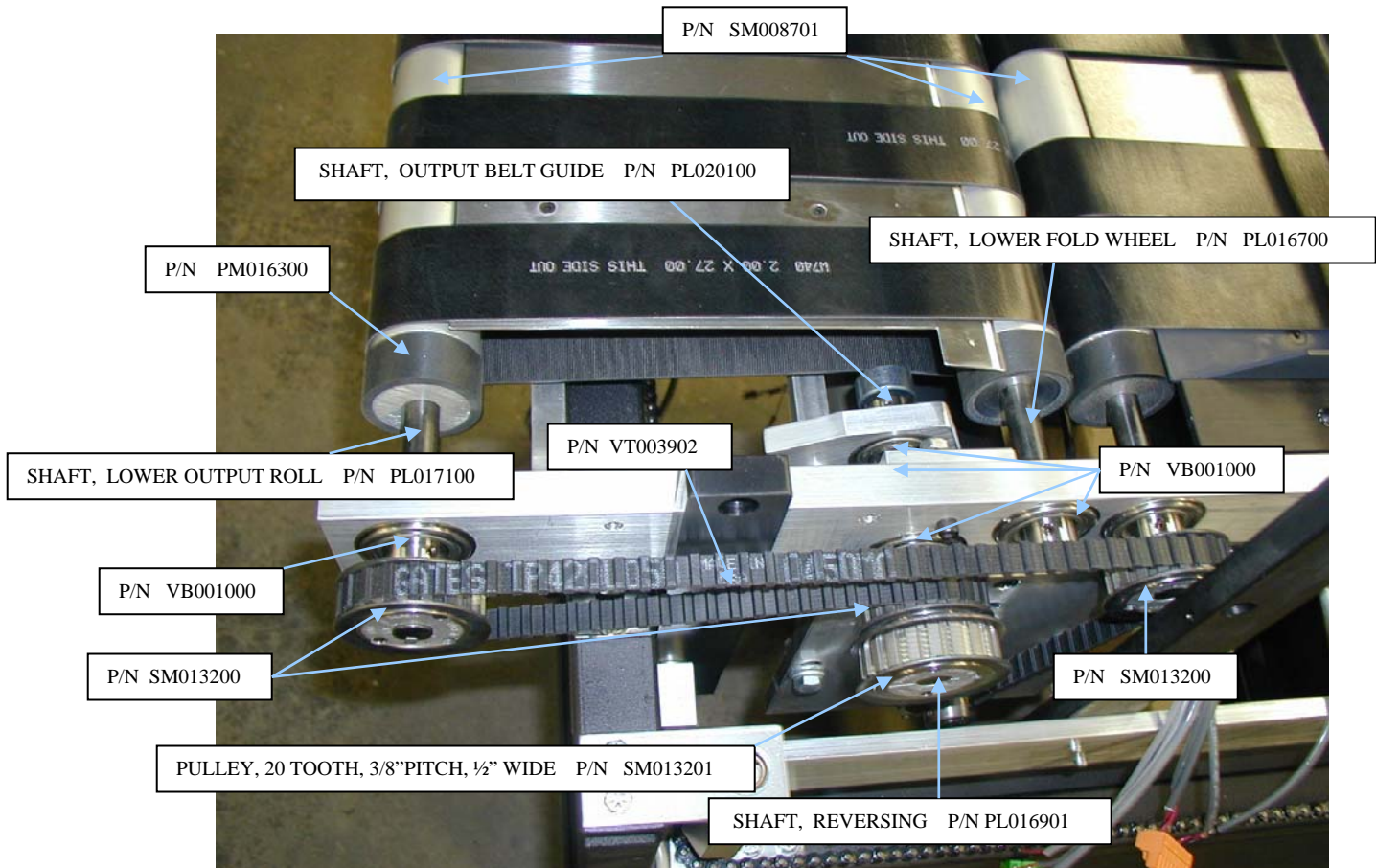
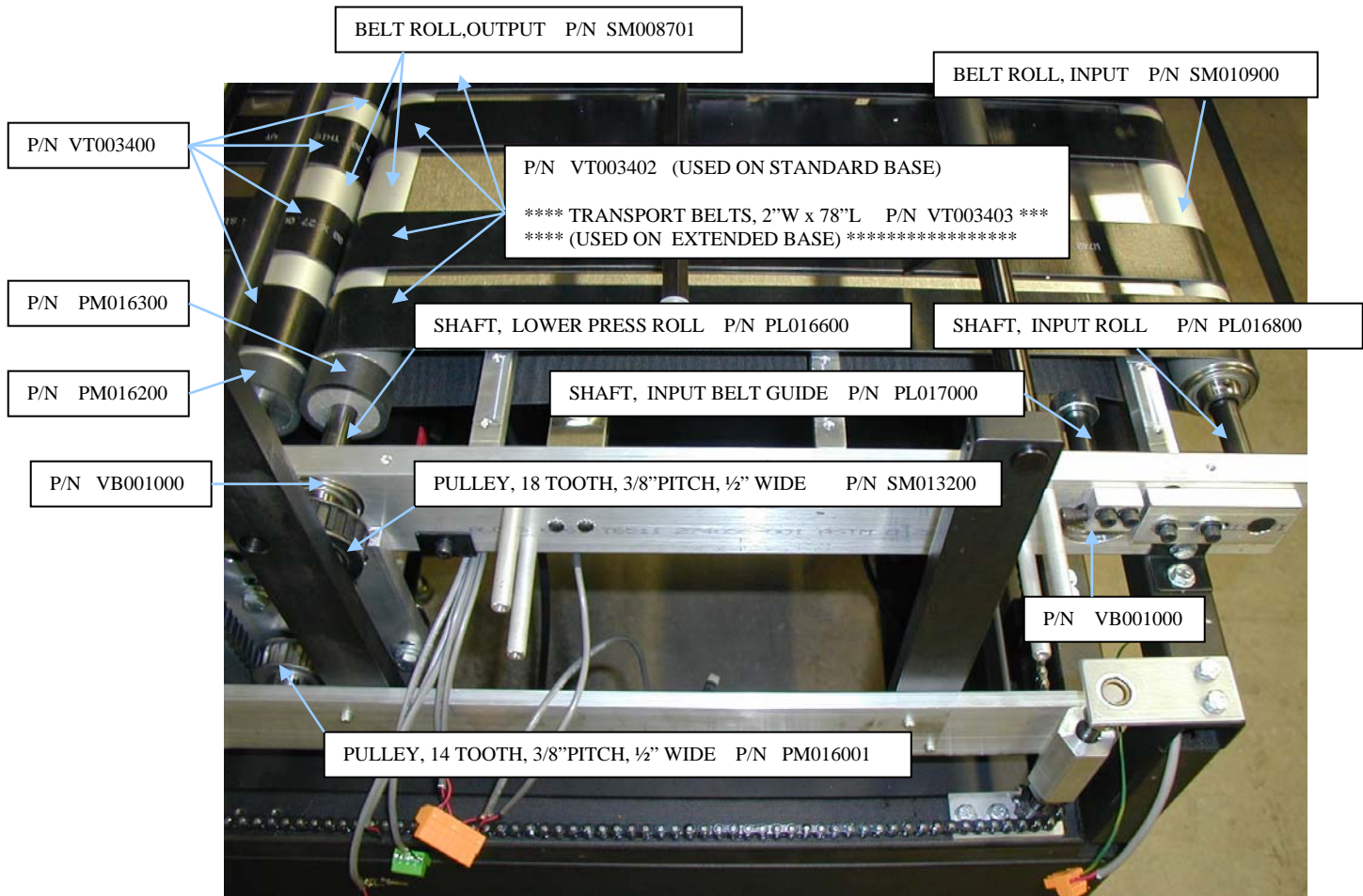
TAB SENSOR ASSEMBLY P/N SM002700 (2")  
LABEL SENSOR ASSEMBLY P/N SM002701 (4")

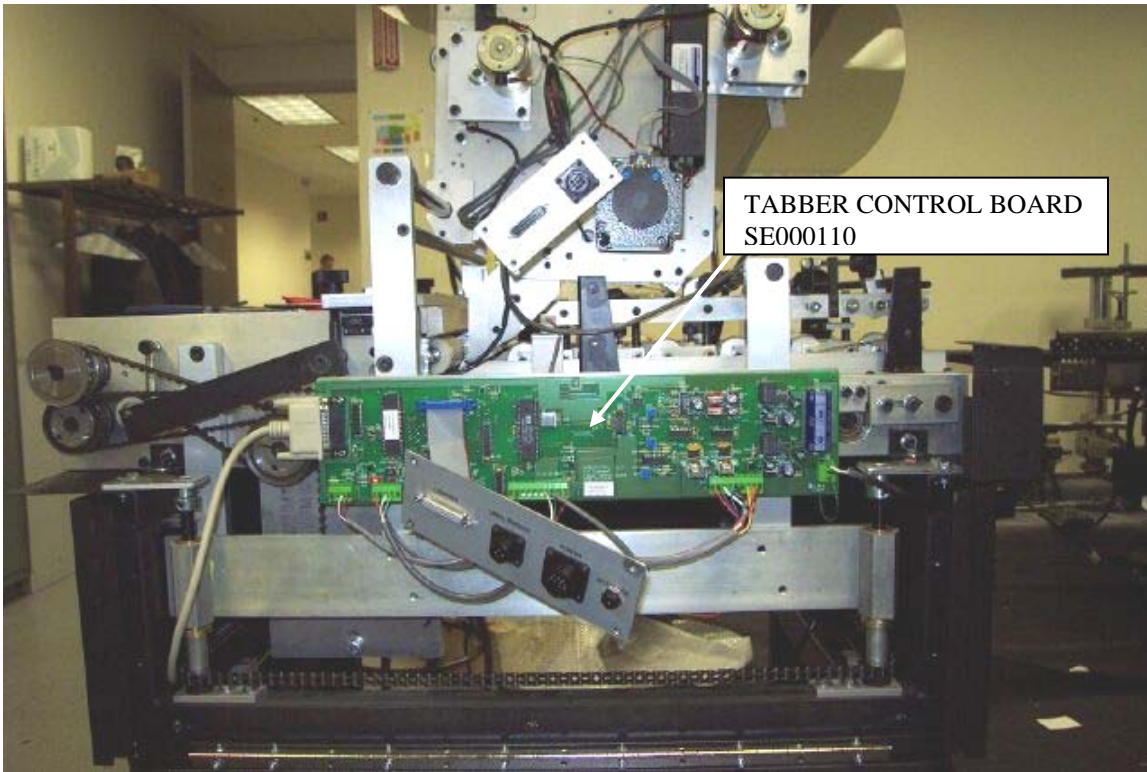




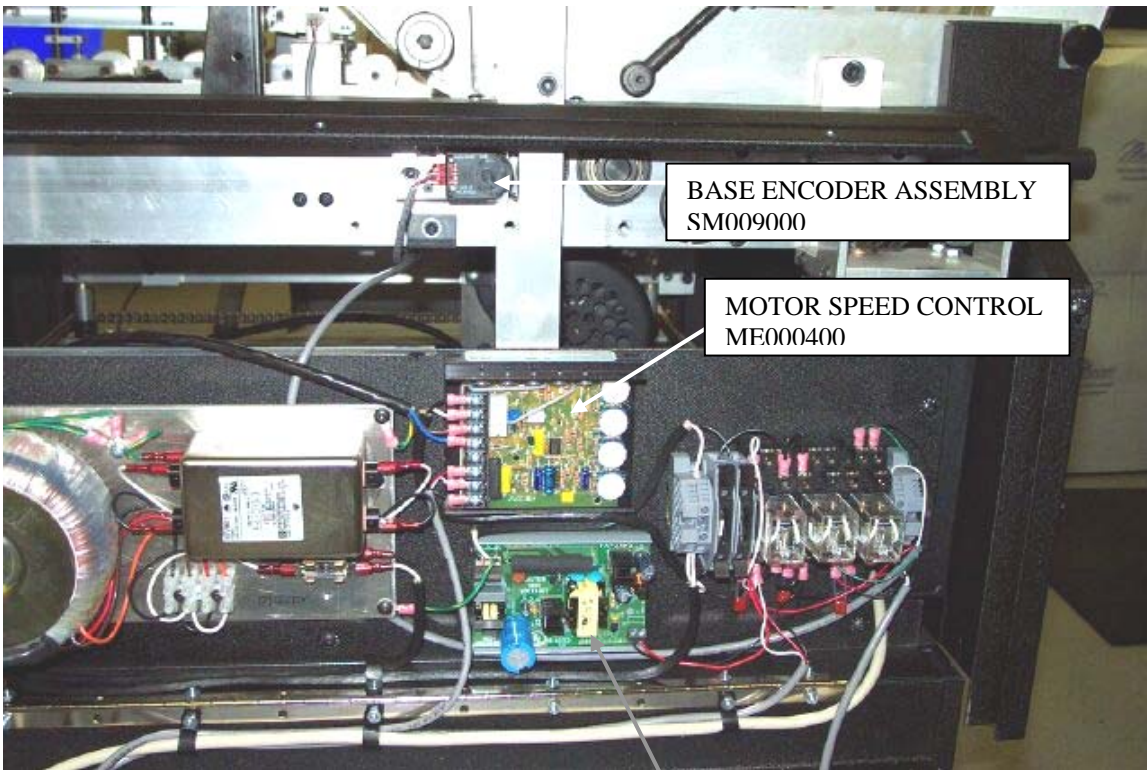








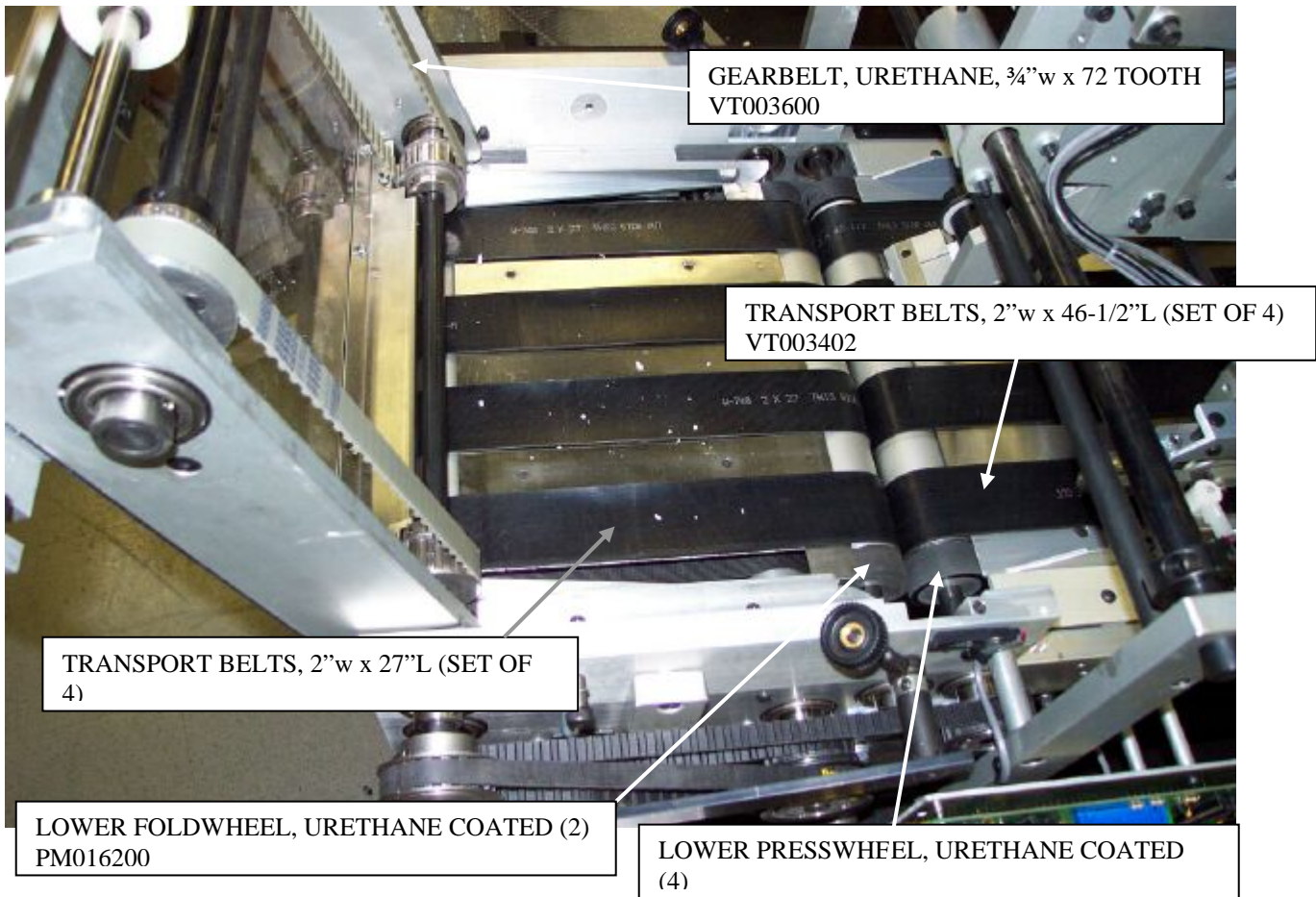
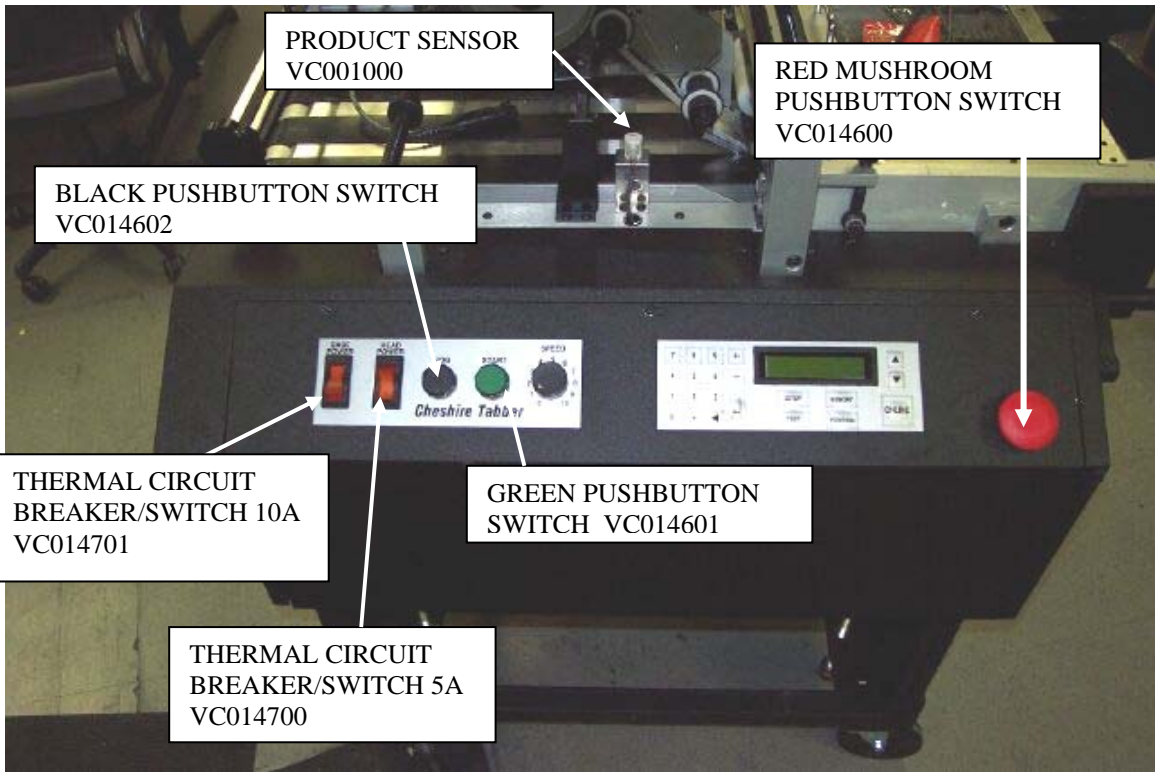
TABBER CONTROL BOARD  
SE000110

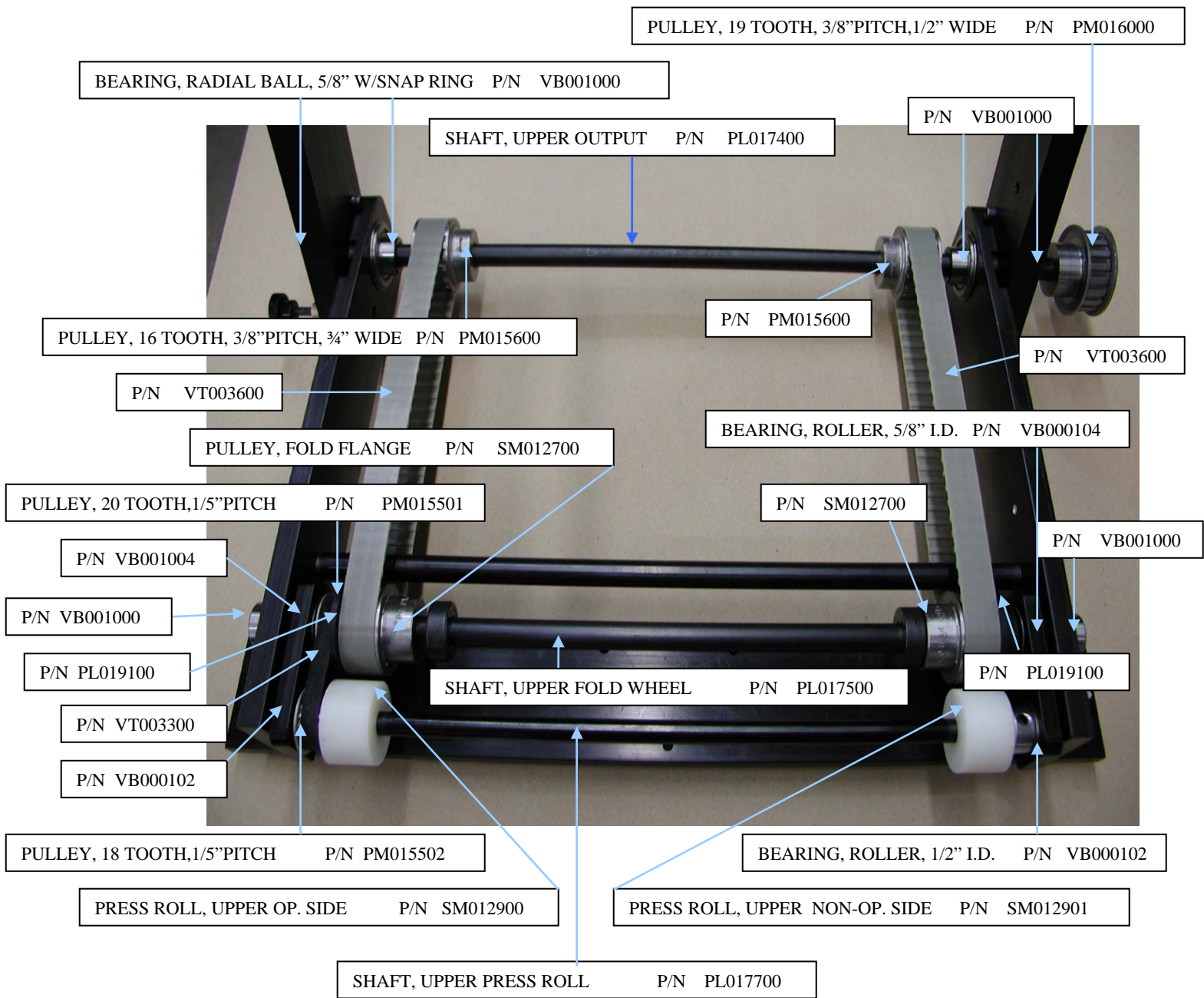


BASE ENCODER ASSEMBLY  
SM009000

MOTOR SPEED CONTROL  
ME000400

24VDC POWER SUPPLY  
VC014300





## MISCELANIOUS SPARE PARTS NOT LISTED ABOVE

### TABBING HEAD

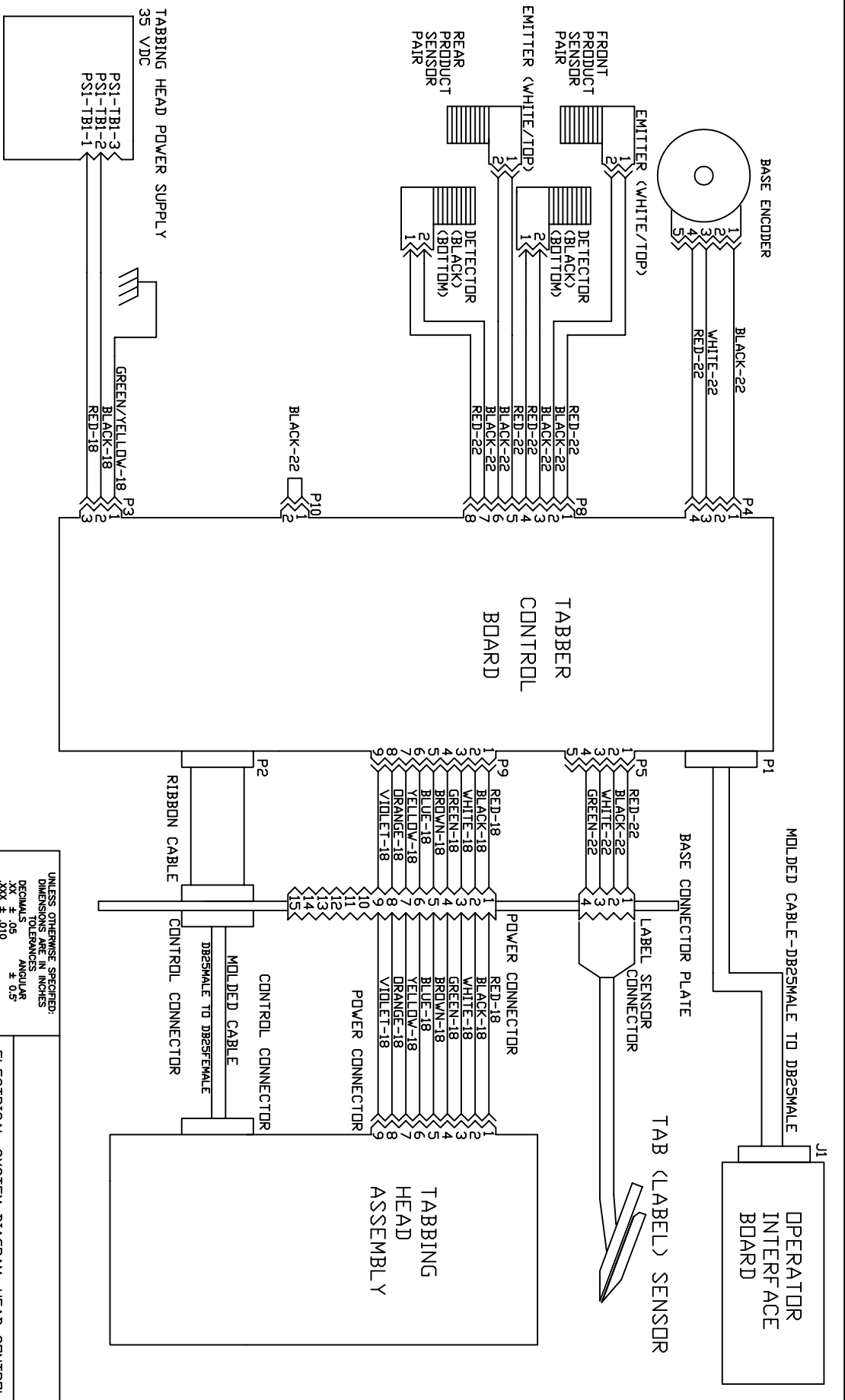
VC006200	HEAD POWER SUPPLY FUSE
VH001900	EXTENSION SPRING, 0.25" OD x 1.75" L (UNWIND REAL)
VH003300	EXTENSION SPRING, 0.25" OD x 1.5" L (TAKE UP)

### TABBING BASE

SE000202	OPERATOR INTERFACE
SE007400	BASE MOTOR ASSEMBLY
VC010900	POWER CORDSET
SE000700	HEAD POWER CABLE
VC014001	HEAD CONTROL CABLE
VC013501	RELAY, 24V COIL
VC013500	RELAY, 12V COIL
VC014500	CONTACT BLOCK, NORMALLY OPEN
VC014501	CONTACT BLOCK, NORMALLY CLOSED
VC006202	FUSE, 1A TIME DELAY (24V SUPPLY)
VC006203	FUSE, 8A FAST ACTING (BASE MOTOR)
VT003902	GEARBELT, L, 1/2"w x 68 TOOTH, 3/8" PITCH
VG000500	"O" RING, CLEAR URETHANE, 4-5/16" x 1/8"
VH008101	EXTENSION SPRING, 1/2"OD x 1-1/2"L
VH007701	COMPRESSION SPRING, .36"OD x 1-1/4"L
VK000700	2-3/8" DIA. BLACK KNOB
VK000800	THUMB KNOB w/ THRU HOLE, 1-1/4" DIA.
VK001000	CRANK HANDLE, 2.5"L
VK001200	ADJUSTABLE CLAMPING HANDLE, SHORT SHAFT
VK001201	ADJUSTABLE CLAMPING HANDLE, LONG SHAFT
SM009300	KNOB, HEAD POSITION FINE ADJUST
SM009400	KNOB, TABLE POSITION FINE ADJUST
SM009401	KNOB, REGISTRATION WHEEL ANGLE ADJUST
VH003900	COMPRESSION SPRING, .360"OD x .75"L
VC005100	REED SWITCH
VC005200	MAGNET







UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN INCHES  
TOLERANCES  
DECIMALS ± .005  
ANGULAR ± 0.5°  
XX ± .005  
DO NOT SCALE DRAWING

DATE

DESIGN

CHECKED

DRAWN

SCALE

SIZE

FSCM NO.

DWG NO.

REV

SHEET

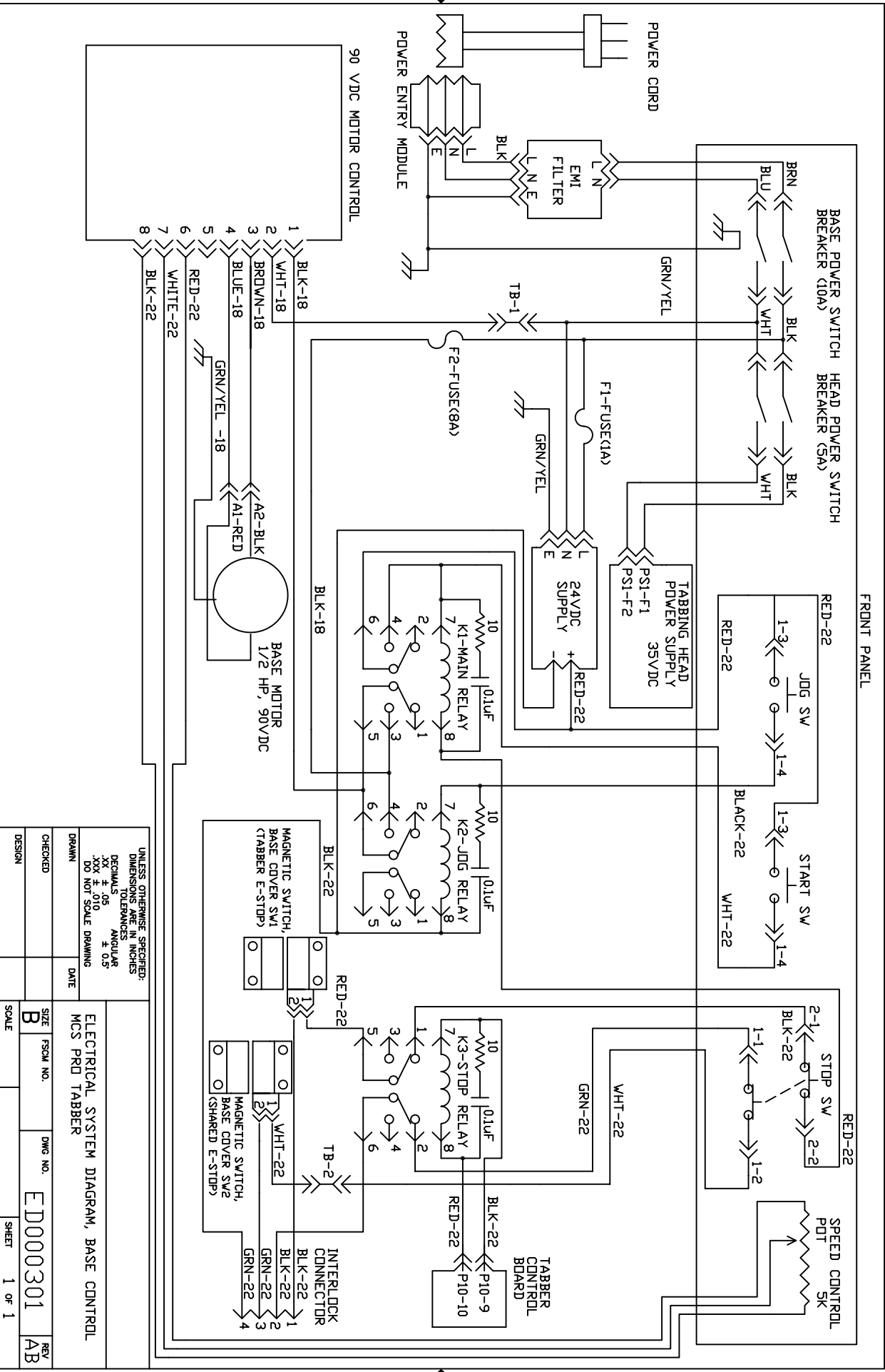
1 of 1

AB

ED000202

MCS PRO TABBER

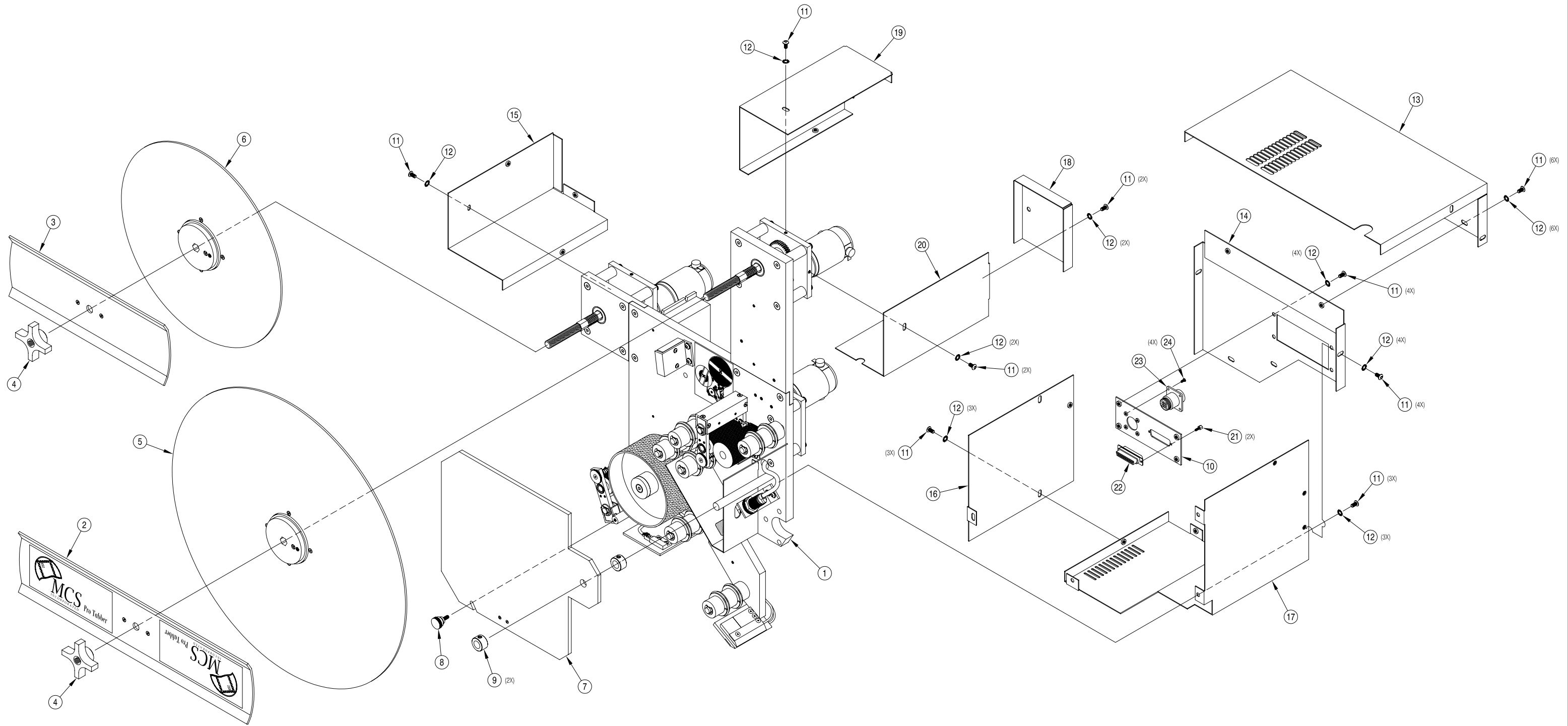
ELECTRICAL SYSTEM DIAGRAM, HEAD CONTROL



FRONT PANEL

ELECTRICAL SYSTEM DIAGRAM, BASE CONTROL

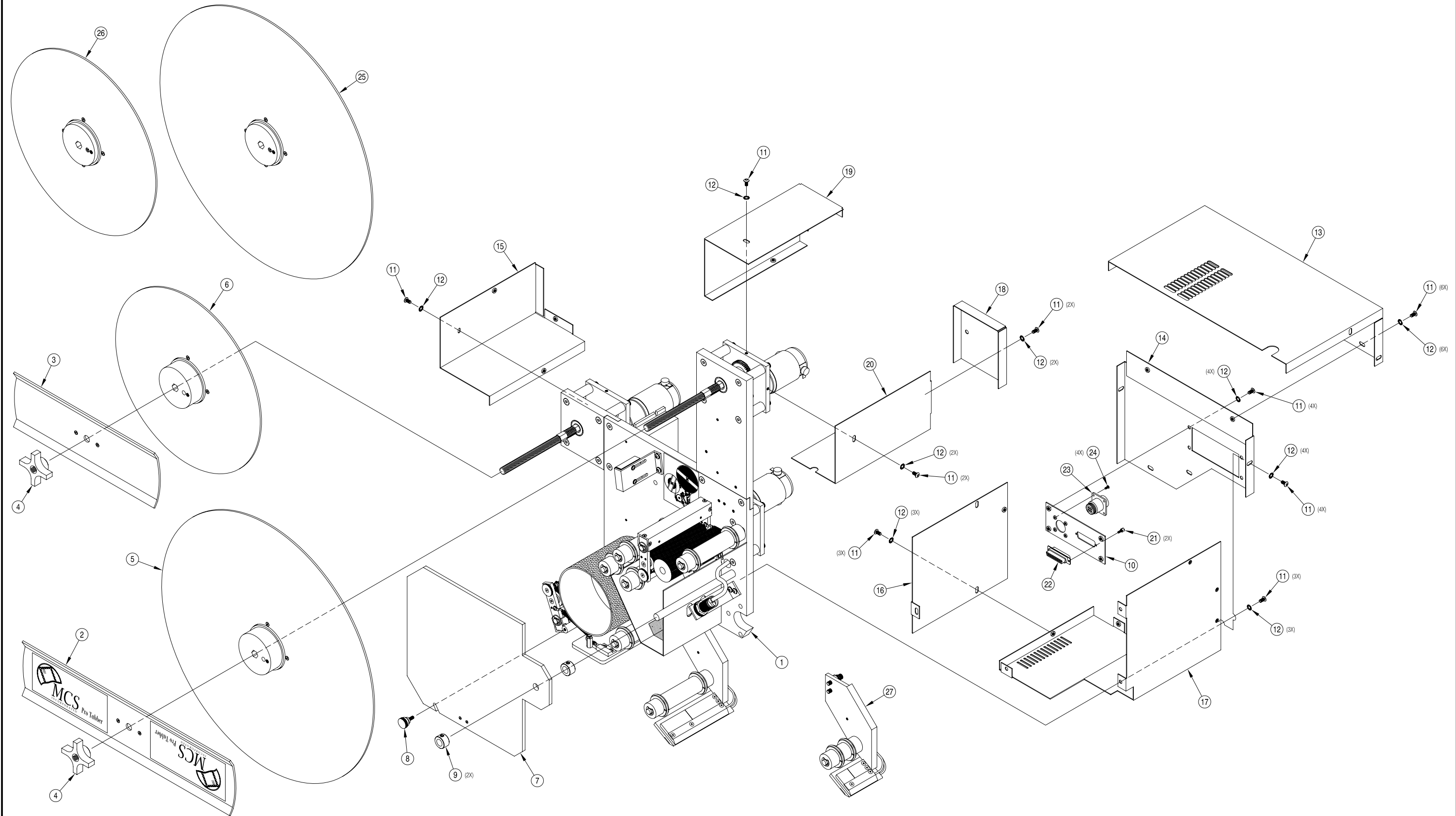
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES		DATE	
DECIMALS ± .05		DRAWN	
ANGULAR ± 0.5°		CHECKED	
DO NOT SCALE DRAWING		DESIGN	
SIZE	FSCM NO.	DWG NO.	REV
B		ED000301	AB
SCALE		SHEET	1 of 1



AF000512 - TABBING HEAD, MCS 2"

