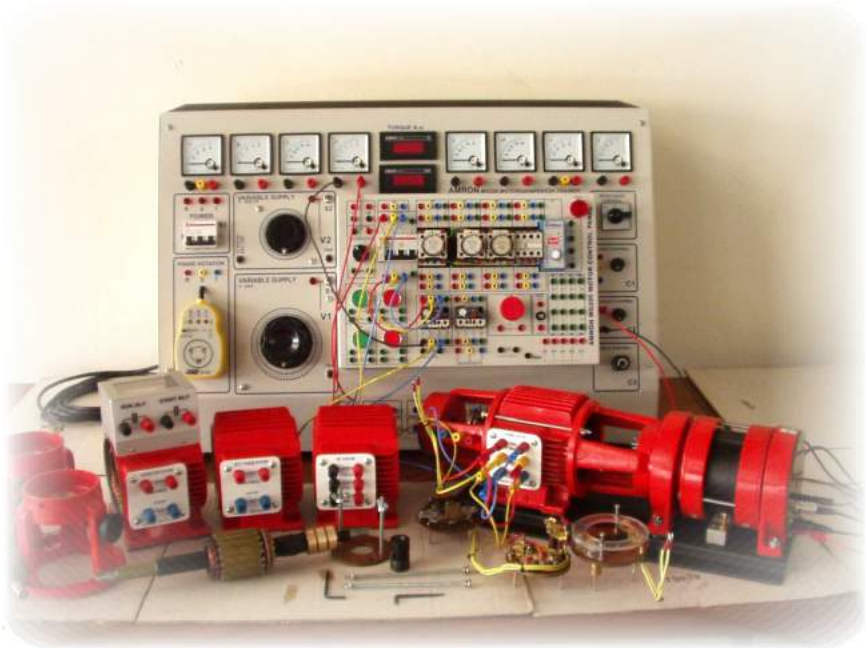
AMRON

ELECTRICAL MACHINE TRAINER MG-200



This trainer consists of:

a) Control/Instrumentation Console
b) Motor Control Panel
c) Set of Demountable Components for Construction of Electrical Machines

Control/Instrumentation Console

A steel enclosure with removable front plate which supports the metering (amps, volts, torque & speed), and the controls for varying voltage,resistance, load, etc.
The front plate also includes a circuit breaker with phase indicator lamps, and a phase rotation indicator. The output from the variacs is isolated and
protected by re-settable thermal overload switches.

Transformers, load resistors, variable DC supply board with power block, FET board, motor/generator board and stall detector/pulse shaper board
are mounted inside the steel console.

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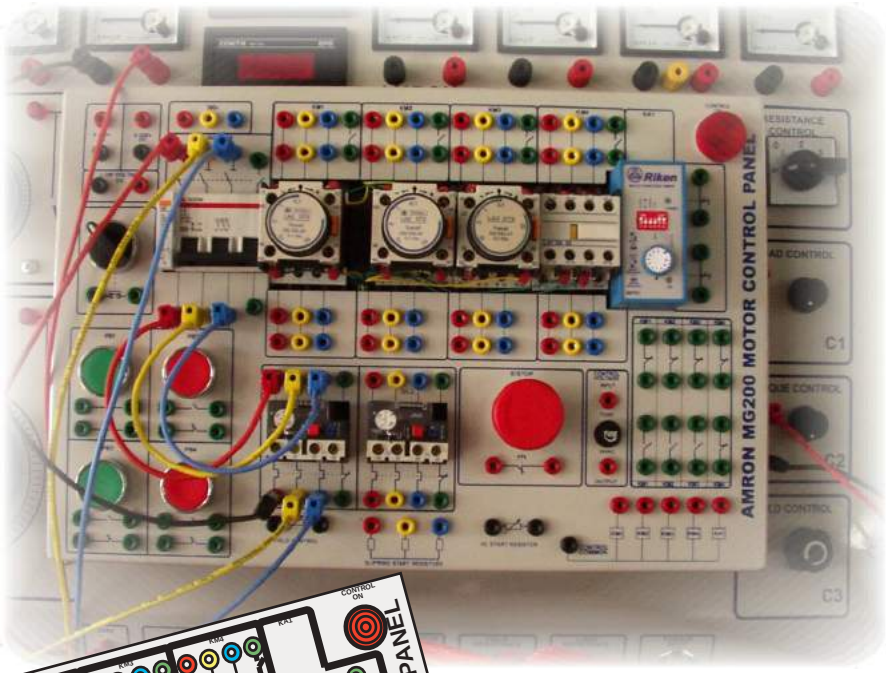

