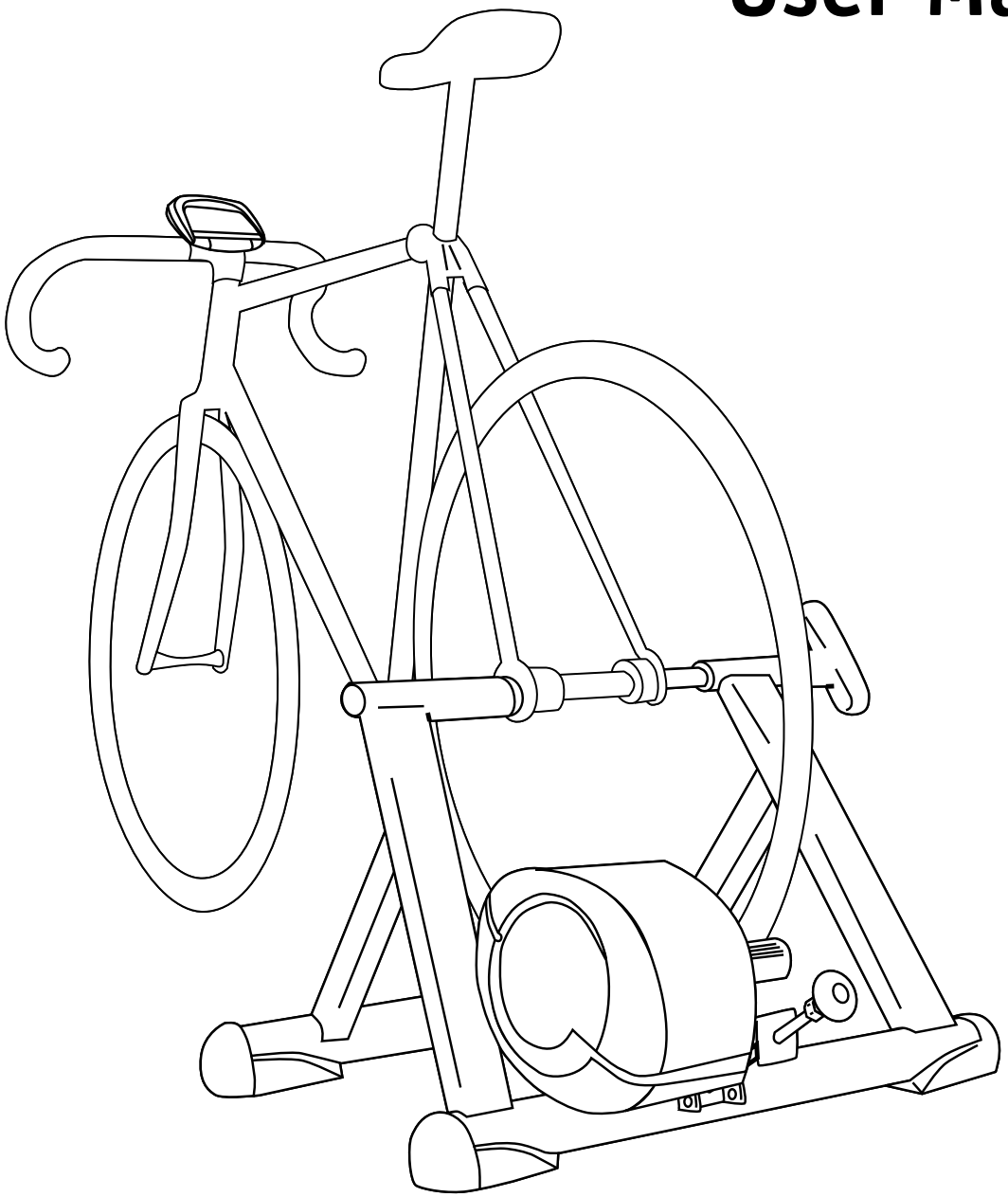
PERFORMANCE®

AXIOM® POWERTRAIN™

User Manual



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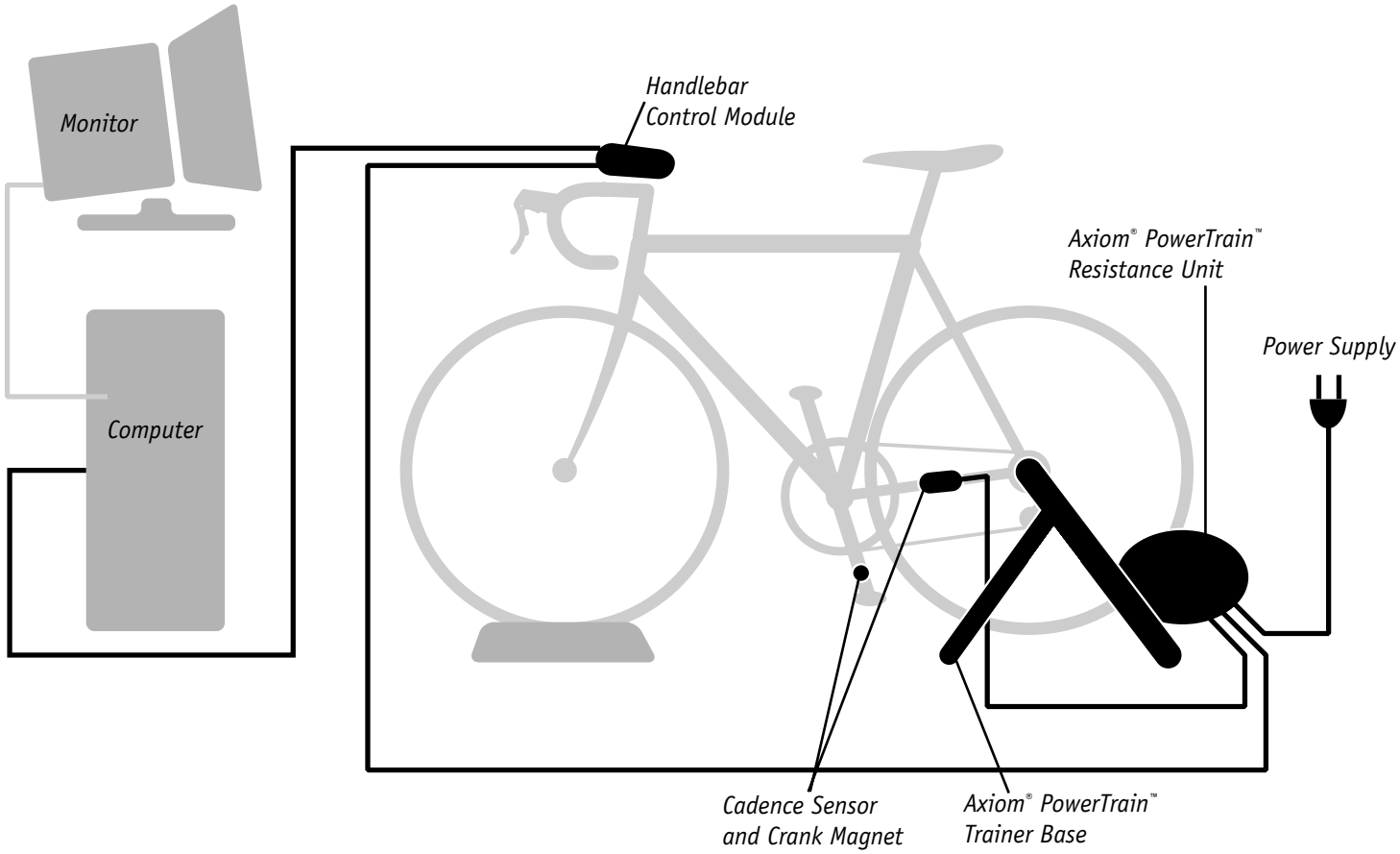
AXIOM® POWERTRAIN™

