Wireless Hand Dynamometer

PS-3253

Introduction

The Wireless Hand Dynamometer is used to measure the force of grip strength during experiments and demonstrations. The device features a grip pad and pinch pad, both of which contribute to the same net force measurement. The device also includes an accelerometer, which measures the sensor's acceleration in three dimensions of linear translation, and a gyrometer, which reports rotational displacement, velocity, and acceleration. The device features built-in over-force protection, which will display a warning in the software the first time the force value exceeds safe limits during each run of data.

Components

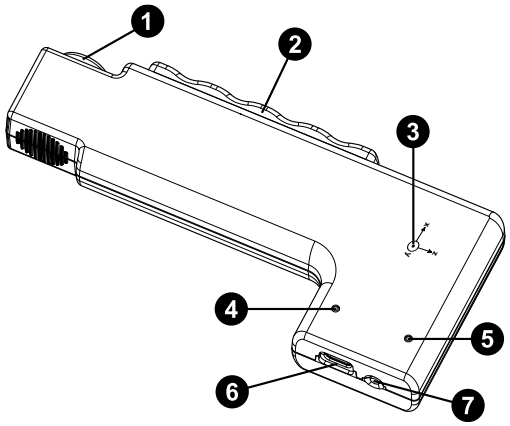
Included components:

- Wireless Hand Dynamometer
- USB-C charging cable

Required software:

- PASCO Capstone or SPARKvue data collection software

Features



1 Pinch pad

2 Grip pad

3 Location of accelerometer

Measures acceleration in three directions, with the positive directions indicated by the arrows in the icon.

4 Bluetooth Status LED

Indicates the status of the sensor's Bluetooth connection.

Bluetooth LED	Status
Red blink	Ready to pair
Green blink	Connected
Yellow blink	Logging data

For more information on remote data logging, see the SPARKvue or PASCO Capstone online help.

5 Battery Status LED

Indicates the charge status of the sensor's rechargeable battery.

Battery LED	Status
Red blink	Low battery
Yellow ON	Charging
Green ON	Fully charged

6 USB-C port

Use to connect the sensor to a USB charging port via the included cable. You can also use this port and the cable to connect the sensor to a computer without a Bluetooth connection via a USB port or powered USB hub.

7 Power button

Press and briefly hold to turn the sensor on or off.

Initial step: Charge the battery

Charge the battery by connecting the USB-C port to any standard USB charger. The Battery Status LED is solid yellow while charging. When fully charged, the LED changes to solid green.

Get the software

You can use the sensor with SPARKvue or PASCO Capstone software. If you're not sure which to use, visit pasco.com/products/guides/software-comparison.

A browser-based version of SPARKvue is available for free on all platforms. We offer a free trial of SPARKvue and Capstone for Windows and Mac. To get the software, go to pasco.com/downloads or search for **SPARKvue** in your device's app store.

If you have installed the software previously, check that you have the latest update:

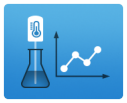
SPARKvue: Main Menu > Check for Updates

PASCO Capstone: Help > Check for Updates

Check for a firmware update

SPARKvue

1. Press the power button until the LEDs turn on.
2. Open SPARKvue, then select **Sensor Data** on the Welcome Screen.



3. From the list of available devices, select the sensor that matches your sensor's device ID.
4. A notification will appear if a firmware update is available. Click **Yes** to update the firmware.
5. Close SPARKvue once the update is complete.

PASCO Capstone

1. Press the power button until the LEDs turn on.
2. Open PASCO Capstone and click **Hardware Setup** in the Tools palette.
3. From the list of available wireless devices, select the sensor that matches your sensor's device ID.
4. A notification will appear if a firmware update is available. Click **Yes** to update the firmware.
5. Close Capstone once the update is complete.

Set up the software

SPARKvue

Connecting the sensor to a tablet or computer via Bluetooth:

1. Turn on the Wireless Hand Dynamometer. Check to make sure the Bluetooth Status LED is blinking red.
2. Open SPARKvue, then click **Sensor Data**.
3. From the list of available wireless devices on the left, select the device which matches the device ID printed on your sensor.

Connecting the sensor to a computer via USB-C cable:

1. Open SPARKvue, then click **Sensor Data**.
2. Connect the provided USB-C cable from the USB-C port on the sensor to a USB port or powered USB hub connected to the computer. The sensor should automatically connect to SPARKvue.

