



SMW1 SPORTS MONITORING WATCH

User Manual REV: 2006-08-18

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Introduction

SMW1 Sports Monitoring System



Features

- *Full-featured digital sports watch for the fitness enthusiast or serious athlete*
- *Integrates Dynastream's ANT™ wireless technology to reliably connect simultaneously with a speed distance monitor, heart rate monitor, and bike speed/cadence monitor*
- *Store and recall up to 50 laps of sport and fitness data*
- *All wireless data is digitally encoded and transmitted in short bursts at 2.4 GHz to prevent cross-talk*
- *Battery life of one year with typical use*

This Guide

The SMW1 Sports Monitoring Watch User Manual illustrates the functionality of the product when configured with a speed distance monitor, heart rate monitor, and bike speed/cadence monitor. Different configurations will have different functionality and will result in different available data.

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SMW1 Modes and Features

Your SMW1 Sports Monitoring Watch has four primary modes.

TIME

- ✎ View and adjust time (two time zones) and date
- ✎ View, enable, and adjust daily alarm
- ✎ Enable chime mode



SPORT

- ✎ Connect with ANT-enabled sports devices
- ✎ Display and record chronograph and sports data
- ✎ Set units, zone alarms, and other settings
- ✎ Save sessions for later recall



TIMER

- ✎ Set two individual countdown timers
- ✎ Set single-expiry or repeating mode
- ✎ Utilize interleaved timers for flexibility during workout interval sessions



DATA

- ✎ View history of workout sessions – up to 50 laps
- ✎ View available data: lap time, distance, speed, step count, calories, heart rate, and cadence
- ✎ Delete individual or full session history

Quick Start Steps

Follow these basic instructions to begin using your speed distance monitor (footpod), heart rate monitor, and bike speed/cadence monitor and discover the functionality of your SMW1 Sports Monitoring Watch.

SDM2 Speed Distance Monitor

POWER ON

- *Press and hold the button for 2 seconds to power on the footpod. The red light flashes to indicate the pod is powered on.*

POWER OFF

- *Press and hold the button for 2 seconds to power off the pod. If left on, the pod will automatically turn off 30 minutes after foot motion has stopped.*

SECURE FIT

- *The SDM2 Speed Distance Monitor (footpod) must be attached securely to the shoe.*
- *The footpod must stay in place on the shoe during running for optimum accuracy. Tight lacing will reduce jiggling or bouncing of the pod, which can be detrimental to speed and distance results.*



Unlace your shoe so that the lace is through the front eyelets only. Then feed each lace end through the front slot of the footpod. Cross the lacing inside the slot.



Re-lace the shoe to the top. Thread the ends of the lace through the rear corners of the footpod as shown.



Feed the lace ends through the top eyelets and then tie the lace as usual. The pod must be snug to the shoe to avoid side-to-side motion, which could affect accuracy.

HRM1 Heart Rate Monitor

POWER ON

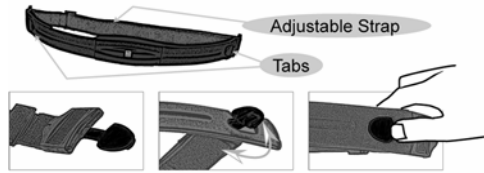
- The HRM1 will turn on automatically and remain on while it is worn around the chest.

POWER OFF

- The HRM1 will turn off automatically 5 minutes after being removed from the chest.

SECURE FIT

- Proper placement of the HRM1 Heart Rate Monitor is important for optimum capture of heart rate pulses.
- Wear the HRM1 directly on your skin and wet both sensors on the back with water or biogel.
- The HRM1 should fit snugly enough to remain in place during your exercise session.
- Wipe down the HRM1 with a wet cloth before and after use. Do not immerse in water.

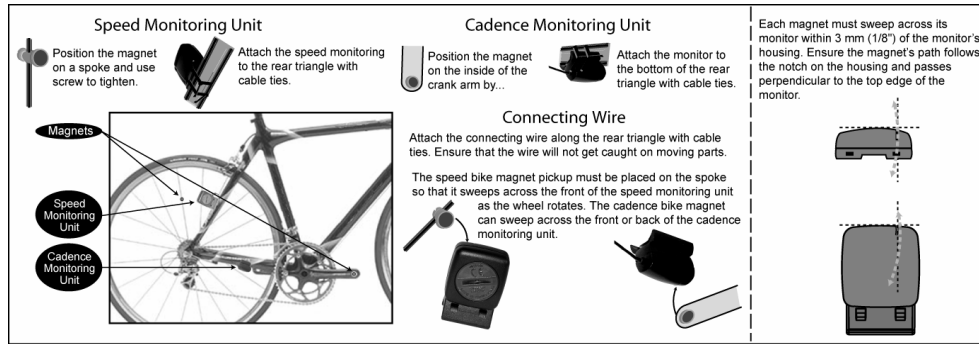


Use the tabs to position the HRM1 transmitter. Push one of the tabs through one of the slots. Turn and direct the tab to fit and press down the tab until flush with the band. Bring the transmitter around your chest and attach the other side with the second tab. The transmitter should be worn on your rib cage, just below the breast plate. Use the adjustable strap to secure the transmitter snug to your chest, directly against the skin.

