MSC 3Dx
HEART RATE COMPUTER

Quick Start
MANUAL

Read this quick-start manual first, and familiarize yourself with the basic operation of the unit.

* The initial setup can be changed later. (See the user manual.)

This manual describes the following procedures:

1 Parts Installation

* If you already have CAT EYE Cyclocomputer Model CC-CD100, you can use the same bracket and sensor; so you do not need parts installation. Just attach the 3Dx attachment on your bracket.

PUSH

3Dx attachment
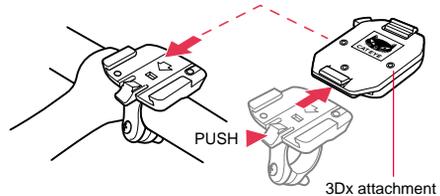
2 Attaching Chest Belt and Main Unit

3 Setting up Main Unit

4 Other Important Features

For more detailed setup and operations, please read the user manual.

E

CAT EYE CO., LTD.

1   Parts Installation

Pay attention to the positions of the sensors and the magnets.

Parts Names

Make sure that the following parts are included in the package.

❶ Bracket (Includes 3Dx attachment)
❷ Speed Sensor (Short cord)
❸ Cadence Sensor (Long cord)
❹ Sensor Band A (L/S)
❺ Sensor Band B
❻ Nylon Ties

❼ Sensor Rubber Pad
❽ Bracket Rubber Pad
❾ Bracket Rubber Pad with Holder
❿ Screw
⓫ Wheel Magnet
⓬ Cadence Magnet

3Dx attachment

Entire View
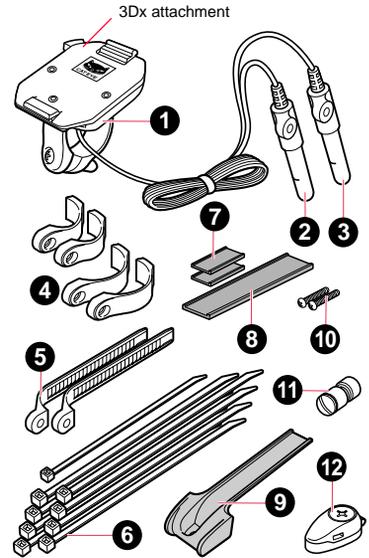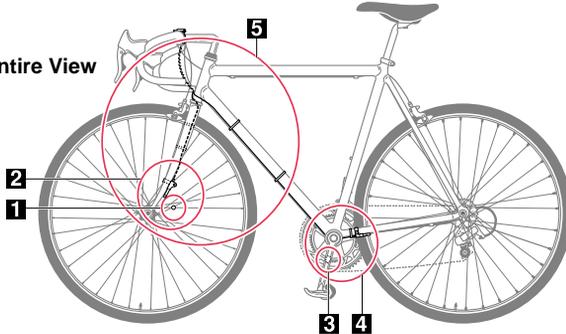
Important

A The clearance between the sensors ❷❸ and the magnets ⓫⓬ should be about 5mm.

5mm

Speed Sensor and
Wheel Magnet

5mm
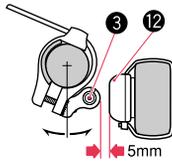
Cadence Sensor and
Cadence Magnet

B Align the center of the magnets ⓫⓬ and the sensor's marking line while rotating the wheel or crank.

**Caution:** Attach the sensor and the magnet within 10cm from the hub axle.

marking line
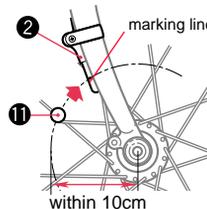
within 10cm

Speed Sensor and Wheel Magnet

Cadence Sensor and
Cadence Magnet

Magnet & Sensor

1 Use a coin to attach the wheel magnet ⑪ temporarily to the right side spoke of front wheel.

Caution: Attach the sensor and the magnet within 10cm from the hub axle.

