

OWNER'S MANUAL

**MODEL NO.
161173295**

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

CAUTION:
You must read and understand this owner's manual before operating unit.



Manufacture's One-Year Limited Warranty

Dyaco Canada Inc. warrants all its 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:

Limited Warranty

Frame and Brake Lifetime
Parts 10 Years
Labor 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@pincoffs.ca or 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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SAFETY PRECAUTIONS

IMPORTANT SAFETY INFORMATION THIS UNIT IS INTENDED FOR HOUSEHOLD USE ONLY READ ALL INSTRUCTIONS BEFORE USING THIS ELLIPTICAL

▲CAUTION: Before starting any exercise program, it is recommended that you consult your physician.

▲WARNING: Connect this unit to a properly grounded outlet only.

▲DANGER: To reduce the risk of electric shock, always unplug the elliptical from the electrical outlet immediately after using and before cleaning.

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 centre.

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:

1. Read the OWNER'S OPERATING MANUAL and all accompanying literature and follow it carefully before using your elliptical.
2. It is the responsibility of the owner to ensure that all users of the elliptical exerciser are adequately informed of all precautions.
3. 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.
4. The elliptical exerciser is intended for in-home use only. Do not use the elliptical exerciser in a commercial, rental, or institutional setting.
5. Inspect your exercise equipment prior to exercising to ensure that all nuts and bolts are fully tightened before each use.
6. The elliptical must be regularly checked for signs of wear and damage. Any part found defective, the part must be replaced with new spare part from the manufacturer.
7. Fitness equipment must always be installed on a flat surface, 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. Keep the elliptical exerciser indoors, away from moisture and dust.
8. No changes must be made which might compromise the safety of the equipment.
9. It is recommended to have a minimum of 1' safe clearance around the exercise equipment while in use.
10. Keep children and pets away from this equipment at all times while exercising.

11. 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 you from straining muscles.
12. Never hold your breath while exercising. Breathing should remain at a normal rate in conjunction with the level of exercise being performed
13. 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.
14. Always hold the handlebars when mounting, dismounting, or using the elliptical exerciser.
15. Keep your back straight when using the elliptical exerciser; do not arch your back.
16. 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.
17. When you stop exercising, allow the pedals to slowly come to a complete stop. The elliptical exerciser does not have a free wheel; the pedals will continue to move until the flywheel stops.
18. Always unplug the power cord immediately after use and before cleaning the elliptical exerciser.
19. If decals on the elliptical exerciser are missing or illegible, please call our customer service department toll free at 1-888-707-1880 and order a replacement decal.
14. Care must be taken when lifting or moving the equipment, so as not to injure your back. Always use proper lifting techniques
15. User weight should not exceed 400 lbs.

▲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 for personal injury or property damage sustained by or through the use of this product.

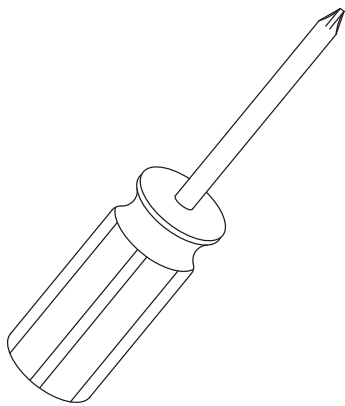
SAVE THESE INSTRUCTIONS

Assembly Instructions

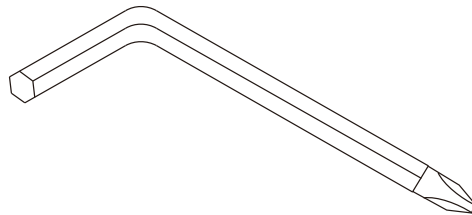
PRE-ASSEMBLY

1. Using a razor knife (Box Cutter), cut the banding straps that wrap around the carton. Reach under the bottom edge of the carton and pull it away from the cardboard underneath, separating the staples that join the two together. Lift the box over the unit and unpack.
2. Carefully remove all parts from carton and inspect for any damage or missing parts. If damaged parts are found, or parts are missing, contact your dealer immediately.
3. Locate the hardware package. The hardware is separated into four steps. Remove the tools first. Remove the hardware for each step as needed to avoid confusion. The numbers in the instructions that are in parenthesis (#) are the item number from the assembly drawing for reference.

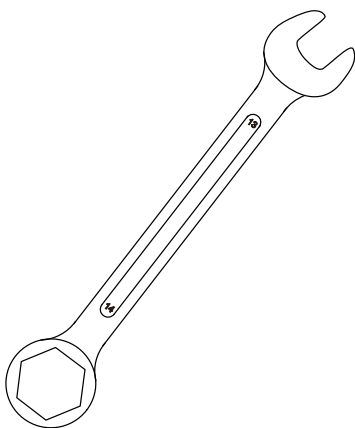
ASSEMBLY TOOLS



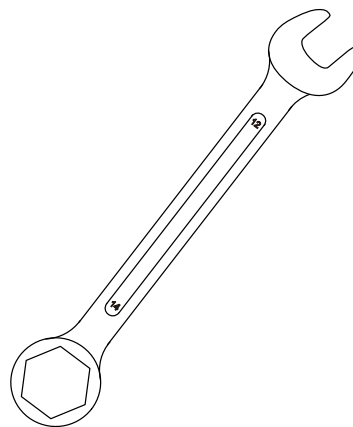
#157. Phillips Head Screw Driver (1 pc)



#177. Combination M5 Allen Wrench & Phillips Head Screw Driver (1 pc)



#155. 13/14mm Wrench (1 pc)

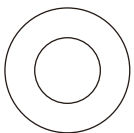


#158. 12/14mm Wrench (1 pc)

STEP 1: Rail Assembly & Console Mast

1. Locate the Console Mast (12) and Console Mast Cover (72); slide the Cover onto the Mast as far as it will go. Make sure the Console Mast Cover (72) is facing the correct way.
2. At the top opening of the Main Frame (1), there is a Computer Cable (53) tied to a twist tie wire. Feed the twist tie wire and Computer Cable (53) into the bottom of the Console Mast (12) and out of the opening at the top.
3. Install the Console Mast (12) into the receiving bracket on the top of the Main Frame (1). Be extremely careful not to pinch the cables between the tubing. If the cable gets pinched, this may affect the electrical functions of the console. NOTE: there is one bolt already installed in the receiving bracket that will engage with the slot at the bottom of the Console Mast. This needs to be tightened last, after the three other console mast bolts.
4. Place a Split Washer (152) onto the Hex Head Bolt (105) and hand tighten through the left side of the console mast. Place a Curved Washer (153) onto each Hex Head Bolt (103) and thread both into the front of the console mast tube. Fasten these front bolts as tight as possible with the wrench (155). Next firmly tighten the two left side bolts with the same wrench.
5. Connect the two Hand Pulse Cables (47), Resistance Cable (49), and Computer Cable (53) to the back of the console (43). Do not force the connectors; they will only fit one way and are different sizes to prevent confusion. Store the excessive cable in the Console Mast tube (12).
6. Attach the Console (43) to the bracket of the Console Mast tube with four Phillips Head Screws (116). Tighten the screws with the Phillips Head Screw Driver (157).
7. Attach the Rear Floor Support (15) to the Rails (2 & 3) with two Button Head Socket Bolts (176) and Curved Washers (153) on each side. Tighten using the Combination M5 Allen Wrench & Phillips Head Screw Driver (177).
8. Slide the Rail Assembly into the Main Frame (1). Insert one Button Head Socket Bolt (176) through each side and attach a Flat Washer (137) and a Nyloc Nut (130) to each joint on the inside.

