

Bicycle Pedal Force Measurement

Customer:

UK University - Department of Sports Sciences

Loadcell:

F314-Z3257 $F_y +3\text{kN} -1\text{kN}$ $F_x \pm 1\text{kN}$

Generic Type:

2 axis loadcell

Special Features:

Multi axis

The customer required a low profile, two axis loadcell for measurement of the force applied by a cyclist's foot upon a bicycle pedal to measure rider performance. The design required fixings for direct attachment to the rider's shoe plate as well as the existing pedal. A low profile assembly was required to minimise the distance between foot and spindle, similar to a standard pedal. The application required the structure to be of robust design as not to be damaged with higher forces presented when starting off and accelerating the bicycle.

The design utilised a combination of bending beams and shear pockets to produce a 2 axis loadcell. Overall height of the loadcell was 17mm with a weight of 0.6kg.

