RECUMBENT TYPE
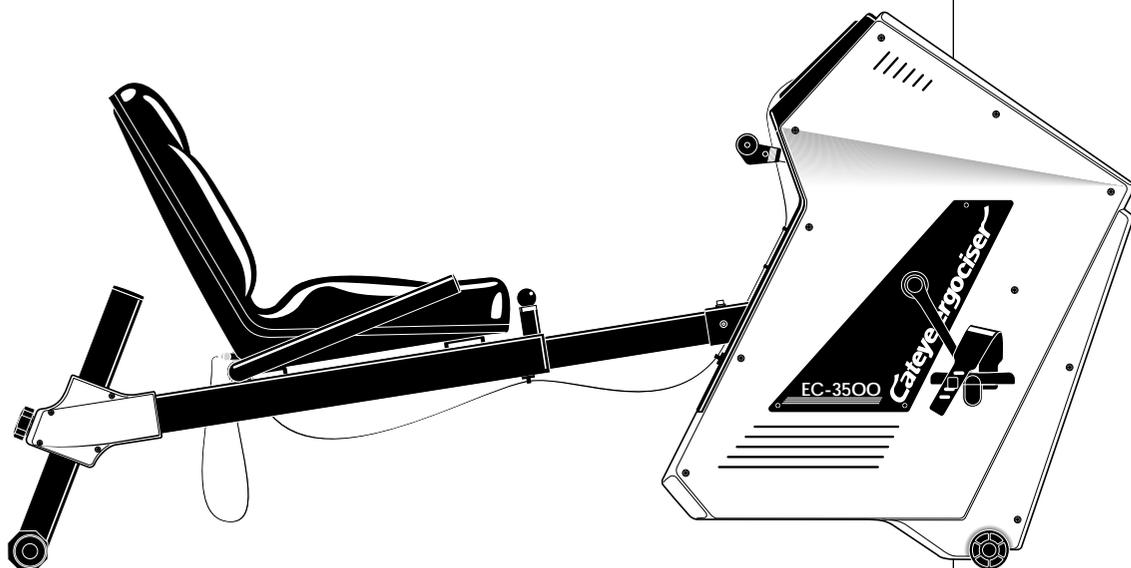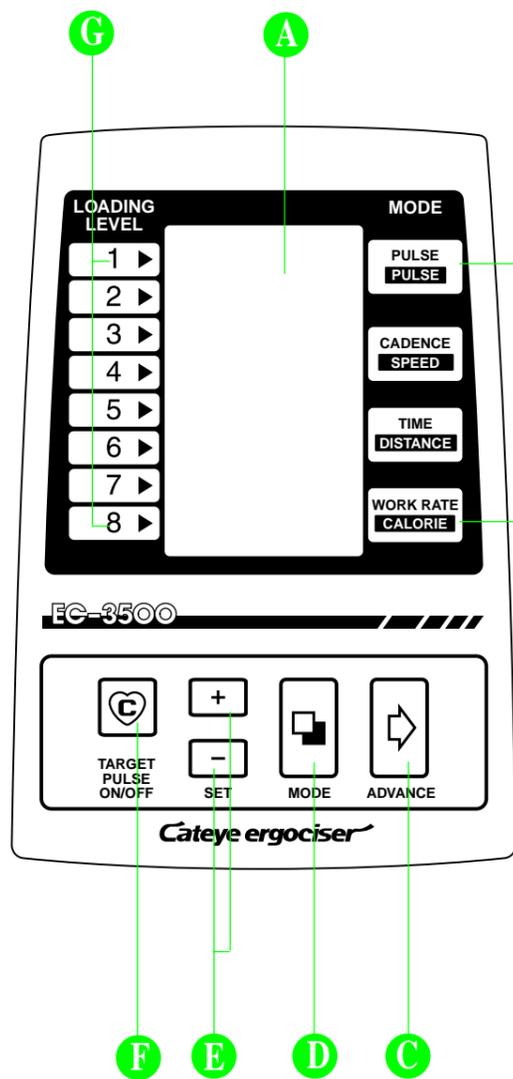# Cateye ergociser

MODEL EC-35OO
OPERATING INSTRUCTIONS

EC-35OO

RECUMBENT TYPE

Cateye ergociser

EC-35OO
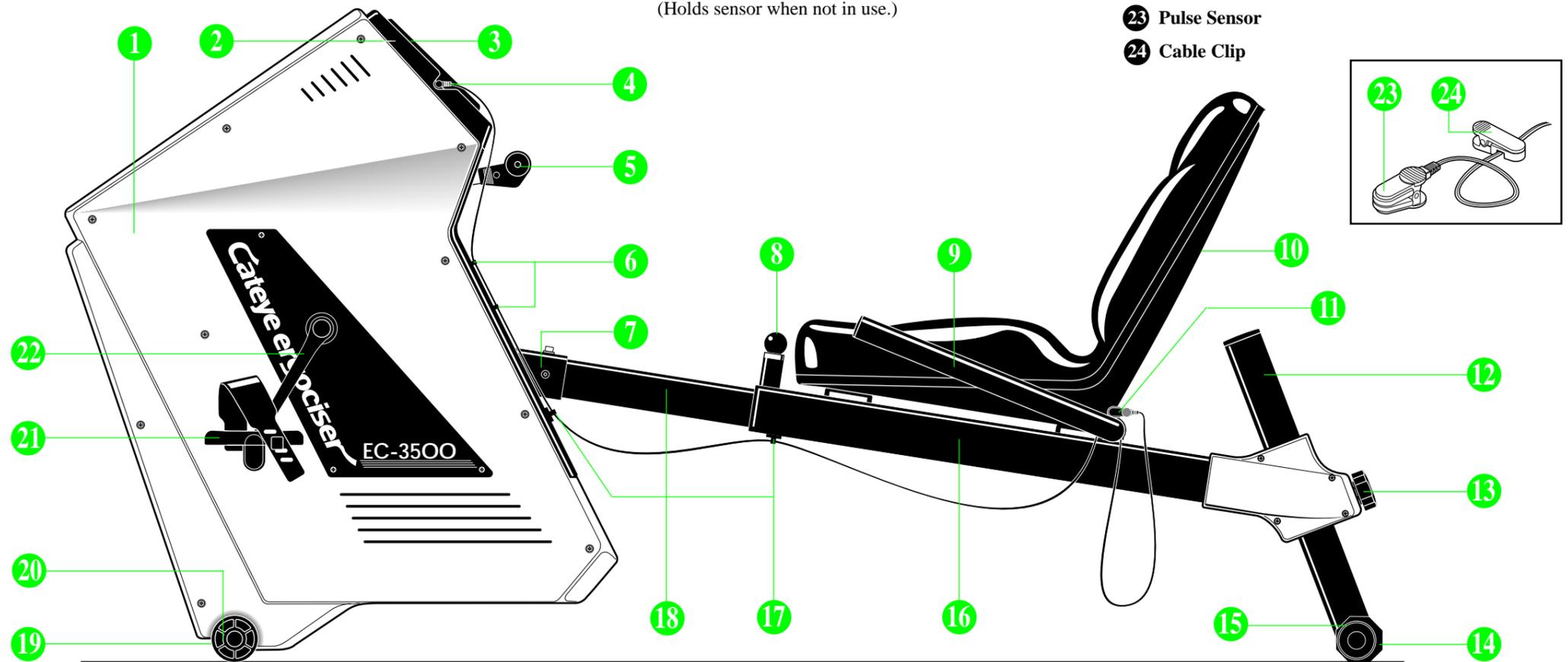
ANATOMY OF THE EC-3500

Control Panel

A Display screen

B Mode
(Indicates what each figure stands for.)

C Advance Button
(Makes the program proceed to the subsequent stage.)

D Mode Button
(Selects data to input or display.)

E Set Button
(Modifies figures to input.)

F Target Pulse On/Off Button

G Loading Level
(Indicates grade of work load.)

Main Body

1 Main Unit

2 Control Panel Cover

3 Control Panel

4 Pulse Sensor Jack

5 Workload Shift Lever
(Changes workload level.)

6 Cable Hooks
(Holds pulse sensor cable.)

7 Joint
(Connects main body with rear frame.)

8 Seat Lock Pin
(Pull when adjusting seat position.)

9 Handlebar

10 Seat

11 Sensor Clip
(Holds sensor when not in use.)

12 Rear Support Pipe

13 Seat Height Lock Knob
(Loosen when adjusting seat height.)

14 Rear Leg

15 Level Adjuster
(For better stability of the unit.)

16 Seat Pipe

17 Cable Holder
(Holds pulse sensor cable.)

18 Inner Pipe

19 Front Leg

20 Caster
(For easy transportation of the unit.)

21 Pedal

22 Crank

23 Pulse Sensor

24 Cable Clip

CONTENTS

INTRODUCTION
FOR SAFE OPERATION

Introduction

Thank you very much for your purchase of Cateye Ergociser Model EC-3500. The model EC-3500 is a recumbent type exerciser with a built-in computer designed to allow aerobic exercise conveniently for the purpose of advancing your cardiovascular system, and maintaining and improving physical endurance.

