
# Q3a

ALTITUDE + HEART RATE + CADENCE + SPEED

Multi Sports Computer

CAT EYE®

# Introduction

Thank you for purchasing the CATEYE Q3a Multi-Sport Computer.
The Q3a is a wristwatch heart rate monitor with additional cyclocomputer features to allow athletes to extensively organize and analyze their training data.
2.4 GHz-frequency digital wireless technology, the same technology used for everyday equipment such as wireless network is used for both the integrated cadence/speed sensor and the heart rate sensor. This technology practically eliminates all interference from external noise and cross-talk with other wireless users, providing you with stress-free riding.
Read this instruction manual thoroughly and understand the functions of the wristwatch before using it. Keep this manual in a safe place for future reference.

**Important**

- Always follow the instructions that are marked with "⚠ **Warning!!!**".
- No part of this manual may be reproduced or transmitted without the prior written permission of CatEye Co., Ltd.
- The contents and illustrations in this manual are subject to change without notice.
- If you have any questions or concerns about this manual, please contact CatEye at www.cateye.com.

This device complies with Part 15 of the FCC Rules and Industry Canada licence-exempt RSS standard(s). 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.
*L'appareil est conforme à la réglementation FCC, section 15 et Industrie Canada RSS standard exempts de licence (s). Son utilisation est soumise à deux conditions :*
1. *L'appareil ne doit pas provoquer d'interférences nuisibles, et*
2. *L'appareil doit supporter les interférences reçues, y compris les interférences empêchant son fonctionnement correct.*

**Modifications**
The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by CatEye Co., Ltd. may void the user 's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This Class B digital apparatus complies with Canadian ICES-003.
*Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.*

# About the manuals

## Before use

See this section for installation of the unit on the bicycle, use of the heart rate sensor, wristwatch set-up, and the basic operation of the product.

- Bicycle Installation .....See page 10-12
- Heart rate sensor.....See page 13
- Wristwatch set-up.....See page 14-21
- Basic wristwatch operation .....See page 22-23

## Clock mode (CLOCK)

See this section to learn how to operate the Clock mode functions.

- Alarm clock .....See page 24

## Sports mode (SPORTS)

See this section to learn how to operate the wristwatch functions.

- Display data in Sports mode .....See page 28-29

## Option mode (OPTION)

See this section to learn how to operate the training functions frequently used in Sports mode (countdown and interval functions), and how to set the HR target zone.

- Training functions .....See page 32-35
- Setting the target heart rate zones .....See page 37-38

## Data mode (DATA)

See this section to review and manage the recorded files.

- Recorded data review (File view).....See page 40-45 “File view”
- Download recorded data to PC (PC link).....See page 45-47 “PC link”

## Setup mode (SETUP)

See this section to change the wristwatch configuration.

- Changing the wristwatch configuration.....See page 49-60

## About the CD-ROM supplied

The CD-ROM supplied contains the following information.

- **Quick start manual** (PDF file)
  Installing the unit on the bicycle and setting up the wristwatch are described using video.
- **Download software “e-Train Data™** (Windows version)**”**
  This software is used to transfer the measurement data to your personal computer, and then use various functions on the PC, such as a graph display (The optional “USB communication kit” is required).
- **Instruction manual** (PDF file)
  This manual can be viewed in PDF file (7 languages).

Use the CD-ROM in combination with this manual.

# Contents

# Proper use of the CatEye Q3a

Please follow the following instructions for safe usage.

**The meaning of icons in this manual:**

| | |
|---|---|
| ⚠ **Warning!!!:** | **Sections marked with these icons are critical for safe use of the device. Be sure to follow these instructions.** |
| **Caution:** | **Important cautionary notes on the use and operation of the Q3a.** |
| * | Helpful tips are highlighted with asterisks. |

**The meaning of color on the screen in this manual:**

| | |
|---|---|
| **Red:** | Indicates the displayed data is flashing. |
| **Black/gray:** | Indicates the displayed data is on. |

## ⚠ Warning!!!:

- **Pace maker users should never use this device.**
- **Cycling can be a dangerous sport. Always remember to pay attention to the road, traffic, and surroundings.**
- **The altitude data of this unit is for reference only. Do not use this unit as an instrument for professional purposes.**
- **Do not leave any battery within the reach of children, and dispose of them correctly. If a battery is swallowed, consult a doctor immediately.**

## Caution:

- Regularly check the positions of the magnets and the speed/cadence sensors and make sure that they are securely mounted. If loose, tighten firmly to avoid falling and damage.
- Avoid leaving the unit in direct sunlight for extended periods of time. A temperature sensor built inside the wristwatch to calculate the altitude may be affected from excessive heat, causing inaccurate display of temperature.
- Do not disassemble the wristwatch, heart rate sensor, or speed sensor.
- Do not subject the wristwatch, heart rate sensor, or speed sensor to strong impact; take care also to prevent any of them from falling.
- Do not use paint thinner or rubbing alcohol to clean the unit. Use a damp cloth and use mild detergent if necessary.
- Stop using the unit if you have skin irritation with the HR strap or electrode pad.
- Do not twist or pull strongly the heart rate sensor.
- The heart rate sensor may deteriorate due to long-term use. Replace the heart rate sensor if it has frequent measurement errors.
- As a nature of liquid crystal displays, sunglasses with polarized lens may block the visibility.

# Important

## 2.4 GHz digital wireless system

2.4 GHz-frequency digital wireless technology, which is the same technology used for wireless LAN, is used for both the integrated speed/cadence sensor and the heart rate sensor. This technology practically eliminates interference from external noise and cross-talk with other wireless computer users, and enables you to store highly reliable data. However, in a very rare occasions, objects and places may generate strong electromagnetic waves and interference, which may result in incorrect measurement. The following are potential sources of interference:

* Should be especially careful while synchronizing the sensor ID.

- TV, PC, radios, motors/engines, or in cars and trains.
- Railroad crossings and near railway tracks, around television transmitting stations and radar bases.
- Other wireless computers or digitally controlled lights.

## Altitude measurement

The altitude is determined by detecting the change in atmospheric pressure using a pressure sensor built in the wristwatch, which is then converted into elevation. For this reason, the measurements may change even at the same location depending on the change in atmospheric pressure caused by weather conditions. In addition, note that there is a change of about 30 to 40 m during the early morning through the evening even in stable weather. This unit may indicate incorrect measurements in the following locations and/or environments.

- When the atmospheric pressure and/or temperature change(s) significantly due to rapid weather change.
- In a location where pressure is controlled, such as in an airplane.
- The altitude measurement may change temporarily when the temperature changes suddenly, such as in cases of going outside from an indoor room. It will return to the normal value after a while.

## Automatic recognition of the speed sensor ID

The speed sensor has its own ID, and the wristwatch measures in synchronization with the ID. Two speed sensor IDs can be registered to one wristwatch, which can automatically identify the 2 speed sensors once their IDs are registered in advance. As a tire circumference is set to the speed sensor ID, wheel selection by manual operation is no longer required, which was necessary with conventional units.

* The speed sensor currently recognized is indicated with a sensor icon (1 or 2) on the screen.

### Procedure of automatic recognition

When the wristwatch changes to the Clock mode by its power-saving function, and then returns to the Sports mode, automatic recognition of the speed sensor ID is performed through the following procedure.

1. The wristwatch searches a sensor signal from the speed sensor ID-1.
2. When the wristwatch receives a sensor signal from ID-1, it displays sensor icon 1 on the screen, and starts measurement.
   When the wristwatch cannot receive any sensor signal from ID-1, it searches a sensor signal from ID-2.
3. When the wristwatch receives a sensor signal from ID-2, it displays sensor icon 2 on the screen, and starts measurement.
   When the wristwatch cannot receive any sensor signal from ID-2, it searches a sensor signal from ID-1 again.

The wristwatch repeats synchronization through the procedure described above even if it fails in synchronization for some reason, such as communication failure; in such cases however, it takes time for recognition.

* When the wristwatch cannot receive any signal from the speed sensor in 5 minutes, the power-saving mode is activated, and the wristwatch changes to the Clock mode.

### Switching the ID by manual operation

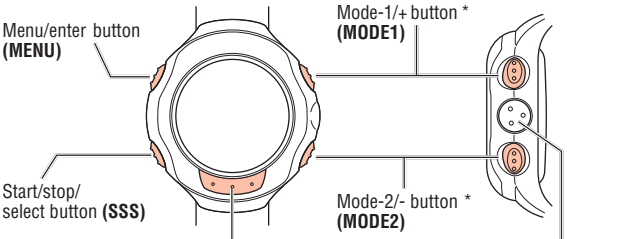
The speed sensor ID can be forcibly switched by manual operation from “Setting the tire circumference” in the Setup mode. Use this operation in the following cases.

- When the wristwatch cannot recognize the intended sensor signal, since the 2 registered speed sensors are nearby and both are sending a sensor signal.
- When you want to switch the speed sensor ID immediately.

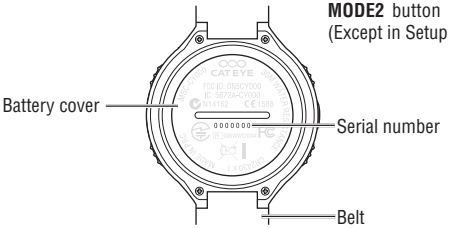
* Once you switch the speed sensor ID by manual operation, the wristwatch continues to search only the speed sensor ID you switched when returning to the Sports mode. When the wristwatch cannot receive any sensor signal in 5 minutes, the power-saving mode is activated, and the wristwatch changes to the Clock mode. The wristwatch searches through the procedure of automatic recognition when it returns to the Sports mode.

# Description of wristwatch and its parts

## Wristwatch

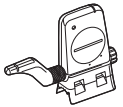



* Pressing and holding the **MODE1** or **MODE2** button lights up the backlight (Except in Setup mode).




## Accessories

Bracket
(for handlebar-mount)

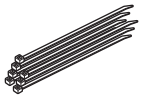


Speed sensor
**(SPEED/CADENCE)**

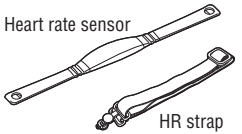
Wheel magnet

Cadence magnet

CD-ROM



Nylon ties (x7)



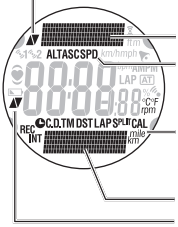
Heart rate sensor

HR strap

This manual

* See page 2 for the CD-ROM contents.

# Screen display




**Speed pace arrow (upper display)**
The pace arrows show whether the current speed is faster (▲) or slower (▼) than the average speed.

**Upper data display**

**Upper selected mode icon**
Indicates the measurement data currently displayed in the upper data display.

**Lower selected mode icon/unit**
Indicates the unit along with the data currently displayed in the lower data display.

**Lower data display**

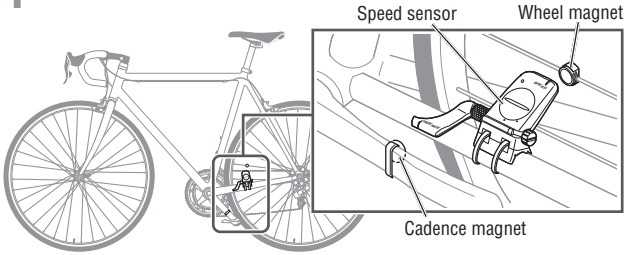
**Heart rate pace arrow (middle display)**
The pace arrows show whether the current heart rate is faster (▲) or slower (▼) than the average heart rate.

| Icon | Description |
|---|---|
| 1 2 | **Sensor icon**<br>Displays the speed sensor currently synchronized. |
| km/h mph | **Speed unit**<br>Flashes while the measurement (counting the elapsed time). |
| ft m | **Altitude unit**<br>Flashes while the measurement (counting the elapsed time). |
| | **Alarm clock**<br>Lights up when the alarm clock is on. |
| | **Speed/Cadence sensor signal**<br>Indicate Speed/Cadence sensor signal status. (page 23) |
| | **Heart rate sensor signal**<br>Indicate Heart rate sensor signal status. (page 23) |
| | **Target zone**<br>Lights up when the target zone is on, and flashes when it is out of the zone. |
| | **Low battery alarm**<br>Flashes when the battery of the wristwatch needs replacing with a new one. |
| bpm | **Heart rate unit** |
| AM PM | **AM/PM display** (lights up when using the 12-hour system) |
| LAP | **Lap indicator**<br>Lights up while the lap data is displayed. |
| AT | **Auto-mode**<br>Lights up when the auto-mode function is on. |
| % | **Slope angle, zone, memory point utilization** |
| | **Alarm**<br>Lights up when the HR alarm sound feature is turned on. |

**Button navigation**
Indicates the buttons available while setting up the wristwatch, or on the Setup screen.

# Bicycle Installation

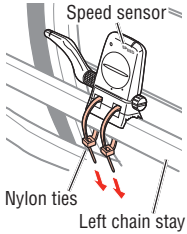
## 1 Mount the speed sensor and magnet




### 1-1.Lightly secure the speed sensor

Locate the speed sensor on the left (non-drive side) chain stay as shown above, and loosely secure it with the nylon ties.

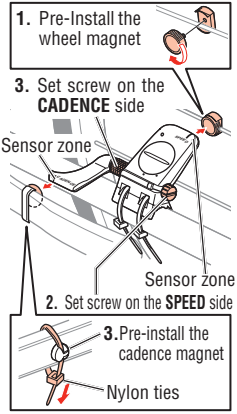
* Do not tighten the nylon ties completely at this stage. Once a nylon tie is tightened, it cannot be pulled out.




### 1-2.Mount the magnet

1. Loosen the set screws both on the **SPEED** side and **CADENCE** side of the speed sensor, and turn the sensor to the angle as shown on the right.
2. Temporarily secure the wheel magnet to the spoke so that it faces the sensor zone on the **SPEED** side.
3. Temporarily secure the cadence magnet inside the crank with nylon ties, so that it faces the sensor zone on the **CADENCE** side.

* Two magnets maybe stuck together inside the package, and appear as one magnet.

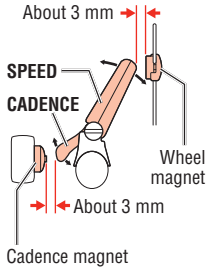



Before use

* When the speed sensor is not positioned properly in respect to the two magnets (in both Steps 2 and 3), move the speed sensor back and forth so that it is positioned properly. After you move the speed sensor, adjust the position so that the two magnets face the relevant sensor zone.

**4.** After adjustment, tighten the nylon ties firmly to secure the speed sensor.

## 1-3.Adjust the distance to the magnet




**1.** Adjust the distance between the wheel magnet and the **SPEED** side of the speed sensor to be about 3 mm. After adjustment, tighten the set screw on the **SPEED** side.

**2.** Adjust the distance between the cadence magnet and the **CADENCE** side of the speed sensor to be about 3 mm. After adjustment, tighten the set screw on the **CADENCE** side.

* For steel axle pedals, the cadence magnet can be installed onto the end face of the pedal axle. Make sure to remove the double-sided tape from the magnet when doing this.

## 1-4.Securing various parts

Tighten the speed sensor, set screw, and magnet firmly, and check for any looseness.

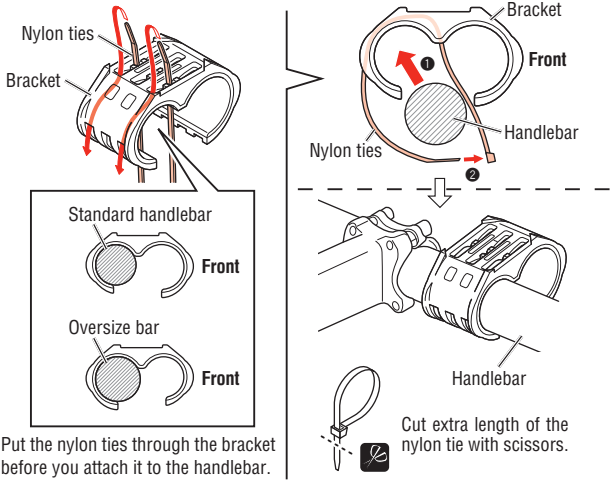
- ☐ Speed/Cadence sensor nylon ties
- ☐ Speed and Cadence sensor screws
- ☐ Wheel magnet screw
- ☐ Cadence magnet

Cut extra length of the nylon tie with scissors.

## 2 Install the wristwatch onto the handlebar

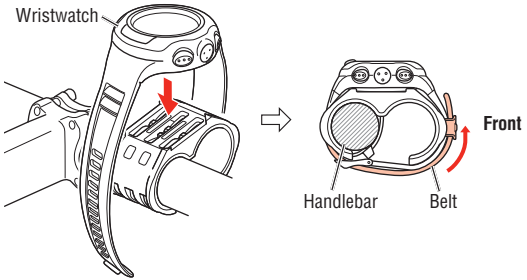
Install the wristwatch to the handlebar with a bracket.

**1.** Check the correct direction of the bracket, and attach it to the handlebar.
Attach the bracket in the correct direction according to the handlebar size, and fix it using nylon ties.




* Put the nylon ties through the bracket before you attach it to the handlebar.

**2.** Wrap the wristwatch around the bracket.
Firmly fasten the belt so that the wristwatch will not come off.




Before use

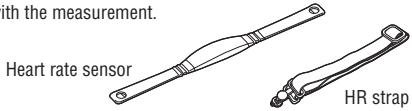
# Heart rate sensor

Heart rate is measured when the heart rate sensor is worn on the chest.

