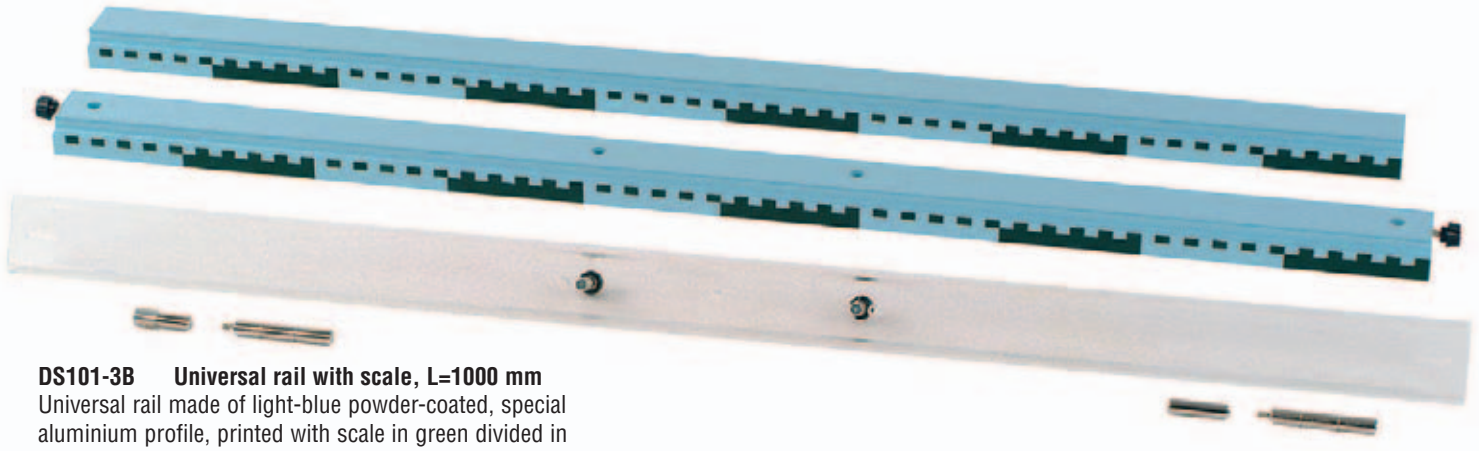




# dynamics - track systems



**DS101-3B Universal rail with scale, L=1000 mm**

Universal rail made of light-blue powder-coated, special aluminium profile, printed with scale in green divided in blocks; used together with dynamics trolley for demonstrations, DM300-2A, or as track for ball bearings 60 mm in diameter, DM360-ff

**DS101-4B Universal rail with scale and holes, L=1000 mm**

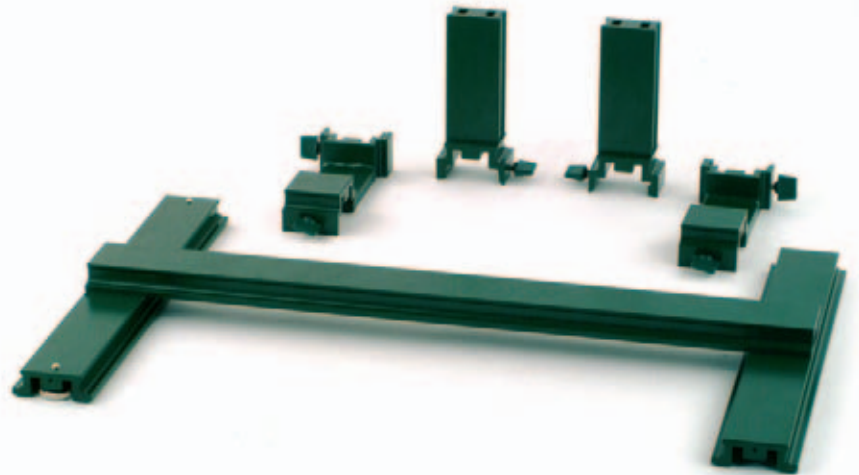
Model as DS101-3B, yet with four additional vertical holes for inserting and fastening the supports of the flexible acrylic track, L=1000 mm

