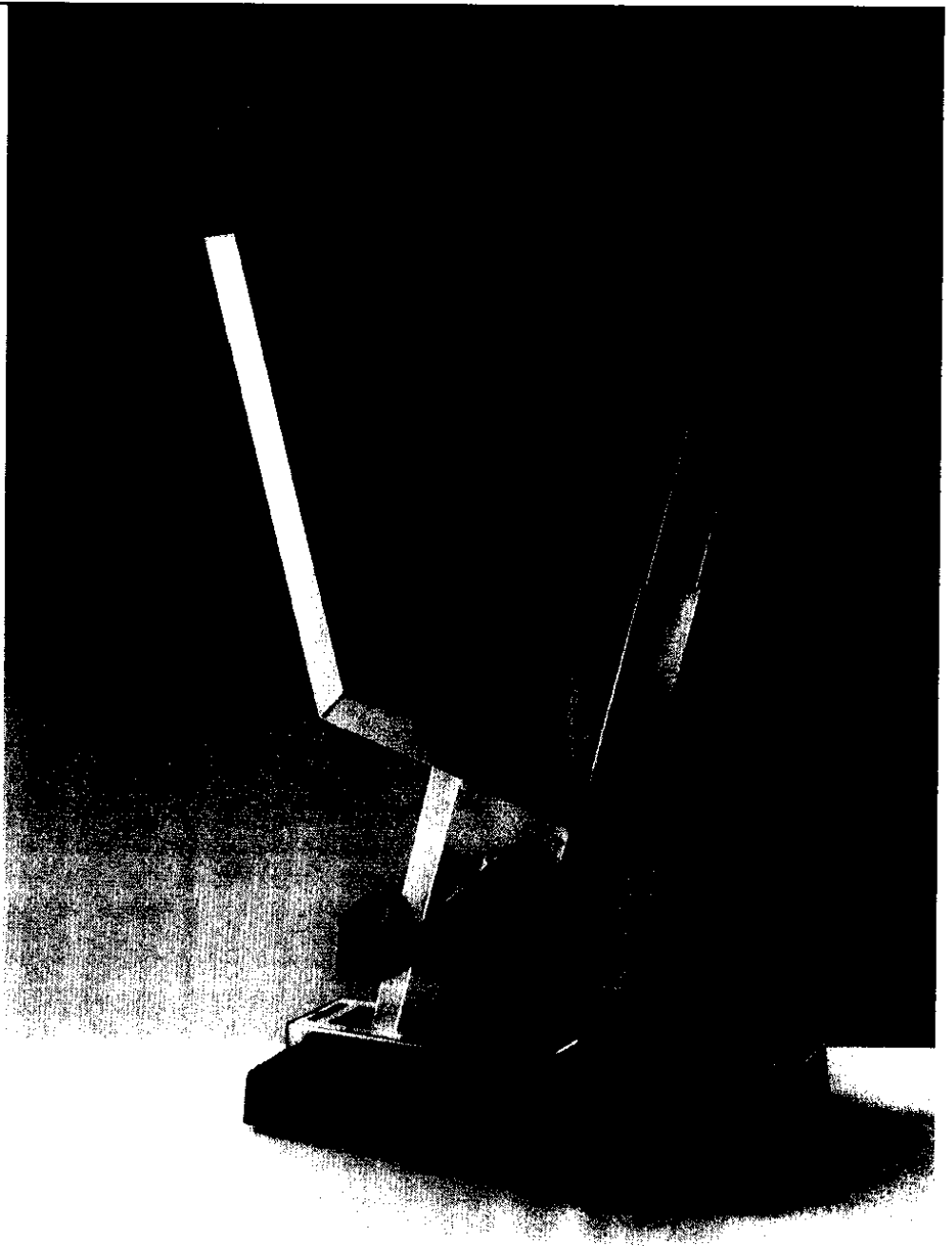



M8.7sp**Electronic Cycling
Simulator****Owner's Manual****Quality by Design**

The M8.7sp computerized electronic cycling simulator is part of Precor's exciting "M" series exercise equipment. By combining innovative design concepts and microprocessor technology, these new products make exercise more enjoyable, informative, and rewarding. "M" series fitness equipment represents Precor's highest achievement and symbolizes our commitment to excellence.



Safety Notice

Caution: A complete physical examination by your personal physician is recommended before beginning any fitness program.

Do not operate any exercise equipment if it is not completely assembled or has been damaged in any manner.

Do not operate before completely reviewing Owner's Manual.

All equipment should be set up and operated on solid, level surfaces only.

Do not stand on pedals.

Do not rock unit.

All equipment should always be checked for wear before each use.

Do not operate exercise equipment with long, loose hair or loose clothing.

Keep hands away from moving parts.

Care should be taken getting on and off any exercise equipment.

Do not overexert yourself or work to exhaustion.

Close adult supervision is necessary when used by or near children.

The use of accessory attachments not recommended by the manufacturer may cause injuries.

Exercise should be pain free! If you feel any abnormal symptoms or pain, stop your workout immediately and consult your physician.

Please use the following safety tips to maximize your enjoyment of each workout:

1. Wear proper shoes, such as those with rubber or high traction soles.
2. Point your hips, knees, ankles and toes facing forward.
3. Hold your pelvis vertical - not tilted.
4. Take several minutes to bring your heart rate into the training zone shown on the back page of this manual. Always allow time for your body to cool down and your pulse rate to decrease by lowering your pedaling rate for a few minutes at the end of your workout.
5. Gentle stretching is recommended for the lower body and back to help prevent stiffness or soreness.



