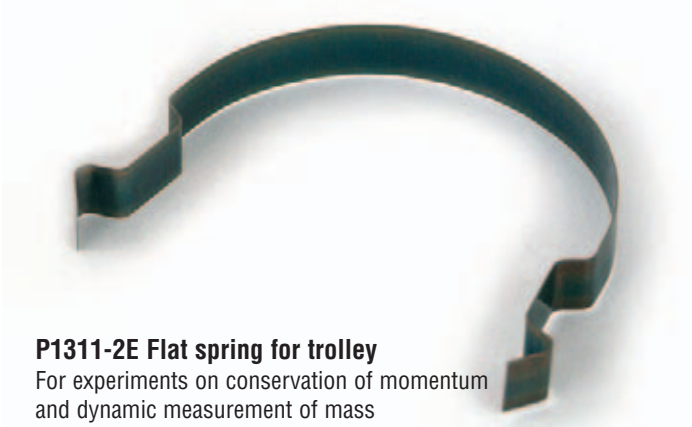
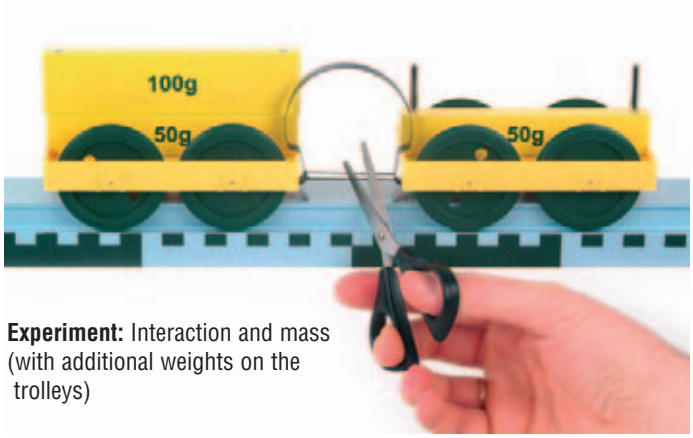
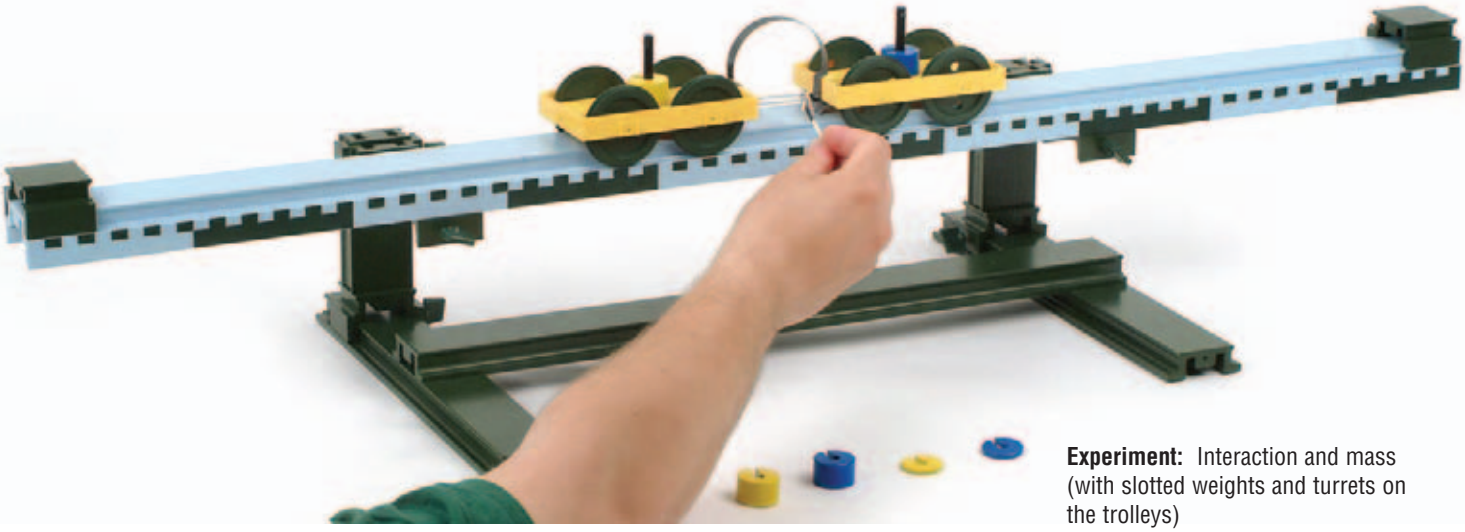




