



# Automotive and Trucks

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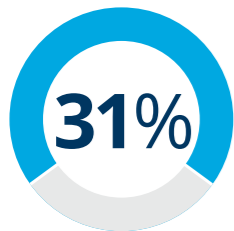


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# APPLIED MATHEMATICS FOR CAREERS

## MATH FOR AUTOMECHANICS

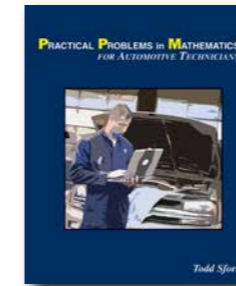
### PRACTICAL PROBLEMS IN MATHEMATICS, 7E

For Automotive Technicians

Todd Sformo, *Ilisagvik College*

© 2009, 288pp, Paperback, 9781428335240

ebook



Comprehensive and easy to use, the revised and updated seventh edition covers practical math problems that automotive technicians will face on the job. The easy-to-read and well organized chapters of Practical Problems in Mathematics for Automotive

Technicians, Seventh Edition feature step-by-step instructions, diagrams, charts, and examples that facilitate the problem-solving process while reinforcing key concepts. The presentation builds from the basics of whole-number operations to cover percentages, linear measurement, ratios, and the use of more advanced formulas. With a special section on graphs, scale reading of test meters, and invoices found in the workplace, this text is tailor-made for students in any automotive course of study!

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# AUTOMOTIVE

## ASE PREPARATION AND NATEF CERTIFICATION

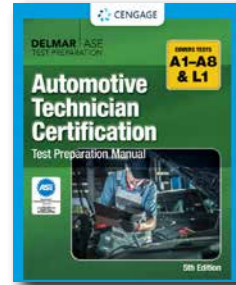
### NEW EDITION

### AUTOMOTIVE TECHNICIAN CERTIFICATION TEST PREPARATION MANUAL, 5E

Cengage Learning

© 2021, 934pp, Paperback, 9780357644607

ebook



One of the most trusted test preparation guides in the industry, AUTOMOTIVE TECHNICIAN CERTIFICATION TEST PREPARATION MANUAL, 5th Edition, will help to prepare users for the A1-A8 and L1 ASE certification exams. The guide is highly effective in covering need-

to-know information to help users pass their exams. Each section starts with a complete overview of the ASE Tasks for that specific system. Next, each section includes ASE Style practice exams to test your knowledge on these critical ASE Tasks. Finally, each section ends an explanation of answers and ASE Task remediation. The end result: is a powerful test preparation tool, filled with updated task list theory, practice tests, and abundant, demonstrative graphics, which will arm users with the knowledge they need to master the ASE certification exams.

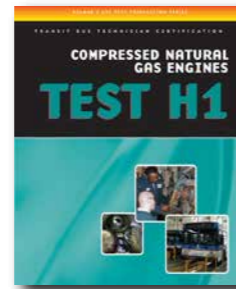
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1. The History and Purpose of ASE
2. Overview and Introduction
3. Types of Questions on an ASE Exam
4. Engine Repair
5. Automatic Transmission/Transaxle
6. Manual Drive Trains and Axles
7. Suspension and Steering
8. Brakes
9. Electrical/Electronic Systems
10. Heating and Air Conditioning
11. Engine Performance
12. Advanced Engine Performance
13. Glossary

### ASE TEST PREPARATION - TRANSIT BUS H1, COMPRESSED NATURAL GAS

Delmar, Cengage Learning

© 2011, 254pp, Paperback, 9781435439399



With more natural gas vehicles on the roads than ever before, today's technicians need to be prepared to service these vehicles, both in the shop and in a testing environment for ASE certification. To accomplish this, ASE Test Preparation - H1,

Compressed Natural Gas has gathered the latest need-to-know information about the new compressed natural gas task list, and paired it with ASE-style practice tests. The book begins with a history of the ASE and progresses to include guidelines, techniques, and strategies for taking and passing the certification exams. An overview of the task lists follows and is reinforced with both ASE-style practice questions and answer rationales that allow readers to practice their test-taking skills and identify areas in need of improvement.

### CONTENTS

- Section 1: The History of ASE.
- Section 2: Take and Pass Every ASE Test.
- Section 3: Types of Questions on an ASE Exam.
- Section 4: Overview of the Task List.
- Section 5: Sample Test for Practice.
- Section 6: Additional Test Questions for Practice.
- Section 7: Appendices.

### ASE TEST PREPARATION - TRANSIT BUS H3, DRIVE TRAIN

Delmar

© 2009, 254pp, Paperback, 9781435453760



When you study with this ASE Test Preparation Manual for your Transit Bus Drive Train (H3) exam, you can be confident that you're getting the most up-to-date ASE task list available and the most current industry information. This comprehensive resource

provides the skills, knowledge, and practice questions needed to successfully prepare for the exam. Ideal for entry-level transit bus technicians, as well as any transit bus technician seeking certification, it is a must-have in the journey toward certification.

### CONTENTS

- Section 1: The History of ASE
- Section 2: Take and Pass Every ASE Test
- Section 3: Types of Questions on an ASE Exam
- Section 4: Overview of the Task List
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## ASE TEST PREPARATION MANUALS

### ASE TECHNICIAN TEST PREPARATION AUTOMOTIVE MAINTENANCE AND LIGHT REPAIR (G1)

Delmar Cengage Learning

© 2014, 288pp, Paperback, 9781285753805

ebook



The first edition of DELMAR'S AUTOMOTIVE SERVICE EXCELLENCE (ASE) TEST PREPARATION MANUAL for the G1 Maintenance and Light Repair exam now contains even more content so you can pass your ASE exam the first time. This

manual will ensure that you understand the Maintenance and Light Repair task list and are fully prepared and confident to take your exam.



## ASE TEST PREP- T8 PREVENTIVE MAINTENANCE, 5E

Delmar, Cengage Learning

© 2013, 256pp, Paperback, 9781111129040

ebook



The fifth edition of DELMAR'S AUTOMOTIVE SERVICE EXCELLENCE (ASE) TEST PREPARATION MANUAL for the Medium/Heavy Duty Truck T8 Preventive Maintenance exam now contains even more content so you can pass your ASE

exam the first time. This manual will ensure that you understand the Preventive Maintenance task list and are fully prepared and confident to take your exam.

## ASE TEST PREPARATION - T5 SUSPENSION AND STEERING, 5E

Delmar, Cengage Learning

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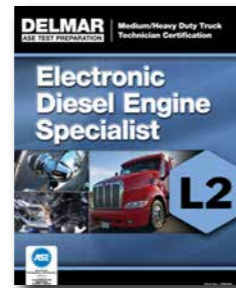
The fifth edition of DELMAR'S AUTOMOTIVE SERVICE EXCELLENCE (ASE) TEST PREPARATION MANUAL for the Medium/Heavy Duty Truck T5 Suspension and Steering exam now contains even more content so you can pass your ASE exam

the first time. This manual will ensure that you understand the Suspension and Steering task list and are fully prepared and confident to take your exam.

## ASE TEST PREPARATION MANUAL - ELECTRONIC DIESEL ENGINE DIAGNOSIS SPECIALIST (L2)

Delmar Cengage Learning

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The first edition of DELMAR'S AUTOMOTIVE SERVICE EXCELLENCE (ASE) TEST PREPARATION MANUAL for the Medium/Heavy Duty Truck L2 Electronic Diesel Engine Diagnosis Specialist exam now contains even more content so you can pass your ASE exam the first

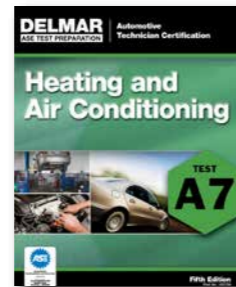
time. This manual will ensure that you understand Electronic Diesel Engine Diagnosis Specialist task list and are fully prepared and confident to take your exam.

## ASE TEST PREPARATION - A7 HEATING AND AIR CONDITIONING, 5E

Delmar, Cengage Learning

© 2012, 176pp, Paperback, 9781111127091

ebook



The fifth edition of Delmar's Automotive Service Excellence (ASE) Test Preparation Manual for the A7 HEATING AND AIR CONDITIONING certification exam contains an abundance of content designed to help you successfully pass your ASE exam. This manual will ensure that you not only understand the

task list and therefore the content your actual certification exam will be based upon, but also provides descriptions of the various types of questions on a typical ASE exam, as well as presents valuable test taking strategies enabling you to be fully prepared and confident on test day.

## ASE TEST PREPARATION - TRANSIT BUS H5, SUSPENSION AND STEERING

Delmar, Cengage Learning

© 2009, 254pp, Paperback, 9781428340114



For the first time, there is a test preparation guide designed specifically to meet the requirements of the ASE certification exam for Transit Bus H5, Suspension and Steering. This exclusive new offering from Delmar Learning, ASE Test Preparation - Transit

Bus H5, Suspension and Steering, is based upon the newly released ASE task list for this exam, and pairs it with ASE-style practice questions. The end result is a thorough and relevant training regimen for anyone seeking to successfully master the H5 ASE certification exam.

### CONTENTS

Section 1: The History of ASE Section 2: Take and Pass Every ASE Test Section 3: Types of Questions on an ASE Exam Section 4: Overview of the Task List Section 5: Sample Test for Practice Section 6: Additional Test Questions for Practice Section 7: Appendices

## AUTOMOTIVE SYSTEMS

### NATEF STANDARDS JOB SHEETS AREA A1, 4E

Jack Erjavec, Columbus State Community College (Emeritus); Ken Pickerill

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All eight of the NATEF Job Sheets manuals have been thoughtfully designed to assist users gain valuable job preparedness skills and master specific diagnostic and repair procedures required for success as a professional automotive technician. Ideal for use

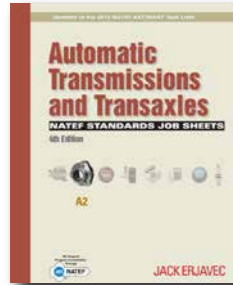
either as a stand-alone item or with any comprehensive or topic-specific automotive text, the entire series is aligned with the 2013 NATEF tasks and consists of individual books for each of the following areas: Engine Repair, Automatic Transmissions/Transaxles, Manual Drive Trains and Axles, Suspension and Steering, Brakes, Electricity/Electronics, Heating and Air Conditioning, and Engine Performance. Central to each manual are well-designed and easy-to-read job sheets, each of which contains specific performance-based objectives, lists of required tools and materials, safety precautions, plus step-by-step procedures to lead users to completion of shop activities. Also, each job sheet references all applicable NATEF Standards. As they work through each task, users are encouraged to conduct tests, record measurements, make observations, and employ critical-thinking skills in order to draw conclusions. Space is included for users to make notes concerning problems encountered while working, and for instructors to add comments and/or grades.

## NATEF STANDARDS JOB SHEETS AREA A2, 4E

Jack Erjavec, Columbus State Community College (Emeritus);  
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## NATEF STANDARDS JOB SHEETS AREA A3, 4E

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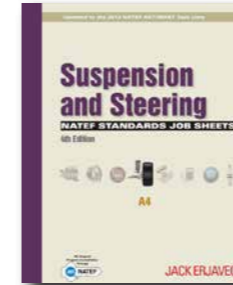
either as a stand-alone item or with any comprehensive or topic-specific automotive text, the entire series is aligned with the 2013 NATEF tasks and consists of individual books for each of the following areas: Engine Repair, Automatic Transmissions/Transaxles, Manual Drive Trains and Axles, Suspension and Steering, Brakes, Electricity/Electronics, Heating and Air Conditioning, and Engine Performance. Central to each manual are well-designed and easy-to-read job sheets, each of which contains specific performance-based objectives, lists of required tools and materials, safety precautions, plus step-by-step procedures to lead users to completion of shop activities. Also, each job sheet references all applicable NATEF Standards. As they work through each task, users are encouraged to conduct tests, record measurements, make observations, and employ critical-thinking skills in order to draw conclusions. Space is included for users to make notes concerning problems encountered while working, and for instructors to add comments and/or grades.

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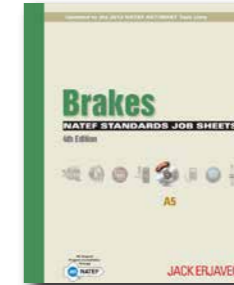
either as a stand-alone item or with any comprehensive or topic-specific automotive text, the entire series is aligned with the 2013 NATEF tasks and consists of individual books for each of the following areas: Engine Repair, Automatic Transmissions/Transaxles, Manual Drive Trains and Axles, Suspension and Steering, Brakes, Electricity/Electronics, Heating and Air Conditioning, and Engine Performance. Central to each manual are well-designed and easy-to-read job sheets, each of which contains specific performance-based objectives, lists of required tools and materials, safety precautions, plus step-by-step procedures to lead users to completion of shop activities. Also, each job sheet references all applicable NATEF Standards. As they work through each task, users are encouraged to conduct tests, record measurements, make observations, and employ critical-thinking skills in order to draw conclusions. Space is included for users to make notes concerning problems encountered while working, and for instructors to add comments and/or grades.

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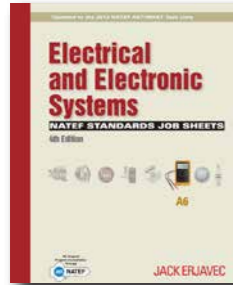
either as a stand-alone item or with any comprehensive or topic-specific automotive text, the entire series is aligned with the 2013 NATEF tasks and consists of individual books for each of the following areas: Engine Repair, Automatic Transmissions/Transaxles, Manual Drive Trains and Axles, Suspension and Steering, Brakes, Electricity/Electronics, Heating and Air Conditioning, and Engine Performance. Central to each manual are well-designed and easy-to-read job sheets, each of which contains specific performance-based objectives, lists of required tools and materials, safety precautions, plus step-by-step procedures to lead users to completion of shop activities. Also, each job sheet references all applicable NATEF Standards. As they work through each task, users are encouraged to conduct tests, record measurements, make observations, and employ critical-thinking skills in order to draw conclusions. Space is included for users to make notes concerning problems encountered while working, and for instructors to add comments and/or grades.

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## AUTOMOTIVE SERVICE, 6E

Inspection, Maintenance, Repair

Tim Gilles, Professor Emeritus, Santa Barbara City College,  
Santa Barbara, California

© 2020, 1792pp, Hardback, 9781337794039

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Prepare for an automotive career with AUTOMOTIVE SERVICE: INSPECTION, MAINTENANCE, REPAIR! Packed with everything you need to succeed, this best-selling book features clear explanations and high-quality illustrations to help you master automotive

systems theory, plus step-by-step instructions for hands-on troubleshooting and repair procedures. Carefully aligned to the latest ASE Education Foundation requirements and standards, this comprehensive guide covers all eight major course areas of automotive technology, so you can develop the knowledge and skills to launch your career as a professional automotive technician.

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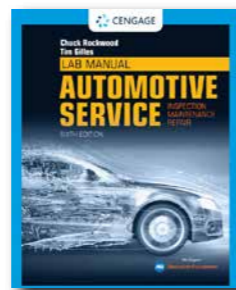
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### LAB MANUAL FOR GILLES' AUTOMOTIVE SERVICE: INSPECTION, MAINTENANCE, REPAIR, 6E

Chuck Rockwood; Tim Gilles, Professor Emeritus, Santa Barbara City College, Santa Barbara, California

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The two-part Lab Manual contains activity sheets to help you master core concepts in the textbook. Lab Preparation Worksheets emphasize the practical, real-life skills you will need to service today's automobiles, while correlations to ASE Education Foundation task lists will help you track your progress toward certification.

### TODAY'S TECHNICIAN, 7E

Automatic Transmissions and Transaxles Classroom Manual and Shop Manual

Jack Erjavec, Columbus State Community College (Emeritus); Ken Pickerill

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TECHNICIAN: AUTOMATIC TRANSMISSIONS AND TRANSAXLES CLASSROOM MANUAL AND SHOP MANUAL, Seventh Edition. This proven resource includes practical, easy-to-understand coverage of

topics aligned to the latest ASE Education Foundation standards for the MLR/AST/MAST program accreditation levels, including continuously variable transmissions (CVT), drivelines for front-wheel drive (FWD) and four-wheel drive (4WD) vehicles, and the latest information on today's high-tech electronic controls and automatic shifting devices. The Classroom Manual provides easy-to-understand coverage of every applicable ASE Education Foundation standard, while the Shop Manual includes Job Sheets to guide you through hands-on service and repair tasks. Written with the needs of current and aspiring technicians in mind, this trusted text will help you master the design, construction, troubleshooting techniques, and procedures necessary for a successful industry career.

#### CONTENTS

Classroom Manual. 1. Drive Train Basics. 2. Drive Train Theory. 3. General Theories of Operation. 4. Transmission Electronics. 5. Transmission Designs. 6. Torque Converters and Oil Pumps. 7. Hydraulic and Electronic Controls. 8. Gears and Shafts. 9. Reaction And Friction Units. 10. Common Automatic Transmissions. Glossary. Index. Shop Manual. 1. Safety. 2. Special Tools and Procedures. 3. Diagnosis, Maintenance, and Basic Adjustments.

4. Electrical and Electronic System Diagnosis and Service. 5. Rebuilding Transmissions. 6. Torque Converter and Oil Pump Service. 7. General Hydraulic System Service. 8. Gear and Shaft Service. 9. Friction And Reaction Unit Service. 10. Rebuilding Common Transmissions. Appendix A: ASE Practice Examination. Appendix B: Automatic Transmission Special Tool Suppliers. Appendix C: Metric Conversions. Glossary. Index.

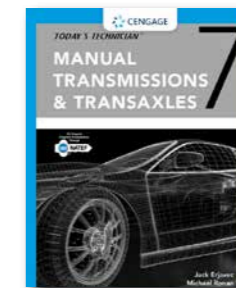
### TODAY'S TECHNICIAN, 7E

Manual Transmissions and Transaxles Classroom Manual and Shop Manual

Jack Erjavec, Columbus State Community College (Emeritus); Mike Ronan, State University of New York, Alfred State College

© 2020, 928pp, Paperback, 9781337795456

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Gear up for success—in the classroom and shop, in your future career — with TODAY'S TECHNICIAN: MANUAL TRANSMISSIONS & TRANSAXLES, Seventh Edition. This proven, practical guide includes easy-to-understand

information on a wide range of must-know topics, including transmission system and subsystem components, shop safety basics, dual-clutch systems, limited-slip differential designs, all-wheel drive systems, and six-speed transmissions. To help you master both essential theory and practical job skills, the text includes a Classroom Manual reviewing every topic for Manual Drive Train and Axles, plus a hands-on Shop Manual with full-color photo sequences and detailed job sheets, so you'll know exactly what to expect with performing service and repair tasks based on the latest MLR, AST, and MAST task lists.



## CONTENTS

**CLASSROOM MANUAL.** 1. Manual Drive Trains and Axles. 2. Drivetrain Theory. 3. Clutches. 4. Manual Transmissions/Transaxles. 5. Front Drive Axles. 6. Drive Shafts and Universal Joints. 7. Differentials and Drive Axles. 8. Four-Wheel Drive (4WD) Systems. 9. Advanced Four-Wheel-Drive Systems. 10. Drivetrain Electrical and Electronic Systems. 11. Electronically Controlled and Automated Transmissions. **SHOP MANUAL.** 1. Safety. 2. Special Tools and Procedures. 3. Servicing Clutches. 4. Servicing Transmissions/Transaxles. 5. Servicing Front Drive Axles. 6. Servicing Drive Shafts and Universal Joints. 7. Servicing Differentials and Drive Axles. 8. Servicing Four-Wheel Drive Systems. 9. Diagnosing 4WD and AWD Control Systems. 10. Servicing Drivetrain Electrical Systems. 11. Diagnosing Advanced Electronic Systems.

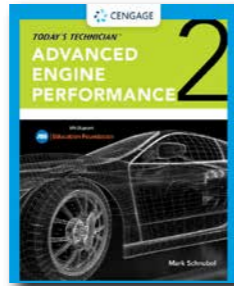
## TODAY'S TECHNICIAN, 2E

Advanced Engine Performance Classroom Manual and Shop Manual

Mark Schnubel, Naugatuck Valley Community College

© 2020, 464pp, Paperback, 9780357125830

 CENGAGE | MINDTAP *ebook*



Part of the popular Today's Technician series, this reader-friendly text provides an in-depth guide to advanced performance topics such as drivability, emissions testing, and engine diagnostics. In addition to a thorough review of on-board

diagnostic generation II (OBD II) continuous monitors and non-continuous monitors strategies, the text includes a chapter on emission control and evaporative systems, as well as detailed information on OBD II generic diagnostic trouble codes (DTC) identification and diagnosis and malfunction indicator light strategies. To help you gain essential knowledge while honing practical job skills, the text includes both a Classroom Manual and a hands-on Shop Manual. The Second Edition features new and updated material to help you prepare for professional success by mastering the latest technology and industry trends, including variable valve and camshaft timing designs, variable displacement and variable lift engine designs currently in production, and advanced on-board diagnostic scanners and digital storage oscilloscopes.

## CONTENTS

**Classroom Manual** 1. Overview of topics to be covered. 2. Basic operational Theories. 3. History of On-Board Diagnostics. 4. On-Board Diagnostic Scanners and Digital Storage Oscilloscopes. 5. Computers and Input Sensors. 6. Ignition System and Related Input Sensors/Output Actuators Diagnosis. 7. Fuel System and Related Input Sensors/Output Actuators Diagnosis. 8. Emission Control and Evaporative Systems. 9. Strategies of On-Board-

Diagnostic Continuous Monitors. 10. Strategies of On-Board-Diagnostic Non-Continuous Monitors. 11. I/M Failure Diagnosis and Five-Gas Exhaust Analysis. Appendix. Appendix I: OBD II acronyms. Appendix II: Generic OBD II Codes. Appendix III: DaimlerChrysler P1 OBD II Codes. Appendix IV: Vehicles with Known Readiness Issues. Appendix V: EPA Milestones. Appendix VI: Oregon Study. Appendix VII: State IM Programs. **Shop Manual** 1. Safety and Shop Practices. 2. Special Tools and Procedures. 3. On-Board Diagnostics and Emissions Tests. 4. On-Board Diagnostic Scanners and Digital Storage Oscilloscopes. 5. Computers and Input Sensor Diagnosis and Service. 6. Ignition System and Related Input Sensors/Output Actuators Diagnosis. 7. Fuel System and Related Input Sensors/Output Actuators Diagnosis. 8. Emission Control and Evaporative Systems Diagnosis and Service. 9. Strategies of On-Board-Diagnostic Continuous Monitors. 10. Strategies of On-Board-Diagnostic Non-Continuous Monitors. 11. I/M Failure Diagnosis and Five-Gas Exhaust Analysis.

## TODAY'S TECHNICIAN, 7E

Automotive Suspension & Steering Classroom Manual and Shop Manual

Mark Schnubel, Naugatuck Valley Community College

© 2020, 1024pp, Spiral, 9781337567336

 CENGAGE | MINDTAP *ebook*



Make the most of your time in both the classroom and the auto shop, and learn to diagnose and service automotive suspension and steering systems with confidence. This trusted text includes a dedicated Classroom Manual that introduces essential theory

and applications, plus a standalone Shop Manual focused on real-world symptoms, diagnostics, and repairs. With comprehensive coverage, accurate and up-to-date details, and abundant illustrations, this reader-friendly resource will help prepare you for success as an automotive technician or ASE certification. Now updated with extensive information on new and emerging technology and techniques--including hybrid and electric vehicles, tire plus sizing, and computer-controlled suspensions--the Seventh Edition also aligns with area A4 of the ASE Education Foundation 2017 accreditation model, including job sheets correlated to specific MLR, AST and MAST tasks.

## CONTENTS

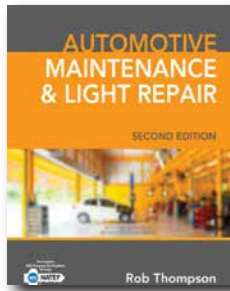
1. Suspension and Steering Systems Introduction and Overview. 2. Basic Theories. 3. Tires and Wheels. 4. Wheel Bearings. 5. Shock Absorbers and Struts. 6. Front Suspension Systems. 7. Rear Suspension Systems. 8. Steering Columns and Steering Linkages. 9. Four Wheel Alignment Part I. 10. Four Wheel Alignment Part II. 11. Computer-Controlled Suspension Systems. 12. Power Steering Pumps. 13. Rack and Pinion Steering Gears and Four Wheel Steering. 14. Recirculating Ball Steering Gears.

## AUTOMOTIVE MAINTENANCE & LIGHT REPAIR, 2E

Rob Thompson, Columbus State Community College

© 2019, 720pp, Hardback, 9781337564397

CENGAGE | MINDTAP *ebook*



Delivering complete coverage of ASE Education Foundation's Maintenance & Light Repair (MLR) program standards, this accessible, practical resource features material spanning the entire MLR task list, as well as many supplemental tasks entry-

level technicians need to master. With an engaging writing style and abundant images and illustrations, this reader-friendly text makes even complex material easier to understand. Proven learning features are integrated into every chapter, including Word Walls highlighting key technical and industry terms and ASE review questions to help you prepare for professional certification exams. Giving you a solid grounding in both automotive competencies and academic and lifelong learning skills like math, science, and communication, **AUTOMOTIVE MAINTENANCE AND LIGHT REPAIR, Second Edition**, is the perfect choice to prepare you for classroom and career success.

### CONTENTS

1. Introduction to the Automotive Industry. 2. Safety. 3. Shop Orientation. 4. Basic Technician Skills. 5. Wheels, Tires, and Wheel Bearings. 6. Suspension System Principles. 7. Suspension System Service. 8. Steering System Principles. 9. Steering System Service. 10. Brake System Principles. 11. Brake System Service. 12. Drum Brake System Principles. 13. Drum Brake System Inspection and Service. 14. Disc Brake System Principles. 15. Disc Brake System Inspection and Service. 16. Antilock Brakes, Vehicle Stability Control, and Power Assist. 17. Electrical/Electronic System Principles. 18. Basic Electrical/Electronic System Service. 19. Starting and Charging System Principles. 20. Starting and

Charging System Service. 21. Lighting and Electrical Accessories. 22. Engine Performance Principles. 23. Engine Mechanical Testing and Service. 24. Engine Performance Service. 25. Drivetrains and Transmissions. 26. Heating and Air Conditioning. 27. Vehicle Maintenance.

## TODAY'S TECHNICIAN, 7E

Automotive Brake Systems, Classroom and Shop Manual Pre-Pack

Ken Pickerill

© 2019, Paperback, 9781337564526

CENGAGE | MINDTAP *ebook*



This comprehensive resource includes everything you need to understand, diagnose, and repair today's brake systems with confidence--and prepare for ASE certification and career success as an automotive technician. In addition to

thorough coverage, accurate and up-to-date details, and abundant illustrations, **TODAY'S TECHNICIAN: AUTOMOTIVE BRAKE SYSTEMS, CLASSROOM AND SHOP MANUAL PRE-PACK, Seventh Edition**, offers a uniquely convenient two-volume approach. The first volume is a Classroom Manual covering the theory and application of the total brake system, subsystem, and components. Volume two is a Shop Manual that explores real-world symptoms, diagnostics, and repairs, and is ideal for standalone use as a reference on the job. In addition to aligning with the ASE Education Foundation 2017 accreditation model, the Seventh Edition features job sheets correlated to specific MLR, AST and MAST tasks, and extensive information on new and emerging technology and techniques--including hybrid vehicles, brake by wire, and electric brakes.

### CONTENTS

**CLASSROOM MANUAL.** 1. Brake System Fundamentals. 2. Principles and Theories of Operation. 3. Related Systems: Tire, Wheels, Bearings, and Suspensions. 4. Master Cylinder and Brake Fluid. 5. Hydraulic Lines, Valves, and Switches. 6. Power Brake Systems. 7. Disc Brakes. 8. Drum Brakes. 9. Parking Brakes. 10. Electrical Braking Systems. 11. Advanced Braking Systems  
**SHOP MANUAL.** 1. Brake Safety. 2. Brake Service Tools and Equipment. 3. Related System Service. 4. Master Cylinder and Brake Fluid Service. 5. Hydraulic Line, Valve, and Switch Service. 6. Power Brake Service. 7. Disc Brake Service. 8. Drum Brake Service. 9. Parking Brake Service. 10. Electrical Brake Systems. 11. Advanced Braking Systems.