Photo 2
Align red dots on connectors and carefully plug the ribbon cable into the connector in the base.

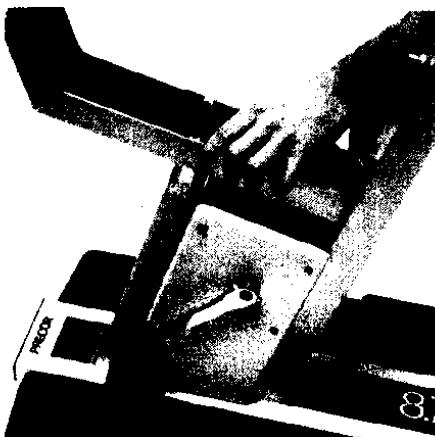


Photo 3
Gooseneck attachment. Attach with the four Allen head bolts provided.

Get ready for a quiet ride!

The maintenance-free direct drive on the M8.7sp provides a more efficient operation over noisy, conventional chain driven cycles. The momentum created from the direct drive, coupled with the weight of the precision balanced flywheel, results in a smooth and quiet ride at any resistance level. Stationary cycles without a precision balanced flywheel cannot create or support the necessary momentum. The result is a jerky, uncomfortable ride. The 8.7sp also features an infinite handlebar adjustment, foot hold straps on the pedals, wheels to facilitate easy transport, and the most sophisticated electronics and display feedback available. The Precor M8.7sp is equipped with an L.C.D. incorporating integral backlighting for improved visibility in low light conditions. The backlighting feature automatically turns off if the M8.7sp is not in use within five minutes and turns on as soon as you resume use.

Its unique electronics set the M8.7sp bicycle apart from other "M" bikes and even further apart from the competition. The large Liquid Crystal Display monitors every inch of your ride, keeping you informed of your: Time, Speed (MPH/KPH), Distance (Miles/Kilometers), Pedal RPM, Gear Setting (1 to 10), Calories per Minute, and Total Calories. In addition, your M8.7sp displays % Grade, and

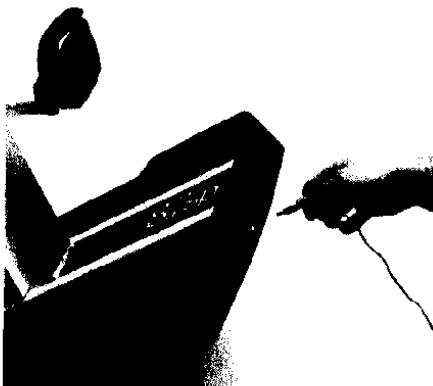


Photo 4
Power supply. Plug power adapter into the wall and jack into the rear base of the unit.

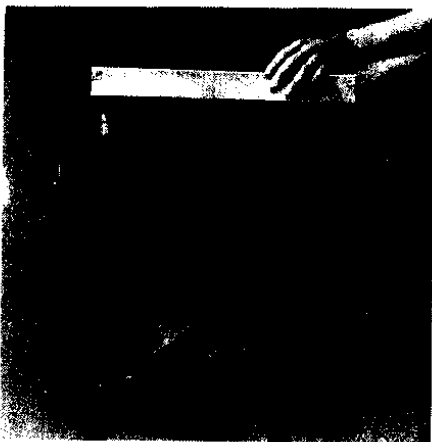


Photo 5
Carefully guide base pan into place so the wood block is to the rear of the cycle. Insert the four screws and tighten.



Photo 6
Pull outward on the seat post adjustment pin. Slide post into desired position.

status of other riders on the course. All feedback is monitored and updated continually as you pedal your way through desert, country or city terrain. Profile, 3D, combined profile/3D, and combined overhead/profile give you a variety of ways to watch your progress. The 8.7sp is an ergometer, which means work (ergo) and measurement (meter). Ergometers accurately monitor the work exerted, or calories burned, during your workout. In addition to this tremendously motivating feedback, the 8.7sp monitors time, pedal rpm, and distance. You will quickly notice your strength and fitness improve as the 8.7sp becomes an integral part of your exercise program.

CAUTION: A complete physical examination by your personal physician is recommended before beginning any fitness program.

Assembly

Your 8.7sp is shipped in four pieces: the base frame with seat post; the handle-bar stem with display module; the protective bottom pan, and the handlebar. The packaging for this unit has been designed to provide maximum protection for your Precor 8.7sp. Please retain the original packaging for any future shipping requirements.

1. Remove the hardware from the plastic bag. Enclosed is an Allen wrench, two 2 1/2-inch Allen bolts, and two 2-inch Allen bolts, four screws for the bottom pan and one power supply.
2. Place the handlebar stem with the display module into the upright position. Carefully plug in the ribbon cable to the connector (photo 2). Lower the handlebar stem into position and insert the two 2 1/2-inch Allen bolts in the front two holes and the two 2-inch Allen bolts in the rear two holes (photo 3). Secure the bolts firmly with the Allen wrench provided. Do not overtighten.

CAUTION: Do not crimp the blue ribbon cable when securing the Allen bolts. CABLES DAMAGED BY IMPROPER INSTALLATION WILL INVALIDATE THE WARRANTY.

3. Plug the power supply into the wall and the jack into the base as shown (photo 4). We recommend the unit remain plugged in at all times to enhance durability and reliability of the M8.7sp stored information.
4. Align the bottom pan holes with the holes inside the flywheel shroud (photo 5). Insert the four black Phillips head screws and tighten.

