Abstracts

Aerodynamic Characteristics for the Design of Rubber-Ball

by

YASUHIRO KINOSHITA, KATSUMI AOKI and JIRO NAGASE
(Received on Sep. 28, 2001 & accepted on Dec. 19, 2001)

Abstract

This paper is described on the aerodynamic characteristics for the design of a rubber ball. This study is a basic research for optimum design of surface structure of the rubber-ball used in the baseball. As a first stage, it is important that the flying characteristics of the rubber-ball in the non-rotational stage is grasped. The balls used for experiment were of 5 kinds of surface structure such as a smooth sphere, a ball with dimples, a ball with the seams, and a ball with dimples and seams. From the experimental results, the difference in aerodynamic lift and drag among these surface structures of the ball was clarified. The flow pattern of the rubber ball circumference for each ball was confirmed by the visualization experiment.

Keywords: Rubber-Ball, Drag, Lift, Drag Coefficient, Surface Structure

*1 Graduate Student, Course of Mechanical Engineering.
*2 Professor, Department of Mechanical Engineering.
*3 Nagase Kenko Co., Ltd.

The Characteristic of a Centrifugal Blower and the Flow Pattern for the Shape of Tongue

by

Atsushi KOIZUMI, Katsumi AOKI
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Abstract

A study of internal centrifugal blower is very interest in case of the problems for improving its characteristics. This report is described about effect of the tongue shape for characteristics of centrifugal blower. The experimental visualization experiment and numerical analysis for the tongue shape of 3 Types clarified the flow characteristic near the tongue of centrifugal blower. As the results, the following facts are made clear. The behavior of the flow near the tongue by the numerical analysis agrees the behavior observed by flow visualization experiments. The detailed flow phenomena near the tongue can be compared changing the flow rate using the visualization and the numerical analysis.

Keywords: Centrifugal blower, Tongue, Numerical analysis, Visualization, Flow pattern

*1 Graduate Student, Course of Mechanical Engineering.
*2 Professor, Department of Mechanical Engineering.

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