

HM 170

Accessories for the wind tunnel



HM 170.01
Drag body sphere
diameter: 80 mm



HM 170.07
Drag body cylinder
height: 100 mm
diameter: 50 mm



HM 170.02
Drag body hemisphere
diameter: 80 mm



HM 170.08
Drag body streamlined shape
length: 240 mm
diameter: 60 mm



HM 170.03
Drag body circular disc
diameter: 80 mm



HM 170.10
Drag body paraboloid
length: 90 mm
diameter: 80 mm



HM 170.04
Drag body circular ring
outer diameter: 113 mm
inner diameter: 56,5 mm



HM 170.11
Drag body concave shape
length: 68,65 mm
diameter: 80 mm



HM 170.05
Drag body square plate
L x W: 71 x 71 mm



HM 170.21
Aerofoil with slot and slot flap
Aerofoil profile NACA 0015
L x W x H: 100 x 100 x 15 mm



HM 170.06
Lift body flag
L x W: 100 x 100 mm



HM 170.22
Pressure distribution on an aerofoil
Aerofoil profile NACA 0015
L x W x H: 100 x 60 x 15 mm
■ recording the pressure curve
■ measuring the lift force

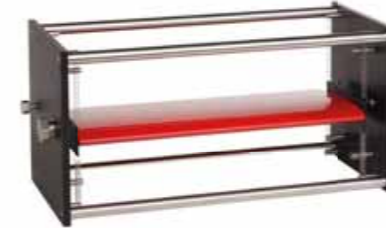


HM 170.09
Lift body aerofoil
Aerofoil profile NACA 0015
L x W x H: 100 x 100 x 15 mm

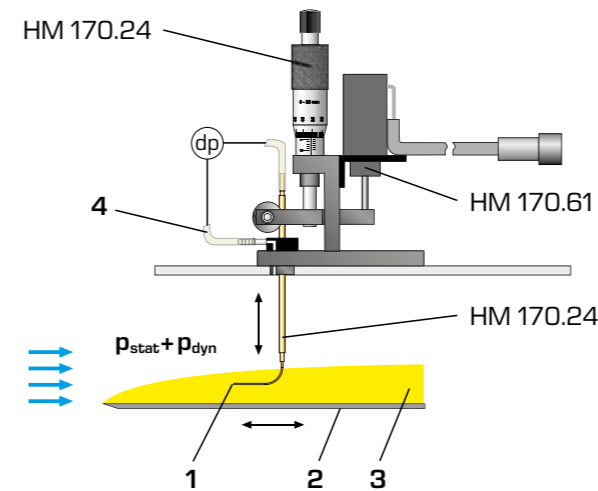
additional aerofoil profiles available:
HM 170.13 NACA 54118
L x W x H: 100 x 100 x 19,65 mm
HM 170.14 NACA 4415
L x W x H: 100 x 100 x 15,5 mm



HM 170.23
Pressure distribution on a cylinder
height: 75,5 mm
diameter: 50 mm



HM 170.20 Airfoil, spring-mounted
Aerofoil profile NACA 0015
L x W x H: 200 x 100 x 15 mm
■ transverse rigidity: 216 N/m
■ torsion rigidity: 0,07..0,28 Nm/rad



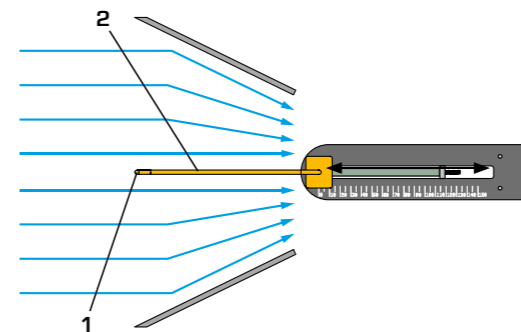
HM 170.24 Boundary layer analysis with Pitot tube
Two plates, rough and smooth, L x W x H = 279 x 250 x 3 mm
■ vertically movable Pitot tube measures the pressures at various distances from the plate surface
■ horizontally movable plate for recording pressures along the flow
■ displaying measured values on the PC using HM 170.60 System for data acquisition and HM 170.61 Electronic displacement measurement

Measuring pressures:

- 1 stagnation point at the Pitot tube (total pressure), 2 flat plate, 3 boundary layer, 4 measuring point for static pressure, dp differential pressure measurement

HM 170.61 Electronic displacement measurement

Displacement measuring range: 0..10 mm



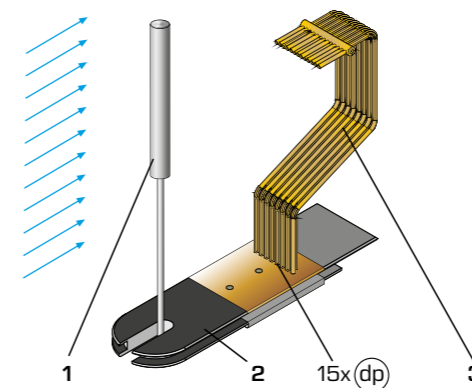
HM 170.25 Model "Bernoulli"

Air inlet: 292 mm, air outlet: 146 mm, opening angle 52°, Pitotstatic tube, outer diameter: 4 mm

- horizontally movable Pitotstatic tube
- wedge-shaped inserts forming a measuring section whose cross-section steadily narrows

Measuring pressures:

- 1 stagnation point at the Pitotstatic tube (total pressure), 2 Pitotstatic tube