## Before wearing the heart rate sensor

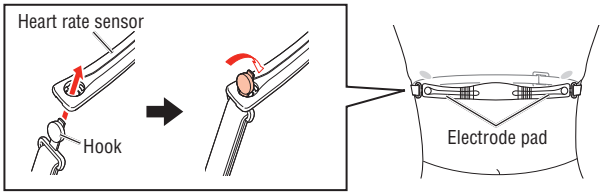
**⚠ Warning!!!: This product must NOT be used by those who have a pacemaker.**

- To avoid measurement errors, it is recommended to moisten the electrode pads with water.
- If your skin is ultra-sensitive, the electrode pad may be moistened with water and worn over a thin undershirt.
- Chest hair may interfere with the measurement.




## Wearing the heart rate sensor

1. Insert the HR strap hook to the hole on the heart rate sensor until it clicks.
2. Wear the heart rate sensor with the HR strap, and adjust the length of the HR strap to fit your chest size (under bust). Fastening the strap too tightly may cause discomfort.
3. Insert the HR strap hook to the other hole on the heart rate sensor until it clicks.
4. For removal, hold near the hole on the heart rate sensor and the hook, and twist off.




* Ensure that the rubber part of the electrode pad is in direct contact with the body.
* Wearing the heart rate sensor when your skin is dry or on top of your undershirt may produce measurement errors. To avoid errors, moisten the rubber part of the electrode pad.

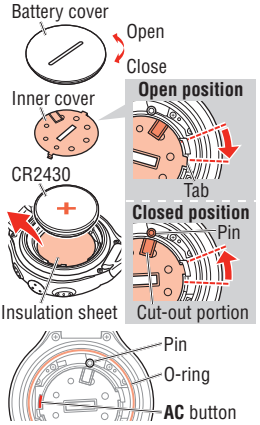
# Preparing the wristwatch

Wristwatch's basic items must be set up before using it.

## Removing the insulation sheet

When you use the unit for the first time after purchasing, remove the insulation sheet under the battery.

1. Open the battery cover of the wristwatch using a coin, etc.
2. Turn the inner cover to the open position using a coin, remove this, and remove the insulation sheet under the battery.
   * Do not turn the inner cover excessively. Otherwise, the tab may be damaged.
3. Replace the battery, and turn the inner cover to the closed position. Check that the cut-out portion of the inner cover faces the pin, and the 2 tabs are fixed.
4. Press the **AC** button beside the inner cover using a tool with a pointed tip.
5. Check that an o-ring is installed to the groove on the wristwatch, and firmly close the battery cover.

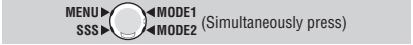



## 1 Restarting

When using the unit for the first time after purchasing, or after replacing batteries, restart the wristwatch to make it work properly.

* The wristwatch and each sensor ID have been checked at the factory.

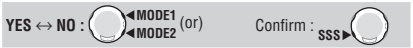
**1.** Simultaneously press and hold the **MENU**, **SSS**, **MODE1**, and **MODE2** buttons on the wristwatch for about 4 seconds.
"**FACTORY DEFAULT**" is displayed.




* When "**FACTORY DEFAULT**" is not displayed on the screen, the button operation has not been completed properly. Simultaneously press and hold the 4 buttons again until the display changes.

**2.** Select "**NO**".
When "**NO**" is displayed on the screen, confirm with the **SSS** button.
The backlight of the display lights up and a buzzer sounds, then the display is switched to the clock/date setting screen. Proceed to the next set-up item, "Setting the clock/date".

Restarting


Before use

Formatting


* Select "**YES**" by pressing the **MODE1** or **MODE2** button for the formatting operation. As the formatting operation deletes all data, select "**NO**" for the restarting operation. See "Formatting/Restarting operation" on page 21 for differences between the formatting and restarting operations.
* The restarting operation will be cancelled if no button has ben pushed for 3 minutes and the wristwatch will enter the Clock screen automatically. In this case, press the 4 buttons simultaneously and do the restart operation again.

## 2 Setting the clock/date

Set the current time and date.

* Press and hold the **MODE1** or **MODE2** button to increase/decrease the number quickly.

**1.** Select the clock display format.
Select "**24h** (24 hour)" or "**12h** (12 hour)" pressing the **MODE1** or **MODE2** buttons, and confirm with the **SSS** button.

**24h ↔ 12h :** MODE1 / MODE2 (or) Confirm : SSS

Display format


**2.** Enter the "Hour" and "Minute".
Enter the "Hour" pressing the **MODE1** to increase, and **MODE2** button to decrease the flashing value, confirm with the **SSS** button, and then enter the "Minute" in the same way.

Edit value : MODE1 / MODE2 (or) Confirm : SSS

Hour


Minute

**3.** Select the date display format.
Select the date display format from **YY.MM.DD** (Year/Month/Day), **DD.MM.YY** (Day/Month/Year) , and **MM.DD.YY** (Month/Day/Year) pressing the **MODE1** or **MODE2** buttons, and confirm with the **SSS** button.

Switch the display : MODE1 / MODE2 (or) Confirm : SSS


Display format

**4.** Enter the "Year", "Month" and "Day".
Enter the "Year", "Month" and "Day" in the display order selected in Step 3 using the **MODE1** to increase, and **MODE2** button to decrease the flashing value, and confirm with the **SSS** button. For "Year", enter the last 2 digits of the year.

Edit value : MODE1 / MODE2 (or) Confirm : SSS


YY/MM/DD

**5.** After you set the clock/date, press the **MENU** button to complete the restarting operation, and switch to the Clock mode.

To Clock mode (setup is completed): MENU

## 3 Switching to the Setup mode

Switch the wristwatch from the Clock mode to the Setup mode, and set the tire circumference and the measurement unit.

**1.** Press and hold the **MENU** button in the Clock mode to display "**SETUP MENU**" on the screen.
It switches to "**CLOCK DATE**" automatically.



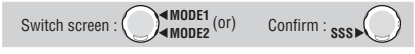
* Unless you perform an operation in the Setup mode within 3 minutes, it returns to the Clock mode. In such cases, any change is not reflected.

## 4 Tire circumference input

In the Setup mode "Setting the tire circumference", enter the tire circumference of the bicycle to 1 (Sensor 1) in millimeters.

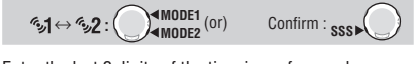
* See "Tire circumference" on the next page for reference.
* Press and hold the **MODE1** or **MODE2** button to increase/decrease the number quickly.

**1.** Press the **MODE1** button twice to switch to "**TIRE**", and confirm with the **SSS** button.



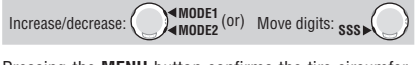


**2.** When 1 and "**S/ID:1**" are flashing, confirm with the **SSS** button.
Change the tire circumference of Sensor 1.



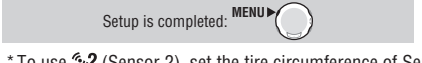


**3.** Enter the last 2 digits of the tire circumference by pressing the **MODE1** or **MODE2** button, and move digits by pressing the **SSS** button.
Then enter the first 2 digits in the same way.





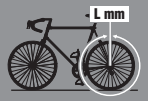
**4.** Pressing the **MENU** button confirms the tire circumference, and returns to the Setup mode "**TIRE**".




* To use 2 (Sensor 2), set the tire circumference of Sensor 2 according to the Setup mode "Searching for sensor ID" on page 53, after you complete "Preparing the wristwatch".

## Tire circumference

You can find the tire circumference (L) of your tire size in the tire circumference reference table below, or actually measure the tire circumference (L) of your bicycle.




**How to measure the tire circumference (L)**

For the most accurate measurement, do a wheel roll out. With the tires under proper pressure, place the valve stem at the bottom. Mark the spot on the floor and with the rider's weight on the bike, roll exactly one wheel revolution in a straight line (until the valve comes around again to the bottom). Mark where the valve stem is and measure the distance on the ground in millimeters.

* For your reference, use the tire circumference table below.

### Tire circumference reference table

| ETRTO | Tire size | L (mm) |
|---|---|---|
| 47-203 | 12 x 1.75 | 935 |
| 54-203 | 12 x 1.95 | 940 |
| 40-254 | 14 x 1.50 | 1020 |
| 47-254 | 14 x 1.75 | 1055 |
| 40-305 | 16 x 1.50 | 1185 |
| 47-305 | 16 x 1.75 | 1195 |
| 54-305 | 16 x 2.00 | 1245 |
| 28-349 | 16 x 1-1/8 | 1290 |
| 37-349 | 16 x 1-3/8 | 1300 |
| 32-369 | 17 x 1-1/4(369) | 1340 |
| 40-355 | 18 x 1.50 | 1340 |
| 47-355 | 18 x 1.75 | 1350 |
| 32-406 | 20 x 1.25 | 1450 |
| 35-406 | 20 x 1.35 | 1460 |
| 40-406 | 20 x 1.50 | 1490 |
| 47-406 | 20 x 1.75 | 1515 |
| 50-406 | 20 x 1.95 | 1565 |
| 28-451 | 20 x 1-1/8 | 1545 |
| 37-451 | 20 x 1-3/8 | 1615 |
| 37-501 | 22 x 1-3/8 | 1770 |
| 40-501 | 22 x 1-1/2 | 1785 |
| 47-507 | 24 x 1.75 | 1890 |
| 50-507 | 24 x 2.00 | 1925 |
| 54-507 | 24 x 2.125 | 1965 |
| 25-520 | 24 x 1(520) | 1753 |
| | 24 x 3/4 Tubular | 1785 |
| 28-540 | 24 x 1-1/8 | 1795 |
| 32-540 | 24 x 1-1/4 | 1905 |
| 25-559 | 26 x 1(559) | 1913 |
| 32-559 | 26 x 1.25 | 1950 |
| 37-559 | 26 x 1.40 | 2005 |
| 40-559 | 26 x 1.50 | 2010 |
| 47-559 | 26 x 1.75 | 2023 |
| **50-559** | **26 x 1.95** | **2050** |
| 54-559 | 26 x 2.10 | 2068 |
| 57-559 | 26 x 2.125 | 2070 |
| 58-559 | 26 x 2.35 | 2083 |
| 75-559 | 26 x 3.00 | 2170 |
| 28-590 | 26 x 1-1/8 | 1970 |
| 37-590 | 26 x 1-3/8 | 2068 |
| 37-584 | 26 x 1-1/2 | 2100 |
| | 650C Tubular 26 x 7/8 | 1920 |
| 20-571 | 650 x 20C | 1938 |
| 23-571 | 650 x 23C | 1944 |
| 25-571 | 650 x 25C 26 x 1(571) | 1952 |
| 40-590 | 650 x 38A | 2125 |
| 40-584 | 650 x 38B | 2105 |
| 25-630 | 27 x 1(630) | 2145 |
| 28-630 | 27 x 1-1/8 | 2155 |
| 32-630 | 27 x 1-1/4 | 2161 |
| 37-630 | 27 x 1-3/8 | 2169 |
| 18-622 | 700 x 18C | 2070 |
| 19-622 | 700 x 19C | 2080 |
| 20-622 | 700 x 20C | 2086 |
| **23-622** | **700 x 23C** | **2096** |
| 25-622 | 700 x 25C | 2105 |
| 28-622 | 700 x 28C | 2136 |
| 30-622 | 700 x 30C | 2146 |
| 32-622 | 700 x 32C | 2155 |
| | 700C Tubular | 2130 |
| 35-622 | 700 x 35C | 2168 |
| 38-622 | 700 x 38C | 2180 |
| 40-622 | 700 x 40C | 2200 |
| 42-622 | 700 x 42C | 2224 |
| 44-622 | 700 x 44C | 2235 |
| 45-622 | 700 x 45C | 2242 |
| 47-622 | 700 x 47C | 2268 |
| 54-622 | 29 x 2.1 | 2288 |
| 60-622 | 29 x 2.3 | 2326 |

## 5 Selecting measurement unit

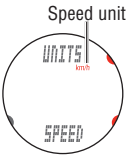
Select the speed unit and temperature unit.

**1.** Press the **MODE1** button twice to switch to "**UNITS**", and confirm with the **SSS** button.

Switch screen : ◀**MODE1** ◀**MODE2** (or) Confirm : **SSS**▶

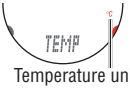

**2.** Select the speed unit by pressing the **MODE1** or **MODE2** button, and confirm with the **SSS** button.

**km/h ↔ mph :** ◀**MODE1** ◀**MODE2** (or) Confirm : **SSS**▶




**3.** Select the temperature unit by pressing the **MODE1** or **MODE2** button in the same way.

**°C ↔ °F :** ◀**MODE1** ◀**MODE2** (or)




**4.** Pressing the **MENU** button confirms the measurement unit, and returns to the Setup mode "**UNITS**".
Now, the wristwatch setup is completed. Press the **MENU** button again to switch to the Clock mode screen.

To the mode top/switch the mode : **MENU**▶

## 6 Switching to the Sports mode

Switch the wristwatch from the Clock mode to the Sports mode for the operation test of the speed sensor and heart rate sensor.

**1.** Press the **MENU** button in the Clock mode to display "**SPORTS MENU**" on the screen.
It switches to the measurement screen automatically.

Switch modes : **MENU**▶


Before use

# 7 Operation test

* It may take up to approximately 2 minutes to display the screen because the wristwatch checks the sensor when switching to Sports mode.
* If the signal icon or ♥ on the measurement screen is turned off, press the **MODE1** or **MODE2** button to turn it on.

## Speed sensor (SPEED side)

**1.** Raise the rear wheel and spin the wheel.

**2.** When the speed is displayed on the screen, it is operating normally.


## Speed sensor (CADENCE side)

**1.** Turn the crank.

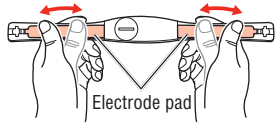
**2.** When the cadence is displayed on the screen, it is operating normally.


## Heart rate sensor

**1.** Wear the heart rate sensor (page 13).

**2.** When the heart rate is displayed on the screen, it is operating normally.


* Heart rate sensor can also be activated by rubbing both electrode pads with thumbs. This method cannot be used to measure the heart rate accurately, but is used as a simple method for testing the sensor/wristwatch communication and searching for the sensor ID.



**Important:** When the speed, cadence, and/or heart rate are/is not displayed, possible causes are as follows.

## Speed and cadence are not displayed.

| Check items | Remedy |
|---|---|
| Is the Speed and Cadence sensor icon on ? | If icon is off, the wristwatch cannot receive any data. Press the **MODE1** or **MODE2** button to cancel the transmission sleep mode (page 23). |
| Check whether the distance between the speed/cadence sensor and the magnet is too large. | Adjust the position of the speed/cadence sensor and that of the magnet correctly. (See "Bicycle Installation" on page 10.) |
| Is the sensor zone of the speed/cadence sensor aligned the center of the magnet? | |
| Has the power-saving mode been activated, entering Clock mode? | Press the **MENU** button to switch to Sports mode. |
| The display may be delayed depending on the wireless transmission condition. | Check whether any speed signal is received by spinning the wheel for a while. |
| Have you performed the formatting operation? | The sensor ID synchronized at the factory is initialized by formatting. Synchronize the speed sensor ID, according to the Setup mode "Searching for sensor ID" (page 53). |

## Heart rate is not displayed.

| Check items | Remedy |
|---|---|
| Is the Heart rate sensor icon on ♥ ? | If ♥ icon is off, the wristwatch cannot receive any data. Press the **MODE1** or **MODE2** button to cancel the transmission sleep mode (page 23). |
| Has the power-saving mode been activated, entering Clock mode? | Press the **MENU** button to switch to Sports mode. |
| Is the heart rate sensor attached securely to your body? | Adjust the electrode pad with its rubber surface to have good contact with the body. |
| Dry skin (particularly in winter) | Slightly moisten the electrode pad of the heart rate sensor. |
| Is the Heart rate sensor being worn correctly? | To wear the electrode pad correctly, follow the instructions for wearing the heart rate sensor (page 13). |
| Have you performed the formatting operation? | The sensor ID synchronized at the factory is initialized by formatting. Synchronize the heart rate sensor ID, according to the Setup mode "Searching for sensor ID" (page 53). |

## Formatting/Restarting operation

There are 2 different wristwatch set-up operations; formatting and restarting operations. Follow the appropriate one depending on the situation.

**Formatting** : When you want to delete all data and the setup of the wristwatch.

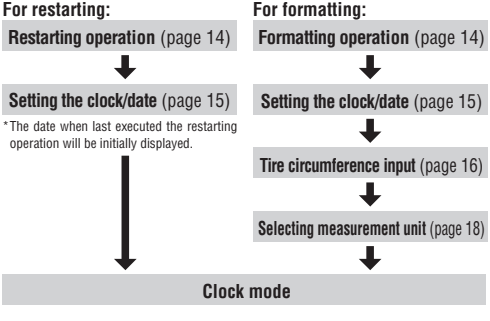
**Restarting** : When you use the unit for the first time after purchasing, or after replacing batteries, or an error is displayed.

* In the restarting operation, the following data are retained.

| | | |
|---|---|---|
| **SPORTS MENU** | Date | |
| **OPTION MENU** | Setting the target zone | |
| **DATA MENU** | • Saved file data<br>• Ride data<br>• Log data | |
| **SETUP MENU** | • Alarm clock setting<br>• Tire circumference and Sensor currently selected<br>• Sensor ID<br>• Measurement unit<br>• Record interval | • Auto-mode<br>• Training function<br>• Sound setting<br>• Sea level altitude |

### Flows of the formatting and restarting operations

The formatting and restarting procedures are as follows.