You can do aerobic exercise effectively when your pulse rate meets constantly a target pulse rate that is decided under your age, physical strength and purpose.

Reclining posture can be changed by adjusting the height of seat. Have a ride in an appropriate posture according to your purpose that may vary from rehabilitation to intense training.

Read this manual carefully to achieve maximum fitness from your EC-3500 and keep it handy.
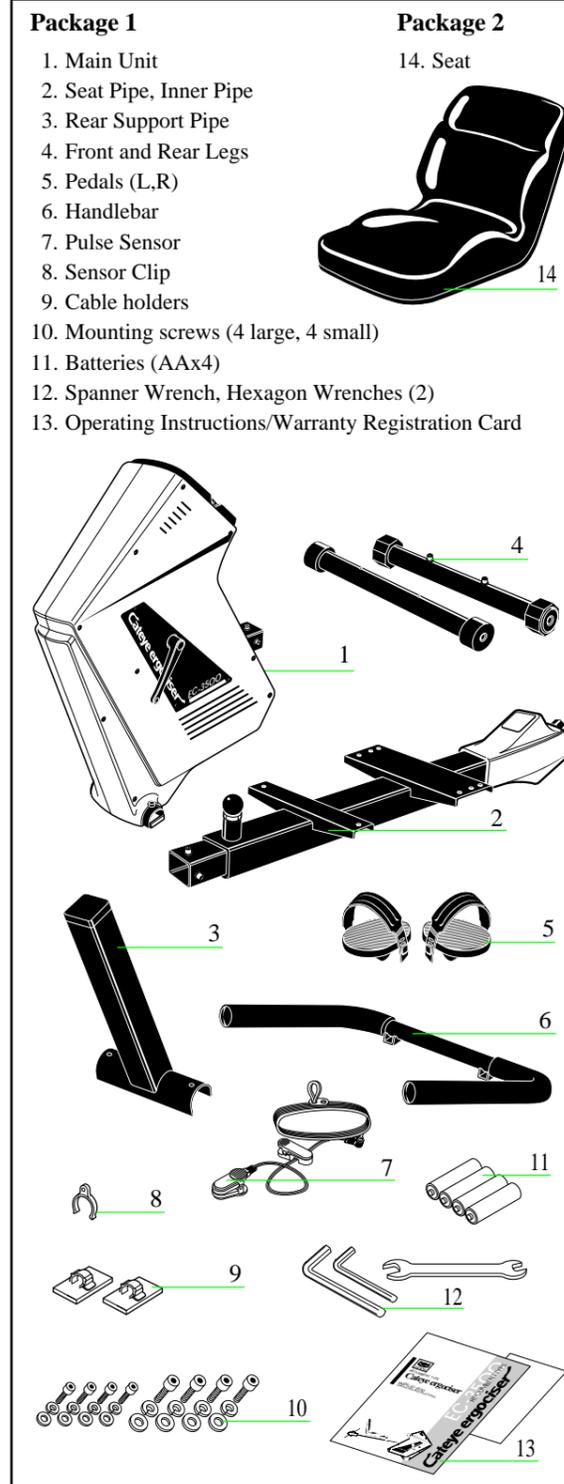
For Safe Operation

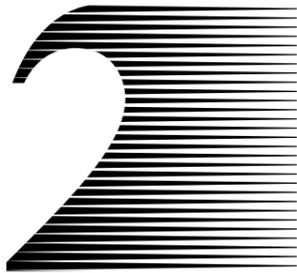For your safety, always observe the following.

1. Before using the EC-3500, it is important to consult a medical specialist if you are suffering from any of the following: heart disease (angina pectoris, myocardial infraction), hypertension, diabetes, respiratory disease (asthma, chronic bronchitis, pulmonary emphysema, etc.), articular metamorphosis, rheumatism, gout, or any other diseases and physical complaints.

2. If you are not used to regular physical activities, it may be dangerous to suddenly start strenuous exercise. Try to increase your exercise level gradually and always avoid careless exercise.

3. If you feel sick or sense something is wrong with your body during exercise, immediately stop exercising.

4. If you are pregnant or physically weak due to any disease, you should always consult a medical specialist prior to doing exercise with the EC-3500.

> **Warning:**
> This equipment has been certified to comply with the limits for a Class B computing device, pursuant to Subpart J of Part 15 of FCC Rules. Only peripherals (computer input/output devices, terminals, printers, etc.) certified to comply with the Class B limits may be attached to this computer. Operation with non-certified peripherals is likely to result in interference to radio and TV reception.

Make sure all components are included in the package.

If anything is missing, please contact your dealer.

| Package 1	Package 2
1. Main Unit	14. Seat
2. Seat Pipe, Inner Pipe	
3. Rear Support Pipe	
4. Front and Rear Legs	
5. Pedals (L,R)	
6. Handlebar	
7. Pulse Sensor	
8. Sensor Clip	
9. Cable holders	
10. Mounting screws (4 large, 4 small)	
11. Batteries (AAx4)	
12. Spanner Wrench, Hexagon Wrenches (2)	
13. Operating Instructions/Warranty Registration Card	

2 LET'S ASSEMBLE
Assemble the main unit under the following process.

1. Mounting Front Leg

• Remove the leg plate from the main unit.

• Place the front leg (with casters) under the main unit as shown in Fig. 1 and fasten screws securely with the hexagon wrench making sure nuts locate at the bottom of the leg.

hexagon wrench
front leg (with casters)
nuts
Fig. 1
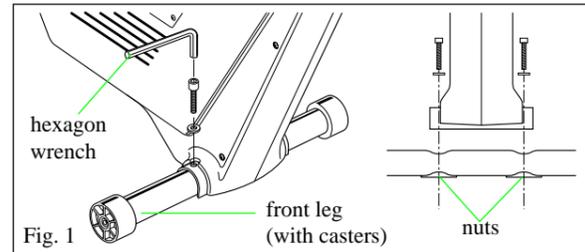
2. Mounting Rear Leg

Place the rear leg (with level adjuster) under the rear support pipe as shown in Fig. 2 and fasten screws securely with the hexagon wrench making sure nuts locate at the bottom of the leg.

Fig. 2
rear leg (with level adjuster)
nuts
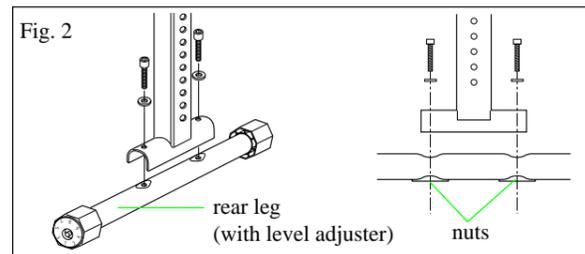
3. Mounting Seat and Handlebar

Mount the seat to the seat pipe using the large screws and the handlebar using the small ones.

