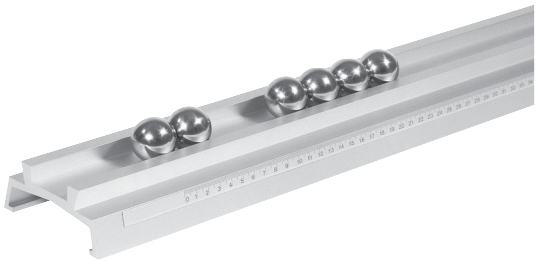
U15014 Set of six steel balls

Instruction sheet

3/03 ALF



Steel balls suitable for experiments on elastic and inelastic collisions on a slide rail.

1. Description, technical data

Set of 6 hardened and polished steel ball bearings.

Diameter:	30 mm each
Weight:	110 g each

2. Instructions for use

- Experiment is set up on a metal slide rail (e. g. U17150) or using 2 stands (U15004) on stand components.
- Track or stands should be adjusted to the horizontal using a spirit level. Fine adjustment can be achieved using the screws on the stand base.

2.1 Elastic collisions

- Roll one ball with various degrees of strength against another stationary ball.
- Observe the speeds of the balls before and after impact. (The stationary ball moves away at the same speed while the impacting ball comes to rest. Momentum is transferred completely from one ball to the other.)

2.2 Inelastic collisions

- Attach sticky tape to a stationary ball to ensure that a collision will be inelastic.
- Roll one ball with various degrees of strength against the stationary ball.
- Observe the speeds of the balls before and after impact. (After impact, both balls move at approximately half the original speed of the impacting ball before the collision.)

2.3 Several balls

- Roll one ball into 5 other balls that are touching one another.
- Observe the speed of all the balls after an elastic collision.
- Repeat the experiment with 2 (3) balls rolling one behind the other into 4(3) stationary balls that are touching one another.