CAT EYE.

Cateye ATC

CYCLOCOMPUTER

MODEL CC-8000

INSTRUCTION MANUAL

MODE D'EMPLOI

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INSTRUCTION MANUAL
CATEYE ATC Model CC-8000

INDEX

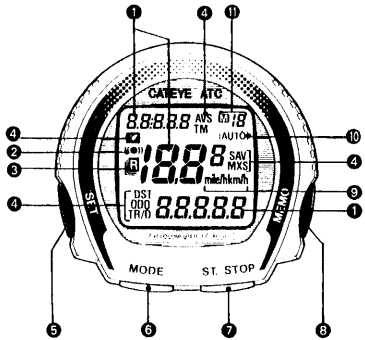
INTRODUCTION

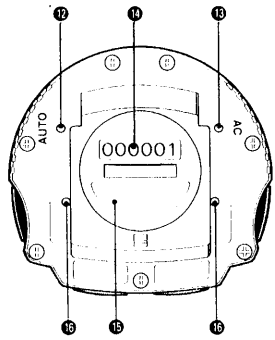
Thank you very much for purchasing a Cateye ATC Cyclocomputer Model CC-8000. The CC-8000 not only can display speed but also measures, stores, and displays total distance, trip distance, day basis trip distance, elapsed time, average speed, maximum speed and clock time. Furthermore, it has a memory function and automatic start/stop function. The CC-8000 is the first cyclocomputer specially designed for ATB's. It's compact yet durable and tough.

Set the distance scale (mile or km) and wheel circumference for your bike, and enjoy the accuracy you have just keyed in.

Before operation, thoroughly familiarize yourself with this manual so you can completely understand the functions of the CC-8000, and maximize cycling fun. Store this manual in a safe place for future reference.

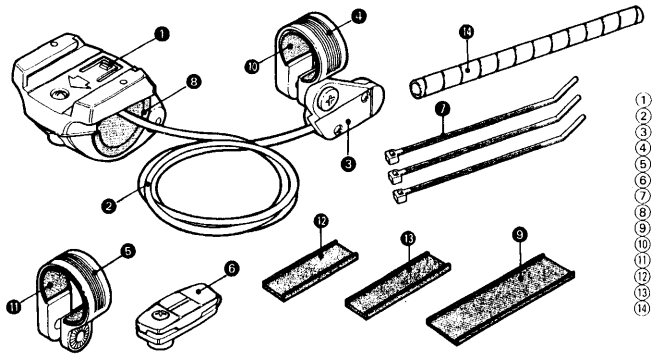
1 Main Unit





(1) Data Display
(2) Sensor Signal Display
(3) Memory Recall Symbol
(4) Mode Symbol
(5) Set Button
(6) Mode Button
(7) Start/Stop Button
(8) Memo (Memory) Button
(9) Distance Scale Symbol
(10) Auto (Automatic Start/Stop) Mode Symbol
(11) Memo No. Symbol
(12) Auto (Automatic Start/Stop) Button
(13) AC (All Clear) Button
(14) Serial Number
(15) Battery Case Cover
(16) Contacts

2 Accessories/Attachments



① Bracket
② Cable
③ Sensor
④ Sensor Band (Small)
⑤ Sensor Band (Large)
⑥ Magnet
⑦ Cable Clip
⑧ Bracket Rubber Pad (2.5mm)
⑨ Bracket Rubber Pad (1.0mm)
⑩ Sensor Band Rubber Pad (1.0mm) Short
⑪ Sensor Band Rubber Pad (1.0mm) Long
⑫ Sensor Band Rubber Pad (2.0mm) Short
⑬ Sensor Band Rubber Pad (2.0mm) Long
⑭ Spiral Tube

3 Main Unit Preparation

Fig. 1

Fig. 2

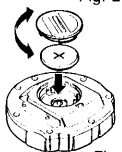


Fig. 3

The following must be completed before operating.
(A battery is already loaded in the main unit when purchased.)

