# LABELMATE USA

## Label Handling Innovations

**Rewinders** ● **Slitters** ● **Dispensers** ● **Applicators** ● **Unwinders**

**Print Solutions** ● **Counters** ● **Core-Chucks** ● **Splicers**



# RRC-400

## Reel-to-Reel Counter / Rewinder

## User Manual

# Safety First

**Safety is our number one priority at Labelmate. The following information provides guidelines for safe operation of Labelmate equipment.**

- Any machine can be dangerous to operators when improperly used or poorly maintained.

- All employees operating and maintaining Labelmate equipment should be instructed on correct use and safety guidelines.

- Most accidents are preventable if adequate precautions are taken.

- Be aware of safety labels and instructional decals that have been placed near any potential hazards.

## TRAINING AND INSTRUCTION

It is the responsibility of the customer to ensure that all personnel are instructed on proper operation of Labelmate equipment prior to use. All personnel operating, inspecting, servicing, or cleaning this equipment must be properly trained in operation and machine safety. Read all operating instructions before using this equipment.

## GENERAL SAFETY

- Ensure that all power sources are turned off when the machine is not in use.

- Read the manual for any special operational instructions for each piece of equipment; user manuals are included in the product packaging and/or can be found on the website www.labelmateusa.com.

- Know how the equipment functions and understand the operating processes.

- Know how to shut down the equipment.

- Understand the equipment safety labels.

- Wear the appropriate personal protective equipment for the job to be performed (eg: eye protection, gloves, safety shoes, etc.).

- When working on or around all equipment, avoid wearing loose clothing, jewelry, unrestrained long hair, or any loose ties, belts, scarves, or articles that may be caught in moving parts.

- Keep all extremities away from moving parts; entanglement could cause severe injury or death.

- For new equipment, check plant voltage with the voltage specified on the machine; electrical specifications for this machine are printed on the power adaptor used with the machine.

- A properly grounded electrical receptacle is required for safe operation regardless of voltage requirements.

- Use the equipment for its intended purpose only.

- Keep the operating zone free of obstacles that could cause a person to trip or fall toward an operating machine.

- Do not operate machinery if you are fatigued, emotionally distressed, or under the influence of drugs or alcohol.

- Know where the first aid safety station is located.

- Use proper lifting and transporting devices for heavy equipment.

- Any machine with moving parts and/or electrical components can be potentially dangerous no matter how many safety features it contains. Stay alert and think clearly while operating or servicing the equipment. Be aware of operations and personnel in your surroundings. Be attentive to indicator lights and/or operator interface screens displayed on the machine and know how to respond.

## BUILT-IN SAFETY FEATURES

The RRC-400 is equipped with built-in safety features. These features are for the safety of the operator and the reliability of the machine.

- Motors accelerate and decelerate to desired speed to prevent electrical current from overpowering the circuitry in the machine

- Depending on the input speed and direction selected, the maximum speed of one of the motors will not exceed a designated threshold, and the right side motor will always overpower the left side motor when speeds are identical. This decreases the amount of current experienced by the internal circuitry and reduces the possibility of the unwind motor overcoming the rewind motor due to user input.

- The RRC-400 slows down at the end of the roll to ensure accurate counts and to prevent the label backing from breaking due to excess speed.

- **NOTE**: **The "Built-in Safety Features" of the RRC-400 are supplemental only, and all instructions outlined herein for safe operation of the machine must be followed.**

# RRC-400

Reel-to-Reel Counters provide the ideal off-line solution for counting rolls of labels. With these machines you can verify the number of labels on a roll, divide large rolls into smaller rolls using the preset count/stop feature, and re-tension loose rolls. The RRC-400 affords high-speed bi-directional counting capability for up to 16" diameter rolls.

## CONTENTS

- RRC-400 user manual (this document)
- Sensor user manual (Ultrasonic model only)
- Counter user manual
- RRC-400 Unit
- Power Supply: PS-160
    - INPUT: 100-240VAC 50/60Hz
    - OUTPUT: 24VDC 6.6A
- 2X Exterior Roll Guide Bracket and Support Shaft
- 2X Core Holders (Desired options selected at time of order)

## SPECIFICATIONS & CAPACITY

- Weight of the machine without core holders: 52 lbs. (23.5kg)
- Max Label Roll Weight: 50 lbs. (23kg)
- Max Label Roll Diameter: 16in. (406mm)
- Dimensions (HWD): 20x40x16in. (508x1016x406mm)

## RRC-400 MODELS

| P/N | MODEL | DESCRIPTION |
|---|---|---|
| 80-238-0013 | RRC-400 | Reel-to-Reel Counter, opaque labels only |
| 80-238-0014 | RRC-400-U | Ultrasonic Reel-to-Reel Counter, opaque & transparent labels |

## CORE-HOLDER OPTIONS

| P/N | MODEL | DESCRIPTION |
|---|---|---|
| 81-197-0020 | RR-C76-170 | 3" diam. Quick-Locking Core-Chuck, 6" tall |
| 81-197-0021 | RR-C76-220 | 3" diam. Quick-Locking Core-Chuck, 8" tall |
| 81-246-0005 | ACH-RR-400 | Adjustable 1" - 4" diam. Roll-Holder Assembly, 6" tall |

## ENCODER OPTION

| P/N | MODEL | DESCRIPTION |
|---|---|---|
| 81-141-0006 | RRC-ENC | Encoder for linear count/measurement |

## GETTING STARTED

### Step 1: Install Exterior Roll Guide Shafts and Brackets (Recommended)

- The Guide Bracket is used to maintain a flush outer roll edge.

