

# Navigating the Modern Automotive Technology, c2026, Online Textbook (6-12 Education) on G-W Online



1

Before we begin, please make sure you have created an account on G-W Online and have redeemed your 16-digit access key code for *Modern Automotive Technology*, 11th edition.

## G-W Online

G-W Online provides a comprehensive collection of learning for students and a full support solution for instructors.

Please log in below to access your bookshelf content.

If you are a registered user, use your username and password to log in. New users are required to register to create an account. Select register to create an account.

### Login

Username:

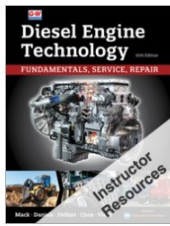
Password:

☐ Remember login

Login

2

Find the *Modern Automotive Technology Online Instructor Resources Suite* and click the link to view the Digital Resources that come with this title.



### Diesel Engine Technology 10e, Online Instructor Resources Suite

Start Date: Nov 15, 2025

End Date: Nov 14, 2031



### Modern Automotive Technology 11e, Online Instructor Resources Suite

Start Date: Nov 13, 2025

End Date: Nov 12, 2031

3

Let's begin by selecting the **Online Textbook**.

My Bookshelf

### Modern Automotive Technology 11e, Online Instructor Resources Suite



Modern Automotive Technology 11e, eBook



Modern Automotive Technology 11e, Online Textbook



Modern Automotive Technology 11e, Digital Companion



Modern Automotive Technology 11e, Workbook



Modern Automotive Technology 11e, Shop Manual



Modern Automotive Technology 11e, Instructor Resources



Modern Automotive Technology 11e, Image Library



Modern Automotive Technology 11e, G-W Assessment




#### 4 Here you will find the **Table of Contents**.

## G-W Online

[Log Out](#)

My Bookshelf



Search

### Modern Automotive Technology 11e, Online Textbook

Author: James E. Duffy and Brian LaCroix

**Modern Automotive Technology** is a comprehensive solution that will take your students from class to career. Correlated to all three levels of the latest ASE Education Foundation Task Lists (MLR, AST, and MAST), the text details the construction, operation, diagnosis, service, and repair of late-model automobiles and light trucks. Updated by new author Brian LaCroix, this edition features new pedagogy and hundreds of new photos, reflecting the latest advancements in automotive system technology and service. New chapters cover Advanced Driver Assistance Systems (ADAS); Automotive Oils, Coolants, Lubricants, and Chemicals; Vehicle Cleaning; Detailing; Controller Area Network (CAN) Systems; and EPA 609 Certification.

Visit the [How-To Guides on the G-W Support Center](#) for more information.

#### Table of Contents

- Modern Automotive Technology
- Copyright © 2026 by The Goodheart-Willcox Company, Inc.
- Preface
- About the Authors
- Reviewers
- Acknowledgments
- New to This Edition

#### 5 Scroll down to find a chapter of choice and select the link.


### Table of Contents

- Modern Automotive Technology
- Copyright © 2026 by The Goodheart-Willcox Company, Inc.
- Preface
- About the Authors
- Reviewers
- Acknowledgments
- New to This Edition
- ASE Connections
- Guided Tour
- Tools for Student and Instructor Success
- Student Tools
- Instructor Tools
- Brief Contents
- Contents
- Section 1 Introduction to Automotive Technology and Foundational Workplace Skills
- Section 1 Introduction
- Chapter 1 The Automobile**
- Chapter 1 Learning Outcomes
- Chapter 1 Technical Terms
- Chapter 1 Introduction
- 1.1 Vehicle Parts, Assemblies, and Systems
- 1.2 Vehicle Construction
- 1.3 Engine
- 1.4 Computer System
- 1.5 Electrical System
- 1.6 Drive Train Systems
- 1.7 Suspension, Steering, and Brake Systems
- 1.8 Accessory and Safety Systems

- 6 Look at the bottom of the screen to see which page you are currently viewing.

Modern Automotive Technology 11e, Online Textbook

CHAPTER 1  
The Automobile



Opener photo credit: Krutov Igor/Shutterstock.com

CHAPTER 1 LEARNING OUTCOMES

After studying this chapter you will be able to:

4 of 1613

- 7 On the left-hand side of the screen you will find a few textbook features. First, you may **Zoom In** by selecting the plus sign.

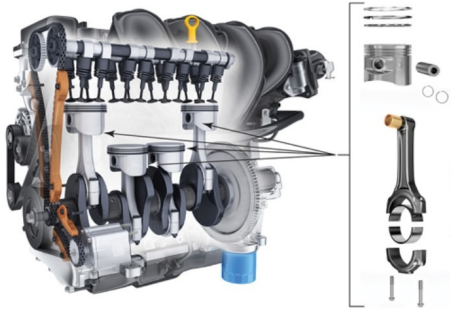
Modern Automotive Technology 11e, Online Textbook

programs, increasing your knowledge will help you become a better technician.

