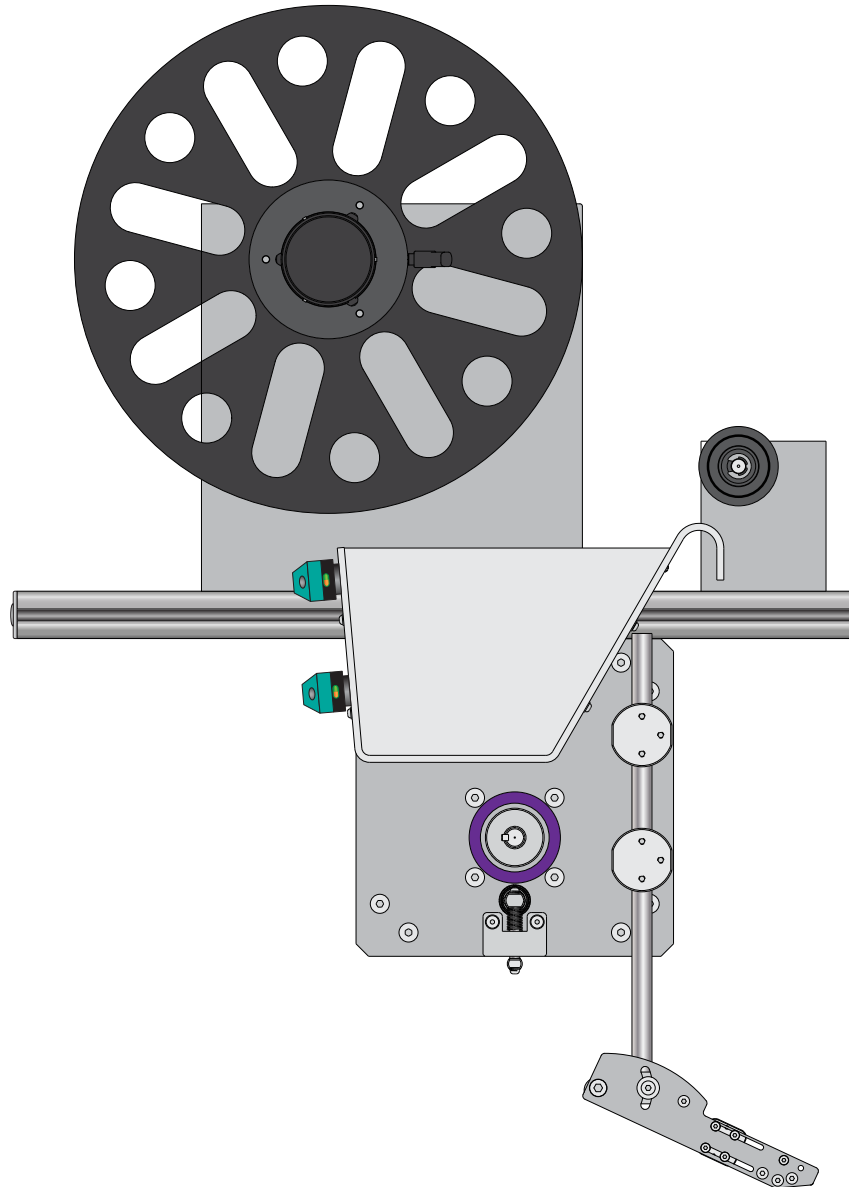


# MFT 102/103hsm Labeler Operator Manual



Document No. 3906330  
Document Revision 0D

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## Introduction

Below is a description of the sections contained in the manual. You may also navigate to a specific section in the electronic version of this manual by clicking on one of the section tabs above.

**Safety** - The Safety section outlines the general safety precautions you should use when operating your MFT equipment.

**Terminology** - The Terminology section describes the main components of your MFT equipment and introduces you to terminology used later in the manual.

**Setup** - The Setup section provides instructions for basis setup the MFT equipment.

**Maintenance** - The Maintenance section describes the basic maintenance necessary to ensure optimal performance of your MFT equipment.

**Terms and Conditions** - Multifeeder Standard Terms and Conditions.

### *Icon Definitions*



**Caution** - This icon is used to alert you to very important safety instructions.



**Tip** - This icon is used to alert you to helpful information or operational tips.



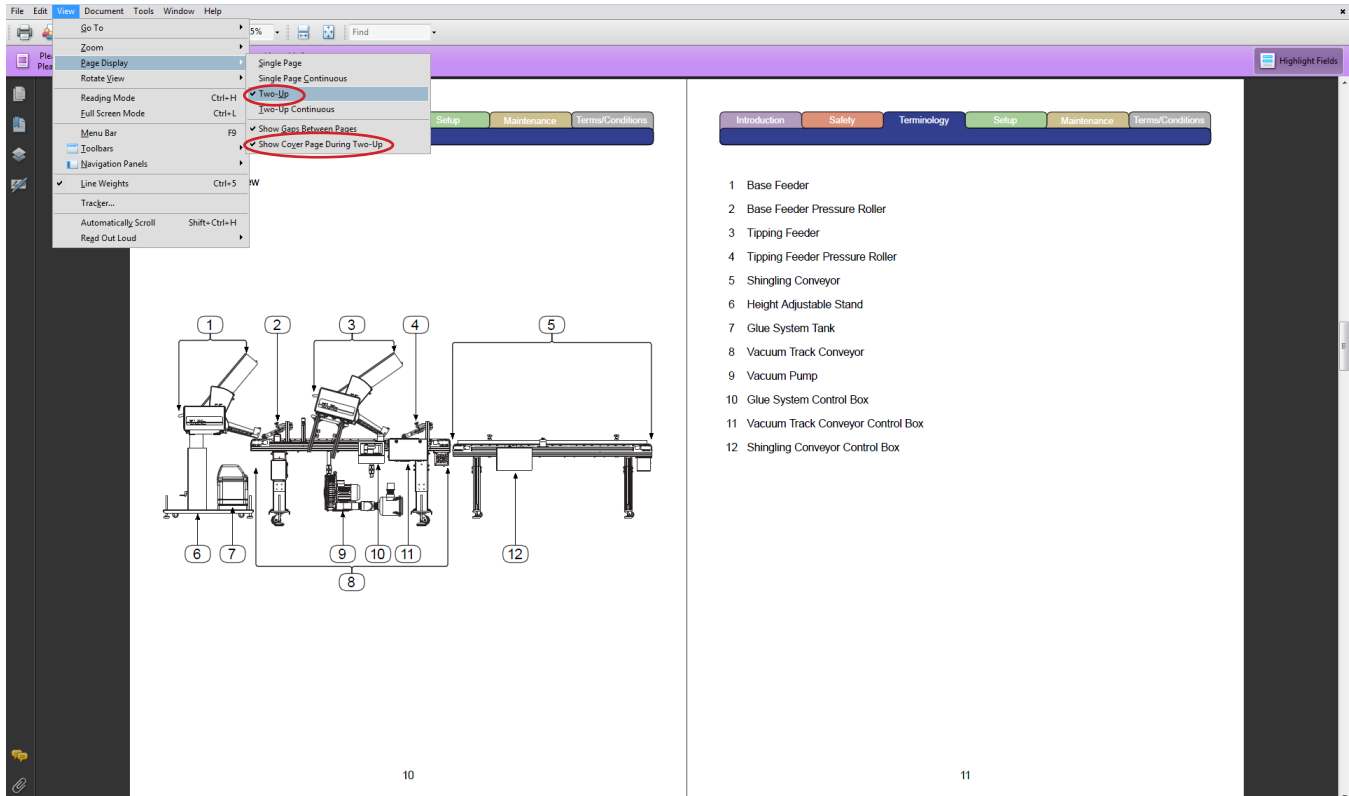
**Important** - This icon is used to alert you to important information.

Congratulations on the purchase of your new equipment from Multifeeder Technology, Inc. This document is designed to provide you with the information about the basic set operation of the MFT equipment.

This manual may not illustrate optional equipment purchased with your unit or units. Multifeeder Technology (MFT) designed this equipment to be used by operators with basic knowledge of machine functions. In order for your MFT equipment to operate as intended, the equipment must be properly installed and basic maintenance must be performed at regular intervals. Compromised performance and unsafe operation may result from unauthorized modification. Unauthorized modifications of any kind will void the product warranty and are strongly discouraged. This equipment requires operation by properly trained personnel in accordance with all the applicable, operation and maintenance manuals using approved product and procedures.

Technical phone support is available by calling (651) 407-3100 Monday - Friday, 8 am to 5 PM (CST). Please have direct access to your MFT system when you call.

## Viewing Electronic Manual



As viewed on a typical monitor.

When viewing this manual electronically. It is best viewed with Adobe Reader® version 9.0 or later. Adobe Reader® version 9.0 version allows the for full display and inter activity features of this manual. Furthermore, set the display settings to view to “Two-Up” and “Show Cover Page During Two-Up”. That ensure the manual will be displayed as intended.



## Viewing Printed Manual

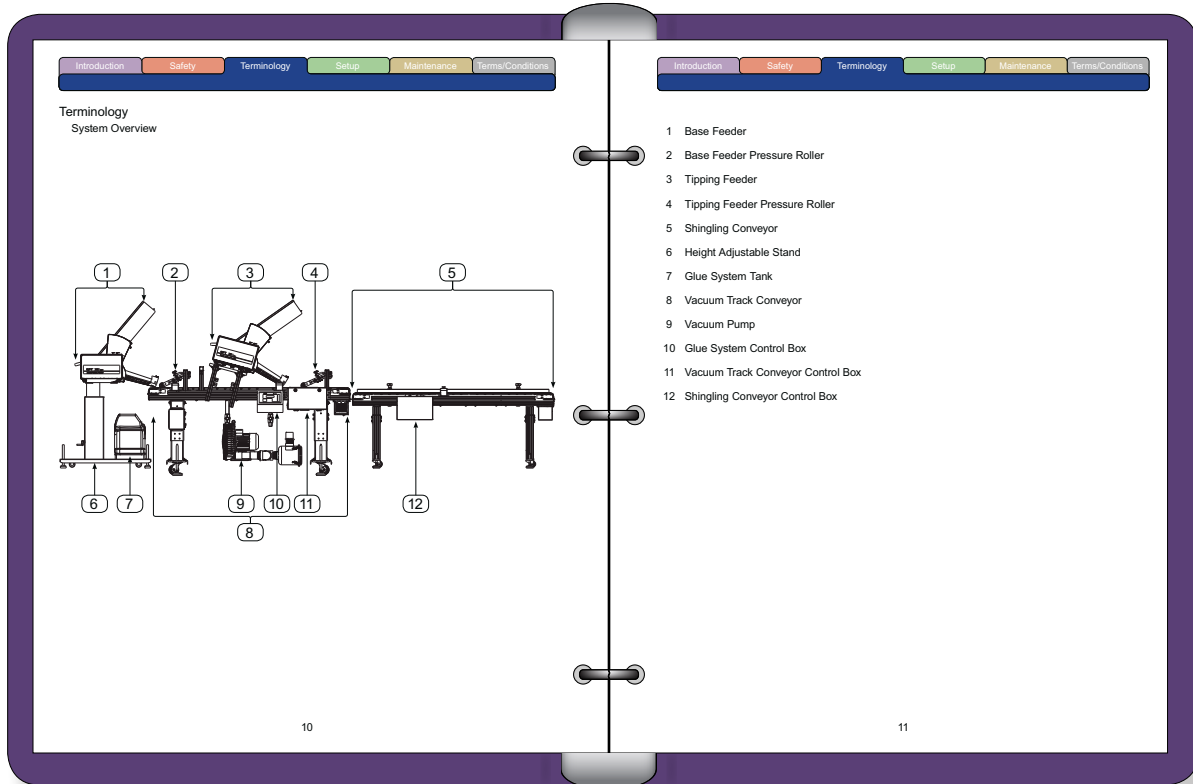


Illustration Page

Definition Page

When printing this manual, print in color and two sided. This allows the printed pages to be placed into a three ring binder as illustrated above with the graphics on the left and the definitions on the right.

## Safety

### ***Personal Safety Warnings***



All equipment from Multifeder Technology is designed with safety in mind. However, in order to ensure your safety and the safety of others around you, common sense must always be used when using this machine. Please read the all of the manuals provided carefully before operating any of your MFT equipment.

- Do not install or use your MFT equipment without first reading each of the individual component manuals completely prior to operation.
- Use proper lifting techniques when removing MFT equipment and associated components from the shipping box.
- Always power down equipment before making any adjustment or clearing jams.
- Never use a knife or sharp instrument to make an adjustment to the MFT equipment, or to clean or clear jams on the MFT equipment.
- The MFT equipment may be unplugged in an emergency.
- Be aware that air cylinder (if equipped) may actuate during power up and power down sequences.
- Be aware the MFT could cycle unexpectedly if the MFT equipment is not placed into a safe mode.
- Make sure loose jewelry, clothing, long hair, neckties, etc., are properly secured before you operate the MFT equipment.
- Always power down the MFT equipment and disconnect the power cord before working with any of the MFT equipment's electrical components or when performing maintenance tasks.
- This machine operates on mains voltage. Contact with this voltage may lead to serious injury, or death.
- Do not use the MFT equipment, make mechanical adjustments, or perform maintenance tasks while under the influence of drugs or alcohol.

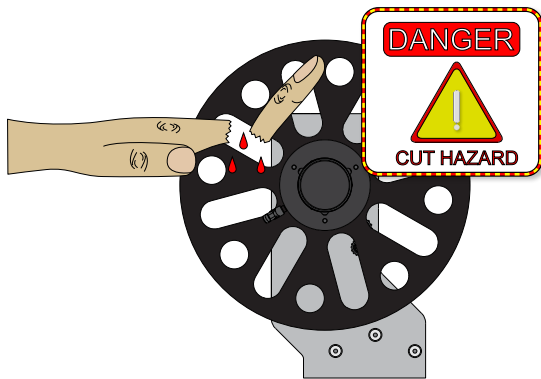
## ***Machine Precautions***



All equipment from Multifeder Technology is designed with safety in mind. However, in order to ensure your safety and the safety of others around you, common sense must always be used when using this machine. Please read this section of the manual carefully before operating your MFT equipment.

- Do not install or use your MFT equipment without first reading each of the individual component manuals completely prior to operation.
- Always power down the MFT equipment and disconnect the power cord before working with any of the MFT equipment's electrical components or when performing maintenance tasks.
- Use proper lifting techniques when removing MFT equipment and related components from the shipping box.
- Make sure the MFT equipment is securely mounted before enabling the motor. The machine may also be unplugged in an emergency.
- Use only fuses of the correct type, voltage, and current ratings. (5 x 20mm, 10A, 250V).
- Do not stack items on the machine even when it is not in use.
- Always power down equipment before making any adjustment or clearing jams.
- Perform regular maintenance on your MFT equipment. Failure to do so may result in damage to the machine or machine operators.
- Maintenance tasks should be performed according to the methods described in this manual by properly trained personnel.
- This system is intended to operate within the following environmental range: Temperature 10-35°C (50-95°F), the recommended relative humidity range of 30% to 60% with 80% maximum, non-condensing.
- This machine should be operated in a well lit area.
- This machine should not be operated around loose cords.
- This machine should not be operated around loose tools or objects such as screw drivers, pliers, paper clips, or anything that may accidentally interfere with normal operation.

## Hazard Warnings



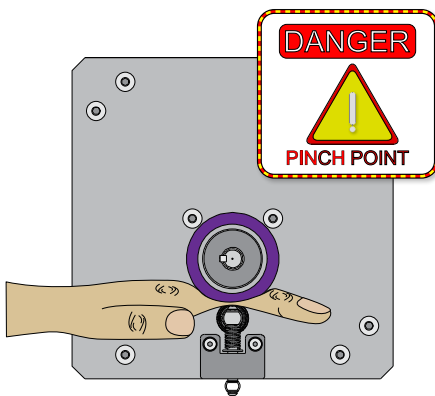
### Unwind



*Read and understand the entire manual before operating the equipment.*



*Use common sense when operating the equipment.*



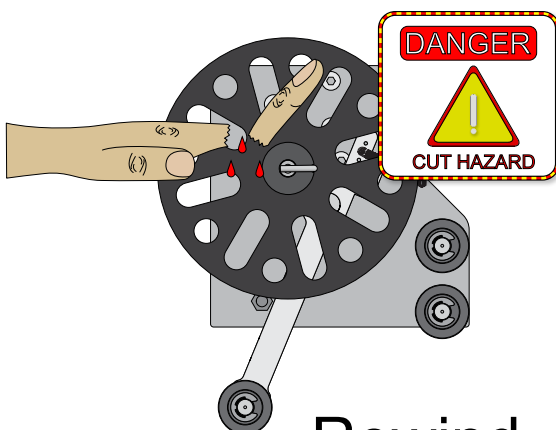
### Main Drive



*Do not operate the equipment while distracted.*



*This equipment is intended to be operated by trained and qualified personnel.*



### Rewind



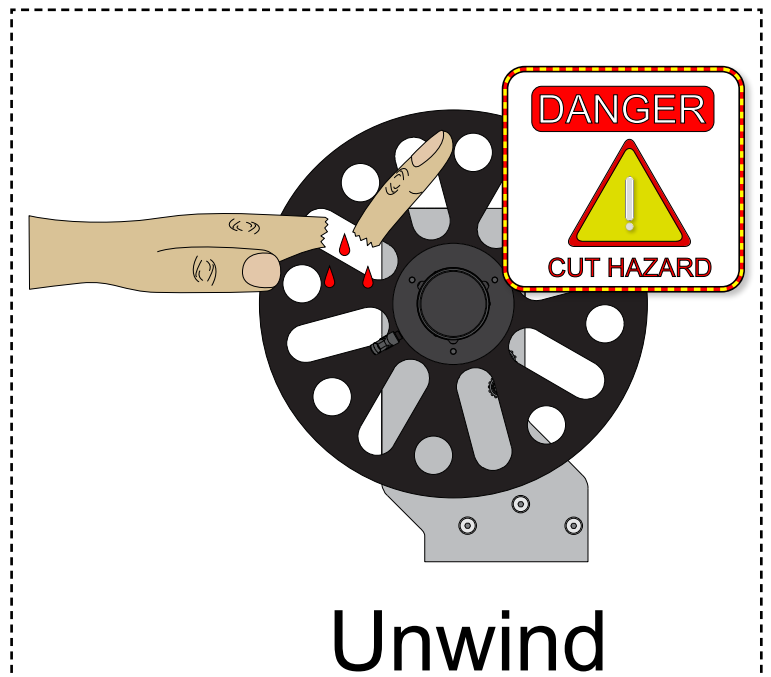
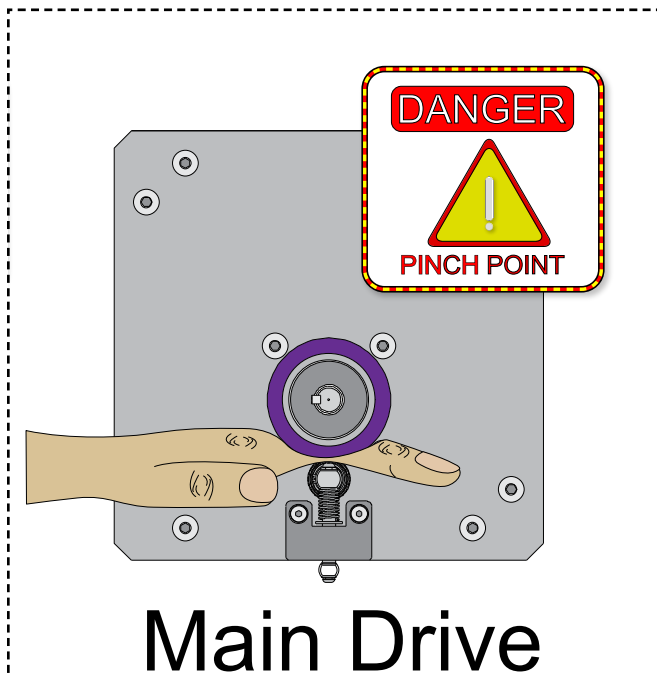
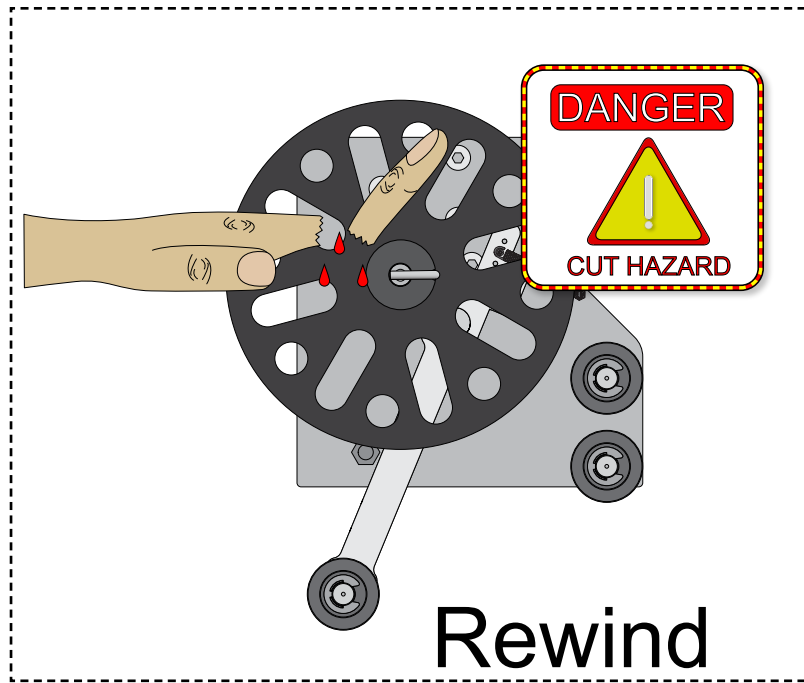
*Make sure loose jewelry, clothing, long hair, neckties, etc., are properly secured before you operate the MFT equipment.*



