Baobab Seed Oil Press

Overview
The team was tasked to extract oil from Baobab seeds for commercial production. Baobab oil is very valuable and can greatly help the commerce in the areas the press is deployed in. In addition to extracting oil, the machine must be able to be sent and used in Africa so it must be able to break up for shipment and run on their electrical requirements. The machine must also be robust as finding parts for repair will be difficult in Africa.

Objectives
- Extract Oil from Baobab seeds.
- Must be either small or modular for shipment
- Robust, safe, and easy to use.
- Run on Africa’s electric standard.
- Budget of $1000

Approach
- Met with sponsor to obtain goals and objectives
- Research past baobab oil projects, patents, industrial solutions
- Look at industrial screw presses for inspiration
- Test seeds with industrial screw press to create benchmark goals and limitations for prototype
- Design and create model (via Solidworks) after industrial screw press and find ways to optimize and lower cost as they are very expensive.
- Create prototype from Solidwork designs
- Test prototype using same parameters as test with industrial screw press.
- Was not able to obtain oil due to motor stalling
- Motor stalled from either low output (our prototype 0.5hp smallest industrial ones around 1.5hp) or inefficient transmission from worm gear (65% efficient)

Outcomes
Finally, list the outcomes for this project making sure to clearly convey their implications for the sponsoring company:
- If either the motor or transmission or both are replaced, a cost savings of at least $2500 is possible vs industrials crew presses
- Screw press can generate oil from unused seeds valued at this time of $6-$8 per ounce.
- Can provide jobs for people in Africa by hiring people to monitor screw press