- The Guide Bracket Shafts are mounted in the two upper corners of the unit. **(FIG. 1)**

- Lay the counter on its back so the inside is visible. **(FIG. 1)**

- Remove hardware from the Shafts and install them in the upper corners of the unit using the M13 bolt and nut on the inside of the machine as shown. **(FIG. 1 & FIG. 2)**

### Step 2: Install Core Holders

- With your hand, turn each motor shaft so that the flat of the shafts face the nearest outside edge of the machine. **(FIG. 3)**

- Slide the core holder assemblies onto the motor shafts. **(FIG. 14 & FIG. 15)**

- Tighten both set-screws in the core-holder assemblies **firmly** onto the **flat part** of the motor shafts using the provided Allen wrench until they are tight. **(FIG. 3)**

- Both the "Quick-Chuck" and ACH Core-Holders are installed identically.

**FIG. 1**

**FIG. 2**

**FIG. 3**

Set Screws

"Flat" on Motor Shaft
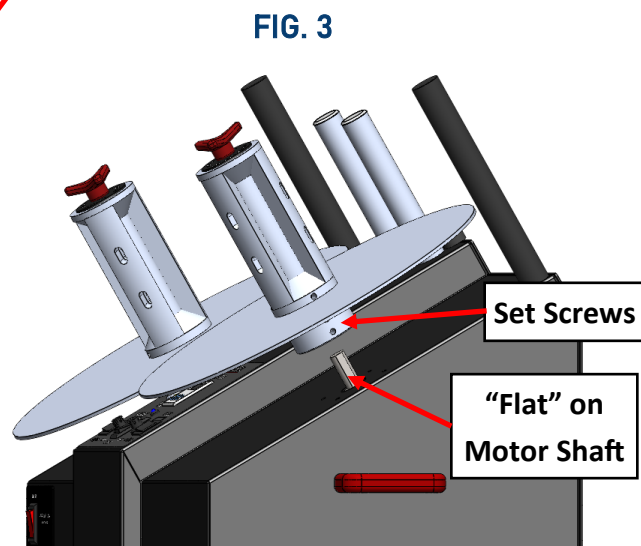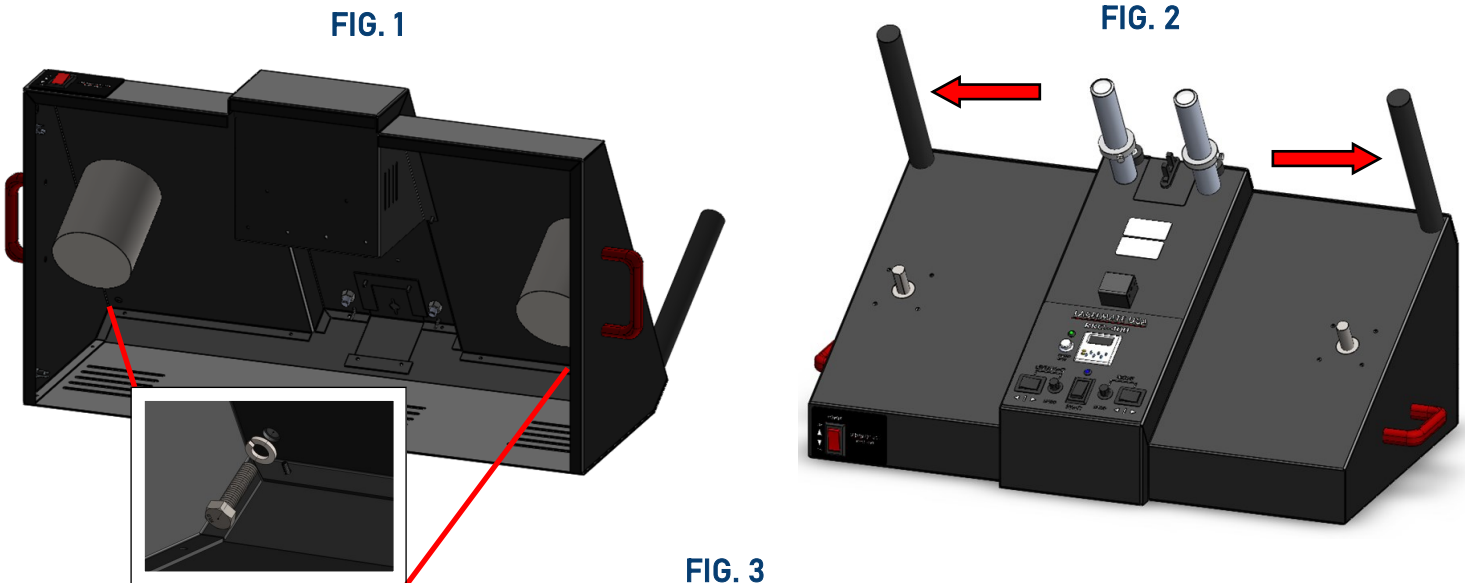
## A) Using the Quick-Chuck

- Slide a label roll or empty label core over the "Quick-Chuck" and turn the red lock knob clockwise until it is tight. **(FIG. 4 & FIG. 5)**

- When using narrow label cores the outer edge of the "Quick-Chuck" must be constrained to ensure that the "Quick-Chuck" expands evenly. To do this, simply squeeze the outer edge of the "Quick-Chuck" with your hand, or place another label core of the same size toward the outer edge of the "Quick-Chuck" as you tighten the red lock knob. **(FIG. 7)**

- To remove the roll or label core, turn the lock knob counter-clockwise until the "Quick-Chuck" relaxes, and gently lift the roll off the machine. **(FIG. 6)**