*This machine operates on mains voltage. Contact with this voltage may lead to serious injury, or death.*

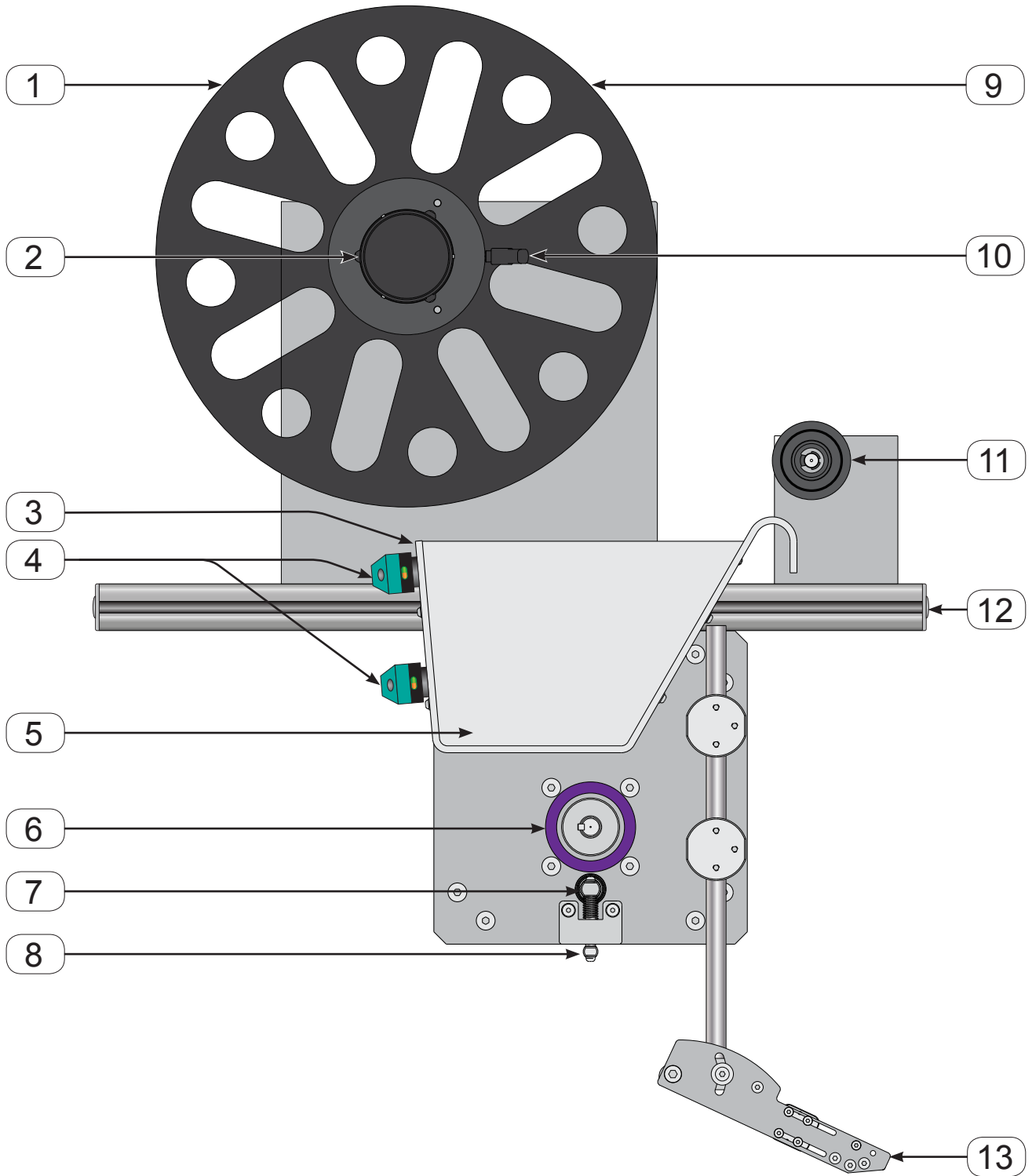
### Hazard Warnings - Cutout

Print this page separately to cutout the hazard warning illustrations and affix it to the equipment as required.



## Terminology

### *Main Body and Power Unwind*



- 1 Power Unwind Media Back Plate**

---

- 2 Power Unwind Hub**

---

- 3 Power Unwind Media Sensor Box**

---

- 4 Power Unwind Media Sensor**

---

- 5 Power Unwind Media Sensor Box Label Width Adjustment Plate**

---

- 6 Main Drive Roller**

---

- 7 Main Drive Pinch Roller**

---

- 8 Main Drive Pinch Roller Pull Down Bar**

---

- 9 Power Unwind Media Front Plate**

---

- 10 Power Unwind Media Front Plate Locking Lever**

---

- 11 Media Guide Roller**

---

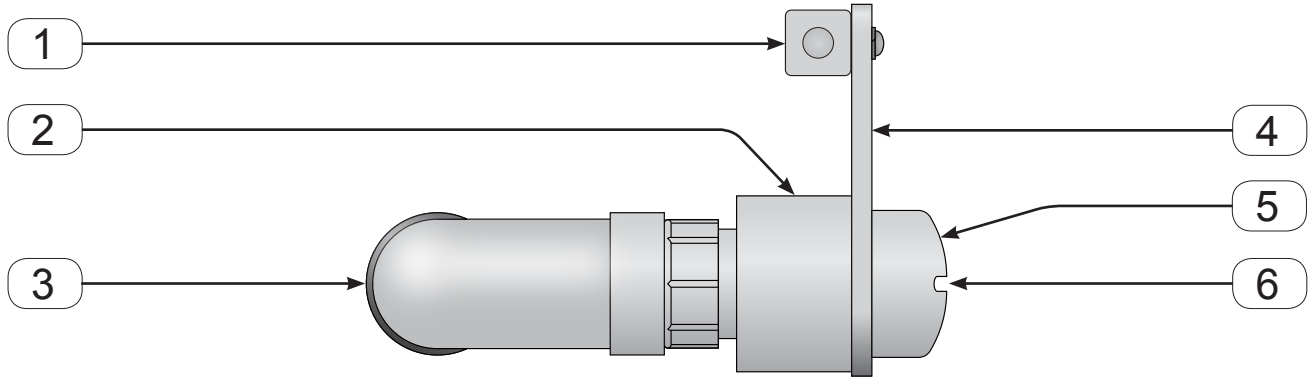
- 12 Main Mounting Bar**

---

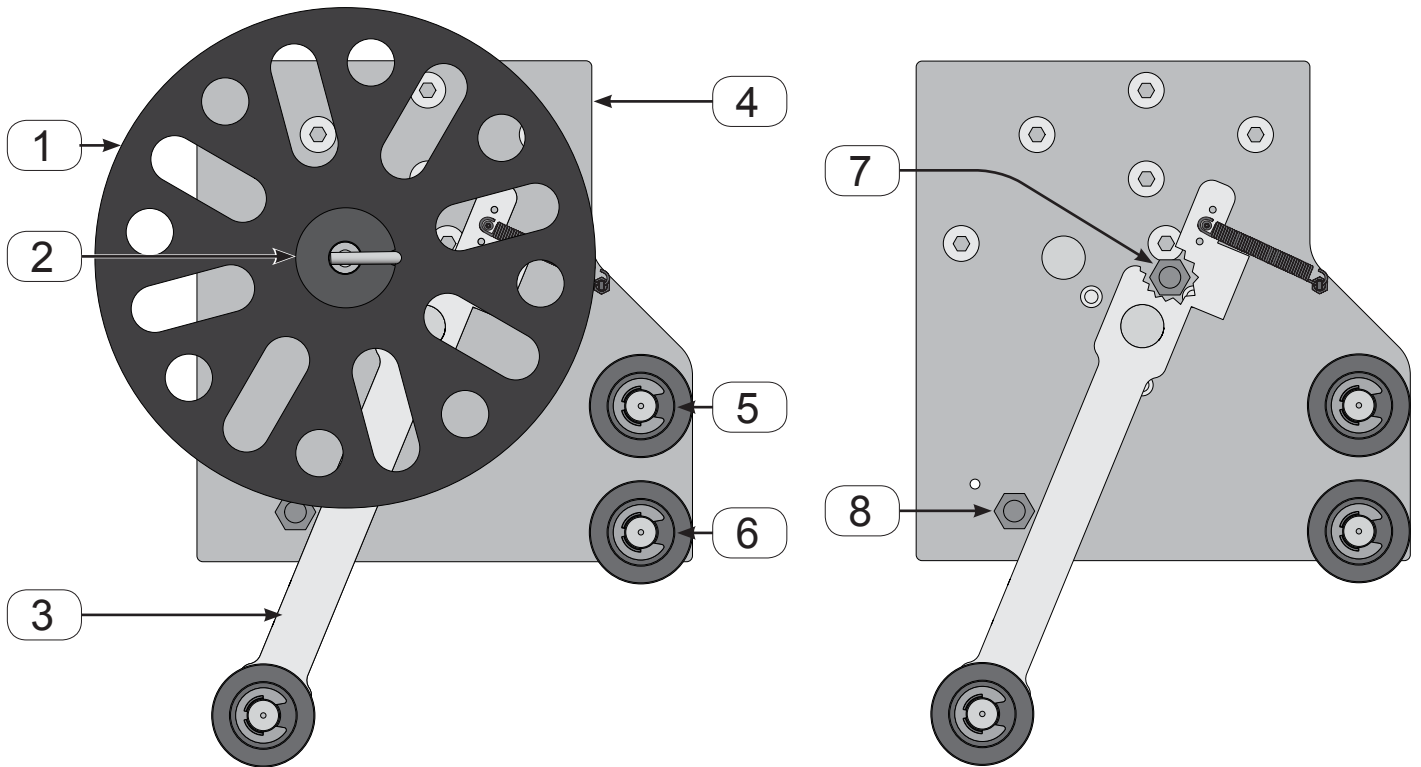
- 13 Peel Plate Assembly**

### Rewind Assembly Options

#### Vacuum Take Up Rewind



#### Power Take Up Rewind



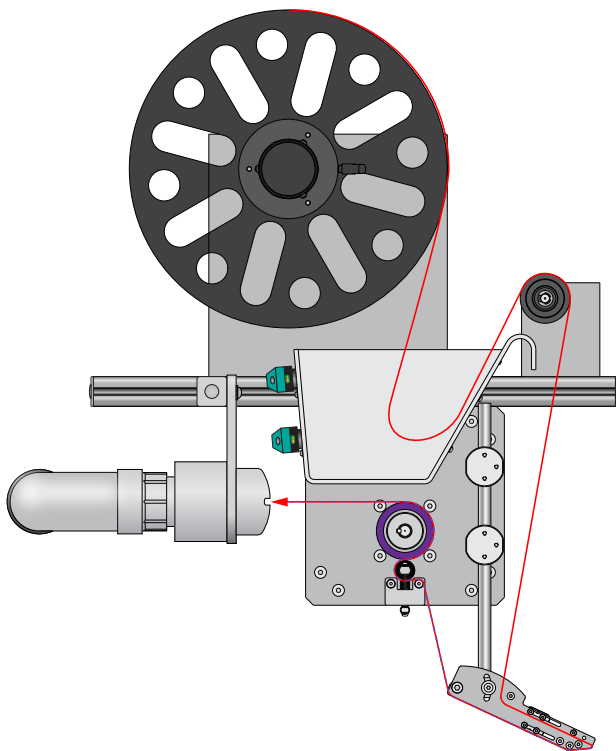


### Vacuum Take Up Rewind

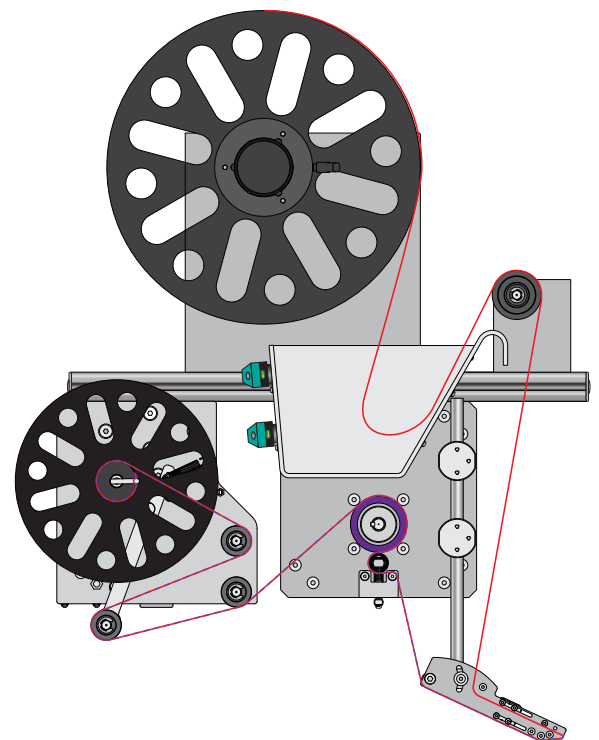
- 1 Vacuum Take Up Mount
- 2 Vacuum Take Up Device
- 3 Vacuum Take Up Device Pipe
- 4 Vacuum Take Up Device Mounting Bracket
- 5 Vacuum Take Up Device Entry Cap
- 6 Vacuum Take Up Device Entrance

### Power Take Up Rewind

- 1 Power Take Up Rewind Hub Back Plate
- 2 Power Take Up Rewind Hub
- 3 Power Take Up Rewind Dancer Arm
- 4 Power Take Up Rewind Main Housing
- 5 Power Take Up Rewind Upper Idler Roller
- 6 Power Take Up Rewind Lower Idler Roller
- 7 Upper Rewind Dancer Arm Sensor  
(Shown behind dancer arm cutaway)
- 8 Lower Rewind Dancer Arm Sensor

