

# Electromagnet Coil Set

100 & 200 turns

Cat.No.S75-5606-W1

Back in 1819, Hans Christian Oersted, a professor of the University of Copenhagen, coincidentally discovered the magnetic effect of electric current, so-called electromagnetism. The electromagnet coil set consist of some solenoids of different turns and different core materials in order to confirm and verify the electromagnet properties like the interrelationship between electric current and magnetism.

## [ Contents ]

1. Solenoid coil (100 turns): 3
2. Solenoid coil (200 turns): 3
3. Core(Copper): 3
4. Core(Aluminum): 3
5. Core(Glass): 3
6. Core(Iron): 3
7. O ring: 15



## [ Activity 1 ] To make electromagnet

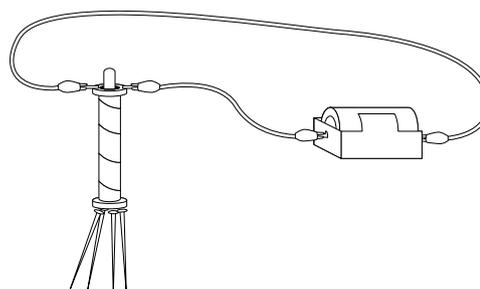
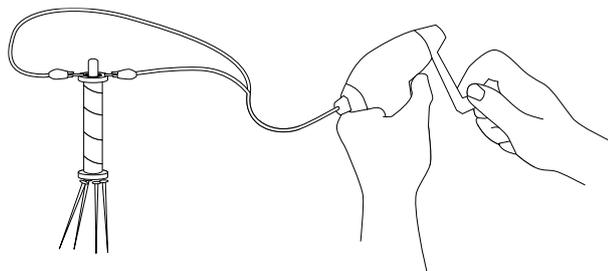
### [Preparation]

Solenoid coil (100 turns): 1, Core (Iron): 1, O rings, (Contained in this set)

Battery with case: 1, Lead with clip: 2, Some iron small nails or paper clips (To be prepared by school)

### [Procedure]

1. Set one O ring to the end of Iron core and insert it into Solenoid coil.
  2. Make electromagnet circuit with battery and leads.
  3. When the circuit is connected, the solenoid coil will pick up some nails.
- \* In stead of battery and switch, you can use Genecon, a hand-held generator.



[Try] To find out what happens and what is observed.

1. Change core material from Iron to others.
2. Increase speed of rotating a handle of Genecon, or numbers of batteries in the serial connection.

## [ Activity 2] Magnetic effect

### [Preparation]

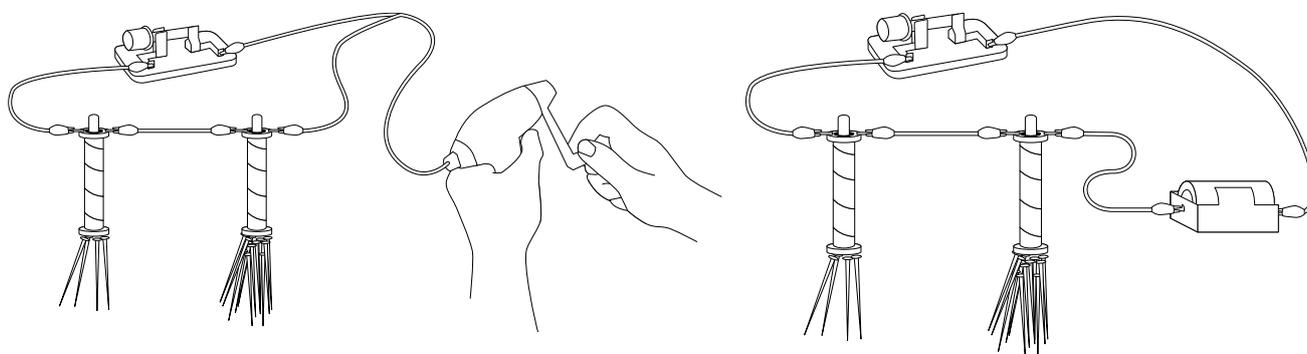
Solenoid coil (100 turns & 200 turns): 1 each, Core (Iron): 2, O rings, (Contained in this set)

Battery with case: 1, Switch: 1, Lead with clip: 3, Some iron small nails or paper clips (To be prepared by school).

### [Procedure]

1. Set O rings to the end of Iron cores and insert them into Solenoid coil 100 turns and 200 turns.
2. Make electromagnet circuit with a switch, battery and leads.
3. When the circuit is switched on, the solenoid coils will pick up some nails.
4. Identify out the magnetic effect depending on different solenoid turns by comparing amount of nails.

\* In stead of battery and switch, you can use Genecon, a hand generator.



[Try] To find out what is happens and what is observed.

1. Change core material from Iron to others.
2. Increase speed of rotating a handle of Genecon, numbers of batteries in the serial connection.

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