● Setting the distance scale

Press the AC button at the rear of the main unit to clear all data. All displays will illuminate for 1 second. Then, "mile/h" alone will be displayed as shown in Fig. 1. "km/h" and "mile/h" are alternately displayed each time the start/stop button is pressed.
Select either as desired. Press the set button. The distance scale will be set and the value "2030" is displayed as shown in Fig. 2.

* How to replace the battery

Turn the main unit over, remove the battery case cover using a coin or similar opener as shown in Fig. 3. Put the unit in your palm battery box side up, and lightly strike the unit on to your other palm to remove the old battery. Insert a new lithium battery (CR 2032). Positioning the (+) pole upward as illustrated, place the battery properly into the case and close the cover securely.

● Setting the wheel circumference

(1) How to measure wheel circumference

Measure the radius R(mm) with the rider on the bicycle as shown in Fig. 4, and calculate the wheel circumference L(mm) using the following formula;

$L = 2\pi R = 6.283R(mm)$

* Table 1 in page 7 shows "Setting Values: Cross Reference Table" by L(mm) and wheel diameter D(inch).

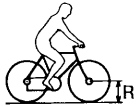


Fig. 4

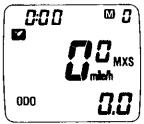


Fig. 5

Fig. 6

(2) Setting the wheel circumference

After setting the distance scale, 2030 is displayed as shown in Fig. 2, which is the wheel circumference for the ATB's 26 × 1.50.

When using "2030" without revision, press the set button, and "Display (A)" will appear. (See page 11).

To revise "2030", press the mode button or the start/stop button to increase or decrease the number by 1. When the button is held down, it will rapidly increase or decrease.

Select a number in the range of 10mm to 4000mm, according to your bicycle wheel circumference. When the desired number appears, press the set button. When the "Display (A)" appears, preparation is completed.

(3) Resetting or changing the wheel circumference

Press the mode button to switch the display screen to "Display (B)" mode. Press the start/stop button to put the unit in the stop mode. Press the set button. The wheel circumference number stored will appear to flicker. Follow the above (2) and set the desired wheel circumference number.

● Setting the 24HR clock time

1. Press the mode button for 2 seconds until "Display (C)" appears. (See Fig. 5.)
2. Press the start/stop button to put the unit in stop mode. * If the auto function is preset, press the auto button to switch off the AUTO symbol to release.
3. Press the set button. The set time stored appears, and the digits for "minutes" flicker. Press the start/stop button to advance the flickering digits by 1. When the start/stop button is pressed for over 2 seconds, it will rapidly increase. Flicker the digits which are ahead of the current time by one or two minutes.
4. Press the mode button. The digits for "hours" flicker. Press the start/stop button to advance the flickering digits. Press the set button. The "Display (C)" appears, and 24HR clock time setting is completed.

* When the set button is pressed, the time in "seconds" (undisplayed) turns to "0". For accurate 24HR clock setting, use your radio time signal on the hour.

