

## Review Paper: Design & Fabrication of 3X Positive Displacement Pump

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### **Abstract**

This review paper delves into the development of a cutting-edge and compact, high-pressure Triple X plunger pump. The pump is designed to succeed in a wide range of industrial applications. Be it transferring high-pressure fluid or using it for rigorous testing. By analyzing a total of 24 research papers this review paper emphasizes the crucial need to fine-tune pump design parameters such as the pump diameter, materials used, and the implementation of pressure needed for a small-sized pump to achieve maximum performance. The paper also talks about the revolutionary potential of computational fluid dynamics (CFD) and multi-objective optimization techniques for improving pump design and performance as a suggestion for future development and research. Furthermore, the paper emphasizes the importance of material selection in maintaining the longevity and effectiveness of pump components. The paper presents tungsten carbide and aluminium alloys as attractive options.

### **Keywords**

Computational Fluid Dynamics (CFD), High-Pressure Pumping, Material Selection, Triple X Plunger Pump.

