

• Brings aerobics classes directly to your home or office. No need to judge substances or keep up with class mates out of your league. You exercise when it suits you, and at your own pace.

• Acts as your personal trainer, guiding you in an exciting multi-stages program tailored to your individual needs

• Gives you instant feedback on the effectiveness of your performance

• Monitors your heart rate

• Provides updates on the calories you've burned

### Simple to Install

The Exercitor™ 21 is comprised of PC software on CD-ROM, an ergonomically-designed lightweight belt that you wear around your chest, and a telemetry receiver connected directly to your PC serial port. That's all. No bulky machines, no wires limiting your movement. The belt sensors monitor your movements - up and down, marching-in-place and bending from the knee - and give you instant on-screen feedback on your effectiveness.

### Working Out with the Exercitor™ 21

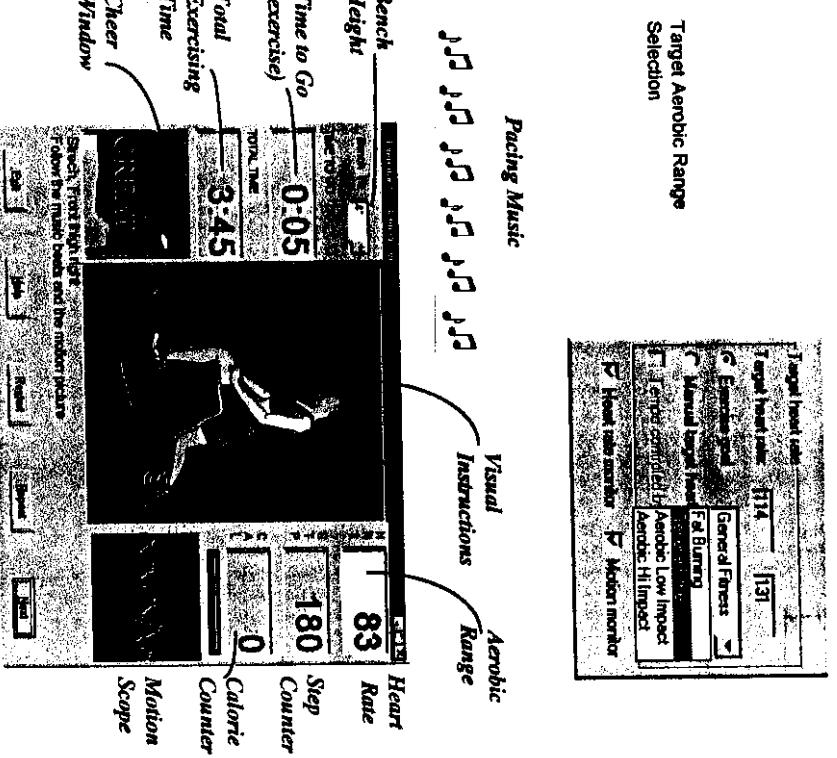
The Exercitor™ 21 utilizes the multimedia power of your PC to provide you with animated films, color in motion and music that make your workout an exciting and enjoyable experience. All you do is switch on your PC, turn on the sound blaster, strap the belt to your chest, have your aerobic step close by... and follow the animated instructions on your monitor.

Each session starts with warm-up and stretching exercises, gradually builds into a variety of real workout exercises and ends with cool-down and stretching exercises. *Everyone can do it!*

If you reach the pacing rhythm, the system rewards you by adding melody to the rhythm. The melody plays as long as you keep in step. Lose the beat and you go back to pacing. Keep to the beat and your performance is rewarded on a cheer window.

The aerobic range indicator displays your current heart rate on changing background colors: Green for in aerobic range, red for rates higher and yellow for slower than aerobic heart rates. In some programs, sold separately on CD-ROM, the music and the beat tempo change in response to your heart rate. If your heart beats too slowly the pacing tempo increases; if your heart beats too fast, the tempo slows.

The data base stores records of your heart rates and the calories you expended, along with other data that is used for future presentation and follow-up of your performance.



\* Exercises supervised by Angelica Sancilio, Wingate Institute graduate and manager of The Body Culture Institute.

\* Product developed by Keytron Electronics & Te-Technologies Ltd.

