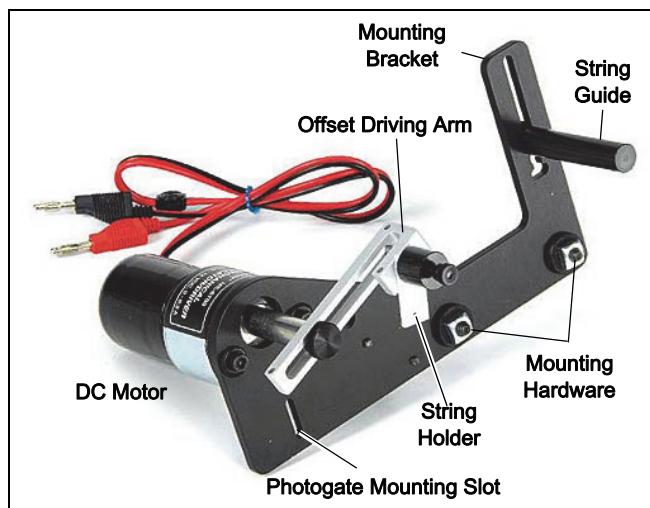


Mechanical Oscillator/Driver

ME-8750

Introduction



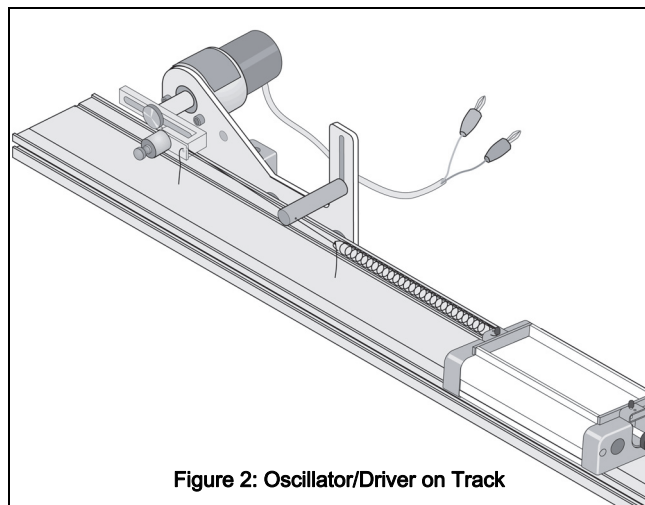
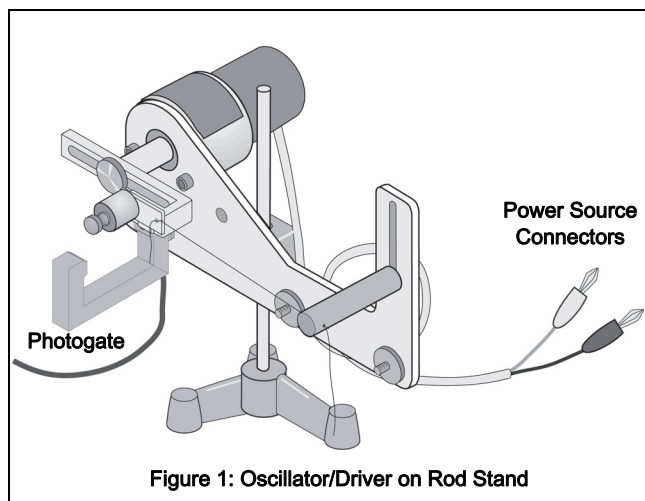
The PASCO ME-8750 Mechanical Oscillator/Driver is designed to drive apparatus requiring a low frequency (0.3 to 3 Hz), high torque, sinusoidal oscillation. It consists of a DC motor with an offset driving arm and a mounting bracket. A string can be attached through the string guide between the plastic string holder on the offset driving arm and the apparatus which is to be driven. The Mechanical Oscillator/Driver will provide a sinusoidal pull on the string.

Features

- 12 VDC motor (frequency: 0.3-3 Hz, current: 0-0.3 A)
- Adjustable Amplitude: adjustable up to 12 cm.
- Photogate Attachment: A photogate can be attached to measure the frequency of the oscillator.
- Driver mounts on PASCO Track or Rod Stand
- Rubber washers on mounting bracket provide quieter operation on the PASCO Track.

Operation of the Oscillator/Driver

1. Mounting: The Oscillator/Driver can be mounted to a PASCO track to drive dynamics carts or it can be mounted on a rod stand for driving other apparatus. See Figures 1 and 2. Tie one end of a string to the white plastic string holder piece on the driving arm and thread the other end of the string through the hole in the string guide. The level of the guide can be adjusted by about 5.5 cm to match the height of the object to be driven.



2. **Amplitude Adjustment:** To vary the amplitude, loosen the thumb screw that holds the arm to the motor shaft and slide the arm to a new position. Retighten the thumb screw to hold the arm in place. The amplitude is zero when the arm is positioned such that the screw which holds the string holder is aligned over the motor shaft.
3. **Power Supply:** Plug the leads from the Oscillator/Driver into a 12 V (0-0.3 A) variable DC power supply.
 - NOTE: Do not exceed 12 V.
4. **Frequency Adjustment:** To adjust the frequency, change the voltage of the power supply. An increase in the voltage corresponds to an increase in the frequency.
5. **Measuring the Frequency:** Mount a photogate onto the Oscillator/Driver using the slot located below the motor. Each period, the arm will block the photogate once. See Figure 1.

