OWNER'S MANUAL
MODEL NO.
16517918

- ***Assembly***
- ***Operation***
- ***Trouble –Shooting***
- ***Parts***
- ***Warranty***

CAUTION:

You must read and understand this owner's manual before operating unit.
Keep this manual for future reference.

Serial number

_____

Write the serial number in the space above for reference. Serial number can be found at the front bottom section of the elliptical.

Manufacture's Limited Warranty

Dyaco Canada Inc. warrants all its home use elliptical parts for a period of time listed below, from the date of retail sale, as determined by a sales receipt or in the absence of a sales receipt. Dyaco Canada Inc.'s responsibilities include providing new or remanufactured parts, at Dyaco Canada Inc.'s option, and technical support to our independent dealers and servicing organizations. In the absence of a dealer or service organization, these warranties will be administered by Dyaco Canada Inc. directly to a consumer. The warranty period applies to the following components:

Home Use Limited WARRANTY	
Frame	Lifetime
All Other Components	2 Years
Labour	1 Year

This warranty is not transferable and is extended only to the original owner.

The warranty shall not apply to exercise units which are (1) used for commercial or other income producing purposes, or (2) subject to misuse, neglect, accident or unauthorized repair and alterations.

This warranty provided herein is lieu of all other express warranties, any implied warranties, including any implied warranties of merchantability of fitness for particular purpose, are limited in duration to the first 12 months from date of purchase. All other obligations or liabilities, including liability for consequential damages are hereby excluded.

REPAIR PARTS AND SERVICE

All of the parts for the elliptical shown in figure can be ordered from Dyaco Canada Inc. 6050 DON MURIE STREET, NIAGARA FALLS, ONTARIO L2G 0B3. When ordering parts, the parts will be sent and billed at the current prices. Prices may be subject to change without notice. Check or money order must accompany all orders. Standard hardware items are available at your local hardware store.

To ensure prompt and correct handling of any errors, or to answer any questions, please call our Toll Free number: 1-888-707-1880, or local number 1-905-353-8955 or fax 1-905-353-8968 or email customerservice@dyaco.ca. You can visit us at www.dyaco.ca Office hours are from 8:30 AM to 5:00 PM Monday to Friday Eastern Standard Time.

Always include the following information when ordering parts

- Model number
- Name of each part
- Part number of each part

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IMPORTANT SAFETY INFORMATION
THIS UNIT IS INTENDED FOR HOUSEHOLD USE ONLY

READ ALL INSTRUCTIONS BEFORE USING THIS ELLIPTICAL

Thank you for purchasing our product. Even though we go to great efforts to ensure the quality of each product we produce, occasional errors and /or omissions do occur. In any event should you find this product to have either a defective or a missing part please contact us for a replacement.
This product has been designed for home use only. Product liability and guarantee conditions will not be applicable to products being subjected to professional use or products being used in a gym center.
This exercise equipment was designed and built for optimum safety. However, certain precautions apply whenever you operate a piece of exercise equipment. Be sure to read the entire manual before assembly and operation of this machine. Also, please note the following safety precautions:

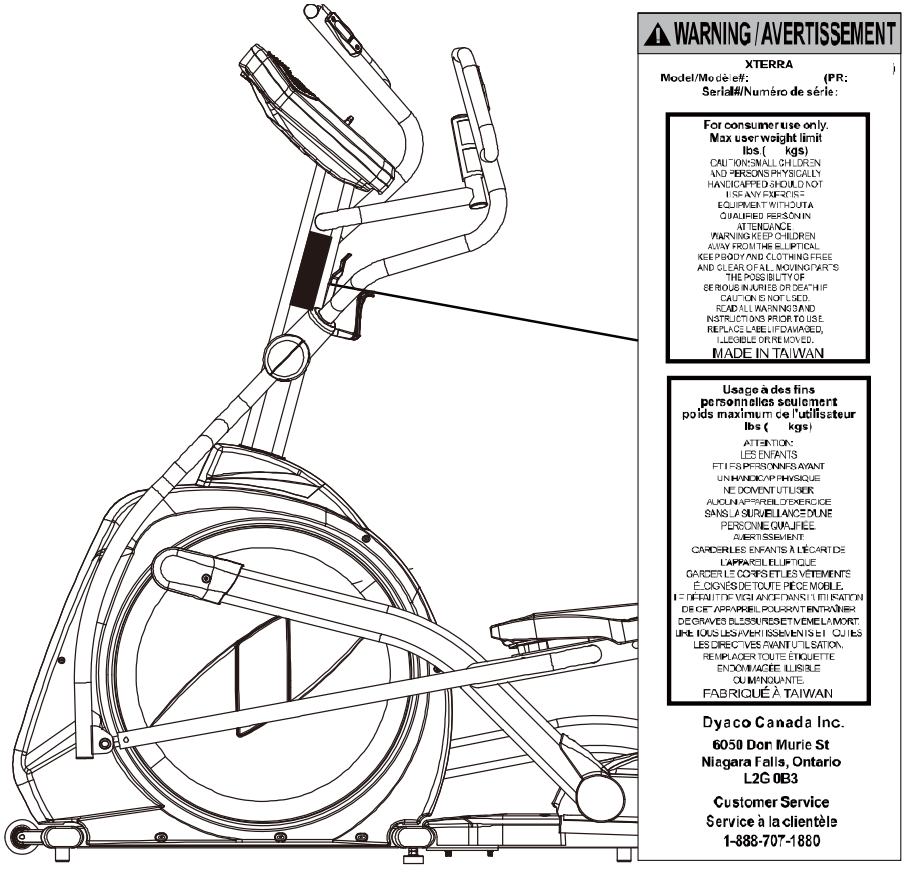
⚠ WARNING

It is the responsibility of the owner to ensure that all users of this elliptical are adequately informed of all warnings and precautions. Read the OWNER'S OPERATING MANUAL and all warnings posted on the elliptical and follow it carefully before using your elliptical..
Review all warnings labels that affixed to the elliptical. Inspect your exercise equipment prior to exercising to ensure that all nuts and bolts are fully tightened before each use. Functional and

1. Functional and visual inspection of the equipment shall be made after assembling your elliptical.
2. Never operate the elliptical if it is not working properly, if it has been dropped, damaged, or exposed to water.
3. Set up and operate the elliptical on a solid level surface. Do not use outdoors or near water. Do not place the unit on a loose rug or uneven surface. It is recommended to use an equipment mat to prevent the unit from moving while it is being used, which could possibly scratch or damage the surface of your floor. It is recommended to have a minimum of 3 metres safe clearance on all sides of the elliptical while in use.
4. Keep the elliptical indoors, away from moisture and dust. Do not put the elliptical in a garage, covered patio or near water.
5. Do not operate the elliptical where aerosol products are used or where oxygen is being administered.
6. Do not insert any objects into any openings.
7. Inspect and properly tighten all parts of the elliptical regularly.
8. Keep children and pets away from this equipment at all times and while exercising.
9. Handicapped individuals should have medical approval and close supervision when using this elliptical.
10. Do not place hands or feet under the elliptical. Always keep hands and legs off of the elliptical when others are using it.
11. Always hold the handlebars when mounting, dismounting, or using the elliptical. Keep your back straight when using your elliptical, do not arch your back. When you stop exercising, allow the pedals to slowly come to a complete stop. The elliptical does not have a free wheel, the pedals will continue to move until the flywheel stops.
12. To disconnect, turn all controls to the off position, then remove plug from outlet.
13. Use the elliptical only for its intended use as described in this manual. Do not use any attachments that are not recommended by the manufacturer.
14. User weight should not exceed 400lbs (181 kgs).
15. Never allow more than one person on the elliptical at once.
16. Warm up 5 to 10 minutes before each workout and cool down 5 to 10 minutes afterward. This allows your heart rate to gradually increase and decrease and will help prevent straining muscles.

Never hold your breath while exercising. Breathing should remain at a normal rate in conjunction with the level of exercise being performed. If dizziness, nausea, chest pains, or any other abnormal symptoms are experienced while using this equipment, STOP the workout at once. CONSULT A PHYSICIAN IMMEDIATELY.

17. The pulse sensor is not a medical device. Various factors, including the user's movement, may affect the accuracy of heart rate readings. The pulse sensor is intended only as an exercise aid in determining heart rate trends in general.
18. Start your program slowly and very gradually increase your speed and distance.
19. Always wear suitable clothing and footwear while exercising. Do not wear loose fitting clothing that could become entangled with the moving parts of your elliptical. Do not walk or jog barefoot, in stocking feet or loose fitting shoes or slippers.
20. Always hold on to a handlebar while making control changes
21. Use caution while participating in other activities while using your elliptical such as watching television, reading, etc. These distractions may cause you to lose balance, resulting in serious injury.
22. The decal shown below has been placed ons the elliptical. If the decal is missing or illegible, please call our Customer Service Department toll-free at 1-888-707-1880 to order a replacement decal. Apply the decal in the location shown.



WARNING: Before beginning any exercise program consult your physician. This is especially important for individuals over the age of 35 or persons with pre-existing health problems. Read all instructions before using any fitness equipment. We assume no responsibility from personal injury or property damage sustained by or through the use of this product.

SAVE THESE INSTRUCTIONS

Important Safety Instructions

When using an electrical appliance, basic precautions should always be followed, including the following: Read all instructions before using this appliance.

WARNING - To reduce the risk of burns, fire, electric shock, or injury to persons:

1. An appliance should never be left unattended when plugged in. Unplug from outlet when not in use, and before repairing or cleaning.
2. Never operate this appliance if it has a damaged cord or plug, if it is not working properly, if it has been dropped or damaged, or dropped into water. Return the appliance to a service center for examination and repair.
3. Do not carry this appliance by supply cord or use cord as a handle.
4. Keep the cord away from heated surfaces or flames.
5. Never operate the appliance with the air openings blocked. Keep the air openings free of lint, hair, and things alike.
6. Connect this appliance to a properly grounded outlet only.
   The use of an extension cord with this product is not recommended. If an extension cord is needed, use a short (less than 10 feet) heavy gauge (14 gauge or better) extension cord with a three prong (grounded) plug and receptacle

- **NEVER** remove any cover without first disconnecting AC power supply.
  If A.C. voltage varies by ten percent (10%) or more, the performance of your elliptical may be affected. Such conditions are not covered under your warranty. If you suspect the voltage is low, contact your local power company or a licensed electrician for proper testing.
- **NEVER** expose this elliptical to rain or moisture. This product is NOT designed for use outdoors, near a pool or spa, or in any other high humidity environment. Maximum environmental ratings are 40-120 degrees Fahrenheit, 95% humidity non-condensing (no water droplets forming on surfaces).
- **NEVER** use your elliptical during an electrical storm. Surges may occur in your household power supply that could damage elliptical components.

Failure to follow all guidelines may compromise the effectiveness of the exercise experience, expose yourself (and possibly others) to injury, and reduce the longevity of the equipment.

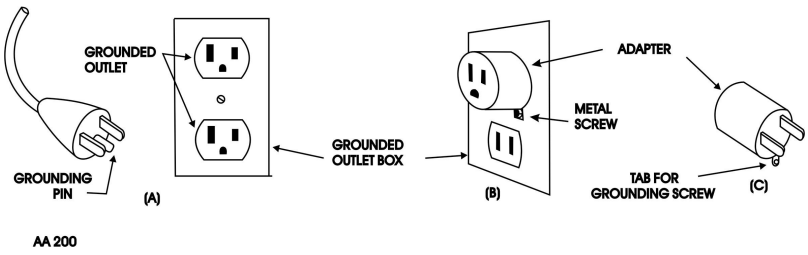
SAVE THESE INSTRUCTIONS - THINK SAFETY!