BKM Bike Speed and/or Cadence Monitors

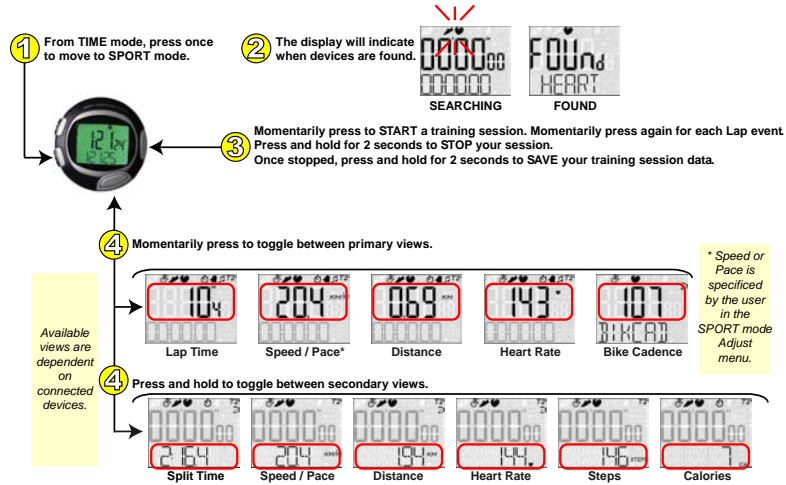
The BKM Bike Monitors mount easily onto the rear triangle of a bike frame.

- The BKM monitors turn on automatically and remain on as long as they detect magnet events (5-minute timeout).
- Securely attach both speed and cadence monitors and ensure the magnet pickups pass within 5 mm of the trigger areas. Sliding motion and misalignment will affect accuracy.



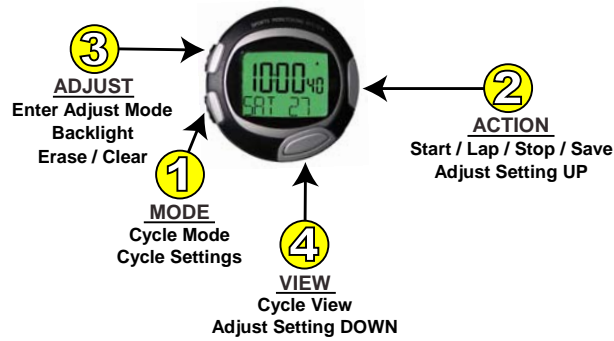
SWM1 Wristwatch Quick Start

- ✈ Turn on the footpod, heart rate monitor, and/or bike monitor and bring the device[s] within range of the watch (<2 meters).
- ✈ The watch will search and connect to all 'paired' devices when placed into SPORT mode.
 - If your products came packaged together (watch, footpod, heart rate monitor, bike monitor), pairing will have already been performed and you do not need to perform additional steps.
 - To pair devices to the watch (i.e., to add a new device or to re-pair a heart rate monitor after battery replacement), refer to page 21, Device Pairing.



Navigating Your SMW1 Sports Monitoring Watch

Each of the four watch buttons maintains a consistent function across the various modes and menus. The buttons are described as Mode, Action, Adjust, and View.



- 1** Use the Mode button to cycle through the four primary modes: TIME, SPORT, TIMER, and DATA.
In any mode, press and hold the Mode button to 'Time Jump' immediately to TIME mode.
In the *Adjust* menu (see #3), use Mode to cycle through the adjustment settings.
- 2** Use the Action button to start, lap, stop, and save your SPORT session and to start and stop the timers (TIMER).
In TIME mode, use Action to cycle between Time/Alarm (momentary press) and to set the chime on or off (press and hold).
In DATA mode, use Action to cycle through session data menus (Totals/Averages/Lap Data).
In the *Adjust* menu, use Action to adjust the selected setting upwards.
- 3** In TIME, SPORT, and TIMER modes, press and hold the Adjust button to enter the *Adjust* menu.
Press Adjust to turn on the Backlight for 5 seconds; any button press during this time extends the backlight for an additional 5 seconds.
In DATA mode, Adjust is used to Erase saved sessions. In SPORT and TIMER modes, Adjust is used to reset/Clear data.
- 4** In all modes, use the View button to cycle through displays. In TIMER mode, use View to toggle between Timer 1 and Timer 2.
In TIME mode, use View to select a time zone (press and hold) and to enable/disable the alarm (momentary press).
In the *Adjust* menu, use View to adjust the selected setting downwards.

