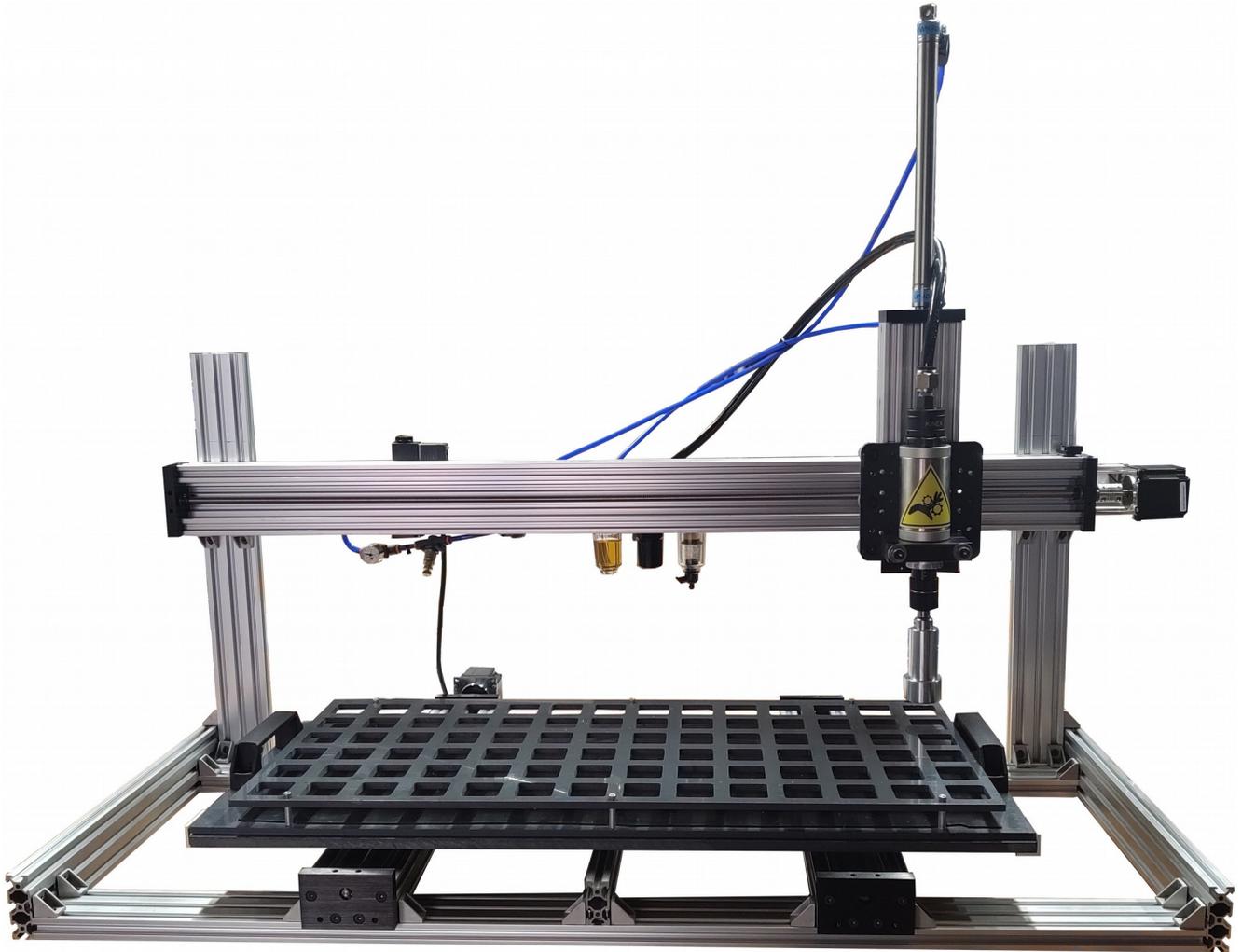


Rocky Mountain PLC REV.10-13-2019

Matrix Bottle Capper

Please contact us with any questions.