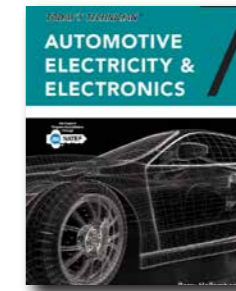
## TODAY'S TECHNICIAN, 7E

Automotive Electricity and Electronics, Classroom and Shop Manual Pack, Spiral bound Version

Barry Hollembeak

© 2019, 848pp, Paperback, 9781337618991

CENGAGE | MINDTAP *ebook*



Whether you're an aspiring automotive professional, preparing for ASE certification, or already working in the field, **TODAY'S TECHNICIAN: AUTOMOTIVE ELECTRICITY & ELECTRONICS, Seventh Edition**, will equip you to

confidently understand, diagnose, and repair electrical and electronic systems in today's automobiles. The text's unique two-volume approach helps you make the most of your time in both the classroom and the auto shop. The first volume (Classroom Manual) covers the theory and application of electricity, electronics, and circuitry in modern automobiles, while the second (Shop Manual) focuses on real-world symptoms, diagnostics, and repair information. In addition to comprehensive coverage, accurate and up-to-date technical information, and hundreds of detailed color illustrations and photographs, the Seventh Edition features extensive updates with information on new and emerging technologies and techniques. Highlights include coverage of telematic systems, LED and adaptive lighting, hybrid and electric vehicles, stop/start technology, lane departure warning, self-park systems, Wi-Fi connectivity, and other modern accessory systems. The new edition aligns to the 2017 ASE Education Foundation accreditation requirements and includes job sheets correlated to all MLR, AST, and MAST tasks.



## CONTENTS

Classroom Manual. Preface. 1. Introduction to Automotive Electrical and Electronic Systems. 2. Basic Theories. 3. Electrical and Electronic Components. 4. Wiring and Circuit Diagrams. 5. Automotive Batteries. 6. Starting Systems and Motor Designs. 7. Charging Systems. 8. Introduction to The Body Computer. 9. Computer Inputs. 10. Vehicle Communication Networks. 11. Lighting Circuits. 12. Instrumentation and Warning Lamps. 13. Accessories. 14. Radio Frequency and Infotainment Systems. 15. Passive Restraint and Vehicle Safety Systems. 16. Vehicles with Alternative Power Sources. Glossary of Terms. Index. Shop Manual. Preface. 1. Safety. 2. Special Tools and Procedures. 3. Basic Electrical Troubleshooting and Service. 4. Wiring Repair and Reading Circuit Diagrams. 5. Battery Diagnosis and Service. 6. Starting System Diagnosis and Service. 7. Charging System Testing and Service. 8. Body Computer System Diagnosis. 9. Sensor Diagnostic Routines. 10. Vehicle Multiplexing Diagnostics. 11. Lighting Circuits Repair and Diagnosis. 12. Instrumentation and Warning Lamp System Diagnosis and Repair. 13. Electrical Accessories Diagnosis and Repair. 14. Servicing Radio Frequency and Infotainment Systems. 15. Servicing Passive Restraint and Vehicle Safety Systems. 16. Hybrid and High-Voltage System Service. Appendix A: ASE Practice Examination. Appendix B: Metric Conversions. Appendix C: Electrical and Electronic Special Tool Suppliers. Glossary of Terms. Index.

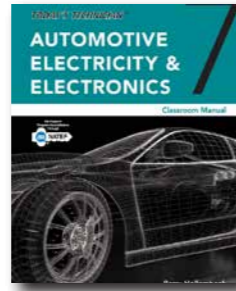
## TODAY'S TECHNICIAN, 7E

Automotive Electricity and Electronics Classroom Manual

Barry Hollembeak

© 2019, Paperback, 9781337619004

ebook



The Classroom Manual details the theory and application of electricity, electronics, and circuitry in modern automobiles.

## TODAY'S TECHNICIAN: AUTOMOTIVE ENGINE REPAIR & REBUILDING, CLASSROOM MANUAL AND SHOP MANUAL, SPIRAL BOUND VERSION, 6E

Chris Hadfield; Randy Nussler, New Market Skills Center

© 2018, 1040pp, Paperback, 9781305958135

CENGAGE | MINDTAP ebook



TODAY'S TECHNICIAN: AUTOMOTIVE ENGINE REPAIR & REBUILDING, CLASSROOM MANUAL AND SHOP MANUAL, Sixth Edition, delivers the theory and skills you need to repair and service modern automotive engines as a professional technician,

along with proven preparation for the Automotive Service Excellence (ASE) certification exam. Using a logical, system-specific approach, the text covers engine construction and operation, intake and exhaust systems, and engine repair, as well as the basics of engine rebuilding. Drawing on decades of shop and classroom experience, the authors provide valuable, forward-looking industry insights on topics such as advances in hybrid technology, factors affecting engine performance, and the design and function of modern engine components. Long known for its technical accuracy and concise writing style, the Sixth Edition of this reader-friendly text includes extensive updates to reflect the latest ASE Education Foundation standards, new information on current industry trends and developments, additional drawings and photos, and a variety of electronic learning tools.

## CONTENTS

Classroom Manual 1. Automotive Engines. 2. Engine Repair and Rebuilding Industry. 3. Theory of Engine Operation. 4. Engine Operating Systems. 5. Factors Affecting Engine Performance. 6. Engine Materials, Fasteners, Gaskets, and Seals. 7. Intake and Exhaust Systems. 8. Engine Configurations,

Mounts, and Remanufactured Engines. 9. Cylinder Heads. 10. Camshafts and Valve Trains. 11. Timing Mechanisms. 12. Engine Block Construction. 13. Pistons, Rings, Connecting Rods, and Bearings. 14. Alternative Fuel and Advanced Technology Vehicles. Shop Manual 1. Safety and Shop Practices. 2. Engine Rebuilding Tools and Skills. 3. Basic Testing, Initial Inspection, and Service Procedures. 4. Diagnosing and Servicing Engine Operating Systems. 5. Diagnosing Engine Performance Concerns. 6. Repair and Replacement of Engine Fasteners, Gaskets, and Seals. 7. Intake and Exhaust System Diagnosis and Service. 8. Engine Removal, Engine Swap, and Engine Installation. 9. Cylinder Head Disassemble, Inspection, and Service. 10. Valve Train Service. 11. Timing Mechanism Service. 12. Inspecting, Disassembling, and Servicing the Cylinder Block Assembly. 13. Short Block Component Service and Engine Assembly. 14. Alternative Fuel and Advanced Technology Vehicle Service.

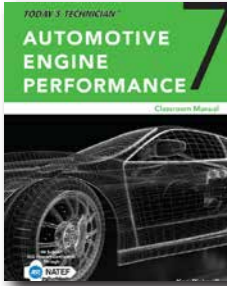
## TODAY'S TECHNICIAN, 7E

Automotive Engine Performance, Classroom and Shop Manuals, Spiral bound Version

Ken Pickerill

© 2018, 1184pp, Paperback, 9781305958289

CENGAGE | MINDTAP **ebook**



The Seventh Edition of TODAY'S TECHNICIAN: AUTOMOTIVE ENGINE PERFORMANCE is a comprehensive learning package designed to build automotive skills in both classroom and shop settings. Following current ASE Education Foundation

criteria, this two-manual set examines each of the major systems affecting engine performance and drivability—including intake and exhaust, sensors, computerized engine controls, fuel, ignition, and emissions. The Classroom Manual addresses system theory, while a coordinating Shop Manual covers tools, procedures, diagnostics, testing, and service. The new Seventh Edition features updates to cover the latest automotive technologies and take automotive technician training to new levels.

### CONTENTS

**PART I: CLASSROOM MANUAL.** 1. Overview of Engine Performance. 2. Basic Theories. 3. Engine Design and Operation. 4. Electricity and Electronics. 5. Intake and Exhaust Systems. 6. Input Sensors. 7. Fuel Systems. 8. Electronic Fuel Injection Systems. 9. Electronic Ignition (EI) Systems. 10. Emission Control Systems. 11. Computer Outputs and Networks. 12. OBD II. 13. Related Systems. **PART II: SHOP MANUAL.** 1. Tools and Safety. 2. Typical Shop Procedures and Equipment. 3. General Engine Condition Diagnosis. 4. Basic Electrical Tests and Service. 5. Intake and Exhaust System Diagnosis and Service. 6. Engine Control System Diagnosis and Service. 7. Fuel System Diagnosis and Service. 8. Electronic Fuel Injection Diagnosis and Service. 9. Electronic Ignition System (EI) Diagnosis and Service. 10. Emission Control System Diagnosis

and Service. 11. Servicing Computer Outputs and Networks. 12. On-Board Diagnostic (OBD II) System Diagnostics and Service. 13. Related Systems.

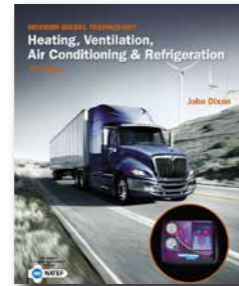
## MODERN DIESEL TECHNOLOGY, 2E

Heating, Ventilation, Air Conditioning & Refrigeration

John Dixon, Centennial College, Toronto

© 2014, 352pp, Paperback, 9781133716259

**ebook**



Easy to read yet technically precise, MODERN DIESEL TECHNOLOGY: HEATING, VENTILATION, AIR CONDITIONING, AND REFRIGERATION, 2nd Edition is the text of choice for many of the country's best diesel technology programs! Detailing the

foundations of truck heating, air conditioning, engine cooling, and truck-trailer refrigeration, the book integrates modern technical terms with photos that clearly demonstrate typical, on-the-job tasks in logical sequence. Coverage includes an entire section on thermodynamics, as well as solid instruction on safety, equipment, components, troubleshooting, performance testing, maintenance, and even the history of HVAC/R in the diesel trucking industry. Enhanced with photos, drawings, and self-testing questions in each chapter, MODERN DIESEL TECHNOLOGY: HEATING, VENTILATION, AIR CONDITIONING, AND REFRIGERATION, 2nd Edition delivers the technical accuracy and depth of HVAC/R information you need for a rewarding career as a diesel technician.

### CONTENTS

1. History of HVAC. 2. Environmental and Safety Practices. 3. Thermodynamics. 4. Air Conditioning Components: Compressor, Condenser, and Receiver-Drier 5. Air-Conditioning Components:

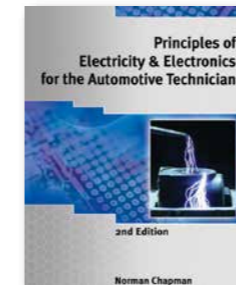
Metering Devices, Evaporator, Accumulator 6. Air Conditioning Systems. 7. Service Procedures. 8. Truck Engine Cooling Systems. 9. Climate Control/Supplemental Truck Heating/Cooling. 10. Trouble Shooting. 11. APADs/ACPU Air Conditioning Control Systems (Air Conditioning Protection Unit). 12. Coach Air Conditioning. 13. Truck Trailer Refrigeration Equipment . 14. Truck Trailer Refrigeration Components. 15. Truck Trailer Refrigerant Flow Control. 16. Truck Trailer Refrigeration Electrical Components. 17. Truck Trailer Refrigeration Maintenance Procedures.

## PRINCIPLES OF ELECTRICITY & ELECTRONICS FOR THE AUTOMOTIVE TECHNICIAN, 2E

Norm Chapman, South Puget Sound Community College

© 2010, 608pp, Paperback, 9781428361218

**ebook**



Principles of Electricity & Electronics for the Automotive Technician, 2E thoroughly covers the basics of automotive electricity and electronics to fully prepare beginning technicians for more complex electrical concepts. Written by an ASE Master

Technician and teacher, the book draws readers in using a combination of basic theory, case studies, hands-on vehicle tasks and ASE-style review questions. The updated second edition includes expanded coverage of hybrid electrical vehicles and safety procedures, technological advances in electronically controlled vehicle accessories, and new troubleshooting techniques using cutting-edge equipment and procedures. Simple illustrations and wiring diagrams, along with straightforward explanations of how automotive electricity and electronics work, act together to make this an ideal introduction to electrical and electronics diagnostics and service.

### CONTENTS

INTRODUCTION TO ELECTRICITY & ELECTRONICS. BASIC ELECTRICAL THEORY. MEASUREMENT SYSTEM & CALCULATOR USE. COMPONENTS OF AN ELECTRICAL CIRCUIT. METERS & MEASURING DEVICES. BASIC OF ELECTRONICS & COMPUTERS. SERIES CIRCUITS. PARALLEL CIRCUITS. SERIES/PARALLEL CIRCUITS. BASIC TROUBLESHOOTING TECHNIQUES & TIPS. ELECTRICAL CIRCUITS, LIGHTING, & INSTRUMENTATION. BATTERIES & TESTING. STARTING SYSTEM THEORY. CHARGING SYSTEM THEORY. IGNITION SYSTEM THEORY.



# AUTOMOTIVE TECHNICIAN TRAINING

## NEW EDITION

### TODAY'S TECHNICIAN, 6E

Basic Automotive Service & Systems Classroom Manual and Shop Manual

Chris Hadfield; John Witthauer, Goodwill Easter Seals Automotive Training Program

© 2021, 1008pp, Paperback, 9781337795661

CENGAGE | MINDTAP ebook



This trusted text provides a comprehensive, accessible overview of automotive systems to prepare you for all aspects of work in the field. BASIC AUTOMOTIVE SERVICE & SYSTEMS, Sixth Edition, includes a Classroom Manual that explores the operational

theory behind each automotive system, and a Shop Manual covering relevant diagnostic, testing, and repair procedures. Updated to align with Task Lists for the latest ASE Education Foundation requirements, the Sixth Edition covers emerging technologies such as hybrid vehicles and electronic engine controls, as well as current information on the global automotive industry and the role you can play within it as a professional technician. The authors assume no prior knowledge of automotive technology, so these clear and engaging resources provide an ideal introduction to both fundamental theory and its real-world applications in specific skills and maintenance procedures, preparing you for success in today's fast-paced, competitive work environment.

### CONTENTS

Classroom Manual. 1. Introduction to the Automotive Industry. 2. Introduction to the Automobile. 3. Automotive Tools and Equipment. 4. Fasteners and Measurements. 5. Electrical and Electronic Systems. 6. Accessory Lighting and Electrical Systems 7.

Engine Systems. 8. Transmission and Drivetrain Systems. 9. Steering and Suspension Systems. 10. Brakes Systems 11. Heating Ventilation and Air Conditioning Systems. 12. Engine Theories and Performance Systems. Glossary. Index. Shop Manual 1. Automotive Shop and Safety Procedures. 2. Working in the Automotive Industry. 3. Using Automotive Tools and Equipment. 4. Using Fasteners and Measuring Equipment. 5. Electrical and Electronic System Inspection, Maintenance, and Service. 6. Accessory Lighting and Electrical Systems Inspections, Maintenance, and Testing. 7. Engine System Inspection and Maintenance. 8. Transmission and Drivetrain Systems Inspection, Maintenance, and Service. 9. Steering and Suspension Systems Inspection, Maintenance, and Service. 10. Brakes Systems Inspection, Maintenance, and Service. 11. Heating Ventilation and Air Conditioning Systems Inspection, Maintenance, and Service. 12. Engine Performance Systems Inspection, Maintenance, and Service. Glossary. Index.

### AUTOMOTIVE SERVICE, 6E

Inspection, Maintenance, Repair

Tim Gilles, Professor Emeritus, Santa Barbara City College, Santa Barbara, California

© 2020, 1792pp, Hardback, 9781337794039

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Prepare for an automotive career with AUTOMOTIVE SERVICE: INSPECTION, MAINTENANCE, REPAIR! Packed with everything you need to succeed, this best-selling book features clear explanations and high-quality illustrations to help you master automotive

systems theory, plus step-by-step instructions for hands-on troubleshooting and repair procedures. Carefully aligned to the latest ASE Education Foundation requirements and standards, this comprehensive guide covers all eight major course areas of automotive technology, so you can develop the knowledge and skills to launch your career as a professional automotive technician.

### CONTENTS

SECTION I: THE AUTOMOBILE INDUSTRY. 1. Introduction to the Automobile. 2. Automotive Careers and Technician Certification. SECTION II: SHOP PROCEDURES, SAFETY, TOOLS, AND EQUIPMENT. 3. Shop Safety. 4. Shop Management, Service Records, and Parts. 5. Locating Service Information and Specifications. 6. Measuring Tools and Systems. 7. Hardware, Fasteners, Drills, and Thread Repair. 8. Shop Tools. 9. General Shop Equipment. 10. Cleaning Equipment and Methods. 11. Lifting Equipment and Air Compressors. SECTION III: VEHICLE INSPECTION (Lubrication/Safety Check). 12. Engine Lubrication. 13. Underhood and Body Inspection (Car on Ground). 14. Undercar Inspection and Service. SECTION IV: ENGINE OPERATION AND SERVICE. 15. Introduction to the Engine. 16. Engine Classifications and Advanced Transportation Technologies. 17. Engine Size and Measurements.

18. Engine Upper End. 19. Engine Lower End and Lubrication System Theory. SECTION V: COOLING SYSTEM, BELTS, HOSES, AND PLUMBING. 20. Cooling System Theory. 21. Cooling System Service. 22. Automotive Belts. 23. Automotive Hoses. 24. Automotive Plumbing: Tubing and Pipe. SECTION VI: ELECTRICAL SYSTEM THEORY AND SERVICE. 25. Basic Electrical System Theory and Repairs. 26. Battery Fundamentals. 27. Battery Service. 28. Starting System Fundamentals. 29. Starting System Service. 30. Charging System Fundamentals. 31. Charging System Service. 32. Lighting and Wiring Fundamentals. 33. Lighting and Wiring Service. 34. Safety, Security, Comfort Systems, and Electrical Accessories. SECTION VII: HEATING AND AIR CONDITIONING. 35. Heating and Air Conditioning Fundamentals. 36. Heating and Air Conditioning Service. SECTION VIII: ENGINE PERFORMANCE DIAGNOSIS: THEORY AND SERVICE. 37. Ignition System Fundamentals. 38. Ignition System Service. 39. Fuels and Alternative Fuels. 40. Fuel System Fundamentals. 41. Fuel System Service. 42. Intake and Exhaust Systems, Turbochargers and Superchargers. 43. Emission Control System Fundamentals. 44. Emission Control System Service. 45. Electronics and Computer Systems Fundamentals. 46. Electronics and Computer Systems Service. 47. Advanced Emissions and On-board Diagnostics (ODB). 48. Diagnosing Engine Performance Problems. SECTION IX: AUTOMOTIVE ENGINE SERVICE AND REPAIR. 49. Diagnosing Engine Mechanical Problems. 50. Engine Removal and Disassembly. 51. Engine Sealing, Gaskets, Fastener Torque. 52. Engine Diagnosis and Service: Cylinder Head and Valvetrain. 53. Engine Diagnosis and Service: Block, Crankshaft, Bearings, and Lubrication System. 54. Engine Diagnosis and Service: Piston, Piston Rings, Connecting Rod, Engine Balancing. 55. Ordering Parts, Short and Long Blocks, Engine Assembly. 56. Engine Installation, Break in, and In-Chassis Repairs. SECTION X: BRAKES AND TIRES. 57. Brake Fundamentals. 58. Brakes Service. 59. Anti-lock Brakes – Traction and Stability Control. 60. Bearings, Seals, and Greases. 61. Tire and Wheel Theory. 62. Tire and Wheel Service. SECTION XI: SUSPENSION,

STEERING, ALIGNMENT. 63. Suspension Fundamentals. 64. Suspension System Service. 65. Steering Fundamentals. 66. Steering Service. 67. Wheel Alignment Fundamentals. 68. Wheel Alignment Service. SECTION XII: DRIVE TRAIN. 69. Clutch Fundamentals. 70. Clutch Diagnosis and Service. 71. Manual Transmission Fundamentals. 72. Manual Transmission Diagnosis and Repair. 73. Automatic Transmission Fundamentals. 74. Automatic Transmission Diagnosis and Service. 75. Driveline Operation. 76. Driveline Diagnosis and Service. 77. Front Wheel Drive (Transaxle and CV Joints) Fundamentals. 78. Front Wheel Drive (Transaxle and CV Joints) Service. 79. Driveline Vibration. SECTION XIII: HYBRID AND ELECTRIC VEHICLES. 80. Hybrid Electric Vehicle Fundamentals. 81. Hybrid Vehicle Safety and Service. 82. New Vehicle Technologies: Battery and Fuel Cell Electric and Hydraulic Hybrid.

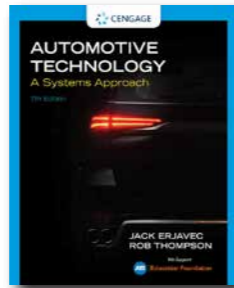
## AUTOMOTIVE TECHNOLOGY, 7E

A Systems Approach

Jack Erjavec, Columbus State Community College (Emeritus);  
Rob Thompson, Columbus State Community College

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CENGAGE | MINDTAP **ebook**



**AUTOMOTIVE TECHNOLOGY: A SYSTEMS APPROACH** provides comprehensive coverage with updates to address the latest ASE Education Foundation requirements for Maintenance and Light Repair (MLR), Automotive

Service Technology (AST), and Master Service Technology (MAST) program accreditation levels. Thoroughly revised to provide accurate, current information on the latest technology, industry trends, and state-of-the-art tools and techniques, the Seventh Edition is an essential resource for building career ready students who want to succeed in the dynamic, rapidly evolving field of automotive service and repair.

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## LAB MANUAL FOR GILLES' AUTOMOTIVE SERVICE: INSPECTION, MAINTENANCE, REPAIR, 6E

Chuck Rockwood; Tim Gilles, Professor Emeritus, Santa Barbara City College, Santa Barbara, California

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The two-part Lab Manual contains activity sheets to help you master core concepts in the textbook. Lab Preparation Worksheets emphasize the practical, real-life skills you will need to service today's automobiles, while correlations to ASE

Education Foundation task lists will help you track your progress toward certification.

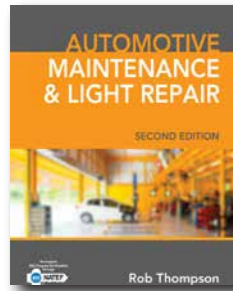


## AUTOMOTIVE MAINTENANCE & LIGHT REPAIR, 2E

Rob Thompson, Columbus State Community College

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Delivering complete coverage of ASE Education Foundation's Maintenance & Light Repair (MLR) program standards, this accessible, practical resource features material spanning the entire MLR task list, as well as many supplemental tasks entry-

level technicians need to master. With an engaging writing style and abundant images and illustrations, this reader-friendly text makes even complex material easier to understand. Proven learning features are integrated into every chapter, including Word Walls highlighting key technical and industry terms and ASE review questions to help you prepare for professional certification exams. Giving you a solid grounding in both automotive competencies and academic and lifelong learning skills like math, science, and communication, *AUTOMOTIVE MAINTENANCE AND LIGHT REPAIR, Second Edition*, is the perfect choice to prepare you for classroom and career success.

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1. Introduction to the Automotive Industry. 2. Safety. 3. Shop Orientation. 4. Basic Technician Skills. 5. Wheels, Tires, and Wheel Bearings. 6. Suspension System Principles. 7. Suspension System Service. 8. Steering System Principles. 9. Steering System Service. 10. Brake System Principles. 11. Brake System Service. 12. Drum Brake System Principles. 13. Drum Brake System Inspection and Service. 14. Disc Brake System Principles. 15. Disc Brake System Inspection and Service. 16. Antilock Brakes, Vehicle Stability Control, and Power Assist. 17. Electrical/Electronic System Principles. 18. Basic Electrical/Electronic System Service. 19. Starting and Charging System Principles. 20. Starting and

Charging System Service. 21. Lighting and Electrical Accessories. 22. Engine Performance Principles. 23. Engine Mechanical Testing and Service. 24. Engine Performance Service. 25. Drivetrains and Transmissions. 26. Heating and Air Conditioning. 27. Vehicle Maintenance.

## TODAY'S TECHNICIAN, 7E

Automotive Brake Systems, Classroom and Shop Manual Pre-Pack

Ken Pickerill

© 2019, Paperback, 9781337564526

CENGAGE | MINDTAP *ebook*



This comprehensive resource includes everything you need to understand, diagnose, and repair today's brake systems with confidence--and prepare for ASE certification and career success as an automotive technician. In addition to

thorough coverage, accurate and up-to-date details, and abundant illustrations, *TODAY'S TECHNICIAN: AUTOMOTIVE BRAKE SYSTEMS, CLASSROOM AND SHOP MANUAL PRE-PACK, Seventh Edition*, offers a uniquely convenient two-volume approach. The first volume is a Classroom Manual covering the theory and application of the total brake system, subsystem, and components. Volume two is a Shop Manual that explores real-world symptoms, diagnostics, and repairs, and is ideal for standalone use as a reference on the job. In addition to aligning with the ASE Education Foundation 2017 accreditation model, the Seventh Edition features job sheets correlated to specific MLR, AST and MAST tasks, and extensive information on new and emerging technology and techniques--including hybrid vehicles, brake by wire, and electric brakes.

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**CLASSROOM MANUAL.** 1. Brake System Fundamentals. 2. Principles and Theories of Operation. 3. Related Systems: Tire, Wheels, Bearings, and Suspensions. 4. Master Cylinder and Brake Fluid. 5. Hydraulic Lines, Valves, and Switches. 6. Power Brake Systems. 7. Disc Brakes. 8. Drum Brakes. 9. Parking Brakes. 10. Electrical Braking Systems. 11. Advanced Braking Systems  
**SHOP MANUAL.** 1. Brake Safety. 2. Brake Service Tools and Equipment. 3. Related System Service. 4. Master Cylinder and Brake Fluid Service. 5. Hydraulic Line, Valve, and Switch Service. 6. Power Brake Service. 7. Disc Brake Service. 8. Drum Brake Service. 9. Parking Brake Service. 10. Electrical Brake Systems. 11. Advanced Braking Systems.

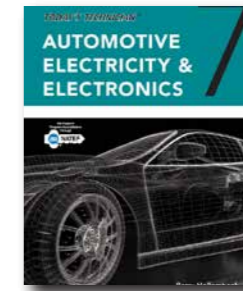
## TODAY'S TECHNICIAN, 7E

Automotive Electricity and Electronics, Classroom and Shop Manual Pack, Spiral bound Version

Barry Hollembeak

© 2019, 848pp, Paperback, 9781337618991

CENGAGE | MINDTAP *ebook*



Whether you're an aspiring automotive professional, preparing for ASE certification, or already working in the field, *TODAY'S TECHNICIAN: AUTOMOTIVE ELECTRICITY & ELECTRONICS, Seventh Edition*, will equip you to

confidently understand, diagnose, and repair electrical and electronic systems in today's automobiles. The text's unique two-volume approach helps you make the most of your time in both the classroom and the auto shop. The first volume (Classroom Manual) covers the theory and application of electricity, electronics, and circuitry in modern automobiles, while the second (Shop Manual) focuses on real-world symptoms, diagnostics, and repair information. In addition to comprehensive coverage, accurate and up-to-date technical information, and hundreds of detailed color illustrations and photographs, the Seventh Edition features extensive updates with information on new and emerging technologies and techniques. Highlights include coverage of telematic systems, LED and adaptive lighting, hybrid and electric vehicles, stop/start technology, lane departure warning, self-park systems, Wi-Fi connectivity, and other modern accessory systems. The new edition aligns to the 2017 ASE Education Foundation accreditation requirements and includes job sheets correlated to all MLR, AST, and MAST tasks.

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Classroom Manual. Preface. 1. Introduction to Automotive Electrical and Electronic Systems. 2. Basic Theories. 3. Electrical and Electronic Components. 4. Wiring and Circuit Diagrams. 5. Automotive Batteries. 6. Starting Systems and Motor Designs. 7. Charging Systems. 8. Introduction to The Body Computer. 9. Computer Inputs. 10. Vehicle Communication Networks. 11. Lighting Circuits. 12. Instrumentation and Warning Lamps. 13. Accessories. 14. Radio Frequency and Infotainment Systems. 15. Passive Restraint and Vehicle Safety Systems. 16. Vehicles with Alternative Power Sources. Glossary of Terms. Index. Shop Manual. Preface. 1. Safety. 2. Special Tools and Procedures. 3. Basic Electrical Troubleshooting and Service. 4. Wiring Repair and Reading Circuit Diagrams. 5. Battery Diagnosis and Service. 6. Starting System Diagnosis and Service. 7. Charging System Testing and Service. 8. Body Computer System Diagnosis. 9. Sensor Diagnostic Routines. 10. Vehicle Multiplexing Diagnostics. 11. Lighting Circuits Repair and Diagnosis. 12. Instrumentation and Warning Lamp System Diagnosis and Repair. 13. Electrical Accessories Diagnosis and Repair. 14. Servicing Radio Frequency and Infotainment Systems. 15. Servicing Passive Restraint and Vehicle Safety Systems. 16. Hybrid and High-Voltage System Service. Appendix A: ASE Practice Examination. Appendix B: Metric Conversions. Appendix C: Electrical and Electronic Special Tool Suppliers. Glossary of Terms. Index.