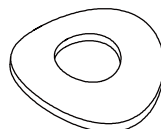
HARDWARE



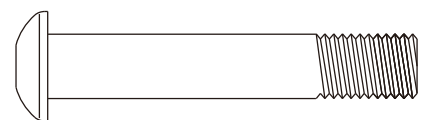
#137. 3/8" x 19 x 1.5T
Flat Washer (2 pcs)



#116. M5 x 10m/m
Phillips Head Screw
(4 pcs)



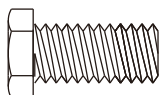
#153. 3/8" x 23 x 2T
Curved Washer (6 pcs)



#176. 3/8" x 2-1/4"
Button Head Socket Bolt
(6 pcs)



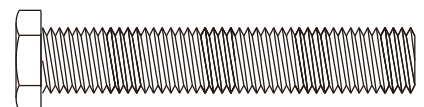
#152. 3/8" x 2T
Split Washer (1 pc)



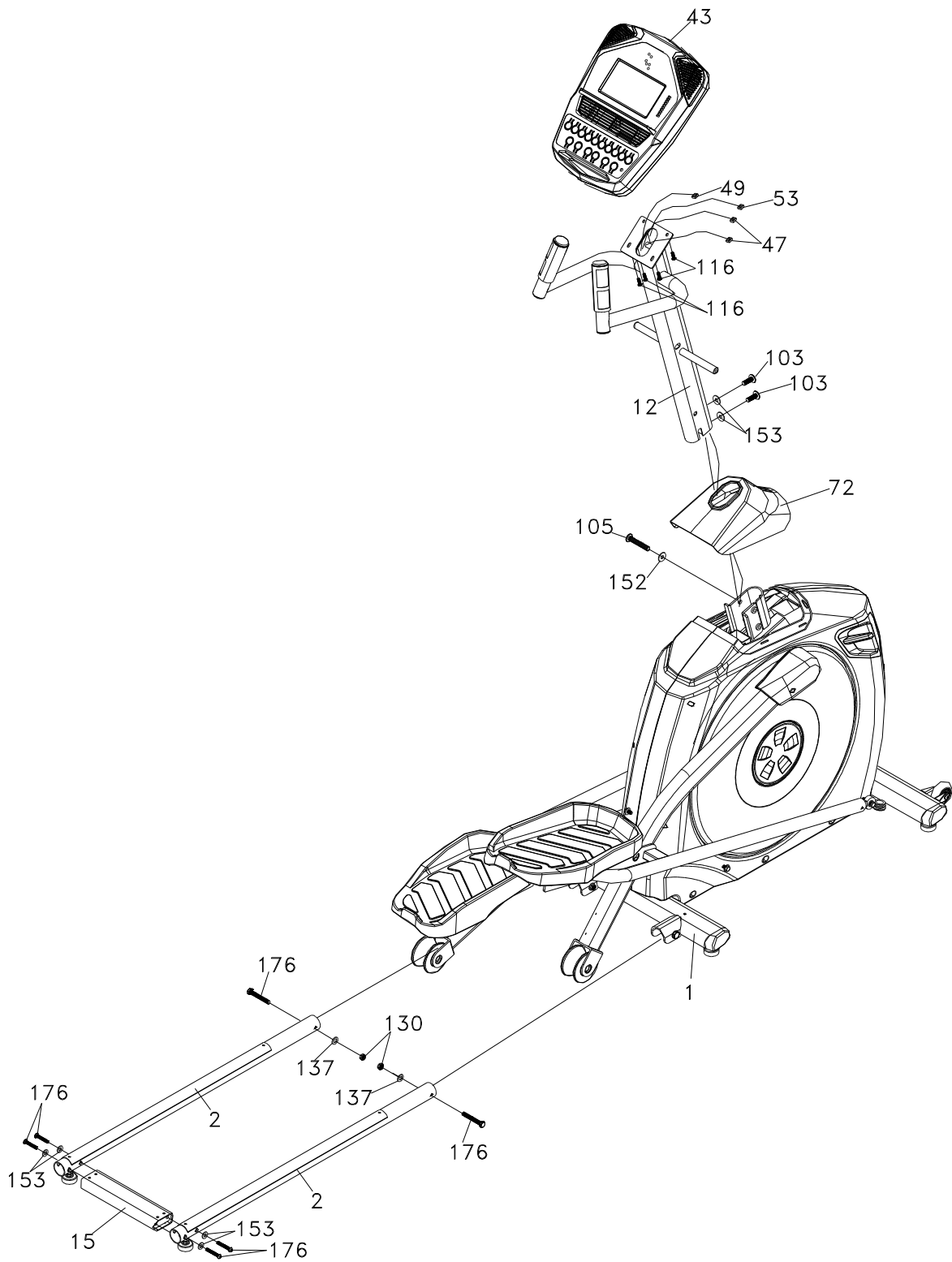
#103. 3/8" x 3/4"
Hex Head Bolt (2 pcs)

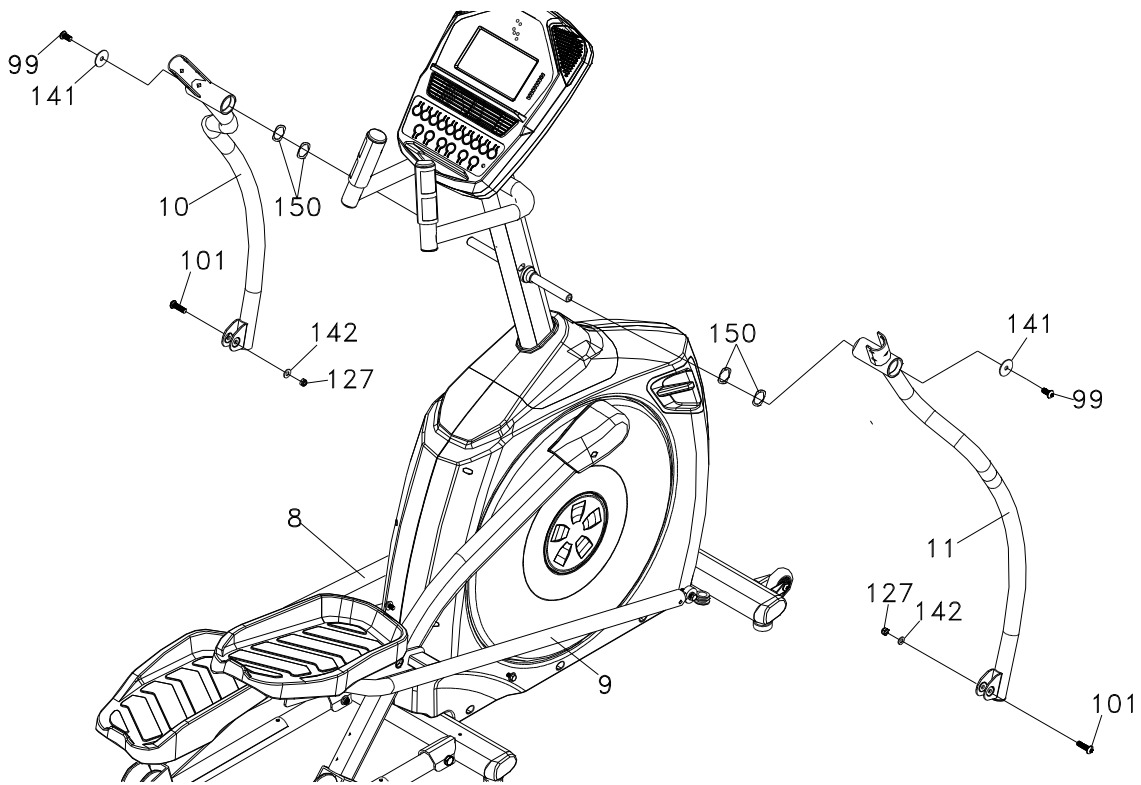


#130. 3/8" x 7T
Nyloc Nut (2 pcs)



#105. 3/8" x 2-1/4"
Hex Head Bolt (1 pc)





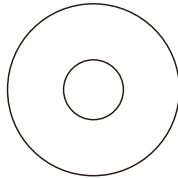
STEP 2: Connecting & Lower Swing Arms

1. Slide two Wave Washers (**150**) onto each side of the Swing Arm Axle. Slide the Lower Swing Arms (**10** Left, **11** Right) onto the axles and secure with the two Hex Head Bolts (**99**) and Flat Washers (**141**). Do not force the Swing Arms onto the axle. They should slide on, but you may need to jiggle them to get them lined up properly. The Swing Arms have been previously installed at the factory so they do fit properly.
2. Remove the tie that holds the spacer 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 Swing Arm (**11**). Slide the Hex Head Bolt (**101**) through the bracket of the Lower Swing Arm and then through the rod end and spacer. Install the Flat Washer (**142**) and Nyloc Nut (**127**) on the bolt and tighten as much as possible. Repeat this step for the left side. Tighten using the Wrenches (**155** & **158**).

