

	<b>Standard Operating Procedure</b>	<b>SOP Number B-611</b>	<b>Revision 4</b>
	<b>In-Line Capper</b>	<b>Effective Date</b> 11/10/22	<b>Page Page 1 of 4</b>
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## 1.0 Purpose

The purpose of this procedure is to define the process of setup, operation, and cleaning for the in-line capper.

## 2.0 Scope

This procedure applies to the In-Line Capper in operation at Ion Labs, Inc.

## 3.0 Responsibility

- 3.1 It is the responsibility of Production (Packaging) personnel to follow this procedure.
- 3.2 It is the responsibility of Production Management to implement this procedure and to ensure that the procedure is being followed.

## 4.0 Definitions

None

## 5.0 References

- 5.1 B-111, SOP, Cleaning of Manufacturing/Production Areas and Equipment

## 6.0 Procedure

- 6.1 Setup and Operation
  - 6.1.1 Ensure that the machine is clean and cleared of all previously used materials.
  - 6.1.2 Load the closures to be used into the hopper attached to the conveyor. Ensure that the closures are filled to the middle level and continue to be filled to the middle level as needed for the remainder of the packaging run.
  - 6.1.3 When the hopper is fully loaded, turn on the elevator and ensure the caps are being lifted on the conveyer face down so that the inside of the caps can be seen.
  - 6.1.4 Adjust the elevator up or down by turning the unit adjustor at the base of the elevator shaft as needed.

6.1.5 Apply the correct unit for feeding the closures into the discharge cap chute. Screw the tooling into the correct location and place against the chute as tightly as possible to ensure that the caps fall correctly.

6.1.6 Adjust the photo sensor for the elevator so the elevator is disengaged when the caps reach a specific level.

**Note:** This sensor must be adjusted with the chute full and caps falling to ensure proper placement.

6.1.7 Ensure that the adjustment of the chute upper track height level and the width allow the caps to fall freely and with close perimeter so they are not falling out of the range of the cap applier or the sensor.

6.1.8 Adjust the applier height by opening the bottle transfer to a width wider than the bottle being capped, allowing the bottle to be easily moved by hand into the cap applier range.

6.1.9 Determine the correct height for the bottle to be capped. Place the bottle below the applier and adjust the height to the correct level for consistent application.

**Note:** The cap height may need a slight adjustment prior to this step during normal operation; however, the height should only need slight adjustments after this step.

6.1.10 Adjust the bottle width to squeeze the bottle enough to transfer it without damaging any of the interior contents.

6.1.11 Activate the capper by placing a bottle in front of the sensor photo eye, located on the conveyor rail, and adjust the height of the upper cap guide and width of the cap belts.

6.1.12 Ensure the cap is applied tightly without marking from the transfer conveyer, cap applier, or cap guide.

**Note:** These adjustments may be required to be repeated many times to complete this process.

6.1.13 To ensure the above information is completed accurately, the following adjustments will apply after theoretical setup is complete.

6.1.13.1 Cap width

6.1.13.2 Bottle width

6.1.13.3 Cap speed

6.1.13.4 Bottle speed

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6.1.13.5 Conveyer speed

6.1.13.6 Cap chute width

6.1.13.7 Capper height

6.1.14 Observe the machine while it is running and make necessary adjustments to ensure consistent capping.

6.1.15 The machine must be observed during the entire packaging run for the following:

6.1.15.1 Caps are being picked up properly by the elevator

6.1.15.2 Caps are running consistently down the cap chute

6.1.15.3 Caps are blocking the correct location to disengage the cap elevator

6.1.15.4 Caps are feeding properly from the cap discharge

6.1.15.5 Bottles are feeding consistently from the conveyer

6.1.16 Complete the following steps once the capper is running:

6.1.16.1 Adjust the conveyor rails to feed the bottles directly into the bottle transfer conveyor and onto the batch number machine.

6.1.16.2 Adjust the rotating index up or down and in or out to feed the bottles properly to the capper without bottle tips, over-pushing the bottle or overloading the capper.

6.1.16.3 Index the capper speed properly to ensure that it is not slower than the filler or faster than any machine after it. This step will require proper communication with other operators ahead and behind the capper.

## 6.2 Cleaning

6.2.1 Remove all product and paperwork from the previous batch.

6.2.2 Refer to SOP B-111 Cleaning of Manufacturing/Production Areas and Equipment to follow the cleaning procedure applicable to this type of equipment.

6.2.3 Document cleaning as outlined in SOP B-111 Cleaning of Manufacturing/Production Areas and Equipment.

**7.0 Revision History**

Revision	Date	Description of Changes	CCR #	By
0	07/02/10	New procedure.	-	-
1	04/30/13	Updated SOP format.	13-282	B. Mosall
2	01/27/16	Scheduled review: updated SOP format.	15-0940	P. Zittere
3	01/22/19	Scheduled review: removed obsolete definitions. Added reference to SOP B-111. Revised section 6.2.	19-0076	K. Burris
4	10/17/22	Scheduled review: updated SOP to include all current in-line cappers. Updated logo.	CC-22-0213	M. Busse