large screws
spring washer
flat washer
small screws
spring washer
flat washer
handlebar
Fig. 3
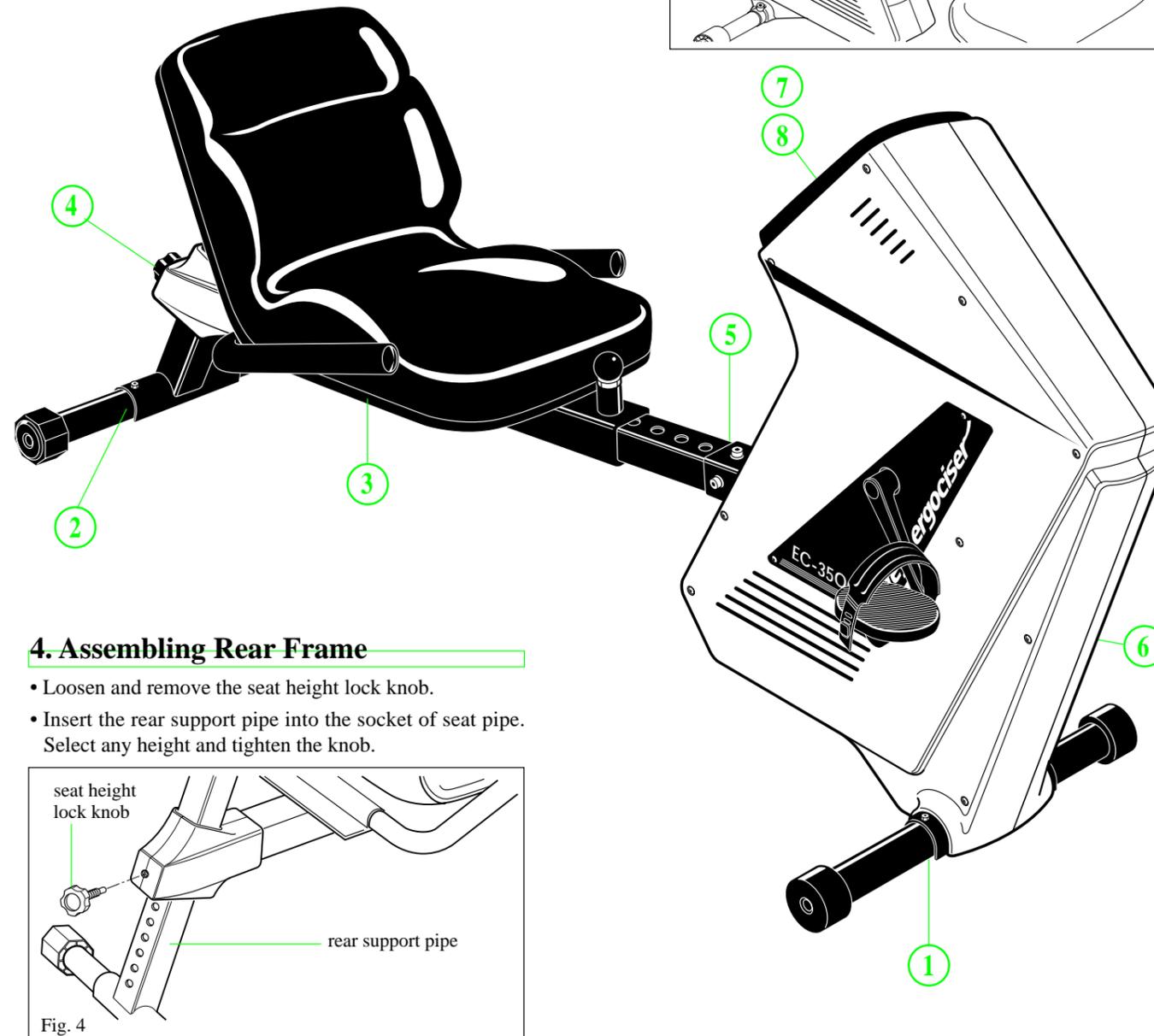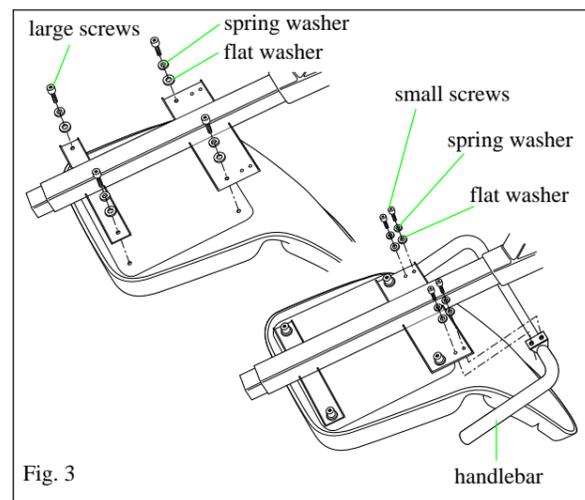
4. Assembling Rear Frame

• Loosen and remove the seat height lock knob.

• Insert the rear support pipe into the socket of seat pipe. Select any height and tighten the knob.

seat height lock knob
rear support pipe
Fig. 4
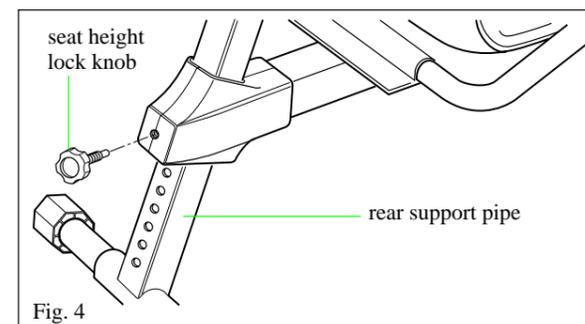
5. Connecting Inner Pipe

• Remove the 3 screws from the end of the inner pipe.

• Insert the inner pipe into the joint metal of the main unit and fasten it securely with the 3 screws.

joint metal
screws
inner pipe
Fig. 5
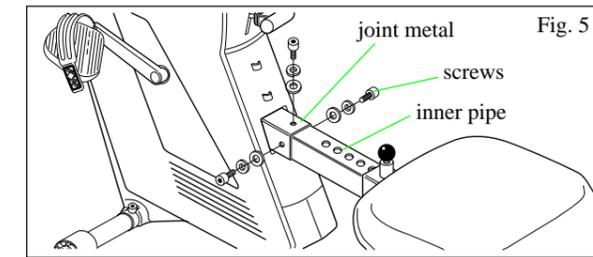
6. Mounting Pedals

• Attach the pedals to cranks using the spanner wrench #15.

• Be sure to install the pedal (R) on the right crank and (L) on the left crank to avoid cross threading.

Fig. 6
(R)   (L)
spanner wrench #15
FRONT
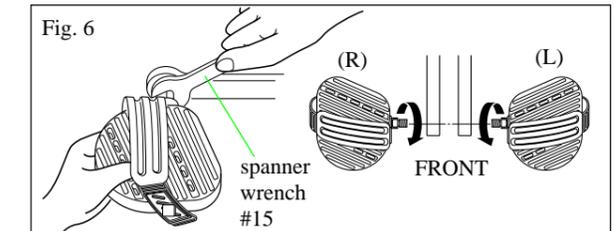
7. Setting Distance Scale

• Remove the control panel cover by loosening the screws as shown in Fig. 7.

• Remove the control unit and pull out the battery case as shown in Fig. 8.

• Turn over the control unit and switch to "KM" or "MILE" to set your desired distance scale.

Fig. 7
control panel cover
battery case
PUSH-OPEN
Fig. 8
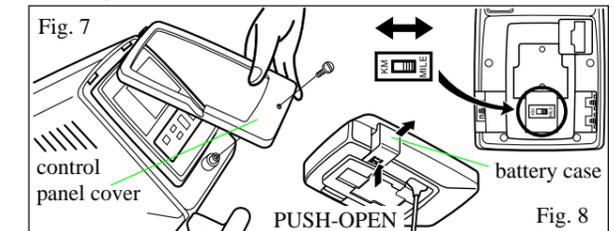
8. Loading (Replacing) Battery

• Load batteries (AA size x4) in the battery case, making sure the polarity + or – is right as shown in Fig. 9. Insert the case into the control unit.

• Replace the control unit in position. Fit the panel cover and tighten the screw. (Fig. 7)

• Press the set buttons ⊞⊟ and the mode button (⊡) simultaneously, and keeping these buttons held down press the advance button ⊡ to clear all readings. (Fig. 10)

• All LCD segments appear for about 2 seconds and then disappear. (refer to "Special functions of buttons" in page 10.)

R6·AA
R6·AA
Fig. 9   Fig. 10
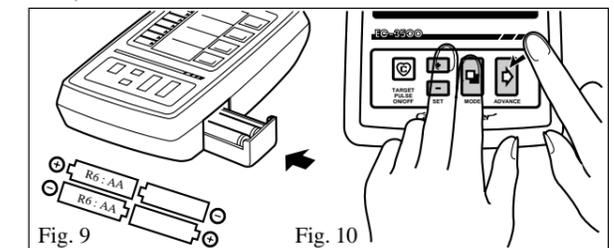
3 ADJUSTMENT

