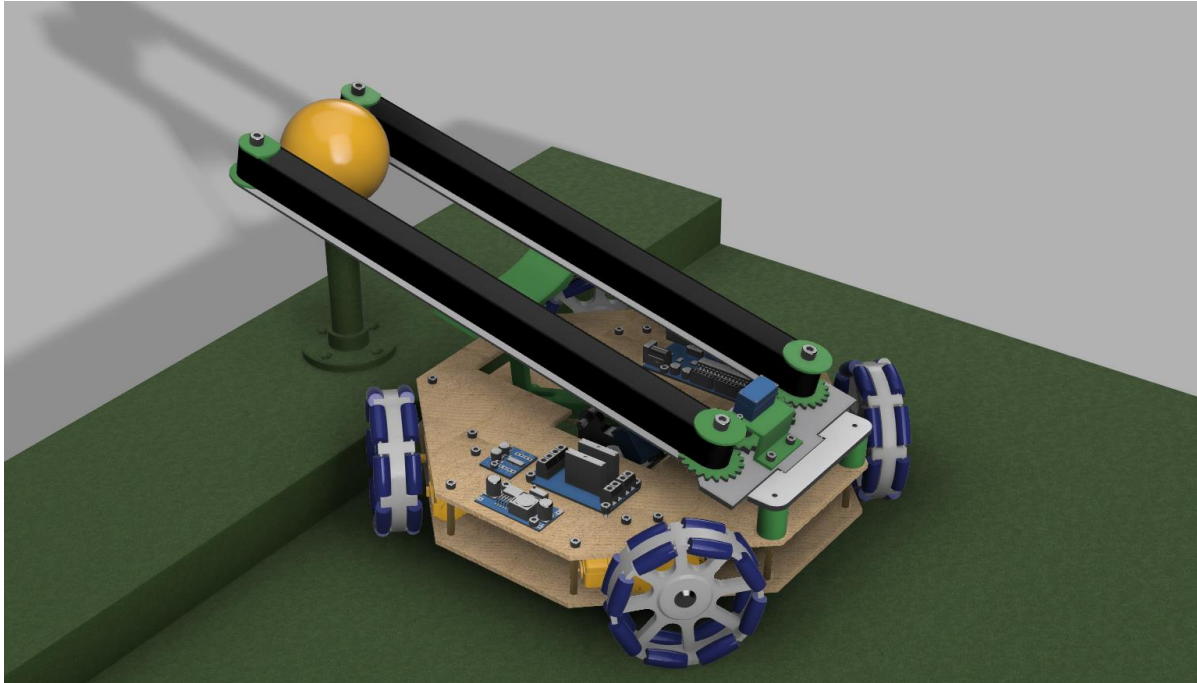


Conveyor Belt Carrier

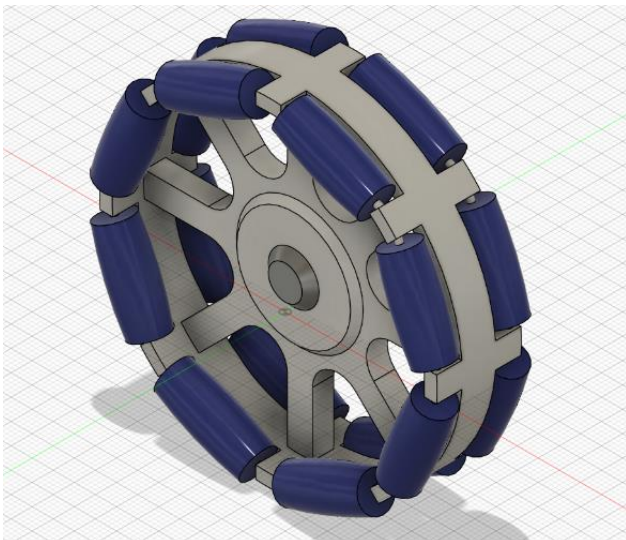
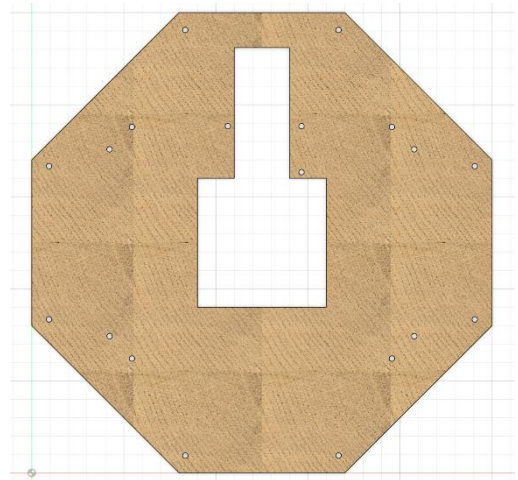
Pictured below, our gear-driven conveyor belt system offers a safe, reliable and cost-effective solution for removing the seed pods efficiently while minimizing damages and construction time. Using an adjustable rubber conveyor belt, the seeds are collected and stored in a safe manner, with the extra protection and padding of the belt system, whilst being placed into the incinerator.