**FIG. 4**

**Loosen Quick-Chuck**

**FIG. 5**

**Tighten Quick-Chuck,**

**FIG. 6**

**Loosen Quick-Chuck,**

**FIG. 7**
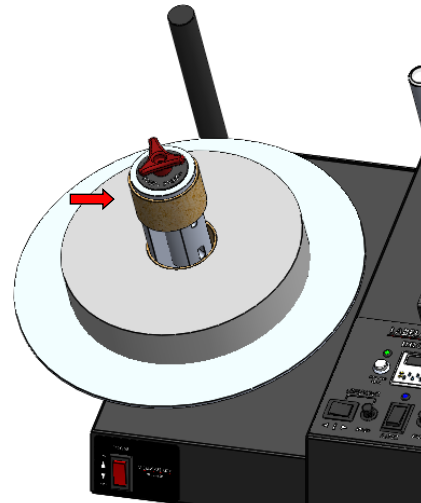
**Using a "dummy-core"**

## B) Using the Adjustable Core Holder (ACH)

- Unlock the three locking levers underneath the plate by turning them clockwise. **(FIG. 8)**
- If any of the levers are difficult to grasp, pull the lever arm down, and turn the arm to reposition it so that it is approximately perpendicular to the cylindrical metal hub. **(FIG. 9)**
- While holding the upper plate firmly, rotate the black plate beneath it to contract the three knurled "fingers" together that comprise the core-holder. **(FIG. 9 & FIG. 10)**
- Place an empty core over the "fingers" about half-way down and rotate the black plate again to bring the "fingers" in contact with the core. **(FIG. 11 & FIG. 12)**
- Remove the empty core and expand the "fingers" an additional 1/16 of an inch in order to prevent the core from slipping.
- Lock the locking levers by turning them counter-clockwise. **(FIG. 9)**
- Reposition the lever arms if necessary by pulling straight down and rotating them to a convenient position. **(FIG. 9)**
- Press the empty core all the way down onto the expanded "fingers". **(FIG. 12)**
- The core should now be held tight on the "fingers"; If it is not tight enough, re-do the operation.
- When satisfied with the fit, the empty core can be removed and a full roll with the same core size can be pressed onto the fingers and against the plate. **(FIG. 13)**
- For easy removal of the roll from the ACH, release one of the locking levers temporarily, remove the roll and re-tighten the locking lever.
- Once the ACH diameter is set, the next empty core or roll can be placed on the ACH without readjusting the locking levers.
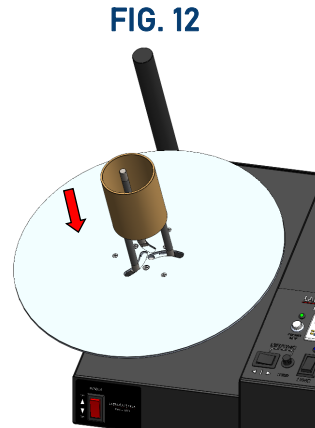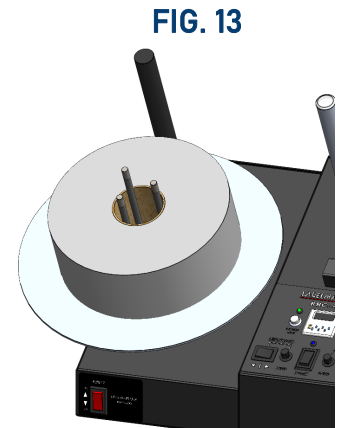
### FIG. 8



Loosen Locking Levers

### FIG. 9



Upper Plate

Black Plate
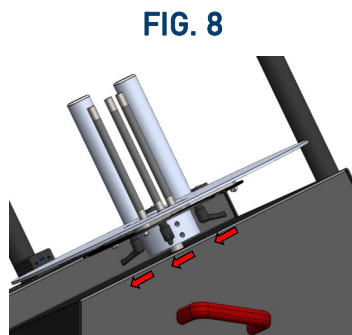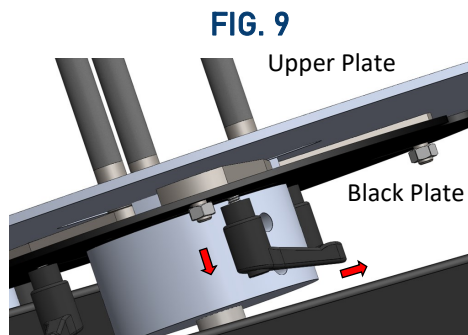
Tighten Locking Levers

### FIG. 10



Fingers Contracted

### FIG. 11



Fingers Expanded

### FIG. 12



Install Empty Core

### FIG. 13



Full Roll Installed

### Step 3: Calibrate the End of Roll Sensor/Opaque Label Sensor

- Place both direction switches to the center-off position (illustrated by the "|" symbol). **(FIG. 16)**
- Place the label liner only (no label) into the label gap sensor. **(FIG. 21)**
- Turn the Photocell Adjust knob located on the left hand side of the counter until the green Photocell Adjust LED above the Counter Reset button illuminates. **(FIG. 16)**
- Remove the label liner from the label gap sensor.

### CALIBRATING THE ULTRASONIC SENSOR (RRC-400-U Model Only)

- Once the labels have been threaded through the label sensor, press and hold the "T" button, located on the front of the sensor, until the green and yellow LED's flash simultaneously. **(FIG. 17)**
- Release the "T" button and advance the label stock through the sensor until the LED's stop flashing and only the green LED remains illuminated. **(FIG. 17)**
- Manually rotate the supply roll until the first label you want to count is properly positioned.
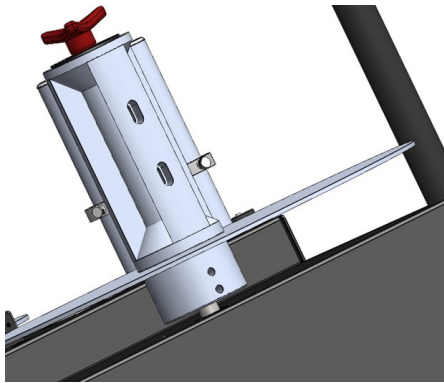- Reset the counter to 0 and start the unit. **(FIG. 16)**
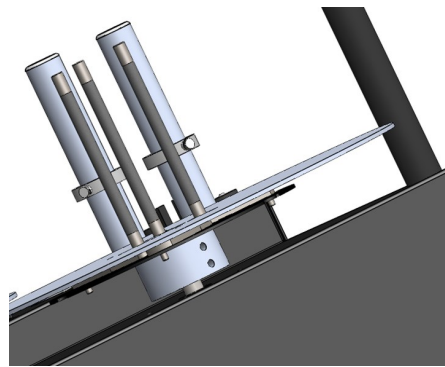
FIG. 14                    FIG. 15



