Getting To Know Your GENECON

Activity 1

Key Concepts

1. A generator converts mechanical energy (the energy of moving parts) into electrical energy (the flow of electrons through a conductor).

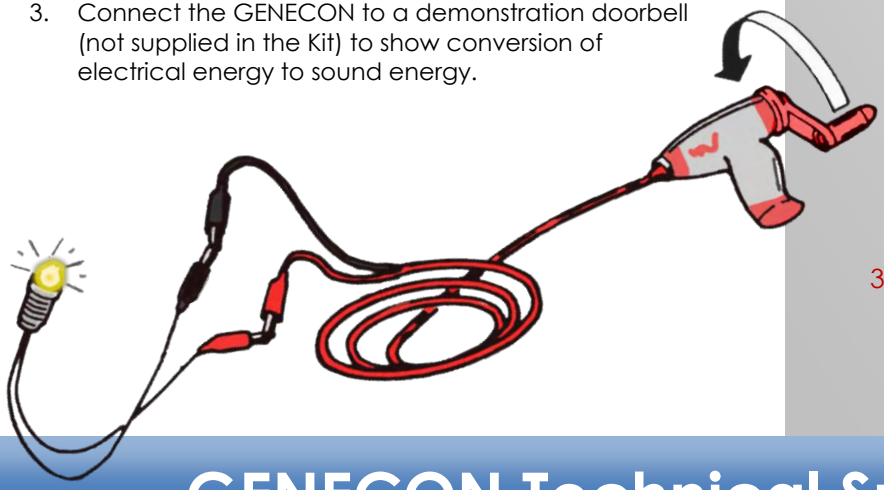
2. The brightness of the bulb is directly related to the voltage of the current passing through it.

Teaching Tips

1. Discuss proper operation of the GENECON with the students.

2. Discuss how lighting the bulb demonstrates a whole series of energy conversions: Chemical energy in the cells of your body was converted into the mechanical energy of your muscles, which the GENECON changed into the electrical energy. The electricity passing through the filament of the bulb got it so hot (thermal energy) that it radiated light energy.

3. Connect the GENECON to a demonstration doorbell (not supplied in the Kit) to show conversion of electrical energy to sound energy.



Materials

1 GENECON with output cord
1 bulb (3.8 V, .3A) in socket with leads

Procedure

1. The output cord should be plugged into the back of the GENECON. Connect the leads of the GENECON to one of the miniature bulb sockets, with leads, supplied in the Kit. Slowly turn the rotary handle of the GENECON with the increasing vigor until the bulb lights. You should notice that the bulb becomes brighter as the handle is turned more rapidly. In general, the brighter the bulb, the more voltage the GENECON is producing.

Caution: The GENECON produces up to 12 volts of pulsating DC current. Overly rapid rotation of the handle may burn out the bulbs supplied in the Kit.

2. SPECIAL CAUTION: While the GENECON is sturdily constructed, excessive speed in rotating the handle can result in stripped gears and damage to the unit. If while rotating the handle in any of the activities which follow, you should experience a sudden "slippage" or decrease in effort required, check your circuit to see if it overloaded (e.g., too many bulbs connected) or shorted out. Continuing to turn the handle when there is no resistance in counterproductive.

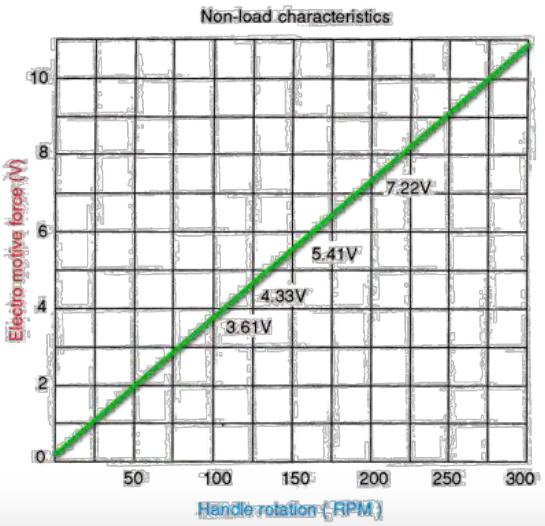
3. Now try turning the handle of the GENECON in the opposite direction. Once again, the bulb lights as before.

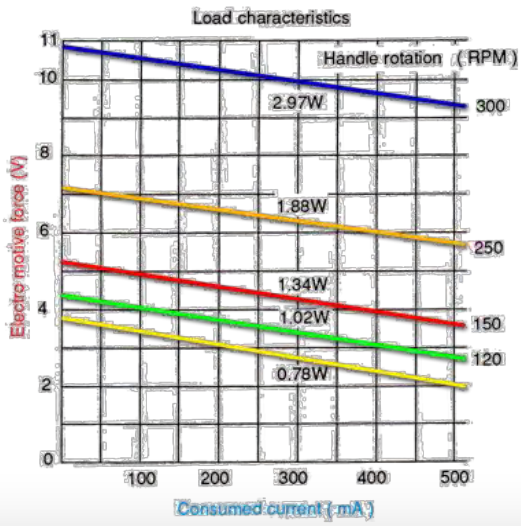
GENECON Technical Specifications

This portable direct current generator is small and convenient. It can be used for experiments involving energy changes or electrolysis. It is capable of generating up to DC 12V with the polarity determined by the position of the handle. The generator body is constructed of transparent acrylic resin allowing the inside structures and mechanisms to be clearly seen and understood. Students can gain direct, hands-on experience in the generation of electricity.

Construction: Transparent ABS resin with red plastic accents
Dimensions: 140 x 114 x 39 mm
Weight: 115 g

Unit is supplied with special output cord with alligator clips at both ends





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