

Structural Analysis of New Dampers Made of Nylon Springs

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Abstract. The article presents an original mathematical model of a damper composed of nylon compressive prestressed springs, which are assembled in series-parallel. Based on the measurement of the mechanical properties of the applied springs, the optimal combination of springs can be determined by proposed mathematical model so that the damper can transmit the maximum possible amplitude of the dynamic force. Measurements of its functionality were performed on the physical prototype of the damper, and their results are compared with the calculated results. The nylon damper can be used for flexible storage of mechanical parts in small mobile systems such as children's scooters or car kits.