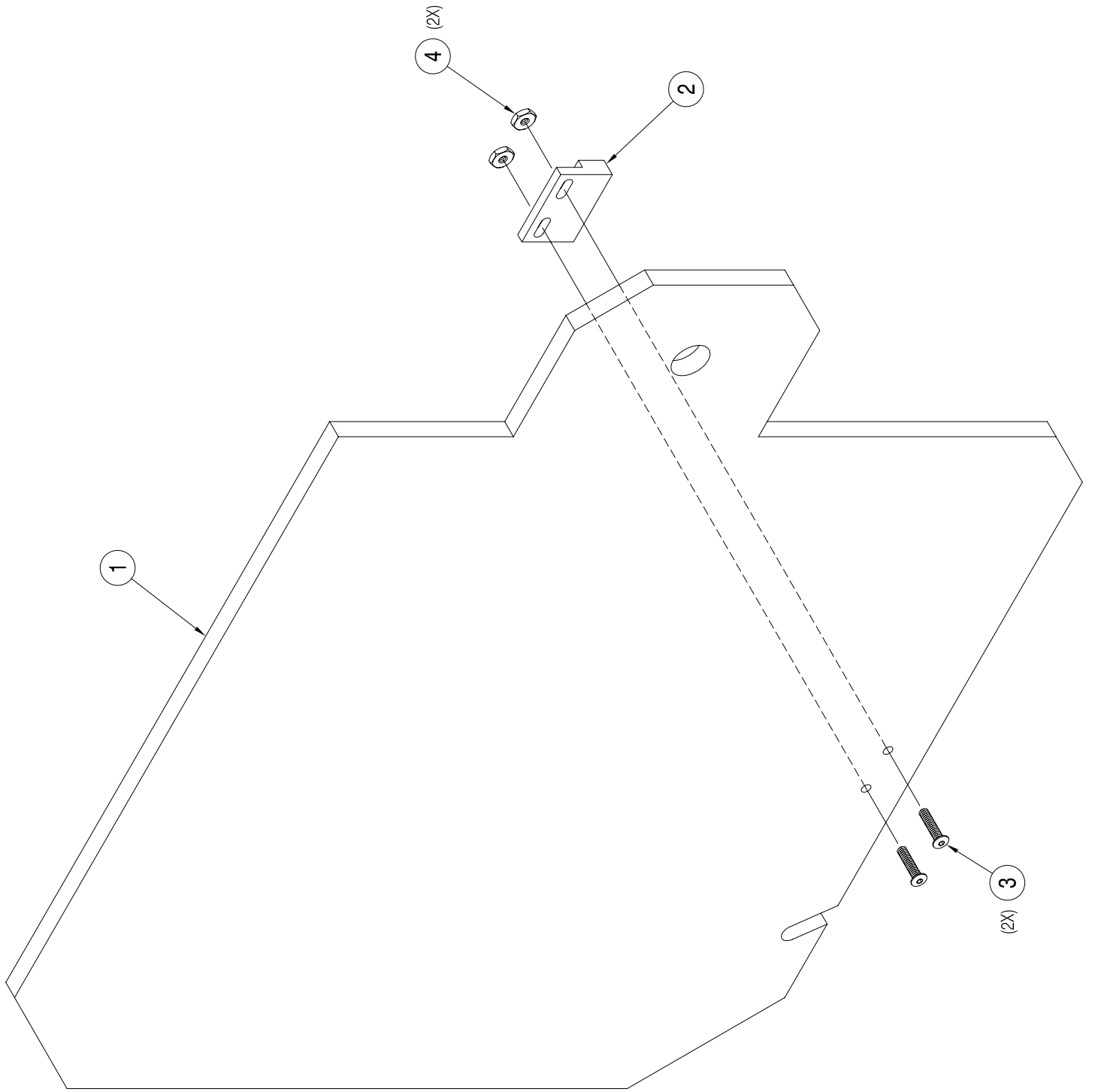
**AF000512 - TABBING HEAD, MCS 2"**

Item	Part Number	Description	Quantity
1	SM002608	Head Sub Assembly, 2"	1
2	SM001605	Support Assembly, Unwind Spool, MCS	1
3	SM001102	Take-Up Spool Assembly, Outer V3	1
4	VK000600	Knob, Quick Acting, 1/2-13	2
5	SM001800	Unwind Spool Assembly, Inner	1
6	SM001900	Take-Up Spool Assembly, Inner	1
7	SM000501	Front Guard Assembly	1
8	VK001100	Knob, Black w/ #10-32 Stud	1
9	VH004103	Collar, Locking, SS, 1/2" ID	2
10	PP002000	Connector Plate, Head	1
11	VH000402	Screw, Button Head Socket, #10-32 x 3/8"	25
12	VH006800	Washer, External Lock, #10	25
13	PA000201	Cover, Rear Main Top	1
14	PP005000	Cover, Rear Main Bottom	1
15	PA000301	Rear Cover, End, Take-Up	1
16	PA000401	Cover, Rear, End	1
17	PP004900	Cover, Rear, Bottom/Front	1
18	PA000600	Brake End Cover	1
19	PA000701	Cover, Unwind Brake, Top	1
20	PA000801	Cover, Unwind Brake, Bottom	1
21	VH003100	Jack Screw, #4-40 x 3/16"	2
22	VC007500	Connector, DB25 Male, Panel Mount, Crimp Type	1
23	VC003501	Connector, CPC, 9 Pin, Receptacle	1
24	VH002801	Screw, Button Head Socket, #4-40 x 5/16"	4



**AF000513 - LABELING HEAD, MCS 4"**

Item	Part Number	Description	Quantity
1	SM002609	Head Sub Assembly, 4"	1
2	SM001605	Support Assembly, Unwind Spool, MCS	1
3	SM001102	Take-Up Spool Assembly, Outer V3	1
4	VK000600	Knob, Quick Acting, 1/2-13	2
5	SM001801	Unwind Spool Assembly, Inner, Labeler	1
6	SM001901	Take-Up Spool Assembly, Inner, Labeler	1
7	SM000501	Front Guard Assembly	1
8	VK001100	Knob, Black w/ #10-32 Stud	1
9	VH004103	Collar, Locking, SS, 1/2" ID	2
10	PP002000	Connector Plate, Head	1
11	VH000402	Screw, Button Head Socket, #10-32 x 3/8"	25
12	VH006800	Washer, External Lock, #10	25
13	PA000201	Cover, Rear Main Top	1
14	PP005000	Cover, Rear Main Bottom	1
15	PA000301	Rear Cover, End, Take-Up	1
16	PA000401	Cover, Rear, End	1
17	PP004900	Cover, Rear, Bottom/Front	1
18	PA000600	Brake End Cover	1
19	PA000701	Cover, Unwind Brake, Top	1
20	PA000801	Cover, Unwind Brake, Bottom	1
21	VH003100	Jack Screw, #4-40 x 3/16"	2
22	VC007500	Connector, DB25 Male, Panel Mount, Crimp Type	1
23	VC003501	Connector, CPC, 9 Pin, Receptacle	1
24	VH002801	Screw, Button Head Socket, #4-40 x 5/16"	4
25	SM001800	Unwind Spool Assembly, Inner	1
26	SM001900	Take-Up Spool Assembly, Inner	1
27	SM007300	Sensor Arm Assembly, Tabber 2"	1

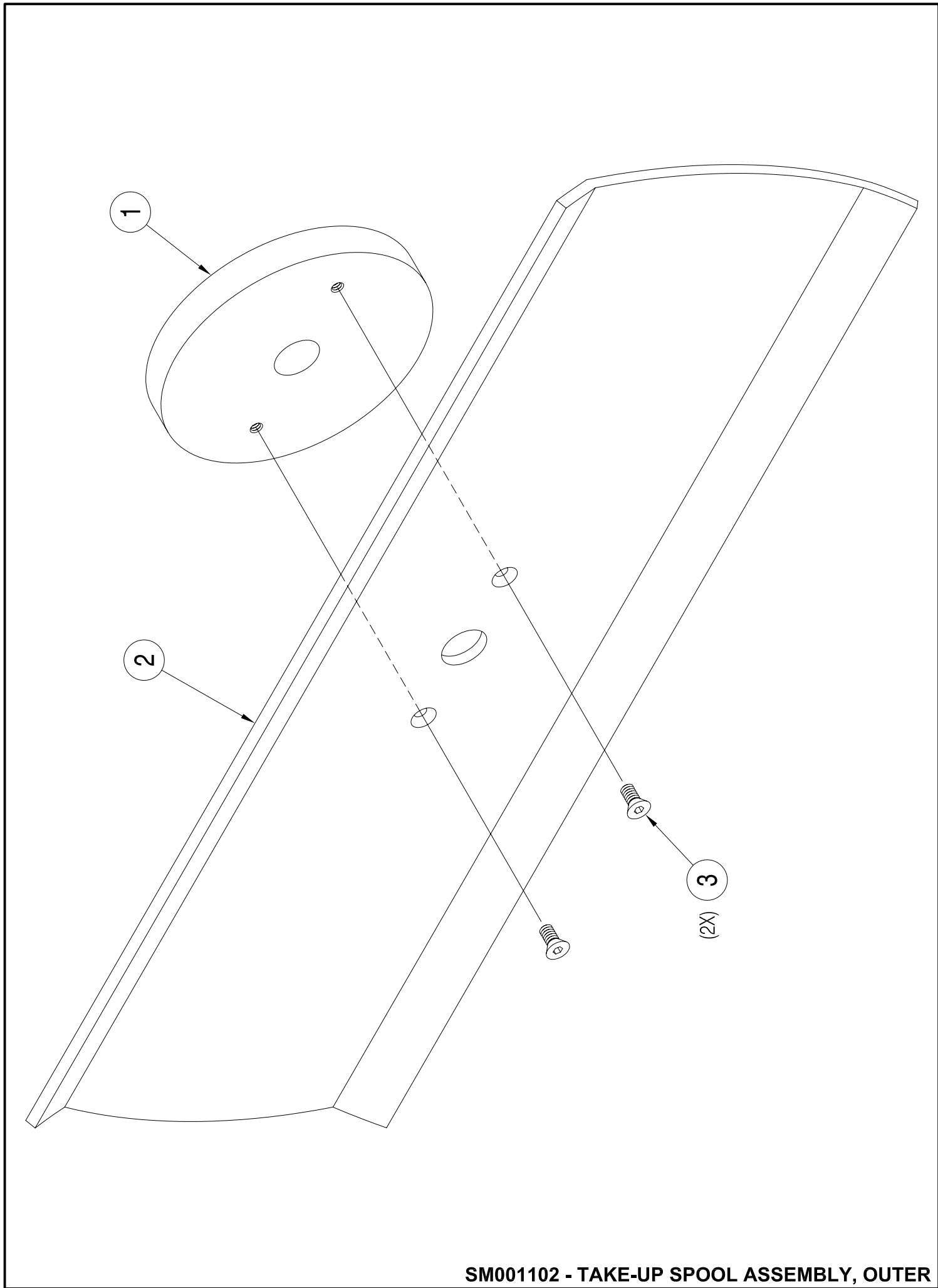


SM000501 - FRONT GUARD ASSEMBLY

**SM000501 - FRONT GUARD ASSEMBLY, V3**

Item	Part Number	Description	Quantity
1	VZ001803	Guard, Front	1
2	VC005200	Magnet	1
3	VH002802	Screw, Button Head Socket, #4-40 x 1/2"	2
4	VH002403	Nut, Hex, #4-40	2

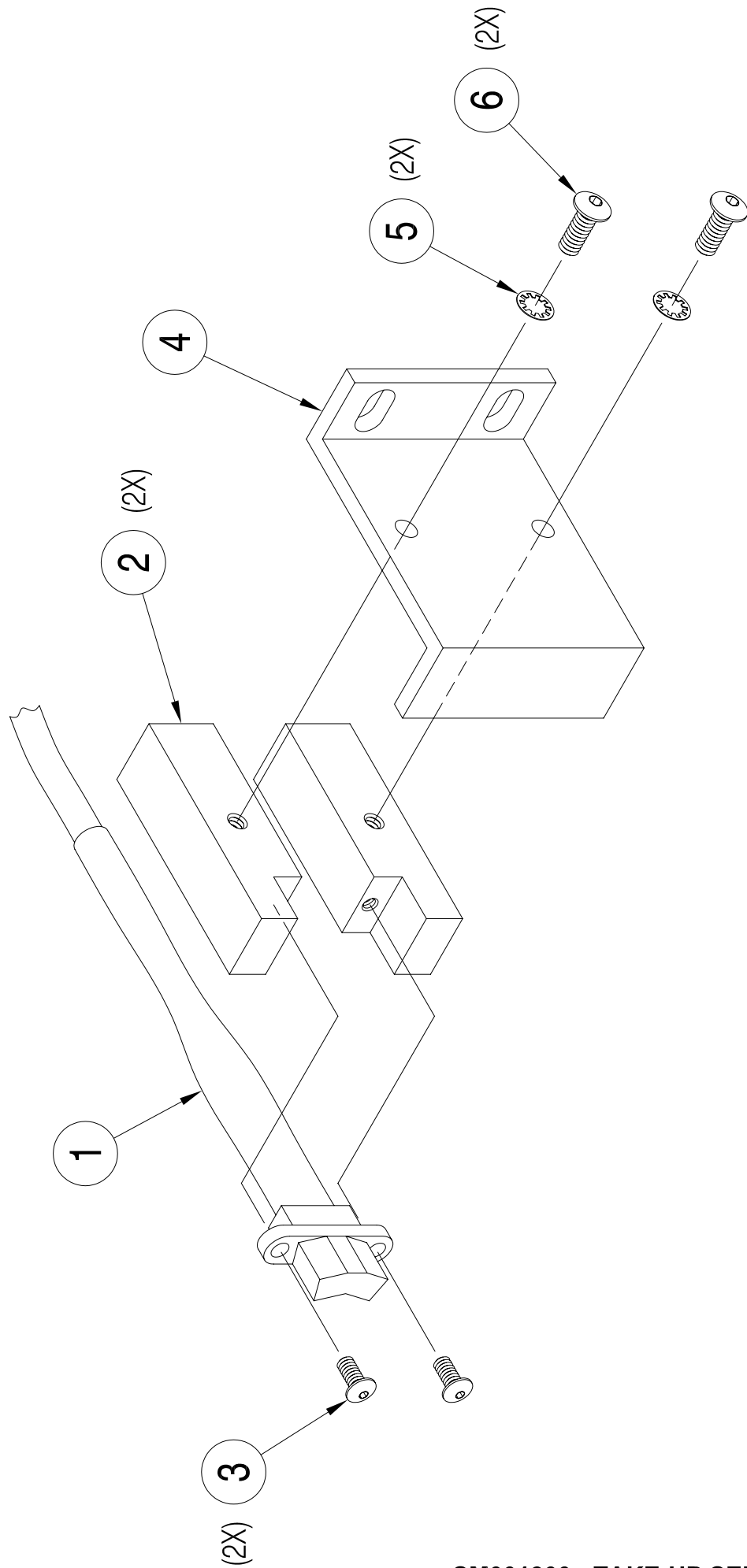




SM001102 - TAKE-UP SPOOL ASSEMBLY, OUTER

**SM001102 - TAKE-UP SPOOL ASSEMBLY, OUTER V3**

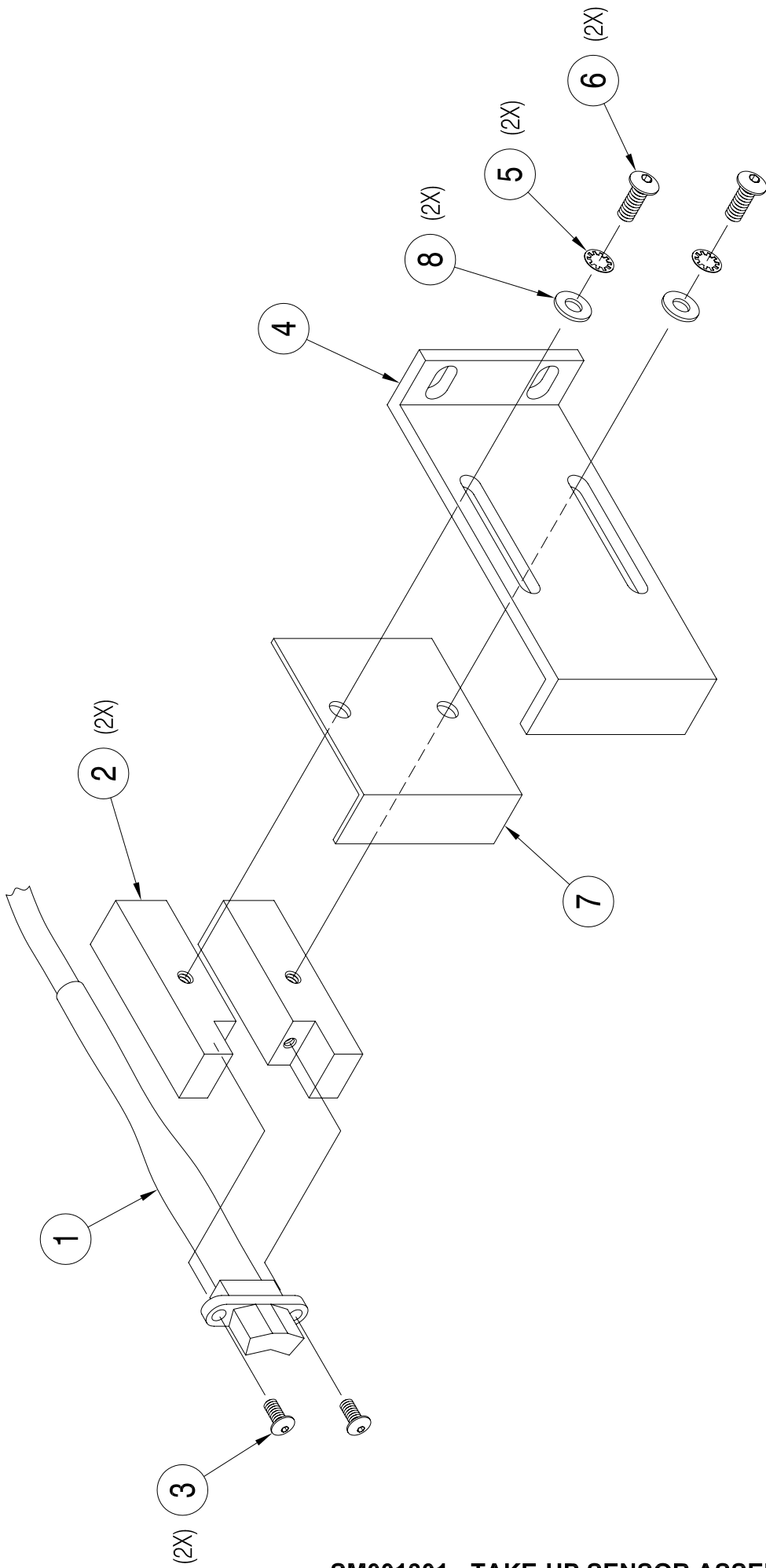
Item	Part Number	Description	Quantity
1	PM004003	Hub, Outer Spool Support	1
2	PF016700	Plate, Outer Take-Up Spool Support	1
3	VH000901	Screw, Flat Head Socket, #6-32 x 5/16"	2



SM001300 - TAKE-UP SENSOR ASSEMBLY

**SM001300 - TAKE-UP SENSOR ASSEMBLY**

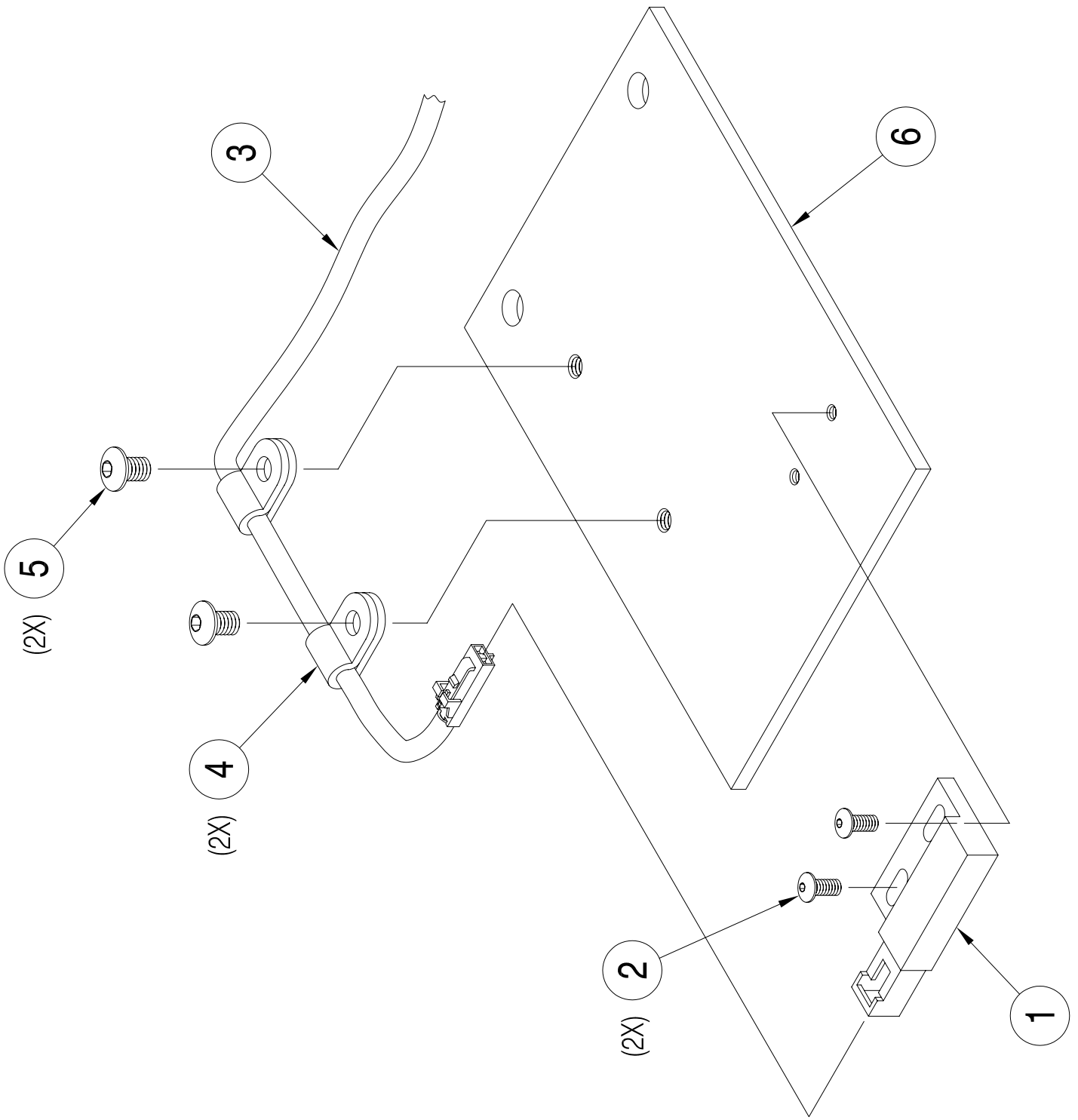
Item	Part Number	Description	Quantity
1	SE001400	Harness, Take-up Sensor	1
2	PL001500	Mount, Take-up Sensor	2
3	VH002801	Screw, Button Head Socket, #4-40 x 5/16"	2
4	PL001400	Bracket, Take-up Sensor	1
5	VH002905	Washer, Internal Lock, #6	2
6	VH002202	Screw, Button Head Socket, #6-32 x 3/8"	2



SM001301 - TAKE-UP SENSOR ASSEMBLY, LABELER

**SM001301 - TAKE-UP SENSOR ASSEMBLY, LABELER**

Item	Part Number	Description	Quantity
1	SE001400	Harness, Take-up Sensor	1
2	PL001500	Mount, Take-up Sensor	2
3	VH002801	Screw, Button Head Socket, #4-40 x 5/16"	2
4	PL001401	Bracket, Take-up Sensor, Labeler	1
5	VH002905	Washer, Internal Lock, #6	2
6	VH002202	Screw, Button Head Socket, #6-32 x 3/8"	2
7	PF001100	Cover, Take-Up Sensor	1
8	VH001801	Washer, Nylon, .150" ID x .317" OD x .031" Thick	2

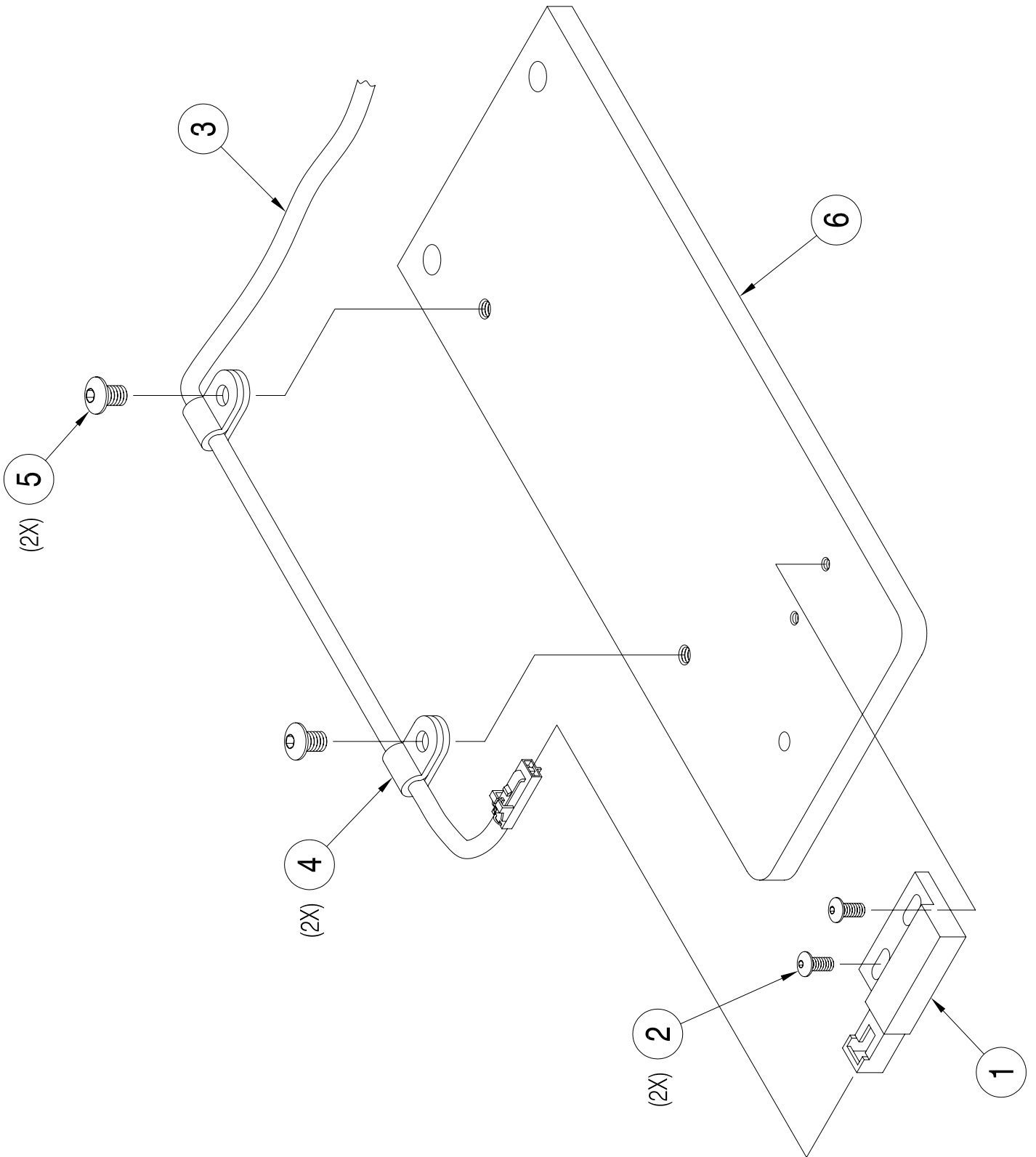


SM001400 - HEAD INTERLOCK ASSEMBLY

**SM001400 - HEAD INTERLOCK ASSEMBLY**

Item	Part Number	Description	Quantity
1	VC005100	Reed Switch, SPST	1
2	VH002801	Screw, Button Head Socket, #4-40 x 5/16"	2
3	SE001300	Harness, Head Interlock	1
4	VC004601	Clamp, Cable, 1/8", Nylon	2
5	VH002101	Screw, Button Head Socket, #8-32 x 1/4"	2
6	PL001600	Plate, Interlock	1

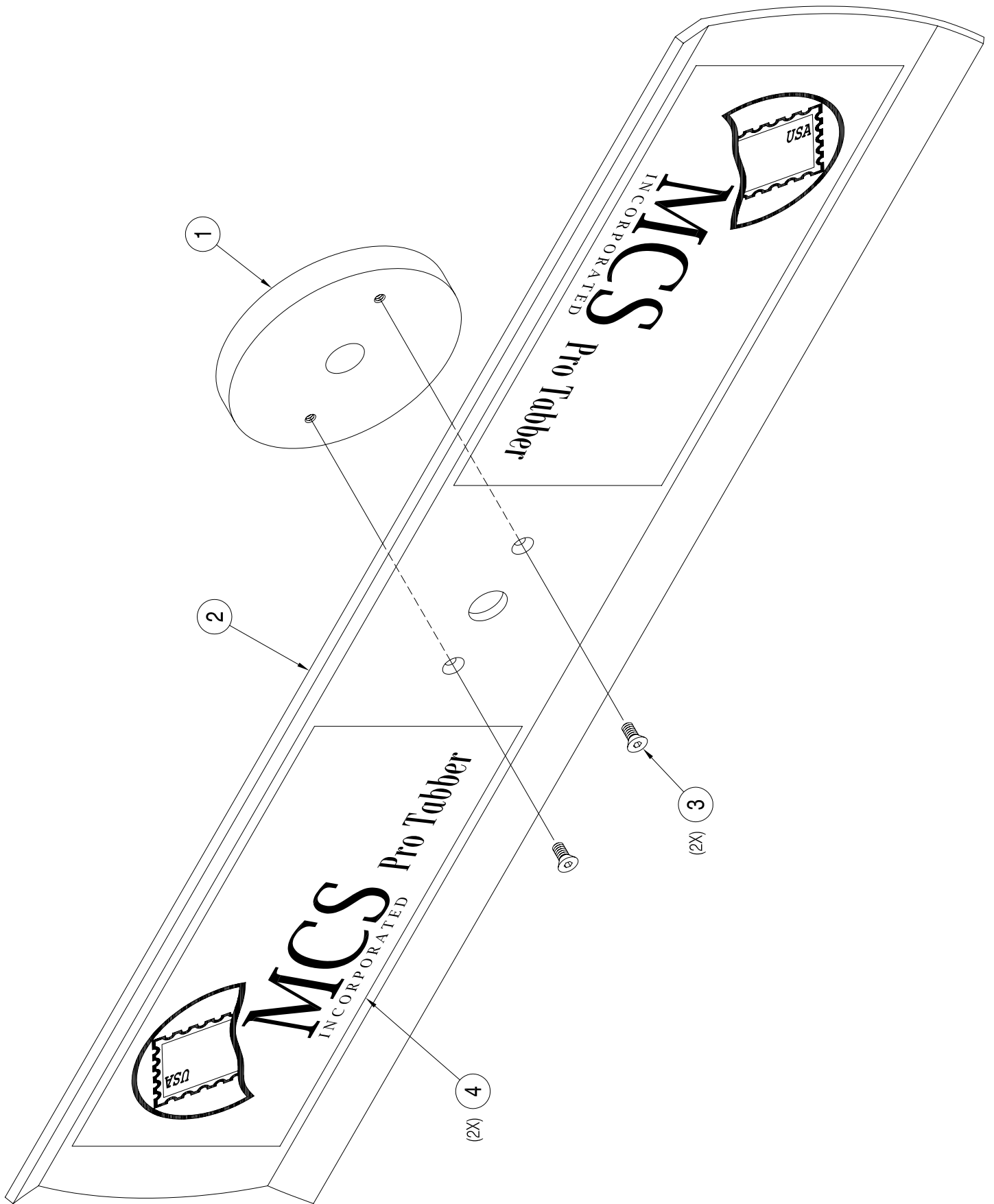




SM001401 - HEAD INTERLOCK ASSEMBLY, LABELER

**SM001401 - HEAD INTERLOCK ASSEMBLY, LABELER**

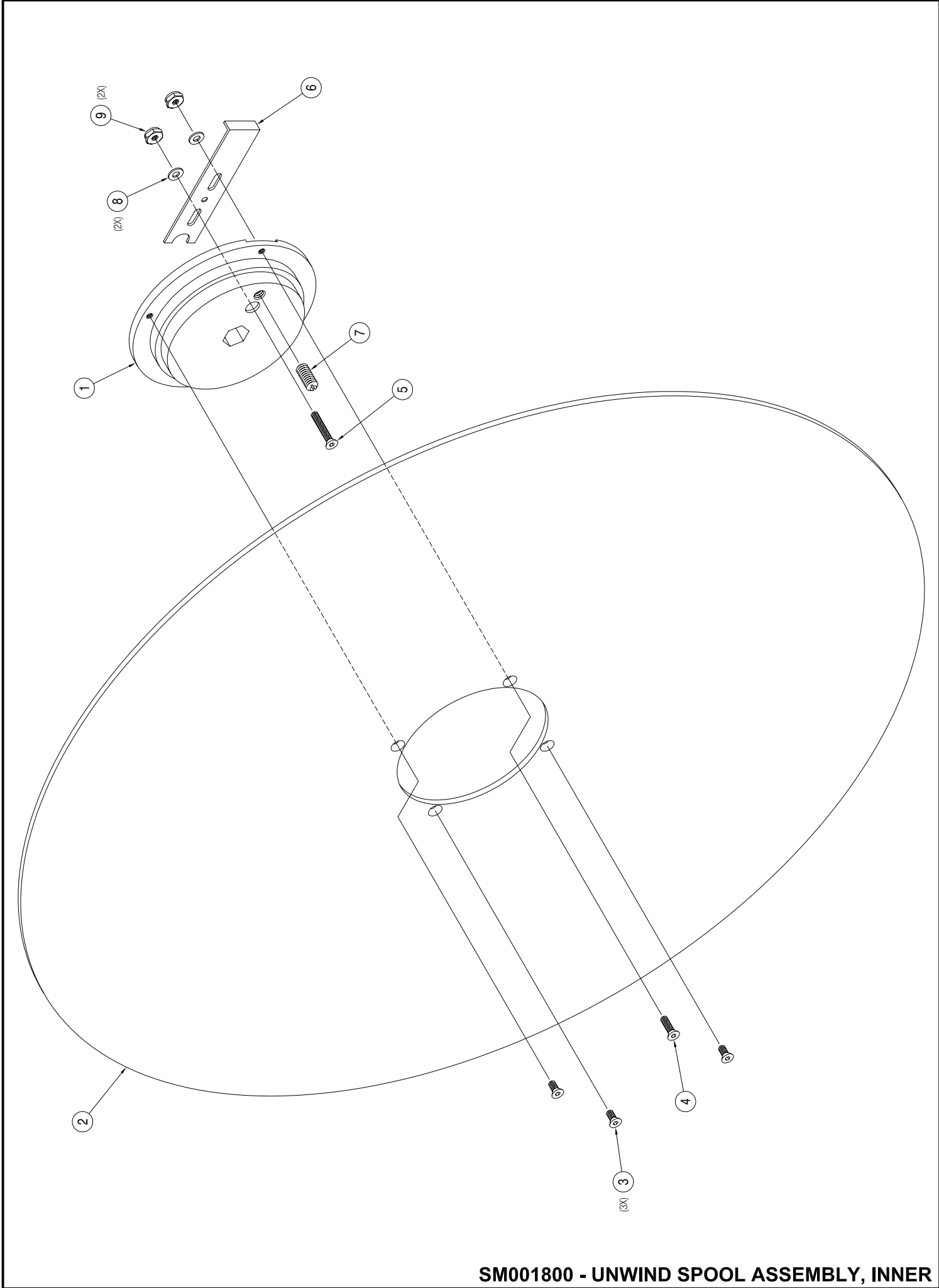
Item	Part Number	Description	Quantity
1	VC005100	Reed Switch, SPST	1
2	VH002801	Screw, Button Head Socket, #4-40 x 5/16"	2
3	SE001300	Harness, Head Interlock	1
4	VC004601	Clamp, Cable, 1/8", Nylon	2
5	VH002101	Screw, Button Head Socket, #8-32 x 1/4"	2
6	PL001601	Plate, Interlock, Labeler	1



SM001605 - SUPPORT ASSEMBLY, UNWIND SPOOL, MCS

**SM001605 - SUPPORT ASSEMBLY, UNWIND SPOOL, MCS**

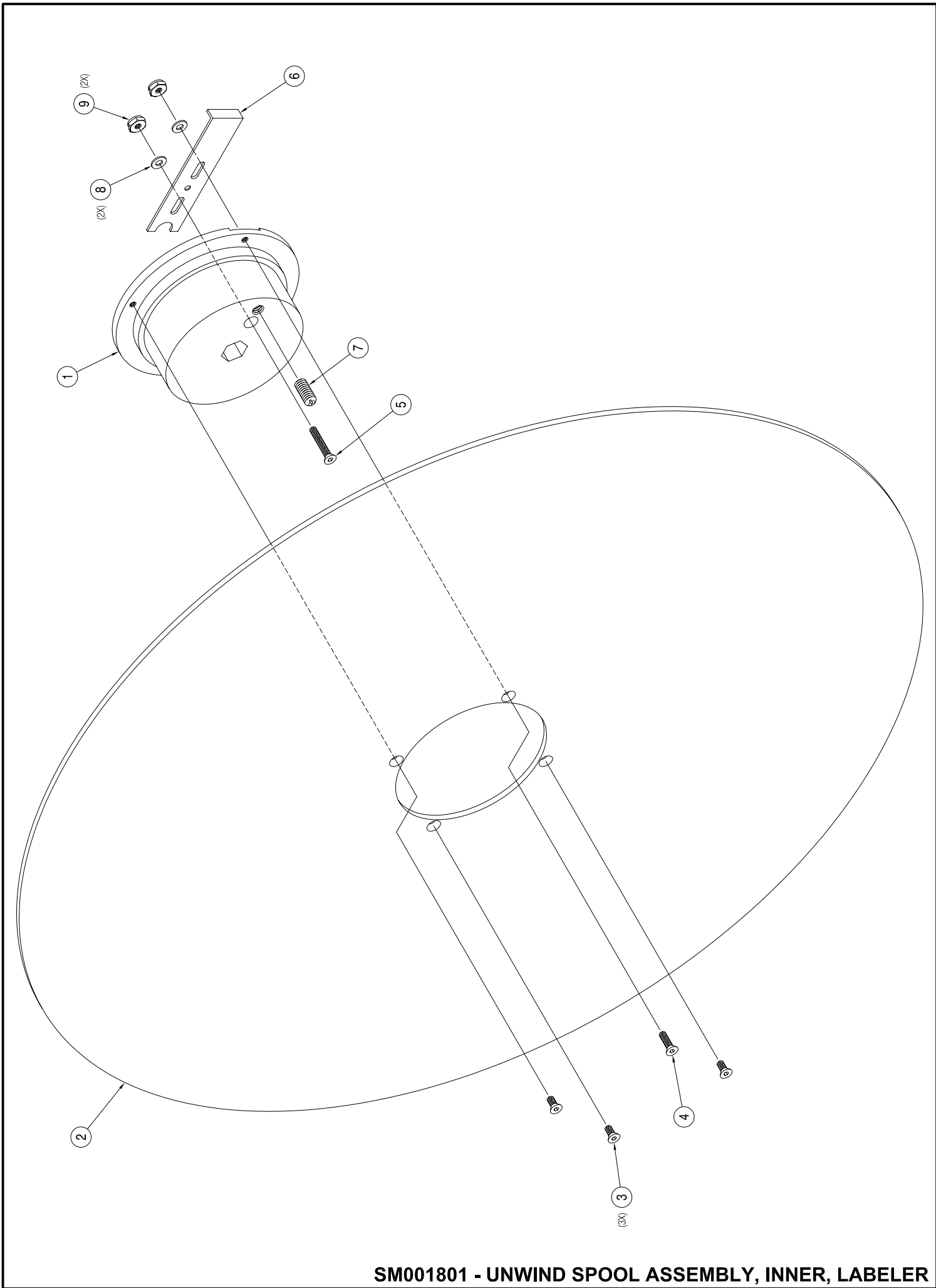
Item	Part Number	Description	Quantity
1	PM004003	Hub, Outer Spool Support	1
2	PF016600	Plate, Outer Source Spool Support	1
3	VH000901	Screw, Flat Head Socket, #6-32 x 5/16"	2
4	VD002500	Decal, MCS Pro Tabber	2



SM001800 - UNWIND SPOOL ASSEMBLY, INNER

**SM001800 - UNWIND SPOOL ASSEMBLY, INNER**

Item	Part Number	Description	Quantity
1	PM006500	Hub, Inner Spool Support	1
2	VZ002100	Plate, Inner Source Spool Support	1
3	VH000901	Screw, Flat Head Socket, #6-32 x 5/16"	3
4	VH000903	Screw, Flat Head Socket, #6-32 x 1/2"	1
5	VH000905	Screw, Flat Head Socket, #6-32 x 7/8"	1
6	PF002400	Latch, Spool	1
7	VH003700	Ball-Nose Plunger, 1/4-20 x 5/8", 1/8" Ball	1
8	VH001801	Washer, Nylon, .156" ID x .317" OD x .031" Thick	2
9	VH003803	Nut, Hex, Self-Locking, #6-32	2

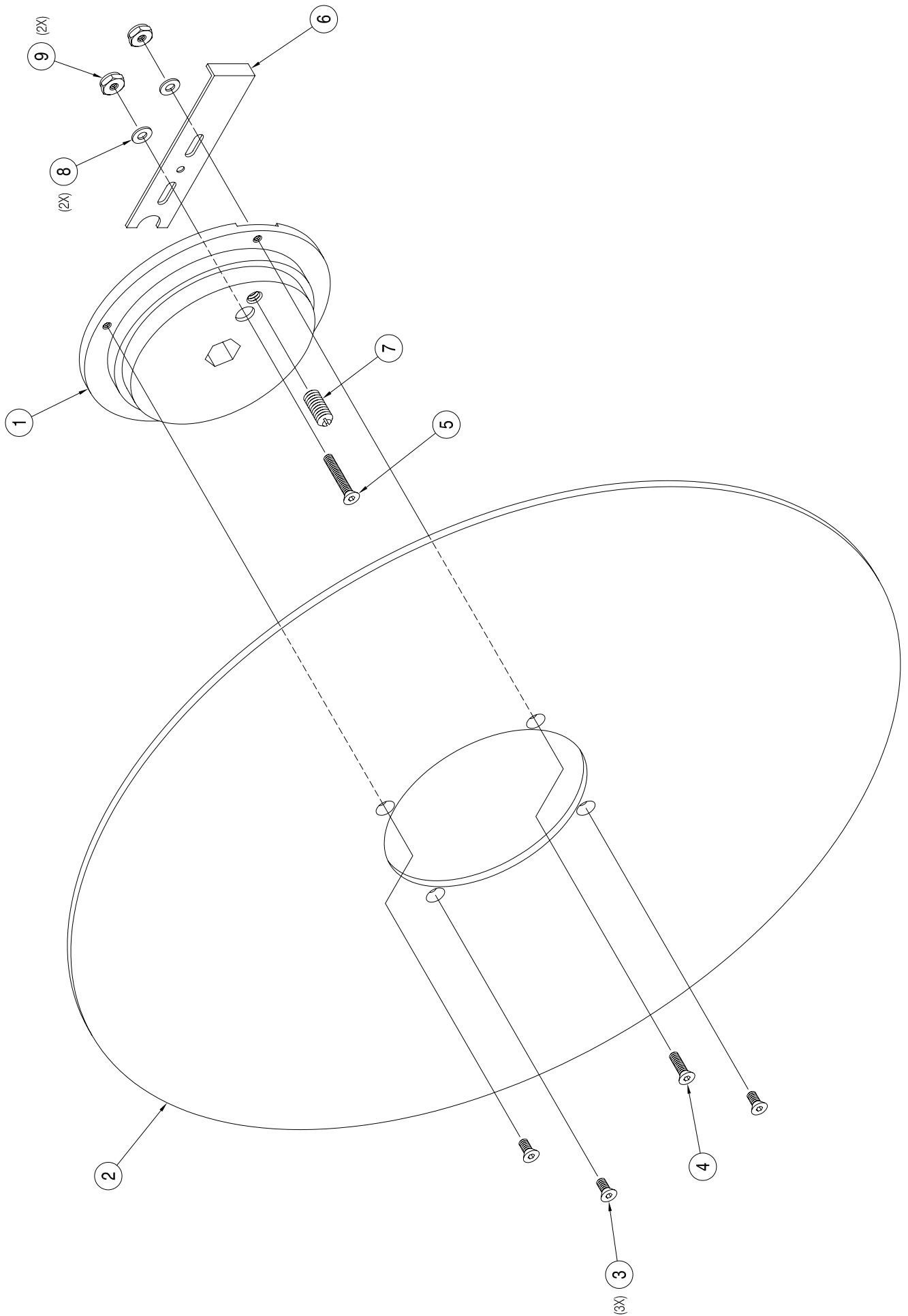


SM001801 - UNWIND SPOOL ASSEMBLY, INNER, LABELER

**SM001801 - UNWIND SPOOL ASSEMBLY, INNER, LABELER**

Item	Part Number	Description	Quantity
1	PM006501	Hub, Inner Spool Support, Labeler	1
2	VZ002100	Plate, Inner Source Spool Support	1
3	VH000901	Screw, Flat Head Socket, #6-32 x 5/16"	3
4	VH000903	Screw, Flat Head Socket, #6-32 x 1/2"	1
5	VH000905	Screw, Flat Head Socket, #6-32 x 7/8"	1
6	PF002400	Latch, Spool	1
7	VH003700	Ball-Nose Plunger, 1/4-20 x 5/8", 1/8" Ball	1
8	VH001801	Washer, Nylon, .156" ID x .317" OD x .031" Thick	2
9	VH003803	Nut, Hex, Self-Locking, #6-32	2

