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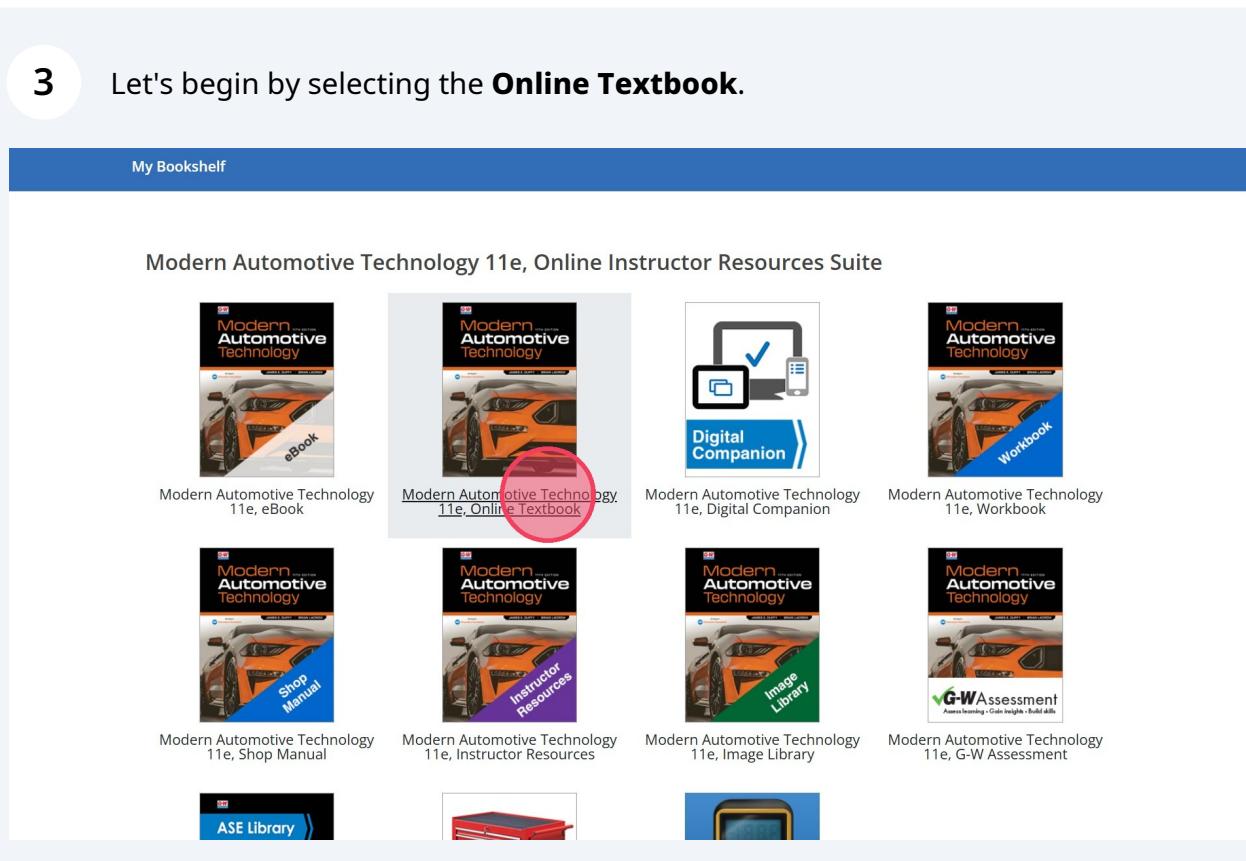
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Author: James E. Duffy and Brian LaCroix

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.

