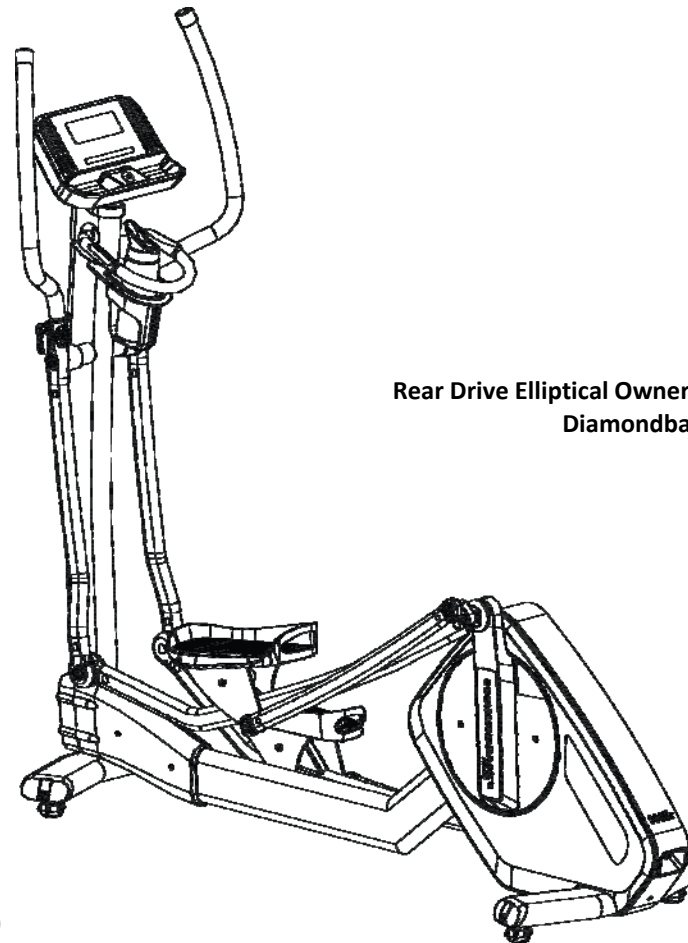




# 900Er Owner's Manual



**900Er  
Rear Drive Elliptical Owner's Manual  
Diamondback Fitness**

Release v.1 (11/2009)



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# 900Er Owner's Manual

## INTRODUCTION

Congratulations on the purchase of your new Diamondback Fitness rear drive elliptical. You have made a great choice and are about to enjoy one of the most effective and technically-advanced methods of low-impact cardiovascular exercise available today.

Founded in 1991 as an off-shoot of the legendary bicycle company, Diamondback Fitness was in many ways a complimentary addition to the Diamondback brand. One might even say this extension grew as a natural evolution...an evolution from classic outdoor bicycle usage, toward indoor-based cycling and cross training. It turns out that many fitness enthusiasts were searching for ways to maintain conditioning during times of inclement weather or were simply looking for new and different cross-training options.

This trend still continues today, twenty years later, as the strong Diamondback brand resonates with both the boomers who grew up with the bicycles, as well as the younger generations riding them today.

Diamondback Fitness continues to build upon this legendary brand identity by offering the cardio enthusiast a full line of upright exercise bikes, recumbents, and elliptical trainers, each offering superior value and quality in an intuitive and visually-appealing design. Let's just say, we are already planning our next twenty years.

Thank you for choosing Diamondback Fitness.

### **Diamondback Fitness**

**6004 South 190<sup>th</sup> Street, Suite 101 • Kent WA 98032 • Ph. 1.800.776.7642 • Fax: 1.800.776.2073**

For more information or questions regarding your equipment, please visit our website at [DiamondbackFitness.com](http://DiamondbackFitness.com).



## **SAFETY INSTRUCTIONS & WARNINGS**

Every piece of Diamondback Fitness equipment is built for maximum safety and meets or exceeds all applicable domestic and international standards. However, certain precautions must be taken when operating any piece of fitness equipment.

***NOTE: Please read the entire owner's manual before operating the unit. Save this manual for future reference.***

### **Cautions – For Safe Operation**

- Keep hands and feet away from all moving parts and pinch points.
- If you have a 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, consult with a physician before beginning any exercise program.
- If overweight, or above the age of 35, consult with your physician before beginning an exercise program.
- Pregnant women should consult with their physician before beginning an exercise program.
- If you experience dizziness, nausea, chest pains or other abnormal symptoms during exercise, stop the exercise session immediately and consult your physician.
- Consume water before, during and after each exercise session.

### **Warnings – To Reduce the Risk of Injury to Yourself and Others**

- To ensure proper functioning of your unit, do not install attachments or accessories not provided or recommended by Diamondback Fitness.
- Always wear proper clothing and shoes when exercising.
- User weight is not to exceed 325 pounds (147.4 Kg) for the 900Er.
- Keep children away from the unit. Hands and feet may become entangled with the moving parts and could result in serious injury.

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- Place the unit in an area that will meet the minimum clearance requirements:
  - Front – 24" inches (61 cm)
  - Sides = 24 inches (61 cm)
  - Rear = 12 inches (30.5 cm)
- The unit is intended for indoor use only.
- Place the unit on a solid, level surface. Always adjust the leveling feet before using to ensure stability.
- Ensure all adjustment knobs and levers are fastened securely before using the unit and after making an adjustment.
- Use the handlebars when stepping on and off the unit.
- The unit is heavy. Do not attempt to move alone.
- Never operate the unit if damaged or broken. Contact your local authorized Diamondback Fitness Dealer for service.
- Please unplug the unit after exercising.
- Always unplug the unit from the power source before moving or servicing.
- Do not remove the covers or other components. Only Authorized Diamondback Fitness Dealers or Authorized Technicians should perform service on the unit.

### **Assembly**

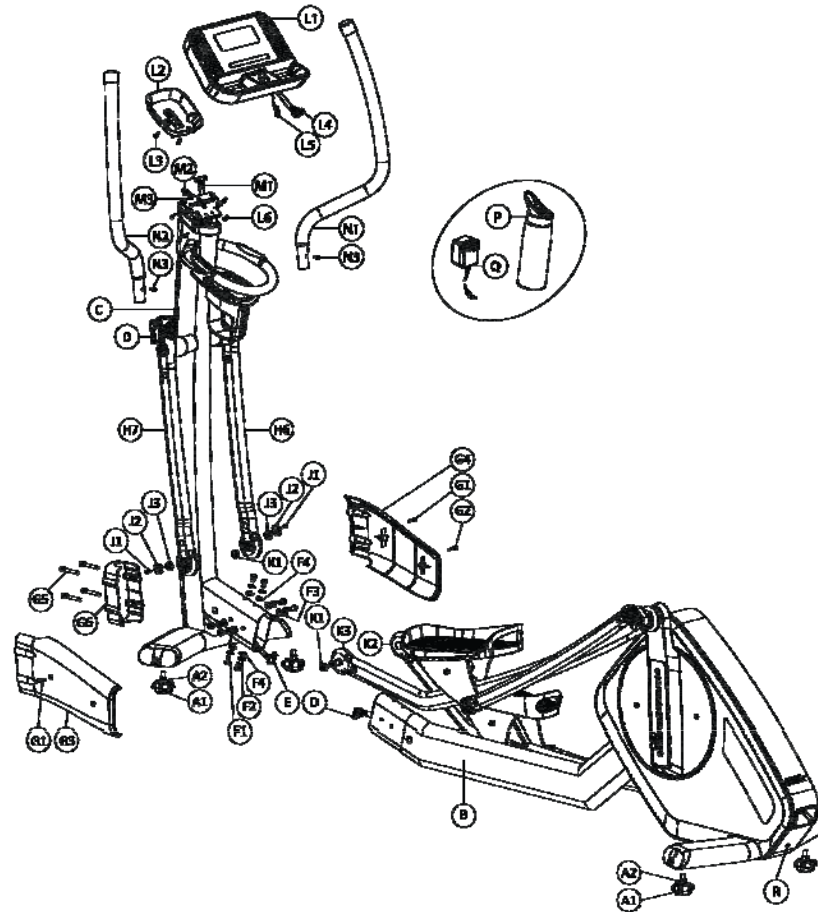
Assembly of all Diamondback Fitness products should be performed by a Diamondback Fitness Dealer or Authorized Technician. A significant amount of technical knowledge is required for the safe and complete assembly of the unit. Many retailers will offer delivery and assembly as part of the sales agreement. If this unit was sold unassembled (in the carton) and you do not feel you can perform the assembly successfully, please call the dealer for service. Service calls for improper assembly are not covered by the Warranty Policy and any associated charges will be the responsibility of the owner.

**900Er LAYOUT**



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## 900Er ASSEMBLY

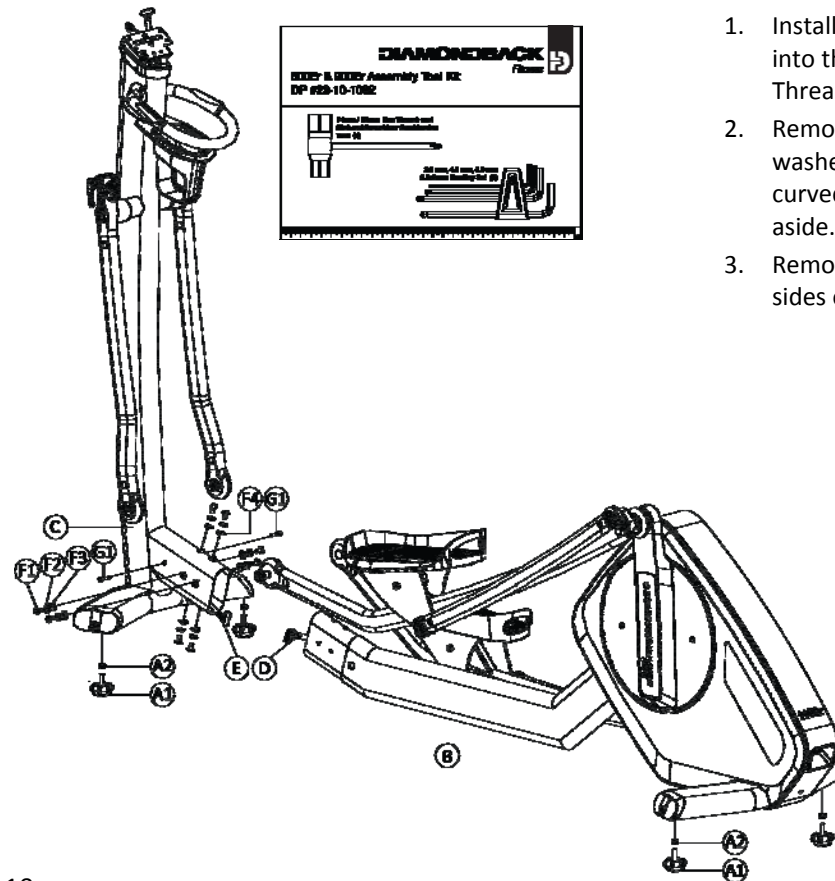


### Part Description

A1	Stabilizer Foot
A2	Stabilizer Foot Lock Nut
B	Rear Frame Assembly
C	Console Mast Assembly
D	Rear Wire Harness Connector
E	Forward Wire Harness Connector – Lower
F1	Hex Bolt - M8 x 1.25 x 16 mm (6 mm socket)
F2	Lock Washer – 8.0 x 12.9 x .24T mm
F3	Flat Washer – 8.0 x 19.0 x 2.0 mm
F4	Curved Washer – 8.0 x 19.0 x 2.0 mm
G1	Hex Bolt – M5 x 0.8 x 20 mm
G2	Hex Bolt – M5 x 0.8 x 20 mm
G3	Lower Console Mast Cover – Left
G4	Lower Console Mast Cover – Right
G5	Hex Bolt – M8 x 1.25 x 55 mm
G6	Lower Console Mast Cover – Front
H1	Lower Handlebar Assembly – Left
H2	Lower Handlebar Assembly – Right
J1	Hex Bolt – M5 x 0.8 x 8 mm
J2	Pivot Cap – Large
J3	Hex Nut – 9/16 x 8T (20 mm flats)
K1	Spacer – 20 x 4.5T mm
K2	Step Arm – Right
K3	Step Arm – Left
L1	900 Series Console
L2	Console Hinge Cover
L3	Philips Screw
L4	Console Wire Harness Connector
L5	Console Heart Rate Wire Harness Connector
M1	Forward Wire Harness Connector - Upper
M2	Heart Rate Wire Harness Connector
N1	Upper Handlebar – Right
N2	Upper Handlebar – Left
N3	Hex Bolt – M5 x 0.8 x 10 mm
O	Adjustable Handlebar Quick Release Assembly
P	Water Bottle
Q	AC Adaptor – US Plug; 120V, 60 Hz, 9V, 1A
R	Input Jack

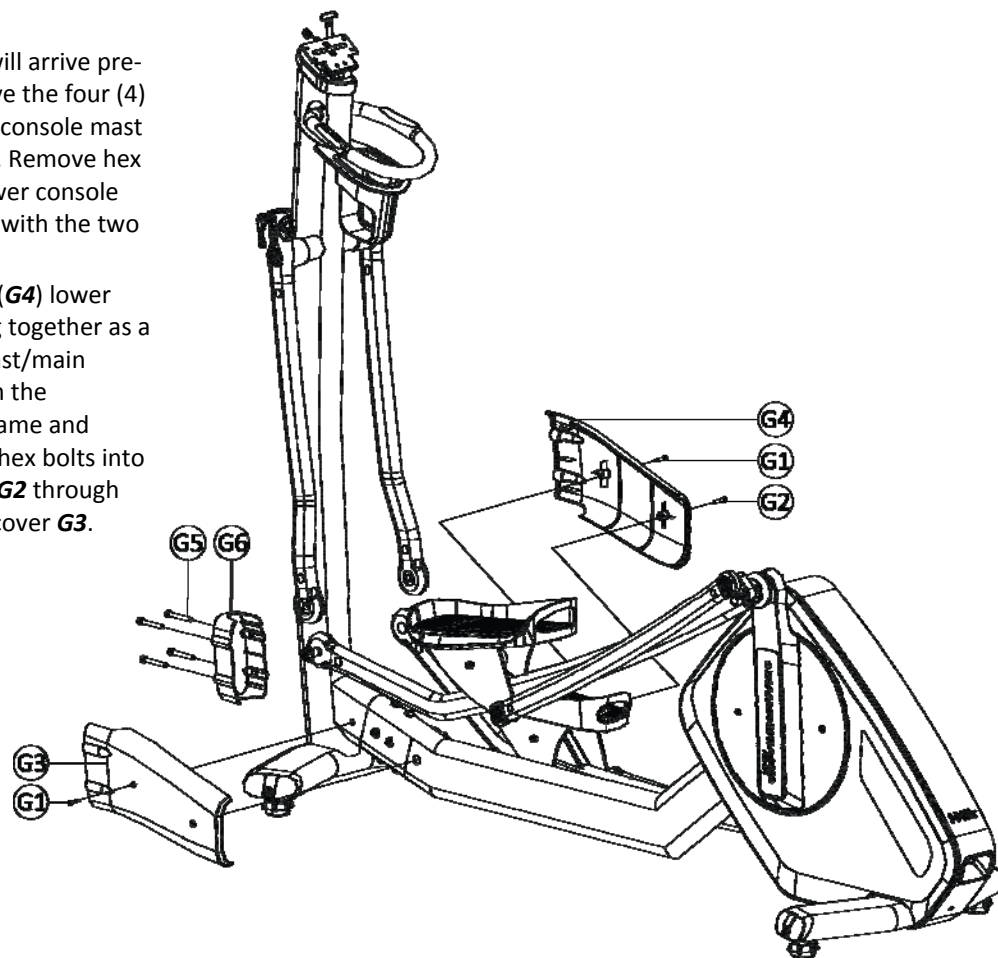


## ASSEMBLY INSTRUCTIONS

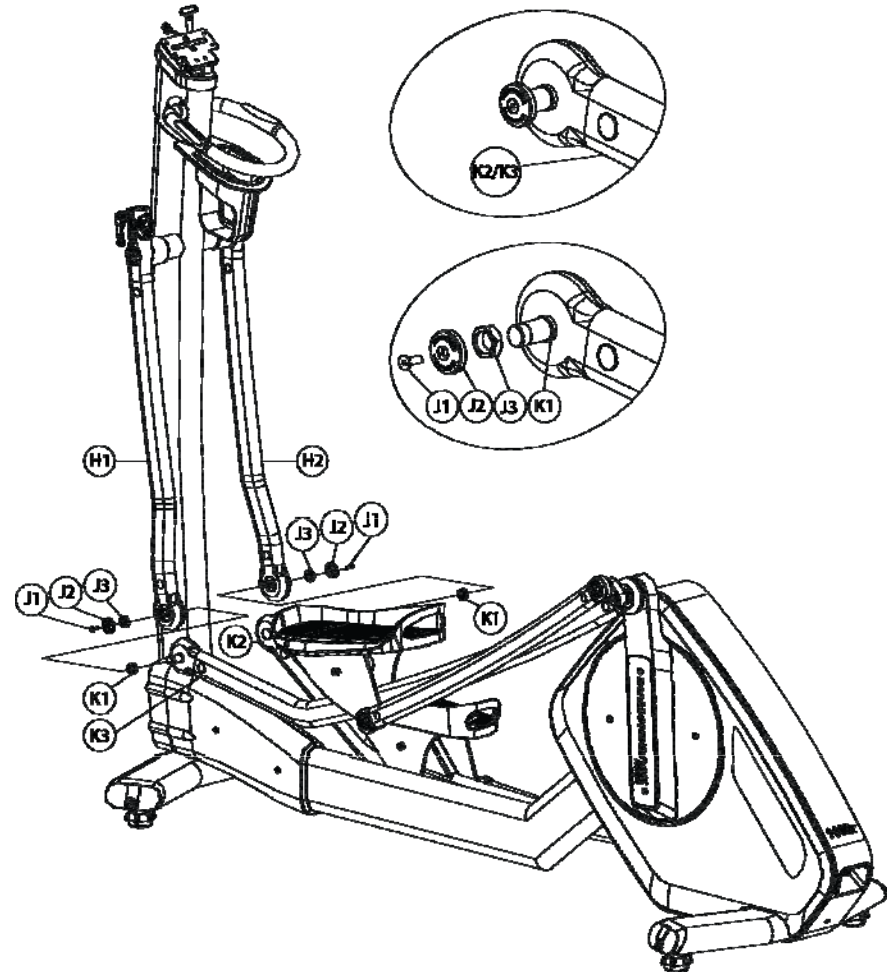


1. Install the four (4) stabilizer feet assemblies (**A1** & **A2**) into the underside of the front and rear stabilizers. Thread all the way in.
2. Remove the eight (8) hex bolts (**F1**), eight (8) lock washers (**F2**), four (4) flat washers (**F3**) and four (4) curved washers (**F4**) from rear frame assembly **B** and set aside.
3. Remove the two (2) hex bolts **G1** from the left and right sides of the console mast assembly (**C**) and set aside.
  4. Stand the rear frame assembly (**B**) right-side up and lay the console mast assembly (**C**) nearby. Join connectors **D** and **E** firmly to ensure a good connection.
  5. Carefully stand console mast assembly **C** upright and join with the rear frame assembly (**B**). Ensure rear assembly (**B**) is fully inserted into the console mast receiver (**C**) by confirming the bolt holes are aligned.
  6. Loosely install four (4) sets of parts **F1**, **F2** and **F3** into the sides of console mast assembly **B** and four (4) sets of parts **F1**, **F2** & **F4** into the top and underside of the mast assembly as per the figure to the left. Once all bolts are partially installed, tighten each firmly with the enclosed hex wrench.

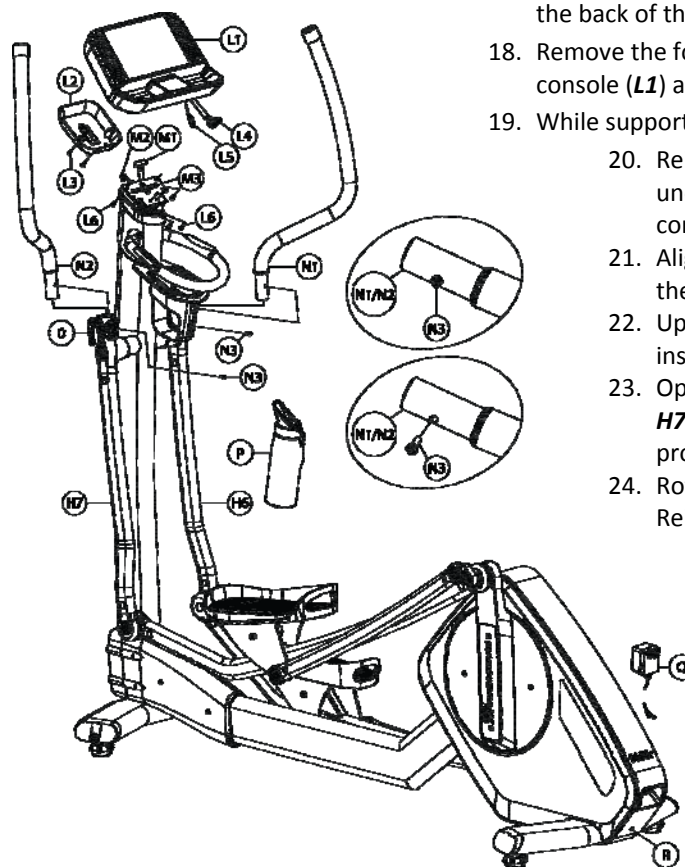
7. Parts **G2**, **G3**, **G4**, **G5** and **G6** will arrive pre-assembled on the unit. Remove the four (4) hex bolts (**G5**) from the lower console mast front cover (**G6**) and set aside. Remove hex bolt **G2** from the right side lower console mast cover (**G4**) and set aside with the two (2) **G1** hex bolts.
8. Gather the left (**G3**) and right (**G4**) lower console mast covers and bring together as a clamshell over the console mast/main frame union. Align covers with the mounting holes in the main frame and loosely thread the two (2) **G1** hex bolts into place. Loosely install hex bolt **G2** through the plastic cover **G4** and into cover **G3**.
9. Install the lower console mast front cover (**G6**) by threading the four (4) hex bolts (**G5**) through the face and into parts **G3** and **G4**. Do not over-tighten.
10. Tighten hex bolts **G1** and **G2**. Do not over-tighten and be aware of improper alignment as the plastic parts come together.



11. The forward pivots of the step arms (**K2 & K3**) will arrive with the fixing hardware pre-installed as depicted. Remove the hardware assembly (parts **J1**, **J2** and **J3**) from the step arms and set aside.
12. Spacer **K1** should remain in place on the pivot axles.
13. Bring the pivots of the left step arm (**K3**) and handlebar (**H1**) together. Slide the handlebar pivot over the step arm pivot axle and press into place.
14. Thread fixing nut **J3** onto the pivot axle and tighten with the provided wrench.
15. Insert hex screw **J1** through pivot cap **J2** and install on step arm **K3**.
16. Repeat steps 12 through 16 for the right side assembly.



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17. Remove the two (2) Philips screws (**L3**) and the console hinge cover (**L2**) from the back of the console (**L1**).
18. Remove the four (4) Philips console mounting screws (**L6**) from backside of the console (**L1**) and set aside.
19. While supporting the console (**L1**), join connectors **L4** with **M1** and **L5** with **M2**.
  20. Reinstall the four (4) Philips machine screws (**L6**) through the underside of the tilting console hinge plate (**M3**) and into the correct holes in the backside of the console **L1**.
  21. Align the hinge cover (**L2**) with the appropriate holes in the back of the console. Reinstall the two (2) Philips wood screws (**L3**).
  22. Upper handlebars **N1** and **N2** are packaged with red hex bolts **N3** installed. Remove bolts **N3** from both handlebars and set aside.
  23. Open the red quick release levers (**O**) on the lower handlebars (**H6** & **H7**) and slide the left (**N2**) and right (**N1**) upper handlebars into the proper receivers.
  24. Rotate the handlebars **N2** and **N1** until threaded hole is visible. Reinstall the red hex screws into each side.
    25. Set the handlebars to the desired position and close the quick release levers (**O**). Ensure the handlebars are firmly fixed.
  26. Place the water bottle (**P**) into the holder.
  27. Plug the power adapter (**Q**) into a 120 volt outlet. Plug the other end into the input jack (**R**).
  28. Check the stability of the unit. If required, adjust the leveling feet to eliminate any rocking of the unit while in use. Lock the feet in place by tightening the nut upward (counter-clockwise) against the frame.



## FINAL INSTALLATION

Upon completion of the assembly steps, it may be necessary to move the unit. The 900Er is equipped with an integrated transport wheel which is recessed into the front of the frame. To move the unit, lift the rear frame, using the hand-hold. Lift the rear end upward until the wheels touch the floor, and carefully roll the unit into position.

Plug the unit into a power outlet.

Ensure the unit is stable by adjusting the leveling feet.



## CUSTOM USER ADJUSTMENTS - Diamondback Natural Alignment (DNA)

With the 900Er now assembled and set into place, the user-specific setting should be adjusted. Diamondback Fitness recognizes the fact that each body is unique. Several built in features allow the user to fine tune the fit of the 900Er for a more ergonomic and comfortable workout. We call these features *Diamondback Natural Alignment* or *DNA*.

### Variable-Width Footbeds

The variable-width footbeds are designed to accommodate the width of an individual's pelvis. A wider pelvis typically indicates the body requires a wider gait or stance. The 900Er allows the user to adjust the width of the footbeds from 1.7" (4.3 cm) wide to 3.2" (8.1 cm) to more closely match their natural alignment and mechanics.

Position Marking	Footbed Width
-	1.7" (4.3 cm)
N	2.45" (6.2 cm)
+	3.2" (8.1 cm)

To adjust the footbeds, remove the six (6) clear plastic footbed caps and set aside. Loosen the six (6) hex bolts until the footbeds moves freely. There is no reason to completely remove the bolts. Align the footbeds to the desired position as indicated by the markings on the footbed liner.

Re-fix the footbeds by tightening the six (6) hex bolts. Reinstall the six (6) footbed caps.



## Tilting Console

To ensure users of every stature can maintain a clear and highly visible view of the console, the 900Er features a tilting console. Hinged at the bottom, adjust the display by gripping the top and rotating the entire console fore and aft until the desired viewing angle is achieved.



## Adjustable Width Handlebars

The adjustable-width handlebars are designed to accommodate an individual's body mechanics. Rather than attempting to adjust the user's natural motion to one that is fixed and inflexible, the 900Er offers a customized fit. The three handlebar positions allow the width to be adjusted with a range of 9.5" (24.1 cm) and an adjustable reach with 7.5" (19.0 cm) of fore-aft adjustment.

	Handlebar Reach	Handlebar Width
-	- 3.0" (- 7.6 cm)	18.75" (47.6 cm)
N	0.0" (0.0 cm)	25.75" (65.4 cm)
+	+ 5.5" (+ 13.9 cm)	28.25" (71.8 cm)

To adjust the bars, open the red quick-release levers on the left and right pivots. Select the desired position and reset the quick release lever. The pressure required to lock the lever should be sufficient to remove any movement of the handlebar. Adjustment of the lever is similar to a nut and bolt. Hold the lever in the open position and rotate the nut on the opposite end clockwise to tighten and counter-clockwise to loosen. While holding the handlebar in the desired position, close the lever. The amount of pressure required to properly lock the lever should leave an impression in the palm of the user's hand.



**Note:** *Always ensure the adjustable handlebars are firmly fixed prior to any workout session as injury can occur.*

Adjust the second handlebar. The positioning indicator should display an alignment that is identical for both bars. "+" represents the widest position while "-" would indicate the narrowest position. "N" represents the neutral or middle position.





## WORKOUT GUIDELINES

### Good Health is an Exercise in Common Sense

In the study titled, “The Surgeon General’s Call To Action To Prevent and Decrease Overweight and Obesity”, the surgeon general indicates that 61% of American adults are either overweight or obese. The study indicates that being overweight increases the risk of health problems, such as heart disease, certain types of cancer, as well as Type-2 diabetes among other afflictions.

**Body Mass Index; BMI = (weight (lb) ÷ height<sup>2</sup> (in)) x 703**

		Weight in Pounds													
		120	130	140	150	160	170	180	190	200	210	220	230	240	250
Height in Feet and Inches	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	

- Healthy Weight
- Overweight
- Obese

Note: Chart applies to adults aged 20 years and older

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### Heart Rate is an Important Key to Your Exercise

The Surgeon General also released a report on physical activity and health. This report dictates that exercise and fitness are beneficial for a person's health and noted the need for exercise as a key component for disease prevention and healthy living. The best way to determine exercise intensity is to monitor your pulse rate. Your heart rate can easily be determined by counting the number of heart beats per minute at the chest, wrist or the carotid artery on your neck. It is difficult however to count your own pulse while exercising as it is not possible to accurately track the number of beats per minute. The Diamondback Fitness 900Er is equipped with a set of touch heart rate sensors as well as a wireless receiver for monitoring your heart rate.

### Using the Touch Heart Rate Sensors

While the unit is powered-on and a workout program is operating, gently grasp both touch heart rate sensors on the fixed handlebar below the console. The computer will detect your pulse rate and register the value as a two (2) or three (3) digit number in the Pulse window on the LCD display.

**NOTE:** *If an inconsistent heart rate is displayed while using the hand pulse sensors:*

- *Ensure the palms of both hands are touching the contact areas of the touch heart rate sensors.*
- *Apply and maintain constant and even pressure upon the grips.*
- *Do not clutch the touch heart rate sensors tightly.*
- *Try to keep both hands still while gripping the touch heart rate sensor.*



***Touch heart rate sensors.***

### Using the Wireless Heart Rate Receiver

A wireless telemetry heart rate receiving system is one feature found on the 900Er. In order for the console to detect and display your heart rate, four (4) conditions must be present:

- A compatible heart rate chest strap transmitter (not included) must be functioning and worn. For proper function of the chest strap, please refer to the manufacturer's instructions.
- The unit must be powered on.
- A workout program must be running.
- The user is within three (3) feet of the console.





In general, a wireless heart rate chest strap is the more accurate and convenient method of detecting and monitoring a heart rate signal. The user is not required to grip the touch heart rate sensors and the unit will continuously display the detected heart rate no matter where the hands are placed.

### Your Estimated Maximum Heart Rate & Target Training Zone

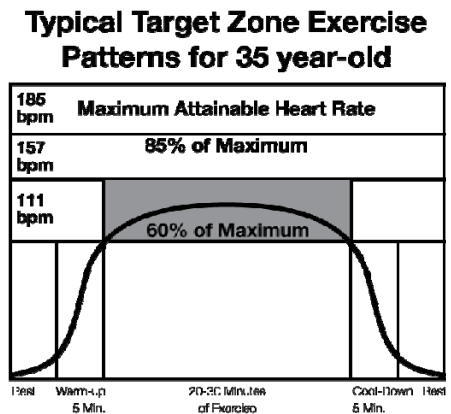
Your calculated target heart rate, or the ideal intensity needed to improve cardiovascular fitness, depends primarily upon your age rather than your current state of fitness. If the exercise intensity is too low or too high, only modest gains will be made in strength and cardiovascular fitness. A workout at a very low intensity will not offer maximum benefits. Conversely, if the workout intensity is too high, injury or fatigue may slow the progression of your exercise goals as the body attempts to recover.

It is most effective to train at a heart rate between 60% and 85% of your maximum heart rate. Maximum heart rate is calculated as 220 beats-per-minute minus your age.

To calculate your maximum heart rate and find the appropriate target training zone, use the following formulas. For example, the following estimation would be relevant for a 35 year-old user:

- $220 - 35 = 185$  Bpm (220 – Age = Max Heart Rate in Beats-per-minute/Bpm)
- $0.60 \times 185 = 111$  Bpm (60% of 185 BPM [Maximum Heart Rate] = 111 Bpm, the upper threshold of the targeted heart rate training zone)
- $0.85 \times 185 = 157$  Bpm (85% of 185 BPM [Maximum Heart Rate] = 157 Bpm, the upper threshold of the targeted heart rate training zone)

Based on these calculations, the recommended heart rate training zone for this user would be between 111 Bpm – 157 Bpm. Pictured to the right is a graph which displays the recommended heart rate training zone for users twenty years of age to seventy-five years of age.



### **WORKOUT QUALITY AND QUANTITY**

It is recommended that you accumulate at least thirty (30) minutes of physical activity most days of the week. 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 session.
- Frequency: 3 to 5 times per week.
- Intensity: 60% to 85% of maximum heart rate.

In addition to aerobic exercise, strength training of moderate intensity twice per week is recommended. Women especially may benefit from weight-bearing exercises. Select activities you enjoy and can fit into daily life. Having Diamondback Fitness equipment at home offers you the opportunity to work out without going to the gym.

### **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 commencing an exercise program. Persons who have diabetes or high blood pressure, a family history of heart disease, high cholesterol or have led sedentary lifestyles should protect themselves with a medical check-up and stress test administered by a healthcare professional.

- Stretching and massaging major muscles (such as your quadriceps) following a workout session will aid in the dissipation of lactic acid and speed your body's recovery.
- The first few minutes of your workout should be devoted to warming up the muscles before a vigorous workout. Concentrate on raising your heart rate slowly.
- After an aerobic workout of roughly 20-30 minutes, spend 10 minutes gradually reducing your heart rate by moving slower or with less resistance.



900Er CONSOLE OVERVIEW

Console Layout



iPod® and iPhone® are registered trademarks of Apple.

## CONSOLE DISPLAY WINDOWS

### Large Data Display

Located in the upper right-hand corner of the LCD window, the Large Data Display window will provide the user with feedback for Time, Calories, Pulse, or Distance. Selection of the displayed data value is controlled by the DISPLAY key. If the Scan option is selected, "Scan" will be displayed in the upper right-hand corner of the Large Data Display window and the displayed value will scroll through the four (4) options, alternating values every five (5) seconds.



### Messaging/Data Display

This secondary console display window contains user data that has been accumulated during the workout. There are two sets of data and only one set is visible at any time. Pressing the DATA DISPLAY key will toggle between one set (Time, Resistance Level, Pulse Rate & Calories) and the other (Strides-per-minute, Speed, Distance & Watts). User instructions will also post in this field.

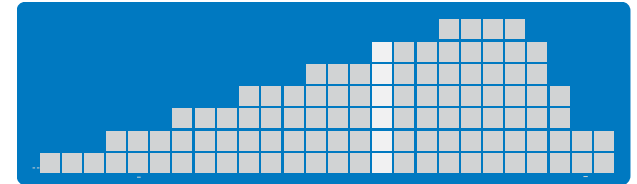


- *Time* will track the program's progress and will usually count down from the default or user-selected value. During the Fitness Test program and if a value of 00:00 is entered, the timer will count *up*.
- *Level* refers to the resistance or load that is currently being applied during the workout. The load level is also displayed in the brickyard matrix as a flashing column. There are sixteen (16) resistance levels to choose from.
- A user's *Pulse* rate, if detected, will be displayed as Beat-per-minute (Bpm).
- The *Calories* field tracks the estimated number of calories burned from the start of the program.
- *Strides/min*, or *Strides-per-minute*, is the number of complete revolutions a single pedal completes every sixty (60) seconds. *Speed* is displayed as Mph or Kph (depending upon the current console setting) and is based upon the user's pedaling speed.
- *Distance* is displayed in miles or kilometers (depending upon the current console setting) and is an estimate based upon the number of strides.
- *Watts* are units of energy generation and are frequently adopted to track the amount of work generated during a workout. Watts are calculated with input from the user's current Speed and Load.



### Workout Profile or Brickyard

During the Setup mode and while a program is operating, this field will graphically display the *resistance level* of the current workout program. A higher “brick” stack represents a higher load or resistance level, with each brick representing two (2) levels of resistance. A flashing column of bricks will indicate the user’s progress in the program at any given time. In the diagram to the left, the user has progressed to the fifteenth column (flashing) and the resistance level is set currently set to twelve (12).



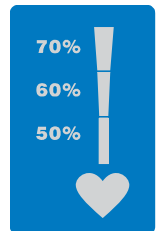
Each vertical column represents a time interval determined by the total length of the program. Each column will equal  $1/10^{\text{th}}$  of the total program length. For example, if the program length is fifty-two (52) minutes, each column will equal three (2) minutes (52 minutes / 26 segments = 2 minutes per segment).

During the Target Heart Rate programs, the brickyard will display the user’s *calculated maximum heart rate* profile.

### Percent of Heart Rate Bar & “Heart” Icon Pulse Indicator

The Heart Rate Bar graphically displays the user’s current heart rate as a percentage of the calculated maximum. The graph will only light up if a heart rate signal is detected by the console. The most accurate feedback will be provided if the user has input their personal age information.

The “heart” icon will light if a pulse rate is detected.



## FUNCTION KEYS

### UP and DOWN Keys

In the Setup mode, the UP/DOWN keys will adjust the entry values for Time, Age and Weight. During the program, adjustments to the resistance level (or target heart rate for interactive heart rate programs) can be made.



### Enter Key

The ENTER key is pressed to accept the user entered data such as program selection and data values.



### Stop / Start – Quick Start

Press the STOP/START-QUICK START key to begin a program or to end a program.

During a Warm Up session, pressing the STOP/START-QUICK START key will end the session and launch the main program. Likewise, if pressed during the main program, the STOP/START-QUICK START key will end the current program and launch the Cool Down mode.



In the Cool Down or Workout Summary modes, pressing this key will restart the previous program.

To reset the console and return to the Idle mode, press and hold the STOP/START-QUICK START key for two (2) seconds at any time.

### Data Display

The DATA DISPLAY key will toggle between two sets of data available for viewing in the Messaging/Data Display window. See section titled *Messaging/Data Display* above.



### Display Key

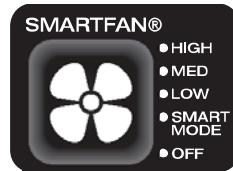
The DISPLAY key will allow the user to toggle through the data values which can be displayed in the Large Data Display field. Pressing DISPLAY repeatedly will alternate the display between Time, Calories, Pulse or Distance. Additionally, the Scan option may be selected to set the display to alternate between these four values automatically every two (2) seconds.





## CONSOLE FEATURES

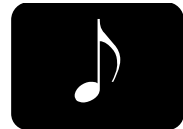
### SmartFan<sup>®</sup>



The 900Er is equipped with a fan on the console to offer a greater level of comfort during the workout. The adjustable louver allows the user to direct the airflow.

Pressing the SmartFan<sup>®</sup> key once will power the fan on in the “smart” mode. The fan speed and airflow will increase as the speed and resistance increase. Pressing the SmartFan<sup>®</sup> button a second, third and fourth time will scroll through the Low, Medium and High preset fan speeds respectively. Pressing the button once more will power the fan off.

### MP3/iPod Input Jack and Speakers



The 900Er console offers an on-board amplifier and stereo speaker set which can be connected to an Mp3 player, iPod<sup>®</sup> or iPhone<sup>®</sup>. Connect one end of a male-to-male 3.5 mm stereo cable (not included) to the headphone jack (or audio out) to the device and the other end to the console port located just above the accessory tray. Sound levels are controlled by the device so be sure to check the internal device settings if the noise level is not satisfactory.

### Tilting Console



The 900Er is equipped with a tilting console to provide all users with a clear and direct view of the displays. The console rotates at the base. To tilt the console, firmly grasp the top of the console and rotate. Do not over-extend the rotation as damage may occur.

**NOTE:** *It is advised that new users read this entire section prior to beginning their first workout session.*

## CONSOLE OPERATION

### Glossary of Terms

<i>Idle Mode</i>	The console has been reset and is waiting for user input. The brickyard matrix displays an animated "DB", while the LED lamps light in series. "Diamondback Fitness" will scroll in the Messaging/Data Display window, followed by a flashing "Select Program." If no input is detected for five (5) minutes, the console will enter the <i>power save</i> mode.
<i>LCD</i>	An acronym for <i>liquid crystal display</i> . The 900Er display screen is an LCD with integrated backlighting for excellent visibility.
<i>LED</i>	An acronym for <i>Light Emitting Diode</i> . The lights above the program keys are LEDs.
<i>Watts</i>	A unit of measurement which refers to the rate energy is expended or generated.
<i>Resistance Level</i>	Also called <i>intensity level</i> . The load applied to a workout by the unit. The higher the intensity level, the higher the resistance.
<i>Heart Rate Control</i>	Also called <i>interactive heart rate control</i> . To maintain a constant heart rate target, the computer console will automatically adjust the resistance or load up or down to increase and decrease the user's heart rate.
<i>Heart Rate Sensors</i>	Located on the fixed handlebar, the user can monitor their heart rate during a workout by simply gripping the touch heart rate sensors.