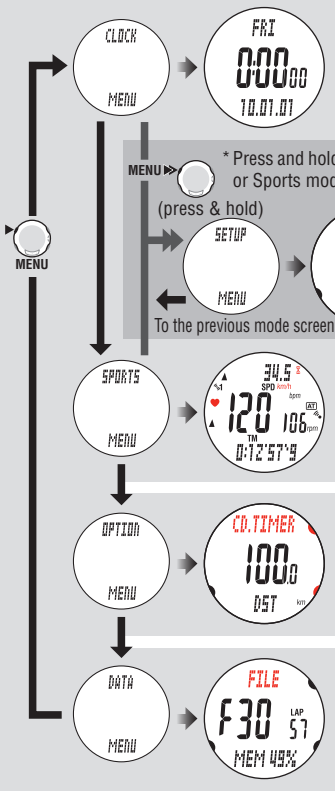



* In the case of the formatting operation, you can set the “tire circumference” and “measurement unit” sequentially after you set the “clock/date”. Each set-up procedure is described on the page referenced.
After you complete the set-up, be sure to synchronize the sensor ID according to the Setup mode “Searching for sensor ID” (page 53).

# Basic operation of the wristwatch

## Switching between modes

The wristwatch has 4 types of mode functions and the Setup mode. "**CLOCK MENU**", "**SPORTS MENU**", "**OPTION MENU**", and "**DATA MENU**" are alternatively selected in sequence by pressing the **MENU** button. Select the screen of your choice to proceed to the mode screen automatically.




**Clock mode** (page 24)
Displays the clock. This mode is used for everyday wristwatch functions displays also altitude, temperature and alarm.

* Press and hold the **MENU** button in the Clock mode or Sports mode to switch to "**SETUP MENU**".

**Setup mode** (page 49)
This mode is used to edit values and setup for less frequently used items, such as sound and wheel circumference.

**Sports mode** (page 25)
This measurement screen is used as a cyclocomputer and/or heart rate monitor.

**Option mode** (page 36)
This mode is used to edit option setup values often used while riding bicycle such as zones, and count down.

**Data mode** (page 39)
This mode is used to check the data saved and/or import them to your PC.

Before use

## Backlight

Pressing and holding the **MODE1** or **MODE2** button illuminates the display for about 3 seconds (Except in the Setup mode).

* Pressing any button while backlight is still on extends the illumination for another 3 seconds.

(press & hold)

## Power-saving mode

### Transmission sleep mode

When the wristwatch does not receive any data from the speed sensor or heart rate sensor for 5 minutes, each sensor will enter the transmission sleep status to save battery power. No sensor signal can be received in the transmission sleep status. To restart measuring, press the **MODE1** or **MODE2** button to recover from transmission sleep. The signal transmission status of each sensor can be checked with the relevant signal icon and the numerical value "---" display.

- (flashing) : Receiving sensor signal (under operation)
- (constant) : Stand-by for sensor signal (searching for sensors)
- (off) : Transmission sleep. Displays the symbol "---".

* Transmission sleep is set separately for the speed sensor and the heart rate sensor. Accordingly, if the bicycle is stopped for over 5 minutes with the heart rate sensor worn, only the speed sensor goes into transmission sleep. When resuming the ride, speed/cadence sensor must be re-activated in order to display necessary data.
* When either the speed sensor or the heart rate sensor is in transmission sleep, the display remains in the Sports mode; however, when both sensors go into transmission sleep, the wristwatch switches to the power-saving mode.

Speed sensor signal icon


The speed sensor is in transmission sleep. Displays the symbol "---".

Heart rate sensor signal icon


The heart rate sensor is in transmission sleep. Displays the symbol "---".

### Saving the power of the wristwatch

When the wristwatch does not receive any data from both the speed and heart rate sensors for 5 minutes, it will switch to Clock mode automatically. Press the **MENU** button to return to Sports mode and continue measuring. For details, see "Switching between modes" on page 22.

* Even if the power-saving mode is activated, data not reset are saved in the wristwatch.


Clock mode

# Clock mode (CLOCK)

**Switching to Clock mode**

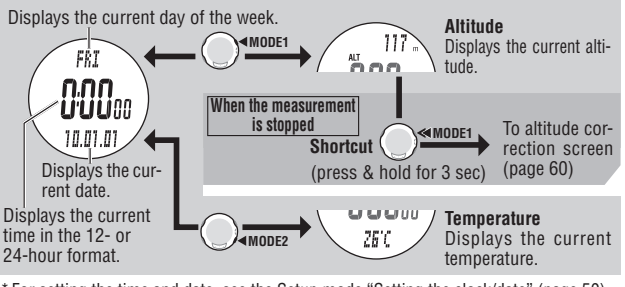
Select "**CLOCK MENU**" by pressing the **MENU** button until display swithces to Clock mode.

* Clock mode is the default screen, so if the power-saving mode is activated in any other mode display will switch to Clock mode. For details, see "Power-saving mode" on page 23.


## Functions in Clock mode

Displays the current time, date, and day of the week. Press the **MODE1** button to display the current sea level altitude. Press the **MODE2** button to display the current temperature or turn on/off the alarm clock.

## Display data in Clock mode




* For setting the time and date, see the Setup mode "Setting the clock/date" (page 50).

* Altitude may need to be adjusted to the current location. For details, see "Correcting the sea level altitude" on page 60, and "Basic knowledge of altitude measurement" on page 61.

* While the current sea level altitude is displayed on the screen, shortcut operation (press and hold the **MODE1** button for 3 sec) moves to the Setup mode "Correcting the sea level altitude" (page 60) for quick altitude correction. This shortcut operation however does not work while the measurement is continuing in the Sports mode.

## Alarm clock mode

Indicates with an alarm sound when the current time reaches any pre-set time. When it reaches a predetermined time, the wristwatch switches to Clock mode, and sounds an alarm for 20 seconds regardless of the mode displayed. Press any button on the wristwatch to stop the alarm.


* Press and hold the **MODE1** button for 3 sec in the Clock mode (except when the current sea level altitude is displayed) to turn on/off the alarm clock. The icon appears on the screen when the alarm clock is on.

* For setting the alarm clock, see the Setup mode "Setting the alarm clock" (page 51).

# Sports mode (SPORTS)

**Switching to Sports mode**
Select "**SPORTS MENU**" by pressing the **MENU** button until display switches to Sports mode.

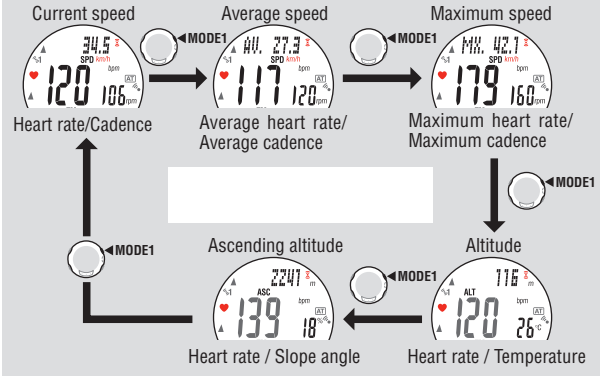

## Function in Sports mode

The Sports mode is for measurement using the cyclocomputer and heart rate monitor functions. 4 types of data such as the heart rate, altitude, and slope are displayed on the screen. These data can be switched by pressing the **MODE1** or **MODE2** button.
The displayed data are as follows.
* Measurement is maintained even if switched to another mode.

### Upper and middle display data (Switch using the MODE1 button)

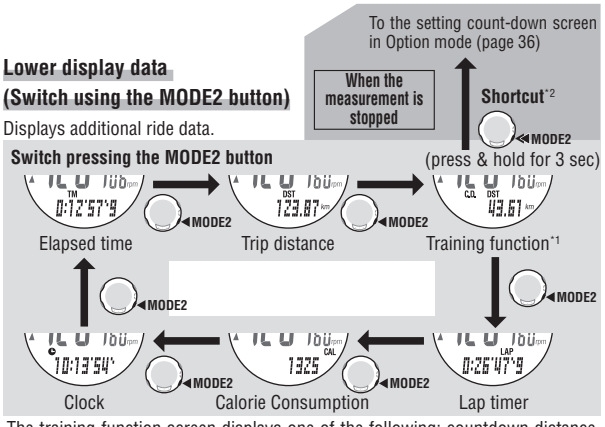
Upper display : Displays data related to the speed and altitude.
Middle display (left) : Displays data related to the heart rate.
Middle display (right) : Displays data related to the cadence, temperature and slope angle.

**Switch pressing the MODE1 button**




*1 When the measurement is stopped in the altitude screen, shortcut operation (press and hold the **MODE1** button for 3 sec.) moves to the Setup mode "Correcting the sea level altitude" (page 60).

**When the measurement is stopped**
**Shortcut***1
MODE1
(press & hold for 3 sec)
To altitude correction screen (page 60)




*1 The training function screen displays one of the following; countdown distance, countdown time, or interval. For details, see “Training function (countdown function and interval function)” on page 32.

*2 When measurement is stopped in the training function screen, shortcut operation (press and hold the **MODE2** button for 3 sec.) moves to the Setup mode “Setting the training function” (page 36).

## Starting/Stopping measurement

”**km/h** [**mph**]” or “**m** [**ft**]” icon flashes during speed measurement. Initially, the auto-mode function which starts or stops measurement automatically in sync with the bicycle motion is ON. Auto measurement is switched to manual measurement and vice versa by ON/OFF operation in the auto-mode. For details, see the Setup mode “Setting the auto-mode” (page 58). The maximum speed, maximum heart rate, and maximum cadence are updated regardless of starting/stopping the measurement.


AT icon

* To use this unit as a heart rate monitor, start/stop the measurement using the **SSS** button in the manual measurement. When the auto-mode is on, you cannot start the measurement.

### Auto-mode (automatic measurement) AT

When the auto-mode is on, AT appears on the screen. The wristwatch detects the wheel spinning, and starts/stops the measurement automatically.

* When the transmission is stopped and Sensor signal icons and ♥ are off, the measurement will not start even after the bicycle starts. If a bicycle is stopped for more than 5 minutes or if heart rate sensor is either far from the bicycle or off the body, it will go into sleep. This normally happens when taking a rest during the ride. To recover from the transmission sleep, press the **MODE1** or **MODE2** button to turn on the sensor signal icons. For details, see “Transmission sleep mode” on page 23.

Sports mode

### Manual measurement

When the auto-mode is off (AT is off), use the **SSS** button to start/stop the measurement.

### Stop reminder

The stop reminder function Reminds the rider with an alarm incase the stopwatch is forgotten to be stopped after the ride. When any signal is not received from the speed or cadence sensor for 90 seconds while counting the elapsed time, an alarm sounds and "**STOP**" appears on the screen. This alert display is repeated up to 3 times every 90 seconds. When any sensor signal is detected, the alarm is stopped.

Stop reminder

* Forgetting to stop the measurement is likely to happen at a rest during a ride or after a race finishes. In cases you will start again immediately, such as at traffic signals, or when you use this unit as a heart rate monitor, ignore this.
* This function cannot be disabled.

## Resetting the measurement data and saving the files

To reset the measurement data, interval, and lap data to 0, simultaneously press the **SSS** + **MODE1** or **SSS** + **MODE2** buttons on any screen in the Sports mode (except interval on the training function screen).

(Simultaneously press)

or

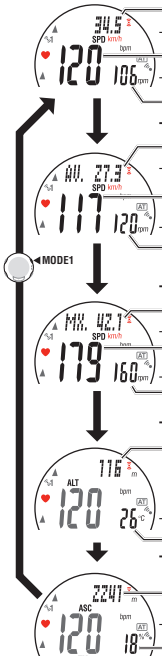
(Simultaneously press)

Resetting the measurement data saves the point data, which was recorded at the timing set for the record interval, automatically in a file. For viewing and deleting the saved data, see the Data mode "File view" (page 40).

* The screen will freeze for about 2 seconds after resetting; however, all measurements are operating normally.
* After you reset, the countdown distance, countdown time, and interval are returned to the predetermined value you set.
* Cannot reset for 5 seconds after pressing the **LAP** button.
* The wristwatch has a limited memory capacity. When the data volume exceeds the memory capacity, any new data can no longer be saved. For details, see the Data mode "File view" (page 40).
* Resetting with the interval (**INT**) displayed on the training function screen resets the measurement data of the interval only. For details, see "Training function (countdown function and interval function)" on page 32.

## Display data in Sports mode (upper and middle display)

Switch pressing the **MODE1** button




| | |
|---|---|
| **Current speed** | Displays the current speed in real time. Updates every second. |
| **Heart rate** | Displays the current heart rate in real time. Updates every second. |
| **Cadence** | Displays the current number of pedal rotations per minute. Updated every second. |
| **Average speed***1 | Displays the average speed since the start of measurement. |
| **Average heart rate** *1*2 | Displays the average heart rate since the start of measurement. The time with no heart rate measured is not reflected on the average rate. |
| **Average cadence** *1*3 | Displays the average cadence since the start of measurement. Any time with no pedaling is not reflected on the average cadence. |
| **Maximum speed***4 | Displays the maximum speed since the start of measurement. |
| **Maximum heart rate** *4 | Displays the maximum heart rate since the start of measurement. |
| **Maximum cadence** *4 | Displays the maximum cadence since the start of measurement. |
| **Sea Level Altitude** | Displays the sea level altitude at the current location point. |
| **MODE1** (press & hold for 3 sec) | **Shortcut***5 (When the measurement is stopped) |
| **Temperature** | Displays the current temperature. |
| **Ascending altitude** | Displays the accumulated altitude from the point you reset to the current point.<br>* Any descending altitude is not counted. |
| **Slope angle***6 | Displays a ±value on the basis that the slope angle of 45° is 100%. |

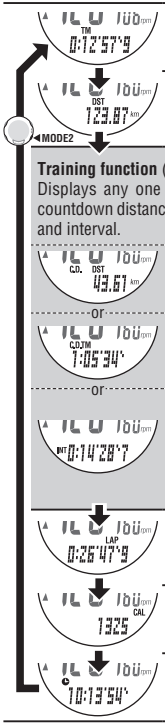
*1 Each average value is displayed on the screen replaced with the character "**E**" when the elapsed time (**TM**) exceeds 100 hours. Clear the data by resetting (page 27). The average speed is displayed in the same way as above when the trip distance exceeds 10000 km [mile].

*2 This device stops calculating the average when the heart rate sensor is detached, and resumes the calculation when the heart rate sensor is worn again. This feature produces actual averages with the heart rate sensor worn.

*3 This device calculates the average excluding the time when you stop pedaling. This feature produces actual averages, unlike other models that calculate averages also to include any zero values.

## Display data in Sports mode (lower display)

Switch pressing the **MODE2** button




**TM**
**Elapsed time**

Displays the elapsed time from the start of measurement to the 1/10 second. When it exceeds 99:59'59", it repeats from 00'00"0.

**DST**
**Trip distance**

Displays the trip distance from the start of measurement.

**Training function** (page 32)
Displays any one selected from the countdown distance, countdown time, and interval.

MODE2 (press & hold for 3 sec) **Shortcut***7 (When the measurement is stopped)




**C.D. DST**
**Countdown distance**

Counts down the predetermined distance, and displays the remaining distance.

or




**C.D. TM**
**Countdown time**

Counts down the predetermined time, and displays the remaining time.

or




**INT**
**Interval (interval time/ recovery time)**

Counts down the predetermined time (interval time), and then counts up automatically as a recovery time after the time is up.
Pressing the **LAP** button starts the interval time again, which allows you to repeat a high and low intensity exercise.




**LAP**
**Lap timer**

Displays the elapsed time from the previous point (for **LAP 01**: from the start of measurement) in real time.




**CAL**
**Calorie Consumption**

Displays the estimated calorie consumption from the start of measurement based on the heart rate.




**Clock**

Displays the current time of day in the 24- or 12-hour system.

*4 Each maximum value is updated regardless of starting or stopping the measurement.
*5 When the measurement is stopped, take a shortcut (press and hold the **MODE1** button for 3 sec.) to the Setup mode "Correcting the sea level altitude" (page 60).
*6 The slope angle value is updated every 2 seconds calculated from several changes of altitude and the trip distance. This may cause some delays in an update. Temporarily abnormal values may also be displayed because of rapid changes of speed or running at a low speed.
*7 When the measurement is stopped, take a shortcut (press and hold the **MODE2** button for 3 sec.) to the Setup mode "Setting the training function" (page 36).

## Pace function

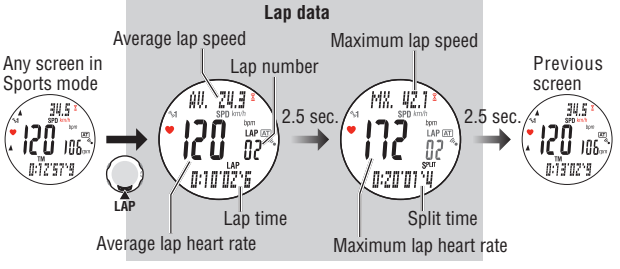
2 types of pace arrows, for speed and heart rate, are displayed in Sports mode. The arrow icons indicate whether the current speed/heart rate is above or below the average speed/heart rate.

▲ : The current value is above the average.
▼ : The current value is below the average.
▲▼ : The current value is equal to the average.
No arrows : The current value is "0".


## Lap function

Pressing the **LAP** button during measurement in Sports mode records the measurement data between a given set of points (average lap speed/maximum lap speed, average lap heart rate/maximum lap heart rate, lap time/split time) up to 99 points*. Immediately after recording, the lap data is displayed in the order as shown in the figure below, and then the display returns to the previous screen.