Important Safety Instructions Misuse of the bottle capping machine can result in serious injury or death. Do not use the machine in any way not covered in this manual or for any purpose other than those explained in the following pages.

Severe product damage and/or injury could result from the use of unqualified Service Technicians. All repairs must be performed by a qualified Service Technicians.

Electrical shock or fire could result if the electrical supply for the bottle capper covered in this manual is not correctly installed or if the bottle capper has been improperly grounded. Do not use the bottle capper covered in this manual unless you are certain the electrical supply has been correctly installed or the bottle capper has been properly grounded



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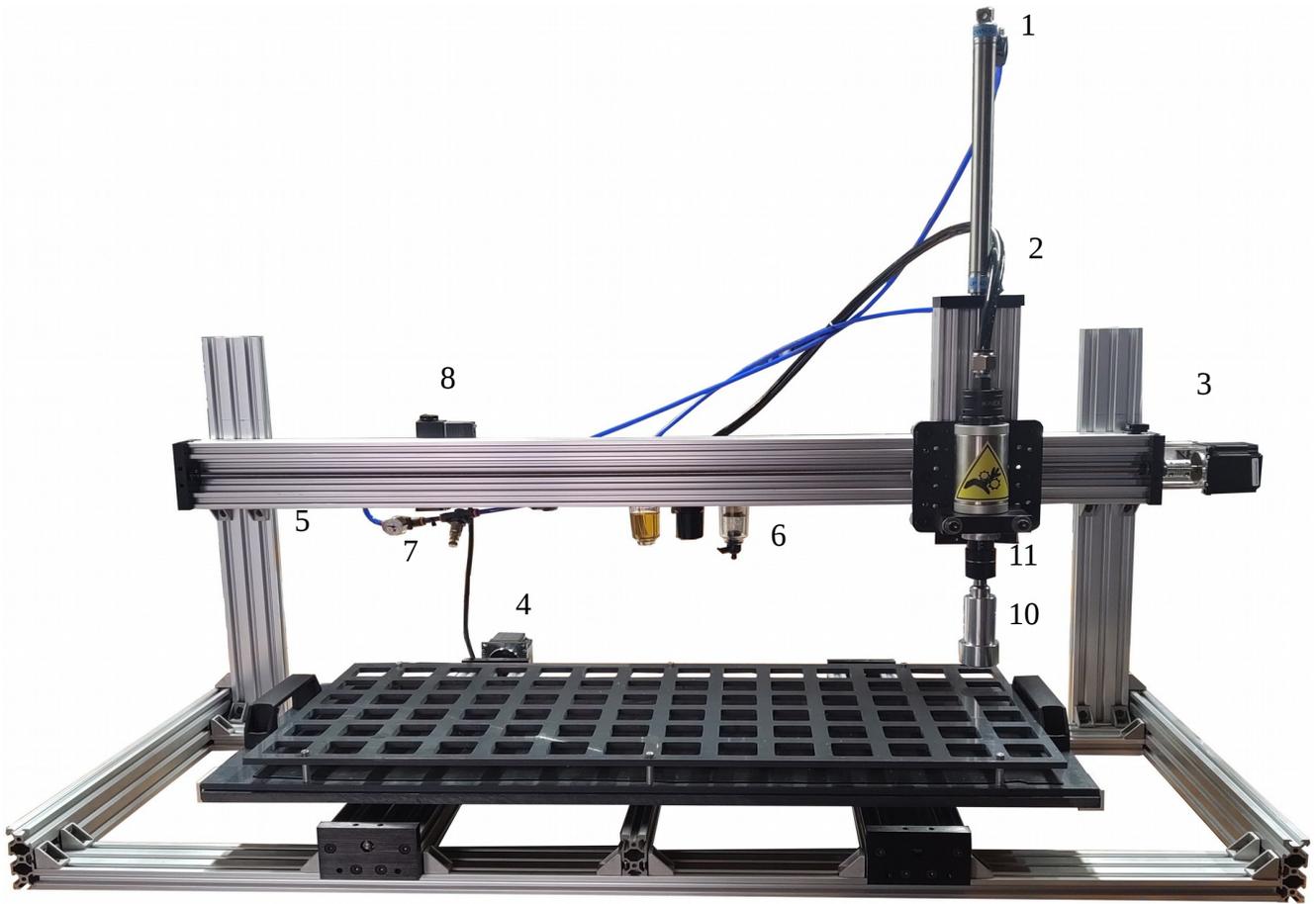
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1. Introduction

