

Calibration of three-hole pressure probe with varying head chamfer angle for varying angle of attack

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Abstract

The present study focuses on the calibration of a three-tube pressure probe with an inner diameter of 1.2 mm and different chamfer angles. The heads of the two lateral tube of the probe were chamfered at an angle ranging from 25° to 45° with an increment of 5°. These chamfered probes were placed in a suction type subsonic wind tunnel with a flow speed of 20 m/s. The tests were conducted for multiple yaw angles ranging from +45° to -45°. Using the data obtained from the wind tunnel testing, dimensional-less function of pressure from different tubes were created. The prepared functions can be used for the required combination of varying chamfer angles and varying yaw angles simultaneously.

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