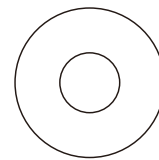
HARDWARE



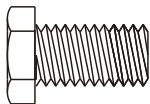
#150. Ø 17 m/m
Wavy Washer (4 pcs)



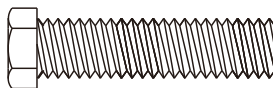
#141. 5/16" x 23 x 1.5T
Flat Washer (2 pcs)



#142. 5/16" x 20 x 1.5T
Flat Washer (2 pcs)



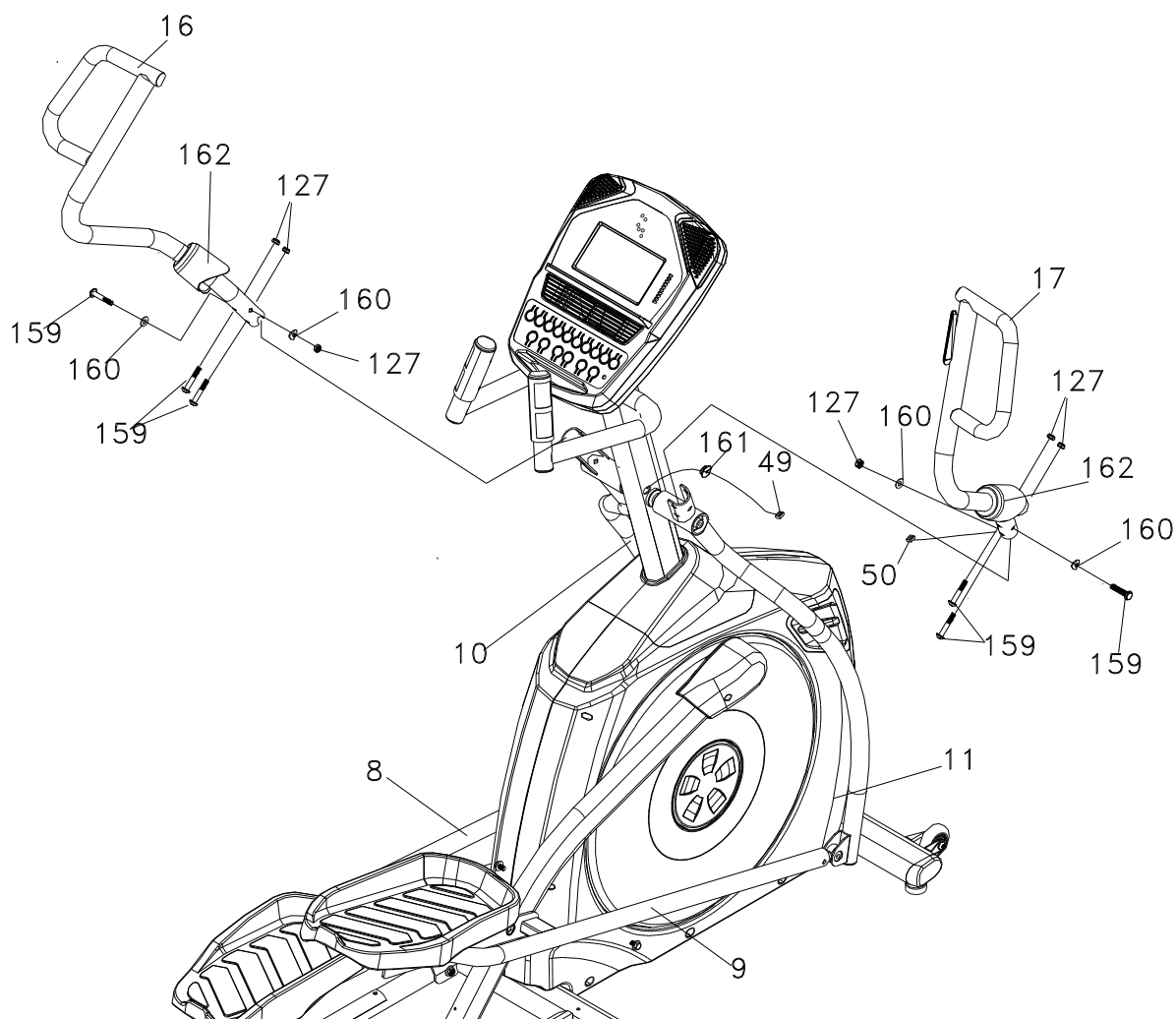
#99. 5/16" x 15mm
Hex Head Bolt (2 pcs)



#101. 5/16" x 1- 1/4"
Hex Head Bolt (2 pcs)



#192. 5/16" x 9T
Nyloc Nut (2 pcs)



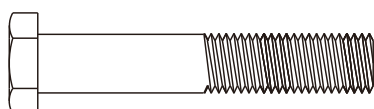
STEP 3: Connecting Arm

1. Slide the Rubber Sleeve (**162**) onto the left (**16**) and right (**17**) Upper Swing Arms. Make sure the wide part is at the bottom.
2. Attach the wire (**50**) from the Right Upper Swing Arm (**17**) to the wire (**49**) 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 (**17**) into the Lower Swing Arm. Fasten together with three Hex Head Bolts (**159**), two Curved Washers (**160**), and three Nyloc Nuts (**127**).
4. Repeat step 3.3 from above on the left side.

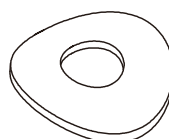
HARDWARE



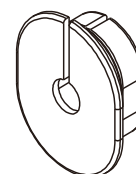
#127. 5/16" x 7T
Nyloc Nut (6 pcs)



#159. 5/16" x 1-3/4"
Hex Head Bolt (6 pcs)



#160. 5/16" x 23 x 1.5T
Curved Washer (4 pcs)

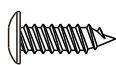


#161. Switch Wire
Cap (1 pc)

STEP 4: Plastic Parts

1. Fasten the two Wheel Covers (**79**) to the rollers with four Phillips Head Screws (**115**). Tighten with the Phillips Head Screw Driver (**157**).
2. Attach the left and right side cover (**80**) to the mid-stabilizer tube with two Phillips Head Screws (**115**). Attach the right side cover (**85**) and left side cover (**86**) to the Rear Stabilizer Tube with two Phillips Head Screws (**115**). Tighten all four screws with the Phillips Head Screw Driver (**177**).
3. Install the Left Handle Bar Covers (**81 & 82**) and Right Handle Bar Covers (**83 & 84**) over the Handle Bar axle connections with four Sheet Metal Screws (**119**) on each side. Tighten with the Phillips Head Screw Driver (**157**).
4. Look closely at the four floor levelers underneath the middle and rear of the elliptical. If any of these aren't in contact with the floor, use the Wrench (**109**) to loosen the bottom nut. Once the nut has been loosened, turn the rubber caster clockwise until it makes solid contact with the floor. Retighten the bottom nut to prevent it from moving.