System Overview

- Axiom® PowerTrain™ parts (Black)
- Owner supplied parts (Grey)



Thank you for choosing the Axiom® PowerTrain™ bicycle training system. Combine your familiar bicycle and your personal computer with the PowerTrain™ electronic trainer and software. The PowerTrain™ lets you track speed, distance, ride time, cadence, power output, elevation gain, and heart rate. History screens let you view your progress over time. Your indoor training has never been more fun and effective then it will be with the Axiom® PowerTrain™!

Caution: Before you start any exercise program you should consult a physician.

I. Parts Diagram and Listing

Axiom® PowerTrain™ trainer base	1
Handle	1
Rubber feet	4
Tension adjusting bolt for trainer base (installed)	1
Control module	1
Handlebar bracket	1
Rubber shim	1
Self-tapping screw (for handlebar bracket)	1
Electronic resistance unit	1
Carriage bolts	2
Washers	2
10 mm nut	2
Cadence sensor	1
Crank magnet	1
Large reusable zip tie	1
Small zip ties	3
Software diskette	1
Transformer (power supply)	1
Computer cables	2

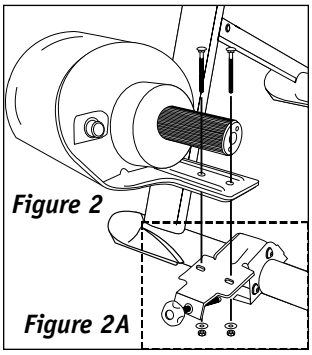
II. System Requirements

	Minimum System Requirements	***Recommended System Requirements***
PC	486/33 MHz	Pentium/100MHz
Operating System	Windows 95 or better	Windows 95 or better
Hard Disk	3 MB of free space	3 MB of free space or better
RAM	8 MB	16 MB
Monitor	VGA 800 x 600 pixels	VGA 800 x 600 pixels or better
Computer Ports	9-pin Serial Port (or 24-pin Serial Port with Adaptor)	9-pin Serial Port (or 24-pin Serial Port with Adaptor)

III. Assembly Instructions

Trainer Assembly

1. Unfold the trainer base. Press the four rubber feet onto the ends of the trainer legs, with the flat part of the feet on the floor (Figure 1).
2. Assemble handle to axle support with a light tap (Figure 1).



Attaching Resistance Unit

Position the resistance unit on the contact plate of the trainer. Orient the unit so that the housing is on the left side (non-drive side of the bicycle). Align the slots of the resistance unit with the holes in the contact plate. Slide a carriage bolt through one of the holes. Place washer on, and then loosely thread a nut onto the bolt. Repeat for the other hole. Center the resistance unit left-to-right, and snug the bolts and nuts (do not tighten fully). See figure 2A.

Positioning/Mounting Bike to Trainer

1. Position the trainer near your PC so that when you are seated on the mounted bicycle you will have a clear view of your monitor.
2. Set the PowerTrain™ on a flat, stable surface.
3. Make sure that the bicycle's rear wheel skewer is tight.
4. Slide the locking ring to the right (Figure 3A) and fully unscrew the axle support mechanism.

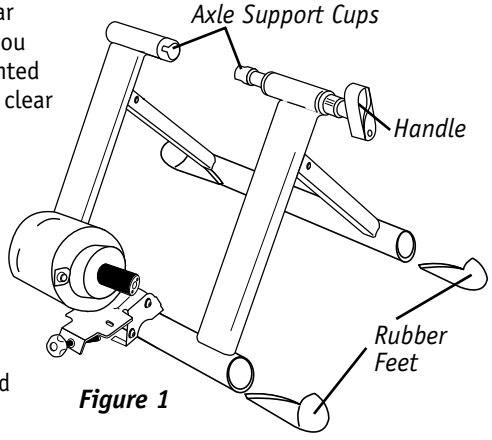
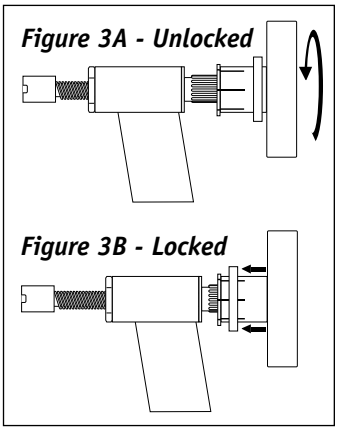


Figure 1

5. Carefully lift your bike into position, aligning the rear wheel axle with the axle support cups (Figure's 4 & 5).
6. While holding the bicycle steady, slide the left side of the quick release skewer into the axle support cup. Make sure that the QR lever aligns with the notch in the support cup. Rotate the support cup as necessary.

NOTE: If your QR Lever will not fit into the support cup notches, replace the QR Lever with a smaller one.



7. Using the handle, tighten the right side axle support until the support cup comes in contact with the bicycle's right side QR skewer nut. After contact is made, tighten by turning the handle 1/2 rotation.
8. Slide the locking ring (Figure 3B) fully to the left (toward the bike) to lock the axle support mechanism.

9. If the wheel is not centered on the resistance unit, loosen the 10mm nuts on the resistance unit and slide it sideways as necessary. Retighten the nuts securely.

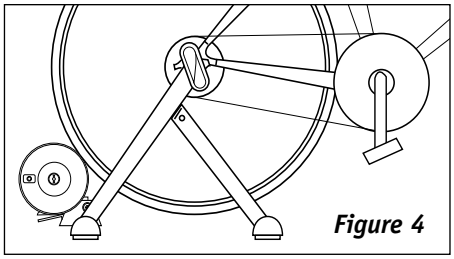


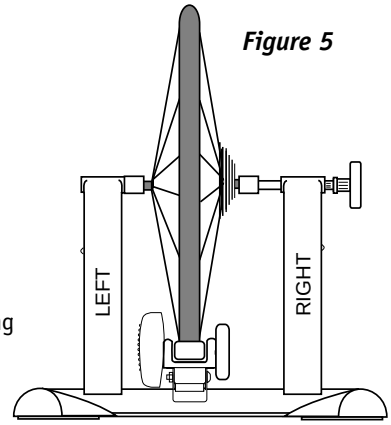
Figure 4

10. Test that the bike is secure by pushing and pulling on the top tube or seat.

11. If the bike is not stable, make sure that the QR lever is positioned correctly in the support cups, and the axle support mechanism is tightened securely.