**P1311-2E Flat spring for trolley**
For experiments on conservation of momentum and dynamic measurement of mass
Steel flat spring, the ends of which are specially shaped to be inserted into the dynamics trolley demo DM300-2A
Dimensions: 170x10x0.23 mm




**Experiment:** Interaction and mass (with additional weights on the trolleys)

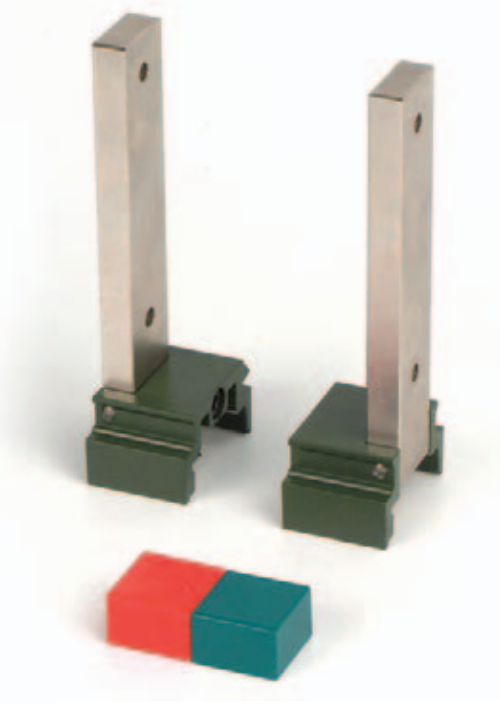


**Experiment:** Interaction and mass (with slotted weights and turrets on the trolleys)

**P1311-2D Spring bumper**
For demonstrating the law of conservation of momentum
Elliptically shaped steel flat spring with 4 mm plug pin, may be inserted into dynamics trolley demo DM300-2A
Spring width: 10 mm
Weight: 10g


Experiment: Elastic collision
(Trolleys with spring bumpers mounted)

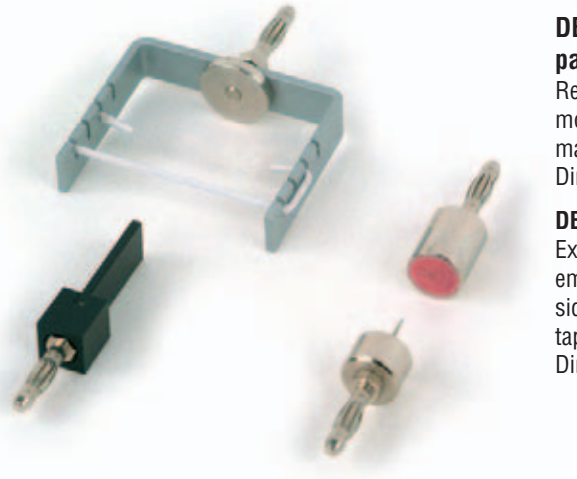
**Experiment:** Conservation of momentum (on the assembly panel)



**DM281-1G Fork with plug, with rubber band**
Used as bumper, may be plugged into dynamics trolley demo DM300-2A

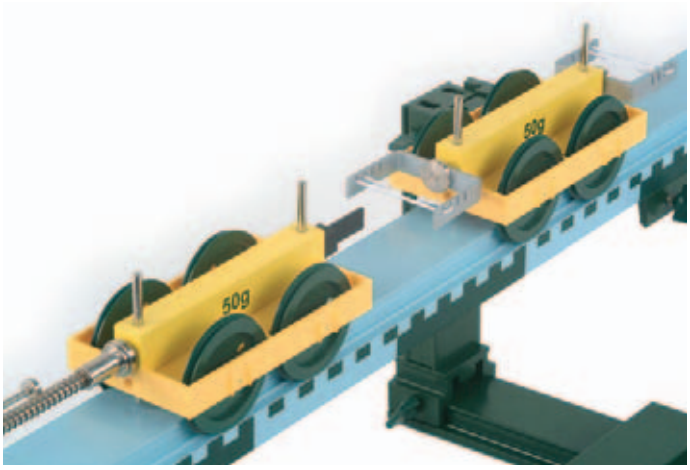
**DM281-1P Plate with plug**
Reciprocal of fork with rubber band