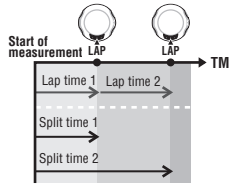
* The maximum number of lap records may decrease depending on file utilization. For details, see "Wristwatch memory capacity limit" on page 40.




| | |
|---|---|
| **Average lap speed** | Displays the average lap speed/heart rate from the previous point (for **LAP 01**: from the start of measurement) to the current point. |
| **Average lap heart rate** | |
| **Lap number** | Displays the lap number just recorded.<br>* When the total number of laps exceeds 99 points, "--" appears indicating further lap recording cannot be done. |
| **Lap time** | Displays the elapsed time from the previous point (for **LAP 01**: from the start of measurement). |
| **Split time** | Displays the total elapsed time from the start of measurement. |
| **Maximum lap speed** | Displays the maximum lap speed/heart rate from the previous point (for **LAP 01**: from the start of measurement) to the current point. |
| **Maximum lap heart rate** | |

Sports mode

## Lap time and split time

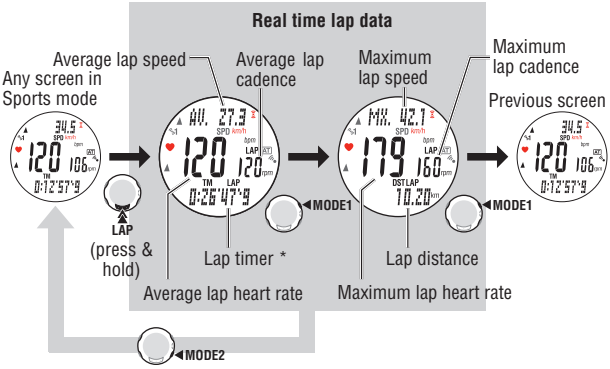



The lap time displays elapsed time from the last press of the **LAP** button. The split time displays the elapsed time from the start of measurement to the point **LAP** button is pressed.

* The measured lap data is saved to a file when you perform a reset operation (page 27).
* Pressing the **LAP** button while the total number of laps reaches 99 points displays the lap data, but "**--**" appears in place of the lap number indicating further recording is impossible.
* The lap data can be reviewed in the Data mode "File view"(page 40).

## Real time lap data

Pressing and holding the **LAP** button on any screen in Sports mode displays the real time lap data in the upper and middle displays. For the real time lap data, the unit starts/stops the measurement in sync with the primary measurement; however, it resets and restarts the data every time you press the **LAP** button. This independent feature of lap time can be useful also for pace checks in a lap and sectional trials such as hill climb section.




* Press the **MODE2** button with the real time lap data to return to the previous Sports mode screen.

## Training function (countdown function and interval function)

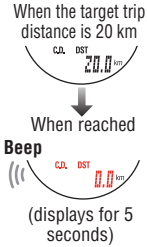
This unit has a countdown function that counts down the predetermined time and indicates when the time is up by setting the target trip distance and elapsed time, and an interval function that is used to set the interval time for a given training. The training function includes both these 2 functions.

* Either the countdown function or interval function is displayed in the lower display. For display of the training function, see "Display data in Sports mode (lower display)" on page 29.
* Select the training function and enter the respective setting values in "Setting the training function" (page 36) in Option mode. Display Option mode in the **MENU** screen or shortcut (press and hold **MODE2**) to the training function setting screen.

### Countdown distance

Displays the countdown distance to a predetermined target trip distance. When it reaches the target trip distance, the unit switches the lower display to the countdown data in any Sports mode display, and notifies by flashing the numerical value/icon and an alarm sound.

* Resetting returns the numerical value to the predetermined value you set.




**Example of how the countdown distance is used:**

1. Entering the race event distance
   For distance system events such as a road race and century ride, enter the race event distance before the start, and develop your strategy and pace based on the countdown distance during the race.
2. Entering the destination sign distance
   For touring, enter the sign distance whenever you encounter a destination sign along the road, and develop your pace based on the countdown distance.
3. Entering the periodical target distance
   Enter the periodical target distance for a week, month, or year to check your progress.

### Countdown time

Displays the countdown time to a predetermined target elapsed time. When it reaches the target elapsed time, the unit switches the lower display to the countdown data in any Sports mode display, and notifies by flashing the numerical value/icon and an alarm sound.

* Resetting returns the numerical value to the predetermined value you set.


**Example how the countdown time is used:**

1. Entering a timed race
   For a time endurance race, enter the limit time, and check your pace based on the countdown time.

**2.** Setting the return time limit
Enter the half way time when the ride time is limited, and enjoy your ride without minding the time.

**3.** Target time for a Century ride
Enter the target time for big events such as Century ride and Granfondo, and check your pace.

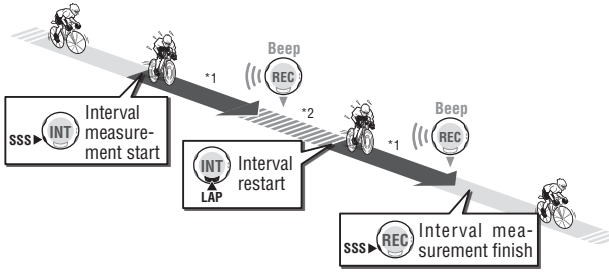
## Interval (interval time/recovery time)

* Use this function in the interval training.

The interval training is a training method that combines the interval time (high intensity exercise time) and the recovery time (rest time). With this unit, the recovery time is not set for the purpose of simplifying the setup. The recovery time is to be judged by users based on the count-up display of the wristwatch. Judging the recovery time by users enables flexible training menus, in which the recovery time in every repeat is different from the recovery time between the sets (such training that has the recovery time of 3 minutes in every repeat, and 10 minutes between the sets).

* You can check recovery progress while riding by viewing the screen.
* Depending on the course condition as signals or traffics, you might not start the interval along with the pre-set recovery time. In this case, you can take a training with smoothness by timing the start on yourself.

**An image of interval measurement**




*1 **Interval time**: Starts countdown from the pre-set time to zero. At zero, switches to recovery time.

*2 **Recovery time**: No need to pre-set the recovery time. The wristwatch remains in the recovery period until **LAP** button is pressed. Press the **LAP** button at any timing to restart the next interval.

**How to use the interval:**

* During the interval training, use the interval display to avoid confusing the start/stop operation with the reset operation.

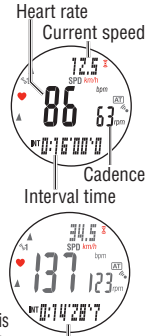
**1.** Setting the interval.
Switch to Sports mode by selecting the interval from the Option mode “Setting the training function”.

**2.** Press the **MODE2** until “**INT**” icon displayed in the lower display.

Switch the lower screen : ◀**MODE2**

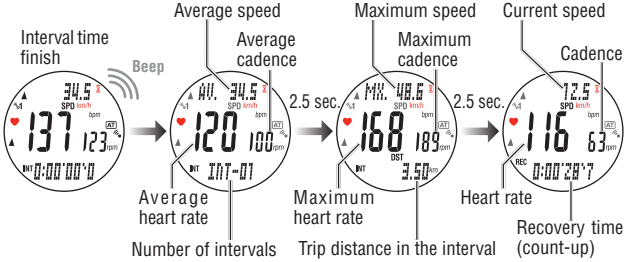
**3.** Press the **SSS** button to start the count down interval measurement. Start a high intensity exercise.
The interval time countdown is displayed.

Interval measurement start : **SSS**▶




* Use the **SSS** button to start/stop the interval even when the auto-mode is on (AT lights up). To start the interval measurement, press the **SSS** button with the interval displayed in the lower display. Pressing the **SSS** button with the interval displayed does not affect start/stop of the measurement in the wristwatch. However, the elapsed time measurement in the wristwatch will start just as the interval starts, when the auto-mode is off (AT lights off) and measurement is stopped.

**4.** When the interval counts down to zero, it will automatically change to recovery timer, which counts up until next interval is ready.
When the interval time reaches the predetermined time, an alarm sounds, various average values and maximum values are displayed in the order as shown in the figure below, and then the recovery time starts countup. At this point, the wristwatch records the lap data automatically. Measure for any period of time in the recovery time, while relaxing and recovering from fatigue.




Sports mode

5. Press the **LAP** button to start the next repeat of the interval time again.
Start pedaling at your interval intensity.
Repeat the steps 4 and 5.


6. When "**INT**" or "**REC**" is displayed in the lower display, pressing the **SSS** button stops the interval measurement.


* To restart the interval measurement, press the **SSS** button.

* Resetting with the interval displayed resets the interval measurement data only.
* The lap data is recorded automatically when the interval measurement starts and the interval time is up. When interval measurement is inserted during primary measurement, the lap data is recorded as being continued, like regular lap data.
* During the interval measurement, pressing the **LAP** button skips the interval time being counted-down, and starts a new countdown.
* The interval time stops just as the elapsed time stops in the wristwatch.

## Target heart rate zone

During measurement, the icon " " is displayed, which indicates the target heart rate status.

(constant) : The target zone is set to any of HR.**ZONE:1** to **5**.

(flashing) : The current heart rate is out of the selected zone.

(off) : The target zone is set to off.

* For selecting the zone and setting the zone range, see the Option mode "Setting the target heart rate zones" (page 37).


Target heart rate zone

# Option mode (OPTION)

**Switching to Option mode**
Select "**OPTION MENU**" by pressing the **MENU** button until it switches to Option mode.


## Function in Option mode

Option mode is used to change the settings of the training function, which is used most frequently in Sports mode, and the target heart rate zone. Switch to various settings as follows.


**Setting the training function** (countdown/interval)
This function is used to select the countdown or interval, and enter the settings.

Target distance or time currently set

Training function currently selected
**DST** : Countdown distance
**TIME** : Countdown time
**INT** : Interval timer


**Setting the target heart rate zones** (page 37)
Select the target heart rate zone, and enter the upper and lower limits.

Heart rate zone currently set

## Setting the training function — CD.TIMER

This function is used to select the training function displayed in the lower of the screen, and enter the settings.

* Stop the measurement before you change the settings.
* In case of shortcutting from Sports mode, proceed to step 2, skipping step 1.
* Press and hold only the **MODE1** button to increase the number quickly.

**1.** When any other mode screen is displayed, switch to the Option mode "**CD.TIMER**".
Select "**OPTION MENU**" by pressing the **MENU** button several times to switch to "**CD.TIMER**" automatically. Then, confirm it pressing the **SSS** button.



Option mode

Shortcut from the Sports mode

**2.** Select the training function displayed in the lower of the screen. Select the "**DST** (countdown distance)", "**TIME** (countdown time)", or "**INT** (interval timer)" pressing the **MODE1** or **MODE2** button, and then confirm it pressing the **SSS** button.

Select the training function : (**DST** ↔ **TIME** ↔ **INT**) ◀**MODE1** ◀**MODE2** (or) Confirm : **SSS**▶

Countdown function currently selected

**3.** Enter the setting.
Enter the target value for the function selected in step 2, each digit one by one. Change the value pressing the **MODE1** to increase and **MODE2** button to decrease the value, and move digits pressing the **SSS** button.

Increase/decrease : ◀**MODE1** ◀**MODE2** (or) Confirm : **SSS**▶

Target distance or time

* Press and hold the **MODE2** button for 3 seconds to confirm the changes, and shortcut to the previous Sports mode.

**4.** Pressing the **MENU** button confirms the change, and returns to Option mode "**CD.TIMER**".
To switch to other mode, press the **MENU** button several times to display the screen of your choice.

To the mode top/switch the mode : **MENU**▶

* The settings are reflected in the lower display in Sports mode. For details, see "Training function (countdown function and interval function)" on page 32.

## Setting the target heart rate zones HR ZONE

Select the registered target heart rate zone (**1** to **5**) or **OFF**, change the upper/lower limit of each zone, or set on/off of the zone sound.

* Stop measurement and perform the resetting operation (page 27) before you change the target heart rate zone. If you do not perform the resetting operation, "**DATA RESET**" appears on the screen and you cannot change the target heart rate zones.
* For details of the target zone, see "Use of the target zone" (page 67).
* The time in the zone measured can be viewed by file in the Data mode "File view" (page 40).
* Press and hold the **MODE1** or **MODE2** button to increase/decrease the number quickly.

**1.** When any other mode screen is displayed, switch to the Option mode "**CD.TIMER**".
Select "**OPTION MENU**" by pressing the **MENU** button several times to switch to "**CD.TIMER**" automatically.

Switch the mode : **MENU**▶


Option mode

**2.** Switch to "**HR ZONE**" pressing the **MODE1** or **MODE2** button, then confirm it pressing the **SSS** button.

Switch the screen : ◀MODE1 ◀MODE2 (or) Confirm : SSS▶


* The target heart rate zone (**ZONE-1** to **5**) or "**OFF**" currently selected appears on the screen.

**3.** Select the target heart rate zone.
Select one of "**OFF**", "**ZONE-1**", "**2**", "**3**", "**4**" or "**5**" pressing the **MODE1** or **MODE2** buttons. To set the target heart rate zone, select from "**1**" to "**5**" and confirm it pressing the **SSS** button, and then proceed to the step 4. Otherwise, select "**OFF**" and proceed to step 6.


Heart rate zone currently selected

Select the zone: ◀MODE1 ◀MODE2 (or) Confirm : SSS▶

Upper limit

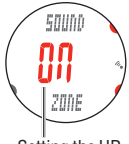
**4.** Enter the lower limit of the zone currently selected pressing the **MODE1** and **MODE2** buttons, and confirm it pressing the **SSS** button.
Then, enter the upper limit in the same way, and confirm it pressing the **SSS** button.


Lower limit

Increase/decrease : ◀MODE1 ◀MODE2 (or) Confirm : SSS▶

* You can enter any upper/lower limit to each zone; however, the upper limit is adjusted automatically to the lower limit + 1 when the entered lower limit exceeds the upper limit. In case of the upper limit, vice versa, the lower limit is adjusted in the same way.
* It is no problem even if the upper and lower limit range overlaps other zones.

**5.** Select "**ON**" or "**OFF**" of the alarm sound pressing the **MODE1** and **MODE2** buttons, and confirm it pressing the **SSS** button.




Setting the HR alarm zone

**ON** ↔ **OFF** : ◀MODE1 ◀MODE2 (or) Confirm : SSS▶

* When the alarm sound is on, an alarm sounds continuously as long as the heart rate is outside the target heart rate zone.

**6.** Pressing the **MENU** button confirms the change, and returns to Option mode "**HR ZONE**".
Press the **MENU** button repeatedly to switch to another mode.

To the mode top/switch the mode : MENU▶

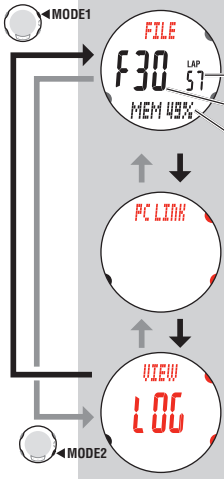
Option mode

# Data mode (DATA)

**Switching Data mode**
Select "**DATA MENU**" by pressing the **MENU** button until it switches to Data mode.


## Function in Data mode

The Data mode is used to review and delete the saved files, download the measurement data to your PC, and review past records.




**File view** (page 40)
This view is used to review and manage the various data recorded.
- Number of total laps in all files
- Number of total files saved
- Memory point utilization

**PC link** (page 45)
This is used to send the measurement data to your PC.
* The optional "USB communication kit" is required.

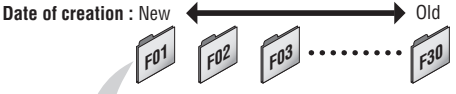
**Past records** (page 47)
Past trip distance and elapsed time can be reviewed by time period.

## File view FILE

The lap and measurement data are saved into a file automatically each time a ride is reset (Resetting operation on page 27). With the file view, you can review and delete the files saved.

### Saving and managing the files

The wristwatch can record up to 30 files.
A new file is always saved as **F01**. When the file volume exceeds the wristwatch memory capacity, the oldest file is deleted automatically.




Measurement data to be saved in a file
- Date and time of file creation (date/time when the measurement started)
- Trip distance
- Elapsed time
- Various average values (speed/heart rate/cadence)
- Various maximum values (speed/heart rate/cadence/altitude/temperature/slope angle)
- Various minimum values (altitude/temperature)
- Ascending altitude
- Calorie consumption
- Number of laps used
- Time distribution to the target zone (time in/above/below the zone) and the percentages (%)
- Lap data (average lap speed, average lap heart rate, maximum lap speed, maximum lap heart rate, lap time, split time, trip lap distance)
- Point data at the intervals specified.

### Wristwatch memory capacity limit

Data can be saved within the following memory capacity limits.

| | | |
|---|---|---|
| Number of files | | 30 files |
| Number of laps | | Laps shall be 99 or less. (* See “Lap data”) |
| Memory for each recording interval | | Points shall be 36000 or less. |
| Example | At 2 seconds | Maximum record of 20 hours |
| | At 3 seconds | Maximum record of 30 hours |
| | At 5 seconds | Maximum record of 50 hours |
| | At 10 seconds | Maximum record of 100 hours |

- **Lap data**

  One lap per file is used even when there is no lap data. Therefore, the total number of laps is the sum of the total number of laps in all files and the number of files.

  **Example)** When the following number of laps are recorded in the files:

| Number of laps in a file | Number of files |
|---|---|
| **F01** : 5 laps | 3 files |
| **F02** : 0 lap | |
| **F03** : 10 laps | |

  The total number of laps is the sum of the total number of laps in all files “15”, and the total number of files “3”, i.e., “18”.

- **Memory point**

  This unit has a function to automatically record the data at intervals specified during measurement (memory point). The recorded data are saved in a file together with other measurement records and lap data.
  The memory point can be viewed in “memory point utilization” on the File view. To use such data, you have to send them to your PC (page 46).
  The automatic record interval can be selected from 4 options in the range of 2 to 10 seconds according to your application. For details, see the Setup mode “Setting the record interval” (page 56).

  When the memory point utilization is over 90%, and the remaining memory capacity is low:
  An alarm sounds during the measurement, “**MEMORY**” flashes on the screen. This alert is displayed repeatedly every 2 minutes until the data volume exceeds the memory capacity.