TABLE 1. Setting Values: Cross Reference Table

L(mm): Circumference D(inch): Tire Diameter

D(inch)	L(mm)	D(inch)	L(mm)	D(inch)	L(mm)	D(inch)	L(mm)	D(inch)	L(mm)
20.0	1596	21.8	1740	23.6	1885	25.3	2017	26.9	2149
20.1	1602	21.9	1747	(ATB 24 × 1.75)	1888	25.35	2023	27.0 (700 × 32C)	2155
20.16	1608	21.97	1753	23.7	1891	25.4	2029	27.1	2161
20.2	1615	22.0	1759	23.8	1898	(ATB 26 × 1.50)	2030	27.17	2168
20.3	1621	22.1	1766	23.85	1904	25.5	2036	27.2	2174
20.4	1627	22.2	1772	23.9	1910	25.6	2042	27.3	2180
20.5	1634	22.3	1778	24.0	1916	(ATB 26 × 1.75)	2045	27.4	2186
20.55	1640	22.36	1784	24.1	1923	25.7	2048	27.5	2193
20.6	1646	22.44	1791	24.2	1929	25.75	2055	27.56	2199
20.7	1652	22.5	1797	24.25	1935	25.8	2061	27.6	2205
20.8	1659	22.6	1803	24.3	1942	25.9	2067	27.7	2212
20.87	1665	22.7	1810	24.4	1948	26.0 (650A)	2073	27.8	2218
20.9	1671	22.76	1816	24.5	1954	26.06	2080	27.9	2224
21.0	1678	22.8	1822	24.6	1960	26.1	2086	27.95	2231
21.1	1684	22.9	1828	24.65	1967	26.2	2092	28.0 (700B)	2237
21.2	1690	23.0	1835	24.7	1973	26.3 (650B)(ATB 26 × 2.00)	2099	28.1	2243
21.26	1696	23.1	1841	24.8	1979	26.4 (700 × 25C)	2105	28.2	2249
21.3	1703	23.15	1847	24.9	1985	26.46	2111	28.3	2256
21.4	1709	23.2	1854	24.96	1992	26.5 Tubular	2117	28.35	2262
21.5	1715	23.3	1860	(ATB 26 × 1.4)	1995	26.6	2124	28.4	2268
21.6	1722	23.4	1866	25.0	1998	26.7	2130	28.5	2275
21.65	1728	23.46	1872	25.1	2004	26.8 (700 × 28C)	2136	28.6	2281
21.7	1734	23.5	1879	25.2	2011	26.85	2143	28.66	2287

4 Magnet/Sensor Mounting

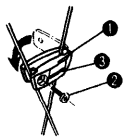


Fig. 7

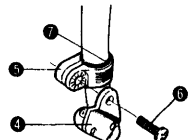


Fig. 8

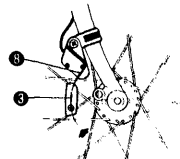


Fig. 9

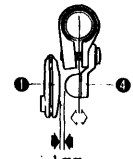


Fig. 10

(1) Magnet
(2) Screw
(3) Marking Line
(4) Sensor
(5) Sensor Band
(6) Screw
(7) Rubber Pad
(8) Marking Line

(1) Attach the magnet by clamping the right spokes of the front wheel (Fig. 7)
(2) Attach the sensor on the right side of the front fork. Use either the small or large sensor band, with 1mm- or the 2mm-thick rubber pad, whichever matches the tube diameter of your bicycle. (Fig. 8)
Fasten lightly the screw to allow position adjustment of the sensor.
(3) Align the marking lines of magnet and sensor. (Fig 9)
Make sure there is about 1mm clearance between them. (Fig. 10). Tighten the screw securely.

5 Bracket Mounting/Securing the Cable

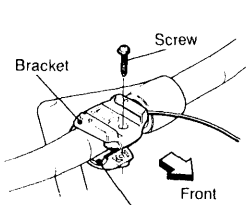


Fig. 11

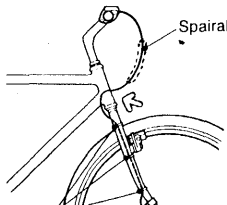


Fig. 12


Fig. 13

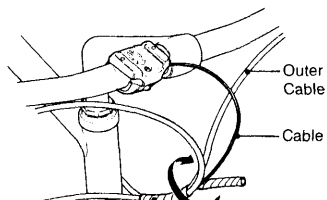


Fig. 14

Use either the 1mm- or 2.5mm-thick rubber pad if necessary, according to the handlebar diameter. Attach the bracket close to the handlebar stem. Tighten the screw so that the bracket cannot turn. (Fig. 11)

Clamp the cable with cable clips. (Fig. 12).
Pass the clip-end through the clip hole, and firmly pull the end with pliers or similar tool. Cut off the projecting part of the clip. (Fig. 13).
Lay the cable parallel to the outer cable, and wind the spiral tube around the cables. (Fig. 14).
Loosen the cable in the area marked with the arrow(⇕).

