

## The Application of Ultrasonic Levitation in the Rotor Support

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**In order to enhance the stiffness of the gas film and increase the maximum speed of the rotor, this paper proposes an ultrasonic levitation structure with a cone type bidirectional supporting motor. The performance of the conical-type ultrasonic levitation support is analysed and tested according the relationship between the levitation force and levitation gap. Through theoretical analysis it is realised that the critical speed and vibration mode of the motor rotor is affected by the change of levitation gap in the ultrasonic levitation condition. The experiments with levitation gap and the maximum speed of the motor rotor show the structure can reduce the suspended gap, while simultaneously the maximum speed of the rotor is increased.**

**Keywords:** Ultrasonic Vibration, Suspension Support, Squeeze Film, Suspension Clearance

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*Acknowledgement is arrange behind results and before References without numbering. References are strictly only by this format, font and automatically numbering.*

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