

Motors and generators

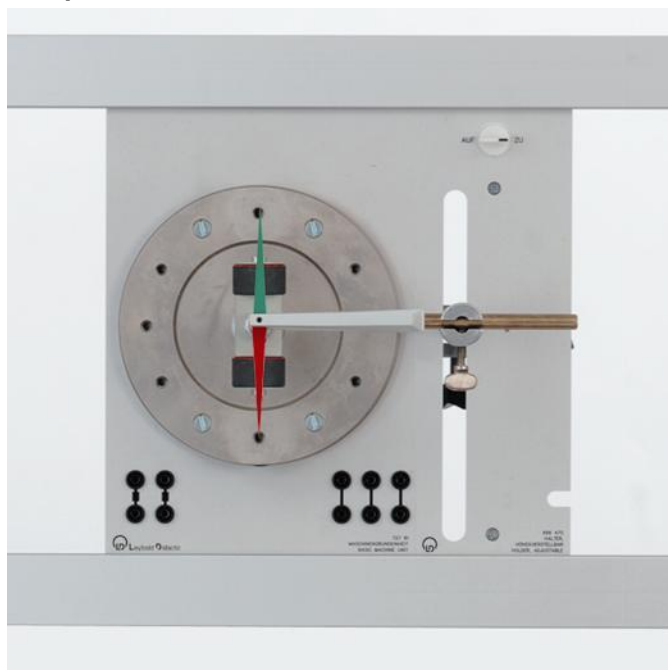
Stators and rotors

Magnetic field of a permanent magnet rotor
Demonstration with a magnetic field indicator needle

Object of the experiment

1. Investigate the magnetic field of a permanent magnet rotor

Setup



Apparatus

1 Basic machine unit	727 81
1 ELM magnet rotor.....	563 19
1 Magnetic field indicator.....	514 011
1 Holder with clamp, height-adjustable, CPS	666 470
1 Universal bosshead.....	666 615
1 Stand rod, 25 cm, 12 mm diam.....	300 41
1 Demonstration panel frame	301 300
2 Bench clamps with pin.....	301 05

Procedure

- Attach the indicator needle in the middle of the rotor (magnet rotor 563 19) and as close to it as possible.
- Set the rotor to a vertical position and observe the direction of the indicator needle.
- Turn the rotor by 180° and observe the direction of the indicator needle again.
- Then use your hand to slowly turn the rotor through 360° and observe the direction of the rotor needle.

Observation

The indicator needle aligns itself parallel to the rotor.
When the rotor is turned, the needle turns with it.

Evaluation

When a permanent magnet rotor is turned, the magnetic field surrounding it also turns by the same angle.