12. Tighten the Tension adjusting bolt by turning clockwise, until the unit contacts the tire.

Figure 5

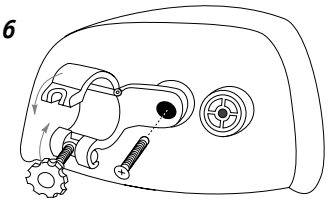


Note: After using the trainer you may find it necessary to tighten the tension adjusting bolt additionally to prevent tire slippage.

Mounting Handlebar Unit

1. Unthread the knob of the mounting bracket enough to allow the bracket to be fully opened. Install the rubber shim to the bracket. Close the handlebar bracket around the handlebar. Place the module on the mounting bracket to determine which of the three possible positions is best for your bike (see figure 6). Remove the bracket from the handlebars.

Figure 6



NOTE: It is best to position the module so that it is centered over the stem.

2. Remove the module from the bracket. Using the self-tapping screw, attach the Control module to the handlebar bracket using the hole determined in step 1.

3. Reattach the handlebar bracket/Control module to your handlebar using the rubber shim to prevent slippage.

Mounting the Cadence Kit to the Bicycle

1. Insert the large reusable zip tie through the cadence sensor bracket as shown in figure 7. The large reusable zip tie should have the smooth side oriented under the small arrow on the sensor bracket.

2. Slide the rubber shim onto the zip tie. Orient the rubber shim so that the side with the ridges is placed next to the sensor bracket. Tuck the sensor wire into the groove in the bracket, under the rubber shim. See figures 8, 9, and 10.

Figure 7

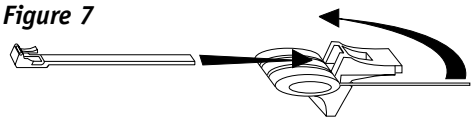


Figure 8

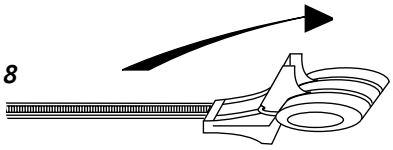
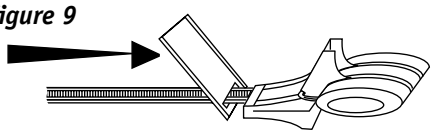


Figure 9



3. Wrap and partially tighten the zip tie around the chainstay on the non-drive side of the bicycle. Orient the cadence sensor so that it is on the outside of the chainstay and near the inside of the left crank arm. The sensor wire should be pointed towards the back of the bicycle.

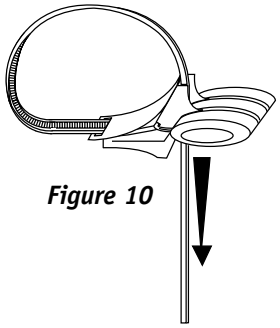


Figure 10

NOTE: You may want to secure the cadence cable to your trainer using zip ties.

4. Using one small zip tie, attach the magnet to the inside of the left crank arm. The magnet should be facing toward the chainstay about $^{2}/_{3}$ of the way down the crank. Position the Cadence sensor and magnet so that they are approximately 2-3 mm apart. The magnet should pass the middle of the sensor.

NOTE: It may be necessary to cut off excess material from the cadence sensor zip tie to prevent it from touching the spokes. Use care not cut off too much plastic, this will prevent the zip tie from being taken on and off easily.

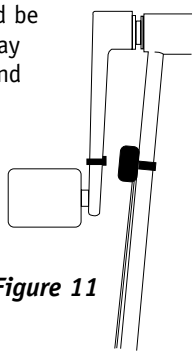


Figure 11

Connections

Connecting to your PC

Plug the narrow flat cable into the right port of the control unit. Plug the other end of this cable into the 9-pin serial port of your computer. (If your mouse uses this port you will need an alternate solution. If you have a 24-pin serial port, use a 9/24 pin adaptor between the cable and the computer. If you have no other free serial ports, you will need to purchase a PS-1 style mouse to free up the 9-pin port.)

Cadence Pick Up

Mount cadence kit (see above). Plug cadence kit into the port marked "#1" on the resistance unit. See figure 12.

Connect the wide cable from the control unit to the port marked "#2" on the resistance unit. See figure 12.

Power connection

Plug the transformer into a wall socket and the power plug into the round port marked “#3” on the resistance unit. See figure 12.

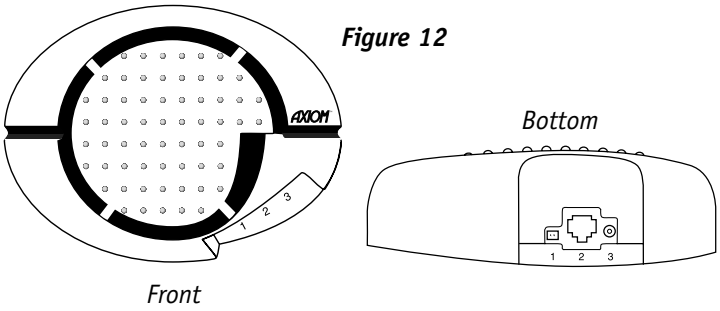


Figure 12

IV. Installing Software

Place the Axiom® PowerTrain™ software disk in your 3½” disk drive. From your Microsoft Windows 95 or better desktop select Start, then select Run. Type “A: Setup” and click OK or hit enter. (If the drive has an alternate designation, type in the appropriate letter in place of “A”.) Now follow the instructions of the installation software. Upon completion of the installation, you will find a new program group called Axiom® PowerTrain™. To start the program, double-click on this program group. Software updates will be made available at www.performancebike.com. Choose "Tech Support". Version "PowerTrain™ 1.0" is supplied with this unit.

V. Program Overview

The Axiom® PowerTrain™ electronic trainer provides a means for cyclists to measure, record and analyze training data in order to improve levels of fitness and performance. The Axiom® PowerTrain™ provides an excellent workout with automatic changes in resistance levels, simulating changes in terrain. During the workout the Axiom® PowerTrain™ allows you to view speed and distance information, cadence, heart rate information, and power output information. After the workout, course data may be saved to a history file for comparison and analysis in spreadsheet-style and graph-style history screens.

In addition to the above-listed data, the PowerTrain™ provides two interesting ratios- Performance Indicator (W/BPM) and Power to Weight (W/Kg)- which can be used to track progress during a training program.

The Performance Indicator value (PI) shows the ratio between power developed and heart rate. This is an indicator of your cycling efficiency. The power value (in watts) is divided by the heart rate, the resulting number shown as the Performance Indicator. This tool can help you monitor fitness by combining two important components of training, heart rate and power output.

