Motors
Series 1, 2 and 3

ISO 9001:2015

Hampden®
ENGINEERING CORPORATION

MADE IN U.S.A.

Hampden Engineering Corporation

Series 1 Rotating Machines

The Hampden Series 1 complement of one horsepower AC and DC motors and generators provide instructors a large measure of flexibility in teaching electrical power technology. The competency-based program produces maximum student involvement while making optimum use of the instructor's time.

The Series 1 system of machines, controllers, and accessories is designed primarily for multi-level instruction in electrical power generation and utilization. As such, it is equally suitable for:

(1) Electrical Trades,
(2) Air Conditioning and Refrigeration,
(3) Appliance Repair, and
(4) as an introductory approach to the more sophisticated machines found in advanced grades and technical courses.

Models Shown

- SPM-1 Split-Phase Motor
- CSM-1 Capacitor Start Motor
- DCG-1 DC Generator
- DCM-1 DC Motor
- IM-1 Three-Phase Induction Motor
- WRM-1-3A Wound Rotor Motor
- SHPM-1 Shaded Pole Motor

HMR-26 ➔
Roll Around Storage Cabinet Option

← HMB-100A Student Experimentation Stations mounted on Workbench for running units The power turret contains six power supplies, whose ranges are compatible with the requirements of the Series 1 program.

DCM-1

SPM-1

CSM-1

DCG-1

IM-1

WRM-1-3A

SHPM-1

Standard Products…Designed to Meet Your Growing Needs!

Series 1 Rotating Machines

Models Shown

- SM-1-3 Synchronous Machine
- DM-1A DC Machine
- MFM-1 Multi-Function Machine
- DYN-1A-DM Fractional Horsepower Dynamometer
- RSIM-1 Repulsion-Start Induction Motor
- PM-1 Permanent Magnet DC Motor
- BDM-1A Brushless DC Motor
- PB-1A Prony Brake
- MGB-1-DG Two Machine Bedplate

Models Not Shown

- ACUM-1 Universal Motor
- PCM-1 Permanent Capacitor Motor
- DSIM-1 Dual Speed Induction Motor
- AS-1 Automotive Starter
- RMFM-1 Refrigeration Multi-Function Machine
- REL-1 Reluctance Synchronous Motor
- RM-1 Repulsion Motor
- VIL-1 Variable Inertia Load

SM-1-3

DYN-1A-DM

PM-1

DM-1A

RSIM-1

BDM-1A

MFM-1

MGB-1-DG

PB-1A

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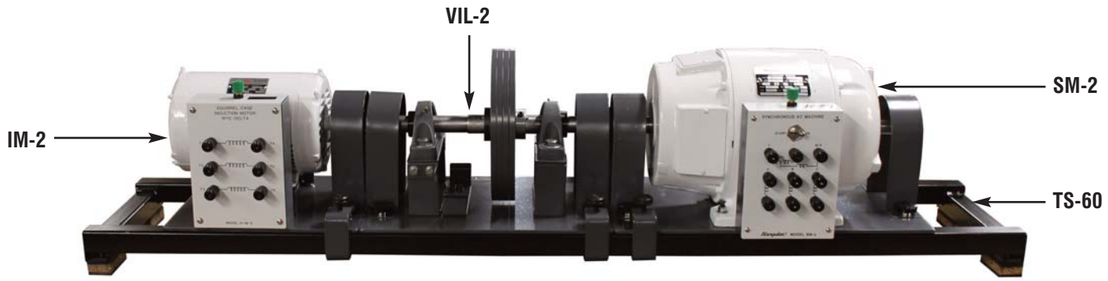
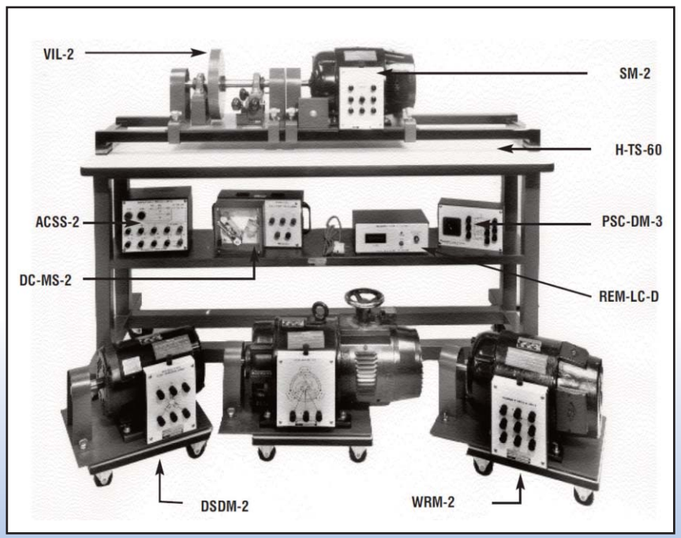
Series 2 Rotating Machines