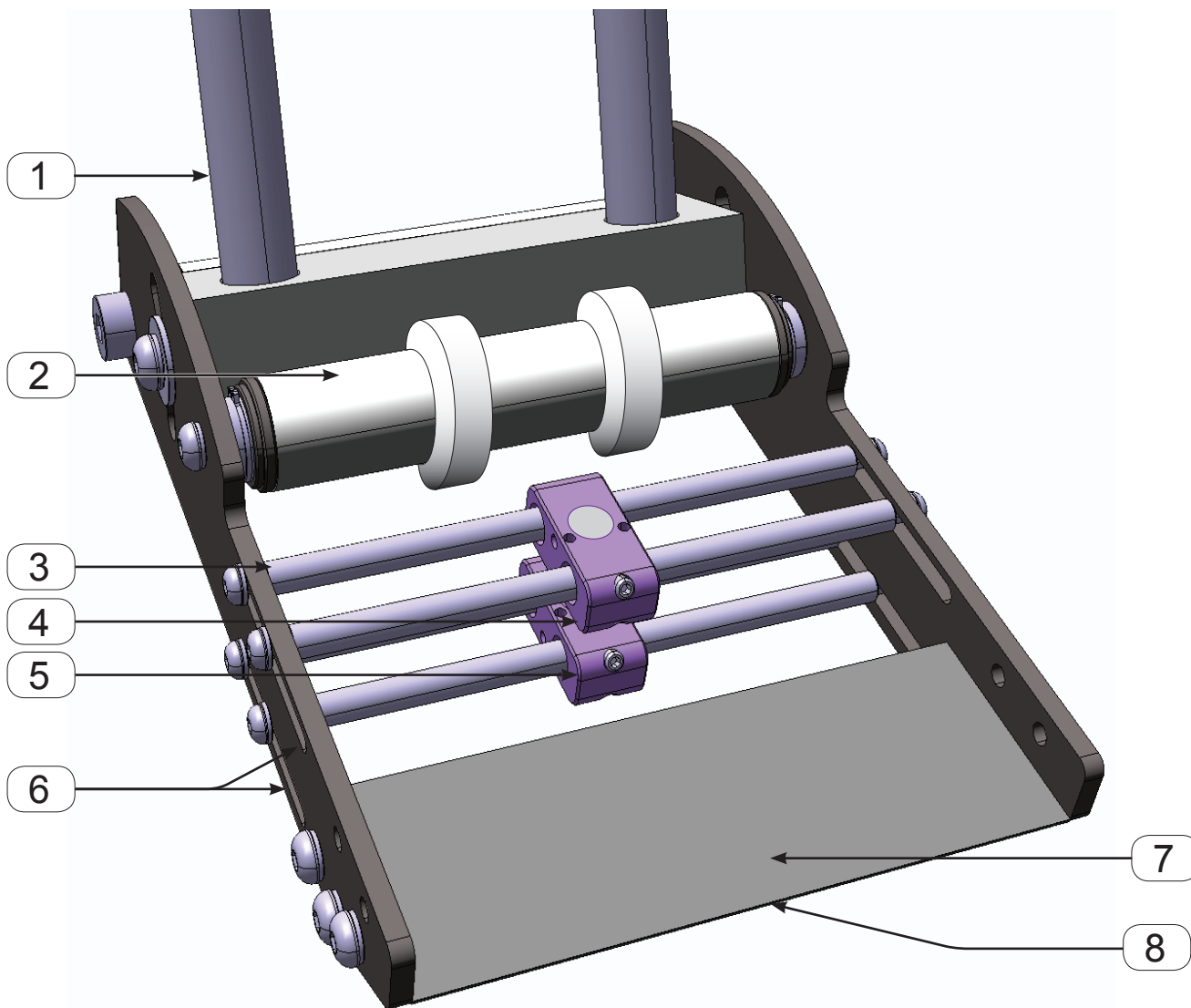


**Vacuum Take Up Rewind Configuration**

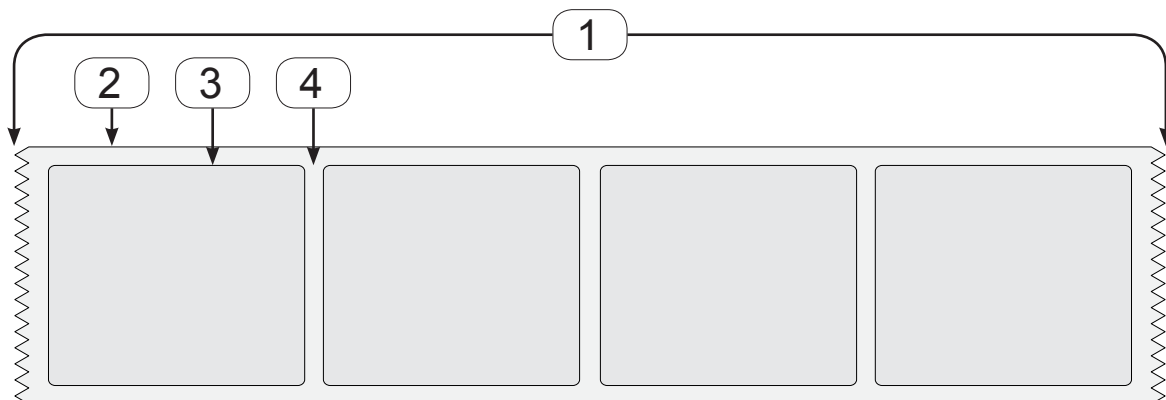


**Power Take Up Rewind Configuration**

**Peel Plate Assembly**



**Typical Media**



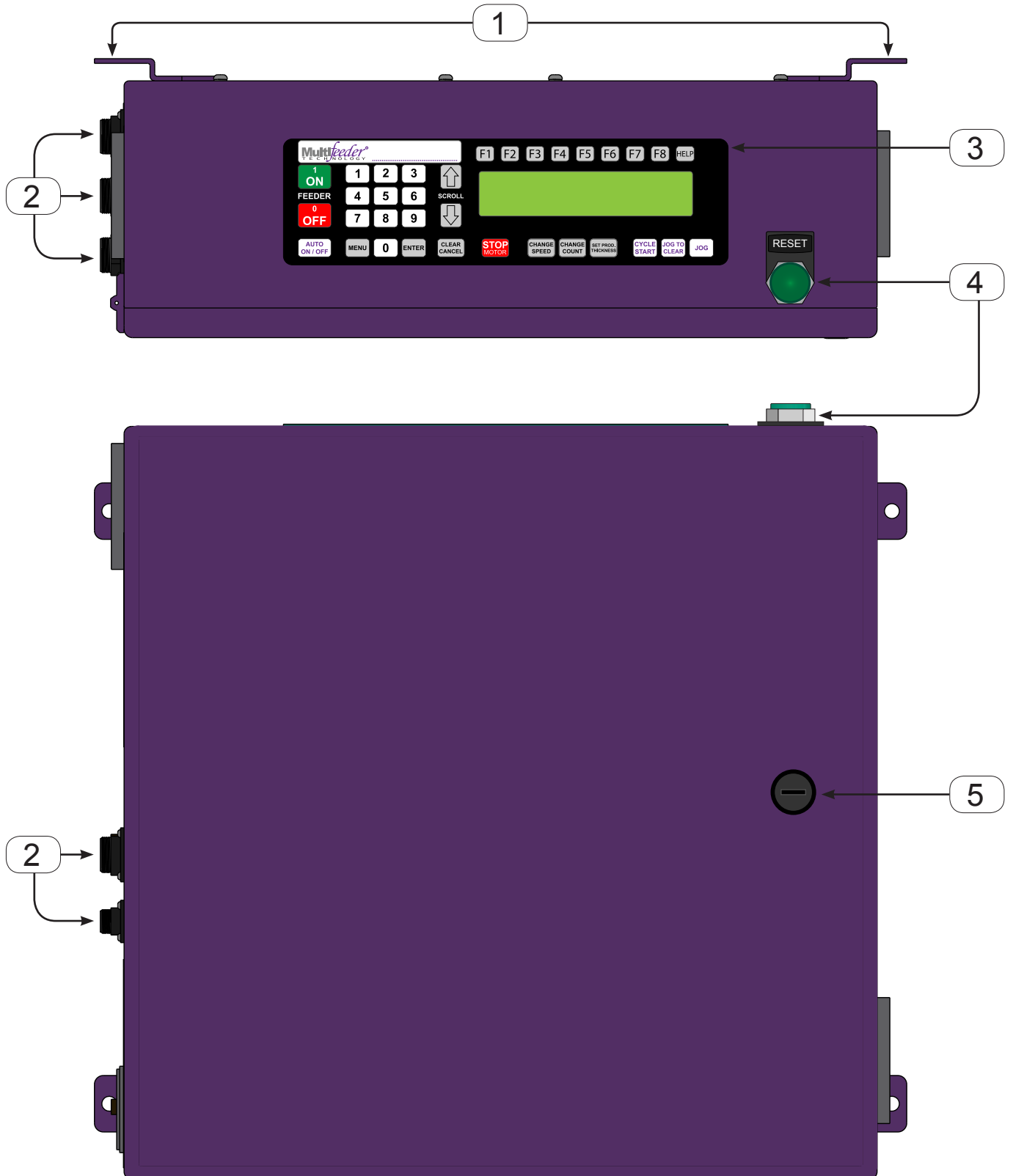
## Peel Plate Assembly

- 1 Peel Plate Mounting Rods
- 2 Peel Plate Media Guide Roller with Adjustable Guide Rings
- 3 Product (Label) Sensor Pair Mounting Rod
- 4 Upper Product (Label) Sensor
- 5 Lower Product (Label) Sensor
- 6 Product (Label) Sensor Pair Mounting Rod Adjustment Slot
- 7 Peel Plate
- 8 Peel Edge

## Typical Media

- 1 Media
- 2 Liner
- 3 Label
- 4 Gap

### Labeler Control Box - Exterior



- 1 **Mounting Tabs** - Used to mount the Control Box to the production line.

---

- 2 **Motor Connection** - Connects the Control Box to the labeler motors.

---

- 3 **Primary Keypad** - Allows operator to access and adjust labeler settings.

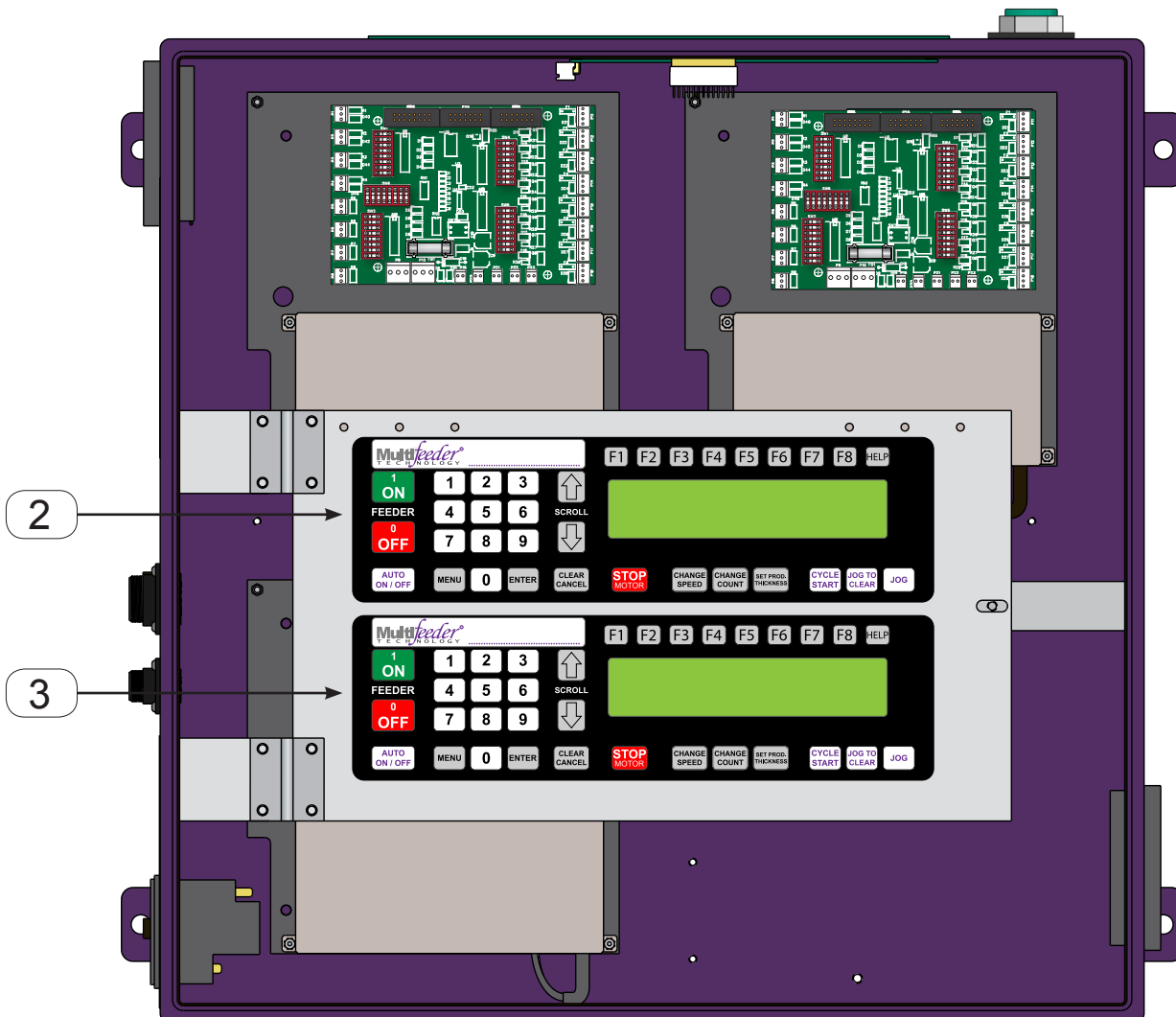
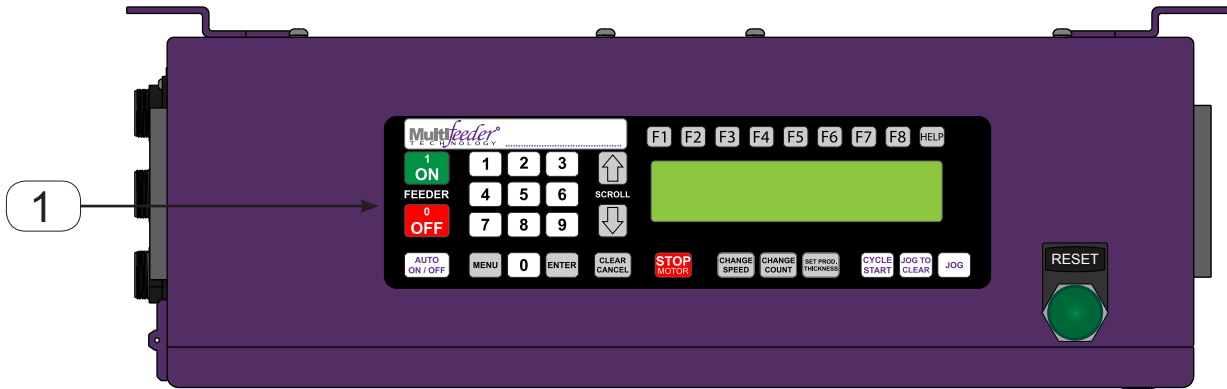
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- 4 **System Reset Button** - Allows the operator to reset the labelers interlock system.

---

- 5 **Cover Cam Latch** - Used to latch the cover closed.

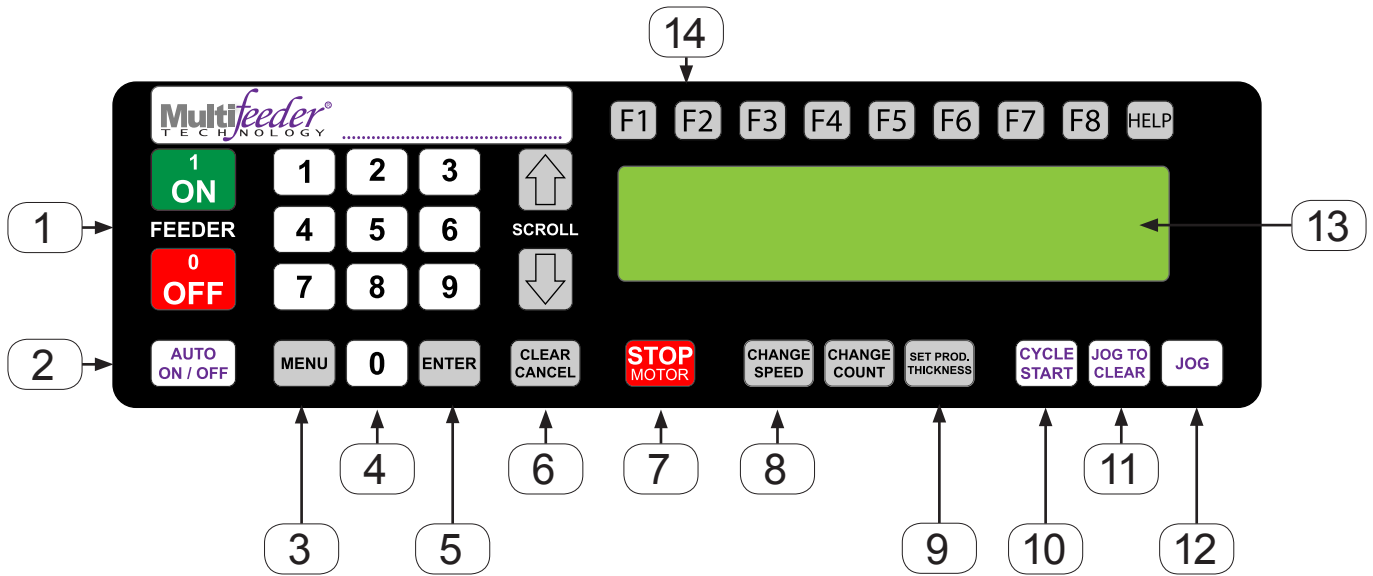
### Labeler Control Box - Interior



**The interior of the control box houses all of the electronics required to operate the labeler. Labeling systems with a vacuum take-away will contain 2 servo-drive controllers while a system with a powered rewind will contain 3 servo-drive controllers. See page 15 for configuration examples.**

- 1 Primary Keypad** - Allows operator to access and adjust the labeler's main drive settings.
- 2 Powered Unwind Keypad** - Allows operator to access and adjust the labeler's powered unwind settings.
- 3 Powered Rewind Keypad** - Allows operator to access and adjust the labeler's powered rewind settings.

### Keypad Detailed





- 1 **On/Off Key** - Used before/after turning on the Main On/Off Switch.

---

- 2 **Auto On/Off Key** - Used to enable or disable the automatic application cycle startup.

---

- 3 **Menu Key** - Used to enter and navigate the menu system.

---

- 4 **Numeric Keys** - Used to enter values in various menu settings.

---

- 5 **Enter Key** - Used to enter value changes in various menu settings.

---

- 6 **Clear/Cancel Key** - Used to clear or cancel values entered in various menu settings and stop certain function of the feeder.

---

- 7 **Stop Motor Key** - Used to stop or de-energizes the drive motor.

---

- 8 **Change Speed Key** - Used to change the dispense speed.

---

- 9 **Set Product Thickness**- Used during media setup.

---

- 10 **Cycle Start Key** - Used to start the application cycle.

---

- 11 **Jog To Clear Key** - Used to feed the label to the end of the peel plate.

---

- 12 **Jog Key** - Used to jog or feed the media or label . The drive continuously feed while this key is pressed.

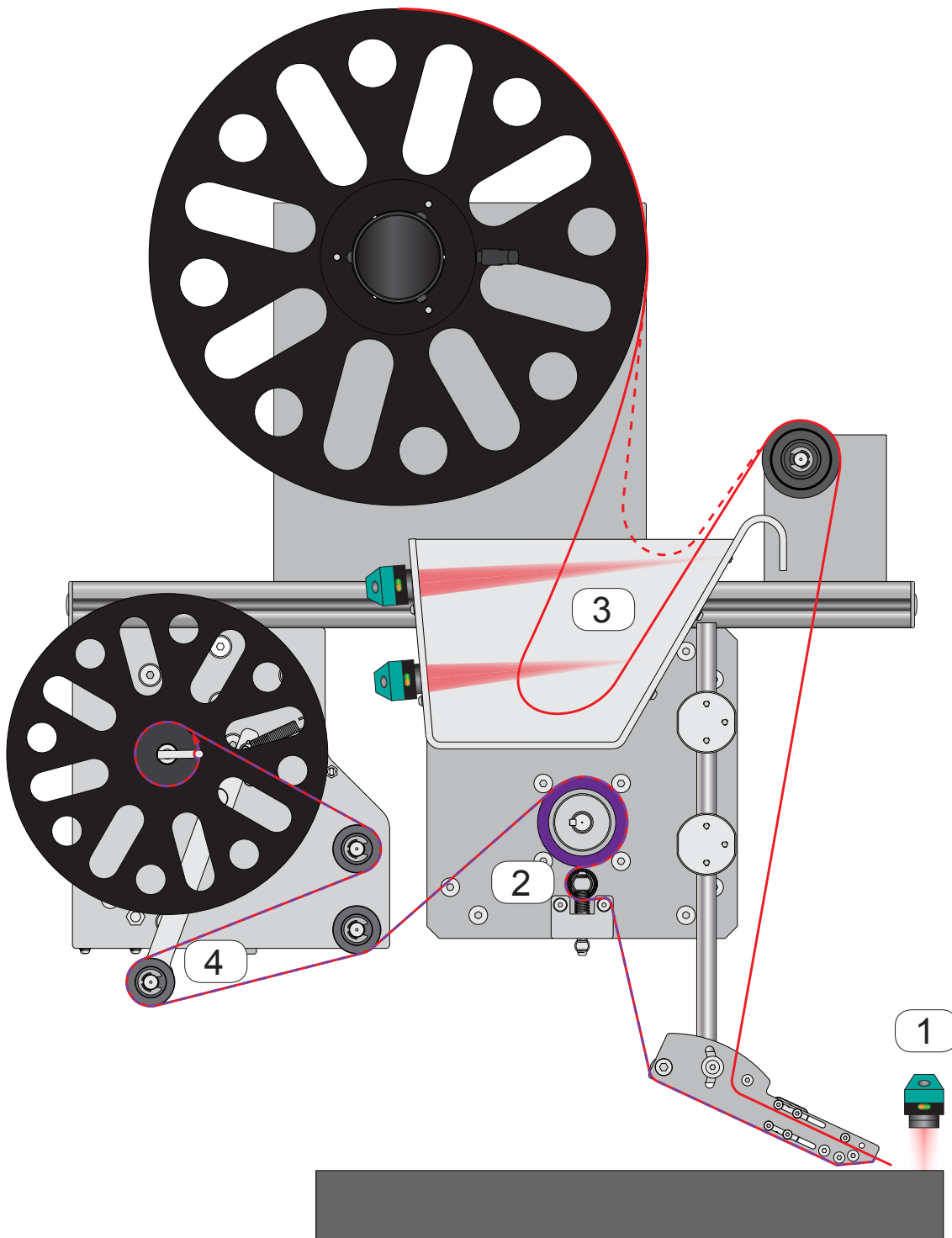
---

- 13 **Display** - Used to display functions and menu setting.

---

- 14 **Function Keys** - Used to display certain functions and menu settings.

## Setup

*Sequence of Operation*

- 1 The Labeler receives a signal to begin the application cycle.

---

- 2 The Main Drive Roller engages and moves the label until the Product (Label) Sensor is triggered by the gap.

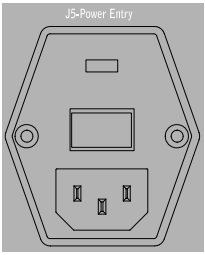

---

- 3 The Power Unwind Media Sensor is triggered as the media is used up and triggers the Power Unwind to supply additional media into the Power Unwind Media Box.

---

- 4 The Rewind Dancer Arm Sensor on the Power Rewind is triggered and takes up the slack in the liner as it develops during the application.

### Labeler Control Box Power Up

Action	Displayed
<p>1</p> 	<pre> STATUS: OFF PRESS ON TO ENABLE EQUIPMENT MODE: XXXXXXXXXX MODE F1 - TECHNICIAN           F2 - FACTORY </pre>
<p>2</p> 	<pre> MODE: ADVANCED TIPPING MODE   AUTO OFF STATUS: READY                 PRODUCT COUNT 1 PROGRAM NUMBER 1 </pre>

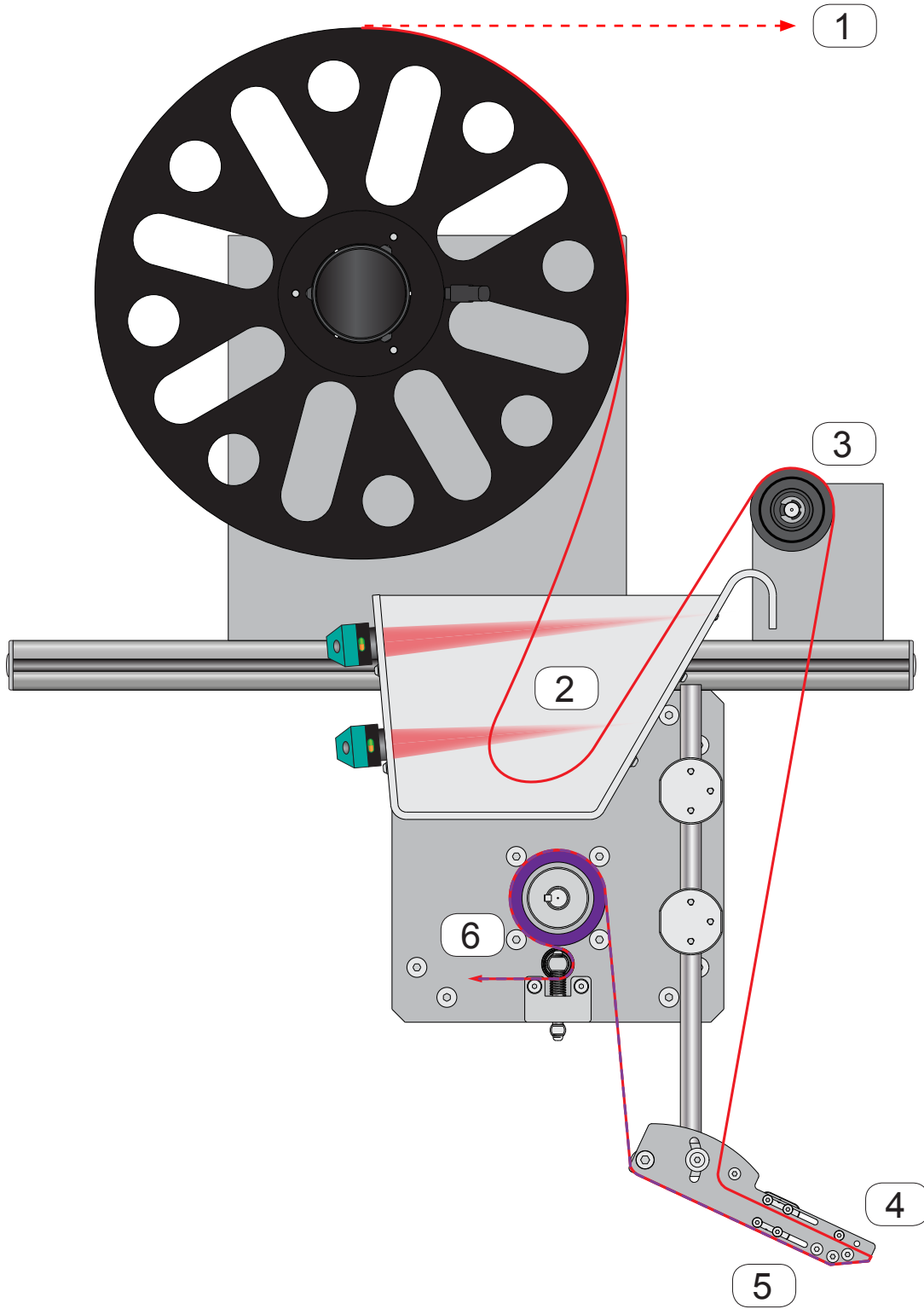



Be certain that you have read and understand ALL of the Safety Section before powering up or setting up any Multifeeder Equipment.