Seat and Handlebar Adjustment

1. Adjust the seat height by pulling out the seat post adjustment pin (photo 6). Position the seat so your knee is slightly bent (10 to 15 degrees) when the leg is extended in the down position. Make sure your toes and knees point straight ahead (photo 7).
2. Remove the t-knobs, slide in the handlebars and replace the t-knobs (photo 8). Tighten the t-knobs to lock the handlebars. The handlebars should be positioned so you are sitting comfortably with an upright back and slight forward lean, and your hands, arms and shoulders are relaxed. Racing enthusiasts may prefer a greater forward lean and lower hand position. This position creates more strain on the lower back and should be avoided by novices.

Ready to Ride

To start - push ("start") button on far left, bottom of screen. The 8.7sp is user friendly. Select what you want to do, then push the appropriate button (at bottom of screen). For step-by-step operating instructions, more information, or if you would like to create your own program, please refer to the Appendix (at the back of the manual).



Photo 7
An approximate 15 degree knee bend indicates correct seat height.



Photo 8
After removing the t-knobs from the back of the display module install the unfoamed section of the handlebars into the clamp, replace t-knobs and tighten.

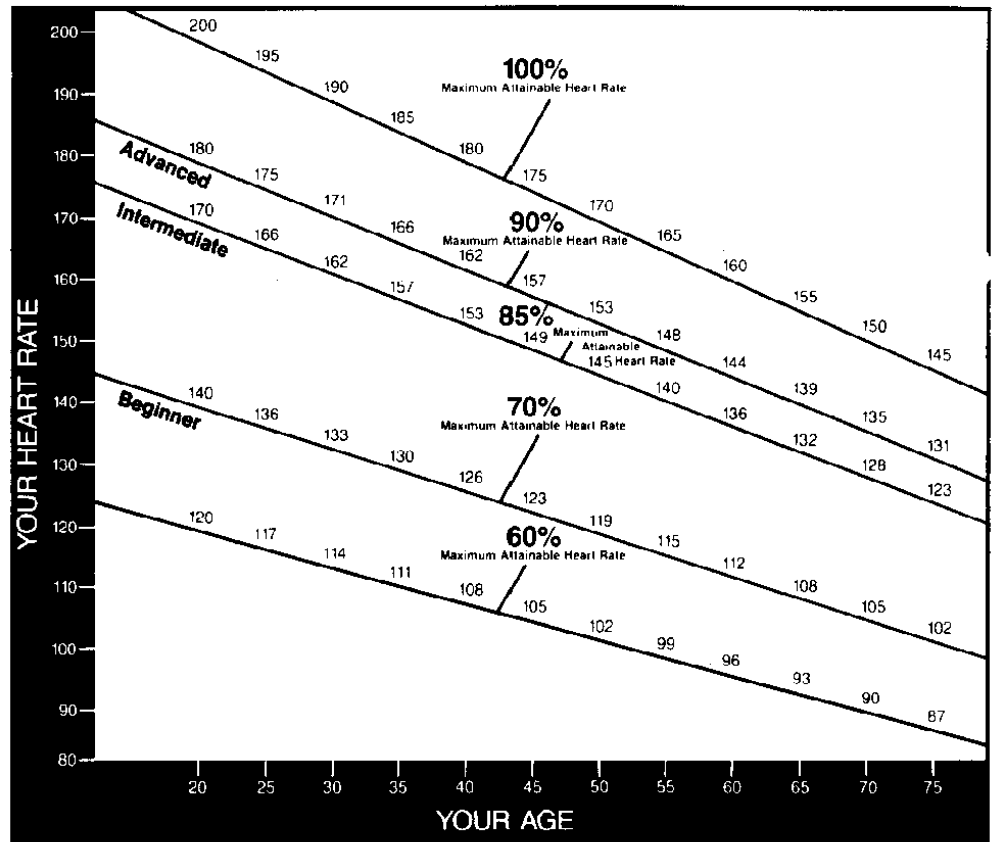
Maximizing Your Workout

Cycling is an excellent aerobic exercise that provides an entire lower body workout. It conditions the heart and lungs, while improving strength and tone in the thighs, calves, and hips. Aerobic exercise can play a key role in a weight control program by burning additional calories during and after the exercise session. The more often you exercise, the more "extra" calories you will burn. Most experts agree the combination of regular aerobic exercise and sensible eating habits is the only proven method of weight control.

Guidelines for an Aerobic Workout

The best aerobic exercises involve the large muscle groups, and are continuous, rhythmic, and repetitive (e.g., cycling, rowing, running). They should be performed hard enough, long enough and often enough (minimum of 15 minutes 3 times a week) to achieve the desired benefits.

Your Heart Rate



How Hard Should I Exercise?

The intensity of an aerobic exercise, or how hard you are working, is measured by your heart rate. To achieve the benefits of aerobic exercise, it is necessary to raise your heart rate to certain minimum levels, called "Training Zones". On a stationary cycle, it is possible to regulate work level (and heart rate) by increasing the pedal resistance or your pedal rpm. Beginners should start slow at the lowest resistance setting. If the initial combination is too easy, increase the pedal rate and/or increase the resistance level. A pulse meter is highly recommended for monitoring your work level. Refer to the chart "Your Heart Rate" to determine your training zone based on your age and present physical condition. Avoid doing too much too soon. Setting the flywheel resistance too high or

pedaling too fast are common errors. As you become accustomed to your stationary cycle and your fitness level improves, the flywheel resistance can be increased. Keep in mind that even the most experienced cyclists can find the higher resistance settings too difficult to endure for extended periods.

How Long Should I Exercise?