By increasing your fitness and pedaling efficiency you should see an increase in the PI value. Producing more power with the same heart rate or the same power with a lower heart rate will cause the Performance Indicator value to rise, indicating increased fitness.

The Performance Indicator value calculated with this system can be used as a fitness gauge. In the Course History file, the Performance Indicator values are shown as AVG. PERF. (W/BPM) in the far right column. On this screen the values are also shown graphically, plotted versus time in days.

To make the most of this feature you should compare Performance Indicator values for rides over the same course. The log that the PowerTrain™ system keeps of these values can help you evaluate your fitness progress over time.

The expression of power to weight ratio is often used to evaluate dynamic things ranging from cars to cyclists. Power is defined as work done over time. The greater the ratio of power to weight, the easier (or faster) a cyclist can ride up a hill.

The AVG POWER/WEIGHT (W/Kg) shown in the **Course Summary** Screen is the average power produced for the course ridden compared to the rider's body weight (body weight entered in the Rider Profile screen). You can improve your power to weight ratio by producing more power (without gaining weight) or losing weight while producing the same power.

The usefulness of the power to weight ratio lies in comparison of the values over time. Monitoring the AVERAGE POWER/WEIGHT value can be especially useful for cyclists trying to lose weight without sacrificing power.

In the following sections are diagrams of each of the available screens in the Axiom® PowerTrain™ software. The screens are arranged in a similar order to that which one might follow during a normal workout. However, movement between screens is possible in many different variations.

To move between screens, use the buttons at the bottom of each screen, or choose **Window** from the toolbar at the top of the screen.

VI. Before You Begin

A. Set up Rider Profile

From the Initial Screen (Figure 13), select **Rider Profile**. The Rider Profile screen allows you to store your personal information (Figure 14). Each person using the Axiom® PowerTrain™ should set up his/her own personal Rider Profile.

Begin by choosing the **New Rider** box in the top right corner of the screen. Type your name, then hit the *Tab* key or use your mouse.

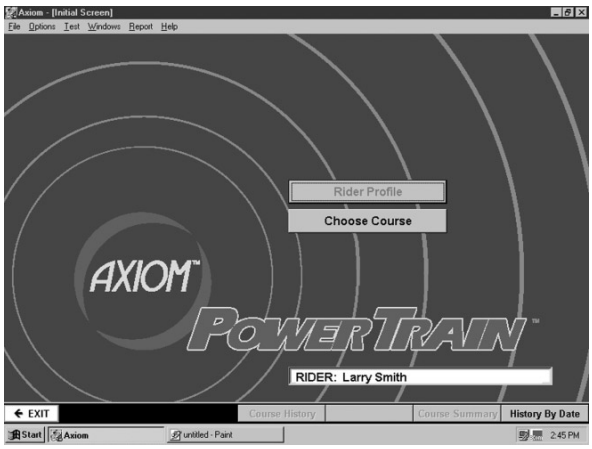


Figure 13

The cursor will move to the Choose Units field in the distance box. Choose the preferred units of measurement by mouse-clicking or selecting with the arrow keys your choice for Distance (Kilometers or Miles), Weight (Kilograms or Pounds), and Elevation Gain (Meters or Feet). Choosing a unit of measurement for Distance will cause the units of measurement for Weight and Elevation Gain to default to corresponding metric or Imperial units. You may choose to override either by selecting with the arrow keys or mouse-clicking on the appropriate box.

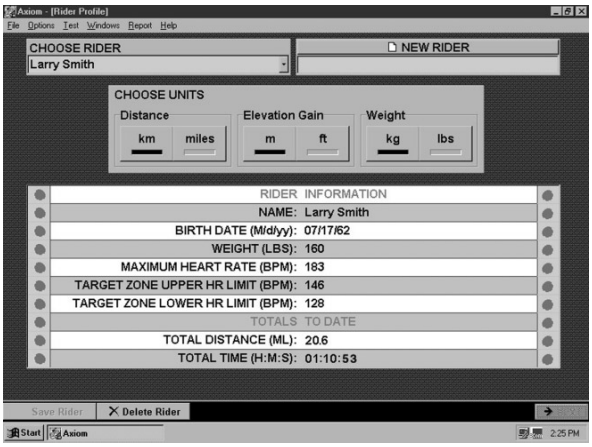


Figure 14

Next, use the *Tab* key to move to the Rider Information box. Enter your birth date, maximum heart rate, and upper and lower target zone limits. The *Tab* key will move you between data fields. Note that the program will automatically calculate maximum heart rate and upper and lower target zone limits based on your age. To override the system-generated values, simply type your preferred values into the appropriate field. When all information has been entered, choose **Save** in the lower left corner of the screen.

Each person who will be using the program should begin with the New Rider option to create their own personal file for data storage. Thereafter, select the appropriate rider from the **Choose Rider** list in the top left corner of the Rider Profile screen. (The active rider's name appears on the Initial screen. If the rider's name is the correct choice, you may skip the "Choose Rider" step, proceeding directly to the **Choose Course** screen.)

The Total Distance and Total Time fields at the bottom of the Rider Profile screen will accumulate data whenever you ride the PowerTrain™. These fields are not adjustable by the user.

To proceed to the next step, choose **Next** in the lower right corner of the screen.

You will find yourself back at the Initial Screen. You are now ready to choose a course to ride.

**A standard maximum heart rate formula of 220–age = MHR is used, and target zone values of 70% of max heart rate for the lower limit and 80% of max heart rate for the upper limit are used for the system-calculated values. A target zone range of 70-80% of maximum heart rate is appropriate for trained athletes. If you have been inactive, you may want to use a lower target zone.*

The first time a Rider is chosen after his/her birthday, a message will appear asking if you want the heart rate information to change automatically. Choosing Yes will cause all three values (maximum heart rate, upper limit, lower limit) to change.

B. Choose Course

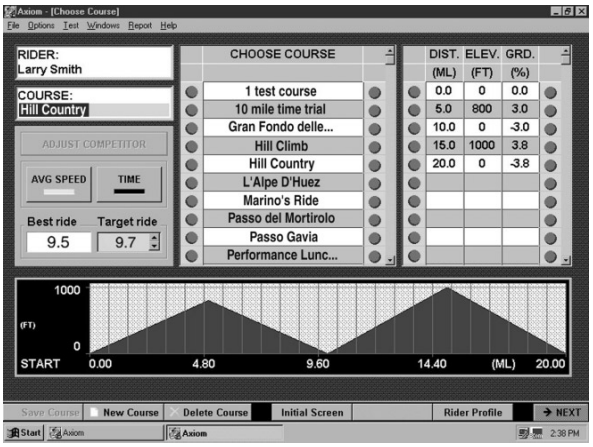


Figure 15

From the Initial Screen, click on **Choose Course** (Figure 15). This screen allows you to choose from a number of courses of varying length and difficulty. You can also create your own custom course. (Custom course design is covered in section IX, but we recommend that you wait until you are familiar with several of the pre-programmed courses before attempting to design your own.)

