

# Magnetismus

Art. No. 88-59492









(GB) Attention! Not to be used by children under 3 years of age! Danger of suffocation because small parts can be swallowed or inhaled. Only to be used by children over 8 years of age.

For use under adult supervision only. Read this manual carefully, follow the instructions and store the manual for further use/reference. Keep out of the reach of children under 8 years of age! This item is not a toy! It is not an item with the typical commercial character of toys, but a learning tool to support the educational work with children.





























## **General Information**

## About this Instruction Manual

Please read the safety instructions in this manual carefully. To avoid damage to the unit and the risk of injury. only use this product as described in the manual. Keep the instruction manual handy so that you can easilv look up information on all the functions.



## DANGER!

You will find this symbol in front of every section of text which deals with the risk of severe injury or even death in the event of improper use.



## CAREFUL!

You will find this symbol before every section of text that deals with the risk of minor to severe injuries resulting from improper use.



## NOTE!

You will find this symbol in front of every section of text which deals with the risk of damage to property or the environment.

## Intended Use

This product is intended only for private use. It was developed for experimentation with everyday natural phenomena.

# **General Warnings**



## RISK OF FLECTRIC SHOCK

This device contains electronic components which operate via a power source (power supply and/or batteries). Children should only use the device under adult supervision. Only use the device as described in the manual; otherwise, you run the risk of an electric shock.

Children should only use the device under adult supervision. Keep packaging material, like plastic bags and rubber bands, out of the reach of children, as these materials pose a choking hazard.

Keep batteries out of the reach of children! Make sure you insert the batteries correctly. Empty or damaged batteries could cause burns if they come into contact with the skin. If necessary, wear adequate gloves for protection.



# RISK OF FIRE/EXPLOSION!

Do not expose the device to high temperatures. Use only the supplied power supply or the recommended batteries. Do not short-circuit the device or batteries or throw them into a fire! Excessive heat or improper handling could trigger a short-circuit, a fire, or an explosion.



# RISK of property damage!

Do not disassemble the device. In the event of a defect, please contact your dealer. The dealer will contact the Service Centre and can send the device in to be repaired, if necessary.

Use only the recommended batteries. Always replace weak or empty batteries with a new, complete set of batteries at full capacity. Do not use batteries from different brands or with different capacities. The batteries should be removed from the unit if it has not been used for a long time.

## Konformitätserklärung:

declares that the above-named product corresponds to the following directives and relevant standards in its conception and design as well in the version marketed by us.

#### DISPOSAL



Dispose of the packaging materials properly, according to their type, such as paper or cardboard. Contact your local waste-disposal service or environmental authority for information on the proper disposal.

Do not dispose of electronic devices in the household garbage!

As per Directive 2002/96/EC of the European Parliament on waste electrical and electronic equipment and its adaptation into German law, used electronic devices must be collected separately and recycled in an environmentally friendly manner.

Empty, old batteries must be disposed of at battery collection points by the consumer. You can find out more information about the disposal of devices or batteries produced after 6 January 2006 from your local waste-disposal service or environmental authority.



#### Parts list:

- Iron bar
- Enameled wires (total 2 bundles)
- 3 Lower housing with battery compartment
- 4 Fixing screws (10 pieces)
- 6 U-shaped iron bar
- 6 Bracket
- Black conducting wires
- On/Off Switch with cables (4 cables are already connected)
- Upper housing shell
- Screwdriver
- Battery cover
- Batteries, Type AA, 1.5V (2 pieces)\*

#### How to assemble?

Step 1: Wind the enameled wires



Fix one side of the enameled wires (2) and keep 3-5 cm length as the connector, wind the iron parts in the middle of the iron bar (1) as clockwise (or counter clockwise). (as shown in picture 1) Keep winding with the whole piece of enameled wires (2). Keep the enameled wires 'two ends as the connectors (as shown in picture 2).

## NOTE:

Please see Picture 2a for the way of winding (The arrow direction in the picture is the direction of the electric current).

The direction of 6m enameled wires.

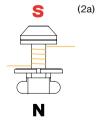
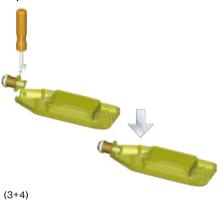


Diagram of Wire Winding on Electromagnet Bar Iron

Step 2: Fix the Bar Iron



Fix the winded iron bar (1) mount in the sharp end of the bottom cover (3) levelly. (as shown in picure 3). Please note that there is a notch in the bottom cover, the mount should match the notch exactly.

## NOTE:

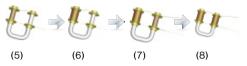
The notch of the bar iron mount should be up-turned.

Put two screws (4) into the ends of the iron bar mount and fix them well in the bottom cover (as shown in picture 4)

<sup>\*</sup> not included



Step 3: Wind enameled wires



Take the enameled wire and fix one side. Wind the enameled on the left side of U-shaped iron bar (5) wise or counter clockwise until the enameled wire is finished half. Then turn to the right side of U-shaped iron bar (5) and wind clock wise or counter clockwise. (as shown in picture 7) Keep the two ends of the enameled wire as connector. (as shown in picture 8).

NOTE: Wire Winding on Electromagnet Bar as shown in picture 8a (Arrow direction in the picture is the direction of the electric current)

Direction of enameled wires.

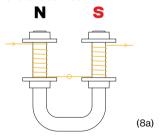


Diagram of Wire Winding on U-Shape Electromagnet Stick.

Step 4: Fix U-shaped iron bar



Fix the winded U-shaped iron bar (5) in the end of the bottom cover (3) levelly. (as Shown in picture 9) Please note that there are two notches in the bottom cover, the mount should match the notches exactly.

Put two screws (4) into the two ends of the bar iron mount and fix them well in the bottom cover. (as shown in picture 10).

Step 5: Fix power switch, put through the circuit.



Take two black conducting wires (as shown in picture 11). Connect the two ends of the two black conducting wires to one; Then make it through the holes of the negative shrapnel and tighten it.

Connect the other side of the long black conducting wires to one end of the enameled wires in the U-shaped iron bar.

Take the Switch with conducting wires (as shown in picture 11). Connect one end of each two red conducting wires of the switch together and make is through the holes of the positive shrapnel and tighten it.

Connect the long yellow conducting wires to one end of the enameled wires in the U-shaped iron bar.

Connect the short yellow conducting wires to one end of the enameled wires in the bar iron. Then take two pieces of screws (as shown in picture 12).

Put them into the two side holes of the switch, and then fix them in the bottom cover well by the screwdriver. Please note that the red and black conducting wires

should not be short cut

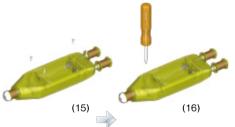


Step 6: Fix the body

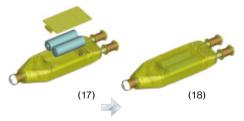


Take the top cover and close it with the bottom cover (as shown in picture 13, 14). Then take four screws and put each into the holes in the top cover.

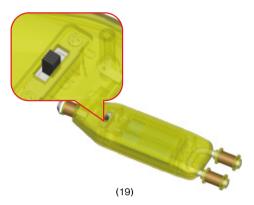
Fix them well in the bottom cover. (as shown in picture 15, 16)



Step 7: Insert Batteries



Step 8: Turn on the device





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