

# Parametric Design of a Triplex Plunger Pump

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## Abstract

We are designing a triplex plunger pump in a CAD system that changes depending on the connecting rod bearing size. Since spherical roller bearings are used in the design, building the entire pump design as a function of bearing size is justified. This is due to the fact that the bearings are purchased parts and the rest of the components are manufactured. We have to design a table that has all different CAD files depending on which bearing size we use. There are several pump specifications to take into account such as how many gallons per minute that it actually pumps and the discharge pressure of the fluid. Some prototypes are going to be produced by means of 3D printing. This will cost us 5\$/in<sup>3</sup> out of our budget to produce.

Our main objective of this project is to deliver a manufacturable design of a triplex plunger pump that is built with parametric CAD capability. All calculations will be done before we start to design our parts in SolidWork. We plan to have all of our parts designed by the end of the 8th week of this class. We will have weekly manufacturability review meetings once we start to make our final parts designs.

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