**DS101-2A Flexible track, acrylic, L=1000 mm**

For use in experiments on non-uniform motion, conversion of "potential to kinetic energy" and "up- and downhill motion" of a trolley or ball bearing; Flexible acrylic panel, 54 mm in width, with longitudinal grooves for dynamics trolley for demonstrations

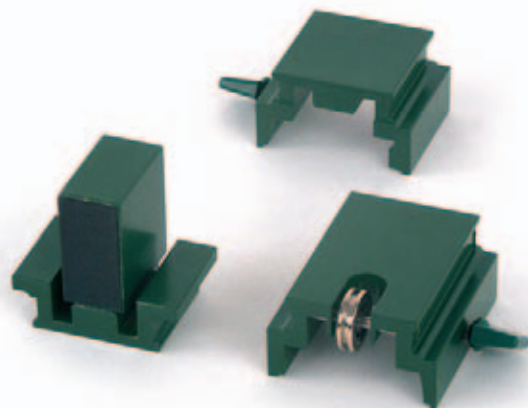
**DS101-3A Supports for fastening flexible track, set of 2**

Two rods with engraved graduations for continuously variable adjustment of the angle of inclination of the ends of the flexible acrylic track, DS101-2A, on the stand rail with scale and holes, DS101-4B  
Dimensions: D=10 mm, L=110 mm



**For fixing universal rails when used as trolley tracks:**

- DS101-1G** Support base, large, L=500 mm
- DS103-4G** 2x Rail support stand, vertical, H=101 mm
- DS105-4G** 2x Rail holder



**DS102-2G Clamp saddle**

As means of braking dynamics trolley DM300-2A

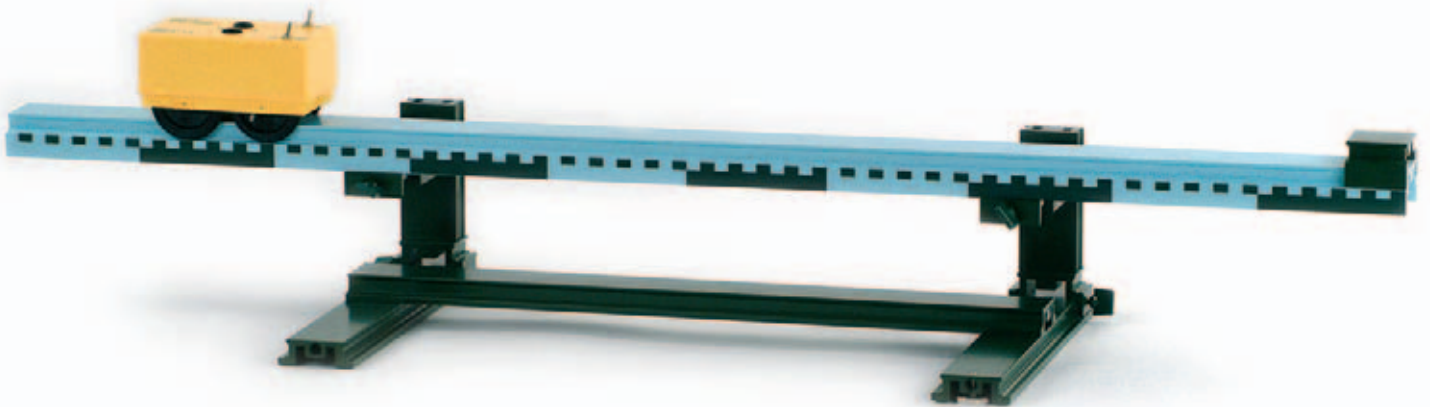
**DM361-1K Ball stopper on base**

Aluminium block with rubber pad mounted on rail base, made of special aluminium profile, used as stopper at end of track, mounted and fixed on support rail when used as a track