We guarantee our products and workmanship. The equipment will be repaired or replaced if, upon inspection at the factory, the equipment is found defective. This does not apply from normal wear and tear, abuse or shipping. The guarantee will be rendered invalid if the customer has made repairs or alteration to the machine without consulting with Rocky Mountain PLC LLC

2. Know your equipment

These machines are table top bottler cappers.
Standard Foot Print: 21.5" x 20" (546mm x 500mm) @ 53lbs



- | | |
|-----------------------------------|--------------------|
| 1. Nozzle Down Speed | 9. Capping Chuck |
| 2. Nozzle Up Speed | 10. Capping Torque |
| 3. X Axis | |
| 4. Y Axis | |
| 5. Riser Mounts | |
| 6. Auto Oiler & Dryer | |
| 7. PSI Control for Nozzle Control | |
| 8. Air Solenoid | |

1. Nozzle Down Speed:

Turn this knob to control how fast the capper goes down. ⁶ ₁

2. Nozzle Up Speed:

Turn this knob to control how fast the nozzle goes up

3. X₁ Axis:

This is the X Axis Movement

4. Y Axis:

This is the Y Axis Movement

5. Riser Mounts:

Mount the riser to the base here

6. Auto Oiler and Dryer:

Auto oils and dries the air for the capping spindle

7. PSI Control for Nozzles

Controls MAX psi for nozzle up and down. Start around 40 PSI

8. 24VDC Air solenoid:

Air control valve.

9. Capping Chuck:

Capping chuck and liner

10. Capping Torque:

Controls when to stop capping and sets how tight the bottle will be.

Start 4 clicks up.

3. Setting up the equipment

The tools you will need are:

Black bolts are mm Silver are Standard.

Standard Allen wrench set / Metric Allen Wrench set.

A 3mm allen wrench to tighten any bolts from shipment and to readjust the riser back up.

A 9/64 and 3/32 standard allen wrench

A 5/16 and 8mm wrench for nuts.

Listed below are how to videos. Follow them in order

Capper overview - <https://youtu.be/sm7oMeFR8ww>

Capper user interface - <https://youtu.be/oKWYI9s1DVA>

wiring capper - <https://youtu.be/qXLmK1b9bSE>

Capper air controls - <https://youtu.be/llJZOsvaD7E>

Capper torque settings - <https://youtu.be/Vz9DwYBCO5U>

Setting position trays - <https://youtu.be/-g3WMeyZEx4>

Capper auto oiler - <https://youtu.be/YVj6fADIC80>

4. Operation:

Single capping head User Interface 2019

1. List program name
2. Machine Status
3. **Home:** Used when you power the machine.

If you hit the “RESET” button or if the machine is out of position
If you Configure start location re home your machine

4. **Bottle Count:** List how many bottles to cap. Once it is set it will repeat every time.

This setting saves when you save your program settings.

5. **Cap Down Delay:** How long the capper will try to cap the bottles.

This setting saves when you save your program settings.

6. **Travel Feedrate:** This controls how fast the nozzle will travel from bottle to bottle.

We normally set this to 5000

This setting saves when you save your program settings.

7. **Cycle Count:** Shows how many cycles have been completed

8. **Row Quantity:** Different bottle trays have different amounts of rows. So we need to tell the machine how many rows there are. Rows go from front to back if looking straight at the bottle capper.

This setting saves when you save your program settings.