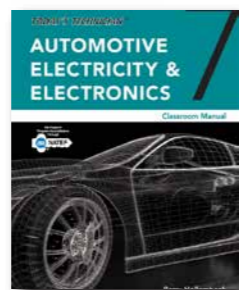
## TODAY'S TECHNICIAN, 7E

Automotive Electricity and Electronics Classroom Manual

Barry Hollebeak

© 2019, Paperback, 9781337619004

ebook



The Classroom Manual details the theory and application of electricity, electronics, and circuitry in modern automobiles.

## MATH FOR THE AUTOMOTIVE TRADE, 6E

John C. Peterson, Chattanooga State Technical Community College; William deKryger

© 2018, 368pp, Paperback, 9781337101813

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MATH FOR THE AUTOMOTIVE TRADE, 6th Edition, is the easy-to-understand worktext that delivers the real-world math you need for automotive repair careers—and kicks the rest to the curb. Using real manufacturer specs, completing automotive repair

orders, and checking your results against industry references right in the appendices, you'll practice the calculations that automotive repair technicians do on the job every day. Written by seasoned automotive pros, MATH FOR THE AUTOMOTIVE TRADE starts with the math basics, greasing the wheels before moving on to the practice exercises. Even better, this book includes the latest, easy-to-understand information about taxes, finances, discounts, and profits, to simplify business math, and move you a step closer to a career in management or your own automotive repair shop.

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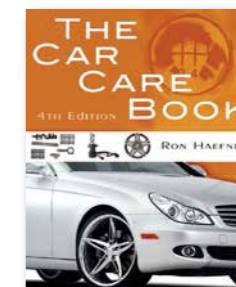
1. Whole Numbers. 2. Decimals. 3. Fractions. 4. Geometry, Angle Measurement, and the Metric System. 5. Integers and Signed Numbers. 6. Ratios, Proportions, and Percentages. 7. Business and Statistics. 8. Completing Repair Orders. 9. The Automobile Engine. 10. Automobile Engine Systems. 11. Automobile Electrical Systems. 12. The Automobile Drive Train. 13. The Automobile Chassis. 14. Automobile Heating, Ventilation, and Air Conditioning. 15. Measurement Tools. Appendix B: Summary of Formulas in this Text-Workbook. Appendix C: Answers to Odd-Numbered Practice Exercises. Index.

## THE CAR CARE BOOK, 4E

Ron Haefner, Columbus High School

© 2010, 496pp, Paperback, 9781428342958

ebook



Consumers typically face three main challenges when it comes to understanding their automobiles: the technologies underlying the car's major systems, the basics of inspection and maintenance, and the financial aspects of owning and operating an

automobile. In this updated edition, The Car Care Book, 4th Edition explores these areas, using the very latest automobile technology to provide an accurate, current context for learning. The book first breaks each section of the car into systems and subsystems to help the reader digest important concepts. Coverage then progresses to include the common tools needed to perform car maintenance and minor repairs, as well as building a preventive maintenance program. Concluding with a section on financial issues, from buying and selling to insurance considerations to the benefits of leasing, this resource provides a thorough and comprehensive overview of basic automobile care.

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What makes the Wheels Go Round? Tooling Up. The Engine. The Fuel System. The Electrical System. The Lubrication and Cooling System. The Drivetrain. Tires and Brakes. Suspension and Steering. Heating, Air Conditioning, and Optional Equipment. Your Maintenance Program. A Look at Repairs. The Repair-It/Replace-It Decision. Buying Tips for Parts and Insurance. Buying a New Car. Leasing. Glossary.



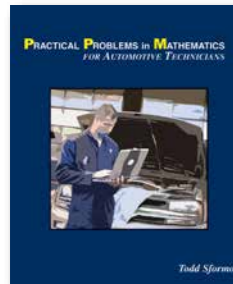
## PRACTICAL PROBLEMS IN MATHEMATICS, 7E

For Automotive Technicians

Todd Sformo, *Ilisagvik College*

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ebook



Comprehensive and easy to use, the revised and updated seventh edition covers practical math problems that automotive technicians will face on the job. The easy-to-read and well organized chapters of *Practical Problems in Mathematics for*

*Automotive Technicians, Seventh Edition* feature step-by-step instructions, diagrams, charts, and examples that facilitate the problem-solving process while reinforcing key concepts. The presentation builds from the basics of whole-number operations to cover percentages, linear measurement, ratios, and the use of more advanced formulas. With a special section on graphs, scale reading of test meters, and invoices found in the workplace, this text is tailor-made for students in any automotive course of study!

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## BASIC TECHNICIAN TRAINING

### MATHS & ENGLISH FOR AUTOMOTIVE Functional Skills

Andrew Spencer, *teaches secondary education in New South Wales and South Australia.*; Jim Scivyer, *College of North West London*

© 2013, 64pp, Paperback, 9781408077382

ebook



This write-in workbook is an invaluable resource to help learners' improve their Maths and English skills and help prepare for Level 1 and Level 2 Functional Skills exams. The workbook format enables learners to practice and improve their maths and English skills

and the real-life questions, exercises and scenarios are all written with an automotive context to help learners find essential Maths and English theory understandable, engaging and achievable. This workbook is an invaluable resource to support Maths and English learning in the classroom, at work and for personal study at home.

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## AUTOMOTIVE TECHNOLOGY, 7E A Systems Approach

Jack Erjavec, *Columbus State Community College (Emeritus);*  
Rob Thompson, *Columbus State Community College*

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## AUTOMOTIVE MAINTENANCE & LIGHT REPAIR, 2E

Rob Thompson, Columbus State Community College

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## TODAY'S TECHNICIAN, 7E

Automotive Brake Systems, Classroom and Shop Manual Pre-Pack

Ken Pickerill

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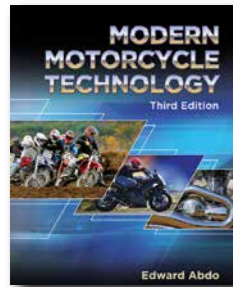


## MODERN MOTORCYCLE TECHNOLOGY, 3E

Edward Abdo

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ebook



MODERN MOTORCYCLE TECHNOLOGY, Third Edition, provides an in-depth, visually rich guide to the internal and external workings of today's motorcycles. The book begins with an overview of motorcycle technology, including the history of the motorcycle and the current state of the industry.

Coverage then progresses to safety measures, engine operation, internal combustion engines (two-stroke and four-stroke), electrical fundamentals, motorcycle maintenance, and troubleshooting. Thoroughly updated, the Third Edition includes the latest motorcycle models and technology from today's top manufacturers, as well as additional material on topics such as fuel injection, suspension systems, and electronics. The text is accompanied by a hands-on Student Skill Guide. Now better than ever, this trusted guide is ideal for anyone seeking the knowledge and skills to succeed in today's motorcycle technology field.

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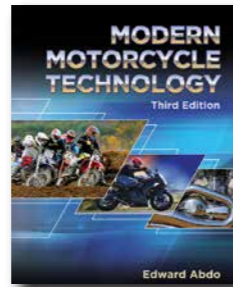
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20. Motorcycle Troubleshooting.

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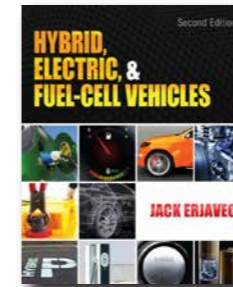
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20. Motorcycle Troubleshooting.

## HYBRID, ELECTRIC, AND FUEL-CELL VEHICLES, 2E

Jack Erjavec, Columbus State Community College (Emeritus)

© 2013, 400pp, Paperback, 9780840023957

ebook



HYBRID, ELECTRIC AND FUEL-CELL VEHICLES, Second Edition, covers the cutting-edge technology and technology that are revolutionizing today's automotive industry. Author Jack Erjavec combines in-depth industry expertise with an engaging, reader-

friendly style, providing extensive detail on new and upcoming electric vehicles, including hybrids in production today and the fuel cell vehicles of tomorrow. Expansive coverage ranges from basic theory related to vehicle construction, electricity, batteries, and motors, to the political and social impact of these high-profile vehicles. In addition to up-to-date, highly accurate technical information on vehicles available today—including service procedures and safe shop practices—the text provides an informed look into the future with material on vehicles currently under development.

### CONTENTS

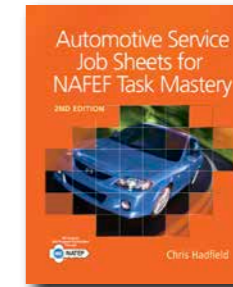
1. An Introduction to Electric Vehicles.
2. Electrical Basics.
3. Motor and Generator Basics.
4. Battery Basics.
5. The Basics of a Battery Operated Electric Vehicle.
6. HEV Basics.
7. Mild and Assist Hybrids.
8. Full Hybrids.
9. Hybrid Maintenance and Service.
10. Fuel Cell and Other Possible Vehicles.

## AUTOMOTIVE SERVICE JOB SHEETS FOR NATEF TASK MASTERY, 2E

Chris Hadfield

© 2012, 816pp, Paperback, 9781111137984

ebook



Master the skills you need to succeed in the automotive industry, with nearly 200 hands-on lab and shop activities correlated to National Automotive Technicians Education Foundation (NATEF) tasks for all eight Automotive Service Excellence (ASE)

systems. With content organized by technology area for convenient reference, this dynamic, full-color manual provides detailed illustrations with step-by-step instructions for all major service, diagnostic, and repair procedures, from engines to electronics. Extensive new and updated material makes the Second Edition of this valuable resource even more useful, with performance-based worksheets covering everything on the current NATEF Task List—more than 450 tasks in all! In addition, integrated assessment and critical thinking questions help you reflect on your work, enhance your understanding, and develop important real-world skills you can apply as a working automotive professional.

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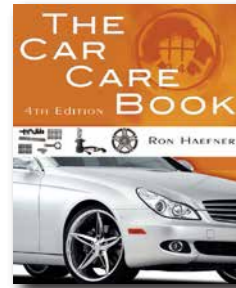
1. The Automobile Industry.
2. Shop Procedures, Safety, Tools, and Equipment.
3. Vehicle Inspection.
4. Engine Operation and Service.
5. Cooling System Belts, Hoses, and Plumbing.
6. Electrical System Theory and Service.
7. Heating and Air Conditioning.
8. Engine Performance Diagnosis: Theory and Service.
9. Automotive Engine Service and Repair.
10. Brakes and Tires.
11. Suspension, Steering, and Alignment.
12. Drive Train.

## THE CAR CARE BOOK, 4E

Ron Haefner, Columbus High School

© 2010, 496pp, Paperback, 9781428342958

ebook



Consumers typically face three main challenges when it comes to understanding their automobiles: the technologies underlying the car's major systems, the basics of inspection and maintenance, and the financial aspects of owning and operating an automobile. In this updated edition, The Car Care Book, 4th Edition explores these areas, using the very latest automobile technology to provide an accurate, current context for learning. The book first breaks each section of the car into systems and subsystems to help the reader digest important concepts. Coverage then progresses to include the common tools needed to perform car maintenance and minor repairs, as well as building a preventive maintenance program. Concluding with a section on financial issues, from buying and selling to insurance considerations to the benefits of leasing, this resource provides a thorough and comprehensive overview of basic automobile care.

### CONTENTS

What makes the Wheels Go Round? Tooling Up. The Engine. The Fuel System. The Electrical System. The Lubrication and Cooling System. The Drivetrain. Tires and Brakes. Suspension and Steering. Heating, Air Conditioning, and Optional Equipment. Your Maintenance Program. A Look at Repairs. The Repair-It/Replace-It Decision. Buying Tips for Parts and Insurance. Buying a New Car. Leasing. Glossary.

## COLLISION REPAIR

NEW EDITION

### AUTO BODY REPAIR TECHNOLOGY, 7E

James E. Duffy, Indiana State University, President, Beneficial Books and Video; Jonathan Beaty, Tennessee College of Applied Technology Livingston, Instructor, Collision Repair Technology

© 2021, 1088pp, Hardback, 9780357139790

CENGAGE | MINDTAP ebook



AUTO BODY REPAIR TECHNOLOGY, Seventh Edition, features extensive new and updated material reflecting the latest automotive technology and current industry best practices. In addition to incorporating current ASE Education Foundation

Collision Repair and Refinish Program Standards and Task Lists, this market-leading text provides detailed information on working with hybrid and electric vehicles, using environmentally friendly water-based paints, resistance spot and nitrogen plastic welding and other cutting-edge methods and materials. Celebrated for its clear, reader-friendly explanations and detailed, accurate information, this proven guide also includes abundant full-color photos and illustrations--many new or updated for the Seventh Edition--to make even complex concepts easier to understand and apply. Available supplements include a tech manual with shop assignments and newly updated and expanded job sheets, as well as interactive online resources ideal for today's learners. Providing comprehensive coverage of collision repair--from initial evaluation and estimating, to structural and mechanical repairs, to repainting and refinishing--this trusted guide will help you quickly and confidently learn the skills and procedures you need to succeed as a professional automotive technician.

### CONTENTS

Part I: NON-STRUCTURAL ANALYSIS & DAMAGE REPAIR. 1. Collision Repair Introduction and Careers. 2. Shop Safety. 3. Vehicle Construction Technology. 4. Service Information, Specifications & Measurements. 5. Hand Tools. 6. Power Tools & Equipment. 7. Compressed Air System Technology. 8. Body Shop Materials & Fasteners. 9. Outer Body Panel Service. 10. Door, Roof & Moveable Glass Service. 11. Repairing Sheet Metal. 12. Using Body Filler. 13. Plastic Repair. 14. Passenger Compartment Service. Part II: WELDING. 15. Welding Technology. Part III: STRUCTURAL ANALYSIS & DAMAGE REPAIR. 16. Structural Glass Service. 17. Body/Frame Damage Measurement. 18. Unibody/Frame Repair & Realignment. 19. Welded Panel Replacement. 20. Restoring Corrosion Protection. Part IV: MECHANICAL & ELECTRICAL. 21. Chassis Service & Wheel Alignment. 22. Electrical System Operation & Service. 23. Restraint System Operation & Service. 24. Hybrid & Electric Vehicle Service. Part V: DAMAGE ANALYSIS & ESTIMATING. 25. Damage Analysis & Estimating Service. Part VI: PAINTING & REFINISHING. 26. Refinishing Equipment. 27. Surface Preparation and Masking. 28. Refinishing Procedures. 29. Color Matching and Custom Painting. 30. Paint Problems and Final Detail. 31. Job Success.

NEW EDITION

### TECH MANUAL FOR UHRINA/DUFFY/BEATY'S AUTO BODY REPAIR TECHNOLOGY, 7E

James E. Duffy, Indiana State University, President, Beneficial Books and Video; Jonathan Beaty, Tennessee College of Applied Technology Livingston, Instructor, Collision Repair Technology; Jonathan Beaty, Tennessee College of Applied Technology Livingston, Instructor, Collision Repair Technology

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The Tech Manual is designed to help readers apply what they learn from chapter content through hands-on activity in the shop.



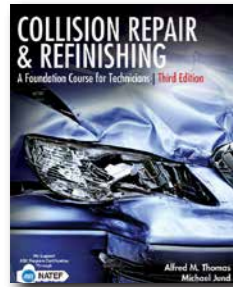
## COLLISION REPAIR AND REFINISHING, 3E

A Foundation Course for Technicians

Alfred Thomas, *Pennsylvania College of Technology*; Michael Jund, *Eastern Iowa Community College*

© 2018, 1072pp, Hardback, 9781305949942

CENGAGE | MINDTAP **ebook**



This trusted, reader-friendly text provides you with a thorough guide to all major areas of collision repair and refinishing as outlined by ASE Education Foundation. **COLLISION REPAIR AND REFINISHING: A FOUNDATION COURSE FOR TECHNICIANS**, Third

Edition, covers structural and non-structural analysis and damage repair, welding, painting and refinishing, paint chemistry, sacrificial coatings for corrosion resistance, mechanical and electrical systems, and more. A chapter on the expanded use of aluminum for domestic vehicle manufacture explores this important trend, as well as basic repair principles related to it. An engaging writing style, logical presentation of topics, and illustrations featuring current equipment and realistic applications make this comprehensive text a perfect choice for students with little or no prior exposure to collision repair.

### CONTENTS

1. Introduction to Collision Repair. 2. Collision Shop Safety. 3. Hand Tools. 4. Power Tools. 5. Welding Procedures and Equipment. 6. Vehicle Construction. 7. Straightening Steel. 8. Aluminum Repair and Panel Replacement (new). 9. Fillers. 10. Trim and Hardware. 11. Estimating Collision Damage. 12. Collision Damage Analysis. 13. Bolted Exterior Panel Replacement. 14. Measuring Structural Damage. 15. Straightening and Repairing Structural Damage. 16. Welded Exterior Panel Replacement. 17. Structural Parts Replacement. 18. Full Frame Sectioning and Replacement. 19. Plastic Repair. 20. Corrosion Protection. 21. Paint

Spray Guns. 22. Spray Techniques. 23. Refinishing Shop Equipment. 24. Detailing. 25. Understanding Refinishing. 26. Surface Preparation. 27. Masking Materials and Procedures. 28. Solvents for Refinishing. 29. Application of Undercoats. 30. Advanced Refinishing Procedures. 31. Advanced Refinishing Procedures Waterborne. 32. Color Evaluation and Adjustment. 33. Paint Problems and Prevention. 34. Electrical Components. 35. Steering, Suspension, and Vehicle Alignment. 36. Brakes. 37. Mechanical Systems.

## COLLISION REPAIR FUNDAMENTALS

James E. Duffy, *Indiana State University, President, Beneficial Books and Video*

© 2008, 576pp, Hardback, 9781418013363

**ebook**

This all new textbook was written and illustrated to introduce readers to automotive collision repair. *Collision Repair Fundamentals* stresses the repair of minor body damage and repainting, as well as advanced repairs such as frame straightening and structural panel replacement. Coverage has been added on the latest high-efficiency spray guns, UV-primers, primer-surfacers with a built in guide-coat action, aluminum weld-rivet construction, and much more. Each service-oriented chapter is accompanied by a practice ASE test featuring numerous ASE-style questions.

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Section 1- Basics 1.Careers in Collision Repair 2.Safety, ASE Certification 3.Vehicle Construction 4.Hand Tools 5.Power Tools 6.Measurements, Manuals 7.Fasteners 8.Hardware and Materials 9.Welding, Heating, Cutting Section 2- Minor Body Repairs 10.Metal Straightening Fundamentals 11.Plastic and Fiberglass Repair 12.Replacing Fastened Panels 13.Servicing Doors, Glass, Air/Water Leaks Section 3- Refinishing 14.Vehicle Paint Prep 15.Shop Paint Prep 16.Painting Fundamentals 17.Color Matching 18.Paint Problems, Final Detailing 19.Decals, Custom Painting, Trim Section

4 -Major Body Frame Repairs 20.Measuring Vehicle Damage 21.Frame-Unibody Straightening 22.Replacing Structural Parts, Corrosion Protection Section 5- Other Body Shop Operations 23.Interior and Top Repairs 24.Mechanical Repairs 25.Wheel Alignment 26.Electrical Repairs 27.Restraint System Repairs Section 6- Estimating, Entrepreneurship 28.Estimating Repair Costs 29.Entrepreneurship, Job Success, Certification

## COLLISION TECHNOLOGY

### COLLISION REPAIR FUNDAMENTALS

James E. Duffy, *Indiana State University, President, Beneficial Books and Video*

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**ebook**

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## MEDIUM/HEAVY DUTY TRUCK

### MOBILE EQUIPMENT HYDRAULICS

A Systems and Troubleshooting Approach

Ben Watson

© 2011, 256pp, Paperback, 9781418080433

**ebook**



Designed for the required course on hydraulics found in diesel technology and heavy equipment programs, **MOBILE EQUIPMENT HYDRAULICS: A SYSTEMS AND TROUBLESHOOTING APPROACH**, takes a practical approach to the

understanding of fluid power / hydraulic systems. Instead of concentrating on the design issues of fluid power systems this book approaches hydraulics more like a technician would to approach a system that requires maintenance or troubleshooting. Nearly all aspiring diesel technicians receive training in this subject, which is one of seven areas of study recognized by ASE Education Foundation in diesel technology. Coverage includes a study of terminology, industrial standards, symbols and basic circuitry design as related to fluid power. Examples are drawn from actual equipment that is relevant to the program of study, whether it be heavy truck, earth-moving, or agricultural equipment.

## CONTENTS

1. An Overview. 2. Building a Basic Cylinder or Hydraulic Motor Circuit. 3. The Math. 4. ANSI Symbols. 5. Oils and Other Hydraulic Fluids. 6. Piping, Tubing and Hoses. 7. Couplers and Fittings. 8. System Design. 9. Electrical Controls. 10. Maintenance. 11. Troubleshooting Fluid Power Systems. 12. Conversions. 13. Hydraulic/Fluid Power Systems.

## SERVICE MANAGEMENT

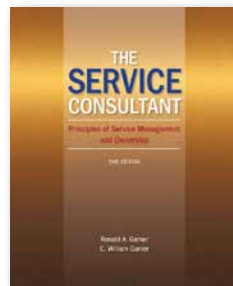
### THE SERVICE CONSULTANT, 2E

Principles of Service Management and Ownership

Ronald A. Garner, Pennsylvania College of Technology; C. William Garner, Rutgers University

© 2014, 416pp, Paperback, 9780357671269

ebook



Designed to prepare you for a successful career as an automotive service consultant, THE SERVICE CONSULTANT: PRINCIPLES OF SERVICE MANAGEMENT AND OWNERSHIP, Second Edition teaches you how to maximize profits and

improve customer satisfaction in an automotive business. With coverage of task-oriented procedures for day-to-day operations as well as communications, relations, supervision, and customer delivery, this practical text provides you with an in-depth examination of the multi-faceted responsibilities of an automotive service consultant. In addition, the text content correlates to the ASE tasks for Automotive Service Consultant (C1) in order to help you better prepare for the ASE certification exam. Furthermore, the second edition contains updated examples, activities, technology, case studies, and visual aids so that you are exposed to the most up-to-date information in the field.

## CONTENTS

PART I: SERVICE FACILITIES AND THE SERVICE CONSULTANT. 1. Types of Automotive Service Facilities, Professional Credentials, and Profit. 2. The Role of the Service Consultant, Parts Specialist, and Warranty Administrator. 3. The Team Approach: Business Operations and Repair Order Tracking. 4. Computerized Shop Management Systems. 5. Checking Vehicle and Customer Records. 6. Working with Warranties, Service Contracts, Service Bulletins, and Campaigns/Recalls. PART II: COMMUNICATIONS: CUSTOMER RELATIONS. 7. Electronic Communications, Websites, and Social Networks. 8. Personal Communication: From the Greeting to the Presentation of the Invoice. 9. Working Out Service Details with Customers. 10. Prioritizing Repair Needs. 11. Closing a Sale. PART III: COMMUNICATION: CUSTOMER DELIVERY AND FOLLOW UP. 12. Writing for the Technician. 13. Workflow and Efficient Shop Operations. 14. Customer Relations: Sales, Follow-Ups, and Promotions. PART IV: COMMUNICATION: CUSTOMER DELIVERY AND FOLLOW UP. 15. Assistant Service Manager Duties. 16. A positive Work Environment for Efficient Business Performance. 17. Analysis of Shop Operations and Business Performance. 18. Service Facility Business Start Up and Ownership. Appendix ASE (C1) Task List: Service Consultant. Glossary. Index.

## TECHNICIAN TRAINING

### VEHICLE MAINTENANCE AND REPAIR LEVEL 1, 2E

Patrick Hamilton, Chairman of the IMI Members Association Norfolk; John Rooke CertEd, MIMI, Mifl; Julian Brown

© 2012, 288pp, Paperback, 9781408064221

ebook



This new edition of the highly successful Vehicle Maintenance and Repair Level 1 workbook provides complete coverage of the QCF National Occupational Standards at Level 1 as set by the IMI and is in-line with VRQ and NVQ qualifications.

Learners will be inspired by the full-colour diagrams and images illustrating key techniques and the Tip Boxes, weblinks, activities and questions will ensure learners have full understanding of all the essential information. This easy to use, easy to follow workbook ensures learners have all the theoretical and practice knowledge in preparation for further study or the world of work.

## CONTENTS

Part 1: Introduction. Section 1: Personal and Social Development (PSD.) Section 2: Employment Rights and Responsibilities (ERR.) Section 3: Health and Safety. Section 4: Tools, Equipment and Materials. Section 5: The Retail Automotive Industry. Part 2: Engine Construction and Operating Principles. Section 1: Spark Ignition Engine Systems, Components and Operation. Section 2: Compression Ignition Engine Systems, Components and Operation. Section 3: Engine Liquid Cooling & Lubrication System Components and Operation. Section 4: Exhaust Systems Components and Maintenance. Section 5: Spark Ignition System Maintenance. Section 6: Introduction to Spark Ignition Fuel Systems. Section 7: Introduction to Compression Ignition Fuel Systems. Part 3: Chassis Section 1: Vehicle Construction. Section

2: Steering and Suspension Systems Components and Maintenance. Section 3: Braking Systems Components and Maintenance. Section 4: Wheels and Tyres Construction and Maintenance. Part 4: Driveline Transmissions Section 1: The vehicle transmission: engine, clutch, gearbox, driveshaft/propshaft. final drive, centre diff/ transfer box. Part 5: Electrical Systems. Section 1: Electrical Foundation Skills: Electrical principles, battery charging, Starting, lighting and system maintenance, auxiliary. Part 6: Low Carbon Technologies. Part 7: Valeting. Part 8: Heavy Vehicle Maintenance. Part 9: Motorcycle Maintenance.

### LIGHT VEHICLE MAINTENANCE AND REPAIR LEVEL 2, 2E

Soft Bound Version

Patrick Hamilton, Chairman of the IMI Members Association Norfolk; John Rooke CertEd, MIMI, Mifl; Robert Sharman, Sector Skills Council

© 2011, 320pp, Paperback, 9781408057490

ebook



This new edition of the highly successful Light Vehicle Maintenance and Repair Level 2 workbook provides complete coverage of the National Occupational Standards at Level 2 as set by the IMI and has been reviewed by Roy Brooks, the highly acclaimed author

of the first edition. The easy to use, easy to follow format makes this the perfect companion for the course, for use in class and while carrying out practical tasks. Learners will be inspired by the full-colour diagrams and images illustrating key techniques and the Tip Boxes, weblinks, activities and questions will ensure learners have full understanding of all the essential information.



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Part 1 – Introduction Section 1 Health & Safety Section 2 Good Housekeeping Part 2 –The Motor Industry Section 1 Workplace structure and job roles Section 2- Tools and Equipment Part 3 – Engines Section 1 Construction and operating principles Section 2 Cooling Section 3 Lubrication Section 4 Fuel injection systems Section 5 Ignition Systems Section 6 Exhaust Systems Part 4 – Chassis Section 1 Vehicle Construction Section 2 Wheels & Tyres Section 3 Braking systems Section 4 Suspension systems Section 5 Steering systems Part 5 – Transmission Section 1 Vehicle layouts Section 2 Clutch Section 3 Gearbox Section 4 Final drive Section 5 Driveline Part 6 – Electrical Systems Section 1 Understanding electricity Section 2 Circuits and operation Section 3 Batteries Section 4 starting system Section 5 Charging system Section 6 Auxiliary systems Section 7 Diagnosis and testing Endmatter Bibliography for further reading Glossary

## NEW EDITION

### TODAY'S TECHNICIAN, 6E

Basic Automotive Service & Systems Classroom Manual and Shop Manual

Chris Hadfield; John Witthauer, Goodwill Easter Seals Automotive Training Program

© 2021, 1008pp, Paperback, 9781337795661

CENGAGE | MINDTAP **ebook**



This trusted text provides a comprehensive, accessible overview of automotive systems to prepare you for all aspects of work in the field. BASIC AUTOMOTIVE SERVICE & SYSTEMS, Sixth Edition, includes a Classroom Manual that explores the operational

theory behind each automotive system, and a Shop Manual covering relevant diagnostic, testing, and repair procedures. Updated to align with Task Lists for the latest ASE Education Foundation requirements, the Sixth Edition covers emerging technologies such as hybrid vehicles and electronic engine controls, as well as current information on the global automotive industry and the role you can play within it as a professional technician. The authors assume no prior knowledge of automotive technology, so these clear and engaging resources provide an ideal introduction to both fundamental theory and its real-world applications in specific skills and maintenance procedures, preparing you for success in today's fast-paced, competitive work environment.