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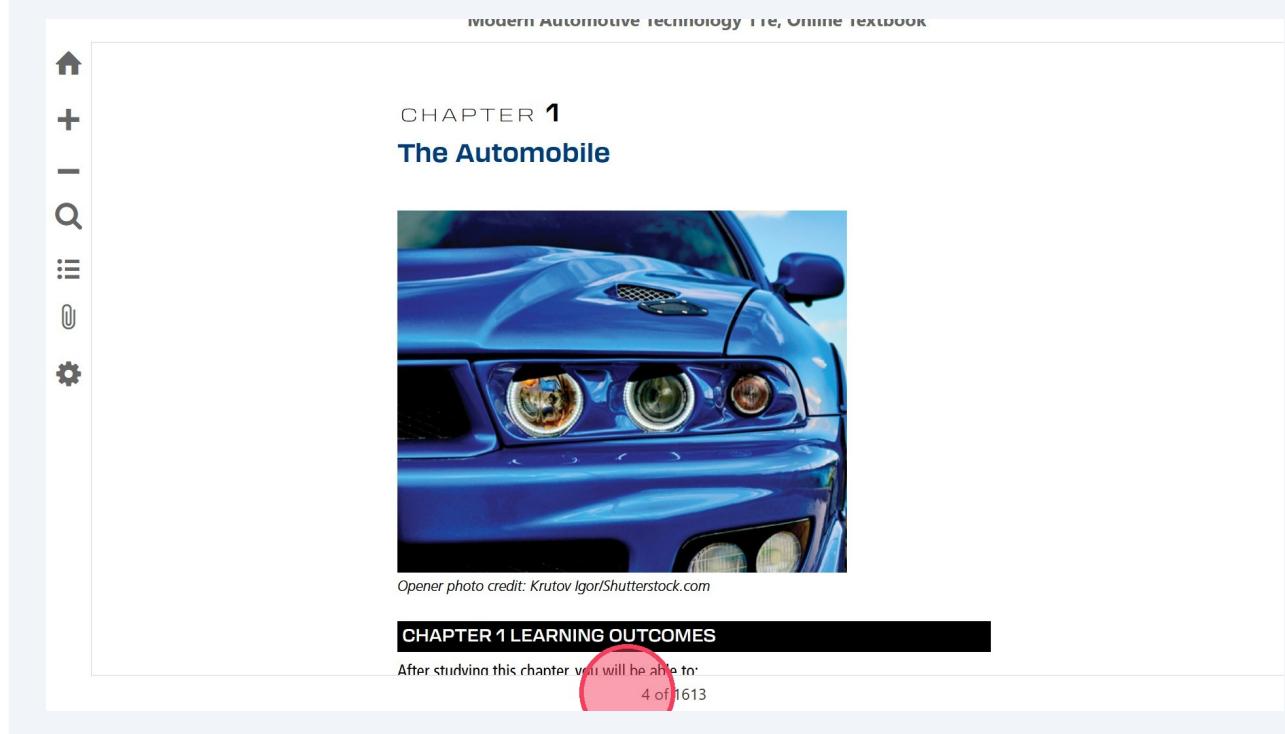
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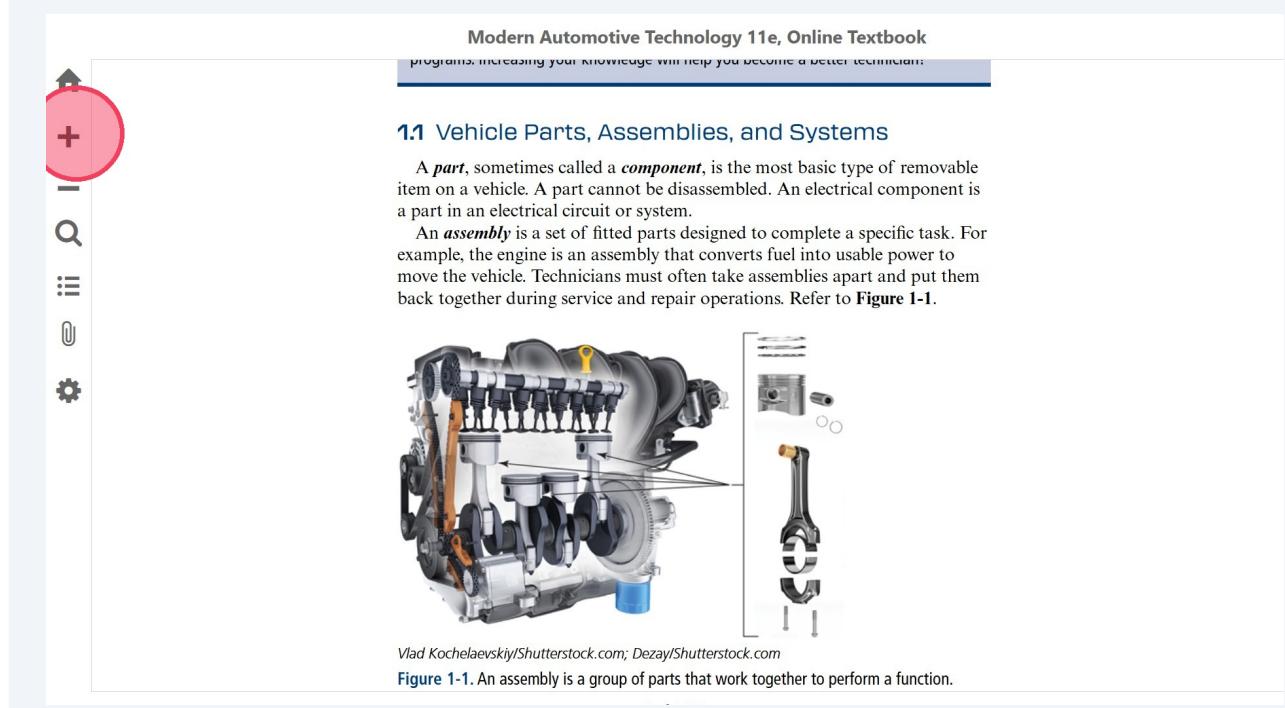
