REVIEW: EFFECTS OF INLET CONDITIONS ON DIFFUSER PERFORMANCE

HARDIAL SINGH¹ & B. B. ARORA²

¹Research Scholar, Department of Mechanical Engineering, Delhi Technical University, Delhi, India
²Professor, Department of Mechanical Engineering, Delhi Technical University, Delhi, India

ABSTRACT

This paper presents the effects of various geometrical as well as fluid dynamics governing parameters on diffusers performance with significance on the inlet conditions for different area ratio in diffusers. The effects of Passage divergence, Length, Area ratio, inlet boundary layer thickness, inlet blockage, Inlet Mach number, Inlet Reynolds number, Turbulence level, Inlet Swirl, Inlet velocity profile, and Distortions have been discussed. The aspects of wall contouring, boundary layer parameters and turbulence model for the improvement of performance and flow characteristics have been considered also. Further various experimental, analytical, and computational studies carried out by various researchers have been reviewed to identify the gaps in the literature.

KEYWORDS: Annular Diffuser, Area Ratio, Reynolds Number, Mach Number & Inlet Swirl

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