1.1 Vehicle Parts, Assemblies, and Systems

A **part**, sometimes called a **component**, is the most basic type of removable item on a vehicle. A part cannot be disassembled. An electrical component is a part in an electrical circuit or system.

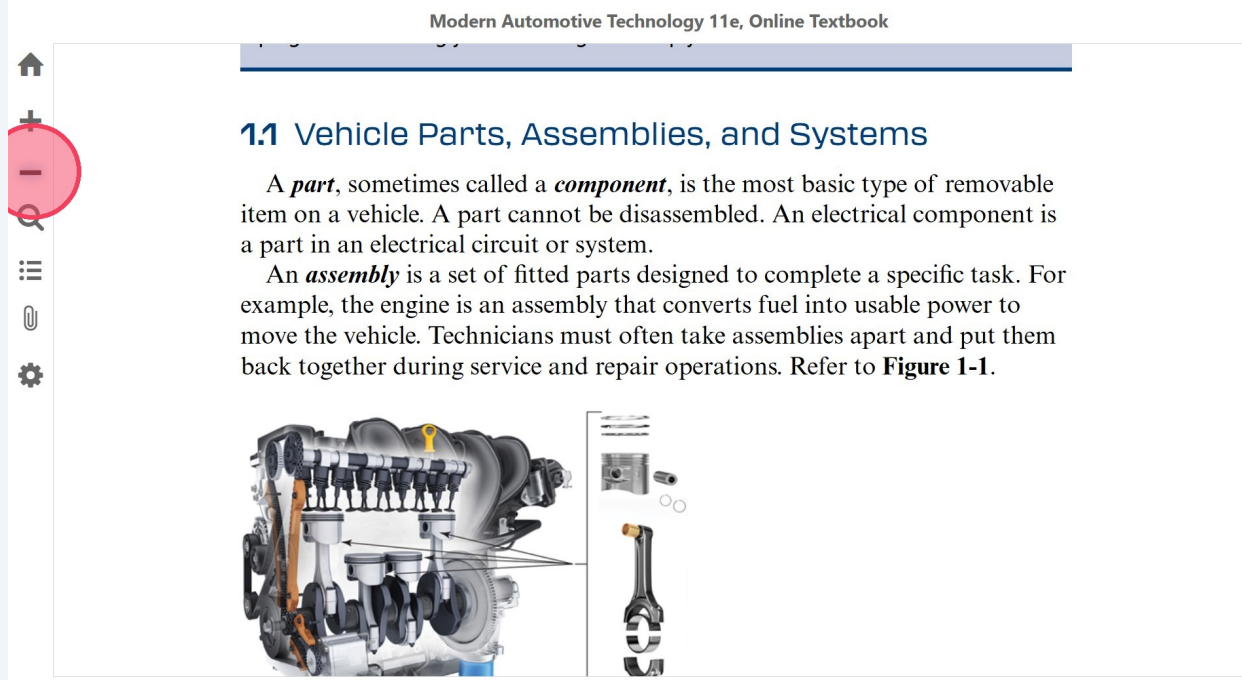
An **assembly** is a set of fitted parts designed to complete a specific task. For example, the engine is an assembly that converts fuel into usable power to move the vehicle. Technicians must often take assemblies apart and put them back together during service and repair operations. Refer to **Figure 1-1**.