Grounding Instructions
This product must be grounded. If it should malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This product is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances. See diagram below for grounding methods.

Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or serviceman if you are in doubt as to whether the product is properly grounded. Do not modify the plug provided with the product if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

This product is for use on a nominal 120-volt circuit, and has a grounding plug that looks like the plug illustrated below. A temporary adapter that looks like the adapter illustrated below may be used to connect this plug to a 2-pole receptacle as shown below if a properly grounded outlet is not available. The temporary adapter should be used only until a properly grounded outlet (below) can be installed by a qualified electrician. The green colored rigid ear-lug, or the like, extending from the adapter, must be connected to a permanent ground such as a properly grounded outlet box cover. Whenever the adapter is used, it must be held in place by a metal screw.

Figure 1.
Grounding methods



AA 200

POWER CONNECTOR – FRONT, LEFT SIDE OF UNIT

HOW THE ELLIPTICAL WORKS

The elliptical allows your feet to move in a natural elliptical path, minimzing the impact on your knees and ankles.

- Dual Action Handles for total body workout
- Stationary handlebar for stability

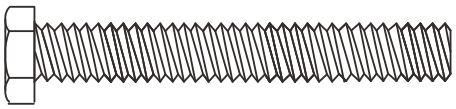
Features

Incline Adjustment

The elliptical has an exciting electronic incline feature that will increase the variety of your workouts. When the incline is at its lowest position you get a traditional elliptical workout. As the incline increases you will feel your knees rise higher with each step, which changes the emphasis of the muscles being used. The power incline is controlled by keys on the console and also automatically during the built-in workout programs.

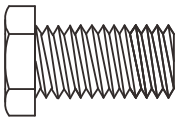
Assembly Pack Checklist

Hardware Step 1 (not shown at actual size)



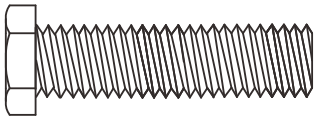
#102. 5/16” × 2-1/4”

Hex Head Bolt (4 pcs)



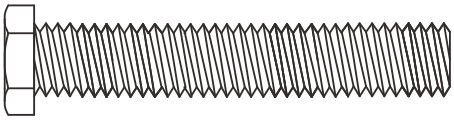
#103. 3/8” × 3/4”

Hex Head Bolt (2 pcs)



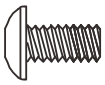
#104. 3/8” × 1-1/2”

Hex Head Bolt (2 pcs)



#105. 3/8” × 2-1/4”

Hex Head Bolt (1 pc)

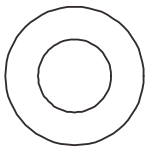


#116. M5 × 10mm

Phillips Head Screw (4 pcs)

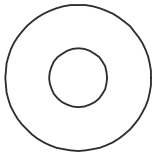
#130. 3/8” × 7T

Nyloc Nut (2 pcs)



#137. 3/8” × 19 × 1.5T

Flat Washer (2 pcs)



#142. 5/16” × 20 × 1.5T

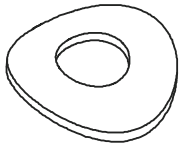
Flat Washer (4 pcs)

#151. 5/16” × 1.5T

Split Washer (4 pcs)

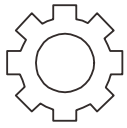
#152. 3/8” × 2T

Split Washer (1 pc)



#153. 3/8” × 23 × 2T

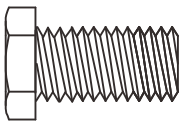
Curved Washer (2 pcs)



#154. 5/16”

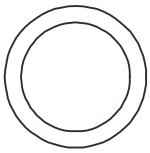
Star Washer (4 pcs)

Hardware Step 2



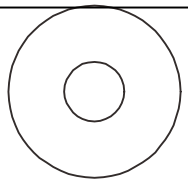
#99. 5/16” × 15mm

Hex Head Bolt (2 pcs)



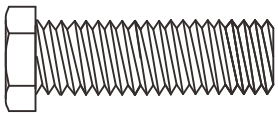
#150. 17mm

Wave Washer (4 pcs)



#141. 5/16” × 23 × 1.5T

Flat Washer (2 pcs)

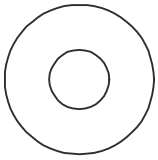


#101. 5/16” × 1-1/4”

Hex Head Bolt (2 pcs)

#192. 5/16” × 9T

Nyloc Nut (2 pcs)



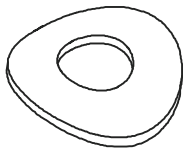
#142. 5/16” × 20 × 1.5T

Flat Washer (2 pcs)

Hardware Step 3

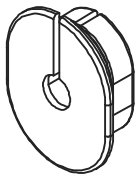
#127. 5/16” × 7T

Nyloc Nut (6 pcs)



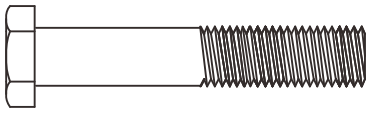
#160. 5/16” × 23 × 1.5T

Curved Washer (4 pcs)



#161. Switch Wire Cap

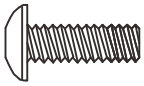
(2 pcs)



#159. 5/16” × 1-3/4”

Hex Head Bolt (6 pcs)

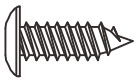
Hardware Step 4



#115. M5 × 15mm

Phillips Head Screw

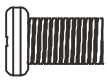
(14 pcs)



#119. 3.5 × 12mm

Sheet Metal Screw

(8 pcs)

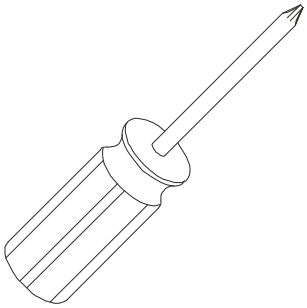


#122. M6 × 10mm

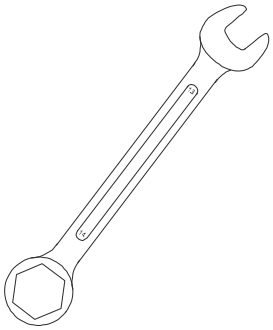
Phillips Head Screw

(4 pcs)

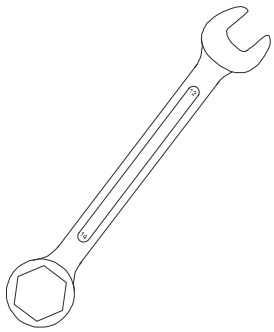
Assembly Tools



#157. Phillips Head Screwdriver



#155. 13/14mm Wrench



#158. 12/14mm Wrench

Assembly Instructions

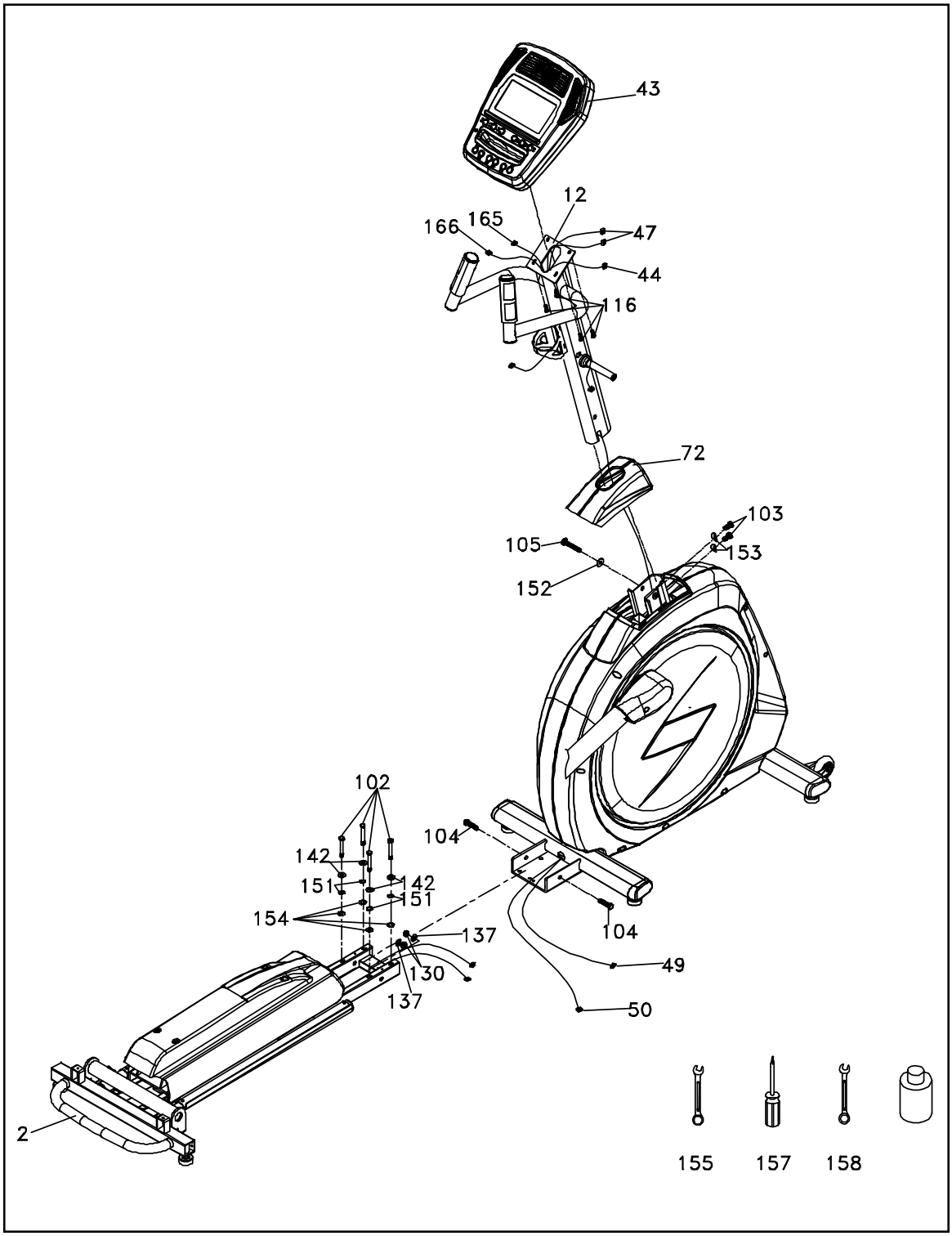
1 Rear Rail, Console Mast & Console

1. Slide the Incline Rail Assembly (**2**) into the U channel of the Main Frame (**1**). Be very careful not to damage the wires that exit each part.
2. Connect the Incline Rail Assembly (**2**) horizontally to the U channel of the Main Frame (**1**) with two Hex Head Bolts (**104**), two Flat Washers (**137**) and two Nyloc Nuts (**130**). Secure it vertically with four Hex Head Bolts (**102**), four Split Washers (**151**), four Flat Washers (**142**) and four Star Washers (**154**). Tighten using the Wrenches provided (**155** & **158**).
3. Connect the Incline Motor wires (**49** & **50**) to the wiring harness that exits the Incline Rail Assembly (**2**), by matching the colors red, white and black. Push the excess cable inside the U channel. Guide the twist tie that is attached to the Computer Cable (**44**) through the bottom of the Console Mast (**12**) until it exits the top of the steel tube. Secure the Console Mast (**12**) by loosely threading two Hex Head Bolts (**103**) from the front and two Curved Washers (**153**) first. Then secure the mast from the side by loosely threading a Hex Head Bolt (**105**) and a Split Washer (**152**). ***Note***: *There is one bolt already installed in the receiving bracket that will engage with the slot at the bottom of the Console Mast. Tighten the two bolts from the left side last.*
4. Tighten the two front bolts first, then the side bolts with the Wrench (**155**).
5. Untie the twist tie from around the Computer Cable (**44**). Plug the Computer cable (**44** - wide white end) & the two Hand Pulse Cables (**47**) into the bottom of the Console (**43**). Insert the Resistance Cable (**165**) into the white port labeled “Load” and the Incline Cable (**166**) into the Incline port on the back of the Console. Secure the Console (**43**) onto the mounting plate with four Phillips Head Screws (**116**). Tighten them with the Phillips Head Screw Driver (**157**).
6. Install the water bottle holder onto the handlebar in any position you like.

