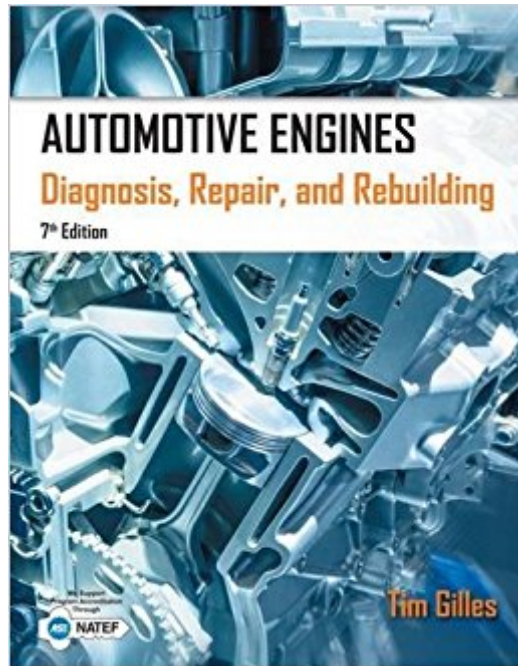


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# Automotive Engines: Diagnosis, Repair, Rebuilding



## Synopsis

This complete textbook provides detailed content on the theory of operation, diagnosis, repair, and rebuilding of automotive engines. In addition to essential technical expertise, the text helps users develop the skills and knowledge they need for professional success, including critical thinking and awareness of key industry trends and practices. The text emphasizes universal repair techniques and case histories based on real-world scenarios to prepare users for careers in the field. Instructor resources include lesson plans, customizable lab sheets that address NATEF Standards, a customizable test bank with questions based on chapter content, presentations in PowerPoint, and more. Now updated with new, full-color images and information on the latest trends, tools, and technology--including hybrid engines and high-performance components--**AUTOMOTIVE ENGINES: DIAGNOSIS, REPAIR, REBUILDING**, Seventh Edition, is the ideal resource for automotive programs who want a complete teaching package for their Engines course.

## Book Information

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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

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Tim Gilles has authored or coauthored several textbooks and has been active in professional associations for many years. He was president and a board member of the California Automotive Teachers (CAT), a board member and election committee chair of the North American Council of Automotive Teachers (NACAT), a member of the California Community College Chancellor's Trade and Industry Advisory Committee, and education committee chair for the Santa Barbara Chapter of the Independent Automotive Professionals Association. Mr. Gilles has also served several terms as a board member of the Santa Barbara Automotive Service Council and is active in industry associations such as AERA, The Automotive Repair Coalition, and IATN, including delivering presentations at numerous conferences. He was an automotive teacher for 38 years and is professor emeritus in the Automotive Technology Department at Santa Barbara City College. Mr. Gilles has held the industry certifications of ASE Master Automotive Technician and ASE Master Engine Machinist.

Lots of info for school

Good general engine reference. Not a guide in how to rebuild YOUR engine, but a great reference for best practices and industry standards. Plenty of helpful tips as well.

Exactly what I needed in almost mint condition

Unwilling to buy the newest edition of this textbook required for one of my automotive classes, I bought this the previous edition. I cannot say I care for this book. While I have learned from it, I would have enjoyed reading a different book instead - i.e. this isn't a particularly enjoyable read. Why? There are plenty of typos and odd layout decision that make you wonder who, if anyone, actually edited the text. Also, just when a topic seemed particularly interesting, the discussion would end after the suggestion that a more in-depth description was to follow, leaving me to find the answers in other sources. Since I haven't read the newest edition, I cannot be sure that the typos, stylistic problems and other shortcomings of this edition have been addressed since. What I can say is that this isn't a great book. Not terrible, but just a step above terrible. I'm glad I didn't spend any more than I did on it!

Want to learn the basics of Auto repair? This gives a lot of good basic information that you can build on.

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This is a very good book. It was very well written and is very easy to understand. You will enjoy reading it.

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