

Diesel

- Diesel Engine
- Hydraulics
- Steering and Braking

Diesel Engine

Diesel Engine Maintenance

Proper engine maintenance (covered in owner manuals and maintenance schedules, such as oil selection, spectroscopic chemical analysis of the engine oil, oil and dry filter installation, leak inspection, proper used oil disposal, oil bath systems, and keeping dirt out of the engine) can deter up to 90% of equipment failures. Dr. Billy Harrell discusses procedures necessary for maintenance of a vehicle's cooling system. Students will visually trace an engine's fuel line and learn the importance of air intake systems, battery maintenance, valve clearance procedures, adjustments, the engine position in the compression cycle, fly wheel and pulley mark. The proper sequence of torquing the head bolts, fitting the gasket, reattaching the cylinder head and checking the PTO (without and with load) with a dynamometer also are illustrated and discussed. Collaborator: Billy Harrell, Ph.D., Sam Houston State University. 150 min, 6 sections, 5 printable resources and 7 web resources.

CEVD80819 (DVD) \$195.00

Multimedia Engine Basics

Using videos, colorful animation, and photos, the program explores four areas. The first section examines the crankshaft, which is considered the backbone of the engine. The flywheel is then examined, along with the process of balancing the crankshaft and flywheel in both states of equilibrium and motion. Section two looks at rotary valve design and poppet valves and methods of heat diffusion. Section three outlines the design requirements, composition, and function of pistons and piston rings. Finally, the program looks at how carburetors and fuel injection systems regulate the gasoline/air mixture in an engine. Quizzes are found at the end of each section, and teachers can monitor students' progress. Specify either Macintosh or Windows CD-ROM.

C1997

SHW40017 (VHS) \$90.00

Monitoring, Sensing, & Metering Devices

An engine's components allow it to start and perform. When these parts malfunction, testing equipment is used to detect the specific problem. This Microsoft® PowerPoint® presentation will discuss the types of testing equipment and testing methods used on engines, along with general maintenance procedures, which should be used to extend the life of the testing equipment. 23 slides.

CEV70082 (PowerPoint) \$49.00

Diesel Engines: Valves & Cylinder Heads

The instructor demonstrates how to perform the "valve clearance" procedure listed in a typical owner/operator manual. He begins by determining engine position in the compression cycle, using the flywheel and a pulley mark. He discusses torquing the head bolts in the proper sequence, adjusting valve clearance, fitting the gasket, reattaching the cylinder head, and checking the PTO (without and with load) with a dynamometer. A supplement is included.

CEV00841 (VHS/DVD) \$85.00

Diesel Engines: Fuel System

Operators and agricultural/mechanical students interested in diesel engines will be ready and able to work after watching the program. Stressing safety and giving specific tips during the procedures, the featured expert traces an engine's fuel lines, changes the fuel filter, bleeds the fuel valves, disassembles the injector nozzle and tests it, then reassembles the nozzle. A supplement is included.

CEV00840 (VHS/DVD) \$85.00

Diesel Engines: Lubrication System

The proper maintenance of diesel engines can deter up to 90% of equipment failures. The expert discusses owner manuals and maintenance schedules, oil selection, spectroscopic chemical analysis of the engine oil, oil and filter change, checking for leaks, importance of keeping dirt out of the engine and proper disposal of old oil. A supplement is included.

CEV00819

(VHS/DVD) \$85.00



Diesel Engines: Cooling System

Comprehensive coverage of procedures necessary for maintenance of a vehicle's cooling system is featured on the live-action videotape. The expert demonstrates draining, flushing and refilling of cooling systems on this must see presentation. A supplement is included.

CEV00821 (VHS/DVD) \$85.00

Utilizing a new tractor and tractor power train, a professor and classroom instructor demonstrates proper procedures for disassembly and service of both dry filter and oil bath systems. The importance of the air intake system and proper battery maintenance procedures are also discussed. A supplement is included.

CEV00820 (VHS/DVD) \$85.00

Diesel Engines: Air Intake System & Battery

Hydraulics

Drivelines & Hydraulics—Guide

The 82-page guide will help your students internalize material from class and from the Hydraulic video series. The guide contains chapters on basic hydraulics; components; transmissions, transaxles and hydrostatics; hydraulic symbols and troubleshooting. It also contains reference charts, worksheets, and sample test questions similar to those found on the certification test.

VEP00800 (Book) \$12.00



A Multi-State Curriculum Consortium

Hydraulics Troubleshooting—I

Use the video to help prepare students to take the Outdoor Power Equipment (OPE) certification test, in college vocational training programs, in trade schools, or as an excellent tool for on-the-job training. The technicians explain and demonstrate how hydraulic components are integrated into operating systems that can then perform time-saving work. Watch how 3-D animation helps clarify how circuits and components function as a unit. Then, each major component is discussed in relation to industry-accepted practices for diagnostics and troubleshooting. Students watch technicians work on equipment from major manufacturers.

A supplement is included.

VEP00801 (VHS/DVD) \$95.00

Hydraulics Troubleshooting—II

The program offers an advanced overview of the process professional technicians face when troubleshooting common service calls concerning hydraulic equipment. Students are presented with four case studies. They watch the service call, see common mistakes technicians make, then have the opportunity to diagnose each problem before the program shows what the technicians should have done. A supplement is included.

VEP00802 (VHS/DVD) \$95.00

Hydraulics Troubleshooting—III

The program teaches the technician and student how to read hydraulic schematics. Viewers see hydraulic circuits illustrated in both line art and engineering drawings. Detailed cutaway-view drawings help viewers make the transition from drawing to actual hydraulic part. Students soon see how the use of symbols in circuit schematics greatly simplifies the task of visualizing those circuits, thereby making the circuits much more understandable. A supplement is included.

VEP00803 (VHS/DVD) \$95.00

Steering and Braking Systems

Steering & Braking Systems

The major goal of any farm manager is to minimize the costs of power while maximizing the returns from the farm enterprise. A fundamental knowledge of how a tractor operates is necessary to achieve this goal. This presentation will introduce the student to different types of steering (manual, hydraulic power assist, complete hydraulic power) and braking systems (shoe, band, disc, hydraulic, electrical). The student will learn the basic components or mechanisms allowing steering and braking systems to operate, along with the proper maintenance techniques to help ensure tractor efficiency.

CEV70037 (PowerPoint) \$49.00



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