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A team of Youngstown State mechanical engineering students worked alongside a Youngstown based company called Commercial Metal Forming (CMF). CMF specializes in is the manufacturing of pressure vessel tank heads. These tank heads go through a process of beveling, cutting the edges of the tank head to make a sloping edge, or the process of joggling, applying an indentation to offset the end of the flange to fit inside cylindrical shells. The team of engineering students were to reengineer an existing machine from a flanger to a joggler. The primary focus of the new converted joggler was to joggler 72 inch diameter tank heads with a maximum thickness of 0.625 inches. The team was to repurpose various parts of the original flanger machine to perform the joggling process. A new design was created with the intent to reach all customer needs and to perform the desirable process.



- Re-engineer an existing flanger machine into a joggler machine.
- Create a way to joggle large size tank heads.
- Repurpose any existing components on the flanger machine
- Assure joggling process is substantial enough to form larger tank heads than specified
- Design all additional tooling to be used on the new joggler

