

Air Cushion Table

Compact equipment for model experiments concerning the following subjects:

- Thermal movement of molecules in gases
- Structures of liquids and solids
- Behaviour of electrons in conductors and semi-conductors
- Atomic models and scattering experiments

The equipment consists of an air cushion table and adapted accessories.

- Demonstrative experiments through projection with an overhead projector.
- Coloured magnetic pucks float on an air cushion and repel each other.
- Magnetic barriers limit the surface.
- The air stream can be interrupted suddenly in order to allow the observation of an instantaneous state of the pucks.
- Lattices which can be fitted on allow investigation of the behaviour of electrons in solids.

This HANDBOOK can be purchased separately. It contains the experiments listed below. Please ask for a complete equipment list. Ref No 23702

**Handbook • Air Cushion Table
No. 01182.02 • 69 described Experiments**

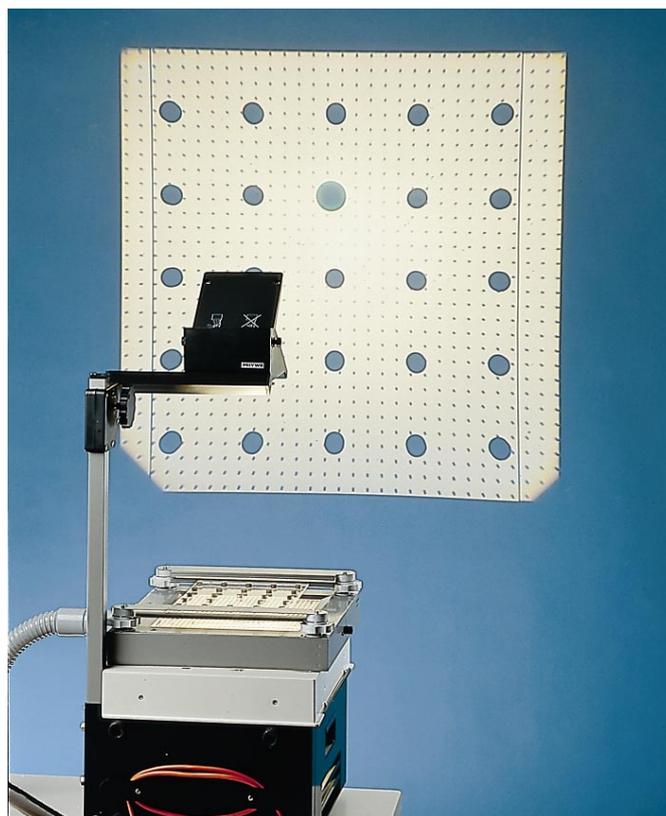
1 Introduction

1.1 Use of the air cushion table for instructional purposes

- 1.1.1** General information on methods
- 1.1.2** Model experiments on heat theory
- 1.1.3** Model experiments on electrical conductivity
- 1.1.4** Quantitative experiments on the air cushion table

1.2 General instructions on experiments

- 1.2.1** Procurement instructions
- 1.2.2** Operating instructions
- 1.2.3** Observation instructions
- 1.2.4** Supply of energy to the particles
- 1.2.5** Photographic recording of the movement processes
- 1.2.6** Preparation of cinematograph charts
- 1.2.7** Film strips for particle statistics



**2 Model experiments
on heat theory/gases**

- 2.1**
Gases
- 2.1.1**
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- 2.1.2**
Collision processes with several particles
- 2.1.3**
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- 2.1.4**
Mean velocity - mean value for any one molecule over a period
- 2.1.5**
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- 2.1.6**
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- 2.1.7**
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- 2.1.8**
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- 2.1.9**
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- 2.1.10**
Equipartition of the mean kinetic energy of gas molecules
- 2.1.11**
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- 2.1.12**
Density distribution of a gas in the gravitational field
- 2.1.13**
Diffusion of a gas through an opening
- 2.1.14**
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- 2.1.15**
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- 2.2**
Solids
- 2.2.1**
Production of solids
- 2.2.2**
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- 2.2.3**
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- 2.2.4**
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- 2.2.5**
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- 2.2.6**
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- 2.2.7**
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- 2.3**
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- 2.3.1**
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- 2.3.2**
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The free electron
- 3.2**
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- 3.2.2**
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- 3.2.3**
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- 3.2.4**
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- 3.2.5**
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- 3.3**
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- 3.3.1**
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- 3.3.2**
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- 3.3.3**
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- 3.3.5**
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- 3.3.6**
Electron movement in the semiconductor

- 3.4**
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- 3.4.1**
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- 3.4.2**
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- 3.4.3**
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**4 Model experiments
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- 4.1.1**
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- 4.1.2**
Rutherford's model of the atom (planetary model)
- 4.2**
Rutherford's scattering experiments

**5 Model experiments
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- 5.1**
Electron exposed to a periodic potential
- 5.1.1**
Electron in the field (potential) of a nucleus
- 5.1.2**
Electron in the field (potential) of two nuclei
- 5.1.3**
Electron in a linear crystal
- 5.1.4**
Electrons in the surface crystal (work function)
- 5.2**
Vacancy in the crystal, trap, colour centres