6 Main Unit Mounting

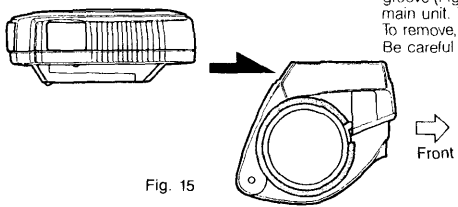


Fig. 15

Slide the main unit from the back to engage the lock hook of the main unit into the bracket groove (Fig. 15). Be sure to click the projection of the bracket into the depression of the main unit. The contacts are automatically connected.
To remove, pull the main unit backward and off.
Be careful not to touch buttons when mounting/removing the unit.

7 Test

Mount the main unit on the bracket. Raise the front wheel off the ground and spin the wheel to check whether the sensor signal symbol is switched on or off.
If the sensor signal symbol is not switched on or off, adjust the mounting positions of the sensor and magnet. (See 4. Magnet/Sensor Mounting in page 8.)

8 Measuring and Display Function

DISPLAY (A) SCREEN

TM Elapsed Time

The elapsed time is measured from the starting point to the current point, and is displayed in the upper section of the display screen.
It measures the elapsed time in 0.1 second unit under 1 hour, and in 1 second unit from 1 hour to 9 hours 59 minutes 59 seconds. When 10 hours have elapsed, the counter returns to zero for restart, measuring the elapsed time again in 1 second unit.

SPD Current Speed

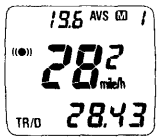
The current speed is displayed in the center of the display screen, and is updated once a second over a range of 0.0 (3.0) mile/h to 68.0 miles/h (0.0 (4.0) km/h to 109.0 km/h).
The upper limit of measurable speed on each wheel size is as shown in the following table.

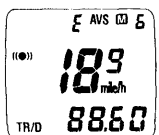
Wheel size	(inch)	ATB					Other tire					
		24 × 1.75	26 × 1.4	26 × 1.50	26 × 1.75	26 × 2.00	20	22	24	26	27	28
Wheel circumference	(mm)	1888	1995	2030	2045	2099	1596	1759	1916	2073	2155	2237
Speed limit	(mile/h)	63	66	68	68	70	53	59	64	69	72	75
	(km/h)	102	107	109	110	113	86	94	103	112	115	121

DST Trip Distance

The trip distance is calculated from the starting point to the current point and is displayed on the lower line of the display screen.
The range is 0.00 to 999.99 miles (km) in 0.01 mile (km) increments. When 1,000 miles (km) are reached, the trip distance returns to zero and counting begins anew.

DISPLAY (B) SCREEN





AVS Average Speed

The average speed is calculated on the basis of the elapsed time and trip distance from the starting point to the current point, and is displayed on the lower line of the display screen.
It is measurable up to 27 hours 46 minutes 39 seconds (99,999 seconds) for the elapsed time or 999.99 miles (km) for the trip distance. If either exceeded the range, "E" is displayed and calculation ceases. It is updated once every 10 seconds.

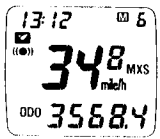
SPD Current Speed

The current speed is displayed in the center of the display screen.
This is the same as current speed on the "Display (A)" screen.

TR/D Trip Distance Per Day

The trip distance per day is the accumulated trip distance from scratch through the displayed clock time. It is shown in the lower section of the screen.
The range is 0.00 mile (km) to 999.99 miles (km) in 0.01 mile (km) increments. When the 24HR clock time reverts to zero, the trip distance per day is automatically reset. It cannot be reset by pushing any button.

DISPLAY (C) SCREEN



24HR Clock Time

The current time is displayed by a 24HR clock.

MXS Maximum Speed

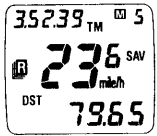
The maximum speed is stored in the memory and displayed in the center of the display screen. The range is 0.0 (3.0) mile/h to 65.0 miles/h (0.0 (4.0) km/h to 109.0km/h). The upper limit of measurable maximum speed is the same as the current speed.