Hardware Step 1

#102. 5/16” × 2-1/4”
Hex Head Bolt (4 pcs)
#103. 3/8” × 3/4”
Hex Head Bolt (2 pcs)
#104. 3/8” × 1-1/2”
Hex Head Bolt (2 pcs)
#105. 3/8” × 2-1/4”
Hex Head Bolt (1 pc)
#116. M5 × 10mm
Phillips Head Screw
(4 pcs)
#130. 3/8” × 7T
Nyloc Nut (2 pcs)
#137. 3/8” × 19 × 1.5T
Flat Washer (2 pcs)
#142. 5/16” × 20 × 1.5T
Flat Washer (4 pcs)
#151. 5/16” × 1.5T
Split Washer (4 pcs)
#152. 3/8” × 2T
Split Washer (1 pc)
#153. 3/8” × 23 × 2T
Curved Washer (2 pcs)
#154. 5/16”
Star Washer (4 pcs)

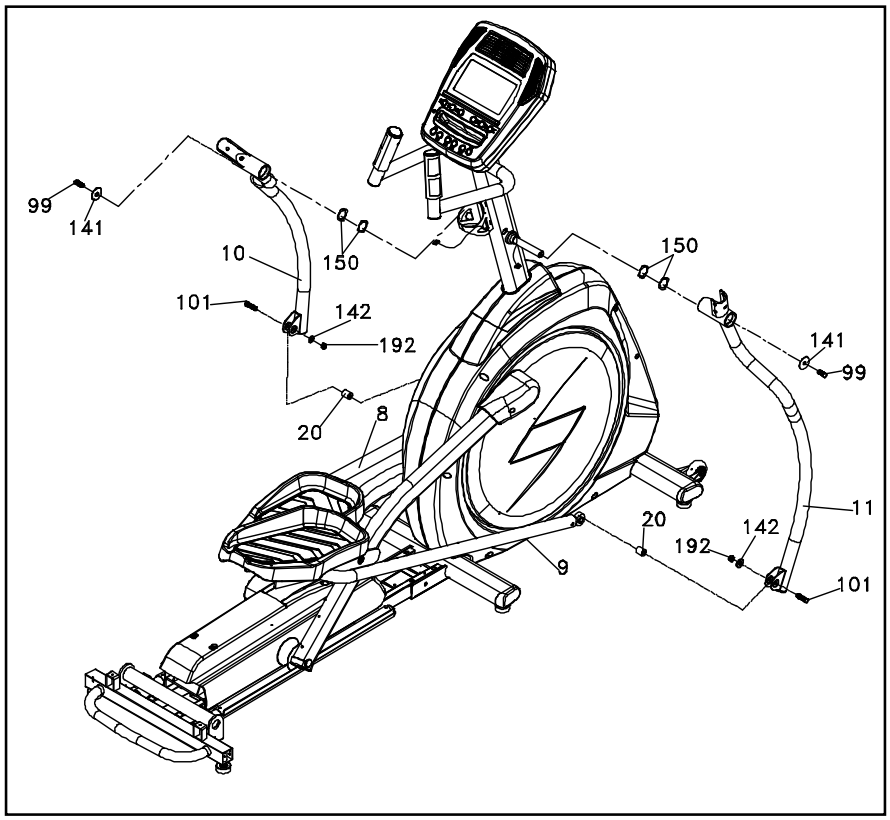
1 Rear Rail, Console Mast & Console



2 Connecting & Lower Swing Arms

Hardware Step 2

##99. 5/16" × 15mm
Hex Head Bolt (2 pcs)
#101. 5/16" × 1-1/4"
Hex Head Bolt (2 pcs)
#192. 5/16"× 9T
Nyloc Nut (2 pcs)
#141. 5/16" × 23 × 1.5T
Flat Washer (2 pcs)
#142. 5/16" × 20 × 1.5T
Flat Washer (2 pcs)
#150. 17mm
Wave Washer (4 pcs)



1. Slide two wave washers (**150**) onto each side of the Console Mast axle. Slide the lower Handle Bars (**10** Left, **11** Right) onto the axles and secure with the two Hex Head Bolts (**99**) and Flat Washers (**141**).

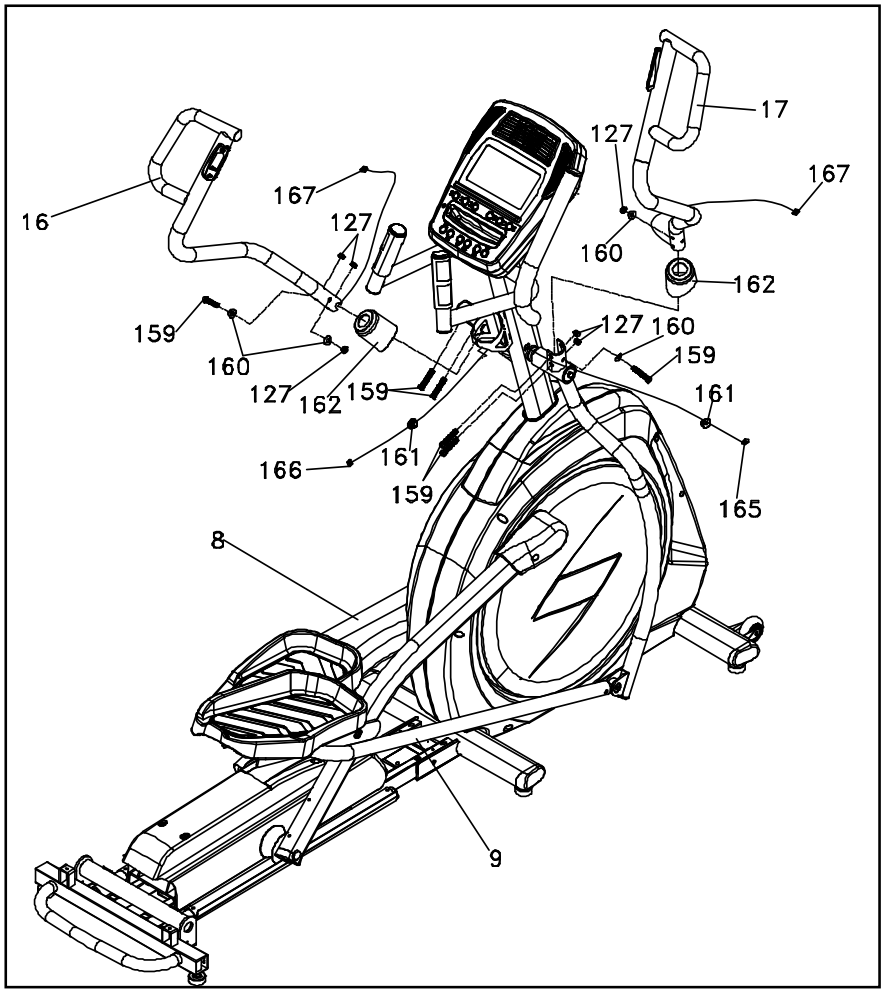
   Do not force the lower Handle Bars onto the axle. They should slide on, but you may need to jiggle them to get them lined up properly. The lower Handle Bars have been previously installed at the factory so they do fit properly.

2. Remove the tie that holds the Sleeve (**20**) in the rod end located at the end of the right connecting arm (**9**) and line up the rod end with the bracket at the bottom of the lower right Handle Bar (**11**). Slide the Hex Head Bolt (**101**) through the bracket of the lower Handle Bar and then through the rod end. Install the Flat Washer (**142**) and Nyloc Nut (**192**) on the bolt and tighten as much as possible. Repeat this step for the left side.

3 Upper Swing Arms

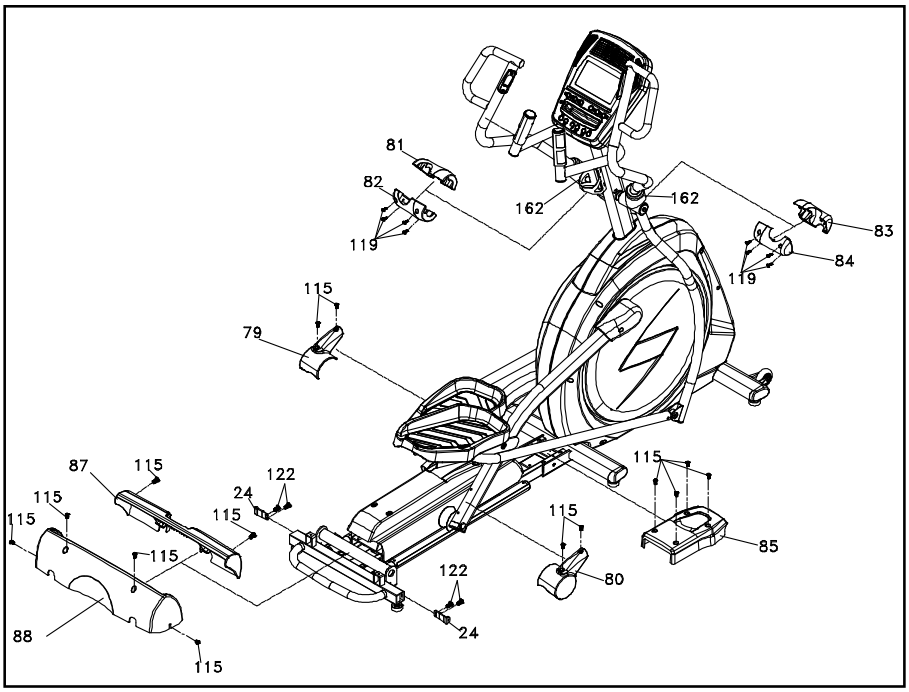
Hardware Step 3

#127. 5/16" × 7T Nyloc Nut (6 pcs)
#159. 5/16" × 1-3/4" Hex Head Bolt (6 pcs)
#160. 5/16" × 23 × 7T Curved Washer (4 pcs)
#161. Switch Wire Cap (2 pcs)



1. Slide the Swing Arm Bushing (**162**) onto the left (**16**) and right (**17**) Upper Swing Arms. Make sure the wide part is at the bottom.
2. Attach the wire (**166**) from the left Upper Swing Arm (**16**; Incline buttons on front) to the wire (**167**) that exits the Console Mast Tube (**12**). Slide the switch wire cap (**161**) onto the wire with the wide side facing the Swing Arm.
3. Insert the Upper Swing Arm (**16**) into the Lower Handle Bar. Fasten together with three Hex Head Bolts (**159**) and two Curved Washers (**160**).
4. Repeat steps 3.2 & 3.3 from above on the right side. You will connect wires (**165)** to (**167)**.