Allow several minutes to bring your heart into the training zone by gradually increasing the work level (warm-up). Once in the training zone, the exercise should be continuous for 20 to 30 minutes. Use several minutes of light exercise after the workout to bring your heart rate down near resting level (cool down). Beginners should start at a comfortable rate, working their way slowly up to 20 minutes. Individuals on a weight loss program benefit from exercising for a longer period of time.

How Often Should I Exercise?

Aerobic exercise should be done three to five times a week. Athletes and individuals on weight loss programs benefit from more frequent workouts.

Maintenance

Clean the 8.7sp with a mild soap and water or a general household cleaner. **CAUTION:** Abrasive cleaners or polishes will damage the surface finish. Wipe the surface of the display module with a moist sponge or cloth. Dry with a clean towel. Do not pour water on the display module.

Warranty

Please complete and mail the enclosed card and questionnaire to validate the warranty. The serial number is located on the underside of the handlebar stem.

Service

Please contact your Precor dealer if your 8.7sp requires service.

Thank you for choosing Precor.

Appendix:

Introduction:

The Precor M8.7sp Electronic Cycling Simulator has been designed around a 32-bit micro-processor, giving it the power and speed of a mini-computer. Along with 64k RAM and 128kROM, the 8.7sp accomplishes bicycle realism, competition, and advanced graphical feed-back.

The Simulator follows predefined courses or custom courses, changing pedal tension with the variation in road grade and velocity. The Simulator uses your weight, road grade, and velocity to accurately simulate a real bicycle.

After completing a course, your ride can be saved and entered as a competitor on subsequent rides on that course. On any course to be ridden, you may select different pace riders to ride against. Up to 7 competitors may be selected.

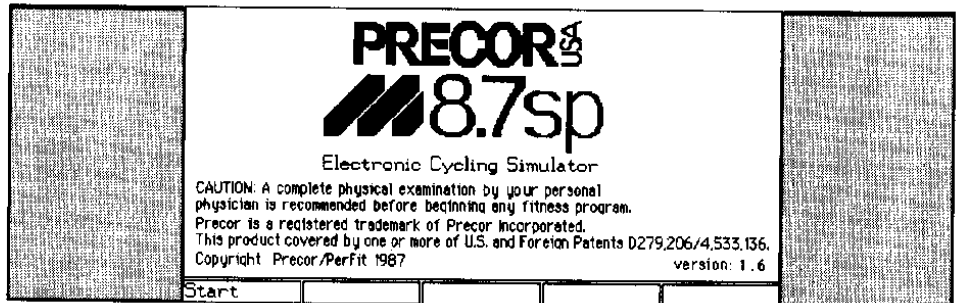
The Simulator uses its processing power to provide you with continual ride information. Available throughout the ride is your position among the competitors, elapsed time, distance per hour, pedal rpms, distance ridden, current gear, calories per minute, and total calories. In addition, there are 4 views of the course that can be watched: three dimensional view, profile view, a combination of the first two, and an overhead view with profile.

Getting Started in Manual mode:

At this point your Simulator should be assembled and powered "on". The following instructions cover the usage of Manual mode.

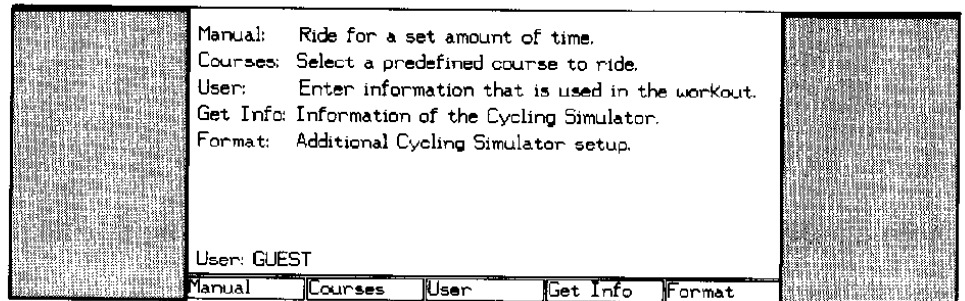
Press "Start" when you're ready. This will allow you to pick from 5 menu items that will be covered later in this manual. Screen #1.

Screen #1



Press "Manual" when you're ready. Manual mode is designed so you can ride a course for a set amount of time. Rides can not be saved in this mode since the distance varies. If a key is not pressed for 1 minute, you return to the previous screen. Screen #2

Screen #2



Use the 2 far right keys to decrease or increase the amount of time in minutes that you desire to ride. When you have selected the appropriate time press "Ok". If for some reason you would have liked to have returned to the previous menu, press "Back Up". Screen #3

Screen #3

Enter ride time in minutes			
5			
Ok	Back Up	Decrease	Increase

You have the option of adding a pace rider as competition. By pressing "Yes", you're able to enter the rider's pace. To return to the previous menu press "Back Up". Screen #4

Screen #4

Manual Ride Riding for 5 minutes Course Record: 00:00 Current Grade: 0	STARTLINE	Do you want pace riders?	STARTLINE	Time	00:00	
				Mph	0	
Rider Status *. GUEST				Pedal Rpm	0	
				Miles	0	
				Gear	1	
				Cal/Min	0	
				Total Cal		0
				Yes		No

Use the 2 far right keys to decrease or increase the speed of the pace rider. When you have selected the appropriate time press "Ok". To return to the previous menu press "Back Up" Screen #5