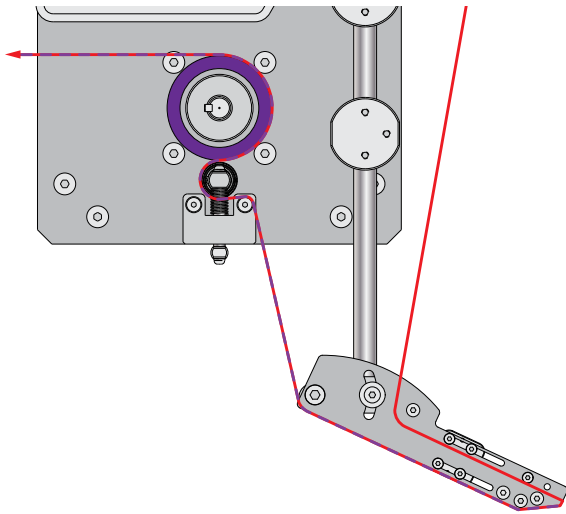
- 1 Turn on the main Power Switch and wait until you see illustrated screen is displayed.
- 2 Press the On Key to complete the Power On Sequence.

**Labeler Thread Pattern**

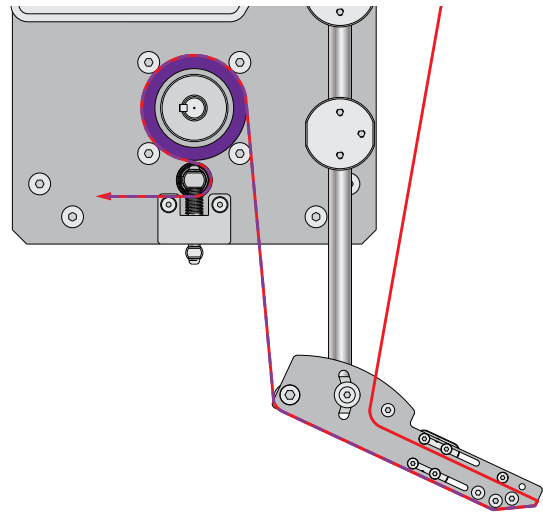
**General Labeler Thread Pattern**



- 1 Place the roll of labels onto the Power Unwind Hub such that the label exits the top of the roll in the direction of the Peel Plate.
- 2 Form a loop within the Power Unwind Media Sensor Box.
- 3 Thread the media around the Media Guide Roller.
- 4 Thread the media around the Peel Plate Media Guide Roller and between the Upper and Lower Product (Label) Sensor Pair.
- 5 Thread the media over the Peel Plate and around the Peel Edge removing any labels from the liner after the Peel Edge as illustrated by the  dashed line.
- 6 Thread the liner under the Main Drive Pinch Roller and then between the Main Drive Pinch Roller and the Main Drive Roller Using the Main Drive Pinch Roller Pull Down Bar. Continue threading the liner around the Main Drive Roller and to the rewind device. Note: Alternative thread pattern is available if required.

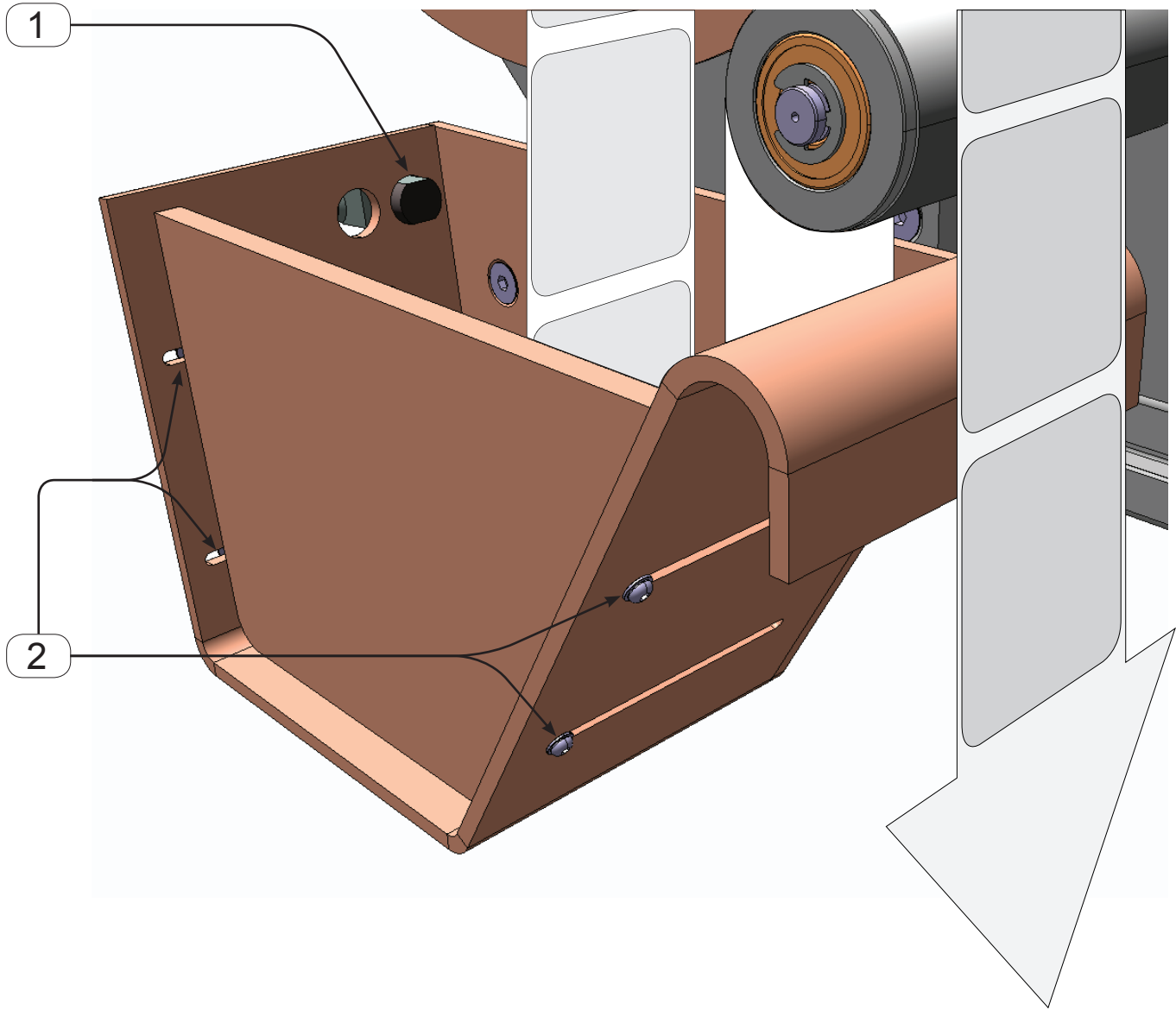


Common Thread Pattern



Alternative Thread Pattern

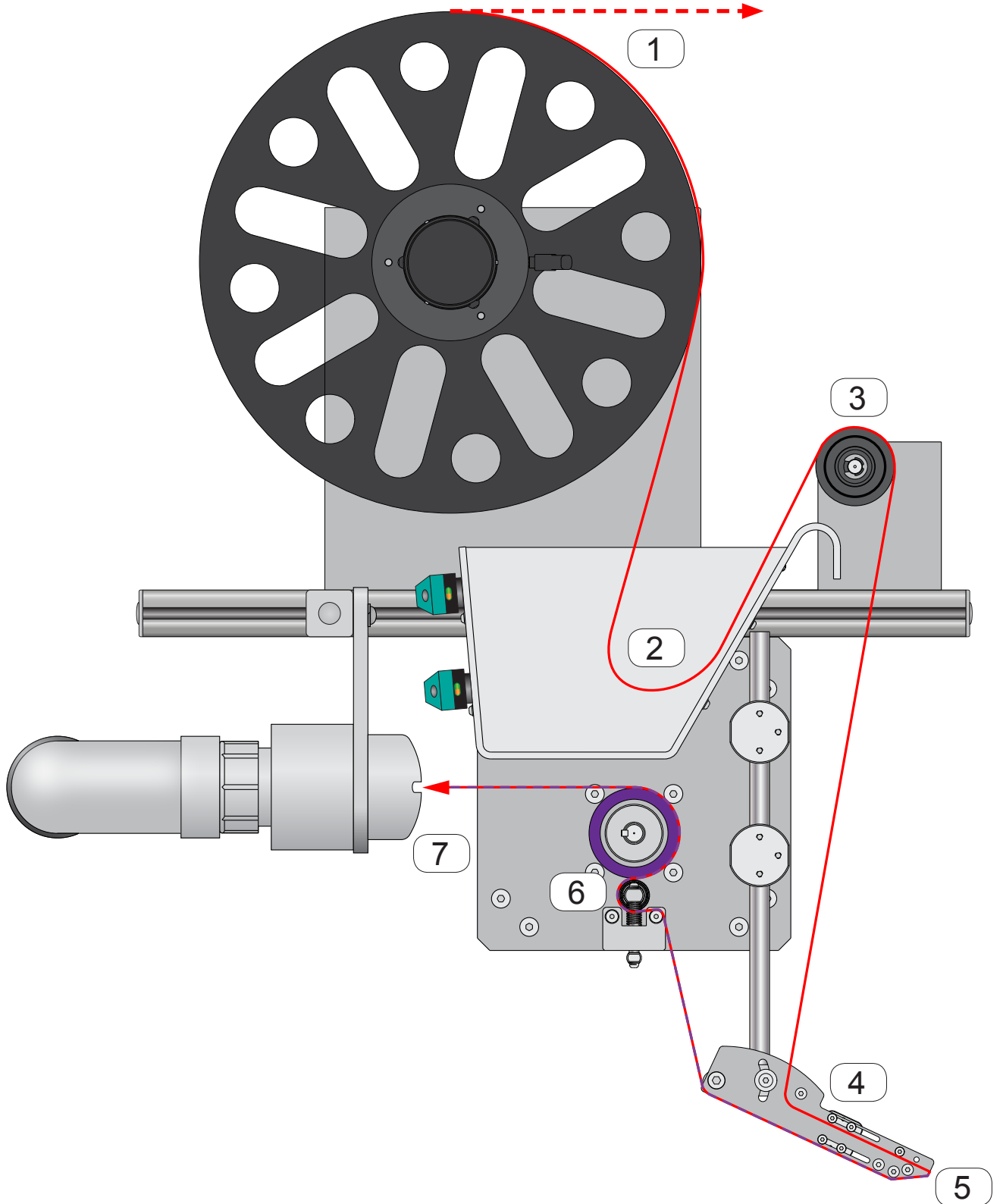
**Power Unwind Media Sensor Box**




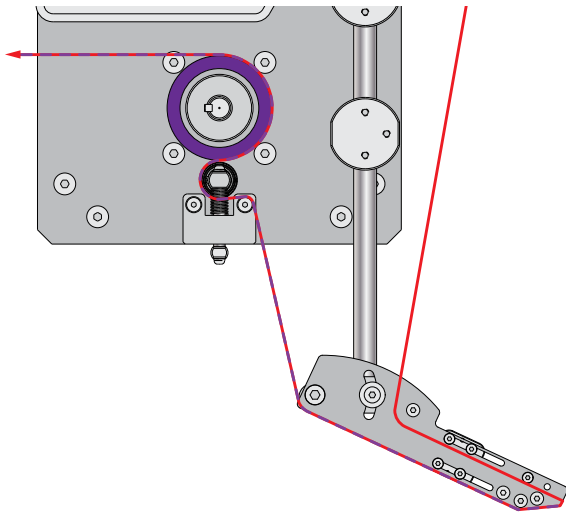


- 1 Verify the Power Unwind Media Sensor is properly positioned to trigger with the media being applied.
- 
- 2 Use the 4 screws to adjust the Power Unwind Media Sensor Box Label Width Adjustment Plate to control the side-to-side movement of the media.

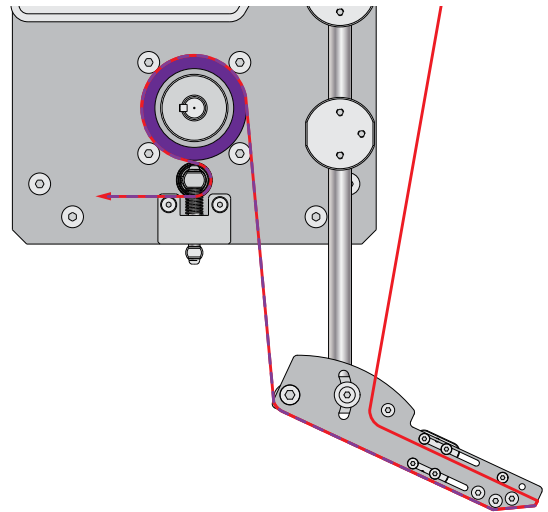
***With Power Unwind and Vacuum Take Up***



- 1 Place the roll of labels onto the Power Unwind Hub such that the label exits the top of the roll in the direction of the Peel Plate.
- 2 Form a loop within the Power Unwind Media Sensor Box.
- 3 Thread the media around the Media Guide Roller.
- 4 Thread the media around the Peel Plate Media Guide Roller and between the Upper Product (Label) Sensor Pair.
- 5 Thread the media over the Peel Plate and around the Peel Edge removing any labels from the liner after the Peel Edge as illustrated by the  dashed line.
- 6 Thread the liner under the Main Drive Pinch Roller and then between the Main Drive Pinch Roller and the Main Drive Roller Using the Main Drive Pinch Roller Pull Down Bar. Continue threading the liner around the Main Drive Roller and to the rewind device.
- 7 Place a length of liner material into the Vacuum Take Up Device Entrance. The length will vary depending on the characteristics of the Liner.

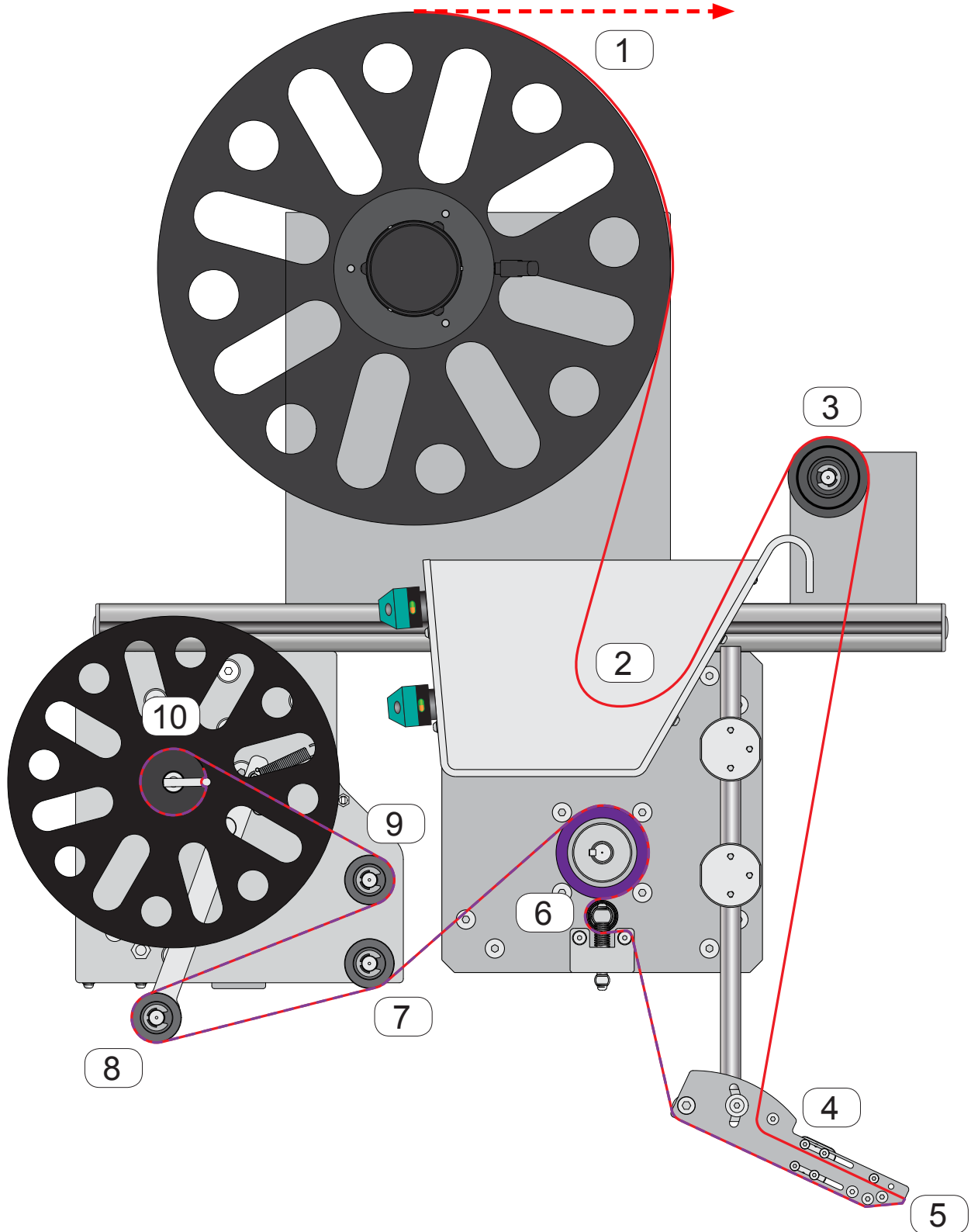



Common Thread Pattern

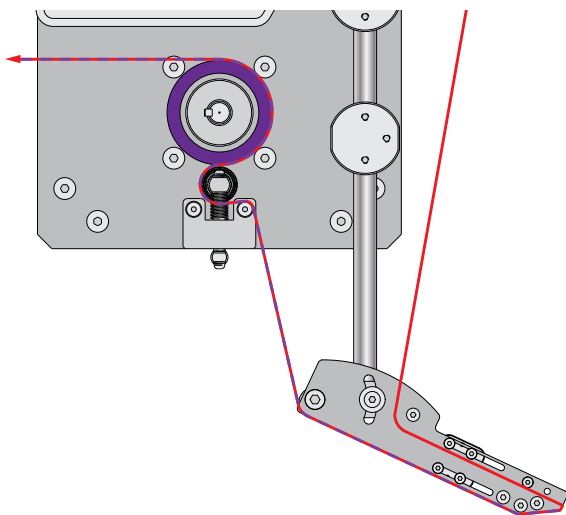


Alternative Thread Pattern

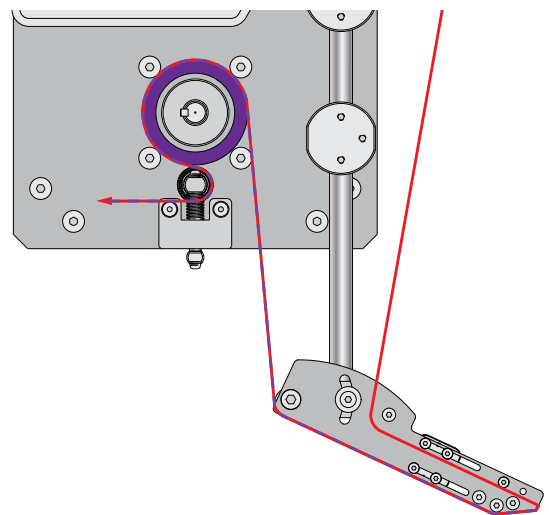
***With Power Unwind and Power Take Up***



- 1 Place the roll of labels onto the Power Unwind Hub such that the label exits the top of the roll in the direction of the Peel Plate.
- 2 Form a loop within the Power Unwind Media Sensor Box.
- 3 Thread the media around the Media Guide Roller.
- 4 Thread the media around the Peel Plate Media Guide Roller and between the Upper Product (Label) Sensor Pair.
- 5 Thread the media over the Peel Plate and around the Peel Edge removing any labels from the liner after the Peel Edge as illustrated by the  dashed line.
- 6 Thread the liner under the Main Drive Pinch Roller and then between the Main Drive Pinch Roller and the Main Drive Roller Using the Main Drive Pinch Roller Pull Down Bar. Continue threading the liner around the Main Drive Roller and to the rewind device.
- 7 Thread the liner underneath the Power Take Up Rewind Lower Idler Roller.
- 8 Thread the label around the Power Take Up Rewind Dancer Arm.
- 9 Thread the label around the Power Take Up Rewind Upper Idler Roller.
- 10 Wrap the liner several times around Power Take Up Rewind Hub.