Icons

The LCD displays various icons to inform you of the current mode and actions of your SMW1 Sports Monitoring Watch.



Indicates your SMW1 Sports Monitoring Watch is connected to a bike speed/cadence monitor.
A flashing icon indicates the watch is searching for a bike speed/cadence monitor.



Indicates your SMW1 Sports Monitoring Watch is connected to a speed distance monitor (footpod).
A flashing icon indicates the watch is searching for a footpod.



Indicates your SMW1 Sports Monitoring Watch is connected to a heart rate monitor.
A flashing icon indicates the watch is searching for a heart rate monitor or indicates that a heart rate measurement is being displayed.



A flashing stopwatch icon indicates a training session is being monitored and/or indicates a countdown timer is running.



Indicates the primary display is set to the bike cadence measurement (revolutions per minute).



Indicates the chime is set to on.



Indicates the alarm function is enabled. The bell icon flashes when the alarm goes off.



Indicates your high zone limit. A flashing icon indicates you are training out of zone (above).



Indicates your low zone limit. A flashing icon indicates you are training out of zone (below).

Customizing Your SMW1 Sports Monitoring Watch

Customize your SMW1 Sports Monitoring Watch before use. Most adjustable settings are found in the *Adjust* menu of the respective mode.

TIME Mode

- ✎ Time of day and current date for each of two individual time zones
- ✎ Daily alarm

SPORT Mode

- ✎ Units (imperial or metric)
- ✎ Display (pace or speed)
- ✎ Auto-lap feature
- ✎ Target zones and zone alarm
- ✎ Bicycle and footpod calibration
- ✎ User data (weight and gender)

TIMER Mode

- ✎ Timer expiry intervals (Timer1 and Timer2)
- ✎ Timer expiry mode (single expiry or repeating)
- ✎ Timer2 enable (for interleaved operation)

Adjust Menu Operation

- (1) To enter into the *Adjust* menu of a particular mode, press and hold the *Adjust* button for 2 seconds.
- (2) Use the *Mode* button to cycle through the adjustment settings.
- (3) Use the *Action* button to adjust a setting upwards, and use the *View* button to adjust a setting downwards.
- (4) Press the *Adjust* button to exit out of the *Adjust* menu and return to the parent mode.

TIME Mode and Adjustment Settings

Time of Day View

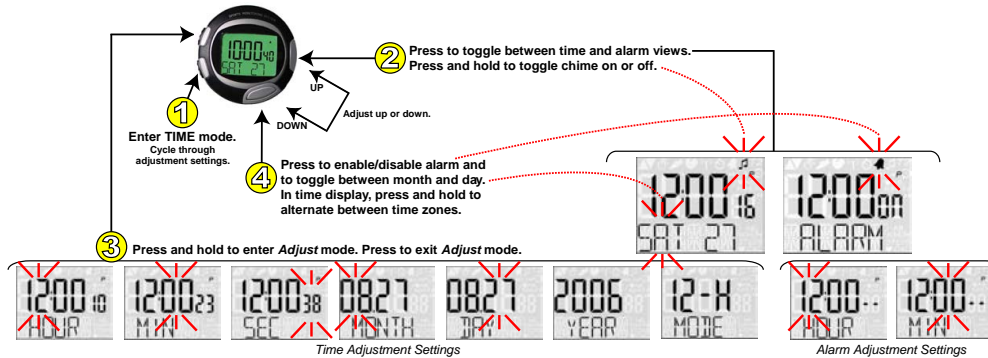
- ✖ To enable/disable chime mode, press and hold the Action button for 2 seconds (chime icon will toggle on/off).
- ✖ To switch between monthly and weekday date views, momentarily press the View button.
- ✖ To switch between T1/T2 time zones, press and hold the View button for 2 seconds (T2 icon will toggle on/off).

Alarm View

- ✖ To switch between the time of day and alarm views, momentarily press the Action button.
- ✖ In the alarm view, momentarily press the View button to enable/disable the alarm.
- ✖ If no buttons are pressed for 30 seconds, the watch display switches to the time of day view.

