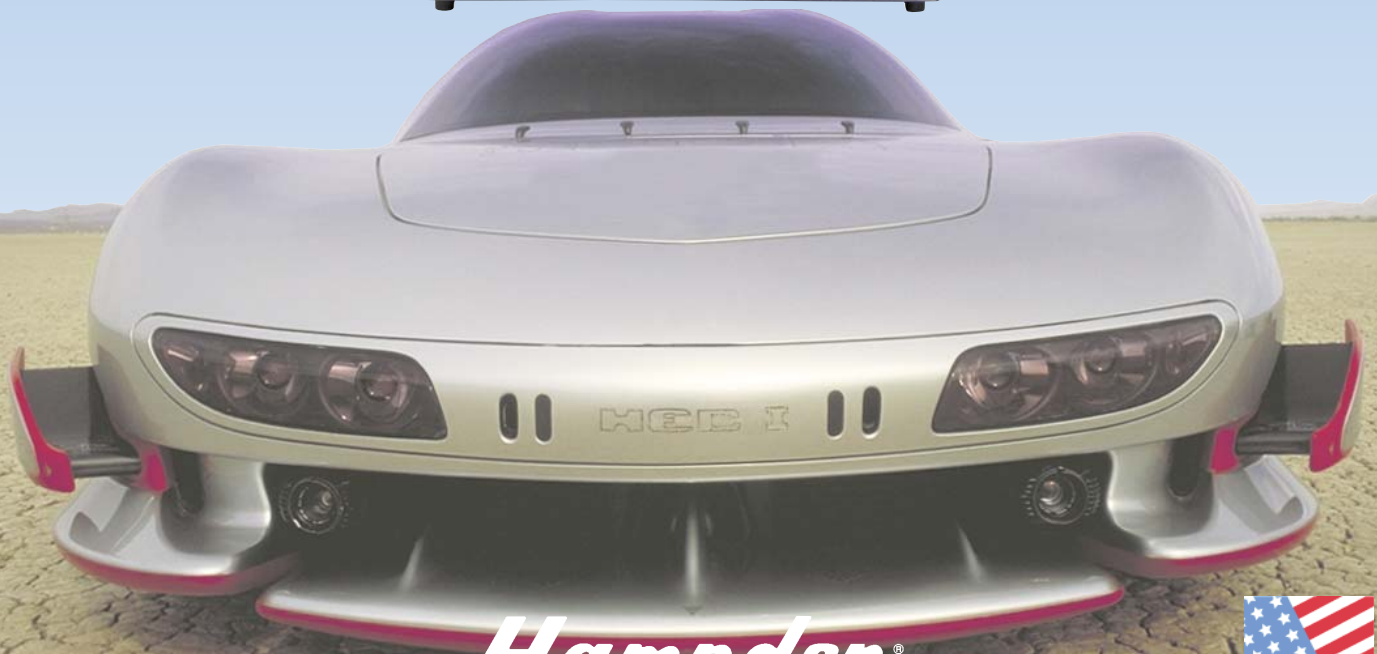
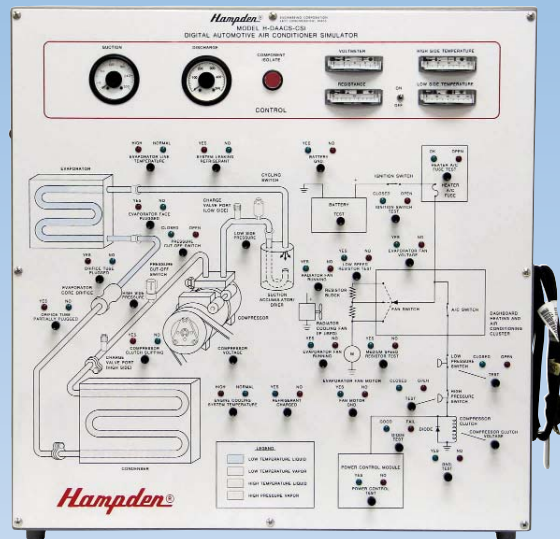


# AUTOMOTIVE TROUBLESHOOTING TRAINERS



**Hampden**<sup>®</sup>  
ENGINEERING CORPORATION



# AUTOMOTIVE TROUBLESHOOTING TRAINERS

## Charging System

Hampden's **Model H-AUTO-ICS** provides training in the principles of automotive charging systems, displaying both internal and external voltage regulators. Simplified techniques are demonstrated to pinpoint problems in automotive charging systems.

### Testing Capabilities

- Battery
- Battery Cables
- Alternator Drive Belt
- Charging System – Volts
- Voltage Regulator
- Voltage Run Test
- Voltage Regulator
- Electrical Connections

## Storage Battery

Hampden's **Model H-AUTO-SB** provides training on testing automotive batteries utilizing hand held digital multimeters.