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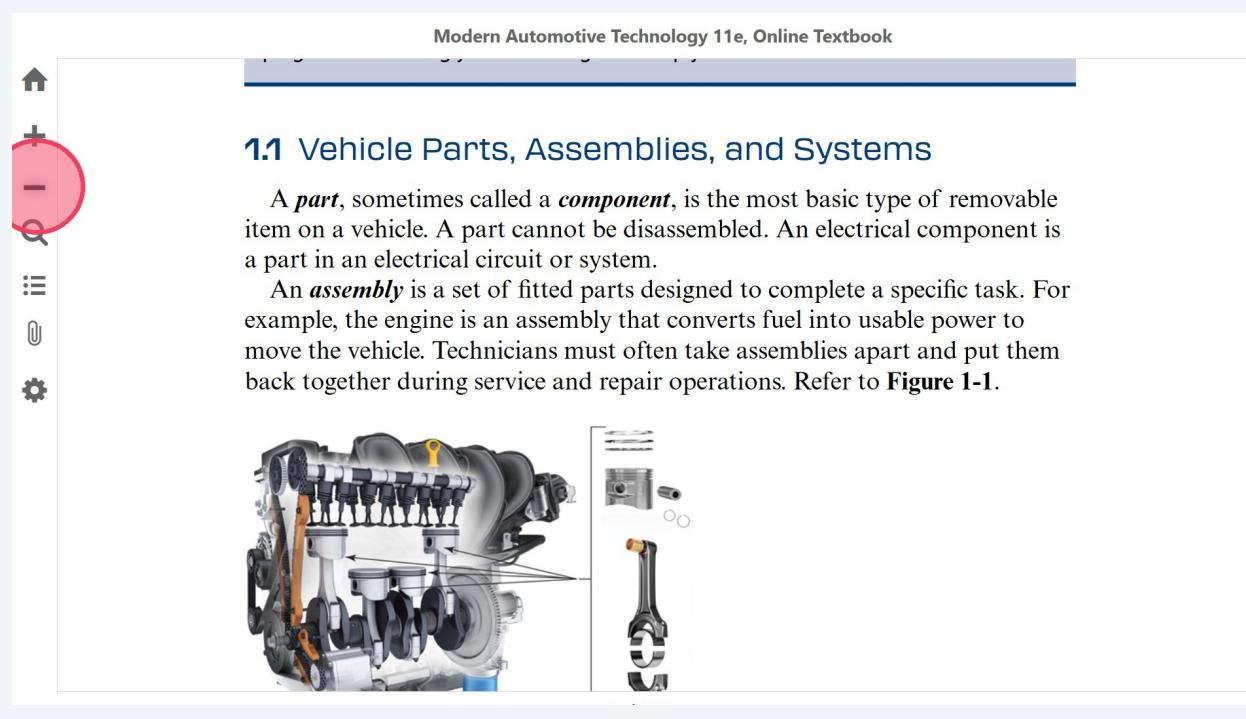
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