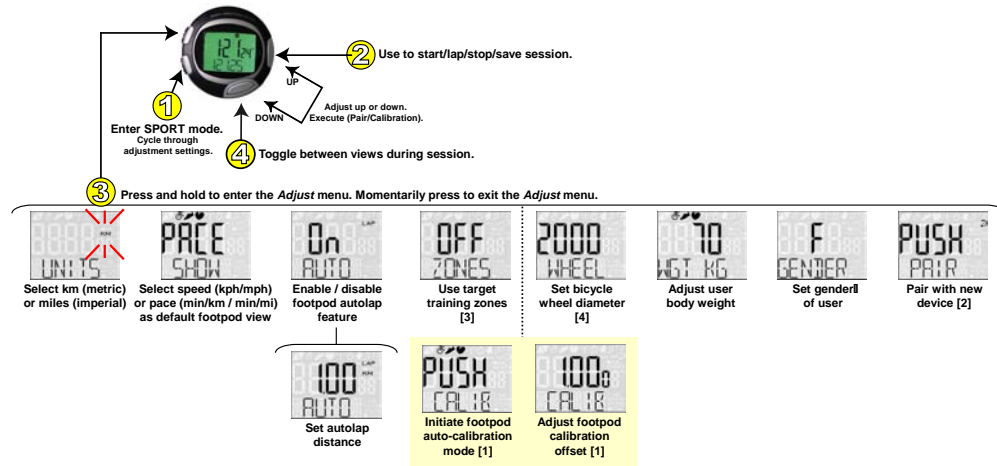
Adjust Menu Settings

- ✖ In the time of day view, press and hold the Adjust button to adjust the time and date of the current time zone.
- ✖ In the alarm view, press and hold the Adjust button to adjust the alarm expiry.



SPORT Mode Adjustment Settings

The SPORT *Adjust* menu is used to select display defaults, set user data, and access sports settings.



[1] For further detail on calibration of a running footpod, see page 22, *Footpod Calibration*.

[2] For further detail, see page 21, *Device Pairing*.

[3] For further detail, see page 17, *Using Training Zones*.

[4] Sample Tire Sizes and Corresponding Wheel Diameters

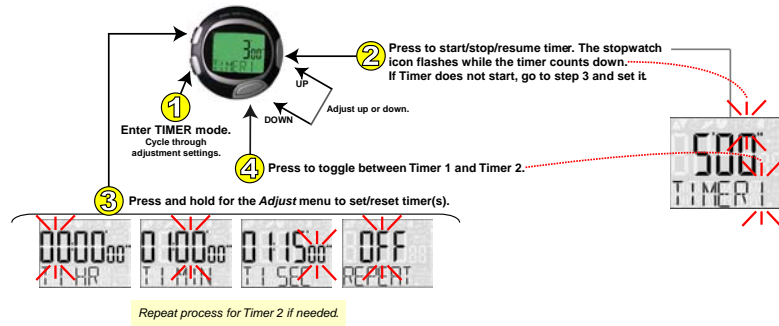
Mountain Bike 26 x 1.75 2030 mm

Road & Touring 700 x 23C 2096 mm

TIMER Mode and Adjustment Settings

Use TIMER mode to set and to use two countdown timers.

- ✖ If both timers are enabled, they will operate in interleaved fashion, first Timer1 followed by Timer2.
- ✖ Use the *Adjust* menu to set the timers as well as to select either single-expiry or repeating mode.



Training with Your SMW1 Sports Monitoring Watch

Your SMW1 Sports Monitoring Watch provides a complete fitness and training platform for casual and serious athletes alike. The SPORT mode integrates a full-featured chronograph with instantaneous fitness data when connected with wireless speed distance monitors, heart rate monitors, and bike speed/cadence monitors.

