MEHEEN ML BOTTLE LABELER

OPERATING MANUAL

Document Release 1.0.4

January 27, 2015
## Revision History

<table>
<thead>
<tr>
<th>Document Release</th>
<th>Date</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0.0</td>
<td>December 15, 2014</td>
<td>Initial product release</td>
</tr>
<tr>
<td>1.0.1</td>
<td>(NA)</td>
<td>(Editorial revisions)</td>
</tr>
<tr>
<td>1.0.2</td>
<td>(NA)</td>
<td>(Editorial revisions)</td>
</tr>
<tr>
<td>1.0.3</td>
<td>January 14, 2015</td>
<td>Add label sensor (Label-Eye)</td>
</tr>
<tr>
<td>1.0.4</td>
<td>January 27, 2015</td>
<td>Added ink jet printing front or back</td>
</tr>
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INTRODUCTION

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This is the Operating Manual (“Manual”) for the Meheen Manufacturing, Inc. (“Meheen”) ML Bottle Labeler. Please read this entire manual prior to operating the equipment. It instructs you how to safely set-up, operate and maintain your equipment. Please be sure that you, and any other persons who will operate the equipment, carefully follow the recommended safety practices at all times. Failure to do so could result in personal injury (including death) or property damage.

For information regarding the setup, label feed and routine maintenance, please refer also to the Operator’s quick reference guide that is delivered with the ML Bottle Labeler.

CONDITIONS

All information in this Manual is relative to the most recent product information available at the time of printing. Meheen reserves the right to change or update this Manual at any time without prior notice. You should check Meheen’s website (www.meheen.com) periodically for any changes or updates to this Manual and/or other Meheen operating manuals.

The contents of this Manual may not be copied, reproduced or transmitted, either wholly or in part, without the written permission of Meheen.

Your purchase agreement with Meheen sets forth the only representations and warranties with respect to the equipment. IN NO EVENT WILL MEHEEN BE LIABLE FOR ANY LOST REVENUE, OR FOR SPECIAL, INDIRECT, CONSEQUENTIAL, INCIDENTAL, OR PUNITIVE DAMAGES ARISING OUT OF OR RELATED TO (A) THE USE OR INABILITY TO USE THE EQUIPMENT, (B) AN ERROR IN THE DOCUMENTATION ACCOMPANYING THE EQUIPMENT, INCLUDING THIS MANUAL, OR
(C) THE LOSS OF ANY PROGRAM OR DATA STORED BY OR USED WITH
THE EQUIPMENT. You assume the risk and liability for loss, damage, or injury
to you and your property and/or to others and their property arising out of the
misuse or inability to use the equipment.

Some states do not allow the exclusion or limitation of incidental or consequential
damages, or limitations on how long an implied warranty lasts, so the above
exclusions or limitations may not apply to you. You may also have other rights
which vary from state to state.

SAFETY CONSIDERATIONS

Safety considerations specific to the operation of the Meheen ML Bottle Labeler
are provided throughout this Manual. Before installing or operating the ML Bottle
Labeler, read and adhere to all of the safety instructions. Failure to read all safety
instructions could lead to personal injury or property damage.

The following paragraph formats are used throughout this manual to highlight
safety issues and risk of damage to the equipment.

⚠️ Warning

This symbol and text format is used throughout the manual to highlight warnings.
A Warning is provided where circumstances could lead to personal injury or
property damage.

The following paragraph format is used throughout this manual to draw the reader
to points of interest or notes.

💡 Note

This symbol and text format is used throughout this manual to draw your attention
to important information and tips.
Warning

As with all mechanical equipment, care must be taken to avoid personal injury and property damage from moving parts that operate with considerable force and without warning. Avoid contact with all moving or rotating parts. Meheen shall not be held liable for personal injury or property damage resulting from the misuse of this machine, the inability to use this machine or from operation without regard to normal safety considerations.

Lethal voltages are used to power the Bottle Labeler. Power must be removed, disconnected or locked out before opening the controller panel and performing work on any electrical circuits used by the Bottle Labeler. Refer all servicing to qualified technicians.

Never leave the equipment unattended while connected to a power source and never attempt to make any manual adjustments to the equipment while connected to a power source.