The base design was created using 2D manufacturing techniques for easy prototyping, specifically MDF laser cutting.

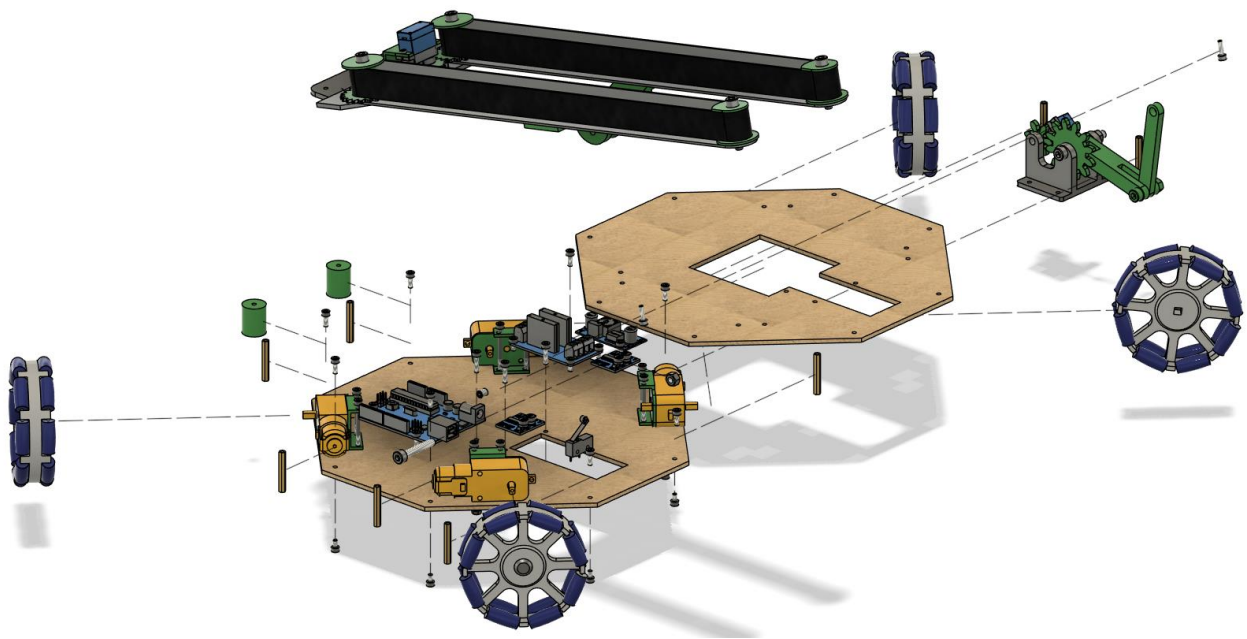
To create structure within the base, brass standoffs are used due to their simplicity and accessibility. These can be swapped for any cylindrical pipe, used with simple nuts and bolts to keep it together.

