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Study and Manufacturing of Fixture for Yoke Spline on Patson Milling Machine

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Abstract: *Fixtures play a crucial role in manufacturing processes by facilitating efficient and accurate operations such as drilling, milling, and tapping on workpieces. This paper presents the design and manufacturing of a specialized fixture for performing side milling operations on Yoke Splines. Without an appropriate fixture, this process becomes complicated, time-consuming, and prone to inaccuracies, leading to increased product rejection rates, higher machining costs, and time wastage for reworking. The developed fixture enables the secure positioning of Yoke Splines on a Horizontal Patson Milling Machine for precise side milling operations. Experimental results demonstrate that the fixture significantly improves machining accuracy, surface finish quality, and processing time compared to conventional methods. The fixture design incorporates hydraulic clamping mechanisms and precisely engineered supporting components to ensure optimal workpiece stability during high-speed machining operations.*

Keywords: Fixture Design, Yoke Spline, Side Milling, Manufacturing Efficiency, Hydraulic Clamping, Machining Accuracy

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