Screen #5

Manual Ride Riding for 5 minutes Course Record: 00:00 Current Grade: 0	STARTLINE	Enter pace (mph)	STARTLINE	Time	00:00	
				Mph	0	
Rider Status *. GUEST				Pedal Rpm	0	
				Miles	0	
				Gear	1	
				Cal/Min	0	
				Total Cal		0
				Ok		Back Up

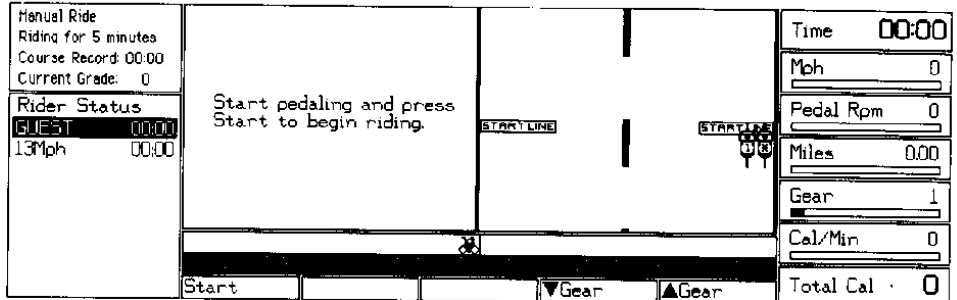
Repeat the last 2 steps to add additional pace riders. Press "No" to continue on. Screen #6

Screen #6

Manual Ride Riding for 5 minutes Course Record: 00:00 Current Grade: 0	STARTLINE	Do you want another pace rider?	STARTLINE	Time	00:00	
				Mph	0	
Rider Status *. GUEST 1. 13Mph				Pedal Rpm	0	
				Miles	0	
				Gear	1	
				Cal/Min	0	
				Total Cal		0
				Yes		No

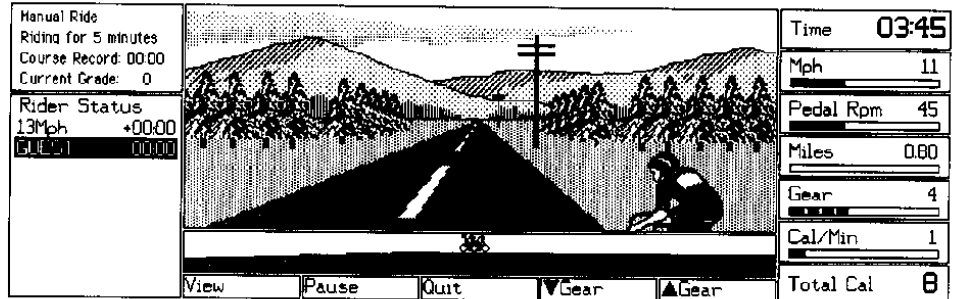
At this time you are ready to ride. All the gauges are active at this time, so start pedaling and press "Start" when you are ready to begin riding. Screen # 7.

Screen #7



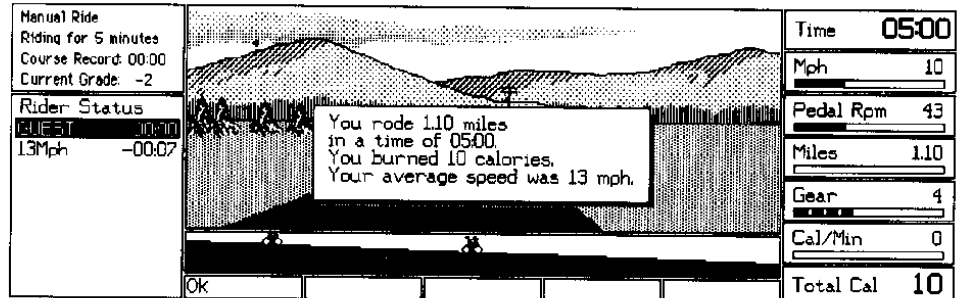
The "View" key allows you to choose from 4 different views of the course. The "Pause" key allows you to stop without losing your position. The "Quit" key allows you to end the ride, but gives you a second chance. Screen #8

Screen #8



When you have finished, total distance, total time, total calories burned, and average velocity are given. Screen #9

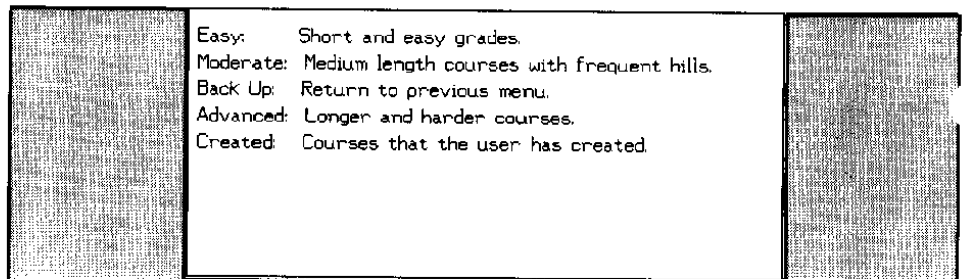
Screen #9



Courses: (See Screen #2)

There are 4 categories of courses that can be ridden. The predefined courses are grouped by level of difficulty: "Easy", "Moderate", and "Advanced." "Created" contains courses that you have created. The procedure for creating courses is covered under "Format". Pressing one of the choices, such as "Easy", displays that menu of rides. Screen # 10

Screen #10



Select a course by using the arrow keys. To find out more information and review the course, press "Course Info". Screen # 11

Screen #11

	Demonstration Ride	
	Distance: 1.00 miles Estimated ride time: 8 minutes. Estimated calorie burn: 40 calories. No saved times Current Grade: 0	
Done	Left	Pause Right

