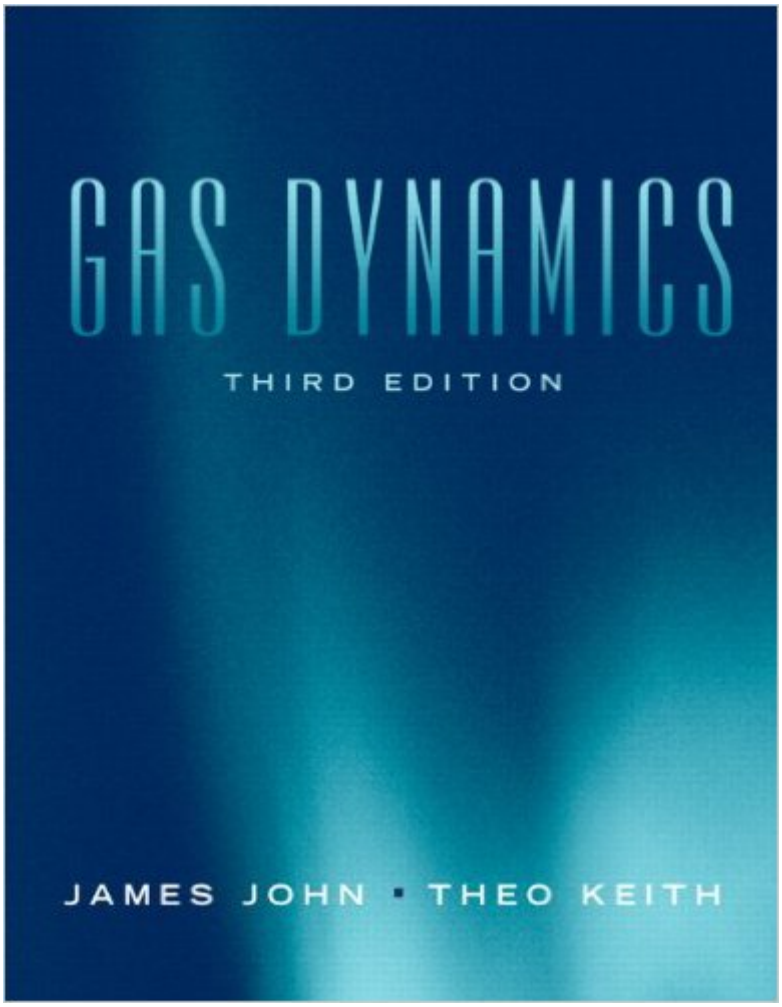
Gas Dynamics (3rd Edition)



Synopsis

This edition of a very successful and widely adopted book has been brought up-to-date with computer methods and applications throughout. It makes use of spreadsheet programs, and contains unique procedures that have never appeared before in any gas dynamics book. KEY TOPICS Chapter topics include basic equations of compressible flow., wave propagation in compressible media, isentropic flow of a perfect gas, stationary and moving normal shock waves, oblique shock waves, flow with friction and with heat addition or heat loss, equations of motion for multidimensional flow, methods of characteristics, special topics in gas dynamics, and measurement in compressible flow. For mechanical and aerospace engineers.

Book Information

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Customer Reviews

This 3rd edition is an update of a classical text by the second author, Theo Keith. The first edition by the original author, James E.A. John, was published in 1969. Since nearly 40 years passed between the publication of these editions, I suspect that the publisher keeps the name of the original author only for marketing purpose. I didn’t read the original edition so I can’t judge the differences between the new edition and the original one neither I can judge the modifications bring by the new author. However, I see a copy of the first edition on the desk of my professor. The first edition was small, compact and probably very easy to carry for lectures. However, this new edition is very big and heavy. It seems that publisher tends to increase the size of textbooks in order to justify the ridiculous price of 200+$Nevertheless, this book is a very good introduction to compressible flow or gas dynamics. With some background in thermodynamics and fluid dynamics, the book is very

readable and suited for self-study. The book covers the classical topics of gas dynamics: Isentropic Flow, Fanno Flow, Rayleigh Flow, normal and oblique shock wave, Prandtl-Meyer Flow. The text is well organized and the application example at the end of each chapter are interesting. However, the treatment is not very advanced. If you are interested by the subject, Modern Compressible Flow by John D. Anderson offers a more advance treatment.In the end, I don't recommend to buy this book, go to your university library and try to find a copy.

Well, it's a textbook. It's getting me through the class and is teaching me quite a bit. It explains everything quite well, but there are some typos, such as the oblique shock charts in the appendix. You could probably get the older version for way cheaper and it'd do the same job as this one.

This was my text for Compressible Flow. The book was OK for most purposes required when taking such a class. The examples and explanations were sufficient, granted the examples seemed to lack a bit. The worst part of the book was the feedback one needs before taking an exam.There weren't enough examples, or high enough quality examples, to be enough. I needed answers to some of the homework problems (which were good) to know if I knew what I thought I knew. Well, I had to wing it for the first exam, and it turned out I didn't.Luckily I've gotten hold of an answer key through the typical student grapevine. Unfortunately not all of you can count on such a luxury. I would recommend grabbing a Schaum's Outline for Fluid Mechanics as a start. It covers about the first half of this book. As for the rest of the book, I lucked out with the answer key, so I would highly recommend some supplament, though I wouldn't know what.Good luck.Find a companion text, and/or get access to some homework answers.PrefactBasic Equations of Compressible FlowWave Propagation in Compressible MediaIsentropic Flow of a Perfect GasStationary Normal ShockwavesMoving Normal ShockwavesOblique ShockwavesPrandtl-Meyer FlowApplications Involving Shocks and Expansion FansFlow with FrictionFlow with Heat Addition or Heat LossEquations of Motion for Multidimensional FlowExact SolutionsLinearized FlowCharacteristicsMeasurements in Compressible FlowAppendix A One-Dimensional Equations of Gas Dynamics for Use in Spreadsheet ProgramsB Isentropic Flow TablesC Normal Shock TablesD Oblique Shock TablesE Prandtl-Meyer FunctionsF Fanno Line FlowG Rayleigh Line FlowH Physical Properties of GassesI Standard AtmoshpereJ Conversion FactorsIndex

This text is an excellent supplement to a course in compressible flows. It is a bit simplistic with respect to the example problems given; the text itself is a VERY easy read. The concepts are clearly

explained, and the material is divided in a very logical, straightforward manner. Would definitely recommend as a first text in compressible flows. For a more advanced treatment, see the book by Anderson.

The authors of this textbook rely a little too much on equations to explain crucial concepts. But for those who already know the concepts but are curious about how those equations are derived, I really recommend reading this text book.

For a book that carries this high of a price tag, the answer key should have been checked. I found 3 errors in the first 15 problems of chapter 1. I understand that it is near impossible to catch 100% of errors, but for a publisher to charge this much, it should be almost perfect. I would not buy, rent if you absolutely have to, but don't expect something great. There are likely better books out there.

This is a great book! Very easy to read through... it is almost like reading through a lecture, plus some extra details. :-)It's the perfect support book to do great in your class

This book covers all the bases and does so in clear language, minimizing the time it takes to absorb the material. Also, the depth of technical discussion is enough for most engineers' needs. I highly recommend this book.

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