

CALIBRATION OF MINIATURE MASS FLOW PLUG FOR METERING AND CONTROL OF INTAKE DUCT FLOWS

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Abstract

The results of experimental calibration of 63mm mass flow plug are presented here. An orifice meter was used as a reference along with total pressure rake to calculate mass flow through the intake duct. The calibration was carried out without intake and fore-body at pressurized condition including atmospheric as well as with intake and fore-body at atmospheric condition only. The results showed that the choked area obtained from orifice plate and total pressure rake data is linear. The calibration data obtained from rake data was higher than that of orifice data, which may be due to highly distorted flow at the dump region. The discharge coefficient is comparable to previously carried out calibration of bigger size of 94 mm mass flow plug.

Keywords : Calibration, Discharge Coefficient, Mass Flow Plug, Rake, Orifice Meter