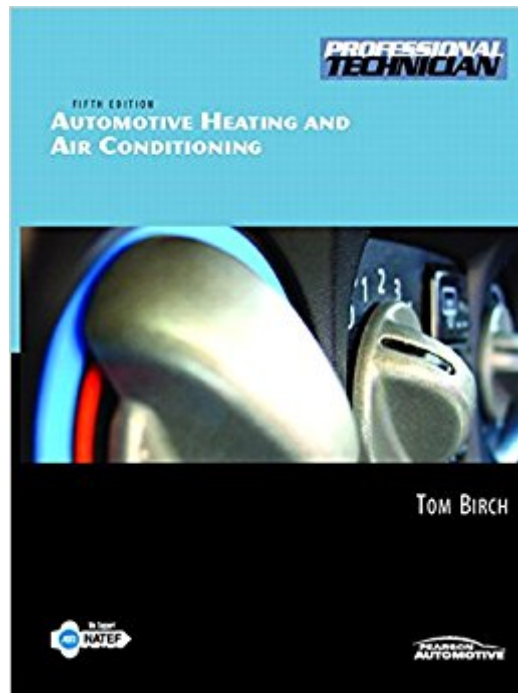




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# Automotive Heating And Air Conditioning (5th Edition)



## Synopsis

Ideal for both novice and advanced technicians, this book is correlated to NATEF and ASE and provides a complete, state-of-the-art source on automotive heating, ventilation, and air conditioning systems. The book focuses on the generic theory that underlies the operation, diagnosis, and repair of the units and subassemblies found in the many makes and types of vehicles students will likely encounter on the job. Formatted to better meet the learning needs of today's technical trade readers, it visually supports concepts covered throughout, and includes many practical shop tips that guide students through important problem-solving procedures they'll need on the job. New content for this updated edition includes new SAE J-standards and expanded information on antifreezes and coolants.

## Book Information

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## Customer Reviews

This exceptionally current and comprehensive book on automotive heating and HVAC provides essential information to effectively diagnose and repair mobile air conditioning, heating, and engine cooling systems. Visually rich, it offers extensive modern illustrations from major sources of OEM and aftermarket training (as well as service equipment and parts), and includes many practical shop tips that offer step-by-step guidance through diagnostic/problem-solving procedures critical to success on the job. Offers a thorough study of automotive HVAC and the engine cooling system - covering the theory of operation, problem solving/trouble diagnosis, service operations, repair

operations, and more. Explores current legal and environmental requirements and regulations, and includes new discussions on: VOV; after-blow module; devices to remove air from recycled refrigerant; refrigerant identifiers; modern ECM controlled clutch and fan circuits; the pros and cons of retrofits and alternate refrigerants; and the most recent findings on heater problems. Integrates problem-solving and shop tips throughout. For technical trades. --This text refers to an out of print or unavailable edition of this title.

The automobile has undergone a continuous evolution since its introduction in the late 1800s. Today's vehicles still incorporate most of the major features of the very early vehicles, yet are vastly different in many aspects. Numerous comfort features, such as heating, air conditioning, and ventilation (HVAC) systems, have been added to make driving safer and more enjoyable. Durability and longevity have increased continuously, although vehicles still break and wear out. Drivability and fuel mileage are slowly but steadily improving, while exhaust emissions are steadily decreasing.

The HVAC system is becoming one of the more durable areas of a vehicle while also becoming very complex with electronic controls, such as dual- and three-zone temperature controls. Also, the lingering effects of environmental regulations for chlorofluorocarbon (CFC) and in the near future hydrochlorofluorocarbon (HCFC) reduction are causing refinements in HVAC system service procedures. These changes are affecting millions of older vehicles that are still on the road. As the automobile becomes more sophisticated and complex, more sophisticated technicians with better training are required to keep up with the changes in regulations, to determine the causes of any malfunction, and to repair problems. Automotive Heating and Air Conditioning, Third Edition, was written to help the student understand the HVAC system used in cars, sport utility vehicles, pickups, light trucks, and vans. It describes the theory of operation for the major power transfer and control systems, as well as the methods to diagnose and repair common problems. The text covers traditional and modern HVAC systems and engine cooling systems. This edition has been expanded to include new regulations and service methods. It is arranged so that the major components of these systems are described completely with regard to theory of basic operation and methods used to diagnose, adjust, and repair problems. The theory chapters (1 through 8 and 15) provide the student technician with an understanding of how the various systems work, the terminology used, and the variety of systems that can be encountered. For example, there are three major ways of transmitting motion and force from the HVAC control head to the airflow control doors. Modern HVAC systems use electronics for the same purpose that earlier systems used mechanical cables. Even though these newer systems are based on principles of the past, the

modern technician needs to keep abreast of the technical advancements as vehicles evolve. If he or she understands how the systems operate, successful problem diagnosis and repair become much easier. The service and repair chapters (Chapters 9 through 14 and 16) complete the coverage of each system by describing the procedure used to maintain a system for proper operation; diagnosing the cause of a problem if it does occur; and then repairing or adjusting the unit to correct the root cause of the problem. These topics are covered in a very generic fashion, to apply to as many makes and types of vehicles as possible. Service information in a printed or electronic form is commonly used in automotive repair industry. It takes more than just the ability to read for the student-technician to understand and use this information effectively. This author intends not to replace these manuals, but rather to supplement them so the student-technician can gain full benefit from these valuable sources of information. This book describes how to perform service operations, and the service information tells what operations are necessary for a particular service operation. The service chapters have been made more realistic by the addition of Service Tips, which describe procedures that can bring a job to completion faster or ensure a more thorough repair. Real World Fixes have also been added; these are case studies of how technicians have solved and repaired problems. This book covers all the areas contained in the Automotive Service Excellence (ASE) test for Automotive Heating and Air Conditioning, and the ASE Task List for this area is included as Appendix A. With class instruction and shop experience, the student-technician should have no trouble passing this test. For the instructor, a complete instructor's guide to accompany this text is available from the publisher. The contents include:

- Sources of teaching aids
- A listing of web sites related to this subject
- A list correlating the ATTS Certification test skills and NATEF tasks to the text
- An outline for each chapter of the text with a set of reading questions, and additional test questions in three different styles
- Student exercises and job report sheets
- The answer key for the chapter review and quiz questions

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Includes everything you might ever want to know about alternative refrigerants, and converting older R12 to the newer R34. It even includes a list of the R12 compressors by make and model that are compatible with the newer R34. And includes all the pros and cons about making this conversion. I mention this because there is a lot of confusion on this on the forums I found online, and if you want to know it all about conversions and, actually anything else to do with A/C, then this book is what you are looking for.

#### Class Textbook

So there is plenty of great information in this book, and I learned a ton from reading it. I like the tech tips and very detailed facts. However this does not make up for how awfully this book is organized. Either someone was paid by the page, or the publisher decided it would be fun to shuffle around everything. Is there a reason why A/C Compressor styles are spread across two chapters, or could they have just gotten their own? Why is Cabin Filter removal arbitrarily stuffed in the middle of the Heating Fixes Chapter? Why must it cycle between A/C to Heat every chapter, doesn't it make more sense to separate them entirely? I'm usually a very attentive reader, but I keep drifting when the subject matter is all over the place. Fix the structure of this book and it will be great, otherwise, buy a different one.

Very good condition I couldn't ask for anything better thank you

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