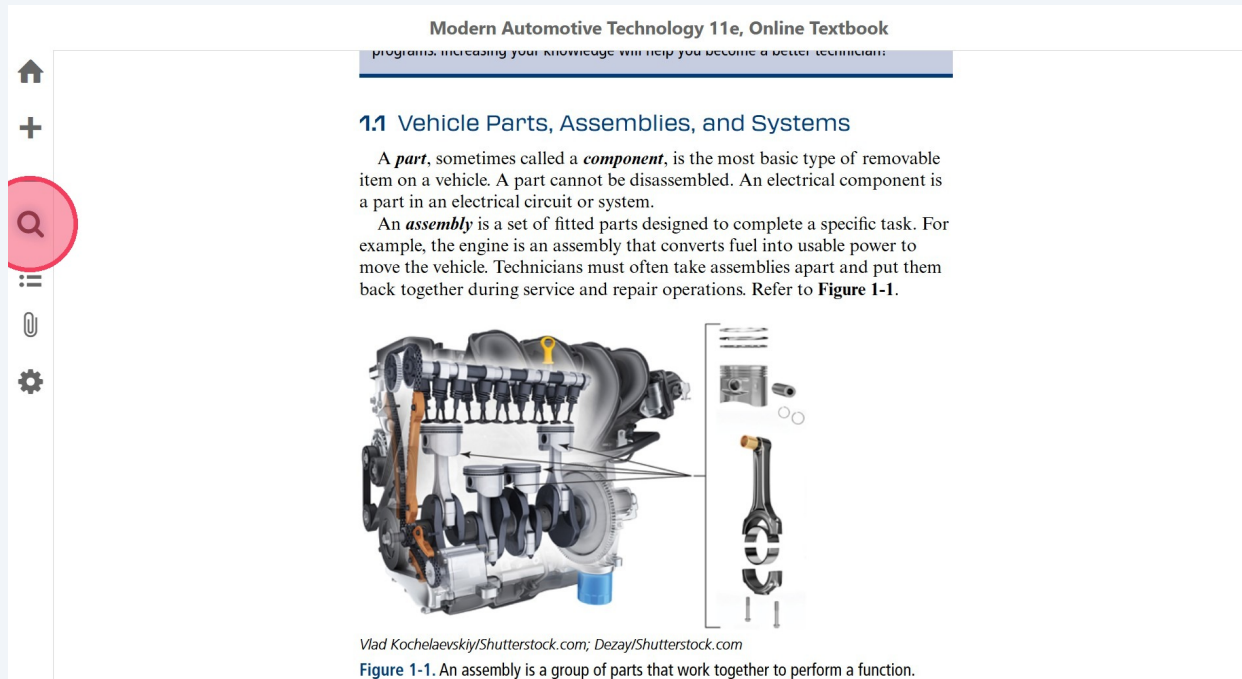
Vlad Kochelaevskiy/Shutterstock.com; Dezay/Shutterstock.com

**Figure 1-1.** An assembly is a group of parts that work together to perform a function.

- 8 Next, you may **Zoom Out** by selecting the minus sign.



- 9 The magnifying glass allows you to conduct a page or **Keyword Search**.





- 10 Enter a keyword you'd like to search for in the search box and select Go.

Modern Automotive Technology 11e, Online Textbook

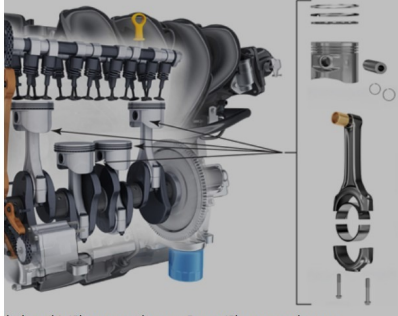
Use advanced search

Enter text or page... [Go](#)

Vehicle Parts, Assemblies, and Systems

Part, sometimes called a **component**, is the most basic type of removable part in a vehicle. A part cannot be disassembled. An electrical component is a part in an electrical circuit or system.

An **assembly** is a set of fitted parts designed to complete a specific task. For example, the engine is an assembly that converts fuel into usable power to drive the vehicle. Technicians must often take assemblies apart and put them back together during service and repair operations. Refer to **Figure 1-1**.



helaevskiy/Shutterstock.com; Dezay/Shutterstock.com

1-1. An assembly is a group of parts that work together to perform a function.

- 11 The search results will appear. Select the page of interest to hyperlink to that page.

Modern Automotive Technology 11e, Online Textbook

Vehicle (EV), regenerative braking, rotor sensor series hybrid series-parallel hybrid three-phase ac power Many of today's vehicles incorporate a high-voltage power supply to assist the drive system. It can be the primary source of power for the vehicle, as in a battery **electric** vehicle, or it can...

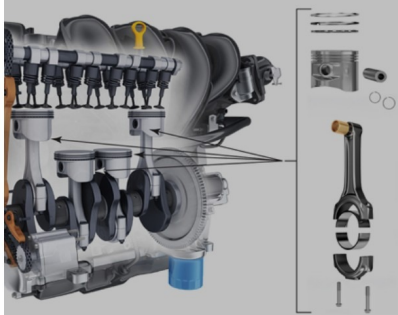
... After studying this chapter, you will be able to: 80.1 Recall the safety measures that must be followed when working on high-voltage, high-current electric drive systems. 80.2 Use on-board diagnostics to locate problems in hybrid **electric** and battery **electric** drive systems. 80.3 Service hybrid and battery **electric** vehicle components. 80.4 Identify HV charging system concerns, contactor insulating gloves insulated tool Since hybrid **electric** vehicles (HEVs) and battery **electric** vehicles (BEVs) are now produced and sold by many automakers, it is important that you understand how to service them safely. The service methods you learned in previous chapters also apply to hybrid and battery **electric** vehicles. The primary concern when working on a high-voltage (HV) drive train is the extremely high voltage and current stored and generated by the **electric** drive devices and circuits. You must learn how to work safely with up to 600 volts of alternating current (ac)

1438

Vehicle Parts, Assemblies, and Systems

Part, sometimes called a **component**, is the most basic type of removable part in a vehicle. A part cannot be disassembled. An electrical component is a part in an electrical circuit or system.