4 Plastic Covers



Hardware Step 4

#115. M5 × 15mm Phillips Head Screw (14 pcs)
#119. 3.5 × 12mm Sheet Metal Screw (8 pcs)
#122. M6 × 10mm Phillips Head Screw (4 pcs)

Note: *Use the Phillips Head Screw Driver (**157**) to tighten the hardware in this step.*

1. Install the two Wheel Covers (**79**-Left & **80**-Right) with four Phillips Head Screws (**115**).
2. Install the Bottom Cover (**85**) with four Phillips Head Screw (**115**). You need to raise the incline to install the Bottom Cover.
3. Install the Handle Bar Covers (**81** & **82**-Left, **83** & **84**-Right) with the eight Sheet Metal Screws (**119**).
4. Install the two 'Z' shaped Cover Holders (**24**) as shown with four Phillips Head Screws (**122**). The Cover Holders should be installed so the tab with the tapped hole is pointing toward the rear.
5. Install the Inclinable Rail Cover (**87**) with two Phillips Head Screws (**115**). Install the Rear Bar Cover (**88**) with four Phillips Head Screws (**115**).

Operation of Your Console

Console

Power Up

Power the elliptical on by plugging it into an appropriate wall outlet. When power is connected to the elliptical and the switch is on, the console will automatically power up. If there is no input to the console for 30 minutes, the console will go to stand-by mode to save energy. To turn the console on press any key.

When initially powered on the console will perform an internal self-test. During this time all the lights will turn on. When the lights go off the dot matrix display will show a software version (i.e.: VER 1.0) and the time and distance windows will display an odometer reading. The odometer reading displays how many hours the elliptical has been used and how many virtual miles the elliptical has gone.

The odometer will remain displayed for only a few seconds then the console will go to the start up display. The dot matrix display will be scrolling through the different workout profiles of the programs and operating instructions. You may now begin to use the console.

NEVER

operate this elliptical without reading and completely understanding the results of any operational change you request from the computer.

Understand that changes in resistance do not occur immediately. Set your desired level on the computer console and release the adjustment key. The computer will obey the command gradually.

Console Operation
Quick Start Mode

This is the quickest way to start a workout. After the console powers up you just press the Start key to begin. In Quick Start the time will count up from zero and the Resistance and Incline may be adjusted manually by pressing the Level Up/Down keys. The dot matrix dis- play will show ½ of the Resistance profile on each side of the Heart Rate Profile. If you press the Start button during a program, the dot matrix will switch to the Incline profile (segments are shown the same way as the Resistance profile). If you press the Start button once more, the Lap track is shown, which is ¼ mile in length. Pressing the Enter key will switch the data displayed in the Message Window. Initially, the Message Window shows the program name. Each time the Enter button is pressed the data will change to the following: Speed, Watts, Laps, Altitude (elevation gain), Current Level/Max Level, Scan, and repeat sequence. To the right of the dot matrix is a number that indicates your Resistance level. To the left is a number that indicates your elevation.

Basic Information and Functions:

Data Displayed:

- Calories show an accumulation of calories burned (Kcal). The number shown is just an estimate; your actual calorie burn most likely will be different. The only way to get an accurate calorie reading is in a laboratory setting connected to a host of machines.
- Time shows elapsed time unless you set the timer to count down.
- Seg Time counts down the time left in the current segment (column) of the profile.
- Pulse indicates your heart rate if you are grasping the hand pulse sensors.
- RPM displays your pedaling speed in revolutions per minute.
- Speed shows your speed in miles per hour or kilometers per hour if 'Km' is displayed.
- Incline/Ramp Shows incline level from 1 to 20.
- Distance displays accumulated mileage.

The elliptical has a built in Heart Rate Monitoring System. Simply grasping the hand pulse sensors on the stationary handlebars or by wearing the chest strap will start the heart icon blinking (this may take a few seconds). The Pulse Display Window will display your heart rate, or pulse, in beats per minute.

The Stop/Reset button actually has several functions. Pressing the Stop/Reset key once during a program will pause the program for 5 minutes. If you need to get a drink, answer the phone or any of the many things that could interrupt your workout, this is a great feature. To resume your workout after pausing just press the Start key. If the Stop/Reset button is pressed twice during a workout, the program will end and a summary of your workout will be displayed. If the Stop/Reset key is held down for 3 seconds, the console will perform a complete reset.

There is an Audio Input Jack on the front of the console, and built-in speakers. You may plug any low-level audio source signal into this port. Audio sources include: MP3 player, iPod, portable radio, CD player or even a TV or computer.

Programming The Console

Each of the programs can be customized with your personal information and changed to suit your needs. Some of the information asked for during programming is necessary to ensure the readouts are correct. You will be asked for your age and weight. Entering your age is necessary during the Heart Rate Program to ensure the correct settings are entered in the program. Entering your Weight aides in calculating a more correct calorie reading; although we cannot provide an exact calorie count we do want to be as close as possible.

A message about calories: Calorie readings on every piece of exercise equipment, whether it is in a gym or at home, are not accurate and tend to vary widely. They are meant only as a guide to monitor your progress from workout to workout. The only way to measure your calorie burn accurately is in a clinical setting connected to a host of machines. This is because every person is different and burns calories at a different rate.

Entering a Program/Changing Settings

Press the program keys to scroll through the program selections. The profile for each program will be displayed in the dot matrix window. Press the Enter key to select a program and begin customizing the settings. If you want to workout without entering new settings then just press the Start key. This will bypass the programming of data and take you directly to the start of your workout. If you want to change the personal settings then just follow the instructions in the message window. If you start a program without changing the settings, the default settings will be used.

Note: Age and Weight default settings will change when you enter a new number. So the last age and weight entered will be saved as the new default settings. If you enter an age and weight the first time you use the elliptical you will not have to enter it every time you work out unless either your age or weight changes or someone else enters a different age and weight.

Manual Program

The Manual program works as the name implies, manually. This means that you control the workload yourself and not the computer.

1. Press the Manual program button then press the Enter key.
2. The message window will ask you to enter your Age. You may adjust the Age setting using the Level Up/Down keys, then press Enter to continue.
3. The message window will ask you to enter your Weight. You may adjust the Weight setting using the Level Up/Down keys, then press the Enter key to accept the new number and proceed on to the next screen.
4. Next is the Time. You may adjust the Time and press Enter to continue.
5. Now you are finished editing the settings and can begin your workout by pressing the Start key.
6. Once the program starts the elliptical will be set to level one for both Incline and Resistance. This is the easiest level and it is a good idea to stay at level one for a while to warm up. If you want to increase the work load at any time press the Up key on the console or right swing arm; the Down key will decrease the workload. You can also increase the Incline at any time by pressing the Up/Down keys on the console or the left swing arm.
7. During the Manual program you will be able to switch data displayed in the message window by pressing the Enter key.
8. When the program ends the message window will show a summary of your workout. The summary will be displayed for a short time then the console will return to the start-up display.

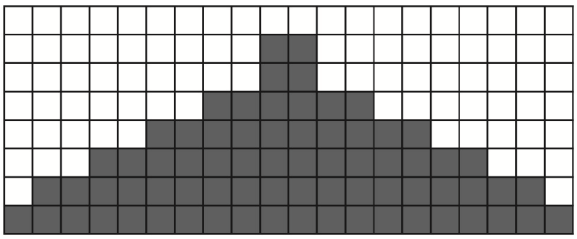
Programming Preset Programs

1. Using the Program Up/Down keys, select the desired program then press the Enter key.
2. The message window will ask you to enter your Age. You may adjust the Age setting, using the Level Up/Down keys, then press the Enter key to accept the new number and proceed on to the next screen.
3. You are now asked to enter your Weight You may adjust the Weight setting using the Level Up/Down keys, then press Enter to continue.
4. Next is time. You may adjust the Time setting and then press Enter to continue.
5. Now you are asked to adjust the Max Level. This is the peak exertion level you will experience during the program (work level at the top of the hill). Adjust the level and then press Enter.
6. Use the Incline Up/Down keys to adjust the Max Incline for the program, then press Enter.
7. Now you are finished editing the settings and can begin your workout by pressing the Start key.
8. If you want to increase or decrease the workload at any time during the program press the Level Up/Down key. This will change only the work level during the current segment.
9. During the program you will be able to switch the data displayed by pressing the Enter button.
10. When the program ends the message window will show a summary of your workout. The summary will be displayed for a short time then the console will return to the start-up display.

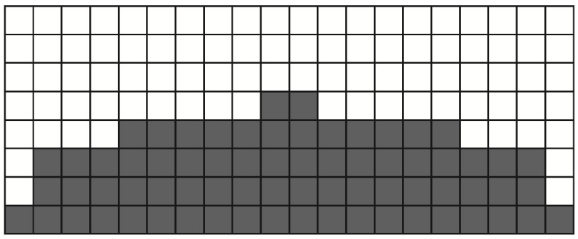
Preset Programs

The elliptical has eight different programs that have been designed to provide a variety of workouts. These programs have factory preset profiles for achieving different goals.

