

Theory: (such as a spring) Materials can behave in different ways when a force is applied to them. in this case the relationship between the restoring force  $F$  and the displacement from equilibrium position  $x$  is given as follows  $F=kx$  For springs this relation is known as Hooke's Law Here  $F$  is the force on the spring. Consider a spring that extended some distance by an effect of force, when applied different weights to springs and found that the extension of a spring is proportional to the force applied. The unit for the spring constant is newtons/meter