The Hampden Series 2 Integral Two Horsepower Rotating Machine System utilizes a modular approach to the study of principles and applications of rotating machines.
The Series 2 system provides practical training for electrical power in a manner which allows for focusing on specific power and electromechanical topics.
All motors and machines are mounted on a tracking system that allows for quick, secure interconnection on a rugged steel test stand, Model H-TS-60.

- ACSS-2 Synchronous Motor Starter
- DM-2 DC Machine, 2HP
- SM-2 Synchronous Machine, 2HP
- IM-2 Induction Motor, Wye-Delta 2HP
- WRM-2 Wound Rotor Motor, 2HP
- DYN-2 Electrodynamometer, 2HP
- H-TG-2 Tachometer with cover
- DSDM-2 Dahlander Motor, 2HP
- MFM-2 Multifunction Motor, 2HP
- REL-2 Synchronous Reluctance Motor, 1.5 HP
- DSIM-2 Dual Speed Induction Motor, 2HP





WRM-2

ACSS-2

Series 3 Rotating Machines

The Hampden Series 3, Three Horsepower System utilizes the modular approach for the study of principles and applications of rotating machines.
The heart of the Series 3 System are the commercial type integral horsepower motors, generator and alternator modules which can be interfaced to the electrical work center. The electrical work center consists of instrumentation, machine terminal, and circuit modules for control for the Series 3 rotating machines.
The series 3 System provides the hands-on practical training for electrical power and electromechanical course levels at Vocational, Technical and Engineering curricula.

- H-EWC-3A Electrical Work Center
- H-ESC-3 Storage Cabinet
- DM-3 DC Machine with DM Overlay
- SM-3 Synchronous Machine with SM Overlay
- IM-3 Squirrel Cage Induction Motor-12 Lead with IM Overlay
- WRM-3 Wound Rotor Motor with WRM Overlay
- DYN-3 Dynamometer with DYN Overlay
- VIL-3 Variable Inertia Load
- PB-3 Prony Brake

- ACVA-3/DCVA-3 AC-DC Voltmeter Ammeter Module
- ACWM-3A Dual Single Phase Sequence Indicator Module
- SYN/PSI-3 Synchronizing and Phase Sequence Indicator Module
- H-ACHZ-3 Frequency Module
- SFR-3A Series Field Rheostat Module
- SFR-3B Shunt Fleld Rheostat Module
- SFR-3C Communtating Field Rheostat Module
- DC-MS-3 DC Manual Starter Module
- MS-3-3A Magnetic Starter Module
- HPT-100A Digital Photo Tachometer with Feedback Module
- WRSC-3 Wound Rotor Speed Controller
- DC-ARC-300 DC Armature Controller
- HMR-NR-12530 125-30 AC-DC Power Supply-Mobile
- HMRL-4.2 Resistance Load 1Ø and 3Ø Mobile
- HMIL-4.2 Inductance Load 1Ø and 3Ø Mobile
- HMCL-4.2 Capacitance Load 1Ø and 3Ø Mobile
- HD-1204-FE-3 DC Excitation Power Supply Module

