PERFORMANCE
CM500
Ten-function Cycle Computer

CM500
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CM500

(Front Cover)

INTRODUCTION

Thank you for choosing the Performance CM-500 Cycle computer. It is designed to provide you with accurate and useful information to monitor your cycling performance.

Features of the CM 500 Ten-Function Cycle Computer:

- Quality construction, easy installation, and simple operation
- Large, easy-to-read non-glare display
- Current speed displayed in all functions
- Four critical functions displayed simultaneously: Current, Average, and Max Speed & Current Cadence
- Cadence functions: current, maximum, and average calculations
- Function-specific reset operations
- Water resistant

Please follow instructions carefully, taking time to familiarize yourself with before installing the unit.
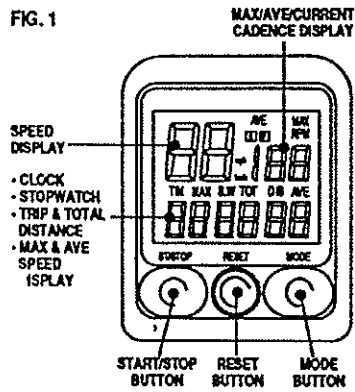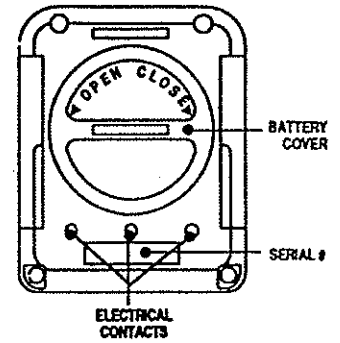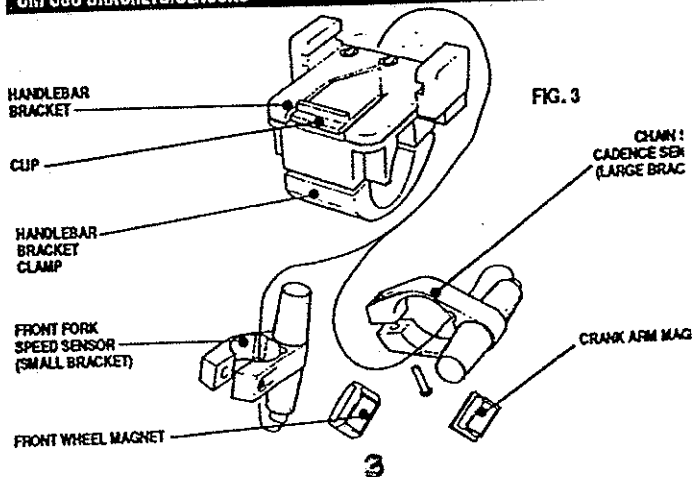
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CM 500 COMPUTER:

FIG. 1

MAX/AVE/CURRENT CADENCE DISPLAY

FIG. 2

SPEED DISPLAY

- CLOCK
- STOPWATCH
- TRIP & TOTAL DISTANCE
- MAX & AVE SPEED DISPLAY

START/STOP BUTTON   RESET BUTTON   MODE BUTTON

BATTERY COVER

SERIAL #

ELECTRICAL CONTACTS

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CM 500 BRACKETS/SENSORS

FIG. 3

HANDLEBAR BRACKET

CLIP

HANDLEBAR BRACKET CLAMP

FRONT FORK SPEED SENSOR (SMALL BRACKET)

FRONT WHEEL MAGNET

CHAIN CADENCE SEN (LARGE BRAC

CRANK ARM MAG

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CM 500 SETUP

BATTERY INSTALLATION

With a coin or large screwdriver, turn the battery cover (Fig. 2) 1/8 turn to the left. Remove cover. Insert battery with positive (+) side facing up. The unit should then display "km/h" and "140".

Press and hold the ST/Stop, Reset, and Mode buttons simultaneously for 2 seconds to assure the computer is reset. (Note: Doing this at any time will reset all of the computer's functions and erase all memory.)

To determine how your speed and distance will be measured, select either MPH (miles per hour) or KM/h (kilometers per hour) by pressing the Reset button.

WHEEL SIZE CALIBRATION

Measure your bicycle's tire size. The tire size can be measured two ways. You may use either of the following methods to determine this size. You may also use the reference chart on (fig.7). Note: Due to inconsistencies between different tire manufacturers, measuring your specific tire will give you more accurate results. For accuracy in speed and distance computation we recommend using the rollout method.

