Paper 05: Ultra-Compact Permanent Magnet Motor for Oil & Gas Production Applications

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Abstract:

Artificial Lift techniques are widely applied in onshore oil extraction, which represents 72% of the Oil & Gas market and relies on equipment such as Pumpjack and PCP (Progressing Cavity Pump) systems. However, in their conventional configurations, these systems require frequent maintenance interventions that increase downtime and operational costs. Pumpjack units depend on precise alignment of motor, pulley, and belt assemblies, and any failure often results in extended production stoppages due to the unavailability of components near remote sites. PCP systems, on the other hand, demand high installation costs due to tall guyed structures and specialized certifications for maintenance.

To address these challenges and enhance productivity in an efficient and sustainable way, the industry increasingly seeks innovative, compact, and energy-efficient solutions. This paper introduces ultra-compact permanent magnet motors designed to deliver high efficiency, reliability, and reduced energy consumption.