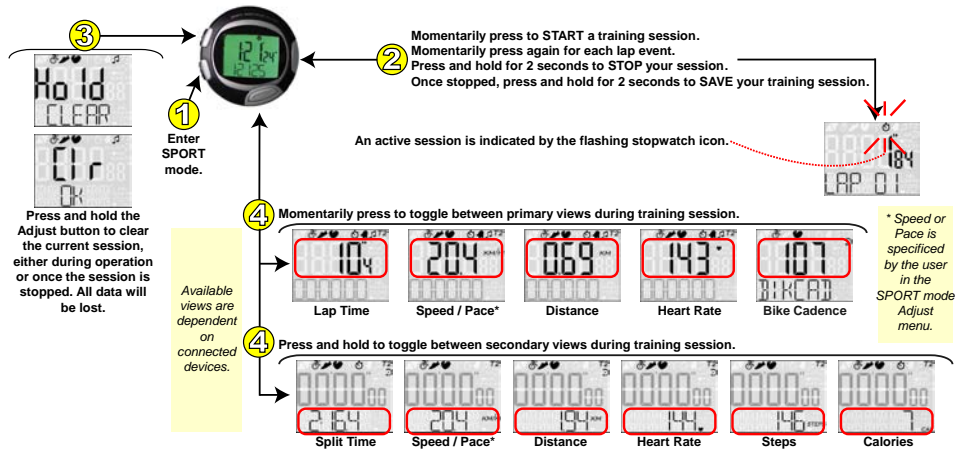
FEATURES

- ✎ Receive instantaneous training feedback on speed*, distance, steps, calories, heart rate, and bike cadence.
- ✎ Select from 7 views in the primary display: lap time, split time, speed/pace, distance, heart rate, and cadence.
- ✎ Select from 7 views in the secondary display: split time, speed/pace, distance, heart rate, steps, and calories.
- ✎ Receive full support for training zones:
 - The watch alerts you when you are above or below a user-specified zone.
 - The watch tracks time spent above, below, and within target zones.
- ✎ Mark up to 50 laps to record progress during session intervals.
- ✎ Save data for later analysis; for each lap, the watch tracks average speed, average and maximum heart rate, calories, and lap times.
- ✎ Use the auto-lap feature to automatically mark laps at preset distances without user intervention.

*Speed or pace is user-selectable in the SPORT mode *Adjust* menu. Pace is the default view.

SPORT Mode Summary

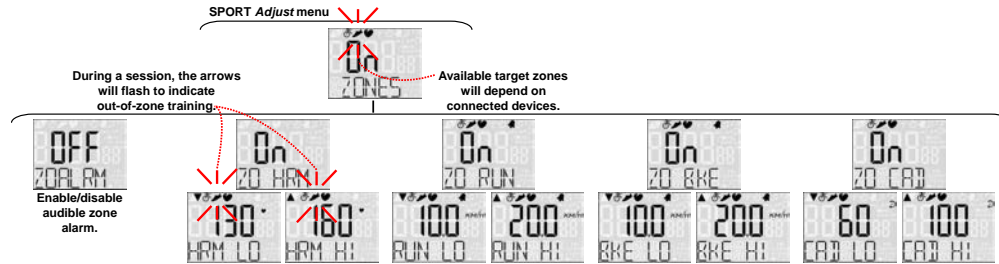
The SPORT mode provides instantaneous feedback of sports data during an activity session. Both the primary (top line) and secondary (bottom line) views are user-selectable. An integrated chronograph with lap support (up to 50 laps) can be used to track run segments for later recall, with laps marked either manually or automatically based on a preset distance.



Using Training Zones

Training zones can be used to help an athlete maintain speed, heart rate, or cadence within a target range. Visual and audible alerts are activated when outside of this range. In addition, time spent within, above, and below zones is tracked for later recall in DATA mode. Perform the following steps to enable and adjust training zones:

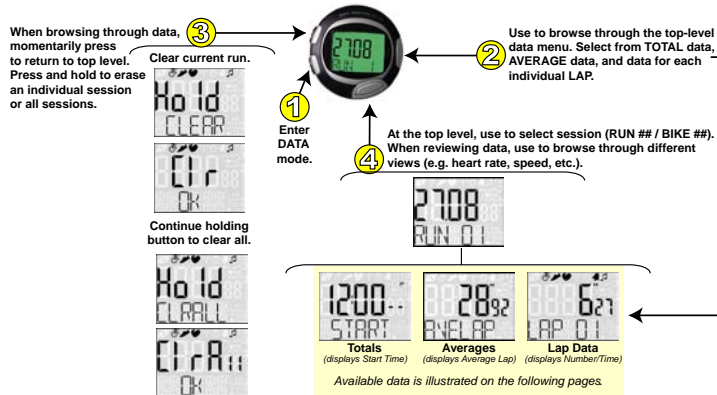
- ✦ In the **SPORT Adjust** menu, cycle to the zones selection using the Mode button. Press Action to enable.
- ✦ Enable or disable the zone alarm. If enabled, you will receive an audible beep when above or below zones.
- ✦ Enable the RUN, HRM, bike speed, and/or bike cadence zones for run speed/pace, heart rate, bike speed/pace, and/or bike cadence readings, respectively. Adjust the HI and LO values to set a desired target training zone.
- ✦ Zone audible alerts and arrows [▲][▼] will be activated under the following conditions:
 - Chronograph is active.
 - Speed/pace, heart rate, or cadence is present in the primary display.



