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孔板浮子流量计原理分析与实验

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摘　要：

浮子流量计是一种传统的变截面流量计，具有结构简单、工作可靠、压力损失小且稳定、可测低流速介质等诸多优点，广泛应用于测量高温、高压及腐蚀性流体介质。但经典的锥管浮子流量计的测量精度受锥管加工精度影响较大，所以锥管得加工费用较高。首先通过对孔板浮子流量计的流量计算公式进行了推导，并和经典锥管浮子流量计流量计算公式进行了比较，发现两者在形式上具有类似性，但还是有区别的。并给出了孔板浮子流量计的实验数据，证实理论分析是正确的，孔板浮子流量计的结构形式是可行的。

关键词：关键词：浮子流量计；流量计算公式；流量系数

Theoretical Analysis and Test on the Orificeplate Rotameter

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Abstract:

Abstract: Rotameter is a kind of traditional float type variable area flow meter, which has many advantages such as simple structure, working credibly, low pressure loss and stabilization. Besides, it can measure low flow rate. Therefore, it is widely applied in measuring the medium in high temperature, high pressure or corrosive flow. But precision of the traditional tapered tube flow-meter is effected highly by the machining precision of tapered tube, which result in high machining cost. Firstly, through studying the measuring equation of the Orificeplate rotameter, Compared with the traditional flow equation for tapered tube rotameter, it is found that both of them are similarity in form. But there are differences, too. At the mean time, the data of the orificeplate rotameter is tested by experimental installation, which verifies the validity and feasibility of the theoretical Analysis. Additionally ,the orificeplate rotameter has the advantage of simply processing technique,which shows the structure of it is feasible.

Keywords: Key words：Rotameter; Flow equation; flow coefficient

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