

21-P-WE-AG-018

A pogo stick has a spring constant of approximately 40 kN/m. How much work would it take to compress a L meter pogo stick from the neutral position to D meters?

ANSWER:

The work of a spring force is given by $U_{1-2} = -\left(\frac{1}{2}ks_2^2 - \frac{1}{2}ks_1^2\right)$. Therefore,

$$U_{1-2} = -\frac{1}{2} \cdot 40,000 \frac{N}{m} \cdot (L - D)^2 \text{ Joules}$$