Make each adjustment under the following process.
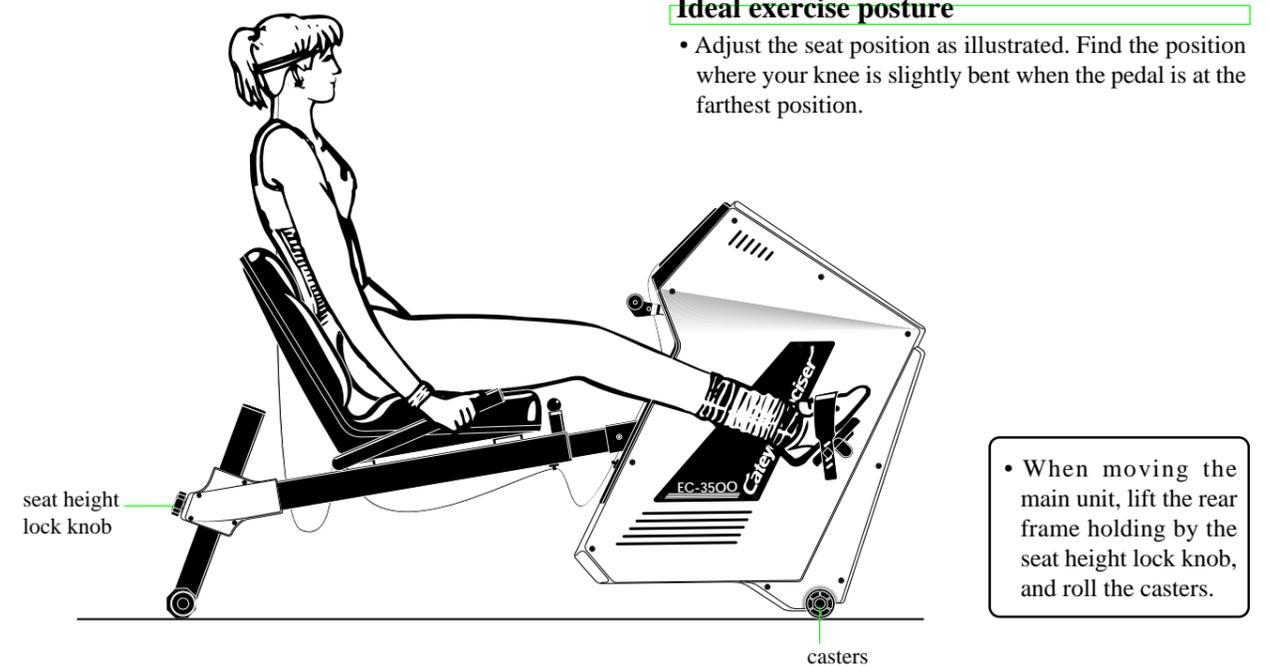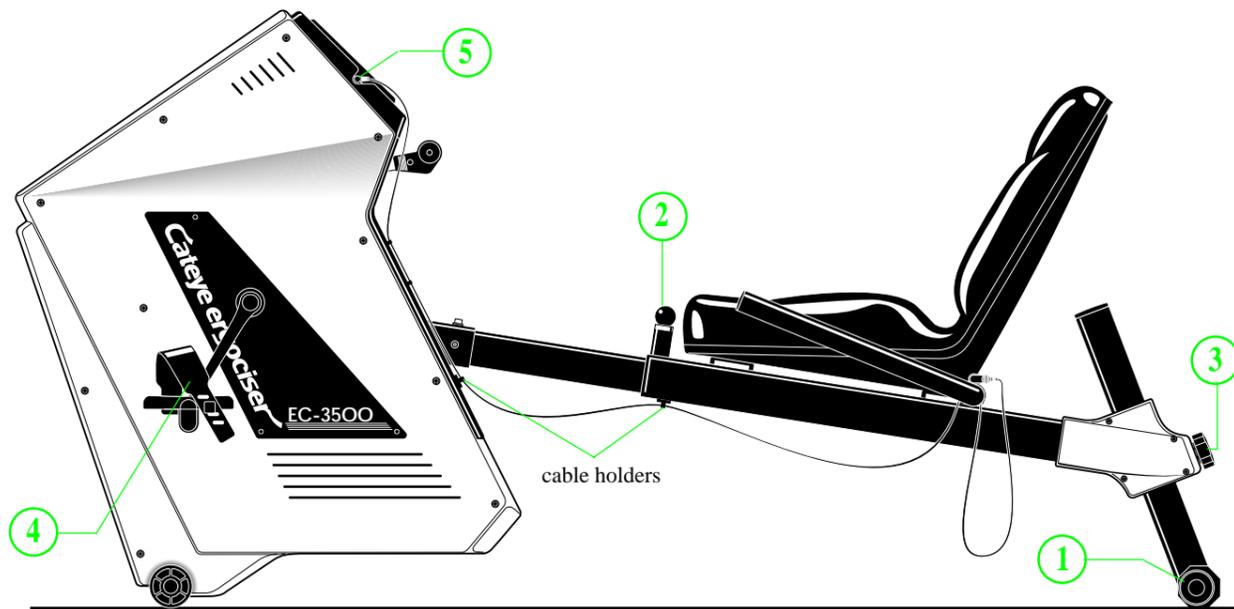
Ideal exercise posture

• Adjust the seat position as illustrated. Find the position where your knee is slightly bent when the pedal is at the farthest position.

seat height lock knob

casters

• When moving the main unit, lift the rear frame holding by the seat height lock knob, and roll the casters.

cable holders

1. Level Adjustment

• Turn the level adjuster on the rear leg so that the unit is placed stably.

• When the indication line on the level adjuster is at the top, the rear leg is at the same level as the caster of the front leg.

indication line

level adjuster

Fig. 1

2. Adjusting Seat Position

The seat position can be adjusted while pulling up the seat lock pin. When desired seat position is obtained, release the lock pin free and move the seat slightly and the lock pin will click into the nearest hole by spring pressure. Holes are provided at an interval of 3 cm(1-3/16").

Note: When sliding the seat, take care not to break the pulse sensor cable.

PULL

lock pin

3 cm(1-3/16")

Fig. 2
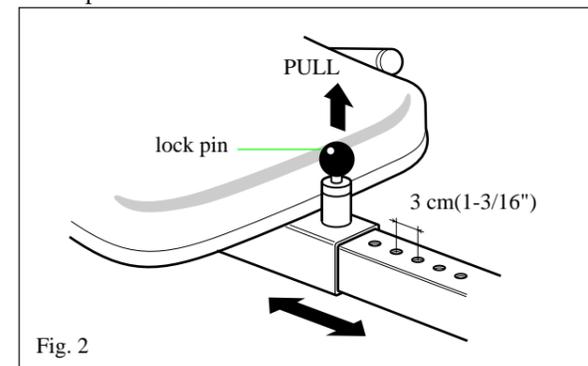
3. Adjusting Seat Height

• The seat height can be adjusted at your choice.

• The higher the seat, the less intense the exercise or vice versa.

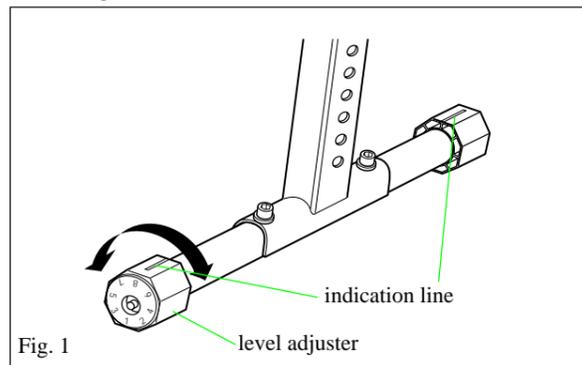• Loosen and remove the seat height lock knob, supporting the seat pipe with the other hand.

• Move up or down the seat pipe to the desired height and screw-in the seat height lock knob. While tightening the knob lift the seat pipe slightly for easier screwing. Holes are provided at an interval of 3 cm(1-3/16").

seat height lock knob

Fig. 3
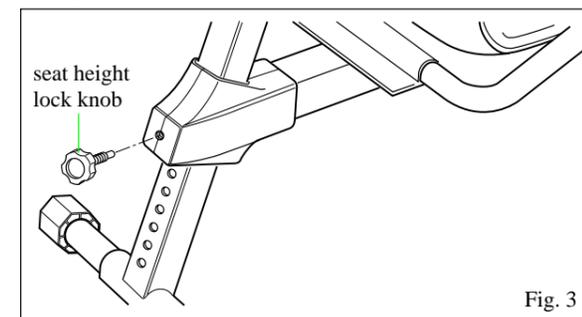
4. Adjusting Pedal Belts

It is possible to adjust the pedal belt length according to your shoes size.

5. Mounting Pulse Sensor

• Insert the pulse sensor plug into the pulse sensor jack at the side of the control panel.

• Attach the cable holders at the main frame and the seat pipe. (Upper figure on page 6)

• Insert the sensor cable through the cable hooks and cable holders. Hold the cable in position by attaching the sensor clip at the bend of the handlebar. (Fig. 4)

• Allow enough slack in cable under the seat pipe for seat adjustment.

• Attach the cable clip to your clothes during exercise to avoid excessive swinging of the sensor cable.

• Attach the pulse sensor on the sensor clip when not in use.

pulse sensor jack

Fig. 4

pulse sensor plug

pulse sensor

cable hooks

cable holders

sensor clip

cable clip
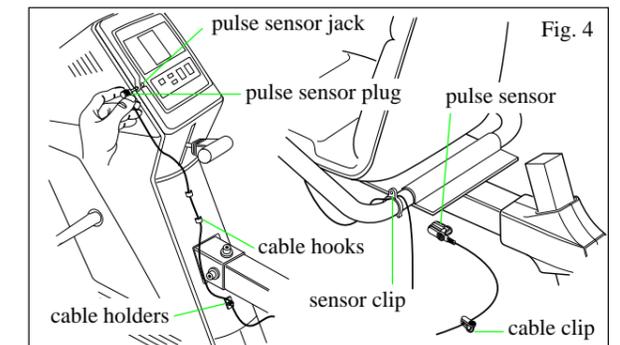
4 LET'S HAVE A RIDE

Try a ride so that you can familiarize yourself with the unit.