HM 170.28 Wake measurement

Cylinder: D x H: 20 x 100 mm
Wake rake consists of 15 Pitot tubes, outer diameter: 2 mm, distance between the Pitot tubes: 3 mm

- display of measured values on tube manometers HM 170.50 or on the PC using HM 170.55 Electronic pressure measurement

Measuring pressures:

- 1 cylinder, 2 bracket, 3 wake rake, dp differential pressure measurement

HM 170

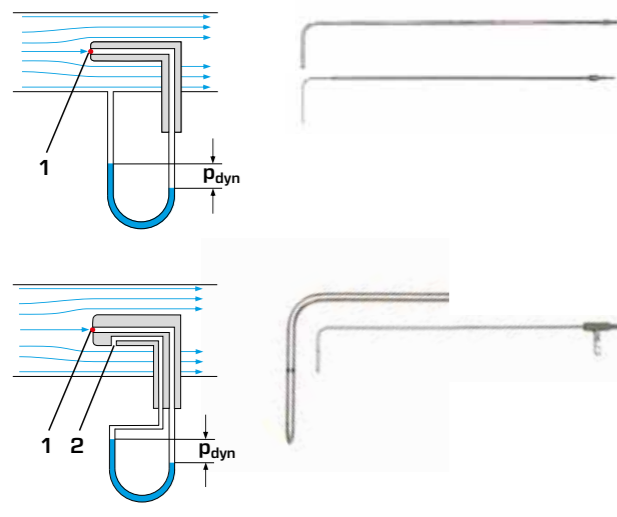
Accessories for the wind tunnel



HM 170.70 Wind power plant with rotor blade adjustment
gearless wind power plant with 3-blade rotor, adjustable rotor blade angle via servo motor, investigation of own rotor blade shapes (3D printing) possible

- replaceable rotor blades with straight and optimised profile
- variable speed generator system
- recording of wind speed, rotor speed and generated electricity

1 connection for wind tunnel HM 170, 2 flow straightener, 3 tower, 4 wind power plant, 5 protective cover



HM 170.31 Pitot tube
outer diameter: 4 mm

HM 170.32 Pitot tube, small
outer diameter: 2 mm

Determining the total pressure:

1 stagnation point
The pressure in the stagnation point is equal to the total pressure

HM 170.33 Pitotstatic tube
outer diameter: 3 mm

Determining the dynamic pressure:

1 stagnation point, 2 measuring point for static pressure
The difference between total and static pressure gives the dynamic pressure



HM 170.53 Differential pressure manometer

- differential pressure: 0...5 mbar
- graduation: 0,1 mbar



HM 170.50 16 tube manometers
L x W x H: 670 x 220 x 750 mm

- manometer inclination up to max. 1/10
- max. 600 mm WC
- height-adjustable manometer
- individual zero points can be set

The tube manometer operates on the principle of communicating tubes



HM 170.52 Fog generator
L x W x H: 350 x 500 x 300 mm

- power consumption: 500 W



HM 170.40 Three-component force sensor
L x W x H: 370 x 315 x 160 mm (measuring amplifier)
D x H: 115 x 150 mm (force sensor)

- measuring amplifier with connections for forces and moment
- connection to HM 170.60 possible
- display of drag, lift and moment

Measuring ranges

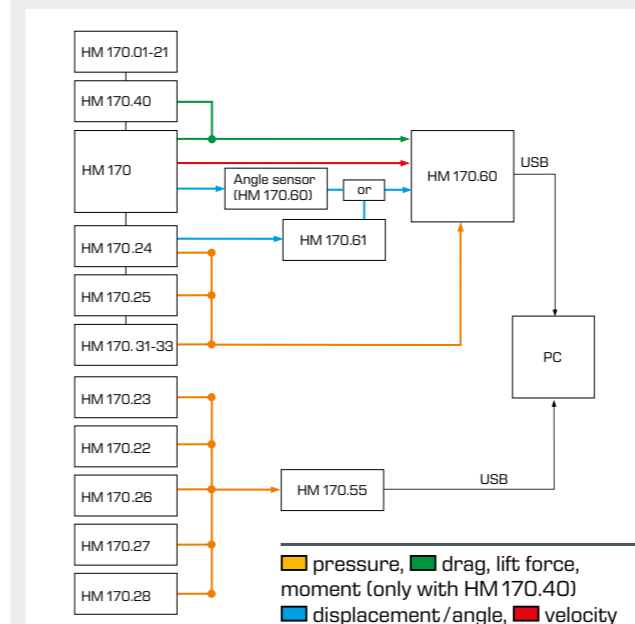
- drag: ±4 N
- lift: ±4 N
- moment: ±0,5 Nm
- angle: ±180°

1 force sensor, 2 measuring amplifier



HM 170.55 Electronic pressure measurement for HM 170
L x W x H: 370 x 315 x 160 mm

- 18 inputs, ±5 mbar
- CD with GUNT software included
- data acquisition via USB under Windows



HM 170.60 System for data acquisition
L x W x H: 360 x 330 x 160 mm (interface module)

- CD with GUNT software included
- data acquisition via USB under Windows
- angle sensor

Measuring ranges

- displacement: 0...10 mm
- angle: ±180°
- differential pressure: ±5 mbar
- velocity: 0...28 m/s
- drag: ±4 N
- lift: ±4 N
- moment: ±0,5 Nm
- (only for HM 170.40 Three-component force sensor)