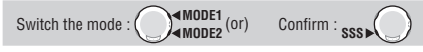

  When the memory point utilization reaches 100%, and the data volume exceeds the memory capacity:
  An alarm sounds during the measurement, “**MEMORY FULL**” flashes on the screen. In this case, the wristwatch automatically saves the data being measured, and creates a file.
  Data will be displayed on the screen but now can no longer be saved. The alert is displayed repeatedly every 2 minutes. It is recommended to stop the measurement immediately, and delete the files in the wristwatch.


  * When using the optional “USB communication kit”, delete the files after you send the saved files to your PC.

## Viewing the contents in a file

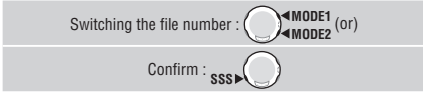
View the measurement data in a file saved in the wristwatch.

**1.** Switch to the Data mode "**FILE**", when any other mode screen is displayed.
Select "**DATA MENU**" by pressing the **MENU** button several times to switch to "**FILE**" automatically. Then, confirm it pressing the **SSS** button.





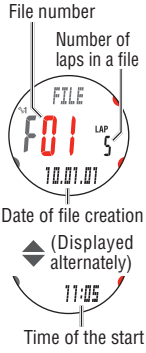
**2.** Select the file number you want to view.
Select the file number pressing the **MODE1** or **MODE2** button, and confirm it pressing the **SSS** button.




* The file number starts with the latest file (**F01**).

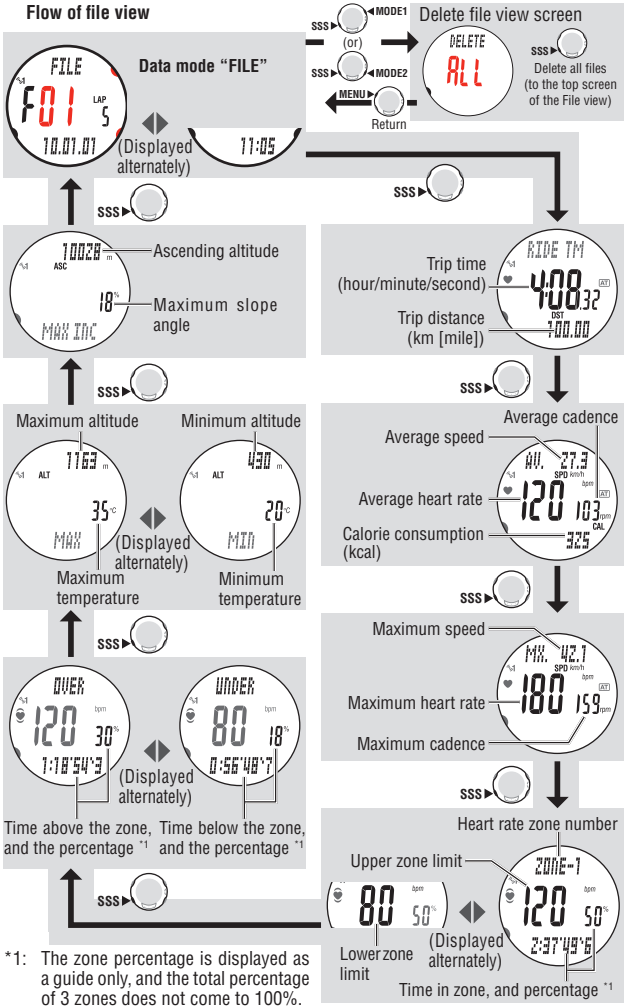
**3.** Scroll through the data saved in each file by pressing the **SSS** button.
The display items are as follows on the next page.

**4.** Pressing the **MENU** button returns to the Data mode "**FILE**".
Press the **MENU** button repeatedly to switch to another mode.


* When the target heart rate zone is set to OFF during measurement, no data related to the target heart rate zone saved is displayed.

* Pressing the **LAP** button while viewing data switches to viewing the lap data. For details, see "Viewing the lap data" (page 44).




*1: The zone percentage is displayed as a guide only, and the total percentage of 3 zones does not come to 100%.

## Viewing the lap data

View the lap data in a file saved in the wristwatch.

**1.** Select the file number you want to view from the Data mode "**FILE**" (page 42).
Select the file number pressing the **MODE1** or **MODE2** button, and confirm it pressing the **SSS** button.

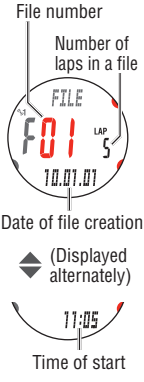
Switching the file number : ◀MODE1 ◀MODE2 (or)  Confirm : SSS▶

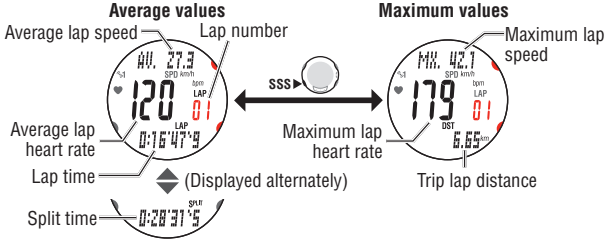
* The file number starts with the latest file (**F01**).

**2.** Press the **LAP** button to view the lap data contained in the file selected.
Switch the average value to maximum value display pressing the **SSS** button. Press the **LAP** button again to return from the lap data.

Viewing/exiting lap data : LAP

* When no lap data is contained in the file, it cannot be viewed.




**3.** Switch the laps, if applicable, pressing the **MODE1** and **MODE2** buttons.

Switching the lap number : ◀MODE1 ◀MODE2 (or)

**4.** Pressing the **MENU** button returns to the Data mode "**FILE**".
Press the **MENU** button repeatedly to switch to another mode.

To the mode top/switch the mode : MENU▶

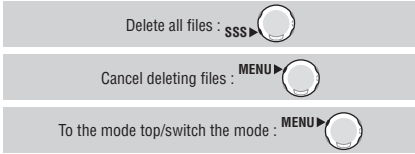
Data mode

## Deleting files

You can manually delete the files saved in the wristwatch.
When the data volume exceeds the memory capacity, the wristwatch automatically deletes the oldest file, and creates a new file. You can manually delete all files at once.

1. Switch to the Data mode "**FILE**" (page 42), and confirm with the **SSS** button.
2. Simultaneously press the **SSS** button and the **MODE1** or **MODE2** button to switch to the delete screen.


3. Pressing the **SSS** button deletes all files, and returns to the Data mode "**FILE**".
   Press the **MENU** button repeatedly to switch to another mode.





Delete file view screen

* Pressing the **MENU** button on the delete screen cancels deleting files, and returns to the previous screen.
* When the wristwatch has no files (**F00**) the delete file operation is not operable.
* Once any file is deleted, all lap data contained in the file are also deleted.
* Once a file is deleted, it cannot be restored.

## PC link PC LINK

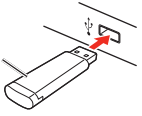
The PC link is used for two-way communication with your PC to which download software "e-Train Data™ ver.4" is installed. You can send the data measured with this unit to your PC, and change various settings in the wristwatch from your PC.
The optional "USB communication kit" and installation of the "e-Train Data™ ver.4 (Windows version)" contained in the CD-ROM supplied are required to use this function.

* For using the files sent, refer to the e-Train Data™ ver.4 instruction manual contained in the CD-ROM supplied.

## Communication between your PC and this unit

Send the files saved in the wristwatch to your PC, or reflect the settings changed from your PC in the wristwatch.

**1.** Boot your PC, and connect the USB communication unit to the your PC.




**2.** Start e-Train Data™ ver.4, and click the "**Communication**" button on your PC screen.
Prepare for sending the data according to the instructions displayed on your PC screen.

**3.** Switch to the Data mode "**FILE**", when any other mode screen is displayed.
Select "**DATA MENU**" by pressing the **MENU** button repeatedly to switch to "**FILE**" automatically.


Switch modes : MENU

**4.** Switch to "**PC LINK**" pressing the **MODE1** or **MODE2** button, and then press the **SSS** button.
"**LINK-TO PC**" appears on the screen, and the wristwatch automatically starts searching for your PC. Once the communication is established, it switches to "**SEND FILE**", and starts sending the data.


Switch the screen : MODE1 / MODE2 (or)

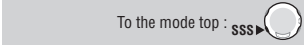
Search PC / Send the data : SSS


Searching for your PC


Sending data

* When communication with your PC cannot be established, "**LINK-TO PC FAIL**" appears. Press the **SSS** button to return to "**PC LINK**", and check the condition of your PC. Pressing the **SSS** button again restarts searching for your PC.
* Pressing the **MENU** button while sending the data displays "**LINK-TO PC FAIL**", and stops sending the data. Pressing the **SSS** button returns to "**PC LINK**".
* Depending on the number of files saved, it takes up to 5 minutes to send the data.

**5.** Once sending data is completed, "**SEND FILE END**" appears. Press the **SSS** button and return to the data mode "**PC LINK**".




Completion of sending

**6.** Press the **MENU** button repeatedly to switch to another mode.


### Data to be sent from this unit to your PC

The data to be sent to your PC are as follows.

- File number
- Date/time of file creation (date/time when the measurement started)
- Measured values of the speed, heart rate, cadence, trip distance, elapsed time, and sea level altitude, at the record intervals specified
- Lap data (lap number, average lap speed, average lap heart rate, Average lap cadence, maximum lap speed, maximum lap heart rate, maximum lap cadence, lap time, split time, and lap distance), Time in the heart rate zone (over / within the range / under)

* The wristwatch has a limited memory capacity. It is recommended to transfer the measurement data periodically to your PC, and delete the files in the wristwatch (page 45).

### Settings to be changed from your PC

The date, clock, on/off and time of the alarm, tire circumference, speed unit, record interval, total trip distance/total elapsed time, auto-mode setting, sound setting, and sea level altitude **HOME** setting.

## Past records VIEW LOG

The past records allow you to view the trip distance and elapsed time by time period, which are essential for your training management.

- Total trip distance (**ODO**) and total elapsed time (**TTM**) since beginning use of this unit
- Weekly trip distance and time since Monday
- Monthly trip distance and time since the 1st
- Yearly trip distance and time since January 1st

You can adjust effectively the training menu by receiving and analyzing the actual training volume of each period of time.

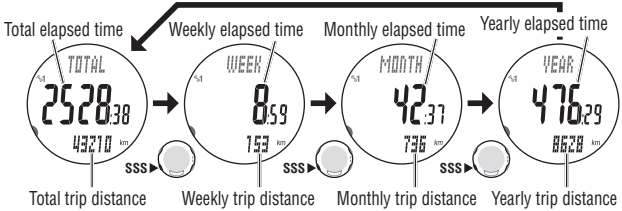
**1.** Switch to the Data mode "**FILE**", when any other mode screen is displayed.
Select "**DATA MENU**" by pressing the **MENU** button several times to switch to "**FILE**" automatically.

Switch modes : MENU


**2.** Switch to "**VIEW LOG**" pressing the **MODE1** or **MODE2** buttons, and confirm pressing the **SSS** button.

Switch the screen : MODE1 MODE2 (or) Confirm: SSS


**3.** The total trip distance and total elapsed time since first use of the wristwatch are displayed.
The weekly, monthly, and yearly trip distance and elapsed time are displayed in sequence by pressing the **SSS** button.




**4.** Press the **MENU** button repeatedly to switch to another mode.

To the mode top/switch the mode : MENU

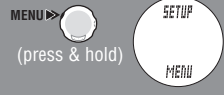
* Once you change any date in the past according to the Setup mode "Setting the clock/date" (page 50), some integrated values for the year, month, or week are deleted according to the relevant changes.

| | Total elapsed time and total trip distance | Elapsed time and trip distance for the week | Elapsed time and trip distance for the month | Elapsed time and trip distance for the year |
|---|---|---|---|---|
| **When the year is changed** | Retained | Deleted | Deleted | Deleted |
| **When the month is changed** | Retained | Deleted | Deleted | Retained |
| **When the day is changed** | Retained | Deleted | Retained | Retained |

* The trip distance of "Past records" in the data mode is integrated regardless of starting or stopping of the measurement. Therefore, the trip distance may differ from that in the sports mode which is interlocked with the start/stop of the measurement.
* The measurement time is integrated into the elapsed time.
* Once "**MEMORY FULL**" appears on the screen, the elapsed time is no longer added. It will resume when the wristwatch attains an available capacity.

# Setup mode (SETUP)

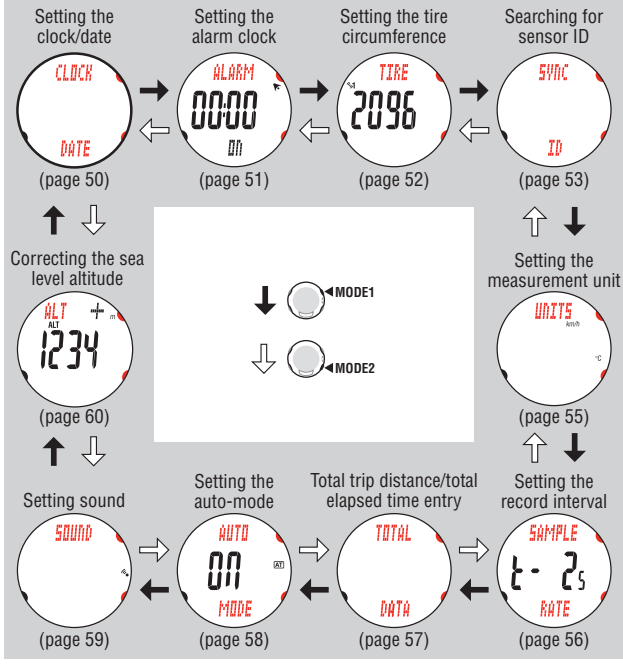
**Switching to Setup mode**
Press and hold the **MENU** button in the Clock mode or Sports mode until "**SETUP MENU**" appears on the screen, then the wristwatch switches to the Setup mode automatically.




## Function in Setup mode

Setup mode is used to change various settings of the wristwatch. Switch the setup items pressing the **MODE1** or **MODE2** button.

* Once any setting is changed, confirm it pressing the **MENU** button.
* Unless you perform an operation within 3 minutes, it returns to Clock mode. In such cases, any change is not reflected.
* Shortcut from Clock mode or Sports mode does not display the altitude adjusting screen as shown in the figure below. It directly switches to the setting entry screen.



## Setting the clock/date — CLOCK DATE

Set the "Clock display format", "Hour", "Minute", "Date display format", "Year", "Month" and "Day".

* Once you change any date in the past, some integrated values for the year, month, or week in the Data mode "Past records" (page 47) are deleted according to the relevant changes.

* Press and hold the **MODE1** or **MODE2** button to increase/decrease the number quickly.

**1.** Press and hold the **MENU** button in the Clock mode or Sports mode until "**SETUP MENU**" appears on the screen.
The wristwatch switches to "**CLOCK DATE**" automatically. Then, confirm it with the **SSS** button.

Switch the mode : MENU (press & hold) Confirm : SSS

Display format

**2.** Select the clock display format.
Select "**24h** (24 hour)" or "**12h** (12 hour)" pressing the **MODE1** and **MODE2** buttons, and confirm with the **SSS** button.

**24h ↔ 12h :** MODE1 / MODE2 (or) Confirm : SSS

Hour

**3.** Enter the "Hour" or "Minute".
Enter the "Hour" pressing the **MODE1** and **MODE2** buttons, confirm with the **SSS** button, and then enter the "Minute" in the same way.

Increase/decrease : MODE1 / MODE2 (or) Confirm : SSS

Minute

**4.** Select the date display format.
Select the date display format from "**YY.MM.DD**", "**DD.MM.YY**", and "**MM.DD.YY**" pressing the **MODE1** and **MODE2** buttons, and confirm with the **SSS** button.

Switch the display : MODE1 / MODE2 (or) Confirm : SSS

Display format

**5.** Enter the "Year", "Month" and "Day".
Enter the "Year", "Month" and "Day" in the display order selected in Step 4 pressing the **MODE1** and **MODE2** buttons, and confirm with the **SSS** button. Enter only the last 2 digits of the year.

Increase/decrease : MODE1 / MODE2 (or) Confirm : SSS

YY/MM/DD

Setup mode

**6.** Pressing the **MENU** button confirms the change, and returns to the Setup mode "**CLOCK DATE**".
Press the **MENU** button repeatedly to switch to another mode.

To the mode top/switch the mode : MENU ▶

## Setting the alarm clock

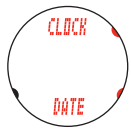
**ALARM**

Set the alarm in Clock mode.

* Press and hold the **MODE1** or **MODE2** button to increase/decrease the number quickly.

**1.** Press and hold the **MENU** button in the Clock mode or Sports mode until "**SETUP MENU**" appears on the screen.
It switches to "**CLOCK DATE**" automatically.

Switch modes : MENU ▶▶ (press & hold)




**2.** Switch to "**ALARM**" pressing the **MODE1** or **MODE2** button, and then confirm it pressing the **SSS** button.

Switch screen : ◀MODE1 ◀MODE2 (or) Confirm : SSS ▶


**3.** Select "**ON**" or "**OFF**" pressing the **MODE1** or **MODE2** button. To use the alarm clock, select "**ON**" and press the **SSS** button to proceed to Step 4. Otherwise, select "**OFF**" to proceed to Step 5.

**ON ↔ OFF:** ◀MODE1 ◀MODE2 (or) Confirm : SSS ▶


* You can set on/off of the alarm clock also in Clock mode. When it is on, icon appears.

**4.** Enter "Hour" and "Minute".
Enter "Hour" pressing the **MODE1** and **MODE2** buttons, and confirm it pressing the **SSS** button. Then, enter "Minute" in the same way.

Increase/decrease: ◀MODE1 ◀MODE2 (or) Confirm : SSS ▶


Setup mode

**5.** Pressing the **MENU** button confirms the change, and returns to the Setup mode "**ALARM**".
Press the **MENU** button repeatedly to switch to another mode.

