

COMPARISON OF SINGLE HOLE, TWO HOLE AND FOUR HOLE PROBES FOR THREE-DIMENSIONAL FLOW MEASUREMENTS

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Abstract

The present paper compares calibration curves and sensitivity curves of calibration coefficients of a four hole probe, two-hole probe and single hole probe for three dimensional flow measurements. A 2.54 mm hemispherical cantilever four hole probe is calibrated in the yaw and pitch angle range of -60° to 60° and -50° to 30° at an interval of 5° . This calibration data is used to calculate calibration coefficients and calibration and sensitivity curves of calibration coefficients for the four hole, two-hole and single hole probes. From these curves the two hole probe is identified as the best configuration for three dimensional flow measurements.

Keywords: Four Hole Probe, Two Hole Probe, Single Hole Probe, Non-Nulling Calibration, Three Dimensional Flow Measurements