## CONTENTS

Classroom Manual. 1. Introduction to the Automotive Industry. 2. Introduction to the Automobile. 3. Automotive Tools and Equipment. 4. Fasteners and Measurements. 5. Electrical and Electronic Systems. 6. Accessory Lighting and Electrical Systems 7. Engine Systems. 8. Transmission and Drivetrain Systems. 9. Steering and Suspension Systems. 10. Brakes Systems 11. Heating Ventilation and Air Conditioning Systems. 12. Engine Theories

and Performance Systems. Glossary. Index. Shop Manual 1. Automotive Shop and Safety Procedures. 2. Working in the Automotive Industry. 3. Using Automotive Tools and Equipment. 4. Using Fasteners and Measuring Equipment. 5. Electrical and Electronic System Inspection, Maintenance, and Service. 6. Accessory Lighting and Electrical Systems Inspections, Maintenance, and Testing. 7. Engine System Inspection and Maintenance. 8. Transmission and Drivetrain Systems Inspection, Maintenance, and Service. 9. Steering and Suspension Systems Inspection, Maintenance, and Service. 10. Brakes Systems Inspection, Maintenance, and Service. 11. Heating Ventilation and Air Conditioning Systems Inspection, Maintenance, and Service. 12. Engine Performance Systems Inspection, Maintenance, and Service. Glossary. Index.

## AUTOMOTIVE TECHNOLOGY, 7E

A Systems Approach

Jack Erjavec, Columbus State Community College (Emeritus); Rob Thompson, Columbus State Community College

© 2020, 1728pp, Hardback, 9781337794213

CENGAGE | MINDTAP **ebook**



AUTOMOTIVE TECHNOLOGY: A SYSTEMS APPROACH provides comprehensive coverage with updates to address the latest ASE Education Foundation requirements for Maintenance and Light Repair (MLR), Automotive

Service Technology (AST), and Master Service Technology (MAST) program accreditation levels. Thoroughly revised to provide accurate, current information on the latest technology, industry trends, and state-of-the-art tools and techniques, the Seventh Edition is an essential resource for building career ready students who want to succeed in the dynamic, rapidly evolving field of automotive service and repair.

## CONTENTS

Part I: AUTOMOTIVE TECHNOLOGY. 1. Careers in the Automotive Industry. 2. Workplace Skills. 3. Basic Theories and Math. 4. Automotive Systems. 5. Hand Tools and Shop Equipment. 6. Diagnostic Equipment and Special Tools. 7. Working Safely in the Shop. 8. Preventative Maintenance and Basic Services. Part II: ENGINES. 9. Automotive Engine Designs and Diagnosis. 10. Engine Disassembly and Cleaning. 11. Lower-End Theory and Service. 12. Upper-End Theory and Service. 13. Engine Sealing and Reassembly. 14. Lubricating and Cooling Systems. Part III: ELECTRICITY. 15. Basics of Electrical Systems. 16. General Electrical System Diagnostics and Service. 17. Batteries: Theory, Diagnosis, and Service. 18. Starting and Motor Systems. 19. Charging Systems. 20. Lighting Systems. 21. Instrumentation and Information Displays. 22. Basics of Electronics and Computer

Systems. 23. Electrical Accessories. Part IV: ENGINE PERFORMANCE. 24. Engine Performance Systems. 25. Detailed Diagnosis and Sensors. 26. Ignition Systems. 27. Ignition System Diagnosis and Service. 28. Gasoline, Diesel and Other Fuels. 29. Fuel Delivery Systems. 30. Electronic Fuel Injection. 31. Fuel Injection Diagnosis and Service. 32. Intake and Exhaust Systems. 33. Emission Control Systems. 34. Emission Control Diagnosis and Service. 35. Hybrid Vehicles. 36. Electric Vehicles. Part V: MANUAL TRANSMISSIONS AND TRANSAXLES. 37. Clutches. 38. Manual Transmissions and Transaxles. 39. Manual Transmission and Transaxle Service. 40. Drive Axles and Differentials. Part VI: AUTOMATIC TRANSMISSIONS AND TRANSAXLES. 41. Automatic Transmissions and Transaxles. 42. Electronic Automatic Transmissions. 43. Automatic Transmission and Transaxle Service. 44. Four- and All-Wheel Drive. Part VII: SUSPENSION AND STEERING SYSTEMS. 45. Tires and Wheels. 46. Suspension Systems. 47. Steering Systems. 48. Restraint Systems: Theory, Diagnosis, and Service. 49. Wheel Alignment. Part VIII: BRAKES. 50. Brake Systems. 51. Drum Brakes. 52. Disc Brakes. 53. Antilock Brake, Traction Control, and Stability Control Systems. Part IX: PASSENGER COMFORT. 54. Heating and Air Conditioning. 55. Heating and Air Conditioning Diagnosis and Service.

## UNDERCAR SYSTEMS

### TODAY'S TECHNICIAN, 7E

Automotive Suspension & Steering Classroom Manual and Shop Manual

Mark Schnubel, Naugatuck Valley Community College

© 2020, 1024pp, Spiral, 9781337567336

CENGAGE | MINDTAP **ebook**



Make the most of your time in both the classroom and the auto shop, and learn to diagnose and service automotive suspension and steering systems with confidence. This trusted text includes a dedicated Classroom Manual that introduces essential theory

and applications, plus a standalone Shop Manual focused on real-world symptoms, diagnostics, and repairs. With comprehensive coverage, accurate and up-to-date details, and abundant illustrations, this reader-friendly resource will help prepare you for success as an automotive technician or ASE certification. Now updated with extensive information on new and emerging technology and techniques—including hybrid and electric vehicles, tire plus sizing, and computer-controlled suspensions—the Seventh Edition also aligns with area A4 of the ASE Education Foundation 2017 accreditation model, including job sheets correlated to specific MLR, AST and MAST tasks.

#### CONTENTS

1. Suspension and Steering Systems Introduction and Overview. 2. Basic Theories. 3. Tires and Wheels. 4. Wheel Bearings. 5. Shock Absorbers and Struts. 6. Front Suspension Systems. 7. Rear Suspension Systems. 8. Steering Columns and Steering Linkages. 9. Four Wheel Alignment Part I. 10. Four Wheel Alignment Part II. 11. Computer-Controlled Suspension Systems. 12. Power Steering Pumps. 13. Rack and Pinion Steering Gears and Four Wheel Steering. 14. Recirculating Ball Steering Gears.

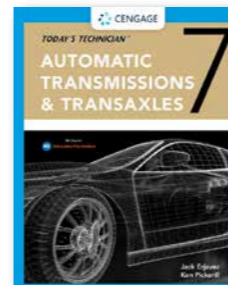
### TODAY'S TECHNICIAN, 7E

Automatic Transmissions and Transaxles Classroom Manual and Shop Manual

Jack Erjavec, Columbus State Community College (Emeritus); Ken Pickerill

© 2020, 1040pp, Spiral, 9781337792158

CENGAGE | MINDTAP **ebook**



**T E C H N I C I A N :  
A U T O M A T I C  
T R A N S M I S S I O N S  
& T R A N S A X L E S**  
CLASSROOM MANUAL  
AND SHOP MANUAL,  
Seventh Edition. This  
proven resource includes  
practical, easy-to-  
understand coverage of

topics aligned to the latest ASE Education Foundation standards for the MLR/AST/MAST program accreditation levels, including continuously variable transmissions (CVT), drivelines for front-wheel drive (FWD) and four-wheel drive (4WD) vehicles, and the latest information on today's high-tech electronic controls and automatic shifting devices. The Classroom Manual provides easy-to-understand coverage of every applicable ASE Education Foundation standard, while the Shop Manual includes Job Sheets to guide you through hands-on service and repair tasks. Written with the needs of current and aspiring technicians in mind, this trusted text will help you master the design, construction, troubleshooting techniques, and procedures necessary for a successful industry career.

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Classroom Manual. 1. Drive Train Basics. 2. Drive Train Theory. 3. General Theories of Operation. 4. Transmission Electronics. 5. Transmission Designs. 6. Torque Converters and Oil Pumps. 7. Hydraulic and Electronic Controls. 8. Gears and Shafts. 9. Reaction And Friction Units. 10. Common Automatic Transmissions. Glossary. Index. Shop Manual. 1. Safety. 2. Special Tools and Procedures. 3. Diagnosis, Maintenance, and Basic Adjustments.

4. Electrical and Electronic System Diagnosis and Service. 5. Rebuilding Transmissions. 6. Torque Converter and Oil Pump Service. 7. General Hydraulic System Service. 8. Gear and Shaft Service. 9. Friction And Reaction Unit Service. 10. Rebuilding Common Transmissions. Appendix A: ASE Practice Examination. Appendix B: Automatic Transmission Special Tool Suppliers. Appendix C: Metric Conversions. Glossary. Index.

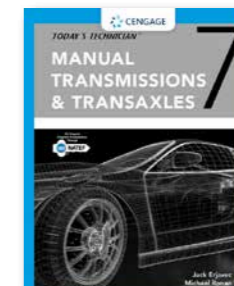
### TODAY'S TECHNICIAN, 7E

Manual Transmissions and Transaxles Classroom Manual and Shop Manual

Jack Erjavec, Columbus State Community College (Emeritus); Mike Ronan, State University of New York, Alfred State College

© 2020, 928pp, Paperback, 9781337795456

CENGAGE | MINDTAP **ebook**



Gear up for success—in the classroom and shop, in your future career — with **TODAY'S TECHNICIAN: M A N U A L T R A N S M I S S I O N S & T R A N S A X L E S**, Seventh Edition. This proven, practical guide includes easy-to-understand

information on a wide range of must-know topics, including transmission system and subsystem components, shop safety basics, dual-clutch systems, limited-slip differential designs, all-wheel drive systems, and six-speed transmissions. To help you master both essential theory and practical job skills, the text includes a Classroom Manual reviewing every topic for Manual Drive Train and Axles, plus a hands-on Shop Manual with full-color photo sequences and detailed job sheets, so you'll know exactly what to expect with performing service and repair tasks based on the latest MLR, AST, and MAST task lists.



## CONTENTS

**CLASSROOM MANUAL.** 1. Manual Drive Trains and Axles. 2. Drivetrain Theory. 3. Clutches. 4. Manual Transmissions/Transaxles. 5. Front Drive Axles. 6. Drive Shafts and Universal Joints. 7. Differentials and Drive Axles. 8. Four-Wheel Drive (4WD) Systems. 9. Advanced Four-Wheel-Drive Systems. 10. Drivetrain Electrical and Electronic Systems. 11. Electronically Controlled and Automated Transmissions. **SHOP MANUAL.** 1. Safety. 2. Special Tools and Procedures. 3. Servicing Clutches. 4. Servicing Transmissions/Transaxles. 5. Servicing Front Drive Axles. 6. Servicing Drive Shafts and Universal Joints. 7. Servicing Differentials and Drive Axles. 8. Servicing Four-Wheel Drive Systems. 9. Diagnosing 4WD and AWD Control Systems. 10. Servicing Drivetrain Electrical Systems. 11. Diagnosing Advanced Electronic Systems.

## TODAY'S TECHNICIAN, 7E

Automotive Brake Systems, Classroom and Shop Manual Pre-Pack

Ken Pickerill

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 CENGAGE | MINDTAP *ebook*



This comprehensive resource includes everything you need to understand, diagnose, and repair today's brake systems with confidence--and prepare for ASE certification and career success as an automotive technician. In addition to

thorough coverage, accurate and up-to-date details, and abundant illustrations, TODAY'S TECHNICIAN: AUTOMOTIVE BRAKE SYSTEMS, CLASSROOM AND SHOP MANUAL PRE-PACK, Seventh Edition, offers a uniquely convenient two-volume approach. The first volume is a Classroom Manual covering the theory and application of the total brake system, subsystem, and components. Volume two is a Shop Manual that explores real-world symptoms, diagnostics, and repairs, and is ideal for standalone use as a reference on the job. In addition to aligning with the ASE Education Foundation 2017 accreditation model, the Seventh Edition features job sheets correlated to specific MLR, AST and MAST tasks, and extensive information on new and emerging technology and techniques--including hybrid vehicles, brake by wire, and electric brakes.

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**CLASSROOM MANUAL.** 1. Brake System Fundamentals. 2. Principles and Theories of Operation. 3. Related Systems: Tire, Wheels, Bearings, and Suspensions. 4. Master Cylinder and Brake Fluid. 5. Hydraulic Lines, Valves, and Switches. 6. Power Brake Systems. 7. Disc Brakes. 8. Drum Brakes. 9. Parking Brakes. 10. Electrical Braking Systems. 11. Advanced Braking Systems **SHOP MANUAL.** 1. Brake Safety. 2. Brake Service Tools and Equipment. 3. Related System Service.

4. Master Cylinder and Brake Fluid Service. 5. Hydraulic Line, Valve, and Switch Service. 6. Power Brake Service. 7. Disc Brake Service. 8. Drum Brake Service. 9. Parking Brake Service. 10. Electrical Brake Systems. 11. Advanced Braking Systems.

## UNDERHOOD SYSTEMS

### NEW EDITION

## COMPUTERIZED ENGINE CONTROLS, 11E

Steve V. Hatch, Lincoln College of Technology, Denver

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With thorough coverage of both fundamental electrical concepts and current automotive electronic systems, COMPUTERIZED ENGINE CONTROLS, Eleventh Edition, equips you with the essential knowledge you need to successfully diagnose and repair modern automotive systems. Reflecting the latest technological advances from the field, the Eleventh Edition offers updated and expanded coverage of diagnostic concepts, equipment, and approaches used by today's professionals. All photos and illustrations are now printed in full, vibrant color, making it easier for today's visual learners to engage with the material and connect chapter concepts to real-world applications. Drawing on abundant, firsthand industry experience, the author provides in-depth insights into cutting-edge topics such as hybrid and fuel cell vehicles, automotive multiplexing systems, and advanced driver assist systems. In addition, key concepts are reinforced with ASE-style end-of-chapter questions to help prepare you for certification and career success.

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**Part I: GENERIC CHAPTERS.** 1. A Review of Electricity and Electronics. 2. Computers in Cars. 3. Common Components for Computerized Engine Control Systems. 4. Common Operating Principles for Computerized Engine Control Systems. 5. Introduction to Diagnostic Concepts and Diagnostic Equipment. 6. Exhaust Gas Analysis. 7. Understanding OBD II. 8. Automotive Multiplexing and Networking of Computers. 9. Hybrid and Electric Vehicles. 10. Advanced Driver Assist Systems. 11. Approach to Diagnostics. **Part II: MANUFACTURER-SPECIFIC CHAPTERS.** 12. General Motors Computerized Engine Controls. 13. Ford Motor Company Computerized Engine Controls. 14. Chrysler Corporation Computerized Engine Controls. 15. European (Bosch) Computerized Engine Controls. 16. Asian Computerized Engine Control.

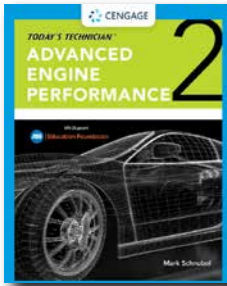
## TODAY'S TECHNICIAN, 2E

Advanced Engine Performance Classroom Manual and Shop Manual

Mark Schnubel, Naugatuck Valley Community College

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CENGAGE | MINDTAP **ebook**



Part of the popular Today's Technician series, this reader-friendly text provides an in-depth guide to advanced performance topics such as drivability, emissions testing, and engine diagnostics. In addition to a thorough review of on-board

diagnostic generation II (OBD II) continuous monitors and non-continuous monitors strategies, the text includes a chapter on emission control and evaporative systems, as well as detailed information on OBD II generic diagnostic trouble codes (DTC) identification and diagnosis and malfunction indicator light strategies. To help you gain essential knowledge while honing practical job skills, the text includes both a Classroom Manual and a hands-on Shop Manual. The Second Edition features new and updated material to help you prepare for professional success by mastering the latest technology and industry trends, including variable valve and camshaft timing designs, variable displacement and variable lift engine designs currently in production, and advanced on-board diagnostic scanners and digital storage oscilloscopes.

### CONTENTS

Classroom Manual 1. Overview of topics to be covered. 2. Basic operational Theories. 3. History of On-Board Diagnostics. 4. On-Board Diagnostic Scanners and Digital Storage Oscilloscopes. 5. Computers and Input Sensors. 6. Ignition System and Related Input Sensors/Output Actuators Diagnosis. 7. Fuel System and Related Input Sensors/Output Actuators Diagnosis. 8. Emission Control and Evaporative Systems. 9. Strategies of On-Board-

Diagnostic Continuous Monitors. 10. Strategies of On-Board-Diagnostic Non-Continuous Monitors. 11. I/M Failure Diagnosis and Five-Gas Exhaust Analysis. Appendix. Appendix I: OBD II acronyms. Appendix II: Generic OBD II Codes. Appendix III: DaimlerChrysler P1 OBD II Codes. Appendix IV: Vehicles with Known Readiness Issues. Appendix V: EPA Milestones. Appendix VI: Oregon Study. Appendix VII: State IM Programs. Shop Manual 1. Safety and Shop Practices. 2. Special Tools and Procedures. 3. On-Board Diagnostics and Emissions Tests. 4. On-Board Diagnostic Scanners and Digital Storage Oscilloscopes. 5. Computers and Input Sensor Diagnosis and Service. 6. Ignition System and Related Input Sensors/Output Actuators Diagnosis. 7. Fuel System and Related Input Sensors/Output Actuators Diagnosis. 8. Emission Control and Evaporative Systems Diagnosis and Service. 9. Strategies of On-Board-Diagnostic Continuous Monitors. 10. Strategies of On-Board-Diagnostic Non-Continuous Monitors. 11. I/M Failure Diagnosis and Five-Gas Exhaust Analysis.

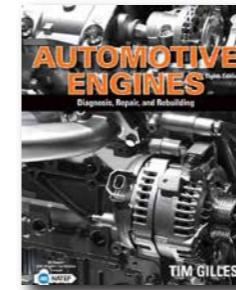
## AUTOMOTIVE ENGINES, 8E

Diagnosis, Repair, Rebuilding

Tim Gilles, Professor Emeritus, Santa Barbara City College, Santa Barbara, California

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CENGAGE | MINDTAP **ebook**



Gain the technical expertise, practical skills, and industry knowledge you need for career success! **AUTOMOTIVE ENGINES: DIAGNOSIS, REPAIR, AND REBUILDING**, Eighth Edition, features comprehensive coverage of the theory of operation,

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Part I: ENGINE CONSTRUCTION, DIAGNOSIS, DISASSEMBLY, AND INSPECTION. 1. ENGINE OPERATION. Simple Engine. Four-Stroke Engine Operation. Cylinder Arrangement. Valve Train. Cylinder Block. Front-Wheel Drive. Engine Classifications. Combustion Chamber Designs. Firing Order. Types of Cooling Systems. Ignition Types. Study Questions. ASE-Style Review Questions. 2. ENGINE SHOP SAFETY. General Shop Health and Safety. Hazardous Materials. Safety Test. 3. DIAGNOSING ENGINE PROBLEMS. Diagnosing Problems Before an Overhaul. Oil Consumption. Fuel Mixture Problems. Compression Loss. Engine Noises. Oil Pressure Problems. Cooling System Problems. Electronic Failures/Engine Damage. Study Questions. ASE-Style

Review Questions. 4. ENGINE REMOVAL, DISASSEMBLY, INSPECTION, AND IN-CHASSIS REPAIRS. Shop Manuals. Engine Removal. Engine Disassembly. Ordering Parts. Major Engine Repair - Engine in the Vehicle. Study Questions. ASE-Style Review Questions. 5. CLEANING THE ENGINE. Cleaning Methods. Cleaning the Inside of the Engine. Study Questions. ASE-Style Review Questions. 6. MEASURING. Metric System. Measuring Tools. Precision Measuring Tools. Study Questions. ASE-Style Review Questions. Part II: THE BREATHING SYSTEM. 7. CYLINDER HEAD: PARTS AND SERVICE. Head Disassembly. Carbon Removal. Crack Inspection. Crack Repair. Valve Guide Inspection. Valve Guide Repair. Valve Guide Seals. Resurfacing Heads. Study Questions. ASE-Style Review Questions. 8. CYLINDER HEAD: SPRINGS, VALVES, AND VALVE SEATS. Valve Springs. Push Rods. Rocker Arms. Valves and Valve Service. Valve Seats and Service. Reassembling the Head. Study Questions. ASE-Style Review Questions. 9. CAMSHAFTS, LIFTERS, TIMING BELTS AND CHAINS. Camshaft. Hydraulic Lifters and Lash Adjusters. Hydraulic Lifter Operation. Roller Cam and Lifters. Cam Drives. Timing Drive Maintenance. Timing the Cam to the Crank. Timing Belts. Timing Belt Replacement. Study Questions. ASE-Style Review Questions. Part III: CYLINDER BLOCK ASSEMBLY. 10. CYLINDER BLOCK - INSPECTION AND SERVICE. Cleaning the Block. Oil and Water Plugs. Main Bearing Caps. Main Bearing Bore Alignment. Decking the Block. Inspecting Cylinder Bores. Deglazing Cylinders. Reboring Cylinders. Honing Cylinders to Size. Chamfering the Cylinder. Cylinder Sleeves. Lifter Bores. Final Block Preparation. Study Questions. ASE-Style Review Questions. 11. CRANKSHAFT, BEARINGS, AND ENGINE BALANCING. Crankshaft Design. Crank End Thrust. Checking Crank Condition. Bearing Inserts. Engine Balancing. Study Questions. ASE-Style Review Questions. 12. PISTON, RINGS, AND CONNECTING ROD. Pistons. Piston Rings. Connecting Rods. Wrist Pins. Study Questions. ASE-Style Review Questions. 13. LUBRICATION SYSTEM. The Lubrication System. Oil. Oil Pumps. Priming the System. Oil Filters. Filter Bypass System. Crankcase Ventilation.



Study Questions. ASE-Style Review Questions. 14. COOLING SYSTEM. The Cooling System. Cooling System Circulation. Water Pump. Belts. Thermostat. Thermostat Bypass. Radiators. Study Questions. ASE-Style Review Questions. Part IV: ENGINE REPAIR AND REASSEMBLY. 15. ENGINE HARDWARE: FASTENERS, THREAD REPAIR, AND GASKETS. Characteristics of Fasteners. Bolt Stretch. Torque and Friction. Bolt Failures. Drill Bits. Taps and Threads. Repairing Broken Fasteners. Flared Lines. Gaskets. Gasket Sealer. Seals. Study Questions. ASE-Style Review Questions. 16. REASSEMBLY AND STARTING. Warranty. Reassembly. Completion of Assembly. Engine Installation. Engine Starting and Initial Break-in of the Camshaft. Final Inspection and Cleaning. Study Questions. ASE-Style Review Questions. Part V: ENGINE POWER AND PERFORMANCE. 17. ENGINE BREATHING: INTAKE AND EXHAUST SYSTEMS. Intake and Exhaust Manifolds. Engine Modifications to Improve Air Flow. High-Performance Valves and Valve Springs. Exhaust Manifolds and Headers. Mufflers. Study Questions. ASE-Style Review Questions. 18. TURBOCHARGERS AND SUPERCHARGERS. Supercharging and Engine Power. Turbochargers. Turbo Boost and Lag. Supercharger Pressure Control. Variable Geometry Turbochargers. Aftercooler/ Intercooler. Turbocharger Troubleshooting. Turbocharger Damage Diagnosis. Belt-driven Superchargers/ Blowers. Pressure Relief Valves. Dynamic Superchargers. Blower Problems. Study Questions. ASE-Style Review Questions. 19. PRODUCING POWER: VALVE TIMING, POWER AND TORQUE MEASUREMENT. Camshaft and Engine Performance. Checking Camshaft Timing. Camshaft Phasing, Lobe Centers, and Lobe Spread. Variable Valve Timing. Active Fuel Management/ Displacement on Demand. Power and Torque. Measuring Torque and Horsepower. Dynamometer Safety Concerns. Study Questions. ASE-Style Review Questions.

## TODAY'S TECHNICIAN: AUTOMOTIVE ENGINE REPAIR & REBUILDING, CLASSROOM MANUAL AND SHOP MANUAL, SPIRAL BOUND VERSION, 6E

Chris Hadfield; Randy Nussler, New Market Skills Center

© 2018, 1040pp, Paperback, 9781305958135

CENGAGE | MINDTAP **ebook**



TODAY'S TECHNICIAN: AUTOMOTIVE ENGINE REPAIR & REBUILDING, CLASSROOM MANUAL AND SHOP MANUAL, Sixth Edition, delivers the theory and skills you need to repair and service modern automotive engines as a professional technician,

along with proven preparation for the Automotive Service Excellence (ASE) certification exam. Using a logical, system-specific approach, the text covers engine construction and operation, intake and exhaust systems, and engine repair, as well as the basics of engine rebuilding. Drawing on decades of shop and classroom experience, the authors provide valuable, forward-looking industry insights on topics such as advances in hybrid technology, factors affecting engine performance, and the design and function of modern engine components. Long known for its technical accuracy and concise writing style, the Sixth Edition of this reader-friendly text includes extensive updates to reflect the latest ASE Education Foundation standards, new information on current industry trends and developments, additional drawings and photos, and a variety of electronic learning tools.

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Classroom Manual 1. Automotive Engines. 2. Engine Repair and Rebuilding Industry. 3. Theory of Engine Operation. 4. Engine Operating Systems. 5. Factors Affecting Engine Performance. 6. Engine Materials, Fasteners, Gaskets, and Seals. 7. Intake and Exhaust Systems. 8. Engine Configurations,

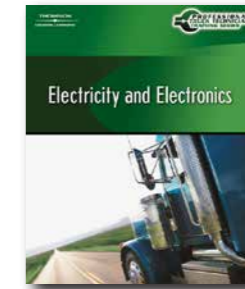
Mounts, and Remanufactured Engines. 9. Cylinder Heads. 10. Camshafts and Valve Trains. 11. Timing Mechanisms. 12. Engine Block Construction. 13. Pistons, Rings, Connecting Rods, and Bearings. 14. Alternative Fuel and Advanced Technology Vehicles. Shop Manual 1. Safety and Shop Practices. 2. Engine Rebuilding Tools and Skills. 3. Basic Testing, Initial Inspection, and Service Procedures. 4. Diagnosing and Servicing Engine Operating Systems. 5. Diagnosing Engine Performance Concerns. 6. Repair and Replacement of Engine Fasteners, Gaskets, and Seals. 7. Intake and Exhaust System Diagnosis and Service. 8. Engine Removal, Engine Swap, and Engine Installation. 9. Cylinder Head Disassemble, Inspection, and Service. 10. Valve Train Service. 11. Timing Mechanism Service. 12. Inspecting, Disassembling, and Servicing the Cylinder Block Assembly. 13. Short Block Component Service and Engine Assembly. 14. Alternative Fuel and Advanced Technology Vehicle Service.

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# AUTOMOTIVE & TRUCK TECHNOLOGY

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Truck Equipment Installation and Repair, Test E1

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Section 1: The History of ASE Section 2: Take and Pass Every ASE Test Section 3: Types of Questions on an ASE Exam Section 4: Overview of the Task List Section 5: Sample Test for Practice Section 6: Additional Test Questions for Practice Section 7: Appendices

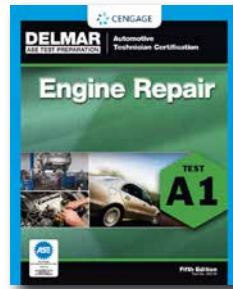


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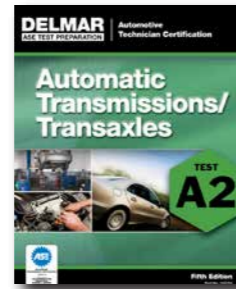
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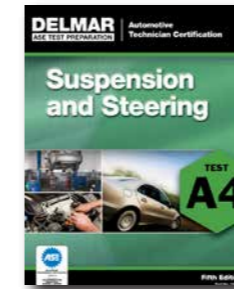
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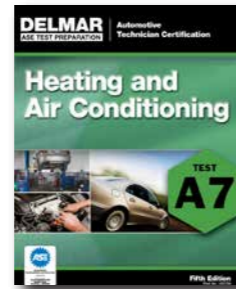
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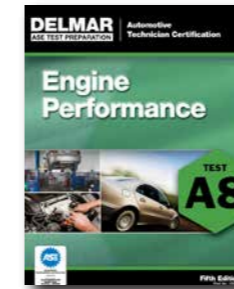
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## ASE TEST PREPARATION - C1 SERVICE CONSULTANT, 5E

Delmar

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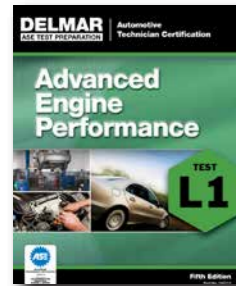


## ASE TEST PREPARATION - L1 ADVANCED ENGINE PERFORMANCE, 5E

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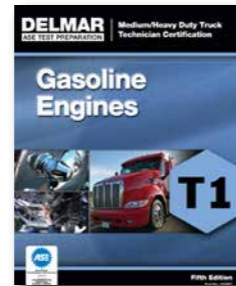
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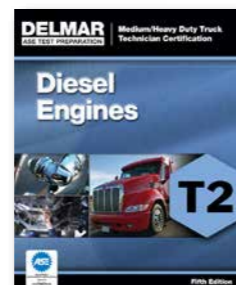
first time. This manual will ensure that you understand the Gasoline Engines task list and are fully prepared and confident to take your exam.