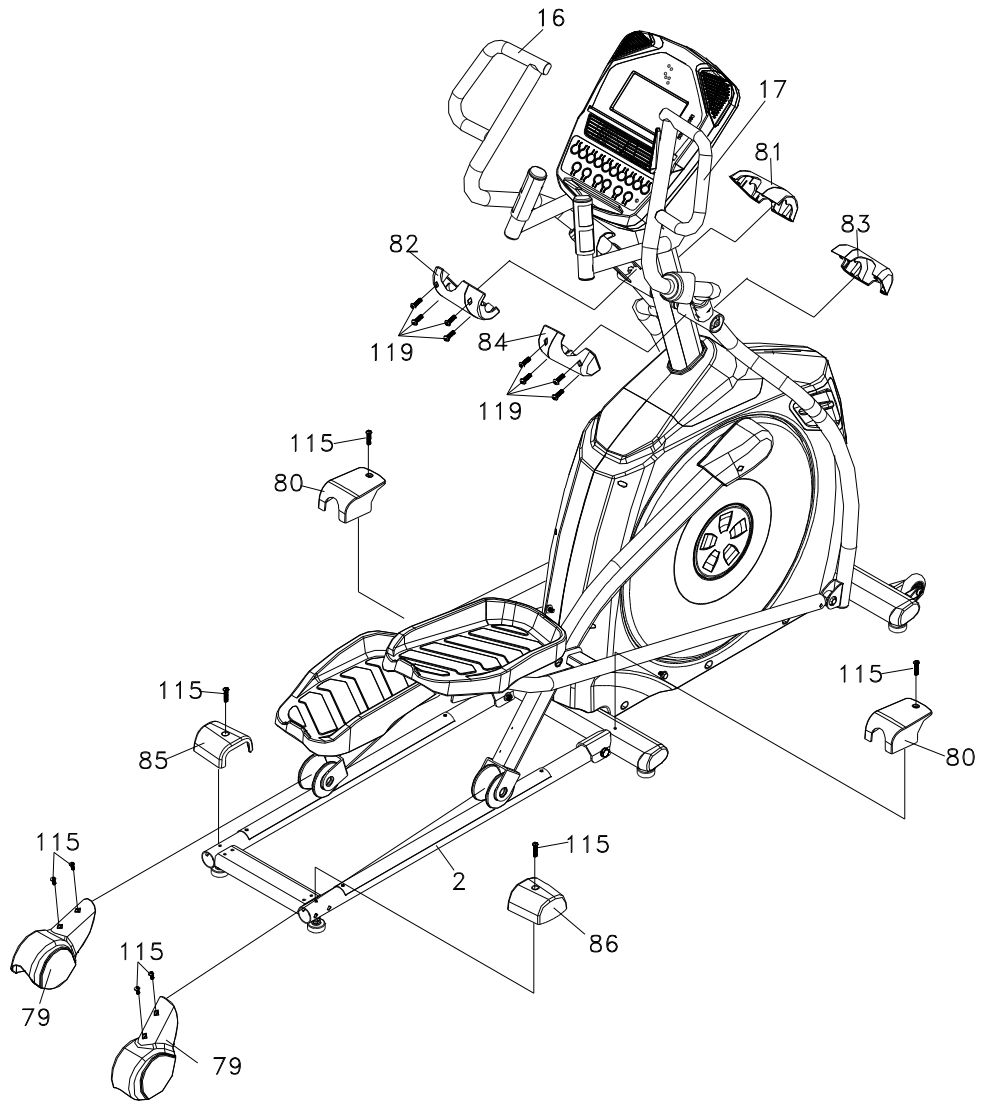
HARDWARE



#119. \varnothing 3.5 × 12mm
Sheet Metal Screw (8 pcs)

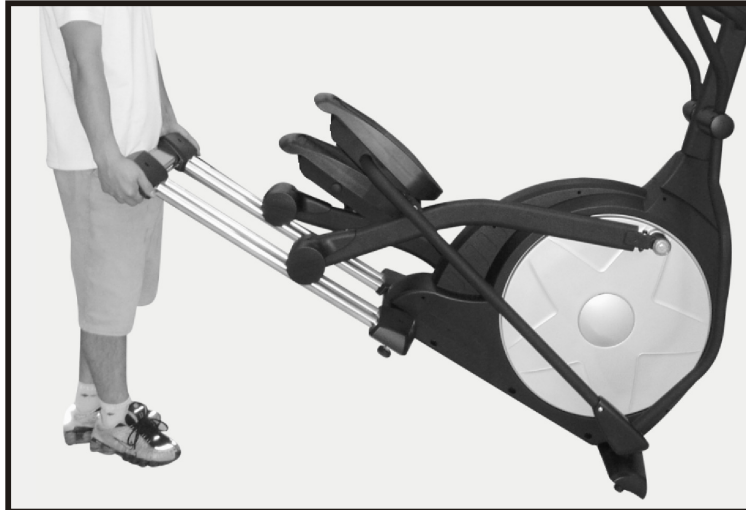


#115. M5 × 12mm
Phillips Head Screw (8 pcs)



■ Transportation

The elliptical is equipped with two transport wheels which are engaged when rear of the elliptical is lifted.



■ Elliptical Lubrication

1. Pour 2c.c of the lubricant under the middle of the rail. You must 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.



Product Features

Footpads

The Foot pedals are adjustable to meet the user's style of pedaling the elliptical. There are three positions available with a simple pull-pin adjustment located under the footpads (see illustration below). The lowest position will set the footpads at zero (0) degrees, or flat at the bottom of the elliptical stroke. The second position sets the footpad at five (5) degrees and the top position sets the footpads at ten (10) degrees.

Because everybody is different, we found there is no one angle that fits every user. Some users are up on the balls of their feet, resulting in numb toes, so we decided to allow the user to adjust the back of the foot pad upward to support the heel, taking the pressure off of the nerves in the balls of the feet and the Achilles tendon. The result was relief from the toes going numb. Some users are uncomfortable at a fixed angle, therefore we added the adjustable pedal angles so they could find one that feels best for them. A great side benefit of the adjustable footpad angle is that you end up working the muscles of the lower extremities in a different way. At the highest angle, you will work the quadriceps more. At the lowest angle, you work the hamstrings and gluts harder.

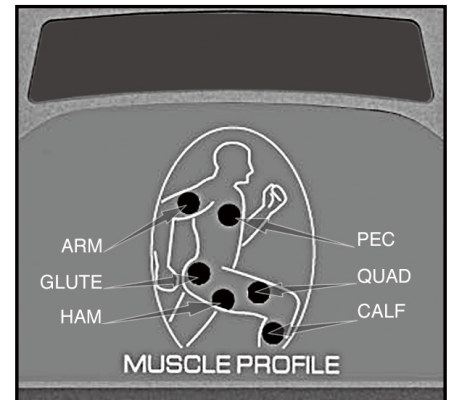


Console

MUSCLE ACTIVATION FIGURE

There is an anatomical figure located at the top of the console. This figure will light all areas that are activated when using the elliptical trainer. These will light up during any of the programs. You can control which muscles are activated by changing up the pedal pattern or switching your hand position. Generally the following guidelines hold true:

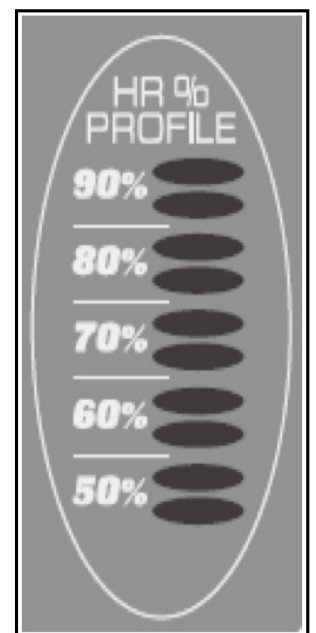
- The upper body lights will activate when you are either holding onto the swing arms or at anytime yours hands aren't holding onto the pulse grip sensors.
- The lower body lights will activate in three degrees of engagement: Green represents minimal muscle involvement, Amber represents medium involvement, and Red represents full or heavy activation.
- These are the different scenarios for lower body muscle activation
Forward pedal rotation Gluteals & Quadriceps are Amber;
Hamstrings & Calves are Green



Heart Rate % Profile

The console LCD screen will display your current heart rate anytime a pulse is detected. The Bar Graph, located to the right of the LCD screen, will show your current heart rate % in relation to your projected maximum heart rate, which is determined by your age that you entered during the programming phase of any of the 10 programs. The significance of the bar graph colors are as follows:

- 50-60% of maximum is Amber
- 65-80% of maximum is Amber and Green
- 85-90% or more is Amber, Green, and Red



Operation Of Your Console

GETTING FAMILIAR WITH THE CONTROL PANEL



Power

When the A.C. power cord is connected to the elliptical, the console will automatically power up. If there is no input to the console for 20 minutes the console will go to stand-by mode. In stand-by mode the console display will turn off. 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 Message Center will show the software version (i.e.: VER 1.0). The distance window shows the distance in miles and the time window shows the total hours of use.