Compressed air is required to activate the bottle guide and must be discharged, removed, disconnected or locked out before performing any work on the Bottle Labeler and specifically in the labeler dispensing mechanism area. Ensure no body parts are present in the bottle guide area at any time while the labeler is powered on, in label ready mode or while the labeler is operating, as this area poses a serious risk of personal injury or property damage.

The Bottler Labeler power-supply-adapter must be connected to an electrical supply that is fused and can be securely isolated. It is recommended that a GFI (Ground Fault Interrupt) is used.

Do not place the bottler labeler in a location where the power cord is not accessible. There must be access to the power cord at all times. It must be possible to disconnect it in an emergency. Know how to stop the machine and disengage it quickly.

Never allow operation of the equipment by children or by adults that have not received the proper instruction or are under the influence of alcohol or drugs. Keep the area of operation clear of all persons who have not been trained in safe operation practices. Stop the machine immediately if anyone enters the operation area.
Warning

Wear appropriate protective gear (including glasses/goggles) and avoid loose fitting clothing that can be caught in moving parts.

Not all parts used are user serviceable. Only a properly qualified and trained technician should do any required service.

Use only Meheen recommended cleaners and lubricants on parts that need routine service. A list of these cleaners and lubricants can be found on page 25.

Use only attachments and accessories approved by Meheen.

The Bottle Labeler and its ancillary parts must be correctly installed and mounted. Make sure all guards and guides are securely mounted and there is no risk of bottles falling off the conveyor or accumulation table.

If the equipment is used in a manner not specified by Meheen, the protections engineered into the equipment and therefore the product warranties may be impaired.

Do not directly spray water at the Meheen ML labeler components. When cleaning is necessary, wipe the components with a moist towel while power is turned off.
TECHNICAL SUPPORT

Within the United States--------------------------------- (+1) 509.547.7029
(8:00 AM to 5:00 PM)

Within Europe ---------------------------------- (+44) 114.245.6300
(9:00 AM to 5:00 PM)

Within Australia --------------------------------- (+61) 427.007.800
(9:00 AM to 5:00 PM)

Within New Zealand --------------------------------- (+84) 274.874.783
(9:00 AM to 5:00 PM)
FEEDING THE LABEL WEB

The ML Bottle Labeler is designed to apply pressure sensitive labels onto cylindrical containers for single wrap or front & back label applications. The label stock must be on 3” cores and positioned on the unwind disk (mount identifier #4) as seen in the illustration below. Labels must face out of the roll with the left leading edge presented and the roll must wind in a clockwise direction. The maximum outside diameter of the label stock roll allowed is 9”. Place the roll of labels on the unwind disk as shown below and insert the core lock into the slot in the unwind disk core to stop the label roll from slipping during operation.

![Label Feeding Image]
ROUTING THE LABEL WEB - WITHOUT DATE CODER

The label routing diagram below is for the ML Bottle Labeler without the optional Anser U2 ink-jet date coder installed.

Feed the labels from the unwind disk through the routing rollers as shown above.

Roller 1  2” roller
Roller 2  Brake release roller 1”
Roller 3  Tension roller 1”
Roller 4  Label guide roller 1”
Roller 5  Waste guide roller 1”
Roller 6  Waste take up roller 1”

💡 **Note**

*It is important that the web tension spring on Roller 3 is positioned correctly as detailed in the above illustration.*
ROUTING THE LABEL WEB - WITH DATE CODER

The label routing diagram below is for the ML Bottle Labeler with the optional Anser U2 ink-jet date coder installed.

Feed the labels from the unwind disk through the routing rollers as shown above.

Roller 1   2” Roller
Roller 2   Brake release roller 1”
Roller 3   Spring Guide roller 1”
Roller 4   Tension Spring Guide roller 1”
Roller 5   Label guide roller 1”
Roller 6   Waste guide roller 1”
Roller 7   Waste take up roller 1”

💡 Note
*It is important that the web tension spring on Roller 4 is positioned correctly as detailed in the above illustration.*
**LABEL SENSOR AND PEEL PLATE**

**STANDARD LABEL SENSOR: LABEL•EYE**

This label sensor works on most labels with paper or clear backing. It does not work on clear labels. It is suggested that you remove enough labels to expose the label web liner and cut the leading section of the web liner at an angle as shown to make it easier to feed through the sensor and peel plate.