Pressing "Left" or "Right" once will review the course in that direction. "Pause" will stop the course at that point. To return to the previous menu, press "Done". When you have selected a course to ride press "Ok". Screen # 12

Screen #12

	Easy courses	
	Demonstration Ride (1.00 miles) Salt Flats (1.00 miles) Lincoln Park (2.00 miles) Cocksackie (2.00 miles) Albuquerque (3.00 miles) Bay City Interurban (4.00 miles) Medicine Bow (4.00 miles) -more-	
Ok	Course Info	Back Up Down Up

If you would like to compete against a previous ride, press "Yes". Screen # 12a

Screen #12a

The Prolog Distance: 0.08 miles Course Record: 00:36 Current Grade: 0 Rider Status * JAMES		Time 00:00
		Mph 0
		Pedal Rpm 0
		Miles 0
		Gear 1
		Cal/Min 0
		Total Cal 0
Yes	No	Back Up Down Up

Select competitors using the arrow keys and press "Ok" to enter that competitor. When you are through, press "Finished". The rest of the instructions for riding a course have been explained in "Getting Started" at "Adding pace riders" (see instructions at screen #4). Screen # 13

Screen #13

The Prolog Distance: 0.08 miles Course Record: 00:25 Current Grade: 0 Rider Status * JAMES	Saved Rides JAMES 00:29 JOAN 00:29 JAMES2 00:35 JAMES 00:38 MARK 00:42		Time 00:00
			Mph 0
		Pedal Rpm 0	
		Miles 0	
		Gear 1	
		Cal/Min 0	
		Total Cal 0	
Ok	Finished	Back Up Down Up	

When you have completed the course, you may save your ride to ride against later. If you don't want to save the ride, press "No." If you would like to save the ride, press "Yes." Screen # 14

Screen #14

The Prolog Distance: 0.08 miles Course Record: 00:25 Current Grade: 0	<div style="border: 1px solid black; padding: 5px; text-align: center;"> CONGRATULATIONS !! You rode the The Prolog in a time of 00:35. You burned 1 calories. Your average speed was 8 mph. Do you want to save this ride? </div>	Time 00:35
Rider Status 15Mph +00:15 13Mph +00:12 12Mph +00:11 JAMES1 +00:09 JOAN +00:04 JAMES2 00:00 JAMES3 00:00 MARK -00:07		Mph 6
		Pedal Rpm 43
		Miles 0.08
		Gear 1
		Cal/Min 0
	Yes No	Total Cal 1

Use backspace to remove ride name if it is not the desired name. Enter your ride name (example: James 1 / James 2 etc.). Press ◀ left or ▶ right to highlight the desired letter. Press "Select" to enter the letter, "Backspace" to delete the letter, and "Finished" to complete the entry. Screen # 15

Screen #15

The Prolog Distance: 0.08 miles Course Record: 00:25 Current Grade: 0	<div style="border: 1px solid black; padding: 5px;"> Ride name? JAMES4 ABCDEFGHIJKLMNOPQRSTUVWXYZ .0123456789 </div>	Time 00:35
Rider Status 15Mph +00:15 13Mph +00:12 12Mph +00:11 JAMES1 +00:09 JOAN +00:04 JAMES2 00:00 JAMES3 00:00 MARK -00:07		Mph 6
		Pedal Rpm 43
		Miles 0.08
		Gear
		Cal/Min 0
	Select Backspace Finished ◀ Left ▶ Right	Total Cal 1

User: (See Screen # 2)
 You can save up to 64 users on the Simulator. The user that is selected will be the name that you ride under. It is also the default name of a saved ride. If a user name is not selected, the default is "GUEST". To delete a user, you edit their name and leave it blank by deleting all the letters in the name. To add a user press "Add User". Screen # 16

Screen #16

Current Users.	
GUEST	
Ok	Add User Back Up ▼ Down ▲ Up

Enter your name. Screen # 17

Screen #17

Name				
ROBERT E				
ABCDEFGHIJKLMNOPQRSTUVWXYZ 0123456789				
Select	Backspace	Finished	Left	Right

Your weight is used in calculating pedal resistance. When you are through editing your name and weight, press "Back Up". Screen # 17a

Screen #17a

Name			
WILBERT			
Weight 120			
Edit	Back Up	Down	Up

Get Information:

Under "Get Info" there are 2 screens of information about the Simulator. Screen # 18 and 18a

Screen #18

M87 sp Cycling Simulator The M87sp electronic cycling simulator is part of Precor's M Series -- the state-of-the-art in exercise equipment. By combining innovative design concepts and microprocessor technology, these new products make exercise more enjoyable, informative, and rewarding. M Series fitness equipment represents Precor's highest achievement and symbolizes our commitment to excellence.		
Back Up	Page	Page

Screen #18a

Maintenance Clean the M87sp with a mild soap and water or a general household cleaner. CAUTION: Abrasive cleaners or polishes will damage the surface finish. Wipe the surface of the display module with a moist sponge or soft cloth. Dry with a clean towel. Do not pour water on the display module.		
Service Please contact your Precor dealer if your M87sp requires service.		
Back Up	Page	Page

Format: (See Screen # 2)

Format contains the 5 shown functions. Press "Kph/Mph". Screen # 19

Screen #19

Kph/Mph: Change units between Kilometers and Miles.
Edit Course: Create, delete, rename custom courses.
Back Up: Return to previous menu.
Remove Ride: Remove a saved ride.
Diagnostics: Cycling Simulator calibration mode.