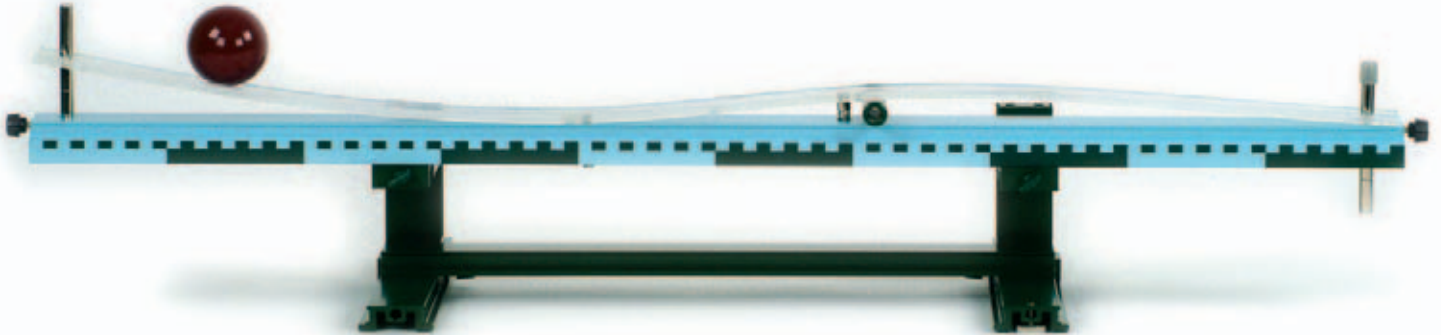
**DS104-2G Sliding saddle with pulley**

Special aluminium profile, pulley with groove on ball bearing, one clamping screw; for mounting at the end of a support rail or for extending support rails DS101ff in conjunction with rail connector DS101-2G when used as a track

# dynamics - track systems



**Experiment:** Uniform linear motion (Universal rail DS101-3B used as trolley track)



**Experiment:** Up- and downhill motion (conversion of energy)  
Universal rail DS101-4B with flexible track DS101-2A, supports DS101-3A and ball DM360-5R



**Experiment:**  
Up- and downhill motion  
(conversion of energy)  
Universal rail DS101-4B with  
flexible track DS101-2A, supports  
DS101-3A and trolley with motor  
DM300-1A

**Experiment:** Up- and downhill motion (shown  
on the demonstration board DS602-2A)





# dynamics - track systems



**DM300-2A Dynamics trolley, demo, 50 g**  
Trolley body and wheels of ABS plastic, runs with very little friction, 4 mm holes at the ends for attaching devices with 4 mm plugs, 2 mm hole for attaching string with plug DM310-2S, two holes on the side for fastening weights DM325ff, one centred, tapped hole for screwing in turret DM300-1T  
Dimensions of trolley body: 120x66 mm  
Weight: 50 g

**DM300-1T Turret for trolley**  
Metal pin with threaded end for holding slotted weights DM120-ff on dynamics trolley DM300-2A; dimensions: 6x50 mm

Additional weights for dynamics trolley DM300-2A:  
DM325-20 Additional weight 20 g  
DM325-50 Additional weight 50 g  
DM325-01 Additional weight 100 g

**Not shown:**  
DM310-2S String with plug for trolley  
2 mm plug with string; string length: approx. 110 cm



**DM300-1A Trolley with motor**  
Body and wheels of ABS plastic; built-in, battery-powered motor (two 1.5 V mignon cells included); ON/OFF switch as well as switch for selecting two speeds; two 4 mm safety jacks for external power supply or for connecting solar panel accessory DM311-1S providing solar power. For description please see page 246.  
Dimensions: 124x69x85 mm



**DE411-2G** Round magnet with plug, green, D=26 mm  
**DE411-2R** Round magnet with plug, red, D=26 mm  
**DE411-3M** Metal cylinder with plug, unpainted, D=26 mm  
(see following page for use of these devices)