You will notice a list of courses in the middle of the screen. When you click on one of the courses listed, you will see a course profile in the bottom portion of the screen. You will also see a summary of the course in chart form in the upper right portion of the screen. For any given distance segment, the chart shows the elevation (height) at the end of the segment, and the slope percentage from the end of the previous segment. The height figure in the chart is for the elevation (above sea level) of that point in the course, it is not the elevation gained during that segment. The total distance of the course is represented by the last number in the distance column.

Choose the course which seems the right distance and the right difficulty (in terms of change in elevation) for your desired workout. Please note: you must finish your chosen course for the history to be saved (see Viewing History Screens, section VIII).

Adjust Competitor

This option is not available the first time you ride any given course. The "Competitor" is based on your previous best ride, and is therefore available only from your second ride forward. When you choose a course you have ridden before, your previous best time and speed will appear in the Competitor box. Choose whether or not to have a Competitor by clicking on the **Adjust Competitor** button. The Adjust Competitor function is only available from the Choose Course screen. Make sure you make any adjustments before starting to ride a course. If you elect to have the Competitor, you may choose to adjust the pace of the Competitor up or down from that of your previous ride. If you click on **Speed**, the up-arrow will make the Competitor faster, and the down-arrow will make the Competitor slower. If you click on **Time**, the up-arrow will increase the Competitor's course time (and consequently decrease the Competitor's speed); the down-arrow will decrease the course time (and consequently increase speed). Providing adjustments for both Speed and Time allows you to set goals which are based on either parameter.

After choosing your course (and adjusting the Competitor if desired), choose the **Next** button in the lower right corner of the

screen. This takes you to the **First Data Screen**, from which you will begin riding the course.

C. Wearing the Pulse Transmitter

The PowerTrain™ can be used with or without an HR transmitter. However to make full use of all of the features of the unit, we recommend using one.

NOTE: The HR transmitter is not included with your system. Virtually all non-digital transmitters are compatible with the PowerTrain™. An Axiom® transmitter is available from Performance (part # 00-8002).

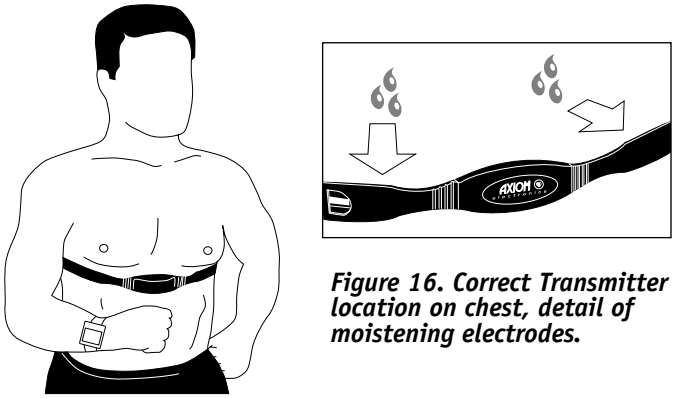


Figure 16. Correct Transmitter location on chest, detail of moistening electrodes.

1. Adjust the strap length to achieve a snug, comfortable fit on your chest as shown in figure 16.
2. The transmitter should face outward as shown, with the band fitting comfortably on the bare chest just below the breast.
3. Center the transmitter on the chest.
4. Moisten the rubber electrodes with water or saliva on the inside of the transmitter band.
5. When placed on the body, the transmitter is automatically activated (and deactivated when removed). To conserve transmitter battery power, the transmitter should be removed when not in use.

If you have difficulty obtaining a regular heart rate reading, try readjusting the chest band. The rubber electrodes must be flat against the skin, and the band must be in the correct position– not too low. Make sure there is sufficient moisture between the electrodes and your skin. Check that the band is clean, with no accumulated sweat or dirt.

VII. Riding a Course

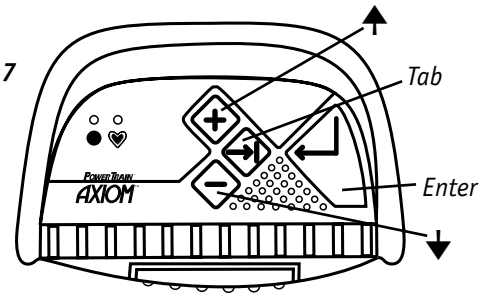
A. Pre-Ride Checklist:

- Bike/trainer positioned within sight of computer screen
- All parts and sensors are correctly connected (see section III, Assembly Instructions)
- Cadence sensor and magnet are correctly installed and adjusted
- Pulse transmitter (if used) is moistened and correctly positioned on chest (see section VI-C)
- Verify heart rate and cadence data is being picked up by the computer by viewing the appropriate data boxes on the First Data Screen (prior to pressing Start)
- If you encounter problems with data transmission, see section XI, Troubleshooting.

B. Using the Control Module

While on the bike it is much easier to change screens using the Handlebar control unit. The *Tab* and *Enter* buttons will help you navigate the screen. The "+" and "-" buttons function like the ↑ and ↓ on your key board. See figure 17.

Figure 17



C. Starting the Course

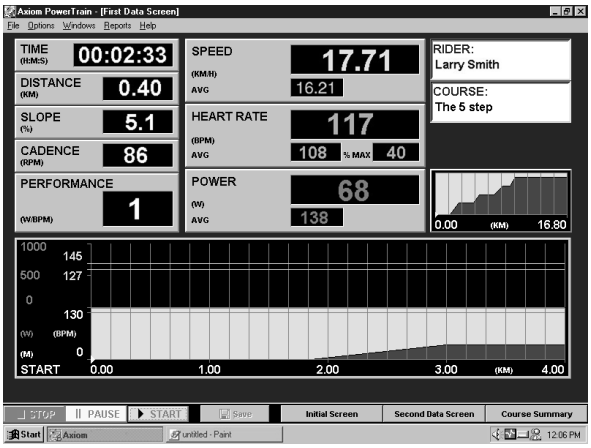


Figure 18 - First Data Screen

Having chosen your desired course, you will now be viewing the First Data Screen. As you ride, you can toggle between any of three screens — the First Data Screen, the Second Data Screen and the Course Summary Screen. Toggle between the three screens by clicking on the marked buttons at the lower portion of the screen. If using the control module use the *Tab* to reach the desired button and *Enter* to select that function. Take a moment to notice where the various pieces of data are displayed, so you don't find yourself searching for information in the middle of your workout. The small display on the right side of the screen shows the overview course profile of the course to be ridden. The main course display shows the 4 mile (or 4 kilometer) segment that is currently being ridden.

You may warm up for as long as you like, viewing data for current Speed, Heart Rate, Cadence, and Power prior to starting the course.