Kph/Mph	Edit Course	Back Up	Remove Ride	Diagnostics
---------	-------------	---------	-------------	-------------

Either Kilometers or Miles can be used as the unit of distance. Once one is pressed you return to the previous menu. Press "Edit Course". Screen # 20

Screen #20

Kph/Mph: Change units between Kilometers and Miles.
Edit Course: Create, delete, rename custom courses.
Back Up: Return to previous menu.
Diagnostics: Cycling Simulator calibration mode.

Choose distance display mode

Kilometers	Miles			
------------	-------	--	--	--

Custom Courses:

Up to 20 custom courses can be created, renamed, and deleted. To create a course press "Create". Screen # 21

Screen #21

Delete: Delete a created course.
Create: Create a new course.
Back Up: Return to previous menu.
Rename: Rename a created course.

Delete	Create	Back Up	Rename	
--------	--------	---------	--------	--

Enter the course name that you are about to create. If it is left blank you return to the previous menu. Screen # 22

Screen #22

Enter course name:
MORGUL BISMARCK
ABCDEFGHIJ . MNOPQRSTUVWXYZ .0123456789

Select	Backspace	Finished	Left	Right
--------	-----------	----------	------	-------

Enter the total distance of the course in the specified distance units. Press "Finished" when it is correct. (Min. distance: 0.08 miles, Max: 1,000 miles)
Screen # 22a

Screen #22a

Enter total course distance (miles):
13
0123456789

Select Backspace Finished Left Right

Enter the highest elevation that the course will reach. Press "Finished" when it is correct. (Max. elevation 26,000 ft.) Screen # 22b

Screen #22b

Enter highest elevation (feet):
5782
0123456789

Select Backspace Finished Left Right

Enter the lowest elevation that the course will reach. Press "Finished" when it is correct. (Min. 0 ft. and the difference between highest and lowest elevation must be 20 feet or greater) Screen # 22c

Screen #22c

Enter lowest elevation (feet):
5214
0123456789

Select Backspace Finished Left Right

Enter the type of background scenery that you desire for this course. Screen # 22d

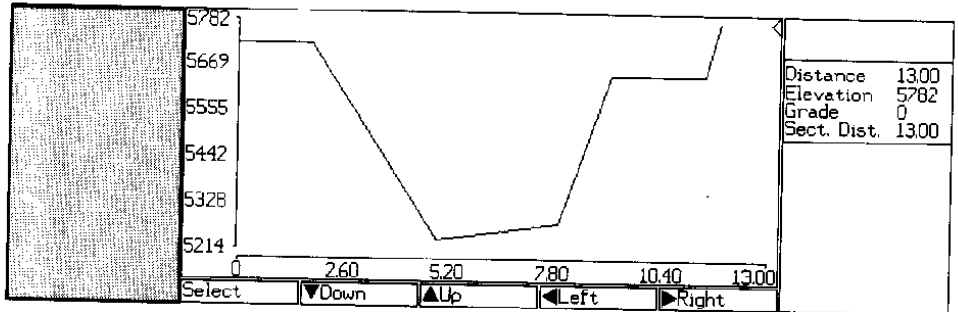
Screen #22d

Choose background

Country City Desert

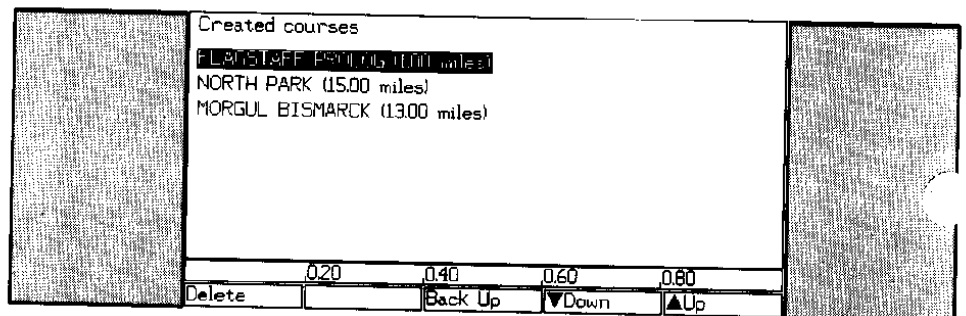
You begin by "Select"-ing a starting elevation. You finish creating your course by selecting an ending elevation at the far right of the screen. To move the prompt (<) you press the "Down," "Up," "Left," and "Right" keys, and to draw course segments press "Select." Once you have selected an ending elevation, your course is automatically saved under the name you chose. Screen # 22e

Screen #22e



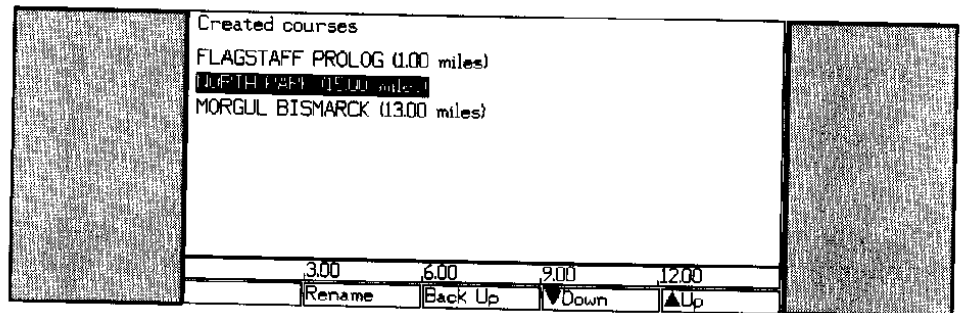
To delete a created course, select the course and press "Delete". You will be asked again if you really want to delete the course. Screen #23