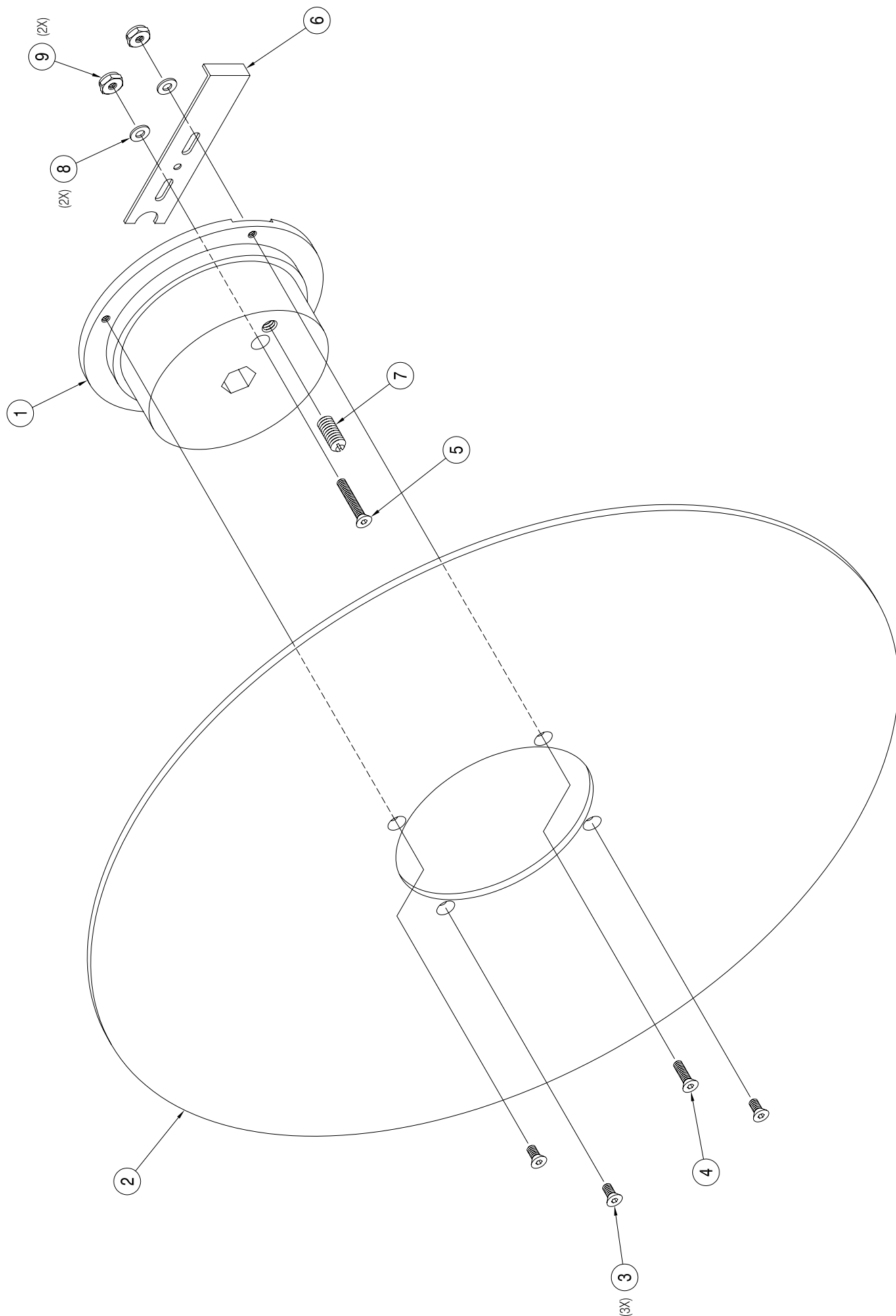




SM001900 - TAKE-UP SPOOL ASSEMBLY, INNER

**SM001900 - TAKE-UP SPOOL ASSEMBLY, INNER**

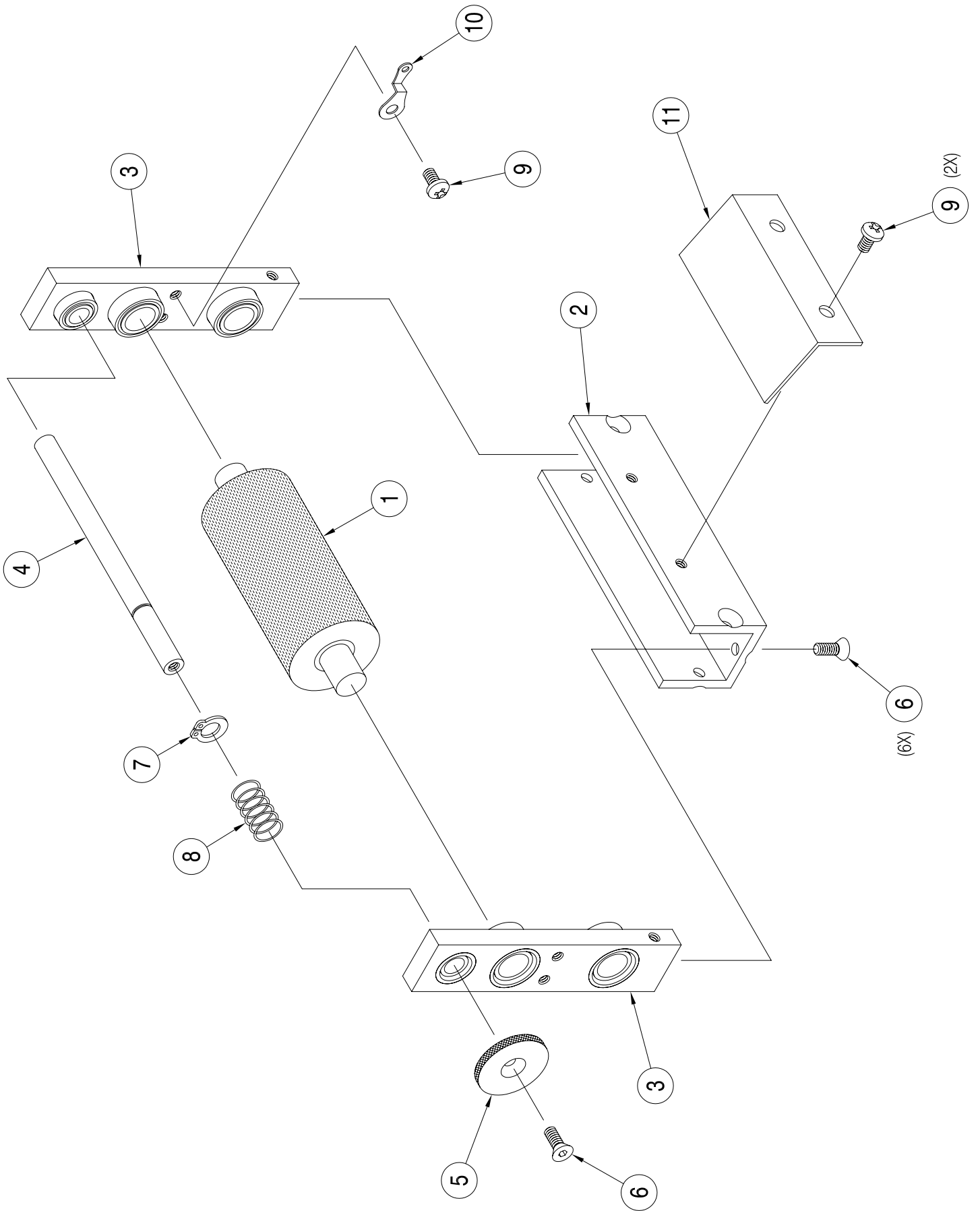
Item	Part Number	Description	Quantity
1	PM006500	Hub, Inner Spool Support	1
2	VZ002000	Plate, Inner Take-Up Spool Support	1
3	VH000901	Screw, Flat Head Socket, #6-32 x 5/16"	3
4	VH000903	Screw, Flat Head Socket, #6-32 x 1/2"	1
5	VH000905	Screw, Flat Head Socket, #6-32 x 7/8"	1
6	PF002400	Latch, Spool	1
7	VH003700	Ball-Nose Plunger, 1/4-20 x 5/8", 1/8" Ball	1
8	VH001801	Washer, Nylon, .156" ID x .317" OD x .031" Thick	2
9	VH003803	Nut, Hex, Self-Locking, #6-32	2



SM001901 - TAKE-UP SPOOL ASSEMBLY, INNER, LABELER

**SM001901 - TAKE-UP SPOOL ASSEMBLY, INNER, LABELER**

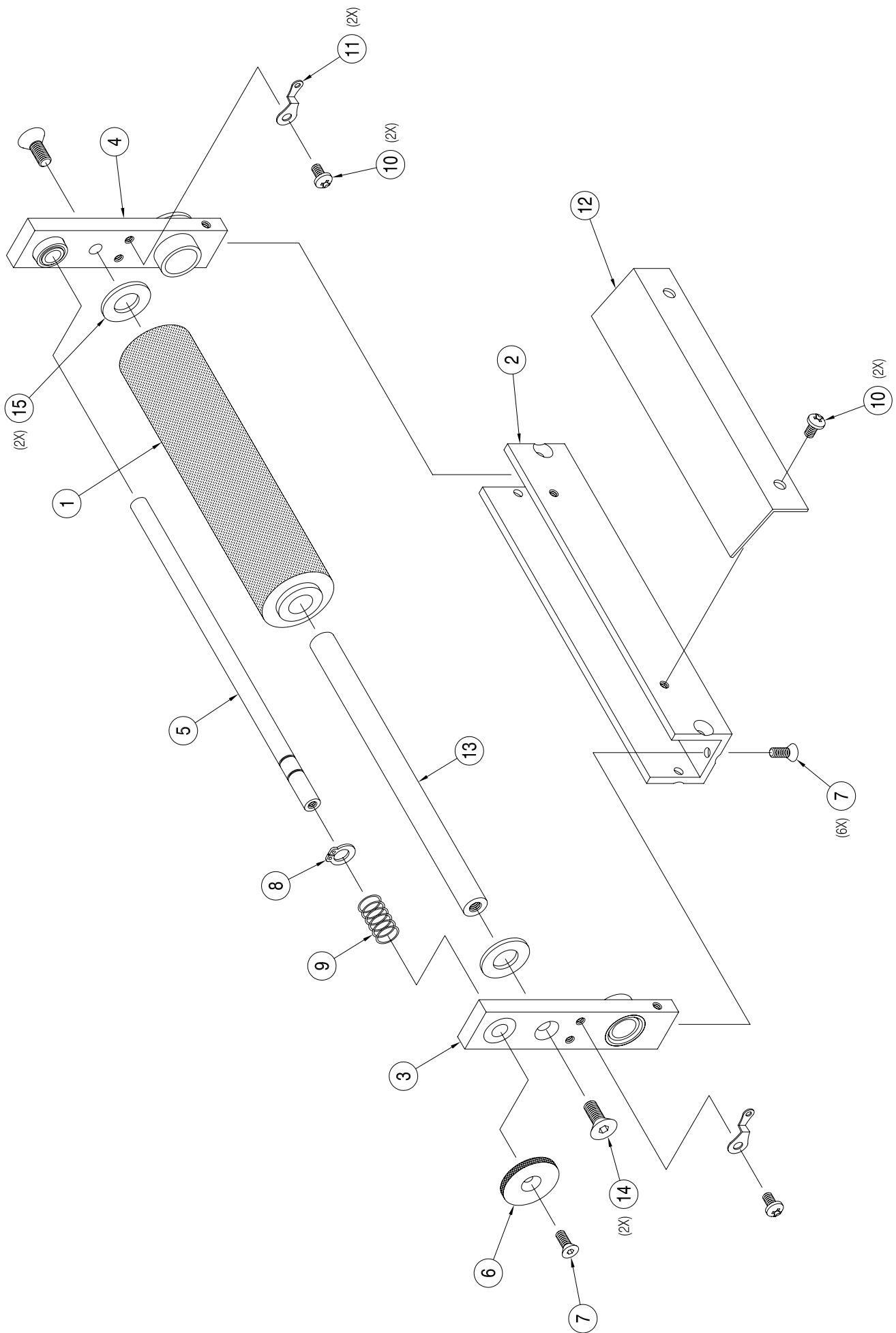
Item	Part Number	Description	Quantity
1	PM006501	Hub, Inner Spool Support, Labeler	1
2	VZ002000	Plate, Inner Take-Up Spool Support	1
3	VH000901	Screw, Flat Head Socket, #6-32 x 5/16"	3
4	VH000903	Screw, Flat Head Socket, #6-32 x 1/2"	1
5	VH000905	Screw, Flat Head Socket, #6-32 x 7/8"	1
6	PF002400	Latch, Spool	1
7	VH003700	Ball-Nose Plunger, 1/4-20 x 5/8", 1/8" Ball	1
8	VH001801	Washer, Nylon, .156" ID x .317" OD x .031" Thick	2
9	VH003803	Nut, Hex, Self-Locking, #6-32	2



SM002100 - IDLER ASSEMBLY, TAB DRIVE

**SM002100 - IDLER ASSEMBLY, TAB DRIVE, V2**

Item	Part Number	Description	Quantity
1	VR000200	Roller, Float Idler	1
2	PL003300	U Channel, Yoke, Tabber	1
3	SM008100	Plate Assembly, Yoke Side, Tabber	2
4	PL003600	Pin, Yoke Lock, Tabber	1
5	PL003500	Knob, Yoke Lock	1
6	VH000902	Screw, Flat Head Socket, #6-32 x 3/8"	7
7	VH006001	Retaining Ring, External, 1/4	1
8	VH003900	Spring, Compression, .360" OD x .625" L x .026" Dia. MW	1
9	VH000701	Screw, Pan Head Phillips, #6-32 x 1/4"	3
10	PF003300	Lug, Spring Retaining	1
11	PF002500	Plate, Deflector, Tabber	1

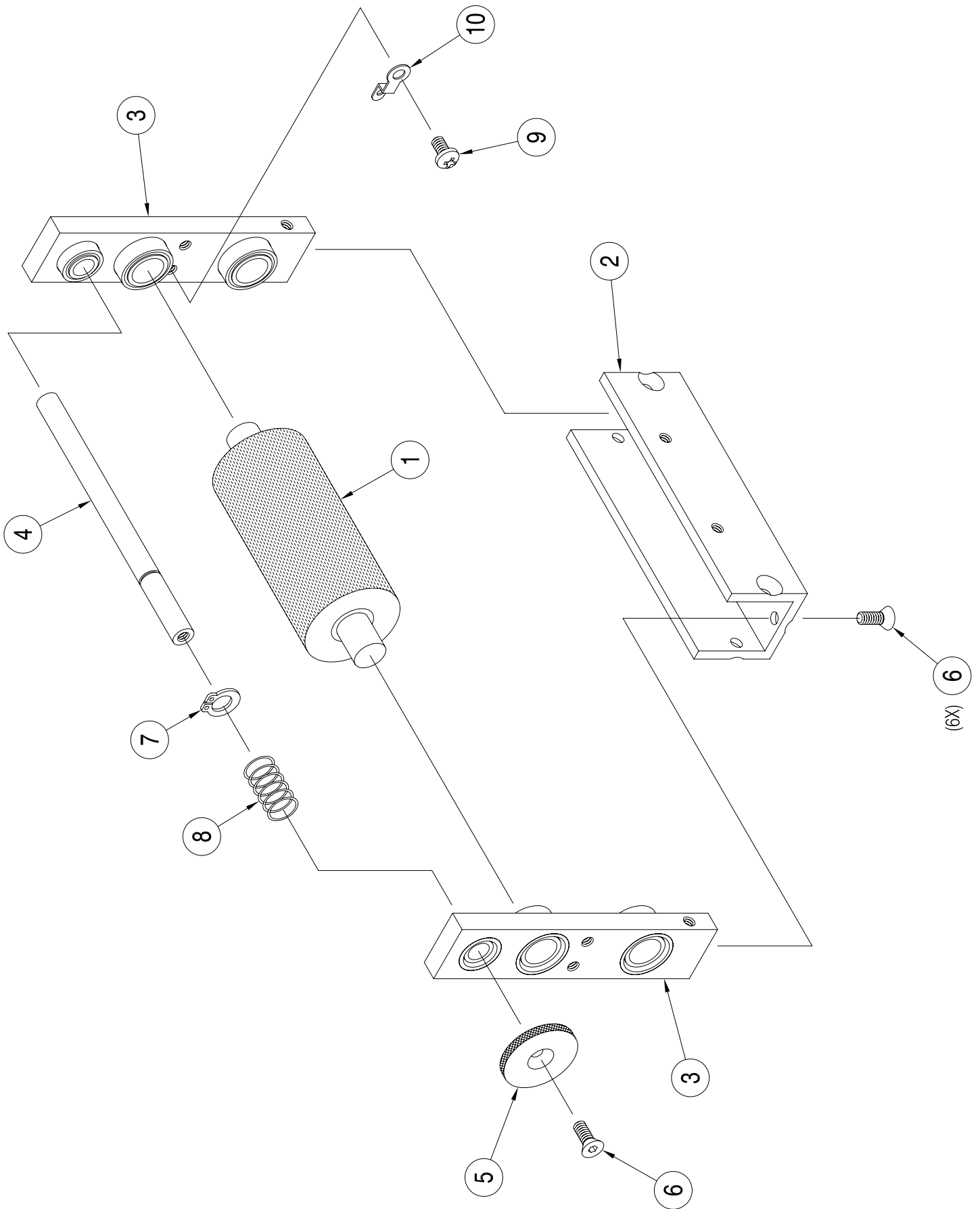


SM002101 - IDLER ASSEMBLY, LABEL DRIVE

**SM002101 - IDLER ASSEMBLY, LABEL DRIVE**

Item	Part Number	Description	Quantity
1	SM008401	Roller, Float Idler, Labeler	1
2	PL003301	U Channel, Yoke, Labeler	1
3	SM008101	Plate Assembly, Left Yoke Side, Labeler	1
4	SM008102	Plate Assembly, Right Yoke Side, Labeler	1
5	PL003601	Pin, Yoke Lock, Labeler	1
6	PL003500	Knob, Yoke Lock	1
7	VH000902	Screw, Flat Head Socket, #6-32 x 3/8"	7
8	VH006001	Retaining Ring, External, 1/4	1
9	VH003900	Spring, Compression, .360" OD x .625" L x .026" Dia. MW	1
10	VH000701	Screw, Pan Head Phillips, #6-32 x 1/4"	4
11	PF003300	Lug, Spring Retaining	2
12	PF002501	Plate, Deflector, Label Drive	1
13	PT003004	Shaft, Idler Support	1
14	VH000506	Screw, Flat Head Socket, #10-32 x 1/2"	2
15	VH001808	Washer, Nylon, .390" ID x .750" OD x .062" Thick	2

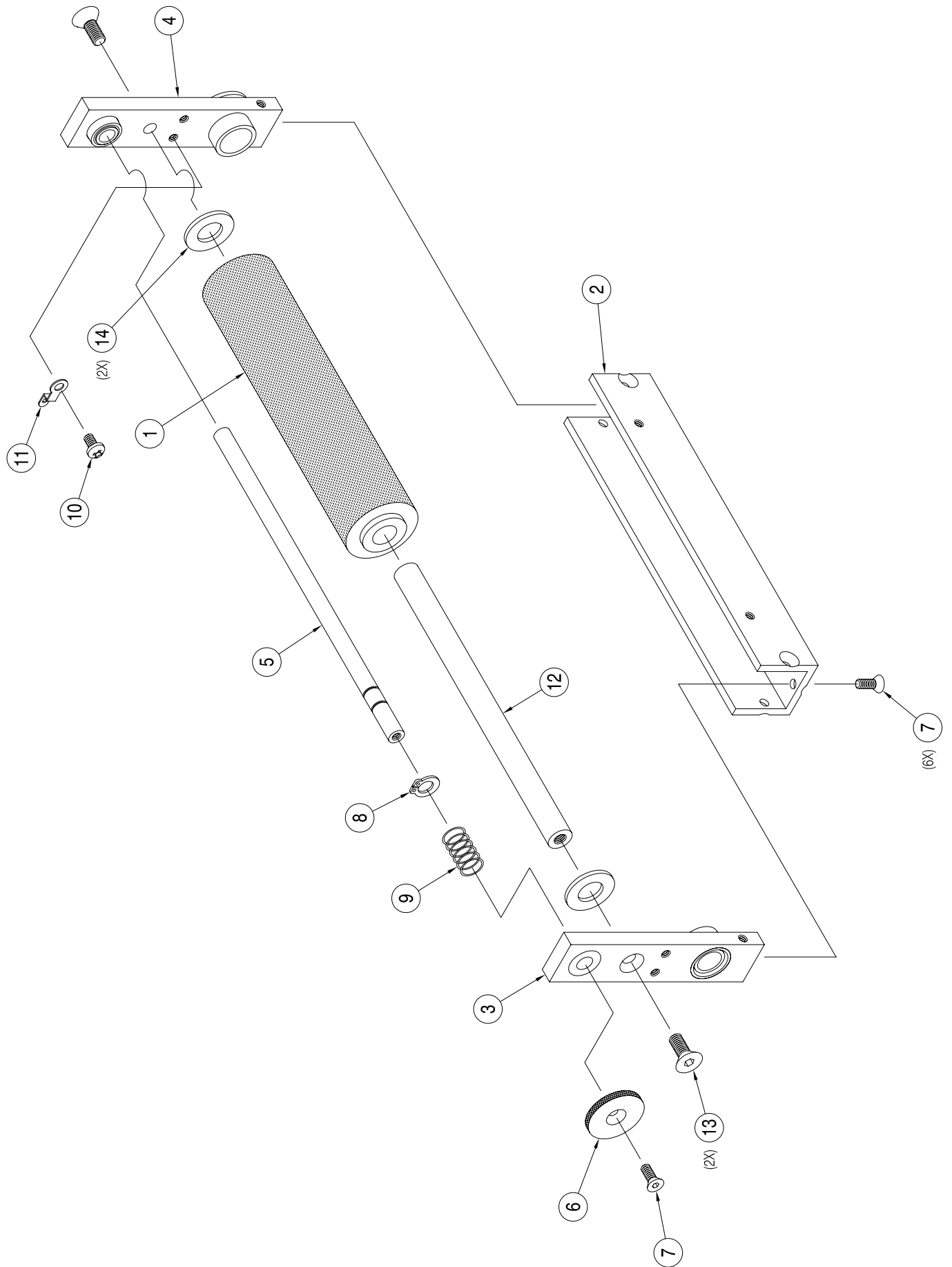




SM002200 - IDLER ASSEMBLY, UNWIND DRIVE

**SM002200 - IDLER ASSEMBLY, UNWIND DRIVE**

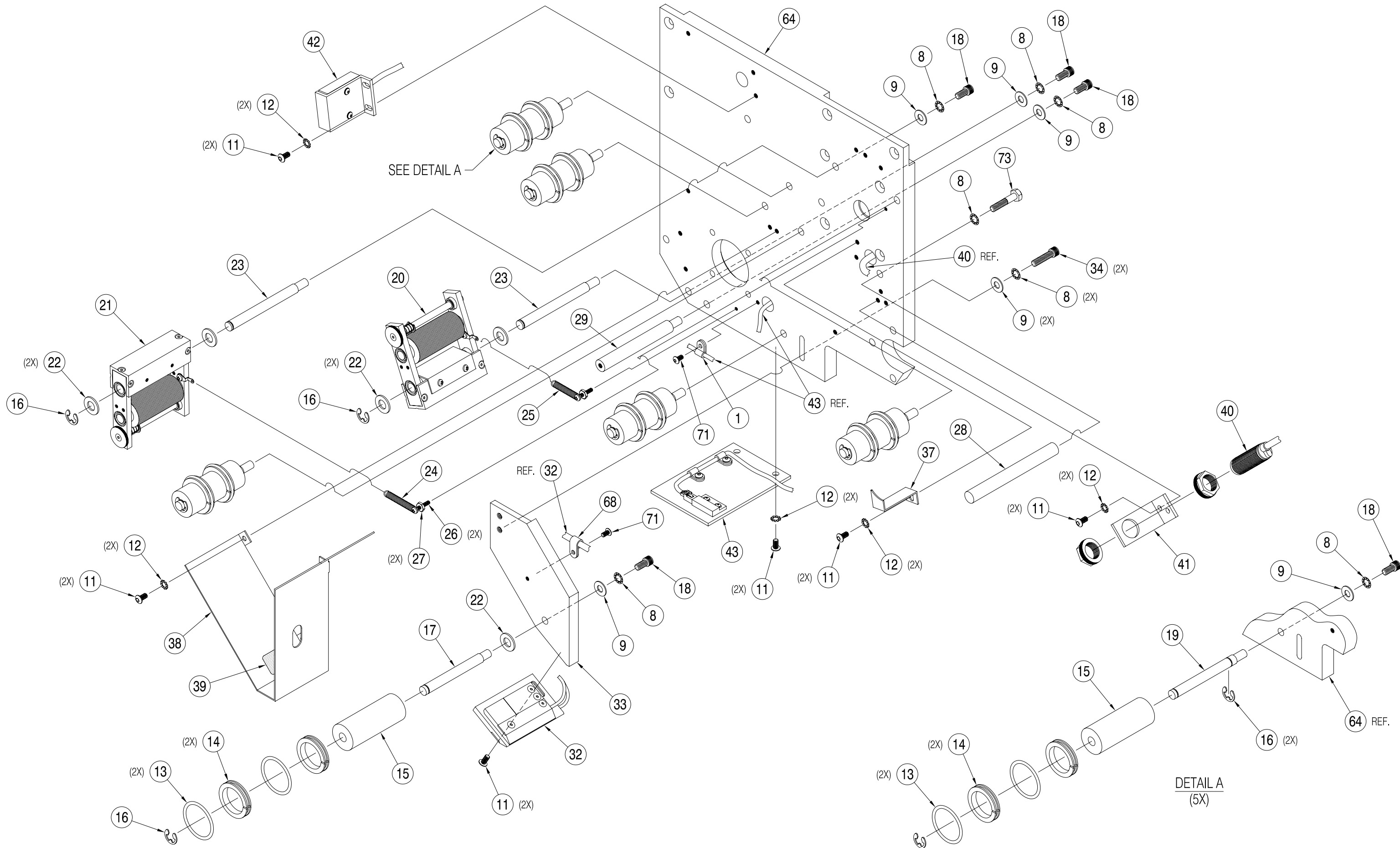
Item	Part Number	Description	Quantity
1	VR000200	Roller, Float Idler	1
2	PL003300	U Channel, Yoke, Tabber	1
3	SM008100	Plate Assembly, Yoke Side, Tabber	2
4	PL003600	Pin, Yoke Lock, Tabber	1
5	PL003500	Knob, Yoke Lock	1
6	VH000902	Screw, Flat Head Socket, #6-32 x 3/8"	7
7	VH006001	Retaining Ring, External, 1/4	1
8	VH003900	Spring, Compression, .360" OD x .625" L x .026" Dia. MW	1
9	VH000701	Screw, Pan Head Phillips, #6-32 x 1/4"	3
10	PF003301	Lug, Spring Retaining, #6 x .687 Long	1

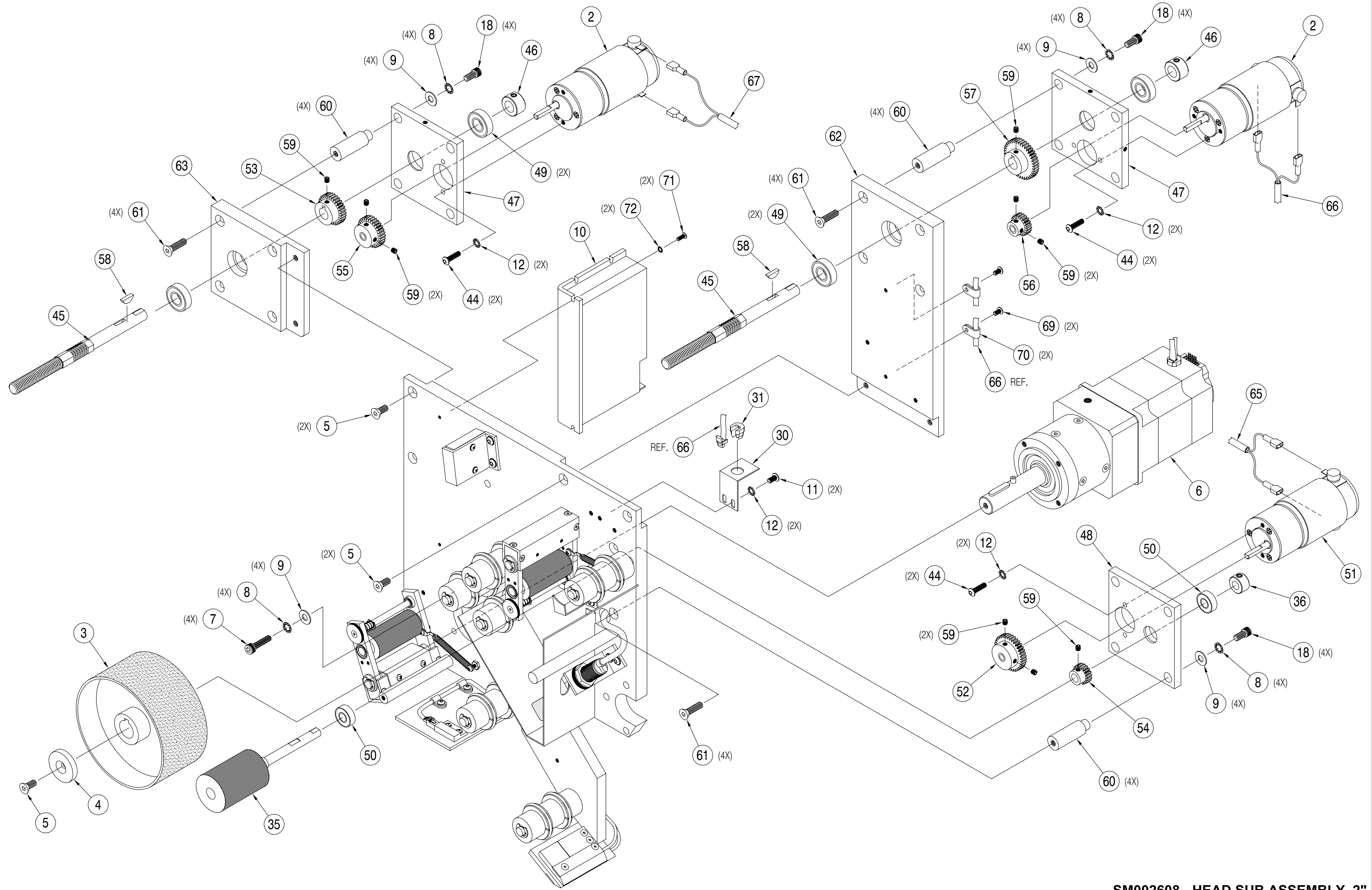


SM002201 - IDLER ASSEMBLY, UNWIND DRIVE, LABELER

**SM002201 - IDLER ASSEMBLY, UNWIND DRIVE, LABELER**

Item	Part Number	Description	Quantity
1	SM008401	Roller, Float Idler, Labeler	1
2	PL003301	U Channel, Yoke, Labeler	1
3	SM008101	Plate Assembly, Left Yoke Side, Labeler	1
4	SM008102	Plate Assembly, Right Yoke Side, Labeler	1
5	PL003601	Pin, Yoke Lock, Labeler	1
6	PL003500	Knob, Yoke Lock	1
7	VH000902	Screw, Flat Head Socket, #6-32 x 3/8"	7
8	VH006001	Retaining Ring, External, 1/4	1
9	VH003900	Spring, Compression, .360" OD x .625" L x .026" Dia. MW	1
10	VH000701	Screw, Pan Head Phillips, #6-32 x 1/4"	4
11	PF003301	Lug, Spring Retaining, #6 x .687 Long	2
12	PT003004	Shaft, Idler Support	1
13	VH000506	Screw, Flat Head Socket, #10-32 x 1/2"	2
14	VH001808	Washer, Nylon, .390" ID x .750" OD x .062" Thick	2





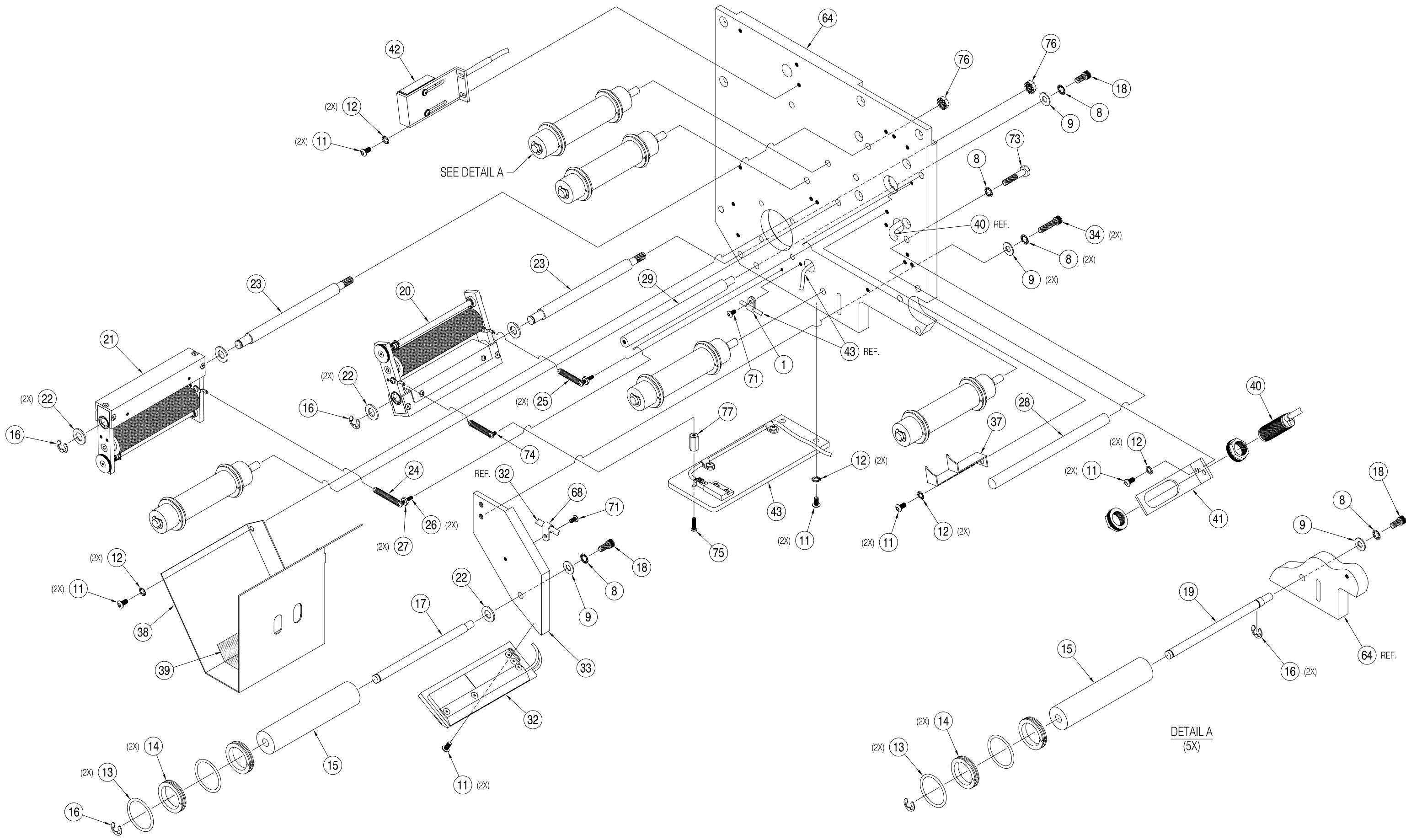
SM002608 - HEAD SUB ASSEMBLY, 2"

**SM002608 - HEAD SUB ASSEMBLY, 2"**

Item	Part Number	Description	Quantity
1	VC004601	Clamp, Cable, 1/8", Nylon	1
2	VM000301	Gearmotor, 30.3VDC, 5.9:1	2
3	PM003500	Grit Wheel, Modified	1
4	PL000200	Washer, Drive Roll	1
5	VH000601	Screw, Flat Head Socket, 1/4-20 x 5/8"	5
6	AM000103	Servo Gearmotor, BLDC, Compumotor Collar Coupling, Copley Wiring	1
7	VH003501	Screw, Cap Head Socket, M6 x 25mm	4
8	VH000102	Washer, Internal Lock, 1/4	24
9	VH001404	Washer, Flat, 1/4	23
10	ME000201	Amplifier, BLDC Servo, Modified, Copley	1
11	VH000402	Screw, Button Head Socket, #10-32 x 3/8"	14
12	VH006800	Washer, External Lock, #10	18
13	VG000100	O-Ring, 1-3/16 x 1-7/16 x 1/8	12
14	PT002400	Guide, Split Ring	12
15	PT001400	Idler, Roll	6
16	VH000303	E-Ring, External, 3/8	13
17	PL000300	Shaft, Idler, Peel Point	1
18	VH000202	Screw, Cap Head Socket, 1/4-20 x 1/2"	21
19	PL000400	Shaft, Idler	5
20	SM002100	Idler Assembly, Tab Drive	1
21	SM002200	Idler Assembly, Unwind Drive, V2	1
22	VH001808	Washer, Nylon, .390" ID x .750" OD x .062" Thick	5
23	PL000800	Shaft, Yoke	2
24	VH001900	Spring, Extension, .250" OD x 1.750" L x .041" Dia. MW	1
25	VH003300	Spring, Extension, .250" OD x 1.500" L x .041" Dia. MW	1
26	VH000702	Screw, Pan Head Phillips, #6-32 x 3/4"	2
27	VH002402	Nut, Hex, #6-32	2
28	PL000902	Shaft, Pivot, Guard	1
29	PL003800	Standoff, Guard	1
30	PA000900	Bracket, Strain Relief	1
31	VG000200	Bushing, Strain Relief	1
32	SM002700	Tab Sensor Assembly	1
33	PL006600	Support, Peel Point	1
34	VH000204	Screw, Cap Head Socket, 1/4-20 x 1"	3
35	VR000300	Roller, Unwind Drive	1
36	VH004102	Collar, Locking, SS, 3/8" ID	1
37	PF002300	Plate, Stripper	1
38	PA001200	Bin	1
39	VD000100	Tape, Reflective	1"
40	SE001200	Harness, Bin Sensor	1
41	PL001300	Bracket, Bin Sensor	1
42	SM001300	Take-Up Sensor Assembly	1
43	SM001400	Head Interlock Assembly	1
44	VH000405	Screw, Button Head Socket, #10-32 x 3/4"	6
45	PL011103	Shaft, Hub Mount	2
46	VH004103	Collar, Locking, SS, 1/2" ID	2
47	PM006600	Plate, Unwind Brake Motor	2
48	PM006700	Plate, Unwind Drive Motor	1
49	VB000102	Bearing, Roller, 1/2" ID	4
50	VB000101	Bearing, Roller, 3/8" ID	2
51	VM000202	Gearmotor, 30.3VDC, 19.7:1	1
52	PM006100	Spur Gear, 36 Tooth, 1/4 Bore, 24 Pitch, 1/4 Face	1
53	PM006200	Spur Gear, 30 Tooth, 1/2 Bore, 24 Pitch, 1/4 Face	1
54	PM006300	Spur Gear, 18 Tooth, 3/8 Bore, 24 Pitch, 1/4 Face	1
55	PM006400	Spur Gear, 30 Tooth, 1/4 Bore, 24 Pitch, 1/4 Face	1

56	PM010400	Spur Gear, Mod, 20 Tooth, 1/4 Bore, 24 Pitch, 1/4 Face	1
57	PM010500	Spur Gear, Mod, 40 Tooth, 1/2 Bore, 24 Pitch, 1/4 Face	1
58	VH001601	Key, Woodruff #6, 5/32 x 5/8	2
59	VH001703	Screw, Set, Socket, Cup Point, #10-32 x 3/16"	9
60	PT000100	Standoff, Motor Support	12
61	VH000603	Screw, Flat Head Socket, 1/4-20 x 1"	12
62	PL003000	Plate, Unwind	1
63	PL003100	Plate, Take-Up	1
64	PL006701	Plate, Main Frame, Head	1
65	SE001500	Harness, Unwind Drive Motor	1
66	SE001600	Harness, Unwind Brake Motor	1
67	SE001700	Harness, Take-Up Motor	1
68	VC004600	Clamp, Cable, 1/4", Nylon	1
69	VH002108	Screw, Button Head Socket, #8-32 x 5/16"	2
70	VC004602	Clamp, Cable, 3/16", Nylon	2
71	VH002202	Screw, Button Head Socket, #6-32 x 3/8"	2
72	VH002905	Washer, Internal Lock, #6	2
73	VH007202	Screw, Hex Head, 1/4-20 x 1-1/4", Grade 5	1





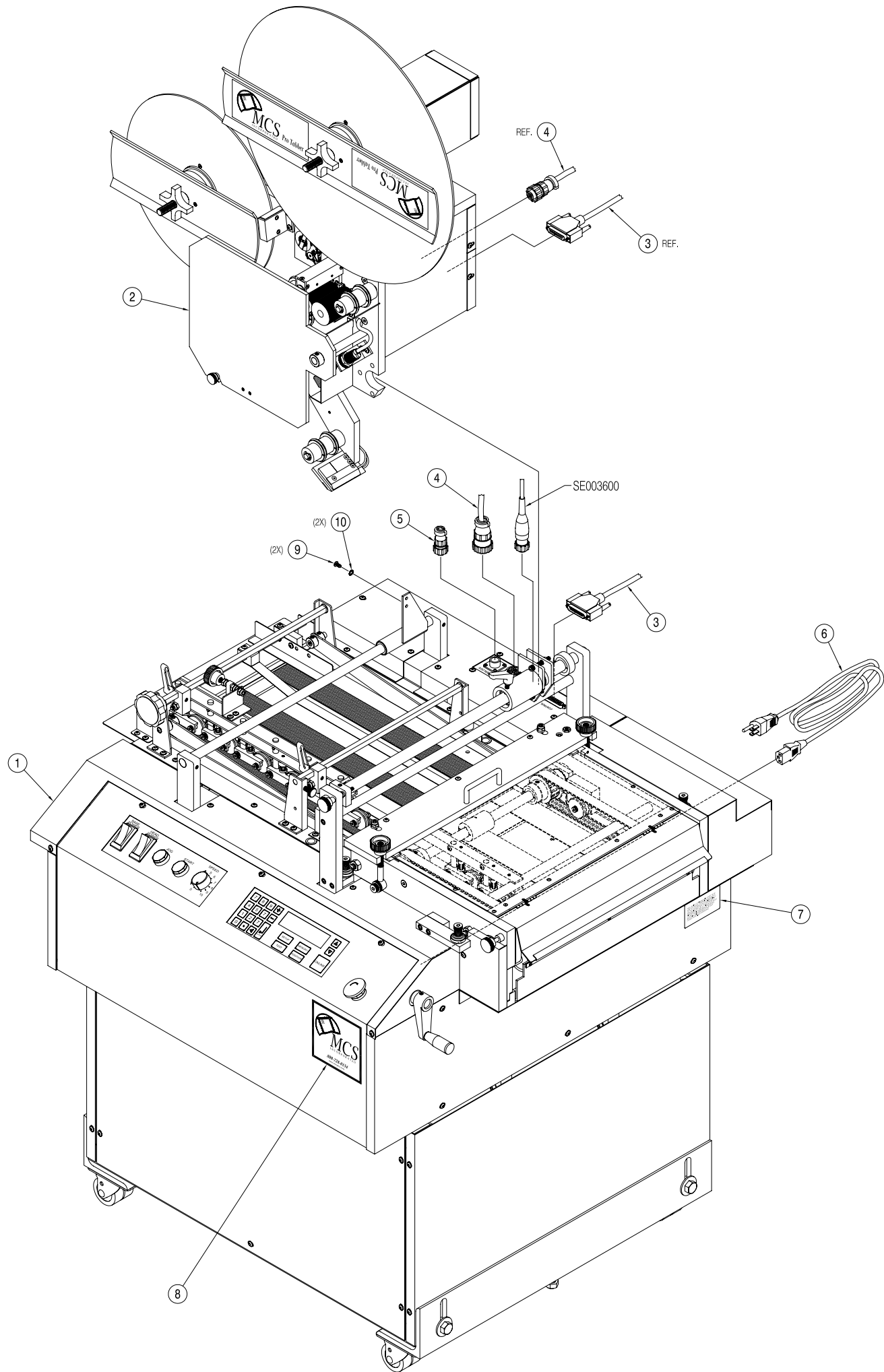
DETAIL A  
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**SM002609 - HEAD SUB ASSEMBLY, 4"**