When you are ready to begin the course, choose the **Start** button located on the toolbar at the bottom of the screen and press **Enter**. You will see the yellow triangular Rider icon (and the red triangular Competitor icon, if you are using the Competitor) begin to progress along the Course Profile in the bottom section of your screen. (Note: The longer the course, the slower the rider icons will progress along the course profile.) Data collection for the course

will now begin. Average and maximum data values will be calculated from this point through the end of the course. Remember, you must finish your course in order for the history to be saved.
PAUSE/STOP buttons - These buttons are located at the bottom of your screen. Choose PAUSE to temporarily stop the course. To reactivate the course after a pause, choose the START button. Choose STOP to discontinue the course without finishing (and without saving). A dialog box will ask you to confirm that you wish to stop the course.

D. During the Ride—Information & Options Available

During the ride, the following information is available on the first data scree. The First Data Screen (Figure 18) is designed to provide all current information for a quick snapshot of your effort at a given moment.

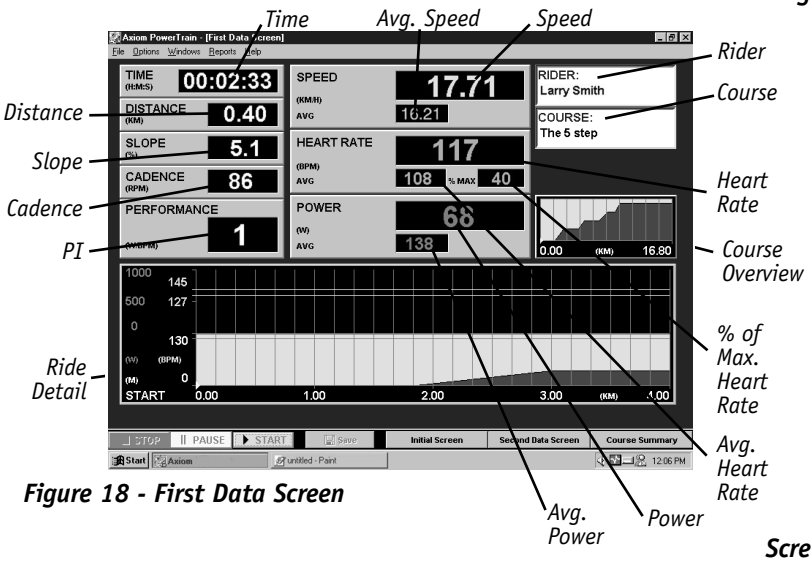


Figure 18 - First Data Screen

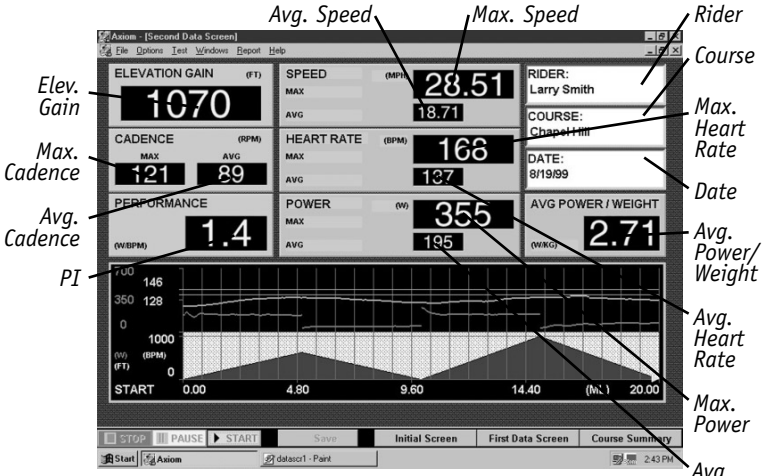


Figure 19 - Second Data Screen

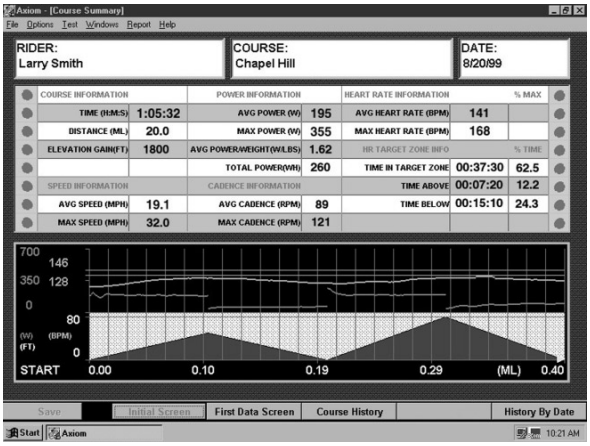


Figure 20 - Course Summary Screen

Course Profile Displays

Large Display

The yellow arrow (rider) in the Large Display will move from the left to the center of the screen at the start of a ride. Once the arrow reaches the middle of the screen (2 miles or kilometers) it will stay in place until the end of the ride. The course profile display will move so you can view both what has just been ridden and what is approaching. When the end of the course is near (the last 2 miles or kilometers), the arrow will move to the right again to complete the course.

Small Display

The Small Course Profile Display is designed to give you an overview of the course. The yellow arrow (rider) will move to show your location on the course. **Note:** Due to the compression of the Small Course Profile Display, the hills may appear steeper than seen on the Large Course Profile Display.

Data Display

The data above the Course Profile charts your heart rate and power output at corresponding points along the course. Your target zone limits are represented by horizontal lines across the chart.

The Second Data Screen (Figure 19) shows maximum values and elevation gain, and can be interesting to check at various points throughout you course, such as after summiting the highest peak on the ride.

The Course Summary Screen (Figure 20) is primarily meant for

Screen Information Summary:

	First Data Screen	Second Data Screen	Course Summary Screen
Speed	Current, Average	Maximum, Average	Maximum, Average
Heart Rate	Current, Average, Current as % of Max	Maximum, Average	Average, Avg. as % of Max; Maximum HR, Max for ride as % of Max HR, Time in, above, below Target Zone, % of Time in, above, below Target Zone
Power (Watts)	Current, Average	Current, Average, Average Power/Wt (W/Kg)	Average, Maximum, Average Power/Wt (W/Kg), Total Power
Cadence	Current	Average, Maximum	Average, Maximum
Elevation	Current Slope %	Total Elevation Gained	Total Elevation Gained
Time	Ride Time		Ride Time
Distance	Current Trip Distance		Current Trip Distance
Total course distance is represented by the scale below the course profile at the bottom of each of the three screens.			
Performance	Watts/bpm	Watts/bpm	
For more information on the Performance Indicator value see section IX.			

viewing upon completion of the course. It contains an all-inclusive summary of average, maximum, and total values, but contains no current information. You can toggle between these three screens to view your desired information at any time during your ride.

E. Finish the Course

When you reach the end of the course, the Rider icon on the course profile will stop. Data collection will cease. You may choose to continue pedaling for a time as you cool down, and your current information will still be displayed on the First Data Screen, but it will not be included in the Course Summary. Click on the **Save** button if you want to record the data for that ride. Choose the **Course Summary** button in the lower right corner of your screen to view a comprehensive summary of your ride.

F. Saving Data—Only Courses That Have Been Completed Can Be Saved!

When you choose **Save**, your ride data is stored in three ways:

1. The data is saved to the Course History file for later comparison with other rides on the same course. View the saved information in the Course History screen by choosing the **Course History** button on the tool bar at the bottom of your screen.
2. History by Date shows the combined histories of all courses you have ridden within a specified date range. See section VIII, Viewing History Screens, for more details.
3. The Course Summary data is stored for later recall. You may choose this option if you wish to review Heart Rate and Power data in a more detailed form. (The graph with Course Profile will not be saved, only the data fields in the top half of the screen.) You can access any saved Course Summary screen from any previous ride through either the Course History or the History by Date screen by clicking on the ride to be analyzed, then choosing the **Course Summary** button at the bottom of the History screen.

VIII. Viewing History Screen

A. Course History

The **Course History** screen is intended to provide a history of key data for all saved rides on each course. The Course History button can be chosen at the buttom of the Course History screen. It can also be selected from the "pull-down" menu labeled "Window" at the top of any screen. Click on "Window" from the pull-down menu that follows, choose **Choose Course** and select the course to be analyzed. Using the pull-down menu from "Window" again, choose **Course History**. Next, select a range of dates in the box in the lower left corner of the screen (or choose All for a complete list of rides on this course). The chart in the lower right corner will then show a record of all saved rides on this course within the selected date range. The scrollbar to the right of the chart moves through the history range. Compare your course times, average speed, average heart rate, average power, and Performance Indicator from ride to ride. (For an explanation of the Performance Indicator, see page 3.)

The graph above the chart plots the Performance Indicator for each ride so that trends over time can be determined. On the graph you will notice a moveable bar with a triangle at the bottom. This bar can help you find a particular event in the chart. You may wish to find the information corresponding to a low point or a high point on the graph. Click and drag the triangle to the left or the right on the bar. You will notice the information in the chart below scrolling up or down in conjunction with the bar. When you stop at a position on the bar, the corresponding ride will be highlighted within the chart.

To view more details of a particular ride, choose the **Course Summary** button while one of the rides in the chart is highlighted.

The value in the upper right corner of the Course History screen gives your average Performance Indicator for the event highlighted in the chart.

From this screen you can return to the Initial Screen from where you may Exit the program, or choose a course to ride. You may also choose to view additional information in the History by Date screen. Choose this option by clicking on the marked button on the toolbar at the bottom of the screen or by using the Window option on the Toolbar at the top of the screen.

To view history for another rider, access the **Rider Profile** screen by using the "Window" pull-down menu at the top of the screen. Select the desired rider's name from the list. Return to the history screen by using the "Window" pull-down menu once again. History for the newly selected rider will appear.

B. History by Date

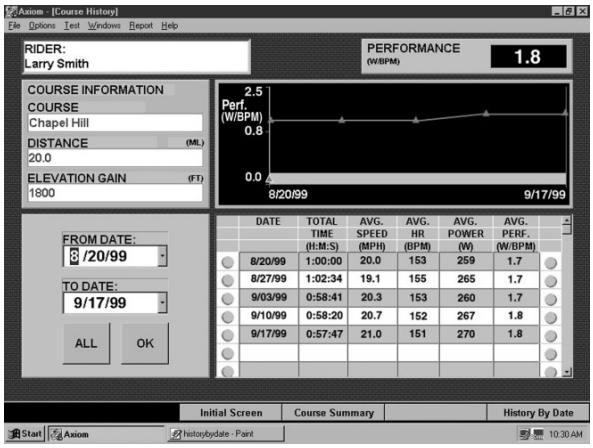


Figure 21 - Course History Screen

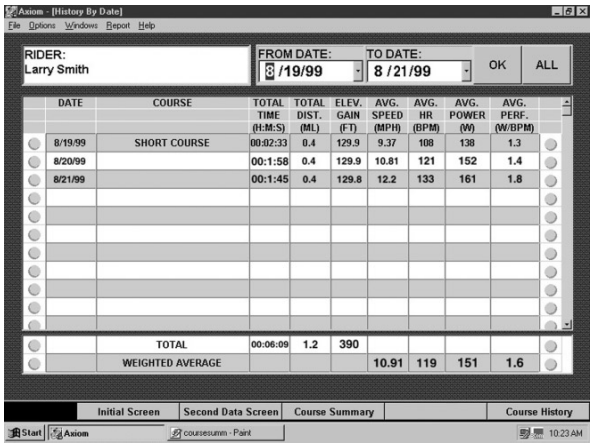


Figure 22 - History by Date Screen

Go to this screen (Figure 22) by choosing the **History by Date** button on the toolbar at the bottom of any of the Initial, Course Summary or Course History screens (or by using the "Windows" pull-down menu at the top of the screen).

The **History by Date** screen provides a history of key data saved from all rides on all courses within a given date range. First, select a date range in the upper right corner of the screen and press OK (or choose All for a complete listing of all rides). You will see a comprehensive record of all of your work for the chosen time. Not only can you compare key data values between the various rides, but you can also view totals and averages for rides within the selected date range. Totals provided include: total ride time, total distance and total elevation gain. Averages provided include: average speed, average heart rate, average power and average Performance Indicator.

This screen is useful for tracking your overall mileage on a weekly, monthly, or even yearly basis. The histories may be sliced into any number of different time spans for comparative viewing. Ride histories may be kept as long as your computer has available hard disk space.

From this screen you may return to the **Initial Screen** from where you may Exit the program, or choose a course to ride. You may also choose to view additional history information in the Course History screen or Course Summary screens. Choose one of these options by clicking on the marked buttons on the toolbar at the bottom of the screen.

IX. Customizing Your Workout

A. Heart Rate Target Zone Settings

During the initial New Rider setup, the system will calculate suggested values based on the following:

1. Maximum Heart Rate calculation: 220 – age = MHR

2. Lower target zone limit calculation: 70% of MHR.

3. Upper target zone limit calculation: 80% of MHR.

You may adjust your target zone settings at any time prior to starting a course. Many helpful books are available which can provide guidance on training by heart rate. The Axiom® PowerTrain™ allows you to customize each workout by setting the heart rate limits in accordance with your goals for that particular ride.

To adjust your target zone limits, choose **Rider Profile** from the Initial screen. Select your name from the Choose Rider list. Use the *Tab* key to position the cursor in the Target Zone: Upper (bpm) field. Type over the existing value with the new value. Tab to the Lower (bpm) field and enter a new value for the lower limit. When target zone limits are updated, choose the **Save** button on the toolbar at the bottom of the screen. Choose the **Next** button to return to the Initial Screen.