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 profiles of the programs and the Message Center will be scrolling the start up message. You may now begin to use the console.

Quick Start

This is the quickest way to start a workout. After the console powers up you just press the **Start** key to begin, this will initiate the Quick Start mode. In Quick Start the Time will count up from zero and the workload may be adjusted manually by pressing the **Level Up/Down** buttons. The dot matrix display will have only the bottom row lit at first.



As you increase the work load more rows will light indicating a harder workout. The elliptical will get harder to pedal as the rows increase.

There are 20 levels of resistance available for plenty of variety. The first 5 levels are very easy workloads and the changes between levels are set to a good progression for de-conditioned users. Levels 6-10 are more challenging, but the increases in resistance from one level to the next remain small. Levels 11-15 start getting tough as the levels jump more dramatically. Levels 16-20 are extremely hard and are good for short interval peaks and elite athletic training.

Basic Information

The Message Center will initially be displaying the Program name. When in scan mode during a program, speed will be displayed for four seconds, then move on and display Watts (indication of workload). If 100 watts is displayed, you are doing enough work to keep a 100-watt light bulb lit. The data changes to Laps completed, Segment Time, Max level. Pressing the **Enter** button again will bring you back to the beginning.



The **Stop** button actually has several functions. Pressing the **Stop** 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 during Pause, just press the **Start** key. If the **Stop** button is pressed twice during a workout, the program will end and the console will display your **Workout Summary** (Total time, Avg. Speed, Avg. Watts, Avg. HR, total Laps). If the **Stop** key is held down for 3 seconds or a third time during the program, the console will perform a complete **Reset**. During data entry for a program the **Stop** key performs a previous screen or segment function. This allows you to go back to change programming data.



Program Keys

The Program Keys are used to preview each program. When you first turn the console on you may press each program key to preview what the program profile looks like. If you decide that you want to try a program, press the corresponding program key and then press the **Enter** key to select the program and enter into the data-setting mode.

The elliptical has a built in heart rate monitoring system. Simply grasping the hand pulse sensors on the stationary handle bars or wearing the heart rate transmitter (see Using Heart Rate Transmitter section) 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 console includes a built-in fan to help keep you cool. To turn the fan on, press the button on the left side of the console.

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 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 programs to ensure the correct settings are in the program for your Age. Otherwise the work settings could be too high or low for you. 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.

CALORIE NOTE: 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. Some good news is that you will continue to burn calories at an accelerated rate for at least an hour after you have finished exercising!

Entering A Program And Changing Settings

When you enter a program, by pressing a program key, then **Enter** key, you have the option of entering your own personal 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 Center. If you start a program without changing the settings, the default or saved 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 your 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.

Programmable Features

MANUAL

The Manual program works as the name implies, manually. This means that you control the workload and not the computer. To start the Manual program, follow the instructions below or just press the **Manual** button, then the **Enter** button and follow the directions in the Message Center.

1. Press the **Manual** key, then press the **Enter** key.
2. The Message Center will ask you to enter your Age. You may enter your age, using the **Up/Down** keys, then press the **Enter** key to accept the new value and proceed on to the next screen.
3. You are now asked to enter your Weight. You may adjust the Weight value using the **Up/Down** keys, then press **Enter** to continue.
4. Next is 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. You can also go back and modify your settings by pressing the **Enter** key.
6. Once the program starts you will be at level one. 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; the **Down** key will decrease the work-load.
7. During the Manual program you will be able to scroll through the data in the Message Center by pressing the **Enter** key.
8. When the program ends you may press **Start** to begin the same program again or **Stop** to exit the program or you can save the program you just completed as a custom user program by pressing a **User** key and following the instructions in the Message Center.



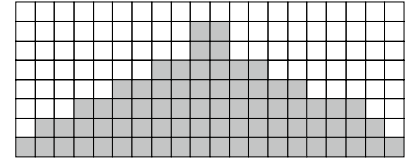
Preset Programs

The elliptical has five different programs that have been designed for a variety of workouts. These five programs have factory preset work level profiles for achieving different goals.

Hill

Resistance: This program follows a triangle or pyramid type of gradual progression from approximately 10% of maximum effort (the level that you chose before starting this program) up to a maximum effort which lasts for 10% of the total workout time, then a gradual regression of resistance back to approximately 10% of maximum effort.

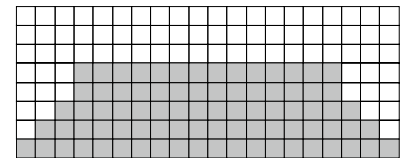
RESISTANCE



Fat Burn

Resistance: This program follows a quick progression up to the maximum resistance level (default or user input level) that is sustained for 2/3 of the workout. This program will challenge your ability to sustain your energy output for an extended period of time.

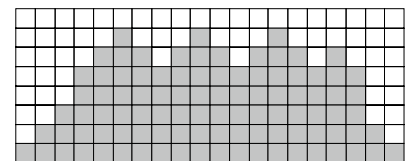
RESISTANCE



Cardio

Resistance: This program presents a quick progression up to near maximum resistance level (default or user input level). It has slight fluctuations up and down to allow your heart rate to elevate, and then recover repeatedly, before beginning a quick cool down. This will build up your heart muscle and increase blood flow and lung capacity.

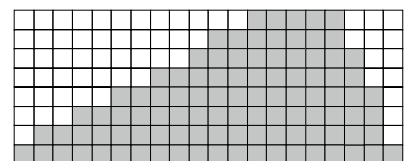
RESISTANCE



Strength

Resistance: This program has a gradual progression of resistance up to 100% of maximum effort that is sustained for 25% of workout duration. This will help build strength and muscular endurance in the lower body and gluts. A brief cool down follows.

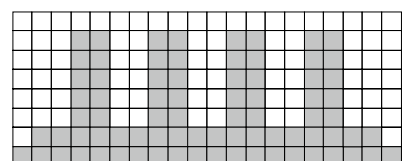
RESISTANCE



Interval

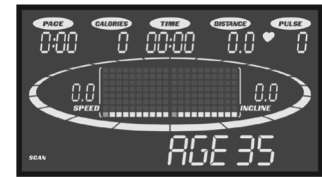
Resistance: This program takes you through high levels of intensity followed by recovery periods of low intensity. This program utilizes and develops your “Fast Twitch” muscle fibers which are used when performing tasks that are intense and short in duration. These deplete your oxygen level and spike your heart rate, followed by periods of recovery and heart rate drop to replenish oxygen. Your cardiovascular system gets programmed to use oxygen more efficiently.