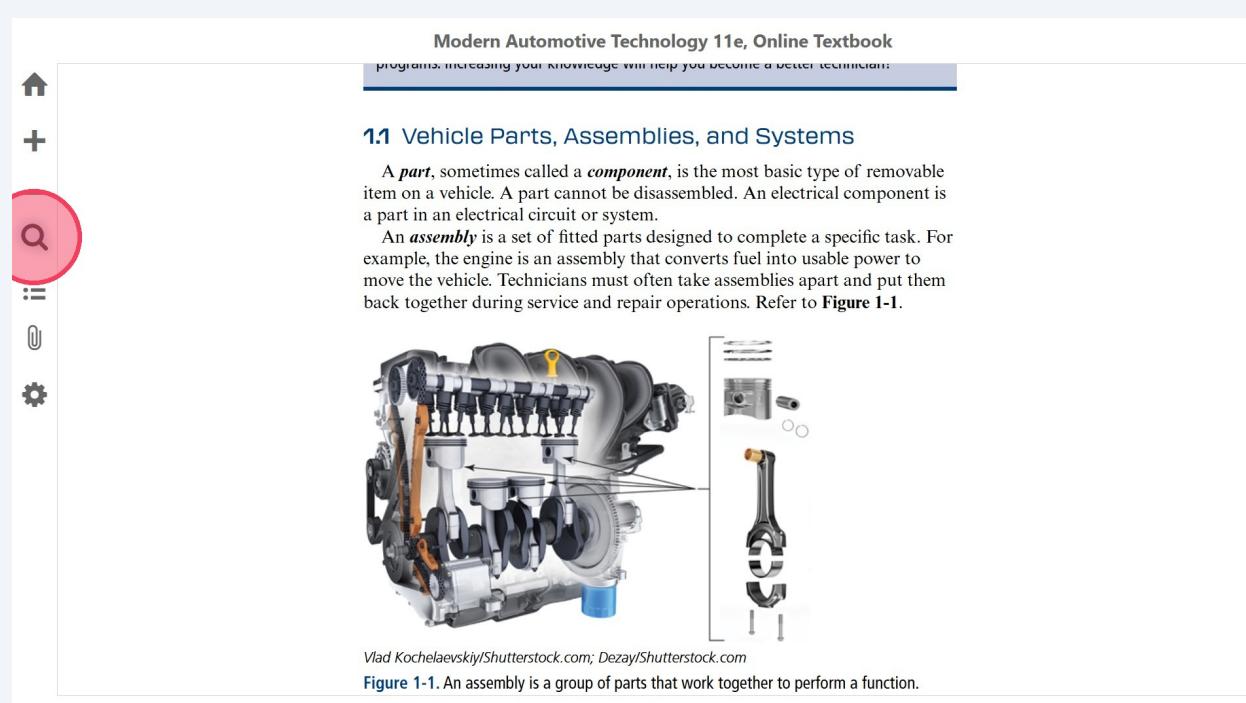
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Figure 1-1. An assembly is a group of parts that work together to perform a function.

