

Does shroud design affect turbine efficiency?

In the last two decades a lot of papers regarding the effect of the shroud design on the flow structure, tip clearance losses and turbine efficiency have been issued.

Why do turbine blades have shrouds?

Last blades of heavy-duty gas and steam turbines have shrouds to avoid dangerous resonance frequency. In this paper, a numerical investigation of the flow structure around full and partial shrouds with various geometries and the effect of the various shrouds on the turbine stage efficiency are carried out.

Can a blade shroud be modified?

The design modification of a typical blade shroud was the subject of a major design project in the course "Finite Element Applications in Mechanical Design," ME 4603, at the University of Texas at San Antonio. A study of currently used shroud configurations was conducted, and several modifications were investigated.

Does a partial shroud reduce aerodynamic efficiency?

Porreca et al. (2007) studied three variants of shroud design: full shroud, partial shroud and enhanced partial shroud. The investigation showed that the use of partial shroud decreases aerodynamic efficiency by 1% in comparison with the full shroud case and optimized partial shroud decreases aerodynamic efficiency by 0.5%.

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Turbine Shroud Design Evolution and Objectives Turbine engine shroud designs have undergone significant evolution since their inception in early jet engine development. Initially, ...

Un immense merci &#224; toute la communaut&#233;, ainsi qu'aux membres du staff, pass&#233;s et pr&#233;sents, et aux diff&#233;rents partenaires, qui ont contribu&#233; &#224; faire vivre cet espace d'&#233;change et de partage.

This paper presents a comprehensive study of the effect of shroud design in axial turbine aerodynamics. Experimental measurements and numerical simulations have been conducted on three different ...

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In the world of power generation, performance and durability are everything. Whether it's a standby unit for emergencies or a primary power source in remote locations, generators need to operate ...

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The air has been blown through several slots along the diffuser surface to increase the mass flow rate and prevent the flow separation. Early experimental studies of shrouded aero ...

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Abstract. High-pressure turbine blade (HPTB) shrouds suffer manufacturing variations in both platform alignment and inter-platform gap width. Compared to hub endwalls, the aerothermal ...

concept, we are trying to analyse the performance of the blade inside the shroud. The shroud was divided in three major parts: a converging section, a curved housing and a divergent ...

In this paper, the numerical investigation of the flow structure around full and partial shrouds with various geometries was conducted and the effect of various shroud geometries on the ...

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