



## The flow and head distribution within the volute of a centrifugal pump in comparison with the characteristics of the impeller without casing

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Measurements of the unsteady velocity, pressure and flow angle have been carried out at the impeller outlet of a centrifugal pump with and without volute casing at 5 operating points using the hotwire technology and a fast response single hole cylindrical probe. The test fluid was air. While the velocities and pressures depend only on the axial coordinate and are rotationally symmetrical, if there is no casing around the impeller, the influence of the volute on the circumferential distribution of these quantities increases with the deviation of the operating point from the design point. With respect to the local throughflow distribution, this influence is much more pronounced in comparison to the pressure distribution.

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