*Below: Illustration identifying the labeling components*

Once the label web liner is fed through the peel plate, continue to pull the label web liner between the label drive roller and pinch roller. You will need to release the Web Pinch Roller tension away from the Label Drive Roller to create a gap to feed the label web liner through. To do this, loosen the black wing knob located on top of the web pinch roller, and use the lower black knob as a lever. Feed the web label liner through this gap.
LABEL•EYE SENSOR ADJUSTMENT

Normal Label Opacity AUTOSET Button

This category includes most paper or metallized film labels adhering to paper or transparent backing materials. To implement the one button AUTOSET routine, utilize external alignment guides to position the gap between the labels in line with the dot shown in the center of the detection zone. Then push the AUTOSET button marked “Normal.”

An alternative set up procedure would be to remove a label and push the “Normal” AUTOSET button.

On rare occasions, when the light is unable to penetrate the backing materials, both the red and green led indicators will blink four times. When this indication occurs, the sensor will be unable to detect the presence of the labels.

Translucent Label Opacity AUTOSET Button

This category includes translucent labels adhering to translucent or paper backing materials. To implement the one button AUTOSET routine, utilize external alignment guides to position the gap between the labels in line with the dot shown in the center of the detection zone. Then push the AUTOSET button marked “Translucent.”

💡 Note
This sensor cannot detect transparent labels.

Invert OUTPUT Button

The status of the red LED and the output transistors can be inverted by pressing both buttons simultaneously. When the output status has been inverted, the red LED and the output transistors will turn off when the label comes into view.

💡 Note
This is the condition status used by the ML label machine.
CLEAR LABEL SENSOR: C-GAGE SLC1

This label sensor is used for clear is attached directly to the peel plate. It is suggested that you remove enough labels to expose the label web liner and cut the leading section of the web liner at an angle as shown to make it easier to feed through the sensor and peel plate.

The ML clear label sensor has been designed to self-teach. No setup is needed to detect the label gap when changing the label rolls. The label sensor is designed to detect the gap between the labels as compared to the label web liner. Opaque and clear labels will work with the label sensor. Metallic and heavy black labels are not suitable for use with this sensor.
TENSIONING THE WEB PINCH AND LABEL DRIVE ROLLER

💡 Note

*It is important to tension the Web Pinch Roller against the Label Drive Roller once the label web liner is completely fed through the labeler the illustration below.*

Tension of the web pinch roller and label drive roller is important as this is the mechanism that pulls the web label liner and winds the liner onto the label rewind hub. First step is to position the Web Pinch Roller against the Label Drive Roller with reasonable contact between these two rollers. Startlevering the black knob towards the rear of the machine, in a clockwise direction away from the bottles, until you feel resistance and then tighten the black wing knob as seen in Figure 1 and Figure 2 below.

*Figure 1:* Shows the Web Pinch Roller in its open position. The black lever knob is facing straight out toward the left of the machine.

*Figure 2:* Shows the Web Pinch Roller in its closed contact position with the lever knob facing towards the back of the machine.
FEEDING THE REWIND HUB TAKE-UP ROLLER

Fold the paper into a point as shown in figure 3 below and if needed, drive a small amount of the label web liner using the touch screen control via the Manual Override button using the Label Advance Momentary button. Insert the triangular head of the label web liner into the slot on the label liner take up roller hub and rotate counterclockwise by hand to remove excess slack of the label liner.

![Figure 3: Pull through just enough Label Web Liner to reach the rewind roller.](image1)

![Figure 4: Feed the triangular head of the label web liner into the slot of the rewind hub.](image2)

Now that the machine is completely threaded, you must set the upper web guide and tension spring. The upper web guide is moved either up and down by forcefully sliding it in the desired direction. The idea is to have the web guides guide the label web through the machine.

💡 Note

*It is important that the web guides are set correctly so that they don’t bind or inhibit motion of the label web. Never move the bottom web guide. This is set level with the unwind disc at the factory.*
SETTING THE WEB GUIDES AND TENSION SPRING

Once the upper web guide has been set, center the tension spring between the two web guides. The user should slightly press the Tension Spring against the Aluminum Black Bar just until it flexes and then tighten the black thumb knob (Figure 7).

Figure 5: Moving the Web Guide

Figure 6: Correct the Web Guide placement

Figure 7: Correct tension spring placement
THE LABEL•EYE LABEL SENSOR DETECTION POSITION

Label sensor height adjustment is made by moving the mount up or down in the slot of the mount and tightening the adjusting bolts.
ADJUSTING THE C-GAGE SLC1 LABEL SENSOR DETECTION POSITION

The label sensor must be set so that the entire sensing area has a label positioned in the sensing window as shown below (Figure 8).

