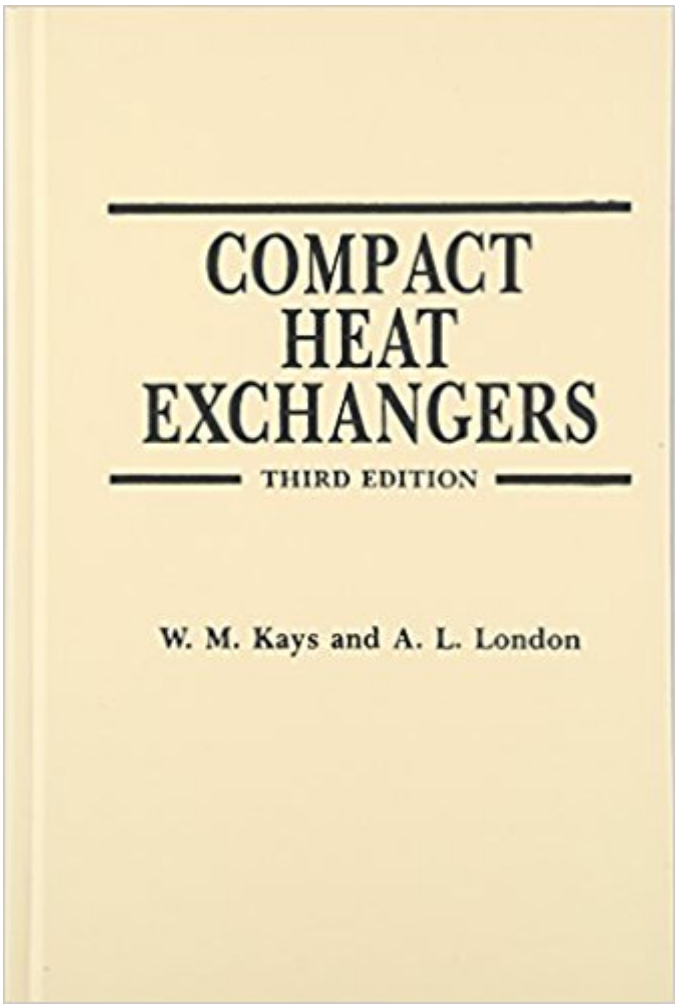
Compact Heat Exchangers



Synopsis

This text compiles experimental data on the basic heat transfer and flow friction characteristics of compact heat exchangers. The data can be applied to space heating, spacecraft heat exchangers, aircraft heat exchangers and various cooling systems.

Book Information

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Customer Reviews

This is the only practical book I've come across. Face it, you need this one. Every other book references this book.While attempting to model the Meredith effect for an aircraft installation I ordered three books. This one, Heat Exchanger Design Handbook by Kuppan and one that never arrived. Working thru the first example in appendix B and a lot of reading in the book and on the internet and I was able to create what I believe is a good model for my application. I have been unable to duplicate a few of the numbers in the example such as the specific volume v2 they have. It may be rounding errors. Also the efficiency vs Ntu graph is so small it is almost unusable. I ended up curve fitting what I could and created an empirical function. The StPr^(2/3) graph is hard to read as well. I ended up using functions for Nu and backing into it. There is also a lot of fussing around with unit conversions that I don't normally deal with. It would be nice if it had decent tables for glycol solutions. But that was another internet scavenger hunt.I wouldn't bother with Kuppan's book. The theory section is probably better, but I didn't see any useful example problems. I didn't spend a lot of time with Kuppan after reading Kays.

As a chemical engineer I've had limited use for this book. Kays addresses an area of heat exchangers used in aerospace, semi-conductors and other industries where small coolers or heaters are needed. I remember first hearing about this book back in the early 80's, while living in California, so it has been in print for a while; the first printing was 1955.Although the author addresses many of the issues of design there is only a half-hearted attempt at examples. Kays speaks to the PhD level not the working engineer. I was hoping for a book more like Kern's "Process Heat Transfer," or even Bird, Stewart, and Lightfoot's "Transport Phenomena."Here's a good example, on page 45, "Procedures for Sizing a Heat Exchanger." Instead of taking the reader through the bloody details as Kern would do, the author refers us back to Figure 2-12, a block-flow diagram giving the reader a vague understanding of the steps involving sizing an exchanger. In the end, in fact, on the same page, the author finishes with: " The complete design of a heat exchanger involves a whole set of considerations, as indicated by Fig. 2-12." This is clearly a cop-out.I had a similiar experience with plate and frame heat exchangers where so much of the sizing information is now proprietary. This forced me to go back to chemical engineering articles written in the 50's when this technology (also a compact heat exchanger) was new. When people are trying to sell an idea they are usually more open; I picked up some dandy sizing equations.All in all, this book will be useful. But, it won't help you size compact heat exchangers to the degree of detail necessary to actually build one. It will merely allow the reader a glimmer of understanding of these marvelous inventions while making him/her a slave to proprietary information from some vendor.If this review was helpful, please add your vote.

Most texts spend only a chapter or two on heat exchanger design and performance. This book really dives into the details. You'll need a pretty good knowledge of the subject matter to begin with in order to fully comprehend the topics. This book contains tons of experimental data that can be used to predict heat exchanger performance.The book has several examples and is easy to follow. A great resource for anyone involved in the development of heat exchanger models. I particularly use this for hvac design and find it works well.

The text is a little old but great for practical applications. Many correlations have been presented for various heat exchanger configurations.

This book will never go out of style. It is chock-full of relevant information on extended heat

exchanger surfaces that can be used for design and also for verification of numerical models. I highly recommend it.

Very nice and usefull book, and help me to solution a great problem with an exchanger, with a practice example.

I was really impressed with the fast deliver of the product.This book i need for my studies in university, so then i've already known about the details and content.I'm really grateful with the product, it's all good, the quality and the conservation of book.And my expectation is to buy more books here.

I LOVE this book. However, i might have to say that you won't obtain much out of this book without a good understanding of Heat Transfer and thermal fluid sciences in general. Data for an extensive list of surfaces are presented in both graphical and tabular form thus giving you the opportunity to graph the same results without having to estimate the coordinates for each surface. Several topics are covered and also present their graphs and tables that have proven to be useful for many of my undergrad projects. If there were anything I'd criticize it would be (actually 2 things) to have the graphs amplified and to present the results in tabular form along with the graphical results for the expansion and contracting coefficients. I say this because it would be a lot easier to write out an algorithm for compact heat exchanger analysis having these results already in numerical form. Buy this book if you really like this topic.

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