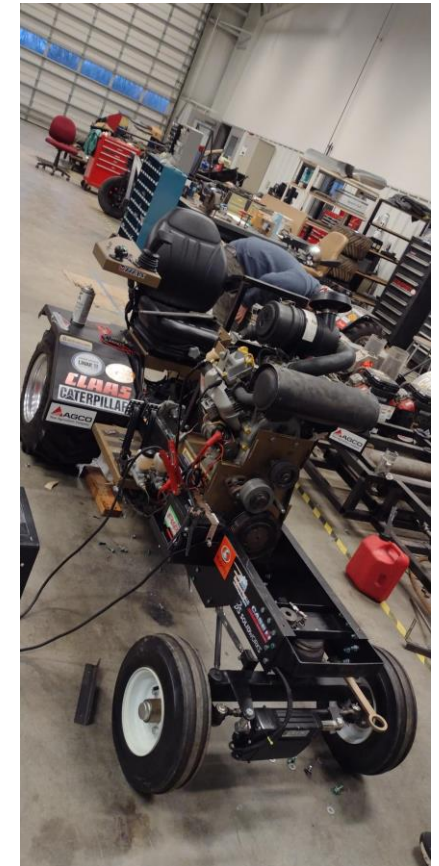


- Features and outcomes
 - 4- puck clutch for reduced or no clutch slippage
 - 43% overdrive gears for increased wheel speed in 3rd gear
 - Gates tensioner pulley for lighter weight and ease of operation
- Value proposition
 - A driveline that will hold up in strenuous conditions is needed. The driveline team's driveline will be able to hold up to the abuse that it is put through in the various courses and tests. Their clutch will help the Purdue Quarter Scale Club do well at their competitions and achieve their goals.



- 2023/ 4/10/23/ Senior Design
- Joel Beck, Tyson Rowe
Garrett Keiser
- Purdue Quarter Scale Club



- Quarter Scale Driveline/
PQS2 Driveline team
- Putting the hammer down on the competition since 1998

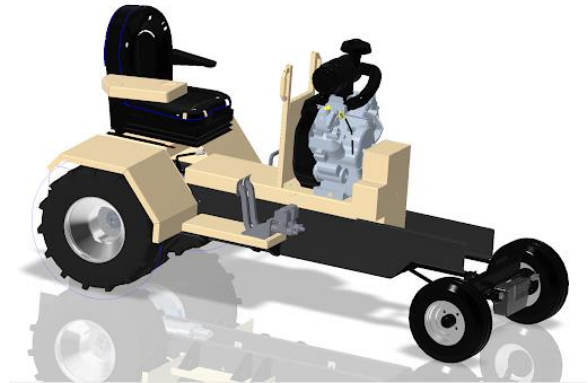
- Driveline team addressed the problems associated with the Clutch slipping, the gear ratio being too low, and the front belt tensioner pulley.
- The Purdue Quarter Scale Team had issues with the driveline of their 2022 tractor. The driveshaft failed and caused a bind, the gearing was too low, and the belt tensioner was clunky and inefficient.
- Customer
 - Purdue Quarter Scale Team and other competitors
- This project contained disassembling the tractor and examining component failures. Then producing problem solutions and overall design improvements.



- Clutch testing was done using a dynamometer to detect any slippage in the clutch



- Testing the transaxle regearing was done using a 100ft long measuring wheel and a stopwatch to measure the tractor's speed



- The final solution was composed of a larger 4-puck clutch, a regearred transaxle, and a new belt tensioner pulley.