ODO Total Distance (Odometer)

The total distance is continuously measured, accumulated, and displayed in the lower section of the display screen, which measures the total distance in 0.1 mile (km) increments under 10,000 miles (km), and in 1 mile (km) increments from 10,000 miles (km) to 99,999 miles (km).
When 100,000 miles (km) are reached, the total distance returns to zero and counting begins anew.

DISPLAY (D) SCREEN

(For Memory Recall Only)



TM Elapsed Time

The elapsed time from the starting point to the point where the memory button was pressed is displayed in the upper section of the display screen. The display range and increments are the same as the elapsed time on "Display (A)" screen.

SAV Split Average Speed

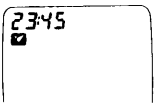
The split average speed is the average speed based on the elapsed time and trip distance from the last point to the current point when the memory button is pressed.

DST Trip Distance

The trip distance from the starting point to the point where the memory button was pressed is displayed in the lower section of the display screen. The display range and increments are the same as the trip distance on "Display (A)" screen.

* Refer to "Memory Function" on page 17.

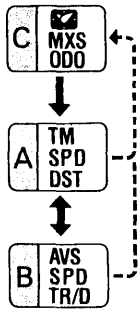
DISPLAY (E) SCREEN



☑ 24HR Clock Time

The clock displays the current time. If no signal is received for over 10 minutes, only the clock time is displayed on the screen so as to save power consumption. Any signal which is received using the button or the sensor will trigger the display screen to revert to "Display (A)".

9 Button Functions

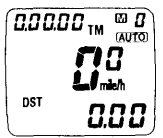


- **Mode Button (MODE)**
  Each press of this button converts the screen to "Display (A)" or "Display (B)" alternatively. If the mode button is held down for over 2 seconds when the screen is in either the "Display (A)" or "Display (B)" mode, the screen will change to "Display (C)".
- **Start/Stop Button (ST./STOP)**
  When this button is pressed, measurement of the trip distance and elapsed time is simultaneously started or stopped. While the unit is in operation, the distance scale symbol flashes.
- **Memo (Memory) Button (MEMO)**
  Each time this button is pressed, the elapsed time, trip distance and split average speed from the starting point to the present point are stored in the memory. A record of 10 separate time segments can be stored.
  The number of stored segments is displayed after the M mark on the display screen. In "Display (D)" mode, each press of this button recalls the next stored memory segment.
  * Refer to "Memory Function" on page 17.
- **Set Button (SET)**
  This button is used for setting the wheel circumference, clock time, and for converting the screen to "Display (D)".
- **Auto (Automatic Start/Stop) Button (AUTO)**
  This button is used to preset the automatic start/stop mode. Each press of this button switches on or off the mode. When the automatic start/stop mode is on, the AUTO symbol is displayed on the display screen.
  * Refer to "Auto Function" on page 16.
- **AC Button (AC)**
  This button is used to clear all preset data and any irregularity.

○ **Reset**
When the mode button and start/stop button are pressed simultaneously, the trip distance, elapsed time, average speed, maximum speed and the memory stored in memo (M) are cleared.

○ **All Clear**
When the AC button is pressed, the preset wheel circumference, clock time and odometer are all cleared, and all displays illuminate for 1 second. Then, the mile/h symbol illuminates.
This operation should only be attempted after replacing the battery, or when irregular displays of information occur. After the all clear operation is accomplished, set the distance scale and wheel circumference once again according to "Main Unit Preparation" on page 5 and 6.

10 Auto Function



- The CC-8000 has an automatic start/stop function (Auto function). This auto function switches the unit to start or stop automatically. You don't need to press the start/stop button each time. When the auto button is pressed, and the AUTO symbol appears on the display screen, the auto function is in use.
- When the auto function is in use, the elapsed time is measured, excluding stop time and resting time.
- When the auto function is in use, the start/stop button doesn't function. Elapsed time (TM) increments become 1 second.
- Even if the display screen is in "Display (D)" mode (Memory Recall Screen), the auto function will be still in use.
- To release the auto function, press the auto button to switch off the AUTO symbol on the display screen.

