

*Aerodynamic dynamometers  
(3 to 6 components)*

*Probes and sensors*

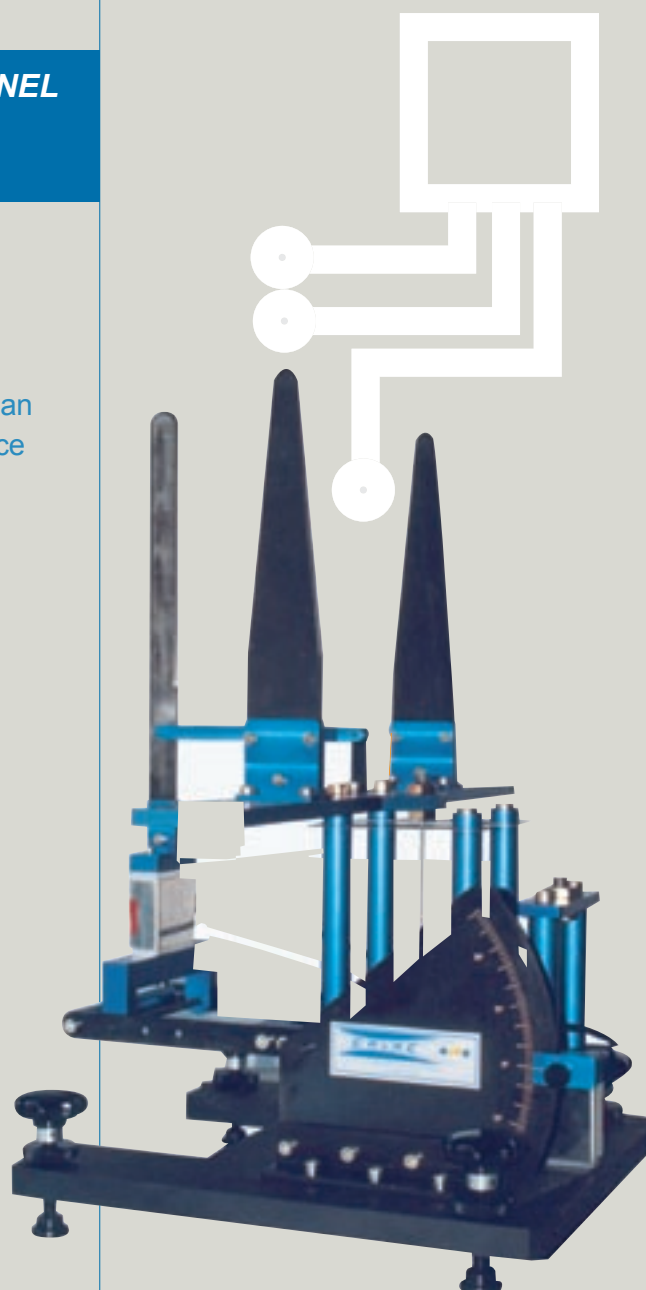
*Moveable probe supports  
(1D to 3D)*

*Data acquisition system*

**MEASUREMENT EQUIPMENT FOR ALL WIND TUNNEL  
TEST APPLICATIONS**

D2T manufactures a full range of test equipment for all test configurations.

The equipment illustrated is shown as an example only. All sizes and performance specifications are available to request.



## AERODYNAMIC DYNAMOMETERS

### THREE-COMPONENT MAST DYNAMOMETERS

- **Independent measurement of the following parameters over the range you specify:**

- Drag
- Lift
- Pitching moment
- **Optional measurements:**
- Lateral force
- Rolling moment and yawing moment
- **Angular adjustments:**
- Incidence
- Side-slip (optional)



### CALIBRATION TOOL

A calibration tool is supplied with all aerodynamic dynamometers. This tool may be used to calibrate each measurement channel independently of the others.

Other types of dynamometers are also available, including single mast, internal, wall-mounted, sting, etc.



## MULTIPLE MANOMETERS



- This system consists of 26 glass tubes with a useable length of 500 mm.
- Inclination adjustable between 30° and 90°.
- Liquid reservoir continuously adjustable over almost the full height of the manometer.
- External connections at the top of each glass tube.

## MOVEABLE PROBE SUPPORTS

### TWO-DIMENSIONAL X/Y TABLE

**Characteristics:**

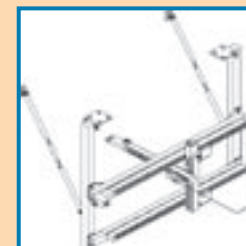
- Longitudinal and vertical movement.
- Extent of movement to suit customer requirements.
- Accuracy to 0.1 mm.
- Manual or motor control.



### THREE-DIMENSIONAL X/Y/Z TABLE

**Characteristics:**

- Longitudinal, transversal and vertical movement.
- Extent of movement to suit customer requirements.
- Accuracy to 0.1 mm.



## MEASUREMENT PROBES

### ANEMOCLINOMETRIC PROBE

This probe consists of a conical measurement head fitted with five pressure sensors, mounted on a cylindrical base. A number of annular pressure sensors are mounted between the conical and cylindrical sections.

The probe operates as an amplifying anemometer by measuring the pressure differential between the tip of the cone and the annular section at its base.

The amplification factor,  $q_{probe} / q_0$  lies between 1.35 and 1.4 depending on the aerodynamic angle of incidence of the probe in the range  $\pm 10^\circ$  as measured by four sensors spaced equidistantly around the probe mid way between the tip of the cone and the base.

### BOUNDARY LAYER PROBE

This total pressure probe consists of a 2 mm diameter tube with a flattened elbow at the tip to increase the measurement resolution.

An indicator lamp lights when the probe is in contact with the plane surface enabling the accurate calibration of the probe position.

