
INVESTIGATING CAVITATION PHENOMENA IN A CRYOGENIC PUMP BY MEANS OF NUMERICAL SIMULATION

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Abstract

A cryogenic pump serves as an example to show the prospects of employing hydrodynamic simulations to calculate and plot the cavitation performance of the pump. We provide examples of how to generally approach computing those parameters that characterise cavitation in turbomachinery. We plot hydraulic head as a function of positive suction head based on the Rayleigh–Plesset model and evaluate the results. We provide recommendations for increasing intake capacity in this pump type.

Keywords

Cavitation, positive suction head, cryogenic pump, hydrodynamic simulation

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