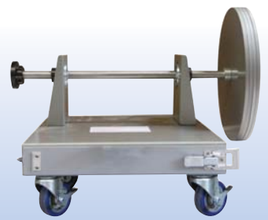
PB-3

H-EWC-3A Electrical Work Center

SFR-3A

HD-1204-FE-3

DYN-3



VIL-3

HMRL-4.2, HMIL-4.2, HMCL-4.2

WRM-3

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REM Rotating Machines

The Hampden **Model H-REM-120CM-MP** Universal Laboratory Machine, which can operate in a variety of AC and DC modes, is available to meet these needs and serve as an experimental platform of a wide variety of electrical machine studies, including computer analysis and control.

The Universal Laboratory Machine set shown here consists of a 2 kVA uniform gap universal Machine coupled to a trunnion mounted DC dynamometer. The dynamometer torque can be measured under both motoring and generating conditions by means of a spring balance calibrated directly in pounds-feet and newton-meters. A 36 position locking device is fitted in the dynamometer to allow stalled torque measurements on the Universal Machine. There is also a DC tachometer on the dynamometer.

The Universal Machine is basically a twopole induction motor with all of the stator coil ends brought out. Its rotor has a commutator winding with 2ø and 3ø tappings. All of these windings, including a rotor and stator search coil, as well as a full-pitch search coil on the dynamometer armature, are brought out to the terminal panel.

The **Model H-REM-1A1CM-MP-1** Provides all conventional modes for operation of DC and AC motors, generators and alternators. The DC Machine has a nominal rating of 3.0 HP as a motor and 2.5kW as a generator. Rigidly coupled to it is an AC Machine having a nominal rating of 3.0 HP as a motor and 2.5kW as an alternator. These machines are ideal for use at the secondary through post secondary level. The comprehensive machine console includes all controls, power supplies, and resistance loads necessary to operate the machine in all modes. The versatility of these machines results in savings both in space and the cost of multiple machines.

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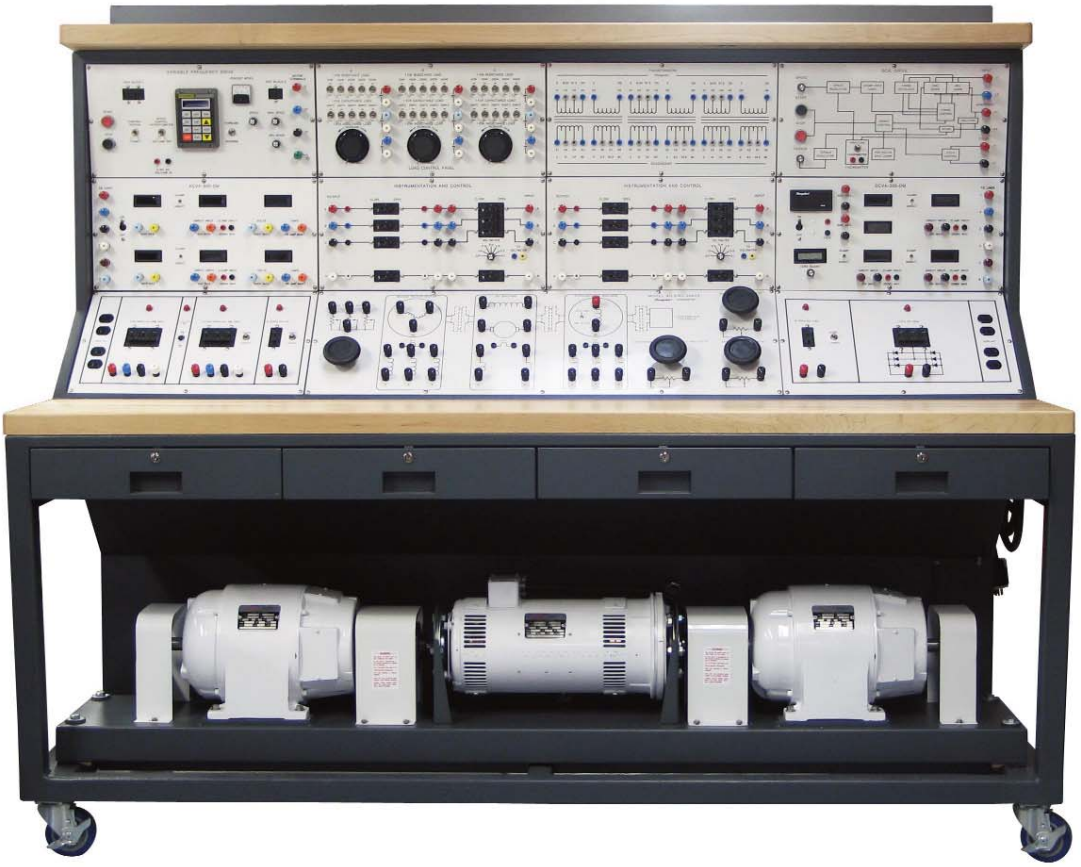
EWC-300AX Rotating Machine Mobile Console