Spoke
⑪
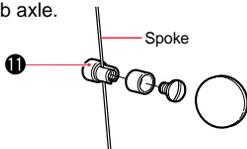
3 Attach the cadence sensor ③ temporarily to the left chain stay.

⑩
⑤
④
Chain stay
③
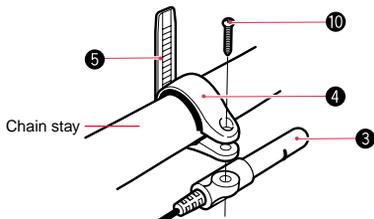
2 Attach the speed sensor ② temporarily to the right front fork. Adjust the sensor ② and the magnet ⑪ referring to the conditions A and B . After adjusting, tighten the screw ⑩ and the magnet ⑪.

Front fork
②
⑤
④
⑦ ⑩
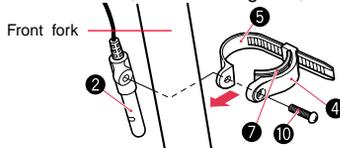
4 Attach the cadence magnet ⑫ to the crank. Adjust the position of the sensor and the magnet referring to the conditions A and B . After adjusting, fix the cadence magnet ⑫ with the adhesive tape and the nylon tie ⑥.

Crank
⑥
⑫
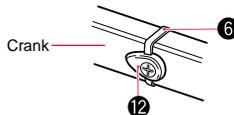
Reference:
If the clearance between spoke and front fork is wider than 5mm, mount the sensor band ③ and ④ in an opposite way as shown.
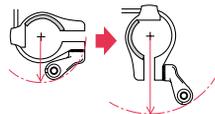

Wire

5 Secure the wire along the frame using the nylon ties ⑥ and wind it round the brake cable up to the handlebar.
Caution: Allow enough wire clearance in the area marked with ⇐.

①
⑥
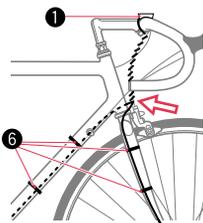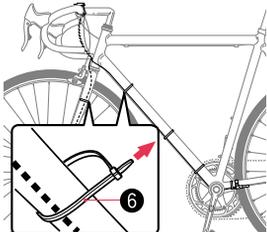
Bracket

Attach the bracket rubber pad with holder ⑨ to the bracket ① and mount it to the handle bar.
Reference: If it does not fit well, use the rubber pad ⑧.

①
⑨
front
⑨
⑧
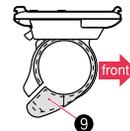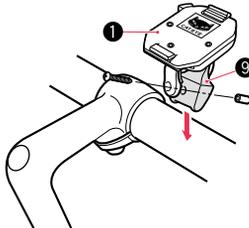
2 Attaching Chest Belt and Main Unit

Chestbelt Heart Rate Sensor

Before Wearing Chestbelt Heart Rate Sensor

WARNING!! Pacemaker users should not use this unit.

Caution: Attach the Chestbelt Heart Rate Sensor at the center of your chest. The electrode belts must be contacting your skin.
When wearing the chest belt heart rate sensor, ensure that the top mark on the transmitter comes to the top. If worn upside down, signal's transmittable distance might become shorter.
For the best results, it is recommended to moisten the electrode areas, or smear electrolytic cream, which is used for electrocardiograph.
If skin irritation occurs, the Chestbelt Heart Rate Sensor can be worn over lightweight underwear; in this case, always moisten the electrode areas.
Chest hair may prevent correct measurement.
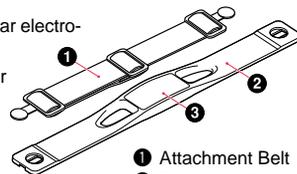
❶ Attachment Belt
❷ Electrode Belt
❸ Transmitter

How to wear Chestbelt Heart Rate Sensor

Top mark
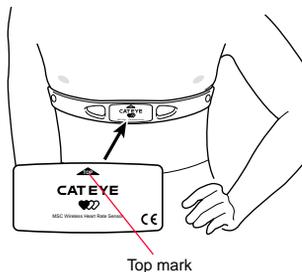
1. Adjust the length of the chestbelt to your chest size.
   Caution: Wear the chestbelt in comfortable way.
   If the chestbelt is too tight, you will feel pain during exercise.