**P1311-2F Adapter for unelastic collision, set of 2**
Adapter consisting of hollow metal cylinder filled with plasticine, second adapter with needle, each with 4 mm plug pin, may be inserted into dynamics trolley demo DM300-2A



**DE456-1N Magnet holder, unpainted, pair, on sliding saddle**
Rectangular metal profile 28x10 mm mounted on special profile, for holding block magnets DE412-1B
Dimensions: 36x54x154 mm

**DE412-1B Block magnets, pair**
Extremely strong neodymium magnets embedded in coloured plastic sleeves; reverse side in colour of opposite pole, with M6 tapping at centre
Dimensions: 28x28x18 mm

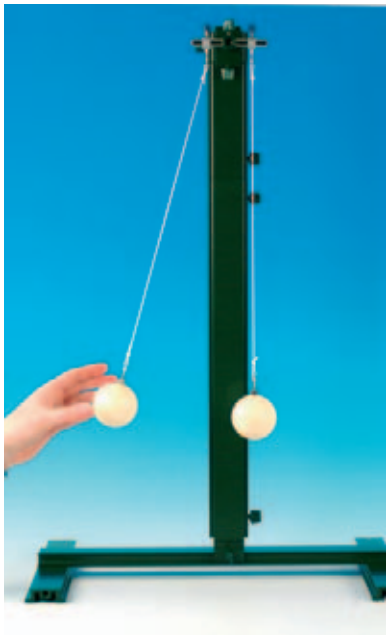



**Experiment:** Elastic collision
(One trolley equipped with plate on plug, other trolley equipped with fork with rubber band)

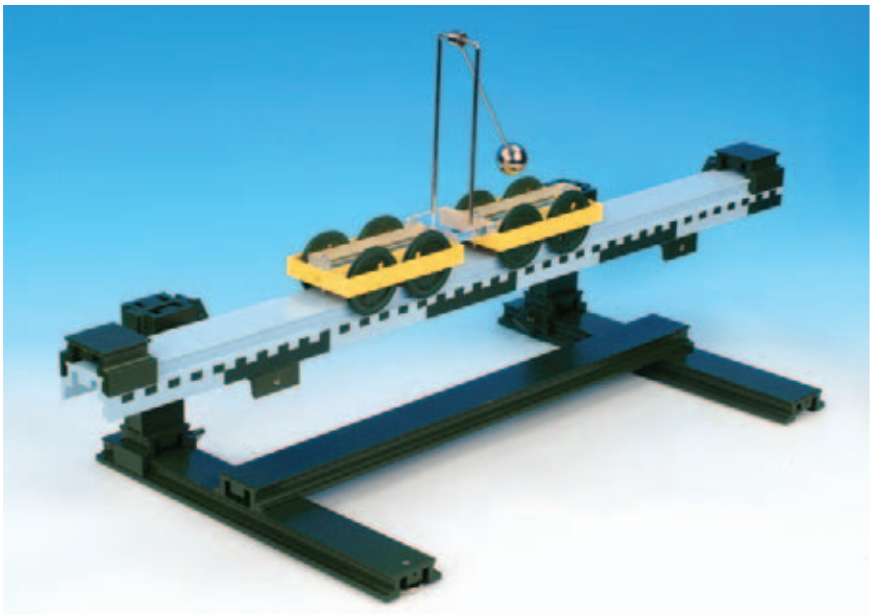
**Experiment:** Unelastic collision

# dynamics - momentum

**DM380-6K Ball, plastic, white, D=60 mm, tapped**
For use as pendulum bob; M6 tapping for screwing in threaded hook DS102-3S
**DS102-3S C-hook, threaded**
**DG200-1S Rope, white, D=1.7 mm, L=5 m**