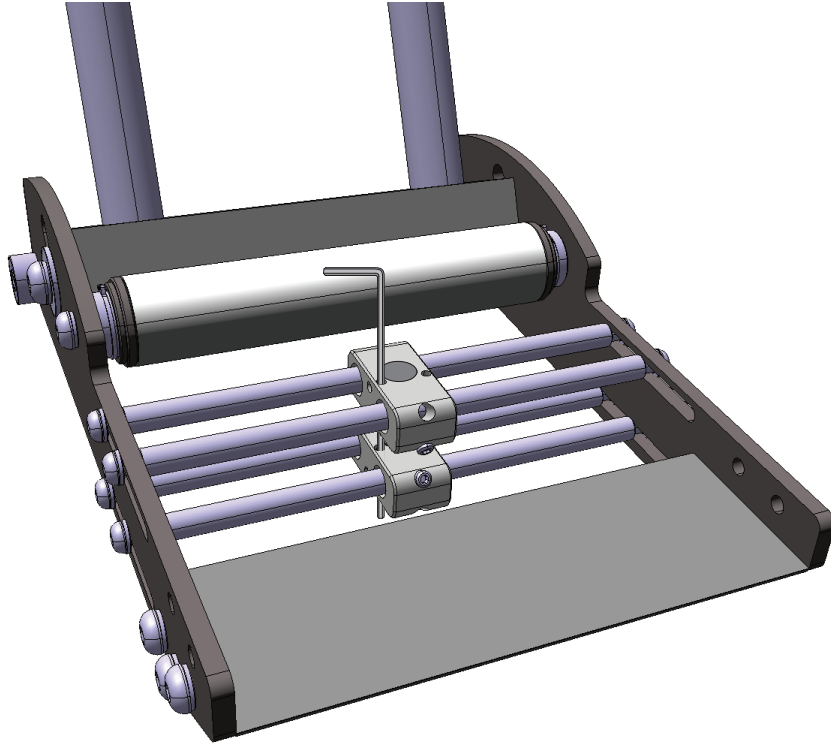
Common Thread Pattern



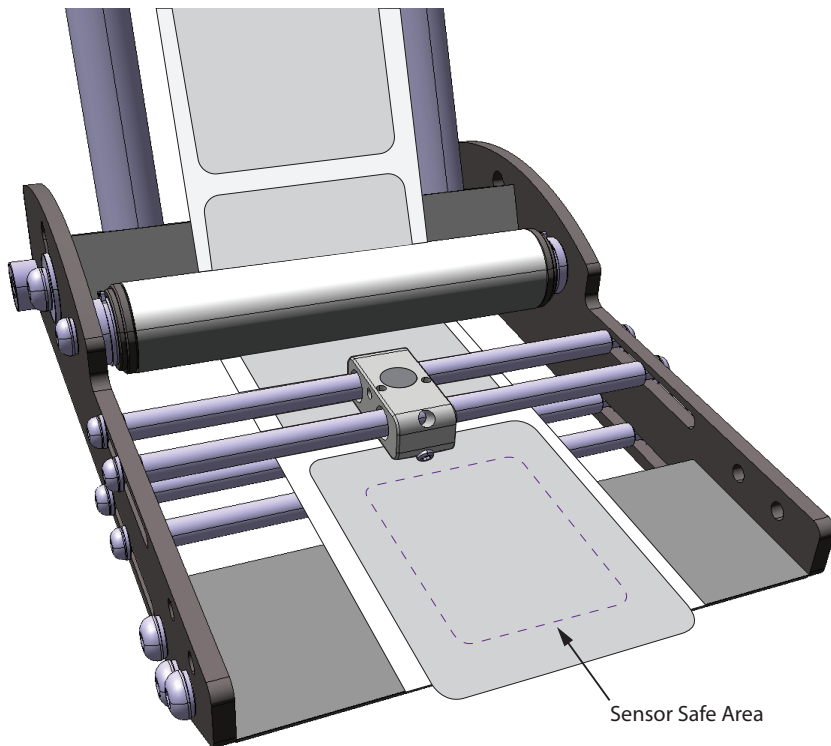
Alternative Thread Pattern


### Standard Product Sensor Setup

1



2





In normal operation, the label product sensor can be setup by positioning the last 5 mm of the trailing edge of the label below the product sensor and then pressing the  key. If however, the labeler product sensor has been moved and becomes seriously out of adjustment, the following setup instructions will restore the labeler product sensor to normal operation:

- 1 When required use an 1.5mm allen wrench to align the emitter and receiver as illustrated.
- 2 Position the labeler product sensor within the safe sensor area that is 5mm from any edge of the label.


**Continue on the next page.**

**Standard Product Sensor Setup - Continued**

Action	Displayed
2	 = <pre> MAIN 1/2 : MENU KEY FOR NEXT 1. SETTINGS           4. REPORTS 2. PROGRAMS          5. IDENTIFICATION 3. SETUP              6. DIAGNOSTICS           </pre>
3	 = <pre> SYSTEM DIAGNOSTICS 1/4 : MENU FOR NEXT 1.STACK LIGHT        4.PSTART/LOW-P INPUT 2.PRODUCT SENSOR     5.LOW PRODUCT OUTPUT 3.LINE SPEED ENC     6.AUTO ON OUTPUT           </pre>



**Continue from previous page.**

**3** From the READY screen on the controller, press the  key.

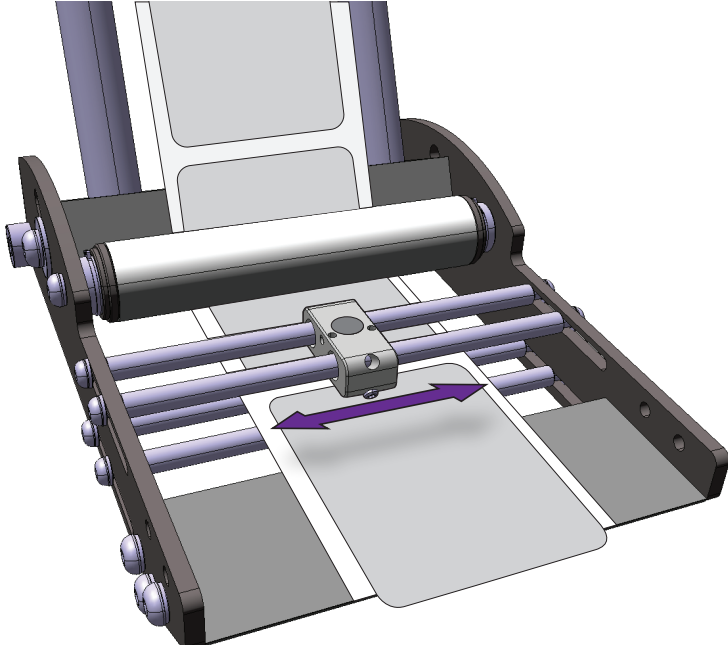
---

**4** Press the  key to select DIAGNOSTICS.




---

**Continue on the next page.**

**Standard Product Sensor Setup - Continued**

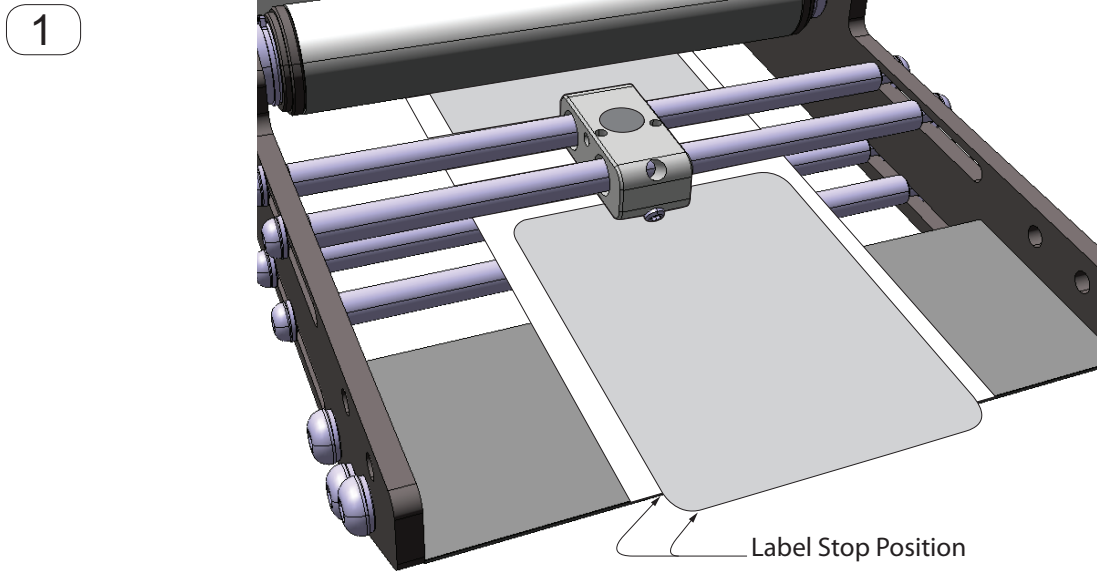
Action	Displayed
<p>4</p> <p><b>2</b> =</p>	<pre>SYSTEM DIAGNOSTICS ITEM 2 OF 24 PRODUCT SENSOR 1-4 SELECTED(0):1=XXX,2=XXX,3=XXX,4=XXX</pre> <p>5</p>
6	
<p>7</p> <p><b>CLEAR CANCEL</b> =</p>	<pre>MODE: ADVANCED TIPPING LABELER STATUS : READY          PRODUCT COUNT 1 PROGRAM NUMBER</pre>
<p>8</p> <p><b>SET PROD. THICKNESS</b> =</p>	<pre>CHECKING PRODUCT THICKNESS PLEASE WAIT...</pre>

**Continued from previous page.**

- 4 Press the  key to select PRODUCT SENSOR.
- 5 Sensor drive #3 should ideally be between 90-110.
- 6 If the labeler has not been feeding correctly and sensor drive #3 is not between these values you should loosen the top half of the product sensor and move it until the values fall between 90-110. When the numbers are in range tighten the top half of the sensor drive to lock it in place.
- 7 Press the  key until you return to the READY screen.
- 8 Press the  key. The labeler product sensor is now ready. It is recommended that you save your settings.



**Note** - For alternate or non-standard sensor setup go to page 50.

**Label Stop Position****Action****Displayed**

2

**MENU**

=

```

MAIN 1/2 : MENU KEY FOR NEXT
1. SETTINGS           4. REPORTS
2. PROGRAMS          5. IDENTIFICATION
3. SETUP              6. DIAGNOSTICS
  
```

3



**1**

=

```

PRODUCT LENGTH (M-F3), DEFAULT: 210
RANGE: 5-1500 mm
CURRENT: 150   NEW: 150
  
```

The Label Stop Position is where the label stops with respect to the Peel Edge after an application cycle. However certain applications may require adjusting the Label Stop Position. Follow the instructions below to adjust the Label Stop Position as required.

- 1 The Stop Position is the where the label stops after the completion of an application cycle.
- 2 From the READY screen on the controller, press the  key.
- 3 Press the  key to select SETTINGS.

**Continue on the next page.**



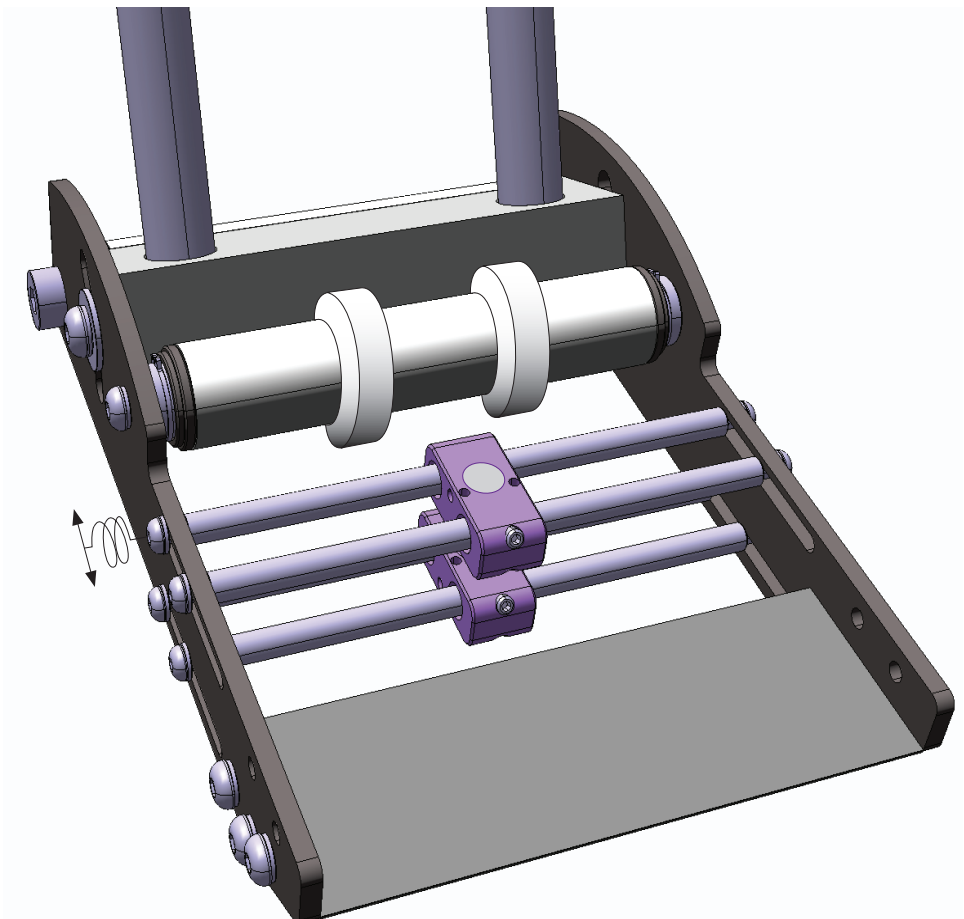
**Note** - Follow the rules below to ensure proper label feeding when adjusting the Label Stop Position.

- Never use a minimum product length longer than the length of the label.
- Never use a minimum product length that makes the label stop past the sensor. If this happens, then instead move the sensor down-stream so the product stops under the sensor.
- This distance and location are dependent on:
  - Length of label
  - Speed of labeler
  - Deceleration value for motor
  - Desired stop position of the label on peel plate

**Label Stop Position - Continued**

Action	Displayed
4 <b>MENU</b> <b>10X</b>	<pre> MIN PRODUCT LENGTH (M-F3), DEFAULT: 0 RANGE: 0-1000 mm CURRENT: 0    NEW: 0           </pre>
5 <b>CLEAR</b> <b>CANCEL</b>	<pre> MODE: ADVANCED TIPPING LABELER STATUS : READY           PRODUCT COUNT 1 PROGRAM NUMBER           </pre>



6




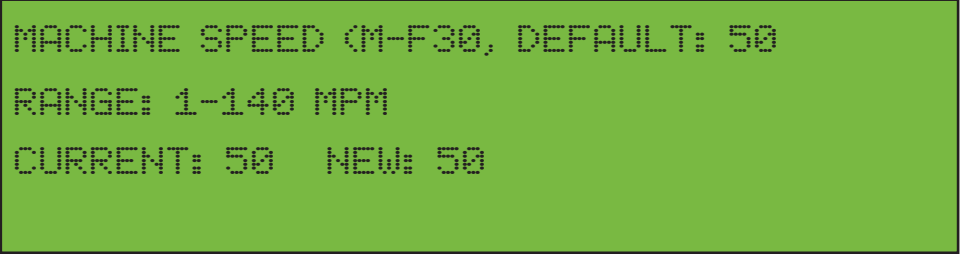


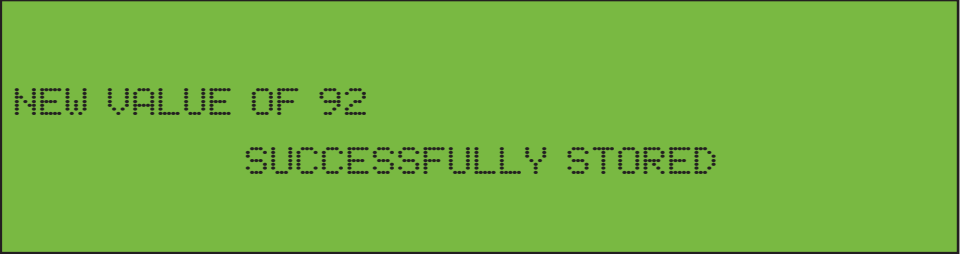

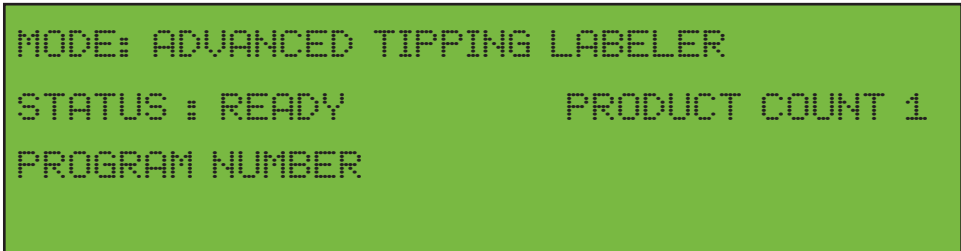
---

**Continued from previous page.**

---

- 4 Press the  key 10 times to navigate to the Minimum Product Length screen and enter the new value.
- 5 Press the  key until you return to the READY screen.
- 6 Some applications may require the repositioning of the Product (Label) Sensors. Do this by loosening the bolts on the Product (Label) Sensor Pair Mounting Rod and repositioning as required.

**Labeler Speed Adjustment**


Action	Displayed
1 	
2 	
3 	
4 	



- 1 Press the Change Speed Key.
- 2 Enter the desired Machine Speed value by using the Number Keys.
- 3 Press the Enter Key. The screen will briefly display:

NEW VALUE OF [the entered value]  
SUCCESSFULLY STORED






After three (3) seconds the screen will return to the Machine Speed setting screen.

- 4 Press the  key until you return to the READY screen.



If you keyed an incorrect value, press the Clear Cancel Key to re-enter the value.

**Labeler Basic Menu - Settings Menu**



Action	Displayed
1 	<pre> MAIN 1/2 : MENU KEY FOR NEXT 1. SETTINGS           4. REPORTS 2. PROGRAMS          5. IDENTIFICATION 3. SETUP              6. DIAGNOSTICS           </pre>
2 	<pre> PRODUCT LENGTH (M-F3), DEFAULT: 210 RANGE: 5-1500 mm CURRENT: 210      NEW: 210           </pre>
3 	<pre> MAX JOG SPEED (S), DEFAULT: 20 RANGE: 1-100 CURRENT: 20      NEW: 20           </pre>
4 	<pre> SIGNAL DELAY (M-F3), DEFAULT: 0 RANGE: 0-30000 CURRENT: 0      NEW: 0           </pre>
5 	<pre> SIGNAL PERIOD (M-F3), DEFAULT: 0 RANGE: 0-10000 CURRENT: 0      NEW: 0           </pre>

Basic menu setting allow the operator control over common adjustments required for basic setup. More advanced menu settings are available through the password protected Technicians Menu. Press the **MENU** key from the ready screen to access the operator available settings illustrated on the previous page.

- 1 Press the **MENU** key from the ready screen to access the sub-menu.
- 2 Press the **1** key from the sub-menu to access the settings screen and the Product Length setting. This setting allows the operator to adjust the Product (Label) Length the labeler looks for when feeding a label.
- 3 Press the **MENU** from the previous screen to enter the Max Jog Speed setting. This setting allows the operator to adjust the speed the labeler jogs a label when the **JOG TO CLEAR** key or the **JOG** is pressed.
- 4 Press the **MENU** from the previous screen to enter the Signal Delay setting. This setting allows the operator to adjust when the labeler begins applying the label. In effect the position of the label on the product it is applied to.
- 5 Press the **MENU** from the previous screen to enter the Signal Period setting. This setting allows the operator to adjust how many start signal are ignored before triggering an application cycle. For example, with the value set to 0, no start signals are ignored and every start signal triggers an application cycle by the labeler. With a value of 21, 21 start signals are require to trigger an application cycle.