### Default Values

**NOTE:** *The default values for Age, Weight and Time will be updated when changed in the program settings.*

<i>Age</i>	35 years
<i>Weight</i>	155 lbs (or 70 kg if system is operating in <i>metric mode</i> )
<i>Time</i>	30 minutes
<i>Resistance Level</i>	Level 1.





### English Unit Mode and Metric Unit Mode

The default unit setting for the console is the *English* or *standard* system. To toggle between the English and metric units modes, press and hold the ENTER key for two (2) seconds during Idle mode. The Message/Data Display window will display “Self Test.” Press the UP or DOWN keys until “Units Setup” is displayed, and press the ENTER key. “English” or “Metric” will display to confirm the current setting. If an adjustment is desired, select via the UP/DOWN keys. Press and hold the ENTER key to accept the displayed setting. The console will return to the Idle mode.

### Console Alert Sound Settings

The 900Er allows the user to switch off the audible messaging delivered by the console. To turn the sound *off*, press and hold the ENTER key for two (2) seconds while in the Idle mode. The Message/Data window will display “SELF TEST.” Scroll through the menu with the UP/DOWN keys until the “Sound Setup” is displayed, and press ENTER. “Sound On” or “Sound Off” will display to confirm the current setting. Scroll between the two options with the UP/DOWN keys until the desired setting is displayed, pressing the ENTER key to accept the new setting and return to the Idle mode.

### Operating Notes

- |                         |  |
|-------------------------|--|
| <i>Power On and Off</i> | When the AC adapter is plugged into the unit, all displays on the console will light to confirm power has reached the unit. The console will power down after five (5) minutes.  |
| <i>Power Save Mode</i>  | In the power save mode, press any key or move the step arms to wake up the console and begin operation.  |
| <i>Reset</i>            | To reset a program during operation, press and hold the STOP/START-QUICK START key for two (2) seconds. When the program resets, the console returns to the <i>idle mode</i> .   |
| <i>Pause and Resume</i> | You may interrupt or pause a program for up to five (5) minutes during a workout before the console will reset. To pause the program, simply stop pedaling. The Messaging/Data Display window color will change from blue to orange, flash “Pause” then alternate with the data accumulated thus far. To resume the paused program, simply start pedaling before the five (5) minute pause mode times out. |

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<i>Switching Programs</i>	The user may switch from a currently-operating program to another by pressing the new program button, followed by the ENTER key. Calories and distance will continue to accumulate from where the previous program left off.
<i>Program Restart</i>	The user may re-start a program after the program ends by pressing the STOP/START-QUICK START key during <i>Cool Down program</i> or <i>Workout Summary mode</i> . The Messaging/Data Display will flash "Program Restart" and the program will restart immediately, skipping the Warm Up mode. The program data defaults will be remembered from the previous program, while <i>calories</i> and <i>distance</i> will continue to accumulate.
<i>Resistance Levels</i>	During the workout program, the user may press the UP or DOWN keys to adjust the resistance level. "Intensity" will display along with a value to confirm the current setting. Resistance adjustments are not allowed in the heart rate interactive programs.

### PROGRAMMING FEATURES

#### Warm Up

The 900Er will automatically launch a three (3) minute Warm Up program at the beginning of each program (except Quick Start). "Warm-Up" will be displayed on the console. This program is designed to prepare the user's body for an intensive workout and reduce the possibility of receiving an injury during workout.

Once the Warm Up program is started:

- "Warm-Up" will flash in the Messaging/Data Display window.
- The brickyard will display the program profile, while the first column will flash to indicate the user's progress in the current program.
- "Time" and "3:00" minutes will be displayed in the Large Data window. The user can select which value is displayed (Time, Calories, Pulse or Distance) by pressing the DISPLAY key to scroll through the options highlighted at the top of the LCD screen. As an additional feature, the values can scroll or *scan* between the values every five (5) seconds if the Scan option is selected. "Scan" will be lit in the upper right corner of the LCD display.



- If a heart rate is detected, the heart (♥) symbol will flash and the Heart Rate Graph will display the current percentage of the user's maximum heart rate. The calculations for the user's heart rate target will be based upon the user data entered in the setup mode. Please ensure these values are correct for the current user.
- The LED lamp above the DATA DISPLAY key will be lit indicating the information currently displayed in the Messaging/Data Display window is Time, Level, Pulse and Calories. Pressing the DATA DISPLAY button once will light the LED lamp below the key to indicate RPM, Speed, Distance and Watts are being displayed in the Messaging/Data Display window.
- The user may only increase the resistance to level 5 during the Warm Up program. "Intensity Level =" will be displayed for two (2) seconds in the Messaging/Data Display window to confirm the selection when the UP/DOWN keys are pressed.
- Press START at any time to end the Warm Up program and immediately enter the main program.
- When three (3) minutes have elapsed or the STOP/START-QUICK START key is pressed, the Warm Up session will end and "Starting Program" will flash indicating the launch of the main program. Any accumulated values for Calories and Distance carry over into the main program.

See section entitled *Operating Notes* (page 26) for more information regarding the Pause, Reset and Program Reset functions.

### **Cool Down**

The 900Er offers a three (3) minute Cool Down session which launches automatically at the end of each program. (The Quick Start program does not include a Cool Down session). "Cool Down" will be displayed above the brickyard field. The user may quit the current program and launch the Cool Down session by pressing the STOP/START-QUICK START key at any time. Designed to reduce muscle stiffness and allow your heart rate to recover, the Cool Down session can be very beneficial.

Once the Cool Down program starts:

- "Program Ended" followed by "Cool Down" will flash in the Messaging/Data window.
- The brickyard will display the program profile, while the first column will flash to indicate the user's progress in the current program.

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- “Time” and “3:00” minutes will be displayed in the Large Data window. The user can select which value is displayed (Time, Calories, Pulse or Distance) by pressing the DISPLAY key to scroll through the options highlighted at the top of the LCD screen. As an additional feature, the values can scroll or *scan* between the values every five (5) seconds if the Scan option is selected. “Scan” will be lit in the upper right corner of the LCD display.
- If a heart rate is detected, the heart (♥) symbol will flash and the Heart Rate Graph will display the current percentage of the user’s maximum heart rate. The calculations for the user’s heart rate target will be based upon the user data entered in the setup mode. Please ensure these values are correct for the current user.
- The LED lamp above the DATA DISPLAY key will be lit indicating the information currently displayed in the Messaging/Data Display window is Time, Level, Pulse and Calories. Pressing the DATA DISPLAY button once will light the LED lamp below the key to indicate RPM, Speed, Distance and Watts are being displayed in the Messaging/Data Display window.
- The user may only increase the resistance to level 5 during the Cool Down program. “Intensity Level =” will be displayed for two (2) seconds in the Messaging/Display window to confirm the selection when the UP/DOWN keys are pressed.
- When three (3) minutes have elapsed, the Cool Down session will end and the Workout Summary mode will launch.

See section entitled *Operating Notes* (page 26) for more information regarding the Pause, Reset and Program Reset functions.

### Workout Summary

For additional user feedback, the 900Er console provides a comprehensive Workout Summary immediately following the completion of the Cool Down session. “Workout Finished” and “Your Summary” will flash in the Messaging/Data window.

Once the Workout Summary mode begins:

- The accumulated workout data will for each category will be displayed in the Messaging/Data Display window for three (3) seconds before scrolling to the next value.
- The following information will be displayed in the Workout Summary mode.

<i>Total time</i>	Displayed as “TOL TIME.” Value will include total time accumulated during the Warm Up, Program and Cool Down modes.
<i>Total distance traveled</i>	Displayed as “TOL DIS” followed by “ML” or “KM” depending upon the current console setting.



<i>Total calories burned</i>	Displayed as "TOL CAL." Value will include total calories burned during the Warm Up, Program and Cool Down modes.
<i>Average heart rate</i>	Displayed as "AVG HR" and will be calculated over the course of the Warm Up, Program and Cool Down modes. "AVG HR" will not be displayed if a heart rate was not detected during the workout.
<i>Maximum heart rate</i>	Displayed as "MAX HR." The value will be equal to the highest detected heart rate over the course of the Warm Up, Program and Cool Down modes. "MAX HR" will not be displayed if a heart rate was not detected during the workout.

- The information displayed will alternate for one (1) minute. The console will then display "Reset Console" and return to Idle mode.

See section entitled *Operating Notes* (page 26) for more information regarding the Pause, Reset and Program Reset functions.

### **Quick Start**

The Quick Start program option is for users who wish to bypass the User Setup and Warm Up mode and launch a workout immediately.

**NOTE:** *Selection of the Quick Start program will skip the Warm Up and Cool Down modes.*

*Select.* Press the STOP/START-QUICK START button from the Idle mode to launch the program with the following default values:

- Time = 30 minutes; Resistance Level = 1
- Age and weight will default to the data entered in the previously-saved workout.

*Launch.* Once the program begins:

- The LED lamp over the MANUAL button will light.
- "Time" and "3:00" minutes will be displayed in the Large Data window. The user can select which value is displayed (Time, Calories, Pulse or Distance) by pressing the DISPLAY key to scroll through the options highlighted at the top of the LCD screen. As an additional feature, the values can scroll or *scan* between the values every five (5) seconds if the Scan option is selected. "Scan" will be lit in the upper right corner of the LCD display.

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- The brickyard will display the program profile, while the first column will flash to indicate the user's progress in the current program.
- If a heart rate is detected, the heart (♥) symbol will flash and the Heart Rate Graph will display the current percentage of the user's maximum heart rate. The calculations for the user's heart rate target will be based upon the user data entered in the setup mode. Please ensure these values are correct for the current user.
- The LED lamp above the DATA DISPLAY key will be lit indicating the information currently displayed in the Messaging/Data Display window is Time, Level, Pulse and Calories. Pressing the DATA DISPLAY button once will light the LED lamp below the key to indicate RPM, Speed, Distance and Watts are being displayed in the Messaging/Data Display window.
- The user may change the resistance level during the program. "Intensity Level =" will be displayed for two (2) seconds in the Messaging/Display window to confirm the selection when the UP or DOWN keys are pressed.
- When thirty (30) minutes have elapsed or the STOP/START-QUICK START key is pressed the Quick Start program will end and the Workout Summary mode will launch. Pressing the STOP/START-QUICK START key will restart the Quick Start program. See the section entitled *Workout Summary* on page 29 for more information.