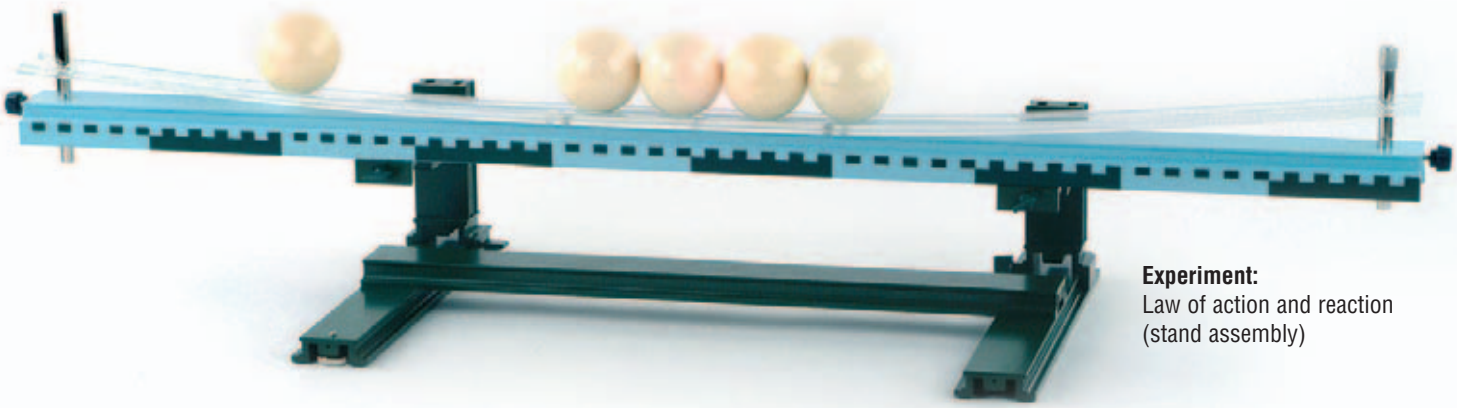


**Experiment:** Momentum

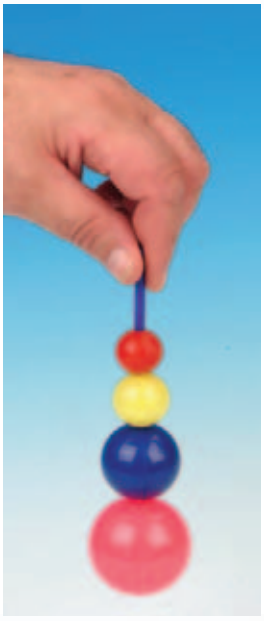


**Experiment:** Conservation of momentum under equal mass

**DM335-1S Momentum accessory**
For demonstrating the law of conservation of momentum
Metal pendulum bob on rod, mounted on wire bracket on ball bearings, acrylic panel with 4 plug pins for insertion into 2 dynamics trolleys DM300-2A, pendulum L=122,5 mm, pendulum D=1" (25.4 mm)
Dimensions: 282x55x160 mm

