

Automotive Technology: Principles, Diagnosis, and Service (2nd Edition)

By James D. Halderman



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For courses in Automotive Principles, Service, and/or Mechanics. This comprehensive text provides a general introduction to the discipline of automotive service, then guides students through the eight areas of ASE certification. Its unique emphasis is on diagnosis; diagnostic stories and tech tips are included throughout to help illustrate how real problems are solved. Each new topic covers the parts involved plus the purpose, function, and operation, as well as how to test and diagnose each system. It accurately reflects the information and skills needed in today's workplace.



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Automotive Technology: Principles, Diagnosis, and Service (2nd Edition) By James D. Halderman Bibliography

Sales Rank: #209492 in BooksPublished on: 2002-07-25Original language: English

• Number of items: 1

• Dimensions: 11.08" h x 1.81" w x 8.50" l, 6.12 pounds

• Binding: Hardcover

• 1344 pages

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Editorial Review

From the Back Cover

This second edition of *Automotive Technology: Principles, Diagnosis, and Service* is organized around the eight major testing areas specified by the National Institute for Automotive Service Excellence (ASE). These areas of certification are detailed in the objectives for each chapter and all shop worksheets are correlated to the Task List recommended by National Automotive Technicians Education Foundation (NATEF).

The primary focus is on the principles and procedures needed for successful diagnosis of automotive mechanical, electrical, and electronic problems. Each topic includes coverage of the purpose, function, operation, and diagnosis of the system plus the individual components that are involved.

A multimedia approach is used, including:

- A CD with the book that includes videos, a glossary, sample test questions, worksheets, ASE content breakdown, and the NATEF task list.
- A coupon that provides access to a website containing numerous practice questions to help the reader succeed in ASE testing.
- A Companion Website.
- Worktext with more than 100 lab sheets.

Some key features of this new edition:

- Five chapters have been added to strengthen the electrical, electronic, and engine performance areas.
- Coverage of manual and automatic transmissions has been expanded, with many new color illustrations and photo sequences.
- All chapters have been updated to reflect the latest technology developments in the automotive field.

About the Author

Jim Halderman brings a world of experience, knowledge, and talent to his work. His automotive service experience includes working as a flat-rate technician, a business owner, and a professor of automotive technology at a leading U.S. community college for more than 20 years.

He has a Bachelor of Science degree from Ohio Northern University and a Master's degree in Education from Miami University in Oxford, Ohio. Jim also holds a U.S. Patent for an electronic transmission control device. He is an ASE certified Master Automotive Technician and is also Advanced Engine Performance (L1) ASE certified. Jim is the author of many automotive textbooks, all published by Pearson Education.

Jim has presented numerous technical seminars to national audiences, including the California Automotive Teachers (CAT) and the Illinois College Automotive Instructor Association (ICAIA). He is also a member and presenter at the North American Council of Automotive Teachers (NACAT). Jim was also named Regional Teacher of the Year by General Motors Corporation and outstanding alumni of Ohio Northern University.

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The 2003 edition of *Automotive Technology: Principles, Diagnosis, and Service* is organized around the eight ASE automobile test areas and is correlated to the NATEF Task List. Terminology throughout the text reflects the SAE J1930 standard.

ASE and NATEF Correlated

This comprehensive textbook is divided into sections that correspond to the eight areas of certification as specified by the National Institute for Automotive Service Excellence (ASE) and the National Automotive Technicians Education Foundation (NATEF). The areas of the ASE material certification test are listed in the objectives at the beginning of each chapter, and all laboratory worksheets are correlated to the NATEF Task List.

Diagnostic Approach

The primary focus of this textbook is to satisfy the need for problem diagnosis. Time and time again, the author has heard that technicians need more training in diagnostic procedures and skill development. To meet this need and to help illustrate how real problems are solved, diagnostic stories are included throughout. Each new topic covers the parts involved plus their purpose, function, and operation, as well as how to test and diagnose each system.