**Continue on the next page.**

**Labeler Basic Menu - Settings Menu (continued)**

Action	Displayed
<p>6</p>  =	<pre>NO PRODUCT LIMIT (M-F3), DEFAULT: 240 RANGE: 15-255 CURRENT: 240      NEW: 240</pre>
<p>7</p>  =	<pre>PRODUCT SEPARATION(0.1 mm units) (M-F3) RANGE: 1-1000, DEFAULT: 5 CURRENT: 5      NEW: 5</pre>

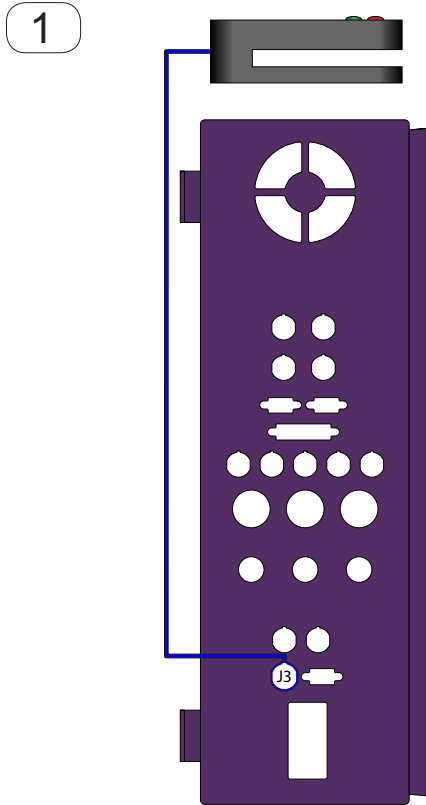
---

**Continued from previous page.**

- 6 Press the  from the previous screen to enter the No Product Limit setting. This setting allows the operator to adjust the value the Product (Label) Sensor uses to determine when a label gap is detected. See page 58.
  - 7 Press the  from the previous screen to enter the Product Separation setting. This setting allows the operator to adjust the Label Gap settings for non-standard labels.
- 

**Continue on the next page.**

### Non-Standard Product Sensor Setup



Action

Displayed

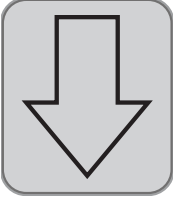
2

**MENU** =

```

MAIN 1/2 : MENU KEY FOR NEXT
1. SETTINGS           4. REPORTS
2. PROGRAMS          5. IDENTIFICATION
3. SETUP              6. DIAGNOSTICS
  
```



3

 =

```







MAIN 2/2 : MENU KEY FOR NEXT
1. DEMO MODE           4. LANGUAGE
2. TECHNICIAN
3. FACTORY
  
```

The Multifeder Technology high speed labeling system allows the use of non standard product or label sensors to meet specific application requirements. Follow the instructions below to connect and enable the non standard product or label sensor. Follow the instructions specific to the sensor to ensure the sensor function properly in your application.

- 1 Connect the non Standard Sensor to J3.
- 2 Navigate to the Advanced Sensor settings. From the READY screen on the controller, press the  key.
- 3 Press the  to navigate to the Main 2/2 screen.




**Continue on the next page.**

**Non-Standard Product Sensor Setup - Continued**

Action	Displayed
4  =	<pre>ENTERING TECHNICIAN SETTINGS MENU TYPE PASSWORD TO CONTINUE [   ]</pre>
5  =	<pre>TECHNICIAN 1/4 : MENU KEY FOR NEXT 1. MOTOR           4. ADVANCED SETTINGS 2. FEEDING         5. DIGITAL I/O 3. DEBOUNCE       6. WIZARDS</pre>
6  =	<pre>DIGITAL I/O 1/4 : MENU KEY FOR NEXT 1. STANDARD I/O SIGNALS 2. DUPLICATE SIGNALS 3. PRODUCT SENSOR</pre>
7  =	<pre>NO PRODUCT LIMIT (M-F3), DEFAULT: 240 RANGE: 15-255 CURRENT: 240   NEW: 240</pre>
8   =	<pre>ADVANCED PRODUCT SENSOR (S), DEFAULT: 0 RANGE: 0=OFF, 1-9=PORT CURRENT: 0   NEW: 0</pre>



**Continued from previous page.**

- 4 Enter the Technician Level password. (See Note)
- 5 Entering the Technician Level password displays the Technician 1/4 screen.
- 6 Press the  key to navigate to the Digital I/O screen.
- 7 Press the  key to enter the Product Sensor menu options.
- 8 Press the  key 3 times to navigate to the Advanced Product Sensor setting.



**Note** - The password is disclosed during the install and training or available by contacting the Multifeder Technology service department at (651) 407-3100 during normal business hours in the central time zone.

**Non-Standard Product Sensor Setup - Continued**

Action	Displayed
<p>9</p> <p><b>9</b> =</p>	<pre>ADVANCED PRODUCT SENSOR (S), DEFAULT: 0 RANGE: 0=OFF, 1-9=PORT CURRENT: 9    NEW: 9</pre>
<p>10</p> <p><b>CLEAR</b> <b>CANCEL</b> =</p>	<pre>MODE: ADVANCED TIPPING LABELER STATUS : READY           PRODUCT COUNT 1 PROGRAM NUMBER</pre>

**Continued from previous page.**

---

- 9** Press the **9** key to set J3 as the input port for the non standard product sensor.

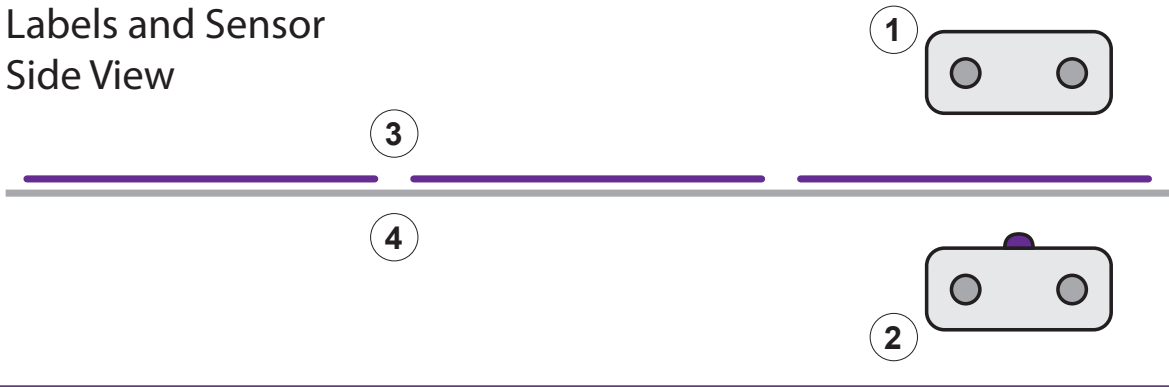
---

- 10** Press the **CLEAR CANCEL** key until you return to the READY screen.

### Label Product Sensor Advanced Calibration

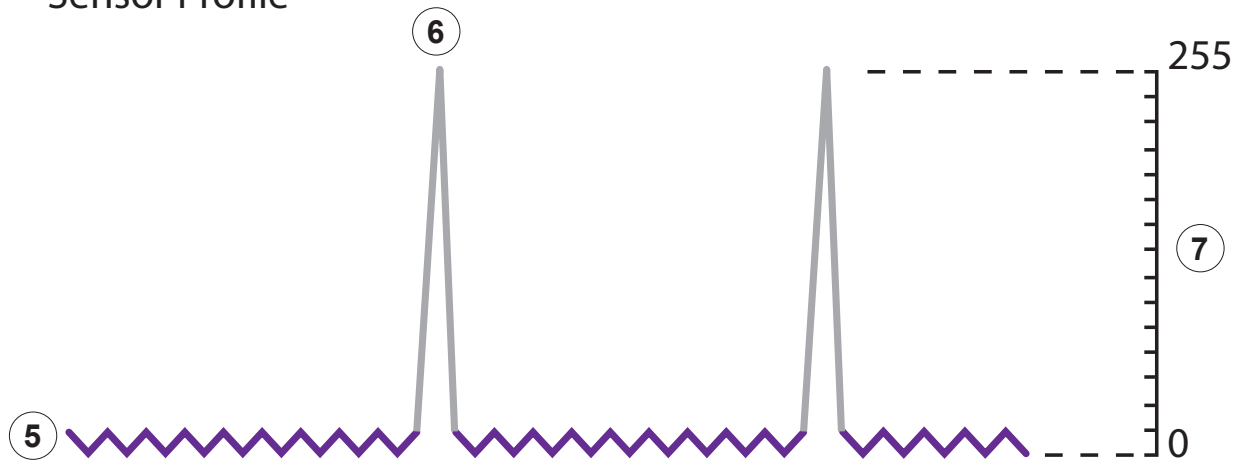
1

Labels and Sensor  
Side View



2

Sensor Profile



The label or product sensor is calibrated at the factory and will function without adjustment for the majority of applications. However certain applications may require adjusting sensor parameters to achieve maximum performance. Follow the instructions below to calibrate the sensor as required.

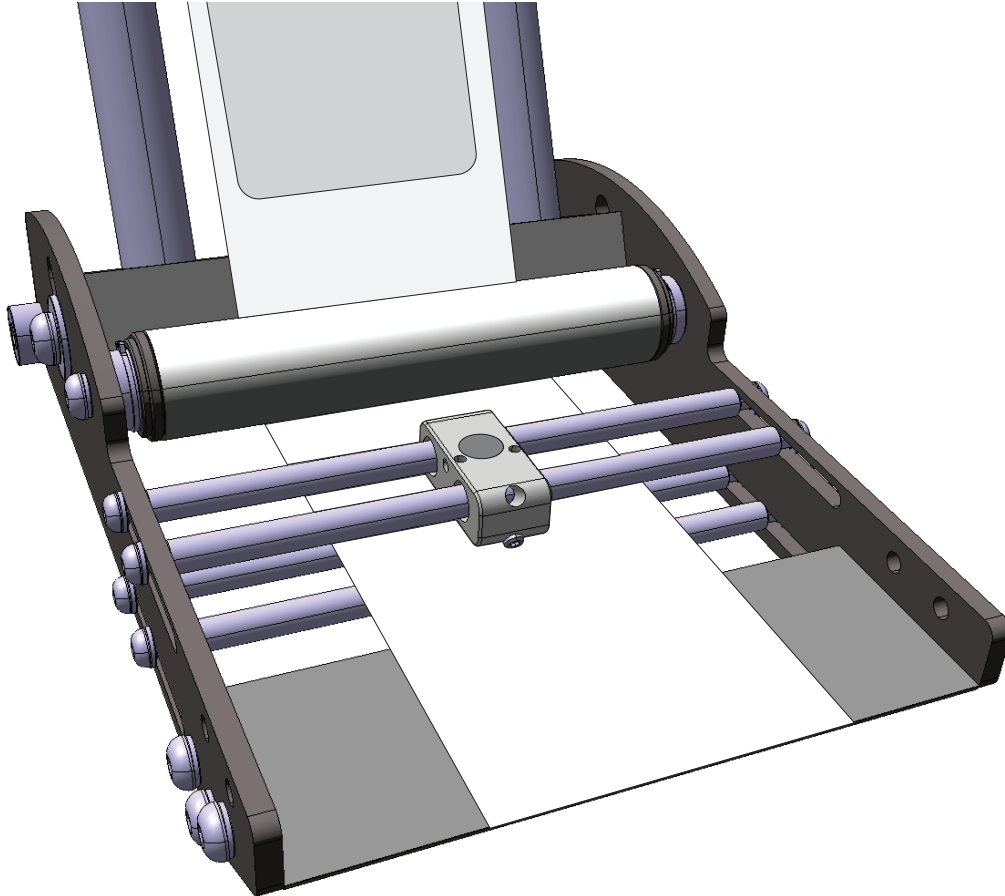
- 1 This illustration shows the sensor, label and liner relationship as viewed from the side. The sensor components consist of an upper emitter (1) and a lower receiver (2). The sensor is calibrated to detect the gap or space (3) between labels on the liner (4).
- 2 This illustration shows the sensor profile. The sensor profile is a graphic representation of what the sensor “sees” as the media passes through it. The wavy line (5) is the sensor value when the sensor is seeing the label and liner and the spike (6) is the sensor value when the label sees the label gap or liner only. The graph (7) represents numerical values of what the sensor might see. The values range from 0 to 255. Where 0 is a completely opaque material and 255 is a completely transparent material.

A software algorithm is used to determine the actual value required to indicate whether the sensor is seeing a label or gap. In some applications this value may need to be adjusted manually. Follow the instructions on the following pages to determine and set the Sensor No Product Value.

**Continue on the next page.**

**Label Product Sensor Advanced Calibration - Continued**

3

**Action****Displayed**

4

**MENU**

=

```

MAIN 1/2 : MENU KEY FOR NEXT
1. SETTINGS           4. REPORTS
2. PROGRAMS           5. IDENTIFICATION
3. SETUP              6. DIAGNOSTICS

```

5

**6**



=

```

SYSTEM DIAGNOSTICS 1/4 : MENU FOR NEXT
1.STACK LIGHT        4.PSTART/LOW-P INPUT
2.PRODUCT SENSOR     5.LOW PRODUCT OUTPUT
3.LINE SPEED ENC     6.AUTO ON OUTPUT

```

**Continued from previous page.**

- 
- 3** Remove any labels from the liner as illustrated.
- 
- 4** From the READY screen on the controller, press the  key.
- 
- 5** Press the  key to select DIAGNOSTICS.

**Continue on the next page.**

**Label Product Sensor Advanced Calibration - Continued**

Action

Displayed

6

2

=

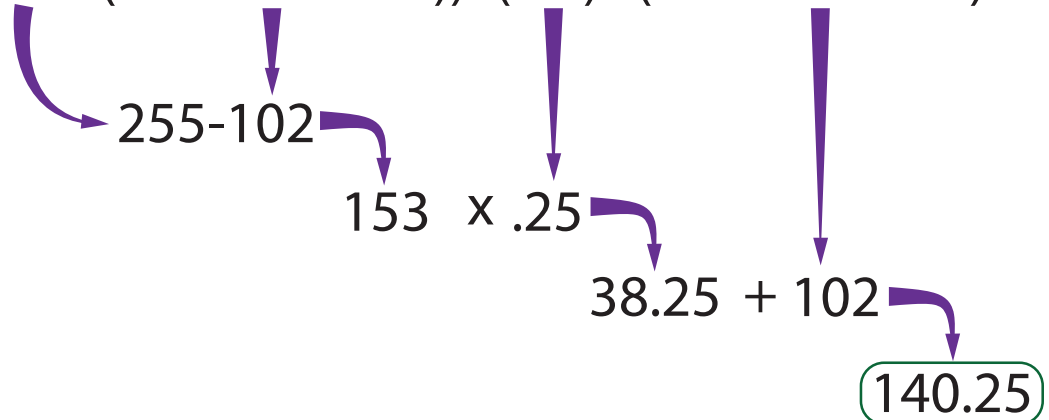
```
SYSTEM DIAGNOSTICS ITEM 2 OF 24
PRODUCT SENSOR
1-4 SELECTED(0):1=255,2=255,3=102,4=36
```

7

8 Value=(255-(Drive 3 Value))x(.25)+(Drive 3 Value)

Example:

Value=(255-(Drive 3 Value))x(.25)+(Drive 3 Value)



9

CLEAR  
CANCEL

=

```
MODE: ADVANCED TIPPING LABELER
STATUS : READY           PRODUCT COUNT 1
PROGRAM NUMBER
```


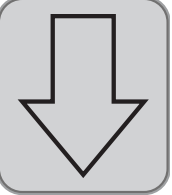




**Continued from previous page.**

- 
- 6 Press the  key to select PRODUCT SENSOR.
- 
- 7 Note the value of #3, referred to as “Drive 3”. In this example a value of 102.
- 
- 8 Enter the value into the No Product Sensor Value formula as illustrated.
- 
- 9 Press the  key until you return to the READY screen.





**Continue on the next page.**

**Label Product Sensor Advanced Calibration - Continued**

Action	Displayed	
10		<pre> MAIN 1/2 : MENU KEY FOR NEXT 1. SETTINGS           4. REPORTS 2. PROGRAMS          5. IDENTIFICATION 3. SETUP              6. DIAGNOSTICS </pre>
11		<pre> MAIN 2/2 : MENU KEY FOR NEXT 1. DEMO MODE          4. LANGUAGE 2. TECHNICIAN 3. FACTORY </pre>
12		<pre> ENTERING TECHNICIAN SETTINGS MENU TYPE PASSWORD TO CONTINUE [   ] </pre>
13	[ Enter Password ]	<pre> TECHNICIAN 1/4 : MENU KEY FOR NEXT 1. MOTOR              4. ADVANCED SETTINGS 2. FEEDING            5. DIGITAL I/O 3. DEBOUNCE           6. WIZARDS </pre>
14		<pre> DIGITAL I/O 1/4 : MENU KEY FOR NEXT 1. STANDARD I/O SIGNALS 2. DUPLICATE SIGNALS 3. PRODUCT SENSOR </pre>

**Continued from previous page.**





**The following instructions guide you through navigating and entering the No Product Sensor Value determined from the previous page.**

- 10 From the READY screen on the controller, press the  key.
- 11 Press the  key to navigate to the Main 2/2 screen.
- 12 Enter the Technician Level password. (See Note) Press the  key.
- 13 Entering the Technician Level password displays the Technician 1/4 screen.
- 14 Press the  key to navigate to the Digital I/O screen.


**Continue on the next page.**



**Note** - The password is disclosed during the install and training or available by contacting the Multifeder Technology service department at (651) 407-3100 during normal business hours in the central time zone.

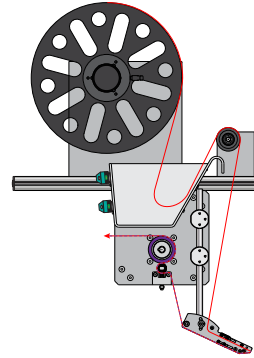
Action	Displayed
15	 = 
16	 = 

**15** Use the keypad to enter the value calculated from page 60.

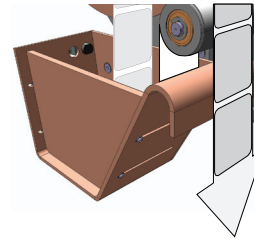
**16** Press the  key until you return to the READY screen.

## Ready-to-Run Checklist

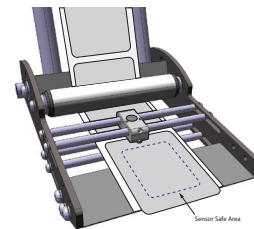
- Verify the media is loaded and labels are removed from the liner after the Peel Plate.



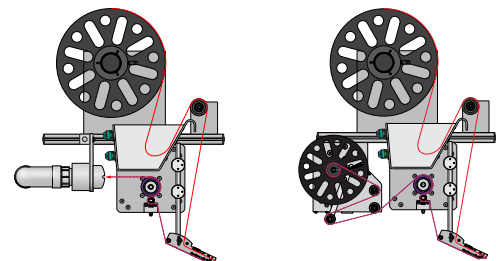
- Verify the media is properly triggering the Power Unwind Media Sensor and the Power Unwind Media Sensor Box Label Width Adjustment Plate is position properly.



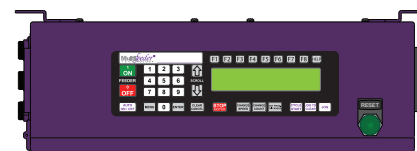
- Verify the Product (Label) Sensor is properly adjusted by pressing the **JOG TO CLEAR** several times verifying the label stops consistently along the Peel Edge.



- Verify the operation of the rewind. Turn on the pneumatics for the Vacuum Take Up Rewind configuration (if required) or set the Control Box to Auto On for the Powered Take Up configuration.



- Set the control box to Auto On and press Cycle Start to activated for the Labeler.





## Maintenance

### ***Preventative Maintenance***



**Proper operation of your Multifeeder equipment is dependent on a regularly preventative maintenance scheduled and inspection program. The generic scheduled outlined in this section may need to be adjusted to your specific application and environmental conditions.**

#### **Warnings**

- Before any maintenance tasks are performed, the power must be disconnected from the Feeder.
- Use only a 50% isopropyl alcohol and water solution unless otherwise noted. Other cleaning agents may damage the material.
- Isopropyl alcohol is very flammable! Use only in an open area away from any source of ignition, including open flame or sparks.
- Be certain that the belts are completely dry before operating equipment. Damp belts may slip or track incorrectly causing injury or damage to the equipment.
- ONLY USE CLEAN DRY AIR IF PNEUMATIC AIR IS REQUIRED FOR YOUR APPLICATION.

#### ***Daily***

- Clean any debris from the equipment with a clean cloth dampened with the alcohol/water solution.
- Visually inspect the rollers and guides for damage or unusual wear.
- Visually inspect the machine for loose screws, bolts, and adjustment knobs.

#### ***Weekly***

- Inspect the photo optic sensors with clean lint free cloth dampened with the alcohol/water solution if necessary.
- Inspect any belt pulleys for looseness and tighten if necessary. With the power cable disconnected the pulleys may be rotated manually.
- Remove any adhesive buildup.

#### ***Semi-Annually***

- Open the side covers and remove any accumulated debris if necessary.