Attach Pulse Sensor

▼

Press ⇨ Button

▼

Make sure Initial Display appears

▼

Press ⇨ Button Begin Exercise

▼

Press ⬛ Button Make sure In-Exercise Display(A) and (B) appear

▼

Operate Workload Shift Lever/ Make sure Pedal Resistance changes

▼

Finish Exercise when Buzzer beeps to signal the end. Press ⇨ Button

---

No-Display Screen

Initial Display Screen
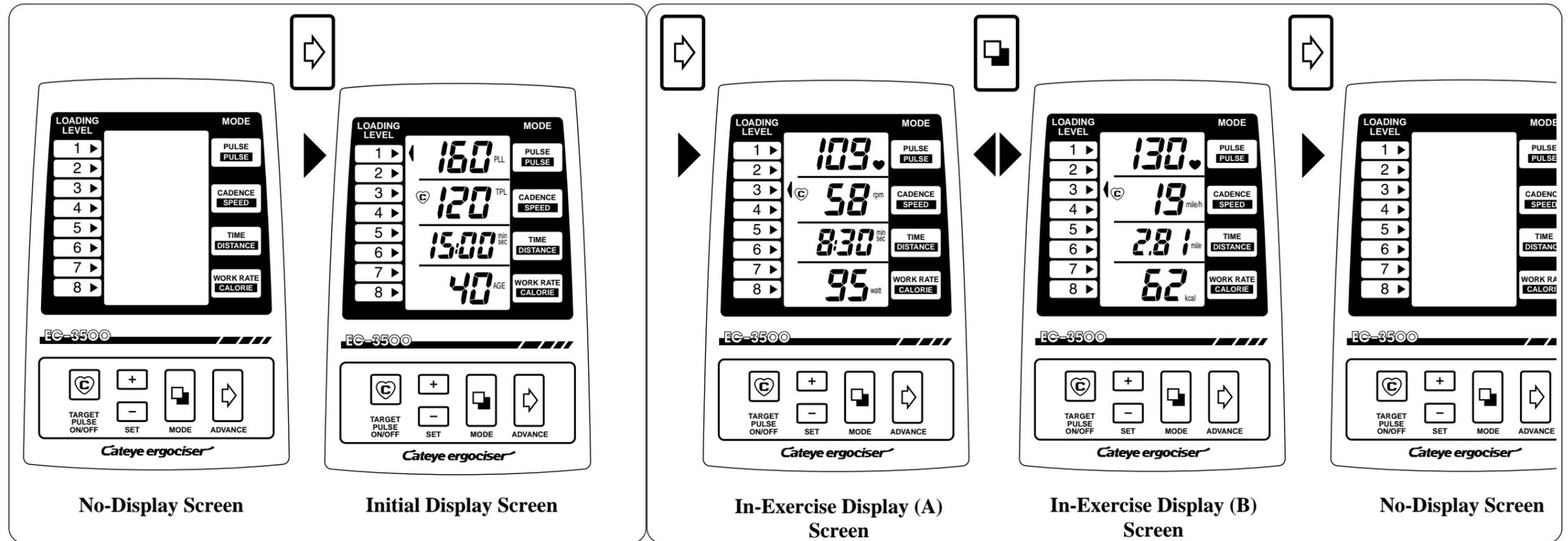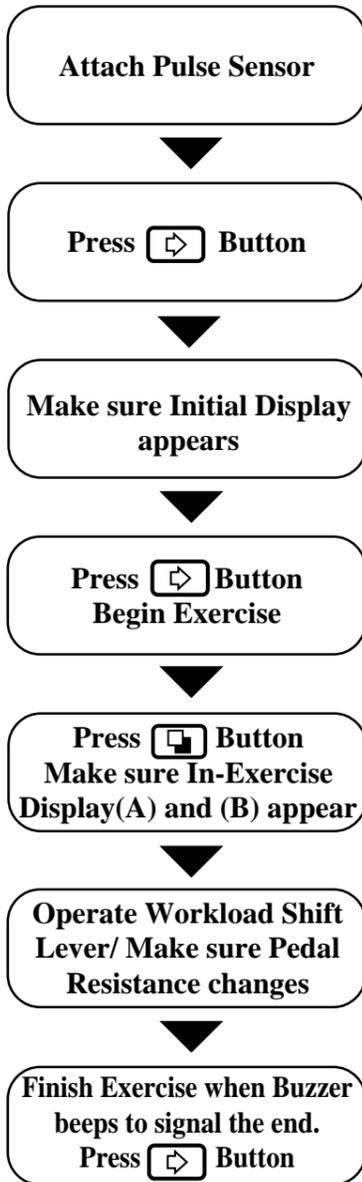
When power is off, no display appears on the screen. In this state, the battery consumes minimal power. When the unit is not in use, turn off to "No-Display" state.

• If input signal is not entered into the control unit in 10 minutes, the unit is automatically turned off to "No-Display" state.

In the "No-Display" state, this "Initial Display" appears with a press of the Advance button ⇨ .

• **Preset Initial Display** (from top)

• **Upper-Limit Pulse Rate**
  160 bpm (beats per minute)

• **Target Pulse Rate**
  120 bpm (beats per minute)

• **Target Exercise Time**
  15 minutes

• **Age**
  40 years old

Before starting exercise, input your age, target exercise time and target pulse rate, in accordance with your purpose.

In-Exercise Display (A) Screen

In-Exercise Display (B) Screen

No-Display Screen

After the "Initial Display" state, this "In-Exercise Display (A)" appears with a press of the advance button ⇨ .

• **Exercise Display (A) Screen**
  (from top)

• **Current Pulse Rate**
  (bpm)

• **Pedal Cadence**
  (rpm-revolutions per minute)

• **Countdown Timer**
  (minute:second)

• **Work Rate**
  (watt)

If you press the advance button ⇨ when the screen is in this state, it turns to the "No-Display" state.

The In-Exercise Display (A) and (B) are alternative. With a press of the mode button ⬛ , they alternate.

• **In-Exercise Display (B) Screen**
  (from top)

• **Current pulse Rate**
  (bpm)

• **Simulated Current Speed**
  (mile/h or km/h)

• **Simulated Trip Distance**
  (mile or km)

• **Calorie Consumption**
  (kcal)

If you press the Advance button ⇨ when the screen is in this state, it turns to the "No-Display" state.

5 LET'S LEARN OPERATION OF BUTTONS & WORKLOAD SHIFT LEVER

To make the most of the functions of the unit.

1. Functions of the buttons

- **Advance Button (⇨)**
  It makes the program proceed. Each time you press this button, the display advances in the order as Fig. 1.

- **Mode Button (▣)**
  It is used in two ways.

  a) **In the "Initial Display"**, each press of this button advances the mode and the figure to be modified blinks in the order as Fig. 2.

  b) **In the "In-Exercise Display"**, each press of this button converts the screen alternately as Fig. 3.

- **Set Buttons (SET)**
  In the "Initial Display", each button serves to change the blinking numerical value in each selected mode.

  [+] **Button**.... Each press increases the numerical value by 1, and when held down, it increases rapidly.

  [−] **Button**.... Each press decreases the numerical value by 1, and when held down it decreases rapidly.

- **Target Pulse On/Off Button (ⓒ)**
  Each time you press this button, the ⓒ mark is switched on or off. When the mark is lit up on the screen, the buzzer warns you if your pulse rate is out of the target pulse rate by more than ±5 bpm . When the mark is not lit up on the screen, the buzzer doesn't function and you can exercise freely unconcerned with the target pulse rate zone.

[Beeping Sound Pattern]	0	1	2	(sec)
Over (the target pulse rate +5)	■■ ■■ ■■ ■■			2kHz
Under (the target pulse rate −5)	■ ■ ■ ■			1kHz

(The buzzer doesn't function unless your pulse rate once reaches the target pulse rate.)

Special functions of buttons

- **"All Clear" Function**
  When new batteries are loaded, or when abnormal signal is received due to electrostatic trouble, etc., the screen may show abnormal displays. In such a case, first hold down the set button [+] [−] and the mode button ▣ simultaneously, then press the advance button ⇨ . The screen first turns to "No-Display" state, then it displays all the readings for 2 seconds. Finally it returns to the "No-Display" state.

- **Recovery Function**
  If you press the advance button ⇨ by mistake during exercise, making the screen turn to "No-Display" state, press any of the other buttons, except the advance button ⇨ , within 10 seconds. The screen recalls the previous "In-Exercise Display" state.

- **Memory Function**
  In the "No-Display", if you hold down the mode button ▣ and press the advance button ⇨ , the data that was set for your last exercise can be recalled. This function is useful when you can use the unit exclusively and want to repeat the same exercise program.