Screen #23



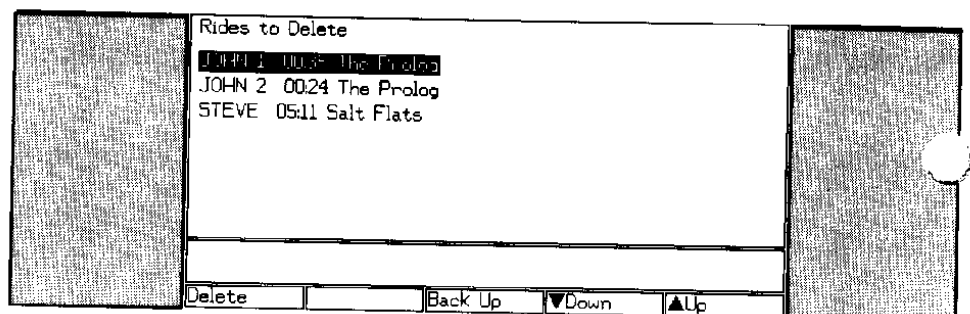
To rename a created course, select the course and press "Rename". At that time you will be able to edit the name. Screen # 24

Screen #24



To delete a ride, select the ride and press "Delete". You will be asked again if you really want to delete the ride. Screen #25

Screen #25



Diagnostics / Troubleshooting:

Complex electronic equipment can require special knowledge to troubleshoot. Use the following guide to identify the symptom and effect the cure.

Symptoms

Causes

- No display; keypad operative (beeps)
 - Contrast knob needs adjustment (see appendix in Owners Manual).
 - Contrast adjustment connector unplugged (see figure 1).
 - Display to P.C.B. ribbon cable unplugged (see figure 1).
- No display and keypad is inoperative
 - Unit unplugged at wall or bike.
 - Blue ribbon cable pinched during assembly.
- Keypad only inoperative
 - Membrane switch tail unplugged from receptacle (see figure 1).
- Display "Frozen" / random pattern on screen / error message and keypad inoperative
 - Microprocessor "crash" Hard reboot required (see below).
- No calories and no rpm indicated
 - Ribbon cable connections unplugged at gooseneck (either end).
- No change in resistance with gear change. Pedal resistance unusually high or low. Calories unusually high or low. No calories in lower gears.
 - Software needs recalibration (see software calibration procedure).

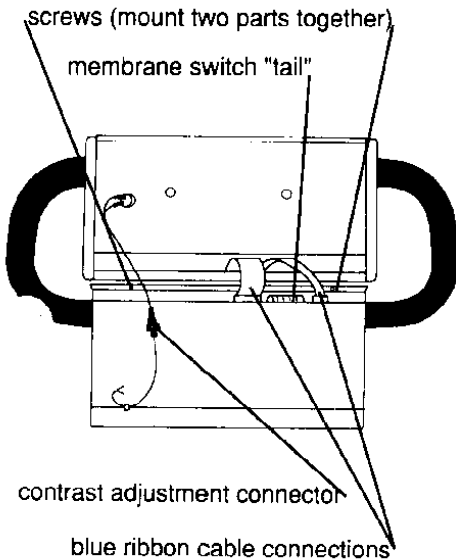


Figure 1. Connectors that are accessible from inside the display module. To open remove two screws from front of panel.

Microprocessor Hard Reboot Instructions

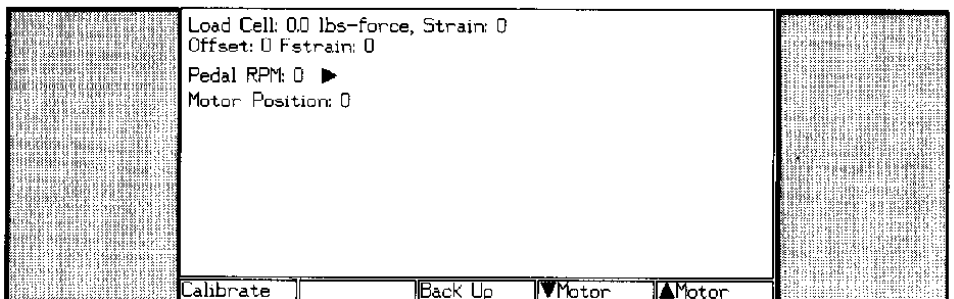
Unusual situations may occur (power surges, environmental conditions, etc.) which require a hard reboot. Note: This procedure will erase the computer memory. ie. saved rides.

- Unplug power from bike and wait 5 seconds.
- Depress left two keys while plugging unit in.
- Recalibrate unit following instructions below.

Software Calibration Procedure

- Press start, format, diagnostics to arrive at calibration. Screen #26.
- Begin pedaling at a consistent rpm in the 50-70 rpm range.
- Press calibrate; a box will appear on the screen. You will feel some resistance while pedaling, but continue. After 30-40 seconds the box in the center of the screen will disappear.
- Calibration is now complete.

Screen #26





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Specifications subject to change without notice.
1-800-4-PRECOR

P/N 31442-101
Rev B 3/90

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Precor is widely recognized for its innovative, award winning designs of exercise equipment. Precor aggressively seeks U.S. and foreign patents for both the mechanical construction and the visual aspects of its product design. Any party contemplating the use of Precor's product designs is hereby forewarned that Precor considers the unauthorized appropriation of its proprietary rights to be a very serious matter. Precor will vigorously pursue all such parties including through legal actions.