\* Music provided by: Musaflex, Inc. 139-34 90th St. Queens, NY 11414 Tel. (718) 738-4839 - Fax. (718) 843-4598

Runs On Windows® 95

Patent Pending

The Computerized Home Aerobics - ...  
Turns your PC into a Motion & Heart Rate Monitor.  
Featuring:  
Acts as your:

• Personal Aerobics Trainer

• High Impact Alert

• Step Workouts

• Swing Music \*

• Calorie Counter

• Data Base \*

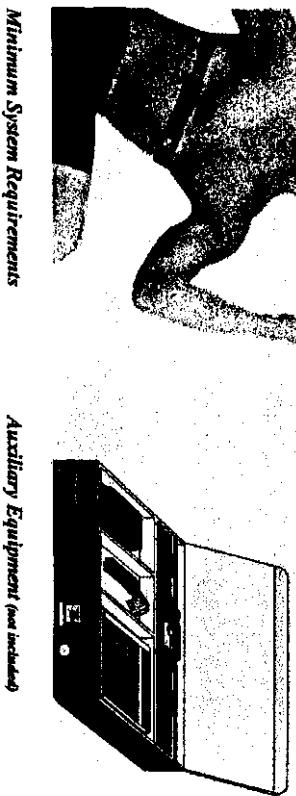
• Step Counter and more...

# Exercitor™ 21

*Aerobics & Health the PC way*

*Basic package contains:*

- Transmitter Belt w. Replaceable Battery
- Elastic Strap
- Small Screwdriver
- Telemetry Receiver
- Serial Interface Cable
- CD-ROM
- User Manual



*Fitness,  
Aerobics,  
Calorie Counter,  
Heart Rate Monitor,  
Multimedia & Your PC!*



## WIRELESS 900 MHZ

**Minimum System Requirements**

Personal IBM or equivalent computer  
Pentium 100 MHz or faster  
16 Mbytes RAM  
Sound Blaster card (64 bit compatible with Direct-X)  
Super VGA with acceleration card  
256 Colors  
50 Megabyte free on hard disk space  
Windows 95

### *Auxiliary Equipment (not included)*

Adjustable exercise step 4" to 8"  
Cables

Copyright ©  
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Windows is a registered trademark of Microsoft Corporation.

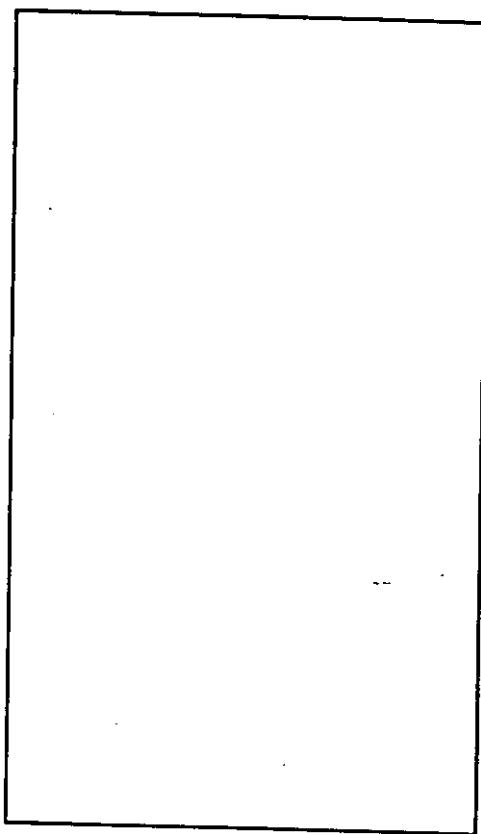
exerdoc

# Exercitor™ 21

Distributor:

The Home Exercising  
Computerized Personal Trainer & Monitor

*Keytron Electronics & Technologies Ltd.  
Innovative Concepts in Personal Exercise Systems*



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*Keytron Electronics & Technologies Ltd.  
Innovative Concepts in Personal Exercise Systems*

Patent Pending

This exercise program is meant for healthy adults only. Some exercisers may not be suitable for everyone and performing them may result in injury! Every user of this program assumes the sole responsibility for any injuries incurred while performing Exercise exercises.

To reduce the risk of injury, consult your physician for medical clearance before beginning this program.

The instructions and advice presented in this program are in no way a substitute for professional medical counseling.

The designers, creators, producers and distributors of this program disclaim any liability in connection with the exercise and advises provided within.

#### FCC Rules

This device complies with part 15 of FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Also, no changes of modifications are allowed to the systems parts. If any changes are made without expressed statement by the manufacturer, the user is void to operate the system.

See page 13 for FCC Note.

#### Customer License Agreement

The use of this system and the accompanying program is licensed solely to the original purchaser for private home use only.

Reproduction, copying, modifying or performance in public, in whole or in part, is absolutely prohibited.

Copyright:

Keytron Electronics & Technologies Ltd.

All rights reserved. November, 1997

One-Year Limited Warranty

For one year after the date of shipment to the end-user, or eighteen months after the date of shipment from Keytron Electronics & Technologies Ltd., whichever occurs first, Keytron Electronics & Technologies Ltd. will at its sole discretion, replace, repair or furnish credit for any product purchased by user that, in Keytron Electronics & Technologies Ltd.'s judgment, has a defect in material or workmanship - provided the product is returned, transportation charges prepaid, to Keytron Electronics & Technologies Ltd. with Keytron Electronics & Technologies Ltd.'s prior permission and return authorization number, and provided further that the product has not been misused (including electrostatic discharge), improperly operated, or subject to unauthorized repairs or modifications. This warranty is in lieu of all other warranties, expressed, implied or statutory, including the warranty of merchantability and the warranty of fitness or of suitability for a particular purpose and of all other obligations or liabilities on Keytron Electronics & Technologies Ltd.'s part, and Keytron Electronics & Technologies Ltd. neither assumes nor authorizes any other person to assume for Keytron Electronics & Technologies Ltd. any other liabilities in connection with the sale of the said product. If Keytron Electronics & Technologies Ltd.'s examination does not disclose a defect in material or workmanship on a product claimed to be defective, the end-user agrees to pay Keytron Electronics & Technologies Ltd.'s established charges for unpacking, testing, and repackaging the product for restumption to the end-user. This provision states the end-user's exclusive and sole remedy for breach of warranty. This provision does not extend the original warranty period of any product that has been repaired or replaced by Keytron Electronics & Technologies Ltd.

This warranty is the only warranty made by Keytron Electronics & Technologies Ltd. with respect to the goods delivered under this Agreement, and may be modified or amended only by a written instrument signed by a corporate officer of Keytron Electronics & Technologies Ltd. and accepted by the end-user.

The products that at the end-user's request are delivered without complete encapsulation are specifically excluded from the warranty set out in this Agreement. All such products are sold "as is."

Except for the express warranty set forth above, Keytron Electronics & Technologies Ltd. grants no other warranties, express or implied, by statute or otherwise, regarding the products, their fitness for any purpose, their quality, their merchantability, or otherwise.

Keytron Electronics & Technologies Ltd.'s liability under the warranty shall be limited to replacement, repair or credit for the customer's purchase price. In no event shall the Supplier be liable for the cost of procurement of substitute goods by the customer or for any special, consequential or incidental damages for breach of warranty.

Repairs are warranted for 90 days unless covered by the one year basic warranty period.

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1. Getting Started
2. Working Out with the Demo 21 Program
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6. References

state of the art. It turns your computer into a personal aerobic exercise trainer and monitor that helps you improve and maintain your physical fitness.

As the Exercitor™ 21 presents pre-programmed exercises, your PC screen comes alive with colorful animation and videos accompanied by pacing music reproduced by your multimedia sound blaster.

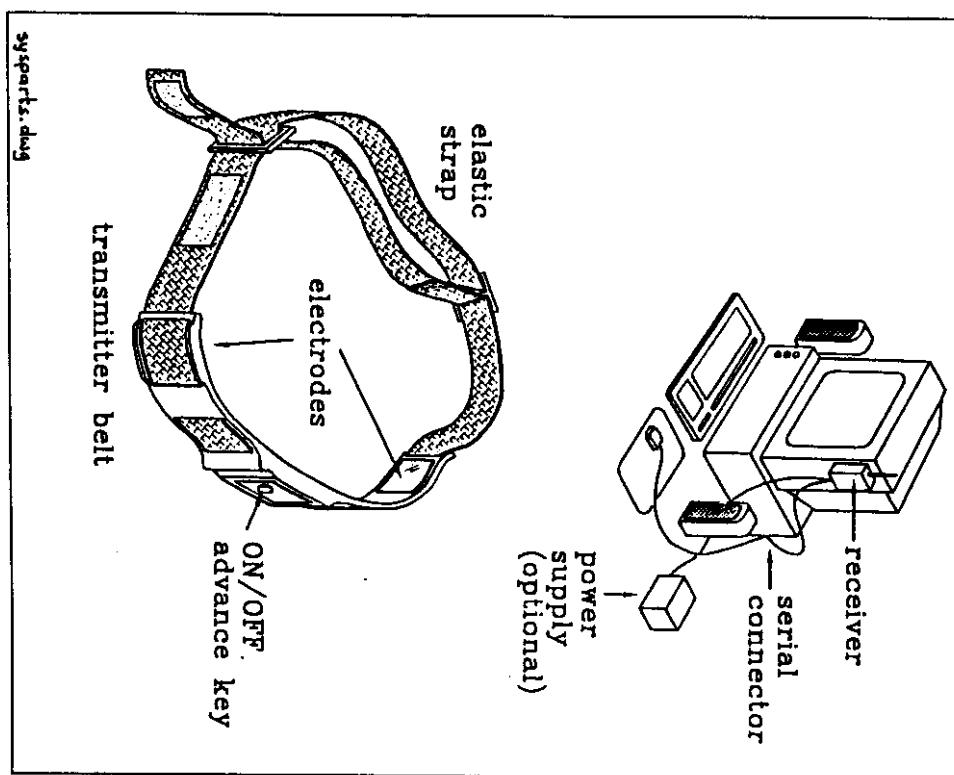
The Exercitor belt monitors your heart rate and the motion waveforms of your torso accelerations. Then, transmits these signals (via a wireless link) to the PC, which displays your heart rate and motion waveform. The motion waveforms are then further analyzed to show your steps count and calorie expenditure (in some exercises the calories expenditure are based only on exercising time).

All through your exercise session, the Exercitor motivates you with features such as a cheering screen, music and rhythm (beats) separation, count down exercise timer and calorie counter.

One of the system's key features is an aerobic range indicator that displays heart rate background colors: Green for aerobics; Red for rates higher than aerobics and yellow for rates slower than aerobic heart rates.

In some of the programs, the music and beat tempo change in response to your heart rate. If your heart beats too slow the pacing tempo increases; if your heart beats too fast, the tempo slows.

The data base stores records of your heart rates and the calories you expended, along with other data that is used for future presentation and follow up of your performance.



syparts.dwg

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## Minimum System Requirements

### Preferred

- Personal IBM or equivalent computer
- Pentium 100 MHz
- Mbytes RAM;
- Sound Blaster Card 16-bit compatible with Direct-X
- Super VGA with accelerating card
- 256 colors
- 50 Mbytes free hard disk space
- CD-ROM driver X8
- Free Serial port RS-232 (19,200 Kbits 9-pin D-type connection)
- Windows 95

### ♦ To install the Exercitor:

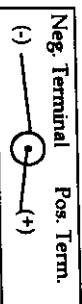
1. Start Windows 95.
2. Place the Exercitor™21 CD-ROM in your CD-ROM drive;
3. If your computer has the AutoPlay feature, Exercitor dialog box shall appear automatically.
4. Select "Install Exercitor21" and follow the instructions;
5. If no AutoPlay feature - open "MyComputer" and select your CD-ROM drive letter. Double click on AutoRun and follow instructions;
6. When asked, select the "Typical Installation" or if you prefer "Full Installation". The last will require about 200 Mbytes of your hard disk, but will free your CD-ROM drive and reward with better response during play.
7. If DirectX is not installed on your machine choose the "Install DirectX" option from the opening dialog box and follow the installation instructions.
8. After the Setup has completed, change the DISPLAY SETTINGS to 256 Colors & 640x480.
9. Double click the Exercitor21 icon;
10. The opening dialog box will give you options to start the Introduction or Lessons. It is recommended to check the Communication Setup first.

## Installing Hardware Connections

### ♦ To install hardware connections:

1. Using the supplied cable, connect the receiver to the PC serial port

*Note: If your PC serial ports has limited current to drive the receiver,*



## Turning OFF the Belt Transmitter

If left motionless for 3 minutes the transmitter belt shall turn off automatically. To turn off immediately by pressing the TX-key for over 7 seconds.

