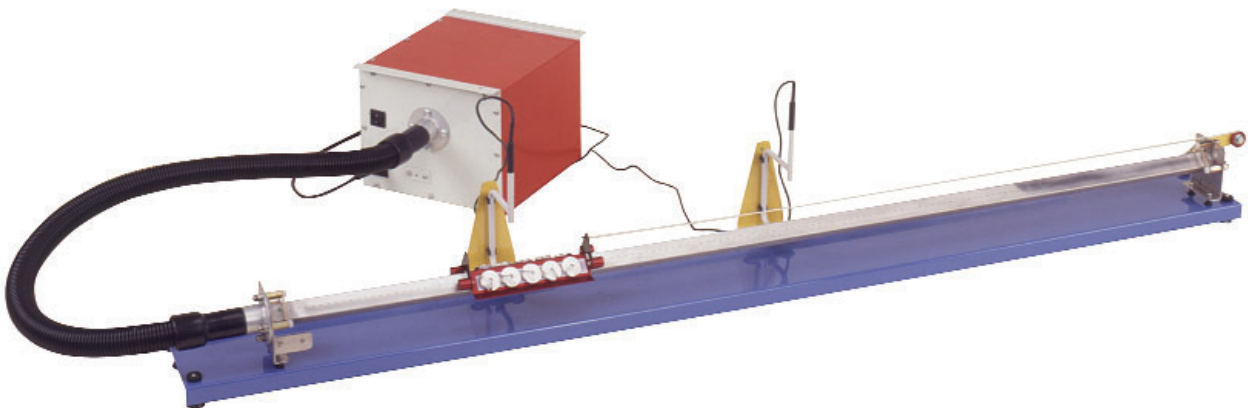


***A low-friction track that demonstrates kinematic and dynamic principles***



- Ideal for classroom demonstrations and for use by small groups of students
- Works with the additional Light Gates to show acceleration due to gravity
- Shows students inelastic and elastic collisions
- Colour-coded parts to help students understand what each part does
- Supports all teaching levels up to and including first year university courses
- Hands-on equipment - easy-to-assemble parts allow students to build the experiments for improved understanding of the experiment

- **TecEquipment** products are designed and manufactured by TQ Education and Training Ltd
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- TQ is an ISO 9001 certified company

## Description

A kit that builds into a track along which vehicles travel suspended on a cushion of air. Because of this, there is low friction on the vehicles as they move along the track.

An airbox supplies large volumes of air at low static pressure continuously to the track. Small holes along the track allow the air to escape, which forms the air cushion.

The airtrack includes two vehicles. To increase the weight of the vehicles, students add masses in increments. Each vehicle has two different sets of buffers at each end. These are for showing elastic and inelastic collisions.

For timing, the vehicles cut the beam of light gates (light gates supplied separately). Included are light gate brackets which students can position at any point along the track.

To move the vehicles along the track, students launch them at a repeatable launch velocity using a rubber bumper at the end of the track. Alternatively, a cord and pulley allows falling masses to tow the vehicles.

Students work individually or in groups of up to three. The colour of parts indicates their function. For example, yellow parts are mainly stationary or passive, and white parts are instrumentation. Red parts may move or contain energy.

The kit comes with Assembly Instructions. A Teacher Guide provides experiment methods, information, references and tips. A Student Workbook guides students through experiments.

## Standard Features

- Supplied with comprehensive User Guides (Assembly Instructions, Student Workbook and Teacher Guide)
- Two-year warranty
- Manufactured in accordance with the latest European Union directives

## Essential Ancillaries

- Datalogger and software (DH1)

A unit that connects the optional Light Gates (DH2) to a computer (not supplied) and software (supplied) to automatically find velocity and acceleration.

- 2 Light gates (2 x DH2)

Photo-electric sensors with lights. Two light gates can fit around the airtrack so that the moving vehicle cuts a light path. They connect to the Data Logger (DH1).

- Computer (not supplied by TQ)
- Weight set (WT)

## Experiments

Covers many classic 'text book' problems including:

- Newton's Law of Motion
- Mass-momentum relationship
- Acceleration
- Elastic and inelastic collisions

## Essential Services (for airbox)

230 V or 115 V 50/60 Hz single-phase electrical supply (specify on order)

## Operating Conditions

*Operating environment:*

Laboratory environment

*Storage temperature range:*

−25°C to +55°C (when packed for transport)

*Operating temperature range:*

+5°C to +40°C

*Operating relative humidity range:*

80% at temperatures < 31°C decreasing linearly to 50% at 40°C

## Specifications

Packed Dimensions and Weight: 0.11 m<sup>3</sup> and 16.5 kg (airtrack 7 kg + airbox 9.5 kg)

- Working length: 1.4 m
- Vehicles: two, mass 100 g each, adjustable to a maximum of 200 g each
- Vehicle buffers: two sets adhesive, two sets magnetic

Main parts:

- Airtrack, airbox, mains lead, hose and two vehicles
- Airtrack base, light-gate rail
- Weights, weight hangers, cord and pulley
- Light gate brackets
- All necessary nuts, bolts, washers, spacers and fixings

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