An **assembly** is a set of fitted parts designed to complete a specific task. For example, the engine is an assembly that converts fuel into usable power to drive the vehicle. Technicians must often take assemblies apart and put them back together during service and repair operations. Refer to **Figure 1-1**.



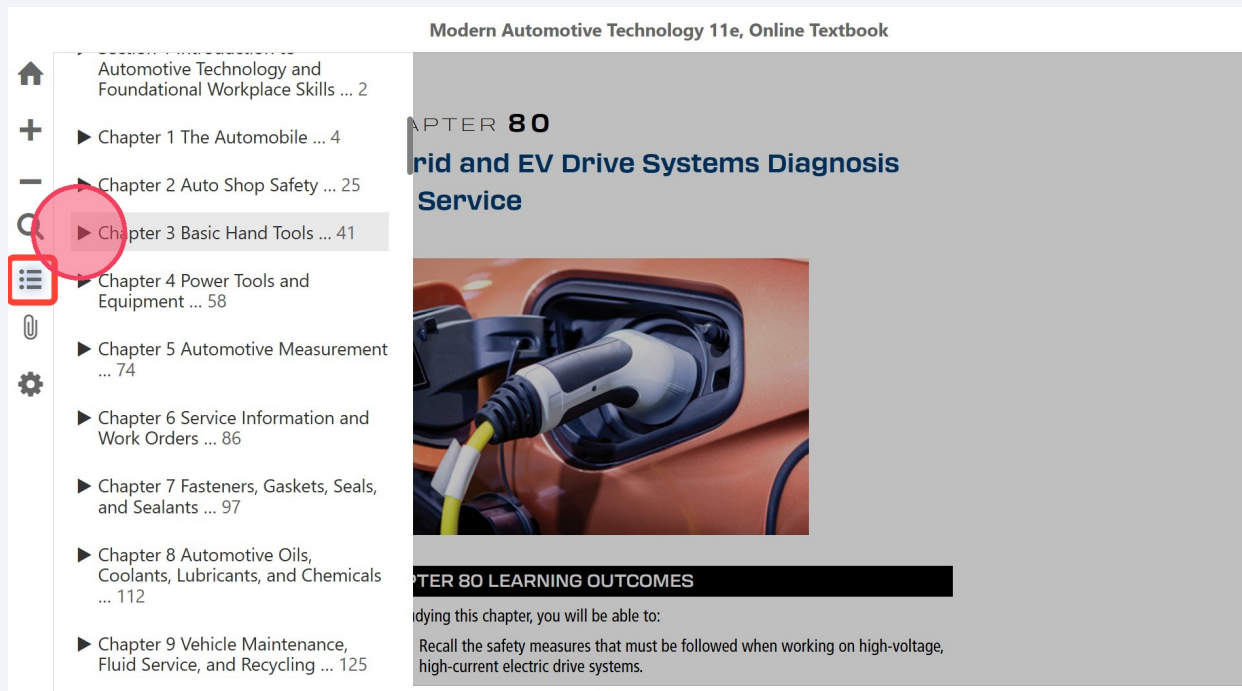
helaevskiy/Shutterstock.com; Dezay/Shutterstock.com

1-1. An assembly is a group of parts that work together to perform a function.

12

The bullet point icon is the **Table of Contents** which users may view to jump to another section of the book if they choose.

Modern Automotive Technology 11e, Online Textbook



Automotive Technology and Foundational Workplace Skills ... 2

▶ Chapter 1 The Automobile ... 4

▶ Chapter 2 Auto Shop Safety ... 25

▶ Chapter 3 Basic Hand Tools ... 41

▶ Chapter 4 Power Tools and Equipment ... 58

▶ Chapter 5 Automotive Measurement ... 74

▶ Chapter 6 Service Information and Work Orders ... 86


▶ Chapter 7 Fasteners, Gaskets, Seals, and Sealants ... 97

▶ Chapter 8 Automotive Oils, Coolants, Lubricants, and Chemicals ... 112

▶ Chapter 9 Vehicle Maintenance, Fluid Service, and Recycling ... 125

CHAPTER 80

## Hybrid and EV Drive Systems Diagnosis Service



CHAPTER 80 LEARNING OUTCOMES

By studying this chapter, you will be able to:

- Recall the safety measures that must be followed when working on high-voltage, high-current electric drive systems.