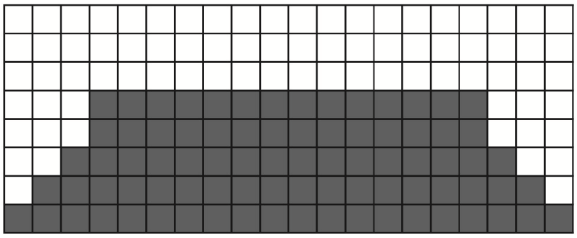
Ascent - Work Profile



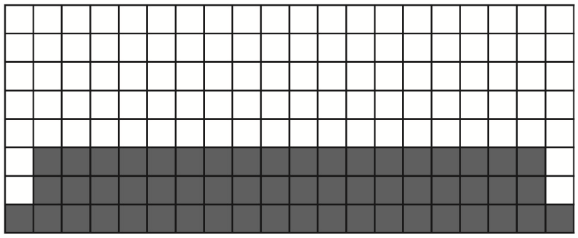
Ascent - Incline Profile



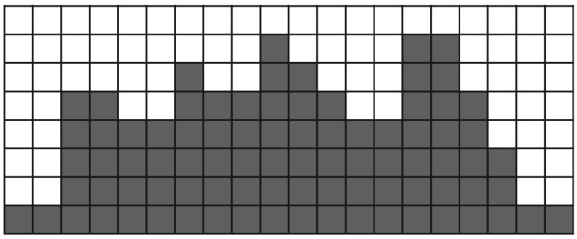
Fat Burn - Work Profile



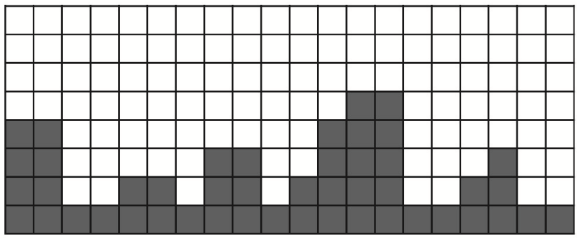
Fat Burn - Incline Profile



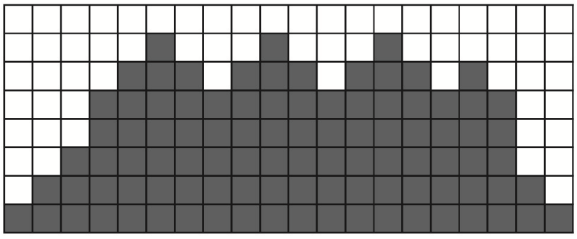
Glute Blast - Work Profile



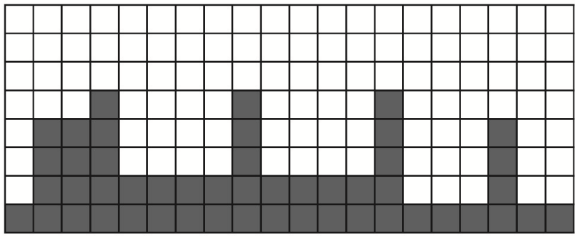
Glute Blast - Incline Profile



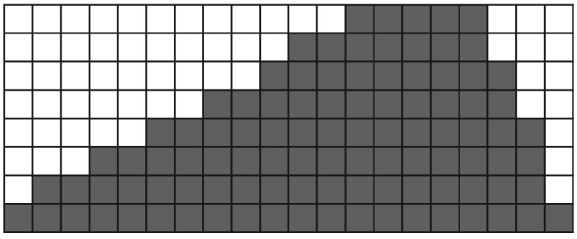
Adventure - Work Profile



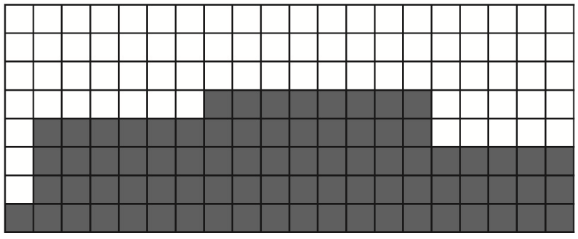
Adventure - Incline Profile



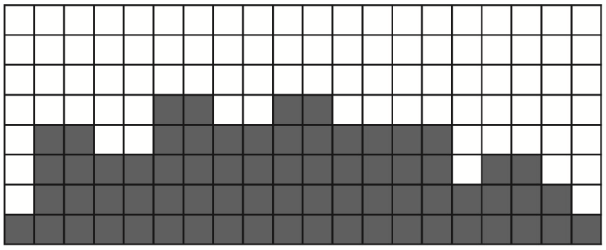
Xtreme - Work Profile



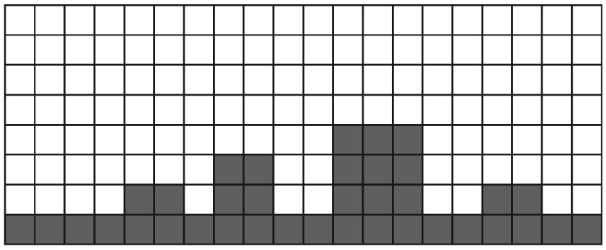
Xtreme - Incline Profile



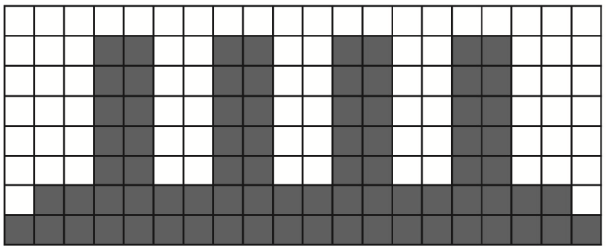
X Country - Work Profile



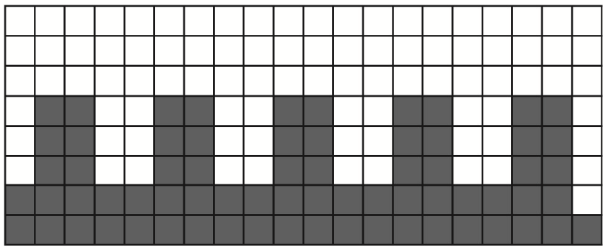
X Country - Incline Profile



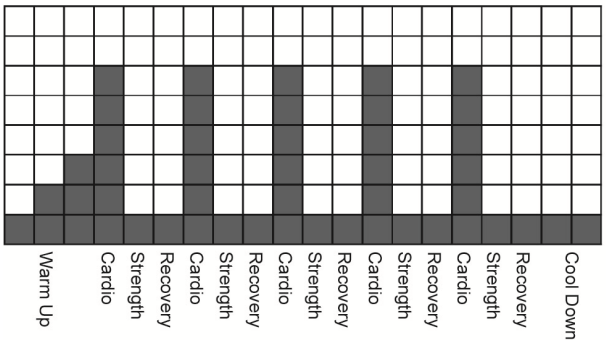
Interval - Work Profile



Interval - Incline Profile



Fitness - Work Profile



User Programs

The User Programs allow you to build and save your own workout. You can build your own custom program by following the instructions below.

1. Select the User Program (User 1 or User 2) also then press Enter. The message will ask “Run Program?” if there is already a program stored. Press Enter or Start to begin stored program or Level Up/Down key to select “No”. If No is selected, you have the option to cancel the stored program. Press Enter to cancel or the Level Up/Down keys to select “No” and begin stored program.
2. If you cancel the stored program or there isn’t a program stored, the letter “A” will be flashing. Use the Level Up/Down keys to select the 1st letter of your name. Press Enter. Repeat this process until the last letter of your name is flashing. Press Stop to accept your User name.
3. The message window will ask you to enter your Age. You may enter your Age using the Level Up/ Down keys, then press the Enter key to accept the new number and proceed on to the next screen.
4. You are now asked to enter your Weight. You may adjust the Weight setting using the Level Up/Down keys, then press Enter to continue.
5. Next is the Time setting. You may adjust the total program time and press Enter to continue. (Next is the Top Level setting. You may adjust the Top Level and press Enter to continue.)
6. Now the message window will ask you to adjust the first segment level for Resistance; use the Level Up/ Down keys to adjust. When you finish adjusting the first segment, or if you don’t want to change it, then press Enter to continue to the next segment.
7. The next segment will show the same level as the previously adjusted segment. Repeat the same process as the last segment then press Enter. Continue this process until all twenty segments have been set.
8. Repeat the same process for Incline segments
9. During the Manual program you will be able to switch data displayed in the message window by pressing the Enter key.
10. If you want to increase or decrease the Resistance or Incline at any time during the program, press the Level or Incline Up/Down keys.
11. During the program you will be able to switch the data displayed by pressing the Enter button.
12. When the program ends the message window will show a summary of your workout. The summary will be displayed for a short time then the console will return to the start-up display.

Heart Rate Programs

Note: You must be worn chest strap for these programs. Both programs operate the same, the only difference is that HR1 is set to 60% and HR2 is set to 80% of your maximum heart rate. They both are programmed the same way.

To start a Heart Rate Program follow the instructions below or just press the HR1 or HR2 button, then the Enter button and follow the directions in the message window.

1. Select the desired HR program then press the Enter key.
2. The message window will ask you to enter your Age. You may enter your Age using the Level Up/Down keys then press the Enter key to accept the new number and proceed.
3. You are now asked to enter your weight. You may adjust the weight setting using the Level Up/Down keys.
4. Next is time. You may adjust the Time setting and then press Enter to continue.
5. You are now asked to select the Target Heart Rate Level. This is the heart rate level you will experience during the program. Adjust the level and then press Enter. Note the heart rate level that appears.
6. Now you are finished editing the settings and can begin your workout by pressing the Start key.
7. If you want to increase or decrease the target heart rate at any time during the program press the Level Up/ Down key.

Heart Rate

The old motto, “no pain, no gain”, is a myth that has been overpowered by the benefits of exercising comfortably. A great deal of this success has been promoted by the use of heart rate monitors. With the proper use of a heart rate monitor, many people find that their usual choice of exercise intensity was either too high or too low and exercise is much more enjoyable by maintaining their heart rate in the desired benefit range.

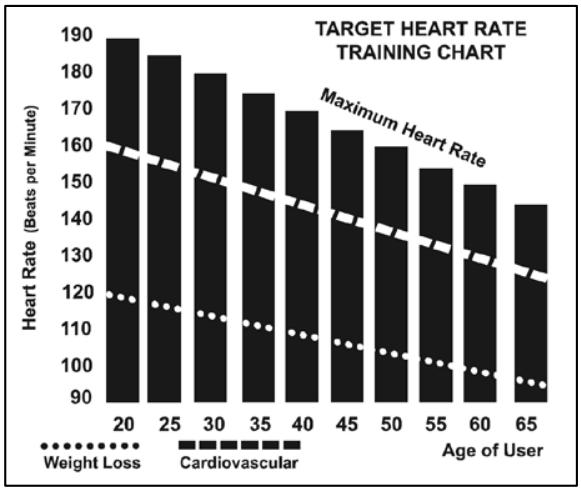
To determine the benefit range in which you wish to train, you must first determine your predicted Maximum Heart Rate. This can be accomplished by using the following formula: 220 minus your age. This will give you the predicted Maximum Heart Rate (MHR) for someone of your age. To determine the effective heart rate range for specific goals you simply calculate a percentage of your MHR. Your heart rate training zone is 50% to 90% of your maximum heart rate. 60% of your MHR is the zone that burns fat, while 80% is for strengthening the cardio vascular system. This 60% to 80% is the zone to stay in for maximum benefit.

For someone who is 40 years old their predicted target heart rate zone is calculated:

220 – 40 = 180 (maximum heart rate)
180 x .6 = 108 beats per minute
(60% of maximum)
180 X .8 = 144 beats per minute
(80% of maximum)

So for a 40 year old the training zone would be 108 to 144 beats per minute.

If you enter your age during programming the console will perform this calculation automatically. After calculating your MHR you can decide upon which goal you would like to pursue.



The two most popular reasons for, or goals, of exercise are cardiovascular fitness (training for the heart and lungs) and weight control. The black columns on the chart above represent the MHR for a person whose age is listed at the bottom of each column. The training heart rate, for either cardiovascular fitness or weight loss, is represented by two different lines that cut diagonally through the chart. A definition of the lines’ goal is in the bottom left-hand corner of the chart. If your goal is cardiovascular fitness or if it is weight loss, it can be achieved by training at 80% or 60%, respectively, of your MHR on a schedule approved by your physician. Consult your physician before participating in any exercise program.

Rate of Perceived Exertion

Heart rate is important but listening to your body also has a lot of advantages. There are more variables involved in how hard you should workout than just heart rate. Your stress level, physical health, emotional health, temperature, humidity, the time of day, the last time you ate and what you ate all contribute to the intensity at which you should workout. If you listen to your body it will tell you all of these things.

The rate of perceived exertion (RPE), also known as the Borg scale, was developed by Swedish physiologist G.A.V. Borg. This scale rates exercise intensity from 6 to 20 depending upon how you feel or the perception of your effort.

The scale is as follows:
Rating Perception of Effort
6 Minimal
7 Very,very light
8 Very,very light +
9 Very light
10 Very light +
11 Fairly light
12 Comfortable
13 Somewhat hard
14 Somewhat hard +
15 Hard
16 Hard +
17 Very hard
18 Very hard +
19 Very,very hard
20 Maximal

You can get an approximate heart rate level for each rating by simply adding a zero to each rating. For example a rating of 12 will result in an approximate heart rate of 120 beats per minute. Your RPE will vary depending on the factors discussed earlier. If your body is strong and rested, you will feel strong and your pace will feel comfortable. When your body is in this condition, you are able to train harder and the RPE will support this. If you are feeling tired and sluggish, it is because your body needs a break. In this condition, your pace will feel difficult. Again, this will show up in your RPE and you will train at the proper level for that day.

Using A Heart Rate Transmitter

How to wear your wireless chest strap transmitter:

1. Attach the transmitter to the elastic strap using the locking parts.
2. Adjust the strap as tightly as possible as long as the strap is not too tight to remain comfortable.
3. Position the transmitter with the logo centered in the middle of your body facing away from your chest (some people must position the transmitter slightly left of center). Attach the final end of the elastic strap by inserting the round end and, using the locking parts, secure the transmitter and strap around your chest.
4. Position the transmitter immediately below the pectoral muscles.
5. Sweat is the best conductor to measure very minute heart beat electrical signals. However, plain water can also be used to pre-wet the electrodes (2 ribbed oval areas on the reverse side of the belt and both sides of the transmitter). It's also recommended that you wear the transmitter strap a few minutes before your work out. Some users, because of body chemistry, have a more difficult time in achieving a strong, steady signal at the beginning. After "warming up", this problem lessens. As noted, wearing clothing over the transmitter/strap doesn't affect performance.
6. Your workout must be within range - distance between transmitter/receiver – to achieve a strong steady signal. The length of range may vary somewhat but generally stay close enough to the console to maintain good, strong, reliable readings. Wearing the transmitter immediately against bare skin assures you of proper operation. If you wish, you may wear the transmitter over a shirt. To do so, moisten the areas of the shirt that the electrodes will rest upon.