9. **Row Distance:** Measure your bottles center to the next bottle center with a caliber to find this number.

When a cycle is running. If the nozzle seems to be to far forward (toward you) and not center on the bottles make this number smaller. Do the opposite if the nozzle is not reaching the center of the bottle and falling short.

This setting saves when you save your program settings.

10. **Column Quantity:** Different bottle trays have different amounts of columns. So we need to tell the machine how many columns there are. Columns go from left to right if looking straight at the bottle capper.

This setting saves when you save your program settings.

11. **Column Distance:** Measure your bottles center to the next bottle center with a caliber to find this number.

When a cycle is running. If the nozzle seems to be to far left and not center on the bottles make this number smaller. Do the opposite if the nozzle is not reaching the center of the bottle and falling short

This setting saves when you save your program settings.

12. **Reset:** This is a soft E-STOP. If you feel something is not running right just click the reset button to stop all motion and filling.

After a reset make sure to re home your bottle capper.

13. **Exit:** This button will let you exit out of the UI.

14. **Clear Counter:** Clears the cycle number.

15. Shows how many moves are left to fill all your bottles.

16. **Pause:** This will pause the machine mid cycle.

Make sure to un-pause the machine

17. **Clear Queue:** If the cycle is pause you can clear any cycle commands left on the cycle.

18. **Open:** This is where you open a saved program to fill the bottles.

If your program is already open it will not re open or over write. A workaround is to open a different program. Then re open the the program your trying to over write.

19. **Save:** This is used to save your program. It works as a "save as" every time.

20. **Start Cycle:** Used to start filling your bottles.

21. **Feedrate:** This will set a machine travel speed or pump speed. If you want to jog or move your nozzle around manually or manually pump your pump.

22. **Distance:** This will set a machine travel distance or pump distance. If you want to jog

or move your nozzle around manually or manually pump your pump or prime it.

23. **Configure start location:** This is used to setup your trays. If you are using a new tray you will need to tell the machine where the first bottle is starting.

Use the jog commands to jog the nozzle over the center of the bottle on the far right side.

Once the nozzle is center on the opening of the bottle. Click on the text box and select a home for this tray. You can have up to 6 pre-defined trays.

Make sure you don't over write an already existing predefined tray.

24. **Set start location:** Use the drop down to tell the bottle capper what pre-defined location to use. Pick position 1 – 6 you set using “configure start location”

- This settings saves when you save your program settings.

25. **X-:** Jogs / moves the nozzle left
Make sure you fill in a feedrate and travel distance.

26. **Y-:** Jogs / moves the nozzle toward you.

Make sure you fill in a feedrate and travel distance.

27. **X+:** Jogs / moves the nozzle right.

Make sure you fill in a feedrate and travel distance.

28. **X+:** Jogs / moves the nozzle away from you

Make sure you fill in a feedrate and travel distance.

29. **P+:** Jogs / moves capping head up
Use for priming the pump.

30. **P-:** Jogs / moves capping head down

31. **Send Gcode:** This is for advanced features. To manually send Gcode to the bottle capper.

If you are looking to change a settings please contact us. This can brake your bottle capper.

Listed below is a setting you may want to change

1. $\$122=$ | This will change the pumps ramp up and down to help with splatter. Example: $\$122=10$ Then jog or run a cycle and you will see the change.

