

Force Measurement Consultancy and Training



Testing ThrustSSC

NPL - Providing Innovative Solutions for Complex Challenges

Accurate measurement of force is important in a wide range of applications from product design to ensuring compliance with health and safety requirements. In an increasingly complex environment, these measurement challenges can push the boundaries or even exceed a company's capability. Whether you're looking for a solution to a particular problem or to develop your internal know-how, as the UK's national standards laboratory, NPL can assist with bespoke consultancy and training in force measurement.

NPL's Credentials

Our expertise has evolved over many years through our work in the development of force standards and their dissemination to industry via NPL's national

force standard machines. Continuous research and development ensure that we provide standards at the highest level of accuracy. For example, work in recent years has focussed on optimising the performance of force transducers for today's demanding applications. Our knowledge and facilities are regularly sought by industry to address a wide range of technical challenges.

Breaking the Land Speed Record -

To break the land speed record, the ThrustSSC development team pushed at the frontiers of technology. Balancing the thrust of the two engines was critical to ensure that the car travelled in a straight line. Working closely with the car's designers, NPL modified the engines' trunnions, strain gauging them to enable to measure force. The trunnions were then calibrated in NPL's 1.2 MN force standard machine.

Measurement at a Pinch

Working with the BBC Natural History Department, NPL designed, manufactured, and calibrated a double cantilever device to measure the pinching force of crab's claws.

Helping to Preserve National Treasures

It was feared Hampton Court Palace's priceless tapestries were being damaged as they stretched and shrunk from taking on and dispelling moisture in the atmosphere. NPL put a system in place to allow the tapestry's weight to be monitored over a period of time. It was found that the atmosphere was indeed affecting the condition of the tapestries and resulted in the implementation of a humidity control system.



Hampton Court Palace

Training Courses

NPL can offer individual or group training.

NPL has run a number of courses specific to force measurement and its application. The courses cover the calibration of force transducers and testing machines to both national and international standards, including ISO 376, ASTM E 74, ISO 7500-1, and ASTM E 4. The theory and understanding of measurement uncertainties and their overall effect on the calibration results is also covered.

NPL has the facilities to adapt and run tailored training packages to meet a customer's specific needs on a wide range of force related topics, from the setting up of indicators and measurement systems to the analysis of results.

Customer Feedback

"I found the course both comprehensive and informative and have no doubt that the knowledge gained from attending the course and the conversations with the tutors and other participants will be very useful in my future work"

"Good organisation and nice networking opportunity - most useful was the calculation of uncertainties in force measurement"

For further information or to discuss your requirements, please contact us.

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