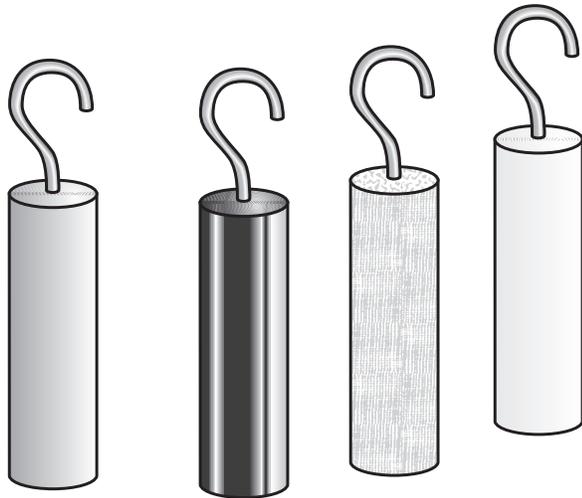




Photogate Pendulum Set

ME-8752



Introduction

The ME-8752 Photogate Pendulum Set is designed for use with a PASCO photogate (such as the ME-9204B Accessory Photogate or the ME-9498A Photogate Head). The photogate can be used with a computer and interface to time the period of the various pendula very precisely. The set contains four cylindrical pendula identical in size and made of different materials: brass, aluminum, plastic and wood.

This set can also be used as a multipurpose pendulum set without the use of interfaces or sensors.

Items Included

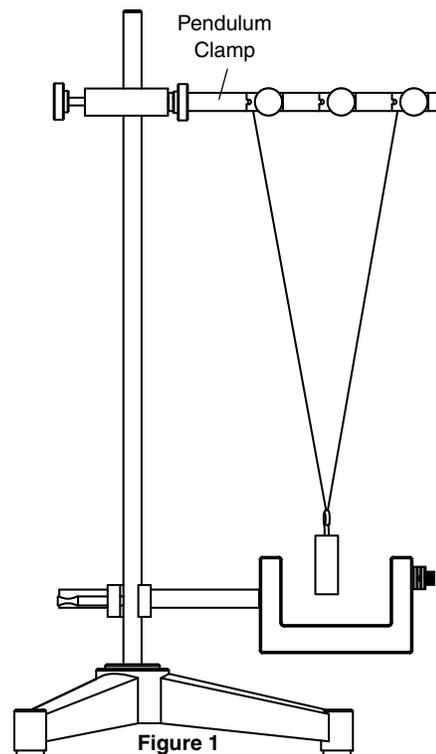
- Brass Pendulum
- Aluminum Pendulum
- Plastic Pendulum
- Wood Pendulum

Other Equipment Needed

- PASCO Interface and data acquisition software*
- Accessory Photogate (ME-9204B) or Photogate Head (ME-9498A)
- Base and Support Rod (ME-9355)
- Pendulum Clamp (SE-9443) or other horizontal support for the pendulum string
- Physics String (SE-8050)

Setup Procedure: Classic Pendulum Experiments

The various pendula can be suspended from a support rod using a Pendulum Clamp (SE-9443). The photogate is blocked each time the pendulum passes through the photogate. Three successive blocks of the photogate would constitute one period of the pendulum. See Figure 1..

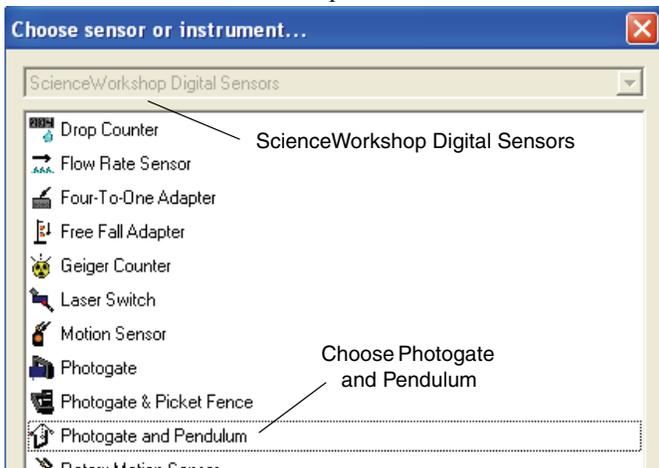


The “V” shaped bifilar arrangement of the string insures that the pendulum will swing back-and-forth in the same plane.

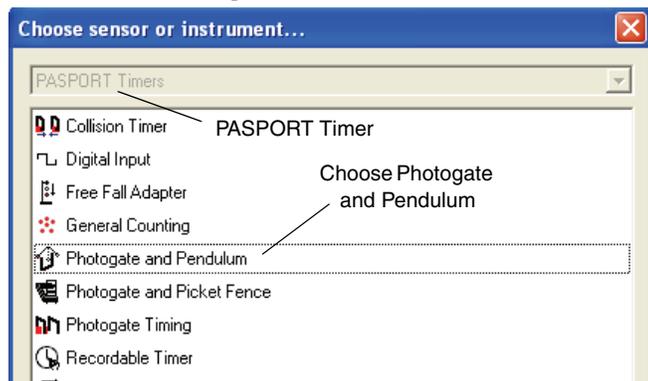
*See the PASCO catalog or web site at www.pasco.com for more information.

Measuring the Period of a Pendulum:

DataStudio: When using DataStudio software with a *Science-Workshop* interface, go to the Experiment Setup window and click the icon of a digital channel on the picture of the interface. Select the “Photogate and Pendulum” choice from the “Choose sensor or instrument” panel. Click OK.



When using DataStudio software with a PASPORT interface, go to the Experiment Setup window and click ‘Setup Timers’. Select the “Photogate and Pendulum” choice from the “Choose sensor or instrument” panel. Click OK.



Check the PASCO web site at www.pasco.com for information about using the SPARK Science Learning System (SPARK SLS) to measure the period of a pendulum.

Data Recording: Align the pendulum with the photogate so that the pendulum will block the photogate beam as the pendulum swings back and forth. Pull the pendulum back a few centimeters and release it so it swings through the photogate. Press ‘Start’ to begin recording data. Let the pendulum swing several times, and then press ‘Stop’ to end recording data. Use a Table display to view the data.

Using this experimental setup, students can investigate the relationships between length and period, mass and period, and amplitude and period. In all cases, the effects of air resistance are held constant since the shape and size of the pendula are identical.

Technical Support

For assistance with any PASCO product, contact PASCO at:

Address: PASCO scientific
10101 Foothills Blvd.
Roseville, CA 95747-7100

Phone: 916-786-3800 (worldwide)
800-772-8700 (U.S.)

Fax: (916) 786-7565

Web: www.pasco.com

Email: support@pasco.com

For more information about the Photogate Pendulum Set and the latest revision of this Instruction Sheet, visit:

www.pasco.com/go?ME-8752

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