### Testing Capabilities

- Normal Battery Operation
- Battery Status
- Battery Capacity
- Battery Terminals
- Battery Charging
- Battery Drain Test
- Voltage Drop from Battery to Load
- Battery Testing
- Jump Start Vehicle from Another Vehicle
- Battery Cell Testing

## Braking System

Hampden's **Model H-AUTO-BS** demonstrates brake system fundamentals, featuring disc and drum brake theory and repair.

### Testing Capabilities

- Master Cylinder
- Brake System Metering Valve
- Rear Drum Brakes
- Self Adjusting Drum Brakes
- Emergency Brake
- Front Disc Brake
- Spongy Brake Pedal
- Power Brake

## Cooling System

Hampden's **Model H-AUTO-CS** demonstrates cooling system fundamentals, troubleshooting and repair. Radiator status is presented.

### Testing Capabilities

- Coolant Capacity
- Water Pump Drive Belt
- Radiator Cap
- Coolant Mixture
- Radiator Hose
- Water Pump
- Coolant Leak
- Radiator
- Thermostat Test
- Fan
- Electrical Control

## Starting System

Hampden's **Model H-AUTO-SS** provides training in the use of digital multimeters to pinpoint problems in automotive starting systems.

### Testing Capabilities

- Battery
- Battery Cables
- Ignition Switch
- Neutral Safety Switch
- Starter Motor Solenoid
- Starter Motor
- Slow Cranking
- Fusible Link
- Power Train Module
- Flywheel
- Charging
- Engine Ignition
- Power Train
- Fuel

## Air Conditioning

Hampden's **Model H-DAACS-CSI** demonstrates the principles of operation and troubleshooting of current factory installed AC systems.

### Testing Capabilities

- Suction, discharge, pressure and temperature gauges
- Built-in voltage and continuity probes
- Adjustable ambient temperature control
- Three-speed fan control and LPCO control
- Adjustable RPM control

## Automotive Heating

Hampden's **Model H-AUTO-AH** demonstrates procedures used to repair automotive heating systems.

### Testing Capabilities

- Duct Delivery
- Heater Blower
- Control
- Heater Core
- Thermostat

## Lighting System

Hampden's **Model H-AUTO-LS** demonstrates the application of basic electrical theory to troubleshoot automotive lighting systems.

### Testing Capabilities

- Power Distribution
- Light Switch
- Head Lamps
- Turn and Hazard Light
- Rear Backup Lamps
- Front Parking Lamps
- Daytime Running Lamps
- Fog Lamps

## Electrical Diagnosis

Hampden's **Model H-AUTO-ED** emphasizes applying the basics of electricity to troubleshooting automotive electrical and electronic systems.

### Testing Capabilities

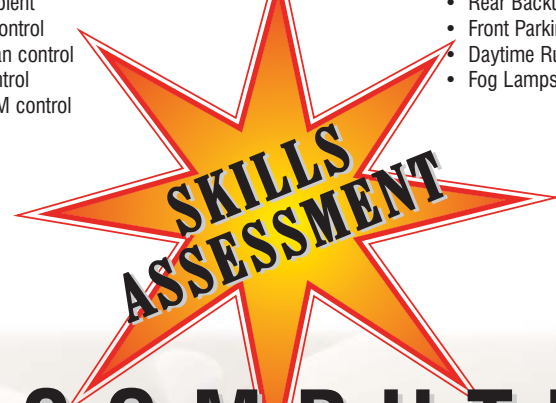
- Battery Test
- Charging System
- Short in a Circuit
- Open
- Identify Component Cluster
- Pinpointing Shorts to Ground
- Pinpointing Opens in Circuit
- Select Faults
  - No Dome Light
  - No Brake Light
  - No Lights
  - No Blower
  - No Wipers
  - Slow Cranking
  - Won't Start

## Fuel Delivery System

Hampden's **Model H-AUTO-FDS** trains the student to pinpoint the problem area and make the proper repair.

### Testing Capabilities

- Fuel Tank foreign matter
- Internal Fuel Pump
- External Fuel Pump
- Restricted Fuel Filter
- Pressure Regulator Test
- Select Faults
  - Carburated
    - Fuel Filter Plugged
    - Mechanical Pump Failure
    - Fuel Sock Plugged
    - Idle Adjustment
    - Fuel Tank Empty
  - Fuel Injected
    - PCM Failure
    - Fuel Filter Plugged
    - Fuel Pump Failure
    - Fuel Rail-Fuel Injector Pulsing



# COMPUTER AIDED DESKTOP TRAINERS

Individual Student Assessment Capabilities

## Real-Time Performance

Hampden's line of **Computer Assisted Panel Instruction Modules** have been designed to provide realistic System Operation & Troubleshooting functions to virtually *ANY CLASSROOM!* Each module's front panel is silkscreened with a complete schematic & pictorial layout of all system operations and combined with actual test-point pushbuttons, LEDs and meters.