RESISTANCE



Programming Preset Programs

1. Select the desired program button then press the **Enter** key.
2. The Message Center 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 value using the **Level Up/Down** keys, then press **Enter** to continue.
4. Next is Time. You may adjust the time and press **Enter** to continue.
5. Now you are asked to adjust the Max Resistance Level. This is the peak exertion level you will experience during the program. Adjust the level and then press **Enter**.
6. Now you are finished editing the settings and can begin your workout by pressing the **Start** key. You can also go back and modify your settings by pressing the **Enter** key.
7. If you want to increase or decrease the resistance at any time during the program, press the **Level Up/Down** keys on the console or above the heart rate sensor grips of the stationary handlebars. This will change the resistance settings of the entire profile, although the profile picture on the screen will not change. The reason for this is so that you can see the entire profile at all times. If the profile picture is changed, it also would be distorted and not a true representation of the actual profile. When you make a change to the resistance, the Message Center will show the current column and program maximum levels of work.
8. During the program you will be able to scroll through the data in the message window by pressing the **Enter** key.
9. When the program ends the Message Center 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.



Custom User Defined Programs

There are two customizable User programs that allow you to build and save your own workout. The two programs, **User 1** and **User 2**, operate exactly the same way so there is no reason to describe them separately. You can build your own custom program by following the instructions below or you can save any other preset program you complete as a custom program. Both programs allow you to further personalize it by adding your name.

1. Press the **User 1** or **User 2** key. The Message Center will show a welcome message. If you had previously saved a program the message will contain your name. Then press the **Enter** key to begin programming.
2. When you press **Enter**, the Message Center will show "Name - A", if there is no name saved. If the name "David" had been previously saved the Message Center will show "Name - David" and the D will be blinking. If there is a name saved you can change it or you may press the **Stop** key to keep the name and continue to the next step. If you want to enter a name use the **Up/Down** key to change the first letter then press **Enter** to save the first letter and continue to the next letter. When you have finished entering the name press the **Stop** key to save the name and continue to the next step.
3. The Message Center 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 value and proceed on to the next screen.
4. You are now asked to enter your Weight. You may adjust the weight value using the **Up/Down** keys or the numeric key pad, then press **Enter** to continue.
5. Next is Time. You may adjust the time and press **Enter** to continue.
6. Now you are asked to adjust the Max Resistance Level of the program, press **Enter** when resistance has been selected.
7. Now the first column will be blinking and you are asked to adjust the resistance level for the first segment (SEGMENT > 1) of the workout by using the **Level Up** key. When you finish adjusting the first segment, or if you don't want to change, then press **Enter** to continue to the next segment.
8. The next segment will show the same workload resistance 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.
9. The Message Center will then tell you to press **Enter** to save the program. After saving the program the Message Center says "New program saved" then will give you the option to Start or modify the program. Pressing **Stop** will exit to the start up screen.

Heart Rate Programs

Before we get started, a word about 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.

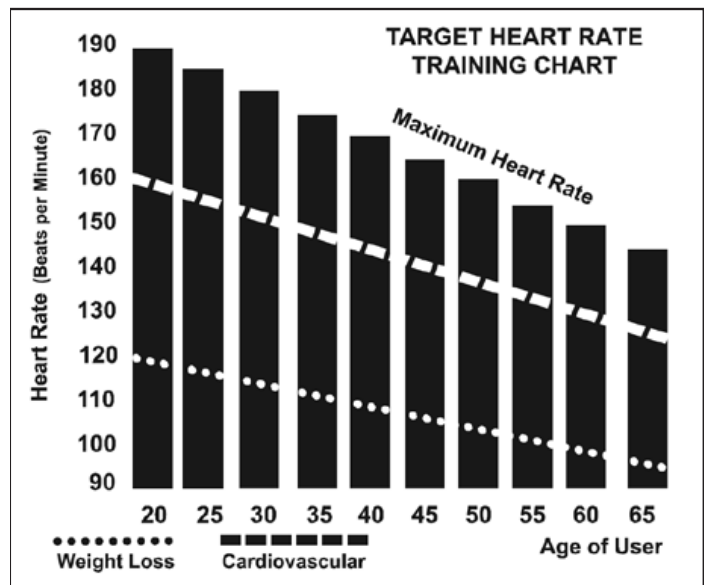
To determine the benefit range in which you wish to train, you must first determine your Maximum Heart Rate. This can be accomplished by using the following formula: 220 minus your age. This will give you the Maximum heart rate (MHR) for someone of your age. To determine the effective heart rate range for specific goals you simply calculate a percentage 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 target heart rate zone is calculated:

$220 - 40 = 180$ (maximum heart rate)
 $180 \times .6 = 108$ beats per minute (60% of maximum)
 $180 \times .8 = 144$ 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. Entering your age is used for the Heart Rate control programs. After calculating your Maximum Heart Rate 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 Maximum Heart Rate 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 Maximum Heart Rate on a schedule approved by your physician. Consult your physician before participating in any exercise program.

With all Heart Rate Control elliptical machines you may use the heart rate monitor feature without using the Heart Rate Control program. This function can be used during manual mode or during any of the nine different programs. The Heart Rate Control program automatically controls resistance at the pedals.

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 know 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 up the factors discussed earlier. That is the major benefit of this type of training. If your body is strong and rested, you will feel strong and your pace will feel easier. 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 harder. Again, this will show up in your RPE and you will train at the proper level for that day.

Using A Heart Rate Transmitter(OPTIONAL)

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.

Heart Rate Program Operation

Note: You must wear the heart rate transmitter 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 the maximum heart rate. They both are programmed the same way.

To start an HRC program follow the instructions below or just select the **HR1** or **HR2** program, then the **Enter** button and follow the directions in the Message Center.

After selecting your heart rate target the program will attempt to keep you at or within 3-5 heart beats per minute of this value. Follow the prompts in the Message Center to maintain your selected heart rate value.

1. Press the **HR 1** or **HR 2** key then press the **Enter** key.
2. The Message Center 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 value and proceed on to the next screen.
3. You are now asked to enter your Weight. You may adjust the weight value using the **Level Up/Down** keys, then press **Enter** to continue.
4. Next is Time. You may adjust the time and press **Enter** to continue.
5. Now you are asked to adjust the Heart Rate Target. This is the heart rate level you will strive to maintain during the program. Adjust the level using the **Level Up/Down** keys, then press **Enter**. *Note: The heart rate that appears is based on the % you accepted in **Step 2**. If you change this number it will either increase or decrease the % from **Step 2**.*
6. Now you are finished editing the settings and can begin your workout by pressing the **Start** key. You can also go back and modify your settings by pressing the **Enter** key.
7. If you want to increase or decrease the workload at any time during the program press the **Level Up/Down** key. This will allow you to change your target heart rate at any time during the program.
8. During the HR 1 or HR 2 programs you will be able to scroll through the data in the Message Center by pressing the **Enter** key.
9. When the program ends you may press **Start** to begin the same program again or **Stop** to exit the program or you can save the program you just completed as a custom user program by pressing a **User** key and following the instructions in the Message Center.

General Maintenance

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. I cannot stress this point enough; 90% 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. There are 4 leveling pads on the bottom of the rear rails, use a 14mm wrench (or adjustable wrench) to adjust the levelers.

Engineering Mode Menu

The console has built in maintenance/diagnostic software. The software will allow you to change the console settings from English to Metric and turn off the beeping of the speaker when a key is pressed for example. To enter the Engineering Mode Menu, press and hold down the **Start**, **Stop** and **Enter** keys. Keep holding the keys down for about 5 seconds and the message center will display Engineering Mode Menu. Press the **Enter** button to access the menu below:

- a. KeyTest (Will allow you to test all the keys to make sure they are functioning)
- b. Security (Allows the keypad to be locked to prevent unauthorized use)
- c. Functions (Press Enter to access settings and Up arrow to scroll)
 - I. Sleep Mode (Turn on to have the console power down automatically after 20 minutes of inactivity)
 - II. Incline On/Off (For e•Glide this is always off)
 - III. Unit Type (Should show Elliptical, other setting is e•Glide. Switches calorie formula, HR program settings and watt tables for the different units)
 - IV. iv. Motor Test (Press Enter to run the resistance motor up and down in a continuous loop. Display shows level setting and position sensor reading. Press Stop to end test.)
 - V. Beep (Turns off the speaker so no beeping sound is heard)
 - VI. Units (Sets the display to readout in English or Metric display measurements)
 - VII. ODO Reset (Resets the odometer)
 - VIII. Pause Mode (Turn on allow 5 minutes of pause, turn off to have the console pause indefinitely)
- d. LCD Test (Tests all the display functions)

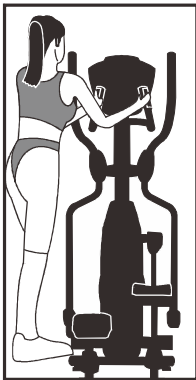
Getting on / off your elliptical

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.

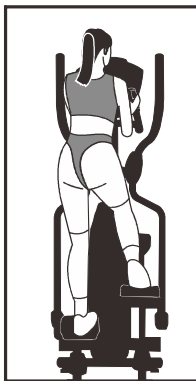
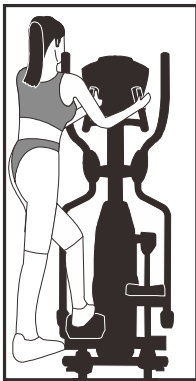
Caution should always be taken when getting on and off any exercise machine. Please follow the safety steps below.



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.

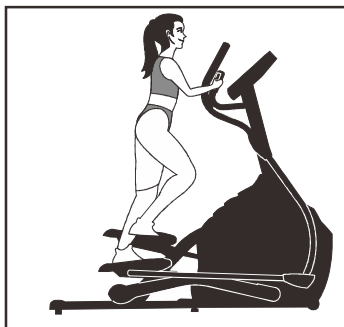
All equipment should be set-up and operated on solid, level surfaces.

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.



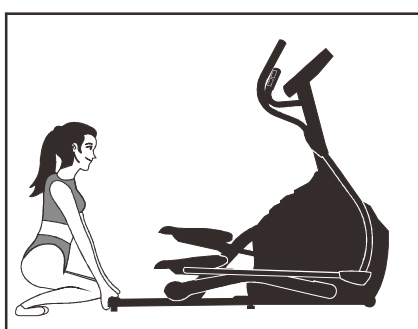
The elliptical can be used in forward or reverse motion.



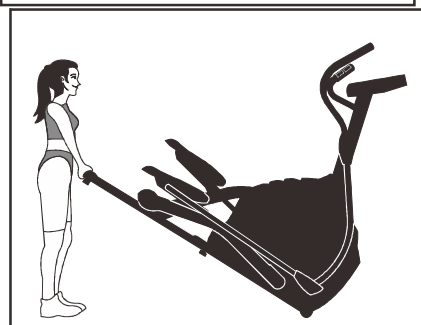
When going in reverse, bend your knees slightly more. More emphasis is on the buttocks and hamstrings in the reverse motion.

MOVING YOUR ELLIPTICAL

The elliptical can be easily moved from room to room.

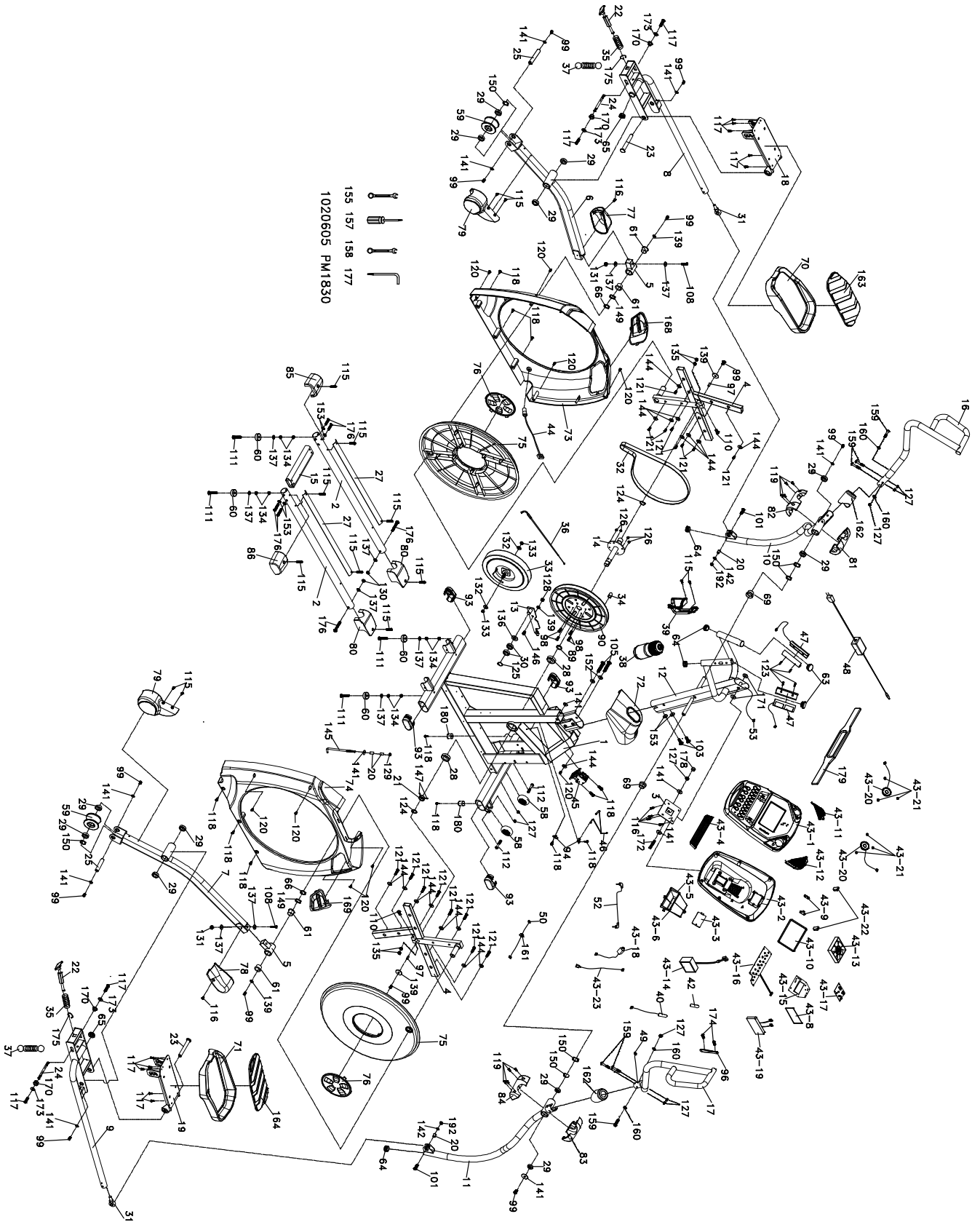


1. Move to the front of the machine and ensure swing arms are even (one foot pedal at top of Elliptical Disk and other at bottom).