If a height adjustment is needed, the label sensor is fastened to the peel plate support with a single socket head cap screw with a 9/64 head (Figure 9). A ball driver type hex-key tool will allow for removal of the bolt and relocation as needed. Be sure to realign the sensor body with the slot in the peel plate support and then fasten the sensor.

Figure 8: Make sure label is present in sensor window.

Figure 9: To move the label sensor, remove the sensor from the peel plate using the 9/64 cap head screw.
ADJUSTING THE LABEL HEIGHT ON THE BOTTLE

Adjusting the label application height on the bottle is done by changing spacers (Figure 10) between the main support plate and the label head plate shown in red. These spacers are shown in black in the photo and there is one spacer in each corner of the plate. Spacers are provided from the factory and are easily added or removed.

![Figure 10: Spacers are added or removed to raise or lower the label height placement position onto the bottle.](image-url)
TEACHING THE PRODUCT SENSOR

When labeling bottles without a cap (typical for prefill labeling), align the edge of the bottle mouth opening with the center of the sensor directly over the edge the bottle opening as shown. Be sure to adjust the sensor to 2” (50mm) above the lip of the bottle. Remember this teaching location of the bottle as you will need relocate in this position later as art of the sensor teaching mode.

If using bottles with caps already installed they may be center under the sensor to make this adjustment.

Figure 11: Position the bottle sensor 2” (50mm) above the lip of the bottle mouth opening.
After you have set the sensor to the correct height, remove the bottle from the capture system and press and hold the black push button on the sensor until the red light comes on next to the green light (Figure 12).

![Figure 12: Press and hold until Red light comes on.](image12)

Place the product container back into the capture system. Once in place, press the black push button once (Figure 13). The red light will start to flash (blink).

![Figure 13: Place product container under product sensor and press button once more.](image13)
Without moving the product container, press the button one more time, the Red light should turn off and a Yellow light will be a steady on (Figure 14). Slide the product container into the capture zone to ensure you are getting strong product container detection sensing.

![Image](image.png)

*Figure 14: Without moving the product container, press the button one last time.*

💡 **Note**

The product container sensor has just been taught using Auto-Window. Anything plus or minus 3/8” (10mm) from the taught location will result in an unstable sense. For more details, please see the vendor information on the Banner QS18U device.
ADJUSTING THE BOTTLE CAPTURE ROLLERS AND BOTTLE GUIDE

The bottle capture rollers and bottle guide are set to approximately 1/16” (1.5mm) of clearance as shown below (Figure 15).

💡 Note

*The bottle capture rollers are normally in the fully retracted position and the bottle must be centered on the bottle drive roller.*

This adjustment is made by loosening bolts in the bottom of the support plate and moving the support in the slotted holes. Once positioned correctly tightening the mounting bolts securely.

The bottle guide is adjusted with 2 bolts though the top. These bolts can be loosened and moved in the slotted brackets mounted underneath as needed.

*Figure 15: Use a gauge to set the distance of the bottle guide rollers and the product container that is approximately 1/16” (1.5mm) thick.*
COMPRESSED AIR OPERATION

Always ensure an adequate compressed air supply is available to operate the bottle pinch roller air cylinder. Compressed air of 60 psi (5 Bar) or higher is needed to feed the regulator on the label machine. Ensure that the pressure is set on the regulator with the needle between the green arrows as shown in Figure 16.

![Figure 16: Regulator showing the 2 green arrows where the needle needs to be positioned between them.]

💡 Note

Compressed air minimum is 60 psi (5 Bar). Ensure that the needle on the regulator is set between the two green arrows.
1. Clean-up the pinch rollers and bottle guide rollers with Isopropyl Alcohol and lint free cloth every 30 days or when necessary. The Black Rollers will have a longer service life if kept clean.

2. If the machine seems to be “binding up”, check Label Web path and size of label roll (large heavy rolls can feel bound-up).

3. If the labels align off to one side or the other, check to make sure the Tension Spring is in the middle of the web guides.

