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The mechanism analysis of belt-pulley driven spray plunger pump

Abstract

This paper presents an analysis of the mechanism of Belt-Pulley Driven Spray Plunger Pump. Belts and pulleys are used to transfer kinetic energy from the internal combustion (IC) engine to operate the pump. Combination of pulley and belts was used to transfer motion between each other simply without the need for meshed toothed gearing. The principal remains the same that there is a driver (powered) and driven (free). The benefit from application of belts which are mostly made of synthetic fibres is that no lubrication is necessary compared to chains. The analysis is focused on power transmitted from IC engine to plunger pump (design power) considering service factor as well as determining total number of belts to be used in the system with refer to FENNER Friction Belt Range Brochure Technical Docs.