Item	Part Number	Description	Quantity
1	VC004601	Clamp, Cable, 1/8", Nylon	1
2	VM000301	Gearmotor, 30.3VDC, 5.9:1	2
3	PM003501	Grit Wheel, Modified, Labeler	1
4	PL000200	Washer, Drive Roll	1
5	VH000601	Screw, Flat Head Socket, 1/4-20 x 5/8"	5
6	AM000103	Servo Gearmotor, BLDC, Compumotor Collar Coupling, Copley Wiring	1
7	VH003501	Screw, Cap Head Socket, M6 x 25mm	4
8	VH000102	Washer, Internal Lock, 1/4	24
9	VH001404	Washer, Flat, 1/4	23
10	ME000201	Amplifier, BLDC Servo, Modified, Copley	1
11	VH000402	Screw, Button Head Socket, #10-32 x 3/8"	14
12	VH006800	Washer, External Lock, #10	18
13	VG000100	O-Ring, 1-3/16 x 1-7/16 x 1/8	12
14	PT002400	Guide, Split Ring	12
15	PT001401	Idler, Roll, Labeler	6
16	VH000303	E-Ring, External, 3/8	13
17	PL000301	Shaft, Idler, Peel Point, Labeler	1
18	VH000202	Screw, Cap Head Socket, 1/4-20 x 1/2"	21
19	PL000401	Shaft, Idler, Labeler	5
20	SM002101	Idler Assembly, Label Drive	1
21	SM002201	Idler Assembly, Unwind Drive, Labeler	1
22	VH001808	Washer, Nylon, .390" ID x .750" OD x .062" Thick	5
23	PL000801	Shaft, Yoke, Labeler	2
24	VH001900	Spring, Extension, .250" OD x 1.750" L x .041" Dia. MW	1
25	VH003300	Spring, Extension, .250" OD x 1.500" L x .041" Dia. MW	1
26	VH000702	Screw, Pan Head Phillips, #6-32 x 3/4"	2
27	VH002402	Nut, Hex, #6-32	2
28	PL000903	Shaft, Pivot, Guard, Labeler, V3	1
29	PL003801	Standoff, Guard, Labeler	1
30	PA000900	Bracket, Strain Relief	1
31	VG000200	Bushing, Strain Relief	1
32	SM002701	Label Sensor Assembly, Labeler	1
33	PL006600	Support, Peel Point	1
34	VH000204	Screw, Cap Head Socket, 1/4-20 x 1"	3
35	VR000301	Roller, Unwind Drive, Labeler	1
36	VH004102	Collar, Locking, SS, 3/8" ID	1
37	SM007700	Stripper Assembly, Labeler	1
38	PA001201	Bin, Labeler	1
39	VD000100	Tape, Reflective	6"
40	SE001200	Harness, Bin Sensor	1
41	PL001301	Bracket, Bin Sensor, Labeler	1
42	SM001301	Take-Up Sensor Assembly, Labeler	1
43	SM001401	Head Interlock Assembly, Labeler	1
44	VH000405	Screw, Button Head Socket, #10-32 x 3/4"	6
45	PL011101	Shaft, Hub Mount, Labeler	2
46	VH004103	Collar, Locking, SS, 1/2" ID	2
47	PM006600	Plate, Unwind Brake Motor	2
48	PM006700	Plate, Unwind Drive Motor	1
49	VB000102	Bearing, Roller, 1/2" ID	4
50	VB000101	Bearing, Roller, 3/8" ID	2
51	VM000202	Gearmotor, 30.3VDC, 19.7:1	1
52	PM006100	Spur Gear, 36 Tooth, 1/4 Bore, 24 Pitch, 1/4 Face	1
53	PM006200	Spur Gear, 30 Tooth, 1/2 Bore, 24 Pitch, 1/4 Face	1
54	PM006300	Spur Gear, 18 Tooth, 3/8 Bore, 24 Pitch, 1/4 Face	1
55	PM006400	Spur Gear, 30 Tooth, 1/4 Bore, 24 Pitch, 1/4 Face	1

56	PM010400	Spur Gear, Mod, 20 Tooth, 1/4 Bore, 24 Pitch, 1/4 Face	1
57	PM010500	Spur Gear, Mod, 40 Tooth, 1/2 Bore, 24 Pitch, 1/4 Face	1
58	VH001601	Key, Woodruff #6, 5/32 x 5/8	2
59	VH001703	Screw, Set, Socket, Cup Point, #10-32 x 3/16"	9
60	PT000100	Standoff, Motor Support	12
61	VH000603	Screw, Flat Head Socket, 1/4-20 x 1"	12
62	PL003000	Plate, Unwind	1
63	PL003100	Plate, Take-Up	1
64	PL006701	Plate, Main Frame, Head	1
65	SE001500	Harness, Unwind Drive Motor	1
66	SE001600	Harness, Unwind Brake Motor	1
67	SE001700	Harness, Take-Up Motor	1
68	VC004600	Clamp, Cable, 1/4", Nylon	1
69	VH002108	Screw, Button Head Socket, #8-32 x 5/16"	2
70	VC004602	Clamp, Cable, 3/16", Nylon	2
71	VH002202	Screw, Button Head Socket, #6-32 x 3/8"	2
72	VH002905	Washer, Internal Lock, #6	2
73	VH007202	Screw, Hex Head, 1/4-20 x 1-1/4", Grade 5	1
74	VH000701	Screw, Pan Head Phillips, #6-32 x 1/4"	1
75	VH002204	Screw, Button Head Socket, #6-32 x 5/8"	1
76	VH006200	Nut, Hex, 5/16-18, Keps	2
77	VH006300	Spacer, Hex, #6-32 x 3/4"	1

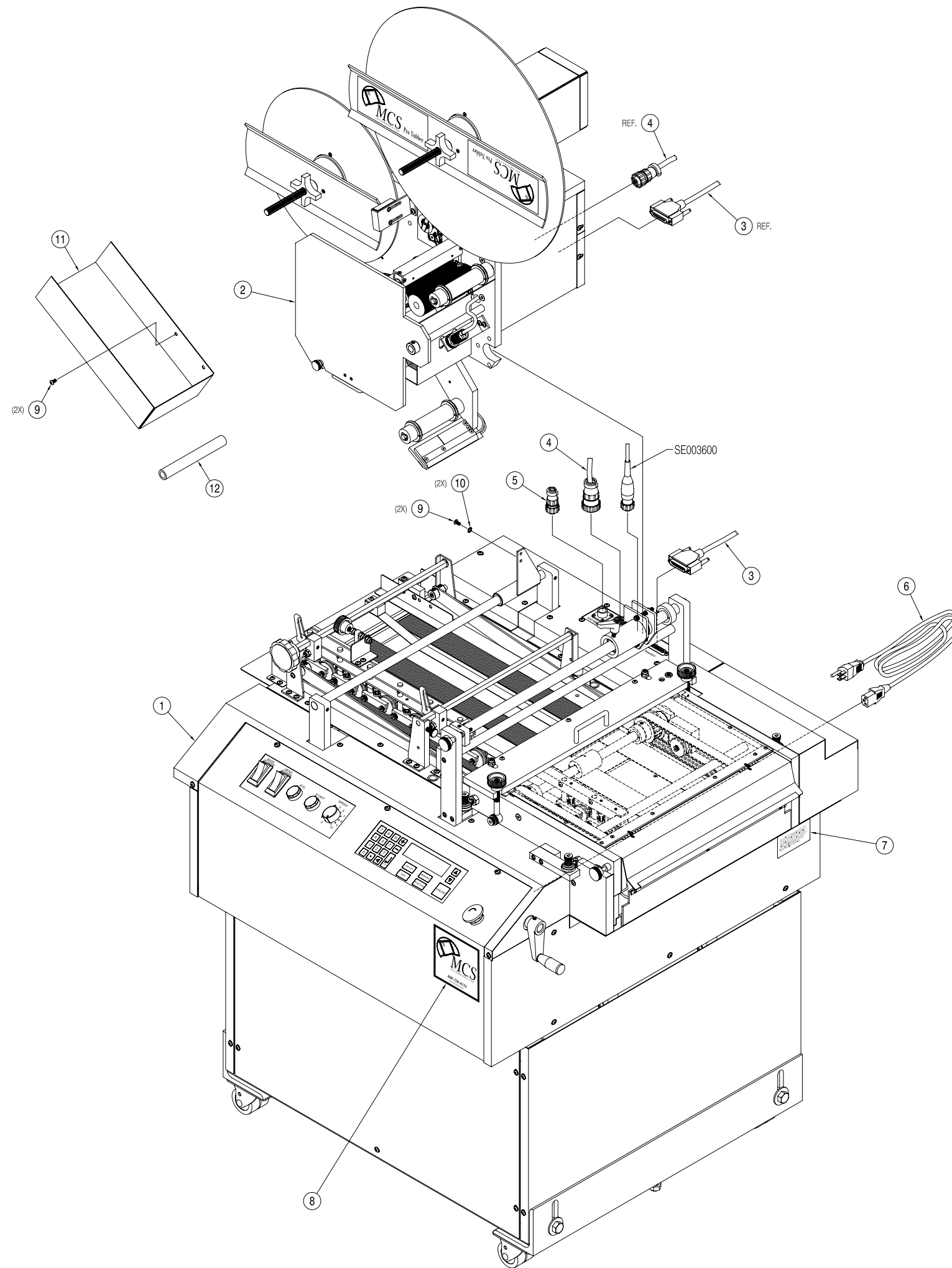


FO000900 - TABBING SYSTEM,  
MCS TABBER 2"

**FO000900 - TABBING SYSTEM, MCS TABBER 2"**

Item	Part Number	Description	Quantity
1	SM022604	Base Sub Assembly, MCS Tabber (2")	1
2	AF000512	Tabbing Head, MCS 2"	1
3	VC014001	Cable, Molded, DB25M-DB25F, 3 Feet	1
4	SE000700	Cable, Head Power, External	1
5	SE008000	Interlock Jumper Plug	1
6	VC010900	Power Cord, 7'6", 18/3SVT, American, 125V, 10A, Black	1
7	MD001000	Label, FCC Compliance	1
8	VD002600	Decal, www.mcspro.com	1
9	VH000402	Screw, Button Head Socket, #10-32 x 3/8"	2
10	VH006800	Washer, External Lock, #10	2
11	VS001600	Label Core, 1" Wide, 3" OD, 1/8" Wall	2
12	VS001700	Label Core, 2" Wide, 3" OD, 1/8" Wall	2
13	VS001900	Carton, Floor Tabber	1
14	VS000201	Carton, Head, Triple Wall, 26 x 20-1/4 x 20-1/4	1
15	VS000300	Foam, Shipping Box, 1 x 20 x 26, #2 PE Foam	2
16	VS000900	Bubble Wrap, Anti-Static, 3/16 Thick	8'
17	VS001000	Bag, Clear Plastic, 3' x 5'	1
18	VS001300	Carton, Head Unwind Insert	1
19	VS001400	Carton, Head Take-Up Insert	1
20	VS001500	Carton, Head Surround	1
21	PW001800	Skid Strap, Tabber Weldment	2
22	VS000600	Banding, 1/2 x .017	70'
23	VD002300	Tabs, 15/16" Dia. Paper, 5K Roll	1
24	VO000100	Binder, White 1/2" Ring	1

**USED BUT NOT SHOWN: ITEMS 11 - 24.**



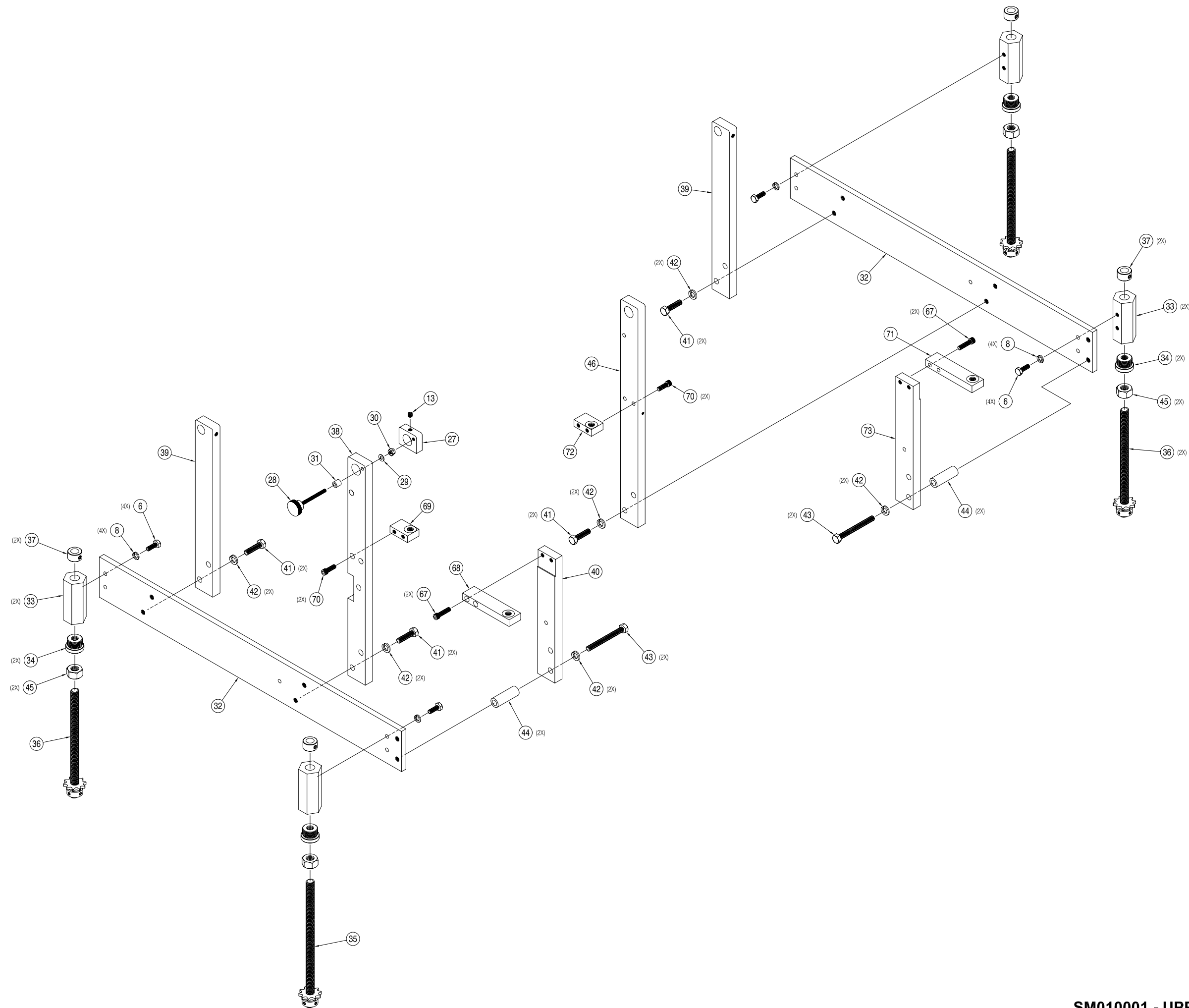
FO000901 - LABELING SYSTEM,  
MCS TABBER 4"

**FO000901 - LABELING SYSTEM, MCS TABBER 4"**

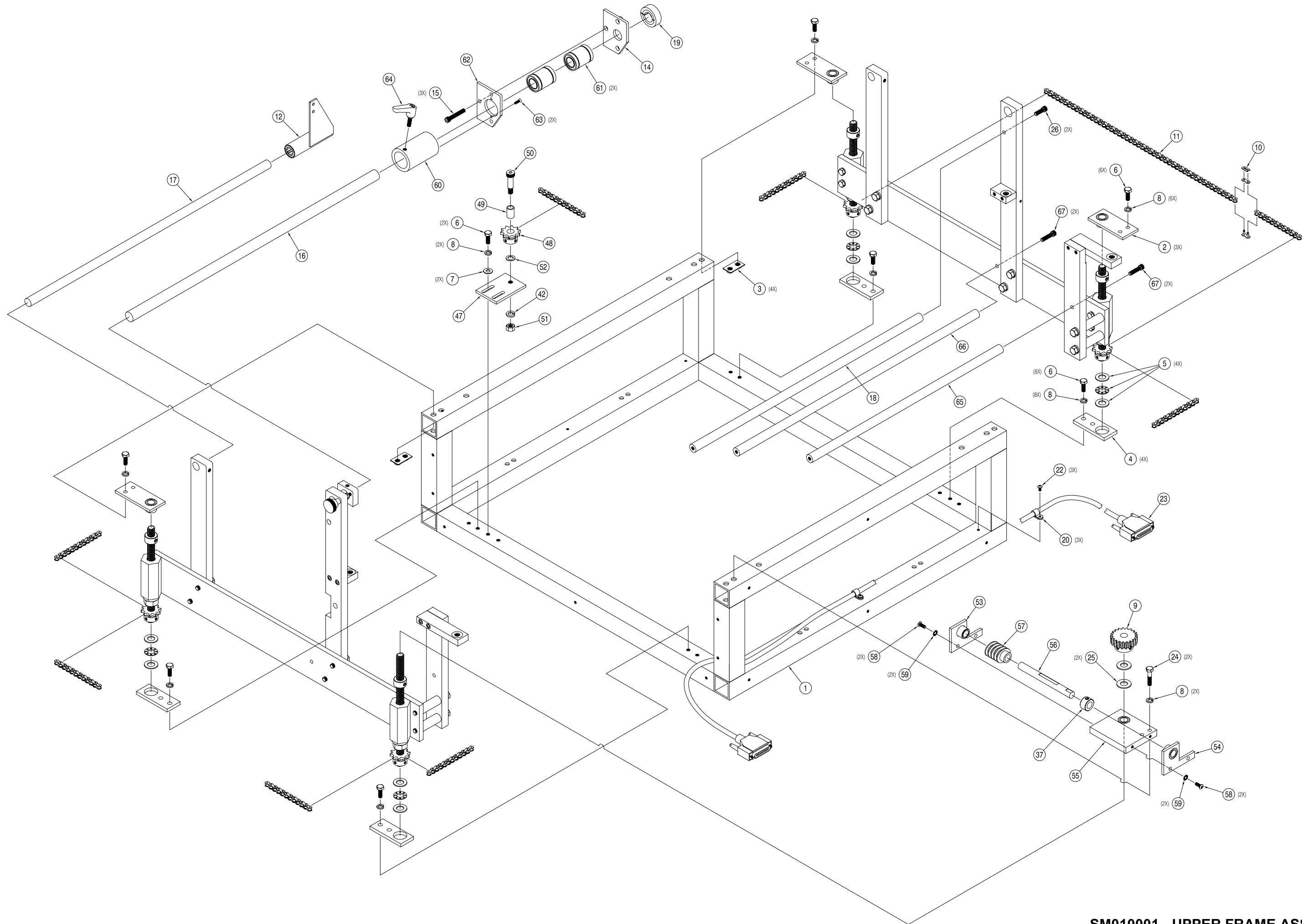
Item	Part Number	Description	Quantity
1	SM022604	Base Sub Assembly, MCS Tabber (2")	1
2	AF000513	Labeling Head, MCS 4"	1
3	VC014001	Cable, Molded, DB25M-DB25F, 3 Feet	1
4	SE000700	Cable, Head Power, External	1
5	SE008000	Interlock Jumper Plug	1
6	VC010900	Power Cord, 7'6", 18/3SVT, American, 125V, 10A, Black	1
7	MD001000	Label, FCC Compliance	1
8	VD002600	Decal, www.mcspro.com	1
9	VH000402	Screw, Button Head Socket, #10-32 x 3/8"	4
10	VH006800	Washer, External Lock, #10	2
11	PA006201	Label Tray	1
12	PL012400	Tray Guide Tube	1
13	VS001600	Label Core, 1" Wide, 3" OD, 1/8" Wall	2
14	VS001700	Label Core, 2" Wide, 3" OD, 1/8" Wall	2
15	VS001800	Label Core, 4" Wide, 3" OD, 1/8" Wall	2
16	VS001900	Carton, Floor Tabber	1
17	VS000201	Carton, Head, Triple Wall, 26 x 20-1/4 x 20-1/4	1
18	VS000300	Foam, Shipping Box, 1 x 20 x 26, #2 PE Foam	2
19	VS000900	Bubble Wrap, Anti-Static, 3/16 Thick	8'
20	VS001000	Bag, Clear Plastic, 3' x 5'	1
21	VS001300	Carton, Head Unwind Insert	1
22	VS001400	Carton, Head Take-Up Insert	1
23	VS001500	Carton, Head Surround	1
24	PW001800	Skid Strap, Tabber Weldment	2
25	VS000600	Banding, 1/2 x .017	70'
26	VD002300	Tabs, 15/16" Dia. Paper, 5K Roll	1
27	VO000100	Binder, White 1/2" Ring	1

**USED BUT NOT SHOWN: ITEMS 13 - 27.**





SM010001 - UPPER FRAME ASSEMBLY

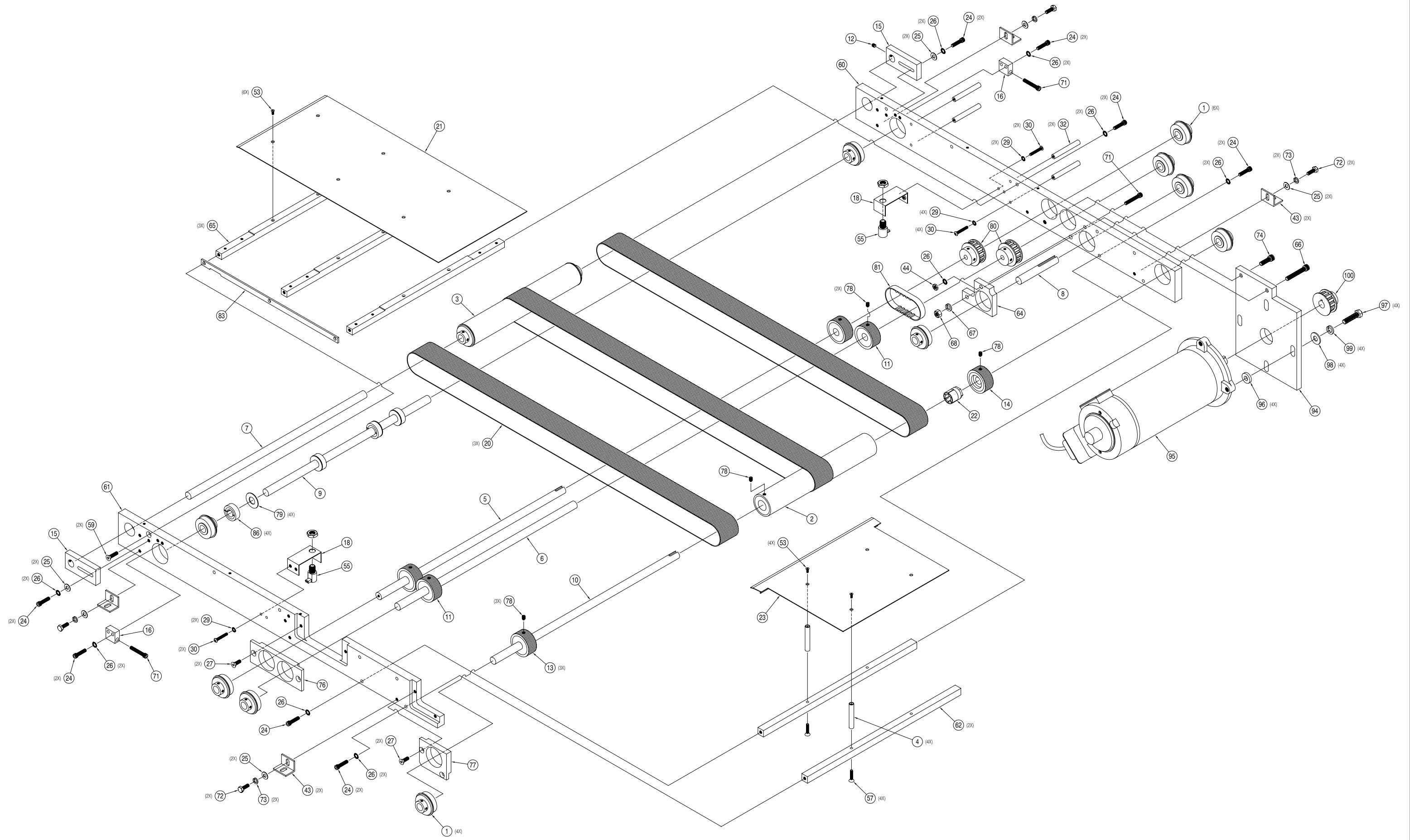


SM010001 - UPPER FRAME ASSEMBLY

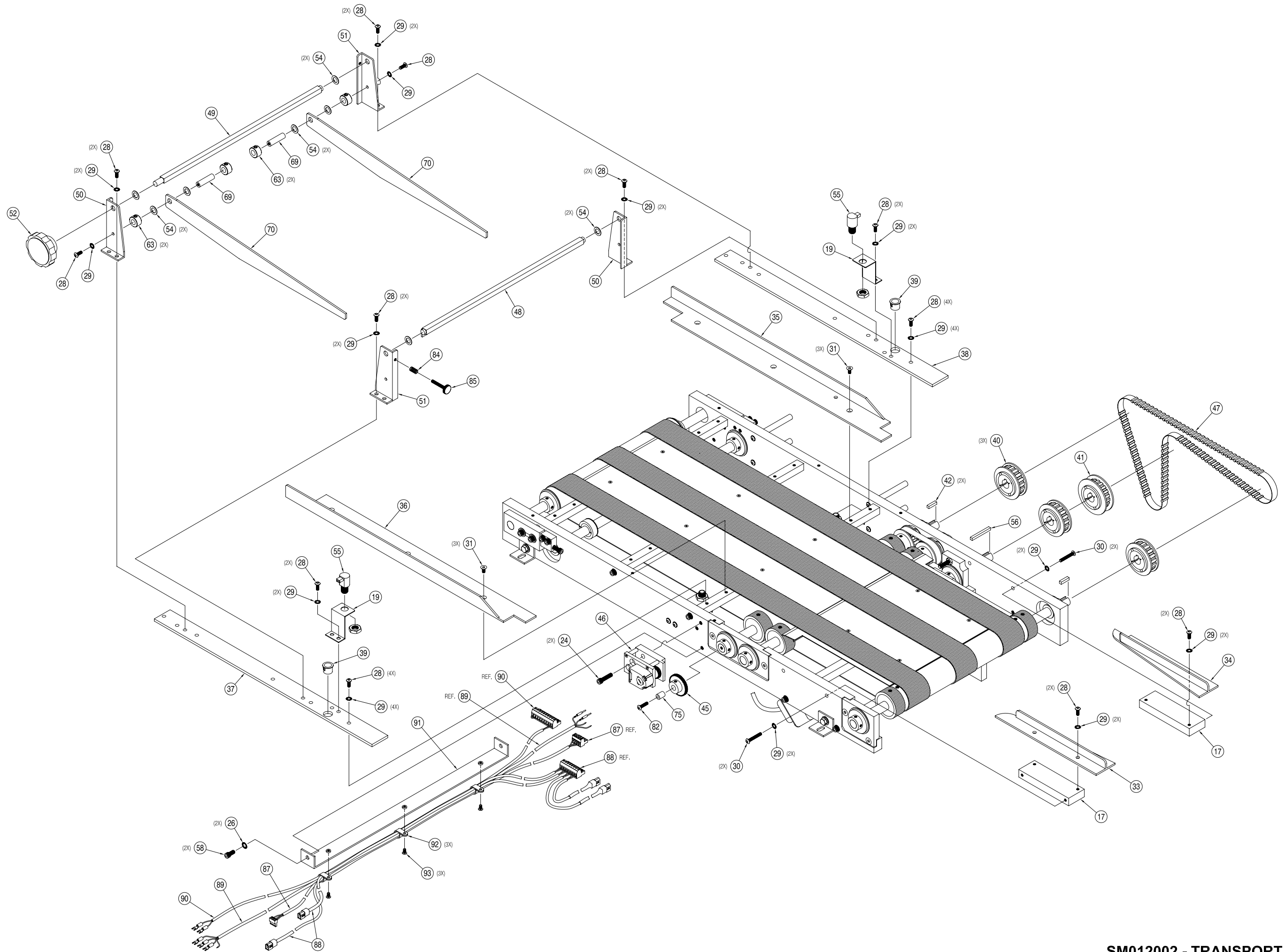
### SM010001 - UPPER FRAME ASSEMBLY

Item	Part Number	Description	Quantity
1	PA008200	Base Frame, Top, Weldment	1
2	SM010100	ACME Screw Support Assembly	3
3	PF016000	Nut Plate, ACME Screw Support	4
4	PM012201	Thrust Bearing Mount	4
5	VB001101	Bearing, Thrust, 1/2" ID x 15/16" OD, 3 Piece	4
6	VH007200	Screw, Hex Head, 1/4-20 x 3/4", Grade 5	24
7	VH001404	Washer, Flat, 1/4	2
8	VH002501	Washer, Split Lock, 1/4	26
9	VT003000	Worm Gear, 12 Pitch, 20 Tooth, 14-1/2 Degree, Left Double Thread	1
10	VT002900	Connecting Link, ANSI #35 Chain	1
11	VT002800	Roller Chain, ANSI #35	104"
12	SM012600	Head Support, Weldment	1
13	VH001702	Screw, Set, Socket, Cup Point, 1/4-20 x 1/4"	1
14	PP001800	Head Mounting Plate, Motor Side	1
15	VH000207	Screw, Cap Head Socket, 1/4-20 x 1-1/2"	3
16	PL017800	Shaft, Ball Bushing, Head Mount Front and Lower Frame	1
17	PL017600	Shaft, Head Mount, Rear, .625 #60 Case Rod	1
18	PL018100	Tie Bar, Frame Mount	1
19	VH004403	Collar, Split, Clamp, 3/4" ID	1
20	VC004605	Clamp, Cable, 5/16", Nylon	3
21	VH000106	Washer, Internal Lock, #8	3
22	VH002108	Screw, Button Head Socket, #8-32 x 5/16"	3
23	VC014000	Cable, Molded, DB25M-DB25M, 2 Meter	1
24	VH007202	Screw, Hex Head, 1/4-20 x 1-1/4", Grade 5	2
25	VH001812	Washer, Nylon, .500" ID x 1.000" OD x .062" Thick	2
26	VH000205	Screw, Cap Head Socket, 1/4-20 x 3/4"	2
27	PL019600	Head Adjustment Block	1
28	SM009300	Knob, Head Position Fine Adjustment	1
29	VH001810	Washer, Nylon, .195" ID x .437" OD x .031" Thick	1
30	VH003801	Nut, Hex, Self Locking, #10-32	1
31	VH006102	Spacer, Nylon, .187" ID x .375" OD x .375" Thick	1
32	PM010703	Bar, Lift Assembly	2
33	PT013401	Hex Support, ACME Nut	4
34	VT004201	ACME Nut, 1/2-10, Single Start, Right Hand, Bronze, External Thread	4
35	SM008901	ACME Screw, Worm Gear Assembly	1
36	SM008801	ACME Screw, Head Lift Assembly	3
37	VH004103	Collar, Locking, SS, 1/2" ID	4
38	PL015101	Frame Support, Operator Side, Center	1
39	PL015300	Head Support, Input	2
40	PL015402	Frame Support, Output, Operator Side	2
41	VH007303	Screw, Hex Head, 5/16-18 x 1-1/4", Grade 5	8
42	VH002503	Washer, Split Lock, 5/16	13
43	VH007302	Screw, Hex Head, 5/16-18 x 3", Grade 5	4
44	PT010301	Spacer, Frame Mount	4
45	VT004202	ACME Nut, 1/2-10, Standard Right Hand	4
46	PL015201	Frame Support, Center, Non-Operator Side	1
47	PF015800	Plate, Chain Tensioner	1
48	VT002700	Sprocket, 10 Tooth, #35 Roller Chain	1
49	VB000611	Bearing, Oil Impregnated Bronze, Plain, 3/8" ID x 1/2" OD x 3/4" L	1
50	VH006901	Screw, Shoulder, Socket Head, 5/16-18 x 3/8" x 1"	1
51	VH002405	Nut, Hex, 5/16-18	1
52	VH001806	Washer, Nylon, .375" ID x .625" OD x .032" Thick	1
53	SM010700	Worm Gear Support Assembly, Left Side	1
54	SM010701	Worm Gear Support Assembly, Right Side	1
55	SM010800	ACME Screw Support/Height Adjust Assembly	1

56	PL016500	Shaft, Worm Gear	1
57	VT003100	Worm, 12 Pitch, Left Double Thread	1
58	VH000403	Screw, Button Head Socket, #10-32 x 1/2"	4
59	VH006800	Washer, External Lock, #10	4
60	PL018900	Tube, Head Mounting	1
61	VB000900	Bearing, Linear, Ball Bushing, 3/4" ID	2
62	PL013000	Head Mounting Plate, Operator Side	1
63	VH000903	Screw, Flat Head Socket, #6-32 x 1/2"	2
64	VK001200	Handle, Adjustable Clamping, 1/4-20 x .78"	1
65	PL021000	Tie Bar, Frame Mount, Lower	1
66	PL021100	Tie Bar, Lift	1
67	VH000204	Screw, Cap Head Socket, 1/4-20 x 1"	4
68	SM022800	Mount, Floating Wrap, Output, Operator Side	1
69	SM022900	Mount, Floating Wrap, Center, Operator Side	1
70	VH000205	Screw, Cap Head Socket, 1/4-20 x 3/4"	4
71	SM022801	Mount, Floating Wrap, Output, Non-Operator Side	1
72	SM022901	Mount, Floating Wrap, Center, Non-Operator Side	1
73	PL015401	Frame Support, Output, Non-Operator Side	1



SM012002 - TRANSPORT ASSEMBLY



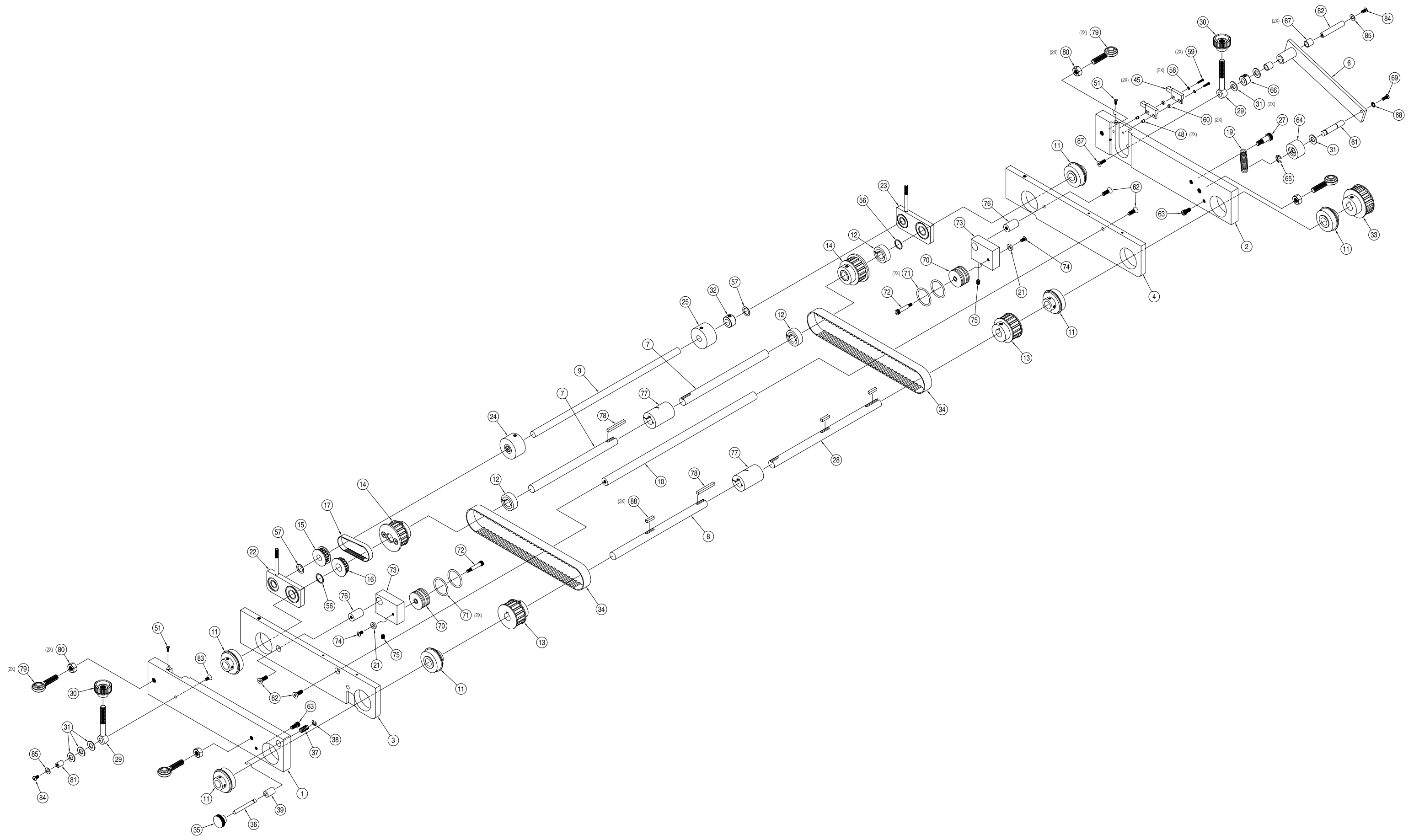
SM012002 - TRANSPORT ASSEMBLY

## SM012002 - TRANSPORT ASSEMBLY

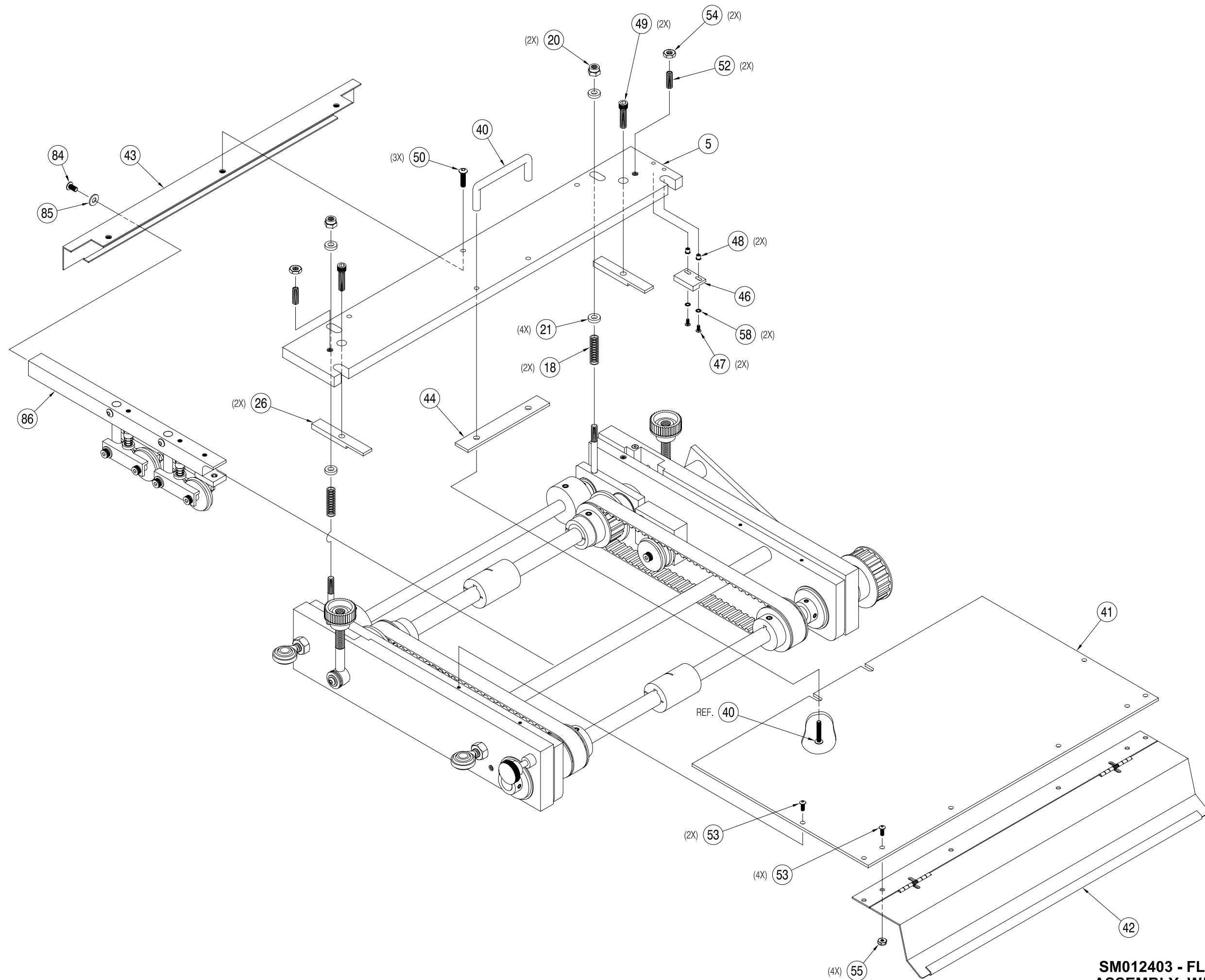
Item	Part Number	Description	Quantity
1	VB001000	Bearing, Radial Ball, 5/8" ID, Snap Rings	10
2	SM008702	Belt Roll Assembly, Output	1
3	SM010900	Belt Roll, Input Assembly	1
4	PT018000	Spacer, Output Tray	4
5	PL020700	Shaft, Encoder Press Wheel	1
6	PL020800	Shaft, Roll-Fold Wheel	1
7	PL016800	Shaft, Input Roll	1
8	PL016901	Shaft, Reversing	1
9	PL017000	Shaft, Belt Guide	1
10	PL020900	Shaft, Output Roll	1
11	PM016200	Fold Wheel, Lower	2
12	VH001702	Screw, Set, Socket, Cup Point, 1/4-20 x 1/4"	1
13	PM016300	Press Wheel, Lower	3
14	PM016301	Press Wheel, Lower, Output	1
15	PM016700	Adjustment Block, Belt	2
16	PM016701	Adjustment Screw Bar	2
17	PM012902	Wrap Guide Mount	2
18	PP004200	Sensor Bracket, Bottom	2
19	PF011503	Sensor Bracket, Top	2
20	VT003404	Belt, Panther H, 2" x 71.5" x .055"	3
21	PF016103	Tray, Input	1
22	VT004400	Keyless Bushing, 5/8" ID	1
23	PW001700	Output Tray Weldment	1
24	VH000204	Screw, Cap Head Socket, 1/4-20 x 1"	17
25	VH001404	Washer, Flat, 1/4	8
26	VH000102	Washer, Internal Lock, 1/4	18
27	VH000602	Screw, Flat Head Socket, 1/4-20 x 3/4"	4
28	VH000403	Screw, Button Head Socket, #10-32 x 1/2"	26
29	VH006800	Washer, External Lock, #10	38
30	VH000408	Screw, Button Head Socket, #10-32 x 1-1/4"	12
31	VH000502	Screw, Flat Head Socket, #10-32 x 3/8"	6
32	PT013800	Standoff, Card	4
33	PL017300	Guide, Wrap, Operator Side	1
34	PL017301	Guide, Wrap, Non-Operator Side	1
35	PL017203	Guide Angle, Non-Operator Side	1
36	PL017202	Guide Angle, Operator Side	1
37	PP000300	Tray Extension, Operator Side	1
38	PP000400	Tray Extension, Non-Operator Side	1
39	VG000304	Bushing, Snap, Black, .625" Dia, .25" Thick Panel	2
40	SM013200	Pulley Assembly, 18 Tooth, 3/8" Pitch, 1/2" Wide, Taper Lock	3
41	SM013201	Pulley Assembly, 20 Tooth, 3/8" Pitch, 1/2" Wide, Taper Lock	1
42	VH008700	Machine Key, 3/16" Square x .75", Square Ends, Undersize	2
43	PL013900	Bracket, Frame Mounting	4
44	VH002404	Nut, Hex, 1/4-20	1
45	VT002500	Spur Gear, 48 Tooth, 32 Pitch, 3/16" Face, 14-1/2 Degree PA	1
46	SM009000	Transport Encoder Assembly	1
47	VT003903	Double Gearbelt, L, 3/8" Pitch, 1/2" Wide	1
48	PL019300	Shaft, Registration Wheel Adjustment, Forward, Welded	1
49	PL019400	Shaft, Drive Wheel Adjustment, Rear	1
50	PL012501	Drive Wheel Support, Non-Operator Side	2
51	PL012502	Drive Wheel Support, Operator Side	2
52	VK000700	Knob, Black Phenolic, 2-3/8" Dia, Brass Insert	1
53	VH000902	Screw, Flat Head Socket, #6-32 x 3/8"	10
54	VH001806	Washer, Nylon, .375" ID x .625" OD x .032" Thick	8
55	VC001000	Optical Sensor, Wide Gap	2