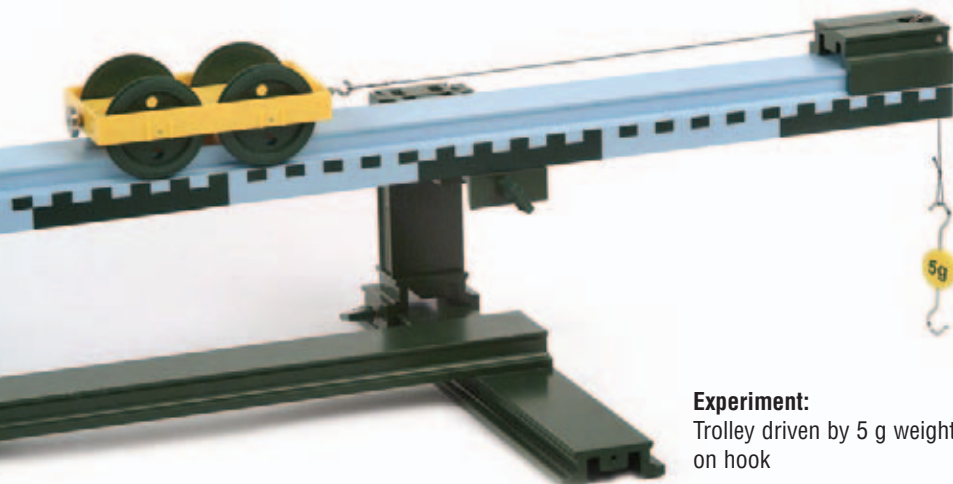
**Weights for driving trolley:**  
**DM120-1A** Weight on hook 2 g  
**DM121-1A** Weight on hook 5 g  
**DM121-1N** Weight on hook 1 N  
(see following page for use of these devices)



Launcher magnetic:  
**DS102-3B** Clamp saddle with fixing screw  
**DM281-2M** Round magnet with plug, D=13 mm  
**DM281-1H** Hook with plug  
(see following page for use of these devices)



Electromagnetic launcher and drive accessories:  
**DS102-3B** 1x Clamp saddle with fixing screw  
**P3911-2R** 1x Coil with 800 turns, blue  
**P3911-2G** 1x Iron core, slotted with screw  
**P7100-1A** 1x Cord, 30 m roll, high tensile strength  
**P3310-7S** 2x Connecting leads, 4/2 mm  
**P3711-1F** 1x Screw, short  
Metal screw with M3 thread, head D=10 mm  
**DM281-2K** 1x Plug with contact plate  
**DM281-1H** 1x Hook with plug  
**DM121-1A** 1x Weight on hook 5 g