FIG. 16

## SENSOR SELECT OPTION (For RRC-400-U and RRC-ENC Encoder Option Only)

- Opaque labels and liners: Flip the switch on the lower front left side of the unit to OPAQUE. **(FIG. 19)**

- Transparent labels and liners: Flip the switch on the lower front left side of the unit to TRANSPARENT. **(FIG. 19)**
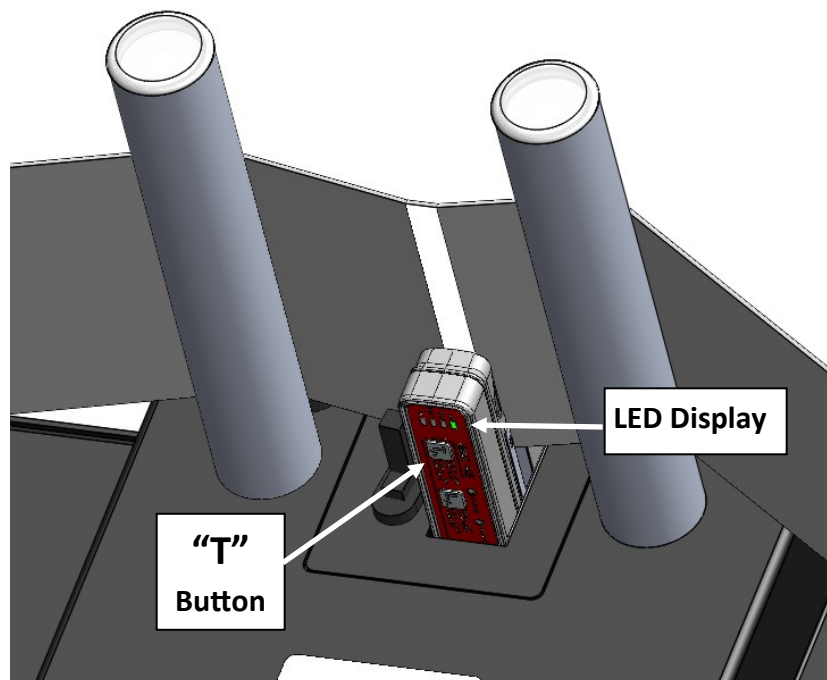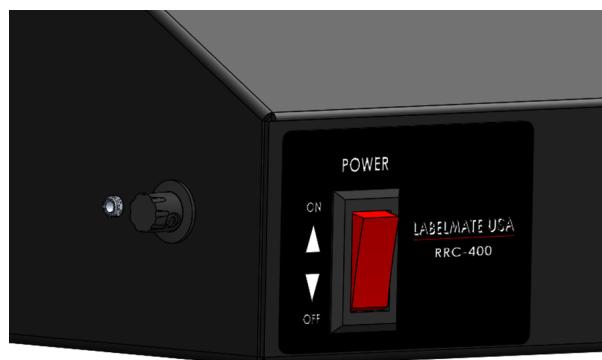
FIG. 17

LED Display

"T" Button

FIG. 18

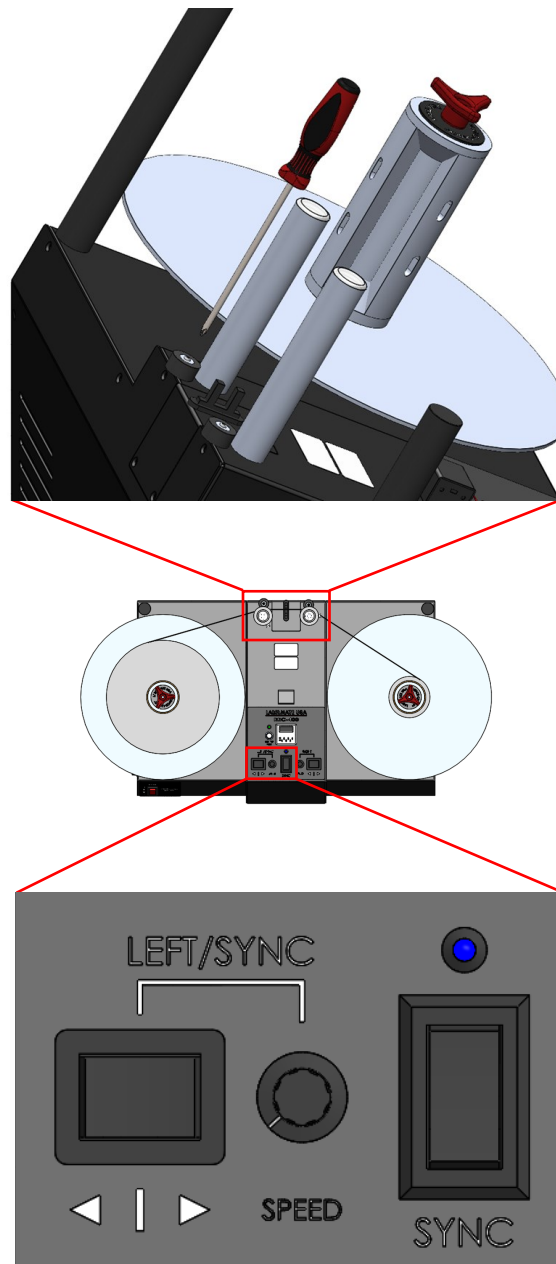RRC-400
(No Encoder)

FIG. 19

RRC-400-U

## ADJUSTING THE DAMPER ROLLERS (FIG. 20 - Top)

- The damper rollers at the top of the machine should be slightly separated from the aluminum rollers such that the labels are close but do not touch the rubber rollers.

- The rubber rollers help prevent any variance in the final count by preventing the fluttering of the web at the end of the roll from being felt by the label sensor as the web is pulled off of the unwind side of the machine.

