

187/0244/017



**TEAM 09: SPRAG CLUTCH
ADDITION TO RECIPROCATING
LEVER TRANSMISSION**

DANIEL T. DUDLEY, S. EVAN GRAMBLING, IAIN C. MARSH, GRANT T. PARKER, ANGELA T. TRENT
FAMU-FSU COLLEGE OF ENGINEERING, 2525 POTSDAMER ST. TALLAHASSEE, FL. 32310

Team 09 will have the Spring of 2018 to complete the sprag clutch addition to the reciprocating lever transmission senior design project. The timeline provided will set goals and deadlines for Team 09 to keep the project progressing continually and to ensure it will be completed on time. We anticipate the project to be completed by Monday, April 2, 2018 and given to Team 20 to begin assembling their vehicle which will be used in the ASME Human Powered Vehicle Competition on April 20, 2018. Testing and analysis were given for a total of two weeks to allow extra time for parts to be manufactured and delivered.

Timeline

| | | |
|--------------------|-------------------------------|--|
| Mon | Jan 8, 2018 | Semester Begins |
| Fri | Jan 12, 2018 | CAD Model Completed |
| Fri | Jan 19, 2018 | Design Calculations Completed FEA Completed |
| Fri | Feb 2 Jan 26, 2018 | Design Refinements Completed |
| Fri Wed | Jan Feb 9, 2018 | Parts Ordered |
| Mon | Feb 26, 2018 | RLT Build Completed |
| Fri | Mar 2, 2018 | Testing Completed |
| Fri | Mar 9, 2018 | Analysis Completed |
| Sat – Sun | Mar 10 – 18, 2018 | Spring Break |
| Fri | Mar 23, 2018 | Design Refinements Completed |
| Mon | Apr 2, 2018 | Project Completed and Delivered to Team 20 |
| Thu | Apr 12, 2018 | Engineering Design Day |
| Fri | Apr 20, 2018 | ASME Human Powered Vehicle Competition |
| Mon – Fri | Apr 30 – May 4, 2018 | Final Exam Week |
| Sat | May 5, 2018 | Florida State University Graduation |

Phase 1: Designing

Should be completed by February 2, 2018.

Phase 2: Purchasing and Constructing

This part of the project should be completed by February 26, 2018.

Phase 3: Testing

This should be completed March 2, 2018.

Phase 4: Presentation

The presentation part of our project is where we show off our design. This will be completed by April 20, 2018; this date is the ASME Human Powered Vehicle Competition.

Budget

Our budget from the university is \$2000. However, our sponsor is more than willing to give more money from his pocket to contribute to our purchasing. We will be purchasing shafts and outsourcing the bevel gear and housing along with the crank arm splining process.

Task Ownership

Daniel Dudley – CAD Modeling and purchasing

Evan Grambling – CAD Modeling and quality control engineer

Iain Marsh – Supervise and report write up

Grant Parker – CAD Modeling and company outreach

Angela Trent – CAD Designing

Bottlenecks

If we cannot find a company to manufacture our specialty gears, then we will have to redesign our gears.