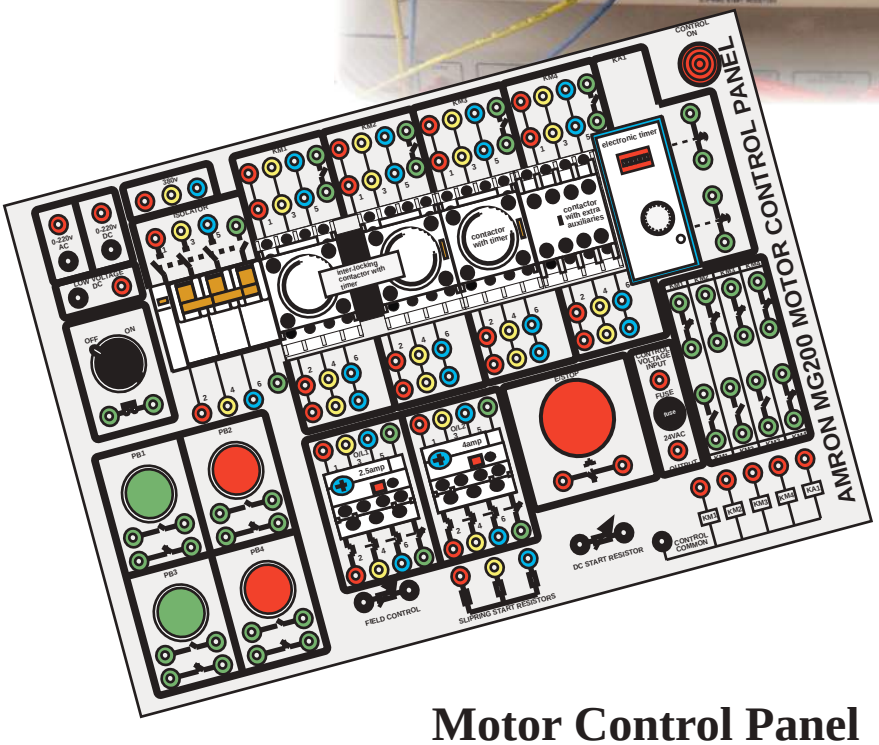

Motor Control Panel

Contains all the components for motor control, including switches, circuit breaker, contactors, timers,overload relays, emergency stop, fuse & indicator lamps.
The control circuits can be varied and tested before connection to the motors, and operate at a safe voltage of 24V AC. The Motor Control Panel is normally attached to the front plate of the console, and may also be used as a separate product for the control of motors up to 2KW.

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Demountable Motor Components

Consist of components from the Standard DM-100 set, to construct all the electrical machines required.
Parts include: endshields; stators; rotors; brushgear; mechanical brakedown & pad; assembly bolt & nut set; coupling set & Allen keys.

An eddy current brake mounted on a steel platform allows the coupling of all the motors, so that characteristic curves may be measured and plotted.
Electrical machines are frame 80, 350-400 watt.
They are industrial components, very robust, and the working parts are highly visible. They can be coupled to each other to create motor/generator sets.
The mechanical brake drum/pad assembly may be fitted to any motor shaft.
The interchangeable components supplied are sufficient to allow the construction of two complete machines, including:

- Ø DC generator
- Ø DC motor (series, shunt, compound)
- Ø Single phase motors (capacitor start, capacitor run, split phase)
- Ø Single phase universal motor
- Ø Single phase alternator
- Ø 3 phase cage induction motor
- Ø 3 phase slipring motor
- Ø 3 phase alternator
- Ø Eddy current brake

Additional components can be supplied for the construction of other electrical machines. All connections are via stackable 4mm banana plug connecting leads,
which are supplied. A comprehensive instruction/experiment manual is also supplied.

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Experimental Capability (Standard Set)

- Direct-on-line starting of all single phase motors
- Forward & reverse control of capacitor & split phase motors
- Braking of capacitor & split phase motors
- Direct-on-line forward/reverse starting of 3 phase motors
- Automatic/star delta starting, forward & reverse of 3 phase motors
- Braking of 3 phase cage & slipring motors
- Resistance starting of slipring motors
- Semi-automatic star/delta starting of 3 phase motors
- Manual star/delta starting of 3 phase motors
- Direct-on-line starting of DC motors
- Resistance starting of DC motors
- Braking of DC motors (reverse current & dynamic)
- Speed/torque characteristics of AC machines
- Torque/current characteristics of AC machines
- Torque/efficiency characteristics of AC machines
- Speed/torque characteristics of a slipring machine with various rotor resistances
- Output voltage/load current characteristics of a self-excited DC shunt generator
- Efficiency of a self-excited DC shunt generator
- Speed/torque characteristics of a shunt-connected DC machine
- Output/torque characteristics of a shunt-connected DC machine
- Efficiency/torque characteristics of a shunt-connected DC machine

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