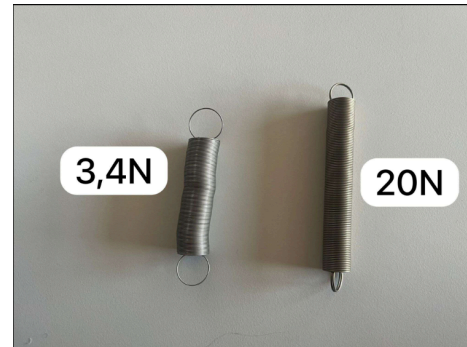
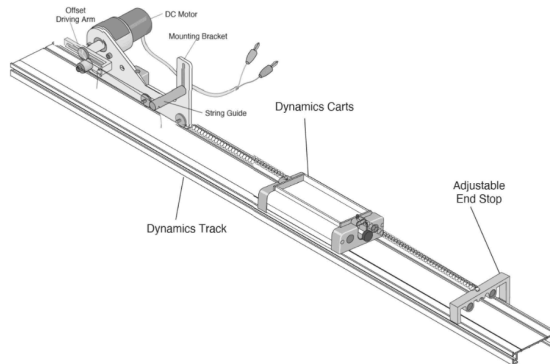


Driven and coupled carts on rails

Key words: coupled carts, simple harmonic motion, hooke's law, oscillations.



Equipment List:

1. DC Motor
2. Dynamic Carts (PASCO)
3. Adjustable End Stop
4. Dynamics Track
5. Three 3,4N and Three 20N springs
1. 12 V stabilized power supply
2. Weights (optional)

How to assemble and operate:

- Assemble the DC motor, dynamic cart, the springs and the end stop as shown in the image. Connect the motor to the power supply with cables. To add a second cart, disconnect one of the springs from the end stop and attach the new cart with a third string in the same way. Optionally, additional weight can be introduced to the carts to extend the variation in oscillatory behavior.
- Turn on the motor, start from the lower voltage and observe the cart's behavior. To observe the difference in oscillation, a change of the springs is also possible.

Description/Theory:

This demonstration illustrates the influence of the spring constant, amplitude of the oscillation, and the mass of the cart on the period of oscillation of the one/two cart system.

Comments/Notes: