# 850Er
# Owners Manual

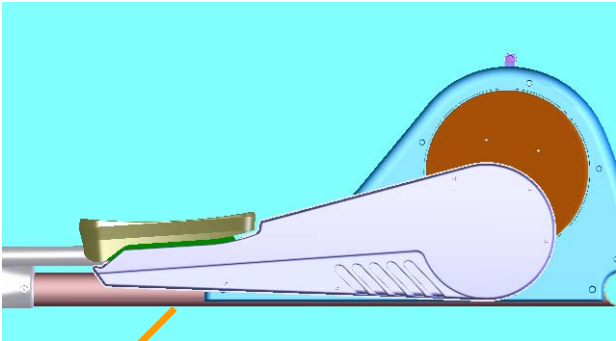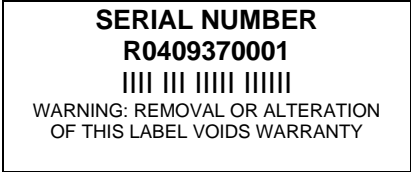## PURCHASER'S REFERENCE INFORMATION

IT IS IMPERATIVE THAT YOU FILL IN THE FOLLOWING INFORMATION AND REFER TO IT SHOULD THE NEED FOR SERVICE ARISE.

Product Name:          Diamondback 850Er Elliptical
Serial Number:          R _ _ _ _ _ _ _ _ _ _

**To Activate Warranty:**
1. REGESITOR YOUR WARRANTY AT www.diamondbackfitness.com OR
2. COMPLETELY FILL OUT THE ATTACHED WARRANTY CARD (SEE BACK COVER) AND RETURN TO DIAMONDACK WITHIN 15 DAYS OF THE DATE OF PURCHASE.  FAILURE TO COMPLY WITH THE WARRANTY ACTIVATION PROCEDURE MAY VOID THE MANFACTURER'S WARRANTY.

**Serial Number Location**

**SERIAL NUMBER**
**R0409370001**
|||| ||| ||||| ||||||
WARNING: REMOVAL OR ALTERATION
OF THIS LABEL VOIDS WARRANTY

Serial No. Sticker

Dealer Name:  _____

Dealer Address:  _____

Dealer Telephone Number: (_____)_____

Dealer Contact Name:  _____

Date Purchased:  _____

**Shipping Materials:**
Diamondback recommends that you retain the original packing materials (box and packing items) for future shipping needs.

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# INTRODUCTION

Congratulations on your 850Er elliptical trainer. You are about to experience one of the most effective and technically advanced methods of low-impact, cardiovascular exercise available today.  Your 850Er elliptical trainer was created by Diamondback Fitness, the innovative value leaders in fitness and bicycle equipment for nearly three decades.

Your power-packed 850Er has feature after feature to make your workout extremely efficient and comfortable. Your console offers 5 display windows with east to select programming buttons, plus a Polar Compatible Heart Rate Receiver and Hand Held Pulse Sensors.  You can choose form 16 levels of intensity including classic Quick Start options and Heart Rate interactive programs.  This is a serious piece of equipment that will take on your most extreme challenges with ease.

You can count on your Diamondback Elliptical trainers to provide years of pleasure and fitness.  The solid steel frame, quality construction and techno-savvy electronics are guaranteed to provide you with the ultimate workout experience.  Congratulations on choosing an elliptical from America's premier name in light institutional and home exercising equipment.

For more information or questions regarding your 850Er, please go to our website at www.diamondbackfitness.com. Or please contact us:

Diamondback Fitness, Inc.
300 Camarillo Ranch Road,
Camarillo, CA 93012
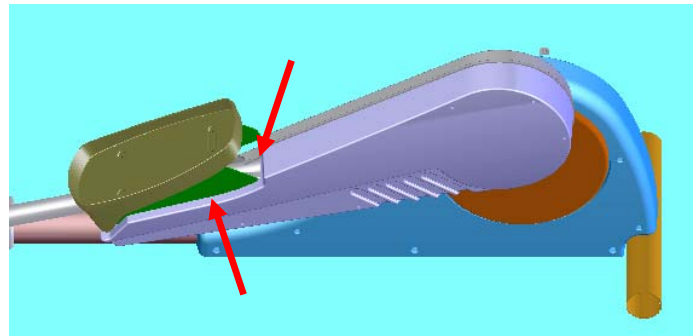Ph. 800.776.7642
Fax: 805.388.5890

# SAFETY INSTRUCTIONS & WARNINGS

The 850Er is built for optimum safety and is designed to meet or exceed all domestic and international standards.  However, certain precautions need to be followed when operating any exercise equipment.  **BE SURE TO READ THE ENTIRE OWNER'S MANUAL BEFORE OPERATING YOUR 850Er UNIT.**

## CAUTION – FOR SAFE OPERATION

### Figure A

1. Keep your hands and feet away from all moving parts and pinch points. See figure A for possible pinch points.
2. Before beginning any exercise program on the 850Er equipment, it is important to consult with your physician if you have any of the following: History of heart disease, high blood pressure, diabetes, chronic respiratory diseases, elevated cholesterol, or if you smoke cigarettes or experience any other chronic diseases or physical complaints.
3. If over the age of 35 or overweight, consult with your physician before beginning any exercise program.



- The area around the footpad & steparm cover.

4. Pregnant women should consult with their physician before beginning an exercise program.
5. If you experience dizziness, nausea, chest pains or other abnormal symptoms during exercise, stop the exercise session immediately.  Consult your physician before continue your exercise.
6. Always drink fluids if you exercise for twenty or more minutes on any 850Er unit.

## WARNING – TO REDUCE RISK OF INJURY TO YOURSELF OR OTHERS

1. To ensure proper functioning of your 850Er equipment, do not install attachments or accessories not provided or recommended by Diamondback.
2. For proper function, do not insert any objects into any opening of the equipment.
3. Always wear proper clothing and shoes when exercising on your 850Er unit.
4. User weight is not to exceed 350lbs / 155kgs for 850Er.
5. Keep children and pets away from 850Er equipment. Hands and feet may get caught in the pedals or other moving parts, which could result in serious injury.
6. Place the 850Er unit in an area that will meet minimum clearance requirements: Front, Back & Sides: 3feet/90cm.
7. Place Keep 850Er equipment away from walls to allow proper ventilation.  Air should be able to circulate freely around the units.  Keep all air openings free of dirt and dust.  Never insert anything into openings.
8. The 850Er is intended for indoor use in the home environment. It is not intended for outdoor use.
9. Place your 850Er unit on a solid, level surface when in use.
10. Use the handlebar when getting on and off your 850Er unit.
11. Make sure all components are fastened securely (i.e. handlebars, handrails, steparms, footpads) at all times.
12. Do not remove the covers or other components. Only an authorized Diamondback fitness dealer should perform the service.
13. SAVE THIS OPERATING INSTRUCTIONS MANUAL FOR YOUR REFERNCE.

# ASSEMBLY DRAWING

# ASSEMBLY INSTRUCTIONS

**Step 1: Rear Stabilizer Bar**
1. Place rear stabilizer bar under rear mainframe and align the screw holes.
2. Insert and tighten these two (M8 x 16mm) screws, split lock washer and flat washers using 6mm Allen wrench.

**Step 2: Console Mast Assembly**
1. Slide console mast cover onto console mast, making sure it is facing the right direction.
2. Connect the plug to the plug receptor of the main wire harness inside the console mast, taking care to install correctly. (See plug alignment marks)
3. Install the console mast by carefully sliding it onto the console mast receptor whiling pulling the wire harness. This will keep the slack out of harness so that the wires will not pinched and short out.
*HINT: Pay attention on the wire harness while sliding the console mast and do not pinch the wire harness. Fail to do so will result a void warranty.*
4. Insert the four screws (M8 x 16mm), spring washer and washers into console mast and **hand** tighten them. Note: do not tighten them until you have all 4 sets of screws, split lock washers and flat washers inserted. Finally, tighten all of them with attached 6mm Allen wrench.
5. Place console mast cover in place and align it with snap holes. Snap the console mast cover into main side cases, making sure all snaps are in place.
6. Insert and tighten console mast cover with two screws (M5 x 12mm) using a Phillips screwdriver.
7. Peel the rubber mats and place them on the accessory trays.

**Step 3: Handlebar Assembly**
1. Insert the hand pulse harness through the opening of the console mast and out the top of the console mounting plate.
2. Assemble the handlebar onto the mount and insert and tighten four screws (M6 x 12mm), split lock washers and flat washers using 4mm Allen wrench. Be sure not to pinch the hand pulse wire harness during this procedure, as this will damage the electronic console.

**Step 4: Console Assembly**
1. Un-tighten the main wire harness on the console mast. Connect both plugs to the plug receptors on the backside of the console, taking care to install correctly (see plug alignment marks).
WIRING HARNESS INSTALLATION HINT: Any excess wiring must be carefully inserted (stored) back into console mast before installing the console onto the console mounting plate.
2. Fasten the console to the console mounting plate with four (M5 x 12mm) screws using a Phillips screwdriver.

**Step 5: Handrail Assembly**
1. Insert Right handrail (See "R" mark on the mounting plate) into handrail receptor and align the screw holes of two mounting plates.
2. Insert and tighten four (M6 x 12mm) screws, split lock washers and flat washers with attached 4mm Allen wrench.
3. Install the handrail cover by tighten two (M5 x 8mm) screws using a Phillips screwdriver. Make sure the oblong opening is facing up and on the handrail side.
4. Repeat this assembling process for the Left handrail and its cover.

**Step 6: Transformer Assembly**
1. Place the elliptical equipment on a solid, leveled floor.
2. Plug the transformer into plug receptor located on the front/bottom side of the main frame.
3. Plug the transformer output into power outlet. NOTE: Be sure to use right transformer for your power outlet, 110V or 220V.

# WORKOUT GUIDELINES

### Good health is an exercise in common sense

The Surgeon General released a new study in 2001, The Surgeon General's Call To Action To Prevent and Decrease Overweight and Obesity. It indicates that 61% of American adults are either overweight or obese. The story states that overweight increases the risk of health problems, such as heart disease, certain type of cancer, type 2 diabetes, etc. It further points out that overweight needs to be regarded primarily as a Health rather than as an Appearance issue.

The Surgeon General's Healthy weight advice for consumers is:
1. Aim for a healthy weight: Find your Body Mass Index (BMI) on the chart below.
2. Be active: Keep physically active to balance the calories you consume.
3. Eat well: Select sensible portion sizes.

$$BMI = \left(weight\ (lb) \div height^2\ (in)\right) \times 703$$

Weight in Pounds

| Height | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 | 210 | 220 | 230 | 240 | 250 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4'6 | 29 | 31 | 34 | 36 | 39 | 41 | 43 | 46 | 48 | 51 | 53 | 56 | 58 | 60 |
| 4'8 | 27 | 29 | 31 | 34 | 36 | 38 | 40 | 43 | 45 | 47 | 49 | 52 | 54 | 56 |
| 4'10 | 25 | 27 | 29 | 31 | 34 | 36 | 38 | 40 | 42 | 44 | 46 | 48 | 50 | 52 |
| 5'0 | 23 | 25 | 27 | 29 | 31 | 33 | 35 | 37 | 39 | 41 | 43 | 45 | 47 | 49 |
| 5'2 | 22 | 24 | 26 | 27 | 29 | 31 | 33 | 35 | 37 | 38 | 40 | 42 | 44 | 46 |
| 5'4 | 21 | 22 | 24 | 26 | 28 | 29 | 31 | 33 | 34 | 36 | 38 | 40 | 41 | 43 |
| 5'6 | 19 | 21 | 23 | 24 | 26 | 27 | 29 | 31 | 32 | 34 | 36 | 37 | 39 | 40 |
| 5'8 | 18 | 20 | 21 | 23 | 24 | 26 | 27 | 29 | 30 | 32 | 34 | 35 | 37 | 38 |
| 5'10 | 17 | 19 | 20 | 22 | 23 | 24 | 26 | 27 | 29 | 30 | 32 | 33 | 35 | 36 |
| 6'0 | 16 | 18 | 19 | 20 | 22 | 23 | 24 | 26 | 27 | 28 | 30 | 31 | 33 | 34 |
| 6'2 | 15 | 17 | 18 | 19 | 21 | 22 | 23 | 24 | 26 | 27 | 28 | 30 | 31 | 32 |
| 6'4 | 15 | 16 | 17 | 18 | 20 | 21 | 22 | 23 | 24 | 26 | 27 | 28 | 29 | 30 |
| 6'6 | 14 | 15 | 16 | 17 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 27 | 28 | 29 |
| 6'8 | 13 | 14 | 15 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 28 |

Height in Feet and Inches

Healthy Weight     Overweight     Obese

Note: This chart is for adults (aged 20 years and olders).

### Heart rate is an important key to your exercise.

The Surgeon General also released a report on physical activity and health.  This report definitively stated that exercise and fitness are beneficial for a person's health and redefined that exercise is a key component of disease prevention and healthier living.

Medical research has shown us that there is an amount of exercise, which is enough to condition the cardio respiratory system and the muscles of the body.  This amount of exercise is between 60% and 85% of your maximum heart rate measured during a training session.  This range allows enough exercise to achieve fitness, but not an excessive amount to cause injury.  Your heart rate is an excellent indicator of the amount of stress placed on the cardiovascular system.  Taking full advantage of this information, the 850Er is designed to include heart rate monitoring features.

If exercise intensity is too low or too high, no gains will be made in fitness.  If the intensity is too low, the stress levels are ineffective.  If the intensity is too high, injury or fatigue may set your exercise program back as you try to recover.

The best way to monitor exercise intensity is to accurately count your pulse during exercise.  Your heart rate can easily be determined by counting your pulse at the chest, wrist or at the carotid artery on your neck.  It is difficult to count your own pulse during exercise, mainly because you cannot count fast enough to get an accurate number.  The 850Er is equipped with a wireless telemetry receiving system.  What it does is automatically count your heart rate while you are wearing a heart rate chest belt during your exercising period.  Heart rate is monitored and electronically displayed as a digital readout.  Your

target heart rate, the intensity needed to improve cardiovascular fitness, depends primarily on your age and not your state of fitness. It is calculated as a percentage of your maximum heart rate, estimated as 220 minus your age. It is most effective to train at your target heart rate between 60% and 85% of your maximum heart rate.

**Maximum Heart Rate & Training Zone**

To calculate your maximum heart rate and find your training zone, use the following formula. An example has been provided below based on a 35-year -old person:

220 - Age = Maximum Heart Rate      (220 - 35 = 185)
60% of Maximum Heart Rate      (60% x 185 = 111bpm)
85% of Maximum Heart Rate      (85% x 185 = 157bpm)
Training Zone:      111bpm - 157bpm

*Heart Rate Guidelines*
*60% - 85% Maximum Target*
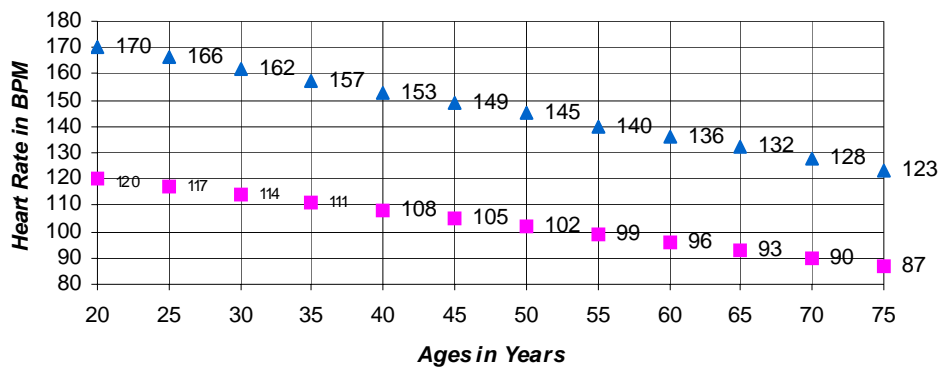


▲ = 85%  ■ = 60%

**Quantity & Quality**
It is recommended that you accumulate at least 30 minutes of physical activity most days of the week. Physical activity should be initiated slowly and the intensity should be increased gradually. You should select activities that you enjoy and can fit into your daily life. Having Diamondback equipment at home certainly gives you the comfortable and convenient workout you want.

The American College of Sports Medicine makes the following recommendations for the quantity and quality of training for developing and maintaining cardio respiratory fitness in healthy adults:
- An activity that uses large muscle groups, maintained continuously, and is rhythmical and aerobic in nature.
- Duration: 20 to 60 minutes of continuous aerobic activity, including a warm-up and cool-down period for each exercise session.
- Frequency: 3 to 5 times per week.
- Intensity: 60% to 85% of maximum heart rate.
- In addition to aerobic exercise, it is recommended that you add strength training of moderate intensity twice per week to your program.



**Typical Target Zone Exercise Patterns for 35 year-old**
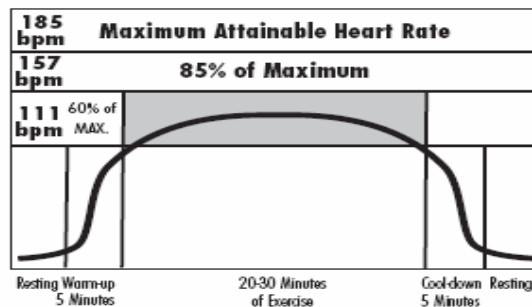
**Get a smart start on exercising.**
Anyone over the age of 35, as well as younger persons whom are overweight, should check with his/her physician before beginning any type of exercise program.  People who have diabetes or high blood pressure, a family history of heart disease, high cholesterol or have lead a sedentary lifestyle should protect themselves with a medical check-up and a stress test, preferably administered during exercise by a healthcare professional.

1.  Always stretch before your workout to loosen muscles, and afterwards to cool down.
2.  The first few minutes of your workout should be devoted to warming up muscles before a vigorous workout, and building your heart rate slowly.
3.  After your aerobic workout of about 24-32 minutes, spend 10 minutes gradually reducing your heart rate with a lower resistance level.

**Remember, to start slow, with intensity low, until you build endurance and strength. And always consult your physician before beginning any exercise program.**

<u>HEART RATE MONITORING DEVICES</u>

**Pulse Hand Grips (Standard)**

The 850Er unit is heart rate controlled and comes standard with stainless steel pulse handgrips. To activate, gently grasp both handgrips to obtain a heart rate reading.

*(Note: It is recommended to wear a chest strap for Heart Rate control program, as it is more accurate. If you wear a chest strap and use hand grips at the same time for heart rate monitoring purpose, please note the console will take the measurement of the chest strap.)*

**Operating Tips:**
If you are not getting a consistent reading while using the hand pulse option, we recommend the following suggestions:

- Make sure that the palms of the hands are touching the contact area of each hand pulse grip.
- Maintain an even pressure on the grips.
- Do not hold the hand pulse grips too tightly.

**Chest Strap (Standard**)

The 850Er is equipped a built-in receiver and a chest strap for your heart rate monitoring. To get an accurate reading using these devices, you will need to be within three feet of the console, and a minimum of four feet from others using a heart rate monitoring device.

*(Note: The transmitter may fluctuate erratically if you are too close to other heart rate monitoring equipment or there is other electronics near by, such as TV, Radio...)*

The receiver of the wireless ECG system is built into the console unit of the Diamondback 850Er equipment. While using heart rate control modes, the computer monitors the exact measurement of and control over the activity if the heart. Heart rate frequency is displayed while the computer continually compares heart rate to the preprogrammed personal data. The computer adjusts the wattage to maintain heart rate at the preprogrammed level.

How to Wear Your Sensor/ Transmitter

1. Buckle one end of the chest strap onto the transmitter.
2. Adjust the band length so that the fit is snug, but not too tight.
3. Buckle the other end of the chest strap onto the transmitter.
4. Center the transmitter on your chest below the pectoral muscle (breasts).
5. Stretch the transmitter away from your chest and moisten the conductive electrode strips located next to the buckles with water.

*(Note: The transmitter is on automatically when being worn. It is off when it is not connected to your body. However, as moisture may activate the transmitter, thoroughly dry the transmitter to prolong battery life.)*

**Erratic Heart Rate Readings:**

Erratic readings on the receiver can be caused by electromagnetic disturbances. If the heart rate readings appear to be abnormal, check that your 850Er product is not within range of other strong electromagnetic signals. Common sources are televisions, computers, cars, cell phones, TV antennas and high voltage power lines (both above and below ground). Please note: Static electricity in clothing or a flapping shirt can cause electrical interference, so some items of clothing, i.e. man-made fibers, can also be the cause. Please try wetting the t-shirt in the area where the transmitter is.