- The rubber rollers can be adjusted forward and backward by loosening the screw with a Phillips head screw driver and tightening it again once it is in the desired position. **NOTE: Do not loosen excessively or remove entirely.**

### FIG. 20

## OPERATING THE RRC-400

- Place both direction switches in the stop position (illustrated by the "|" symbol). **(FIG. 16)**
- Place the supply roll of labels onto a core holder on one side of the machine.
- Install an empty label core onto the other side of the machine and tighten the Core-Holder.
- Thread the labels from the supply behind the guide rollers and through the label sensor(s). **(FIG. 21)**
- If desired, position the guide brackets over the top of the rolls (recommended).   **(FIG. 22)**. This helps pre-vent the web from rising during the counting process, and ensures a flush and consistent roll edge.
- The guide brackets also generate a small amount of friction with the unwind roll, which can increase the tension and compactness of the finish-roll.
- If desired, another option is to set the white label guide rings on the center aluminum rollers so that they hover just above the label web. **(FIG. 23)** This also helps prevent the web from rising during the counting process in order to ensure a flush and consistent roll edge.
- Reset the counter to zero. **(FIG. 16)**
- Set the "SYNC" switch to the desired mode (On or Off). If "On". The blue LED will illuminate. **(FIG. 16)**

Top View

**FIG. 21**

**FIG. 22**

**FIG. 23**
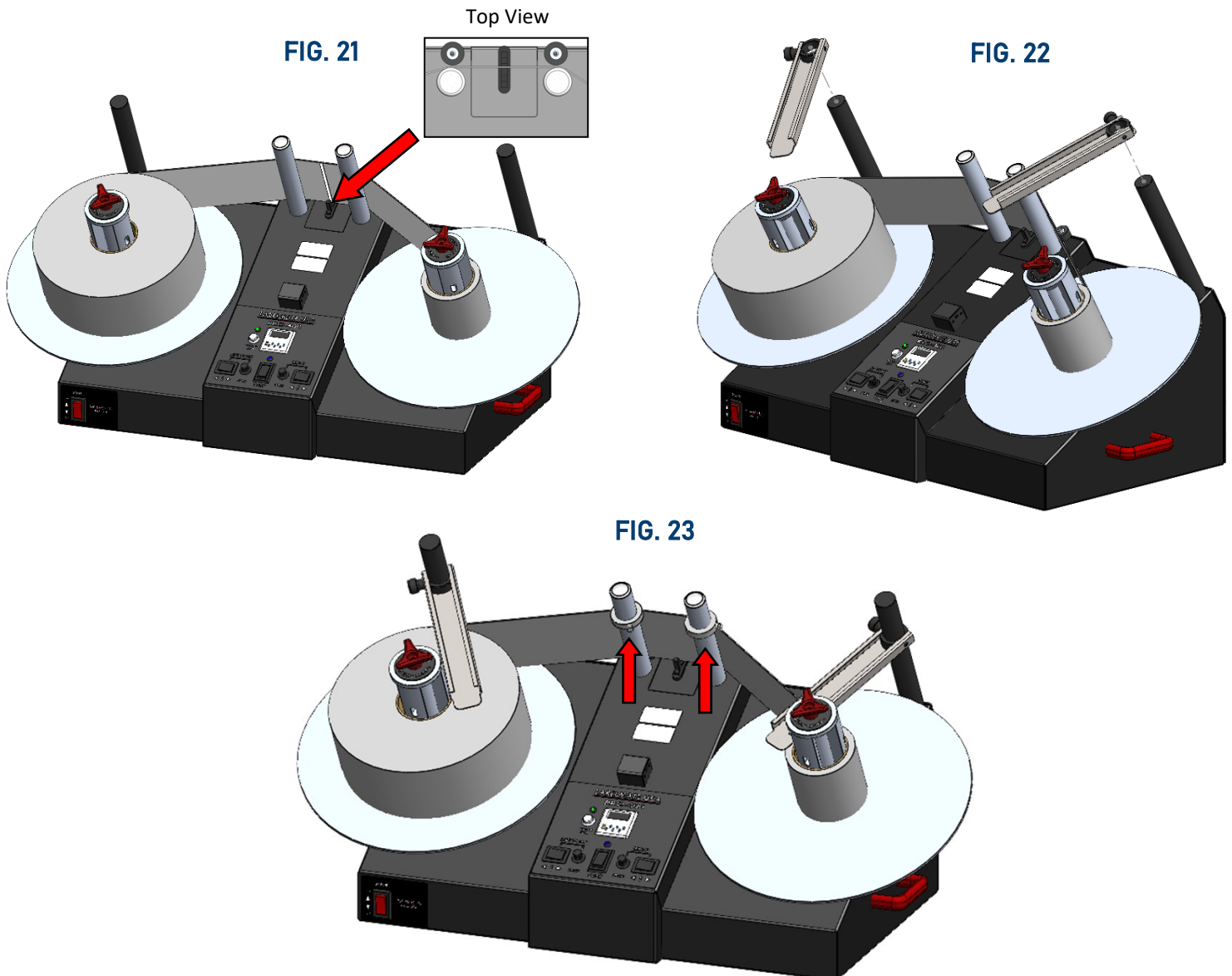
## A) Sync Mode (FIG. 20 - Bottom)

- Sync Mode enables semi-automatic operation. Once the operator has chosen the desired direction and speed, the machine will automatically adjust the speed throughout the counting process to optimize the counting time and roll tension.

- Place the "SYNC" switch in the up position, and the blue LED above the switch will illuminate to indicate that Sync Mode has been activated.

- While in Sync Mode, **the right side controls are deactivated**. Direction and max speed are set for *both* motors using the "LEFT/SYNC" switch and speed dial.

- While in Sync Mode, rollers must unwind and rewind from the outside as shown in **FIG. 25**.

- Set the "LEFT/SYNC" speed control to desired max speed - **f**ull clockwise rotation for max speed, full counter-clockwise rotation for no speed.

