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-MT300, ED200, ST300 and AT100), you can use the same bracket and sensor; so you do not need parts installation. Just attach the 2Dx attachment on your bracket.

2. **Attaching Main Unit and Chest Belt**

3. **Setting up Main Unit**

4. **Other Important Features**

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

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

1. Bracket (Includes 2Dx attachment)
2. Speed Sensor
3. Sensor Band A (L/S)
4. Sensor Band B
5. Nylon Ties
6. Sensor Rubber Pad
7. Bracket Rubber Pad
8. Bracket Rubber Pad with Holder
9. Screw
10. Wheel Magnet

Important

The clearance between the sensor 2 and the magnet 10 should be about 5mm.

Align the center of the magnet 10 and the sensor’s marking line while rotating the wheel.

Magnet

Use a coin to attach the magnet 2 temporarily to the right side spoke of front wheel.
**Speed Sensor**

Attach the speed sensor temporarily to the right front fork. Adjust the sensor 2 and the magnet 10 referring to the above A and B. After adjusting, tighten the screw 9 and the magnet 10.

**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**

Secure the wire along the fork using the nylon ties 5 and wind it round the brake cable up to the handlebar.

**Caution:** Allow enough wire clearance in the area marked with ←.

**Bracket**

Attach the bracket rubber pad with holder 8 to the bracket 1 and mount it to the handle bar.

**Reference:** If it does not fit well, use the rubber pad 7.
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.

**How to wear Chestbelt Heart Rate Sensor**

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).

Main Unit

**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.
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.

(1) Initial Setting

The main unit has 6 buttons: SET/AT button, MODE button, LAP button, LT button, S/S button and AC button. (I -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”. (I -2)

2. Push SET/AT button to choose the desired speed scale. Then the wheel symbol appears and the initial figure 2096 flashes. (I -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” in the upper display, “Heart Rate” in the middle display and “Elapsed Time” in the lower display (I -4). Initial setting is completed.
(2) Basic Operations

Start and stop measurement

Push S/S button and the unit will start measuring “Elapsed Time ™”. 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 ♥", "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. The functions of the lower display are divided into the Main functions and Sub functions. Each Main function has its corresponding Sub function. To go back to Main function, push MODE button. You can not switch the Sub function to one another.

Measurement screen map

Switching the lower display by pushing MODE button.
Shows Current Speed

(4) Checking Sensors

Speed Sensor

- Spin the front wheel and see if the speed appears in the display.
  
  If the speed stays zero, the position of the speed sensor and the magnet is not correct. Re-adjust the position so that it meets the conditions A and B in “Bracket/Sensor installation”

Heart Rate Sensor

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.

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

(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.
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 øø". However, you can change it to Clock, by pressing SET/AT button and S/S button simultaneously (in this case "Current speed øø" comes down to the lower display and joins in the main function).

*When Auto function is on, just push S/S button and the upper display changes from "Current speed øø" to "Clock time ☑️".*

**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.