B. Adjusting Competitor

While in the Choose Course screen, you may adjust the pace of the Competitor. Adjust the speed of the Competitor by using the up- or down-arrows on the right side of the box or during a ride by using the "+" and "-" arrows on the control module. Clicking the Up arrow will raise the Competitor's speed in 0.1 mph or kph increments. The Down arrow will reduce the speed in the same increments. If you choose Time as the value to adjust, the arrows will adjust the Competitor's course time in 1 sec. increments. Customize the Competitor's pace to help you achieve your goals—slow yourself down on an easy day, or motivate yourself to new levels of performance by bumping up the pace just slightly from your previous best.

C. Creating Your Own Course

When you've gained experience on several of the provided courses, you may wish to create your own custom course. You can choose the exact distance you want, and provide the right degree of elevation gain to get the difficulty you want.

From the Initial screen, select the **Choose Course** button. On the Choose Course screen, select the **New Course** button. Hit *Enter* and the cursor will move to **Course** box. Type in a name for your new course. Press *Tab*, or use your mouse, to get to the box in the upper right corner of the screen. This box contains cells for entering Distance (DST), Elevation (ELEV), and Percent Grade (GRD). The cursor should be positioned in the first Distance field.

Enter a value for your first distance increment. The value is expressed with one decimal place, so the shortest possible distance between points is 0.1 miles or kilometers. After you've typed in your first distance value, press *Enter* to advance to the Elevation field. Type in a value, then press *Enter*. The system will calculate the percent grade, displaying the value in the GRD box. (The percent grade is the ratio of the elevation change to the distance traveled, for example, a 20% grade indicates 2 feet gained for every 10 feet traveled.) A 6 % grade indicates 6 feet gained for every 100 feet traveled. The cursor will then advance to the distance field on the next line.

Note: The maximum allowable grade is 6% and the minimum grade is –6%. If you enter an elevation value that produces a grade in excess of 6%, an error message will pop upappear, and you'll you will have to enter another value

Grade Option
You can choose to enter a percent grade and let the system calculate the elevation. Enter a distance value, leave the Elevation box blank, hit *Enter*, and the cursor will move to the GRD field. Enter the desired value and hit *Enter*. The cursor will move to the next distance field and the Elevation will have been calculated.

Note: Only grades between –6% and 6% are allowable

Once a satisfactory course is created, choose the **Save Course** button. Hit *Enter* and your course will be saved. It will now appear in the list of courses.

D. Alarm

To activate an audible alarm which goes off when your heart rate is below or above your target zone, choose "Options", "Course Alarm" at the top of your screen. The alarm works on computers with sound cards and speakers. The volume may be adjusted through your Windows desktop.

X. Menu Bar Commands

You can easily navigate and choose functions and screens by using the Toolbar at the top of any screen.

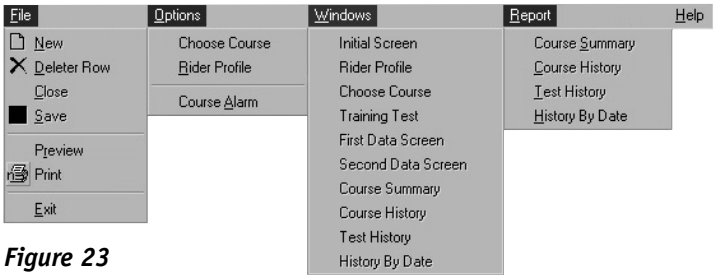


Figure 23

Figure 23 shows the pull-down menu options available on the tool bar at the top of your screen. The tool bar options operate in the same manner as in your other Windows® driven programs - use your mouse to choose one of the headings on the tool bar, and the subordinate menu choices will "pull-down" or appear on the screen.

The tool bar menu options are accessible from any screen. However, in each screen a different set of options will be available to you. Those that are available will appear in dark type, while those that are not available from your current screen will be "ghosted", or lighter in color.

As you will notice from the diagram, most options available in the pull-down menus take you to various screens in the programs. Additionally, the Course Alarm is activated or deactivated from the "Options" menu. The Print Preview and Print Commands (for printing History screens) are found under the "File" menu. And finally, "File", "Exit" takes you completely out of the program and back to your Windows desktop.

XI. Troubleshooting

1. The program is not picking up any data at all.

Check all of the following connections:

1. Power cord plugged into wall socket and into resistance unit.
2. Cable between handlebar module and resistance unit secure at both ends.
3. Cable between cadence pick up and resistance unit secure at both ends.
4. Cable between handlebar module and computer secure at both ends.

Ensure your computer is recognizing the port you are using by checking the System Properties through your Windows® desktop.

2. The program is picking up cycling data such as speed, but no heart rate signal (or an erratic heart rate signal).

When the heart rate signal alone is absent or erratic, the signal from your transmitter belt is probably to blame. First, check the placement of the belt on your chest, ensuring the logo is right side up and the transmitter is centered below your pectoral muscles.

Ensure that the electrode area makes good contact with your skin and is sufficiently moistened with water or saliva. If you continue to experience poor transmission of the heart rate signal, change the battery in your transmitter. If your transmitter does not have a user-changeable battery, or if the transmitter is more than five years old, you should purchase a new transmitter belt. Performance® Axiom® Transmitter belts are available (Part # 00-8002).

3. I rode a course yesterday, but it is not showing up in the course history.

Remember to save your ride data at the end of the course by clicking on the **Save** button on the toolbar at the bottom of the Course Summary screen.

Be sure you are looking for the course history under the correct course name. To double check, use the History by Date screen to look at all rides around the date in question.

Be sure your computer is set to the correct date. Check the date in the top right corner of the Course Summary screen or the top left portion of the Choose Course screen. If the incorrect date is showing, you will need to correct the date through your Windows program.

4. My weight has changed since I set up my Rider Profile.

From the Initial Screen choose **Rider Profile**. Select your name from the Choose Rider list. Use the Tab key to position the cursor in the field you wish to change. Type over the existing value. When all rider data is updated as desired, choose the **Save** button on the toolbar at the bottom of the screen, then choose the **Next** button to return to the Initial Screen.

5. I have to answer the phone in the middle of riding a course, but I want to resume the course when I'm finished.

You can Pause the course, stopping the clock so your average values will not be affected, by clicking on the button marked **Pause** on the toolbar at the bottom of the First Data Screen or Second Data Screen. Click **Start** when you wish to resume data collection. Keep in mind that a pause during a course may affect your performance values positively due to the rest provided by the pause. Comparing this ride to other uninterrupted rides will be an inaccurate comparison.

6. The program screens do not fit well in the viewing area of my monitor.

You will need to adjust the number of pixels shown in your screen area through your Windows program. Go into the Control Panel. Choose the "Display" option, then the "Settings" option. Find the segment of this utility which shows, and allows adjustment of, the number of pixels in the display area. Make sure it is at least 800x600. If this doesn't work on your computer, increase the number of pixels (try 1024x768). Choose "Apply" then click "OK" to exit the utility.

Performance® may offer free upgrades to this software in the future. Please check our website, www.performancebike.com and choose "Tech Support". Version "PowerTrain™ 1.0" is supplied with this unit.

For technical support, call 1-800-553-8324 from 9am - 6pm EST Monday through Friday.

Notes

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