## ASE TEST PREPARATION - T2 DIESEL ENGINES, 5E

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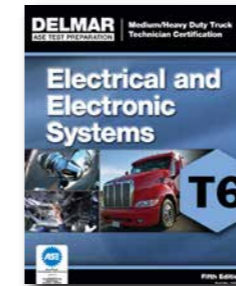
time. This manual will ensure that you understand the Drive Train task list and are fully prepared and confident to take your exam.

## ASE TEST PREPARATION - T6 ELECTRICAL AND ELECTRONIC SYSTEM, 5E

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Delmar, Cengage Learning

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The fifth edition of DELMAR'S AUTOMOTIVE SERVICE EXCELLENCE (ASE) TEST PREPARATION MANUAL for the Medium/Heavy Duty Truck T7 Heating, Ventilation, and Air Conditioning exam now contains even more content so you can pass your ASE exam the first time. This

manual will ensure that you understand the Heating, Ventilation, and Air Conditioning task list and are fully prepared and confident to take your exam.

## ASE TEST PREPARATION - X1 EXHAUST SYSTEMS, 5E

Delmar, Cengage Learning

© 2012, 176pp, Paperback, 9781111127152

ebook



The fifth edition of Delmar's Automotive Service Excellence (ASE) Test Preparation Manual for the X1 EXHAUST SYSTEMS certification exam contains an abundance of content designed to help you successfully pass your ASE exam. This manual will

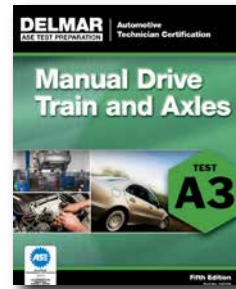
ensure that you not only understand the task list and therefore the content your actual certification exam will be based upon, but also provides descriptions of the various types of questions on a typical ASE exam, as well as presents valuable test taking strategies enabling you to be fully prepared and confident on test day.

## ASE TEST PREPARATION- A3 MANUAL DRIVE TRAINS AND AXLES, 5E

Delmar

© 2012, 208pp, Paperback, 9781111127053

ebook



The fifth edition of Delmar's Automotive Service Excellence (ASE) Test Preparation Manual for the A3 MANUAL DRIVE TRAINS AND AXLES certification exam contains an abundance of content designed to help you successfully pass your ASE

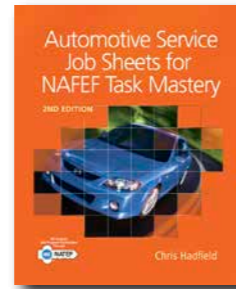
exam. This manual will ensure that you not only understand the task list and therefore the content your actual certification exam will be based upon, but also provides descriptions of the various types of questions on a typical ASE exam, as well as presents valuable test taking strategies enabling you to be fully prepared and confident on test day.

## AUTOMOTIVE SERVICE JOB SHEETS FOR NATEF TASK MASTERY, 2E

Chris Hadfield

© 2012, 816pp, Paperback, 9781111137984

ebook



Master the skills you need to succeed in the automotive industry, with nearly 200 hands-on lab and shop activities correlated to National Automotive Technicians Education Foundation (NATEF) tasks for all eight Automotive Service Excellence (ASE)

systems. With content organized by technology area for convenient reference, this dynamic, full-color manual provides detailed illustrations with step-by-step instructions for all major service, diagnostic, and repair procedures, from engines to electronics. Extensive new and updated material makes the Second Edition of this valuable resource even more useful, with performance-based worksheets covering everything on the current NATEF Task List--more than 450 tasks in all! In addition, integrated assessment and critical thinking questions help you reflect on your work, enhance your understanding, and develop important real-world skills you can apply as a working automotive professional.

### CONTENTS

1. The Automobile Industry. 2. Shop Procedures, Safety, Tools, and Equipment. 3. Vehicle Inspection. 4. Engine Operation and Service. 5. Cooling System Belts, Hoses, and Plumbing. 6. Electrical System Theory and Service. 7. Heating and Air Conditioning. 8. Engine Performance Diagnosis: Theory and Service. 9. Automotive Engine Service and Repair. 10. Brakes and Tires. 11. Suspension, Steering, and Alignment. 12. Drive Train.

## ASE TEST PREPARATION - TRANSIT BUS H1, COMPRESSED NATURAL GAS

Delmar, Cengage Learning

© 2011, 254pp, Paperback, 9781435439399



With more natural gas vehicles on the roads than ever before, today's technicians need to be prepared to service these vehicles, both in the shop and in a testing environment for ASE certification. To accomplish this, ASE Test Preparation - H1,

Compressed Natural Gas has gathered the latest need-to-know information about the new compressed natural gas task list, and paired it with ASE-style practice tests. The book begins with a history of the ASE and progresses to include guidelines, techniques, and strategies for taking and passing the certification exams. An overview of the task lists follows and is reinforced with both ASE-style practice questions and answer rationales that allow readers to practice their test-taking skills and identify areas in need of improvement.

### CONTENTS

Section 1: The History of ASE. Section 2: Take and Pass Every ASE Test. Section 3: Types of Questions on an ASE Exam. Section 4: Overview of the Task List. Section 5: Sample Test for Practice. Section 6: Additional Test Questions for Practice. Section 7: Appendices.

## ASE TEST PREPARATION - TRANSIT BUS H3, DRIVE TRAIN

Delmar

© 2009, 254pp, Paperback, 9781435453760



When you study with this ASE Test Preparation Manual for your Transit Bus Drive Train (H3) exam, you can be confident that you're getting the most up-to-date ASE task list available and the most current industry information. This comprehensive resource

provides the skills, knowledge, and practice questions needed to successfully prepare for the exam. Ideal for entry-level transit bus technicians, as well as any transit bus technician seeking certification, it is a must-have in the journey toward certification.

### CONTENTS

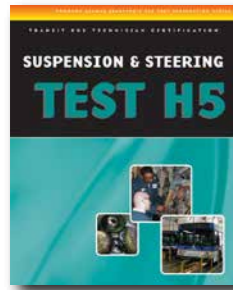
Section 1: The History of ASE Section 2: Take and Pass Every ASE Test Section 3: Types of Questions on an ASE Exam Section 4: Overview of the Task List Section 5: Sample Test for Practice Section 6: Additional Test Questions for Practice Section 7: Appendices



## ASE TEST PREPARATION - TRANSIT BUS H5, SUSPENSION AND STEERING

Delmar, Cengage Learning

© 2009, 254pp, Paperback, 9781428340114



For the first time, there is a test preparation guide designed specifically to meet the requirements of the ASE certification exam for Transit Bus H5, Suspension and Steering. This exclusive new offering from Delmar Learning, ASE Test Preparation - Transit

Bus H5, Suspension and Steering, is based upon the newly released ASE task list for this exam, and pairs it with ASE-style practice questions. The end result is a thorough and relevant training regimen for anyone seeking to successfully master the H5 ASE certification exam.

### CONTENTS

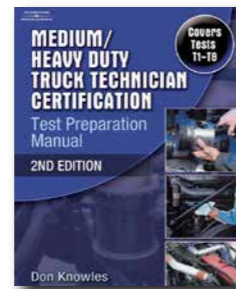
Section 1: The History of ASE Section 2: Take and Pass Every ASE Test Section 3: Types of Questions on an ASE Exam Section 4: Overview of the Task List Section 5: Sample Test for Practice Section 6: Additional Test Questions for Practice Section 7: Appendices

## MEDIUM/HEAVY DUTY TRUCK TECHNICIAN CERTIFICATION TEST PREPARATION MANUAL, 2E

Don Knowles

© 2008, 576pp, Paperback, 9781418066000

ebook



Updated to reflect the most current ASE tasks, this book combines a clear writing style, in-depth coverage, and abundant practice questions and tests to deliver a tool that will help trucking technicians and students successfully prepare for all eight areas

of the Medium/Heavy Duty Truck certification exams. Each chapter of the Medium/Heavy Duty Truck Technician Certification Test Preparation Manual, 2nd Edition is devoted to thoroughly covering one specific ASE truck test, resulting in eight core chapters that instill the knowledge and skills needed to get certified. These chapters include extensive coverage of all the ASE tasks associated with each test, ASE-style questions to familiarize users with the testing format, as well as hints to encourage users to be actively involved in the problem-solving process. Pre-tests, post-tests, and sample tests are all accompanied by answers and answer analysis so users can receive immediate feedback for a continuous learning process.

### CONTENTS

Contents Introduction History NIASE ASE ASE Testing Objective Tests Chapter 1 Gasoline Engines Chapter 2 Diesel Engines Chapter 3 Drivetrain Chapter 4 Brakes Chapter 5 Steering and Suspension Chapter 6 Electrical/Electronic Systems Chapter 7 Heating, Ventilation, and Air Conditioning (HVAC) Systems Chapter 8 Preventive Maintenance and Inspection (PMI)

## AUTOMOTIVE SERVICE MANAGEMENT

### THE SERVICE CONSULTANT, 2E

Principles of Service Management and Ownership

Ronald A. Garner, Pennsylvania College of Technology; C. William Garner, Rutgers University

© 2014, 416pp, Paperback, 9780357671269

ebook



Designed to prepare you for a successful career as an automotive service consultant, THE SERVICE CONSULTANT: PRINCIPLES OF SERVICE MANAGEMENT AND OWNERSHIP, Second Edition teaches you how to maximize profits and

improve customer satisfaction in an automotive business. With coverage of task-oriented procedures for day-to-day operations as well as communications, relations, supervision, and customer delivery, this practical text provides you with an in-depth examination of the multi-faceted responsibilities of an automotive service consultant. In addition, the text content correlates to the ASE tasks for Automotive Service Consultant (C1) in order to help you better prepare for the ASE certification exam. Furthermore, the second edition contains updated examples, activities, technology, case studies, and visual aids so that you are exposed to the most up-to-date information in the field.

### CONTENTS

PART I: SERVICE FACILITIES AND THE SERVICE CONSULTANT. 1. Types of Automotive Service Facilities, Professional Credentials, and Profit. 2. The Role of the Service Consultant, Parts Specialist, and Warranty Administrator. 3. The Team Approach: Business Operations and Repair Order Tracking. 4. Computerized Shop Management Systems. 5. Checking Vehicle and Customer Records. 6. Working with Warranties, Service Contracts,

Service Bulletins, and Campaigns/Recalls. PART II: COMMUNICATIONS: CUSTOMER RELATIONS. 7. Electronic Communications, Websites, and Social Networks. 8. Personal Communication: From the Greeting to the Presentation of the Invoice. 9. Working Out Service Details with Customers. 10. Prioritizing Repair Needs. 11. Closing a Sale. PART III: COMMUNICATION: CUSTOMER DELIVERY AND FOLLOW UP. 12. Writing for the Technician. 13. Workflow and Efficient Shop Operations. 14. Customer Relations: Sales, Follow-Ups, and Promotions. PART IV: COMMUNICATION: CUSTOMER DELIVERY AND FOLLOW UP. 15. Assistant Service Manager Duties. 16. A positive Work Environment for Efficient Business Performance. 17. Analysis of Shop Operations and Business Performance. 18. Service Facility Business Start Up and Ownership. Appendix ASE (C1) Task List: Service Consultant. Glossary. Index.

## ASE TEST PREPARATION - C1 SERVICE CONSULTANT, 5E

Delmar

© 2012, 176pp, Paperback, 9781111127121

ebook



The fifth edition of Delmar's Automotive Service Excellence (ASE) Test Preparation Manual for the C1 SERVICE CONSULTANT certification exam contains an abundance of content designed to help you successfully pass your ASE

exam. This manual will ensure that you not only understand the task list and therefore the content your actual certification exam will be based upon, but also provides descriptions of the various types of questions on a typical ASE exam, as well as presents valuable test taking strategies enabling you to be fully prepared and confident on test day.

## AUTOMOTIVE SYSTEMS

**NEW EDITION**

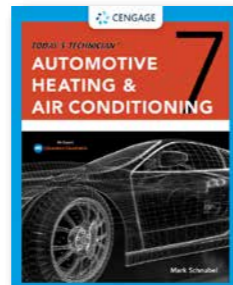
### TODAY'S TECHNICIAN, 7E

Automotive Heating & Air Conditioning Classroom Manual and Shop Manual

Mark Schnubel, Naugatuck Valley Community College

© 2022, 608pp, Paperback, 9780357358672

CENGAGE | MINDTAP ebook



Understand and master the principles, components, diagnosis and repair of modern automotive heating and air conditioning systems with **TODAY'S TECHNICIAN: AUTOMOTIVE HEATING & AIR CONDITIONING CLASSROOM MANUAL**

**AND SHOP MANUAL**, 7th edition. This integrated, two-book set covers theory and hands-on content in separate Classroom and Shop Manuals, enabling you to learn fundamental climate control theory -- including basic physics related to heat transfer -- before applying your knowledge through practical, hands-on shop work. Cross-references in each manual link related material, making it easy to connect classroom learning to lab and shop activity. Updated to reflect the latest trends, technology and relevant ASE Education Foundation standards, the 7th edition includes new material on refrigerant R-1234yf (HFO-1234yf) and a vibrant full-color design. Also available: MindTap's anywhere, anytime digital learning solution.

#### CONTENTS

1. Heating and Air Conditioning -- History and the Environment. 2. Temperature and Pressure Fundamentals. 3. Electricity and Electronic Fundamentals. 4. Engine Cooling and Comfort Heating Systems. 5. Air-Conditioning System Operating Principles. 6. Refrigerant System Components. 7. Refrigerant System Servicing and Testing. 8. Diagnosis of the Refrigeration System.

9. Compressors and Clutches. 10. Case and Duct Systems. 11. System Controls. 12. Retrofit and Future Trends (R-12 to R-134a).

### TODAY'S TECHNICIAN, 7E

Automotive Suspension & Steering Classroom Manual and Shop Manual

Mark Schnubel, Naugatuck Valley Community College

© 2020, 1024pp, Spiral, 9781337567336

CENGAGE | MINDTAP ebook



Make the most of your time in both the classroom and the auto shop, and learn to diagnose and service automotive suspension and steering systems with confidence. This trusted text includes a dedicated Classroom Manual that introduces essential theory

and applications, plus a standalone Shop Manual focused on real-world symptoms, diagnostics, and repairs. With comprehensive coverage, accurate and up-to-date details, and abundant illustrations, this reader-friendly resource will help prepare you for success as an automotive technician or ASE certification. Now updated with extensive information on new and emerging technology and techniques--including hybrid and electric vehicles, tire plus sizing, and computer-controlled suspensions--the Seventh Edition also aligns with area A4 of the ASE Education Foundation 2017 accreditation model, including job sheets correlated to specific MLR, AST and MAST tasks.

#### CONTENTS

1. Suspension and Steering Systems Introduction and Overview. 2. Basic Theories. 3. Tires and Wheels. 4. Wheel Bearings. 5. Shock Absorbers and Struts. 6. Front Suspension Systems. 7. Rear Suspension Systems. 8. Steering Columns and Steering Linkages. 9. Four Wheel Alignment Part I. 10. Four Wheel Alignment Part II. 11. Computer-

Controlled Suspension Systems. 12. Power Steering Pumps. 13. Rack and Pinion Steering Gears and Four Wheel Steering. 14. Recirculating Ball Steering Gears.

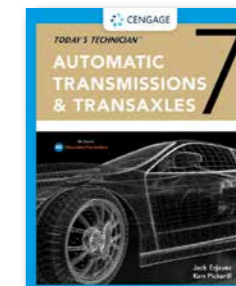
### TODAY'S TECHNICIAN, 7E

Automatic Transmissions and Transaxles Classroom Manual and Shop Manual

Jack Erjavec, Columbus State Community College (Emeritus); Ken Pickerill

© 2020, 1040pp, Spiral, 9781337792158

CENGAGE | MINDTAP ebook



**TECHNICIAN: AUTOMATIC TRANSMISSIONS AND TRANSAXLES CLASSROOM MANUAL AND SHOP MANUAL**, Seventh Edition. This proven resource includes practical, easy-to-understand coverage of

topics aligned to the latest ASE Education Foundation standards for the MLR/AST/MAST program accreditation levels, including continuously variable transmissions (CVT), drivelines for front-wheel drive (FWD) and four-wheel drive (4WD) vehicles, and the latest information on today's high-tech electronic controls and automatic shifting devices. The Classroom Manual provides easy-to-understand coverage of every applicable ASE Education Foundation standard, while the Shop Manual includes Job Sheets to guide you through hands-on service and repair tasks. Written with the needs of current and aspiring technicians in mind, this trusted text will help you master the design, construction, troubleshooting techniques, and procedures necessary for a successful industry career.



## CONTENTS

Classroom Manual. 1. Drive Train Basics. 2. Drive Train Theory. 3. General Theories of Operation. 4. Transmission Electronics. 5. Transmission Designs. 6. Torque Converters and Oil Pumps. 7. Hydraulic and Electronic Controls. 8. Gears and Shafts. 9. Reaction And Friction Units. 10. Common Automatic Transmissions. Glossary. Index. Shop Manual. 1. Safety. 2. Special Tools and Procedures. 3. Diagnosis, Maintenance, and Basic Adjustments. 4. Electrical and Electronic System Diagnosis and Service. 5. Rebuilding Transmissions. 6. Torque Converter and Oil Pump Service. 7. General Hydraulic System Service. 8. Gear and Shaft Service. 9. Friction And Reaction Unit Service. 10. Rebuilding Common Transmissions. Appendix A: ASE Practice Examination. Appendix B: Automatic Transmission Special Tool Suppliers. Appendix C: Metric Conversions. Glossary. Index.

## TODAY'S TECHNICIAN: AUTOMOTIVE ENGINE REPAIR & REBUILDING, CLASSROOM MANUAL AND SHOP MANUAL, SPIRAL BOUND VERSION, 6E

Chris Hadfield; Randy Nussler, *New Market Skills Center*

© 2018, 1040pp, Paperback, 9781305958135

 CENGAGE | MINDTAP ebook



TODAY'S TECHNICIAN: AUTOMOTIVE ENGINE REPAIR & REBUILDING, CLASSROOM MANUAL AND SHOP MANUAL, Sixth Edition, delivers the theory and skills you need to repair and service modern automotive engines as a professional technician,

along with proven preparation for the Automotive Service Excellence (ASE) certification exam. Using a logical, system-specific approach, the text covers engine construction and operation, intake and exhaust systems, and engine repair, as well as the basics of engine rebuilding. Drawing on decades of shop and classroom experience, the authors provide valuable, forward-looking industry insights on topics such as advances in hybrid technology, factors affecting engine performance, and the design and function of modern engine components. Long known for its technical accuracy and concise writing style, the Sixth Edition of this reader-friendly text includes extensive updates to reflect the latest ASE Education Foundation standards, new information on current industry trends and developments, additional drawings and photos, and a variety of electronic learning tools.

## CONTENTS

Classroom Manual 1. Automotive Engines. 2. Engine Repair and Rebuilding Industry. 3. Theory of Engine Operation. 4. Engine Operating Systems. 5. Factors Affecting Engine Performance. 6. Engine Materials, Fasteners, Gaskets, and Seals. 7. Intake and Exhaust Systems. 8. Engine Configurations,

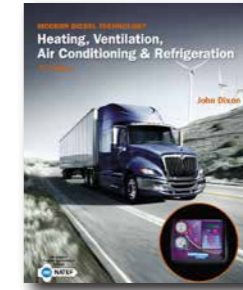
Mounts, and Remanufactured Engines. 9. Cylinder Heads. 10. Camshafts and Valve Trains. 11. Timing Mechanisms. 12. Engine Block Construction. 13. Pistons, Rings, Connecting Rods, and Bearings. 14. Alternative Fuel and Advanced Technology Vehicles. Shop Manual 1. Safety and Shop Practices. 2. Engine Rebuilding Tools and Skills. 3. Basic Testing, Initial Inspection, and Service Procedures. 4. Diagnosing and Servicing Engine Operating Systems. 5. Diagnosing Engine Performance Concerns. 6. Repair and Replacement of Engine Fasteners, Gaskets, and Seals. 7. Intake and Exhaust System Diagnosis and Service. 8. Engine Removal, Engine Swap, and Engine Installation. 9. Cylinder Head Disassemble, Inspection, and Service. 10. Valve Train Service. 11. Timing Mechanism Service. 12. Inspecting, Disassembling, and Servicing the Cylinder Block Assembly. 13. Short Block Component Service and Engine Assembly. 14. Alternative Fuel and Advanced Technology Vehicle Service.

## MODERN DIESEL TECHNOLOGY, 2E Heating, Ventilation, Air Conditioning & Refrigeration

John Dixon, *Centennial College, Toronto*

© 2014, 352pp, Paperback, 9781133716259

 ebook



Easy to read yet technically precise, MODERN DIESEL TECHNOLOGY: HEATING, VENTILATION, AIR CONDITIONING, AND REFRIGERATION, 2nd Edition is the text of choice for many of the country's best diesel technology programs! Detailing the

foundations of truck heating, air conditioning, engine cooling, and truck-trailer refrigeration, the book integrates modern technical terms with photos that clearly demonstrate typical, on-the-job tasks in logical sequence. Coverage includes an entire section on thermodynamics, as well as solid instruction on safety, equipment, components, troubleshooting, performance testing, maintenance, and even the history of HVAC/R in the diesel trucking industry. Enhanced with photos, drawings, and self-testing questions in each chapter, MODERN DIESEL TECHNOLOGY: HEATING, VENTILATION, AIR CONDITIONING, AND REFRIGERATION, 2nd Edition delivers the technical accuracy and depth of HVAC/R information you need for a rewarding career as a diesel technician.

## CONTENTS

1. History of HVAC. 2. Environmental and Safety Practices. 3. Thermodynamics. 4. Air Conditioning Components: Compressor, Condenser, and Receiver-Drier 5. Air-Conditioning Components: Metering Devices, Evaporator, Accumulator 6. Air Conditioning Systems. 7. Service Procedures. 8. Truck Engine Cooling Systems. 9. Climate Control/Supplemental Truck Heating/Cooling. 10. Trouble Shooting. 11. APADs/ACPU Air Conditioning Control Systems (Air Conditioning Protection Unit). 12. Coach Air Conditioning. 13.

Truck Trailer Refrigeration Equipment . 14. Truck Trailer Refrigeration Components. 15. Truck Trailer Refrigerant Flow Control. 16. Truck Trailer Refrigeration Electrical Components. 17. Truck Trailer Refrigeration Maintenance Procedures.

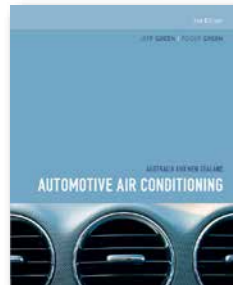
## AUTOMOTIVE AIR CONDITIONING, 3E

Australia and New Zealand

Jeff Green, TAFE NSW; Roger Green, Sydney Institute of TAFE

© 2013, 264pp, Paperback, 9780170197748

ebook



Automotive Air Conditioning: Australia and New Zealand is a text book for professional training and covers in three parts air conditioning theory, system diagnosis and service procedures. Now in full colour, this 3rd edition covers sustainability, growing environmental

concerns and recent changes to refrigerants and their legislative requirements. The 3rd edition now covers the following units of competency from the AUR05 Training Package: • AURT222670A Service A/C systems • AURT322666A Repair/retrofit A/C systems • AURT322645A Overhaul air conditioning system components • AURC270103A Apply safe work practices • AURT366108A Carry out diagnostic procedures • AURT202166B Repair cooling system • AURT223104A Assemble and install refrigeration systems/components • AURT366308A Carry out advanced diagnostic procedures • AURT202170A Inspect and service cooling – pressure and boiling • AURT271781A Implement and monitor environmental regulations in the automotive mechanical industry • AURE218708A Carry out repairs to single electrical circuits • BSBSUS201A Participate in environmentally sustainable work practices

## CONTENTS

SECTION 1 AIR-CONDITIONING THEORY 1. Introduction to air conditioning, metric conversions and refrigerant handling regulations 2. Climate change 3. The human body and heat 4. The refrigeration circuit 5. Refrigerants 6. Retrofitting – using a different refrigerant 7. Receiver dryers, accumulators, moisture and its removal 8. Service valves and manifold and gauge sets 9. Leak detection 10. Compressors 11. Expansion valves 12. Electrical and other system controls 13. Engine cooling, heating and air-conditioning ducting 14. Electronic climate control (ECC) SECTION 2 SYSTEM DIAGNOSIS 2.1 System-diagnosis flow charts 2.2 System-diagnosis charts 2.3 System-diagnosis problem sheets 2.4 Pressure/temperature charts 2.5 Temperature-pressure exercises 2.6 System-diagnosis exercises SECTION 3 SERVICE PROCEDURES 3.1 Service procedure 1 Connecting the manifold and gauge set to the air-conditioning system 3.2 Service procedure 2 Performance testing the system 3.3 Service procedure 3 Purging the system and recovering the refrigerant 3.4 Service procedure 4 Evacuation of the system 3.5 Service procedure 5 System oil compensation 3.6 Service procedure 6 Charging the system 3.7 Service procedure 7 Leak testing the system 3.8 Service procedure 8 Testing and adjusting the thermostatic switch 3.9 Service procedure 9 Testing the expansion valve – TX valve or FOT 3.10 Service procedure 10 Servicing the Sanden SD compressor 3.11 Service procedure 11 Servicing the Sanden TR70/90 compressor 3.12 Service procedure 12 Servicing the TRF/TRS090 and the TRF/TRS105 Sanden compressors

## GUIDE TO DIAGNOSTIC PRODUCT CERTIFICATION – TRANSPORTATION

Matthew Janisin, Gateway Technical College, Kenosha, WI & Elkhorn Area High School, Elkhorn, WI

© 2013, 528pp, Paperback, 9781435483798



The Guide to Diagnostic Product Certification – Transportation is intended to give you the knowledge they need to more effectively use their Snap-On diagnostic tools. As vehicles have become more complex so have the tools used to diagnose them. While many automotive

programs do a great job teaching the vehicle systems, few take the time to explain in detail the sophisticated diagnostic tools needed to diagnosis them. Current market research indicates that most technicians only use about 15% of their diagnostic tools' capabilities.; this manual, designed to accompany the Snap-On Diagnostic Certification Program, will aims to boost usage to 90%. The manual begins with a physical overview of each of the tools and explains the various ports, connectors, buttons and controls. In separate sections each tool's utility menu is fully explained and all customizable features are discussed so the user will have full control to make the tool their own. Finally, every aspect of the tool including the Scanner, Lab Scope, Component Test Meter, Troubleshooter, and all other options are explained in detail. This manual will greatly increase a student's employability and a technician's productivity when either is faced with a complex diagnostic situation.

## CONTENTS

1. Ethos. 2. Solus Pro. 3. Vantage Pro. 4. MODIS. 5. Data Management. 6. Scanner Introduction. 7. Global OBD verse VIN Specific Information. 8. Codes Menu. 9. Viewing & Interpreting Scanner Data (added "Scanner" to title, little more clear). 10. Functional Tests. 11. Fast-Track Troubleshooter. 12. Component Testing. 13. Multimeter Functions. 14. Lab Scope Operation. 15. ShopKey. 16. Verus.

## ASE TEST PREPARATION - A1 ENGINE REPAIR, 5E

Delmar

© 2012, 176pp, Paperback, 9781111127039

ebook



The fifth edition of Delmar's Automotive Service Excellence (ASE) Test Preparation Manual for the A1 ENGINE REPAIR certification exam contains an abundance of content designed to help you successfully pass your ASE exam. This manual will

ensure that you not only understand the task list and therefore the content your actual certification exam will be based upon, but also provides descriptions of the various types of questions on a typical ASE exam, as well as presents valuable test taking strategies enabling you to be fully prepared and confident on test day.

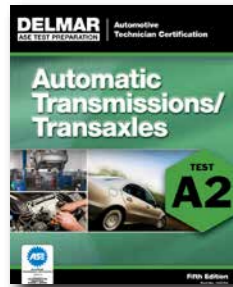


## ASE TEST PREPARATION - A2 AUTOMATIC TRANSMISSIONS AND TRANSAXLES, 5E

Delmar

© 2012, 176pp, Paperback, 9781111127046

ebook



The fifth edition of Delmar's Automotive Service Excellence (ASE) Test Preparation Manual for the A2 AUTOMATIC TRANSMISSIONS AND TRANSAXLES certification exam contains an abundance of content designed to help you

successfully pass your ASE exam. This manual will ensure that you not only understand the task list and therefore the content your actual certification exam will be based upon, but also provides descriptions of the various types of questions on a typical ASE exam, as well as presents valuable test taking strategies enabling you to be fully prepared and confident on test day.