2. Hook attachment belt to electrode belt at the front of your chest.
   Be sure to attach electrode area of the chestbelt to your skin closely.
   Reference: If you wear the chestbelt indirectly on the skin, moisten the electrode area for the best results. Dry skin will cause measurement error in winter, even if the chestbelt is attached to your skin directly.

3. Adjust the chestbelt so that the transmitter is placed at the front of your chest (under breast).
   Wear the chest belt heart rate sensor in the legible way (the top mark on the transmitter should come to the top).

MainUnit

Mount:

1. First hook the upper part of the unit. Then push the bottom part into the bracket while holding the lever. Release the lever and the unit is fixed into position.
   Caution: Be sure to push the lever when mounting the main unit. Never press the main unit forcibly onto the bracket.

2. Wind the wristband round the handlebar.
   **Caution:** When riding, do not touch the lever; the main unit might fall off.

Remove:

To remove the main unit, unwind the wristband and push the lever.

PUSH Hook
Release Lever
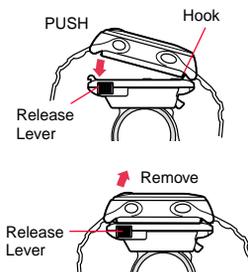
How to mount the unit to bicycle

Remove
Release Lever
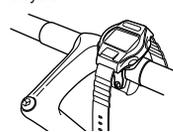
3 Setting up Main Unit

Input the wheel circumference of your bicycle into the main unit. Find out your bicycle's wheel circumference from the table below. If you cannot fine one, use the default figure " 2096" temporarily.

Name of Button

1-1

Select a Speed Scale

1-2

Setting the Wheel Circumference

1-3

"Elapsed Time TM"

1-4

The tire size is marked on the side of your tire.

Wheel Circumference = L	
Tire Size	mm
24 x 1	1753
24 x 3/4 Tubular	1785
24 x 1-1/8 Tubular	1795
24 x 1-1/4	1905
24 x 1.75	1890
24 x 2.00	1925
24 x 2.125	1965
26 x 1 (559mm)	1913
26 x 1 (650C)	1952
26 x 1.25	1953
26 x 1-1/8 Tubular	1970
26 x 1-3/8	2068
26 x 1-1/2	2100
26 x 1.40	2005
26 x 1.50	1985
26 x 1.75	2023
26 x 1.95	2050
26 x 2.00	2055
26 x 2.10	2068
26 x 2.125	2070
26 x 2.35	2083
27 x 1	2145
27 x 1-1/8	2155
27 x 1-1/4	2161
27 x 1-3/8	2169
650 x 35A	2090
650 x 38A	2125
650 x 38B	2105
700 x 18C	2070
700 x 19C	2090
700 x 20C	2086
700 x 23C	2096
700 x 25C	2105
700 x 28C	2136
700 x 30C	2170
700 x 32C	2155
700C Tubular	2130
700 x 35C	2168
700 x 38C	2180
700 x 44C	2224

(1) Initial Setting

The main unit has 6 buttons: SET/AT button, MODE button, LAP button, LT button, S/S button and AC button. (1 -1) Follow the instruction below for the initial setting.

1. Push AC button. Then the entire screen illuminates and gives a beep sound. Speed scale "**km/h**" flashes. Push the MODE button to switch between "**km/h**" and "**mph**". (1 -2)

2. Push SET/AT button to choose the desired speed scale. Then the wheel symbol Ⓛ appears and the initial figure 2096 flashes. (1 -3)

3. Input your bicycle's wheel circumference obtained from the above table. Push MODE button to increase the digits, and LAP button to decrease. (To increase/decrease rapidly, hold down the respective button.)