Multimedia System Approach

The multimedia CD-ROM that accompanies and supplements the textbook is informative and also makes learning more fun for the student. The CD includes:

- 1. Live action videos and animation to help students understand complex systems.
- 2. A glossary of automotive terms.
- 3. Sample ASE test questions with immediate correct answer feedback.
- 4. Sample worksheets.
- 5. ASE content list for each of the eight ASE areas.
- 6. NATEF Task Lists for all eight ASE areas.

Internet (World Wide Web) Approach

Included with the book is a coupon that entitles the owner to *free* access to an ASE test preparation Website for an extended time period. Now you can practice and take the ASE certification tests with confidence. Included at this Website are ASE-type questions for each of the eight ASE automotive areas plus sample questions for advanced level engine performance (L1). There are over 2,000 total questions. The questions are presented 10 at a time, then graded (marked). The correct answer is then given as you scroll back through the questions. This feature allows students to study at their own pace.

Worktext Approach

A separate worktext accompanies the book. Each worktext page is correlated to the NATEF Task List. The worksheets included in the worktext help instructors and students apply the material presented to everyday-type activities and typical service and testing procedures. The worksheets show typical results and a listing of what could be defective if the test results are not within the acceptable range. These sheets help build diagnostic and testing skills.

Chapter Components

- Each chapter opens with a list of learning *objectives* including the ASE content area covered by the chapter. These objectives identify the topics covered and goals to be achieved in the chapter.
- Most chapters contain tech tips, diagnostic stories, frequently asked questions, high-performance tips, and safety tips.
- All chapters contain a *summary* at the end that highlights the material covered in the chapter.
- Review questions (discussion-type questions) are offered at the end of each chapter.
- Each chapter contains ASE certification-type questions.

Type Styles Used in This Text

Various type styles are used throughout this text to emphasize words, identify important terms, and highlight figure references. *Italic type* is used to emphasize words and terms. For example, the word *not* is often printed in italic type when it is important that an operation be avoided. New terms appear in **bold type** at first usage. These terms are defined when introduced, and most are listed in the glossary at the back of the text.

Troubleshooting Charts

Troubleshooting charts have been added to the end of each service chapter. These charts will help the reader diagnose and repair common problems.

Color Use

Color is used extensively throughout this text to enhance understanding and highlight important information. Hundreds of color photographs help students grasp the subject material.

New Features of the Second Edition

- 1. All eight areas of ASE and NATEF thoroughly covered and correlated.
- 2. ASE areas and content areas included in the objectives at the beginning of each chapter.
- 3. Hundreds of new color photographs and line drawings to help students understand the content material and to bring the subject alive.
- 4. Expanded electrical and electronic content with an additional three chapters including a chapter on audio systems.
- 5. Expanded coverage of OBD II and I/M 240.
- 6. Expanded coverage on manual and automatic transmissions.
- 7. Many new photo sequences help to explain service procedures.
- 8. New topics covered include use of digital storage oscilloscopes (DSO) and clamp-on multimeters, to name but two.
- 9. Each technical topic discussed in one place or chapter. Unlike other textbooks, this book is written so that the theory, construction, diagnosis, and service of a particular component or system is presented in one location. There is no need to search through the entire book for other references to the same topic.
- 10. Spanish-language glossary.

Instructor Package

A comprehensive *instructor package* is available free when the text is adopted for classroom use from Prentice Hall (call 1-800-526-0485 or visit Prentice Hall online at wwwprenhall.com).

This instructor package includes the following:

- PowerPoint presentation on topics covered in the text.
- Instructor CD with suggested student activities, a test bank, photo library with hundreds of digital color photos, as well as many other useful elements for the classroom.
- Answers to all questions in the textbook.
- Companion Website where instructors can obtain additional helpful teaching material and handouts, as well as links that can help students and instructors keep up to date.

Users Review

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This book untitled Automotive Technology: Principles, Diagnosis, and Service (2nd Edition) to be one of several books in which best seller in this year, that's because when you read this guide you can get a lot of benefit into it. You will easily to buy this particular book in the book shop or you can order it by means of online. The publisher in this book sells the e-book too. It makes you easier to read this book, as you can read this book in your Mobile phone. So there is no reason to you personally to past this reserve from your list.

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