
浮头式换热器设计

摘 要

这次毕业设计的课题为 80 平方米浮头式换热器。这篇文章对浮头式换热器做了总体的设计，再设计前期对它的结构设计、零部件设计均提出了一些技术要求。只有技术要求才能更好的对课题的研究起到约束性和准确性。设计的目的是制造出合理规范、实用性的换热器，并且可以投入到工业市场中进行生产。本文采用了 1-4 型，即壳侧单程，管侧四程。文章还用到了热系数计算、胀接、误差分析等工艺方法，来确保换热器的结构强度。浮头式换热器是管壳式换热器的一员，它是通过壳体内部流体相互交换，产生热量进行存储来实现工作的。由于它的工作环境，则需要壳体具有耐腐蚀性，不能在规定的工作年限内出现壳体的破损系列问题。浮头式换热器是一端固定，另一端可滑动，这也是它“浮头”的由来，也让它与其它的换热器有了独特之处。壳体内部流体交换产生的热量，易使壳体膨胀，需要管壳、管束来消除内部的热压力。浮头式换热器安装拆卸方便，因为它的管束可抽出，故清理也方便。换热器热能源的节约利用，也为工业提供了能量，也落实了国家的资源保护措施。

关键词：换热器；浮头；管壳

ABSTRACT

The subject of this graduation project is 80 m^2 floating head heat exchanger. This article has made the overall design to the floating head heat exchanger, and has put forward some technical requirements for its structure design and parts design in the early stage of redesign. Only the technical requirements can be more binding and accurate to the research of the subject. The purpose of the design is to create a reasonable standard, practical heat exchanger, and can be put into the industrial market for production. This paper adopts type 1-4, that is, shell side one way, tube side four way. In this paper, thermal coefficient calculation, expansion connection and error analysis are used to ensure the structural strength of heat exchanger. The floating head heat exchanger is a member of the tube and shell heat exchanger, which works by exchanging the internal fluid of the shell with each other and generating heat for storage. Because of its working environment, it is necessary for the shell to have corrosion resistance, and the damage series of the shell can not appear in the specified working life. The floating head heat exchanger is fixed at one end and sliding at the other end, which is the origin of its "floating head" and makes it unique with other heat exchangers. The heat generated by fluid exchange inside the shell is easy to make the shell expand, and the shell and tube bundle are needed to eliminate the internal hot pressing force. The floating head heat exchanger is easy to install and disassemble, because its tube bundle can be pulled out, so cleaning is also convenient. The saving and utilization of heat exchanger heat energy also provides energy for industry, and also implements the national resource protection measures.

Key words: heat exchanger; floating head; tube and shell

目 录

摘要.....	I 错误!未定义书签。
ABSTRACT.....	错误!未定义书签。
1 前言	1
1.1 概述	1
1.2 我国换热器发展前景.....	1
1.3 国外换热器发展现状及前景.....	3
2 热力计算	4
2.1 原始数据.....	4
2.2 定性温度和物性参数计算.....	4
2.3 初选结构.....	5
2.4 流量计算.....	5
2.5 壳程换热计算.....	6
2.6 传热系数.....	8
2.7 管程压降.....	8
2.8 壳程压降.....	9
2.9 压强校核.....	10
3 结构设计	11
3.1 换热流程设计.....	11
3.2 管子和传热面积	11
3.3 管子排列方式	11
3.4 壳体.....	12
3.5 管箱.....	13
3.5.1 封头.....	13
3.5.2 箱壳	- 13 -
3.6 固定管板	- 13 -
3.7 分程隔板	- 14 -
3.7.1 管程分程隔板	- 14 -
3.7.2 壳程分程隔板	- 14 -
3.8 折流板	- 14 -
3.9 拉杆.....	15
3.10 进出口管.....	16
3.10.1 管程进出管	16

3.10.2 壳程进出口管	16
---------------------	----

以上内容仅为本文档的试下载部分，为可阅读页数的一半内容。如要下载或阅读全文，请访问：

<https://d.book118.com/555211043142011310>