Reviewing Saved Workout Sessions

The DATA mode can be used to view saved sessions and all stored activity data.

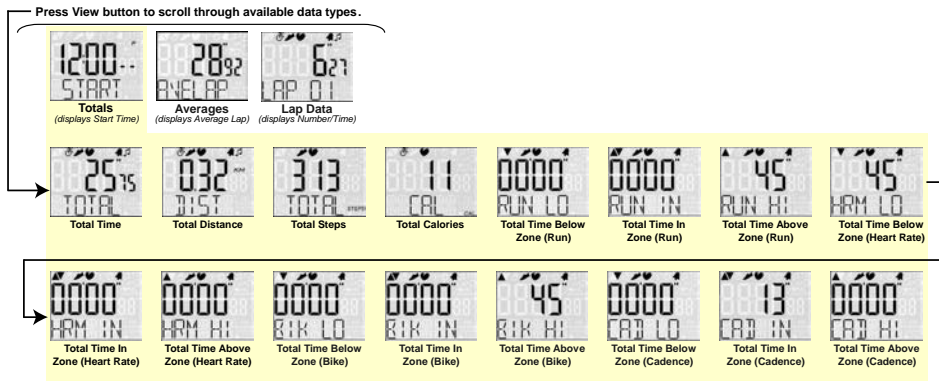
- ☛ Sessions are saved chronologically and displayed by date – any number of sessions up to 50 laps aggregate.
- ☛ Sports data is saved for the session's active devices only.
- ☛ When the lap memory is full, sessions can be erased either individually or all at once.



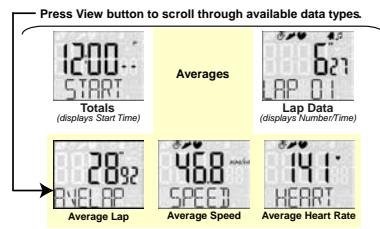
Stored data for each session includes TOTAL, AVERAGE, and individual LAP data.

- After entering the DATA mode, use the View button to select the desired session (Run ## / Bike ##).
- Press the Action button to select either TOTAL data (includes start time of session), AVERAGE data, or individual LAP data.
- Use the View button to browse further through the session data.

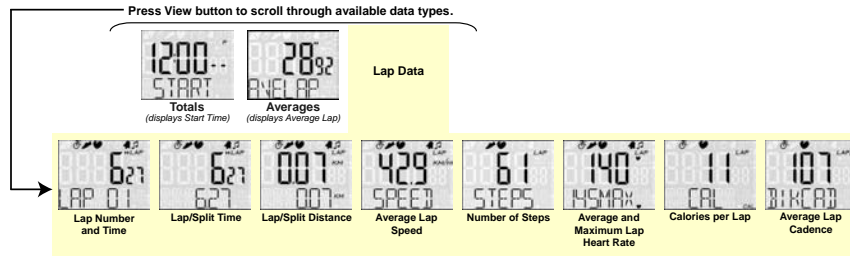
The following figure shows the available views for the TOTAL data.



The following figure shows the available views for the AVERAGE data.



The following figure shows the available views for the LAP data (duplicated for each lap).



Device Pairing

Each sports device (footpod, heart rate monitor) has a unique digital ID that must be stored in the wristwatch to enable the watch to connect to the appropriate device during activity. Each device must be 'paired' with the watch.

- *Prior to pairing, the footpod and heart rate monitor must first be turned on, see page 5, Quick Start Steps.*
- *To place the wristwatch into the pairing mode, enter the SPORT mode Adjust menu and execute "PUSH PAIR", as detailed on page 13, SPORT Mode Adjustment Settings.*
- *Pairing will complete within 15 seconds. A message "Paired Pod" or "Paired Heart" indicates success.*
- **** Ensure that only the device to be paired is within 10 meters of the watch. This will prevent unintentional pairing with wrong devices.*
- **** Only one device ID per device type (footpod, heart rate monitor) can be stored in the watch at a time. If a device is found during a pair procedure, the previously stored device is overwritten. If no device of a particular type is found during a pair procedure, then the stored ID remains intact.*

INITIAL SYSTEM SETUP

- *If your sports system was shipped as a complete set (wristwatch, footpod, and heart rate monitor) then pairing before use is not necessary; pairing is done at the factory. Devices will therefore be found automatically within 10 seconds when they are turned on and the watch is placed into SPORT mode.*

BATTERY REPLACEMENT

- *The pair operation must be repeated following heart rate monitor battery replacement, since the heart rate monitor regenerates its unique ID upon battery replacement.*
- *The pair operation does NOT need to be repeated following wristwatch or footpod battery replacement.*

NEW DEVICES

- *To pair a newly purchased footpod or heart rate monitor into an existing watch system, perform a pairing operation in isolation with the new device. The previously paired device will be overwritten.*

Footpod Calibration

The accuracy of the speed distance monitor (footpod) is 97% out of the box for a majority of users. Some users with certain stride characteristics, such as pronation and supination, will not obtain 97% accuracy until a simple calibration procedure is performed. Calibration can be done either manually or using the auto-calibration feature.