Note: The transmitter is automatically activated when it detects activity from the user's heart. Additionally, it automatically deactivates when it does not receive any activity. Although the transmitter is water resistant, moisture can have the effect of creating false signals, so you should take precautions to completely dry the transmitter after use to prolong battery life (estimated transmitter battery life is 2500 hours). The replacement battery is Panasonic CR2032.

Erratic Operation

Caution! Do not use this elliptical for Heart Rate Control unless a steady, solid Actual Heart Rate value is being displayed. High, wild, random numbers being displayed indicate a problem.
Areas to look for interference which may cause erratic heart rate:

1. Microwave ovens, TV's, small appliances, etc.
2. Fluorescent lights.
3. Some household security systems.
4. Perimeter fence for a pet.
5. Some people have problems with the transmitter picking up a signal from their skin. If you have problems try wearing the transmitter upside down. Normally the transmitter will be oriented so the logo is right side up.
6. The antenna that picks up your heart rate is very sensitive. If there is an outside noise source, turning the whole machine 90 degrees may de-tune the interference.
7. Another Individual wearing a transmitter within 3' of your machine's console.

If you continue to experience problems contact your dealer.

General Maintenance and Troubleshooting

1. Wipe down all areas in the sweat path with a damp cloth after each workout.
2. If a squeak, thump, clicking or rough feeling develops, the main cause is most likely one of two reasons:
   i. The hardware was not sufficiently tightened during assembly. All bolts that were installed during assembly need to be tightened as much as possible. It may be necessary to use a larger wrench than the one provided if you cannot tighten the bolts sufficiently. The majority of calls to the service department for noise issues can be traced to loose hardware or the rear rails being dirty.
   ii. Dirt build-up on the rear rails and polyurethane wheels are also a source of noise. Noise from build-up on the rails can cause a thumping sound that you would swear is coming from inside the main body of the machine because noise travels and is amplified in the tubing of the frame. Clean the rails and wheels with a lint free cloth and rubbing alcohol. Stubborn build-up can be removed with your thumbnail or a non-metallic scraper, like the back edge of a plastic knife. After cleaning, apply a small amount of lubricant on the rails with your fingers or a lint free cloth. You only need a thin coat of lubrication, wipe off any excess.
3. If squeaks or other noises persist, check that the unit is properly leveled before calling the service department.

Elliptical Noises

Your new elliptical is engineered and manufactured to the strictest industry standards and tolerances. All elliptical trainers, no matter who the manufacturer, have a multitude of moving linkages and parts. Be aware that even with the tightest mechanical tolerances there still could be a slight amount of play between some parts. This inherent play can result in slight noises during use such as clicks and small thumps. Please expect that the elliptical will not be completely silent.

Engineering Mode

The console has built in maintenance/diagnostic software. The software will allow you to make changes to the console settings such as changing units from English to Metric or turning off the console beeps (if they are waking your family during your early morning workouts). To enter the Maintenance Menu (may be called Engineering Mode, depending on version) press and hold down the **Start**, **Stop** and **Enter** keys. Keep holding the keys down for about five seconds and the message window will display “Engineering Mode”. Press the **Enter** key to access the menu below. Press the **Level** ▲/▼ keys to navigate the menu.

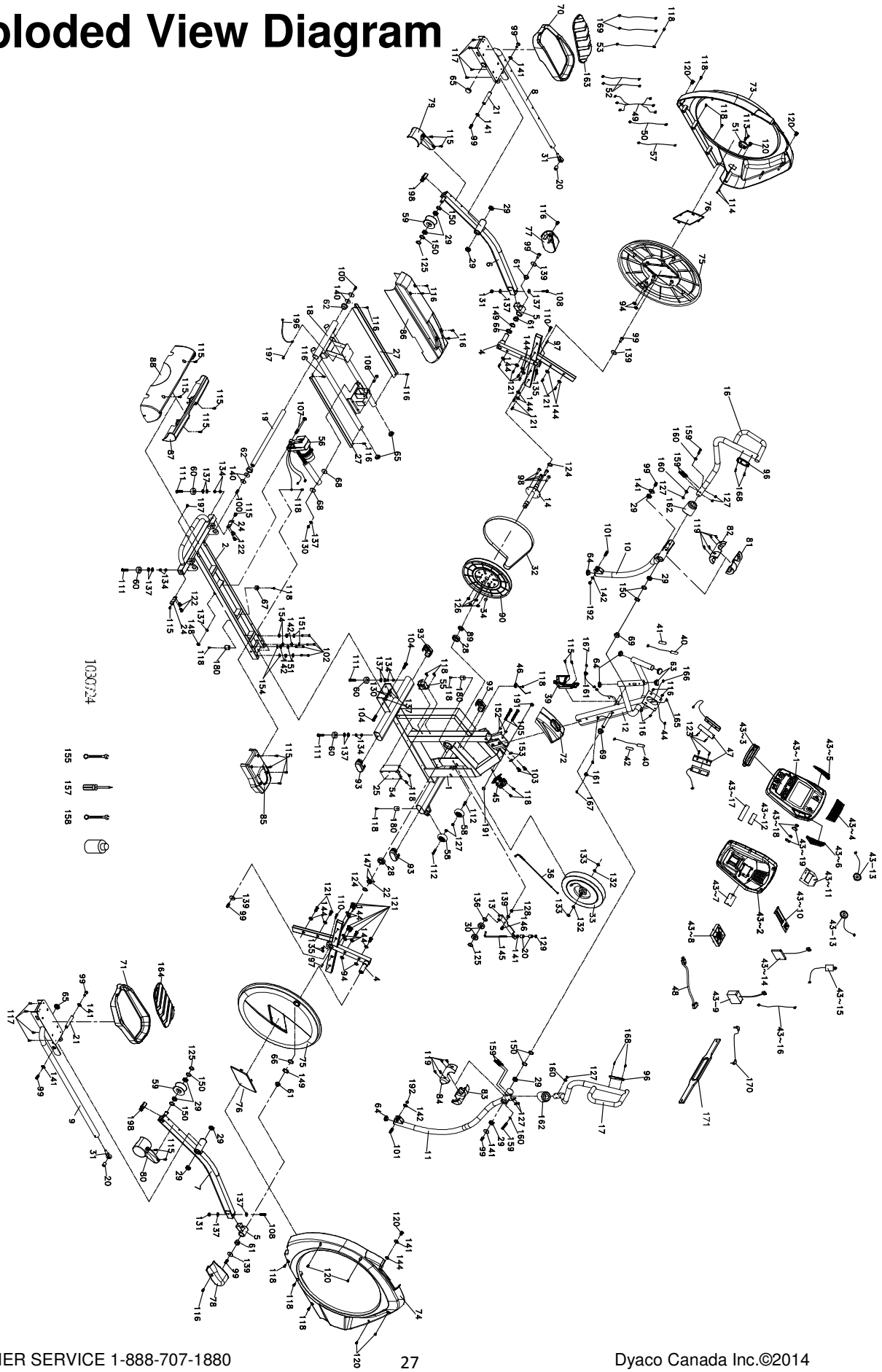
a. Key Test - Allows you to test all the keys to make sure they are functioning
b. LCD Test - Tests all the display functions.
c. Functions - Press Enter to access settings, use Level ▲/▼keys to navigate.
   i. Sleep Mode - On; when turned on the console will darken after 30 minutes of no use. When turned off the console will remain lit as long as the power is on
   ii. Motor Test - Continually runs the tensioning gear motor
   iii. Manual - Allows stepping of the gear motor
   iv. Key Tone - Turns off the speaker so no beeping sound is heard
   v. Units - Set to English or Metric display readings
   vi. Odometer Reset - Reset the odometer
   vii. Pause mode – On; when turned off, pressing Stop once ends the program; when turned on, the console retains data for five minutes before switching to the startup screen
   viii. Safety – Off; when turned on the machine automatically goes to Level 20 of Resistance to prevent unauthorized use by a child
d. Security - Allows you to lock the keypad so no unauthorized use is allowed. When the child lock is enabled, the console will not allow the keypad to operate unless you press and hold the Start and Enter keys for three seconds to unlock the console.
e. Factory Set
f. Exit - Select to exit engineering mode.

Incline Calibration: If there is a problem with the incline, try running the calibration. Press the **Incline** ▲ key and the **Start** key at the same time. Hold them down for five seconds and the Incline calibration will start and run automatically. If the problem persists, contact Fitness service department.

■ Elliptical Lubrication

1. Pour 2c.c of the lubricant on the top surface of the rail. You must be lubricate the rails every three months.
2. If you feel the exercise is not smooth or you hear noise during your exercise, lubricate the middle rail with 2 c.c.of the lubricant.

Exploded View Diagram



Parts List

KEY NO.	PART NO.	Description	Q'TY
1	1791801	Main Frame	1
2	1791802	Incline Rail Assembly	1
4	1791804	Cross Bar	2
5	1791805-1	Bushing Housing, Pedal Arm	2
6	1791806-1	Pedal Arm (L)	1
7	1791807-1	Pedal Arm (R)	1
8	1791808	Connecting Arm (L)	1
9	1791809	Connecting Arm (R)	1
10	1791810	Lower Handle Bar (L)	1
11	1791811	Lower Handle Bar (R)	1
12	1791812	Console Mast	1
13	1791813	Idler Wheel Assembly	1
14	1791814	Crank Axle	1
16	1791816	Swing Arm (L)	1
17	1791817	Swing Arm (R)	1
18	1791818	Rear Rail Assembly	1
19	1791819	Locking Tube Assembly	1
20	1791820	Rod End Sleeve	4
21	1791821	Axle for Pedal	2
22	1791822	Axle Stopper	1
24	1791824	Cover Holder B	2
25	1791825	Controller Back Plate	1
27	1791827-1	Aluminum Rail	2
28	1791828	6005_Bearing	2
29	1791829	6003_Bearing	12
30	1791830	6203_Bearing	2
31	1791831	M12 × P1.75_Rod End Bearing	2
32	1791832	Drive Belt	1
33	1791833	Flywheel	1
34	1791834	Magnet	1
36	1791836	Steel Cable	1
39	1791839	Drink Bottle Holder	1
40	1791840	Resistance Button W/Cable	2
41	1791841	Handgrip Resistance Label (INCLINE)	1
42	1791842	Handgrip Resistance Label (LEVEL)	1
43	1791843	Console Assembly	1
44	1791844	1550m/m_Computer Cable	1
45	1791845	Gear Motor	1
46	1791846	500m/m_Sensor W/Cable	1
47	1791847	850m/m_Handpulse W/Cable Assembly	2
48	1791848	Power Cord	1
49	1791849	400m/m_Connecing Wire, Incline Motor Power Cord	1
50	1791850	550m/m_Connecting Wire, Incline Motor	1
51	1791851	AC Electronic Module	1