- Set the "LEFT/SYNC" direction switch so the arrow is pointed in the desired flow direction (toward the rewind side).

- The machine will begin counting. You may notice it will speed up and slow down automatically through-out the counting process. This is intentional as the machine is optimizing for tension and speed.

 **NOTE:** DO NOT BLOCK THE RAISED SENSOR BOX LOCATED IN THE CENTER OF THE UNIT AS THIS WILL CAUSE THE UNIT TO MALFUNCTION.
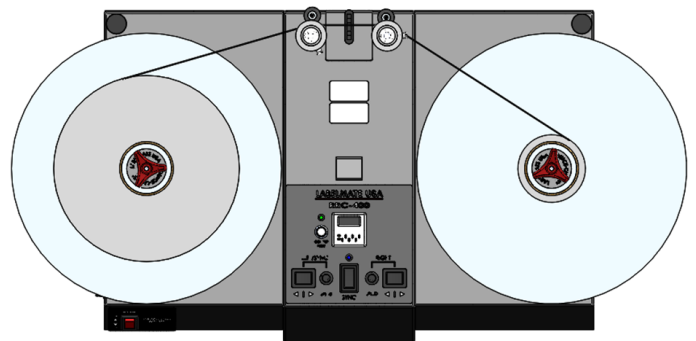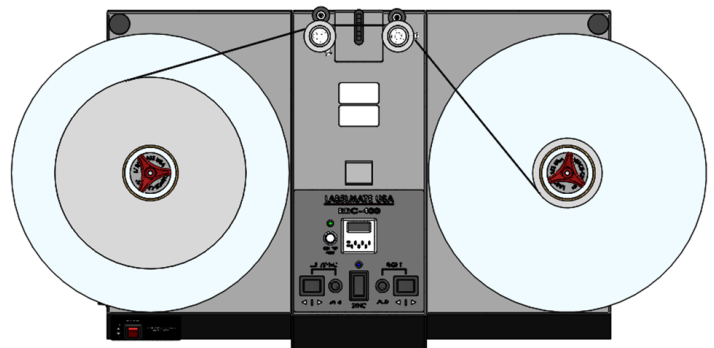
FIG. 25



FIG. 24



FIG. 26

## B) Manual Mode (FIG. 16)

- Manual Mode gives the user complete control over the operation of the machine. The two bidirectional motors enable the rewinding and unwinding in any direction and any configuration. **(FIG. 25, 26, 27, 28)**.

  <u>Note</u>**: The motors CAN be set in opposite directions and at different speeds. This is perfectly OK and will not damage the machine. It is made to operate this way.**

- Each motor has its own direction and speed control.

- The arrows under each switch indicate the direction the motors will turn.

- "<" Sets the motor to turn counterclockwise.

- ">" Sets the motor to turn clockwise.

- "|" Center position stops the motor.

- The speed control increases the speed and torque of each respective motor.

- Full clockwise rotation for max speed and torque.

- Full counterclockwise rotation for no speed or torque.

- The machine will automatically slow down at the end of the roll to ensure an accurate count.
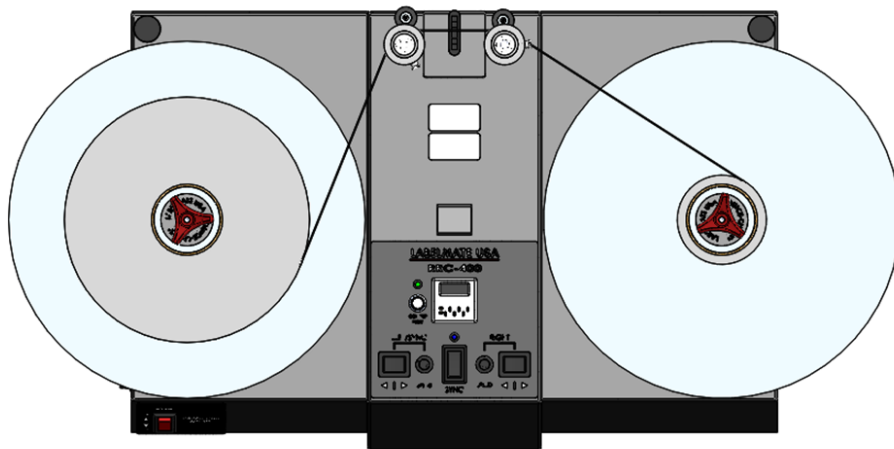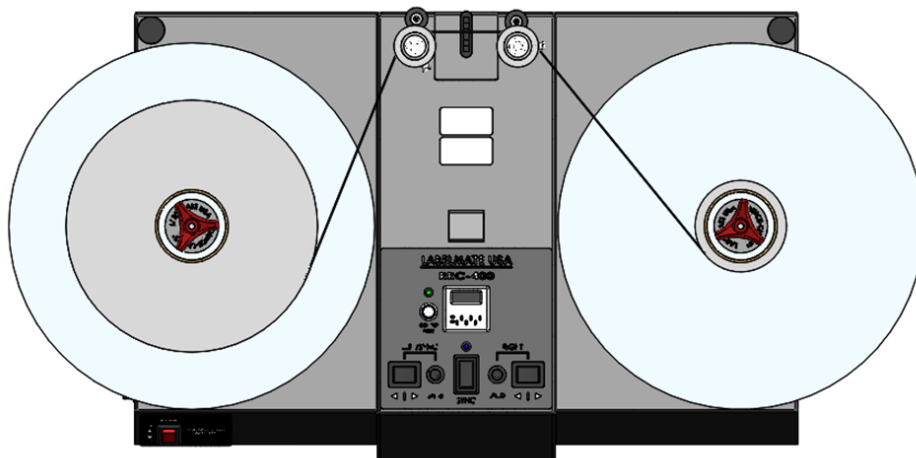
### FIG. 27



### FIG. 28

## OPERATING THE COUNTER & SETTING A PRESET COUNT

- The counter is counting the gaps between the labels, and will increase by one for each label that passes through the sensor.

