

Parametric Analysis of a Screw Compressor :- A Critical Review

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Abstract: Rotary twin screw compressor are widely used in the refrigeration, gas processing and energy industries and their application are diverse. Flow rate, pressure, temperature and working fluid are all factors to consider for good screw compressor. Twin-screw compressor are generally simple and small in construction with improved dependability, due to a lower moving components. They are primarily classed as oil-free and oil-flooded, and owing to their low cost, they may be used to compress helium and other gases in addition to air. Twin screw compressor are replacing reciprocating compressor due to improved profile design. Because of technological advancements and continues improvement the industry's necessity for exact performance projections has become a reality advances in the current analytical and simulation tools where appropriately can be proven by experimental investigation.

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

Nomenclatures

Computational fluid dynamics (CFD)

Vapour injection (VI)

Kinetic energy- epsilon ($K-\epsilon$) turbulence

Pressure volume (P-V) indicator diagram

M³/h. - meter³/ hour

M³/min - meter³ / minute

Revolution per minute (RPM)

Kg/s - kilogram/second Finite element analysis (FEA)

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BIOGRAPHICAL NOTES



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