If the battery of the transmitter is running low, the transmission range decreases and may cause errors similar to the ones listed above in this document.

**Battery Replacement:**

To replace the transmitter battery, remove the four small screws security the cover plate in the back of the transmitter. Remove the cover plate, and the thin plastic shield covering the battery, Pry out the battery and replace with a new CR 2032 battery (available at photo or watch  departments). Make sure the battery snaps into place and the numbers are facing up. Replace the plastic shield and cover plate with four screws.

## CONSOLE

### Glossary of Terms

- Idle mode = Console is reset and waiting for an entry. The dot matrix display window will flash "**DB**". If no rpm for 5 minutes, the console will enter power save mode and the display will be shut off.
- LED = The lights on the face of the console.
- Watts = The rate of energy currently being expended.
- Work = The amount of energy expended during exercise.
- Level = The resistance provided by this elliptical. The resistance gradually increases as the level goes up.
- Difficulty level = In the preset programs, the intensity of the program is designed into an intensity hill profile with default difficulty level 1. You may select a different difficulty level to increase or decrease the hill profile.

### Default values

- Age = 35 years
- Weight = 155 lb or 70kg for Metric system
- Time = 30 minutes; Segment time = 30/16 minutes.
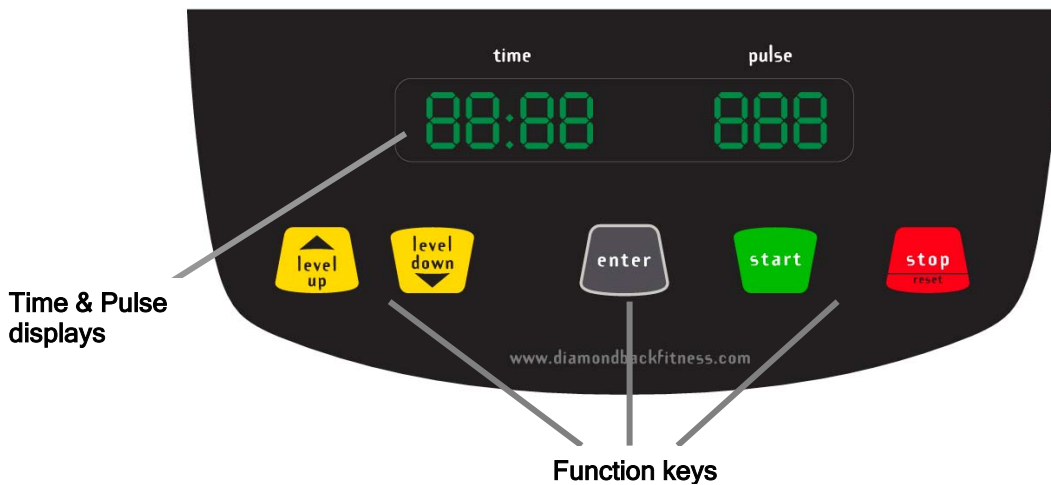- Intensity level: Level 1.
- Difficulty level for intensity: Level 1

*Note: Every time age or weight is changed, the default value setting will be updated to the last modification.*

### Operating Tips

- **Power On:** In the power save mode, press any key or start pedaling to wake up the console and start operation.

- **Reset:** To reset a program during its operation, press and hold the "Stop/Reset" key for 2 seconds. When the program resets, the console returns to idle mode.

- **Pause and Resume:** You may interrupt or pause a program for up to 5 minutes during a workout before the console resets. To pause a program, simply stop pedaling. To resume the program back to the point of where you left off, either press Start or simply start pedaling.

- **Switching a program:** The user may switch from current operating program to another program during its execution by pressing a new program key and then Enter key to accept the new program. Calories and distance will continue accumulating from previous program.
    - If "Classic Program" or "HR Interactive" program key is pressed during a program-executing mode, it will enter program-switching mode:
        - If Enter key is pressed, it will enter this program setup mode. Age and weight default will be the last update and time will be the remaining time of the pervious program.
        - If Start key is pressed, the new program will begin, but Warm Up mode will be skipped.
        - If 10 seconds passes and no other key is pressed, the program will resume back to previous activities.

- **Re-start a program:** The user may re-start a program after the program ends. Simply press "Start" key during Cool Down or Workout Summary mode. The program will be started right immediately without Warm up. The program default will remain the same as previous program; the calories and distance will continue accumulating.

- **Level adjustment:** During Quick Start, Manual & Interval program, the user may press Level Up/Down key to adjust the resistance level. (Note: Resistance adjustments are not allowed in any Heart rate interactive program).
    - If Level Up/Down key is pressed, the level data display will show the current resistance level and adjust it accordingly. The Dot matrix display will update the profile as well.

- **Difficulty level adjustment:** During Random, Hill & Strength profile program, the user may press Level Up/Down key to adjust the difficulty level.
    - If Level Up/Down key is pressed, the level data display will show the current resistance level and adjust it accordingly. The Dot matrix display will update the profile as well.

- **% MAX HR:** Age / (220 minus age).
  It is recommended to control your % Max heart rate within 60% - 85% for the most effective workout. It is also unsafe to exceed 90% and above. This elliptical is equipped with a safety shut off function.
    - First, there is a warning for exceeding 90%, the Pulse data display will blink.
    - Second, if the heart rate continues going up and reaches 95% for 5 seconds, the console will reset.

- **English / Metric setting**:  The default Units is English system. To enter the system-switching mode, press " Start" & "Stop" keys at the same time for 2 seconds during idle mode. The Dot Matrix display will blink "**EN**" for English units or "**ME**" for Metric units. To change it, press "Level Up/Down" key to switch the current Units. After the setup is completed, press "Stop" key for 2 seconds to reset the console and return to the idle mode.

Console Layout

Dot matrix window

Data display window

Data display select key

Workout programs

Workout programs selecting keys

Time & Pulse displays

Function keys

Displays:

### a. Dot Matrix /Profile display
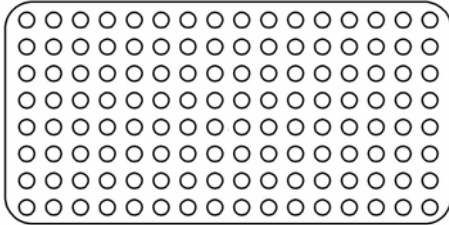


1.It displays letters for instruction during setup:
- Display "**AGE**" during age setup; "**WT**" for weight setup; "**TM**" for time setup & "**HR**" for HR setup.
- Display "**EN**" or "**ME**" for English or Metric units switch.
- Scroll "**WARM UP**" or "**COOL DOWN**" to indicate entering these modes.

2. It displays the program profile during the program execution.
- Display the level profile during the Classic programs.
- Display the % Max HR profile during the HR interactive programs.

