

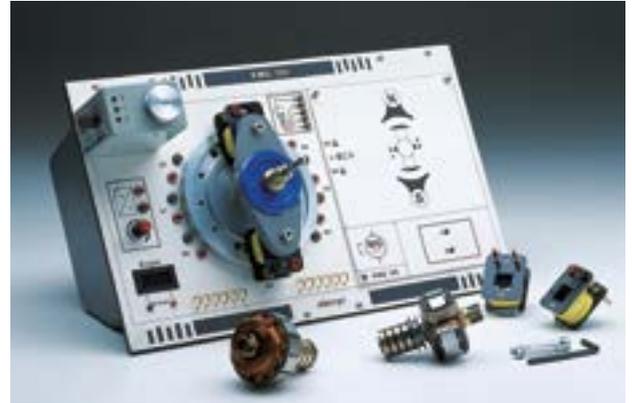
Introduction to electric machinery**DISSECTIBLE ROTARY ELECTRIC MACHINES KMQ-120**

The KMQ-120 dissectible machine has been designed for the clear and straightforward study of the building, operation and performance of the most common rotary machines. With relatively few parts and an easily understandable operation, a large number of tests can be carried out, combining the advantage of a simplified but real system with the highly accurate reproduction of practical conditions.

The equipment consists of a tabletop panel, which may be mounted upright on a frame, and a carrier case with a series of parts (rotors, brush holdings, coils, field poles, etc.), which can be used to build different rotary machines on the panel in a quick and easy way.

The support disc is attached to the panel, being used for screwing on the various field poles. The shaft protrudes from the centre of the disc and this is where the different rotors are attached. The necessary parts included (rotors, field poles, light poles, etc.), as required for building the machines, are the following:

- 1 Two-pole rotor
- 1 Three-pole rotor
- 1 Twelve-pole rotor
- 1 Squirrel cage rotor
- 6 Narrow field poles
- 3 Wide field poles
- 6 Windings of 240 turns
- 4 Windings of 1400 turns
- 5 Brushes
- 1 Brush holder
- 6 Light poles
- 1 Drive motor with belts



- 1 Drive belt
- 6 M5 X 50 mm Allen screws.
- 1 x 5 mm Allen key
- 1 x 2.5 mm Allen key
- 4 x 4 mm. X 150 mm red wires
- 4 x 4 mm. X 1 mm black wires

An area has been set aside on the upper left-hand corner of the panel for the attachment of a drive motor that will allow experiments to be conducted with generators or provide a braking torque for the motors.

The right-hand side of the panel has the area for electric connections, using interchangeable labels.

These allow the quick and clear interconnection of the various windings on the rotary machine subject to the experiment, providing the necessary information for its assembly. The areas the label is subdivided into make it easy to distinguish the electric connections both inside and outside the machine (connection board), without losing the perspective of a real machine.

The panel includes an adjustable power supply for the excitation of the machines, as well as a tachometer for measuring the motor's velocity during the different types of tests.

The machines built are powered by a low voltage supply - 22/38 V AC/DC -, which ensures the students' safety. Accordingly, provision is made for a three-phase transformer 230-400/22-38 V (TRI-120), or a low voltage three-phase generator that takes the single-phase mains supply of 110-230 V / 50-60 Hz (depending on the module) to supply a three-phase voltage of 22/38 V. (GTT-120).

The kit caters for the study of the following rotary machines, amongst others:

- DC generators
- AC motors
- Asynchronous alternator
- Synchronous motor
- Universal motor
- Single-phase induction motor
- Repulsion motor
- Wound-rotor three-phase motor
- Dahlander motor
- etc.

Standard accessories included:

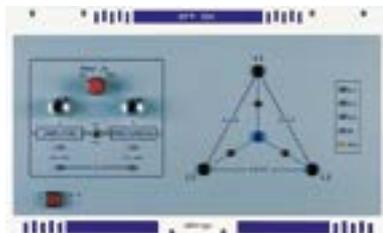
- User manual
- Practicals handbook

NECESSARY accessories:

- GTT-120 three-phase generator or TRI-120 three-phase transformer

Recommended optional accessories:

- CIR-120 teaching module: RL loads
- CRC-120 teaching module: RC loads



THREE-PHASE GENERATOR GTT-120

Panel for mounting on the frame or tabletop that incorporates a low voltage variable frequency three-phase generator with a single-phase mains supply of 110-230 V / 50-60 Hz (depending on the module). It has the following specifications:

- Phase-neutral voltage: 0-22 V variable strength adjusted by a potentiometer control.
- Phase-Phase: 0-38 V strength.
- Maximum current per phase: 5 A.
- Protection against current surges and short circuits.
- Frequency variation: 1-100 Hz in two scales and potentiometer control.
- Instant value output from the three-phase network, variable between 0-360°.
- 3 simultaneously variable 0-30 V / 5 A DC outputs
- Option of independent control of the value of the amplitude and frequency.



DISSECTIBLE ROTARY ELECTRIC MACHINES KMQ-100

This is a "reduced" version of the dissectible machine, designed as a student work station. Although it has fewer options than the full kit, it may be a valid option, depending on the nature of the practicals to be held. Basically, the differences are as follows:

- The panel is smaller, removing the options of drive motor, tachometer, power source, and connections area, maintaining just a small assembly panel.
- There are fewer components for building machines, with the following contents:

- 6 Windings of 250 turns
- 2 Windings of 1400 turns
- 1 Twelve-pole rotor
- 1 Squirrel cage rotor
- 1 Brush holder
- 5 Brushes
- 2 Wide field poles
- 6 Narrow field poles
- 1 assembly support base
- 1 assembly shaft

All the equipment is supplied in a carrier case.

Standard accessories included:

- User manual
- Practicals handbook

NECESSARY accessories:

- GTT-120 three-phase generator or TRI-120 three-phase transformer

Recommended optional accessories:

- CIR-120 teaching module: RL loads
- CRC-120 teaching module: RC loads