- To use the preset function, input the desired number of labels with the blue push buttons on the counter. Each button increases the preset count by its respective order of magnitude.

- When the preset number of labels is reached, the RRC-400 will stop as close to the desired count as possible. Pressing the white "COUNTER RESET" button to the left of the counter will start the RRC-400 again.

- The motors will "coast" a little after reaching the preset count, and the counter will indicate how many labels beyond the preset have been counted.

- In order to precisely achieve the desired preset amount, manually rotate the unwind shaft backwards by the amount of the overage.

  NOTE: FOR BEST PRESET COUNT RESULTS, ONLY USE THE PRESET FEATURE:

  (1) IN SYNC MODE, AND

  (2) WITH THE SPEED DIAL SET AT OR BELOW 50% OF MAXIMUM SPEED (White line on the dial is in the 11:00 position, or less.) - FIG. 24


## ENCODER OPTION (RRC-ENC)

The Encoder Option provides the flexibility to measure the linear length of a material or numerically count labels with inter-label gaps, and/or labels without gaps.

### Step 1: Load Roll Onto Machine

- Load label roll as previously outlined herein (pgs. 16 - 20) and thread the material through the Rollers in either one of the two ways shown. (FIG. 31 & FIG.32)

  #### A) Measuring Linear Length

- Flip the switch on the lower front left side of the unit to TRANSPARENT. (FIG. 19)

- On the Counter, press "SET/LOCK" key and "UP" (far top right key) together at the same time. SCLE appears in the display. (FIG. 29)

- Enter the desired SCALE FACTOR from the chart on the next page (pg. 21). The values shown are the calculated Scale Factor Values for readout in various units.

- Press the RESET key for the change to take effect. (FIG. 29)

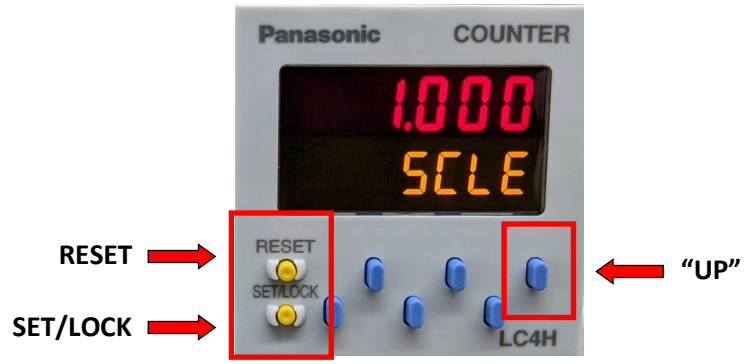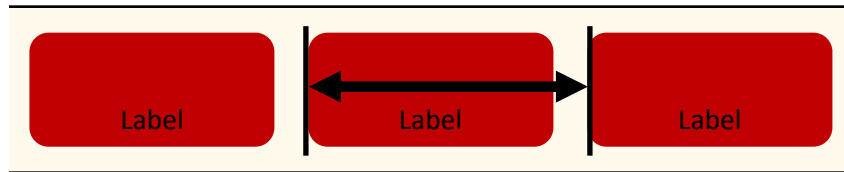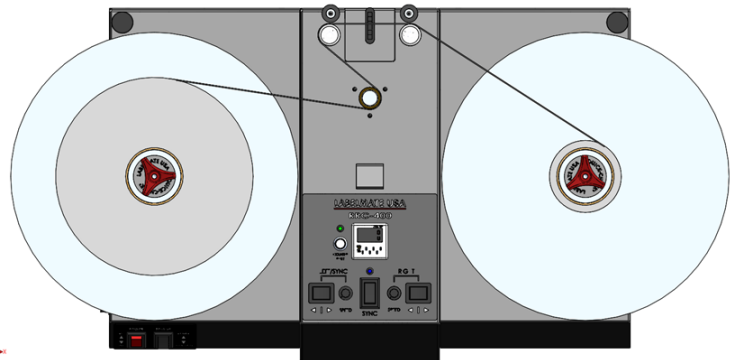- The readout will now display the length of material wound as it passes the Encoder.

**FIG. 29**



RESET →

SET/LOCK →

← "UP"