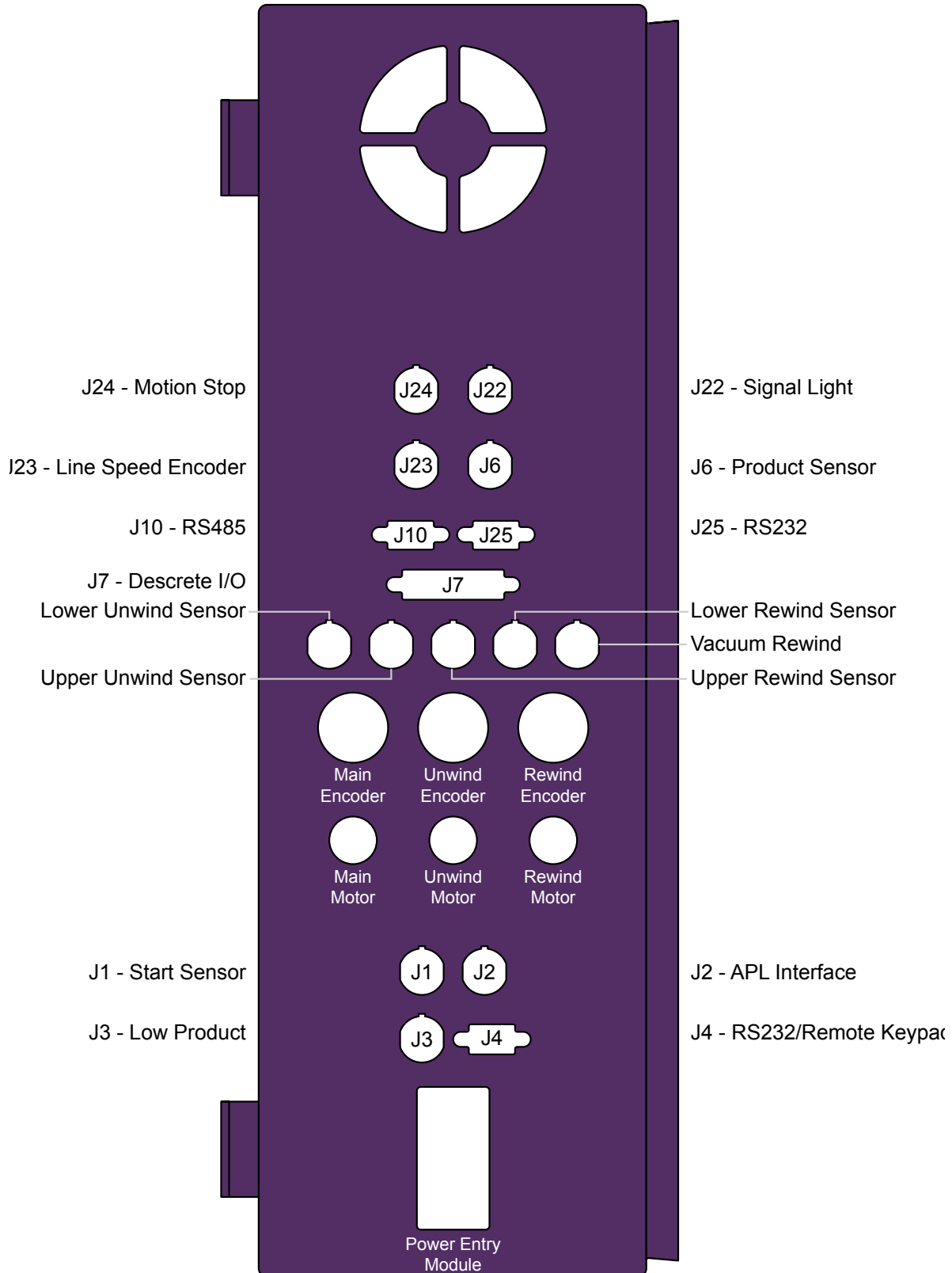
#### ***Annually***

- Inspect all belts, bearings and timing belts for wear and replace if necessary.

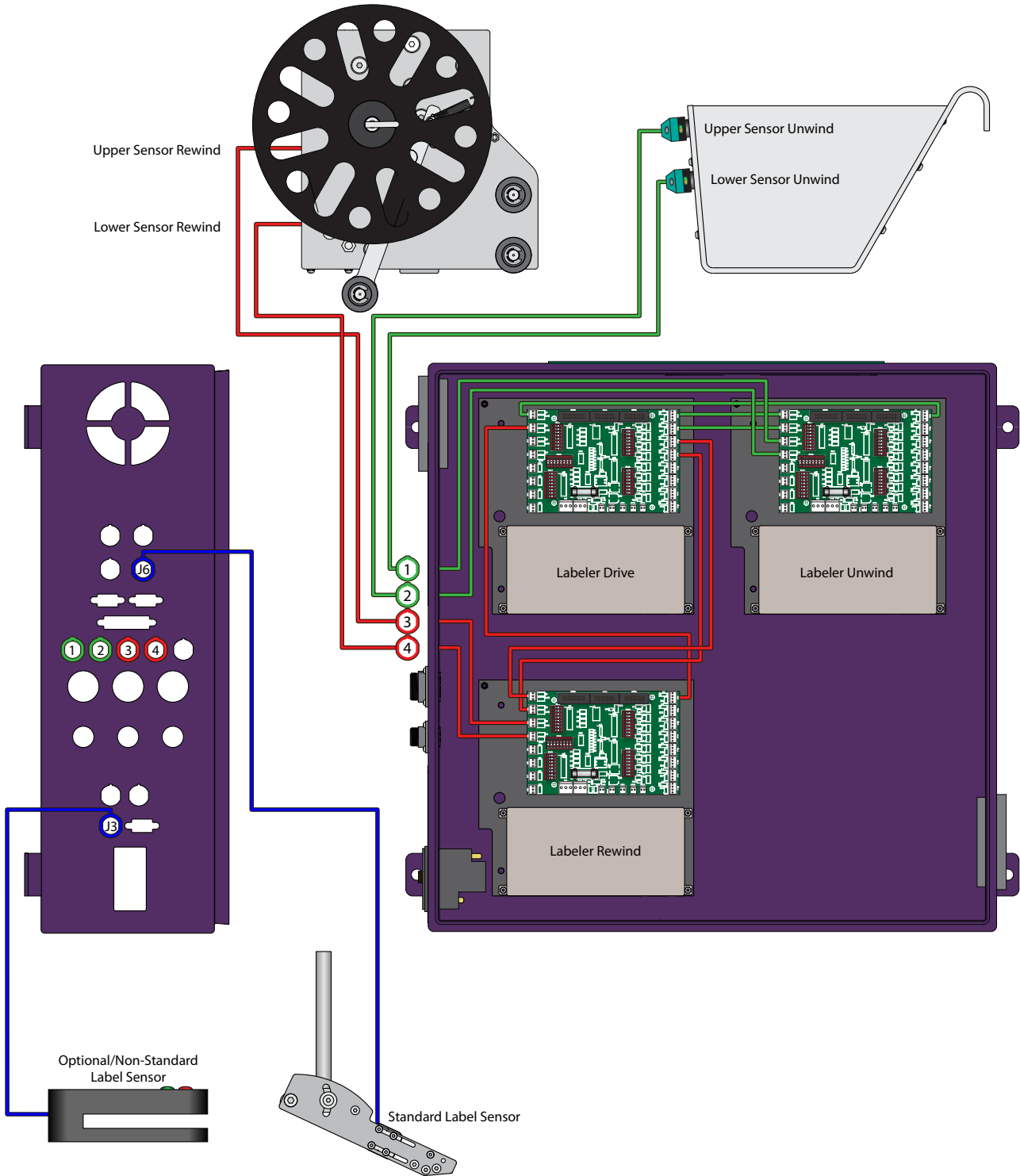




### Control Box External Connections

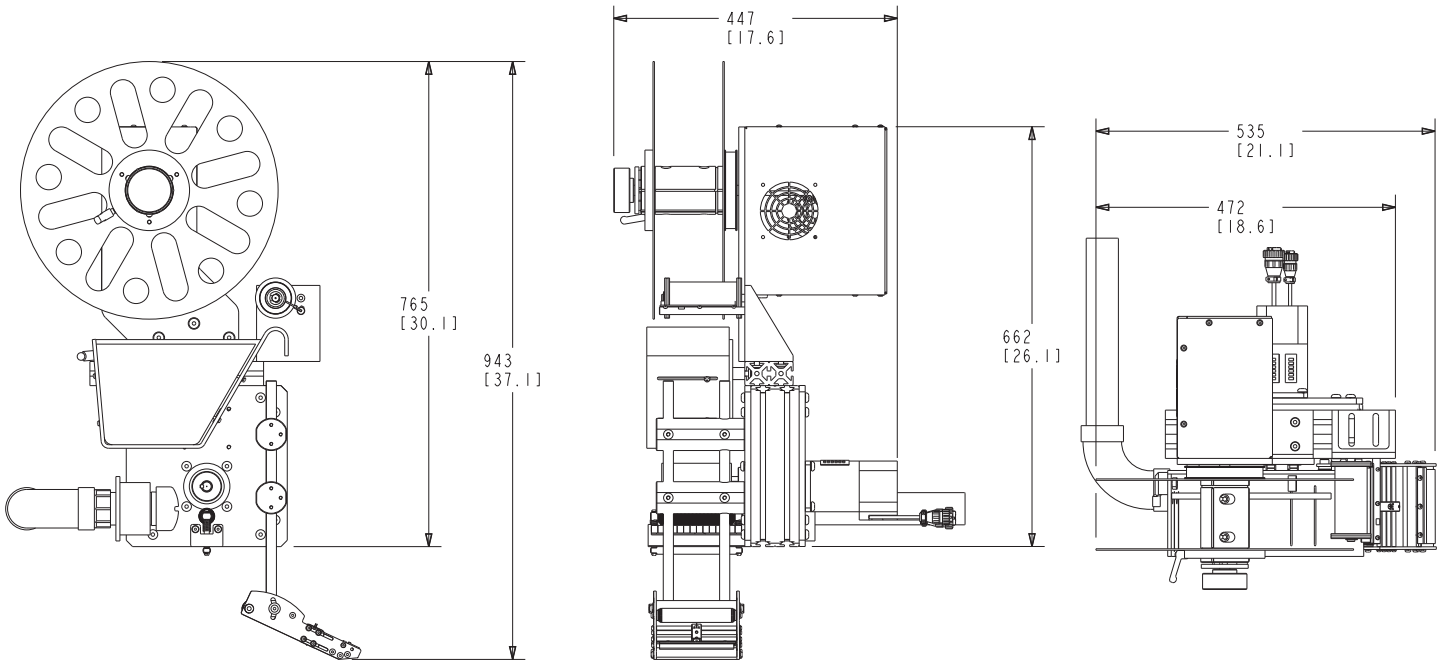


### Control Box Intercommunication Wiring

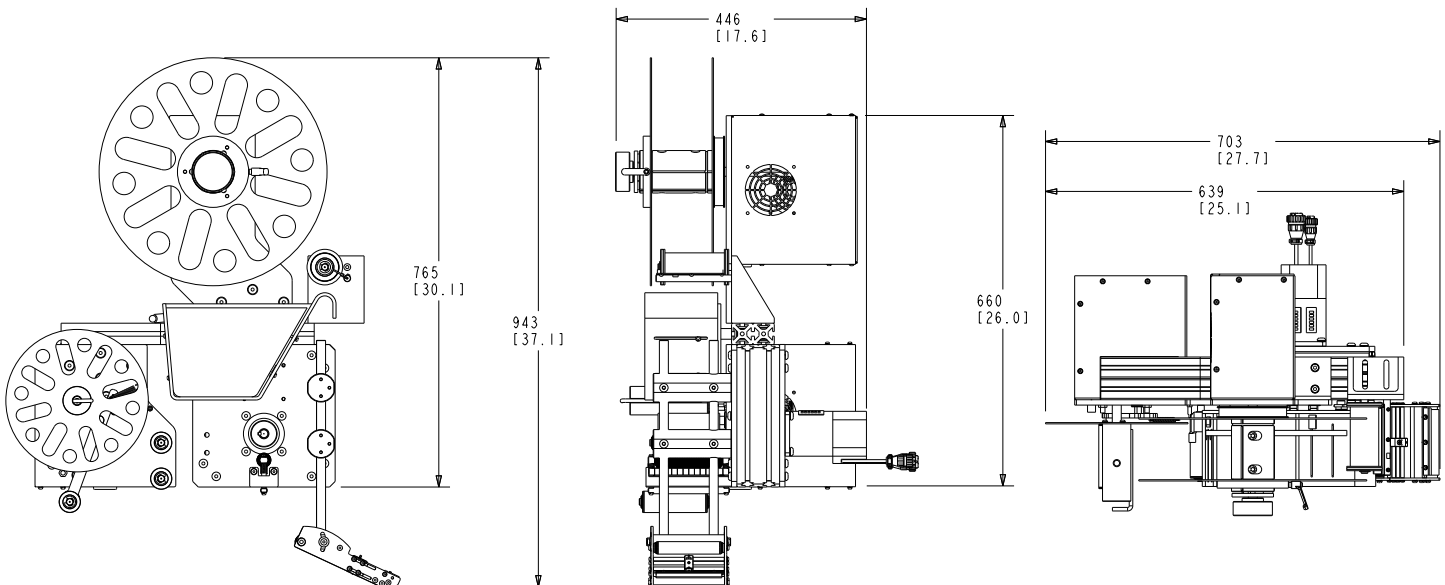


## Product Dimensions

### MFT 102hsm



### MFT 103hsm



**Spare Parts****Part # Part Description**


---

**4598108** HSL Drive Roller Assembly

---

**7105301** Motor 800W 950 With Plugs

---

**1002600** Bearing 174012

---

**1710109** R-W EKL020B 19x16 Mod

---

**1528200** Sleeve Bearing 081210

---

**4503600** Drive Roller Idler Block

---

**1395301** HSL Drive Traction idler

---

**1522400** Roller Sleeve 7/8 16ld

---

**1155900** Timing Belt 15X59

---

**1055600** Timing Pulley 051534 16 Keyed

---

**1055700** Timing Pulley 051534 16 Mod.

---

**1554200** Thrust Washer GTM 1630-015

---

**3003000** 5/8 Needle Roller Bearing

---

**1002600** Ball Bearing 174012
**For Use with Power Rewind Only**


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**3091801** Compression Spring Lc042G 085

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**1712100** Spring Retaining
**To order spare parts:**

Send fax to 651-407-3199 with part numbers and pricing on company P.O, or Call 651-407-3100.

We do require a faxed company P.O. before shipment. Please indicate on P.O. the date you need the parts delivered. We ship all orders UPS Ground unless specified on your purchase order.

## Terms and Conditions

### MULTIFEEDER TECHNOLOGY, INC. (MFT) TERMS AND CONDITIONS

ALL SALES ARE SUBJECT TO THE FOLLOWING TERMS AND CONDITIONS.

1. Definitions.
  - 1.1 "Accessory Products" mean spare parts purchased, at Buyer's option, to enhance the System or replace components within the System.
  - 1.2 "Agreement" means this Sale Agreement.
  - 1.3 "Buyer" means the person or entity that enters into this Agreement for the design and for manufacture of the System, subsystem accessory products, or related services and/or Buyer's assigns, successor's agents and transferees.
  - 1.4 "Default Specifications" means the MFT Default Specifications set forth in Exhibit A, attached hereto, which set forth the default functional and technical performance criteria for the System.
  - 1.5 "Final Product Throughput" means the end-product as fully processed by the MFT System.
  - 1.6 "MFT" means Multifeeder Technology, Inc.
  - 1.7 The "Operation and Maintenance Manual" means the operative and instruction guide supplied by Seller to Buyer, which addresses one or several of the devices, components or Subsystems within the System.
  - 1.8 "Order" means Buyer's order in the form of Seller's Proposal, signed by Buyer and delivered to Seller.
  - 1.9 "Order Acknowledgement Form" means the written form Seller sends to Buyer indicating that Seller is in receipt of Buyer's Order.
  - 1.10 "Parties" means the Buyer and Multifeeder Technology, Inc.
  - 1.11 "Product Samples" mean Buyer-supplied components and/or material to be fed through and/or processed by the System to create a Final Product Throughput.
  - 1.12 "Product Schedule" means the actions undertaken by MFT to design and build the System over a period of time.
  - 1.13 "Production Schedule Date" means the date upon which production is scheduled for completion.
  - 1.14 "Proposal" means Seller's written description of the System and/or Accessory Products
  - 1.15 "Quote" means the price quote for the System and/or Accessory Products.
  - 1.16 "Seller" means Multifeeder Technology Inc.
  - 1.17 "Shipment Date" means the estimated date upon which MFT anticipates shipment of the System from the MFT facility.
  - 1.18 "Specifications" means the functional and technical performance criteria for the System, as agreed-to by the Parties.
  - 1.19 "Subsystem" means any smaller MFT-designed system that constitutes a component of the overall System.
  - 1.20 "System" means the custom-designed product manufactured by Seller according to the Specifications, which may or may not include various other Subsystems.

- 1.21 "System Manual" means the operative and instruction guide supplied to Buyer by Seller with the shipment of the System, which addresses the overall System, and may or may not address each separate device, component or Subsystem within the System
2. The System.
- 2.1 Purchase and Supply. Seller will sell the System and/or Accessory Products to Buyer under the terms and conditions set forth in this Agreement.
- 2.2 Specifications. The System will be manufactured by Seller according to the Specifications. The Proposal will include a Quote for each component of the System. If the Buyer does not provide specifications prior to the Quotation process, the Default Specifications will apply. All specifications supplied by Buyer are subject to (a) MFT's written approval and (b) signature by a MFT-authorized representative.
- 2.3 Packing. Unless otherwise specified in this Agreement or Buyer's Order, the System and/or all Accessory Products are to be packed and identified in accordance with customary industry practice. Seller shall mark each container with necessary lifting, loading and shipping information, including the applicable purchase order number, date of shipment, and the name and address of Seller and Buyer.
3. Assent to Terms and Conditions of Agreement. Unless otherwise indicated, Seller's Proposal will expire thirty (30) days following the date the Proposal is transmitted to Buyer. Seller's Proposal is not binding upon Seller until Buyer's Order is accepted in writing by Seller on an Order Acknowledgement Form. Buyer's Order must be submitted within the time frames provided herein.
4. Price, Price Adjustment & Additional Charges.
- 4.1 Price. The purchase price for the System will be set forth in the Quote. The pricing of Accessory Products is subject to change from time to time.
- 4.2 Price Adjustment. The purchase price in the Quote may be increased to reflect increases in the cost of materials or labor, if:
- 4.2.1 Shipment of the System is scheduled for a date that is more than three (3) months after the date of Buyer's Order;
- 4.2.2 Shipment of the System is delayed by Buyer to a date that is more than three (3) months after the date of Buyer's Order; or
- 4.2.3 Shipment of the System is accelerated due to an accelerated Production Schedule Date.
- 4.3 Delivery, Risk of Loss and Title. The System will be delivered f.o.b. Seller's Minnesota facility. Buyer will pay all packaging, handling and freight to Buyer's destination. Risk of loss or damage to the System passes to Buyer at the time of delivery to the carrier. Seller will purchase shipping insurance at Buyer's request and at Buyer's expense. Transfer of title is not deemed to occur until payment in full has been received by Seller. Shipment dates are Seller's best estimate of when product(s) will be shipped or delivered, but the Shipment Date is not guaranteed.
- 4.4 Taxes. Buyer will pay all duties and taxes including sales, use, property, excise, value added and gross receipts taxes levied on the System or Accessory Products. Seller will not collect an otherwise applicable tax if Buyer's purchase is exempt from Seller's collection of such tax and a valid tax exemption certificate is furnished by Buyer to Seller.
- 4.5 Cancellation of Orders. Following Seller's acceptance of Buyer's Order, the Order can be cancelled only with Seller's written consent. A minimum cancellation charge of 35% of the purchase price of the System or Accessory Products will be assessed and will vary according to the date on which the cancellation occurs in the Production Schedule, the quantity of work and materials that are salvageable, the degree to which the System is custom-designed, and other factors in MFT's sole discretion.
- 4.6 Additional Charges. Additional work completed or time consumed by reason of Buyer's alterations or delays caused by Buyer, will be charged to Buyer at Seller's current price for work or material at the time of such alterations, changes, or delays.