*This function becomes effective 10 seconds after the unit is turned off.
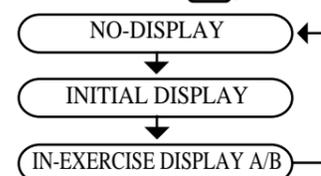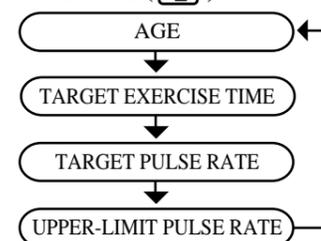

- **Advance Button (⇨)**

NO-DISPLAY → INITIAL DISPLAY → IN-EXERCISE DISPLAY A/B

Fig. 1

- **Mode Button (▣)**

AGE → TARGET EXERCISE TIME → TARGET PULSE RATE → UPPER-LIMIT PULSE RATE

Fig. 2

IN-EXERCISE DISPLAY (A) ⇅ IN-EXERCISE DISPLAY (B)

Fig. 3

Screen Display

① **Workload Shift Position Mark**
Indicates the position of the workload shift lever

② **Pulse Sensor "OK" Mark**
Indicates that the pulse sensor functions properly.

③ **"Error" Mark**
Appears when the pulse rate jumps up or down abnormally, or when the pulse sensor is not attached to your earlobe properly.

④ **Mode Mark**
Indicates the mode in display.
PLL --- Upper-Limit Pulse Rate
TPL --- Target Pulse Rate
AGE -- Age of the user

⑤ **Pulse Mark**
Flickers synchronized with the pulse

⑥ **Target Pulse Rate On/Off Mark**
When this mark is on, the buzzer functions to signal when your pulse rate is out of the target pulse rate zone.

⑦ **Unit Mark**
Indicates the unit of the display figure.

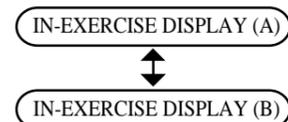⑧ **Battery Alarm Mark**
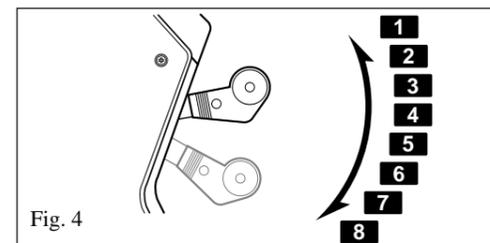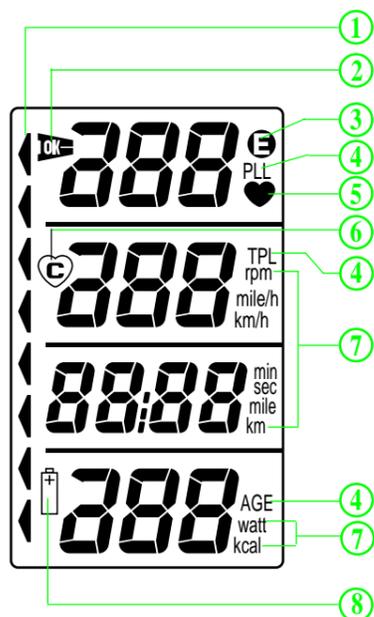Indicates that the battery power has exhausted.

Fig. 4

- Before starting exercise, set the workload shift lever to the following standard level in accordance with your age and sex.

Age	Male	Female
20~30's	3	2
40~50's	2	1
Over 60	1	1

Fig. 5

---

2. Workload Shift Lever and Work Rate

Work rate (watt) is determined by the position of the workload shift lever, and your pedal cadence. (Fig. 4). To get the desired work rate during exercise, first adjust it roughly by the workload shift lever, then precisely by changing your pedal cadence. The workload can be shifted to 8 positions, 1 is the easiest and 8 is the heaviest. Each position of the workload shift lever is identified by the ◀ mark displayed on the screen. The following table shows work rate (watt) corresponding to each workload shift lever position, and the pedal cadence.

Work Rate (watt)

Pedal Cadence	50	60	70	80	100	120
Shifting Position						
1	25	33	41	50	65	85
2	50	65	85	105	140	195
3	75	100	130	155	215	265
4	100	135	170	210	285	355
5	125	165	215	260	350	440
6	150	200	255	310	420	520
7	175	235	295	355	480	595
8	200	265	335	405	545	680

3. Pulse Sensor Handling

- Attach the pulse sensor to either earlobe, right or left. Clip it firmly to the center of the earlobe. Be sure to remove any earring or the like from your earlobe. (Fig. 5)

- When it is cold, rub your earlobe before attaching the pulse sensor, to facilitate the blood circulation.

- Try not to change the position of the earlobe sensor during exercise.

- If the error mark ⊟ lights up frequently, remove the pulse sensor and attach it again correctly.

- If the pulse sensor is pulled excessively, the cable can be damaged or short-circuited. Treat the pulse sensor with care.

- When the pulse sensor is not in use, always clip it to the sensor clip. Hold the pulse sensor cable with the cable clip, adjusting the slack of the pulse sensor cable.

Checking the pulse sensor

1) In the "In-Exercise" state, close the pulse sensor; putting nothing in between.

   The ▣ mark lights up on the screen, and the pulse rate readings show "0" bpm ----- Normal

   When the pulse sensor cable is pulled, the ▣ mark blinks ----- The sensor cable is about to be broken.

   The ▣ mark doesn't light up ----- The pulse sensor cable is broken.

2) The ▣ mark blinks even when the pulse sensor is attached to your earlobe. ----- The pulse sensor cable is short-circuited.
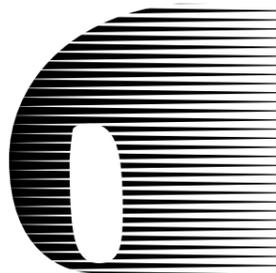
LET'S INPUT YOUR DATA

The target pulse rate calculated from your age is the key of effective exercise.

Adjusting Seat Position	Adjust the seat position to get correct exercise posture.
Adjusting Seat Height	Choose the seat height to your preference.
Attaching Pulse Sensor	Attach the pulse sensor to your earlobe firmly.
Press Advance button	Press the advance button ⇨ to turn on the Initial Display.
Input your data	Input your age and target exercise time, and if necessary modify the target pulse rate.

For a person who has built up enough physical strength:

The target pulse rate more than [your upper-limit pulse rate - 10] cannot be input. If you wish to have a higher target pulse rate, modify the upper-limit pulse rate upward, then input the desired target pulse rate. The target pulse rate can be input up to 189 bpm.

• How to modify the upper-limit pulse rate

1) Press the mode button until the upper-limit pulse rate (value in the top line) flickers.

2) Input the desired upper-limit pulse rate using the set button ＋ or －.

• In general, modification of the upper-limit pulse rate is not always recommended because the target pulse rate that is based on [180 - age] would be adequate for effective exercise.
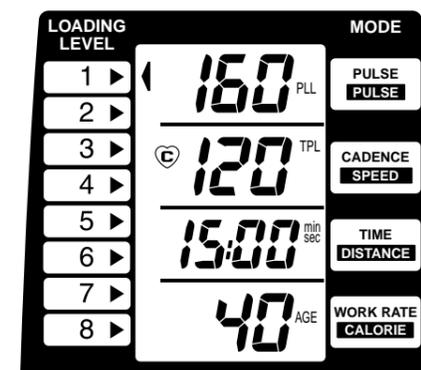
1. Press Advance Button ⇨

1) Set the seat at the position where you can take the correct exercise posture, then adjust the seat height at your choice (Page 7).

1) Press the Advance button ⇨ and make sure that the "Initial Display" is shown on the screen. If you want to modify the "Age" and/or the "Exercise Time", proceed to 2 and 3 in order. If no modification is needed, proceed to 5.

2) If you want to modify the "Target Pulse Rate" from the automatically preset value, proceed to 3, then to 4.
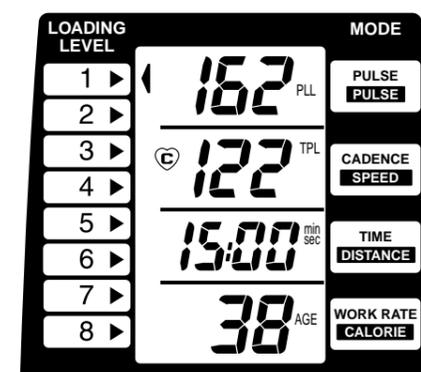
2. Input Your Age

1) Press the mode button ▣ , and the numerical value "40" at the bottom flickers, which is the preset standard age.

2) Input your age, using the set button ＋ or －.

* Each time the age is modified, the upper-limit pulse rate (PLL) and the target pulse rate are automatically set, based on "200 - age" and "160 - age" respectively.
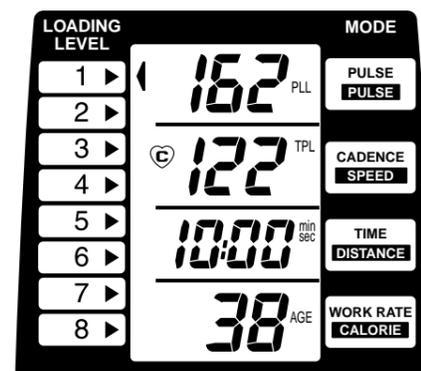
3. Input Target Exercise Time

1) Press the mode button ▣ , to make the numerical value "15:00" in the third line flicker, which is the preset standard exercise time.

2) Input the desired exercise time, using the set button ＋ or －.