**FIG. 30**



Label | Label | Label

**FIG. 31**
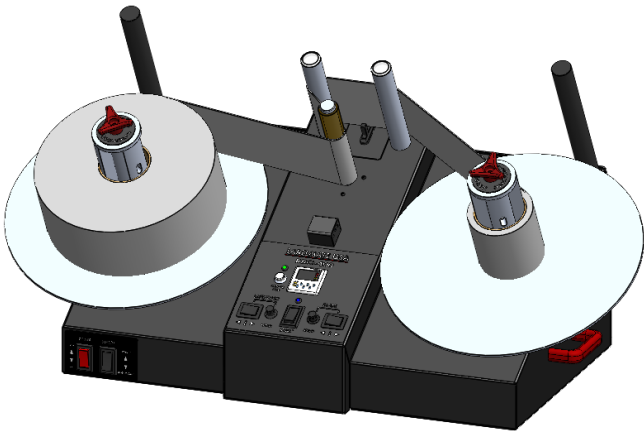


**FIG. 32**
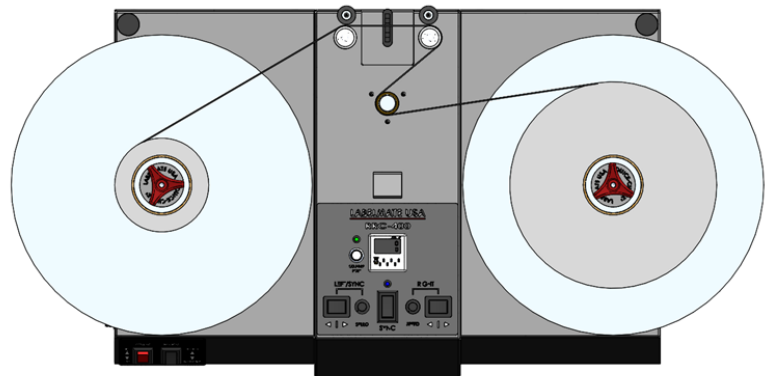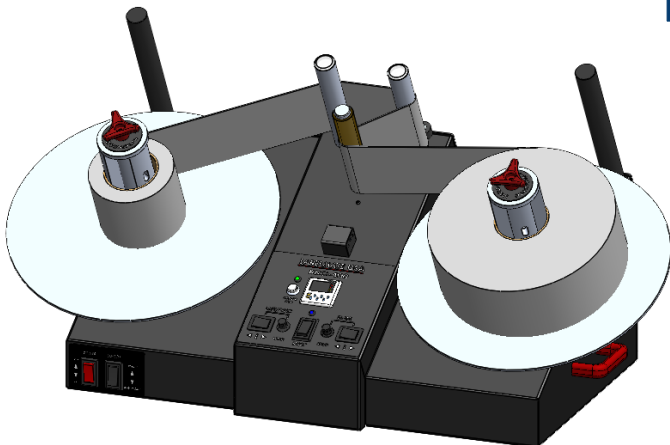
## RRC-ENC ENCODER OPTION

| DESIRED READOUT - UNITS | SCALE FACTOR |
|---|---|
| Millimeters (mm) | 4.555 |
| Centimeters (cm) | 0.456 |
| Meters (M) | 0.004 |
| Inches (in) | 0.179 |
| Feet (ft) | 0.015 |

### B) Numerically Count Opaque Labels with Gaps

- Flip the switch on the lower front left side of the unit to OPAQUE. **(FIG. 19)**

- If a pre-scale value was previously set, the value will need to be reset to 1. **(FIG. 29)**

- On the Counter, press "SET/LOCK" key and "UP" (far top right key) together at the same time. SCLE appears in the display. **(FIG. 29)**

- Set the SCALE FACTOR to 1.000. **(FIG. 29)**

- Press the RESET key for the change to take effect. **(FIG. 29)**

### C) Counting Butt-Cut, Very Small, and/or Transparent Labels

- Flip the switch on the lower front left side of the unit to TRANSPARENT. **(FIG. 19)**

- On the Counter, press "SET/LOCK key" and "UP" (far top right key) together at the same time. SCLE appears in the display. **(FIG. 29)**

- Calculate the SCALE FACTOR by dividing the SCALE FACTOR from the chart above by the measured length from the leading edge of one label to the leading edge of the next label. **(FIG. 30)** Use the SCALE FACTOR from the chart above that corresponds to the unit of measurement used to measure the label. **(FIG. 30)**

- For best results measure the labels in mm.

- Press the RESET key for the change to take effect. **(FIG. 29)**

NOTE: If you want the Unit to stop automatically at a given number of Labels, key in the length of material or number of labels at which you want the machine to stop. (*See* PRESET COUNT instructions on the top of page 20.)

NOTE:**For best results use the linear count mode in Sync Mode, and with the speed dial set at or below 50% of maximum speed.**

**The Encoder Shaft Must Be Kept Clean.**

# Product Limited Warranty

Labelmate USA warrants to the original end-user customer that Labelmate USA products will be free from defects in materials and workmanship for the duration described herein below. Labelmate USA's Limited Warranty covers only those defects that arise as a result of normal use of the products and does not cover any other problems, including those that arise as a result of: (i) improper maintenance or modification; (ii) parts or supplies not provided or supported by Labelmate USA; (iii) operation outside the products' specifications; or (iv) unauthorized repair, modification or misuse. Use of any unauthorized accessory or attachment will void coverage.

The Warranty period for all products commences the date of shipment from Labelmate USA and accrues to the original end-user customer. Warranty coverage is non-transferable and terminates immediately upon rental, resale or any other change in ownership. Original purchase documentation should be retained for Warranty coverage verification.

In the event Labelmate USA substantiates, during the applicable Warranty period, a defect in any product which is covered by Labelmate USA's Warranty, Labelmate USA shall repair or replace the product, at Labelmate USA's option. Labelmate USA retains sole discretion to determine whether or not a product is defective. In no event shall Labelmate USA have any obligation to repair or replace until the customer returns the defective product to Labelmate USA. The customer assumes any and all responsibility and liability associated with transportation of products for service under this Warranty.

In the event your product requires service or you have questions regarding Warranty coverage, please call toll-free (877) 833-7149 inside the United States, or +1 (702) 435-8535 outside the United States.

| WARRANTY PERIOD | PRODUCTS COVERED |
|---|---|
| 5-Years | "CAT" and "Mini CAT" Label Rewinders<br>"UCAT" Label Unwinders |
| 3-Years | Label Counters (*Excluding Counter Displays and Encoders*)<br>Label Dispensers (*Excluding Counter Displays*)<br>Label Slitters (*Mechanical Parts Only - excluding Counter Displays*)<br>Reel-to-Reel Machines (*Excluding Counter Displays and Encoders*)<br>Print Mechanisms (*Excluding Counter Displays and Encoders*)<br>Bottle Label Applicators (Excluding Polyurethane Rollers)<br>Quick-Chucks |
| 1-Year | Power Supplies, AC/DC Adaptors and Transformers<br>Counter Displays<br>Encoders<br>Any other products or parts not specified herein |
| 180-Days | Out-of-Warranty Repairs |

LABELMATE MAKES NO OTHER WARRANTY OF ANY KIND, WHETHER EXPRESS OR IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY, SATISFACTORY QUALITY, AND/OR FITNESS FOR A PARTICULAR PURPOSE. NO OTHER PERSON, AGENT, DEALER OR RESELLER IS AUTHORIZED TO GIVE ANY WARRANTIES ON BEHALF OF LABELMATE. ANY OBLIGATION TO  WARRANTY OTHER THAN THAT SPECIFICALLY ADDRESSED HEREIN IS EXPRESSLY DISCLAIMED.

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