To the mode top/switch the mode : MENU ▶

## Setting the tire circumference TIRE

Set the tire circumference (peripheral length) to **SP1** (Speed sensor 1) and **SP2** (Speed sensor 2) synchronized according to "Searching for sensor ID" (page 53).

* For the tire circumference, see "Tire circumference" (page 17).
* Press and hold the **MODE1** or **MODE2** button to increase/decrease the number quickly.

**1.** Press and hold the **MENU** button in the Clock mode or Sports mode until "**SETUP MENU**" appears on the screen.
It switches to "**CLOCK DATE**" automatically.

Switch modes : MENU ▶▶ (press & hold)


**2.** Switch to "**TIRE**" pressing the **MODE1** or **MODE2** button, and then confirm it pressing the **SSS** button.

Switch screen : ◀MODE1 ◀MODE2 (or) Confirm : SSS ▶

Sensor currently selected


Tire circumference set to the sensor currently selected

**3.** Select 1 (Sensor 1) or 2 (Sensor 2) by pressing the **MODE1** or **MODE2** button.

1 ↔ 2 : ◀MODE1 ◀MODE2 (or) Confirm : SSS ▶


* When using a wristwatch for a single bicycle, set the tire circumference to 1 (Sensor 1) only. When using a wristwatch commonly for two bicycles, sets the tire circumference of the second bicycle to 2 (Sensor 2).

Setup mode

**4.** Enter the last 2 digits for the tire circumference of the sensor selected in Step 3 using the **MODE1** and **MODE2** buttons, and move digits using the **SSS** button.
Then, enter the first 2 digits in the same way.


Increase/decrease: MODE1 / MODE2 (or) Move digits: SSS

**5.** Pressing the **MENU** button confirms the change, and returns to the Setup mode "**TIRE**".
Press the **MENU** button repeatedly to switch to another mode.

To the mode top/switch the mode : MENU

* Switching to the Sports mode displays the sensor icon (**1** or **2**) selected. Even when a wristwatch is commonly used for 2 bicycles, the speed sensor is recognized automanically; accordingly, the measurement can be started appropriately (it may take time to recognize it automatically depending on the situation).
For details, see "Automatic recognition of the speed sensor ID" on page 7.

## Searching for sensor ID — SYNC ID

Pairing the wristwatch with the heart rate and speed/cadence sensors.

* This unit requires checking of the sensor ID in order for the wristwatch to receive signals from the sensors. Once you format the wristwatch, or when you use a new sensor, synchronize the sensor ID according to the following procedure.

* When you use the unit for the first time (at factory default setting), each sensor ID has been synchronized to the wristwatch in the package; accordingly, the following procedure is not required.

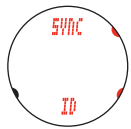
* To synchronize the sensor ID, each sensor must be near the wristwatch.

* Check that there is not any other sensor of the same type nearby.

**1.** Press and hold the **MENU** button in the Clock mode or Sports mode until "**SETUP MENU**" appears on the screen.
It switches to "**CLOCK DATE**" automatically.


Switch modes : MENU (press & hold)

**2.** Switch to "**SYNC ID**" pressing the **MODE1** or **MODE2** button, and then confirm it pressing the **SSS** button.



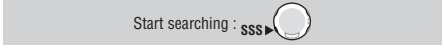

Switch screen : MODE1 / MODE2 (or) Confirm : SSS

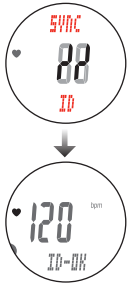
**3.** Select the sensor ID to be checked.
Select from "**HR** (heart rate sensor)", "**SP1** (speed sensor 1)", and "**SP2** (speed sensor 2)" pressing the **MODE1** and **MODE2** buttons, and then confirm it pressing the **SSS** button.



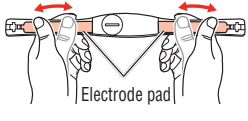
* **SP2** is used when a wristwatch is commonly used for 2 bicycles. Once you synchronize the ID of the second bicycle equipped with a sensor with **SP2** in advance, the wristwatch can identify the second bicycle automatically.

**4.** Press the **SSS** button to start searching for the ID.
When you select "**SP1**" or "**SP2**", press the **RESET** button on the speed sensor. When you selected "**HR**", wear the heart rate sensor (page 13), or transmit a sensor signal according to the following simple method below.
When the heart rate or speed/cadence is displayed with "**ID-OK**" on the screen, synchronization is completed.

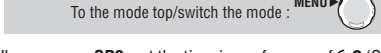



* This unit enters the search mode for 5 minutes after starting the ID sync. Press the **SSS** button in the search mode to cancel the ID synch, and "**ID-SKIP**" is displayed. If any sensor signal is not received in 5 minutes, "**ID-ERROR**" is displayed. When "**ID-SKIP**" or "**ID-ERROR**" is displayed, the ID has not been synchronized properly.
* Even when the heart rate sensor is not worn, it transmits a heart rate signal by rubbing both electrode pads with your thumbs.




**5.** Pressing the **MENU** button confirms the change, and returns to the Setup mode "**SYNC ID**".
Press the **MENU** button repeatedly to switch to another mode.




* When you use **SP2**, set the tire circumference of **2** (Sensor 2) according to "Setting the tire circumference" (page 52).

Setup mode

## Setting the measurement unit UNITS

Change the speed unit and temperature unit.

* Stop measurement and perform the resetting operation (page 27) before you change the unit. Unless you perform the resetting operation, "**DATA RESET**" appears on the screen, preventing change of the unit.

**1.** Press and hold the **MENU** button in the Clock mode or Sports mode until "**SETUP MENU**" appears on the screen.
It switches to "**CLOCK DATE**" automatically.

Switch modes : MENU ▶▶ (press & hold)

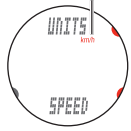

**2.** Switch to "**UNITS**" pressing the **MODE1** or **MODE2** button, and then confirm it pressing the **SSS** button.

Switch screen : ◀MODE1 ◀MODE2 (or) Confirm : SSS▶


Current speed unit

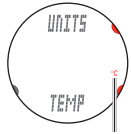
**3.** Select the speed unit pressing the **MODE1** or **MODE2** button. To switch the speed unit only, proceed to Step 5. To change the temperature unit afterwards, press the **SSS** button, and then proceed to Step 4.

**km/h ↔ mph :** ◀MODE1 ◀MODE2 (or) Confirm : SSS▶




**4.** Select the temperature unit using the **MODE1** and **MODE2** buttons.

**°C ↔ °F :** ◀MODE1 ◀MODE2 (or)




Current temperature unit

**5.** Pressing the **MENU** button confirms the change, and returns to the Setup mode "**UNITS**".
Press the **MENU** button repeatedly to switch to another mode.

To the mode top/switch the mode : MENU▶

* After the measurement unit is switched, the total distance measured in the past is automatically converted to the new unit.

## Setting the record interval — SAMPLE RATE

In primary measurement, the measurement data is recorded in the selected intervals (seconds).

* Stop the measurement and perform the resetting operation (page 27) before you change the record interval. Unless you perform the resetting operation, "**DATA RESET**" appears on the screen, preventing change of the record interval.
* You cannot set the record interval to off.

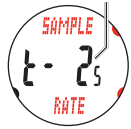
**1.** Press and hold the **MENU** button in the Clock mode or Sports mode until "**SETUP MENU**" appears on the screen.
It switches to "**CLOCK DATE**" automatically.

Switch modes : MENU (press & hold)


**2.** Switch to "**SAMPLE RATE**" pressing the **MODE1** or **MODE2** button, and then confirm it pressing the **SSS** button.

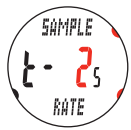
Switch screen : MODE1 / MODE2 (or) Confirm : SSS

Current record interval




**3.** Select "**T-10s** (10 seconds)", "**T-5s** (5 seconds)", "**T-3s** (3 seconds)" or "**T-2s** (2 seconds)" pressing the **MODE1** or **MODE2** buttons.

**T-10s** ↔ **T-5s** ↔ **T-3s** ↔ **T-2s** : MODE1 / MODE2 (or)




**4.** Pressing the **MENU** button confirms the change, and returns to the Setup mode "**SAMPLE RATE**".
Press the **MENU** button repeatedly to switch to another mode.

To the mode top/switch the mode : MENU

* The wristwatch stores up to 36000 points of data, and the maximum record time (maximum time up to the memory point utilization of 100%) depends on the intervals of the seconds selected. The following time lengths can be used as a guideline.
  **T-10s** (at intervals of 10 seconds) : up to 100 hours
  **T-5s** (at intervals of 5 seconds) : up to 50 hours
  **T-3s** (at intervals of 3 seconds) : up to 30 hours
  **T-2s** (at intervals of 2 seconds) : up to 20 hours
* The current memory point utilization can be viewed in the Data mode "File view" (page 40).

## Total trip distance/total elapsed time entry TOTAL DATA

You can enter any values to the total trip distance and total elapsed time in the Data mode "Past records" (page 47), then you can start with the values entered.
The total trip distance and total elapsed time can be retained even after formatting the wristwatch or replacing the wristwatch.

* Press and hold the **MODE1** or **MODE2** button to increase/decrease the number quickly.

**1.** Press and hold the **MENU** button in the Clock mode or Sports mode until "**SETUP MENU**" appears on the screen.
It switches to "**CLOCK DATE**" automatically.

Switch modes : MENU (press & hold)


**2.** Switch to "**TOTAL DATA**" pressing the **MODE1** or **MODE2** button, and then confirm it pressing the **SSS** button.

Switch screen : MODE1 / MODE2 (or) Confirm : SSS


**3.** For entry, change each digit one by one for the total trip distance by pressing the **MODE1** or **MODE2** button, and move digits by pressing the **SSS** button. (6-digit integer number)
To enter the total trip distance only, proceed to Step 5 after the entry. To enter the total elapsed time at the same time, move digits to the far left, and then proceed to Step 4 by pressing the **SSS** button.

Increase/decrease: MODE1 / MODE2 (or) Move digits: SSS

Total trip distance

**4.** For entry, change each digit for the total elapsed time by pressing the **MODE1** or **MODE2** button, and move digits by pressing the **SSS** button.

Increase/decrease: MODE1 / MODE2 (or) Move digits: SSS

Total elapsed time

**5.** Pressing the **MENU** button confirms the change, and returns to the Setup mode "**TOTAL DATA**".
Press the **MENU** button repeatedly to switch to another mode.

To the mode top/switch the mode : MENU

## Setting the auto-mode

**AUTO MODE**

Switch on/off of the auto-mode (page 26).

**1.** Press and hold the **MENU** button in the Clock mode or Sports mode until "**SETUP MENU**" appears on the screen.
It switches to "**CLOCK DATE**" automatically.

Switch modes : MENU (press & hold)


**2.** Switch to "**AUTO MODE**" pressing the **MODE1** or **MODE2** button, and then confirm it pressing the **SSS** button.

Switch screen : MODE1 MODE2 (or) Confirm : SSS


Current setting

**3.** Select "**ON**" or "**OFF**" pressing the **MODE1** or **MODE2** button.

**ON** ↔ **OFF:** MODE1 MODE2 (or)


**4.** Pressing the **MENU** button confirms the change, and returns to the Setup mode "**AUTO MODE**".
Press the **MENU** button repeatedly to switch to another mode.

To the mode top/switch the mode : MENU

Setup mode

## Setting sound

**SOUND**

Switch on/off of the button operation sound and target heart rate zone alarm sound.

**1.** Press and hold the **MENU** button in the Clock mode or Sports mode until "**SETUP MENU**" appears on the screen.
It switches to "**CLOCK DATE**" automatically.

Switch modes : MENU ▶▶ (press & hold)


**2.** Switch to "**SOUND**" pressing the **MODE1** or **MODE2** button, and then confirm it pressing the **SSS** button.

Switch screen : ◀MODE1 ◀MODE2 (or) Confirm : SSS▶


**3.** Select "**ON**" or "**OFF**" of the button operation sound pressing the **MODE1** or **MODE2** button.
To switch the button operation sound only, proceed to Step 5. To change also the target heart rate zone alarm sound, press the **SSS** button, and then proceed to Step 4.

**ON ↔ OFF:** ◀MODE1 ◀MODE2 (or) Confirm : SSS▶


**4.** Select "**ON**" or "**OFF**" of the target heart rate zone alarm sound pressing the **MODE1** or **MODE2** button.

**ON ↔ OFF:** ◀MODE1 ◀MODE2 (or)


**5.** Pressing the **MENU** button confirms the change, and returns to the Setup mode "**SOUND**".
Press the **MENU** button repeatedly to switch to another mode.

To the mode top/switch the mode : MENU▶

## Correcting the sea level altitude ALT

Correct the sea level altitude.

* Stop the measurement before you change the settings.
* In case of shortcutting from Clock mode or Sports mode, proceed to the step 2 skipping the step 1.
* For details of the altitude, see “Basic knowledge of the altitude measurement” on page 61.
* Press and hold the **MODE1** or **MODE2** button to increase/decrease the number quickly.

**1.** Press and hold the **MENU** button in the Clock mode or Sports mode until “**SETUP MENU**” appears on the screen.
It switches to “**CLOCK DATE**” automatically.

Switch modes : MENU ▶▶ (press & hold)


Shortcut from the Clock mode or Sports mode

Current sea level altitude

**2.** Switch to “**ALT**” using the **MODE1** or **MODE2** button, and then confirm it using the **SSS** button.

Switch screen : ◀MODE1 ◀MODE2 (or) Confirm : SSS▶


**3.** Select “**REF** (correcting the sea level altitude)” or “**HOME** (home altitude)” with the **MODE1** and **MODE2** buttons, and then confirm it with the **SSS** buttons.

* There are 2 ways to correct the sea level altitude with this unit. One is **REF** (correcting the sea level altitude), and **HOME** (home altitude), the other. For details, “Sea level altitude correction” on page 61.


**4.** Select “**+**” or “**-**” of the sea level altitude. Then, change each digit one by one for the value using the **MODE1** and **MODE2** buttons, and move digits using the **SSS** button.

Increase/decrease: ◀MODE1 ◀MODE2 (or) Move digits: SSS▶


* The altitude is entered in 4 digits in the unit of meter, 5 digits in the unit of feet, both in integer numbers.
* Pressing and holding the **MODE1** button for 3 seconds confirm the changes, and shortcuts to the previous Clock mode or Sports mode.

**5.** Pressing the **MENU** button confirms the change, and returns to the Setup mode “**ALT**”.
Press the **MENU** button repeatedly to switch to another mode.

To the mode top/switch the mode : MENU▶

# Basic knowledge of the altitude measurement

## 1 Altitude measurement function

This unit measures the atmospheric pressure using a built-in pressure sensor and determines the altitude. It estimates the altitude using the relation between the altitude and pressure of ISO 2533 (Standard atmosphere), which was developed based on the international standard atmosphere specified by the International Civil Aviation Organization (ICAO). Generally, a conventional pressure sensor is affected by temperature and can cause a large margin of error, but this unit is temperature-compensated and records 1 meter resolution. This unit is designed not to reflect the change in atmospheric pressure to the altitude measurement except during a ride; therefore, the altitude is less prone to weather changes, so while not in motion, value shift is minimal.

* The altitude measurement may change temporarily when going outside from an indoor room. This is due to a rapid temperature change, and is not a malfunction. It will return to the normal value after a while.

### Sea level altitude correction

There are 2 ways to correct the sea level altitude with this unit. It is recommended to correct the sea level altitude just before measurement, taking either following methods.

* The sea level altitude correction screen is displayed in Setup mode in the **MENU**, or is shortcut to from the orthrometric height screen in Clock mode or in Sports mode.

- **REF (sea level altitude correction): Enter the altitude at the current point.** Enter the actual value at the point where the sea level altitude is well known, such as along the seashore, or at a sign on the mountain, etc.

  * Press and hold **MODE1** and **SSS**, or **MODE2** and **SSS**, simultaneously on the setting screen to reset the corrected value to the default value (a value according to ISO2533).


- **HOME (home altitude setting): Apply the altitude set beforehand.** Preset the sea level altitude at your home in advance. Move to the **ALT HOME** screen, and then return to Clock mode or Sports mode by pressing **MENU** or the relevant shortcut. Then, the sea level altitude changes to the preset value. You can start with the correct sea level altitude by setting home altitude before starting from your home.


### Timing for updating the sea level altitude, ascending altitude, and temperature

The timing for updating the sea level altitude, ascending altitude, and temperature data differs depending on whether the Sports mode is in measurement or is stopped.

| Condition | Timing for updating |
|---|---|
| When the Sports mode is in measurement, and a speed sensor signal is received | 5 seconds |
| When the Sports mode is stopped, or no speed sensor signal is received | 5 minutes |

* This is also valid in Clock mode.

## 2 Relation between the altitude and atmospheric pressure

The higher the altitude, the lower the atmospheric pressure. At an altitude of 500 m or less, the pressure changes by 12 hPa per 100 m of altitude.

## 3 Knowledge related to weather and altitude

The change in atmospheric pressure when the weather changes from a good condition such as clear and sunny, to a bad condition such as rainy and cloudy is equivalent to the ascending altitude of about 100 m. Thunder storms will be result in even larger changes. Furthermore, the atmospheric pressure measurements may change more than 30 m in altitude change from sunrise to sunset even under stable clear weather conditions.