## 5. Payment.

5.1 Payment of Purchase Price. If Seller approves Buyer for credit, the payment schedule is (a) 55% of the purchase price in certified or other currently available funds within five (5) days following acceptance of Buyer's Order; (b) no later than ten (10) days before Buyer's requested shipment date (i) 35% of the purchase price in certified funds; and (ii) the remaining balance by Buyer's delivery of an irrevocable letter of credit or some other MFT-approved payment alternative, drawn on a U.S. bank in an amount equal to the remaining balance due for the benefit of Seller or Seller's agent. The letter of credit and/or its equivalent must be drawn on a financial institution and in form reasonably acceptable to Seller, must be in U.S. dollars, and will expire no earlier than 60 days after the requested shipment date. Under no circumstances will Seller be liable to Buyer for delays in shipment caused by Buyer's delay in payment. If Seller does not approve Buyer for credit, payment will be disbursed to Seller within five (5) days following acceptance of Buyer's Order by certified or other currently available funds or by Buyer's delivery of an irrevocable letter of credit or some other MFT-approved payment alternative, drawn on a U.S. bank in an amount equal to the full amount of the purchase price. The letter of credit and/or its equivalent shall provide for interim draws in accordance with the schedule referenced in the preceding paragraph, be drawn on a financial institution and in form reasonably acceptable to Seller, in U.S. dollars, and will expire no earlier than 60 days after the requested shipment date. Buyer authorizes Seller to review any and all necessary credit reports and information to assess whether Seller will extend credit to Buyer.

5.2 Invoicing for Ongoing Services and/or Accessory Products. Seller will invoice Buyer for any ongoing services or Accessory Products purchased separately from Buyer's Order for the System. Invoices will reference purchase order number, item number and description of product(s) and/or service(s), unit price of products and/or service(s), total amounts due, and the due date. Invoices shall be due and payable within thirty (30) days after the date of invoice. Payments will be applied to oldest invoices first. Overdue invoices will accrue interest at a rate equal to the lesser of 18% per annum or the maximum rate allowable by law.

5.3 Non-payment of Amounts Due. Seller hereby retains a security interest in the System or Accessory Products for any portion of the purchase price thereof unpaid by Buyer. Seller is authorized to perfect its security interest. In addition, if payment in full is not made within sixty (60) days following delivery of the System, or within 60 days of the invoice date for any and all additional charges accrued by Buyer, whichever applies, Seller may at its sole discretion, activate the control software installed in the System that will disable the System from functioning. Upon receipt of full payment, Seller will reactivate the System.

## 6. Performance of System and Product Samples.

6.1 Acceptance Criteria of System Performance. The acceptance testing shall be conducted in two (2) phases, as set forth below:

6.1.1 Phase One Acceptance Testing. Prior to shipping the equipment from the Multifeeder Technology, Inc. facility to the place of delivery, MFT will conduct a system performance test mutually-agreed upon with the Buyer and reduced to a writing signed by both Parties. Buyer may, at its option, witness the Phase One Acceptance Test in person or by electronic means supplied by MFT. If the Parties do not agree upon an a specific test, the Parties agree that MFT will conduct a 30-minute test demonstrating 90% uptime, after excluding any lost time or lost production due to Nonconforming Product Samples (defined in section 3.3 of Exhibit A and all related subsections) or other factors out of MFT's control. MFT reserves the right to restart or continue the test until completed, or to abbreviate the test by discounting lost time or lost production due to Nonconforming Product Samples or other factors out of MFT's control. It is Buyer's responsibility to supply an adequate amount of acceptable quality test product pursuant to ¶ 6.2 below. MFT bears no responsibility if Buyer fails to provide Product Samples to MFT.

6.1.2 Phase Two Acceptance Testing. After completion of delivery of the System, assembly, and training at the place-of-delivery, MFT personnel will conduct a second test to confirm the System's performance ("Phase Two Acceptance Testing"). The Phase Two Acceptance Testing will be conducted using the same Product Samples and performance criteria specified for the Phase One Testing. If the Phase One performance criteria are met during the Phase Two Acceptance Testing, the Parties agree that the System shall be deemed accepted.

6.2 Acceptance of All Other Goods. For any other goods that are not subject to paragraphs 6.1.1 – 6.1.2, Buyer will have ten (10) days after receipt to reject nonconforming goods before such goods are deemed accepted by Buyer.



- 6.3 Product Samples. Seller requires Buyer to supply Product Samples to MFT prior to MFT's submission of a Proposal to Buyer, and in sufficient quantities to (a) evaluate Product Samples for consistency in structure and form, and (b) design the System Specifications to process the Product Samples provided. The projected System performance, as presented in the Proposal, is valid only for Product Samples provided to Seller prior to the date of the Proposal. Buyer must also supply to Seller actual Product Samples to the same specification as those provided prior to the MFT Proposal, so that MFT may conduct Acceptance Testing of the System, as set forth above in paragraphs 6.1.1-6.1.2. MFT will estimate and advise Buyer of the quantity of Product Samples MFT requires. If not otherwise specified by MFT, MFT requires a stack of each Product Sample, approximately 25 inches high, for testing any System that is composed of feeders. If automatic product loaders are to be tested, a minimum of 5,000 samples are required. Product Samples should be shipped at Buyer's cost to Seller no later than ten (10) days after Seller's acceptance of Buyer's Order. Product Samples will not be returned. Seller does not guarantee feeding performance of any specific product unless an exact Product Sample has been tested before delivery of the System to Buyer. LIMITED WARRANTY AND LIMITATION OF LIABILITY To activate the warranty, Buyer must sign and return to MFT (a) the Proposal and (b) fully completed warranty registration cards, which Buyer will receive with the System. Seller warrants to Buyer, for a period of one year from the date of delivery of the System to Buyer or for 2000 operating hours, whichever occurs first, that the System or Accessory Product(s) will be free from defects in material and workmanship. An extension of this Limited Warranty is available for an additional charge. OTHER THAN THE FOREGOING, NO WARRANTY OR GUARANTEE, WHETHER STATUTORY, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR ANY PURPOSE IS MADE. THE EXPRESS WARRANTY SET FORTH HEREIN SHALL BE THE SOLE AND EXCLUSIVE REMEDY BY THE BUYER HEREUNDER FOR ANY SYSTEM OR ACCESSORY PRODUCTS DELIVERED TO THE BUYER WHICH ARE FOUND TO BE DEFECTIVE IN ANY MANNER, WHETHER SUCH REMEDIES BE IN CONTRACT, TORT, STRICT LIABILITY, OR BY LAW. OTHER THAN AS SET FORTH HEREIN, SELLER SHALL UNDER NO CIRCUMSTANCE BE DIRECTLY OR INDIRECTLY LIABLE FOR ANY LOSS OR DAMAGE HOWSOEVER ARISING FROM SUCH MERCHANDISE, INCLUDING LOST USE, LOST PRODUCT, LOST REVENUE, LOST PROFITS, COST OF CAPITAL, OR SPECIAL, CONSEQUENTIAL OR INCIDENTAL DAMAGES. If during the warranty period, the System or an Accessory Product fails to meet the Specifications, Buyer shall notify in writing of the specific nature of the failure and all-pertinent observations related to the failure. Seller does not represent or warrant that Systems or Accessory Products sold by it complies with OSHA or any like state, local, or national law or regulation, and the cost of modification and responsibility for such compliance is imposed upon Buyer. Equipment must be used in a non-condensing, low-humidity, dry environment, unless explicitly exempted by MFT in writing. THE TOTAL CUMULATIVE LIABILITY OF SELLER TO BUYER FOR ANY CLAIM OF ANY KIND, FOR ANY LOSS OR DAMAGE WHATSOEVER ARISING OUT OF, CONNECTED WITH OR RESULTING FROM THE SALE OR SERVICING OF THE PRODUCTS HEREIN, SHALL NOT EXCEED THE PURCHASE PRICE OF THE SYSTEM OR ACCESSORY PRODUCT. BUYER AGREES TO INDEMNIFY, DEFEND AND HOLD HARMLESS SELLER FROM ALL CLAIMS ARISING IN WHOLE OR IN PART ON ACCOUNT OF IMPROPER USE, ABUSE, MISUSE, USE NOT IN ACCORDANCE WITH SELLER'S RECOMMENDATIONS SET FORTH IN THE OPERATION, MAINTENANCE AND SYSTEM MANUALS SUPPLIED BY SELLER, OR BUYER'S FAILURE TO PERFORM UNDER THIS AGREEMENT. Warranty coverage excludes cost of delivery to and from Seller's Minnesota facility. All units that the customer wishes to have repaired under warranty shall be accompanied by a MFT issued Returned Material Authorization (RMA) and must be sent to Multifeeder at Buyer's expense. A service fee of \$500.00 will be charged for products sent to Seller for warranty repair, which are found to comply with the Specifications. Seller reserves the right to suspend any and all warranties if the Buyer has a delinquent account. The System and Accessory Products are sensitive. To qualify for the warranty set forth in this Agreement, the System and Accessory Products warranted must be repaired by knowledgeable and specially trained MFT personnel only. Accordingly, warranty coverage will be void in its entirety upon any sign or evidence of (a) opening the System or field service conducted by individuals other than Seller's authorized personnel, (b) tampering or any kind of misuse of the System including Buyer's use of belts, Stripper Wheels or other parts not supplied by Seller, or (c) abuse of the System or Accessory Products. Non-warranty work will be completed according to Seller's standard rates and charges in effect at the time.
7. Confidentiality. Buyer acknowledges that Seller's technology is confidential and agrees not to disclose or utilize for its own commercial benefit any technology that Buyer learns through the purchase or use of the Systems and/or Accessory Products. In no manner does this Agreement imply or authorize any form of technology license to Buyer for any portion of Seller's technology except for Buyer's use of the System and Accessory Products for their intended purpose.

8. Export Controls. Buyer agrees that it will not, without obtaining prior authorization from the U.S. Department of Commerce:
- (i) export or re-export, directly or indirectly, any technical data or products (as defined by the U.S. Export Administration Regulations) received by Buyer under this Agreement to destinations restricted or prohibited by U.S. law;
  - (ii) disclose such technical data to destinations restricted or prohibited by U.S. law; or
  - (iii) export or re-export, directly or indirectly, any direct product resulting from the technical data received by Buyer to destinations restricted or prohibited by U.S. law. Buyer hereby agrees to indemnify, defend and hold harmless Seller for any export, re-export or disclosure in violation of U.S. law that results directly or indirectly from Buyer's actions.
10. Patents. Seller warrants that it has utilized reasonable efforts to ensure that the System and/or Accessory Products do not infringe on any patented technology belonging to any other person or entity. If infringement is found and Buyer's use of the System, Subsystem and/or Accessory Products is restricted, Seller will, at its option, either (a) redesign the System, Subsystem, and/or Accessory Products to avoid the infringement; (b) seek a license to allow the current technology to be utilized by Seller; or (c) allow Buyer to return the System, Subsystem and/or Accessory Products for a full refund.
11. Choice of Law.
- 11.1 Governing Law. The laws of the State of Minnesota, United States of America and any applicable Federal laws of the United States of America, as from time to time amended and in effect, govern all matters arising out of or relating to this Agreement, including without limitation its validity, interpretation, construction, performance (including the details of performance), and enforcement. The Parties agree that any applicable conflict of law provision that results in the application of the laws of a foreign jurisdiction shall be disregarded. Buyer and Seller expressly agree that neither this Agreement, nor any ancillary agreement, undertaking, or performance that may be promised, performed, or executed to implement this Agreement will not be subject to or interpreted by the United Nations Convention on Contracts for International Sale of Goods.
- 11.2 Foreign Corrupt Practices Act of 1977. Buyer is subject to the laws and regulations of the Foreign Corrupt Practices Act of 1977 (FCPA), Title 15 United States Code Service section 78dd-1 and its progeny.
- 11.3 Prohibition on Flowdown Provisions. In no event will this Agreement be subject to any other contract which would subject Seller to any additional terms and conditions or liability. Buyer bears all liability for all other contracts to which Buyer is subject.
12. Forum Selection Clause. Buyer and Seller agree that all disputes, claims, controversies and disagreements relating to or arising out of this Agreement are subject to the exclusive jurisdiction and venue of the state and federal courts of Minnesota, of the United States of America. Buyer waives any objections to jurisdiction or venue in any proceeding before any such court in Minnesota and hereby submits to the exclusive jurisdiction of any such court in Minnesota. Buyer and Seller agree that the exclusive choice of forum set forth in this section does not prohibit the enforcement of any judgment obtained in that forum or any other forum.
13. Miscellaneous.
- 13.1 Governing Language. The English language of this Agreement shall govern and control any translations of the Agreement into any other language. Documents furnished by Buyer to Seller under the terms of this Agreement shall be furnished in English or accompanied by an English translation. Seller will not be held responsible for errors or misunderstandings that may occur due to omissions or translations to another language. Seller reserves the right to correct all errors.
- 13.2 Assignment. This Agreement shall be binding upon and shall inure to the benefit of Buyer and Seller and their respective successors and assigns, provided, however, that Buyer may not assign its rights or delegate its duties under this Agreement without Seller's prior written consent, which may be granted or withheld at Seller's sole discretion. Buyer and its assignees and/or transferees of the System and/or Accessory Products, including all associated proprietary and intellectual property rights, agree to the terms and conditions of the Agreement. Buyer agrees to indemnify, defend and hold harmless Seller for any claim or loss or damage suffered as a result of any assignee or transferee failing to abide by these terms and conditions.

- 13.3 Counterparts. This Agreement may be executed in multiple identical counterparts, all of which taken together constitute a single agreement.
- 13.4 Entire Agreement. This Agreement and any exhibits attached hereto, including Multifeeder Technology, Inc. General System Default Specifications (Exhibit A), constitute the entire agreement and understanding between Buyer and Seller. All prior written or oral agreements, undertakings, promises, warranties, or covenants relating to any subject matter not expressly set forth within this Agreement are hereby superseded.
- 13.5 Amendments and Waivers. No inconsistent, additional or modified terms or conditions, including price, will apply unless specifically agreed to in a writing signed by Buyer and Seller. No waiver of any provision or condition shall be valid unless set forth in a writing signed by the waiving party.
- 13.6 Force Majeure. Whether foreseen or unforeseen, Seller will not be liable for any failure, defect in performance, delay in the performance of orders or in the delivery of goods, or for any damages arising from events beyond Seller's reasonable control, including without limitation, acts of Buyer, acts of God, accidents, fires, floods, acts of insurrection or war, governmental interference, embargo, delays by the shipper, strikes, labor disturbances, unavailability or shortage of supplies or raw materials, unforeseen absence of transportation capabilities or rescheduled, postponed or cancelled transportation arrangements, changes due to export controls or the ability to obtain an export license, or any other like cause.
- 13.7 Limit of Time to Bring Action. No actions or arbitrations arising out of this Agreement may be brought by Buyer more than eighteen (18) months after the occurrence of the event giving rise to such action or arbitration.
- 13.8 Attorneys Fees. Seller will be entitled to recover reasonable attorneys' fees and costs in any proceeding to enforce payment from Buyer.
- 13.9 Buyer's right to use all of Seller's products, systems and materials are conditioned upon Buyer's acceptance of these Terms and Conditions.

#### EXHIBIT A: MULTIFEEDER TECHNOLOGY, INC.

#### GENERAL SYSTEM DEFAULT SPECIFICATIONS

- 1.0 SCOPE. The scope of these Default Specifications is to define the equipment configuration and performance requirements for the Custom Multifeeder Technology, Inc. System (hereinafter "System"). All definitions set forth under the MFT Terms and Conditions apply to these Default Specifications.
- 2.0 APPLICABLE DOCUMENTS.
- National Electric Code 1993
- 3.0 DEFAULT SPECIFICATIONS. The System shall be configured as specified herein (the "Default Specifications"), unless more specifically defined in the applicable Proposal. To the extent that any of the Default Specifications specified here are varied by the Proposal submitted to Buyer, for the purposes of creating custom-designed product-specific or application-specific requirements, those specifications that are specially varied will apply. Other than to the extent specifically varied in the Proposal, the Default Specifications apply.
- 3.1 POWER REQUIREMENTS. Each Subsystem will have 110 VAC +/-10%, 50/60 HZ or 208 VAC +/- 10% 50/60 HZ single phase power available on a circuit capable of delivering 15 amps minimum per feed station. The power will be clean and free from power surges or power outages. The power, fusing, wiring and disconnects will be in accordance with the applicable requirements of the National Electrical Code, as updated.

- 3.2 ENVIRONMENTAL REQUIREMENTS.
- 3.2.1 TEMPERATURE REQUIREMENTS. The System will be maintained and operated in a location where the temperature range is maintained between 10 to 35 degrees Celsius (50 to 95 degrees Fahrenheit).
- 3.2.2 HUMIDITY REQUIREMENTS. The System will be maintained and operated in a non-condensing, dry location with a relative humidity range of 40 to 80%.
- 3.3 PRODUCT SAMPLE REQUIREMENTS. This System is a customized high technology system that depends upon strict quality standards and uniformity of Product Samples handled in order to achieve strict quality standards and uniformity of Final Product Throughput. By way of example and without limitation, the Product Samples to be fed and/or processed by the System will be uniform and free of defects, such as bent corners, dog ears, warpage, tears, bends, folds, debris, contamination, any other nonconforming factor that affects feeding and/or secondary processing, or any other nonconforming Product Sample Tolerances as defined below. Product Samples that do not fall within the Product Sample Tolerances set forth below or within the Proposal will be deemed "Nonconforming Product Samples."
- 3.3.1 PRODUCT SAMPLE TOLERANCES.
- 3.3.1.1 DIMENSIONAL TOLERANCE. The dimensional tolerance of any Product Sample will exhibit no more than a +/- 1/32 inch variance from the nominal values designated in Buyer's Proposal.
- 3.3.1.2 SQUARENESS TOLERANCE. The squareness tolerance of any Product Sample will exhibit no more than a +/- 1/32 inch variance from the nominal values designated in Buyer's Proposal.
- 3.3.1.3 THICKNESS TOLERANCE. The thickness of any Product Sample will exhibit no more than a +/-10% variance from the nominal values designated in Buyer's Proposal.
- 3.3.1.4 FLATNESS TOLERANCE. The maximum warpage or curl of any Product Sample will be less than +/- 1/16 inch when measured lying on a flat surface.
- 3.4 OPERATOR REQUIREMENTS. Due to the customized high-technology of this System, it is imperative that all users of the System ("operators") adopt and practice MFT-documented operating procedures to properly function. To ensure effective production, all equipment operators must (a) be properly trained by MFT-authorized personnel and (b) adhere at all times to the prescribed procedures set forth in the various Operation, Maintenance and System Manuals. All System Performance Specifications and Guarantees are conditioned upon the adherence of all operators to the above-mentioned requirements. By way of example without limitation, all operators must be capable of performing all equipment adjustments and product set-up procedures in accordance with the applicable Operation, Maintenance and System Manuals, and trained to properly load product into the Feeder magazines, perform Feeder parametric settings and to properly adjust photo-eyes and holding apparatuses.
- 3.5 RELIABILITY OF PRODUCT SAMPLES SUPPLIED TO MFT. In order to design and build a System that will assemble and/or process Final Product Throughput that is consistent in specification, the MFT System requires consistent Product Samples. In order to accomplish this goal, the performance projected within MFT's Proposal is valid only for (a) those Product Samples that pass MFT's factory testing prior to MFT's draft Proposal; and (b) those Product Samples that (1) conform to the MFT pre-proposal factory testing and (2) are provided to MFT prior to MFT's receipt of Buyer's Order and in sufficient quantities to perform testing prior to shipment of the equipment ("Phase One Acceptance Testing" Terms and Conditions paragraph 6.1.1).
- 3.6 PROCEDURES FOR ACTIVATING WARRANTY COVERAGE. The MFT General System Default Specifications incorporate the Limited Warranty set forth under Multifeeder Technology, Inc. Terms and Conditions. All warranties require the Buyer to return a signed copy of the signature page of the Proposal to Multifeeder Technology, Inc. to become effective.
- 3.6.1 EQUIPMENT WARRANTY. All applicable equipment warranties require the Buyer to return a fully completed warranty registration card to Multifeeder Technology, Inc. If the equipment requires return to MFT, the Buyer shall call MFT in advance and request a return material authorization number (RMA), which must be written on the outside of the shipping container.

- 3.6.2 PERFORMANCE WARRANTY. Upon request of the Buyer, Multifeeder Technology, Inc. will negotiate and price into its Proposal an efficiency level (parts per minute at a to-be-determined confidence level) for each type of Product Sample received by MFT, in sufficient quantities and with sufficient time to perform testing on the System, provided that such Product Samples are consistent and conforming. For purposes of calculating an efficiency level, all lost time or lost production due to Nonconforming Product Samples or factors out of MFT's control shall be subtracted from the production uptime, and product changeover time is excluded. To qualify for any applicable performance warranty the Buyer agrees to comply with the following:
- a) The System will be completely installed by qualified MFT personnel and all operators will be properly trained by qualified MFT personnel;
  - b) Buyer will notify MFT in writing of any deficiencies observed in the System's performance with sufficient detail to assist MFT in determining the source of the reported problem;
  - c) Product Samples are in compliance with the Product Sample requirements and tolerances specified herein; and
  - d) Upon proper notification of any problem, MFT will have 30 days to repair, replace, or arrange a partial or complete refund in exchange for returning the defective equipment. The amount of refund will depend upon the problem, equipment condition upon return, and the assignment of responsibility. The amount of any refund will be within the sole discretion of Multifeeder Technology, Inc