KEY NO.	PART NO.	Description	Q'TY
52	**1791852**	950m/m_Connecting Wire, Controller	2
53	**1791853**	200m/m_Ground Wire	1
54	**1791854**	Incline Controller	1
55	**1791855**	Incline Adaptor	1
56	**1791856**	Incline Motor	1
57	**1791857**	850m/m_Computer Cable	1
58	**1791858**	Ø65_Transportation Wheel	2
59	**1791859**	Ø78_Slide Wheel , Urethane	2
60	**1791860**	Ø35 × 10m/m_Rubber Foot	4
61	**1791861**	WFM-2528-21_Bushing	4
62	**1791862**	Ø38 × Ø34 × Ø26 × 4 + 16T_Bushing	2
63	**1791863**	Ø32(1.8T)_Button Head Plug	2
64	**1791864**	Ø32 × 2.0T_Round Cap	4
65	**1791865**	32 × 2.5T_Round Cap	4
66	**1791866**	Ø25.5 × 33.5 × 1.5T_Nylon Wave Washer	2
67	**1791867**	Ø25 × Ø25 × 15T_Rubber Foot Pad	1
68	**1791868**	3/8" × 35 × 5T_Nylon Washer	2
69	**1791869**	Ø30 × 19m/m_Upright Bushing	2
70	**1791870**	Pedal (L)(Flat)	1
71	**1791871**	Pedal (R)(Flat)	1
72	**1791872**	Console Mast Cover	1
73	**1791873**	Side Case(L)	1
74	**1791874**	Side Case(R)	1
75	**1791875**	Round Disk	2
76	**1791876**	Round Disk Cover	2
77	**1791877**	Pedal Arm Cover (L)	1
78	**1791878**	Pedal Arm Cover (R)	1
79	**1791879**	Slide Wheel Cover(L)	1
80	**1791880**	Slide Wheel Cover(R)	1
81	**1791881**	Front Handle Bar Cover (L)	1
82	**1791882**	Rear Handle Bar Cover (L)	1
83	**1791883**	Front Handle Bar Cover (R)	1
84	**1791884**	Rear Handle Bar Cover (R)	1
85	**1791885**	Bottom Cover	1
86	**1791886**	Incline Cover	1
87	**1791887**	Inclinable Rail Cover	1
88	**1791888**	Rear Bar Cover	1
89	**1791889**	Spacer Bushing	1
90	**1791890**	Ø330_Drive Pulley	1
93	**1791893**	Ø40 × Ø80_Oval End Cap	4
94	**1791894**	Ø15.5 × Ø10 × 6.1T_Nylon Washer	4
96	**1791896**	Handle Switch Bracket	2
97	**1791897**	Woodruff Key	2
98	**1791898**	1/4" × 3/4"_Hex Head Bolt	4
99	**1791899**	5/16" × 15m/m_Hex Head Bolt	10

KEY NO.	PART NO.	Description	Q'TY
100	**17918100**	5/16" × 1"_Hex Head Bolt	2
101	**17918101**	5/16" × 1-1/4"_Hex Head Bolt	2
102	**17918102**	5/16" × 2-1/4"_Hex Head Bolt	4
103	**17918103**	3/8" × 3/4"_Hex Head Bolt	2
104	**17918104**	3/8" × 1-1/2"_Hex Head Bolt	2
105	**17918105**	3/8" × 2-1/4"_Hex Head Bolt	2
106	**17918106**	3/8" × 2-1/2"_Hex Head Bolt	1
107	**17918107**	M10 × 130m/m_Hex Head Bolt	1
108	**17918108**	3/8" × 2-1/4"_Socket Head Cap Bolt	2
110	**17918110**	M8 × 40m/m_Socket Head Cap Bolt	2
111	**17918111**	3/8" × 1-3/4"_Flat Head Socket Bolt	4
112	**17918112**	5/16" × 1-3/4"_Button Head Socket Bolt	2
113	**17918113**	M4 × 12m/m_Phillips Head Screw	2
114	**17918114**	M4 × 5T_Nyloc Nut	2
115	**17918115**	M5 × 15m/m_Phillips Head Screw	16
116	**17918116**	M5 × 10m/m_Phillips Head Screw	14
117	**17918117**	M5 × 10m/m_Phillips Head Screw	8
118	**17918118**	5 × 19m/m_Tapping Screw	19
119	**17918119**	Ø3.5 × 12m/m_Sheet Metal Screw	8
120	**17918120**	3.5 × 16m/m_Sheet Metal Screw	8
121	**17918121**	5 × 16m/m_Tapping Screw	16
122	**17918122**	M6 × 10m/m_Phillips Head Screw	4
123	**17918123**	Ø3 × 20m/m_Tapping Screw	4
124	**17918124**	Ø25_C Ring	2
125	**17918125**	Ø17_ C Ring	3
126	**17918126**	1/4"_Nyloc Nut	4
127	**17918127**	5/16" × 7T_Nyloc Nut	8
128	**17918128**	M8 × 7T_Nyloc Nut	1
129	**17918129**	M8 × 9T_Nyloc Nut	1
130	**17918130**	3/8" × 7T_Nyloc Nut	3
131	**17918131**	3/8" × 11T_Nyloc Nut	2
132	**17918132**	3/8" -UNF26 × 4T_Nut	2
133	**17918133**	3/8" -UNF26 × 11T_Nut	2
134	**17918134**	3/8" × 7T_Nut	8
135	**17918135**	M8 × 6.3T_Nut	4
136	**17918136**	Ø17 × 23.5 × 1T_Flat Washer	1
137	**17918137**	3/8" × 19 × 1.5T_Flat Washer	16
139	**17918139**	5/16" × 35 × 1.5T_Flat Washer	5
140	**17918140**	5/16" × 35 × 2.0T_Flat Washer	4
141	**17918141**	5/16" × 23 × 1.5T_Flat Washer	8
142	**17918142**	5/16" × 20 × 1.5T_Flat Washer	6
144	**17918144**	1/4" × 19m/m_Flat Washer	17
145	**17918145**	M8 × 170m/m_J Bolt	1
146	**17918146**	M8 × 20m/m_Carriage Bolt	1
147	**17918147**	M5 × 5m/m_Slotted Set Screw	2
148	**17918148**	M10 × 8T_Nyloc Nut	1

KEY NO.	PART NO.	Description	Q'TY
149	17918149	Ø25_Wave Washer	2
150	17918150	Ø17_Wave Washer	8
151	17918151	5/16" × 1.5T_Split Washer	4
152	17918152	3/8" × 2T_Split Washer	2
153	17918153	3/8" × 23 × 2T_Curved Washer	2
154	17918154	Ø5/16"_Star Washer	4
155	17918155	13/14m/m_Wrench	1
157	17918157	Phillips Head Screw Driver	1
158	17918158	12/14m/m_Wrench	1
159	17918159	5/16" × 1-3/4"_Hex Head Bolt	6
160	17918160	5/16" × 23 × 1.5T_Curved Washer	4
161	17918161	Switch Wire Cap	2
162	17918162	Swing Arm Bushing	2
163	17918163	Pedal Foam (L)	1
164	17918164	Pedal Foam (R)	1
165	17918165	450m/m_Handle Wire (Upper), Resistance(White)	1
166	17918166	450m/m_Handle Wire (Upper), Incline(Red)	1
167	17918167	900m/m_Handle Wire (Lower), Resistance/Incline	2
168	17918168	M5 × 20m/m_Flat Head Socket Screw	4
169	17918169	80m/m_Connecting Wire (White)	2
170	17918170	400m/m_Audio Cable	1
171	17918171	Chest Strap(Optional)	1
180	17918180	Ø25 × 25mm_Rubber Foot Pad	3
191	17918191	Ø13m/m_Bolt Cap	2
192	17918192	5/16" × 9T_Nyloc Nut	2
196	17918193	250m/m_Ground Wire	1
197	17918194	5 × 16m/m_Tapping Screw	2
198	17918198-1	End Cap	2

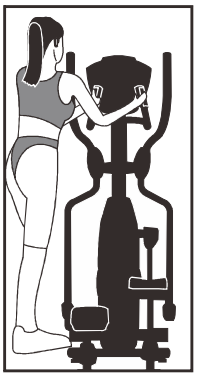
Getting on / off your elliptical

IMPORTANT

The elliptical comes with two Dual Action Handles and a Stationary Handlebar.
Always hold the Stationary Handlebar when getting on and off the elliptical.
First time users should familiarize themselves with using the elliptical by using the Stationary Handlebar first and then progressing to the Dual Action Handles.

Once you have familiarized yourself with using the elliptical, you can progress to using the Dual Action Handles to provide a total body workout. Hands can be positioned on the Dual Action Handles at the most appropriate position for your height and arm length.

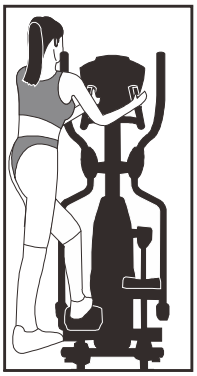
Caution should always be taken when getting on and off any exercise machine.
Please follow the safety steps below.



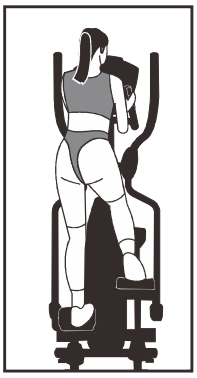
Ensure the left Foot Pedal is in the lowest position and grasp the Stationary Handlebar with both hands.

Place your left foot on the left Foot Pedal and get secure.

Lift your right foot over machine and place on right Foot Pedal. Get balanced and begin your workout.

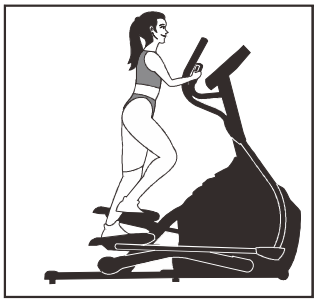


Important
To get off, come to a complete stop and reverse the procedure.
Always wear rubber-soled shoes, such as tennis shoes.
It is recommended that you keep at least one hand on the Stationary Handlebar at all times, especially when getting on or off. If you are performing a walking action with your arms, or doing upper body strength training exercises, ensure you are well balanced.
All equipment should be set-up and operated on solid, level surfaces.



Correct Position

Your body should be in an upright position so that your back is straight. Keep your head up to minimize neck and upper back strain. Always try and use the elliptical in a rhythmical and smooth motion. If you find yourself feeling uncomfortable, or experience a surging type feeling, there is probably too much tension.



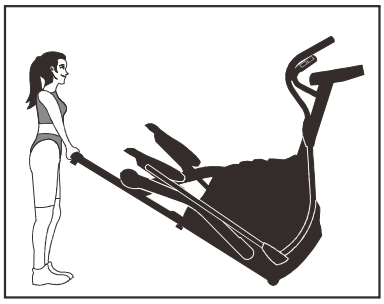
The elliptical can be used in forward or reverse notion.

When going in reverse, bend your knees slightly more. More emphasis is on the buttocks and hamstrings in the reverse motion.

MOVING YOUR ELLIPTICAL

The elliptical can be easily moved from room to room.

1.Move to the front of the machine and ensure swing arms are even (one foot pedal at top of Elliptical Disk and other at bottom).



2.Grasp both Dual Action Handles together and pulling back on handles, tip machine towards you.

TRAINING GUIDELINES

Exercise

Exercise is one of the most important factors in the overall health of an individual. Listed among its benefits are:

- Increased capacity for physical work (strength endurance)
- Increased cardiovascular (heart and arteries/veins) and respiratory efficiency
- Decreased risk of coronary heart disease
- Changes in body metabolism, e.g. losing weight
- Delaying the physiological effects of age
- Physiological effects, e.g. reduction in stress, increase in self-confidence, etc.

Basic Components of Physical Fitness

There are four all encompassing components of physical fitness and we need to briefly define each and clarify its role.