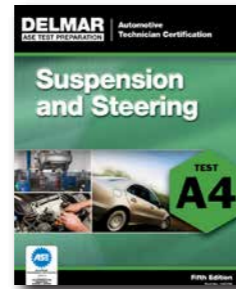
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## ASE TEST PREPARATION - A4 SUSPENSION AND STEERING, 5E

Delmar

© 2012, 176pp, Paperback, 9781111127060

ebook



The fifth edition of Delmar's Automotive Service Excellence (ASE) Test Preparation Manual for the A4 SUSPENSION AND STEERING certification exam contains an abundance of content designed to help you successfully pass your ASE

exam. This manual will ensure that you not only understand the task list and therefore the content your actual certification exam will be based upon, but also provides descriptions of the various types of questions on a typical ASE exam, as well as presents valuable test taking strategies enabling you to be fully prepared and confident on test day.

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## ASE TEST PREPARATION - A5 BRAKES, 5E

Delmar

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ebook



The fifth edition of Delmar's Automotive Service Excellence (ASE) Test Preparation Manual for the A5 BRAKES certification exam contains an abundance of content designed to help you successfully pass your ASE exam. This manual will

ensure that you not only understand the task list and therefore the content your actual certification exam will be based upon, but also provides descriptions of the various types of questions on a typical ASE exam, as well as presents valuable test taking strategies enabling you to be fully prepared and confident on test day.

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## ASE TEST PREPARATION - A6 ELECTRICAL/ELECTRONIC SYSTEMS, 5E

Delmar

© 2012, 176pp, Paperback, 9781111127084

ebook



The fifth edition of Delmar's Automotive Service Excellence (ASE) Test Preparation Manual for the A6 ELECTRICITY AND ELECTRONICS certification exam contains an abundance of content designed to help you successfully pass your ASE

exam. This manual will ensure that you not only understand the task list and therefore the content your actual certification exam will be based upon, but also provides descriptions of the various types of questions on a typical ASE exam, as well as presents valuable test taking strategies enabling you to be fully prepared and confident on test day.

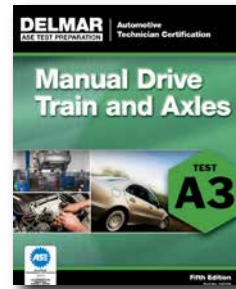
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## ASE TEST PREPARATION- A3 MANUAL DRIVE TRAINS AND AXLES, 5E

Delmar

© 2012, 208pp, Paperback, 9781111127053

ebook



The fifth edition of Delmar's Automotive Service Excellence (ASE) Test Preparation Manual for the A3 MANUAL DRIVE TRAINS AND AXLES certification exam contains an abundance of content designed to help you successfully pass your ASE

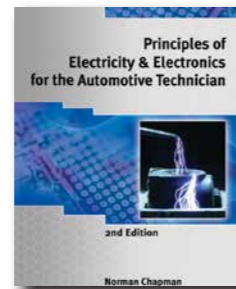
exam. This manual will ensure that you not only understand the task list and therefore the content your actual certification exam will be based upon, but also provides descriptions of the various types of questions on a typical ASE exam, as well as presents valuable test taking strategies enabling you to be fully prepared and confident on test day.

## PRINCIPLES OF ELECTRICITY & ELECTRONICS FOR THE AUTOMOTIVE TECHNICIAN, 2E

Norm Chapman, South Puget Sound Community College

© 2010, 608pp, Paperback, 9781428361218

ebook



Principles of Electricity & Electronics for the Automotive Technician, 2E thoroughly covers the basics of automotive electricity and electronics to fully prepare beginning technicians for more complex electrical concepts. Written by an ASE Master Technician and teacher, the book draws

readers in using a combination of basic theory, case studies, hands-on vehicle tasks and ASE-style review questions. The updated second edition includes expanded coverage of hybrid electrical vehicles and safety procedures, technological advances in electronically controlled vehicle accessories, and new troubleshooting techniques using cutting-edge equipment and procedures. Simple illustrations and wiring diagrams, along with straightforward explanations of how automotive electricity and electronics work, act together to make this an ideal introduction to electrical and electronics diagnostics and service.

### CONTENTS

INTRODUCTION TO ELECTRICITY & ELECTRONICS. BASIC ELECTRICAL THEORY. MEASUREMENT SYSTEM & CALCULATOR USE. COMPONENTS OF AN ELECTRICAL CIRCUIT. METERS & MEASURING DEVICES. BASIC OF ELECTRONICS & COMPUTERS. SERIES CIRCUITS. PARALLEL CIRCUITS. SERIES/PARALLEL CIRCUITS. BASIC TROUBLESHOOTING TECHNIQUES & TIPS. ELECTRICAL CIRCUITS, LIGHTING, & INSTRUMENTATION. BATTERIES & TESTING. STARTING SYSTEM THEORY. CHARGING SYSTEM THEORY. IGNITION SYSTEM THEORY.

## AUTOMOTIVE TECHNICIAN TRAINING

NEW EDITION

### TODAY'S TECHNICIAN, 6E

Basic Automotive Service & Systems Classroom Manual and Shop Manual

Chris Hadfield; John Witthauer, Goodwill Easter Seals Automotive Training Program

© 2021, 1008pp, Paperback, 9781337795661

CENGAGE | MINDTAP ebook



This trusted text provides a comprehensive, accessible overview of automotive systems to prepare you for all aspects of work in the field. BASIC AUTOMOTIVE SERVICE & SYSTEMS, Sixth Edition, includes a Classroom Manual that explores the operational

theory behind each automotive system, and a Shop Manual covering relevant diagnostic, testing, and repair procedures. Updated to align with Task Lists for the latest ASE Education Foundation requirements, the Sixth Edition covers emerging technologies such as hybrid vehicles and electronic engine controls, as well as current information on the global automotive industry and the role you can play within it as a professional technician. The authors assume no prior knowledge of automotive technology, so these clear and engaging resources provide an ideal introduction to both fundamental theory and its real-world applications in specific skills and maintenance procedures, preparing you for success in today's fast-paced, competitive work environment.

### CONTENTS

Classroom Manual. 1. Introduction to the Automotive Industry. 2. Introduction to the Automobile. 3. Automotive Tools and Equipment. 4. Fasteners and Measurements. 5. Electrical and Electronic Systems. 6. Accessory Lighting and Electrical Systems 7.

Engine Systems. 8. Transmission and Drivetrain Systems. 9. Steering and Suspension Systems. 10. Brakes Systems 11. Heating Ventilation and Air Conditioning Systems. 12. Engine Theories and Performance Systems. Glossary. Index. Shop Manual 1. Automotive Shop and Safety Procedures. 2. Working in the Automotive Industry. 3. Using Automotive Tools and Equipment. 4. Using Fasteners and Measuring Equipment. 5. Electrical and Electronic System Inspection, Maintenance, and Service. 6. Accessory Lighting and Electrical Systems Inspections, Maintenance, and Testing. 7. Engine System Inspection and Maintenance. 8. Transmission and Drivetrain Systems Inspection, Maintenance, and Service. 9. Steering and Suspension Systems Inspection, Maintenance, and Service. 10. Brakes Systems Inspection, Maintenance, and Service. 11. Heating Ventilation and Air Conditioning Systems Inspection, Maintenance, and Service. 12. Engine Performance Systems Inspection, Maintenance, and Service. Glossary. Index.



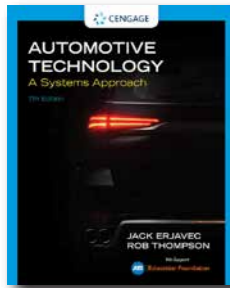
## AUTOMOTIVE TECHNOLOGY, 7E

A Systems Approach

Jack Erjavec, Columbus State Community College (Emeritus);  
Rob Thompson, Columbus State Community College

© 2020, 1728pp, Hardback, 9781337794213

CENGAGE | MINDTAP ebook



**AUTOMOTIVE TECHNOLOGY: A SYSTEMS APPROACH** provides comprehensive coverage with updates to address the latest ASE Education Foundation requirements for Maintenance and Light Repair (MLR), Automotive

Service Technology (AST), and Master Service Technology (MAST) program accreditation levels. Thoroughly revised to provide accurate, current information on the latest technology, industry trends, and state-of-the-art tools and techniques, the Seventh Edition is an essential resource for building career ready students who want to succeed in the dynamic, rapidly evolving field of automotive service and repair.

### CONTENTS

Part I: AUTOMOTIVE TECHNOLOGY. 1. Careers in the Automotive Industry. 2. Workplace Skills. 3. Basic Theories and Math. 4. Automotive Systems. 5. Hand Tools and Shop Equipment. 6. Diagnostic Equipment and Special Tools. 7. Working Safely in the Shop. 8. Preventative Maintenance and Basic Services. Part II: ENGINES. 9. Automotive Engine Designs and Diagnosis. 10. Engine Disassembly and Cleaning. 11. Lower-End Theory and Service. 12. Upper-End Theory and Service. 13. Engine Sealing and Reassembly. 14. Lubricating and Cooling Systems. Part III: ELECTRICITY. 15. Basics of Electrical Systems. 16. General Electrical System Diagnostics and Service. 17. Batteries: Theory, Diagnosis, and Service. 18. Starting and Motor Systems. 19. Charging Systems. 20. Lighting Systems. 21. Instrumentation and Information Displays. 22. Basics of Electronics and Computer

Systems. 23. Electrical Accessories. Part IV: ENGINE PERFORMANCE. 24. Engine Performance Systems. 25. Detailed Diagnosis and Sensors. 26. Ignition Systems. 27. Ignition System Diagnosis and Service. 28. Gasoline, Diesel and Other Fuels. 29. Fuel Delivery Systems. 30. Electronic Fuel Injection. 31. Fuel Injection Diagnosis and Service. 32. Intake and Exhaust Systems. 33. Emission Control Systems. 34. Emission Control Diagnosis and Service. 35. Hybrid Vehicles. 36. Electric Vehicles. Part V: MANUAL TRANSMISSIONS AND TRANSAXLES. 37. Clutches. 38. Manual Transmissions and Transaxles. 39. Manual Transmission and Transaxle Service. 40. Drive Axles and Differentials. Part VI: AUTOMATIC TRANSMISSIONS AND TRANSAXLES. 41. Automatic Transmissions and Transaxles. 42. Electronic Automatic Transmissions. 43. Automatic Transmission and Transaxle Service. 44. Four- and All-Wheel Drive. Part VII: SUSPENSION AND STEERING SYSTEMS. 45. Tires and Wheels. 46. Suspension Systems. 47. Steering Systems. 48. Restraint Systems: Theory, Diagnosis, and Service. 49. Wheel Alignment. Part VIII: BRAKES. 50. Brake Systems. 51. Drum Brakes. 52. Disc Brakes. 53. Antilock Brake, Traction Control, and Stability Control Systems. Part IX: PASSENGER COMFORT. 54. Heating and Air Conditioning. 55. Heating and Air Conditioning Diagnosis and Service.

## TODAY'S TECHNICIAN, 7E

Automotive Brake Systems, Classroom and Shop Manual Pre-Pack

Ken Pickerill

© 2019, Paperback, 9781337564526

CENGAGE | MINDTAP ebook



This comprehensive resource includes everything you need to understand, diagnose, and repair today's brake systems with confidence--and prepare for ASE certification and career success as an automotive technician. In addition to

thorough coverage, accurate and up-to-date details, and abundant illustrations, TODAY'S TECHNICIAN: AUTOMOTIVE BRAKE SYSTEMS, CLASSROOM AND SHOP MANUAL PRE-PACK, Seventh Edition, offers a uniquely convenient two-volume approach. The first volume is a Classroom Manual covering the theory and application of the total brake system, subsystem, and components. Volume two is a Shop Manual that explores real-world symptoms, diagnostics, and repairs, and is ideal for standalone use as a reference on the job. In addition to aligning with the ASE Education Foundation 2017 accreditation model, the Seventh Edition features job sheets correlated to specific MLR, AST and MAST tasks, and extensive information on new and emerging technology and techniques--including hybrid vehicles, brake by wire, and electric brakes.

### CONTENTS

**CLASSROOM MANUAL.** 1. Brake System Fundamentals. 2. Principles and Theories of Operation. 3. Related Systems: Tire, Wheels, Bearings, and Suspensions. 4. Master Cylinder and Brake Fluid. 5. Hydraulic Lines, Valves, and Switches. 6. Power Brake Systems. 7. Disc Brakes. 8. Drum Brakes. 9. Parking Brakes. 10. Electrical Braking Systems. 11. Advanced Braking Systems **SHOP MANUAL.** 1. Brake Safety. 2. Brake Service Tools and Equipment. 3. Related System Service.

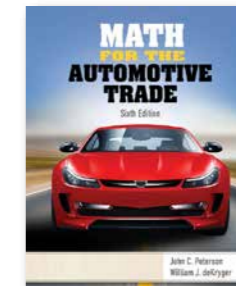
4. Master Cylinder and Brake Fluid Service. 5. Hydraulic Line, Valve, and Switch Service. 6. Power Brake Service. 7. Disc Brake Service. 8. Drum Brake Service. 9. Parking Brake Service. 10. Electrical Brake Systems. 11. Advanced Braking Systems.

## MATH FOR THE AUTOMOTIVE TRADE, 6E

John C. Peterson, Chattanooga State Technical Community College; William deKryger

© 2018, 368pp, Paperback, 9781337101813

CENGAGE | MINDTAP ebook



**MATH FOR THE AUTOMOTIVE TRADE**, 6th Edition, is the easy-to-understand worktext that delivers the real-world math you need for automotive repair careers—and kicks the rest to the curb. Using real manufacturer specs, completing automotive

repair orders, and checking your results against industry references right in the appendices, you'll practice the calculations that automotive repair technicians do on the job every day. Written by seasoned automotive pros, MATH FOR THE AUTOMOTIVE TRADE starts with the math basics, greasing the wheels before moving on to the practice exercises. Even better, this book includes the latest, easy-to-understand information about taxes, finances, discounts, and profits, to simplify business math, and move you a step closer to a career in management or your own automotive repair shop.

### CONTENTS

1. Whole Numbers. 2. Decimals. 3. Fractions. 4. Geometry, Angle Measurement, and the Metric System. 5. Integers and Signed Numbers. 6. Ratios, Proportions, and Percentages. 7. Business and Statistics. 8. Completing Repair Orders. 9.

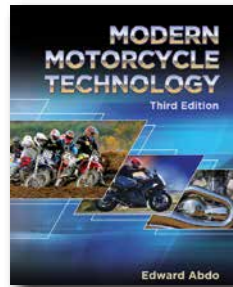
The Automobile Engine. 10. Automobile Engine Systems. 11. Automobile Electrical Systems. 12. The Automobile Drive Train. 13. The Automobile Chassis. 14. Automobile Heating, Ventilation, and Air Conditioning. 15. Measurement Tools. Appendix B: Summary of Formulas in this Text-Workbook. Appendix C: Answers to Odd-Numbered Practice Exercises. Index.

## MODERN MOTORCYCLE TECHNOLOGY, 3E

Edward Abdo

© 2017, 544pp, Hardback, 9781305497450

ebook



MODERN MOTORCYCLE TECHNOLOGY, Third Edition, provides an in-depth, visually rich guide to the internal and external workings of today's motorcycles. The book begins with an overview of motorcycle technology, including the history of the motorcycle and the current state of the industry. Coverage then progresses to safety measures, engine operation, internal combustion engines (two-stroke and four-stroke), electrical fundamentals, motorcycle maintenance, and troubleshooting. Thoroughly updated, the Third Edition includes the latest motorcycle models and technology from today's top manufacturers, as well as additional material on topics such as fuel injection, suspension systems, and electronics. The text is accompanied by a hands-on Student Skill Guide. Now better than ever, this trusted guide is ideal for anyone seeking the knowledge and skills to succeed in today's motorcycle technology field.

## CONTENTS

1. Introduction to Modern Motorcycle Technology. 2. Safety First. 3. Tools. 4. Measuring Systems, Fasteners, and Thread Repair. 5. Introduction to Basic Engine Operation and Configurations. 6. Internal Combustion Engines. 7. Lubrication and Cooling Systems. 8. Fuel and Engine Management Systems. 9. Drives, Clutches, and Transmissions. 10. Two-Stroke Engine Top-End Inspection. 11. Two-Stroke Engine Lower-End Inspection. 12. Four-Stroke Engine Top-End Inspection. 13. Four-Stroke Engine Lower-End Inspection. 14. Electrical Fundamentals. 15. Motorcycle Charging Systems and DC Circuits. 16. Ignition and Electric Starting Systems. 17. Frames and Suspension. 18. Brakes, Wheels, and Tires. 19. Motorcycle Maintenance and Emission Controls. 20. Motorcycle Troubleshooting.

## MODERN MOTORCYCLE TECHNOLOGY, 3E

Edward Abdo

© 2017, 544pp, Paperback, 9780357671108

ebook



MODERN MOTORCYCLE TECHNOLOGY, Third Edition, provides an in-depth, visually rich guide to the internal and external workings of today's motorcycles. The book begins with an overview of motorcycle technology, including the history of the

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Wheels, and Tires. 19. Motorcycle Maintenance and Emission Controls. 20. Motorcycle Troubleshooting.

## GUIDE TO DIAGNOSTIC PRODUCT CERTIFICATION – TRANSPORTATION

Matthew Janisin, Gateway Technical College, Kenosha, WI & Elkhorn Area High School, Elkhorn, WI

© 2013, 528pp, Paperback, 9781435483798



The Guide to Diagnostic Product Certification – Transportation is intended to give you the knowledge they need to more effectively use their Snap-On diagnostic tools. As vehicles have become more complex so have the tools used to diagnose them. While many

automotive programs do a great job teaching the vehicle systems, few take the time to explain in detail the sophisticated diagnostic tools needed to diagnosis them. Current market research indicates that most technicians only use about 15% of their diagnostic tools' capabilities; this manual, designed to accompany the Snap-On Diagnostic Certification Program, will aims to boost usage to 90%. The manual begins with a physical overview of each of the tools and explains the various ports, connectors, buttons and controls. In separate sections each tool's utility menu is fully explained and all customizable features are discussed so the user will have full control to make the tool their own. Finally, every aspect of the tool including the Scanner, Lab Scope, Component Test Meter, Troubleshooter, and all other options are explained in detail. This manual will greatly increase a student's employability and a technician's productivity when either is faced with a complex diagnostic situation.



## CONTENTS

1. Ethos.
2. Solus Pro.
3. Vantage Pro.
4. MODIS.
5. Data Management.
6. Scanner Introduction.
7. Global OBD verse VIN Specific Information.
8. Codes Menu.
9. Viewing & Interpreting Scanner Data (added "Scanner" to title, little more clear).
10. Functional Tests.
11. Fast-Track Troubleshooter.
12. Component Testing.
13. Multimeter Functions.
14. Lab Scope Operation.
15. ShopKey.
16. Verus.

## HYBRID, ELECTRIC AND FUEL-CELL VEHICLES, INTERNATIONAL EDITION, 2E

Jack Erjavec, Columbus State Community College (Emeritus)

© 2013, 400pp, Paperback, 9781133284352

ebook



HYBRID, ELECTRIC AND FUEL-CELL VEHICLES, 2E, International Edition, covers the cutting-edge technology and technology that are revolutionizing today's automotive industry. Author Jack Erjavec combines in-depth industry expertise with an engaging,

reader-friendly style, providing extensive detail on new and upcoming electric vehicles, including hybrids in production today and the fuel cell vehicles of tomorrow. Expansive coverage ranges from basic theory related to vehicle construction, electricity, batteries, and motors, to the political and social impact of these high-profile vehicles. In addition to up-to-date, highly accurate technical information on vehicles available today—including service procedures and safe shop practices—the text provides an informed look into the future with material on vehicles currently under development.

## CONTENTS

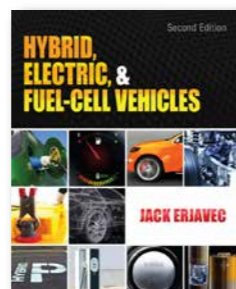
1. An Introduction to Electric Vehicles.
2. Electrical Basics.
3. Motor and Generator Basics.
4. Battery Basics.
5. The Basics of a Battery Operated Electric Vehicle.
6. HEV Basics.
7. Mild and Assist Hybrids.
8. Full Hybrids.
9. Hybrid Maintenance and Service.
10. Fuel Cell and Other Possible Vehicles.

## HYBRID, ELECTRIC, AND FUEL-CELL VEHICLES, 2E

Jack Erjavec, Columbus State Community College (Emeritus)

© 2013, 400pp, Paperback, 9780840023957

ebook



HYBRID, ELECTRIC AND FUEL-CELL VEHICLES, Second Edition, covers the cutting-edge technology and technology that are revolutionizing today's automotive industry. Author Jack Erjavec combines in-depth industry expertise with an engaging, reader-friendly style,

providing extensive detail on new and upcoming electric vehicles, including hybrids in production today and the fuel cell vehicles of tomorrow. Expansive coverage ranges from basic theory related to vehicle construction, electricity, batteries, and motors, to the political and social impact of these high-profile vehicles. In addition to up-to-date, highly accurate technical information on vehicles available today—including service procedures and safe shop practices—the text provides an informed look into the future with material on vehicles currently under development.

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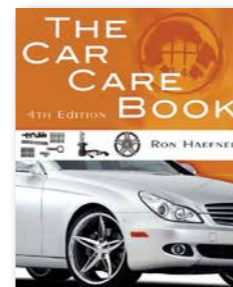
1. An Introduction to Electric Vehicles.
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6. HEV Basics.
7. Mild and Assist Hybrids.
8. Full Hybrids.
9. Hybrid Maintenance and Service.
10. Fuel Cell and Other Possible Vehicles.

## THE CAR CARE BOOK, 4E

Ron Haefner, Columbus High School

© 2010, 496pp, Paperback, 9781428342958

ebook



Consumers typically face three main challenges when it comes to understanding their automobiles: the technologies underlying the car's major systems, the basics of inspection and maintenance, and the financial aspects of owning and operating an

automobile. In this updated edition, The Car Care Book, 4th Edition explores these areas, using the very latest automobile technology to provide an accurate, current context for learning. The book first breaks each section of the car into systems and subsystems to help the reader digest important concepts. Coverage then progresses to include the common tools needed to perform car maintenance and minor repairs, as well as building a preventive maintenance program. Concluding with a section on financial issues, from buying and selling to insurance considerations to the benefits of leasing, this resource provides a thorough and comprehensive overview of basic automobile care.

## CONTENTS

What makes the Wheels Go Round? Tooling Up. The Engine. The Fuel System. The Electrical System. The Lubrication and Cooling System. The Drivetrain. Tires and Brakes. Suspension and Steering. Heating, Air Conditioning, and Optional Equipment. Your Maintenance Program. A Look at Repairs. The Repair-It/Replace-It Decision. Buying Tips for Parts and Insurance. Buying a New Car. Leasing. Glossary.

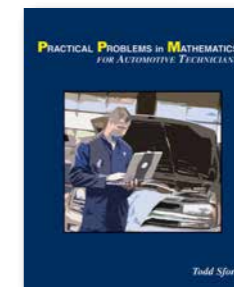
## PRACTICAL PROBLEMS IN MATHEMATICS, 7E

For Automotive Technicians

Todd Sformo, Illisagvik College

© 2009, 288pp, Paperback, 9781428335240

ebook



Comprehensive and easy to use, the revised and updated seventh edition covers practical math problems that automotive technicians will face on the job. The easy-to-read and well organized chapters of Practical Problems in Mathematics for Automotive

Technicians, Seventh Edition feature step-by-step instructions, diagrams, charts, and examples that facilitate the problem-solving process while reinforcing key concepts. The presentation builds from the basics of whole-number operations to cover percentages, linear measurement, ratios, and the use of more advanced formulas. With a special section on graphs, scale reading of test meters, and invoices found in the workplace, this text is tailor-made for students in any automotive course of study!

## CONTENTS

Preface Estimation Section 1 Whole Numbers Unit 1 Addition of Whole Numbers Unit 2 Subtraction of Whole Numbers Unit 3 Multiplication of Whole Numbers Unit 4 Division of Whole Numbers Section 2 Common Fractions Unit 5 Addition of Common Fractions Unit 6 Subtraction of Common Fractions Unit 7 Multiplication of Common Fraction Unit 8 Division of Common Fractions Section 3 Decimal Fractions Unit 9 Fractional Equivalent Unit 10 Addition of Decimal Fractions Unit 11 Subtraction of Decimal Fractions Unit 12 Multiplication of Decimal Fractions Unit 13 Division of Decimal Fractions Unit 14 Micrometer Reading: Application of Decimal Fractions Unit 15 Multiple Operations of Common and Decimal Fractions Section 4 Percent and Percentage Unit 16 Simple Percent

Unit 17 Simple Percentage Unit 18 Discounts Unit 19 Profit and Loss, Commissions Unit 20 Interest and Taxes Unit 21 Percent of Error and Averages Section 5 Measurement Unit 22 English Linear Measurements Unit 23 Metric Measurements Unit 24 Scale Reading Unit 25 Scale Reading of Test Meters Unit 26 Circular Measurements Unit 27 Angular Measurements Unit 28 Area and Volume Measurement Unit 29 Time, Speed, and Money Calculations Section 6 Ratio and Proportion Unit 30 Ratios Unit 31 Proportions Section 7 Formulas Unit 32 Formulas for Circular Measurement Unit 33 Formulas for Efficiency Unit 34 Temperature Unit 35 Cylindrical Volume Measurements Unit 36 Horsepower Unit 37 Ohms Law Section 8 Graphs Unit 38 Use of Graphs Section 9 Invoices Unit 39 Repair Orders and Shop Tickets Appendix Glossary Answers to Odd-Numbered Problems

## COLLISION REPAIR

**NEW EDITION**

### AUTO BODY REPAIR TECHNOLOGY, 7E

James E. Duffy, *Indiana State University, President, Beneficial Books and Video*; Jonathan Beaty, *Tennessee College of Applied Technology Livingston, Instructor, Collision Repair Technology*

© 2021, 1088pp, Hardback, 9780357139790

CENGAGE | MINDTAP ebook



**AUTO BODY REPAIR TECHNOLOGY**, Seventh Edition, features extensive new and updated material reflecting the latest automotive technology and current industry best practices. In addition to incorporating current ASE Education Foundation

Collision Repair and Refinish Program Standards and Task Lists, this market-leading text provides detailed information on working with hybrid and electric vehicles, using environmentally friendly water-based paints, resistance spot and nitrogen plastic welding and other cutting-edge methods and materials. Celebrated for its clear, reader-friendly explanations and detailed, accurate information, this proven guide also includes abundant full-color photos and illustrations--many new or updated for the Seventh Edition--to make even complex concepts easier to understand and apply. Available supplements include a tech manual with shop assignments and newly updated and expanded job sheets, as well as interactive online resources ideal for today's learners. Providing comprehensive coverage of collision repair--from initial evaluation and estimating, to structural and mechanical repairs, to repainting and refinishing--this trusted guide will help you quickly and confidently learn the skills and procedures you need to succeed as a professional automotive technician.

#### CONTENTS

Part I: NON-STRUCTURAL ANALYSIS & DAMAGE REPAIR. 1. Collision Repair Introduction and Careers. 2. Shop Safety. 3. Vehicle Construction Technology. 4. Service Information, Specifications & Measurements. 5. Hand Tools. 6. Power Tools & Equipment. 7. Compressed Air System Technology. 8. Body Shop Materials & Fasteners. 9. Outer Body Panel Service. 10. Door, Roof & Moveable Glass Service. 11. Repairing Sheet Metal. 12. Using Body Filler. 13. Plastic Repair. 14. Passenger Compartment Service. Part II: WELDING. 15. Welding Technology. Part III: STRUCTURAL ANALYSIS & DAMAGE REPAIR. 16. Structural Glass Service. 17. Body/Frame Damage Measurement. 18. Unibody/Frame Repair & Realignment. 19. Welded Panel Replacement. 20. Restoring Corrosion Protection. Part IV: MECHANICAL & ELECTRICAL. 21. Chassis Service & Wheel Alignment. 22. Electrical System Operation & Service. 23. Restraint System Operation & Service. 24. Hybrid & Electric Vehicle Service. Part V: DAMAGE ANALYSIS & ESTIMATING. 25. Damage Analysis & Estimating Service. Part VI: PAINTING & REFINISHING. 26. Refinishing Equipment. 27. Surface Preparation and Masking. 28. Refinishing Procedures. 29. Color Matching and Custom Painting. 30. Paint Problems and Final Detail. 31. Job Success.

