

Investigation of the Tooth Profile for Screw Compressor Considering Leakages by Simulating in CFD

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Abstract: *The positive displacement twin-screw compressor is used to compress gases to modest pressures. Internal leakage is a fundamental issue with screw compressors. The design and performance are impacted by the phenomenon of leakages across various clearances. The experimental processes are costly and time-consuming to manufacture screw compressor. The performance of various tooth profiles of screw compressor can be determine by utilising CFD. The aim of study is to develop screw compressor profiles in solid modelling software and numerical analysis in CFD. The change in the flow rate, clearance, and tooth profile and by considering other parameter, like pressure velocity and temperature, the clearance between the male-female and casing can be adjusted and hence the scope of improvement considering the actual phenomena taking place within the screw compressor. By modifying the input parameter the losses between the internal leakages and the functional issues with the screw compressor can be minimize.*

Keywords: Tooth profile, Computational fluid dynamics (CFD), leakages, screw compressor.

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BIOGRAPHICAL NOTES



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