**Experiment:**  
Trolley driven by 5 g weight on hook

# dynamics - track systems

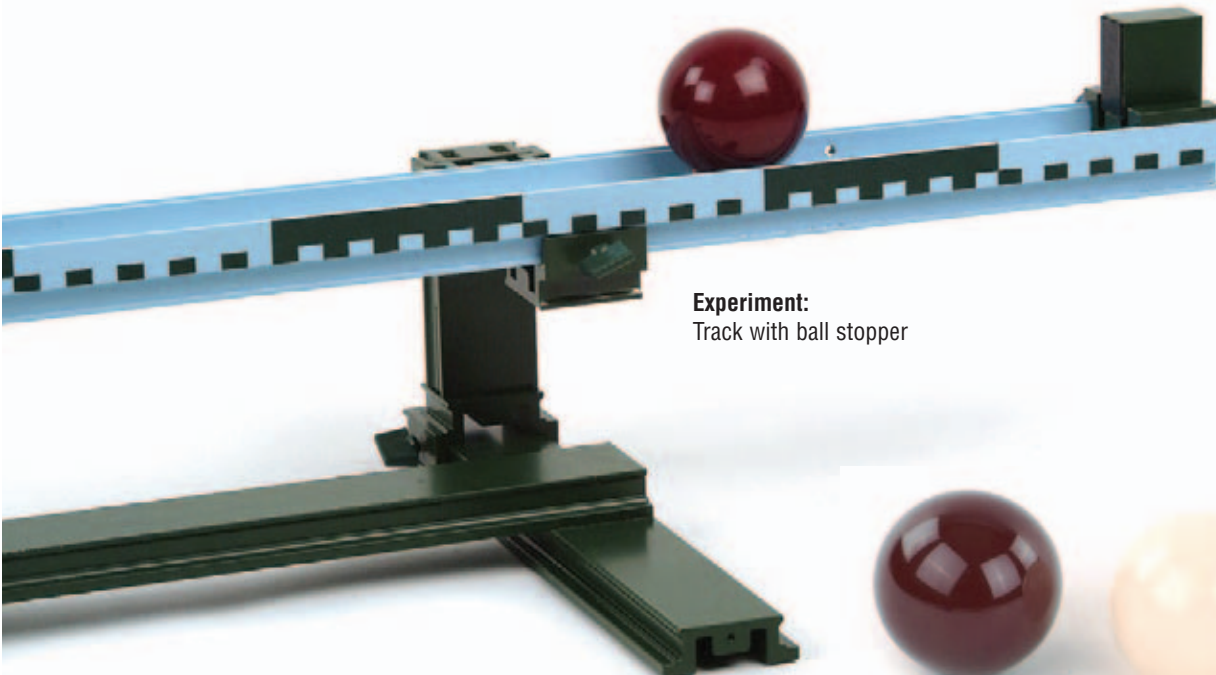
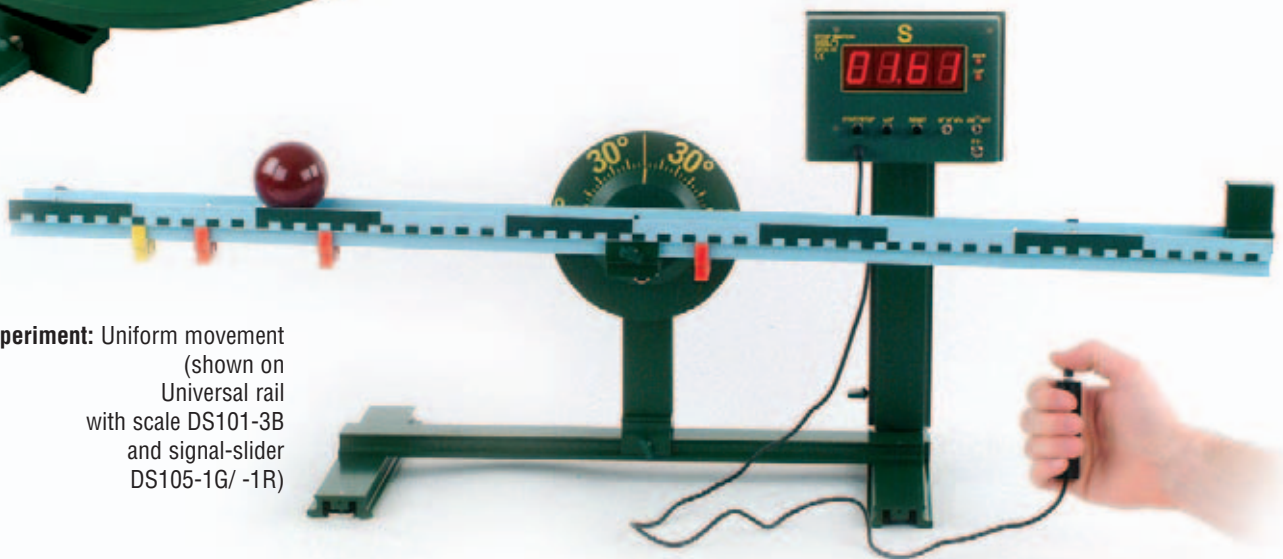


## DS107-3D Track holder, rotatable, with degree scale

For holding and rotating support rails by means of rail support stand DS103-ff and clamp saddle DS102-2G; aluminium disk attached to saddle made from special profile, with clamping screw for mounting on rail support stands DS103-ff using clamp saddle DS102-2G, on vertically arranged support rails or on the assembly panel DS602-2A

D=160 mm, green powder-coated, printed with degree scale in yellow  
Scale: 0° to 90°, left and right, in 5° graduations

