

## Waltenhofen pendulum 1000993

### Instruction sheet

10/15 SP



- 1 Slotted aluminium ring
- 2 Aluminium ring
- 3 Aluminium disc
- 4 Stand rod (not included within the scope of delivery)
- 5 Clamp (not included within the scope of delivery)
- 6 Bearing rod
- 7 Roll axis
- 8 Pendulum rod
- 9 Slotted clamp with knurled screw
- 10 Rectangular aluminium plate

### 1. Description

The Waltenhofen pendulum is used to demonstrate the working of an eddy current brake and its effect.

A pendulum rod is attached by means of a magnet to a bearing rod. Four different pendulum bodies are provided for the experiments. A heavy rectangular aluminium pendulum disc oscillates between the poles of an electromagnet that is switched off. When the electromagnet is switched on, the oscillating motion of the aluminium disc ceases within a very short time, owing to the magnetic field generated by the electromagnet. If the disc/plate is slotted, then the time required for the oscillating motion to stop is extended, i.e. there is a strong reduction in the braking effect.

### 2. Scope of delivery

- 1 Pendulum rod with bearing rod and slotted clamp
- 4 Aluminium pendulum discs:
- Rectangular plate and slotted rectangular plate
  - Disc
  - Ring
  - Slotted ring

### 3. Technical data

|                    |                            |
|--------------------|----------------------------|
| Rectangular plate: | 65 mm x 86 mm, 29 g        |
| Disc:              | 78 mm $\varnothing$ , 26 g |
| Ring               | 70 mm $\varnothing$ , 21 g |
| Slotted ring:      | 70 mm $\varnothing$ , 20 g |
| Pendulum rod:      | 80 mm x 275 mm, 112 g      |

### 3. Experiment set-up

The following apparatus is additionally required for conducting the experiments:

|   |         |
|---|---------|
| 1 Stand base, 150 mm                    | 1002835 |
| 1 Stand rod, 750 mm                     | 1002935 |
| 1 Universal clamp                       | 1002830 |
| 1 U-core D                              | 1000976 |
| 1 Pair of pole pieces, bored            | 1000978 |
| 2 Coils, number of turns 1200           | 1000989 |
| 1 DC power supply unit 20 V, 5 A @230 V | 1003312 |

or

|   |         |
|---|---------|
| 1 DC power supply unit 20 V, 5 A @115 V | 1003311 |
|---|---------|

Set of 15 Safety Experiment Leads 1002843

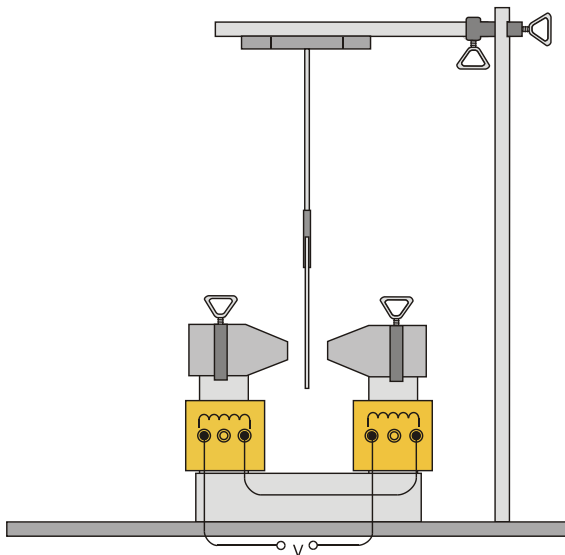


Fig. 1: Experiment set-up of a Waltenhofen pendulum