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C2Or4C-02: Design and testing of a submersible laboratory-sized cryogenic liquid hydrogen pump

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As the hydrogen market expands, the need for the efficient distribution of liquid hydrogen (LH2) becomes increasingly important. Reducing flash gas losses during LH2 transfer and ensuring adequate pressurization of downstream applications, such as fuel cells and combustion engines, are challenges. It is therefore essential to develop pumps for liquid hydrogen. To overcome transfer losses a three-staged liquid hydrogen turbo pump, as well as a test rig for small cryogenic pumps was developed. This paper presents the general concept of this submersible liquid hydrogen pump and gives insight into component and system testing of this pump.

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