1. THE ROLLOUT METHOD is used to measure the tire circumference (distance around the tire). To use this method find a smooth area of sidewalk or concrete about 10 ft. long. Rotate the front wheel so that the valve stem is at the bottom of the tire. Adjacent to the point of the

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CADENCE MAGNET

BOTTOM BRACKET

LEFT CRANK ARM

NYLON ZIP TIE

FIG. :

CADENCE SENSOR
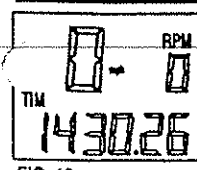
RI SPACER OPTIONA

LEFT CHAIN STAY

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FIG. 10

TIM (Time of day) Display:
Shows: Current time Hours:Min:Seconds, Current Speed, Current Cadence (Fig. 10).
To Reset Seconds to Zero: Press and hold Reset for 2 seconds. Seconds will flash. Press Reset again to set seconds to zero. Press Mode to enter.
If seconds are 0-29, minutes will remain the same.
If seconds are 30-59, minutes will advance one.

MAX/AVE (Maximum and average speed) Display:
Shows: Current Speed, Current Cadence, Max Speed, and Average Speed (Fig. 11).
To Reset Max Speed, press and hold reset for 2 seconds. To reset the average speed, reset the stopwatch.
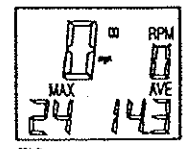*NOTE: For the CM 500 to compute the average speed, the Stopwatch must be started.*
If you stop riding and the Stopwatch is still running, your Average Speed reading will slowly decrease. Stop the Stopwatch to maintain your average reading when the bike is not moving.
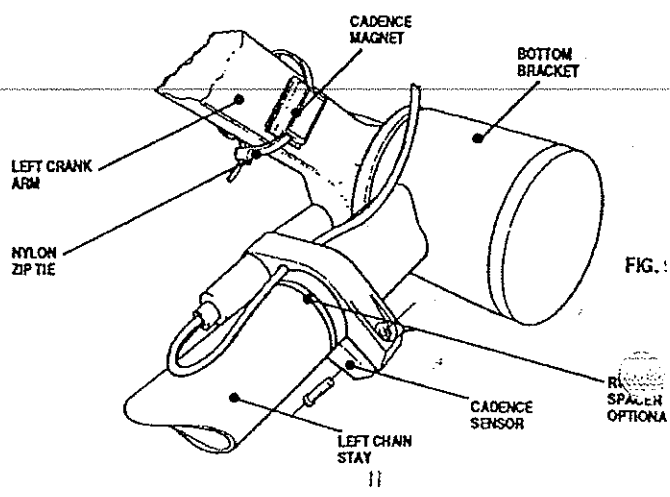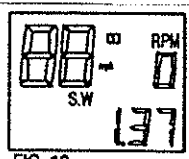
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FIG. 11

FIG. 12

SW (Stop watch) Display:
Shows: Current Speed, Current Cadence, and StopWatch (Hrs:Min:Sec) (Fig. 12)
To start and stop StopWatch, press the ST/Stop button. You ma and stop the stopwatch from any screen. A StopWatch indicator 'S visible whenever the Stopwatch is on.
To reset the Stopwatch press the ST/STOP button to stop t Stopwatch, and then press and hold Reset for 2 seconds whi in the SW mode.

NOTE: Whenever the stopwatch is reset, the Average Speed, Average Cadence, and Trip Distance are also reset.

TOT (Total distance) Display:
Shows: Current Speed, Current Cadence, and Total Distance (odometer) (Fig. 13).
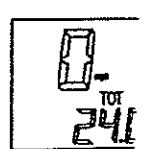To reset Total Distance (odometer), press and hold reset for 2 seconds.

FIG. 13

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DIS (Trip distance/Cadence) Display:
Shows: Current Speed, Trip Distance, and Current, Max, or Average Cadence (Fig. 14, 15 & 16).
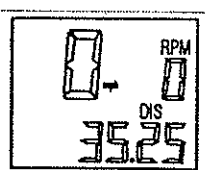*NOTE: Stopwatch must be running for the trip distance to be calculated.*
To toggle between Current, Max, or Average Cadence, press the Reset button.
To reset Max Cadence, press and hold the Reset button for 2 seconds while DIS and current cadence are shown on the display.
To reset trip distance, reset the stopwatch. The trip distance, average speed, and average cadence will all be reset to "0".
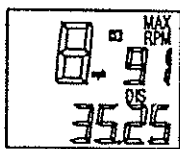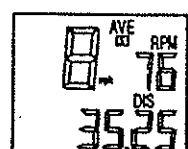

FIG. 14

FIG. 15

FIG. 16

NOTE: Stopwatch must be running for the Average cadence to be calculated.
If you stop riding and the Stopwatch is still running, your Average Cadence reading will slowly decrease. Stop the Stopwatch to maintain your average reading.