56	VH008701	Machine Key, 3/16" Square x 1.75", Square Ends, Undersize	1
57	VH000505	Screw, Flat Head Socket, #10-32 x 1"	4
58	VH000202	Screw, Cap Head Socket, 1/4-20 x 1/2"	2
59	VH000603	Screw, Flat Head Socket, 1/4-20 x 1"	2
60	PM010801	Frame, Transport, Non-Operator Side	1
61	PM010803	Frame, Transport, Operator Side	1
62	PM012801	Tray Bar, Output	2
63	VH004102	Collar, Locking, SS, 3/8" ID	4
64	PM011701	Bearing Mount, Compound	1
65	PM019800	Tray Bar, Input	3
66	VH007101	Screw, Cap Head Socket, 5/16-18 x 2"	1
67	VH002503	Washer, Split Lock, 5/16	1
68	VH002405	Nut, Hex, 5/16-18	1
69	PL014400	Stub Shaft, Hold Down Mount	2
70	PL020000	Product Hold Down	2
71	VH000207	Screw, Cap Head Socket, 1/4-20 x 1-1/2"	3
72	VH007200	Screw, Hex Head, 1/4-20 x 3/4", Grade 5	4
73	VH002501	Washer, Split Lock, 1/4	4
74	VH007104	Screw, Cap Head Socket, 5/16-18 x 1"	1
75	PT020400	Spacer, Modified, 3/16" x 3/8" OD x 1/2" Long	1
76	PM018600	Bearing Block, Encoder-Fold	1
77	PM018700	Bearing Block, Output	1
78	VH001714	Screw, Set, Brass Tip, #10-32 x 3/8"	7
79	VH001813	Washer, Nylon, .625" ID x 1.312" OD x .050" Thick	4
80	PM019300	Pulley, 15 Tooth, L, 3/8" Pitch, Modified, 1/2" Wide, 5/8" Bore	2
81	VT003904	Gearbelt, L, 3/8" Pitch, 1/2" Wide, 26 Groove	1
82	VH000405	Screw, Button Head Socket, #10-32 x 3/4"	1
83	PF017800	Spacer Strip, Tray Bar	1
84	VH009200	Spring, Compression, .300" OD x .500" L x .042" Dia. MW	1
85	SM002902	Knob, Black, #10-32 x 1-1/4"	1
86	VH004401	Collar, Split, Clamp, 5/8" ID	4
87	SE000800	Cable, Transport Encoder	1
88	SE006300	Harness, Product Detector	1
89	SE007301	Cable, Interlock	1
90	SE007901	Cable, Stop Relay	1
91	PP001400	Cable Mount	1
92	VC004604	Clamp, Cable, 7/16", Nylon	3
93	VH002108	Screw, Button Head Socket, #8-32 x 5/16"	3
94	PM011801	Motor Plate	1
95	SE007400	Assembly, Transport Motor	1
96	VH008600	Washer, Stamping, C100819, Bokers, .387" ID x .870" OD x .187" Thick	4
97	VH007300	Screw, Hex Head, 3/8-16 x 1-1/2", Grade 5	4
98	VH007501	Washer, Flat, 3/8	4
99	VH002502	Washer, Split Lock, 3/8	4
100	PM016001	Pulley, 14 Tooth, 3/8" Pitch, 5/8" Bore, 1/2" Wide, 3/16" Keyway	1





**SM012403 - FLOATING WRAP SECTION ASSEMBLY, W/BOGIES, 2 WRAP BELTS**



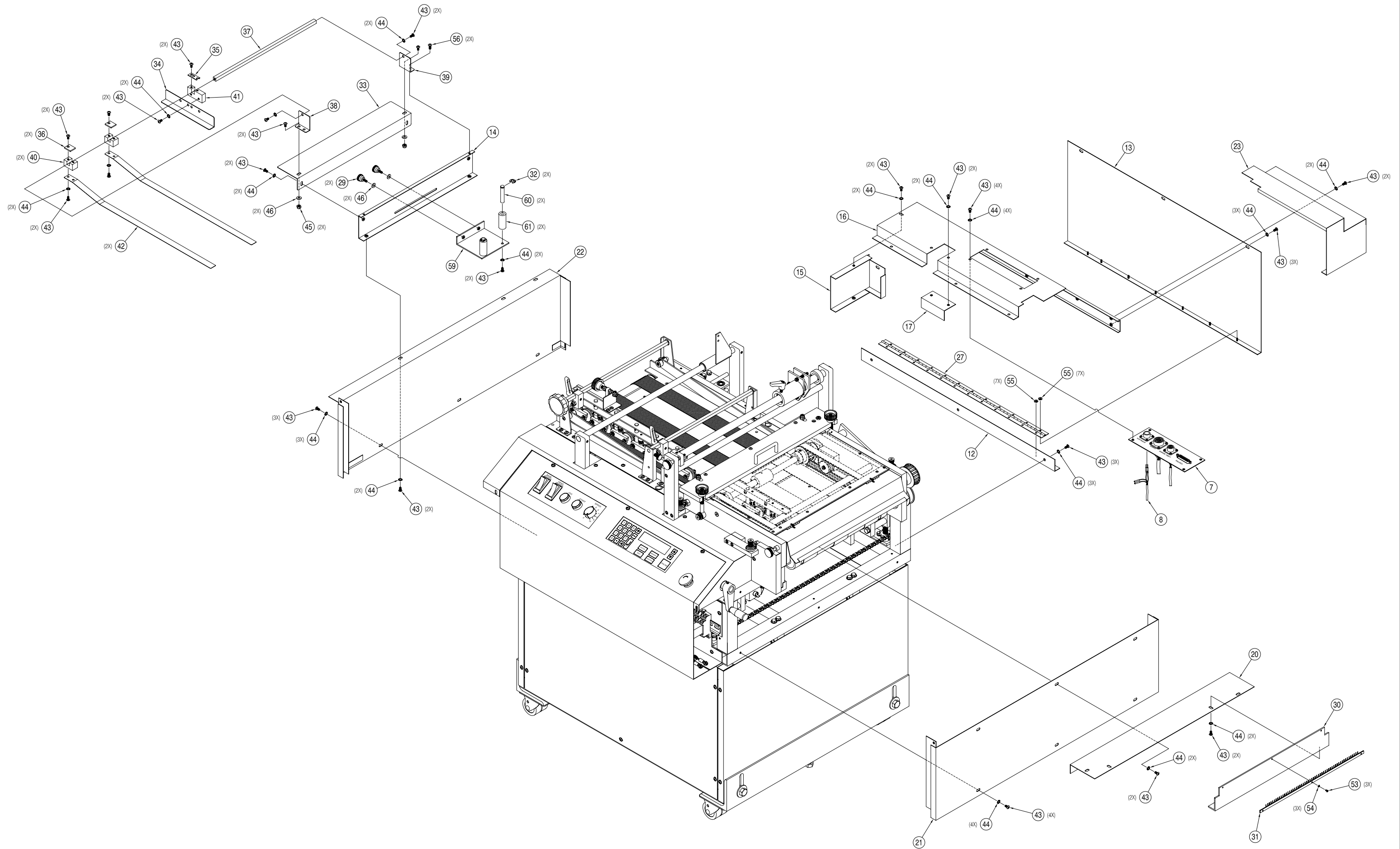
**SM012403 - FLOATING WRAP SECTION ASSEMBLY, W/BOGIES, 2 WRAP BELTS**

**SM012403 - FLOATING WRAP SECTION ASSEMBLY, W/BOGIES, 2 WRAP BELTS**

Item	Part Number	Description	Quantity
1	PL014701	Outer frame, Top, Operator Side	1
2	PL014801	Outer frame, Top, Non-Operator Side	1
3	PL014901	Inner Frame, Top, Operator Side	1
4	PL015001	Inner Frame, Top, Non-Operator Side	1
5	PL019700	Lift Bar	1
6	PL019000	Belt Tensioner, Weldment	1
7	PL020400	Shaft, Timing Belt, Fold, Split	1
8	PL020500	Shaft, Timing Belt, Top, Operator Side	1
9	PL017700	Shaft, Press Roll, Upper	1
10	PL018101	Tie Bar, Inner Frame	1
11	VB001000	Bearing, Radial Ball, 5/8" ID, Snap Rings	6
12	VH004401	Collar, Split, Clamp, 5/8" ID	3
13	PM015600	Pulley, 16 Tooth, 3/8" Pitch, 3/4" Wide, Modified	2
14	SM012700	Pulley, Wrap Flange Assembly	2
15	PM015502	Pulley, 1/5 Pitch, DF, 18 Tooth, 1/4" ID, Aluminum Hubless	1
16	PM015501	Pulley, 1/5 Pitch, DF, 20 Tooth, 1/4" ID	1
17	VT003300	Gearbelt, XL, 1/5 Pitch, 3/8" Wide, 40 Tooth	1
18	VH007701	Spring, Compression, .360" OD x 1.250" L x .042" Dia. MW	2
19	VH008101	Spring, Extension, .500" OD x 2.000" L x .049" Dia. MW	1
20	VH003804	Nut, Hex, Self Locking, 1/4-20	2
21	VH006101	Spacer, Nylon, .250" ID x .500" OD x .125" L	6
22	SM012800	Pivot Block Assembly, Operator Side	1
23	SM012801	Pivot Block Assembly, Non-Operator Side	1
24	SM012900	Press Roll, Top, Operator Side	1
25	SM012901	Press Roll, Top, Non-Operator Side	1
26	PL019200	Spacer, Lift Bar	2
27	VH006900	Screw, Shoulder, Socket Head, 3/8" x 5/8"	2
28	PL020501	Shaft, Timing Belt, Top, Non-Operator Side	1
29	VH008000	Rod Eyebolt, 3/8-16 x 3"	2
30	VK000800	Knob, Thumb, 1-1/4" Dia., Thru Hole, Brass Insert	2
31	VH001808	Washer, Nylon, .390" ID x .750" OD x .062" Thick	6
32	VH004103	Collar, Locking, SS, 1/2" ID	1
33	PM016000	Pulley, 19 Tooth, Modified	1
34	VT003600	Gearbelt, L, 3/8" Pitch, 3/4" Wide, 72 Tooth	2
35	VK000200	Knob, DK30, 1/4" ID, Black Phenolic, Brass Insert	1
36	PL017900	Lock Pin, Wrap Section	1
37	VH003900	Spring, Compression, .360" OD x .625" L x .026" Dia. MW	1
38	VH006001	Retaining Ring, External, 1/4	1
39	VB000614	Bearing, Oil Impregnated Bronze, Plain, 1/4" ID x 1/2" OD x 3/4" L	1
40	VK001500	Handle, Lift, Wrap Section	1
41	PF014700	Lexan Cover, Top, Wrap	1
42	PW001900	Output Guard, Hinged	1
43	PF013505	Input Top Guard	1
44	PL019500	Lexan Spacer, Lift Bar	1
45	VC005100	Reed Switch, SPST	2
46	VC005200	Magnet	1
47	VH002801	Screw, Button Head Socket, #4-40 x 5/16"	4
48	VH001202	Insert, Threaded, #4-40	4
49	VH000204	Screw, Cap Head Socket, 1/4-20 x 1"	2
50	VH000405	Screw, Button Head Socket, #10-32 x 3/4"	3
51	VH000902	Screw, Flat Head Socket, #6-32 x 3/8"	2
52	VH001712	Screw, Set, Socket, Cup Point, 1/4-20 x 3/4"	2
53	VH002202	Screw, Button Head Socket, #6-32 x 3/8"	12
54	VH002404	Nut, Hex, 1/4-20	2
55	VH003803	Nut, Hex, Self Locking, #6-32	8

56	VH001811	Washer, Nylon, .640" ID x .781" OD x .031" Thick	2
57	VH001807	Washer, Nylon, .505" ID x .750" OD x .032" Thick	2
58	VH002904	Washer, Internal Lock, #4	4
59	VH002802	Screw, Button Head Socket, #4-40 x 1/2"	2
60	VH006401	Spacer, Nylon, .142" ID x .250" OD x .110" L	2
61	PL014500	Idler, Spring Shaft	1
62	VH000602	Screw, Flat Head Socket, 1/4-20 x 3/4"	4
63	VH000202	Screw, Cap Head Socket, 1/4-20 x 1/2"	2
64	SM013001	Idler Assembly, Belt Tensioner	1
65	VH000303	E-Ring, External, 3/8	1
66	VH004102	Collar, Locking, SS, 3/8" ID	1
67	VB000603	Bearing, Oil Impregnated Bronze, Plain, 3/8" ID x 1/2" OD x 1/2" L	2
68	VH006800	Washer, External Lock, #10	1
69	VH000403	Screw, Button Head Socket, #10-32 x 1/2"	1
70	SM013101	Bogie Wheel Assembly	2
71	VG000500	O-Ring, 4-1/4" x 1/8" Dia.	4
72	VH005003	Screw, Shoulder, Socket Head, 1/4" x 1"	2
73	PM018500	Mounting Block, Bogie Wheel	2
74	VH005006	Screw, Button Head Socket, #10-32 x 3/8"	2
75	VH001714	Screw, Set, Brass Tip, #10-32 x 3/8"	2
76	PL020600	Shaft, Bogie Wheel Assembly Mounting	2
77	VT004500	Shaft Coupling w/Keyway	2
78	VH008701	Machine Key, 3/16" Square x 1.75", Square Ends, Undersize	2
79	VH009000	Ball Joint Rod End, 3/8-24	4
80	VH002413	Nut, Hex, 3/8-24, Grade 5	4
81	VH010500	Spacer, #8 x 3/8" OD x 1/2" L, Zinc-Plated Steel	1
82	PL022400	Stub Shaft, 3/8" Dia.	1
83	VH000502	Screw, Flat Head Socket, #10-32 x 3/8"	1
84	VH000402	Screw, Button Head Socket, #10-32 x 3/8"	2
85	VH001401	Washer, Flat, #10	2
86	SM023200	Assembly, Output Drive Wheels	1
87	VH000507	Screw, Flat Head Socket, #10-32 x 5/8"	1
88	VH008700	Machine Key, 3/16" Square x .75", Square Ends, Undersize	3





**SM022604 - BASE SUB ASSEMBLY,  
MCS TABBER (2")**

**SM022604 - BASE SUB ASSEMBLY, MCS TABBER (2")**

Item	Part Number	Description	Quantity
1	SM009703	Lower Frame Assembly, MCS 2" Caster	1
2	SM010001	Upper Frame Assembly	1
3	SM012002	Transport Assembly	1
4	SM009100	Registration Wheel Assembly	1
5	SM012403	Floating Wrap Section Assembly, 2 Wrap Belts	1
6	SM008300	Front Panel Assembly	1
7	SM008000	Assembly, Base Connector Plate	1
8	SE006901	Harness, Base Cover Interlock	1
9	VC004601	Clamp, Cable, 1/8", Nylon	2
10	SE000110	PCB Assembly, Taber Control	1
11	SE001100	Cable, DC Power Supply	1
12	PP000500	Angle Support, Hinge, Non-Operator Side	1
13	PP000600	Cover, Hinge, Non-Operator Side, Formed	1
14	PP000900	Guard, Input, Top	1
15	PP001000	End Cap, Non-Operator, Frame, Input	1
16	PP001200	Cover, Fixed, Non-Operator Side	1
17	PP001601	Cap, Non-Operator, Outer Frame, Bracket #1	1
18	PP001602	Cap, Operator Side, Outer Frame, Bracket #2	2
19	PP001700	Operator Outer Frame Cover	1
20	PA007800	Cover, Output, Top	1
21	PA008400	Cover, Base, Top, Output End	1
22	PA008500	Cover, Base, Top, Input End	1
23	PA008600	Output Cover, Non-Operator Side	1
24	PP001300	Cover, Hinged, Fixed, Formed	1
25	VK001000	Crank Handle, 2.5", 1/2" ID	1
26	VT003902	Gearbelt, L, 3/8" Pitch, 1/2" Wide, 68 Tooth	1
27	PM017000	Piano Hinge, 2 Feet	1
28	SM024000	Mounting Plate, Tabber Control Board	1
29	VK001100	Knob, Black w/#10-32 Stud	2
30	PL013200	Angle, Output Guard	1
31	VZ002300	Brush, Static	1
32	VH000303	E-Ring, External, 3/8	2
33	PF016203	Bridge Angle, 3"	1
34	PF017100	Guide	1
35	PL020201	Cap, Guide Mount	1
36	PL020200	Cap, Strap Mount	2
37	PL020203	Shaft, Guide & Strap	1
38	PF017200	Bracket, Square Shaft Mount, Operator Side	1
39	PF017201	Bracket, Square Shaft Mount, Non-Operator Side	1
40	PL020202	Mount Block, Strap	2
41	PL020204	Mount Block, Guide	1
42	PF017103	Strap, Deflector	2
43	VH000402	Screw, Button Head Socket, #10-32 x 3/8"	64
44	VH006800	Washer, External Lock, #10	58
45	VH003801	Nut, Hex, Self Locking, #10-32	2
46	VH001401	Washer, Flat, #10	2
47	VH007201	Screw, Hex Head, 1/4-20 x 2", Grade 5	12
48	VH001404	Washer, Flat, 1/4	12
49	VH000102	Washer, Internal Lock, 1/4	4
50	VH002404	Nut, Hex, 1/4-20	4
51			
52			
53	VH002801	Screw, Button Head Socket, #4-40 x 5/16"	3
54	VH002904	Washer, Internal Lock, #4	3
55	VH002402	Nut, Hex, #6-32	14

56	VH000403	Screw, Button Head Socket, #10-32 x 1/2"	2
57	VH006901	Screw, Shoulder, Socket Head, 5/16-18 x 3/8" x 1"	4
58	VH009100	Spring, Compression, .480" OD x .875" L x .036" Dia MW	3
59	PP002300	Bracket, Center Belt Shift	1
60	PL021600	Shaft, Vertical Belt Guide	2
61	PT017900	Tube, Vertical Belt Guide	2



# User's Guide



## MCSPRO-1020 Tabbing System



**MCS Incorporated**  
8101 Cessna Avenue  
Gaithersburg, MD 20879

REV-AA

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## **Chapter 1 - System Description**

The MCSPRO-1020 Tabbing System is designed to apply pressure sensitive tabs/ labels on to flat product. You can use the system as a wrap around tabbing device or use it as a labeler. The system is made up of two major components, the transport base and the tabbing head. The tabbing head is movable to enable tabbing on either edge of a mail piece. If the system is used as a flat tabber or labeler, the head can be located to position the label anywhere on the piece. Tab/ Label position over the length of the product is adjusted electrically through the operator interface.

The product is introduced into the system by a feeder, conveyor, or ink jet system. The product is justified to a side guide by adjusting the transport table position and the registration wheel assembly. A knob that raises and lowers the height of the tabbing head and the upper output transport assembly adjusts for product thickness.

When the product is transported, it is detected by a through-beam sensor that tells the tabbing head to apply a tab. If more than one tab is to be applied to a product, this can be set at the operator interface. After the tab is applied, the product passes through a number of rollers and guides to ensure that the tab/label is firmly applied and wrapped tight against the product edge.



## Chapter 2 - System Components

### 2.1 Transport Base Component

The transport base is designed to register and tightly control the product for accurate and consistent tab/ label application. When it is used to apply tabs (wafer seals) to the edge of mail pieces it is also responsible for wrapping the tab around the piece. All electrical controls are found on the transport base. The major components of the transport base are shown in Figure 1.

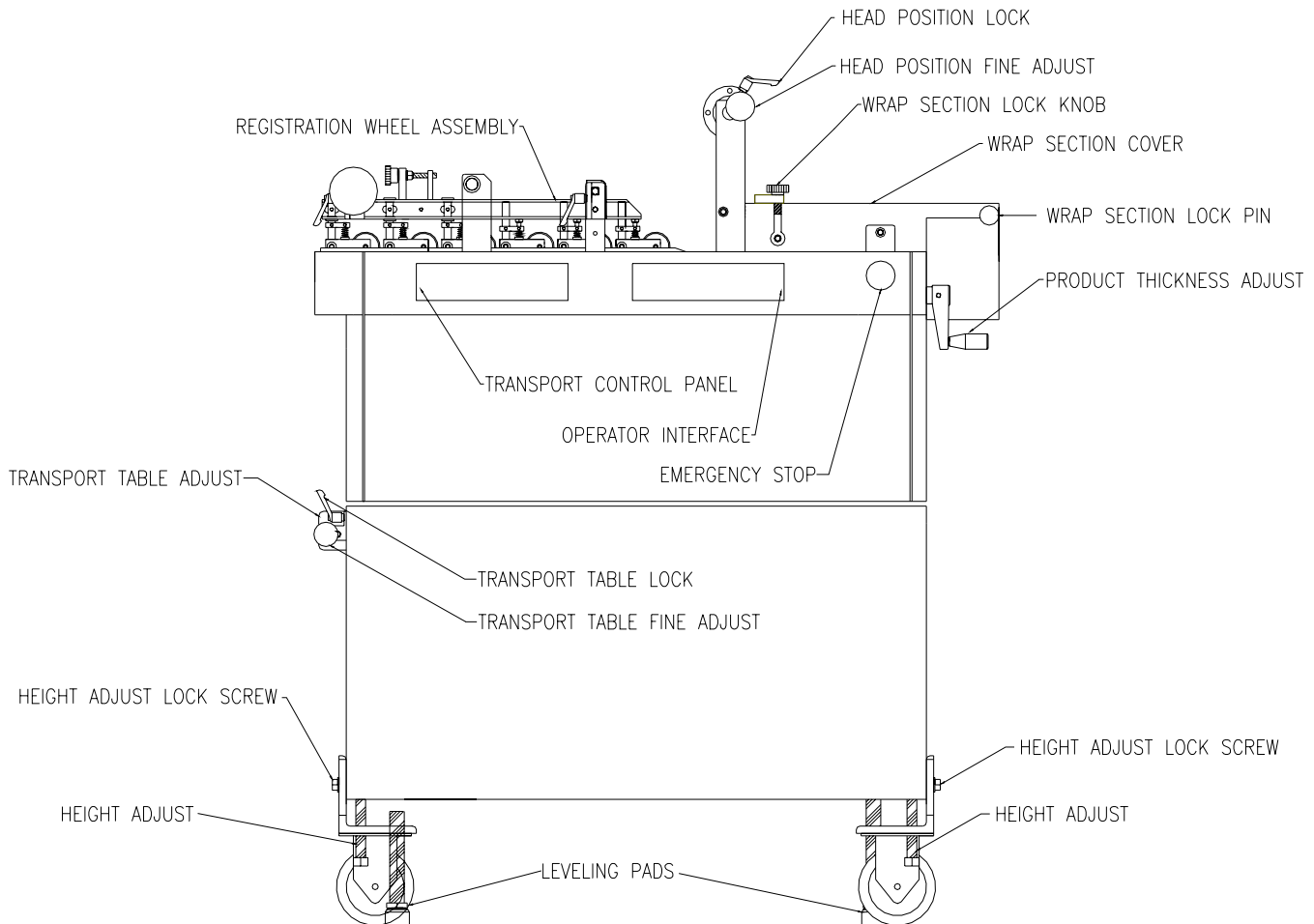


FIGURE 1 – TRANSPORT BASE

## 2.2 Tabbng Head Component

The tabbing head is designed for accurate and high-speed application of pressure sensitive tabs/ labels. It was designed specifically to work in conjunction with the base and is controlled by the interfaces on the base. The major components of the head are shown in Figure 2.

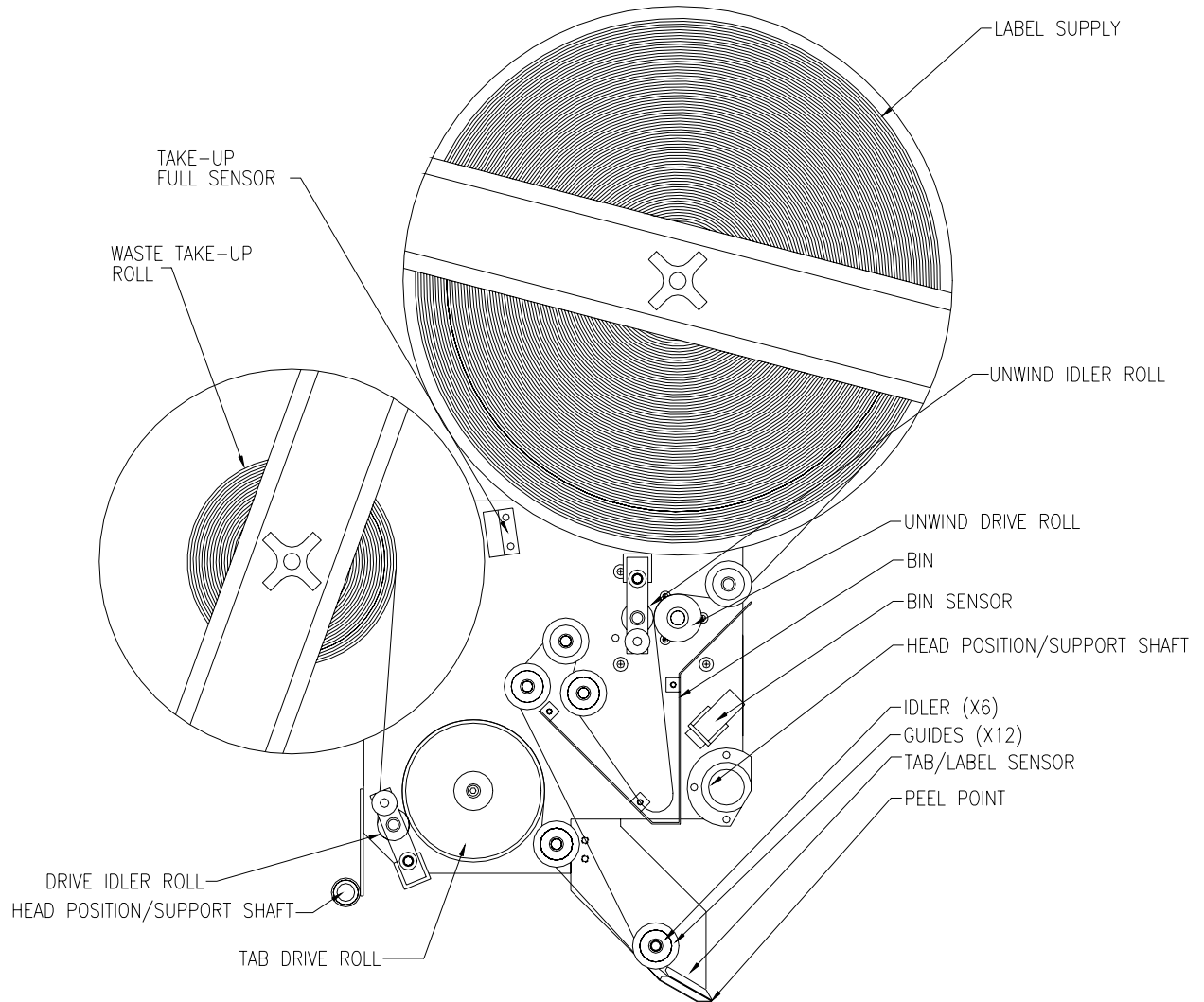


FIGURE 2 - TABBING HEAD



## Chapter 3 - Electronic Controls

### 3.1 Transport Control Panel

The Transport Control Panel is located on the left side of the base front. This panel controls system power and transport base motor condition. Housed on this panel are the following six controls:

- Base Power Rocker Switch
- Head Power Rocker Switch
- Jog Push Button Switch
- Start Push Button Switch
- Transport Speed Potentiometer

#### 3.1.1 Base Power Rocker Switch

This switch controls power to the tabber base. This switch must be on and lit in order for the transport base to function.

#### 3.1.2 Head Power Rocker Switch

This switch controls power to the tabbing head. This switch must be on and lit in order for the tabbing head to function. Since this switch obtains its power from the base, the Base Power Rocker Switch must also be on.

#### 3.1.3 Jog Push Button Switch

This switch is provided to aid operator setup. When depressed the transport base motor will run at the speed set by the speed control pot. The base will stop as soon as the switch is released.

#### 3.1.4 Start Push Button Switch

This switch is used to start the transport base motor. The transport base motor will run at the speed set by the speed control until the Stop Mushroom Cap Switch is depressed or the electronic controls stop the unit.

#### 3.1.5 Transport Speed Potentiometer

The transport speed potentiometer is used to control the speed of the base. Turning this knob clockwise will increase base speed.

### 3.2 Operator Interface

The Operator Interface is located on the right side of the base front. It is used to setup and control the tabbing head and consists of an array of tact-switches and a LCD display. The Operator Interface can be subdivided into the following 5 sections:

- LCD Module
- Online Key
- Menu Scroll Keys
- Numeric Keypad
- Menu Selection Keys

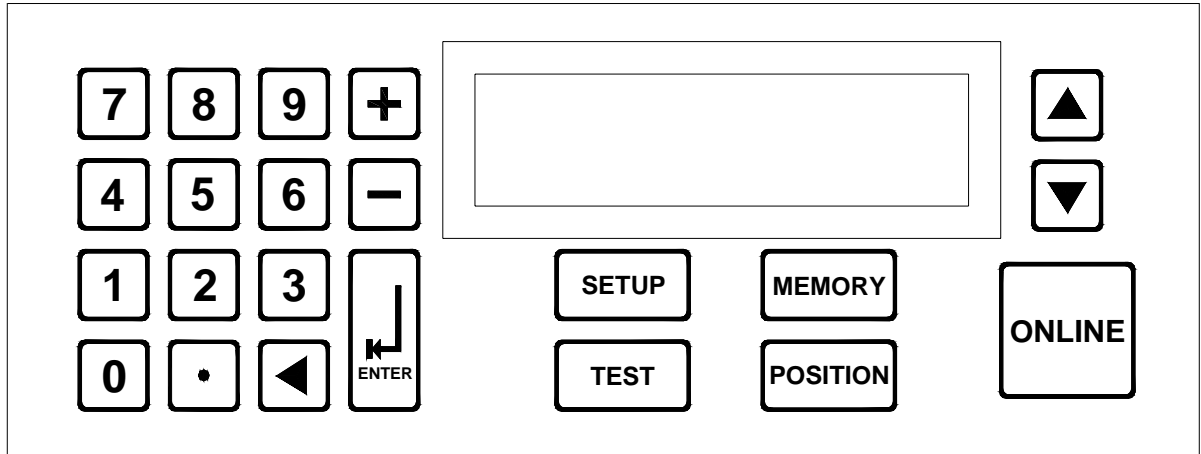


FIGURE 3 - OPERATOR INTERFACE

### 3.2.1 LCD Module

The Operator Interface is equipped with a LCD module used to display controller information to the operator. Setup parameters, error descriptions and controller status can all be viewed through the LCD.

### 3.2.2 Online Key

This key toggles the head condition between online and offline. When offline the head will not dispense any tabs/ labels. The head must be offline to access setup parameters within the controller. The head must be online in order to dispense tabs/ labels. Online/ Offline condition is displayed on the LCD. While online the second line of the LCD displays “NORMAL STATUS”, if offline the first line of the LCD displays “OFFLINE”.

### 3.2.3 Menu Scroll Keys

The ▲ (up arrow) and ▼ (down arrow) keys are used to scroll up and down menus to facilitate menu item selection when used during setup. These keys are also used to control the display of production data when the unit is online. The operator can choose between the following three different production displays:

- Product Count
- Transport Speed
- Production Rate

#### **3.2.3.1 Product Count**

The controller maintains a six-digit product count. The operator through use of the setup key can reset this counter. An example of a typical count display follows.

FORMS DONE: 000123  
NORMAL STATUS

### **3.2.3.2 Transport Speed**

The controller must be aware of the transport speed to accurately locate tabs/ labels on the product. This speed, displayed in feet/ minute, represents the approximate belt speed of the base. An example of a typical speed display follows.

SPEED: 160 FT/M  
NORMAL STATUS

### **3.2.3.3 Production Rate**

Another useful production item is the production rate. The controller can display the approximate real-time production rate of the tabber. Units for the production rate is product #/ hour. An example of a typical rate display follows.

PROD RATE: 24000 PPH  
NORMAL STATUS

### **3.2.4 Numeric Keypad**

A numeric keypad is provided to allow direct entry of settings from the Operator Interface. This keypad is functional for tabber setup only when the unit is offline.

### **3.2.5 Menu Selection Keys**

Beneath the LCD are four menu selector keys. These keys are used to access the different setup and test menus. The four keys are listed below:

- Test
- Position
- Setup
- Mode

## **3.3 Stop Switch (Red Mushroom Cap)**

When depressed, this switch stops the transport base motor. If the stop interlock cable has been used to “tie-in” the tabber with the feeding equipment, then the stop switch will also stop the in-feeding equipment. The operator must twist the switch in order to release the stop condition.



## Chapter 4 – System Setup

### 4.1 Base Set-up

#### 4.1.1 Position Transport Base

The Tabbing Base is designed with two sections, lower fixed base and upper sliding transport table. The sliding transport table allows tabbing or labeling on the operator or non-operator side.

Requirement:

Adjust transport table to begin system setup.

Procedure:

1. Loosen transport table locking lever. (See Figure 5)
2. Position transport table to dimension given. (See Figure 4)

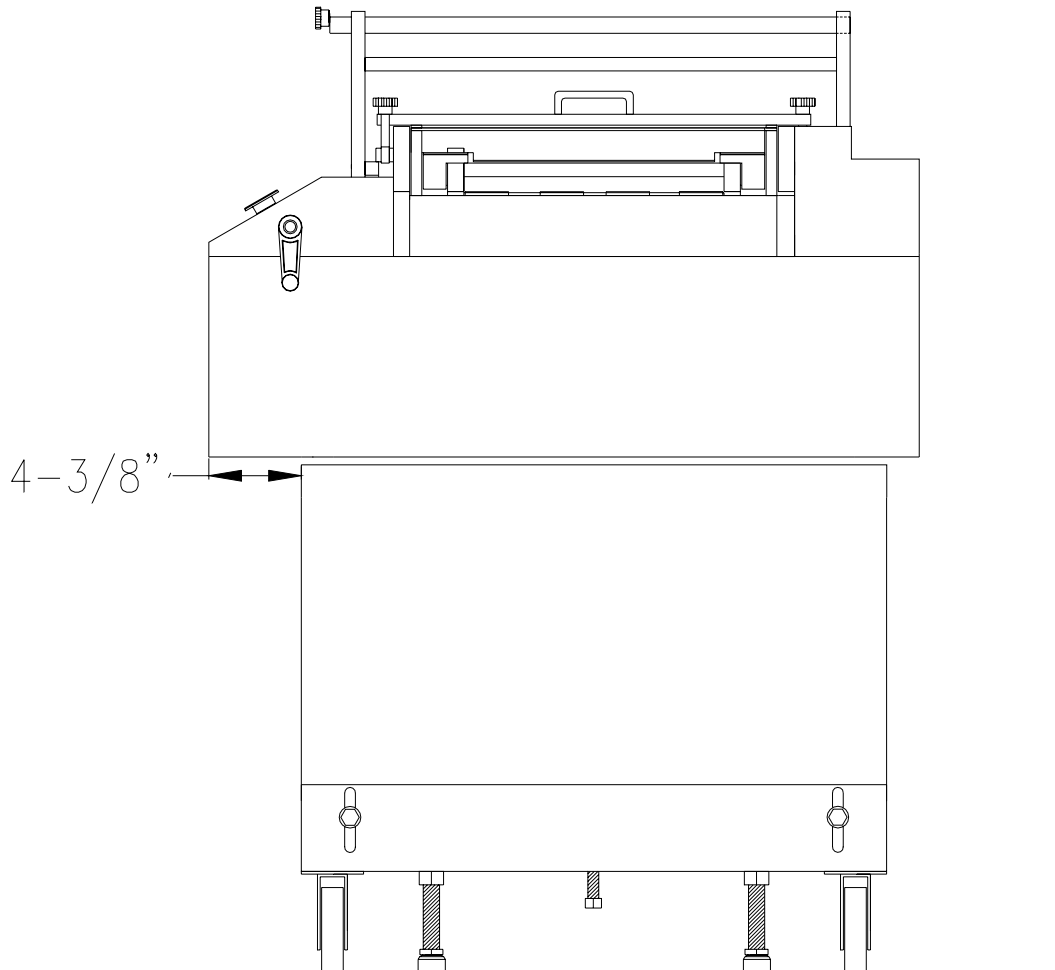


Figure 4

### 4.1.2 Position Base

The Tabbing Base has casters to move the system. Roll the input end of the base up to the output end of the ink jet base.

Requirement:

Position base to ink jet base for product transition and centerline.

Procedure

1. Loosen the four height adjust lock screws (Figure 5)
2. Adjust two height adjust screws up-down until bridge angle (Figure 5) is just below the belts of the ink jet base.
3. Secure the four height adjust locking screws.
4. Position tabber base so the bridge angle is as close to ink jet base belts without touching and position tabber base so the centerline of ink jet base matches the centerline of the transport table (Figure 6).
5. Set four leveling pads (Figure 5) firmly to secure tabber base in final position.
6. Secure leveling pad lock nuts against base bottom.

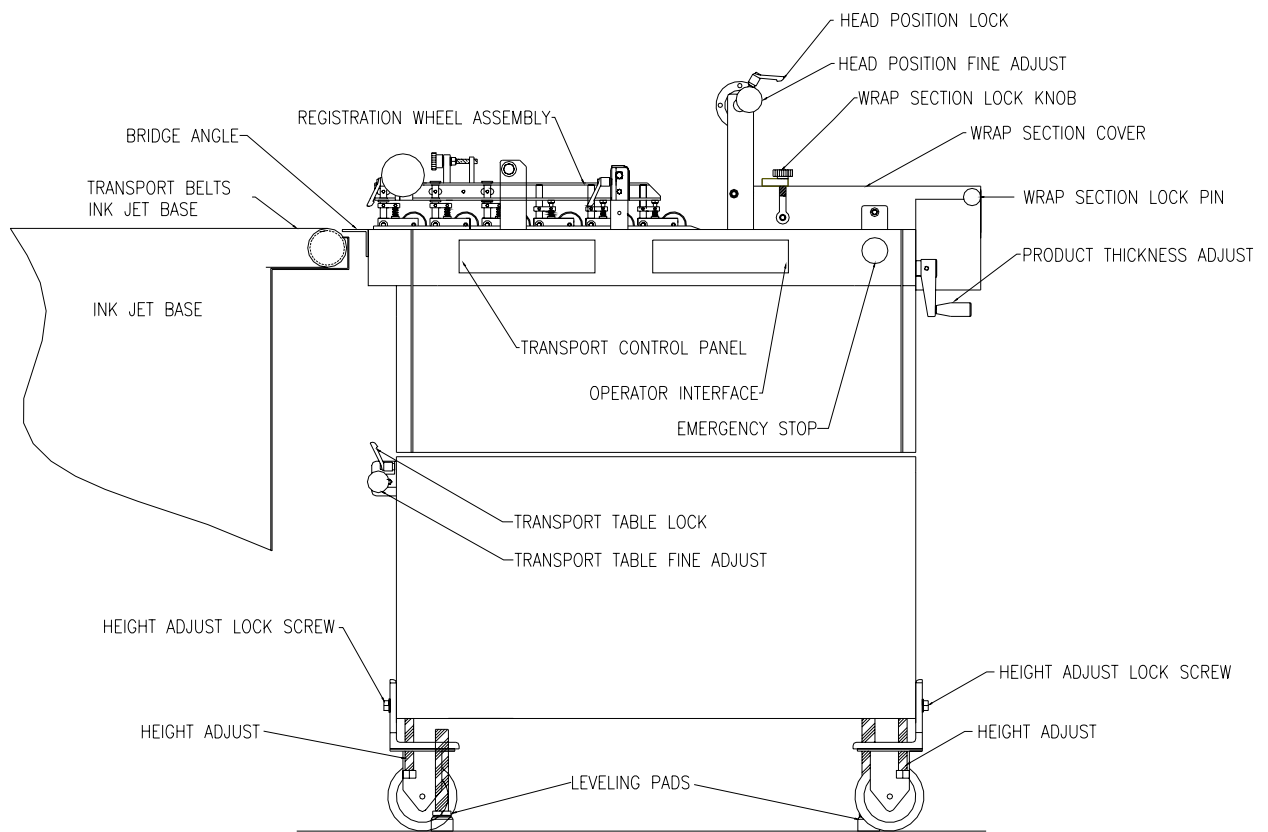
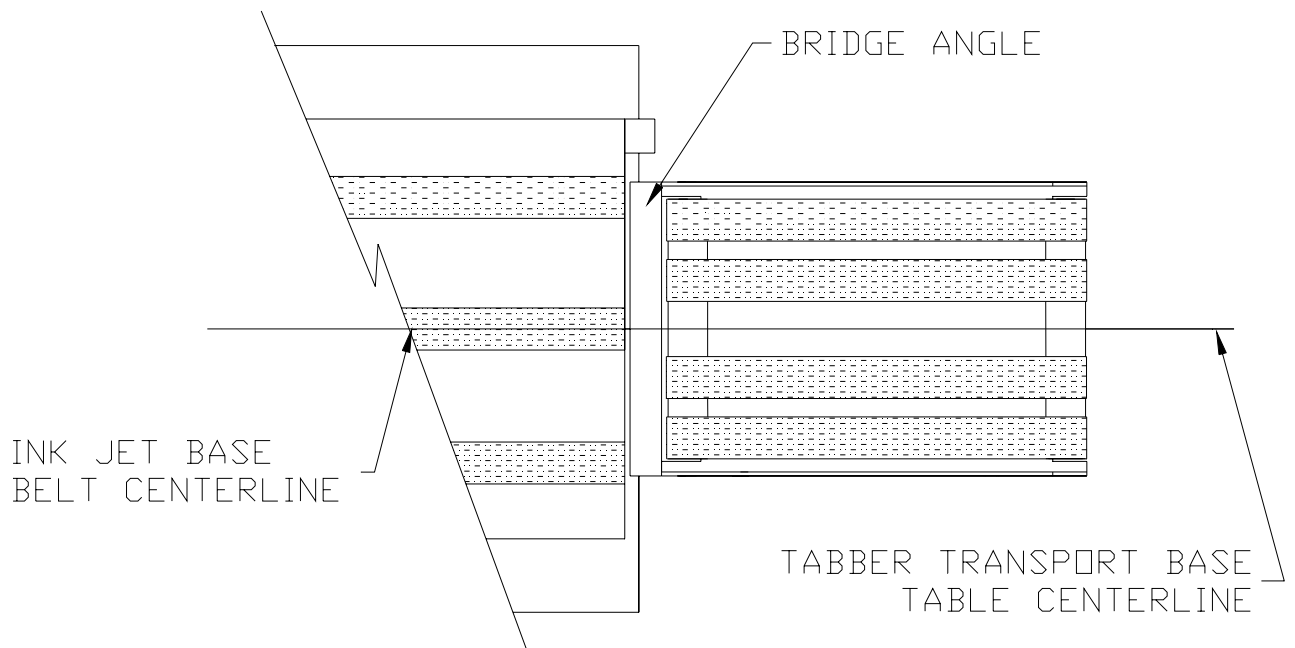


Figure 5



NOTE: SOME ASSMEBLIES REMOVED FOR CLARITY.