Collecting data using SPARKvue:

1. Select the measurement you intend to record from the **Select measurements for templates** column by clicking the check box next to the relevant measurement's name.
2. Click **Graph** in the **Templates** column to open the Experiment Screen. The graph's axes will auto-populate with the selected measurement versus time.
3. Click **Start** to begin collecting data.

PASCO Capstone

Connecting the sensor to a computer via Bluetooth:

1. Turn on the Wireless Hand Dynamometer. Check to make sure the Bluetooth Status LED is blinking red.
2. Open PASCO Capstone, then click **Hardware Setup** in the **Tools** palette.
3. From the list of **Available Wireless Devices**, click the device which matches the device ID printed on your sensor.

Connecting the sensor to a computer via micro USB cable:

1. Open PASCO Capstone. If desired, click **Hardware Setup** to check the connection status of the sensor.
2. Connect the provided USB-C cable from the USB-C port on the sensor to a USB port or powered USB hub connected to the computer. The sensor should automatically connect to Capstone.

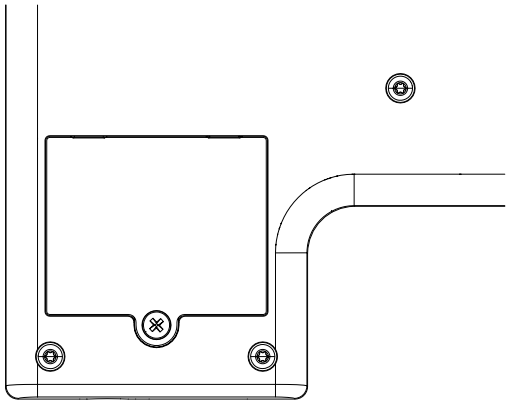
Collecting data using Capstone:

1. Double-click the **Graph** icon in the **Displays** palette to create a new blank graph display.
2. In the graph display, click the **<Select Measurement>** box on the y-axis and select an appropriate measurement from the list. The x-axis will automatically adjust to measure time.
3. Click **Record** to begin collecting data.

Replace the battery

The battery compartment is located on the back of the sensor, as shown below. If the battery needs to be replaced, you can do so using the Wireless Sensor 3.7 V 500 mAh Replacement Battery (PS-3291). To install the new battery:

1. Use a Phillips screwdriver to remove the screw from the battery door, then remove the door. The position of the battery door is shown below.



2. Unplug the old battery from the battery connector and remove the battery from the compartment.
3. Plug the replacement battery into the connector. Make sure the battery is properly positioned inside the compartment.
4. Place the battery door back in place and secure it with the screw.

After replacing the battery, make sure to dispose of the old battery properly per your local laws and regulations.

Software help

The SPARKvue and PASCO Capstone Help provide information on how to use this product with the software. You can access the help from within the software or online.

SPARKvue

Software: Main Menu > Help

Online: help.pasco.com/sparkvue

PASCO Capstone

Software: Help > PASCO Capstone Help

Online: help.pasco.com/capstone

Technical support

Need more help? Our knowledgeable and friendly Technical Support staff is ready to answer your questions or walk you through any issues.

Chat pasco.com

Phone 1-800-772-8700 x1004 (USA)
+1 916 462 8384 (outside USA)

Email support@pasco.com

Limited warranty

For a description of the product warranty, see the Warranty and Returns page at www.pasco.com/legal.

Copyright

Trademarks

Product end-of-life disposal

This electronic product is subject to disposal and recycling regulations that vary by country and region. It is your responsibility to recycle your electronic equipment per your local environmental laws and regulations to ensure that it will be recycled in a manner that protects human health and the environment. To find out where you can drop off your waste equipment for recycling, please contact your local waste recycle or disposal service, or the place where you purchased the product. The European Union WEEE (Waste Electronic and Electrical Equipment) symbol on the product or its packaging indicates that this product must not be disposed of in a standard waste container.

CE statement

This device has been tested and found to comply with the essential requirements and other relevant provisions of the applicable EU Directives.

FCC statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Battery disposal

Batteries contain chemicals that, if released, may affect the environment and human health. Batteries should be collected separately for recycling and recycled at a local hazardous material disposal location adhering to your country and local government regulations. To find out where you can drop off your waste battery for recycling, please contact your local waste disposal service, or the product representative. The battery used in this product is marked with the European Union symbol for waste batteries to indicate the need for the separate collection and recycling of batteries.