3.Profile definitions:
- Level profile – The LED represents the resistance level, L1- L16; the higher LED lights up, the higher resistance it is on. The LED will blink to indicate the current workout segment.
- % Max HR profile – The LED represents the % Max HR: 0-100%

### b. Workout data display
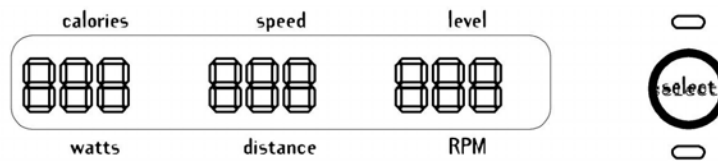


As soon as a program is executed, it will start displaying the default 3 workout data: calories, speed & level. You may select your favorite data displays by pressing the "SELECT" button on the right hand side, the LED indicator will light up to show which row of data is displaying.

- Calories (kcal): Total workout calories.
- Watts (watt): Current workout wattage.
- Speed (mile/hr or km/hr): Current workout speed. It simulates a jogging exercise.
- Distance (mile or km): Total workout distance. It simulates a jogging exercise.
- Intensity (level 1-16): Current workout level.
- RPM: Revolutions per minute.

### c. Time & Pulse displays
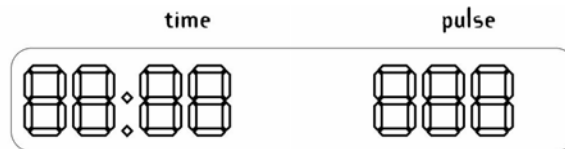


1. In the program setup, Pulse window will light up and display the default Age, Weight & HR for adjustment. Time display will light up and display the default Time for adjustment.
2. As soon as the program is executed, it will start displaying Time and Pulse.
   - Time (hr: min or min: sec): The remaining of current program time.
   - Pulse (bpm): Your current heart rate. If there is no pulse detected, it will display " - - - " instead.

**Function keys:**



a. **Level Up/Down keys:**
   o   During program setup, press "Level Up/Down key" to adjust the following – age, weight, time & HR setting.
   o   After program started, press "Level Up/Down key" to adjust the level, difficulty level or HR setting during exercising.

b. **Enter key:**
   o   After program selecting, press "Enter" to accept the program and enter its setup mode.
   o   After age, weight, level….. adjustment, press "Enter" key to accept your entry.

c. **Start key:**
   o   Press "Start" to start a program during program setup.
   o   Press "Start" key to skip Warm up and enter program executing.
   o   Press "Start" to re-start a program during Cool Down.

d. **Stop/Reset key:**
   o   Press and hold "Stop" button to reset the console.
   o   Press "Stop" to end program executing and enter Cool Down.
   o   Press "Stop" to enter workout summary during Cool Down

# WORKOUT PROGRAMS

## Warm Up

**Getting Started**
The 950Ef automatically initiates a 3-minute Warm Up at the beginning of each program. It is designed to prepare your body for an intensive workout and to reduce the possibility of injury during workout.

*Note: Warm Up is skipped for the Quick Start or Manual programs.*

**Beginning the Program**
Warm Up is active as soon as the "Start" key is pressed and a program is executed.  The Dot matrix window will scroll "**WARM UP**" and then display program profile. This sequence will repeat until Warm up is finished.

**During the Program**
   Data Display
   •   Once it is started, the data display window will display the default workout data of "**calories, speed & level**". Press "Select" button to switch the data displays to "**watts, distance & RPM**".
   •   The time will display count down from 3:00.
   •   The pulse display will display the heart rate if there is valid pulse detected.

   Adjustment
   •   Level = L1. Press "Level Up/Down" key to adjust the level from L1- L5 only.
   •   "Start" key can be pressed to skip the warm up and start the program immediately.

**Ending the Program**
   •   When 3-minute duration is up or Start key is pressed, Warm Up will end and the program will execute.
   •    There will be a beep sound to indicate the Warm up is over and the selected program begins.

**Pause, Reset, Re-start or Switch a program**
See Console Operating Tips section for details, page…?

## Cool Down

### Getting Started
950Ef is equipped with a 3-minute Cool Down at the end of each program. It appears as soon as a program ends. Cool Down is designed to reduce muscle stiffness and allow your heart rate to recover.

### Beginning the Program
Cool Down is active as soon as a program ends.  The dot matrix window will scroll **"COOL DOWN"** and then display program profile. This sequence will repeat until Cool Down is finished.

### During the Program
Data Display
- Once it is started, the data display window will display the default workout data of "**calories, speed & level**". Press "Select" button to switch the data displays to "**watts, distance & RPM**".
- The time will display "3:00" and continuing down.
- The pulse display will display the heart rate if there is valid pulse detected.

Adjustment
- Level = L1. Press "Level Up/Down" key to adjust the level from L1- L5 only.
- "Start" key could be pressed to re-start the previous program again.
- "Stop" key could be pressed to skip the cool down mode and active the Workout Summary immediately.

### Ending the Program
- When 3-minute duration is up or Stop key is pressed, Cool Down will end and enter Workout Summary. See Workout summary for details.

### Pause, Reset, Re-start or Switch a program
See Console Operating Tips section for details, page…?

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## Workout Summary

### Getting Started
For your convenience, the 950Ef incorporates a Workout Summary right after the completion of the Cool Down. It will display the total workout data for 30 seconds before the Console resets.

### Beginning the Program
Workout Summary appears as soon as the Cool Down mode ends or a "Stop" key is pressed during Cool Down mode. The data display will stop counting and show the final data.

### During the Program
Data Display
- Once this summary is started, the data window will display:
    - Calories:  total calories.
    - Distance: total distance.
    - Time: total program time

Adjustment
Intensity and Incline cannot be adjusted during this time.

### Ending the Program
- When 30-second duration is up, Workout Summary will end and console will reset.

### Pause, Reset, Re-start or Switch a program
See Console Operating Tips section for details, page…?

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## Quick Start

**Getting Started**
A Quick Start program is for someone who wants to bypass the setup mode and start their workouts right away. By picking Quick Start program, you are accepting the default values for calculations. Be sure to include a Warm Up period during your workout since the Warm Up mode is skipped in the Quick Start program.

**Beginning the Program**
During idle mode, the dot matrix window displays "**DB**". To begin this program, press "Quick Start" key once or continue to pedal and press no key for 30 seconds.

**Program Default Values**
- Time = 30 minutes
- Level = L1.

**During the Program**
Data Display
- As soon as the "Quick Start" button is pressed, this program will begin; the data display window will display the default workout data of "**calories, speed & level**". Press "Select" button to switch the data displays to "**watts, distance & RPM**".
- Time display will show 30:00 and count down.
- Pulse display will start displaying if there is a valid pulse.

Adjustment
- Press "Level Up/Down" key to adjust the level from L1 to L16. The level data display will update the level and the dot matrix window will update the profile accordingly.

**Ending the Program**
- When 30-minute duration is up or Stop key is pressed, this program will end and Cool down will be active. See Cool down section for details.
- There will be a beep sound to indicate the program ends.

**Pause, Reset, Re-start or Switch a program**
See Console Operating Tips section for details, page…?

## Classic programs

## Manual

**Getting Started**
You could build your own profile with Manual program. Be sure to include a Warm Up period during your workout since the Warm Up mode is skipped in the Manual program.

