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Characteristics and function of the South African national measuring standard for force.

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Abstract content
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This paper describes the force comparator machine by which a national measuring standard for force is established. The design of the machine is described focusing on the mechanical structure of the force comparator. High-precision strain gauge load cells are at the heart of the force comparator machine. Characteristics of these force measuring devices are discussed. The process of calibration of load cells for industry using the comparator machine is explained and it is shown that it can be carried out to uncertainties as low as 0.03%.

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