

Pressure Response Characteristics of a Measurement System for a Rotating Cylinder

by

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Abstract

Over the past few years, several studies on the pressure measurement in a rotating cylinder have been carried out. However, it is considered that the argument regarding the response characteristics of a measurement system is inadequate. Thus, in this paper, the response characteristics of a measurement system for a rotating cylinder are clarified, and a proofreading method for obtaining the exact surface pressure of a cylinder to the angle from the stagnation point is described. In the measurement system used in this research, a time lag in response to the pressure fluctuation on the surface of the cylinder is observed. Therefore, the correct flow phenomenon on the surface of the cylinder cannot be determined based on the result obtained in this experiment. However, using a correction expression, a correct pressure fluctuation and a correct phenomenon can be determined.

Keywords: Rotating cylinder, Pressure response, Pressure measurement

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