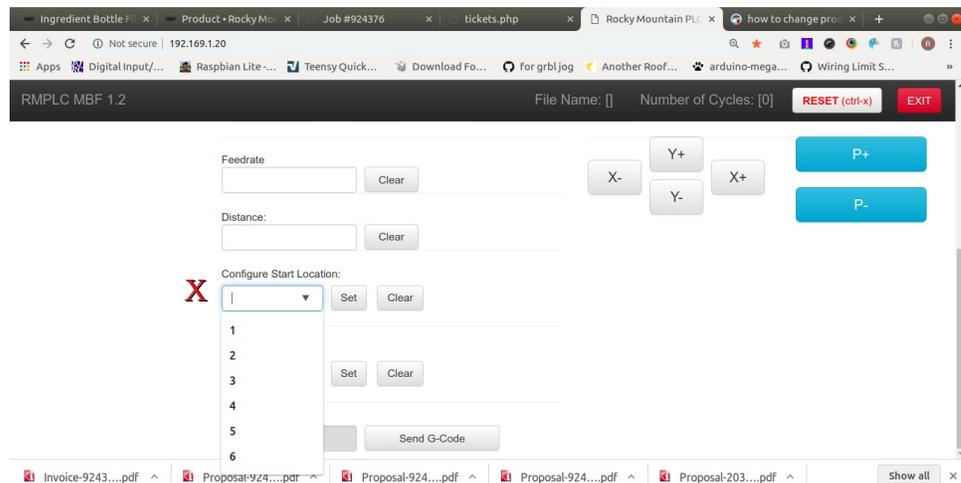
5. SETTING UP TRAY POSITIONS

You only need to configure trays locations after shipping, new trays or machine changes.

1. Hit reset to clear the machine of any processes
2. Home the machine
3. Jog the capper to the trays starting location (The far right bottle position shown on image below). Then center the capper to the center of the bottle opening.



4. Once the capper is on center with the bottle opening you need to **configure start location**. The bottle capper will let you save up to 6 starting positions. They are labeled 1-6. Use the drop down menu and select any start location you want. **You want to make sure you are not using the starting positions for any other programs or trays otherwise you will over write an exciting starting location.**



5. Once you select a **non used start location** or re configuring an existing start location click the set button.
6. Now you saved that start location 1-6 to the firmware of the capper. We now need to tell our program which start location to use. To do this scroll down to **Set start location**. Clear out any values in the box and use the drop down menu and select the position you configured 1-6

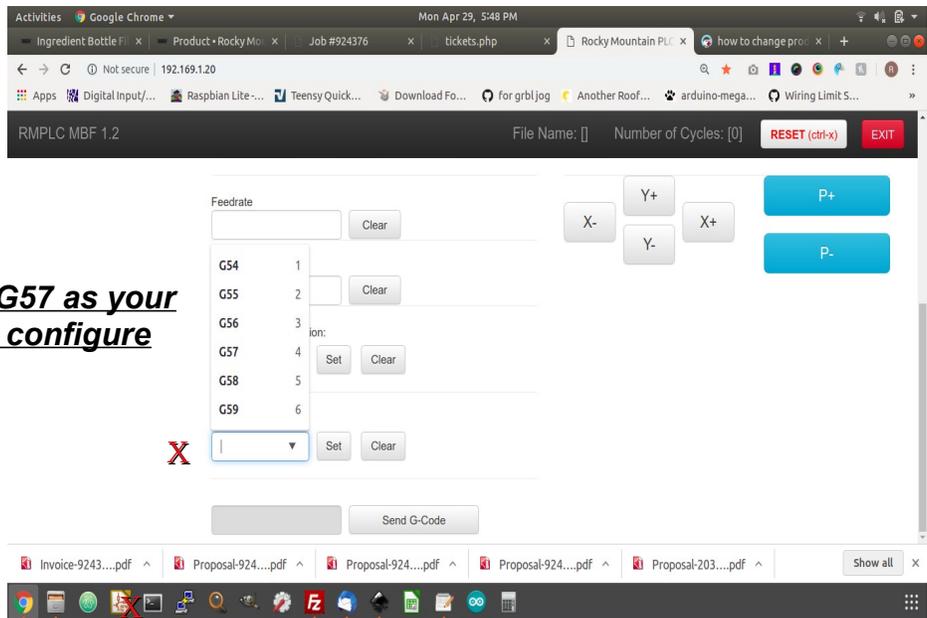
Note: You will see 1 – 6 on the right hand side of the G54- G59 codes.

Note: If you are re-configuring a programs tray position and not sure which start location you are using. Scroll down to **set start location**.