**NEW EDITION**

### TECH MANUAL FOR UHRINA/DUFFY/BEATY'S AUTO BODY REPAIR TECHNOLOGY, 7E

James E. Duffy, *Indiana State University, President, Beneficial Books and Video*; Jonathan Beaty, *Tennessee College of Applied Technology Livingston, Instructor, Collision Repair Technology*; Jonathan Beaty, *Tennessee College of Applied Technology Livingston, Instructor, Collision Repair Technology*

© 2021, Paperback, 9780357139806



The Tech Manual is designed to help readers apply what they learn from chapter content through hands-on activity in the shop.



## COLLISION REPAIR AND REFINISHING, 3E

A Foundation Course for Technicians

Alfred Thomas, Pennsylvania College of Technology; Michael Jund, Eastern Iowa Community College

© 2018, 1072pp, Hardback, 9781305949942

CENGAGE | MINDTAP **ebook**



This trusted, reader-friendly text provides you with a thorough guide to all major areas of collision repair and refinishing as outlined by ASE Education Foundation. COLLISION REPAIR AND REFINISHING: A FOUNDATION COURSE FOR TECHNICIANS, Third

Edition, covers structural and non-structural analysis and damage repair, welding, painting and refinishing, paint chemistry, sacrificial coatings for corrosion resistance, mechanical and electrical systems, and more. A chapter on the expanded use of aluminum for domestic vehicle manufacture explores this important trend, as well as basic repair principles related to it. An engaging writing style, logical presentation of topics, and illustrations featuring current equipment and realistic applications make this comprehensive text a perfect choice for students with little or no prior exposure to collision repair.

### CONTENTS

1. Introduction to Collision Repair. 2. Collision Shop Safety. 3. Hand Tools. 4. Power Tools. 5. Welding Procedures and Equipment. 6. Vehicle Construction. 7. Straightening Steel. 8. Aluminum Repair and Panel Replacement (new). 9. Fillers. 10. Trim and Hardware. 11. Estimating Collision Damage. 12. Collision Damage Analysis. 13. Bolted Exterior Panel Replacement. 14. Measuring Structural Damage. 15. Straightening and Repairing Structural Damage. 16. Welded Exterior Panel Replacement. 17. Structural Parts Replacement. 18. Full Frame Sectioning and Replacement. 19. Plastic Repair. 20. Corrosion Protection. 21. Paint

Spray Guns. 22. Spray Techniques. 23. Refinishing Shop Equipment. 24. Detailing. 25. Understanding Refinishing. 26. Surface Preparation. 27. Masking Materials and Procedures. 28. Solvents for Refinishing. 29. Application of Undercoats. 30. Advanced Refinishing Procedures. 31. Advanced Refinishing Procedures Waterborne. 32. Color Evaluation and Adjustment. 33. Paint Problems and Prevention. 34. Electrical Components. 35. Steering, Suspension, and Vehicle Alignment. 36. Brakes. 37. Mechanical Systems.

## COLLISION REPAIR FUNDAMENTALS

James E. Duffy, Indiana State University, President, Beneficial Books and Video

© 2008, 576pp, Hardback, 9781418013363

**ebook**

This all new textbook was written and illustrated to introduce readers to automotive collision repair. Collision Repair Fundamentals stresses the repair of minor body damage and repainting, as well as advanced repairs such as frame straightening and structural panel replacement. Coverage has been added on the latest high-efficiency spray guns, UV-primers, primer-surfacers with a built in guide-coat action, aluminum weld-rivet construction, and much more. Each service-oriented chapter is accompanied by a practice ASE test featuring numerous ASE-style questions.

### CONTENTS

Section 1- Basics 1.Careers in Collision Repair 2.Safety, ASE Certification 3.Vehicle Construction 4.Hand Tools 5.Power Tools 6.Measurements, Manuals 7.Fasteners 8.Hardware and Materials 9.Welding, Heating, Cutting Section 2- Minor Body Repairs 10.Metal Straightening Fundamentals 11.Plastic and Fiberglass Repair 12.Replacing Fastened Panels 13.Servicing Doors, Glass, Air/Water Leaks Section 3- Refinishing 14.Vehicle Paint Prep 15.Shop Paint Prep 16.Painting Fundamentals 17.Color Matching 18.Paint Problems, Final Detailing 19.Decals, Custom Painting, Trim Section

4 -Major Body Frame Repairs 20.Measuring Vehicle Damage 21.Frame-Unibody Straightening 22.Replacing Structural Parts, Corrosion Protection Section 5- Other Body Shop Operations 23.Interior and Top Repairs 24.Mechanical Repairs 25.Wheel Alignment 26.Electrical Repairs 27.Restraint System Repairs Section 6- Estimating, Entrepreneurship 28.Estimating Repair Costs 29.Entrepreneurship, Job Success, Certification

## DIESEL TECHNOLOGY

### NEW EDITION

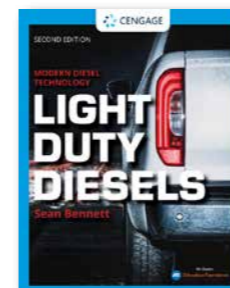
## MODERN DIESEL TECHNOLOGY, 2E

Light Duty Diesels

Sean Bennett

© 2022, 432pp, Paperback, 9781337624978

CENGAGE | MINDTAP **ebook**



MODERN DIESEL TECHNOLOGY: LIGHT DUTY DIESELS, Second Edition, gives you a thorough introduction to the light-duty diesel engine, the engine of choice to optimize fuel efficiency and longevity in workhorse pickup trucks, refrigeration units,

agricultural equipment and generators. While the major emphasis is on highway usage, best-selling author Sean Bennett also addresses current and legacy, small stationary and mobile off-highway diesels. Using a modularized structure, Bennett helps you gain a strong conceptual grounding in diesel engine technology while emphasizing hands-on technical competency. The text explores current diesel engine subsystems and management electronics in detail, while also providing a solid foundation in mechanical engine systems. All generations of CAN-bus technology are covered, including the basics of network bus troubleshooting. The author uses simple language to make even complex concepts easier to master and focuses on

helping you gain the knowledge and expertise you need for career success as a diesel technician, including addressing ASE A9 task learning objectives in detail.

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1. Shop and Personal Safety. 2. Introduction to Diesel Engines. 3. Cylinder Block Assemblies. 4. Timing Train and Cylinder Head Assemblies. 5. Intake and Exhaust Systems. 6. Cooling and Lubrication Systems. 7. Engine Electrical Systems. 8. Fuel Subsystems. 9. Injector Nozzles. 10. Pump-Line-Nozzle Systems. 11. Engine Electronics. 12. Electronic Fuel Injection. 13. Emission Controls. 14. Servicing and Maintenance. 15. Diagnostics and Testing. Glossary. Acronyms.

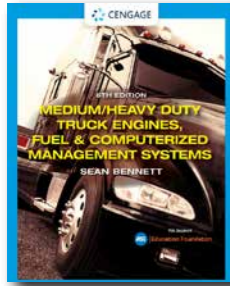
## NEW EDITION

### MEDIUM/HEAVY DUTY TRUCK ENGINES, FUEL & COMPUTERIZED MANAGEMENT SYSTEMS, 6E

Sean Bennett

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CENGAGE | MINDTAP ebook



Gear up for career success in the dynamic field of commercial truck engine service, with the latest edition of the most comprehensive to guide commercial vehicle engines and their management systems available today! Ideal for students, entry-

level technicians, and experienced professionals, **MEDIUM/HEAVY DUTY TRUCK ENGINES, FUEL & COMPUTERIZED MANAGEMENT SYSTEMS, Sixth Edition**, covers the full range of commercial vehicle diesel engines (from light- to heavy-duty), electric drivetrains, and the most current management electronics used in the industry. In addition, dedicated chapters deal with natural gas (NG) fuel systems, alternate fuels, hybrid drive, fuel cell, and all-electric drive systems. User-friendly and fully up to date, this trusted text addresses the latest ASE® Education Foundation tasks, places unique emphasis on the modern multiplexed chassis and telematics, and is designed to serve as a practical toolbox reference throughout your professional career.

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Part I: DIESEL ENGINE FUNDAMENTALS. 1. Introduction. 2. Hand and Shop Tools. 3. Personal Safety Equipment. 4. Engine Fundamentals. 5. History of the Heat Engine. 6. Power. 7. Diesel Engine Powertrain Assemblies. 8. Diesel Engine Feedback Assembly. 9. Engine Housing Components. 10. Diesel Engine Lubrication systems. 11. Engine Cooling Systems. 12. Engine Breathing. 13. Engine Retarders. 14. Engine Service Procedure. 15.

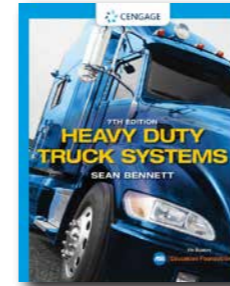
Diesel Engine Removal, Disassembly, Cleaning, Inspection and Reassembly. 16. Diesel Engine Run-in and Performance Testing. Part II: DIESEL FUEL SYSTEMS. 17. Chemistry and Combustion in Diesel Engines. 18. Diesel Fuel Characteristics. 19. Fuel Subsystems. 20. Fuel Injection Basics and Governor Principles. 21. Injector Nozzles. 22. Port Helix Metering Fuel Systems. 23. Inlet Metering Rotary Distributor Pumps. 24. Sleeve Metering Rotary Distributor Pumps. 25. Single Actuator EUI Fuel Systems. 26. Twin Actuator EUI Fuel Systems. 27. HEUI Fuel System. 28. Electronic Unit Pump (EUP) Fuel Systems. 29. HPI-TP Fuel System. 30. Common Rail Fuel Systems. 31. Amplified CR systems. Part III: ENGINE MANAGEMENT, HYBRID, ELECTRIC POWERTRAINS, EMISSIONS, AND TROUBLESHOOTING. 32. Review of Electrical and Electronics Fundamentals. 33. Vehicle Computers. 34. ESTs and SIS. 35. Electrical Wiring, Connector and Terminal Repair. 36. Multiplexing. 37. The Connected Vehicle. 38. Natural Gas, Propane and Biodiesel. 39. High Voltage Electricity. 40. Hybrid and Hydrogen Fuel Cell Powertrains. 41. Electric Powertrains. 42. Bosch EDC and Siemens Systems. 43. Caterpillar ADEM Systems. 44. Cummins Management Systems. 45. Detroit Diesel DDEC. 46. Navistar Diamond Logic. 47. Paccar Management Systems. 48. Volvo and Mack Management Systems. 49. Emissions Management. 50. Servicing and Maintenance of Exhaust Aftertreatment Systems. 51. Failure Analysis. 52. Troubleshooting and Diagnostics.

### HEAVY DUTY TRUCK SYSTEMS, 7E

Sean Bennett

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Prepare for your future career with **HEAVY DUTY TRUCK SYSTEMS, Seventh Edition!** This comprehensive, best-selling guide will help you gain the essential knowledge and skills needed to service medium- and heavy-duty trucks.

You'll build a strong foundation in electricity and electronics, powertrain, steering and suspension, brakes, and accessories systems, as well as mastering practical topics like servicing, safety, tools, and preventive maintenance. You'll also benefit from full coverage of the latest ASE Education Foundation IMMR/TST/MST competencies and the latest truck technology, including J1939 updates and access tools, lock-out tag-out compliance, expanded PicoScope coverage, DIN wiring schematic navigation, and the five levels of semi- and fully autonomous trucks. With extensive review questions, over 1800 full-color photos and illustrations, and a standalone workbook with ASE Education Foundation task-oriented job sheets, this proven text is the perfect choice to prepare you for professional success.

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1. Introduction to Servicing Heavy-Duty Trucks. 2. Shop Safety and Operations. 3. Tools and Fasteners. 4. Maintenance. 5. Fundamentals of Electricity. 6. Fundamentals of Electronics and Computers. 7. Batteries. 8. Charging Systems. 9. Cranking Systems. 10. Chassis Electrical Circuits. 11. Diagnosis and Repair of Electronic Circuits. 12. Multiplexing. 13. Hydraulics Fundamentals. 14. Clutches. 15. Standard Transmissions. 16. Standard Transmission Servicing. 17. Torque Converters. 18. Automatic Transmissions. 19. Automatic Transmission Maintenance. 20. Automated

Manual Transmissions (AMTs) and Hybrids. 21. Electronically Controlled Automatic Transmissions (ECATs). 22. Driveshaft Assemblies. 23. Heavy-Duty Truck Axles. 24. Heavy-Duty Truck Axle Service and Repair. 25. Steering and Alignment. 26. Suspension Systems. 27. Wheels and Tires. 28. Truck Brake Systems. 29. Hydraulic and Air-over-Hydraulic Braking Systems. 30. ABS and EBS Braking Systems. 31. Air Brake Servicing. 32. Vehicle Chassis Frame. 33. Heavy-Duty Truck Trailers. 34. Fifth Wheels and Coupling Systems. 35. Heavy-Duty HVAC systems. Acronyms. Glossary. Index.

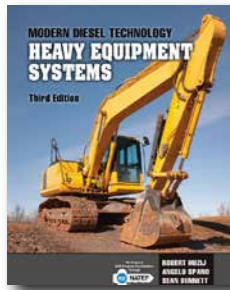


## MODERN DIESEL TECHNOLOGY, 3E Heavy Equipment Systems

Robert Huzij, Cambrian College; Angelo Spano, Centennial College; Sean Bennett

© 2019, 624pp, Paperback, 9781337567589

CENGAGE | MINDTAP **ebook**



**MODERN DIESEL TECHNOLOGY: HEAVY EQUIPMENT SYSTEMS**, Third Edition, focuses on off-highway mobile equipment systems, giving you in-depth coverage of service and repair essentials for heavy equipment, agricultural equipment, and powered lift

truck technology. Written by experienced technicians, this trusted text includes both universal and manufacturer-specific information on everything from hydraulics, heavy-duty brakes, drivetrains, steering, suspension, and track systems, to safety and best practices. Now featuring a visually appealing, full-color design, the Third Edition is also newly updated with information on the latest computer-controlled hydraulics, GPS, electronic controls, J1939 multiplexing, and electric drive vehicle systems, offering insights into important trends and technology you need to know for success as a specialty technician in today's ever-evolving industry.

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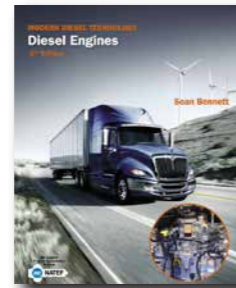
1. Safety. 2. Hoisting and Rigging. 3. Introduction to Hydraulics. 4. Hydraulic System Components. 5. Hydraulic Symbols and Schematics. 6. Hydraulic System Maintenance and Diagnostics. 7. Hydraulic Brakes. 8. Spring-Applied, Hydraulic-Released Brakes. 9. Air and Air Over Hydraulic Brake Systems. 10. Introduction to Powertrains. 11. Powershift Transmissions. 12. Hydrostatic Drive Systems and Retarders. 13. Driveline Systems. 14. Heavy Duty Drive Axles. 15. Final Drives. 16. Steering Systems. 17. Tires and Rim Systems, Track Systems, and Ground Engaging Equipment. 18. Suspension and Ride Control Systems. 19. Machine and Equipment Electronics. 20. AC Hybrid Electric / Battery Powered Drive Systems.

## MODERN DIESEL TECHNOLOGY, 2E Diesel Engines

Sean Bennett

© 2015, 360pp, Paperback, 9781285442969

**ebook**



**MODERN DIESEL TECHNOLOGY: DIESEL ENGINES**, Second Edition, provides a thorough, reader-friendly introduction to diesel engine theory, construction, operation, and service. Combining a simple, straightforward writing style, ample

illustrations, and step-by-step instruction, this trusted text helps aspiring technicians develop the knowledge and skills they need to service modern, computer-controlled diesel engines. The text provides an overview of essential topics such as shop safety, tools and equipment, engine construction and operation, major engine systems, and general service and repair concepts. Dedicated chapters then explore engine, fuel, and vehicle computer control subsystems, as well as diesel emissions. Thoroughly revised to reflect the latest technology, trends, and techniques—including current ASE Education Foundation standards—the Second Edition provides an accurate, up-to-date introduction to modern diesel engines and a solid foundation for professional success.

### CONTENTS

1. Safety. 2. Hand and Shop Tools. 3. Engine Fundamentals. 4. Piston Assemblies, Crankshafts, Flywheels, and Dampers. 5. Timing Geartrains, Camshafts, Tappets, Rockers, and Cylinder Valves. 6. Cylinder Blocks, Liners, Cylinder Heads, Rocker Housings, Oil Pans, and Manifolds. 7. Lubricating Oil and Lubrication Systems. 8. Coolant and Cooling Systems. 9. Intake and Exhaust Systems and Turbochargers. 10. Engine Brakes. 11. Engine Service Procedure. 12. Engine Removal, Disassembly, Cleaning, Inspection, and Reassembly. 13. Fuel Subsystems. 14. Injector

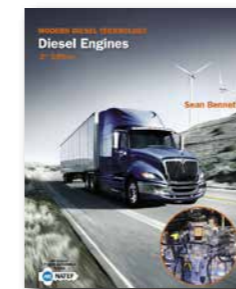
Nozzles. 15. Engine Management Electronics. 16. Diesel Fuel Injection Systems. 17. Emissions.

## MODERN DIESEL TECHNOLOGY, 2E Diesel Engines

Sean Bennett

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**ebook**



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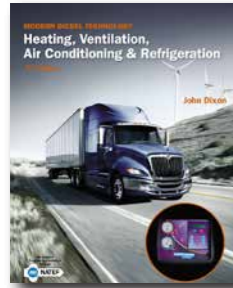
1. Safety. 2. Hand and Shop Tools. 3. Engine Fundamentals. 4. Piston Assemblies, Crankshafts, Flywheels, and Dampers. 5. Timing Geartrains, Camshafts, Tappets, Rockers, and Cylinder Valves. 6. Cylinder Blocks, Liners, Cylinder Heads, Rocker Housings, Oil Pans, and Manifolds.

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**MODERN DIESEL TECHNOLOGY, 2E**  
Heating, Ventilation, Air Conditioning & Refrigeration  
*John Dixon, Centennial College, Toronto*

© 2014, 352pp, Paperback, 9781133716259

**ebook**



Easy to read yet technically precise, MODERN DIESEL TECHNOLOGY: HEATING, VENTILATION, AIR CONDITIONING, AND REFRIGERATION, 2nd Edition is the text of choice for many of the country's best diesel technology programs! Detailing the foundations of truck heating, air conditioning, engine cooling, and truck-trailer refrigeration, the book integrates modern technical terms with photos that clearly demonstrate typical, on-the-job tasks in logical sequence. Coverage includes an entire section on thermodynamics, as well as solid instruction on safety, equipment, components, troubleshooting, performance testing, maintenance, and even the history of HVAC/R in the diesel trucking industry. Enhanced with photos, drawings, and self-testing questions in each chapter, MODERN DIESEL TECHNOLOGY: HEATING, VENTILATION, AIR CONDITIONING, AND REFRIGERATION, 2nd Edition delivers the technical accuracy and depth of HVAC/R information you need for a rewarding career as a diesel technician.

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1. History of HVAC.
2. Environmental and Safety Practices.
3. Thermodynamics.
4. Air Conditioning Components: Compressor, Condenser, and Receiver-Drier
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6. Air Conditioning Systems.
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9. Climate Control/Supplemental Truck Heating/Cooling.
10. Trouble Shooting.
11. APADs/ACPU Air Conditioning Control Systems (Air Conditioning Protection Unit).
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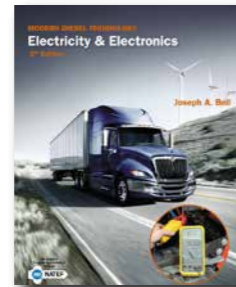
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15. Truck Trailer Refrigeration Components.
16. Truck Trailer Refrigerant Flow Control.
17. Truck Trailer Refrigeration Electrical Components.
18. Truck Trailer Refrigeration Maintenance Procedures.

**MODERN DIESEL TECHNOLOGY, 2E**  
Electricity and Electronics

*Joseph Bell*

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**ebook**



Today's diesel vehicles integrate electrical and electronic controls within all major systems, making a thorough understanding of current technology essential for success as a diesel technician. Bell's MODERN DIESEL TECHNOLOGY: ELECTRICITY AND ELECTRONICS, Second Edition, provides this understanding through clear explanations of fundamental principles, detailed coverage of the latest engines and equipment, abundant real-world examples, and the technical accuracy and depth of detail that professional technicians demand. An engaging writing style and highly visual layout make the material easier to master, while a strong focus on practical applications and problem-solving help readers readily use what they learn in the shop. Now updated with a visually appealing, two-color design and new material to reflect the latest technology and practices, this proven guide is an essential resource for aspiring and professional diesel technicians alike.

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9. Lighting Systems.
10. Electrical Accessories.
11. Sensors, Digital Electronics and

12. Multiplexing.
13. Instrumentation.
14. Diesel Engine Electronics.
15. Body Control Modules.
16. Modern Truck Electrical System.

**MODERN DIESEL TECHNOLOGY, 2E**  
Electricity and Electronics, International Edition

*Joseph Bell*

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**ebook**



Today's diesel vehicles integrate electrical and electronic controls within all major systems, making a thorough understanding of current technology essential for success as a diesel technician. Bell's MODERN DIESEL TECHNOLOGY: ELECTRICITY AND ELECTRONICS, International Edition, provides this understanding through clear explanations of fundamental principles, detailed coverage of the latest engines and equipment, abundant real-world examples, and the technical accuracy and depth of detail that professional technicians demand. An engaging writing style and highly visual layout make the material easier to master, while a strong focus on practical applications and problem-solving help readers readily use what they learn in the shop. Now updated with a visually appealing, two-color design and new material to reflect the latest technology and practices, this proven guide is an essential resource for aspiring and professional diesel technicians alike.

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14. Electronics.
15. Body Control Modules.
16. Modern Truck Electrical System.

**MOBILE EQUIPMENT HYDRAULICS**  
A Systems and Troubleshooting Approach

*Ben Watson*

© 2011, 256pp, Paperback, 9781418080433

**ebook**



Designed for the required course on hydraulics found in diesel technology and heavy equipment programs, MOBILE EQUIPMENT HYDRAULICS: A SYSTEMS AND TROUBLESHOOTING APPROACH, takes a practical approach to the understanding of fluid power / hydraulic systems. Instead of concentrating on the design issues of fluid power systems this book approaches hydraulics more like a technician would to approach a system that requires maintenance or troubleshooting. Nearly all aspiring diesel technicians receive training in this subject, which is one of seven areas of study recognized by ASE Education Foundation in diesel technology. Coverage includes a study of terminology, industrial standards, symbols and basic circuitry design as related to fluid power. Examples are drawn from actual equipment that is relevant to the program of study, whether it be heavy truck, earth-moving, or agricultural equipment.

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1. An Overview.
2. Building a Basic Cylinder or Hydraulic Motor Circuit.
3. The Math.
4. ANSI Symbols.
5. Oils and Other Hydraulic Fluids.
6. Piping, Tubing and Hoses.
7. Couplers and Fittings.
8. System Design.
9. Electrical Controls.
10. Maintenance.
11. Troubleshooting Fluid Power Systems.
12. Conversions.
13. Hydraulic/Fluid Power Systems.



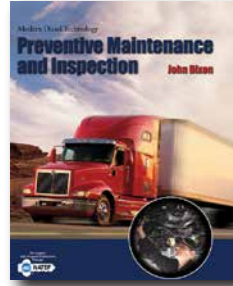
## MODERN DIESEL TECHNOLOGY

Preventive Maintenance and Inspection

John Dixon, Centennial College, Toronto

© 2010, 400pp, Paperback, 9781418053918

ebook



Designed for technicians new to the field of preventive maintenance for trucks and trailers, this valuable resource offers readers a clear, solid understanding of the otherwise complex equipment involved in truck servicing. MDT: Preventive Maintenance and Inspection

provides the knowledge needed to identify potential problems during regular service, before they turn into major repair issues or a roadside breakdown. The book breaks down need-to-know content areas into chapters that make sense: from general shop safety and hand tools to truck/trailer reefer service and coupling systems and everything in between. Each chapter includes procedures for inspecting and maintaining that specific area. Using a generic preventive maintenance checklist as a guideline throughout, this go-to guide has everything the beginning technician needs to perform effective servicing.

### CONTENTS

1. General Shop Safety. 2. Hand tools. 3. Fasteners. 4. PM Service. 5. Cooling System Service and Inspection. 6. Drive Train Service. 7. Transmission Service and Inspection Automatic and Standard. 8. Tire Wheel and Rim Service and Inspection. 9. Braking Systems Service and Inspection. 10. Chassis / Cab Service and Inspection. 11. Steering System and Suspension Service and Inspection. 12. Electrical Systems and Auxiliary Components. 13. Coupling Systems. 14. Truck/Trailer Reefer service and Inspection. 15. Trailer Service and Inspection. 16. Tank Trailer Service and Inspection. 17. Tractor PMI Class 7 and 8 Diesel Powered with Air Brakes.

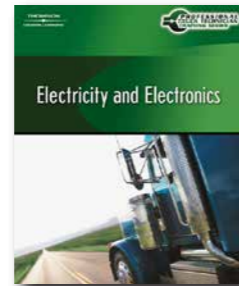
## ELECTRONIC TRAINING & REFERENCE SOLUTIONS

### PROFESSIONAL TRUCK TECHNICIAN TRAINING SERIES

Medium/Heavy Duty Truck Electricity and Electronics  
CBT - Bilingual

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Delmar Learning, the leader in providing first-rate educational materials for technicians, now offers the Electricity and Electronics Computer Based Training (CBT), which is part of the exciting, self-paced Professional Truck Technician Training Series.

This course offers more than 8.5 hours worth of quality instruction. Combining theory, diagnosis, and repair information into one easy-to-use training tool, this highly interactive product helps technicians receive the most applicable delivery method for their needs, regardless of technical infrastructure.

## MOTORCYCLE AND SMALL ENGINE TECHNOLOGY

### MODERN MOTORCYCLE TECHNOLOGY, 3E

Edward Abdo

© 2017, 544pp, Hardback, 9781305497450

ebook



MODERN MOTORCYCLE TECHNOLOGY, Third Edition, provides an in-depth, visually rich guide to the internal and external workings of today's motorcycles. The book begins with an overview of motorcycle technology, including the history of the

motorcycle and the current state of the industry. Coverage then progresses to safety measures, engine operation, internal combustion engines (two-stroke and four-stroke), electrical fundamentals, motorcycle maintenance, and troubleshooting. Thoroughly updated, the Third Edition includes the latest motorcycle models and technology from today's top manufacturers, as well as additional material on topics such as fuel injection, suspension systems, and electronics. The text is accompanied by a hands-on Student Skill Guide. Now better than ever, this trusted guide is ideal for anyone seeking the knowledge and skills to succeed in today's motorcycle technology field.

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1. Introduction to Modern Motorcycle Technology. 2. Safety First. 3. Tools. 4. Measuring Systems, Fasteners, and Thread Repair. 5. Introduction to Basic Engine Operation and Configurations. 6. Internal Combustion Engines. 7. Lubrication and Cooling Systems. 8. Fuel and Engine Management Systems. 9. Drives, Clutches, and Transmissions. 10. Two-Stroke Engine Top-End Inspection. 11. Two-Stroke Engine Lower-End Inspection. 12. Four-Stroke Engine Top-End Inspection. 13. Four-

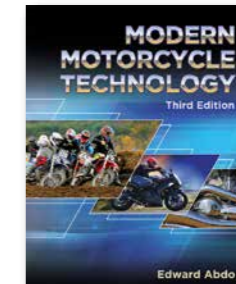
Stroke Engine Lower-End Inspection. 14. Electrical Fundamentals. 15. Motorcycle Charging Systems and DC Circuits. 16. Ignition and Electric Starting Systems. 17. Frames and Suspension. 18. Brakes, Wheels, and Tires. 19. Motorcycle Maintenance and Emission Controls. 20. Motorcycle Troubleshooting.

### MODERN MOTORCYCLE TECHNOLOGY, 3E

Edward Abdo

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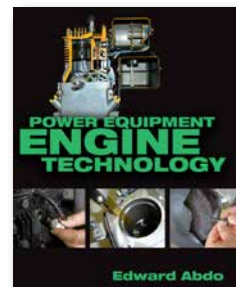
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## POWER EQUIPMENT ENGINE TECHNOLOGY

Edward Abdo

© 2011, 464pp, Hardback, 9781418053888

ebook



POWER EQUIPMENT ENGINE TECHNOLOGY (PEET) is designed to meet the basic needs of students interested in the subject of small engine repair. The subject matter is intended to help students become more qualified employment candidates for repair shops

looking for well-prepared, entry-level technicians. PEET has been written to make the learning experience enjoyable: The easy-to-read-and-understand chapters and over 600 illustrations assist visual learners with content comprehension. The book comprises 17 chapters, starting with a brief history of the internal combustion engine and ending with a chapter on troubleshooting various conditions found on any power equipment engine. Both two-stroke and four-stroke engines are covered. PEET can be used not only by pre-entry-level technicians but also as a reference manual by practicing technicians, and it will be helpful for the general consumer of power equipment engines that has an interest in understanding how they work.

