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Discussion

Effects of Honeycomb-Shaped Walls on the Flow Regime Between a Rotating Disk and a Stationary Wall[1]

J. M. Owen.[2] To minimize the cooling air necessary to prevent the ingress of hot gas into a turbine wheel space, a peripheral seal is usually fitted between the turbine disk and the adjacent stationary casing. The authors have used an open rotor–stator system, and it would be interesting to see what effect the honeycomb stator has when it is used in a sealed system. Are there plans to do this?

Richardson and Saunders [14] noted that when the diameter of the stator was larger than that of the rotor, the flow leaving the rotor could snap on to the stator thereby altering the flow structure. Why did the authors make their stator larger than the rotor, and did they observe any strange flow behavior?

The following comments apply to errors and omissions on the figures. The gap ratio is variously referred to as s/a, s/r_l, and $\bar{S}$, and in Fig. 3(b) the values for $s/r_l = 0.0166$ and 0.0666 appear to have been reversed. Similarly, some of the values of Q appear to have been reversed in Fig. 4. It would also be helpful to indicate the values of s/r_l and Q on the appropriate figures; there are many (e.g., Figs. 3 and 7–10) where the information is missing.

References

14 Richardson, P. D., and Saunders, O. A., "Studies of Flow and Heat Transfer Associated With a Rotating Disc," *J. Mech. Engng. Sci.*, Vol. 5, 1963, p. 336.

[1] By T. Uzkan and N. J. Lipstein, published in the July 1986 issue of the JOURNAL OF ENGINEERING FOR GAS TURBINES AND POWER, Vol. 108, No. 3, pp. 553–561.

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