The base can be easily redesigned and drilled into to create holes for mounting parts using the CAD files and hand tools.



- Supplementing the base, the omni-directional wheels allow for every motion possible on a 2D plane.
- The design uses off the shelf parts for assembly and created using 2D manufacturing for fast prototyping and full-scale building.
- Simplicity is at the core of the design, to allow for easy construction and fast testing to mitigate the seed problem quickly, alongside the benefits in reliability.

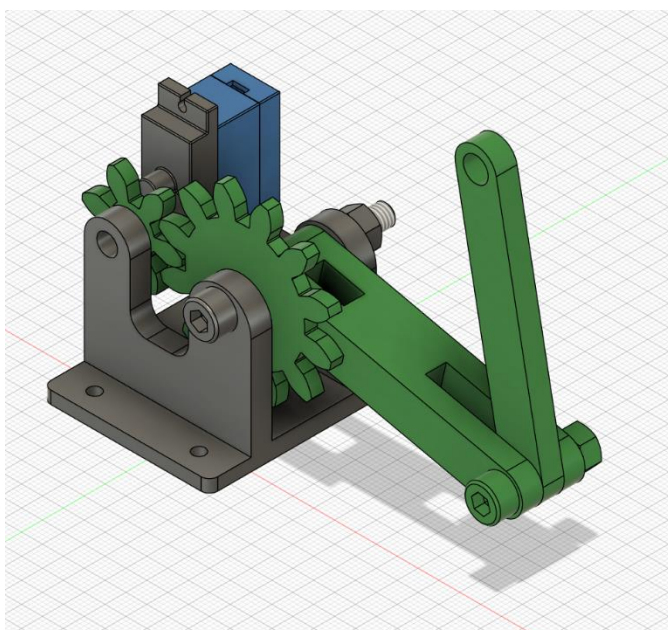
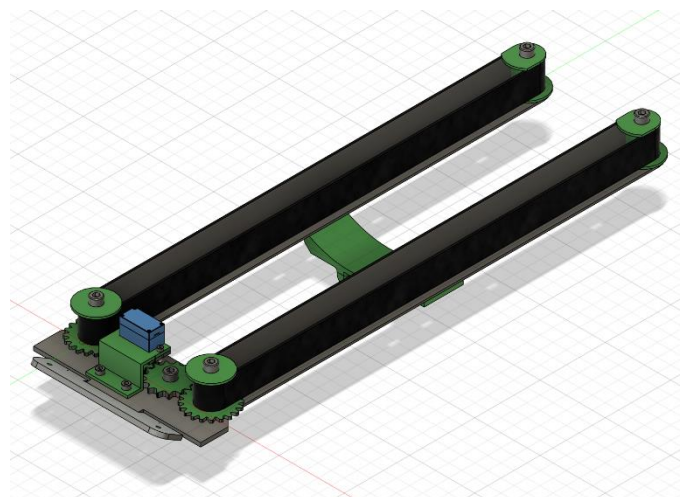
Exploded view:



The exploded view shows the overall simplicity of the design with minimal critical components. These include the conveyor belt itself, the drive system for the wheels and the lift system to position the conveyor belt.

Our system also utilizes servos for both the lifting and conveyor belt systems, allowing for precise control over the seeds to avoid mishaps.

By using a rubber conveyor belt, the seed pods will have an amount of resistance to vibration and sudden movements which will help avoid the pods from bursting before reaching the incinerator.



Lastly, the lift system uses a gear drive to utilize mechanical advantage and can be created with off-the-shelf or 3D printed parts.

Overall, the design utilizes a multitude of fast construction and manufacturing techniques which allow for quick prototyping and testing, whilst being a financially viable option when construction at full size. By using a simple design and mechanism, the team prototyping, innovating and testing this design will be able to focus more on the task at hand rather than the intricacies of the design itself.

Ultimately, this scalable and adaptable design is a cost-effective solution to the seed pod problem.