FIGURE – 6

#### 4.1.3 Ink Jet Base Setup

All requirements concerning feeding, printing and product position should be met before feeding product through tabber.

#### 4.1.4 Adjust Transport Table Position

Requirement:

Adjust transport table to edge of product path.

Procedure:

1. Feed product from ink jet base to transport table until it just crosses bridge angle. Stop feed.
2. Loosen table lever lock (See Figure 5). Position transport table guide rail 1/8" from product edge (See Figure 7). Lock table lever.
3. Use fine adjust knob (See Figure 5) to complete the adjustment if necessary. The fine adjustment may also be used as a running adjustment to move guide rail towards or away from product edge during operation.

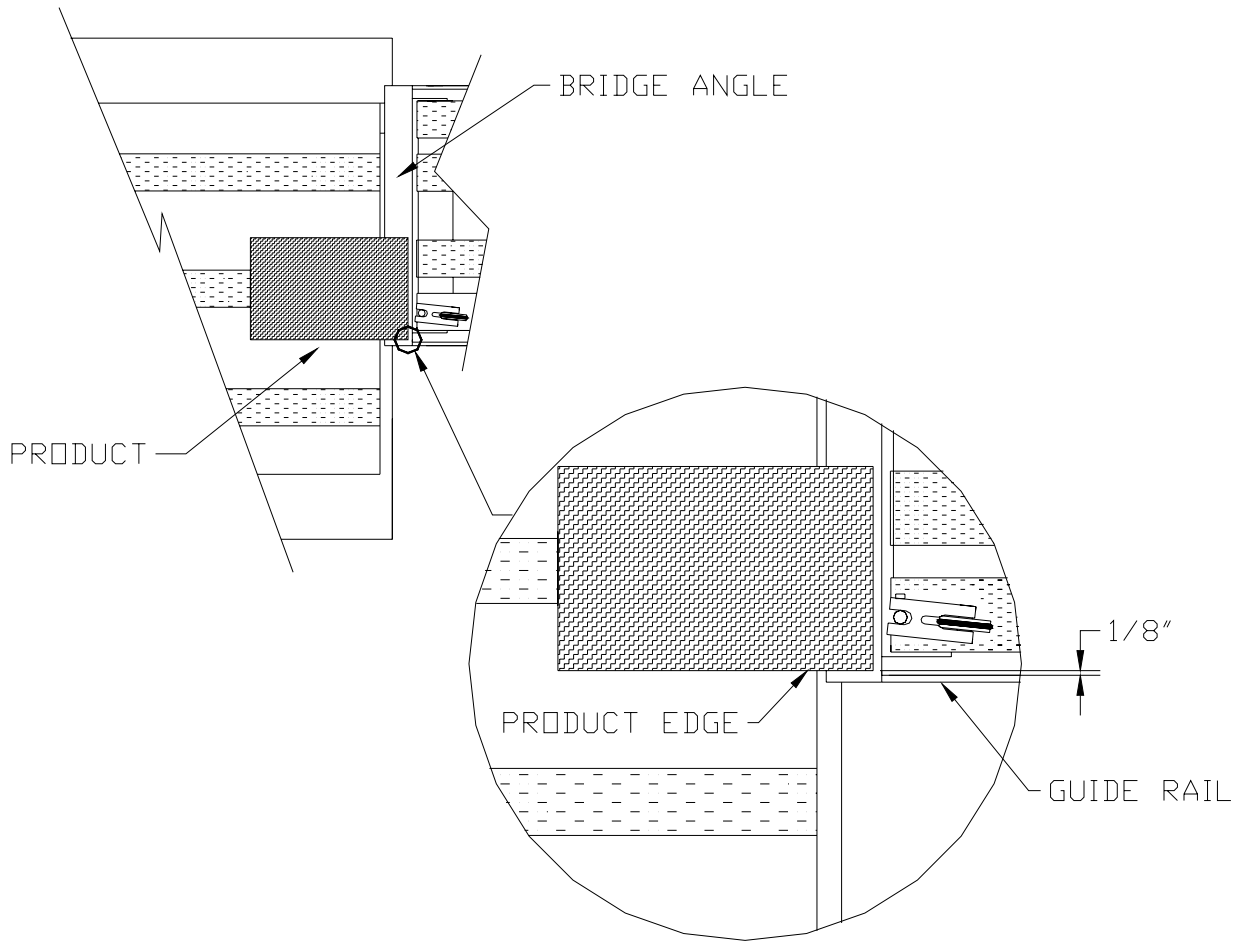


Figure 7

#### 4.1.5 Product Guide and Strap Usage

##### Procedure:

1. Mount strap assemblies (2) provided to square shaft (See Figure 8).

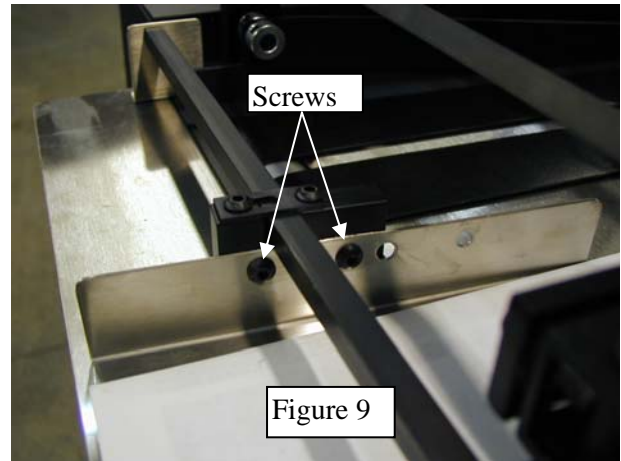
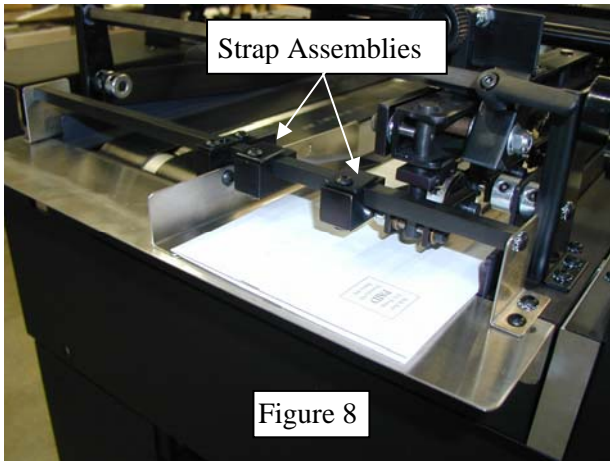
*Note: Straps may be positioned on product to control flatness as desired or removed by loosening screw and rotating retainer cap 180 degrees.*

2. Mount Product Guide (See Figure 9).

*Note: The product guide is provided primarily for use in off line requirements when auxiliary feeders are used. Its purpose is to control product skew that may be experienced using free-standing feeders, normally friction type. Skew is not normally experienced with in line ink jet base use, however guide use may be desirable. The guide is designed with an oversized slot in the mounting block. The assembly may be positioned on any angle to allow entry of skewed product and correct it as it proceeds.*

*Note: The product guide may be mounted on either side of the mounting block to allow use on both the operator's side or non-operator's side. Remove (2) screws (See Figure 9) and reposition guide using the two additional holes provided, on the opposite side of the mounting block.*





#### 4.1.6 Set Gap

The tabbing/labeling system can accept flat product as thick as 5/8 inch. The Product Thickness Adjust Crank controls the gap. Rotate clockwise to increase gap, counterclockwise to decrease gap.

#### Requirement:

The top wrap section must be gapped to product thickness to effectively wrap tabs or secure labels.

#### Procedure:

1. Rotate Product Thickness Crank (See Figure 10) clockwise. Insert product sample to be tabbed between upper output belt and output roller below.
2. Rotate crank counterclockwise until firm pressure is felt by pulling product sample from the belt-roller.

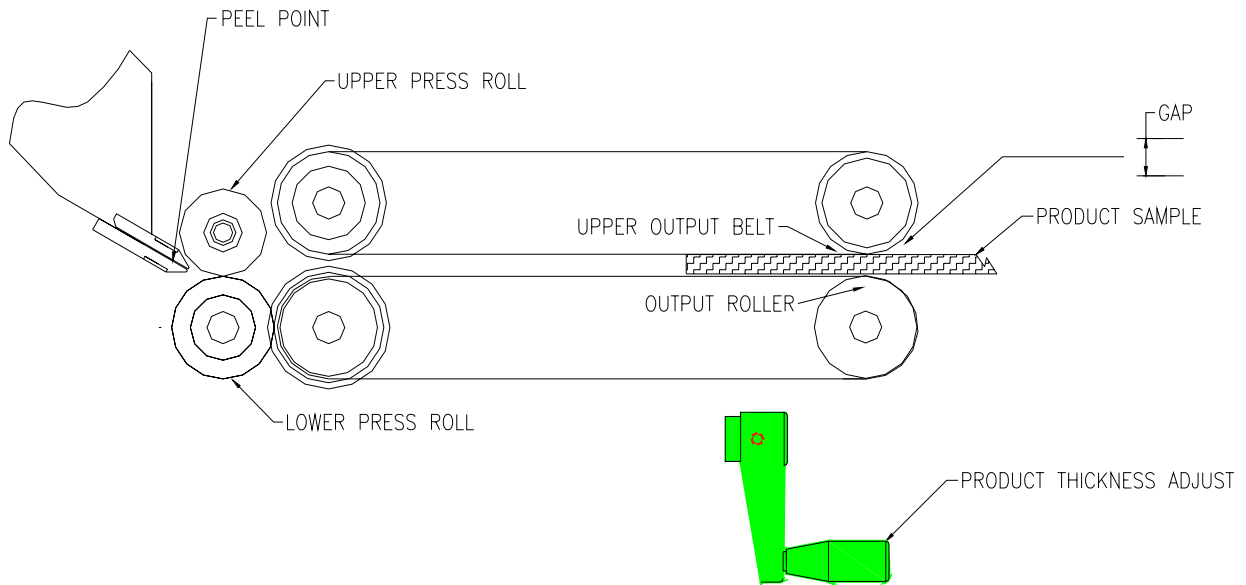


Figure 10

#### 4.1.7 Power-Up System

The tabber control system depends on a small computer processor for its operation. Since electrical line disturbances can adversely affect computers it would be prudent to use a “fairly clean” line to power the tabber. Plug the power cord into a 120VAC 60Hz source. Power-up the base by turning on only the Base Power Rocker Switch. The switch will light up as a confirmation of power application.

#### 4.1.8 Feed Product

Start the base by pressing the Start Pushbutton and adjusting the Speed Control Knob until the speed of tabbing/labeling base matches the speed of the system feeding it. Feed sample product to make sure it enters the transport within 1/8” of the guide rail.

#### 4.1.9 Adjust Registration Wheels

The tabbing/labeling base uses a set of registration wheels to ensure consistent placement and wrap of tabs and labels. The wheels are used to “push” the product against the guide rail guide and secure the product to the transport belt. The first three entry wheels are slaved together on a swivel system that allows angle adjustment to drive the product against the guide rail for registration. The following three drive wheels are fixed in a straight line to maintain registration along the guide rail for accurate tab/label placement on the product.

This registration wheel assembly is designed to function on either side of the transport base. The assembly may be positioned over any portion of the lower transport belts along the square mounting shafts, by loosening lever locks and sliding to desired location. Drive pressure may be increased or decreased by rotating the Wheel Lift Knob. This knob is also used to lift the complete assembly off the lower transport belts for repositioning. The Registration Wheel Assembly functions best when product is delivered 1/8” or less from the guide rail at the entry point. (See Figure 7 of Section 4.1.4)

***Warning: Product feeding and registration must be properly adjusted before tabbing! Turn head power off and move the head aside. Visually check feeding and registration with sample product. Any skew or catch points must be eliminated. A Product Guide and two Hold Down Straps are provided to control the conditions above (See Section 4.1.5)) at the input end of tabber. The primary feeder, free standing friction type, ink jet base friction or vacuum, must also be properly adjusted to eliminate double feeds, product skew or side to side drift.***

Requirement:

Registration wheels must be positioned and adjusted to consistently guide product edge along guide rail, without distorting or causing product stall.

*Note: A fine adjustment limit stop (Figure 13) is provided to control and maintain drive pressure. Turning the knob clockwise limits the down-drive pressure. Turning the knob counterclockwise allows more down-drive pressure to be set. The limit stop allows the assembly to be raised completely from a preset drive position and returned to that position without adjustments.*

Procedure:

1. Loosen lever locks (See Figure 11). Position registration wheel assembly over belt adjacent to guide rail.
2. Adjust angle drive wheel knob to angle three slaved wheels towards guide rail (See Figure 11). Do not adjust wheels to maximum angle. Use minimum angle, increase only as necessary.

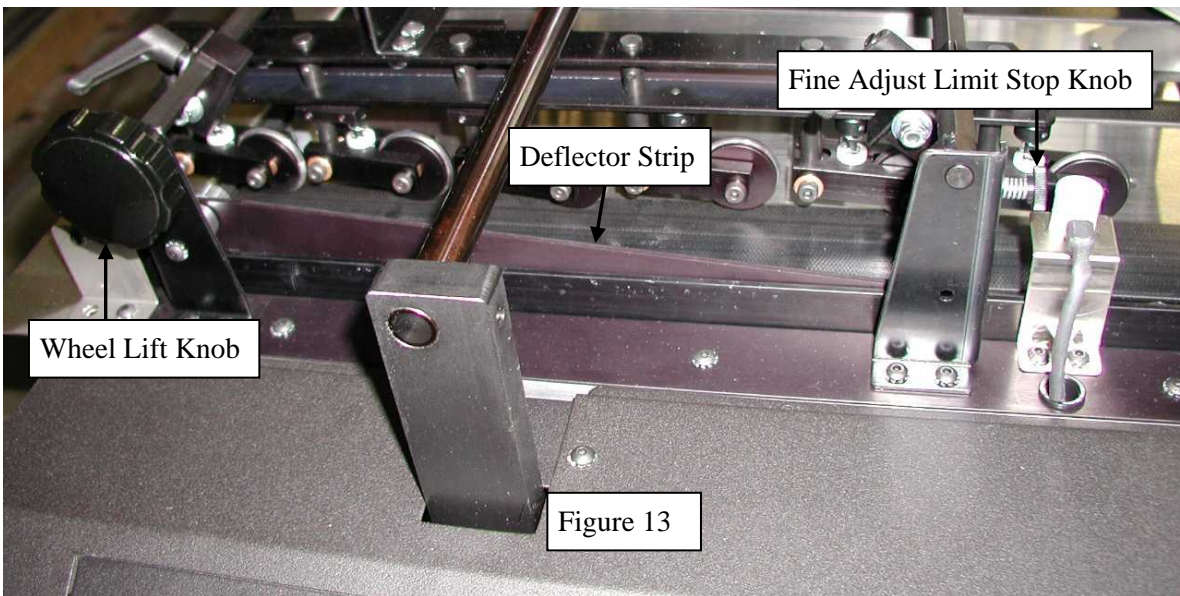
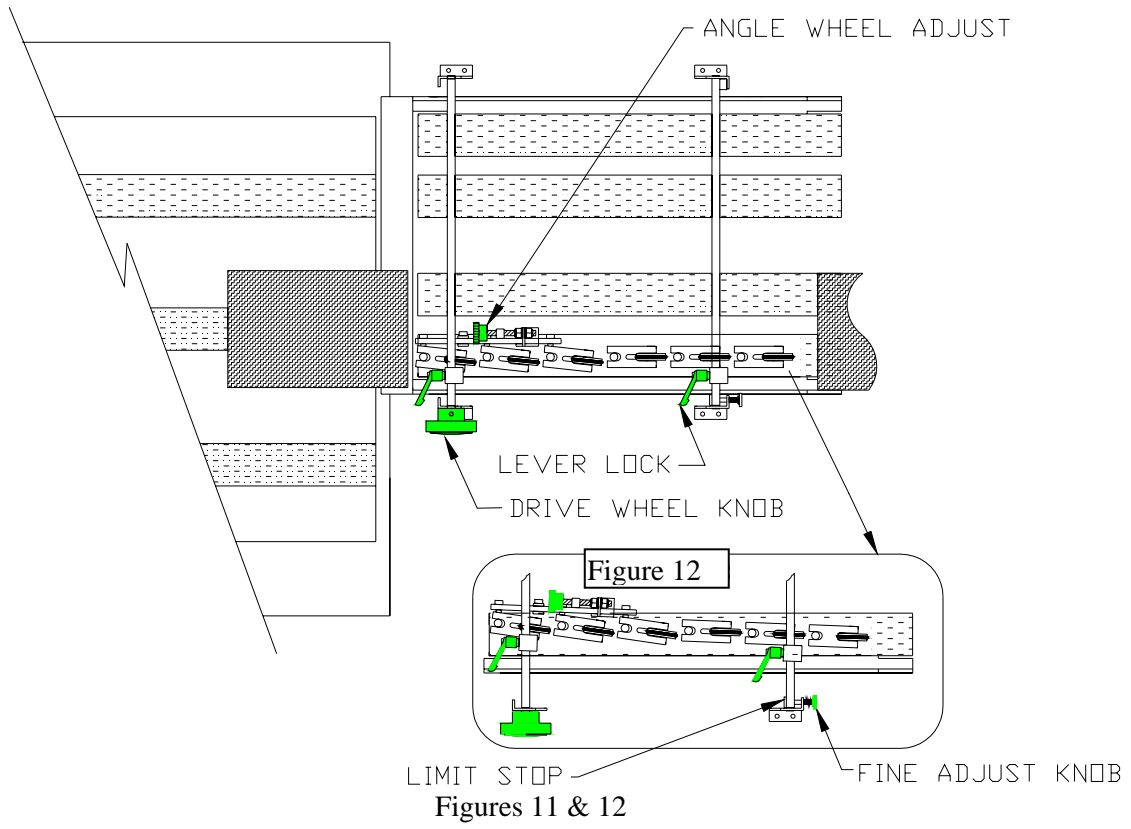
*Note: Occasionally it may be necessary to angle the entire registration system. (See Figure 12) to assure product remains against guide rail. The lever lock mounting assemblies permit a limited amount of misalignment for this purpose.*

Caution:

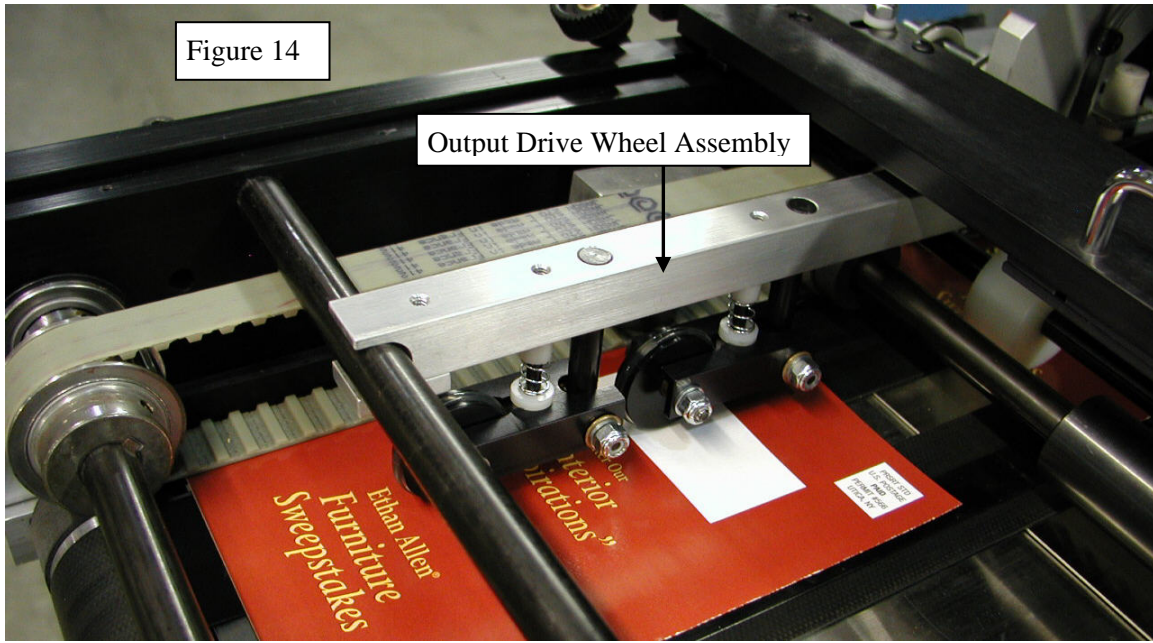
Over adjustment of angle wheels and excessive drive pressure can cause product to ride up guide rail, or cause product to distort or stall. A deflector strip (Figure 13) is provided along each guide rail to help hold down product.

3. Turn base power on and operate base with speed control at slow speed. Rotate drive wheel lift knob (Figure 11) counterclockwise until all drive wheels are turning. Turn fine adjustment knob screw clockwise to meet stop on square shaft (Figure 12).
4. Feed product and visually check to assure product is against the guide rail and not distorted or stalling before entering underneath upper press roll. Further adjust angle wheels and drive wheel down pressure if necessary. Operate at production speed and visually check again.
5. When the requirements above have been met, tabbing operation can proceed.

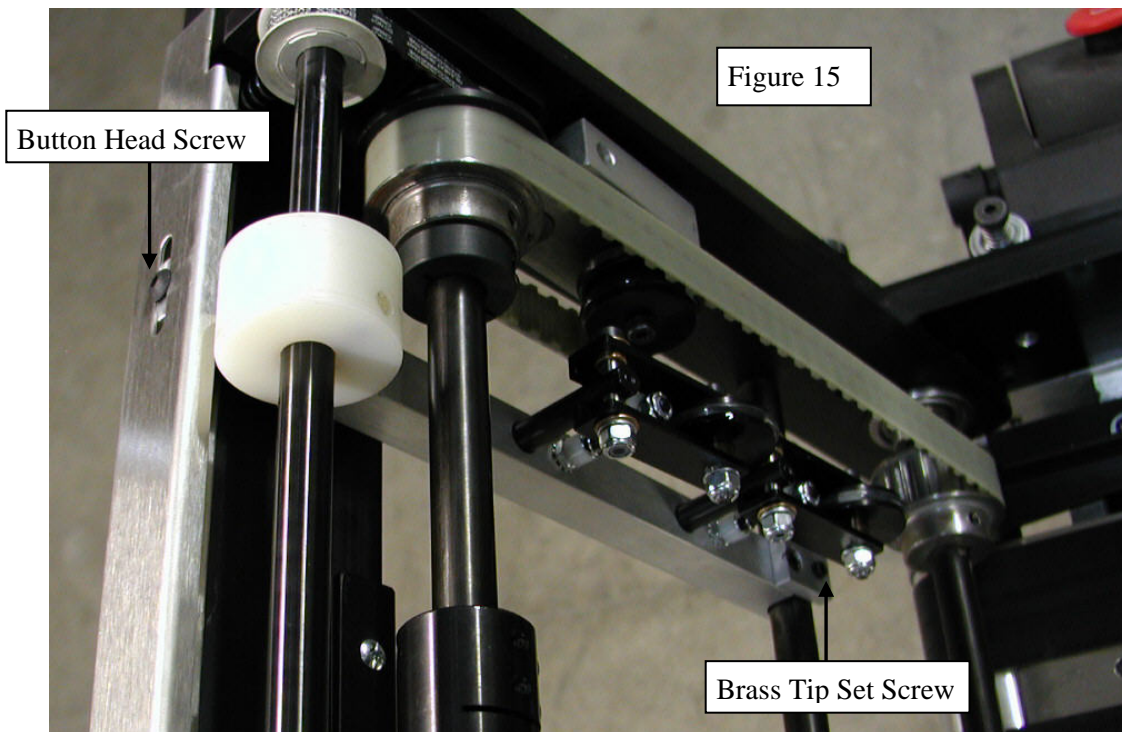
***Warning: For pass thru operation (Not applying tabs), set up as described above. Product conveyed by tabber transport belts only, and not controlled by top drive, can skew and migrate into the gearbelts of the upper wrap section. Severe damage or breakage can occur! When the tabber base is left in-line and used as a conveyor, the same set up procedures for tabbing, labeling or stamp affixing must be used. However, since securing tabs, labels or stamps to the product is not a requirement, the gap setting (See Section 4.1.5) may be opened slightly more than normal for product flow.***



#### 4.1.10 Output Drive Wheels



An Output Drive Wheel Assembly is provided in the Wrap Section (See Figure 14). These wheels assist in controlling the mailpiece when the Wrap Section is gapped.

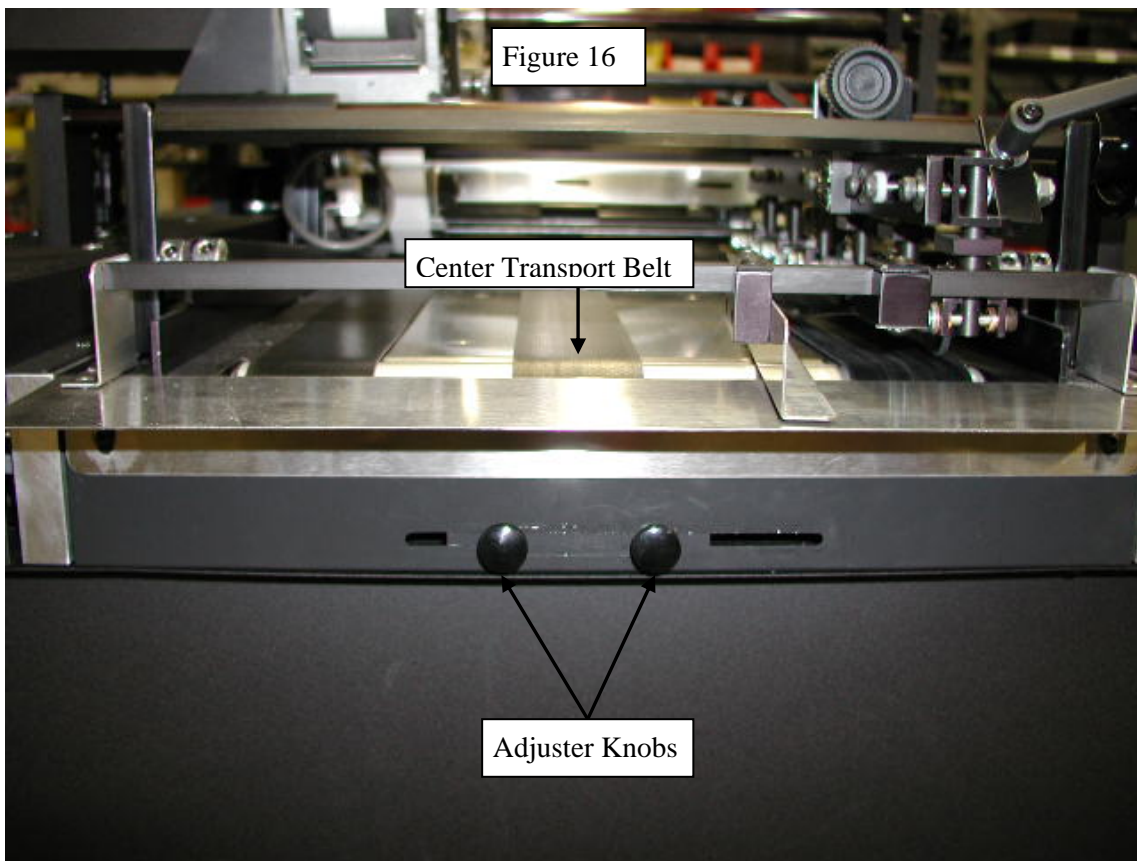


The Output Drive Wheel Assembly may be located on the Operator's Side or Non-Operator's Side. To relocate the Assembly remove Button Head Screw, loosen Brass Tip Set Screw (See Figure 15) and slide assembly to opposite side. Using the other slot provided, replace the Button Head Screw and secure the Brass Tip Set Screw.

Note: The Output Drive Wheel Assembly position may be adjusted within the slots to avoid ink tracking.

**Warning:** For pass thru operation (Not applying tabs), set up as described above. Product conveyed by tabber transport belts only, and not controlled by top drive, can skew and migrate into the gearbelts of the upper wrap section. Severe damage or breakage can occur! When the tabber base is left in-line and used as a conveyor, the same set up procedures for tabbing, labeling or stamp affixing must be used. However, since securing tabs, labels or stamps to the product is not a requirement, the gap setting (See Section 5.1.5) may be opened slightly more than normal for product flow.

#### 4.1.11 Center Belt Adjustment



Requirement: Adjust Center Belt position to support Product Edge.

Note: Transport Base must be powered up to move center belt..

Procedure:

1. Power up Base and operate with Speed Control.
2. Loosen Adjuster Knobs shown in Figure 16.
3. Gently push Adjuster along its slot to position Center Belt as required.
4. Secure Knobs to maintain belt position.

#### 4.1.12 Position Upper Press Rolls

The upper press rolls, located at the input of the wrap section, may be positioned across their drive shaft to secure tabs for wrap tabbing, labeling or stamp application on the product.

Rolls are provided to meet the requirements, and are designed to move by hand. Two press rolls are provided for systems using the standard 2" head, and four rolls are supplied on the 4" wide head systems.

Requirement: Position upper press rolls for wrap tabbing.

Procedure:

1. Loosen wrap section lock knobs and raise pivoting portion of wrap section (Figure 17).
2. Push press roll (1) for operator side or (4) non-operator side (Figure 18), to the outermost position.
3. Release safety lock pin. Return wrap section to operating position and secure lock knobs. Lock knobs must be secured during operation.

Note:

For labeling or stamp affixing requirements, press rolls (1) through (4) may be positioned in various configurations in front of the peel point to meet size requirements.

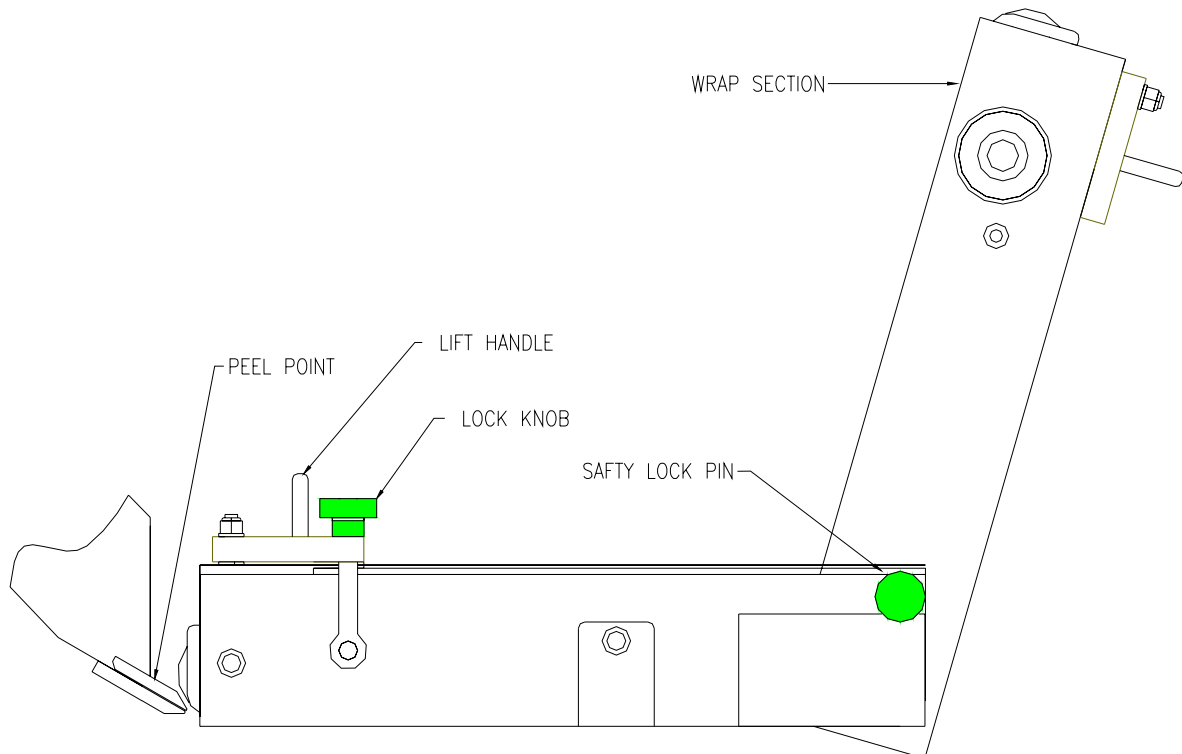


Figure 17

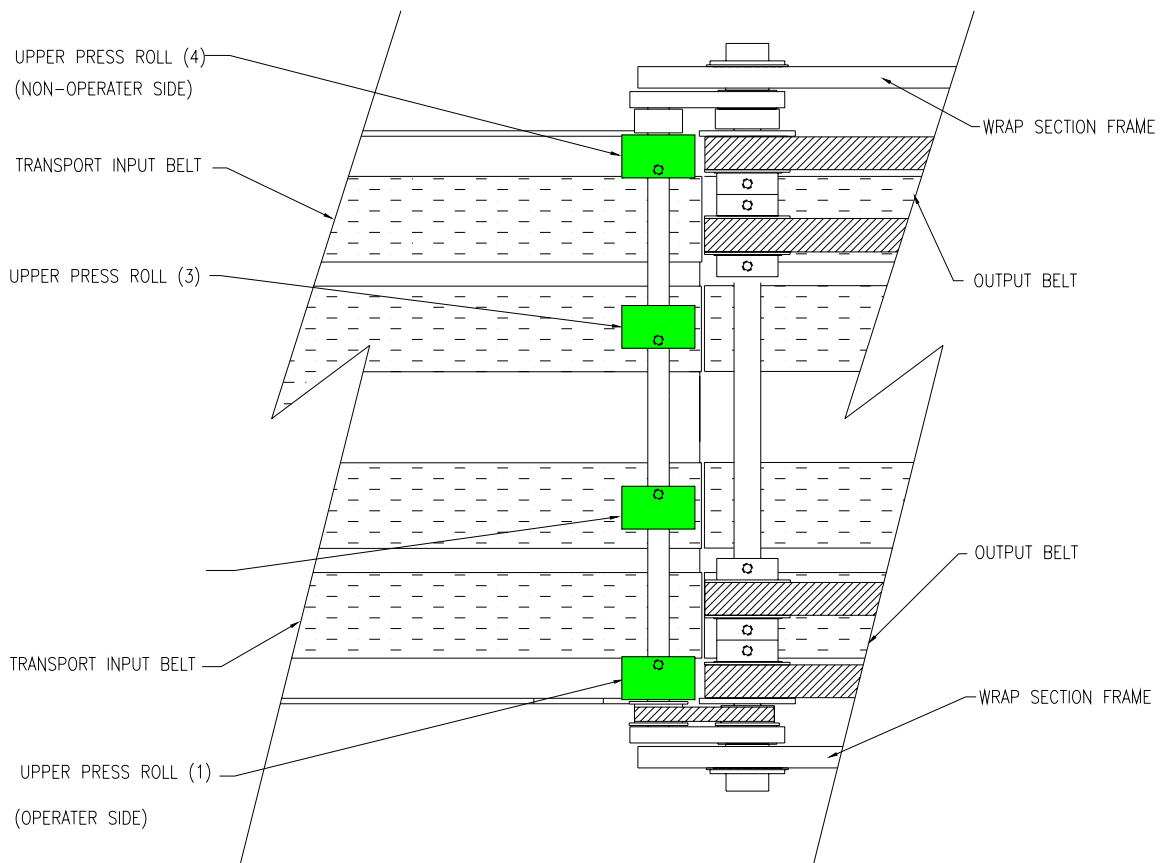


Figure 18

#### 4.1.13 Idler Wheel Adjustments

##### Requirement:

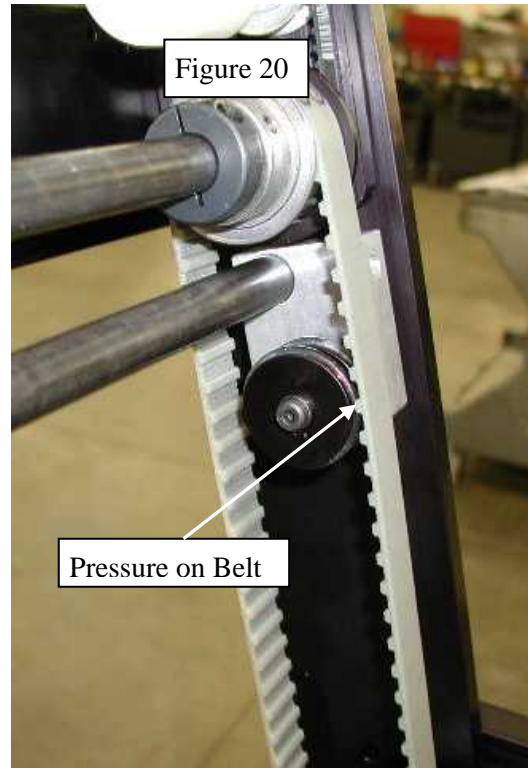
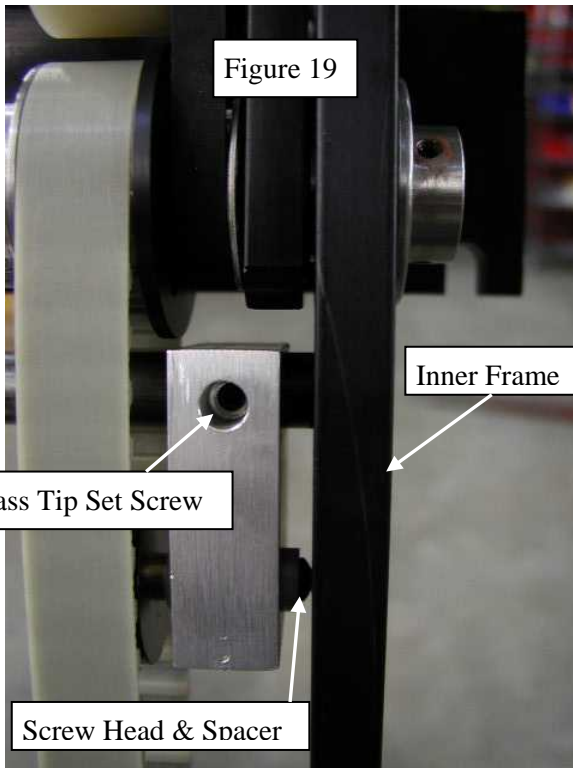
Idler wheel assemblies must be positioned and adjusted correctly to assure tab wrap performance and avoid damage to wrap guide.

*Note: Lexan cover has been removed for clarity. It is not necessary to remove for the following procedure.*

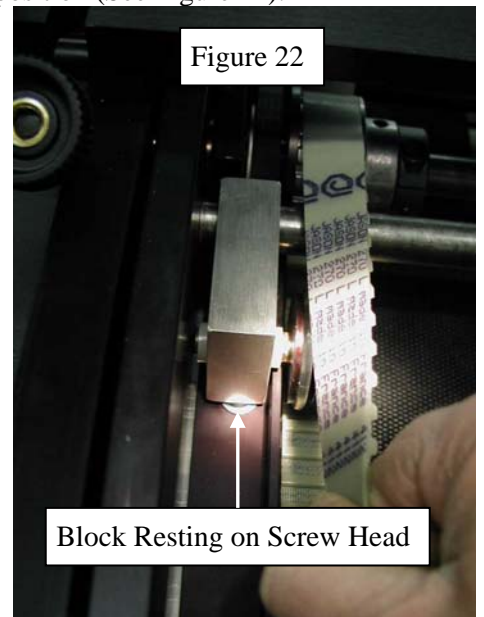
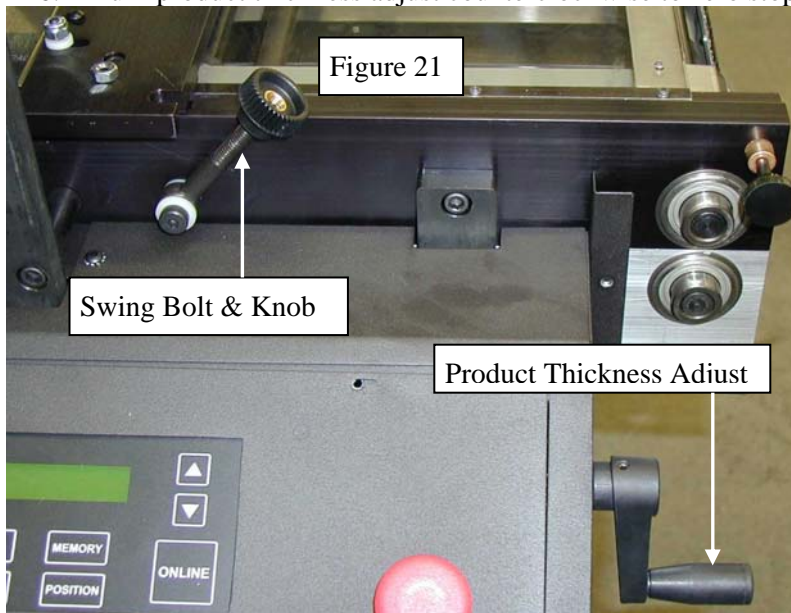
##### Procedure:

1. Raise upper wrap section to lock position.
2. Position block assembly (operator's side shown) with screw head and spacer against inner frame of upper wrap section. See Figure 19.
3. Rotate block wheel assembly on the fixed mounting shaft, causing outward pressure on the belt. See Figure 20.
4. Lightly secure brass tip set screw. See Figure 19.





