

# HM 170.21

## Aerofoil with slat and slot flap



### Learning objectives/experiments

- experiments on bodies immersed in a flow
- influence of a slat
- Influence of a slot flap
- determination of the drag coefficient ( $c_d$  factor)
- determination of the lift coefficient
- together with the force sensor HM 170.40
  - ▶ determination of the moment coefficient

### Specification

- [1] aerofoil with slat and slot flap for investigating the influence of control surfaces on aerofoils
- [2] accessory for the wind tunnel HM 170
- [3] bracket made of corrosion-resistant steel
- [4] aerofoil with slot profile NACA 0015

### Technical data

#### Aerofoil

- profile: NACA 0015
- shape: symmetrical
- LxWxH: 100x100x15mm

#### Bracket

- corrosion-resistant steel
- $\varnothing$  4mm

LxWxH: 120x120x300mm

Weight: approx. 0,4kg

### Scope of delivery

- |   |          |
|---|----------|
| 1 | aerofoil |
| 1 | manual   |

### Description

#### ■ aerofoil model for investigating aerodynamic lift aids

The aerofoil model HM 170.21 has an adjustable slat and an adjustable slot flap on the rear. On the slat it is possible to vary the separation to the leading edge of the base profile; the slot flap can be adjusted in angle and separation. The slot flap can be detached.

Together with the slat, the base profile of the aerofoil corresponds to the symmetrical profile NACA 0015. To avoid secondary flows, the aerofoil is fitted with circular covering discs.

The aerofoil is placed in the force sensor, this indicates the drag force as a measured value in flow around bodies.

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## Aerofoil with slat and slot flap

### Required accessories

HM 170            Open wind tunnel

### Optional accessories

HM 170.40        Three-component force sensor