## Cleaning the Transmitter Belt

You may wash the transmitter belt under running (tap) water but never immerse it in. You may use liquid soap on damped cloth to remove any oily stains then rinse soap out in running water. Don't apply hot water!

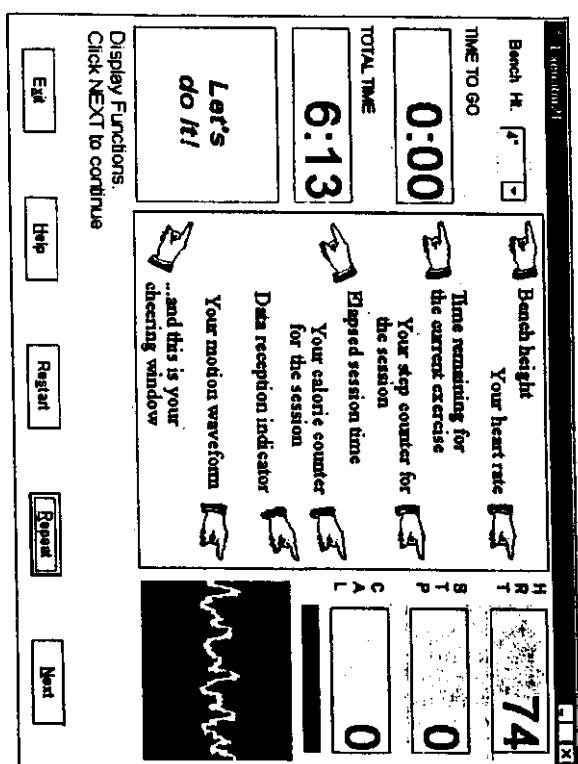
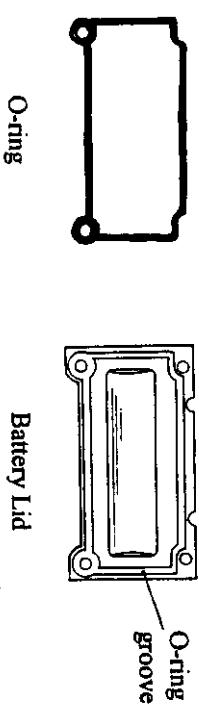
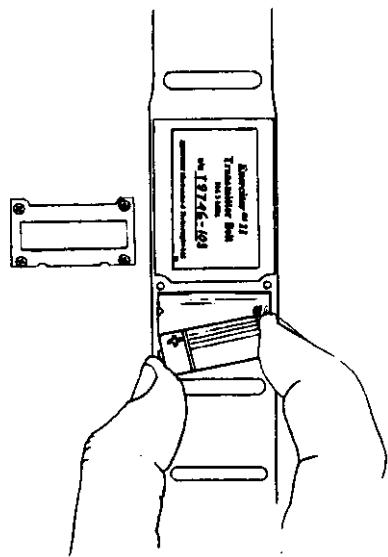
*Warning! Don't wear the belt while bathing or under shower!*

Use the following procedure when battery replacement is required.

your screen when the Exercitor-21 is active.

♦ To replace batteries:  
 Note: The battery lid is coupled to the case with an 'O-ring'. This O-ring is designed to seal the Exercitor against moisture. To make the O-ring effective it should be coated with a tiny layer of clear silicon grease - not glue! - and inserted carefully into the groove in the lid.

1. Using a small screwdriver, gently open the four screws on the back of the belt;
2. Carefully remove the used battery;
3. Insert a fresh Alkaline 1.5V type N cell into the case;
4. Check that the sealing O-ring is greasy and inserted in the groove of the battery lid;
5. Replace the lid and the four screws; screw gently leaving small (paper sheet thickness) gap between the lid and case.
6. Check the operation using the Communication Set-up screen.



#### Heart Rate Monitor (HRT)

Displays your average heart rate as measured by the transmitter belt. The number reads Beats Per Minute (40 to 200 BPM).

The HRT display background color is rate dependent: If you are within the target aerobic range, it will be green. If you are lower than the range it will be yellow and if you are higher it will be red.

#### Step Counter (STP)

Displays the total step count you accumulated during the current session. The counter is updated about every 10 steps. The count is interrupted if no motion is detected.

### Bench Height

This window show the height of the bench (step) as you entered it in the session entry screens. Usually, the default value is shown. Make sure the actual bench height is the same as that shown on the screen. If it is not the same, the calorie counter will give incorrect information.

### FCC Note:

Some programs allows you to update the entry directly: Click the window and change the bench height on screen. If this option do not work in your program the default height shall apply.

*Remember, the higher the step the greater the chance of injury!*

### Time To Go

Displays time you have left (in minutes and seconds) to finish the current exercise. Each exercise begins with a pre-defined exercise time. As long as your movements are detected, the timer counts down to zero, after which you will hear a double gong (or other sound effect).

The animation and music continue (even after zero) until you advance to the next exercise. (You do this by using the belt button or the Next key.)

The count down is interrupted if no motion detected.

Your actual exercising time (not displayed on the screen) is accumulated for the data base, including all time you were in motion during the current session.

### Total Time

This is where you see the time that elapsed from the time the session started — in minutes and seconds.

### Cheer Screen

This screen responds to your performance: If you exerted no motion during the exercise — the screen asks if you are Resting? If your movements are inconsistent with the music tempo, the Cheer Screen urges you with Come On. When your movements are consistent with the music tempo, the screen cheers you with Great!

In some versions you will find more dynamic presentations (cartoons, movies...) of those distinctive phases.

is green and full. If the bars are garbled the green bar is shortened and changes to yellow or red segments.

To reach stable communication, find the optimal position for the transmitter: if you find signal errors during motion with the Exercitor belt worn try to relocate the receiver to minimize the red or yellow segments.

### FCC Note:

This system has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installations.

This system generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this system does cause harmful interference to radio or television reception, which can be determined by turning the Belt off and on (press the belt button for 7 sec. for off), the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the system and the receiver.
- Connect the system PC into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

### Keys

*Exit* - Returns you to the entry window

*Help* - Gives you assistance for some of the functions

*Restart* - Switches the session back to the beginning

*Repeat* - If you click this key within the first 5 seconds of the exercise, it will switch you back to the previous exercise; if you click it during the course of the exercise, it will restart the current exercise

*Next* - Advances you to the next screen or exercise.

stretching, workout, cool-down and final stretch. The lesson is designed for beginners. It is suitable for 3 to 4 months, after which you may wish to go on to more complex lessons (sold on CD-ROMs separately).

### The Demo 21 Program

If you are a beginner, you may find it helpful to read some introductory books on fitness. Please refer to the references at the end of this manual.

### Work Outs

- If you are a very beginner it is recommended to start your workouts on floor not using the bench. If during a workout, which is well after the warm-up and stretch exercises, your heart rate is still slow (in the yellow zone), you can switch to a 4" bench height for the next session.
- Workouts are planned in sequence and timing; don't skip any of the exercises unless you are in pain.
- During the workout the muscles must be kept warm. *Bridge breaks between exercises with march-in-place movements.*
- If you found your previous lesson too easy, use a higher step. Remember, though: the higher the step the greater the risk of injury. Work thoughtfully!
- Don't skip the warm-up, stretching or cool-down exercises; they are as important as the aerobic ones.
- If certain exercise cause pain, work more gently. If the pain persists consult your physician. *Never push through pain!*
- If you are a beginner, work the Demo 21 lesson for 4 to 6 sessions using a low (4 inch) bench or no bench at all. During the next 6 to 8 sessions, repeat the lesson using a 4 or 6 inch bench. If you feel good, you may increase the bench height even further.
- If the load is too easy you may add hand movements to your exercise or go to more advanced lessons like *Aerobic One* for beginners. The key is to keep your aerobic range and enjoy the workouts!

### Safety in Exercising

We assume that your decision to purchase this system was motivated by a strong will to keep physically fit or shed pounds. Whatever the reason, it is strongly recommended that you speak to your doctor, who may recommend certain limitations on particular movements or exercises. It is your own responsibility to get such

step workout. For that reason no automatic tempo control is supported by this program.