**Beginning the Program**
During idle mode, the dot matrix window displays "**DB**". To begin this program, press "Classic Program" key until "Manual" program LED indicator lights up.

**Accepting default values or Entering the program setup mode**
When the dot matrix display shows Manual program profile, it indicates you are about to select the Manual program:
- Press "Start" key to accept current default values and begin Manual program workout.
    - o  Default Time = 30 minutes
    - o  Default Level = L1.
- Or press "Enter" to enter program setup mode. The dot matrix & data displays will take you through the program setup mode step by step as below:

### Entering Age
1. If Enter key is pressed, the dot matrix window will flash "**AGE**".
2. The pulse display will display & blink the default age.
3. You may press "Level Up/Down" key to adjust the age.
4. After age adjustment, press "Enter" to accept and enter Weight adjustment.

### Entering Weight
1. If Enter key is pressed after age adjustment, the dot matrix window will flash "**WT**".
2. The pulse display will display & blink the default weight.
3. You may press "Level Up/Down" key to adjust the weight.
4. After weight adjustment, press "Enter" to accept and enter Time adjustment.

### Entering Time
1. If Enter key is pressed after weight adjustment, the dot matrix window will flash "**TM**".
2. The time display will display & blink the default time = 30:00.
3. You may press "Level Up/Down" key to adjust the time up to 99:00.
4. After time adjustment, press "Enter" or "Start" to accept and begin this program.
(Note: you may press Start key anytime to skip the setup and begin the workout immediately.)

## During the Program
As soon as the "Enter" or "Start" key is pressed, the Manual program will start.
Data Display
- Once the program is started, this program will begin; the data display window will display the default workout data of "**calories, speed & level**". Press "Select" button to switch the data displays to "**watts, distance & RPM**".
- Time display will show the selected program time and count down.
- Pulse display will start displaying if there is a valid pulse.

Adjustment
- Press "Level Up/Down" key to adjust the level from L1 to L16. The level data display will update the level and the dot matrix window will update the profile accordingly.

## Ending the Program
- When selected program time is up or Stop key is pressed, this program will end and Cool down will be active. See Cool down section for details.
- There will be a beep sound to indicate the program ends.

## Pause, Reset, Re-start or Switch a program
See Console Operating Tips section for details, page…?

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## Random

## Getting Started
The Random program is designed to allow the user to choose from an unlimited number of computer generated profiles.

## Beginning the Program
During idle mode, the dot matrix window displays "**DB**". To begin this program, press "Classic Program" key until "Random" program LED indicator lights up.

## Accepting default values or Entering the program setup mode
When the dot matrix display shows Random program profile, it indicates you are about to select the Random program:
- Press "Start" key to accept current default values and begin Random program workout.
  - o Default Time = 30 minutes
  - o Default Level = a computer generated level profile with default difficulty level = L1.
- Or press "Enter" to enter program setup mode The dot matrix & data displays will take you through the program setup mode step by step as below: (**same as Manual program setup**)
  - o Entering Age
  - o Entering Weight
  - o Entering Time

**During the Program**

As soon as the "Enter" or "Start" key is pressed, the Warm Up will be active. See Warm Up mode section for details.

Data Display
- When Warm Up mode is completed, the data display window will display the default workout data of "**calories, speed & level**". Press "Select" button to switch the data displays to "**watts, distance & RPM**".
- Time display will show the selected program time and count down.
- Pulse display will start displaying if there is a valid pulse.

Adjustment
- Press "Level Up/Down" key to adjust the difficulty level. The level data display will update the level and the dot matrix window will update the profile accordingly.

**Ending the Program**
- When selected program time is up or Stop key is pressed, this program will end and Cool down will be active. See Cool down section for details.
- There will be a beep sound to indicate the program ends.

**Pause, Reset, Re-start or Switch a program**
See Console Operating Tips section for details, page…?

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## Interval

**Getting Started**

The Interval program helps to build the strength of your cardiovascular system. By alternating the workload from high to low, your heart gets an effective workout.

**Beginning the Program**
During idle mode, the dot matrix window displays "**DB**". To begin this program, press "Classic Programs" key until "Interval" program LED indicator lights up.

**Accepting default values or Entering the program setup mode**
When the dot matrix display shows Interval program profile, it indicates you are about to select the Interval program:
- Press "Start" key to accept current default values and begin Interval program workout.
    - Default Time = 30 minutes
    - Default Level = a default level profile alternates Rest: L2 and Work level: L10.
- Or press "Enter" to enter program setup mode The dot matrix & data displays will take you through the program setup mode step by step as below: (**same as Manual program setup**)
    - Entering Age
    - Entering Weight
    - Entering Time

**During the Program**

As soon as the "Enter" or "Start" key is pressed, the Warm Up will be active. See Warm Up mode section for details.

Data Display
- When Warm Up mode is completed, the data display window will display the default workout data of "**calories, speed & level**". Press "Select" button to switch the data displays to "**watts, distance & RPM**".
- Time display will show the selected program time and count down.
- Pulse display will start displaying if there is a valid pulse.

Adjustment
- Press "Level Up/Down" key during **Rest** segment to adjust the level from L2.  The level of the remaining Rest segments will be updated to the new setting and the dot matrix window will update the intensity profile accordingly as well.
- Press "Level Up/Down" key during **Work** segment to adjust the level from L10. The level of the remaining Work segments will be updated to the new setting and the dot matrix window will update the intensity profile accordingly as well.

**Ending the Program**
- When selected program time is up or Stop key is pressed, this program will end and Cool down will be active. See Cool down section for details.
- There will be a beep sound to indicate the program ends.

**Pause, Reset, Re-start or Switch a program**
See Console Operating Tips section for details, page…?

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## Hill

**Getting Started**
The Hill program simulates a hill climb exercise with a preset hill profile. The exercise profile will guide you through the up hill climb or down hill glide.

**Beginning the Program**
During idle mode, the dot matrix window displays "**DB**". To begin this program, press "Classic Programs" key until "Hill" program LED indicator lights up.

**Accepting default values or Entering the program setup mode**
When the dot matrix display shows Hill program profile, it indicates you are about to select the Hill program:
- Press "Start" key to accept current default values and begin Hill program workout.
  - o Default Time = 30 minutes
  - o Default Level = a preset level profile with default difficulty level = L1.
- Or press "Enter" to enter program setup mode The dot matrix & data displays will take you through the program setup mode step by step as below: (**same as Manual program setup**)
  - o Entering Age
  - o Entering Weight
  - o Entering Time

**During the Program**
As soon as the "Enter" or "Start" key is pressed, the Warm Up will be active. See Warm Up mode section for details.

Data Display
- When Warm Up mode is completed, the data display window will display the default workout data of "**calories, speed & level**". Press "Select" button to switch the data displays to "**watts, distance & RPM**".
- Time display will show the selected program time and count down.
- Pulse display will start displaying if there is a valid pulse.