4. Input Target Pulse Rate

1) Press the mode button ▣ to make the numerical value "120" in the second line flicker, which is the preset standard target pulse rate.

2) Input the desired target pulse rate, using the set button ＋ or －.

LET'S START THE EXERCISE

Continuing exercise with the EC-3500 will make you fit.

Adjust Workload Level	Set the workload shift lever at an appropriate position, in accordance with your age and sex.

▼

Press Advance Button (Start of Exercise)	Upon pressing the advance button, start pedaling.

▼

Press Mode Button, and make sure In-Exercise Display (A) and (B) appear alternately.	You can read various data by pressing the mode button.

▼

Finish Exercise when Buzzer beeps to signal the end.	When you have reached the target exercise time, the buzzer signals the end. (After the timer has reached the target exercise time, it starts to count-up.)

▼

Check your data	Press the mode button to check the data, and record them. Press the advance button to turn off the screen to No-Display state.

WARNING

If the buzzer beeps to signal that your pulse rate has exceeded the upper-limit pulse rate, stop exercising immediately.

Beeping sound pattern		0	1	2(sec.)
When the upper-limit pulse rate has been overpassed				
Target pulse rate	Over (+) 5 bpm			
	Under (-) 5 bpm			
When the target exercise time has elapsed				

5. Adjust Workload Level

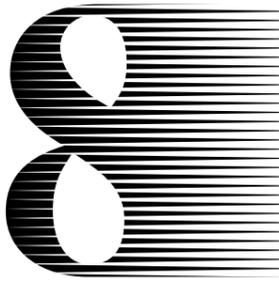Set the workload shift lever at the following suggested position, in accordance with your age and sex.

Age	Male	Female
20~30's	3	2
40~50's	2	1
Over 60	1	1

6. Start Exercising

1) After setting the data, press the advance button and start pedaling. The timer starts to countdown, so the remaining time is shown.

2) Keep pedaling in the range of 50~70 rpm, increasing the workload level by one point per minute, so that your pulse rate comes close to the target pulse rate smoothly.

3) After your pulse rate once reaches the target pulse rate, the buzzer will beep if your pulse rate is out of the target pulse rate zone (the target pulse rate ±5). In such a case, adjust your pedal cadence upward or downward by 5 rpm so that your pulse rate can stay within the target pulse rate zone.

* In case you cannot get back to the target pulse rate zone by only changing the pedal cadence, adjust the workload shift lever to change the workload level upward or downward by one point.

7. Alternate Display

With a press of the mode button, the In-Exercise Display (A) and the In-Exercise Display (B) can alternate each other during exercise. You can watch different data while you exercise.

8. Finish Exercise

1) When the buzzer beeps to signal the end of the target exercise time, finish exercise. Recall the In-Exercise Display (B) screen, by pressing the mode button.

2) Check the consumed calories (kcal) and the simulated trip distance (mile or km). Press the advance button to turn off the screen to the "No-Display" state.

* You may continue exercise even after the buzzer beeps to signal the end, if you have not reached to your target of consumed calories. After counting down to the preset target exercise time, the timer starts counting up.

PURPOSE OF EXERCISE/EXERCISE PROGRAM/FITNESS TERMS

To maximize the benefit of your exercise.

1. Purpose of Exercise

Do you often get out of your breath when you go up stairs or walk fast? This is because your ability to take oxygen into your body is getting weak. Such ability is evaluated by a value called MOU (Maximum Oxygen Uptake), which represents the maximum amount of oxygen taken into your body per 1 kg of body-weight in a minute (ml/kg.min.). The MOU value can be used as a scale of your physical endurance.

The average MOU value is 40-50 ml/kg.min. for men in their twenties, and 30-40 ml/kg.min. for women of the same age. In general, the MOU value becomes less as you get older, and the more you lack proper exercise, the faster it decreases. It is said the MOU value less than 22 ml/kg.min. may result in illness of cardiovascular system, and in restriction of your daily life.

Continued aerobic exercise several times per week maintains and improves your MOU value, activating oxygen supply to your cardiovascular system. With the EC-3500, you can perform aerobic exercise effectively and efficiently.

2. Exercise Program

Aerobic exercise will be more effective when it is continued at a certain pulse rate, which is determined based on your age and physical strength. This is called "Target Pulse Rate".

•How to decide your target pulse rate
When you input your age, the EC-3500 automatically sets your target pulse rate at [160 - age]. This target pulse rate corresponds to 50-60 % of the exercise level for the twenties, 40-50 % for the sixties. (Refer to "Exercise Level" on page 17.) The older you are, at the less intense level your target pulse rate is set because of such programming of the EC-3500. The exercise level automatically set by this unit could be too hard even for a young person, if he is a beginner. If you feel it too hard, you may decrease the target pulse rate by 10 bpm from the original level. If you feel too easy, you may increase it by 10 bpm so that you can continue exercise in the appropriate target zone as illustrated. If you can continue your exercise at the target pulse rate of [180 - age], your exercise can be considered as effective enough. Upgrade your exercise gradually so that you can reach the suggested final target of [190 - age].

•Exercise Time for Each Session
A minimum of 30 minutes exercise is necessary for each session of exercise. A 5 minute warm up period, and 20 minutes of exercise time, with a 5 minute cool down period, is suggested as a standard exercise. For weight reducing exercise, over 30 minutes exercise time at the low level of the target pulse rate is recommended with a 5 minute cool down.

•How many days a week for exercise
Minimum two exercise days a week is required just to maintain your present fitness level. With 3-4 exercise days you can expect improvement. Always consult with your doctor before proceeding with any exercise program.

*Caution:
Concentrated and repeated exercise in a day may produce an adverse result.

PULSE RATE (bpm)

TARGET PULSE RATE CHART
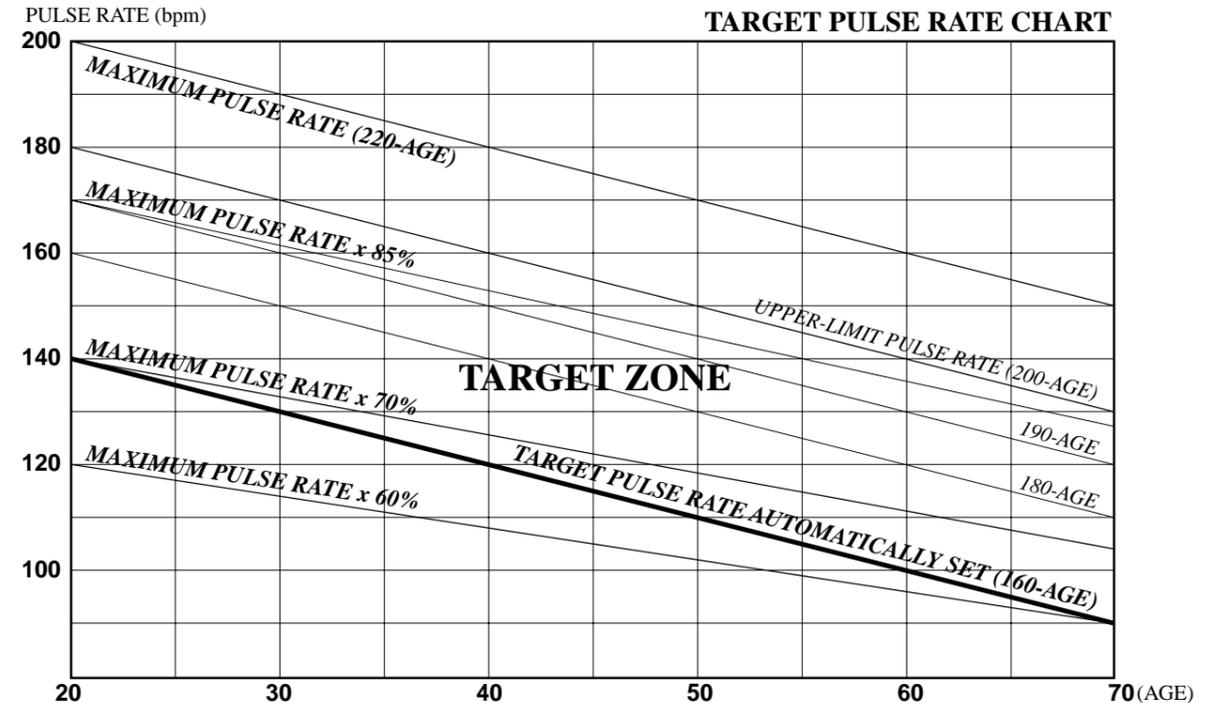
3. Fitness Terms

• Maximum Heart Rate
When you exercise, your heart rate continues to increase as the exercise level becomes more intense, but there is a certain limit. This limit is called the maximum heart rate. The maximum heart rate decreases as you become older. The decrement ratio in the maximum heart rate differs individually, depending on whether one is physically well trained or not. In general, the maximum heart rate decreases yearly by 0.6-1.0 beats per minute.