The Hampden **Model H-EWC-300AX** is a mobile electrical work center used for studying a wide range of AC and DC rotating machines. The Work Center is comprised of an 84" long by 36" deep all steel bench which includes a 14" deep hardwood work surface and four key locked storage drawers. Numerous equipment panels are mounted in a console mounted on top of the mobile bench.

The incoming line is circuit breaker protected. Constant three-phase power is available at the left side of the console plus there are a number of variable power supplies contained within the unit.

Eleven separate equipment panels make up the control and instrumentation console. The equipment panels are flush mounted and sloped for easy viewing. Doors on the rear of the console provide accessability to the equipment panels for examination and service.

The Hampden Model H-EWC-300AX Rotating Machines Mobile Console program consists of the following components:

- Mobile Console
- DYN-300X Dynamometer
- WRM-300X Wound Rotor Motor
- SM-300X Synchronous Machine
- MTP-300 Machine Terminal Graphics and Rheostat Panel
- WRSC-300-R Wound Rotor Speed Controller
- SFR-300-AX Shunt Field Rheostat
- SFR-300-BX Series Field Rheostat
- SFR-300-CX Synchronous Machine Field Rheostat
- ICP-300 Instrumentation and Control Panels (2)
- ACVA-300-DM AC Voltmeter - Digital
- DCVA-300-DM DC Voltmeter - Digital
- VFD-300X 3HP Variable Frequency Drive
- RLC-300X Resistance-Inductance-Capacitance Load Panel
- T-300-3A Transformer Panel
- H-SCR-300-RDS Regenerative DC Drive
- PSP-300-1 Power Supply Panel
- PSP-300-2 Power Supply Panel
- H-REM-LC-D Load Cell Transducer
- H-TD-300-DI Tachometer Transducer

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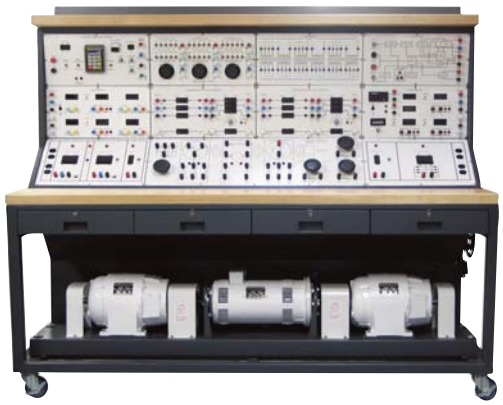

LabVIEW™ COMPATIBLE

GRAPHICAL PROGRAMMING SOFTWARE

COMPUTER DATA LOGGING (CDL)

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