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**WIND TUNNEL PERFORMANCE DATA FOR TWO- AND
THREE-BUCKET SAVONIUS ROTORS**

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ABSTRACT

Fifteen configurations of a Savonius rotor wind turbine were tested in the Vought Corporation Systems Division 4.9- x 6.1-m Low Speed Wind Tunnel to determine aerodynamic performance. The range of values of the varied parameters was

Number of buckets	2 and 3
Nominal Freestream Velocity	7 and 14 m/s
Reynolds Number per Metre	4.32 and 10^5 and 8.67×10^5
Rotor Height	1 and 1.5 m
Rotor Diameter (nominal)	1 m
Bucket Overlap	0.0-0.1 m

The measured test variables were torque, rotational speed, and tunnel conditions. The data presented are in the form of power and torque coefficients as a function of speed ratio (or angular position for static starting torques). It is concluded that increasing Reynolds number and/or aspect ratio improves performance. The recommended configuration consists of two sets of two-bucket rotors, rotated 90° apart, with each rotor having a dimensionless gap width of 0.1-0.15.

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