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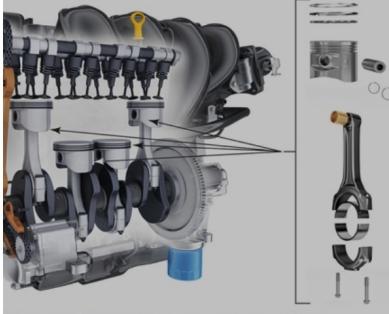
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Enter text or page...

vehicle Parts, Assemblies, and Systems

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

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 together during service and repair operations. Refer to **Figure 1-1**.



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

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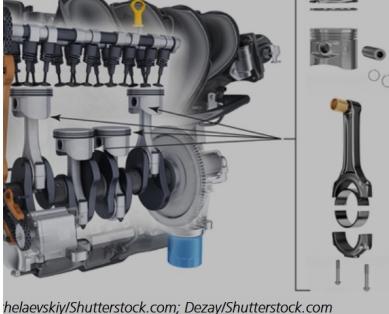
Vehicle (P)HEV, regenerative braking, rotor sensor series hybrid series-parallel hybrid three-phase ac power. Many of today's vehicles incorporate a high-voltage power supply to assist the drive system. It can be the primary source of power for the vehicle, as in a battery **electric** vehicle, or it can... 1438

... 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 onboard 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).

vehicle Parts, Assemblies, and Systems

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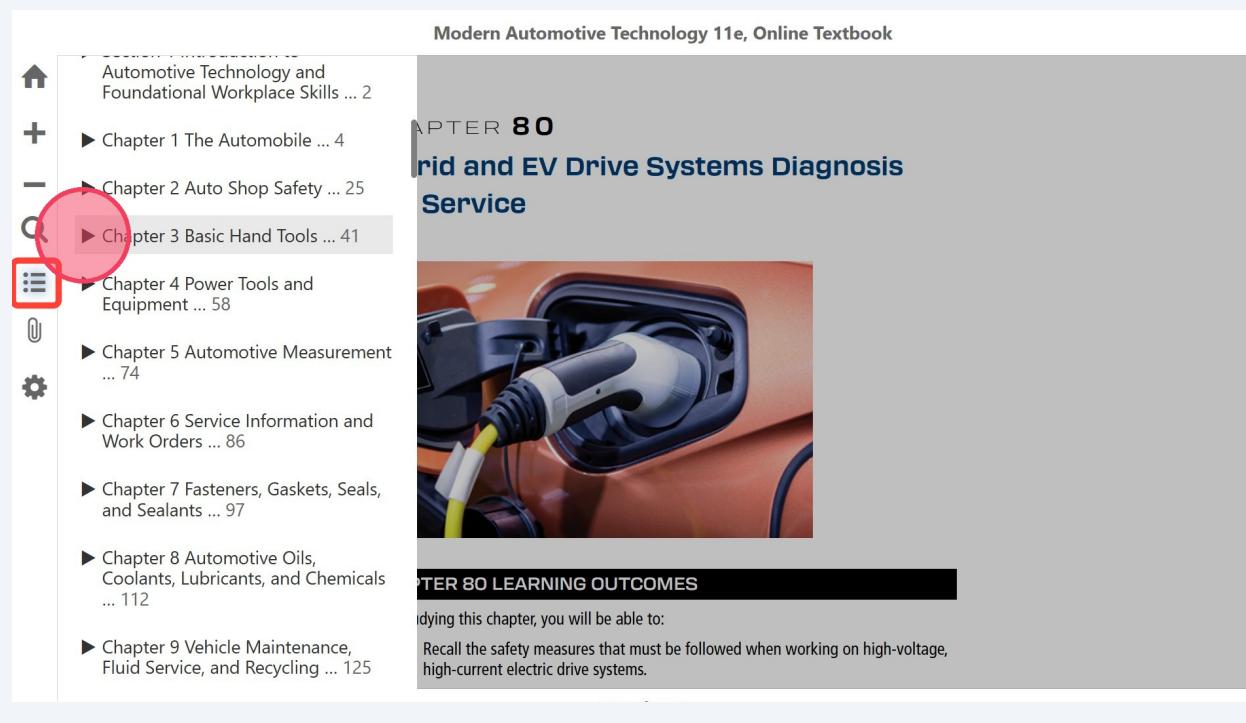
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Figure 1-1. An assembly is a group of parts that work together to perform a function.