In today's world, an education prior to working in the field is becoming more desirable by all shops that hire. Power equipment technicians are currently sought after and will continue to be in demand in the future as technology advances in the manufacturing of modern power equipment engines.

### CONTENTS

1. INTRODUCTION TO POWER EQUIPMENT ENGINE TECHNOLOGY. Objectives. Introduction. A Brief History of the Internal Combustion Engine. Power Equipment Industry Opportunities. Power Equipment Industry Education and Certification. Summary. Chapter 1 Review Questions. 2. SAFETY FIRST. Objectives. Introduction. The Safety Attitude. Fire Safety. Hazardous Chemicals. Right-to-know Laws. Electrical Safety. Exhaust Gas Safety. Safe Operation of Equipment. Good Housekeeping Practices. Handling Heavy Objects and Materials. Using Personal Protective Equipment (PPE). Using Tools Safely. Chapter 2 Summary. Chapter 2 Review Questions. 3. TOOLS. Objectives. Introduction. Basic Hand Tools. Power Tools. Special Tools. Purchasing Tools. Storing Tools. Service Information Library. Summary. Chapter 3 Review Questions. 4. MEASURING SYSTEMS, FASTENERS AND THREAD REPAIR. Objectives. Introduction. Measurement Systems. Fasteners. Inspection and Cleaning of Threaded Fasteners. Stresses on Threaded Fasteners. Tips for Working with Threaded Fasteners. Tightening and Torque. Repairing and Replacing Broken Fasteners. Chapter Summary. Chapter 4 Review Questions. 5. BASIC ENGINE OPERATION AND CONFIGURATIONS. Objectives. Basic Engine Operation. Engine Ratings. Basic Four-Stroke Engine Components. Basic Two-Stroke Engine Components. Engine Cooling. Engine Configurations. Summary. Chapter 5 Review Questions. 6. INTERNAL COMBUSTION ENGINES. Objectives. Introduction. General and Scientific Terms. Basic Internal Combustion Engine Operation. Internal-Combustion Engine Operation. Basic Four-Stroke Engine Components. Four Stroke Engine Theory of Operation. Two Stroke Engines. Two Stroke Engine Components. Two-Stroke Engine Theory of Operation. Two-Stroke

Engine Induction Systems. Two-Stroke Exhaust Systems. Comparing Two-Stroke to Four-Stroke Engines. Summary. Chapter 6 Review Questions. 7. LUBRICATION AND COOLING SYSTEMS. Objectives. Introduction. Lubricants and Lubrication. Friction Reducing Devices. Two Stroke Engine Lubrication. Four Stroke Engine Lubrication. Cooling Systems. Summary. Chapter 7 Review Questions. 8. FUEL SYSTEMS. Objectives. Introduction. Fuel. Oxygen. Emissions. The Carburetor. Fuel Delivery Systems. Carburetor Types and Operation. Fuel Injection. Chapter Summary. Chapter 8 Review Questions. 9. GOVERNOR AND THROTTLE CONTROL SYSTEMS. Objectives. Introduction. Manual Throttle Control. Governor Throttle Control. Chapter Summary. Chapter 9 Review Questions. 10. TWO STROKE ENGINE TOP END INSPECTION. Objectives. Introduction. Diagnostics. Repair Procedures. Two-Stroke Top End Disassembly and Inspection. Two-Stroke Engine Top End Inspection. Starting the Rebuilt Engine. Chapter 10 Summary. Chapter 10 Review Questions. 11. TWO-STROKE ENGINE LOWER-END INSPECTION. Objectives. Introduction. Repair Procedures. Two Stroke Engine Removal and Disassembly. Two Stroke Engine Lower End Inspection. Chapter 11 Summary. Chapter 11 Review Questions. 12. FOUR-STROKE ENGINE INSPECTION. Objectives. Introduction. Diagnostics. Repair Procedures. Four-Stroke Top End Disassembly and Inspection. Four-stroke Engine Lower End Disassembly. Common Lower-End Engine Failures. Four-Stroke Engine Lower End Inspection. Four-stroke Engine Reassembly. Chapter 12 Summary. Chapter 12 Review. 13. ELECTRICAL FUNDAMENTALS. Objectives. Introduction. Safety Precautions with Electricity. Basic Principles of Electricity. Units of Electricity. Electrical Meters and Measurements. Magnetism. Electronic Devices. Electrical Schematics and Symbols. Electrical Terms. Chapter 13 Summary. Chapter 13 Review Questions. 14. POWER EQUIPMENT ENGINE CHARGING SYSTEMS AND DC CIRCUITS. Objectives. Introduction. Charging Systems. Charging System Operation. Types of Charging Systems. Charging System Inspection. DC Electrical Circuits. Chapter 14 Summary. Chapter 14 Review Questions. 15. IGNITION AND ELECTRIC

STARTING SYSTEMS. Objectives. Introduction. Power Equipment Engine Ignition Systems. Basic Ignition System Components. Types of Ignition Systems. Electric Starter Systems. Chapter 15 Summary. Chapter 15 Review questions. 16. POWER EQUIPMENT ENGINE MAINTENANCE. Objectives. Introduction. Maintenance Intervals. Power Equipment Engine Maintenance. Power Equipment Engine Storage Procedures. Chapter 16 Summary. Chapter 16 Review. 17. POWER EQUIPMENT ENGINE TROUBLESHOOTING. Objectives. Introduction. Systematic Approaches to Solving Problems. Engine Problem Troubleshooting. Fuel System Troubleshooting. Electrical Problem Troubleshooting. Abnormal Noise Troubleshooting. Chapter 17 Summary. Chapter 17 Review.

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# AUTOMOTIVE SYSTEMS

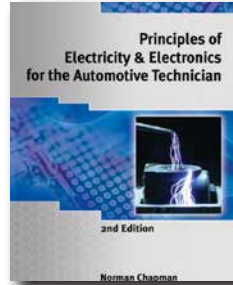
## ELECTRICITY & ELECTRONICS

### PRINCIPLES OF ELECTRICITY & ELECTRONICS FOR THE AUTOMOTIVE TECHNICIAN, 2E

Norm Chapman, South Puget Sound Community College

© 2010, 608pp, Paperback, 9781428361218

ebook



Principles of Electricity & Electronics for the Automotive Technician, 2E thoroughly covers the basics of automotive electricity and electronics to fully prepare beginning technicians for more complex electrical concepts. Written by an ASE Master Technician and

teacher, the book draws readers in using a combination of basic theory, case studies, hands-on vehicle tasks and ASE-style review questions. The updated second edition includes expanded coverage of hybrid electrical vehicles and safety procedures, technological advances in electronically controlled vehicle accessories, and new troubleshooting techniques using cutting-edge equipment and procedures. Simple illustrations and wiring diagrams, along with straightforward explanations of how automotive electricity and electronics work, act together to make this an ideal introduction to electrical and electronics diagnostics and service.

#### CONTENTS

INTRODUCTION TO ELECTRICITY & ELECTRONICS. BASIC ELECTRICAL THEORY. MEASUREMENT SYSTEM & CALCULATOR USE. COMPONENTS OF AN ELECTRICAL CIRCUIT. METERS & MEASURING DEVICES.

BASIC OF ELECTRONICS & COMPUTERS. SERIES CIRCUITS. PARALLEL CIRCUITS. SERIES/PARALLEL CIRCUITS. BASIC TROUBLESHOOTING TECHNIQUES & TIPS. ELECTRICAL CIRCUITS, LIGHTING, & INSTRUMENTATION. BATTERIES & TESTING. STARTING SYSTEM THEORY. CHARGING SYSTEM THEORY. IGNITION SYSTEM THEORY.

## ENGINE REPAIR

NEW EDITION

### COMPUTERIZED ENGINE CONTROLS, 11E

Steve V. Hatch, Lincoln College of Technology, Denver

© 2021, 600pp, Paperback, 9780357358832

CENGAGE | MINDTAP ebook



With thorough coverage of both fundamental electrical concepts and current automotive electronic systems, COMPUTERIZED ENGINE CONTROLS, Eleventh Edition, equips you with the essential knowledge you need to successfully diagnose and repair modern

automotive systems. Reflecting the latest technological advances from the field, the Eleventh Edition offers updated and expanded coverage of diagnostic concepts, equipment, and approaches used by today's professionals. All photos and illustrations are now printed in full, vibrant color, making it easier for today's visual learners to engage with the material and connect chapter concepts to real-world applications. Drawing on abundant, firsthand industry experience, the author provides in-depth insights into cutting-edge topics such as hybrid and fuel cell vehicles, automotive multiplexing systems, and advanced driver assist systems. In addition, key concepts are reinforced with ASE-style end-of-chapter questions to help prepare you for certification and career success.

#### CONTENTS

Part I: GENERIC CHAPTERS. 1. A Review of Electricity and Electronics. 2. Computers in Cars. 3. Common Components for Computerized Engine Control Systems. 4. Common Operating Principles for Computerized Engine Control Systems. 5. Introduction to Diagnostic Concepts and Diagnostic Equipment. 6. Exhaust Gas Analysis. 7. Understanding OBD II. 8. Automotive Multiplexing and Networking of Computers. 9. Hybrid and Electric Vehicles. 10. Advanced Driver Assist Systems. 11. Approach to Diagnostics. Part II: MANUFACTURER-SPECIFIC CHAPTERS. 12. General Motors Computerized Engine Controls. 13. Ford Motor Company Computerized Engine Controls. 14. Chrysler Corporation Computerized Engine Controls. 15. European (Bosch) Computerized Engine Controls. 16. Asian Computerized Engine Control.

# BASIC TECHNICIAN TRAINING

## COMPREHENSIVE AUTOMOTIVE TECHNOLOGY

### GUIDE TO DIAGNOSTIC PRODUCT CERTIFICATION – TRANSPORTATION

Matthew Janisin, Gateway Technical College, Kenosha, WI & Elkhorn Area High School, Elkhorn, WI

© 2013, 528pp, Paperback, 9781435483798



The Guide to Diagnostic Product Certification – Transportation is intended to give you the knowledge they need to more effectively use their Snap-On diagnostic tools. As vehicles have become more complex so have the tools used to diagnose them. While many

automotive programs do a great job teaching the vehicle systems, few take the time to explain in detail the sophisticated diagnostic tools needed to diagnosis them. Current market research indicates that most technicians only use about 15% of their diagnostic tools' capabilities; this manual, designed to accompany the Snap-On Diagnostic Certification Program, will aims to boost usage to 90%. The manual begins with a physical overview of each of the tools and explains the various ports, connectors, buttons and controls. In separate sections each tool's utility menu is fully explained and all customizable features are discussed so the user will have full control to make the tool their own. Finally, every aspect of the tool including the Scanner, Lab Scope, Component Test Meter, Troubleshooter, and all other options are explained in detail. This manual will greatly increase a student's employability and a technician's productivity when either is faced with a complex diagnostic situation.

## CONTENTS

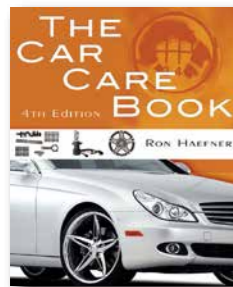
1. Ethos.
2. Solus Pro.
3. Vantage Pro.
4. MODIS.
5. Data Management.
6. Scanner Introduction.
7. Global OBD verse VIN Specific Information.
8. Codes Menu.
9. Viewing & Interpreting Scanner Data (added "Scanner" to title, little more clear).
10. Functional Tests.
11. Fast-Track Troubleshooter.
12. Component Testing.
13. Multimeter Functions.
14. Lab Scope Operation.
15. ShopKey.
16. Verus.

## THE CAR CARE BOOK, 4E

Ron Haefner, Columbus High School

© 2010, 496pp, Paperback, 9781428342958

ebook



Consumers typically face three main challenges when it comes to understanding their automobiles: the technologies underlying the car's major systems, the basics of inspection and maintenance, and the financial aspects of owning and operating an

automobile. In this updated edition, The Car Care Book, 4th Edition explores these areas, using the very latest automobile technology to provide an accurate, current context for learning. The book first breaks each section of the car into systems and subsystems to help the reader digest important concepts. Coverage then progresses to include the common tools needed to perform car maintenance and minor repairs, as well as building a preventive maintenance program. Concluding with a section on financial issues, from buying and selling to insurance considerations to the benefits of leasing, this resource provides a thorough and comprehensive overview of basic automobile care.

## CONTENTS

What makes the Wheels Go Round? Tooling Up. The Engine. The Fuel System. The Electrical System. The Lubrication and Cooling System. The Drivetrain. Tires and Brakes. Suspension and Steering. Heating, Air Conditioning, and Optional Equipment. Your Maintenance Program. A Look at Repairs. The Repair-It/Replace-It Decision. Buying Tips for Parts and Insurance. Buying a New Car. Leasing. Glossary.

## MATH SKILLS

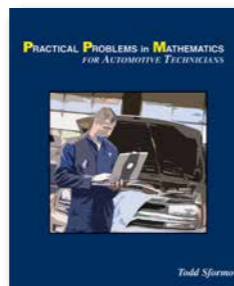
### PRACTICAL PROBLEMS IN MATHEMATICS, 7E

For Automotive Technicians

Todd Sformo, Iisagvik College

© 2009, 288pp, Paperback, 9781428335240

ebook



Comprehensive and easy to use, the revised and updated seventh edition covers practical math problems that automotive technicians will face on the job. The easy-to-read and well organized chapters of Practical Problems in Mathematics for Automotive

Technicians, Seventh Edition feature step-by-step instructions, diagrams, charts, and examples that facilitate the problem-solving process while reinforcing key concepts. The presentation builds from the basics of whole-number operations to cover percentages, linear measurement, ratios, and the use of more advanced formulas. With a special section on graphs, scale reading of test meters, and invoices found in the workplace, this text is tailor-made for students in any automotive course of study!

## CONTENTS

Preface Estimation Section 1 Whole Numbers Unit 1 Addition of Whole Numbers Unit 2 Subtraction of Whole Numbers Unit 3 Multiplication of Whole Numbers Unit 4 Division of Whole Numbers Section 2 Common Fractions Unit 5 Addition of Common Fractions Unit 6 Subtraction of Common Fractions Unit 7 Multiplication of Common Fraction Unit 8 Division of Common Fractions Section 3 Decimal Fractions Unit 9 Fractional Equivalents Unit 10 Addition of Decimal Fractions Unit 11 Subtraction of Decimal Fractions Unit 12 Multiplication of Decimal Fractions Unit 13 Division of Decimal Fractions Unit 14 Micrometer Reading: Application of Decimal Fractions Unit 15 Multiple Operations of Common and Decimal Fractions Section 4 Percent and Percentage Unit 16 Simple Percent Unit 17 Simple Percentage Unit 18 Discounts Unit 19 Profit and Loss, Commissions Unit 20 Interest and Taxes Unit 21 Percent of Error and Averages Section 5 Measurement Unit 22 English Linear Measurements Unit 23 Metric Measurements Unit 24 Scale Reading Unit 25 Scale Reading of Test Meters Unit 26 Circular Measurements Unit 27 Angular Measurements Unit 28 Area and Volume Measurement Unit 29 Time, Speed, and Money Calculations Section 6 Ratio and Proportion Unit 30 Ratios Unit 31 Proportions Section 7 Formulas Unit 32 Formulas for Circular Measurement Unit 33 Formulas for Efficiency Unit 34 Temperature Unit 35 Cylindrical Volume Measurements Unit 36 Horsepower Unit 37 Ohms Law Section 8 Graphs Unit 38 Use of Graphs Section 9 Invoices Unit 39 Repair Orders and Shop Tickets Appendix Glossary Answers to Odd-Numbered Problems

## RENEWABLE ENERGY

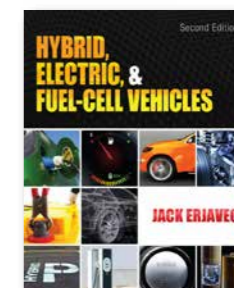
### RENEWABLE ENERGY

### HYBRID, ELECTRIC, AND FUEL-CELL VEHICLES, 2E

Jack Erjavec, Columbus State Community College (Emeritus)

© 2013, 400pp, Paperback, 9780840023957

ebook



HYBRID, ELECTRIC AND FUEL-CELL VEHICLES, Second Edition, covers the cutting-edge technology and technology that are revolutionizing today's automotive industry. Author Jack Erjavec combines in-depth industry expertise with an engaging, reader-

friendly style, providing extensive detail on new and upcoming electric vehicles, including hybrids in production today and the fuel cell vehicles of tomorrow. Expansive coverage ranges from basic theory related to vehicle construction, electricity, batteries, and motors, to the political and social impact of these high-profile vehicles. In addition to up-to-date, highly accurate technical information on vehicles available today—including service procedures and safe shop practices—the text provides an informed look into the future with material on vehicles currently under development.

## CONTENTS

1. An Introduction to Electric Vehicles.
2. Electrical Basics.
3. Motor and Generator Basics.
4. Battery Basics.
5. The Basics of a Battery Operated Electric Vehicle.
6. HEV Basics.
7. Mild and Assist Hybrids.
8. Full Hybrids.
9. Hybrid Maintenance and Service.
10. Fuel Cell and Other Possible Vehicles.



# TRUCKING

## ASE TEST PREPARATION MANUALS

### ASE TEST PREP- T8 PREVENTIVE MAINTENANCE, 5E

Delmar, Cengage Learning

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ebook



The fifth edition of DELMAR'S AUTOMOTIVE SERVICE EXCELLENCE (ASE) TEST PREPARATION MANUAL for the Medium/Heavy Duty Truck T8 Preventive Maintenance exam now contains even more content so you can pass your ASE exam the first time. This manual will ensure that you understand the Preventive Maintenance task list and are fully prepared and confident to take your exam.

### ASE TEST PREPARATION - T3 DRIVE TRAIN, 5E

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The fifth edition of DELMAR'S AUTOMOTIVE SERVICE EXCELLENCE (ASE) TEST PREPARATION MANUAL for the Medium/Heavy Duty Truck T3 Drive Train exam now contains even more content so you can pass your ASE exam the first time. This manual will ensure that you understand the Drive Train task list and are fully prepared and confident to take your exam.

### ASE TEST PREPARATION - T4 BRAKES, 5E

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### ASE TEST PREPARATION - T2 DIESEL ENGINES, 5E

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### ASE TEST PREPARATION - T6 ELECTRICAL AND ELECTRONIC SYSTEM, 5E

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### ASE TEST PREPARATION - T7 HEATING, VENTILATION, AND AIR CONDITIONING, 5E

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## CERTIFICATION TEST PREPARATION

### ASE TEST PREP- T8 PREVENTIVE MAINTENANCE, 5E

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exam the first time. This manual will ensure that you understand the Preventive Maintenance task list and are fully prepared and confident to take your exam.

### ASE TEST PREPARATION - T5 SUSPENSION AND STEERING, 5E

Delmar, Cengage Learning

© 2013, 176pp, Paperback, 9781111129019



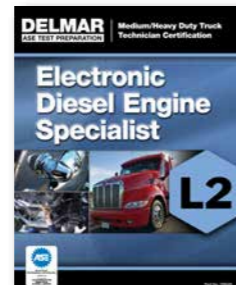
The fifth edition of DELMAR'S AUTOMOTIVE SERVICE EXCELLENCE (ASE) TEST PREPARATION MANUAL for the Medium/Heavy Duty Truck T5 Suspension and Steering exam now contains even more content so you can pass your ASE exam

the first time. This manual will ensure that you understand the Suspension and Steering task list and are fully prepared and confident to take your exam.

### ASE TEST PREPARATION MANUAL - ELECTRONIC DIESEL ENGINE DIAGNOSIS SPECIALIST (L2)

Delmar Cengage Learning

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The first edition of DELMAR'S AUTOMOTIVE SERVICE EXCELLENCE (ASE) TEST PREPARATION MANUAL for the Medium/Heavy Duty Truck L2 Electronic Diesel Engine Diagnosis Specialist exam now contains even more content so you can pass your ASE exam the

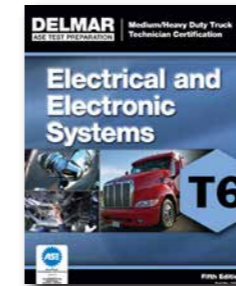
first time. This manual will ensure that you understand Electronic Diesel Engine Diagnosis Specialist task list and are fully prepared and confident to take your exam.

### ASE TEST PREPARATION - T6 ELECTRICAL AND ELECTRONIC SYSTEM, 5E

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so you can pass your ASE exam the first time. This manual will ensure that you understand the Heating, Ventilation, and Air Conditioning task list and are fully prepared and confident to take your exam.

### MEDIUM/HEAVY DUTY TRUCK TECHNICIAN CERTIFICATION TEST PREPARATION MANUAL, 2E

Don Knowles

© 2008, 576pp, Paperback, 9781418066000

ebook



Updated to reflect the most current ASE tasks, this book combines a clear writing style, in-depth coverage, and abundant practice questions and tests to deliver a tool that will help trucking technicians and students successfully prepare for all eight areas

of the Medium/Heavy Duty Truck certification exams. Each chapter of the Medium/Heavy Duty Truck Technician Certification Test Preparation Manual, 2nd Edition is devoted to thoroughly covering one specific ASE truck test, resulting in eight core chapters that instill the knowledge and skills needed to get certified. These chapters include extensive coverage of all the ASE tasks associated with each test, ASE-style questions to familiarize users with the testing format, as well as hints to encourage users to be actively involved in the problem-solving process. Pre-tests, post-tests, and sample tests are all accompanied by answers and answer analysis so users can receive immediate feedback for a continuous learning process.

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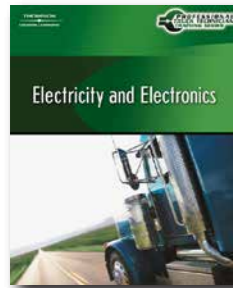
## ELECTRONIC TRAINING & REFERENCE SOLUTIONS

### PROFESSIONAL TRUCK TECHNICIAN TRAINING SERIES

Medium/Heavy Duty Truck Electricity and Electronics  
CBT - Bilingual

Delmar

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Delmar Learning, the leader in providing first-rate educational materials for technicians, now offers the Electricity and Electronics Computer Based Training (CBT), which is part of the exciting, self-paced Professional Truck Technician Training Series.

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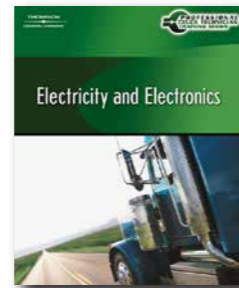
## TECHNICIAN TRAINING

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CBT - Bilingual

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## TRUCK DRIVER TRAINING

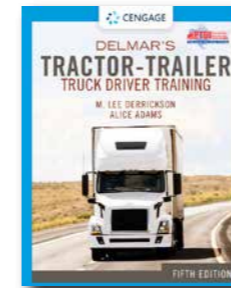
### NEW EDITION

### TRACTOR-TRAILER TRUCK DRIVER TRAINING, 5E

Lee M. Derrickson; Ptdi ; Ptdi

© 2022, 752pp, Paperback, 9781337567695

CENGAGE | MINDTAP *ebook*



Are you eager for a successful career as a professional truck driver? Get proven training with the resource even the pros trust: Delmar's TRACTOR-TRAILER TRUCK DRIVER TRAINING, Fifth Edition. As the only official education partner of the Professional

Truck Driver Institute (PTDI), Delmar provides up-to-date, comprehensive knowledge to help you succeed at every stage of your career. Now updated to align with the Federal Motor Carrier Safety Administration's (FMCSA) new minimum standards for Entry Level Driver Training (ELDT), the Fifth Edition of this valuable resource also features Skill Drills and Safety Checks to help you hone in on key skills and important safety topics essential for today's professional truck drivers.

### CONTENTS

Preface. 1. Welcome to Professional Driving. 2. The Commercial Driver's License. 3. Control Systems. 4. Vehicle Systems. 5. Transportation Technology. 6. Vehicle Inspections. 7. Basic Control. 8. Shifting. 9. Backing and Docking. 10. Coupling and Uncoupling. 11. Sliding Fifth Wheels and Tandem Axles. 12. Preventive Maintenance and Servicing. 13. Recognizing and Reporting Malfunctions. 14. Communication. 15. Visual Search. 16. Space Management. 17. Speed Management. 18. Night Driving. 19. Extreme Driving Conditions. 20. Skid Control. 21. Hazard Awareness. 22. Railroad Crossings. 23. Emergency Maneuvers. 24. Accident Procedures. 25. Handling Cargo. 26. Cargo Documentation. 27. Special Rigs. 28. Hours of Service.

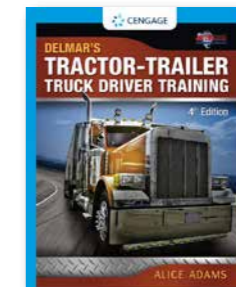
29. Trip Planning. 30. Transportation Security. 31. Driving International Routes. 32. Hazardous Materials. 33. Public Relations and Job Search. 34. Driver Health, Safety and Security. 35. Whistleblower Protections for Professional Drivers. 36. Compliance, Safety, Accountability (CSA). Appendix A: Troubleshooting Guide. Appendix B: Trucking Organizations. Appendix C: Glossary. Appendix D: Index.

### TRACTOR-TRAILER TRUCK DRIVER TRAINING, 4E

Alice Adams; Ptdi

© 2013, 656pp, Paperback, 9781111036485

*ebook*



When students need to learn from the resource even the pros trust, look no further than Delmar's Tractor-Trailer Truck Driver Training, 4E. Delmar is the only official education partner of the Professional Truck Driver Institute (PTDI). Our goal is to

ensure that students are armed with the information needed to excel in their truck driver careers. The all-new fourth edition incorporates both customer and industry feedback to bring enhancements that truly capture the learning needs of the industry. One key improvement: the book's approach has been broadened to include all of North America, in an effort to provide accurate, effective content that is relevant to all drivers, whether they drive within or beyond the border of the United States. Additional updates include a detailed chapter devoted to CSA 2010, references to the latest tractor-trailer and driving technologies, as well as "day in the life" stories written by truck drivers and industry leaders that illustrate how truck driving experiences can shape both lives and careers. The end result is a valuable resource that will instill an up-to-date, comprehensive foundational knowledge that will help drivers in any stage of their career development.

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Preface. 1. An Introduction to Trucking. 2. The Commercial Driver's License. 3. Control Systems. 4. Vehicle Systems. 5. Transportation Technology. 6. Vehicle Inspections. 7. Basic Control. 8. Shifting. 9. Backing and Docking. 10. Coupling and Uncoupling. 11. Sliding Fifth Wheels and Tandem Axles. 12. Preventive Maintenance and Servicing. 13. Recognizing and Reporting Malfunctions. 14. Communication. 15. Visual Search. 16. Space Management. 17. Speed Management. 18. Night Driving. 19. Extreme Driving Conditions. 20. Skid Control. 21. Hazard Awareness. 22. Railroad Crossings. 23. Emergency Maneuvers. 24. Accident Procedures. 25. Handling Cargo. 26. Cargo Documentation. 27. Special Rigs. 28. Hours of Service. 29. Trip Planning. 30. Transportation Security. 31. Driving International Routes. 32. Hazardous Materials. 33. Public Relations and Job Search. 34. Driver Health, Safety and Security. 35. Whistleblower Protections for Professional Drivers. 36. CSA 2010. Appendix A: Troubleshooting Guide. Appendix B: Website/Reference list. Appendix C: Trucking Association Listing. Appendix D: Glossary. Appendix E: Index.

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## TRUCK DRIVING

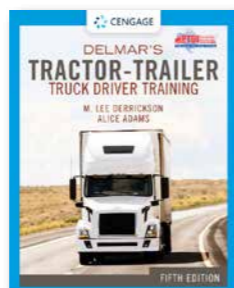
### NEW EDITION

### TRACTOR-TRAILER TRUCK DRIVER TRAINING, 5E

Lee M. Derrickson; Ptdi ; Ptdi

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Are you eager for a successful career as a professional truck driver? Get proven training with the resource even the pros trust: Delmar's TRACTOR-TRAILER TRUCK DRIVER TRAINING, Fifth Edition. As the only official education partner of the Professional Truck Driver Institute (PTDI), Delmar provides up-to-date, comprehensive knowledge to help you succeed at every stage of your career. Now updated to align with the Federal Motor Carrier Safety Administration's (FMCSA) new minimum standards for Entry Level Driver Training (ELDT), the Fifth Edition of this valuable resource also features Skill Drills and Safety Checks to help you hone in on key skills and important safety topics essential for today's professional truck drivers.

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