   Caution: This is just the temporary setting of the wheel circumference. For more accurate measurement, input the exact wheel circumference. When you want to change wheel circumference later, refer to "**Changing wheel circumference**" in page 13 of the user manual.

4. Push SET/AT button to fix the setting, and the screen shows "Current Speed ᗡᗡ" in the upper display, "Heart Rate ❤" in the middle display and "Elapsed Time TM" in the lower display (1 - 4). Initial setting is completed.

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(2) Basic Operations

Start and stop measurement

Push S/S button and the unit will start measuring "Elapsed Time TM". At the same time, calculation of "Trip Distance DST" and "Average Speed AVS" starts. The symbol of **bpm** in the middle display flashes while measuring. Push S/S button again and the unit stops measuring and calculation. "Current Speed ♂♂", "Heart Rate ❤", "Cadence ⌁", "Total Distance ODO", "Maximum Heart Rate MXP" and "Maximum Speed MXS" continue to be measured and displayed regardless of the start/stop.

Switching Functions

The upper display always shows "Current Speed ♂♂", and the middle display always shows "Heart Rate ❤". In the lower display, the selected function is displayed. Push MODE button to switch functions of the lower display. As illustrated below, the lower display changes as TM (Elapsed Time) –> Cadence C –> Clock 🕐 –> AVS (Average Speed) –> DST (Trip Distance). These five functions are called "Main functions", and each Main function has its corresponding Sub function. (Cadence does not have Sub function.) To switch from one Main function to its sub function, hold down MODE button. To go back to Main function, push MODE button. You can not switch the Sub function to one another.

Hold Down (2sec.) ➡
Just Push ➡

LP *Lap Count*

C (S) *Cadence (Current Speed)*

🕐 (S) *Clock Time (Current Speed)*

Sub Function

Main Function

MXP *Maximum Heart Rate*

TM *Elapsed Time*

AVS *Average Speed*

MXS *Maximum Speed*

DST *Trip Distance*

Sub Function

ODO *Total Distance*
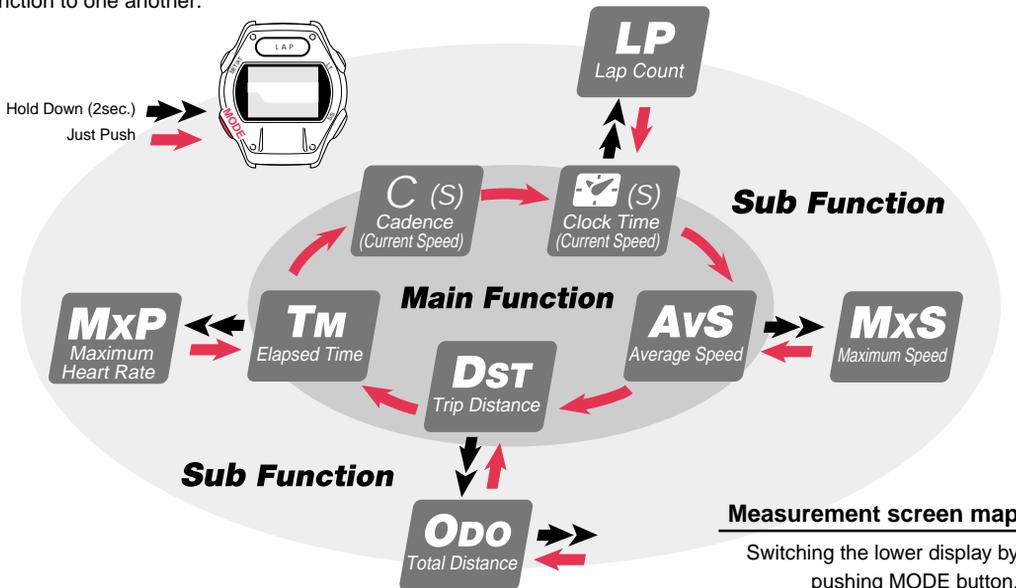
Measurement screen map

Switching the lower display by pushing MODE button.