# Heart rate training

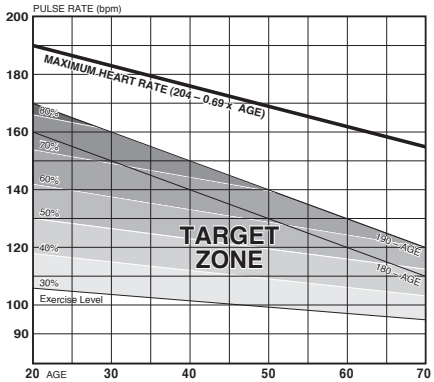
This section is just a general overview of training with heart rate data. For more complete information, there are books and websites with more in-depth information. Generally, the heart rate increases during exercise, getting higher in conjunction with the intensity of the workout. The measurement of your heart beat is a good indicator of the intensity of your workout. By setting target HR (heart rate) zones and sticking to pre-set exercises, you will be able to work out more efficiently. Before beginning a training program, be sure to first consult a medical specialist or sports trainer.

## 1 Target heart rate zone

Bicycling is one of the best activities to improve your general fitness. To improve your overall fitness through bicycling, set a target heart rate zone from between 30% and 70% of your maximum HR, depending on your physical strength. For best results, exercise consistently in this zone for periods of at least 20-30 minutes, 3 or more times a week. Obtain your target heart rate zone from either of the 2 ways below.

### Training level for improving general fitness

Check the training level according to your age using the graph below. For beginners, it is recommended to start with the level of 30% of your max. From this point, gradually increase the level according to your fitness level and experience. Training at levels over 70% of your HR max will focus more on anaerobic exercise, and less on aerobic exercise. Weight loss usually occurs through longer rides (over 1 hour) at lower HR levels.



## Obtaining individual heart rate zone for building up power

Athletic ability is different from person to person. The effective and reasonable target heart rate zone has to be obtained from the actual ride data. A time trial for 20 minutes or 5 km (hereinafter abbreviated as TT) is required to measure the actual data. Perform the TT under the following conditions, according to the specified procedure.

* TT is a training item, in which riders bicycle a specified distance at full speed. The last half is especially a very physically demanding workout. Maintain the pace so that you can ride the specified distance at a stable speed.

**Conditions for time trials**

For the TT measurement, a continuous ride for 20 minutes is ideal. When such a course that you can ride continuously for 20 minutes is not available, use a 5 km course that you can ride continuously. Measure the course distance in advance, and specify the start and goal points. Repeat the TT twice, and calculate the average of the average heart rates in the 2 sessions, which will be used as an average level for setting the zone.

**Procedures for time trial measurements**

**Caution:**

- **Maintain a good physical condition. If you have any worries, consult with a doctor before you attempt any time trial.**
- **Do not perform any TT on a road where many signals are located and the traffic is heavy.**
- **Be sure to pay attention to the road ahead during a TT.**

* Perform a TT in a week which is scheduled with relatively mild training.
* Warm up sufficiently at least for 30 minutes before you attempt any TT.
* Select the manual measurement (on page 27).

1. Stop your bicycle at the start point, and reset the wristwatch.
2. Press the **SSS** button to start the TT.
   Gradually accelerate up to a stable speed in the first 1-minute. Keep up the intensity level that you feel is moderately difficult. Set a pace so that you do not slow down in the last half, and maintain the pace to the finish.
3. Once you reach the goal, stop the measurement by pressing the **SSS** button.
4. Cool down for 30 minutes while drinking some water.
5. Repeat the TT once more.
   Repeat Steps 1 to 3.
6. Check the measurement data.
   Record the average heart rate of two TT data from the Data mode “File view” (page 40). Record the other data (time, average cadence, average speed, etc.) for your reference.

**7.** Obtain your target heart rate zone from the table below according to the average heart rate recorded.

e.g.) Average heart rate at 20 minutes time trial is 100%.

| Heart rate zone level | Lower limit | Upper limit |
|---|---|---|
| 1 (Active Recovery) | 0 % | 64 % |
| 2 (Endurance) | 65 % | 79 % |
| 3 (Tempo) | 80 % | 90 % |
| 4 (Lactate Threshold) | 91 % | 101 % |
| 5 (VO2 Max) | 102 % | 112 % |

* An elite ride should set the value 4% lower than those values above.

For example, when the average heart rate at 20 minutes time trial is 175 bpm, the zone is categorized as the table shown below.

| Heart rate zone level | Lower limit | Upper limit |
|---|---|---|
| 1 (Active Recovery) | 0 | 112 |
| 2 (Endurance) | 114 | 138 |
| 3 (Tempo) | 139 | 158 |
| 4 (Lactate Threshold) | 159 | 177 |
| 5 (VO2 Max) | 178 | 196 |

**8.** Set the calculated value to the heart rate target zone.

* For details of setting the heart rate target zone, see “Setting the target heart rate zones” in Option mode (page 37).

## 2 Training for competition

Measure your resting heart rate just after waking in the morning and your maximum heart rate (perhaps during competition). Then set your target zone according to your goal:

**A) For recovery, endurance training, and weight loss :**

60% - 70% (aerobic exercise)

**B) For quality endurance and tempo training :**

70% - 80% (aerobic exercise)

**C) For increasing TT and race ability, and VO2 max :**

85% + (anaerobic exercise)

**D) For anaerobic capacity and sprinting :**

92.5% + (anaerobic exercise)

$$\text{Training level (\%)} = \frac{\text{(Target heart rate) - (Resting heart rate)}}{\text{(Maximum heart rate) - (Resting heart rate)}} \times 100$$

$$\text{Target heart rate} = \text{(Maximum heart rate - Resting heart rate)} \times \frac{\text{Training level (\%)}}{100} + \text{Resting heart rate}$$

### Resting heart rate

Your resting heart rate is usually the lowest recorded rate soon after waking up in the morning.

### Maximum heart rate

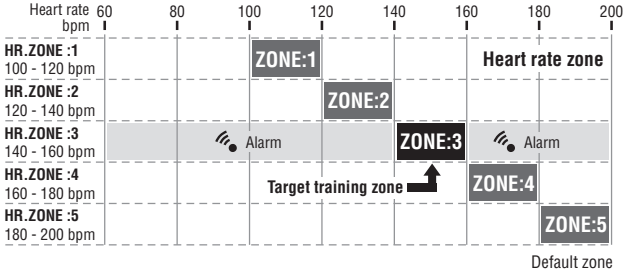
The following calculations are generally used: (220 - age) or (204 - 0.69 x age). For more precise figure, consult a training specialist.

## 3 Use of the target zone

When the heart rate is out of the zone during the measurement, the wristwatch sounds an alarm and notifies the rider by flashing . The heart rate zone is selected from 5 predetermined zones.

For a training aiming at a heart rate of 140 to 160 bpm, select HR.**ZONE:3** as shown below. Then, the wristwatch sounds an alarm when the heart rate falls below 140 bpm, or rises above 160 bpm. Once the target zone is set to On, the relevant data are recorded and the time in the zone, time above the zone, and time below the zone and their percentages can be viewed in the file view (page 40).

* The alarm sound is interlocked with the start/stop of the measurement.
* You can enter any upper/lower limit to each zone.
* Select "OFF" of the target heart rate zone, select Zones 1 to 5, change the upper and lower limits, and select "ON" or "OFF" of the zone sound in the Option mode "Setting the target heart rate zones" (page 37). You can select "ON" or "OFF" of the zone sound also in the Setup mode "Setting sound" (page 59).



# Trouble shooting

If a malfunction occurs, check the following before contacting CatEye or your retailer for repair or service.

## Trouble on display

| Trouble | Check Items | Remedy |
|---|---|---|
| Display motion becomes slower. | Is the surrounding temperature low (below zero degree Celsius or 32 degrees Fahrenheit)? | Temperatures below freezing may result in slower screen response. Data is not affected. |
| icon appears. | The remaining battery capacity for the wristwatch is low. | Replace it with a new battery (CR2430). After replacement, be sure to perform the restarting operation (page 14). |
| "**STOP**" appears. | The stop reminder function (page 27) is activated. | Once any sensor signal is received, the stop reminder is canceled.<br>Ignore this during measurement. |
| "**MEMORY**" icon flashes on the screen every 2 minutes. | The remaining wristwatch memory capacity is low. | It is recommended to delete the files (page 45).<br>* When using the optional "USB communication kit", delete the files after you send the saved files to your PC. |
| "**MEMORY FULL**" icon flashes on the screen every 2 minutes. | The data volume exceeded the wristwatch memory capacity during measurement. | Measurement data can no longer be recorded. Delete the files (page 45).<br>* When using the optional "USB communication kit", delete the files after you send the saved files to your PC. |
| No displays appear. | Is the battery for the wristwatch empty? | Replace it with a new battery (CR2430). After replacement, be sure to perform the restarting operation (page 14). |
| Meaningless display appears. | | Perform the restarting operation (page 14). |
| Cannot measure the current speed or cadence. | Is the Speed and Cadence sensor icon on ? | If icon is off, the wristwatch cannot receive any data. Press the **MODE1** or **MODE2** button to cancel the transmission sleep (page 23). |
| | Check whether the distance between the speed/cadence sensor and the magnet is too large. | Adjust the position of the speed/cadence sensor and that of the magnet correctly. (See "Bicycle Installation" on page 10). |
| | Is the sensor zone of the speed/cadence sensor off the center of the magnet? | |
| | Has the power-saving mode been activated, entering Clock mode? | Press the **MENU** button to switch to Sports mode. |
| | | The display may be delayed depending on the wireless transmission condition. Check whether any speed signal is received by spinning the wheel for a while.<br>* For details, see "Automatic recognition of the speed sensor ID" on page 7. |
| | Is the battery for the speed sensor empty? | Replace it with a new battery (CR2032). |
| | Did you perform the formatting operation? | The sensor ID was deleted by formatting. Synchronize the speed sensor ID again (page 53). |

| Trouble | Check Items | Remedy |
|---|---|---|
| Measure the current speed, but cannot measure the cadence. | Is the connection on the cadence side of the speed sensor dirty? | The continuity on the cadence side of the speed sensor is bad.<br>Loosen the set screw on the cadence side to remove the cadence sensor. Clean the pins with a dry cloth and replace the sensor. After cleaning, adjust the distance to the magnet, and then firmly secure the sensor. |
| Heart rate signals are not received. | Is the Heart rate sensor icon on ♥ ? | If ♥ icon is off, the wristwatch cannot receive any data. Press the **MODE1** or **MODE2** button to cancel the transmission sleep (page 23). |
| | Has the power-saving mode been activated, entering Clock mode? | Press the **MENU** button to switch to Sports mode. |
| | Is the heart rate sensor attached securely to your body? | Adjust the electrode pad with its rubber surface to have a good contact with the body. |
| | Dry skin (particularly in winter) | Slightly moisten the electrode pad of the heart rate sensor. |
| | Is the battery for the heart rate sensor used up? | Replace it with a new battery (CR2032). |
| | Check whether ▭ lights up on the wristwatch screen. | The remaining battery capacity of the wristwatch is low. Replace it with a new battery (CR2430). After replacement, be sure to perform the restarting operation (page 14). |
| | Is the electrode pad overly worn and damaged after long use? | Replace it with a new heart rate sensor. |
| | Did you perform the formatting operation? | The sensor ID was deleted by formatting. Synchronize the heart rate sensor ID again (page 53). |
| Fluctuation in the heart rate indicator, for example it returns to zero and then the heart rate is measured again. | Is the electrode pad being worn correctly? | To wear the electrode pad correctly, follow the instructions for wearing the heart rate sensor (page 13). |
| Moving the main unit away from your body will prevent measurement of the heart rate. | Check whether ▭ lights up on the wristwatch screen. | The remaining battery capacity of the wristwatch is low. Replace it with a new battery (CR2430). After replacement, be sure to perform the restarting operation (page 14). |
| | Is the battery for the heart rate sensor used up? | Replace it with a new battery (CR2032). |
| The sea level altitude display is wrong. | Have you corrected the sea level altitude? | The sea level altitude may have errors due to the change in atmospheric pressure. Correct the sea level altitude before use (page 60). |
| Some values in the Data mode “Past records” have been reset. | Did you change any date in the past according to “Setting the clock/date”? | Some values for the year, month, or week are deleted according to the relevant changes. For details, see page 48. |

## Trouble on operation

| Trouble | Check Items | Remedy |
|---|---|---|
| Pressing and holding the **MODE1** or **MODE2** button does not turn on a light. | Check whether the Setup mode is displayed (page 49). | The backlight does not turn on in the Setup mode. |
| | Check whether [▬] lights up on the wristwatch screen. | The remaining battery capacity of the wristwatch is low. Replace it with a new battery (CR2430). After replacement, be sure to perform the restarting operation (page 14). |
| Pressing the **SSS** button does not start/stop measurement. | Check whether the auto-mode is turned on (with [AT] illuminating). | When the auto-mode is on ( [AT] icon appears), you cannot start or stop the measurement by pressing the button. To start/stop measurement by pressing the **SSS** button, switch the auto-mode to off (page 58). |
| The heart rate sensor (speed sensor) ID check failed. | | The battery for the heart rate sensor (speed sensor) is possibly depleted. After replacing the battery with a new one (CR2032), check the sensor ID again (page 53). |
| Lap data cannot be stored. | Check whether "--" appears for the Lap No. screen. | The data volume exceeds the wristwatch memory capacity. Delete the files (page 45).<br>* When using the optional "USB communication kit", delete the files after you send the saved files to your PC. |
| | Does the lap time exceed 100 hours (or the interval distance exceed 9999.99 km/mile) ? | Laps cannot be measured, if recordable range described on the left is exceeded. Reset the data (page 27), and then perform measurement again. |
| | Is it immediately after pressing the **LAP** button? | Recording laps needs at least 5 seconds of interval. |
| Abnormal values appear. | Are there any objects emitting electromagnetic waves (railway tracks, transmitting stations for television, etc.) nearby? | Keep the unit away from any object that may be causing interference, and reset the data (page 27). |
| Any setting cannot be changed in Option mode or Setup mode. | Is it during measurement? | Settings can be only viewed during the measurement. |
| | Check whether the auto-mode is on ([AT] lights up). | When the auto-mode is on ([AT] lights up), the wristwatch may enter measurement mode due to electromagnetic waves. Keep the unit away from any object that may be causing interference with electromagnetic waves. |
| | Check whether "**DATA RESET**" is displayed. | To change the target heart rate zone, measurement unit, and record interval, the resetting operation is required. Stop the measurement, and perform the resetting operation (page 27). |
| The record data in the File view cannot be viewed to the end. | Check whether "**MEMORY FULL**" is displayed on the screen during measurement. | The data volume exceeds the wristwatch memory capacity. The data was saved automatically during measurement, and any subsequent data was no longer recorded. Delete the files for subsequent measurement (page 45).<br>* When using the optional "USB communication kit", delete the files after you send the saved files to your PC. |

# Water resistance of the wristwatch

The wristwatch is water-resistant up to 100 feet (30 meters). Refer to the following for proper use.

## Before aquatic and outdoor activities

**Caution:**

- The heart rate sensor and speed sensor are waterproof, but should not be used for underwater activities.
- Wash with pure water and wipe off any salt and dirt, after using in seawater or outdoors.
- Do not press any button when wet.

| | | Waterproof Capability |
|---|---|---|
|  | Rain, splash, etc. | **OK** |
|  | Shower (hot water, and cold water) | **OK** |
|  | Mild swimming (water depth: shallow) | **OK** |
|  | Diving, surfing, and other marine sports (water depth: shallow) | **NO!** |
|  | Snorkeling (water depth: deep) | **NO!** |

# Replacing battery

The Q3a comes with factory-installed batteries. When a battery is empty, replace it with a new one according to the following instructions.

⚠ **Warning!!!: Safely dispose of the old batteries, and do not place them within reach of children. If a battery is swallowed, consult a doctor immediately.**

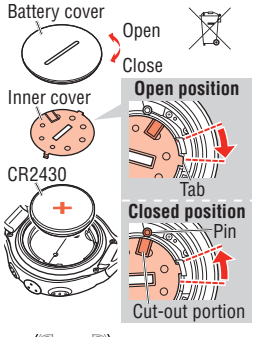
* When any battery for the wristwatch, heart rate sensor, or speed sensor is depleted, we recommend replacing all batteries at the same time.
* The battery life shown in this manual is not definitive and it varies depending on the use environment.
* The battery cover sealing is critical to maintain the waterproof feature. When the battery cover and the o-ring are dirty, wipe off carefully and check that it is installed properly.

## Wristwatch

Battery life: Approx. 1 year when used for 1 hour per day.

* When the remaining battery capacity is low, lights up.

1. Open the battery cover of the wristwatch using a coin, etc.
2. Turn the inner cover to the open position using a coin, remove this, and insert a new lithium battery (CR2430) with the (+) side up.
   * Do not turn the inner cover excessively. Otherwise, the tab may be damaged.
3. Turn the inner cover to the closed position. Check that the cut-out portion of the inner cover faces the pin, and the 2 tabs are fixed.
4. Press the **AC** button beside the inner cover using a tool with a pointed tip.
5. Check that an o-ring is installed to the groove on the wristwatch, and firmly close the battery cover.
6. After replacement, be sure to perform the restarting operation (page 14) to set the current time and date.

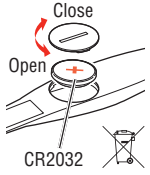



## Heart rate sensor

Battery life: Approx. 1 year when worn for 1 hour per day.

1. Remove the battery cover on the back of the heart rate sensor using a coin, or the equivalent.
2. Insert new lithium batteries (CR2032) with the (+) sign upward, and close the battery cover firmly.

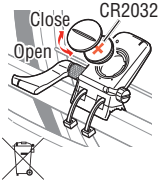
* The heart rate sensor consumes power when worn. Remove the heart rate sensor whenever measurement is not performed.




## Speed sensor

Battery life: Approx. 1 year when used for 1 hour per day.

1. Remove the battery cover on the speed sensor using a coin, or the equivalent.
2. Insert new lithium batteries (CR2032) with the (+) sign upward, and close the battery cover firmly.
3. After replacing batteries, be sure to check that the positions of the magnet and sensor are correct and they are secured firmly.



