



2-METER AIR TRACK WITH COMPLETE ACCESSORIES

ATRK02

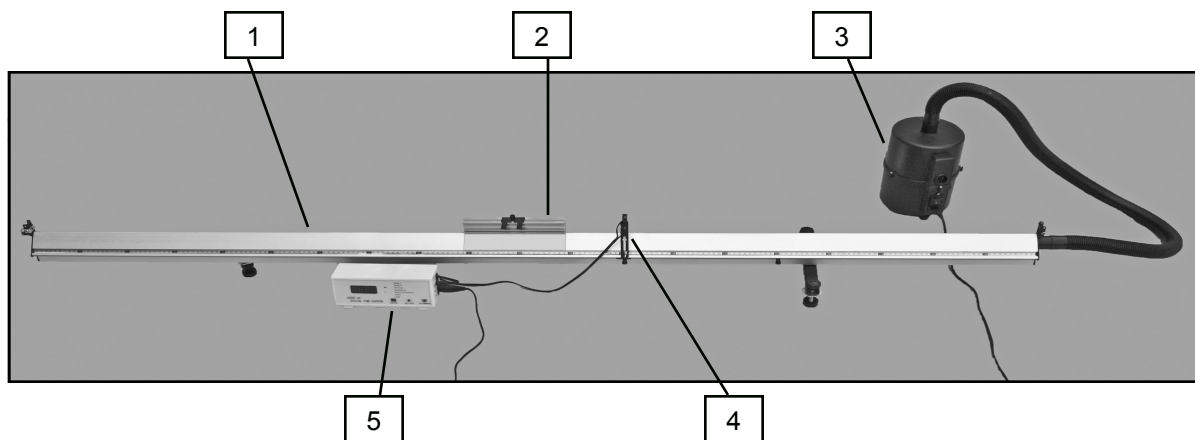


Figure 1

DESCRIPTION

The 2-Meter Air Track with Accessories is designed for students to investigate speed, acceleration and force in linear motion, momentum and energy in collisions, and some characteristics of harmonic oscillators. The air cushion between the track and the gliders reduces the friction to a very low (but measurable) value, increasing the accuracy of the experimental results. The system consists of a uniform air track (1, *Figure 1*) with 2 meters of usable length and a scale along one side, a set of gliders (2—four are provided), an air source (3) that provides a constant stream of air into the track to support the gliders, a measuring system with photogates (4—two are included) and a microprocessor-controlled digital timer (5).

The setup and use of each of these components are described individually on the following pages, and a series of suggested experiments is included.

COPYRIGHT NOTICE

This ATRK02 2m Air Track and Accessories Operating Instructions and Experiment Guide is copyrighted and all rights are reserved. Permission is granted to all non-profit educational institutions to make as many copies of this work as they need as long as it is for the sole purpose of teaching students. Reproduction of this work by anyone for any other purpose is prohibited.

© United Scientific Supplies, Inc., 2010

2-METER AIR TRACK

SPECIFICATIONS

Track:

Track length:	200 cm
Track straightness:	$< \pm 0.10$ mm for full length $< \pm 0.05$ mm in any 40 cm interval
Angle between air support surfaces:	90°
Roughness of air support surfaces:	$R_a = 3.2$ μm
Distance between track supports:	100 cm
Outer diameter of air inlet tube:	30 mm

Gliders:

Glider lengths:	10 cm (2 each); 20 cm (2 each)
Glider masses:	Approx.: 98g (short gliders); 198g (long gliders)

General:

Overpressure of air supply:	~ 6.5 kPa
Thickness of air cushion:	~ 0.1 mm
Operating Conditions:	$-10^\circ\text{C} - +40^\circ\text{C}$; Relative humidity $\leq 85\%$
Dimensions:	210 x 27 x 23cm
Gross weight:	7 kg

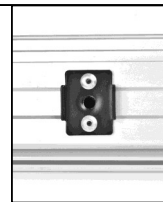
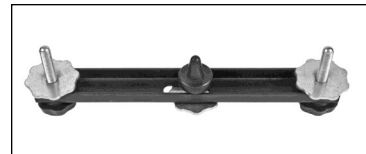
SETUP

HANDLE THE AIR TRACK WITH CARE — IT IS SENSITIVE.

1. ATTACHING THE FEET

The air track is delivered with the feet detached from the track but attached together:

- Unscrew the center leveling foot from the crossfoot assembly:
- Locate the attachment points on the underside of the track:
- Unscrew the large screw from the crossfoot attachment point and attach the crossfoot to the track with the large screw. Fit the locking wheel onto the center foot and screw the assembly into the center foot attachment point:



Crossfoot

Center foot



Feet in place