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(3) Setting Clock Time 📧

If you chose "**km/h**" for speed scale, clock time is in 24h mode; if you chose "**mph**", clock is in 12h mode.

1. Before entering into the clock setting mode, see that the bpm symbol in the middle display is not flashing. If **bpm** is flashing, push S/S button to stop it.

2. Push Mode button to scan the lower display to show the "📧" icon. (**3**-1)

3. Push SET/AT button and the hour flashes. Increase them by pushing MODE button (to increase rapidly, hold down the button.) (**3**-2)

   Push S/S button and the minute flashes. Increase them by the same way as in 3. (**3**-3)

4. Push SET/AT button and clock setting is completed.
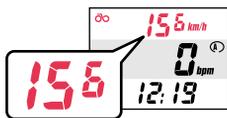
(4) Checking Sensors

Speed Sensor

Shows Current Speed

Spin the front wheel and see if the speed appears in the display.

Cadence Sensor

Press MODE button and navigate to Cadence in the lower display. Spin the crank reversely and check if Cadence starts counting.

Shows Cadence

If the speed and the cadence stays zero, the position of the sensor and the magnet is not correct. Re-adjust the position so that it meets the conditions $\boxed{A}$ and $\boxed{B}$ in "Bracket/Sensor installation"

Heart Rate Sensor

Shows Heart Rate
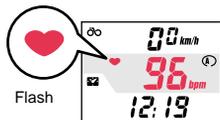
1. Wear the chestbelt sensor.

2. Stand by your bicycle. If the heart icon "●" does not flash, re-adjust the location of the Heart Rate Sensor according to the previous instructions.

Flash

**After checking the sensors, take a test ride and see how the unit works.**

The following features and operations are important when you use MSC-2Dx.

Auto time feature

When this function is on, "**AT**" icon appears. The main unit detects the wheel rotation and automatically starts/stops measurement. In the default state, this function is off. To switch on/off this function, push SET/AT button when the lower display is either "Elapsed Time TM", "Average Speed AvS" or "Trip Distance DsT".

Caution: When this feature is on, you cannot start/stop the measurement by button operation. Therefore this feature is useful only when riding bicycle. When you use this unit on your wrist as a heart rate monitor, turn off the Auto time feature.
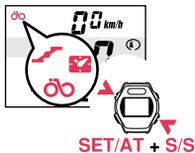
Changing Upper Display

In the Default State the upper display always shows "Current Speed ᚖᚖ". However, you can change it to Clock 🕑 or Cadence ⟋, by pressing SET/AT button and S/S button simultaneously. If Clock 🕑 comes up to the upper display, Current Speed ᚖᚖ comes down to the lower display and joins in the main function; in the same manner, if Cadence ⟋ comes up, Current Speed ᚖᚖ comes down.

*When Auto function is on, just push S/S button and the upper display changes from "Current speed ᚖᚖ" to "Clock time 🕑" or "Cadence ⟋".

Reset Operation

To reset the data of "Elapsed Time TM", "Average Speed AvS", "Maximum Speed MxS", "Maximum Heart Rate MxP" and "Trip Distance DsT", push S/S button and MODE button simultaneously.

Pace Arrow

When you are using the unit for cycling, the pace arrow appears in the right side of the lower display. The pace arrow indicates whether the current speed is higher or lower than the average speed. When the average speed is zero, no arrow appears.
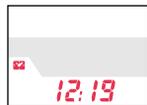
Power Saving Feature

When the main unit is left without receiving any signal or there is no button operation for about 15 minutes, power is shut down and the unit will be in "sleep" state, displaying only clock. By receiving signal from the wheel, or by a press of any button other than LT button, the screen returns to normal.

LT button

When you push this button, the screen will illuminate for 3 seconds.

MSC-2Dx provides you various functions such as "Record memory feature" and "Heart rate target zone". For more detail of these functions, read the user manual.