Manual Calibration

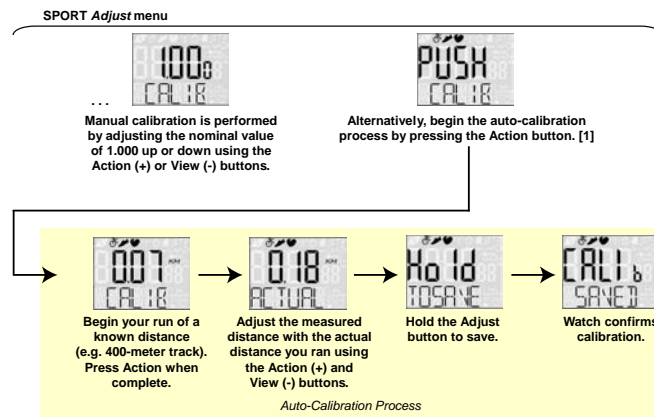
- *Manual calibration involves the adjustment of a multiplication factor that is then applied to all future speed and distance measurements.*
- *The nominal value of the manual calibration factor is 1.000.*
- *The nominal value can be adjusted upwards or downwards if the athlete has a known reference distance to calculate the calibration factor appropriately.*
- *The manual calibration factor will be automatically adjusted following an auto-calibration process, and can be recorded for future reference (for example to track calibration values for multiple users).*

Auto-Calibration

- *Perform auto-calibration by running a known 'truth' distance, such as a 400-meter track. For best results, choose a truth distance between 400 and 1000 meters*
- *After running, adjust the measured distance to the 'actual' distance that you ran.*
- *Auto-calibration will automatically calculate and apply the required calibration factor for you.*
- **** When calibrating, place the footpod on the same foot that you will typically use for all runs.*
- **** Perform the run at your typical running pace. Note that the footpod will still give accurate data at other speeds.*

Calibration Menu

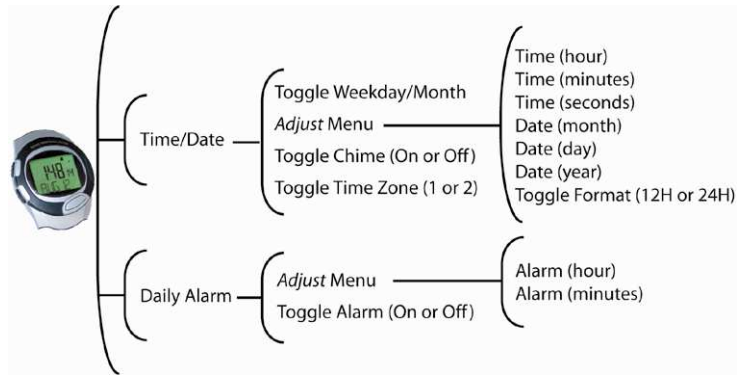
Both manual and auto-calibration settings are found in the *SPORT Adjust* menu.