5. Lower wrap section to operating position and secure with swing bolts and knobs.
6. Turn product thickness adjust counterclockwise to zero stop position (See Figure 21).



*Note: Idler wheel mounting block should be resting firmly on the wrap guide mounting screw head (Figure 22). The block and wheels must straddle the wrap guide right angle, as shown with clearance on each side.*

7. Raise upper wrap section to lock position. Secure brass tip set screw. See Figure 19.
8. Repeat all procedures above for non-operator's side.

*Note: The idler wheel assembly is now adjusted to its correct position and will give tight wrap on all product when the upper wrap assembly is correctly gapped (See Section 4.1.6 Set Gap).*



## 4.2 Head Set-up

The head will be set up differently for different size labels. If the tabs/ labels have a backer width of less than 2 inches, then the head should be set up with the Tab Sensor Assembly and the two “thin” Inner Spool Guides. Labels with a backer width over 2 inches must be set up with the Label Sensor Assembly and the two “wide label” Inner Spool Guides.

The tabbing head utilizes optical sensors to ensure accurate tab/label position. It is important for the tab/ labels to be positioned so their centers run under the optical sensor. When using the label sensor the label threading path is centered on the center of the label guide idlers. When using the Tab Sensor the threading path is centered about 1-3/4” off the main side frame of the head.

### 4.2.1 Install Inner Spool Guides

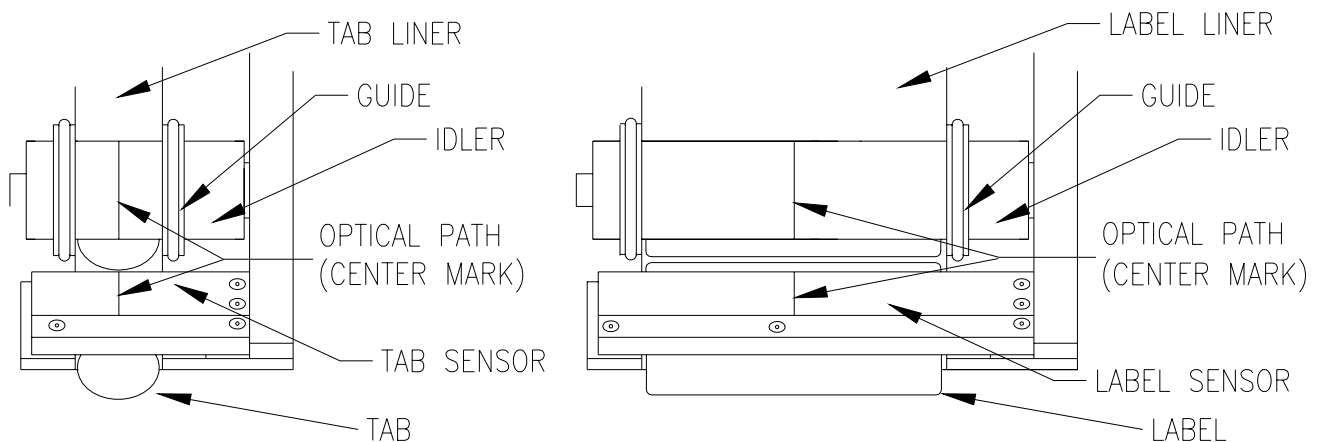
Choose the appropriate spool guides for the tabs/ labels to be run. The exact location of the spool guides depends on the width of the tabs/ labels being run. Keep in mind that it is important for the tabs/labels to be centered on the optical path of the tab/ label sensor. Select the appropriate locating slot on the spool support shaft and engage the locating latch of the guide. The center location is marked on the tab / label sensor and it defines the center for the full threading path.

### 4.2.2 Secure Source Spool

Slip your roll of tabs over the supporting hub of the inner spool support. Push the outer spool support against the side of the source spool, secure with the spool knob. The knob should be tight enough to ensure that the tab/label roll cannot slip on the hub of the inner spool support.

### 4.2.3 Threading

Adjust the tab/label guides on the idlers for the width of the labels to be used. Gap the spring-loaded idlers in both the roll unwind and tab drive sections. Thread according to the figure provided on the main side frame. Note that the unpeeled tabs slide through the tab sensor while the path of the waste liner is under the bottom sensor plate. The Bin Sensor must be located to sense the tab/label liner for proper unwinding.



### 4.2.4 Secure Waste Take-up Spool

Slip an empty tab/label core over the supporting hub of the inner spool support. Secure the threaded end of the liner to the empty core with tape or a label. Push the outer spool support against the side of the core and secure with the spool knob. The knob should be tight enough to

ensure that the take-up roll cannot slip on the hub of the inner spool support. The Take-up Full Sensor must be located to sense the waste tab/label liner for overflow detection.

#### 4.2.5 Adjust Tab Sensor

The tabber uses a pair of optical sensors housed in the tab sensor to register each tab. These sensors are about ½ inch from the “peel point” and “look through” the labels and liner enabling the detection of the tab/label edges. This sensing technique will ensure accurate detection when tuned for the tabs currently being run. Adjustments are made automatically once the operator initiates the tuning process. The adjustment is different for plain paper tabs versus clear plastic or translucent tabs. For paper tabs make sure that only liner is present inside the tab sensor, back feed liner or peel tabs to make this possible. For clear or translucent tabs make sure that the tabs are still attached to the liner, and the lead edge of a liner registration marker must be at the peel point edge.

##### Procedure

- 1) Power-up the head by turning on the Head Power Rocker Switch
- 2) Press the “SETUP” key to access the setup menu. “SETUP” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “ADJUST TAB SENSOR ?” is displayed on the second line of the LCD.
- 4) When using typical paper tabs it is important to have the machine fully threaded, but with no tab present in the tab sensor. It is important to make this setting while only liner is present in the tab sensor. When using translucent or clear tabs it is important to have the machine fully threaded with a tab present in the tab sensor. It is important not to have a liner registration mark directly under the sensor while making the adjustment. Since the optical path of the tab sensor is approximately ½” from the peel point edge, adjusting the sensor after aligning a registration mark with the peel point edge will assure that proper setting will be found.
- 5) The controller will automatically make the optimal sensor adjustment when the “ENTER” key is pressed. The LCD will indicate completion by displaying “TAB SENSOR ADJUSTED”.

“SETTING = xxx% “

The xxx represents the electrical setting used for the sensor. This value should normally range from 70% to 97% when setting with liner in the sensor. A value of 01% indicates sensor disconnection or sensor failure. A value between 01% and 70% probably indicates that the tab sensor requires cleaning. A value of 100% should always be obtained when adjusted with no liner present. A value of less than 100% with no liner would indicate a dirty sensor. The sensor should be adjusted without liner only as a diagnostic tool. The sensor must be readjusted with liner before normal operation.

#### 4.2.6 Adjust Pitch Setting

The distance between the lead edges of two consecutive tabs still attached to release liner defines the Tab Pitch. This is an important value since it defines how far the tab drive will move when it applies tabs. The minimum pitch is 0.75” and the maximum pitch is 7.00”.

**Note:** Since it is difficult for the system to reverse itself, it is always better to enter a lower number for pitch versus a larger number. The system can “self-correct” for any slightly undersized pitch whereas a system with an oversized pitch may never be able to synchronize the tab position. It short, an oversized pitch means bad tab/label placement.

##### Procedure

- 1) Take the system offline.
- 2) Press the “SETUP” key to access the setup menu. “SETUP” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “PITCH: x.xx >\_” is displayed on the second line of the display. The x.xx represents the current setting for tab pitch.
- 4) To increase the Tab Pitch, press the “+” key until the desired location is displayed as the current setting. To decrease the Tab Pitch, press the “-“ key until the desired location is displayed as the current setting.

-Or-

- 5) The desired pitch can be directly entered from the numeric keypad.
- 6) As the new setting is entered it appears to the right of the current setting.
- 7) Once entry of the new value is completed press the “ENTER” key to save the new value. The LCD will indicate completion by replacing the current setting with the new setting.

#### 4.2.7 Select Product Sensor

Through beam type opto-electronic sensors are used to detect the presence of product to be tabbed/ labeled. Since the tabbing takes place at either the front or rear of the unit, product sensors are located at both the front and rear. The operator can select the appropriate product sensor to be active.

##### Procedure

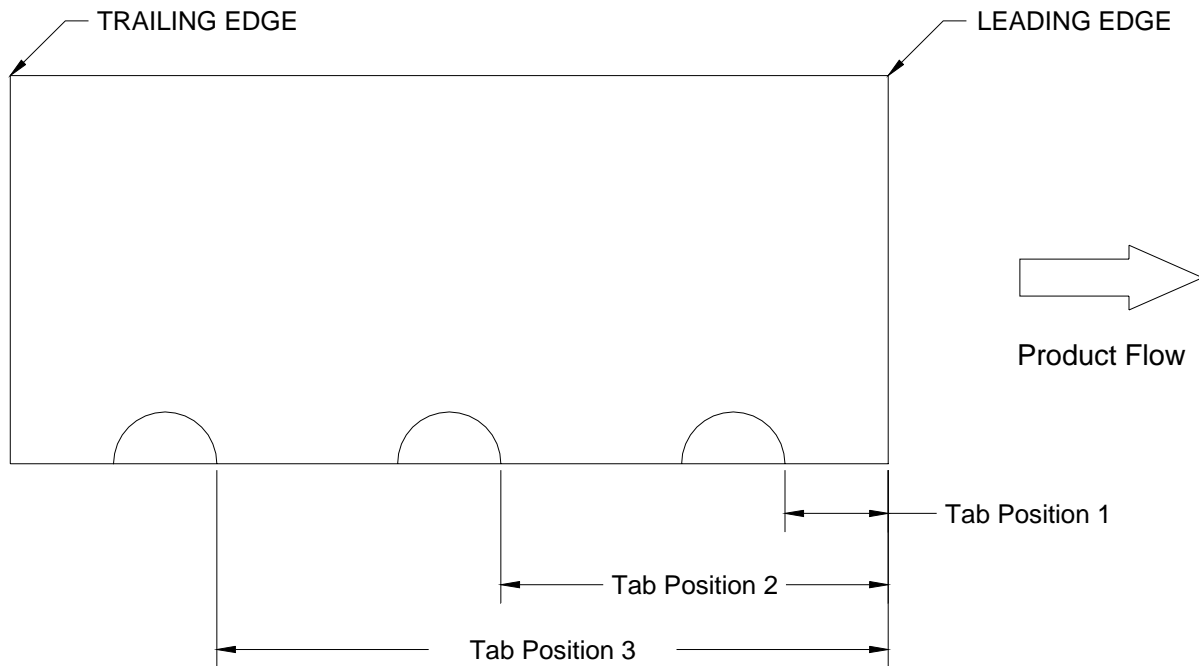
- 1) Take the system offline.
- 2) Press the “SETUP” key to access the setup menu. “SETUP” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “PRODUCT SENSOR: (RIGHT)FRONT or (LEFT)REAR” is displayed on the second line of the LCD. The xxxxxx represent the current count.
- 4) Press the “+” key to change from (RIGHT)FRONT to (LEFT)REAR. Press the “-“ key to change from REAR to FRONT. The LCD will update sensor selection as it is made.

##### Tab/ Label Position Overview

The location and number of tabs/labels to be applied to a single product is controlled by the choices accessed by the “POSITION” key. The “POSITION” key is active only when the unit is offline. The position setting to be displayed and or adjusted is controlled by the “▲” key and or “▼” key. After displaying the setting of interest it can then be adjusted by one of two methods: direct keypad entry or incremental adjustment. The direct keypad entry is accomplished by using the numeric keypad to directly enter the desired position. After the position has been entered the “ENTER” key must be pressed to load the new value into memory. Incremental adjustments are made by using the “+” and or “-“ keys. The current value will be increased by 0.05” every time the “+” key is pressed. The current value will be decreased by 0.05” every time the “-” key is pressed. The maximum number of tabs that can be applied in a single pass is three. The minimum position is 00.00” and the maximum position is 20.00”.

#### 4.2.8 Tab/ Label Position Entry

The distance between the product lead edge and the lead edge of the tab/ label defines the tab/ label positions. The system uses position units measured in inches with a precision on 1/100 of an inch. The three tab positions are defined by their order of application. If only one tab is being applied to a product, then Tab Position # 1 defines its location. If two tabs are applied, then Tab Position # 1 defines the leading edge tab and Tab Position # 2 defines the trailing edge tab. If three tabs are applied, then Tab Position # 1 defines the leading edge tab; Tab Position # 3, and the middle tab is defined by Tab Position #2 define the trailing edge tab. When using more than one tab the second or third tab position must have a value greater than the (previous tab position value + Tab Pitch)



#### Procedure

- 1) Take the system offline.
- 2) Press the “POSITION” key to access the test menu. “POSITION” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “TAB POS x: yy.yy>\_” is displayed on the second line of the display. The x represents the tab position of interest and the yy.yy represents the current setting for that tab position.
- 4) To increase the Tab Position from the leading edge press the “+” until the desired location is displayed as the current setting. To decrease the Tab Position from the leading edge press the “-“ until the desired location is displayed as the current setting.

-Or-

- 5) The desired position can be directly entered from the numeric keypad.
- 6) As the new setting is entered it appears to the right of the current setting.
- 7) Once entry of the new value is completed press the “ENTER” key to save the new value. The LCD will indicate completion by replacing the current setting with the new setting.

#### 4.2.9 Number of Tabs

The unit can apply 1 to 3 tabs on a single product in one pass. The “POSITION” key gives access to this setting.

#### Procedure

- 1) Take the system offline.
- 2) Press the “POSITION” key to access the position menu. “POSITION” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “NUMBER OF TABS: x” is displayed on the second line of the display. The x represents the current setting for the number of tabs to be applied to a given product.
- 4) To increase the Number of Tabs to be applied, press the “+” key until the desired number is displayed as the current setting. To decrease the Number of Tabs to be applied, press the “-“ key until the desired number is displayed as the current setting.

#### 4.2.10 Begin Tabbng

The system should now be ready to apply tabs/labels. Turn the head online by pressing the online key on the operator interface.





## Chapter 5 - Controller Programming/Diagnostics

### 5.1 Setup Programming

The operator can adjust many of the components and parameters necessary to setup the unit, through the operator interface. The “SETUP” key is used to access these adjustments and is active only when the unit is offline. The setup parameter to be displayed and or adjusted is controlled by the “▲” key and or “▼” key. The components/ parameters that can be adjusted are listed below:

- Tab Pitch
- Job Memory
- Auto Tab Calculator Product Size
- Product/ Tab Sensor Offset
- Tab Sensor Sensitivity
- Counter Reset
- Product Sensor Selection

#### 5.1.1 Pitch Setting

The distance between the lead edges of two consecutive tabs still attached to release liner defines the Tab Pitch. This is an important value since it defines how far the tab drive will move when it applies tabs. The minimum pitch is 0.75” and the maximum pitch is 7.00”.

#### Procedure

- 1) Take the system offline.
- 2) Press the “SETUP” key to access the setup menu. “SETUP” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “PITCH: x.xx >\_” is displayed on the second line of the display. The x.xx represents the current setting for tab pitch.
- 4) To increase the Tab Pitch, press the “+” key until the desired location is displayed as the current setting. To decrease the Tab Pitch, press the “-“ key until the desired location is displayed as the current setting.

-Or-

- 5) The desired pitch can be directly entered from the numeric keypad.
- 6) As the new setting is entered it appears to the right of the current setting.
- 7) Once entry of the new value is completed press the “ENTER” key to save the new value. The LCD will indicate completion by replacing the current setting with the new setting.

#### 5.1.2 Save Setup to Memory

Two memory locations are reserved for saving the most frequent job settings. Memory location 1 can retain the Tab Pitch, Tab Position # 1, Tab Position # 2, Tab Position # 3, Number of Tabs, and Product Sensor Selection settings. Memory location 2 can retain the Tab Pitch, Tab Position # 1, Tab Position # 2, Number of Tabs, and Product Sensor Selection settings.

#### Procedure

- 1) Take the system offline.
- 2) Press the “SETUP” key to access the setup menu. “SETUP” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “SAVE(M1 or M2) >\_” is displayed on the second line of the display.
- 4) To save the current settings enter either “1” or “2” from the numeric keypad, then press the “ENTER” key.
- 5) The LCD will display the message “Mx SAVED”. The x represents the number of the memory location selected by the operator.

### 5.1.3 Auto Tab Calculator Product Size

The controller can calculate the proper location(s) for tabs on any given mail piece. The operator must enter the size of the mail piece (product), the number of tabs to be applied, and the tab pitch. The system can then calculate and program the appropriate tab positions. The minimum product size is 05.00” and the maximum is 20.00”.

#### Procedure

- 1) Take the system offline.
- 2) Press the “SETUP” key to access the setup menu. “SETUP” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “AUTO: xx.xx >\_” is displayed on the second line of the LCD. The xx.xx represents the current product size to be used by the calculator.
- 4) Increase the product size by pressing the “+” key until the desired size is displayed as the current setting. Decrease the product size by pressing the “-“ key until the desired size is displayed as the current setting.

-Or-

- 5) The desired size can be directly entered from the numeric keypad. As the new setting is entered it appears to the right of the current setting.
- 6) Once entry of the new value is completed press the “ENTER” key to calculate the new position values. The LCD will indicate completion by displaying the newly calculated positions “TAB 1 TAB 2 TAB 3”

xx.xx yy.yy zz.zz

### 5.1.4 Product/ Tab Sensor Offset

The controller must know the distance between the product sensor and tab sensor (peel point) in order to accurately place tabs at the desired location. When the operator makes small mechanical adjustments of the tab sensor location, the distance between the product and tab sensors will also be changed. This programmed offset must be kept up to date with sensor movements, in order to obtain the highest positional accuracy. Although the minimum offset is 2.00” and the maximum is 9.00”, only small changes to the default offset should be needed.

#### Procedure

- 1) Take the system offline.

- 2) Press the “SETUP” key to access the setup menu. “SETUP” should be displayed on the first line of the display.
  - 3) Press either the “▲” or “▼” until “SENSOR: x.xx >\_” is displayed on the second line of the LCD. The x.xx represents the current setting for sensor offset.
  - 4) To increase the Sensor Offset, press the “+” key until the desired value is displayed as the current setting. To decrease the Sensor Offset, press the “-“ key until the desired value is displayed as the current setting.
- Or-
- 5) The desired offset can be directly entered from the numeric keypad.
  - 6) As the new setting is entered it appears to the right of the current setting.
  - 7) Once entry of the new value is completed press the “ENTER” key to save the new value. The LCD will indicate completion by replacing the current setting with the new setting.

### 5.3.5 Tab Sensor Sensitivity

The controller must know the location of each tab edge in order to place the tab accurately on product. Through beam type opto-electronic sensors are used to “look through” the liner and tabs. The electronics can detect a significant contrast between just liner (found between tabs) and the combination of tabs on top of the release liner. Since this accurate detection is so important, setting the correct setting has been made very simple. This adjustment should be made periodically since dust and debris can block the optical path, thus affecting operation. It is also important to make the adjustment whenever setting up for a different type/ manufacturer of tab.

#### Procedure

- 1) Take the system offline.
- 2) Press the “SETUP” key to access the setup menu. “SETUP” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “ADJUST TAB SENSOR ?” is displayed on the second line of the LCD.
- 4) When using typical paper tabs it is important to have the machine fully threaded, but with no tab present in the tab sensor. It is important to make this setting while only liner is present in the tab sensor. When using translucent or clear tabs it is important to have the machine fully threaded with a tab present in the tab sensor. It is important not to have a liner registration mark directly under the sensor while making the adjustment. Since the optical path of the tab sensor is approximately ½” from the peel point edge, adjusting the sensor after aligning a registration mark with the peel point edge will assure that proper setting will be found.
- 5) The controller will automatically make the optimal sensor adjustment when the “ENTER” key is pressed. The LCD will indicate completion by displaying :  
“TAB SENSOR ADJUSTED”.  
“SETTING = xxx% “

The xxx represents the electrical setting used for the sensor. This value should normally range from 70% to 97% when setting with liner in the sensor. A value of 01% indicates sensor disconnection or sensor failure. A value between 01% and 70% probably indicates that the tab sensor requires cleaning. A value of 100% should always be obtained when adjusted with no liner present. A value of less than 100% with no liner would indicate a dirty sensor. The sensor should be adjusted without liner only as a diagnostic tool. The sensor must be readjusted with liner before normal operation.

### 5.3.6 Counter Reset

The controller displays and records a product count. The operator can reset this count to zero at any time. The current count is retained in memory at power down and recalled at power up.

## Procedure

- 1) Take the system offline.
- 2) Press the “SETUP” key to access the setup menu. “SETUP” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “RESET COUNT ? xxxxxx” is displayed on the second line of the display. The xxxxxx represent the current count.
- 4) Press the “ENTER” key to reset the counter. The LCD will be updated upon reset and now display “RESET COUNT ? 000000”.

### 5.3.7 Product Sensor Selection

Through beam type opto-electronic sensors are used to detect the presence of product to be tabbed/ labeled. Since the tabbing takes place at either the front or rear of the unit, product sensors are located at both the front and rear. The operator can select the appropriate product sensor to be active.

## Procedure

- 1) Take the system offline.
- 2) Press the “SETUP” key to access the setup menu. “SETUP” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “PRODUCT SENSOR: (RIGHT)FRONT or (LEFT)REAR” is displayed on the second line of the LCD. The xxxxxx represent the current count.
- 4) Press the “+” key to change from (RIGHT)FRONT to (LEFT)REAR. Press the “-“ key to change from REAR to FRONT. The LCD will update sensor selection as it is made.

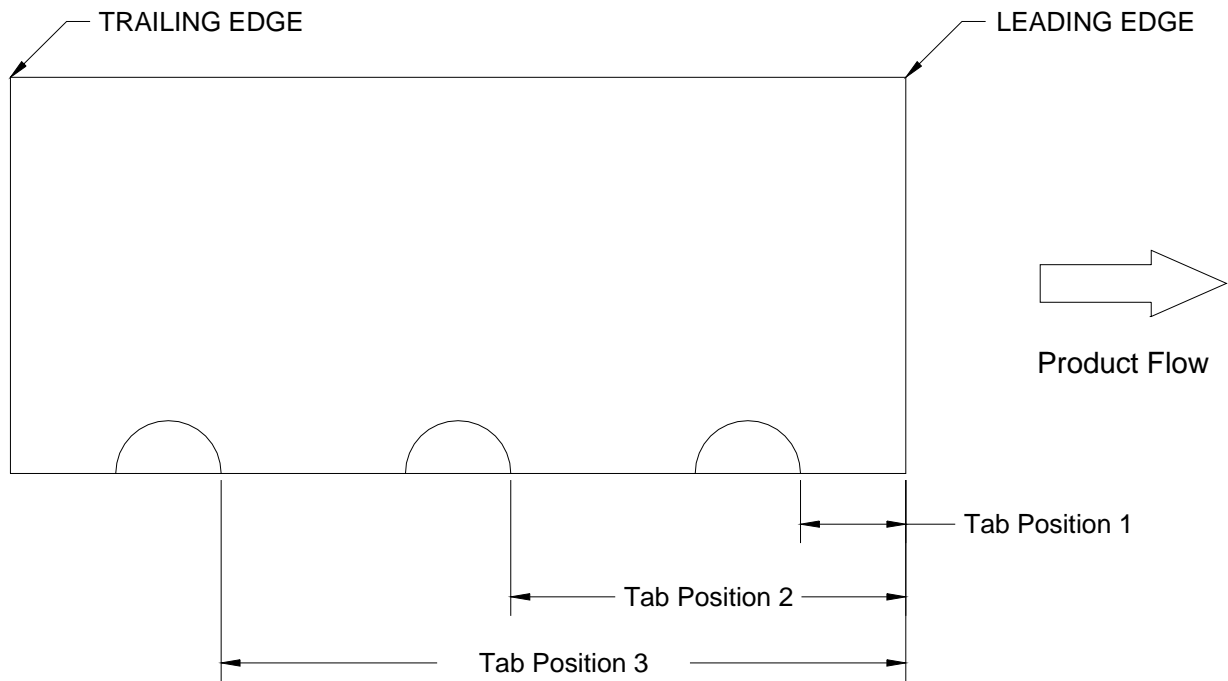
## **5.2 Position Programming**

The location and number of tabs/labels to be applied to a single product is controlled by the choices accessed by the “POSITION” key. The “POSITION” key is active only when the unit is offline. The position setting to be displayed and or adjusted is controlled by the “▲” key and or “▼” key. After displaying the setting of interest it can then be adjusted by one of two methods: direct keypad entry or incremental adjustment. The direct keypad entry is accomplished by using the numeric keypad to directly enter the desired position. After the position has been entered the “ENTER” key must be pressed to load the new value into memory. Incremental adjustments are made by using the “+” and or “-“ keys. The current value will be increased by 0.05” every time the “+” key is pressed. The current value will be decreased by 0.05” every time the “-” key is pressed. The maximum number of tabs that can be applied in a single pass is three. The minimum position is 00.00” and the maximum position is 20.00”.

### 5.2.1 Tab/ Label Position Entry

The distance between the product lead edge and the lead edge of the tab/ label defines the tab/ label positions. The system uses position units measured in inches with a precision on 1/100 of an inch. The three tab positions are defined by their order of application. If only one tab is being applied to a product, then Tab Position # 1 defines its location. If two tabs are applied, then Tab Position # 1 defines the leading edge tab and Tab Position # 2 defines the trailing edge tab. If three tabs are applied, then Tab Position # 1 defines the leading edge tab; Tab Position # 3

defines the trailing edge tab, and the middle tab is defined by Tab Position #2. When using more than one tab the second or third tab position must have a value greater than the (previous tab position value + Tab Pitch).



#### Procedure

- 1) Take the system offline.
- 2) Press the “POSITION” key to access the test menu. “POSITION” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “TAB POS x: yy.yy>\_” is displayed on the second line of the display. The x represents the tab position of interest and the yy.yy represents the current setting for that tab position.
- 4) To increase the Tab Position from the leading edge press the “+” until the desired location is displayed as the current setting. To decrease the Tab Position from the leading edge press the “-“ until the desired location is displayed as the current setting.

-Or-

- 5) The desired position can be directly entered from the numeric keypad.
- 6) As the new setting is entered it appears to the right of the current setting.
- 7) Once entry of the new value is completed press the “ENTER” key to save the new value. The LCD will indicate completion by replacing the current setting with the new setting.

#### 5.2.2 Number of Tabs

The unit can apply 1 to 3 tabs on a single product in one pass. The “POSITION” key gives access to this setting.

#### Procedure

- 1) Take the system offline.

- 2) Press the “POSITION” key to access the position menu. “POSITION” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “NUMBER OF TABS: x” is displayed on the second line of the display. The x represents the current setting for the number of tabs to be applied to a given product.
- 4) To increase the Number of Tabs to be applied, press the “+” key until the desired number is displayed as the current setting. To decrease the Number of Tabs to be applied, press the “-“ key until the desired number is displayed as the current setting.

## 5.4 Head Diagnostics/ Test

The electrical control system of the unit is capable of testing 15 critical components. The operator must select which test is to be performed from the operator interface. The unit must be offline before any tests are run. The components/ parameters that can be tested are listed below:

- Software Version
- Tab Drive Cycle Test
- Stop Relay Test
- Motor / Brake Test (Take-up motor/ Unwind drive motor/ Source spool brake)
- Base Cover Switch Test
- Head Cover Switch Test
- Bin Sensor Test
- Take-up Sensor Test
- Left Product Sensor Test
- Right Product Sensor Test
- Tab Sensor Test
- Encoder Test
- Factory Reset

### 5.4.1 Software Version

It is often important to know the version of the firmware that is running on a system. The firmware version will often determine the capabilities of the unit. This test will simply display the version number of firmware installed on the unit.

#### Procedure

- 1) Take the system offline.
- 2) Press the “TEST” key to access the test menu. “TEST” should be displayed on the first line of the display.

- 3) Press either the “▲” or “▼” until “VERSION X.X” is displayed on the second line of the display. (X.X will be the version number of interest)

#### 5.4.2 Tab Drive Cycle Test

The Tab Drive Cycle Test is used to test the function of the Tab Drive Motor. The Tab Drive Motor is responsible for the accurate application of the tabs/labels.

##### Procedure

- 1) Take the system offline.
- 2) Remove any tabs/ labels from the head before conducting this test.
- 3) Press the “TEST” key to access the test menu. “TEST” should be displayed on the first line of the display.
- 4) Press either the “▲” or “▼” until “TAB DRIVE CYCLE: OFF” is displayed on the second line of the display.
- 5) Start the test by pressing the “ENTER” key.
- 6) While the test is being run the display should read “TAB DRIVE CYCLE: ON” and The Tab Drive Wheel should alternate between 3 different states. The wheel should run forward at high speed (2 second duration), then stop or rotate very slowly (2 second duration), then run reverse at high speed (2 second duration), followed again by a stopped or very slow state. The cycle will continue repeating until the “ENTER” key is used to stop the test.

#### 5.4.3 Stop Relay Test

The Stop Relay allows the control system to shutdown the base whenever serious problems have been detected. This test allows the operator to test the function of this relay.

##### Procedure

- 1) Take the system offline.
- 2) Press the “TEST” key to access the test menu. “TEST” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “STOP RELAY: OFF” is displayed on the second line of the display.
- 4) Run the base by pressing the “START” button. The base should stop if the “ENTER” key is pressed. After the “ENTER” key is pressed STOP RELAY: ON” will display on the second line of the LCD.

#### 5.4.4 Motor/ Brake Test

Three DC gearmotors are used to: 1) unwind the source spool, 2) brake the rotation of the source spool, and 3) take-up the waste liner. The Motor/Brake Test allows the operator to test the fitness of each of these gearmotors.

##### Procedure

- 1) Take the system offline.
- 2) Remove any tabs/ labels from the head before conducting this test.
- 3) Press the “TEST” key to access the test menu. “TEST” should be displayed on the first line of the display.

- 4) Press either the “▲” or “▼” until “MOTOR/ -BRAKE: OFF” is displayed on the second line of the display.
- 5) Press the “ENTER” key to start the test. The second line of the LCD will display “MOTOR/ -BRAKE: ON”. While this test is being run the take-up motor should run continuously. The unwind motor will run when the bin sensor is not blocked and stop when the bin sensor is blocked. The source spool will brake when the bin sensor is blocked; the braking action is released when the bin sensor is not blocked.

#### 5.4.5 Base Cover Test

**Note \*\*\*\*** Due to a change intended to enhance the safety of the tabbing system, this test will now give invalid results. Do not use this test to diagnose the condition of the magnetic switches on the base cover.

#### 5.4.6 Head Cover Test

A magnetic switch senses the condition of the head cover. This switch is used, as a safety interlock that prevents the system from operating while the cover is open. The switch condition is displayed while this test is being run.

Procedure

- 1) Take the system offline.
- 2) Press the “TEST” key to access the test menu. “TEST” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “HEAD COVER: OPEN” or “HEAD COVER: CLOSED” is displayed on the second line of the display.
- 4) The LCD display will indicate the current state of the head cover while this test is being run.

#### 5.4.7 Bin Sensor Test

A retro-reflective sensor is used to determine the state of the tab/label bin. The sensor is used to ensure that some tabs/labels have been unwound from the source spool and are ready for application. The bin condition is displayed while this test is being run.

Procedure

- 1) Take the system offline.
- 2) Press the “TEST” key to access the test menu. “TEST” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “BIN SENSOR: BLOCKED” or “BIN SENSOR: UNBLOCKED” is displayed on the second line of the display.



- 4) The LCD display will indicate the current state of the bin sensor while this test is being run.

#### 5.4.8 Take-up Sensor Test

A reflective sensor is used to determine when the waste take-up spool is filled to capacity. The sensor condition is displayed while this test is being run.

##### Procedure

- 1) Take the system offline.
- 2) Press the “TEST” key to access the test menu. “TEST” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “TAKE-UP : BLOCKED” or “TAKE-UP: UNBLOCKED” is displayed on the second line of the display.
- 4) The LCD display will indicate the current state of the take-up sensor while this test is being run.

#### 5.4.9 Left Product Sensor Test

A “through beam” type opto-electronic sensor is used to sense the edge of the product about to be tabbed/ labeled. The sensor condition is displayed while this test is being run.

##### Procedure

- 1) Take the system offline.
- 2) Press the “TEST” key to access the test menu. “TEST” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “LF PRODUCT: BLOCKED” or “LF PRODUCT: UNBLOCKED” is displayed on the second line of the display.
- 4) The LCD display will indicate the current state of the left product sensor while this test is being run.

#### 5.4.10 Right Product Sensor Test

A “through beam” type opto-electronic sensor is used to sense the edge of the product about to be tabbed/ labeled. The sensor condition is displayed while this test is being run.

##### Procedure

- 1) Take the system offline.
- 2) Press the “TEST” key to access the test menu. “TEST” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “RT PRODUCT: BLOCKED” or “RT PRODUCT: UNBLOCKED” is displayed on the second line of the display.
- 4) The LCD display will indicate the current state of the right product sensor while this test is being run.

#### 5.4.11 Tab/ Label Sensor Test

A “through beam” type opto-electronic sensor is used to sense the edge of the tab/ label about to be dispensed. The sensor condition is displayed while this test is being run.

##### Procedure

- 1) Take the system offline.
- 2) Press the “TEST” key to access the test menu. “TEST” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “TAB SEN: BLOCKED” or “TAB SEN: UNBLOCKED” is displayed on the second line of the display.
- 4) The LCD display will indicate the current state of the tab/label sensor while this test is being run.

#### 5.4.12 Encoder Test

An optical encoder is used to sense product speed and position information. The encoder test displays a running pulsewheel count from the encoder.

##### Procedure

- 1) Take the system offline.
- 2) Press the “TEST” key to access the test menu. “TEST” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “ENCODER: 00000 is displayed on the second line of the display.
- 4) The LCD will display a running count from the encoder. The count overflows to zero after reaching a maximum count of 65,535. The encoder should register approximately 150 counts for every inch of transport belt travel.

#### 5.4.13 Factory Reset

The factory reset allows the operator to reset all operator programmable settings to their original factory settings. This could be necessary if the system memory becomes corrupt. Symptoms that may indicate the need for a factory reset include; tabs/ labels significantly and repeatedly misplaced, or no tabs/ labels applied at all.

##### Procedure

- 1) Take the system offline.
- 2) Press the “TEST” key to access the test menu. “TEST” should be displayed on the first line of the display.
- 3) Press either the “▲” or “▼” until “FACTORY RESET ?” is displayed on the second line of the display.
- 4) Press the “ENTER” key to initiate the reset. Upon completion, the LCD will display “FACTORY SETTINGS LOADED TO MEMORY”.

## **Chapter 6 – Troubleshooting**



# Chapter 7 – Appendix

## FIGURE A1 – BASE CONTROL SYSTEM DIAGRAM

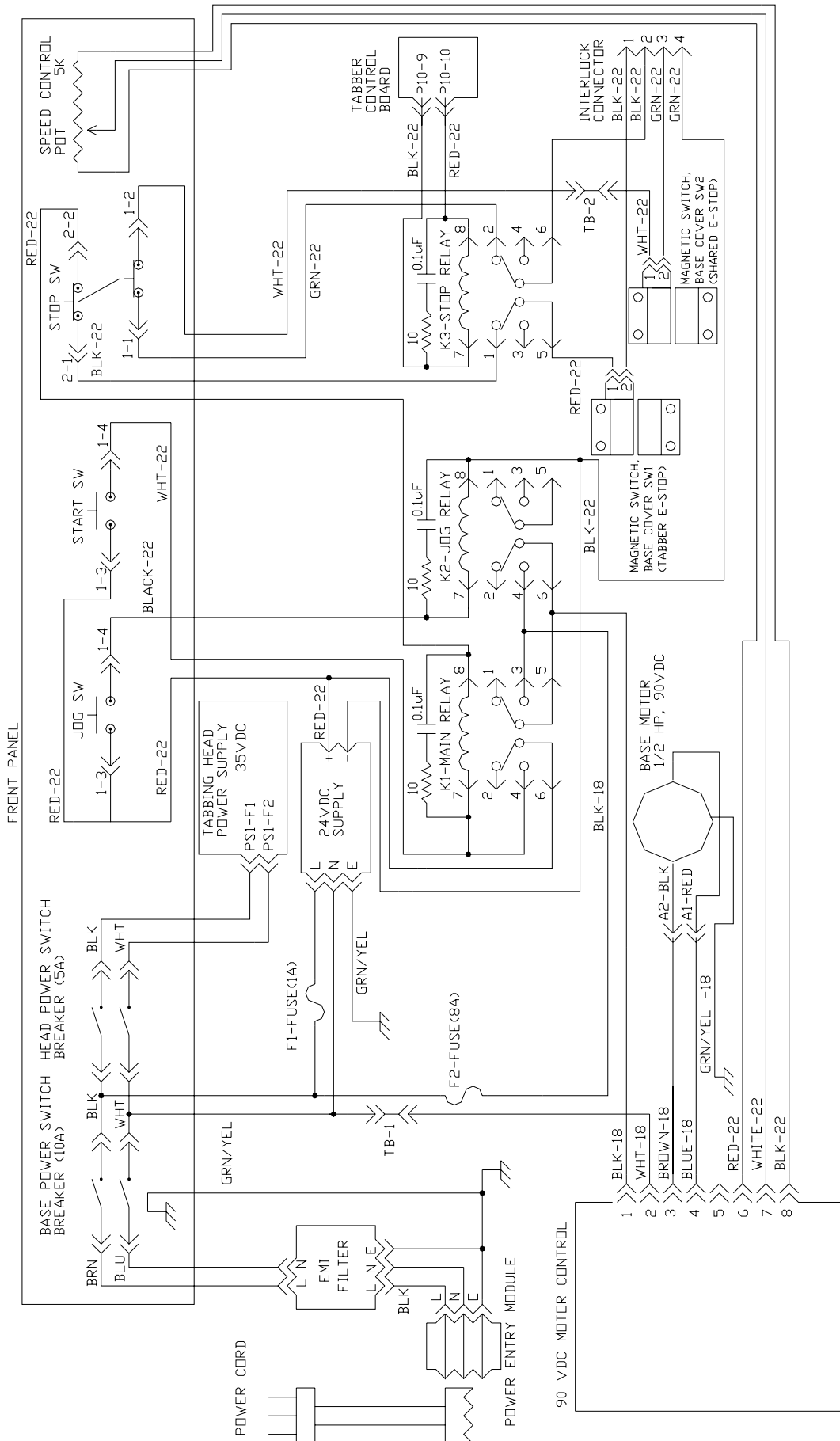


FIGURE A2 – HEAD CONTROL SYSTEM DIAGRAM

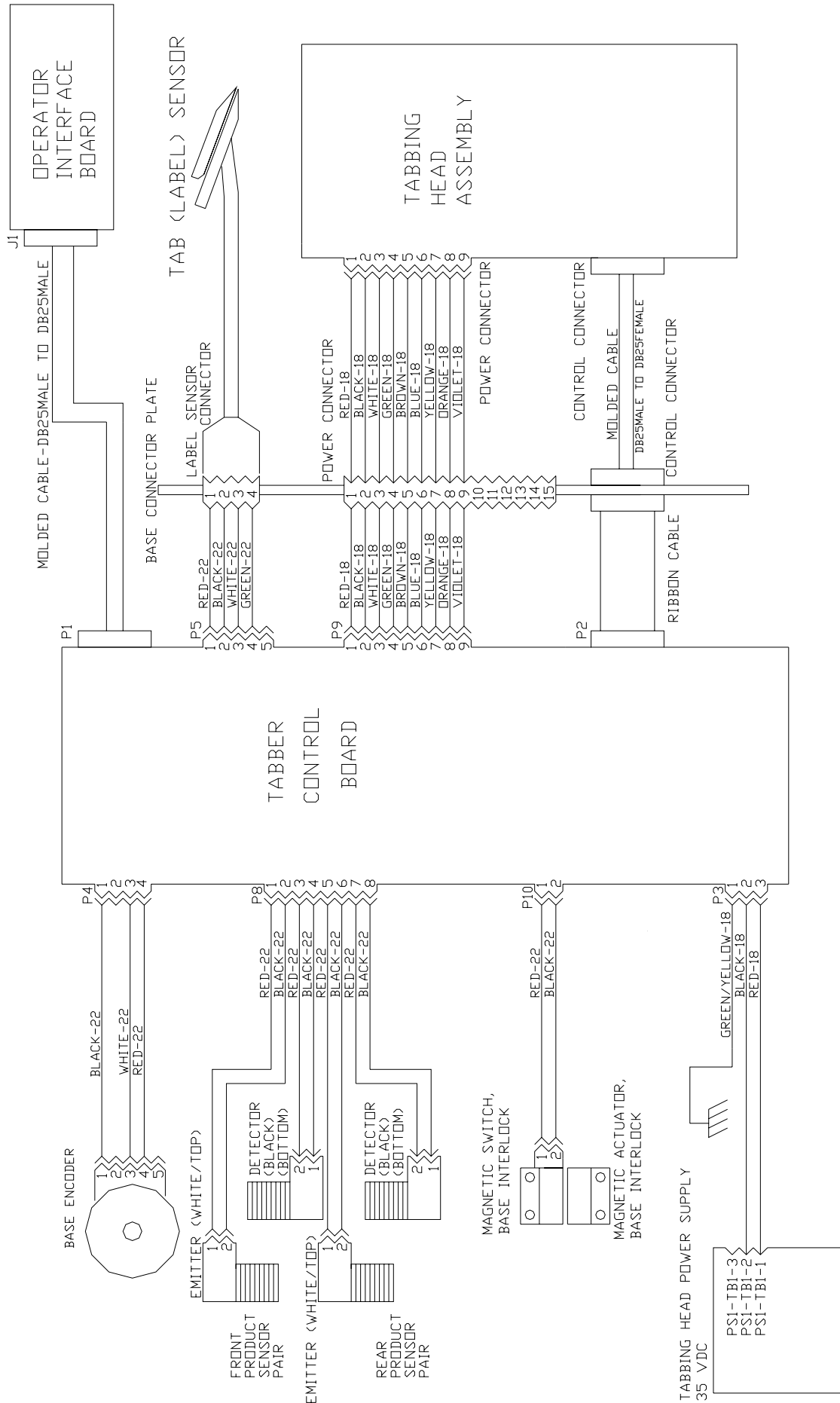
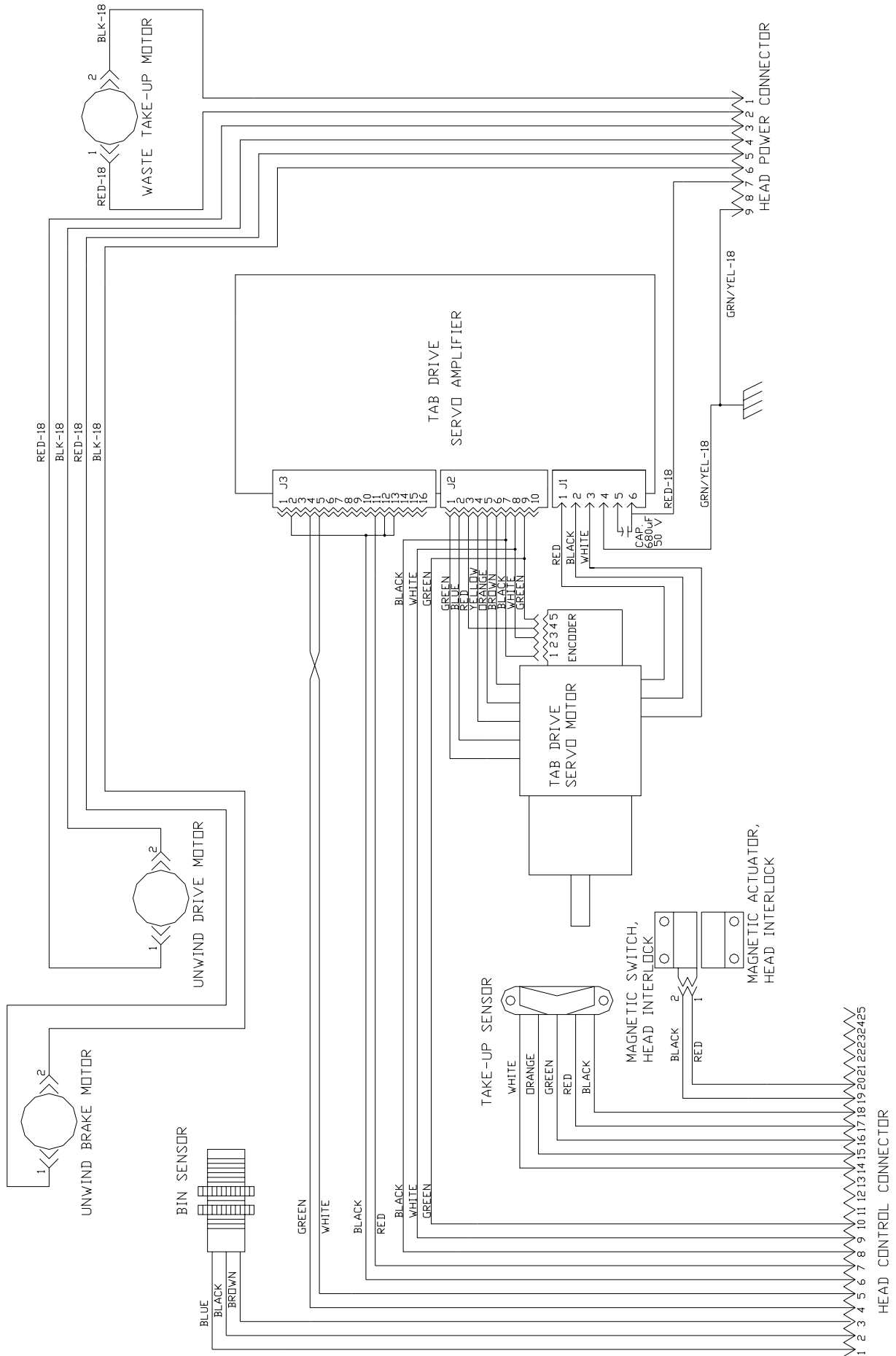


