



Material

| Item-no. | Qty. | Description |
|----------|------|--|
| DM300-2A | 1 | Dynamics trolley, demo, 50 g |
| DM300-2K | 1 | Rod support for trolley |
| DM311-2M | 1 | Motor with propeller, on support |
| DG520-1G | 1 | Double cable 200 cm |
| P3120-4A | 1 | L-shaped assembly platform |
| P3120-1B | 1 | Rechargeable battery, "inno", 6V/10 Ah |
| P3120-1K | 1 | DC-Converter "inno" |

Purpose

To show a practical application of the propulsion principle.

Preparation

Attach the rod support for trolley to the trolley; the motor with propeller is mounted in this support.

Connect the DC-Converter to the rechargeable battery and place the complete unit on the L-shaped assembly platform.

Connect the power supply and the motor with the double cable, the longer the cable the better it is for the experiment.



Experiment

Turn on the rechargeable battery and increase the voltage output on the DC-Converter slowly.

Result

At a certain number of revolutions the trolley starts to move.

If the trolley is moving into the wrong direction reverse the cable on the power supply.



Conclusion

When the propeller "throws the air back", a force acts forward (the total momentum zero is retained). The force depends on the speed of the air flow and the amount of air thrown back (size of the propeller).

Note

This drive works on the same principle as "ship propellers". Because of the much greater density of the water a lower speed is sufficient in such a case; the propeller turns more slowly than the propeller on airplanes. For motor boats that are supposed to be fast the propeller has to turn pretty quickly again in order to move the water backwards at a higher speed.