

3D Numerical Simulation on Annular Diffuser Temperature Distribution Enhancement by Different Twist Arrangement

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Abstract : The influence of twist arrangement on the temperature distribution in an annular diffuser fitted with twisted rectangular hub is investigated. Different pitches ($Y = 120$ mm, 100 mm, 80 mm, and 60 mm) for the twist arrangements are simulated to be compared. The geometry of the annular diffuser and the inlet condition for the hub arrangements are kept constant. The result reveals that using twisted rectangular hub insert with different pitches will force the temperature to distribute in a circular direction. However, temperature distribution will be enhanced with the length pitch increases.

Keywords : numerical simulation, twist arrangement, annular diffuser, temperature distribution, swirl flow, pitches

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