See section entitled *Operating Notes* (page 26) for more information regarding the Pause, Reset and Program Reset functions.

### CLASSIC PROGRAMS

All Classic Programs offer identical setup and data entry. Once the desired program has been selected, jump to the section entitled *Classic Programs Setup Mode* or *Classic Programs Launch* below.

#### Manual Program

*Overview.* The Manual program offers the user the ability to build a customized workout profile on-the-fly, during the workout.

*Selecting.* From the Idle mode, press the MANUAL program button. The LED indicator above the button will light and "Manual" will be displayed in the Messaging/Data Display field.

- Press ENTER to launch Setup mode (see section titled *Classic Programs Setup Mode* below), or





- Immediately launch the Manual program by pressing the STOP/START-QUICK START key and accepting the default values for user Age, Weight and program Time (see section titled *Classic Programs Launch* below).

### Random Cross Program

*Overview.* The Random program offers a nearly infinite number of computer-generated workout profile options to choose from. Selecting varied workout profiles may help to motivate the user by offering training profiles that are new and interesting.

*Selecting.* From the Idle mode, press the RANDOM CROSS key on the console. The LED indicator above the button will light and “Random” will be displayed in the Messaging/Data Display window.

- Press ENTER to enter the Setup mode and accept the workout profile displayed in the brickyard (see section titled *Classic Programs Setup Mode* below), or
- Select another computer-generated profile by pressing the RANDOM CROSS key. Each time RANDOM CROSS is pressed, a new profile will be displayed. When the desired profile is visible, confirm by pressing ENTER (see section titled *Classic Programs Setup Mode* below), or
- Immediately launch the Random Cross program by pressing the STOP/START-QUICK START key and accepting the default values for user Age, Weight and program Time (see section titled *Classic Programs Launch* below).



### Interval Trainer Program.

*Overview.* The Interval Trainer program helps to build cardiovascular strength by alternating the workload from high to low.

*Selecting.* From the Idle mode, press the INTERVAL TRAINER program button. The LED indicator above the button will light and “Interval Trainer” will be displayed in the Messaging/Data Display window.

- Press ENTER to launch Setup mode (see section titled *Classic Programs Setup Mode* below), or
- Immediately launch the Interval Trainer program by pressing the STOP/START-QUICK START key and accepting the default values for user Age, Weight and program Time (see section titled *Classic Programs Launch* below).

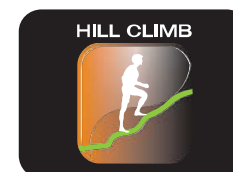


### Hill Climb Program

*Overview.* The Hill Climb program simulates a climbing exercise with a preset hill profile. The exercise profile will guide you up one side of the hill and down the other.

*Selecting.* From the Idle mode, press the HILL CLIMB program button. The LED indicator above the button will light and "Hill Climb" will be displayed in the Messaging/Data Display window.

- Press ENTER to begin the Setup mode (see section titled *Classic Programs Setup Mode* below), or
- Immediately launch the Hill Climb program by pressing the STOP/START-QUICK START key and accepting the default values for user Age, Weight and program Time (see section titled *Classic Programs Launch* below).



### Strength Program

*Overview.* The Strength program will gradually increase the load for a high intensity workout.

*Selecting.* From the Idle mode, press the HILL CLIMB program button. The LED indicator above the button will light and "Interval Trainer" will be displayed in the Messaging/Data Display window.

- Press ENTER to launch Setup mode (see section titled *Classic Programs Setup Mode* below), or
- Immediately launch the Strength program by pressing the STOP/START-QUICK START key and accepting the default values for user Age, Weight and program Time (see section titled *Classic Programs Launch* below).



### Classic Programs Setup Mode

Once a Classic Program has been selected, on-screen messaging will guide the user throughout the Setup Mode.

**NOTE:** *The user may press the START key at anytime during the Setup mode to skip the setup and begin the workout immediately the with previously-saved default values.*

*Age Data Entry.* "Enter Age" will flash followed by "Age = XX" in the Messaging/Data Display window prompting the user to adjust the age value up or down using the UP/DOWN keys. Once the desired value is visible, press the ENTER key to accept. This value will now become the default for the next launch of this program.





*Weight Data Entry.* “Enter Weight” will flash followed by “Weight = XXX LB” (or Weight = XXX KG if console is set to Metric Units mode) in the Messaging/Data Display window prompting the user to adjust the weight value up or down using the UP/DOWN keys. Once the desired value is visible, press the ENTER key to accept. This value will now become the default for the next launch of this program.

*Program Time Data Entry.* “Enter Time” will flash followed by “Time = XX:XX” in the Messaging/Data Display window prompting the user to adjust the time value up or down using the UP/DOWN keys. Once the desired value is visible, press the ENTER key to accept. This value will now become the default for the next launch of this program. The program will now launch.

#### **Classic Programs Launch**

Once a program has been launched:

- A three (3) minute Warm Up session will begin followed by the main program. See the *PROGRAMMING FEATURES - Warm Up* section for details.
- The brickyard will display the program profile, while the first column will flash to indicate the user’s progress in the current program.
- “Time” and “30:00” minutes (or the user-entered value) will be displayed in the Large Data window. The user can select which value is displayed (Time, Calories, Pulse or Distance) by pressing the DISPLAY key to scroll through the options highlighted at the top of the LCD screen. As an additional feature, the values can scroll or *scan* between the values every five (5) seconds if the Scan option is selected. “Scan” will be lit in the upper right corner of the LCD display.
- If a heart rate is detected, the heart (♥) symbol will flash and the Heart Rate Graph will display the current percentage of the user’s maximum heart rate. The calculations for the user’s heart rate target will be based upon the user data entered in the setup mode. Please ensure these values are correct for the current user.
- The LED lamp above the DATA DISPLAY key will be lit indicating the information currently displayed in the Messaging/Data Display window is Time, Level, Pulse and Calories. Pressing the DATA DISPLAY button once will light the LED lamp below the key to indicate RPM, Speed, Distance and Watts are being displayed in the Messaging/Data Display window.
- The user may adjust the resistance level from 1 to 16 during the program via the UP/DOWN keys.
- Pressing STOP/START-QUICK START twice while in the main program will restart the program.

### Ending a Classic Program

When the program time has elapsed or the STOP/START-QUICK START key is pressed, the Cool Down program will launch, followed by the Workout Summary display. Refer to the section titled *PROGRAMMING FEATURES - Cool Down and Workout Summary* for more information.

- Press and hold the STOP/START-QUICK START for two (2) seconds to reset the console and return to the Idle mode.

See the section entitled *Operating Notes* (page 26) for more information regarding the Pause, Reset and Program Reset functions.

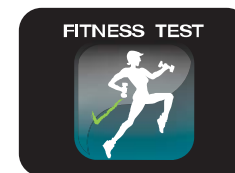
### FITNESS TEST PROGRAM

*Overview.* Based upon the YMCA *Protocol Standards*, the Fitness Test program is provided as a tool to evaluate your current fitness level. While exercising, the muscles convert oxygen into the fuel needed for the muscles to do the required work. The higher the effort, the more oxygen the muscles will require. This oxygen (or fuel) is delivered to the muscles via the cardiovascular system. The harder the effort, the faster the heart will pump in an effort to maintain the fuel supply to the muscles. As one's fitness level improves, the muscles become more efficient and therefore do not require as much fuel to perform the same amount of work. The Fitness Test incorporates this basic knowledge within an algorithm to provide a measurement of the user's fitness. The user's heart response is then monitored at each interval via the touch heart rate sensors or wireless heart rate receiver if used with a transmitter belt (not included).

During the Fitness Test, the user is introduced to a program of predetermined workloads which increase at each stage. The program will continue until two stages have successfully been completed with an average heart rate in excess of 110 Bpm. At the conclusion of the Fitness Test program, the console will provide the user with a score based upon the results. These scores can be recorded to track and monitor improvements and progress in the user's desired fitness goals.

*Selecting.* From the Idle mode, press the FITNESS TEST program button. The LED indicator above the button will light and "Fitness Test" will be displayed in the Messaging/Data Display window.

- Press ENTER to begin the Setup mode, or





- Immediately launch the Fitness Test program by pressing the STOP/START-QUICK START key and accepting the default values for user Age, Weight and program Time.

**NOTE:** *A heart rate must be detected by the computer to operate the Target Heart Rate program.*

*Setup.*

**NOTE:** *The user may press the START key at anytime during the Setup mode to skip the setup and begin the workout immediately the with previously-saved default values.*

- *Age Data Entry.* “Enter Age” will flash followed by “Age = XX” in the Messaging/Data Display window prompting the user to adjust the age value up or down using the UP/DOWN keys. Once the desired value is visible, press the ENTER key to accept. This value will now become the default for the next launch of this program.
- *Weight Data Entry.* “Enter Weight” will flash followed by “Weight = XXX LB” (Weight = XXX KG if console is set to *Metric Units mode*) in the Messaging/Data Display window prompting the user to adjust the weight value up or down using the UP/DOWN keys. Once the desired value is visible, press the ENTER key to accept. This value will now become the default for the next launch of this program.
- *Program Time Data Entry.* Time will be determined by the user’s performance during the Fitness Test program.
- *Intensity Level Data Entry.* The resistance or intensity level will be determined by the user’s performance during the Fitness Test.

*Launch.* Once the program launches:

- A three (3) minute Warm Up session will begin. See the *PROGRAMMING FEATURES - Warm Up* section for details.
- The brickyard will display the program profile, while the first column will flash to indicate the user’s progress in the current program.
- “Time” and “0:00” minutes will be displayed in the Large Data window. The time value will begin to count up from 0:00. The user can select which value is displayed (Time, Calories, Pulse or Distance) by pressing the DISPLAY key to scroll through the options highlighted at the top of the LCD screen. As an additional feature, the values can scroll or *scan*

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between the values every five (5) seconds if the Scan option is selected. "Scan" will be lit in the upper right corner of the LCD display.

