

Small Gas Engines

Grade 10+

1 Credit

based on *Small Gas Engines*, 12th Edition ©2010

Provides useful information about small gas engines and their applications. Contains material on the construction, operation, lubrication, maintenance, troubleshooting, repairing and rebuilding both two- and four-stroke engines. Applications include lawn mowers, tillers, chainsaws, trimmers, and more. Gives advice on job opportunities and certification.

LightUnit 1	LightUnit 2	LightUnit 3	LightUnit 4	LightUnit 5
Safety in the Small Gas Engine Shop Shop Safety Be Prepared for Emergencies Hazardous Wastes OSHA Tools and Measuring Instruments Hand Tools Vises Engine Tools Power Tools Cleaning Tools and Equipment Measuring Instruments	Fasteners, Sealants, and Gaskets Threaded Fasteners Internal Thread Repair Washers Pins Retaining Rings Keys Adhesives and Sealants Gaskets Fundamentals of Electricity, Magnetism, and Electronics Types of Electrical Circuits Magnetism Electrical Components Electrical Wire and Connectors Electronics Electrical Test Equipment	Principles of Engine Operation Constructing an Elementary Engine Simple Engine in Operation Four-Stroke-Engine; Two-Stroke-Engine Four-Stroke-Engine vs. Two-Stroke-Engine Engine Components Engine Block; Crankshaft Pistons and Rings Connecting Rods and Bearings Intake and Exhaust Ports Camshafts and Gears Valve Lifter or Tappet Valve Train Configurations Starter Assembly; Flywheel Measuring Engine Performance Basic Terminology Science of Engine Performance Measurements of Performance	Fuel Supply, Air Induction, and Emissions Engine Fuels Fuel Systems Air Induction Systems Crankcase Breathers Mufflers Emissions Carburetion and Fuel Injection Principles of Carburetion Types of Carburetors Primers Anti-Afterfire Solenoids Manual Throttle Controls Governor Throttle Controls Fuel Injection (EFI) EFI System Components	Ignition Systems Basic Ignition System Operation Ignition System Components Magneto Ignition Systems Battery Ignition Systems Lubrication Systems Principles of Lubrication Oil Specifications Selecting the Proper Engine Oil Engine Lubrication Systems Cooling Systems Principle of Engine Cooling Air Cooling Liquid Cooling
LightUnit 6	LightUnit 7	LightUnit 8	LightUnit 9	LightUnit 10
Preventative Maintenance and Troubleshooting Preventative Maintenance Systematic Troubleshooting Service Information Fuel System Service Troubleshooting the Fuel System Carburetor Adjustments Carburetor Overhaul Engine Governor Service Fuel Injection Diagnosis	Ignition and Electrical System Service Ignition System Service Electrical System Service Engine Disassembly and Inspection Engine Inspection Engine Disassembly	Cylinder, Crankshaft, and Piston Service Cylinder Reconditioning Crankshaft and Main Bearing Service Piston Assembly Service Camshaft and Valve Train Service Camshaft Service Valve Service Engine Reassembly and Break-In Reinstalling Internal Engine Components Reinstalling External Engine Components Engine Break-In	Lawn and Brush Equipment Working Safely Lawn Mowers Chain Saws String Trimmers and Brushcutters Edger/Trimmers Lawn and Garden Tractors Tractor Safety Tractor Uses Engine Components Chassis and Steering Transmissions Electrical Safety Systems Circuits for Study General Maintenance	Snow Throwers Operating Safely Machine Types and Features Snow Thrower Operation; General Maintenance; Off-Season Storage Personal Watercraft PWC Main Components and Parts PWC Engines; PWC Storage General Maintenance; Transporting PWC Career Opportunities and Certification Considering Career Options Sources of Career Information Applying for a Position Succeeding in the Workplace Certification