

Review on Single-Phase Fluid Flow Distribution in Manifold

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Abstract: *single-phase flow distribution from a manifold into parallel channels are found in various industrial applications employing fuel cells ,agricultural irrigation systems, variety of piping system, chemical reactors, solar thermal collectors, Polymer processing, etc. the flow distribution in manifold with multi-parallel channels has been studied over the past decade. Uneven flow distribution causes a reduction in both the thermal and fluid-dynamic performance and in many cases the failure of the device. A uniform flow distribution requirement is a very common issue in many engineering applications. This task is made complicated by the flow distribution in these devices depended on the great number of variables which act together. Research on convective flow distribution in manifold of different application has been extensively conducted in the past decade. This review summarizes numerous researches on two topics; the first section focuses on studying the fluid flow behavior of different appellations. The second section concentrates on the effect design parameters on flow distribution in manifold. The purpose of this article is to get a clear view and detailed summary of the influence of several parameters such as flowrate in the header (or manifold), size of the header, diameter of the parallel channels, location and size of inlet port to the header, flow direction, shape of the channels and the headers. In addition, operating conditions and flow properties.*

Keywords: Manifold, Flow distribution, Uniformity.