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Journal	Applied Mechanics and Materials (Volumes 63 - 64)
Volume	Advanced Research on Mechanical Engineering, Industry and Manufacturing Engineering
Edited by	Helen Zhang and David Jin
Pages	98-101
DOI	10.4028/www.scientific.net/AMM.63-64.98
Citation	Hong Ling Wei et al., 2011, Applied Mechanics and Materials, 63-64, 98
Online since	June, 2011
Authors	Hong Ling Wei , Xiao Shun Lu
Keywords	Energy , Heat Exchanger , Impeller
Abstract	Rotary heat exchanger heat exchanger is produced based on the original so easy to have oxide generated sediments, it has a small, high efficiency and low cost, can be widely used in textile, printing and dyeing, food processing, leather, paper and chemical industries. The feasibility of the rotary heat exchangers is analyzed from thermodynamics.
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Applied Mechanics and Materials Vols. 63-64 (2011) pp 98-101
Online available since 2011/Jun/08 at www.scientific.net
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doi: 10.4028/www.scientific.net/AMM.63-64.98

The Design of Rotary Heat Exchangers

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Key words: Heat exchanger; impeller; energy

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Introduction

For most wet processing industries, as far as dyeing and printing industry, food industry, leather-making industry, distillation industry and paper-making industry, its energy brewing usually as high as wage costs, or even higher. These industrial uses of energy, approximately 30% to 50% is direct poured to ditch [1]. In order to recover the most of being wasted energy effectively, reduce a waste of energy as soon as possible, well, some of the ready-made heat exchangers are living on the market, the original area of the original equipment is small but the heat capacity is big, and heat-exchanging's length is insufficient, heat is not complete, the left heat-exchanging's utilization rate is low. Based on this kind of circumstance, had made the rotary type heat exchanger designed, the rotary heat exchanger in appearance, concise, compact structure, small volume, take up the field also small, because it adopts unique design in impeller-rotating, reduce internal failure rate, reduce the maintenance workload and the use cost, and also has high heat recovery efficiency in the meantime.

Working principle

Rotary type heat exchanger can solve the problem of existing pollutants sedimentary when contaminated liquid is heat exchanging, the biggest characteristic is doing heat exchange on suffer serious pollution of the liquid without the use of special filter, unique rotary impeller and the heat generated in the process of the special electrolysis are all guarantee this heat utensils automatic cleaning performance, thus can ensure oxide skin and blockage to be cleaned up.

Rotary type heat exchanger including enclosure, liquid trough import and liquid trough export, hollow shaft import and hollow shaft export, impeller, liquid trough and the rotating hollow shaft, using this heat exchanger can do the recovery of waste heat without the use of special filter on the liquid in suffering serious pollution. Rotating hollow shaft installed in liquid trough internal, impeller are all placed on the disc hollow shaft, makeup the structure can rotate, make rotation hollow shaft can promote the impeller turns. Every impeller unicomed together through the rotating hollow shafts, make clean liquid with certain pressure from internal circulation. Impeller with internal shape is slightly less than the impeller's circular clapboard, make the liquid can be in impeller edge circulation. When the impeller rotates, the liquid trough caused turbulence, prevent liquid in the production of sediments [2][3].

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