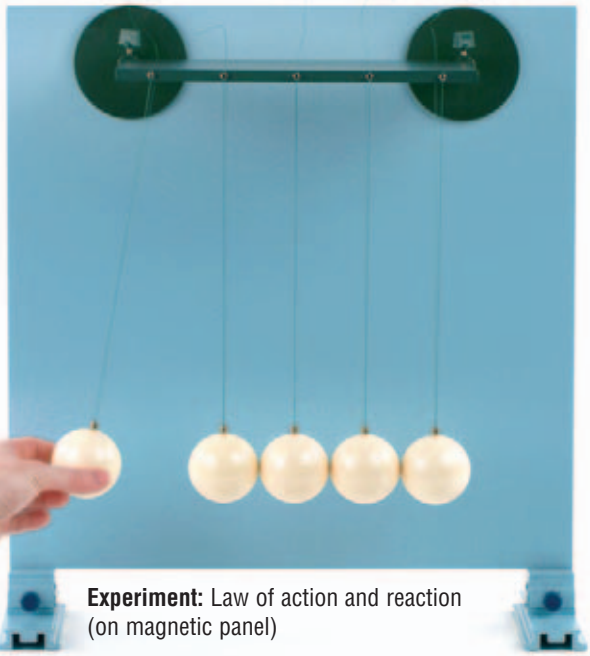


**Experiment:**
Law of action and reaction
(stand assembly)

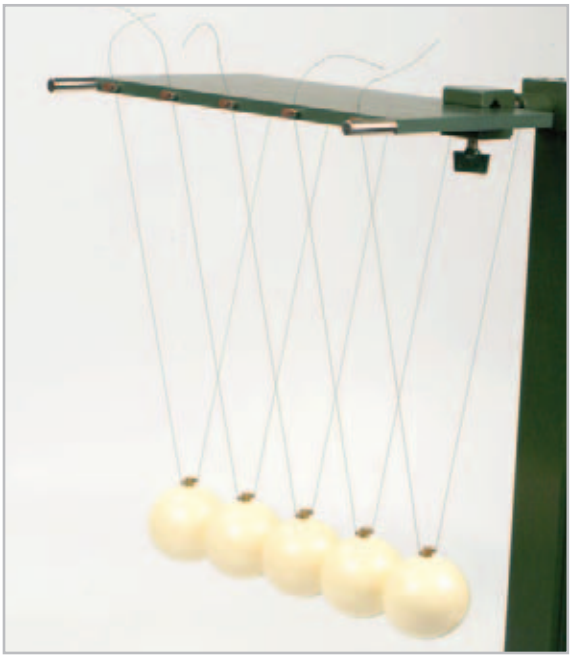


**DM343-1S Momentum cannon**
Three rubber balls stacked one upon another on the plastic central axis add, beginning with the bottommost ball, the momentum gathered when the device is dropped. The total momentum is then transferred to a fourth ball (plastic) sitting loosely on the stack, causing it to be propelled upwards. This "shot" can reach five times the distance dropped. Supplied with two replacement balls.
Ball D: 47 / 36.5 / 26 / 21.5 mm
Total height: 165 mm

**DM750-5S**
**Ball collision assembly, small**
5 steel balls, D=22 mm, bifilar suspension from two metal brackets, mounted on base
Dimensions: 180x120x180 mm



**Experiment:** Law of action and reaction
(on magnetic panel)



**DM750-5K**
**Ball collision assembly, large**
5 plastic balls, D=60 mm, bifilar suspension from plate, adjustment screw on one side, suspension plate with 2 support pins, D=10 mm, L=40 mm
Pendulum length: 300 mm
Dimensions of suspension plate: 300x150 mm

# dynamics - momentum

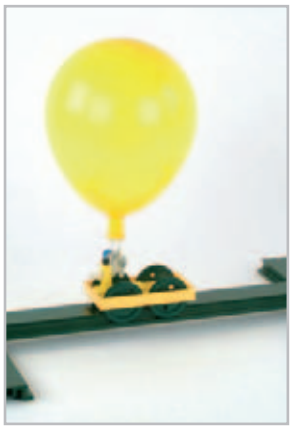
**DM340-8B Balloons, set of 10**

**C3084-4F Adapter tube, with SB19, L=175 mm**
Glass tube, 25x175 mm, tapered to SB19 at one end

**DM341-1H Propulsion accessory for trolley**
For demonstrating propulsion principle with gases or liquids
Plastic I-bracket, with hole and fixing screw for C5090-4G; two 4 mm plug pins for attaching to dynamics trolley demo DM300-2A
Dimensions: 62x20x30 mm

**C5090-4G Connecting tube with stopcock, angled, SB19**
For demonstrating propulsion principle with gases or liquids
Glass adapter angled at 90°, with core SB19 and hose fitting as well as glass stopcock

**C1370-1B Funnel, plastic**
D=75 mm, L=110 mm



**Experiment:** Propulsion by airflow (on stand rail)

**Experiment:** Propulsion by water flow (on assembly panel)

**DM300-1K Clamp socket for trolley demo**
Aluminium bolt with hole and fixing screw, D=18 mm, L=45 mm, yellow powder-coated, threaded for screwing onto trolley demo DM300-2A; for inserting and fastening rods with a diameter of up to 10 mm.
DM300-2A Dynamics trolley, demo, 50 g
(detailed description s. page 74)