13

Throughout the text you may find an icon with a blue arrow which indicates an option to hyperlink to the **Digital Companion** where you will find self-assessment activities and review questions.

Modern Automotive Technology 11e, Online Textbook


3.8 Name the holding and cutting tools typically found in an automotive shop.

3.9 Describe the importance of cleaning and scraping tools in automotive service.

3.10 Recognize how probe and pickup tools are used by an automotive technician.

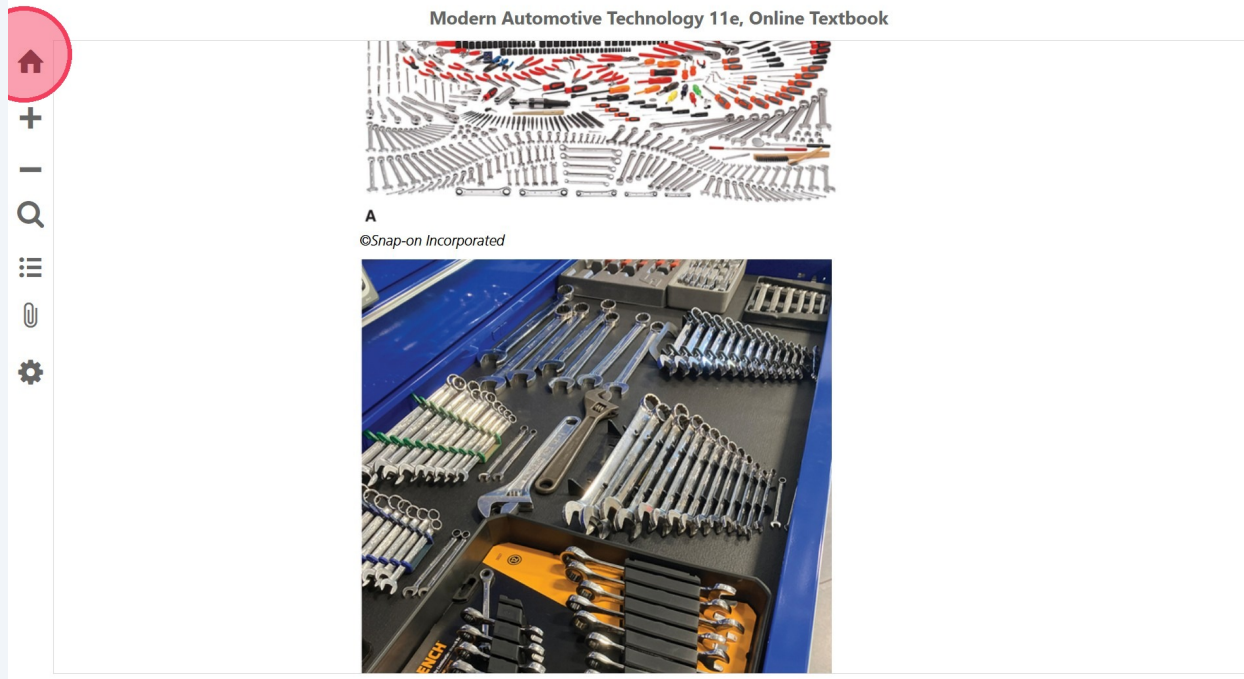
3.11 Identify the types of pry bars and pullers used in automotive service.

3.12 Explain why insulated tools must be used when servicing high-voltage systems.

CHAPTER 3 TECHNICAL TERMS 

- Allen drive
- ball peen hammer
- breaker bar
- C-clamp
- chisel
- dead blow hammer
- extension
- file
- hacksaw
- impact socket
- pickup tool
- pliers
- pry bar
- puller
- punch

- 14 Select the **Home** icon to get back to the Online Instructor Resources.







## Modern Automotive Technology 11e, Online Instructor Resources Suite



Modern Automotive Technology 11e, eBook



Modern Automotive Technology 11e, Online Textbook



Modern Automotive Technology 11e, Digital Companion



Modern Automotive Technology 11e, Workbook



Modern Automotive Technology 11e, Shop Manual



Modern Automotive Technology 11e, Instructor Resources



Modern Automotive Technology 11e, Image Library



Modern Automotive Technology 11e, G-W Assessment



ASE Series Video Library



Automotive Virtual Toolbox



Multimeter Simulations