The value will say..

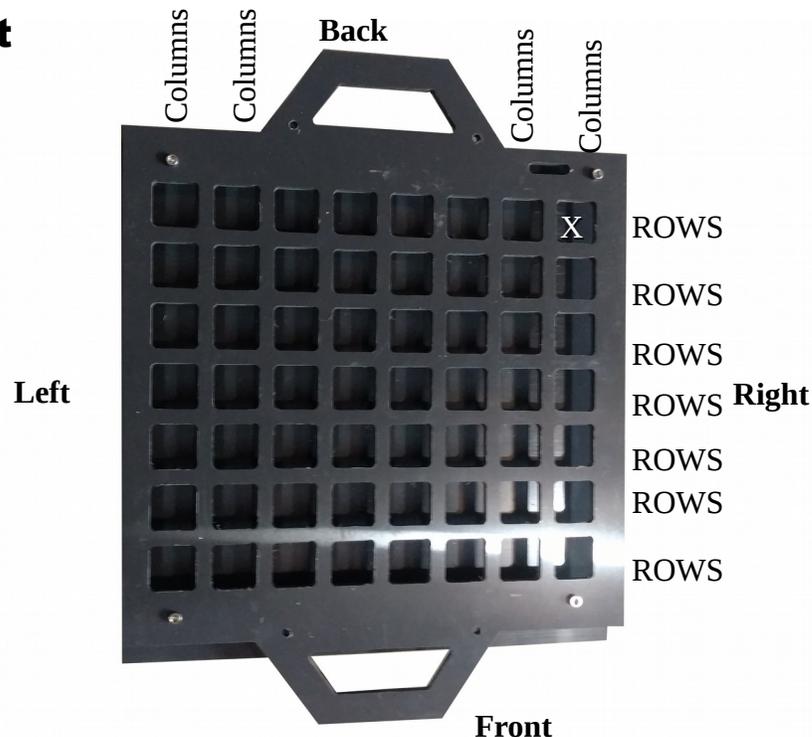
- G54 | G54 = 1 position
- G55 | G55 = 2 position
- G56 | G56 = 3 position
- G57 | G57 = 4 position
- G58 | G58 = 5 position
- G59 | G59 = 6 position

example: If you are using G57 as your start location you want to configure your start location to 4



7. Now lets test our program to see if its using the right start location. Click Start and thecapper should start capipng the bottle, because we are already at the start location. If this happened you did everything right! Save the program to save your settings. You no longer have to configure this start location as its saved in the program and firmware. Next time you load up this program the **set start location** will load up the value you saved.

6. Tray Layout



Adjusting Rows and Columns:

ROWS: When the nozzle is filling the first row you want to watch it. Make sure it is staying center on your bottles. If the nozzle start to drift to the left side of the bottles as it is going down the row you want to adjust your row distance to a smaller distance value. If the nozzle starts drifting to the right side of the bottles you want it rise your row distance value.

Columns: As the nozzle works its way to the front of the tray you want to watch it. Make sure it is staying center on your bottles. If the nozzle start to drift to the front side of the bottles as it is going down the columns you want to adjust your column distance down. If the nozzle starts drifting to the back of the bottles you want it rise your column distance

NOTE: To make sure your nozzle will be in the right position when filling. Run a dry run by setting your fill volume to 0 and the reverse fill to 0.

7. Setting Capping Torque

Use the knob shown below to set the tightness of the capper. We recommend setting it 4 clicks up on a standard 30ml boston round bottle.



8. Trouble Shooting

1. Machine not homing.

Hit reset and homing again. If the axis are to far over the homing cycle will need to run twice.

2. When starting a cycle the capper is not going to starting bottle position.

Make sure the “set bottle position” box has the right configured number. This valve will save with your program. Please watch <https://youtu.be/hv3pgz9Z76M> for more info

3. No green light on cabinet

Check the E-STOP, Key Switch of safely breaker in cabinet.

