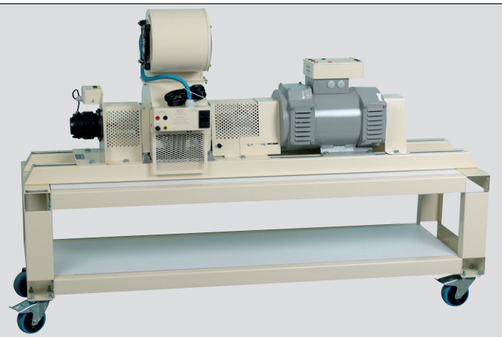
STUDYING THE 1.5KW DC MOTOR

DESCRIPTION OF THE 16 ITEMS INCLUDED IN PACK-DC1 REFERENCE



DC motor **Ref. CC20 - Qty 1** **Rotary torque sensor** **Ref.CR2-V2 - Qté 1**	**Powder brake** **Ref. FP2 - Qty 1** **DC tachogenerator** **Ref. DYTA2 - Qté 1**	**Stand on wheels** **Ref. CTC - Qty 1** **Guide rails** **Ref. RGC - Qty 1**
 **DC variable supply** **Ref. COMPAK40 - Qty 1**	 **Wattmeter** **Ref. W17 - Qty 1**	 **Magnetoelectric voltmeter** **Ref. V1001 - Qty 2**
 **20A magnetoelectric Ammeter** **Ref. A11 - Qty 2**	 **Power supply master/slave** **Ref. GPS3303 - Qty 1**	 **Torque measuring interface for brushless sensor** **Ref. INTER-SB - Qty 1**
 **Multimeter** **Ref. TRG803 - Qty 2**	 **Safety starter Rheostat** **Ref. REDA34 - Qty 1**	 **Rheostat** **Ref. ECO1-470 - Qty 1**
 **Set of 46 safety leads** **Ref. 400S - Qty 1 set**		

ref. PACK-DC1
ALSO AVAILABLE IN 300W. CONSULT US.

TUTORIAL WITH PACK-DC1

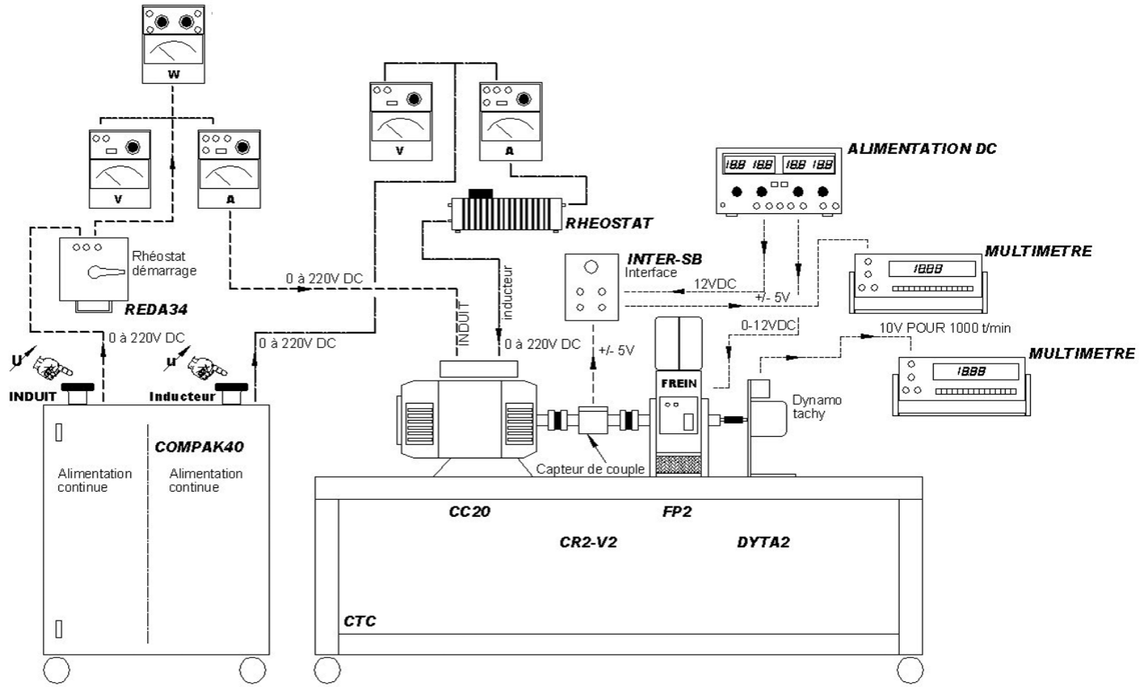
- **Study of connection schematics with shunt excitation and separate excitation (independent).**
  - Understanding and undertaking motor wiring depending on the selected excitation type.
  - Measurements and comparisons of the various consumed power, voltage and current values depending on the selected excitation type.

- **Calculation method used for determining the resistance value:**
  - of the start-up rheostat

- **Study of the motor's operation when unloaded, when loaded and when overloaded with separate excitation (independent) and with shunt excitation:**
  - Theoretical reminders of the mathematical formulae applying to a DC motor.
  - Understanding and undertaking motor wiring with measuring devices.
  - Creation of a table containing calculations and measurements of electrical and mechanical quantities at various points of the motor load:
    - ✔ Current consumption of field system/in the rotor
    - ✔ Power consumption of field system/in the rotor
    - ✔ Rotation speed
    - ✔ Useful power
    - ✔ Motor torque
    - ✔ Counter-electromotive force
    - ✔ Rotor Joule decrease
    - ✔ Efficiency

- **Plotting of properties based on motor measurements:**
  - Rotation speed as a function of the field system current
  - Rotation speed as a function of the rotor current
  - Efficiency as a function of the rotor current
  - Torque as a function of the rotor current
  - Power consumption as a function of the rotor current
  - Calculation of no load losses
  - Power balance
  - Comparison oth the 2 types of excitation

- **Analysis of results and conclusion**



The engine group assembly PACK-DC1 allows the study DC motor 1500W.
The characteristics of load are plotted from measurements made by various analog devices or digital.
It is made up of 16 elements, engine group + accessories.

Delivered with teaching resources
Student booklet: theoretical studies and practical works
Teacher booklet: with correct versions of the practical works

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