**Experiment:** Uniform movement  
(shown on  
Universal rail  
with scale DS101-3B  
and signal-slider  
DS105-1G/ -1R)



**Experiment:**  
Track with ball stopper



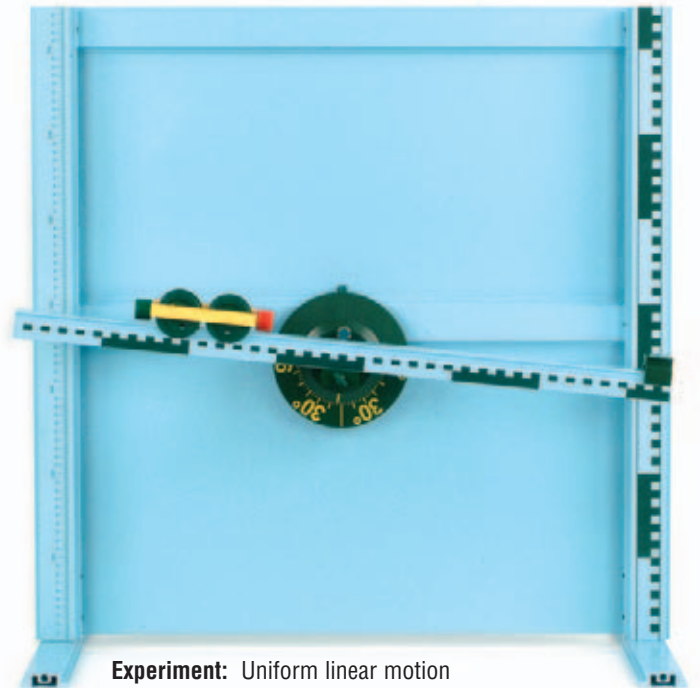
- DM360-5E Ball, steel, D=60 mm
- DM360-5R Ball, plastic, red, D=60 mm
- DM360-5W Ball, plastic, white, D=60 mm



