**Solution:Cone Picking Issues**

This canvas will help you with addressing issues related to cone picking. An "issue" is any situation in which the cone picking robot can not do its job properly. These situations are typically:

* The load robot is not moving at all
* A cone stack not being picked
* The load robot gripper colliding with cone stacks not being picked

Following this canvas will help deal with issues related to Cone Picking Issues.

Parts of the Conveyor

First Steps

Before moving down and trying anything else to address the issues, first check the sensors involved in this step of the process. If dirty follow the steps here to clean them: Support: Cleaning Sensors: Conveyor: Box Detection Sensor Support: Cleaning Sensors: Load Robot: Cone Stack Detection Sensor

Also check to make sure you are running the correct recipes for the cone boxes you have loaded.

Addressing Issues

* Conveyor Issues
* Box Loading Issues
* Grippers Not Closing
* Cones Not Picking Correctly

Conveyor Issues

1. If the conveyor isn’t running at all the rollers that drive the conveyor could be sticking. Remove all cone boxes present and spray some isopropyl alcohol on the rollers. Also spray the belt itself and try to roll it by hand. Try running the conveyor again.

\*Front Roller \*Rear Roller

1. If after cleaning the conveyor and the Box Detection Sensor the conveyor still isn’t running reach out to a team member for further assistance.

Box Loading Issues

1. If a cone box is not ejecting try lowering the "To Open Pos" under under the "Crowder" section by going to "Manual Functions" → "Load"
2. If a cone box is going past the loading zone after a box is ejected the "To Stop Pos" may be too low. Try increasing this number under under the "Crowder" section by going to "Manual Functions" → "Load"
3. If a cone box isn’t going into the loading zone after a box is ejected the "To Stop Pos" may be too high. Try decreasing this number under the "Crowder" section by going to "Manual Functions" → "Load"

Grippers Not Closing

1. If the gripper is not closing it might be dirty. Try closing the grippers by hand and if they don’t open back up use the compressed air to blow in between the grippers.
2. If they still struggle to open up spray isopropyl alcohol in-between the grippers.

Cones Not Picking Correctly

1. Make sure the boxes you have loaded match the recipe that is being run. If not change the recipe to the correct one. Try running the machine again.
2. If the gripper is not approaching the box, make sure the box is in front of the Box Detection Sensor.
3. Check whether or not the crowder bar is fully extended. If not, please clean the area with isopropyl alcohol until after pressing the crowder bar in it returns back to its fully extended position.

\*Pushed in and not returning to extended position \*In the extended position

1. Check whether or not the box is secured snuggly in between the wall, the crowder bar, and the track roller. If the box is loose or does not move with the conveyor go to the following section try increasing the "To Clamp Pos" under the "Crowder" section by going to "Manual Functions" → ""Load"

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1. Check whether or not the bottom of the box is flat on the conveyor belt. If the box is angled just push it down flat to the conveyor belt and try running again.

\*Not even against the wall

\*Too far away \*\*Tight up against the wall

1. Check whether or not the cone stacks in the box are straight up and down. If they are not fix the stacks or load in a box with cone stacks.

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1. If the above step doesn’t work the conveyor wall may need to be moved. Follow the steps under the following section:Adjusting the Conveyor Belt Wall
2. If all the above steps are completed try just removing the one cone stack that isn’t being picked correctly, there is a chance the stack is bad.
3. If after removing a stack the robot is still having issues try removing the entire box and let the robot pick a new box, there is a chance that the box is bad.
4. If all other methods fail try reteaching the box following the steps found here: Support: Box Teaching
5. If after reteaching the box you are still having issues picking cone stacks please reach out to a team member.

Adjusting the Conveyor Belt Wall

The cone box may be able to move around if it is not pressed tightly in between the conveyor wall, crowder bar, and track roller. If the box moves the load robot will not know where the cone stacks are and issues will arise.

* Place the cone box in the position in which it would be picked.
* Loosen the 3 black handles that connect the conveyor wall to the conveyor belts frame.
  + To loosen the handles push them in and rotate counter-clockwise.
* Push the conveyor wall so that it is tight up against the side of the cone box.
  + Do not make the wall too tight as this will stop the boxes from moving along the conveyor.
  + Push the cone box backwards, if it moves to easily or not at all the wall is incorrectly placed.
* Tighten the 3 black handles
  + To tighten the handles push them in and rotate clockwise.

🗺️ Links to Help

<https://acceleranthq.slack.com/files/U0239EH4KK9/F078SCAEC77/accelerant_pro4_pre-roll_machine_manual_6-13-23__1_.pdf>