- The user must maintain a stride rate of 50 Rpm. "Step at 50 RPM" will display in the Messaging/Data Display window at the start of the session.
- The current program stage (e.g. "Stage 1") will periodically be displayed in the Messaging/Data Display window.
- The LED lamp above the DATA DISPLAY key will be lit indicating the information currently displayed in the Messaging/Data Display window is Time, Level, Pulse and Calories. Pressing the DATA DISPLAY button once will light the LED lamp below the key to indicate RPM, Speed, Distance and Watts are being displayed in the Messaging/Data Display window.
- The console will begin to monitor the user's heart rate. If no pulse is detected, the program will stop and the Messaging/Data Display will display "No HR Detected." If a heart rate is detected, the heart (♥) symbol will flash and the Heart Rate Graph will display the current percentage of the user's maximum heart rate. The calculations for the user's heart rate target will be based upon the user data entered in the setup mode. Please ensure these values are correct for the current user.
- The Fitness Test program will automatically adjust the resistance levels. The user will not be able to modify the resistance during this program.
- Pressing STOP/START-QUICK START twice while in the main program will restart the program.

*End.* The Fitness Test program will automatically end when the user successfully completes two (2) phases at or above a heart rate of 110 Bpm, or when the STOP/START-QUICK START key is pressed.

- If successful, the Messaging/Data Display window will display "Max METS = X.X" and enter the Cool Down mode. Refer to the section titled *PROGRAMMING FEATURES - Cool Down and Workout Summary* for more information.

The *METS* value calculated by the 900Er console represents the user's functional capacity for aerobic exercise. *METS*, or metabolic units are calculated with the input of body weight, but not age or gender. For this reason, the value is to be considered a relative measurement only. The American College of Sports Medicine offers this chart which compares *METS* to a person's relative fitness level.



Knowing your functional capacity can help indicate how difficult it may be for a user to perform certain activities. For example, cycling leisurely generally requires about 3-4 METS, while fast cycling at roughly 10 MPH would require 7 METS. If a user's functional capacity is 6, it can be assumed that this user would have a very difficult time sustaining the faster riding speed for any length of time. For more information about METs capacity or if you have concerns about your fitness level, consult American College of Sports Medicine guidelines or a personal trainer.

Functional Capacity (METS)	Relative Fitness Level*
1.0 – 3.9	Poor
4.0 – 6.9	Low
7.0 – 10.9	Average
11.0 – 13.9	Good
14.0 – 16.0	High

*\*For 40 year-old males.*

- If the Fitness Test program was not completed successfully, “Unable to Complete Test” will scroll across the Messaging/Data Display window, followed by “Program Ended.” The Cool Down program will launch, followed by the Workout Summary display. Refer to the section titled *PROGRAMMING FEATURES - Cool Down and Workout Summary* for more information.
- Press and hold the STOP/START-QUICK START button for two (2) seconds to reset and return console to Idle mode.

See section entitled *Operating Notes* (page 26) for more information regarding the Pause, Reset and Program Reset functions.

## CUSTOM PROGRAM

### Custom Trainer Program

*Overview.* The Manual program offers the user the ability to build a customized workout profile prior to launching the workout. Changes to the workout profile will be saved and launched as the default profile in future workout sessions.

*Selecting.* From the Idle model, press the CUSTOM TRAINER program button. The LED indicator above the button will light and “Custom Trainer” will be displayed in the Messaging/Data Display field.

- Press ENTER to begin the Setup mode, or



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- Immediately launch the Custom Trainer program by pressing the STOP/START-QUICK START key (see section *Launch* below).

### *Setup.*

**NOTE:** *The user may press the START key at anytime during the Setup mode to skip the setup and begin the workout the with previously-saved default values.*

- *Age Data Entry.* "Enter Age" will flash followed by "Age = XX" in the Messaging/Data Display window prompting the user to adjust the age value up or down using the UP/DOWN keys. Once the desired value is visible, press the ENTER key to accept. This value will now become the default for the next launch of this program.
- *Weight Data Entry.* "Enter Weight" will flash followed by "Weight = XXX LB" (Weight = XXX KG if console is set to Metric Units mode) in the Messaging/Data Display window prompting the user to adjust the weight value up or down using the UP/DOWN keys. Once the desired value is visible, press the ENTER key to accept. This value will now become the default for the next launch of this program.
- *Program Time Data Entry.* "Enter Time" will flash followed by "Time = XX:XX" in the Messaging/Data Display window prompting the user to adjust the time value up or down using the UP/DOWN keys. Once the desired value is visible, press the ENTER key to accept. This value will now become the default for the next launch of this program.
- *Program Profile Modification.* "Modify Profile" will be displayed in the Messaging/Data Display window, while the brickyard will post the default or previously-modified profile. The first column will flash. Adjust the resistance level using the UP/DOWN keys until the desired value is displayed. Press the ENTER key to accept and modify the next column. Repeat for the remaining segments. Pressing the STOP/START-QUICK START button at any time will accept the currently-displayed profile and launch the Custom Trainer program. The program will now launch.

*Launch.* Once a program has been launched:

- A three (3) minute Warm Up session will launch followed by the main program. See the *PROGRAMMING FEATURES - Warm Up* section for details.
- The brickyard will display the program profile, while the first column will flash to indicate the user's progress in the current program.



- “Time” and “30:00” minutes (or the user-entered value) will be displayed in the Large Data window. The user can select which value is displayed (Time, Calories, Pulse or Distance) by pressing the DISPLAY key to scroll through the options highlighted at the top of the LCD screen. As an additional feature, the values can scroll or *scan* between the values every five (5) seconds if the Scan option is selected. “Scan” will be lit in the upper right corner of the LCD display.
- If a heart rate is detected, the heart (♥) symbol will flash and the Heart Rate Graph will display the current percentage of the user’s maximum heart rate. The calculations for the user’s heart rate target will be based upon the user data entered in the setup mode. Please ensure these values are correct for the current user.
- The LED lamp above the DATA DISPLAY key will be lit indicating the information currently displayed in the Messaging/Data Display window is Time, Level, Pulse and Calories. Pressing the DATA DISPLAY button once will light the LED lamp below the key to indicate RPM, Speed, Distance and Watts are being displayed in the Messaging/Data Display window.
- The user may adjust the resistance level from 1 to 16 during the program via the UP/DOWN keys.
- Pressing STOP/START-QUICK START twice while in the main program will restart the program.

*End.* When the program time has elapsed or the STOP/START-QUICK START key is pressed, the Cool Down program will launch, followed by the Workout Summary display. Refer to the section titled *PROGRAMMING FEATURES - Cool Down and Workout Summary* for more information.

- Press and hold the STOP/START-QUICK START button for two (2) seconds to reset the console and return to the Idle mode.

See the section entitled *Operating Notes* (page 26) for more information regarding the Pause, Reset and Program Reset functions.

## **INTERACTIVE HEART RATE PROGRAMS**

Diamondback’s interactive heart rate programs can also be described as *heart rate control programs*. Heart rate control programs automatically increase and decrease the load during the workout to stay within four (4) Bpm (Beats-per-minute) of the desired target.

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For example, if the heart rate target is 132 BPM, and the user's pulse begins to fall, the 900Er computer will slowly increase the load. Eventually, the amount of work being performed by the user will increase and so will the heart rate. Conversely, if the user's heart rate climbs above the target zone, the load will be reduced, ultimately decreasing the user's heart rate.

The advantages of heart rate control programs are the simplicity and accuracy by which the ideal cardio-vascular training zone is maintained thereby offering a very efficient workout.

For the interactive heart rate programs to operate, the computer must receive a heart rate signal from the touch heart rate sensors or optional chest strap transmitter. If no signal is detected, the program will not start, the Pulse field will display "--" and the heart symbol will not be lit.

For the greatest cardio-vascular benefit, most persons should target a heart rate that is between 60% and 85% of their *calculated maximum heart rate*. An individual's calculated maximum heart rate is estimated at 220 Bpm, minus their age. It is unsafe to exceed 90% of this calculated heart rate. The 900Er elliptical is programmed to warn the user if the heart rate exceeds 95% of their maximum.

When the user's heart rate reaches or exceeds 95% of calculated maximum, the Pulse display will blink three (3) times, followed by two beeps. The warning will repeat every three minutes if the heart rate is maintained.

**NOTE:** *The computer bases all heart rate targets and maximums on the data entered during the program Setup mode. For an effective and safe workout, please enter the correct data for the current user.*

**NOTE:** *It is unsafe to exceed 95% of your calculated maximum heart rate. Please consult your physician before performing any heart rate based training program.*

See the sections titled *Heart Rate is an Important Key to Your Exercise* and *Your Estimated Maximum Heart Rate & Target Training on Zone* page 17 for more information regarding target heart rate calculations.

### Target Heart Rate Program

The Target Heart Rate program allows the user to select their target heart rate. The console will automatically adjust the load to keep the heart rate within four (4) Bpm of the desired goal. During the program, the user can adjust the heart rate target between 60% and 85% of their calculated maximum heart rate by pressing the UP/DOWN keys.







*Selecting.* From the Idle mode, press the Target Heart Rate program key on the console, followed by the ENTER key to begin the Setup mode.

#### **Heart Rate Interval Program**

The Heart Rate Interval program is designed to alternate between periods of hard work (*work phase; 80% of max heart rate*) and easy work (*rest phase; 65% of max heart rate*). The console will automatically adjust the resistance level up or down to match keep the heart rate targets. During the program, the user can adjust the heart rate target by pressing the UP or DOWN buttons.



*Selecting.* From the Idle mode, press the Target Heart Rate program key on the console, followed by the ENTER key to begin the Setup mode.

#### **Interactive Heart Rate Program Setup**

**NOTE:** *The user may press the START key at anytime during the Setup mode to skip the setup and begin the workout immediately the with previously-saved default values.*

*Age Data Entry.* “Enter Age” will flash followed by “Age = XX” in the Messaging/Data Display window prompting the user to adjust the age value up or down using the UP/DOWN keys. Once the desired value is visible, press the ENTER key to accept. This value will now become the default for the next launch of this program.