Strength is the capacity of a muscle to exert a force against resistance. Strength contributes to power and speed and is of great importance to a majority of sports people.

Muscular Endurance is the capacity to exert a force repeatedly over a period of time, e.g. it is the capacity of your legs to carry you 10 Km without stopping.

Flexibility is the range of motion about a joint. Improving flexibility involves the stretching of muscles and tendons to maintain or increase suppleness, and provides increased resistance to muscle injury or soreness.

Cardio-Respiratory Endurance is the most essential component of physical fitness. It is the efficient functioning of the heart and lungs

Aerobic Fitness

The largest amount of oxygen that you can use per minute during exercise is called your maximum oxygen uptake (MVo2). This is often referred to as your aerobic capacity.

The effort that you can exert over a prolonged period of time is limited by your ability to deliver oxygen to the working muscles. Regular vigorous exercise produces a training effect that can increase your aerobic capacity by as much as 20 to 30%. An increased MVO2 indicates an increased ability of the heart to pump blood, of the lungs to ventilate oxygen and of the muscles to take up oxygen.

Anaerobic Training

This means “without oxygen” and is the output of energy when the oxygen supply is insufficient to meet the body’s long term energy demands. (For example, 100 meter sprint).

The Training Threshold

This is the minimum level of exercise which is required to produce significant improvements in any physical fitness parameter.

Progression

As your become fitter, a higher intensity of exercise is required to create an overload and therefore provide continued improvement

Overload

This is where you exercise at a level above that which can be carried out comfortably. The intensity, duration and frequency of exercise should be above the training threshold and should be gradually increased as the body adapts to the increasing demands. As your fitness level improves, so the training threshold should be raised.

Working through your program and gradually increasing the overload factor is important.

Specificity

Different forms of exercise produce different results. The type of exercise that is carried out is specific both to the muscle groups being used and to the energy source involved.

There is little transfer of the effects of exercise, i.e. from strength training to cardiovascular fitness. That is why it is important to have an exercise program tailored to your specific needs.

Reversibility

If you stop exercising or do not do your program often enough, you will lose the benefits you have gained. Regular workouts are the key to success.

Warm Up

Every exercise program should start with a warm up where the body is prepared for the effort to come. It should be gentle and preferably use the muscles to be involved later.

Stretching should be included in both your warm up and cool down, and should be performed after 3-5 minutes of low intensity aerobic activity or callisthenic type exercise.

Warm Down or Cool Down

This involves a gradual decrease in the intensity of the exercise session. Following exercise, a large supply of blood remains in the working muscles. If it is not returned promptly o the central circulation, pooling of blood may occur in the muscles

Heart Rate

As you exercise, so the rate at which your heart beat also increases. This is often used as a measure of the required intensity of exercise. You need to exercise hard enough to condition your circulatory system, and increase your pulse rate, but not enough to strain your heart.

Your initial level of fitness is important in developing an exercise program for you. If you are starting off, you can get a good training effect with a heart rate of 110-120 beats per minute(BPM). If you are fitter, you will need a higher threshold of stimulation.

To begin with, you should exercise at a level that elevates your heart rate to about 65 to 70% of your maximum. If you find this is too easy, you may want to increase it, but it is better to lean on the conservative side.

As a rule of thumb, the maximum heart rate is 220 minus your age. As you increase in age, so your heart, like other muscles, loses some of its efficiency. Some of its natural loss is won back as fitness improves.

The following table is a guide to those who are “starting fitness”.

Age	25	30	35	40	45	50	55	60	65
Target heart Rate									
10 Second Count	23	22	22	21	20	19	19	18	18
Beats per Minute	138	132	132	126	120	114	114	108	108

Pulse Count

The pulse count(on your wrist or carotid artery in the neck, taken with two index fingers)is done for ten seconds, taken a few seconds after you stop exercising. This is for two reasons: (a) 10 seconds is long enough for accuracy, (b) the pulse count is to approximate your BPM rate at the time you are exercising. Since heart rate slows as you recover, a longer count isn’t as accurate.

The target is not a magic number, but a general guide. If you’re above average fitness, you may work quite comfortably a little above that suggested for your age group.

The following table is a guide to those who are keeping fit. Here we are working at about 80% of maximum.

Age	25	30	35	40	45	50	55	60	65
Target heart Rate									
10 Second Count	26	26	25	24	23	22	22	21	20
Beats per Minute	156	156	150	144	138	132	132	126	120

Don’t push yourself too hard to reach the figures on this table. It can be very uncomfortable if you overdo it. Let it happen naturally as you work through your program. Remember, the target is a guide, not a rule, a little above or below is just fine.

Two final comments:(1) don’t be concerned with day to day variations in your pulse rate, being under pressure or not enough sleep can affect it;(2) your pulse rate is a guide, don’t become a slave to it.

Endurance Circuit Training
Cardiovascular endurance, muscle, strength, flexibility and coordination are all necessary for maximum fitness. The principle behind circuit training is to give a person all the essentials at one time by going through your exercise program moving as fast as possible between each exercise. This increases the heart rate and sustains it, which improves the fitness level. Do not introduce this circuit training effect until you have reached an advanced program stage.

Body Building
Is often used synonymously with strength training The fundamental principal here is OVERLOAD. Here, the muscle works against greater loads than usual. This can be done by increasing the load you are working against.

Patronization
This is the term used to vary your exercise program for both physiological and psychological benefits. In your overall program, you should vary the workload, frequency and intensity. The body responds better to variety and so do you. In addition, when you feel yourself getting “stale’, bring in periods of lighter exercise to allow the body to recuperate and restore its reserves. You will enjoy your program more and feel better for it.

Muscle Soreness
For the first week or so, this may be the only indication you have that you are on an exercise program. This, of course, does depend on your overall fitness level. A confirmation that you are on the correct program is a very slight soreness in most major muscle groups. This is quite normal and will disappear in a matter of days.
If you experience major discomfort, you may be on a program that is too advanced or you have increased your program too rapidly.
If you experience PAIN during or after exercise, your body is telling you something.
Stop exercising and consult your doctor.

What to Wear
Wear clothing that will not restrict your movement in any way while exercising. Clothes should be light enough to allow the body to cool. Excessive clothing that causes you to perspire more than you normally would while exercising, gives you no advantage. The extra weight you lose is body fluid and will be replaced with the next glass of water you drink. It is advisable to wear a pair of gym or running shoes or “sneakers”.
Breathing during Exercise
Do not hold your breath while exercising. Breathe normally as much as possible. Remember, breathing involves the intake and distribution of oxygen, which feeds the working muscles.

Rest periods
Once you start your exercise program, you should continue through to the end. Do not break off halfway through and then restart at the same place later on without going through the warm-up stage again.

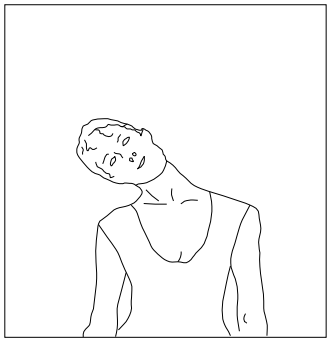
The rest period required between strength training exercises may vary from person to person. This will depend mostly on your level of fitness and the program you have chosen. Rest between exercises by all means, but do not allow this to exceed two minutes. Most people manage with half minute to one minute rest periods

STRETCHING

Stretching should be included in both your warm up and cool down, and should be performed after 3-5 minutes of low intensity aerobic activity or callisthenic type exercise. Movements should be performed slowly and smoothly, with no bouncing or jerking. Move into the stretch until slight tension, not pain, is felt in the muscle and hold for 20-30 seconds. Breathing should be slow, rhythmical and under control, making sure never to hold your breath.

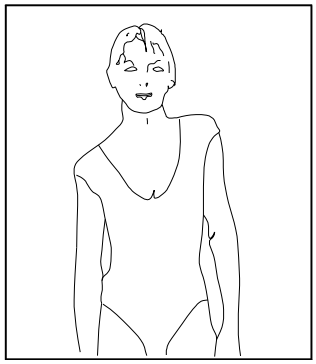
HEAD ROLLS

Rotate your head to the right for one count, feeling the stretch up the left side of your neck. Next rotate your head back for one count, stretching your chin to the ceiling and letting your mouth open. Rotate your head to the left for one count, and finally, drop your head to your chest for one count.



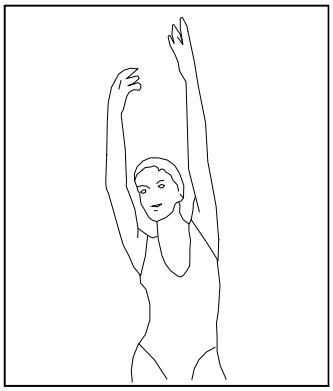
SHOULDER LIFTS

Lift your right shoulder up toward your ear for one count. Then lift your left shoulder up for one count as you lower your right shoulder.



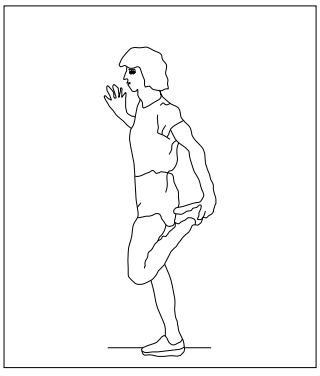
SIDE STRETCHES

Open your arms to the side and continue lifting them until they are over your head. Reach your right arm as far upward toward the ceiling as you can for one count. Feel the stretch up your right side. Repeat this action with your left arm.



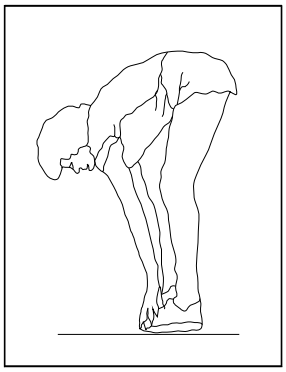
QUADRICEPS STRETCH

With one hand against a wall for balance, reach behind you and pull your right foot up. Bring your heel as close to your buttocks as possible. Hold for 15 counts and repeat with left foot up.

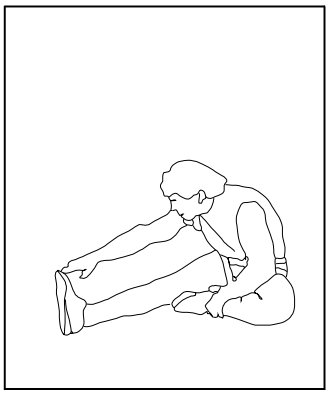
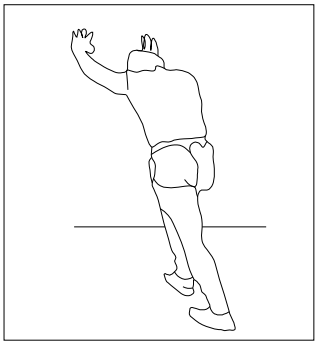


INNER THIGH STRETCH
Sit with the soles of your feet together with your knees pointing outward. Pull your feet as close Into your groin as possible. Gently push your knees towards the floor. Hold for 15 counts.

TOUCHES
Slowly bend forward from your waist, letting your back and shoulders relax as you stretch toward your toes. Reach down as far as you can and hold for 15 counts.



HAMSTRING STRETCHES
Sit with your right leg extended. Rest the sole of your left foot against your right inner thigh. Stretch as possible. Hold for 15
counts. Relax and then repeat with left leg extended.



CALF / ACHILLES STRETCH
Lean against a wall with your left leg in front
of the right and your arms forward. Keep toward your toe as far your right leg straight and the left foot on the
floor then bend the left leg and lean forward
by moving your hips toward the wall. Hold, then repeat on the other side for 15 counts.