11 Memory Fucntion

Each press of the memo button memorizes the trip distance, elapsed time and split average speed up to 10 separate time segments. The number of separate time segments is displayed after the M mark on the display screen.

- How to use: (See the following chart)
  1. Make sure the unit is in stop mode. Press the mode button and start/stop button simultaneously to reset.
  2. When you start, press the start/stop button. When you reach check points (A) – (E), press the memo button each time. (If you rest after reaching point (C), press the memo button and press again when you depart from point (C).)
  3. When you reach destination point (F), press the start/stop button to stop the unit.
     The elapsed time and the trip distance from the starting point to each check point, and the split average speed from each point to the next will be in the memory. Also you can find the resting time, too.

  NOTE: In the auto function, the above example doesn't apply.

Check points	Starting point	Point (A)	Point (B)	Point (C)		Point (E)	Destination Point (F)
	When starting	Passing	Passing	Arriving	Departing	Passing	Arriving
Buttons to press	ST/STOP	MEMO	MEMO	MEMO	MEMO	MEMO	ST/STOP
Memory segments	M 0	M 1	M 2	M 3	M 4	M 5	M 7

- When the start/stop button is used to put the unit in stop mode, it functions as the memo button to memorize the trip distance, the elapsed time and the split average speed. (In the above example, the memory function was used 7 times.)
- When the auto function is preset, the resting time cannot be measured by using the memory function because when the bicycle stops, so does the elapsed time function. And the split average speed is calculated on the basis of trip distance and elapsed time excluding the time when a bicycle is not moving. Also, be sure to press the memo button when you reach destination point (F).

○ The memory function will not function in the following cases.
- The elapsed time (TM) has passed 20 hrs.
- Stored memory has exceeded the ten storage slots.
- The display screen is in "Display (D)" mode.

● How to recall the memory

1. Switch the display screen to "Display (A)". Press the set button. The display screen reverts to "Display (D)". The memo number M1 is displayed in the upper righthand corner of "Display (D)" screen. The elapsed time at point A, the split average speed from starting point to point A, the trip distance from starting point to point A are all displayed in the upper section, in the center section and in the lower section respectively.
2. Press the memo button. The memo number M2 is displayed and the stored memory from point B is recalled. That is, the elapsed time at point B, the split average speed from point A to point B, and the trip distance from starting point to point B are displayed.
3. Each press of the memory button advances the memo number of M by one. Press the memo button to recall the stored memory at each point and check it.
4. After checking the memory, press the set button. The display screen turns to "Display (A)".

● Note:

1. Before converting to "Display (D)" screen, ensure that the screen is "Display (A)" and press the set button. If the set button is pressed in the stopped mode of "Display (B)" or "Display (C)", the display screen will turn to the wheel circumference setting mode or 24HR clock setting mode.
2. If the mode button and the start/stop button are pressed simultaneously, resetting is accomplished and all stored memory is erased.
3. If the memo button is pressed a second time within 5 seconds, the split average speed (SAV) cannot be calculated and the "E" mark is shown.
4. If the total elapsed time is over 10 hrs, display increments change from 1/10 second to 1 second.
5. "Display (D)" will show the memory recall even if unit is in the start mode. However, when the display screen is in "Display (D)" mode, maximum speed (MXS) cannot be updated.
   When bicycle stops, the split average speed (SAV) may display abnormal readings. In this case, press the memo button to advance the memory number M in order to bring it around. Then, the readings become normal.

12 Trouble Shooting

The following situations do not indicate malfunction of the CC-8000. Check the following before taking it for repairs.