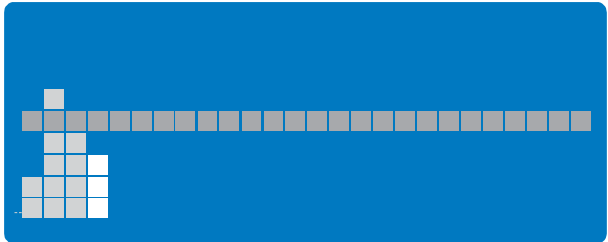
*Weight Data Entry.* “Enter Weight” will flash followed by “Weight = XXX LB” (Weight = XXX KG if console is set to Metric Units mode) in the Messaging/Data Display window prompting the user to adjust the weight value up or down using the UP/DOWN keys. Once the desired value is visible, press the ENTER key to accept. This value will now become the default for the next launch of this program.

*Program Time Data Entry.* “Enter Time” will flash followed by “Time = XX:XX” in the Messaging/Data Display window prompting the user to adjust the time value up or down using the UP/DOWN keys. Once the desired value is visible, press the ENTER key to accept. This value will now become the default for the next launch of this program. The program will now launch.

#### **Interactive Heart Rate Programs Launch**

Once a program has been launched:

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- A three (3) minute Warm Up session will launch followed by the main program. See the PROGRAMMING FEATURES - Warm Up section for details.
- The brickyard will display the program profile, while the first column will flash to indicate the user's progress in the current program.
- "Time" and "30:00" minutes (or the user-entered value) will be displayed in the Large Data window. The user can select which value is displayed (Time, Calories, Pulse or Distance) by pressing the DISPLAY key to scroll through the options highlighted at the top of the LCD screen. As an additional feature, the values can scroll or scan between the values every five (5) seconds if the Scan option is selected. "Scan" will be lit in the upper right corner of the LCD display.
- The brickyard matrix will display a solid horizontal line of segments near the middle of the field which graphically represents the user's current target heart rate. This value is dependent upon the heart rate control program although changes can be administered by the user. The user's current progress through the program is tracked by a flashing column, where each column equals 1/26<sup>th</sup> of the Time value entered during the Setup mode and the height of the column represents the user's current heart rate percentage versus the horizontal bar target. Each segment of the column represents a percentage of the current user's heart rate.  


■	91 - 100% of max HR
■	81 - 90%
■	71 - 80%
■	61 - 70%
■	51 - 60%
■	41 - 50%
■	31 - 40%
■	0 - 30% of max HR

As the user progress from one segment to the other, the average heart rate for the previous segment will be displayed as a solid column.
- Press the STOP/START key once to enter the Cool Down mode. See the section titled *Cool Down* on page 28.
- If a heart rate is detected, the heart (♥) symbol will flash and the Heart Rate Graph will display the current percentage of the user's maximum heart rate. The calculations for the user's heart rate target will be based upon the user data entered in the *Setup* mode. Please ensure these values are correct for the current user.



- The LED lamp above the DATA DISPLAY key will be lit indicating the information currently displayed in the Messaging/Data Display window is Time, Level, Pulse and Calories. Pressing the DATA DISPLAY button once will light the LED lamp below the key to indicate RPM, Speed, Distance and Watts are being displayed in the Messaging/Data Display window.
- Messages or feedback for the user will periodically flash and scroll in the Messaging/Data Display window. Directions such as “Speed Up” or “No Heart Rate Detected. Check Your Pulse Sensor” will ensure a productive workout.
- Adjustment of the resistance level is controlled by the console.
- Pressing STOP/START-QUICK START twice while in the main program will restart the program.

#### **Ending a Heart Rate Control Program**

When the program time has elapsed or the STOP/START-QUICK START key is pressed, the Cool Down program will launch, followed by the Workout Summary display. Refer to the section titled PROGRAMMING FEATURES - Cool Down and Workout Summary for more information.

- Press and hold the STOP/START-QUICK START for two (2) seconds to reset the console and return to the Idle mode.

See the section entitled *Operating Notes* (page 26) for more information regarding the Pause, Reset and Program Reset functions.

#### **MAINTENANCE**

All Diamondback Fitness products are engineered for years of near-silent operation. Let noise be your first indication that a repair or adjustment is required. Please, discontinue use immediately and contact an Authorized Service Technician or Diamondback Fitness Dealer if an unusual noise, scraping, knocking, grinding or vibration is detected. Often, a minor issue will become a major repair if ignored and use is continued.

Prior to each workout, confirm that all adjustment levers and screws are tightened.

Your Diamondback Fitness 900Er is manufactured of the most durable materials available. The plastics are molded of strong and chemical-resistant ABS and PVC. The frame is produced of high-tensile steel and protected with an industrial-grade, powder paint coating for the highest level of corrosion resistance. It is important to note however, that perspiration can be extremely

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corrosive if allowed to accumulate on the machine. After training, always wipe down the unit with a mild soap solution followed by a thorough drying with a clean towel. Locating a small spray bottle and towel near the unit will help ensure that your Diamondback Fitness 900Er looks new for many years.

**NOTE:** *Perspiration is very corrosive and if allowed to remain on the machine, will cause discoloration, fading, rust and odors. Unfortunately, these conditions are not covered under the Warranty Policy.*

### WARRANTY INFORMATION

Diamondback Fitness warrants the 900Er Rear Drive Elliptical to be free from defects in material and workmanship under normal use in the home environment. Diamondback Fitness's obligation under this warranty is limited to the repair or replacement of any defective part, provided free of charge through an Authorized Service Agent. This warranty is extended to the original purchaser. The following conditions apply:

#### **Who is Covered**

The warranty is extended to the individual whose name appears on the Warranty Registration filed with Diamondback Fitness and may not be transferred to any other individual or legal entity. In the absence of a valid Warranty Registration, the original sales receipt will serve as satisfactory documentation of the valid warranty status.

#### **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 to begin the warranty claim process.

#### **Warranty Registration**

Warranty commitments are valid only with a completed Warranty Registration. Registration is available online at [www.diamondbackfitness.com](http://www.diamondbackfitness.com). Alternatively, a warranty card may be mailed to Diamondback Fitness. (See page 48)

#### **Proof of Purchase**

Proof of purchase from a Diamondback Fitness Authorized Dealer will be required if the warranty card is not registered.



#### **What is Covered – For Interior Residential Use Only.**

- Frame Limited lifetime warranty; covers defects in welds, materials, and workmanship (some exclusions apply).
- Brake Limited lifetime warranty
- Parts & Electronics 1 year
- Labor 1 year
- Wear Items 90 days

**Note:** *Limited lifetime refers to warranty coverage of the unit's expected service life, not the lifetime of the purchaser. The expected lifetime of the Diamondback Fitness 900Er is five (5) years from the date of purchase although other factors can extend this period. Support and maintenance of the unit may become difficult or impossible after this period expires.*

#### **Voided Warranty**

The warranty does not apply to any failure of the product or its components due to alterations or modifications, misuse and abuse, accidental damage, lack of maintenance or improper assembly. Improper assembly can be avoided if the unit is assembled by an authorized technician. Damage due to improper assembly is not covered by the warranty. Common assembly errors can include damaged wire harnesses, stripped screws and nuts, crank arms or damaged threads. If the serial number has been removed, altered or defaced, the warranty for the affected unit is voided.

#### **Parts & Service**

Contact the Authorized Diamondback Fitness Dealer which originally sold the unit. If you have moved, or the retailer is unavailable, visit the Diamondback Fitness dealer locator site at [www.diamondbackfitness.com](http://www.diamondbackfitness.com) to help locate an alternate Authorized Dealer.

Diamondback Fitness is not responsible for securing warranty service and/or honoring extended warranties provided by dealers.

**NOTE:** *Authorized service technicians do not reside in all areas of the country. If you live beyond the reasonable service area of a metropolitan area, Diamondback Fitness may not be able to support the labor portion of the product warranty. Travel fees for technicians are not covered by the warranty.*

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### **Other Exclusions**

The warranty is void if the 900Er is placed in commercial or light commercial environments such as health clubs, schools, hotels, condominium common areas, correctional facilities, or any other non-residential setting.

The warranty will not be honored if the 900Er is employed for commercial or rental purposes.

The 900Er is for indoor use only.

### **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, and are limited to the same duration as the express warranty herein. Diamondback Fitness 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 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.



### WARRANTY REGISTRATION CARD

Please return the completed warranty registration card to Diamondback Fitness within 15 days of purchase. Failure to comply may void the warranty. You may register your product at [www.diamondbackfitness.com](http://www.diamondbackfitness.com).

Name (last, first)   
Address   
City  State  Zip Code   
Daytime Telephone  -  -  Evening Telephone  -  -

Dealer / Store Name   
Dealer's Address   
City  State  Zip Code

Model **500Er** Serial Number **E**  Date of Purchase  -  -

Mail Completed Form To: **Diamondback Fitness – Warranty Card**  
**6004 S 190th Street Suite 101 Kent, Washington 98032**

..... Detach and mail

## 900Er Owner's Manual



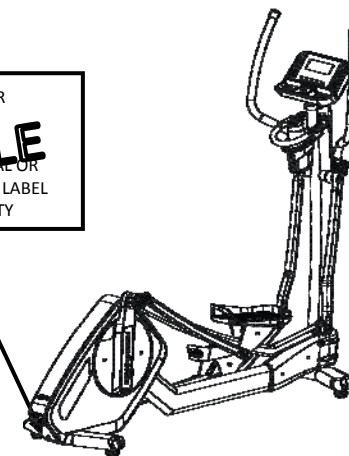
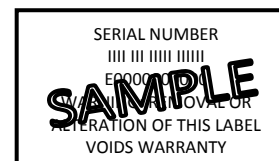


**PURCHASER'S REFERENCE INFORMATION**

**Model Number:** 900Er

**Record Serial Number** E 

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**Serial Number Location**

The serial number is imprinted on a metal badge located on the rear of the unit, just under the transport handle (see figure to the right).

**Record of Purchase**

**NOTE:** Please record details associated with the purchase of your Diamondback Fitness unit below. This information will be required in the event the unit requires future service. ATTACH THE PURCHASE RECEIPT.

Dealer Name: \_\_\_\_\_ Dealer Telephone Number: (\_\_\_\_) \_\_\_\_\_

Dealer Address: \_\_\_\_\_

Date Purchased: \_\_\_\_\_ Dealer Contact Name: \_\_\_\_\_

**To Activate Your Warranty**

Please register the unit at [www.diamondbackfitness.com](http://www.diamondbackfitness.com). Failure to comply may limit or void your warranty coverage.

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