Adjustment
- Press "Level Up/Down" key to adjust the difficulty level. The level data display will update the level and the dot matrix window will update the profile accordingly.

**Ending the Program**
- When selected program time is up or Stop key is pressed, this program will end and Cool down will be active. See Cool down section for details.
- There will be a beep sound to indicate the program ends.

**Pause, Reset, Re-start or Switch a program**
See Console Operating Tips section for details, page…?

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## Strength

**Getting Started**
The Strength program gradually increases the workload over time. This program focuses on strengthening both your heart and your major muscle groups.

**Beginning the Program**
During idle mode, the dot matrix window displays "**DB**". To begin this program, press "Classic Programs" key until "Strength" program LED indicator lights up.

**Accepting default values or Entering the program setup mode**
When the dot matrix display shows Strength program profile, it indicates you are about to select the Strength program:

- Press "Start" key to accept current default values and begin Strength program workout.
  - o Default Time = 30 minutes
  - o Default Level = a preset level profile with default difficulty level = L1.
- Or press "Enter" to enter program setup mode The dot matrix & data displays will take you through the program setup mode step by step as below: (**same as Manual program setup**)
  - o Entering Age
  - o Entering Weight
  - o Entering Time

**During the Program**

As soon as the "Enter" or "Start" key is pressed, the Warm Up will be active. See Warm Up mode section for details.

Data Display
- When Warm Up mode is completed, the data display window will display the default workout data of "**calories, speed & level**". Press "Select" button to switch the data displays to "**watts, distance & RPM**".
- Time display will show the selected program time and count down.
- Pulse display will start displaying if there is a valid pulse.

Adjustment
- Press "Level Up/Down" key to adjust the difficulty level. The level data display will update the level and the dot matrix window will update the profile accordingly.

**Ending the Program**
- When selected program time is up or Stop key is pressed, this program will end and Cool down will be active. See Cool down section for details.
- There will be a beep sound to indicate the program ends.

**Pause, Reset, Re-start or Switch a program**

See Console Operating Tips section for details, page…?

## HR interactive programs



Dot matrix display during HR Interactive programs – The dot matrix display will display program % Max HR profile, not level profile. The row of target % Max HR LEDs will light up to indicate your goal; then the current segment LEDs will light up and blink to show your actual heart rate. You could compare your actual heart rate against your goal while exercising.



Blinking – Actual Heart rate
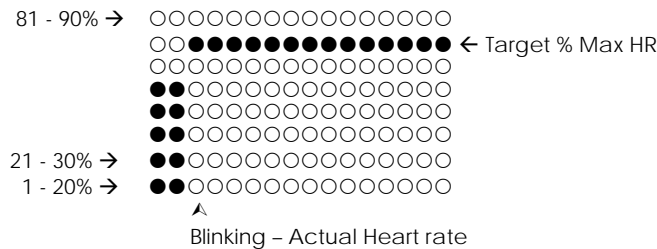
### Target HR

**Getting Started**

The Target Heart Rate program is designed to keep you training at your chosen heart rate level. Computer will adjust the intensity level automatically to ensure the target heart rate is achieved and maintained during the entire program.

A HEART RATE MONITORING DEVICE MUST BE USED FOR THIS PROGRAM. FOR BETTER RESULTS, A CHEST STRAP IS RECOMMENDED FOR THIS OPERATION.

IMPORTANT: It is unsafe to exceed 95% of your maximum heart rate while exercising. Please consult your physician before performing any Heart Rate based training program.

**Beginning the Program**
During idle mode, the dot matrix window displays "**DB**". To begin this program, press "HR Interactive" key until "Target HR" program LED indicator lights up.

**Accepting default values or Entering the program setup mode**
When the dot matrix display shows Target HR program profile, it indicates you are about to select the Target HR program:

- Press "Start" key to accept current default values and begin Target HR program workout.
    - o    Default Time = 30 minutes
    - o    Default Target HR = 120bpm.
- Or press "Enter" to enter program setup mode. The message display will take you through the program setup mode step by step as below:
    - o    Entering Age
    - o    Entering Weight
    - o    Entering Time
    - o    Entering Target HR
        1. If Enter key is pressed after time adjustment, the dot matrix window will flash "**HR**".
        2. The pulse display will display & blink the default target HR = 120.
        3. You may press "Level Up/Down" key to adjust the target HR up to 85% of Max HR.
        4. After HR adjustment, press "Enter" or "Start" to accept and begin this program.
        (Note: you may press Start key anytime to skip the setup and begin the workout immediately.)

**During the Program**
As soon as the "Enter" or "Start" key is pressed, the Warm Up will be active. See Warm Up mode section for details.

Data Display
- When Warm Up mode is completed, the data display window will display the default workout data of "**calories, speed & level**". Press "Select" button to switch the data displays to "**watts, distance & RPM**".
- Time display will show the selected program time and count down.
- Pulse display:
    - o    If there is no pulse input, the Pulse data display will show " - - -" and blink. If there continues to be no pulse input, this console will maintain its current resistance setting and not changing until the program ends or is changed.
    - o    If there is a valid pulse, the Pulse display will show the actual pulse reading.

Adjustment
- Press "Level Up/Down" key to adjust the target HR setting. The Pulse window will blink the target HR setting and adjust. Until the adjustment is done, it then will resume to display actual HR. Dot matrix window will update the % Max HR profile accordingly.

**Ending the Program**
- When selected program time is up or Stop key is pressed, this program will end and Cool down will be active. See Cool down section for details.
- There will be a beep sound to indicate the program ends.

**Pause, Reset, Re-start or Switch a program**
See Console Operating Tips section for details, page…?

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**HR Interval**

**Getting Started**
The Heart Rate Interval program is designed to alternate periods of hard work (Work phase) with periods of easy work (Rest phase). The console will adjust the resistance level up to meet your Work heart rate goal and adjust it down to recover. This phase changes every 2 segments to best condition your cardiovascular system.

A HEART RATE MONITORING DEVICE MUST BE USED FOR THIS PROGRAM. FOR BETTER RESULTS, A CHEST STRAP IS RECOMMENDED FOR THIS OPERATION.

IMPORTANT: It is unsafe to exceed 95% of your maximum heart rate while exercising. Please consult your physician before performing any Heart Rate based training program.

**Beginning the Program**
During idle mode, the dot matrix window displays "**DB**". To begin this program, press "HR Interactive" key until "HR Interval" program LED indicator lights up.

**Accepting default values or Entering the program setup mode**
When the dot matrix display shows HR Interval program profile, it indicates you are about to select the HR Interval program:

- Press "Start" key to accept current default values and begin HR Interval program workout.
    - o  Default Time = 30 minutes
    - o  Default Work HR = 150bpm, Rest HR = 120bpm
- Or press "Enter" to enter program setup mode. The message display will take you through the program setup mode step by step as below:
    - o  Entering Age
    - o  Entering Weight
    - o  Entering Time
    - o  Entering Rest HR
        1. If Enter key is pressed after time adjustment, the Rest HR setting columns of dot matrix window will blink.
        2. The pulse display will display & blink the default Rest HR = 120.
        3. You may press "Level Up/Down" key to adjust the Rest HR up to 80% of Max HR.
        4. After Rest HR adjustment, press "Enter" to accept and begin this program.