Trouble	Check Items	Remedy
The entire liquid crystal screen is dark and unusual display is seen where it should not be.	Wasn't it left for a long time under direct sun?	It returns to normal state if left in the shade. No adverse effect on data.
Display response is slow.	Isn't it at a low temperature under 32°F (0°C)?	It returns to normal state when temperature rises.
No display	Hasn't the Lithium Battery worn out?	Replace the Lithium Battery with a new one.
Incorrect data appears		Execute "All Clear" operation (Page 16).
Current speed does not appear.	Isn't there anything on the contact of the main unit or of the bracket?	Wipe the contact clean.
	Isn't the distance between sensor and magnet too far?	Refer to "Magnet/Sensor Mounting" (Page 8), and re-adjust correctly.
	Are the marking lines of the sensor and magnet matched each other?	
	Isn't the cable broken?	Connect and solder the cable, keeping correct insulation between the 2 cables. Or, replace the Bracket & Sensor part with a new one.

Trouble	Check Items	Remedy
The speed display doesn't change.	Is the display in the "Display (C)" mode?	In the "Display (C)" mode, the maximum speed is displayed.
	Is the display in the "Display (D)" mode?	In the "Display (D)" mode, the split average speed is displayed.
When the start/stop button is pressed, the unit doesn't activate or stop.	Is the unit in the automatic start/stop mode?	Press the auto button at the back of the main unit to release the automatic start/stop mode. (Refer to "Auto Function" on page 16.)
When the memo button is pressed, the display doesn't increase the memo number.	Is the elapsed time over 20 hours?	Press the mode button and the start/stop button simultaneously to reset.
	Is the memo number over 10 times?	
When the mode button is pressed, the display screen doesn't change modes.	Is the display in "Display (D)" mode?	Press the set button to switch the display from "Display (D)" to "Display (A)".

Caution/Maintenance

- Do not leave the main unit exposed to direct sunlight when the unit is not in use.
- Do not disassemble the main unit and/or its accessories.
- Do not pay too much attention to your ATC while riding. Keep your eyes on the road and give due consideration to traffic safety.
- Check the position of the sensor and wheel magnet periodically.
- If the main unit and/or the accessories become dirty, wipe first with a cloth and a neutral detergent. Then, wipe with a dry cloth. Do not use thinner, alcohol, or benzine.

Specifications			
Function	Elapsed Time	TM	0'00"0 ~ 59'59"9 1:00'00" ~ 9:59'59"
	Current Speed	SPD	0.0(3.0) ~ 68.0 miles/h 0.0(4.0) ~ 109.0 km/h (ATB 26 × 1.50)
	Trip Distance	DST	0.00 ~ 999.99 miles or km
	Average Speed	AVS	0.0 ~ 68.0 miles/h or 109.0 km/h
	Trip Distance Per Day	TR/D	0.00 ~ 999.99 miles or km
	24HR Clock Time		0:00' ~ 23:59'
	Maximum Speed	MXS	0.0(3.0) ~ 68.0 miles/h 0.0(4.0) ~ 109.0 km/h
	Total Distance	ODO	0.0 ~ 99999 miles or km
	Split Average Speed	SAV	0.0 ~ 68.0 miles/h or 109.0 km/h
	Memo No.	M	TM, DST & SAV of up to 10 time segments.
Controller	4-bit 1-chip Microcomputer (Crystal Controlled Oscillator)		
Display	Liquid Crystal		
Sensor	No Contact Magnetic Sensor		

Specifications		
Power Supply		Lithium Battery (CR 2032) × 1
Operating Temperature Range		0°C ~ 40°C (32°F ~ 104°F)
Storage Temperature Range		−20°C ~ 50°C (−4°F ~ 122°F)
Applicable Wheel Circumference		10mm ~ 4000mm
Standard Accuracy	Elapsed Time	±0.003%
	Current Speed	±0.1 mile/h or km/h
	Trip Distance	±0.1%
	Average Speed	±0.1 mile/h or km/h
	Trip Distance Per Day	±0.1%
	24HR Clock Time	±0.003%
	Maximum Speed	±0.1 mile/h or km/h
	Total Distance	±0.1%
	Split Average Speed	±0.1 mile/h or km/h
Battery Life		Approx. 2 ~ 3 years *The life of the first factory-loaded battery may be shorter than this period.
Dimension/Weight		2-5/32" × 2-9/32" × 7/8" (55 × 58 × 22mm) / 1.59 oz (45g)

The specifications and design are subject to change without notice.