Here are some basic tips:

- Schedule your workouts so that they are at least 3 hours after meals (even 5 after a heavy meal)
- Your workout should be an easy and comfortable experience. If you feel abnormally short of breath or any discomfort or pain stop exercising.
- Drink before, during and after your workouts.
- Keep your Heart rate in the target zone — the green background of the Heart Rate display. If the background turns red switch to working on floor only (don't use the bench) for a minute or two. If your heart rate does not slow down after 2 minutes stop the exercise and consult your doctor.
- Warm-up and stretching exercises are very important parts of the workout. Don't skip them.
- Never work if you are in pain. Listen to your body!
- Keep to a regular workout schedule - preferably every day and a minimum of 3 times a week.
- If you miss a week of workouts, go back one lesson; if you miss more than 3 weeks, go back two lessons; if you miss over a month, start from the first lesson and use a lower bench height.
- Using a Bench
  - If you are a beginner, begin exercising on an even floor. Otherwise, start with a step that is no higher than height 4 inches.
  - Be conscious of your movements all through the workout.
  - Make sure your Platform is stable;
  - Place your entire foot firmly on the center of the bench.
  - Wear comfortable sport shoes with good support to the arches and ankles.
  - Do not perform the stretching exercises on higher than the 4" bench - instead dip them on floor.

*Have a good and pleasant workouts!*

You may run the program using your favorite music from a compact disc. Be sure to select music with the same tempo (rhythm of beating in BPM - Beat Per Minute) or there will be a discrepancy between the movie and music. In any case, there will be no synchronization between your music and the Exercitor movie.

For exact installation instructions refer to the *readme.txt* file provided with your program. Then insert your favorite music on compact disc and open the CD Player to run the music.

- Exercitor 21 Transmitter Belt
- Exercitor Receiver & Serial Interface
- CD-ROM with installation, control and Demo 21 programs
- Elastic Ribbon (strap)
- Battery Screwdriver
- User Manual

### 3. DATA BASE

#### **Viewing the Data Base**

After you have finished your exercise you may review the data gathered.

Follow the Data Base options starting from the Exercitor 21 entry screen.

The Transmitter Belt consists of a motion sensor, ECC electrodes and amplifiers, a microcontroller, a UHF small power wireless transmitter, an alkaline battery and an elastic ribbon.

This basic package is used for indoor exercising for fitness-health management, weight control, and personal challenge. The package is essential to run any of the exercising sessions designed for the Exercitor 21 system.

The electronic circuits and the battery are waterproof-sealed in their compartments.

The electronic circuits are powered by a standard 1.5V N-size alkaline battery which is inserted in a separate compartment for easy replacement.

The entire belt assembly is made of a flexible, bio-compatible material. The belt is attached to the body by the elastic ribbon. The elastic ribbon may be easily separated and washed in warm water with soap.

#### *Transmitter Belt*

Battery type:	1.5V N-size Alkaline
Battery life:	433 MHz systems: min. 70 hours of continuous operation - i.e. over 50 lessons.
	900 MHz systems: min. 140 hours i.e. over 100 lessons.
Operating temperature:	+9 to +50°C (35 to 122°F)
Storage Temperature:	-10 to +60°C (14 to 140°F)
Receiver / Interface	for 433 MHz units external 9V
Supply requirements:	DC - 30mA minimum
PC Connection type:	D-9 standard RS-232

## 5. ADDITIONAL EXERCISE PROGRAMS

A variety of workouts are being developed:

EXR21-001 Aerobic One for Beginners

An exciting program that is the first step in aerobic exercise for those wishing to exercise at their own pace at home or office.

The program consists of 12 30-minute lessons in duration. Each lesson begins with warm-up and stretching exercises, goes into aerobic workout and ends with cool-down and stretch exercises. The incorporated music is rhythmic and melodic.

EXR21-002 Aerobic Two - Keep-it-on...

Whether fitness or weight control is your motivation this software provides a variety of aerobic exercises sessions that help you

Keep it on... Each of the three sessions (30 to 40 minutes each) is accompanied with tempo controlled rhythmic melodies.

Similar to Aerobic Two but for more demanding workouts.

**EXER-OUT** Weight Control With Aerobic Exercise. Three specially designed sessions for easy but demanding weight control exercises for beginners.

## **EXR21-011 Weight Control with Aerobic Exercise II**

**EXR21-020** *Aerobics for Cardio-Respiratory Health*  
Prescribed by medical professionals for easy and controlled workouts that improve the cardio-respiratory system and keep it healthy.

## Registration

Fill in and mail your registration card today. When the workout CD-ROM is released we will contact you with details for special discount.

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