The heart rate is the number of heart beats per minute measured by a cardiometer. However, we can measure the pulse by touching the arteries near the skin, such as carotid arteries; which is called the pulse rate.

At the earlobe, blood flow fluctuates with each beat of the heart, and the optical permeability through the earlobe changes every time the heart beats. The EC-3500 measures the pulse rate with the sensor, amplifying the changes of optical permeability. An earlobe is a suitable part for sensing the pulse rate during the physical exercise since its muscular movement during exercise is very little and doesn't affect the pulse rate detection.

The heart rate and the pulse rate differ from each other in principle and method, but their value per minute is equal, and therefore both can be interpreted as synonymous.

• Upper-Limit Pulse Rate (PLL)
The maximum pulse rate is related with the age, and is calculated by standard formulas such as [220 - age] or [204 - 0.69 x age]. In the EC-3500, it is calculated as [200 - age] and called the upper-limit pulse rate (PLL), which is lower than the standard formula of the maximum pulse rate and gives you a safer upper-limit pulse rate. When your pulse rate exceeds the preset upper-limit pulse rate, a buzzer beeps to warn you. You can adjust the upper-limit pulse rate according to your physical condition.

• Target Pulse Rate (TPL)
A pulse rate to be maintained during the exercise is called the target pulse rate (TPL). When your pulse rate is more than 5 bpm over or under the target pulse rate which you set before the exercise, a buzzer beeps to signal you.

• Exercise Level
Since the pulse rate gets higher according to the intensity of exercise, the exercise level can be indicated by how high your pulse rate is compared with your pulse rate at rest. It is shown by percentage as follows:

$$\text{Exercise Level (\%)} = \frac{\text{Pulse Rate in exercise - Pulse Rate at rest}}{\text{Maximum Heart Rate - Pulse Rate at rest}} \times 100$$

Therefore, the target pulse rate for a certain exercise level can be obtained through the following formula:

Target Pulse rate = (Maximum Heart Rate - Pulse Rate at rest)

$$\times \frac{\text{Exercise Level (\%)}}{100} \text{ Pulse Rate at rest}$$

9
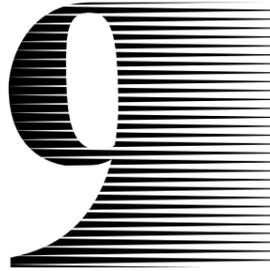
MAINTENANCE/TROUBLE SHOOTING/SPECIFICATIONS

1. Caution on Handling

For longer use, observe the following precautions.

• Don't disassemble the main unit or the control unit. Consult the dealer you purchased the unit from, in case of trouble.

• Avoid using this unit where it may be splashed with water or there is a high temperature or humidity.

• When the unit is not in use, be sure to turn the power off.

• Don't wipe the unit with organic solvents such as thinner, kerosene, gasoline or alcohol. Wipe it clean with a cloth with neutral cleanser, and wipe with a dry cloth.

• Wipe off the sweat drops on the main unit and control unit, after use.

• Don't leave the unit in the direct sun light.

2. Trouble Shooting

Trouble	Check Item	Suggested Remedy
No display appears or abnormal display appears on the control panel.	Press the advance button ⏩ and check if the display appears or not. Proceed "All-clear Process", and press the advance button ⏩ and check if the display appears or not. [Page 5-8 (Fig. 10)]	If still no display appears, the batteries are dead. Replace all four batteries. [Page 5-8]
A buzzer beeps continuously.	Check if your upper-limit pulse rate (PLL) has been set correctly. [Page 13-2]	Input your age correctly. The upper-limit pulse rate is set based on [200 - age].
"Distance Scale Unit" display is wrong.	Check if the distance scale unit was set correctly according to instructions. [Page 5-7]	Follow instructions on page 5-7,8 to set the desired distance unit.
The pulse rate reading is not displayed.	Check if the sensor plug is inserted properly. [Page 7-5]	Insert the sensor plug properly, and attach the pulse sensor correctly.
	Check if the pulse sensor is correctly attached to your earlobe. [Page 11]	
	Check if the plug or the cable of the pulse sensor is damaged. [Page 11]	In case of damage on the pulse sensor, replace it with a new one.
The target pulse rate alarm does not beep.	Has your pulse rate once reached the target pulse rate? [Page 10]	The target pulse rate alarm is activated only after your pulse rate reaches the target.
	Is the Target Pulse On/Off mark Ⓒ lit on the screen? [Page 10]	Press the Target Pulse On/Off button Ⓒ to turn on the Ⓒ mark.

ITEM	SPECIFICATIONS		
Load	Eddy current system utilizing permanent magnet		
Load Range	Manual Adjustment	1~8 level	
	Cadence	50~120 rpm	
	Load Range	25~680 watts	
Acceleration	2-step chain drive incorporating timing belt		
Control System	4-bit micro-computer		
Display Function	Function	Range	Accuracy
	Pulse Rate	50 ~ 220 bpm	± 1 bpm (stable state)
	Cadence	20 ~ 240 rpm	± 1 rpm
	Exercise Time	00 min. 00 sec. ~ 99 min. 59 sec.	± 0.003 %
	Work Rate	0 ~ 999 watts	± 5 watts (at 50 watts)
	Speed	0 ~ 99 miles/h (km/h)	Simulated value
	Distance	0.00 ~ 99.99 miles (km)	Simulated value
	Calorie	0 ~ 999 kcal	Estimated value
Alarm Function	Target Pulse Rate Alarm		
	Signals if the pulse rate deviates by ±5 bpm from target pulse rate		
	Upper-limit Pulse Rate Alarm		
	Signals when pulse rate exceeds preset upper-limit pulse rate		
	Exercise Time Alarm		
	Signals when preset target exercise time is reached		
Power Supply	AA (R6) x 4 (Battery life: Approx. 200 hours by alkaline battery)		
User's Weight Limit	286 lbs (130 kg)		
Measurement	Overall Length: 75-3/16 inches max. (1910 mm)		
	Unit Hight: 14-31/32 inches max. (847 mm)		
	Width: 22-1/16 inches (560 mm)		
	Seat to Crank Axle Distance: 14-31/32 ~ 26-25/32 inches (380 mm ~ 680 mm)		
	Seat Hight: 11-11/32 ~ 19-3/32 inches (288 mm ~ 485 mm)		
	Crank Axle: 17-1/8 inches max. (435 mm) from floor		
Weight	Net Weight: 73 lbs. approx. (33 kgs)		

*Specifications and design are subject to change without notice.
Pat. & Design Pat. Pending
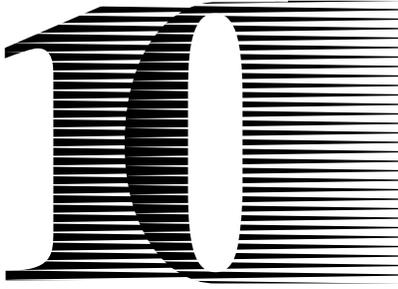
10 LIMITED WARRANTY

CAT EYE & IMPORTER LIMITED WARRANTY

Cat Eye Co., Ltd. and Importer warrant that the CATEYE ERGOCISER™ model EC-3500 is free from manufacturing defects in workmanship and materials and will repair or replace defective parts or equipment in the product for the period of one (1) year from the date of purchase, excluding the batteries and the pulse sensor, in accordance with conditions set forth below:

1. This warranty applies to the product only while the product (1) remains in the possession of the original purchaser and (2) has not been subject to accident, misuse, abuse, improper service, or non-Cat Eye modification.

2. This warranty does not cover damage or equipment failure caused by wiring not in compliance with electrical codes, failure to provide reasonable and necessary maintenance, damage caused by an improper battery, or incorrect battery installation.

3. THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED (INCLUDING MERCHANTABILITY AND FITNESS), AND OF ALL OTHER OBLIGATIONS OR LIABILITIES ON THE PART OF CAT EYE & IMPORTER. We neither assume nor authorize any person to assume for us any other obligation or liability in connection with the sale of this product. Under no circumstances shall Cat Eye or Importer be liable by virtue of this warranty or otherwise for damage to any person or property whatsoever for any special, indirect, secondary, or consequential damage of any nature however arising out of the use of, or inability to use, this product.

[TO: U. S. CUSTOMER]

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

1) Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

2) Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

4. Service under this warranty may be obtained by (1) obtaining a RETURN AUTHORIZATION FORM from your local dealer, (2) completing a RETURN AUTHORIZATION FORM, and (3) shipping the defective part(s) or equipment, accompanied by the RETURN AUTHORIZATION FORM and the original copy of purchase receipt, prepaid to Importer.

5. For your protection, please complete the CATEYE ERGOCISER Warranty Registration and mail it to Importer at the time of purchase.

PROCEDURES FOR RETURN

Contact your local dealer for a RETURN AUTHORIZATION FORM. Part(s) or equipment will not be accepted by Importer without the completed RETURN AUTHORIZATION FORM and prepayment of any shipping charge.