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A. Speed and/or Crank rotation data are not being displayed.
1. Make sure distance between sensors and magnets is no greater than 2 mm.
2. Make sure alignment between magnets and sensors is correct.
3. Make sure the computer is mounted correctly in the bracket.
4. Make sure the wiring has not been cut or otherwise damaged.

B. Display is blank or very light.
1. Make sure battery is installed correctly.
2. Try a new battery.

C. Display becomes dark or black.
1. The unit is too hot.

D. Unit operates slowly or sluggishly.
1. The unit is too cold.

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S.W.	Elapsed time (hrs, min, sec)	00.00.00-99.59.59
DIS	Trip distance	0.00-999.99 km or 0.00-624.99 mi.
TOT	Total distance (odometer)	9999.9 km or 6249.9 mile
MPH/KPH	Current Speed	0-99 km/h or 0-62 mph
MAX	Maximum Speed	0-99 km/h or 0-62 mph
AVE	Average Speed	0-99 km/h or 0-62 mph
RPM	Current cadence	0-199 rpm
AVE RPM	Average cadence	0-199 rpm
MAX RPM	Maximum cadence	0-199 rpm
TIM	24 Hr. clock (hrs, min, sec)	00.00.00 - 23.59.59
Processor	Single chip	4-bit
Battery	(CR-2032) Lithium	1 required
Temperature	Operation	0°C-40°C (32°F-104°F)
	Storage	20°C - 50°C (-4°F - 122°F)
Sizes	Circumference	140-249 cm
	Diameter	18-28 in
Dimensions	H x W x D	58 x 47 x 19 mm
Weight	Including hardware & battery	92 g.

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tire's contact with the pavement, make a mark on the pavement at the tire's point of contac. Stand up beside your bike and roll it forward in a straight line until the valve stem is again : the bottom of the tire. Make a second mark on the pavement. Measure the distance betw the two marks to determine the tire's circumference. Measure in centimeters, or me͏͏...re t distance in inches and multiply by 2.54 to convert the measurement to centimeters.

2. THE RADIUS METHOD uses the radius (half the distance across the tire) to calculate t circumference. To use this method lean your bike securely against a wall making sure tha is perpendicular to the ground. Measure in inches (to the nearest sixteenth of an inch) the distance from the front tire's point of contact with the ground to the exact center of the from axle. Make sure that the measuring device is also perpendicular to the ground. This distan is the radius. Multiply the radius by 2 to determine the tire's diameter. Multiply the diamete by 2.54 to convert the measurement to centimeters. Multiply the resulting figure by 3.1416 to calculate the circumference.

Note: For more accuracy, have the rider sit on the bike when making the radius measurement.

EXAMPLE CALCULATION FOR WHEEL SIZE (METHOD 2)

Radius inches	= 13 1/8 (13.125)inches
Diameter inches	= 13 1/8 (13.125) x 2 = 26 1/4 (26.25)inches
Diameter cm.	= 26 1/4 (26.25)inches x 2.54 = 66.675cm
Circumference cm.	= 66.675cm x 3.1416 (pi) = 209.47cm
Round off number;	use 209 for wheel size setting

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ENTERING THE WHEEL SIZE

Using the results from the previous tire measurement (rollout or radius methods described above) or from the chart (pg. 7), enter the size of your tire. The tire sizes are displayed two ways: the circumference is displayed in the lower right corner of the display. The default setting is 140 centimeters. To increase the setting press the ST/Stop button. As you move up the scale, the computer will display large numbers in the upper left corner. These indicate tire FIG. 4 diameters in inches. You can use this as a secondary check of your circumference calculation, but for accuracy, we recommend using the rollout or radius methods to determine circumference. Press Mode once you have reached the correct setting. If you make an error, reset the computer and try again. After entering the correct wheel size, record the setting on page 17.
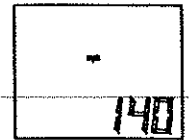
FIG. 4

SETTING THE CLOCK:

The 24 hour clock display should now be displayed. Set the hours by pressing ST/Stop. Set minutes by pressing Reset. Set time by pressing Mode.

Note: To reset the clock, the CM500 must be reset (pg. 4) as this will erase your total distance from memory, record your total distance on page 17 before resetting.

Your computer is now ready for installation.

FIG. 5

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Note: Tire sizes are molded into tire sidewalls.

This table is based on popular tire brands at recommended inflation pressure with a rider weight c 150lb (68kg). If your tire is not included or if you want to account for your particular combination of weight, tire pressure, and tire brand, measure your tire circumference according to one of the methods described previously.