# Maintenance

Regularly perform the following instructions to prolong the life of your Q3a.

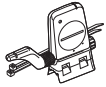
- Regularly check that the positions of the magnets and sensors are correct, and they are secured firmly.
- When the wristwatch, heart rate sensor, and speed sensor are dirty, wash them with water or wipe them with a soft cloth dampened with diluted neutral detergent, then wipe with dry cloth. Do not use solvents such as benzine or rubbing alcohol as they may damage the surfaces.
- The heart rate strap absorbs sweat easily, and leaving it as such is unsanitary. Wash with neutral detergent and keep it clean.

# Spare accessories

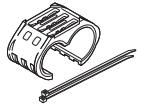
## Standard accessories

**#240-0570**
Parts kit

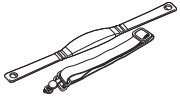
**#160-2385N**
Speed sensor kit



**#240-0575**
Bracket Handlebar-mount



**#160-2390N**
Heart rate sensor kit



**#160-2395**
HR Strap

**#169-9691**
Wheel magnet

**#169-9766**
Cadence magnet

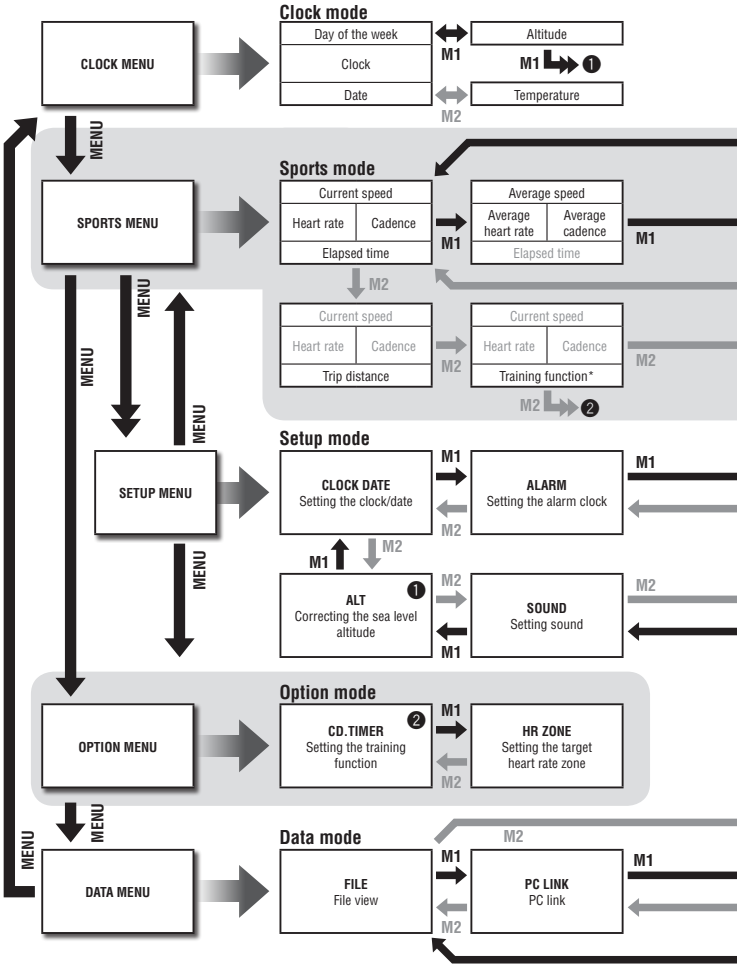
**#240-0580**
Lithium-battery (CR2430) for wristwatches

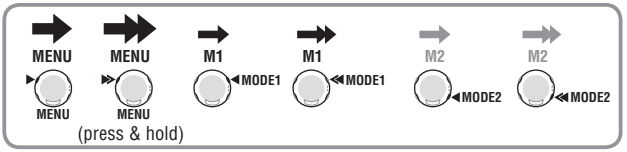
**#166-5150**
Lithium-battery (CR2032) for sensors

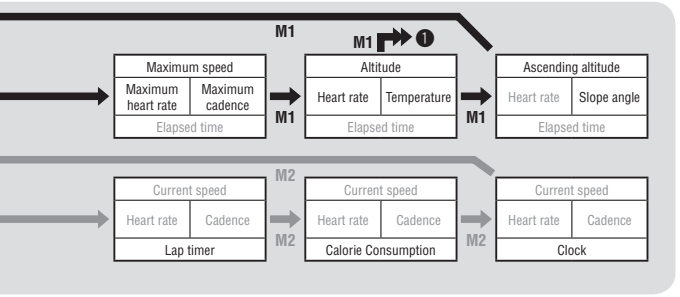
## Optional accessories

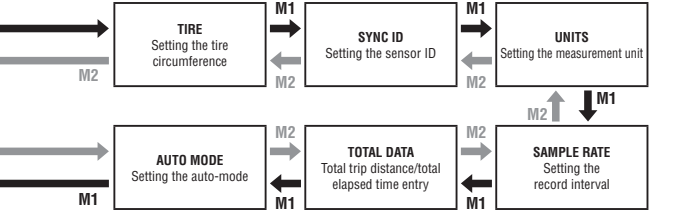
**#240-0590**
USB communication kit
(included with the Windows version of e-Train Data™)

# Flow of the screen

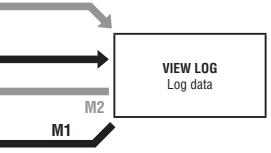





* Training function: Displays one of the following: countdown distance, countdown time, and interval.



# Specifications

Measurement function

| | |
|---|---|
| **Upper display** | |
| Current speed | 0.0 (4.0) – 150.0 km/h<br>0.0 (3.0) – 93.0 mph] (For 27-inch tire size) |
| Average speed | 0.0 – 150.0 km/h [0.0 – 93.0 mph] |
| Maximum speed | 0.0 (4.0) – 150.0 km/h [0.0 (3.0) – 93.0 mph] |
| Altitude | -500 – 9000 m [-1640 – 29600 ft] |
| Ascending altitude | 0 – 99999 m [ft] |
| Average lap speed | 0.0 – 150.0 km/h [0.0 – 93.0 mph] |
| Maximum lap speed | 0.0 (4.0) – 150.0 km/h [0.0 (3.0) – 93.0 mph] |
| **Middle display** | |
| Heart rate | 0 (30) – 240 bpm |
| Average heart rate | 0 – 240 bpm |
| Maximum heart rate | 0 (30) – 240 bpm |
| Average lap heart rate | 0 – 240 bpm |
| Maximum lap heart rate | 0 (30) – 240 bpm |
| Cadence | 0 (20) – 199 rpm |
| Average cadence | 0 – 199 rpm |
| Maximum cadence | 0 (20) – 199 rpm |
| Average lap cadence | 0 – 199 rpm |
| Maximum lap cadence | 0 (20) – 199 rpm |
| Temperature | -10 – +50 ˚C [+14 – +122 ˚F ] |
| Slope angle | 0 – ±99 % (100 % = 45°) |
| Lap number | 01 – 99 |
| **Lower display** | |
| Elapsed time | 0:00'00"0 – 0:59'59"9 / 1:00'00" – 99:59'59" |
| Trip distance | 0.00 – 9999.99 km [mile] |
| Countdown distance | 9999.90 – 0.00 km [mile] (setting range : 9999.9 – 0.0 km [mile]) |
| Countdown time | 99:59'00" – 0:00'00" (setting range : 99:59' – 0:00') |
| Interval timer | 99:59'59" – 1:00'00" / 0:59'59"9 – 0:00'00"0<br>(setting range : 99:59'59" – 0:00'00") |
| Recovery time | 0:00'00"0 – 0:59'59"9 / 1:00'00" – 99:59'59" |
| Lap timer | 00'00"0 – 0:59'59"9 / 1:00'00" – 99:59'59" |
| Calorie consumption | 0 – 999999 kcal (calculation-based estimation only) |
| Clock | 0:00'00" – 23:59'59" [AM 1:00'00" – PM 12:59'59"]<br>(Both 12 and 24-hour modes can be selected) |
| Date | 00.01.01 – 99.12.31 (display format can be switched) |
| Lap time | 00'00"0 – 0:59'59"9 / 1:00'00" – 99:59'59" |
| Split time | 00'00"0 – 0:59'59"9 / 1:00'00" – 99:59'59" |
| **Lap (With the real time lap function)** | |
| Lap display:<br>Upper display (average lap speed, maximum lap speed)<br>Middle display (average lap heart rate, lap number, maximum lap heart rate)<br>Lower display (lap time, split time) | |
| Real time lap display:<br>Upper display (average lap speed, maximum lap speed)<br>Middle display (average lap heart rate, maximum lap heart rate, cadence)<br>Lower display (lap timer, lap distance) | |

| | |
|---|---|
| Interval | |
| Upper display | (current speed, average speed, and maximum speed) |
| Middle display | (current heart rate, average heart rate, maximum heart rate, current cadence, average cadence, and maximum cadence) |
| Lower display | (interval time, number of intervals, trip distance in an interval, and recovery time) |
| Saving the data | |
| Saves the data at the time of resetting<br>(The oldest file will be deleted automatically when exceeding 30 files)<br>(The oldest file will be deleted and the data during the measurement will be saved automatically when "**MEMORY FULL**" is displayed.) | |
| Control system | |
| 8 bit one-chip microcomputer, crystal oscillator | |
| Display system | |
| Liquid crystal display (EL backlight) | |
| Speed/Cadence sensor signal detection system | |
| Noncontact magnetic sensor | |
| Sensor signal transmission and reception | |
| 2.4 GHz ISM Band (With ID. Two IDs of **SP1** and **SP2** can be set for the speed sensor.) | |
| Sensor coverage distance | |
| 5 m (above 5 m, transmission distance may vary due to environmental conditions) | |
| Operating temperature range | |
| 32 °F – 104 °F [0 °C – 40 °C]<br>(This product will not function appropriately when exceeding the working temperature range. Slow response or black LCD at lower or higher temperature may happen respectively.) | |
| Storage temperature range | |
| -4 °F – 122 °F [-20 °C – 50 °C] | |
| Wheel circumference set range | |
| 0100 to 3999 mm: 1 size for each speed sensor ID (default setting: **SP1** = 2096, **SP2** = 2050) | |
| Power supply/battery life | |
| Wristwatch | : CR2430 x 1 / Approx. 1 year (When using 1 hour/day) |
| Heart rate sensor | : CR2032 x 1 / Approx. 1 year (When worn about 1 hour per day) |
| Speed sensor | : CR2032 x 1 / Approx. 1 year (When using 1 hour/day) |
| Dimensions/Weight | |
| Wristwatch | : 55.0 x 46.5 x 15.0 mm (excluding the projection and belt) / 56.4 g (With batteries) |
| Heart rate sensor | : 12-13/16" x 1-1/4" x 1/2" (325.0 x 31.4 x 12.2 mm) / 1.41 oz (40 g) (With batteries) |
| Speed sensor | : 2-9/16" x 3-9/16" x 9/16" (65.0 x 90.5 x 14.4 mm) / 1.25 oz (36 g) (With batteries) |

* When the elapsed time exceeds 100 hours, or the trip distance exceeds 9999.99 km/h, "**E**" appears in place of the average speed.

* When the elapsed time exceeds 100 hours, "**E**" appears in place of the average heart rate and average cadence.

* Designs and specifications are subject to change without notice, due to modifications or improvements.

# Registration

**CATEYE Web Site (http://www.cateye.com)**

For warranty service you must register your product. Please register your Q3a as soon as possible. CATEYE provides regular technical support and new product information as much as possible. Please register on-line through the “Support” page on our web site. You will need the product’s 7 -digit number (marked on the battery cover) to register your product.

# Limited warranty

**2-Year: wristwatch, heart rate sensor and speed sensor (Not including depletion of batteries)**

CatEye products are warranted to be free of defects from materials and workmanship for a period of two years from original purchase. If the product fails to work during normal use, CatEye will repair or replace the defect at no charge. Service must be performed by CatEye or an authorized retailer. To return the product, pack it carefully and enclose the warranty certificate (proof or purchase) with instruction for repair. Please write or type your name and address clearly on the warranty certificate. Insurance, handling and transportation charges to CatEye shall be borne by person desiring service.

For UK and REPUBLIC OF IRELAND consumers, please return to the place of purchase. This does not affect your statutory rights.


**CATEYE CO.,LTD.**

**Service & Research Address for USA:**
**CatEye North America**
2300 Central Ave Suite L Boulder, CO 80301
Phone: 303.443.4595 Fax: 303.473.0006
Toll Free: 800.5CATEYE E-mail: service@cateye.com
URL: http://www.cateye.com
**Japan Office:**
2-8-25, Kuwazu, Higashi Sumiyoshi-ku, Osaka 546-0041 Japan
Attn: CATEYE Customer Service Section

# Index

## S



## T



## U



## V



## W

Please fill with 7-digits numbers marked on the battery cover of main unit.
リストウォッチ裏面の（バッテリーカバー）に記載の7桁の数字をご記入ください。
Veuillez indiquer le numéro à 7 chiffres indiqué sur le couvercle de la pile de l'unité principale.
Geben Sie bitte die siebenstellige Nummer an, die auf der Batterieabdeckung der Haupteinheit steht.
Vul de 7-cijferige nummers in die op het batterijdeksel van de computer staan.
Por favor, introduzca los números de 7 dígitos indicados en la tapa de la pila de la unidad principal).
Inserire il codice di 7 cifre indicato sul coperchio del vano batterie dell'unità principale.
請輸入手錶後蓋上顯示的7位數字。
请输入手表后盖上显示的7位数字。

# REGISTRATION CARD

**Fiche d'enregistrement** **Registratiekaart**
**Registrierungskarte** **Tarjeta de registro**

# ユーザー登録カード

**Scheda di registrazione**
**用戶登記卡** **用户登记卡**

CAT EYE

Name
お名前(フリガナ)
Nom Nome
Name 姓名
Naam 姓名
Nombre

Serial No
シリアルNo
No. de série
Seriennr
Serienummer
Nº de serie
Numero di matricola
產品編號
产品编号

Address
ご住所
Adresse Indirizzo
Adresse 地址
Adres 地址
Dirección

Phone
電話番号
Téléphone Numero di telefono
Telefon 電話號碼
Telefoon 电话号码
Teléfono

E-mail address
Eメールアドレス
Adresse e-mail Indirizzo e-mail
E-mail-Adresse 郵箱地址
E-mailadres 郵箱地址
Dirección de correo electrónico

Dealer or Shop name
ご購入店名
Nom du magasin ou du revendeur Nome del punto vendita
Name des Händlers oder des Geschäfts 經銷商名
Dealer of Naam van winkel 经销商名
Nombre del proveedor o de la tienda

Dealer or Shop address
所在地
Adresse du magasin ou du revendeur Indirizzo del punto vendita
Adresse des Händlers oder des Geschäfts 經銷商地址
Dealer of Adres van winkel 经销商地址
Dirección del proveedor o de la tienda

The date of purchase
ご購入日
Date d'achat Data di acquisto
Kaufdatum 購入日期
Datum van aankoop 购入日期
Fecha de compra

/ /

**Your name address or e-mail address will not be sold or shared with any other company.**
**ご送信いただいた情報や内容の管理には万全を期し、新製品情報やテクニカルサポート提供以外に使用することは一切ありません。**
Votre adresse postale et votre adresse e-mail ne seront pas vendues ou transmises à d'autres entreprises.
Ihr Name oder Ihre E-Mail-Adresse wird weder weiterverkauft noch an eine andere Firma weitergegeben.
Uw naam, adres of e-mailadres zullen niet beschikbaar worden gesteld aan derden.
Su nombre, dirección o correo electrónico no serán vendidos o compartidos con otras empresas.
Il vostro nome, indirizzo o indirizzo e-mail non saranno venduti o condivisi con altre società.
顧客情報內容將被妥善管理，只會使用在提供新產品信息及技術支援上。
顾客情报内容将被妥善管理，只会使用在提供新产品信息及技术支援上。

# INTERNATIONAL WARRANTY CERTIFICATE 保証書

**CERTIFICAT DE GARANTIE INTERNATIONALE** **INTERNATIONAAL GARANTIECERTIFICAAT** **CERTIFICATO DI GARANZIA INTERNAZIONALE**
**INTERNATIONALES GARANTIEZERTIFIKAT** **CERTIFICADO DE GARANTÍA INTERNACIONAL** **國際保固證明書** **国际保固证明书**

PURCHASER'S NAME/ADDRESS
ご住所・お名前
NOM/ADRESSE DU CLIENT
NAME UND ANSCHRIFT DES KÄUFERS
NAAM/ADRES KOPER
NOMBRE/DIRECCIÓN DEL COMPRADOR
NOME/INDIRIZZO DEL COMPRATORE
購買者的姓名／地址 购买者的姓名／地址

Serial No

DEALER'S NAME/ADDRESS
販売店名・住所
NOM/ADRESSE DU DISTRIBUTEUR
NAME UND ANSCHRIFT DES HÄNDLERS
NAAM/ADRES VERKOPER
NOMBRE/DIRECCIÓN DEL DISTRIBUIDOR
NOME/INDIRIZZO DEL VENDITORE
銷售業務地址／姓名 经销商地址和名字

DATE OF PURCHASE
お買い求め年月日
DATE D'ACHAT
VERKAUFSDATUM
AANKOOPDATUM
FECHA DE COMPRA
DATA DELL'ACQUISTO
購買日期 购买日期

/ /

DIGITAL 2.4G

CATEYE CO., LTD 2-8-25 , KUWAZU, HIGASHI SUMIYOSHI-KU, OSAKA, JAPAN 546-0041
**www.cateye.com** **www.cateye.co.jp**

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