4. If the labels are misaligned on the bottle, check that the Tension Spring is centered on the web and check the tension. Increase tension if needed.
CHANGING THE REWIND BELT

It is possible for the rewind belt to break after many hours of operation. If this happens, contact Meheen to purchase a replacement belt. Once you have received your new belt, changing it is a very simple process. On the pinch roller cam shaft there is a two-piece clamping lock collar. By removing the 2 socket head cap screws, using a 7/64” hexkey (Figure 17), this will allow the am shaft to slide out of the motor side plate just enough to fit the new belt on (Figure 18). Put the new belt over the rewind roller first and stretch the belt to the pinch roller shaft.

Once the new belt is in place, slide the cam shaft back into the motor side plate and re-install the two-piece lock collar. The key is to align the left hand edge of the Pinch Roller with the lefthand edge of the Label Drive Roller.

Figure 17: Remove the 2 piece locking collar.

Figure 18: Slide the new belt on.

Figure 19: Line up the Pinch Roller and the Label Drive Roller and re-tighten the locking collar.
The main control panel consists of an HMI touch screen, main power switch and BMU Series conveyor controller. Conveyor speed and electronic timers are preset by the factory and adjusted to initial settings that will help you get started. No further adjustment should be needed unless changing label or bottle sizes.

💡 Note

*Each time the main power is turned on, the conveyor will cycle and move for a few seconds, then stop. This is normal and part of the starting sequence of the machine.*
POWERING-ON THE ML BOTTLE LABELER

Once the boot-up process is complete this screen will be visible with the logo. Touch it and the screen will change to the main screen.

INITIALIZATION

The screen shown below is the power-on setup screen. The long button in the upper left corner of the screen is used to calibrate the label sensor. The label sensor is self-calibrating and when this button is pushed, the machine will dispense 1 label and flag (present a leading edge of the label past the pinch plate) the next label on the roll to its correct location. Once pressed this button will disappear and be replaced with the Home screen providing the On/Off button to operate the machine.
HOME SCREEN

The screen below is the Meheen ML Bottle Labeler Home screen. The three buttons that appear at the bottom of the screen can be accessed when the machine is not applying labels. The “Bottle sensor adjustment” allows for accurate setup of bottle location when the label is applied. “Setup Timed Parameters” are set by the factory and most likely will not need any adjustment. The timed parameters are the amount of label that is flagged (presented past the pinch plate) and the time delay of the label motor starting. The “Manual Override” allows for operation of all the moving components on the machine for testing and cleaning purposes.
After the product sensor has been adjusted 2” above the bottle and generally located over the bottle capture area as described in this manual the setup location of the bottle position for labeling can be adjusted. Start by placing a bottle on the infeed portion of the conveyor and press the “Ready to Start Test” button.

Note

*The product sensor must be properly set to ensure smooth consistent operation of the labeling machine.*

The conveyor will advance the bottle under the product sensor and stop the conveyor when the object is detected and display the “Present” in the Bottle sensor window. With air pressure disconnected from the machine, move the bottle capture rollers forward until they just contact the bottle. If both rollers do not contact the bottle at the same time, move the product sensor and run the test again until both rollers contact the bottle at the same time.
The screen above is for the timed parameters. These should not need adjustment, but if you do, simply touch the timer and it will expand into a keypad to change the timing. Bottle Sensor delay is the time to delay looking for the next bottle. Generally speaking 0.25 works well for bottles 2.5” and 0.40 for 3” bottles.

Pressing the “Main” button from any screen returns you to the labeling system Home screen.

**MANUAL OVERRIDES**

The Cradle roller and label advance buttons are momentary and will only actuate while being pressed. The Bottle Motor and Conveyor are push on/push off and will run continuously until turned off. All manual overrides should be turned off before returning to the main operating screen. The end of roll detection system can also be disabled by pressing the “End of Roll Detection” Off.
If you are applying a single label, this is the indicator you will see on the label button (Body Only). When the label light is green indicating the machine is operating, the conveyor will be running and the machine will automatically apply a single label to each bottle placed on the machine. The operations of the machine are indicated with green and red indicators.

If labeling front and back, press the label mode button and the labeling machine will automatically switch to apply Front & Back labels. Label space timing is displayed and can be changed while the machine is running by pressing the timer, which expands into a key pad. Pressing enter changes the spacing time to center the back label. If using the Ink Jet printer, you may also select to print on the front label or back label by pressing the “Ink Jet” button to toggle between front and back.

**Note**

*Each 0.01 second change is approximately 1/16” (1.25mm).*