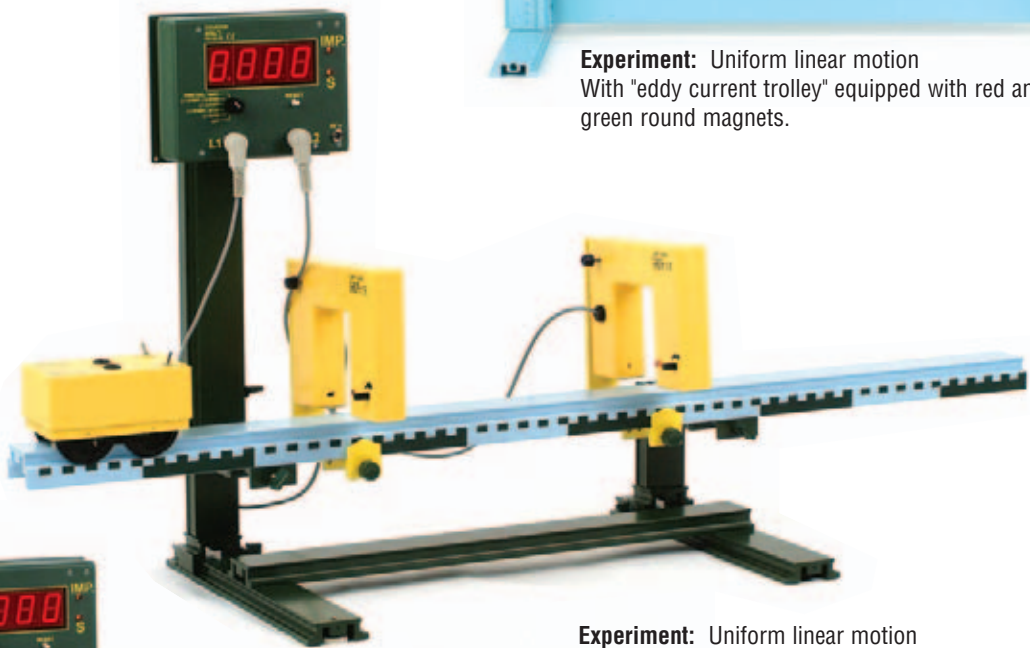
# dynamics - track systems

**Experiment:**

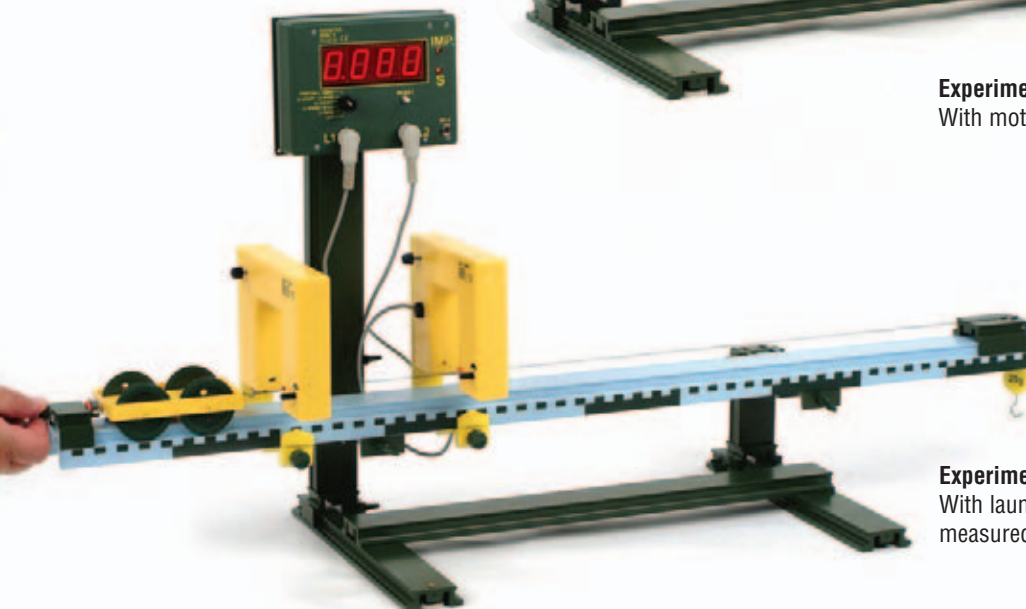
Uniform linear motion  
With clamp saddle with fixing screw and round magnets used as launcher, time measured using light gate and timer "inno"



**Experiment:** Uniform linear motion  
With "eddy current trolley" equipped with red and green round magnets.



**Experiment:** Uniform linear motion  
With motorized trolley, two light gates and timer "inno"



**Experiment:** Uniformly accelerated motion  
With launcher and weight on hook for driving trolley, time measured using two light gates and timer "inno"

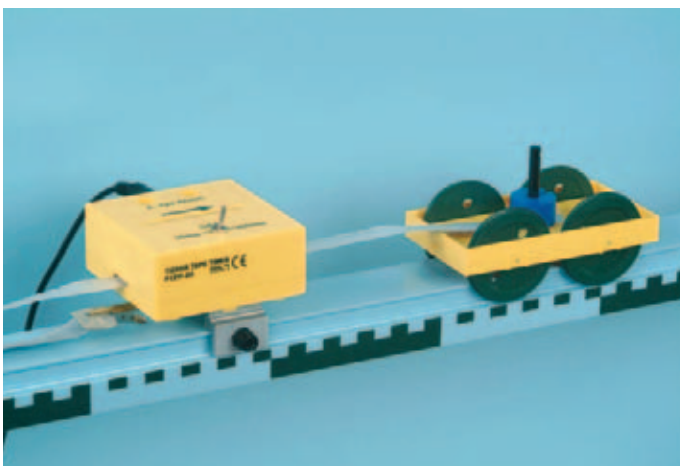
# dynamics - track systems



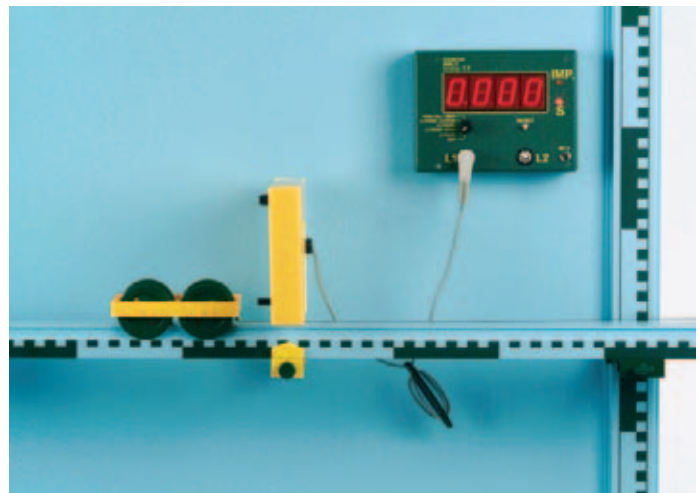
**Experiment:** Uniformly accelerated motion  
With electromagnetic launcher and weight on hook for driving trolley, time measured using launcher, light gate and timer "inno"



**Experiment:**  
Non-uniform linear motion,  
measurement of average velocity using stopwatch "inno"



**Experiment:** Uniformly accelerated motion  
Time measured using ticker tape timer  
(for technical description see page 60)



**Experiment:** Uniformly accelerated motion  
Experiment on assembly panel using timer "inno"