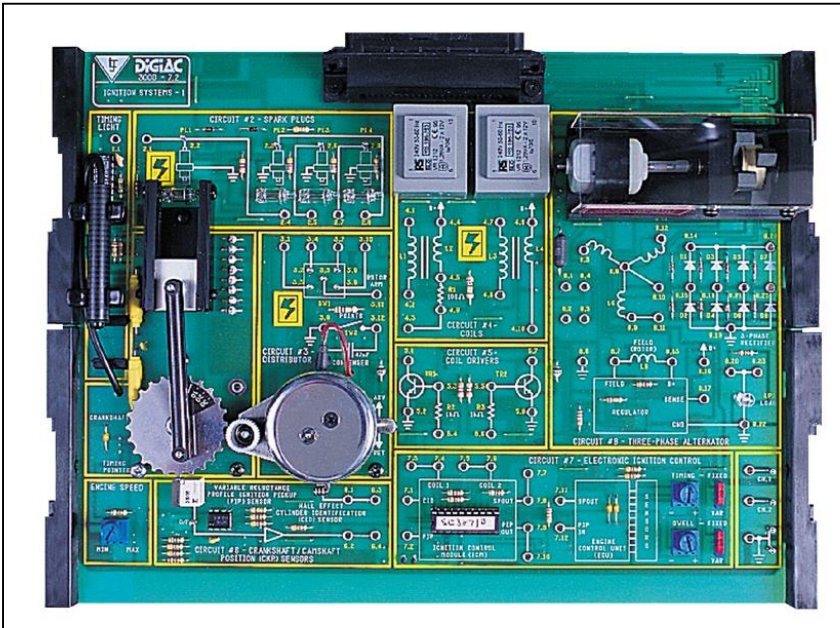


D3000 7.2 - Ignition Systems



The D3000 7.2 study module introduces students to automotive ignition systems through a wide range of practical activities.

This study module has been designed specifically to operate within a DIGIAC modular electronics program. It comprises a circuit board and student laboratory manual housed in an injection molded storage case.

When used in conjunction with a student personal computer (PC), the laboratory manual is fully compatible with the ClassAct computer managed learning system.

The laboratory manual is divided into a series of chapters. Each covers a specific topic area and provides background theory, practical activities and student assessment questions.

Each chapter is designed around a list of performance objectives. These objectives are used by the ClassAct management system to generate a student competency report.

An instructor's solutions book is available, providing solutions to all of the questions and practical activities contained in the laboratory manual.

Typical topic areas include:

- Semiconductor Basic Principles
- Contact Breaker Ignition Systems
- Electronic Ignition Systems
- Spark Plugs
- Dynamo Charging Systems
- Alternator Charging Systems

Typical activities include:

- Recognize the principle of the PN junction.
- Recognize what is meant by the term dwell angle and its effect upon performance.
- Recognize the operating principle of the ignition coil.
- Make measurements of the resistance and voltage at the coil primary and secondary windings.
- Diagnose faults in the contact breaker ignition system.
- Recognize the operating principle of the transistor assisted contact breaker ignition system.
- Identify the range of sensors required to provide input to the ECU.
- Make measurements with an oscilloscope of an inductive pickup ignition circuit.
- Compare the secondary wave patterns of each cylinder of a multi-cylinder engine.
- Recognize that the dynamo current is rectified through a mechanical commutator.
- Recognize the differences in construction and operating principle between the dynamo and alternator.
- Diagnose faults in the rotor circuit.

Items supplied with the D3000 7.2 study module include:

- Circuit board
- Laboratory manual
- Storage case

Additional items required:

- D3000 Experiment Platform (EP) **or** D3000 Virtual Instrument Platform (VIP)
- Digital Multimeter*
- Oscilloscope*

* Note that separate test instruments are not needed if the D3000 VIP is used, as all required test equipment is provided in the form of on-screen 'virtual' instruments.

If a D3000 VIP is used, or if the study module is to be used in a ClassAct computer managed learning environment, then a student PC will also be required.

Optional supporting items include:

- Instructor's Solutions Book.

Module Facts

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	No.	Average time
Chapters	12	90 minutes
Total		18 hours



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 Web site: www.ljgroup.com

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