**Experiment:** Force of propulsion created by wind generator

**DM311-2M**
**Wind generator on support**
Extremely easy-to-turn motor with fan vanes for demonstrating conversion of wind to electrical energy and inverted;
Aluminium cylinder, 40x68 mm, with built-in motor, with fan vanes (L=130 mm) and two 4 mm safety jacks,
on support: D=10mm, L=62 mm

**DM340-1A Segner's Wheel**
Acrylic model for demonstrating the principle of jet propulsion; cylindrical water vessel on pivot bearings, D=36 mm, H=255 mm, equipped with 4 tubes, L=58 mm, with drainage holes on the side; total height: 280 mm
Recommended accessories:

**DM340-2W Vat with drain connector**
Acrylic, D=200 mm, H=65 mm

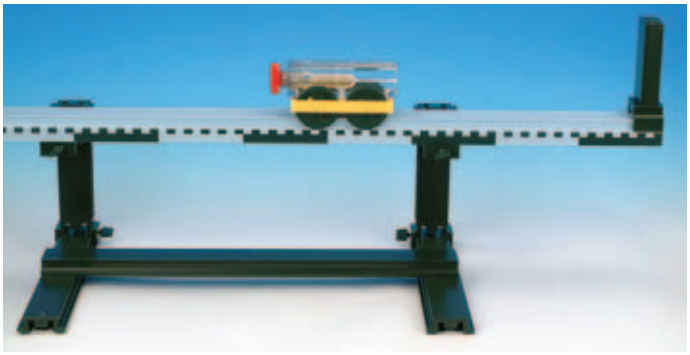
**Experiment:** Propulsion (Segner's Wheel )

**DM340-3C CO2 cartridges, set of 10**
Dimensions: D=18mm, L=62 mm

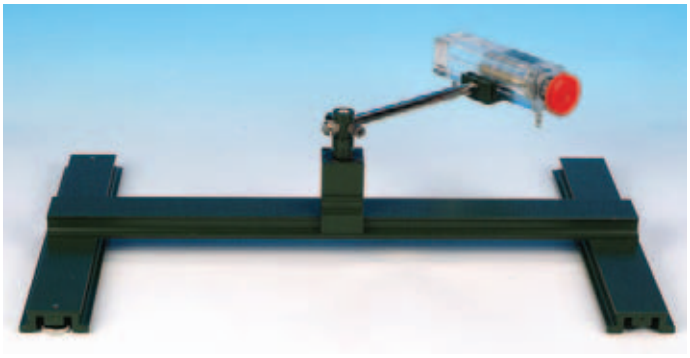
**DM340-3B Cartridge adapter**
For demonstrating propulsion due to escaping gas ($CO_2$) and for measuring the temperature of suddenly escaping gas ($CO_2$) using flexible thermo-sensor P4120-1T; acrylic block with recess for inserting carbon dioxide cartridge, screw cap with piercing pin and nozzle opening, may be attached to trolley demo DM300-2A by means of two 4 mm plug pins
Dimensions: 35x142x35 mm

**DM341-3K Clamp for cartridge adapter**
Aluminium u-profile, 50x35x19 mm, green powder-coated, with centred metal pin for securing in place cartridge adapter DM340-3B, clamping rod (10x172 mm) with fixing screw and clamping jaw

**DM340-5A Rocket, model**
"Rocket drive" by means of propulsion; plastic bottle with special valve and guide fins along with connecting hose and hand pump; the "pressure tank" is partially filled with water and sealed using the special valve; pumping causes a rise in pressure in the " pressure tank"; sufficient pressure causes the connecting hose to be ejected from the valve, water is forced through the valve at high velocity and the rocket rises
Total height: approx. 430 mm; pump hose L = approx. 145 cm
Caution: experiment may only be performed out of doors!
Ascent altitude: 5 - 40 m depending on water volume in tank



**Experiment:** Propulsion (cartridge adapter mounted on trolley)



**Experiment:** Propulsion (cartridge adapter with clamp, rotates on stand)

**Experiment:** Propulsion (blower DM701-2L mounted to rotate on stand)