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| **Department of Engineering**  **GE ###.# Industrial Design Project**  **2019-2020** |

**Project Proposal**

Please complete the form and return to the Department of Mechanical Engineering ([jocelyn.peltier-huntley@usask.ca](mailto:jocelyn.peltier-huntley@usask.ca)). Feel free to attach extra information or material that would be helpful.

**Project Title:** Robotic Rotating Positioner

**Background Information:**

At Doepker Industries LTD, we are always looking for new ways make things easier for our staff. One big impact we have on production is the introduction of rotating equipment, this allows the user to easily access works in progress from many angles. Whether welding, blasting, painting, or finishing, being able to rotate equipment is always beneficial. Doepker has used manual and hydraulically powered rotators in the past. With robotics becoming more prevalent in manufacturing the next step is electrically powered and positioned rotating equipment.

**Project Objectives:**

Release structural drawings and hardware selection by December 6, 2020 to allow a prototype to be built in February and March.

User friendly for production staff to operate controller from production floor.

Provide positional feedback, operator can save favourite positions.

**Project Constraints:**

Budget for materials to be discussed in first meeting. If positioner can be assembled by students or in-house at Doepker those labour costs will not go towards budget.

Any applicable health and safety regulations must be met or exceeded.

Head and tail stock have a combined load rating of at least 10,000 lbs.

Design of positioner allows operator to control from the production floor.

**Project Deliverables:**

Mechanical: Structural drawings; load calculations (by hand).

Computer/Electrical: Electrical schematics; hardware selection; and applicable code.

Manual with pictures and text: Pre-job hazard analysis; maintenance procedures; operator procedures.

**Intellectual Property Ownership or Non-Disclosure Issues:**

Students will be expected to sign a limited non-disclosure agreement and assign intellectual property to the company. If project results in patents the students will be named as the inventors; however, the all patents will belong to Doepker Industries.