    - o  Entering Work HR
        1. If Enter key is pressed after Rest HR adjustment, the Work HR setting columns of dot matrix window will blink.
        2. The pulse display will display & blink the default Work HR = 150.
        3. You may press "Level Up/Down" key to adjust the Work HR from "Rest HR setting" to "85% of Max HR".
        4. After Work HR adjustment, press "Enter" or "Start" to accept and begin this program.
        (Note: you may press Start key anytime to skip the setup and begin the workout immediately.)

**During the Program**
As soon as the "Enter" or "Start" key is pressed, the Warm Up will be active. See Warm Up mode section for details.

Data Display
- When Warm Up mode is completed, the data display window will display the default workout data of "**calories, speed & level**". Press "Select" button to switch the data displays to "**watts, distance & RPM**".
- Time display will show the selected program time and count down.
- Pulse display:
    - o  If there is no pulse input, the Pulse data display will show " - - -" and blink. If there continues to be no pulse input, this console will maintain its current resistance setting and not changing until the program ends or is changed.
    - o  If there is a valid pulse, the Pulse display will show the actual pulse reading.

Adjustment
- Press "Level Up/Down" key during Rest HR segment to adjust the Rest HR setting of the remaining program. The Pulse window will blink the Rest HR setting and adjust. Until the adjustment is done, it then will resume to display actual HR. Dot matrix window will update the Rest %Max HR profile accordingly.
- Press "Level Up/Down" key during Work HR segment to adjust the Work HR setting of the remaining program. The Pulse window will blink the Work HR setting and adjust. Until the adjustment is done, it then will resume to display actual HR. Dot matrix window will update the Work %Max HR profile accordingly.

**Ending the Program**
- When selected program time is up or Stop key is pressed, this program will end and Cool down will be active. See Cool down section for details.
- There will be a beep sound to indicate the program ends.

**Pause, Reset, Re-start or Switch a program**
See Console Operating Tips section for details, page…?

## MAINTENANCE

CAUTION – FOR SAFE OPERATION

Always inspect hardware prior to any exercise session.  Look for loose hardware, loose pedals, loose handrails, loose cranks and frayed wires.  Repair or replace any damaged or worn parts, tighten all loose hardware.

After workout, always wipe down your 850Er unit.  Perspiration that continuously settles on frame, pads or casing may eventually cause rust or damage to the unit.  Damage resulting from lack of proper maintenance will not be covered under warranty.  To clean pads, use a mild soap and warm water.  Dry with a clean towel.

If noises develop or malfunctions occur, contact your authorized Diamondback fitness dealer.

## DOMESTIC WARRANTY INFORMATION

(Applies to all product sold and placed within the continental US, Alaska, Hawaii, and Puerto Rico only)

**Effective:  August 2003**
Diamondback warrants its 850Er to be free from defects in material and workmanship under normal use in the home and light instructional environments. Diamondback's obligation under this Warranty is limited to repair or replacement of any defective part without charge through an authorized service agent to the original purchaser with the following parameters:

**Who is covered:**
The Warranty is extended to the individual or legal entity whose name appears on the Warranty registration card filed with Diamondback and may not be transferred to any other individual or legal entity.

**To obtain service:**
To obtain service you must contact your authorized Diamondback Fitness dealer. Your dealer is also your authorized service agent. An authorized service agent must diagnose your unit in order to determine Warranty claims/issues.

Sales where the unit is delivered unassembled (in a carton) to the end user (e.g. mail order or Internet sales) without a service contract purchased through the dealer voids the Warranty.

**Warranty Registration:**
Warranty commitments are valid only with a completed Warranty card that is returned within 15 days from the date of purchase and includes the product serial number. Registration is available at www.diamondbackfitness.com.

Proof of purchase from Diamondback's authorized dealer will be required if the Warranty card is not registered prior to any consideration of Warranty claim.

**What is covered:**

HOME:

| | |
|---|---|
| *Maximum usage:* | *14 hours per week.* |
| Frame: | Lifetime limited Warranty, covers defects in welds, materials, and workmanship. |
| Parts & Electronics: | 2 Years |
| Normal Wear Items: | 90-day limited on foam grips, pedals, etc. |
| Labor: | 1 Year |

LIGHT INSTITUTIONAL:

| | |
|---|---|
| *Maximum Usage:* | *21 hours per week* |
| Frame: | Lifetime limited Warranty, covers defects in welds, materials, and workmanship. |
| Parts & Electronics: | 1 Year |
| Normal Wear Items: | 90-day limited on foam grips, pedals, etc. |
| Labor: | 1 Year |

**Warranty voided if:**
The Warranty does not apply to any failure of the product, or any parts of the product, due to: assembly errors, alterations, modifications, misuse, abuse, accident, improper maintenance, or if the serial number on the product has been removed, altered or defaced. Assembly errors include but are not limited to:

Damaged wire harness.
Bolts used in the wrong location.

**Parts & Service:**
Contact the authorized Diamondback dealer where unit as originally purchased. If you have moved, or that retailer is unavailable, use our dealer locator at www.diamondbackfitness.com to help find another authorized dealer.

Diamondback is not responsible for arranging Warranty service and/or honoring extended warranties provided by dealers.

**Exclusions:**
Warranty is void if the 850Er unit is placed in a commercial or light commercial environment, such as health club, school, or correctional facility.


**Additional Rights:**
This Warranty is expressly in lieu of all other warranties, and any implied warranties of merchantability or fitness for a particular purpose created hereby, are limited to the same duration as the express Warranty herein. Diamondback Fitness, Inc. shall not be liable for any incidental or consequential damages. Some states do not allow the exclusion or limitations of implied warranties, incidental or consequential, so the above limitations and exclusions may not apply to you.
Retailers and wholesale outlets for Diamondback Fitness, Inc. products are not authorized to modify this Warranty in any way. This Warranty gives the original owner specific legal rights. Other additional rights may vary from state to state.

Diamondback Fitness, Inc.
300 Camarillo Ranch Road
Camarillo, CA 93012

Phone no. 800 776 7642

## WARRANTY CARD

IMPORTANT!        IMPORTANT!        IMPORTANT!        IMPORTANT!
Warranty card must be completed and returned to Diamondback within <u>15 days</u> of purchase. Failure to comply may void manufacturer's Warranty. Or, you may register your product at [www.diamondbackfitness.com](http://www.diamondbackfitness.com).

Your Name: _____

Address: _____

City: _____    State: _____    Zip: _____

Daytime phone No.: _____    Evening phone No.: _____

Dealer Store Name: _____

Address: _____

City: _____    State: _____    Zip:_____


**Model:** _____    **Serial No.:** _____

**Purchase Date:** _____

**Environment Unit Placed:**    ☐ Home        ☐ Light Institutional, i.e. Hotel, Business Center…

Back Cover

Part no. is