All units are controlled via a PC computer using supplied Hampden software and USB I/O Interface.

## Realistic Problem Solving in the Classroom

All Instruction Modules have the capability of inserting system specific Mechanical & Electrical malfunctions—singly or in multiples. This gives students the added experience of resolving realistic problem situations which would otherwise be very difficult for an instructor to create in a classroom.



## Standard Features

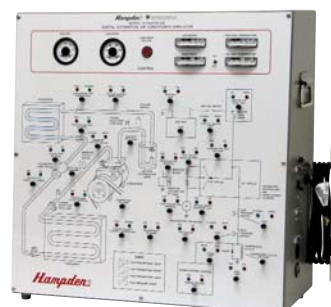
- SCHEMATIC AND PICTORIAL TEST POINTS
- SPECIFICATION CHART
- IMPROPER EQUIPMENT USE WARNING
- COMPONENT ISOLATE SWITCH
- MALFUNCTION INDICATION
- WINDOWS DIGITAL CONTROL SYSTEM



**MODEL H-AUTO-ICS**  
Automotive Charging System Simulator



**MODEL H-AUTO-BS**  
Automotive Braking System Simulator



**MODEL H-DAACS-CSI**  
Automotive Air Conditioning Simulator



**MODEL H-AUTO-ED**  
Automotive Electrical Diagnosis Simulator



**MODEL H-AUTO-CS**  
Automotive Cooling System Simulator



**MODEL H-AUTO-AH**  
Automotive Heating Simulator



**MODEL H-AUTO-FDS**  
Automotive Fuel Delivery System Simulator



**MODEL H-AUTO-SB**  
Automotive Storage Battery Simulator



**MODEL H-AUTO-SS**  
Automotive Starting System Simulator



**MODEL H-AUTO-LS**  
Automotive Lighting System Simulator

**Standard Products...Designed to Meet Your Growing Needs!**

# State-of-the-Art Classroom Training



# AUTOMOTIVE TROUBLESHOOTING TRAINERS

## Hampden Covers Your Certification Needs!



### Engine Repair (A1) ✓

### Automatic Transmission and Transaxle (A2) ✓

c. In vehicle Transmission and Transaxle Repair

### Manual Drive Train and Axles (A3) □

### Suspension and Steering (A4) □

### Brakes (A5) ✓

- a. Hydraulic System Diagnosis and Repair
- b. Disc Brake Diagnosis and Repair

### Electrical/Electronic Systems (A6) ✓

- a. General Electrical System Diagnosis
- b. Battery Diagnosis and Repair
- c. Starting System Diagnosis and Repair
- d. Charging System Diagnosis and Repair
- e. Charging System and Repair

### Heating and Air Conditioning (A7) ✓

- a. A/C and System Diagnosis and Repair
- b. Refrigeration System Component Diagnosis and Repair
- c. Heating and Engine Cooling Systems Diagnosis and Repair
- d. Operating Systems and Related Controls

### Engine Performance (A8) ✓

- a. General Engine Diagnosis
- b. Computerized Engine Controls Diagnosis and Repair
- c. Ignition System Diagnosis and Repair
- d. Fuel, Air Induction, and Exhaust Systems Diagnosis and Repair
- e. Emissions Control Systems Diagnosis and Repair
- f. Engine Related Service

## H-AACT Automotive Air Conditioning Series

The Hampden H-AACT Series Automotive Air Conditioning Systems use an electric motor to drive the compressor. The unit also includes a condenser and fan, a filter drier, a DC power supply, and AC controls. Furnished complete with text/manual, "Automotive Heating and Air Conditioning", by Tom W. Birch.



**MODEL H-AACT-1B**  
with variable speed drive  
(Factory Original Equipment shown)

## H-CD-46-RC Four-Cycle, Six Cylinder Digital Diesel Engine Simulator

The Hampden Model H-CD-46-RC Four-Cycle, Six-Cylinder Digital Diesel Engine Simulator provides hands-on training on a computer controlled simulated diesel engine.

The simulator has the capability of 40 malfunctions which can be inserted singly or in multiples. They may be inserted before their "permissive" has been reached; that is, a battery or starter failure may be selected while the engine is running. However, it will not signal a problem until the engine is turned off and an attempt is made to restart.



**MODEL H-CD-46-RC**  
Four-Cycle, Six Cylinder Digital  
Diesel Engine Simulator



Hampden is committed to providing industry-leading technology.

For the latest from Hampden, visit our home page at <http://www.hampden.com> or e-mail us at [sales@hampden.com](mailto:sales@hampden.com)

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