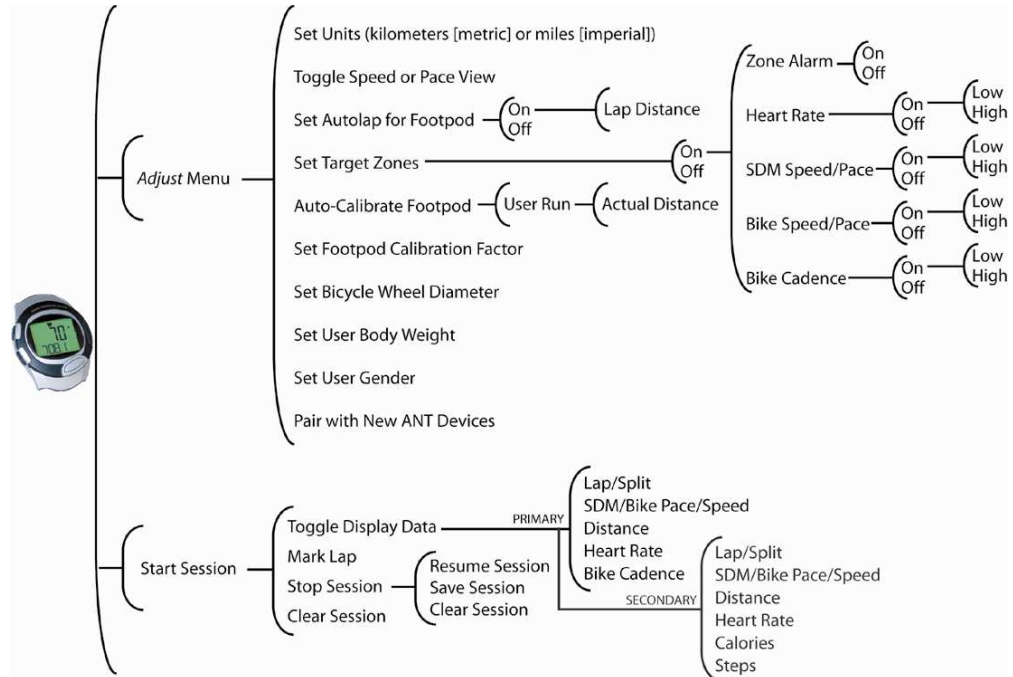
[1] The auto-calibration setting is not available until the watch is paired with a footpod.

Menu Structure and Detail

TIME Mode User Interface Menu Items

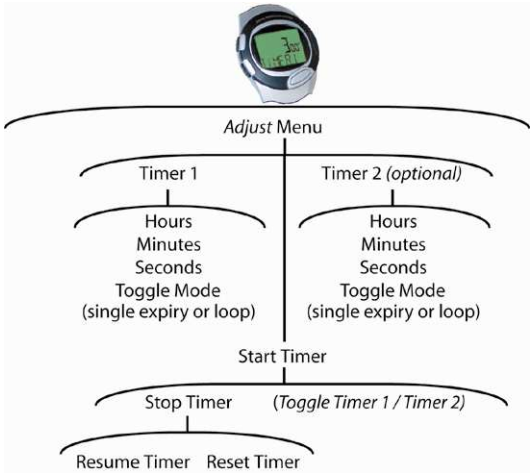


SPORT Mode User Interface Menu Items

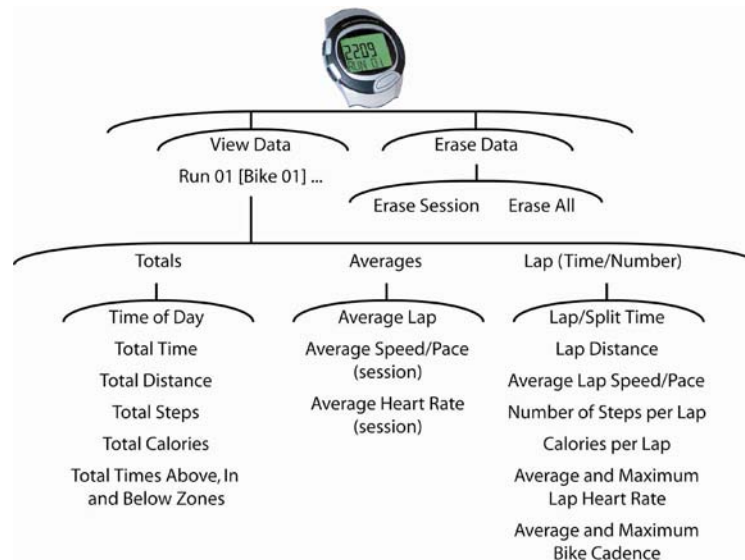


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TIMER Mode User Interface Menu Items

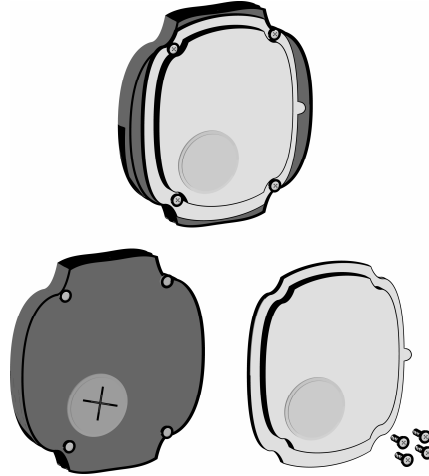


DATA Mode User Interface Menu Items



Battery

Your SMW1 Sports Monitoring Watch uses a single CR2032 3V lithium battery. Battery life is approximately one year depending on use. Please have a certified watch service center or professional jeweller replace the battery.



FCC Compliance

Operational Conditions

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. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.