Tire size	Circumference (cm)	Tire size	Circumference (cm)
20 x 1.75	153	700 x 18	208
24 x 1	175	700 x 20	206
24 tubular	176	700 x 25	209
26 x 1	191	700 x 28	210
26 tubular	193	700 x 32	211
26 x 1.25	197	700 x 35	214
26 x 1.5	197	27 x 7/8	208
26 x 1.9-1.95	205	27 x 1	210
26 x 2.1-2.2	207	27 x 1 1/8	212
26 x 1 3/8	207	27 x 1 1/4	214

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MOUNTING COMPUTER TO THE HANDLEBARS

Remove the two screws from the handlebar bracket. Attach the mounting bracket to the center section of the handlebar close to the stem. Use a rubber spacer if needed. Slide computer ͏to the bracket until icks into place.

FIG. 6

CLIP

CM 500

RUBBER SPACER (OPTIONAL)

SCREWS

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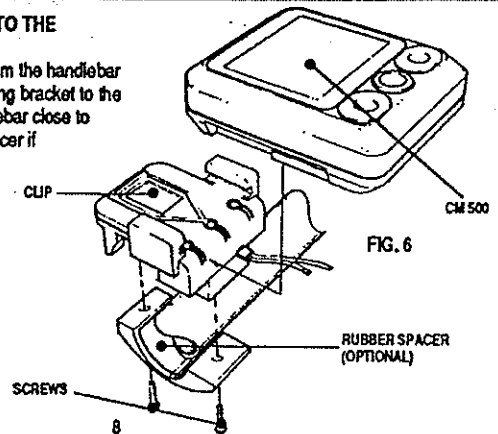## MOUNTING THE SPEED SENSOR

Mount the Speed sensor magnet to the spokes of the front wheel as close to the hub as possible.

Note: The magnet and sensor can be mounted on either side of the fork.

Straighten out any kinks in the wire between the handlebar bracket and the Speed sensor.

Mount the sensor to the fork as shown. Use a rubber spacer if necessary. Adjust the sensor so the magnet passes no more than 2 mm from the sensor. Both the upper and lower parts of the sensor are active, but not the center. Spin the front wheel to determine that the speed data is being picked up by the computer. Speed reading should appear after 2-3 seconds. Reposition sensor if necessary, until the data is being picked up. Tighten the sensor.
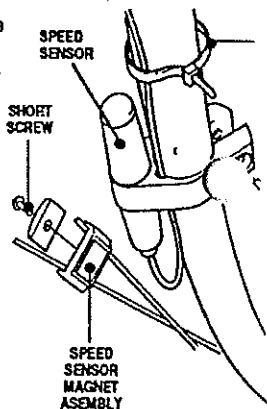
SPEED SENSOR

SHORT SCREW

SPEED SENSOR MAGNET ASSEMBLY

FIG. 7

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MOUNTING THE CADENCE SENSOR

Straighten out any kinks in the wire between the handlebar bracket and the Cadence sensor. Mount the Cadence sensor to left chain stay as shown in figure 9. Use a rubber spacer if necessary. When installed correctly, the cadence magnet and cadence sensor should pass no more than 2mm from each other (Fig. 8).

Mount the Cadence sensor magnet to the inside of the left crank arm using the adhesive pad on the magnet. ͏Rotate the crank backwards and determine that cadence is being picked up by the computer. Reposition magnet and sensor until the cadence data is being picked up. After sensor and magnet are properly positioned, tighten the sensor and secure the magnet with the nylon cable tie.

Bundle and secure extra cable to bike frame as necessary. Make sure that cable allows full rotation of handlebars. Clip the ends off of all Nylon cable ties.
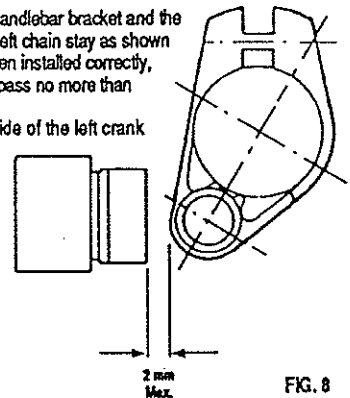
Your computer is now ready for use.

2 mm Max.

FIG. 8

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NOTES

Use this space to record data that will be lost if you change your battery or if your CM500 is accidentally reset. Also record your serial number as a record in case your bike or computer should be stolen.

INFORMATION

Wheel Circumference	Serial #

BATTERY CHANGES & RESETS

Date	Total Distance	Date	Total Distance

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PERFORMANCE BICYCLE SHOP
P.O. Box 2741
Chapel Hill, NC 27514

(Back Cover)