FIGURE A3 – HEAD SYSTEM DIAGRAM



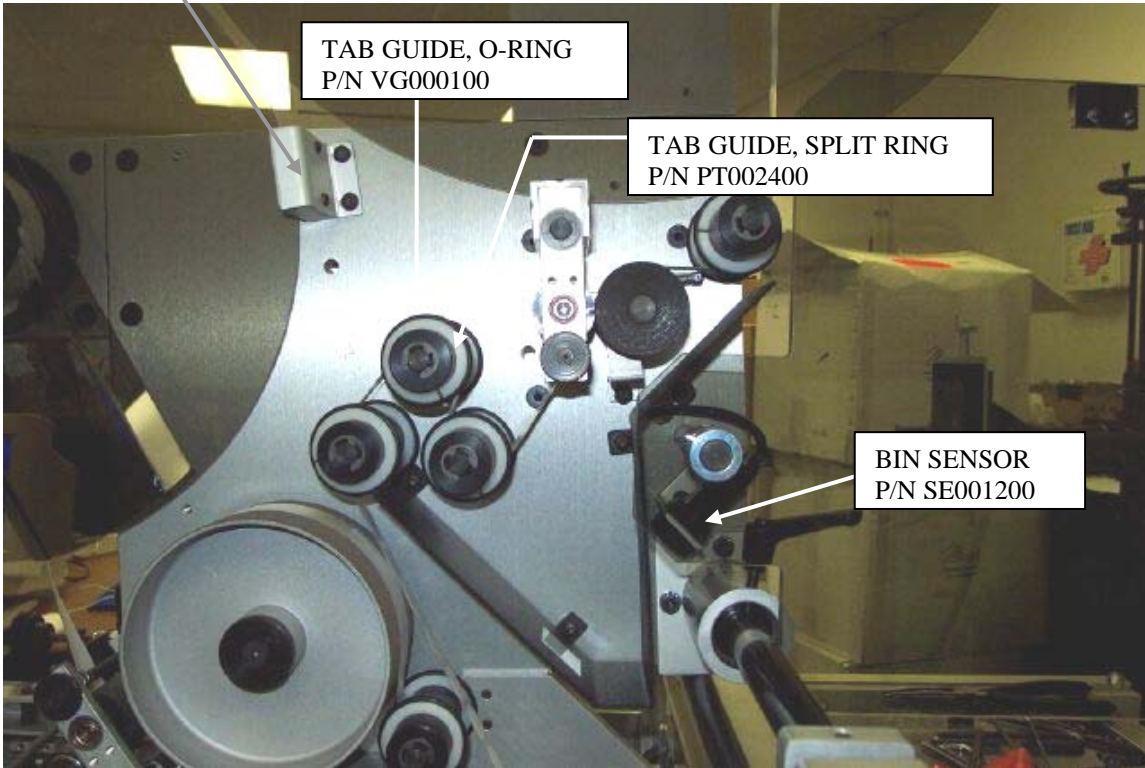
## ILLUSTRATED PART BREAKDOWN

WASTE TAKE-UP SENSOR  
P/N SE001400

TAB GUIDE, O-RING  
P/N VG000100

TAB GUIDE, SPLIT RING  
P/N PT002400

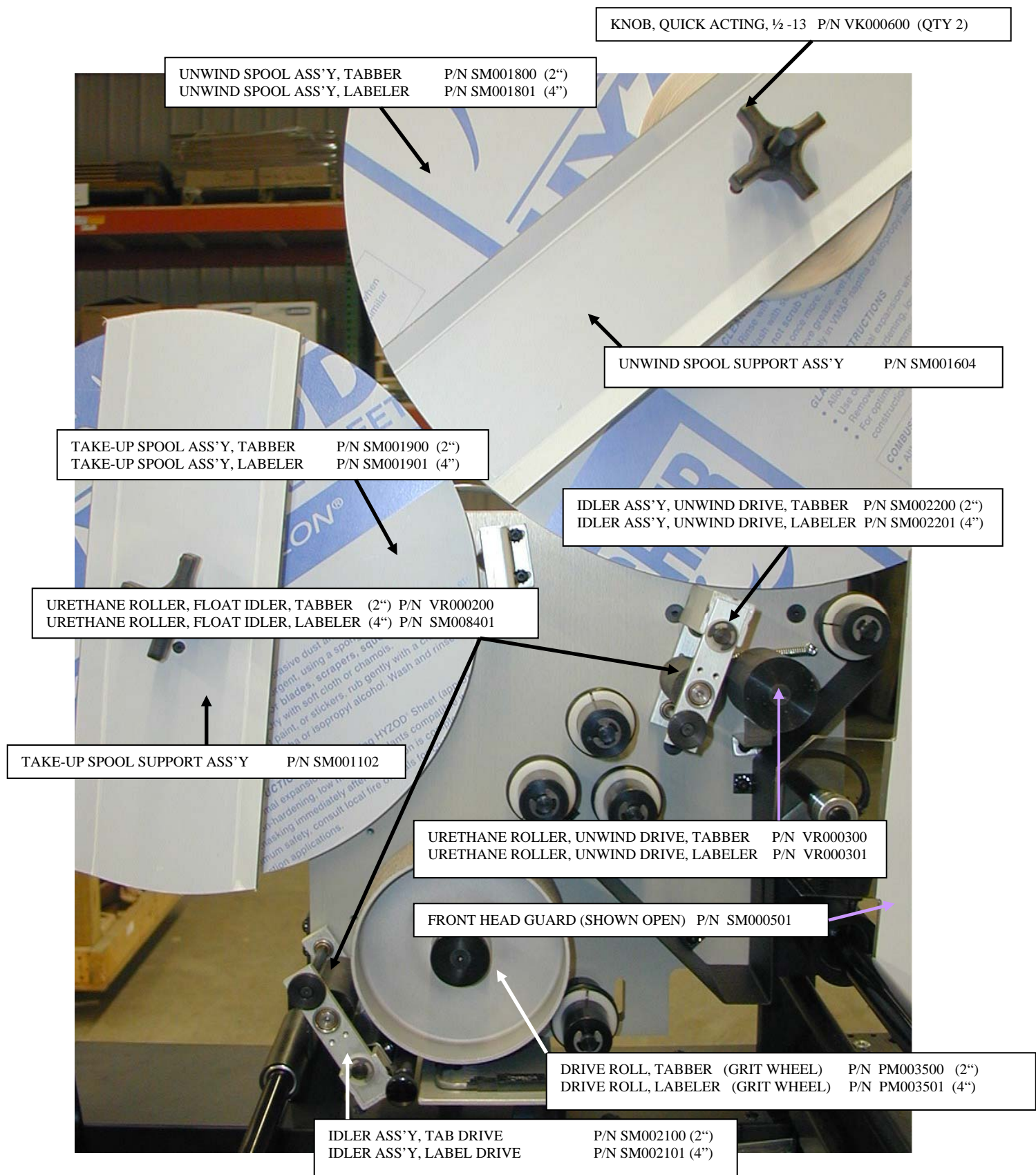
BIN SENSOR  
P/N SE001200

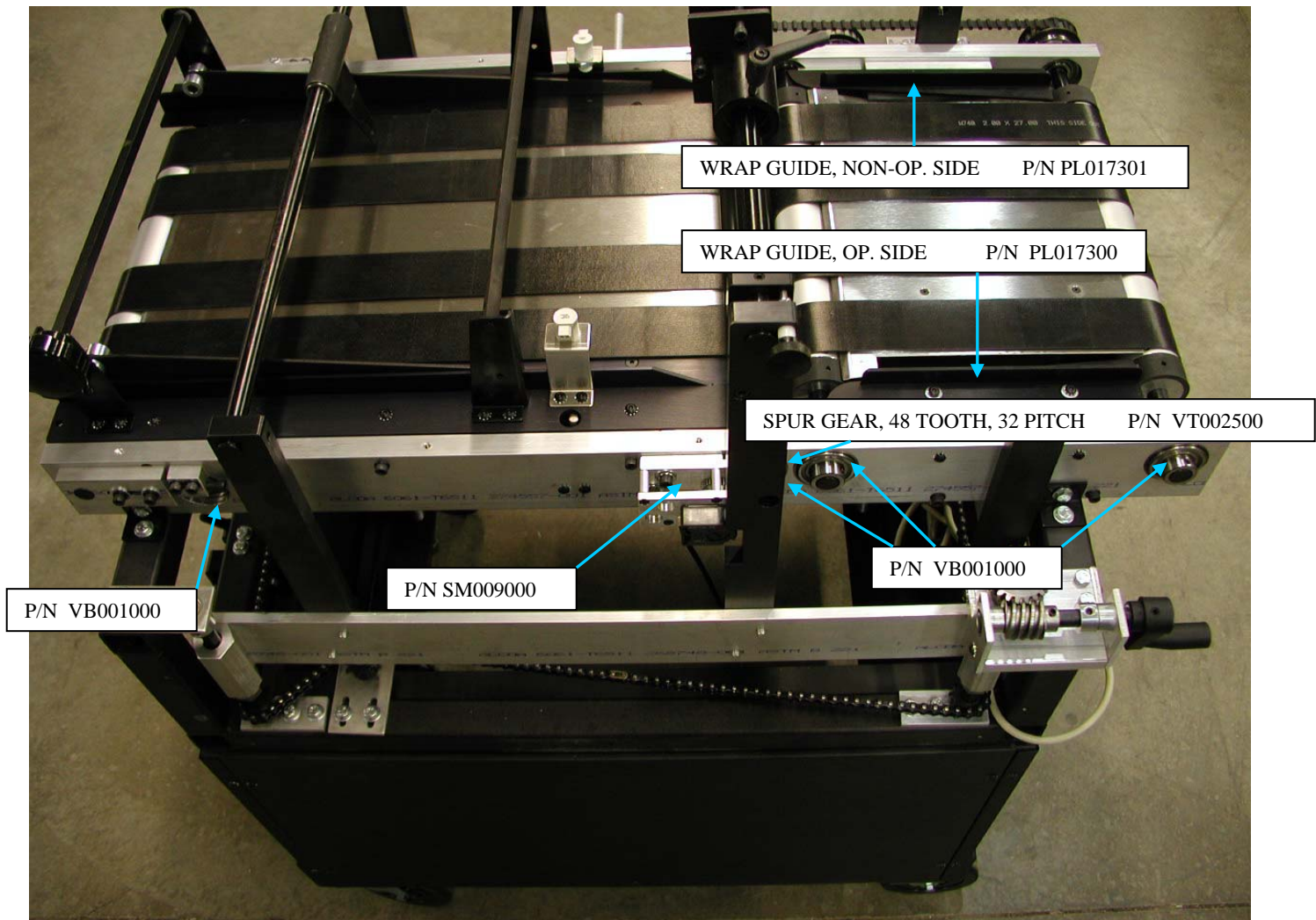
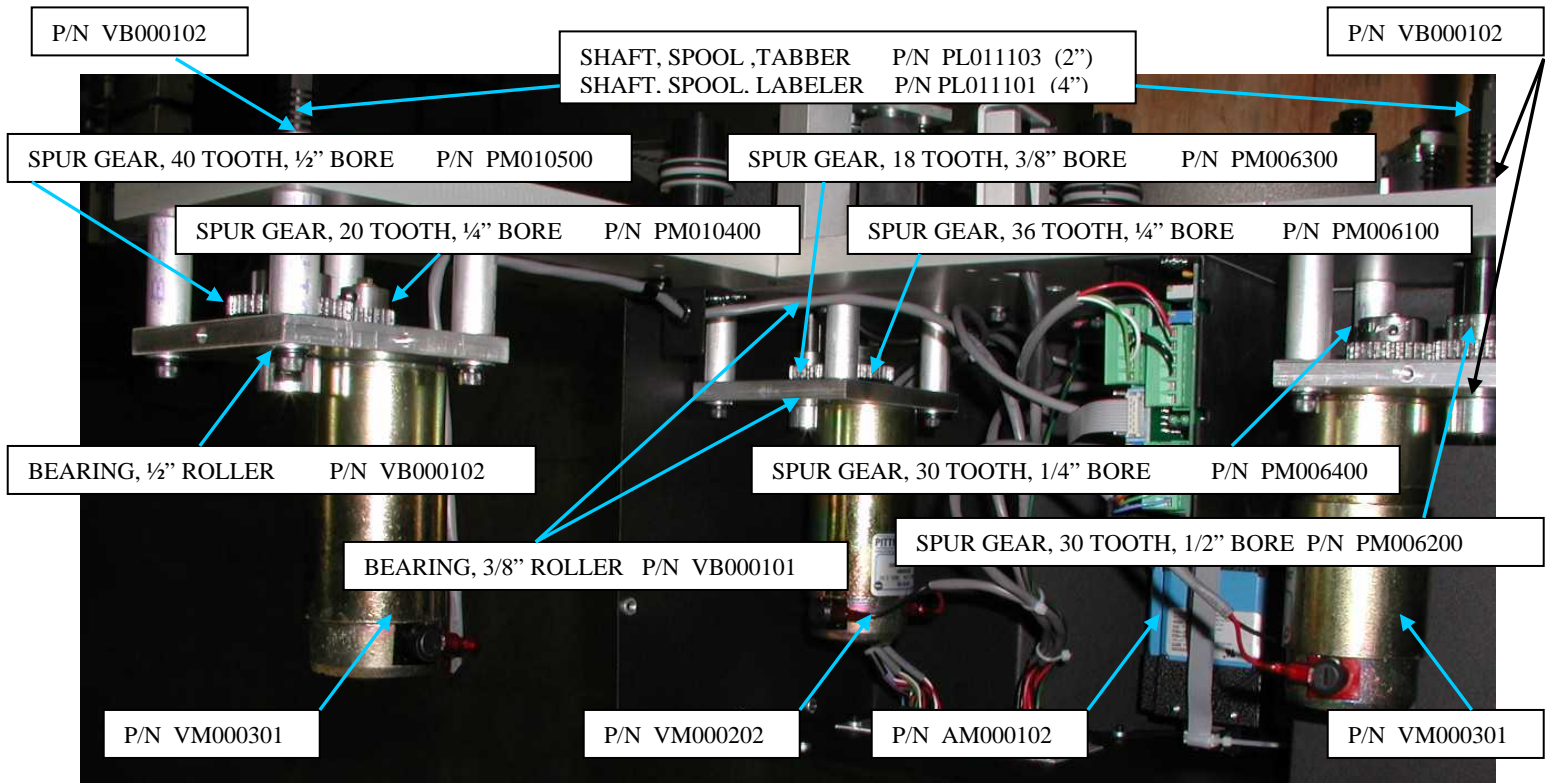


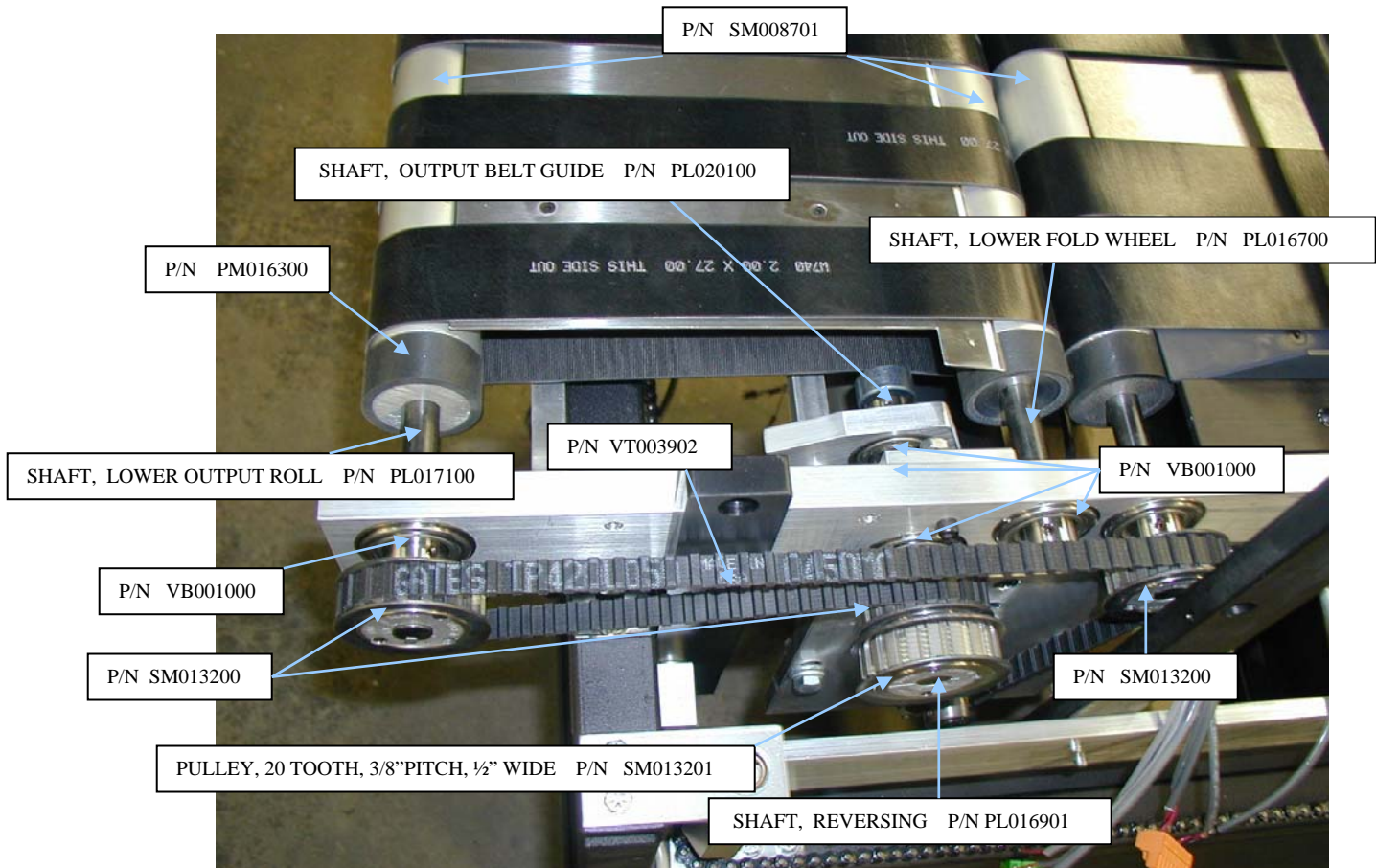
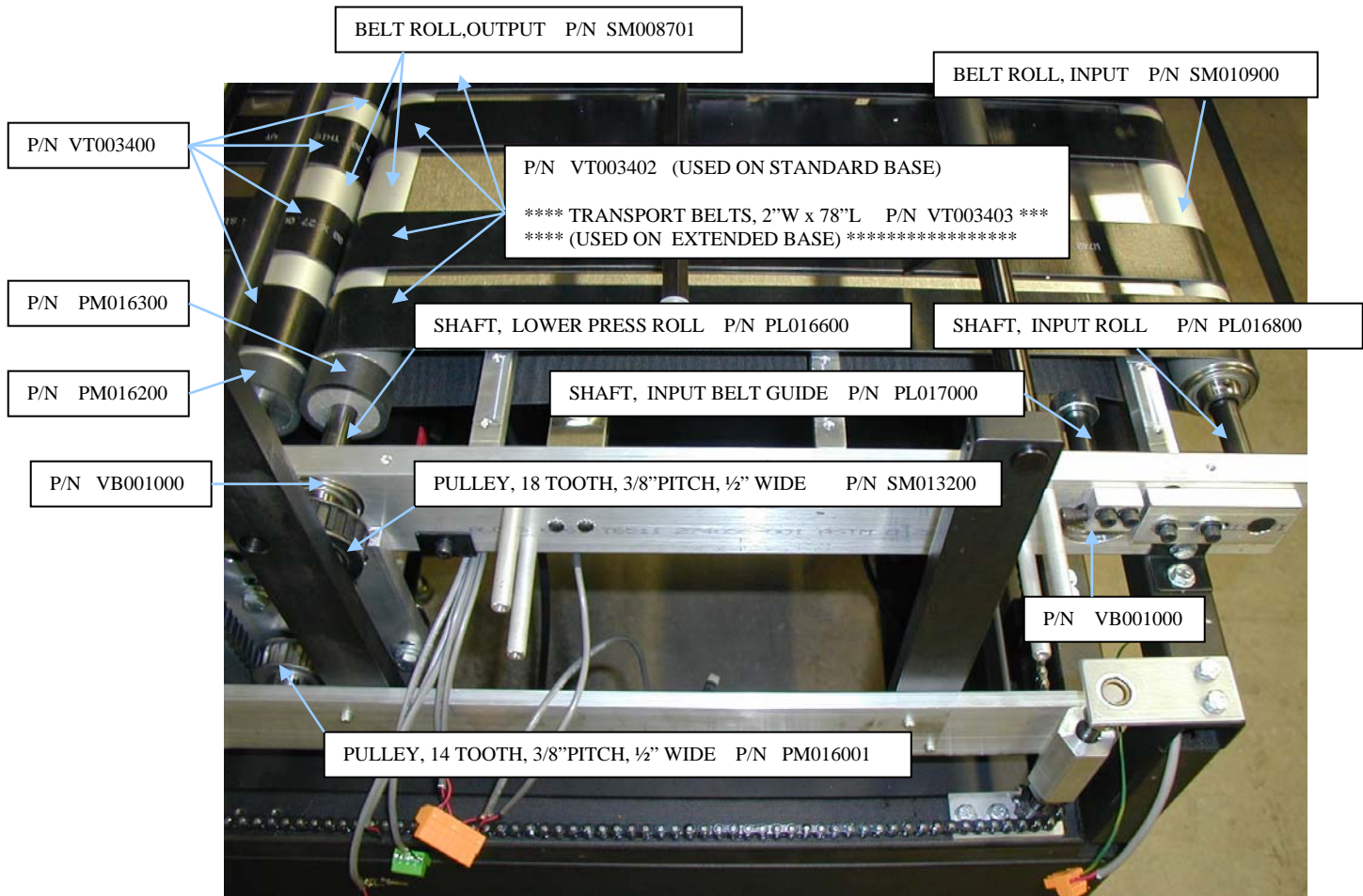
TAB SENSOR ASSEMBLY      P/N SM002700 (2")  
LABEL SENSOR ASSEMBLY    P/N SM002701 (4")

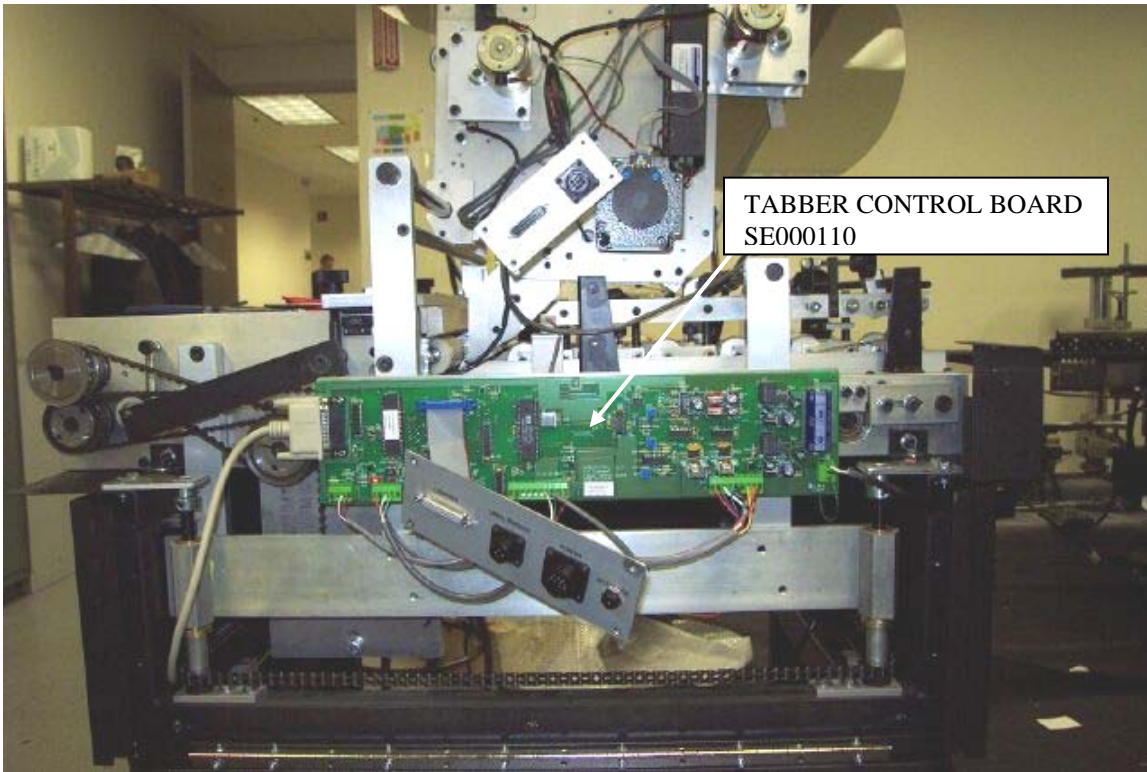




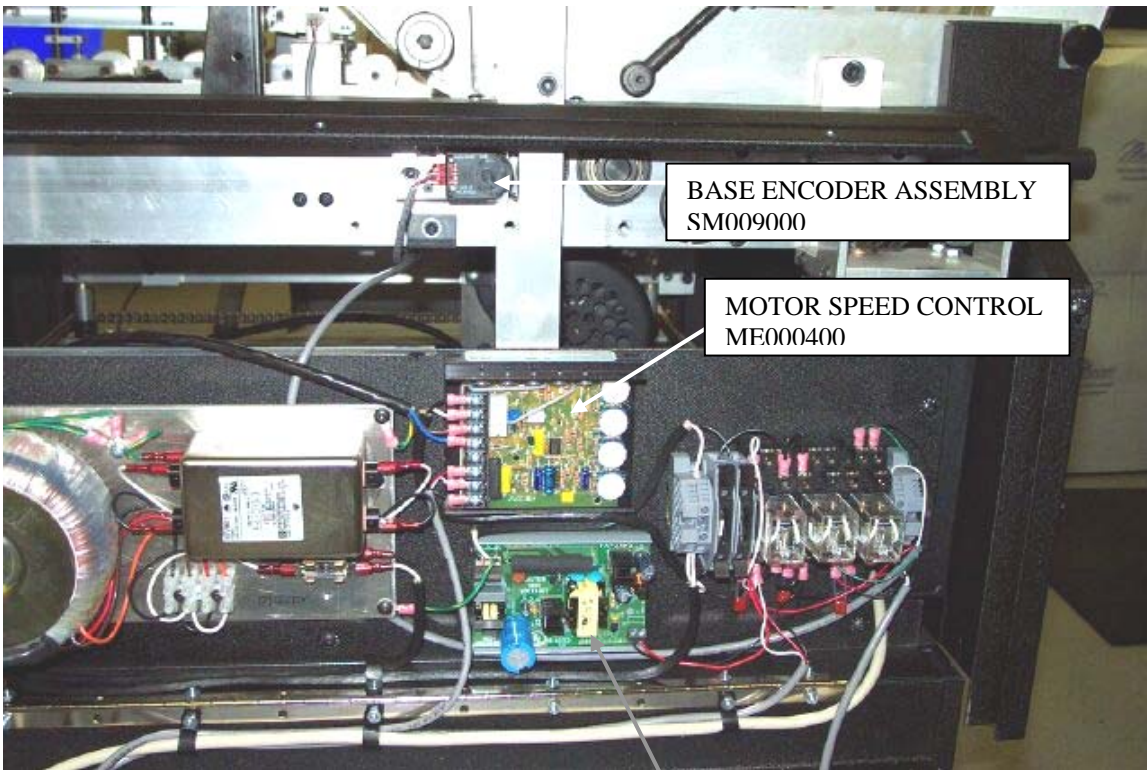








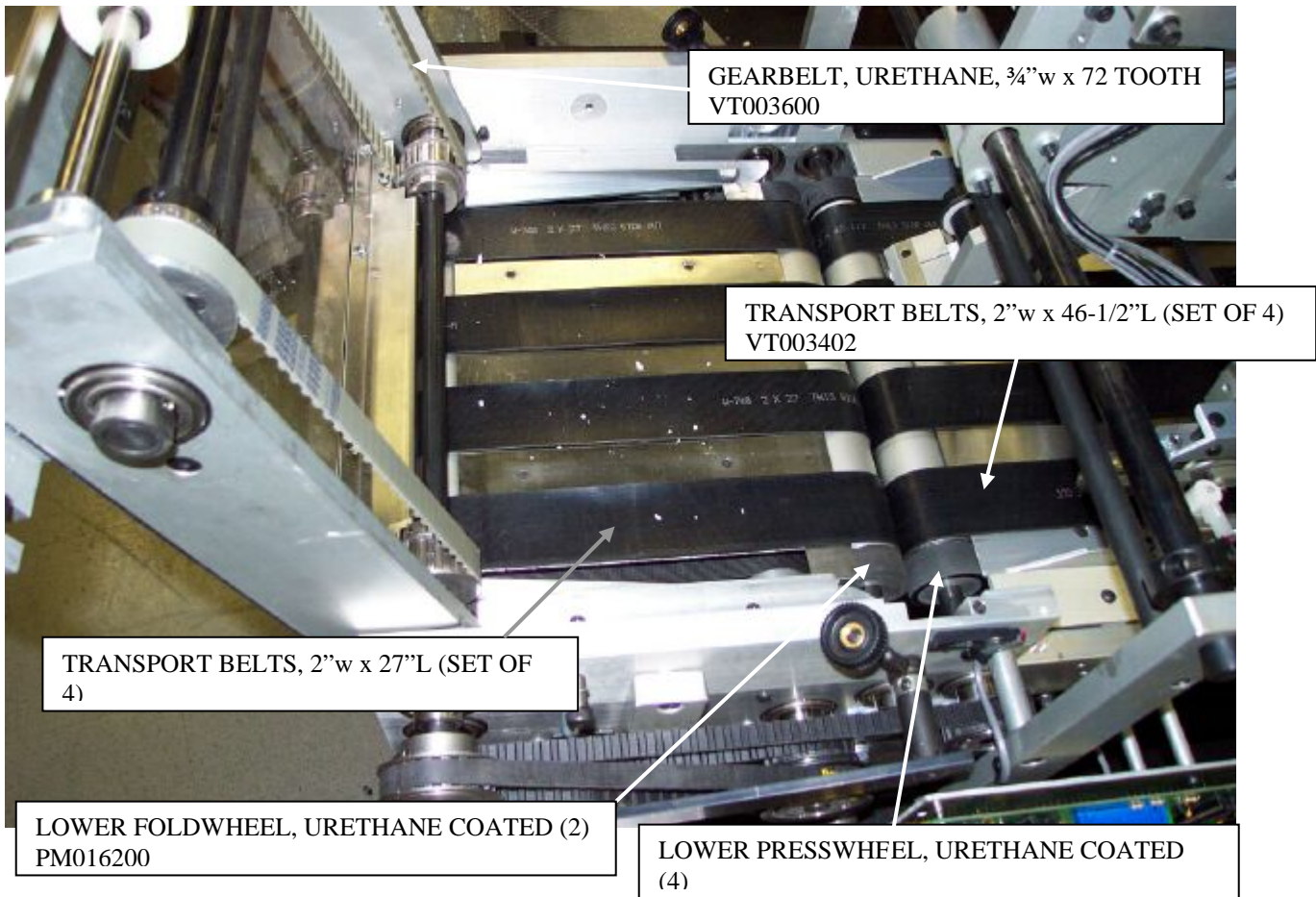
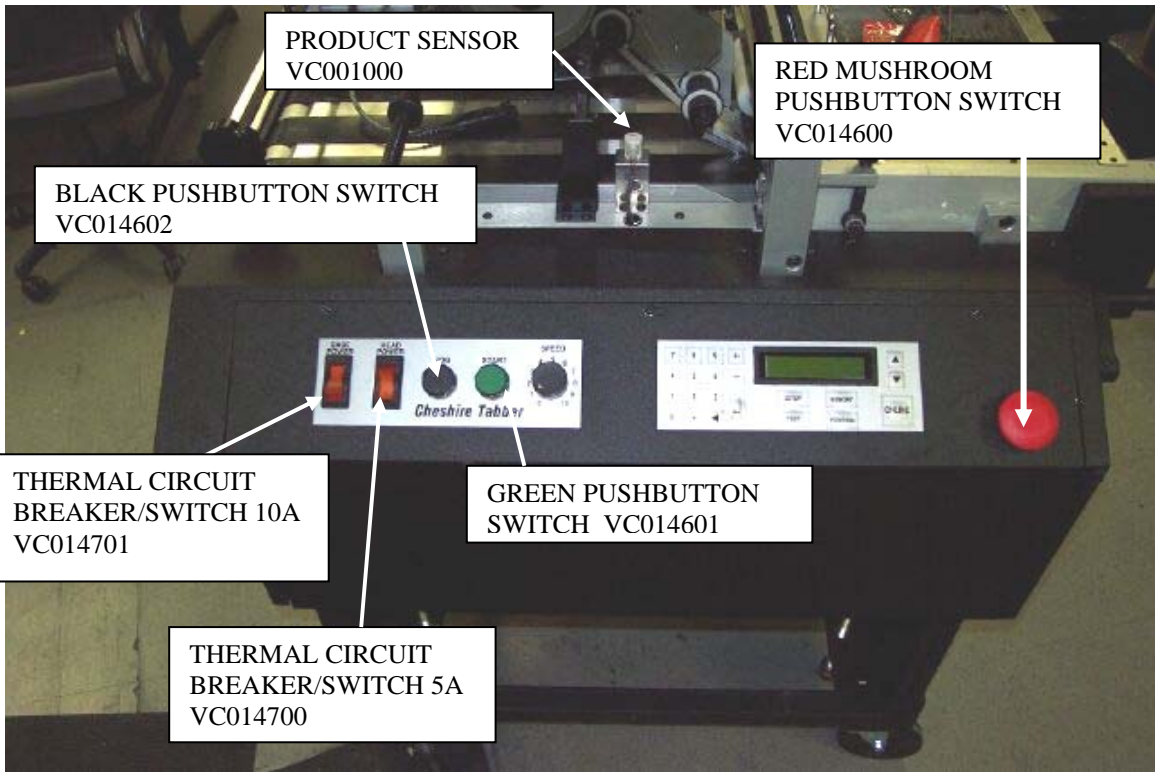
TABBER CONTROL BOARD  
SE000110

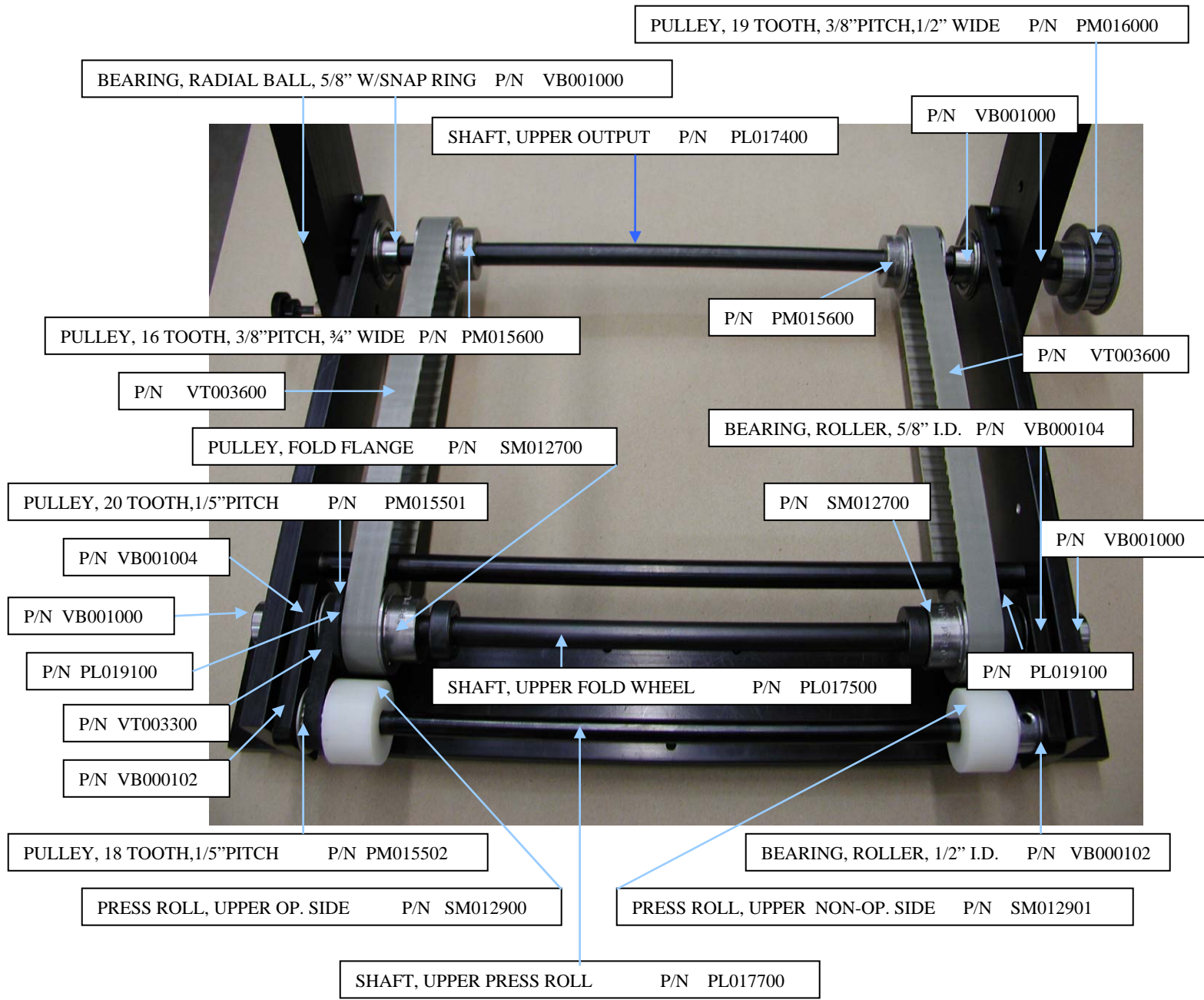


BASE ENCODER ASSEMBLY  
SM009000

MOTOR SPEED CONTROL  
ME000400

24VDC POWER SUPPLY  
VC014300





## MISCELANIOUS SPARE PARTS NOT LISTED ABOVE

### TABBING HEAD

VC006200	HEAD POWER SUPPLY FUSE
VH001900	EXTENSION SPRING, 0.25" OD x 1.75" L (UNWIND REAL)
VH003300	EXTENSION SPRING, 0.25" OD x 1.5" L (TAKE UP)

### TABBING BASE

SE000202	OPERATOR INTERFACE
SE007400	BASE MOTOR ASSEMBLY
VC010900	POWER CORDSET
SE000700	HEAD POWER CABLE
VC014001	HEAD CONTROL CABLE
VC013501	RELAY, 24V COIL
VC013500	RELAY, 12V COIL
VC014500	CONTACT BLOCK, NORMALLY OPEN
VC014501	CONTACT BLOCK, NORMALLY CLOSED
VC006202	FUSE, 1A TIME DELAY (24V SUPPLY)
VC006203	FUSE, 8A FAST ACTING (BASE MOTOR)
VT003902	GEARBELT, L, 1/2"w x 68 TOOTH, 3/8" PITCH
VG000500	"O" RING, CLEAR URETHANE, 4-5/16" x 1/8"
VH008101	EXTENSION SPRING, 1/2"OD x 1-1/2"L
VH007701	COMPRESSION SPRING, .36"OD x 1-1/4"L
VK000700	2-3/8" DIA. BLACK KNOB
VK000800	THUMB KNOB w/ THRU HOLE, 1-1/4" DIA.
VK001000	CRANK HANDLE, 2.5"L
VK001200	ADJUSTABLE CLAMPING HANDLE, SHORT SHAFT
VK001201	ADJUSTABLE CLAMPING HANDLE, LONG SHAFT
SM009300	KNOB, HEAD POSITION FINE ADJUST
SM009400	KNOB, TABLE POSITION FINE ADJUST
SM009401	KNOB, REGISTRATION WHEEL ANGLE ADJUST
VH003900	COMPRESSION SPRING, .360"OD x .75"L
VC005100	REED SWITCH
VC005200	MAGNET