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CHAPTER 80

Hybrid and EV Drive Systems Diagnosis Service



CHAPTER 80 LEARNING OUTCOMES

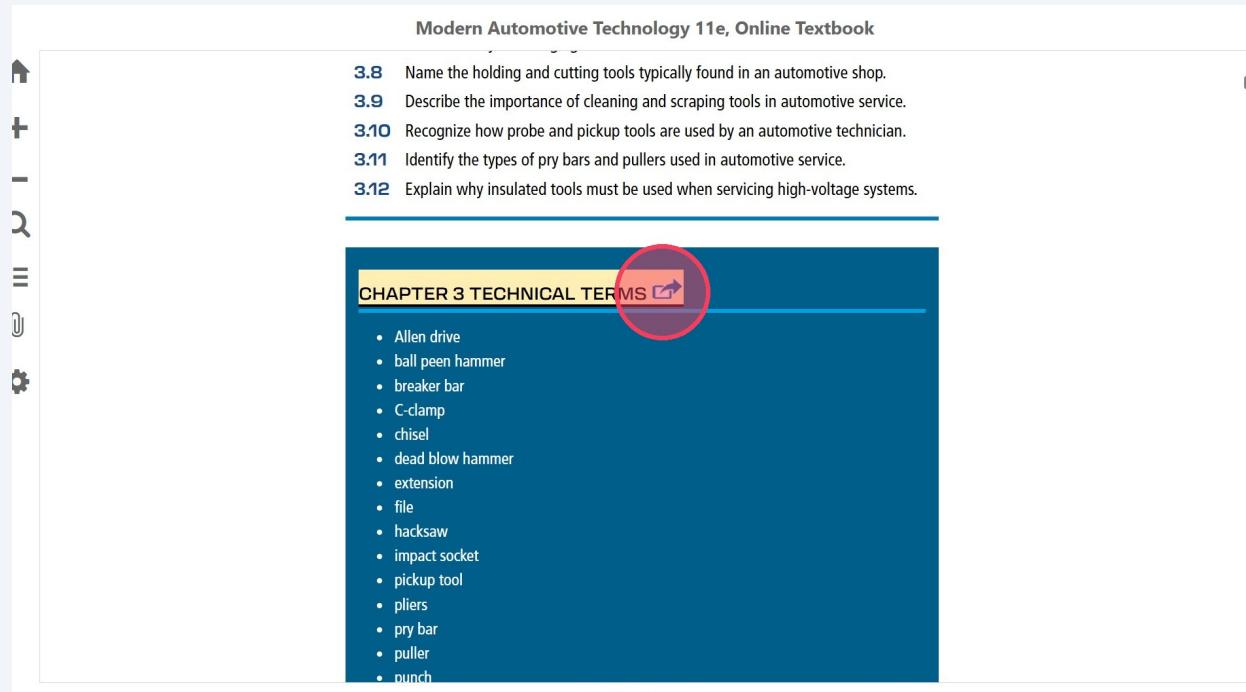
By studying this chapter, you will be able to:

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

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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.

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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

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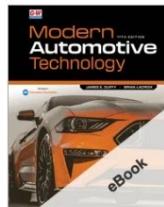
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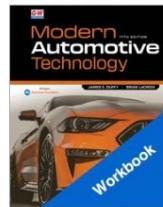
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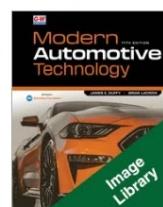
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