

## Design and Analysis of a Planetary Gearbox Used in Stirred Vessel

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**Abstract :** Gear in stirred vessel is one of the most critical components in machinery which has power transmission system and it is rotating machinery cost and redesign being the major constraints, there is always a great scope for a mechanical engineer to apply skills to improve the design. Gear will be most effective means of transmitting power in future machinery due to their high degree of compactness. The Galliard moved in the industry from heavy industries such as textile machinery and shipbuilding to industries such as automobile manufacture tools will necessitate the affable application of gear technology. The two-stage planetary reduction gear unit is designed to meet the output specifications. In industries, where the bevel gears are used in turret vessel to transmit the power, that unit is replaced by this planetary gearbox. Use of this type of gearbox is to get better efficiency and also the manufacturing of the bevel gear is more complex than the spur gears. Design a gearbox with the epicyclic gear train. In industries, the power transmission from gearbox to vessel is done through the bevel gears, which transmit the power at a right angle. In this work, the power is to be transmitted vertically from gearbox to vessel, which will increase the efficiency and life of gears. The arrangement of the gears is quite difficult as well as it needs high manufacturing cost and maintenance cost. The design is replaced by the planetary gearbox to reduce the difficulties, and same output is achieved but with a different arrangement of the planetary gearbox.

**Keywords :** planetary gearbox, epicyclic gear, optimization, dynamic balancing

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