Suggested Uses for the Oscillator/Driver

1. Attach a spring to each end of a PASCO Cart. Connect the free end of one spring to the adjustable end stop at one end of the dynamics track. Connect the free end of the second spring to a string tied to the Oscillator/Driver and threaded through the string guide. Drive the spring and cart system at various frequencies to find the resonant frequency of the system.
 - NOTE: It generally takes the system a little time to respond to a change in frequency of the driving force so some patience is needed to see the resulting change in amplitude.
2. Use two carts and three springs to find the resonant frequencies of the two different modes of oscillation. See Figure 3.

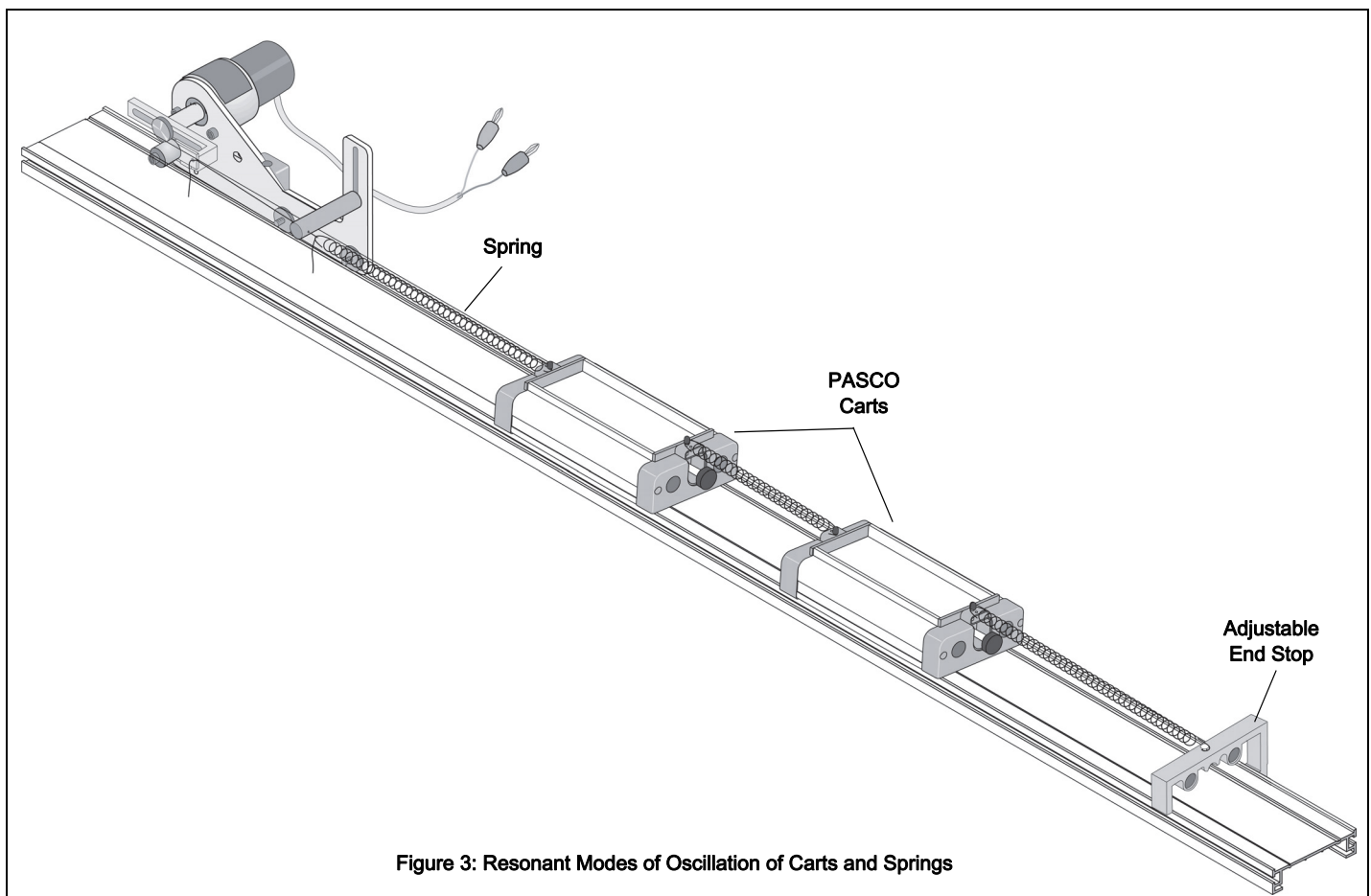


Figure 3: Resonant Modes of Oscillation of Carts and Springs

Technical Support

For assistance with any PASCO product, contact PASCO at:

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Roseville, CA 95747-7100

Phone: +1 916 462 8384 (worldwide)
800-772-8700 (U.S)

Email: techsupp@pasco.com

Limited Warranty

For a description of the product warranty, see the PASCO catalog.

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