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

Exploded View Diagram



Parts List

KEY NO.	PART NO.	DESCRIPTION	O'TY
1	17329501	Main Frame	1
2	17329502	Rear Rail Assembly	2
3	17329503	Console Holder Assembly	1
4	17329504	Cross Bar	2
5	17329505	Bushing Housing, Pedal Arm	2
6	17329506	Pedal Arm (L)	1
7	17329507	Pedal Arm (R)	1
8	17329508	Connecting Arm (L)	1
9	17329509	Connecting Arm (R)	1
10	17329510	Lower Handle Bar (L)	1
11	17329511	Lower Handle Bar (R)	1
12	17329512	Console Mast	1
13	17329513	Idler Wheel Assembly	1
14	17329514	Crank Axle	1
15	17329515	Rail Assembly	1
16	17329516	Swing Arm (L)	1
17	17329517	Swing Arm (R)	1
18	17329518	Adjustable Pedal (L)	1
19	17329519	Adjustable Pedal (R)	1
20	17329520	Rod End Sleeve	4
21	17329521	Axle Stopper	1
22	17329522	Locking Pin Assembly	2
23	17329523	Carriage Bolt	2
24	17329524	Axle Of Locking Pin	2
25	17329525	Axle for Slide Wheel	2
27	17329527	Aluminum Track	2
28	17329528	6005 Bearing	2
29	17329529	6003 Bearing	12
30	17329530	6203 Bearing	2
31	17329531	Rod End Bearing	2
32	17329532	Drive Belt	1
33	17329533	Flywheel	1
34	17329534	Magnet	1
35	17329535	Latch Spring	2
36	17329536	Steel Cable	1
37	17329537	Pedal Tension Spring	2
38	17329538	Drink Bottle	1
39	17329539	Drink Bottle Holder	1
40	17329540	Resistance Button W/Cable	1
42	17329542	Handgrip Resistance Label (LEVEL)	1
43	17329543	Console Assembly	1
43~1	17329543-1	Console Top Cover	1
43~2	17329543-2	Console Bottom Cover	1
43~3	17329543-3	Battery Cover	1
43~4	17329543-4	Deflector Fan Grill	1
43~5	17329543-5	Wind Duct (L)	1
43~6	17329543-6	Wind Duct (R)	1

KEY NO.	PART NO.	DESCRIPTION	O'TY
43~8	17329543-8	Water-resist Rubber	1
43~9	17329543-9	Fan Grill Anchor	2
43~10	17329543-10	LCD Transparent Piece	1
43~11	17329543-11	Console Speaker Cover (L)	1
43~12	17329543-12	Console Speaker Cover (R)	1
43~13	17329543-13	Fan Assembly	1
43~14	17329543-14	270m/m W/Receiver, HR	1
43~15	17329543-15	Console Display Board	1
43~16	17329543-16	Key Board	1
43~17	17329543-17	Interface Board	1
43~18	17329543-18	Earphone socket with cable and securing metal	1
43~19	17329543-19	Amplifier Controller	1
43~20	17329543-20	250m/m Speaker W/Cable	2
43~21	17329543-21	Speaker Grill Anchor	6
43~22	17329543-22	Fan Grill Anchor	2
43~23	17329543-23	250m/m Amplifier Cable	1
44	17329544	600m/m DC Power Cord	1
45	17329545	Gear Motor	1
46	17329546	Sensor W/Cable	1
47	17329547	850m/m Handpulse W/Cable Assembly	2
48	17329548	Power Adaptor	1
49	17329549	450m/m Handle Wire (Upper), Resistance	1
50	17329550	900m/m Handle Wire (Lower), Resistance/Incline	1
52	17329552	400m/m Audio Cable	1
53	17329553	1300m/m Computer Cable	1
58	17329558	Transportation Wheel	2
59	17329559	Slide Wheel , Urethane	2
60	17329560	Rubber Foot	4
61	17329561	WFM-2528-21 Bushing	4
63	17329563	Button Head Plug	2
64	17329564	Ø32 × 1.8T Round Cap	4
65	17329565	32 × 2.5T Round Cap	2
66	17329566	Ø25.5 × 33.5 × 1.5T Nylon Wave Washer	2
69	17329569	Mast Bushing	2
70	17329570	Pedal (L)	1
71	17329571	Pedal (R)	1
72	17329572	Console Mast Cover	1
73	17329573	Side Case (L)	1
74	17329574	Side Case (R)	1
75	17329575	Round Disk	2
76	17329576	Round Disk Cover	2
77	17329577	Pedal Arm Cover (L)	1
78	17329578	Pedal Arm Cover (R)	1
79	17329579	Slide Wheel Cover	2
80	17329580	Middle Stabilizer Cover	2
81	17329581	Front Handle Bar Cover (L)	1
82	17329582	Rear Handle Bar Cover (L)	1
83	17329583	Front Handle Bar Cover (R)	1

KEY NO.	PART NO.	DESCRIPTION	O'TY
84	17329584	Rear Handle Bar Cover (R)	1
85	17329585	Rear Stabilizer Cover (L)	1
86	17329586	Rear Stabilizer Cover (R)	1
89	17329589	Spacer Bushing	1
90	17329590	Drive Pulley	1
93	17329593	Oval End Cap	4
94	17329594	Sensor Rack	2
96	17329596	Handle Switch Bracket	1
97	17329597	7 × 7 × 19L Woodruff Key	2
98	17329598	1/4" × 3/4" Hex Head Bolt	4
99	17329599	5/16" × 15m/m Hex Head Bolt	12
101	173295101	5/16" × 1-1/4" Hex Head Bolt	2
103	173295103	3/8" × 3/4" Hex Head Bolt	2
105	173295105	3/8" × 2-1/4" Hex Head Bolt	2
108	173295108	3/8" × 2-1/4" Socket Head Cap Bolt	2
110	173295110	M8 × 40m/m Socket Head Cap Bolt	2
111	173295111	3/8" × 1-3/4" Flat Head Socket Bolt	4
112	173295112	5/16" × 1-3/4" Button Head Socket Bolt	2
115	173295115	M5 × 12m/m Phillips Head Screw	14
116	173295116	M5 × 10m/m Phillips Head Screw	6
117	173295117	M5 × 10m/m Phillips Head Screw	14
118	173295118	5 × 19m/m Tapping Screw	12
119	173295119	Ø3.5 × 12m/m Sheet Metal Screw	8
120	173295120	3.5 × 16m/m Sheet Metal Screw	9
121	173295121	5 × 16m/m Tapping Screw	16
123	173295123	Ø3 × 20m/m Tapping Screw	4
124	173295124	Ø25 C Ring	2
125	173295125	Ø17 C Ring	1
126	173295126	1/4" Nyloc Nut	4
127	173295127	5/16" × 7T Nyloc Nut	9
128	173295128	M8 × 7T Nyloc Nut	1
129	173295129	M8 × 9T Nyloc Nut	1
130	173295130	3/8" × 7T Nyloc Nut	2
131	173295131	3/8" × 11T Nyloc Nut	2
132	173295132	3/8" -UNF26 × 4T Nut	2
133	173295133	3/8"-UNF26 × 11T Nut	2
134	173295134	3/8" × 7T Nut	8
135	173295135	M8 × 6.3T Nut	4
136	173295136	Ø17 × 23.5 × 1T Flat Washer	1
137	173295137	3/8" × 19 × 1.5T Flat Washer	10
139	173295139	5/16" × 35 × 1.5T Flat Washer	5
141	173295141	5/16" × 23 × 1.5T Flat Washer	12
142	173295142	5/16" × 20 × 1.5T Flat Washer	2
144	173295144	1/4" × 19m/m Flat Washer	17
145	173295145	M8 × 170m/m J Bolt	1
146	173295146	M8 × 20m/m Carriage Bolt	1
147	173295147	M5 × 5m/m Slotted Set Screw	2

KEY NO.	PART NO.	DESCRIPTION	Q'TY
149	173295149	Ø25 Wave Washer	2
150	173295150	Ø17 Wave Washer	6
152	173295152	3/8" x 2T Split Washer	2
153	173295153	3/8" x 23 x 2T Curved Washer	6
155	173295155	13/14m/m Wrench (160m/m)	1
157	173295157	Phillips Head Screw Driver	1
158	173295158	12/14m/m Wrench (160m/m)	1
159	173295159	5/16" x 1-3/4" Hex Head Bolt	6
160	173295160	5/16" x 23 x 1.5T Curved Washer	4
161	173295161	Switch Wire Cap	1
162	173295162	Swing Arm Bushing	2
163	173295163	Pedal Foam (L)	1
164	173295164	Pedal Foam (R)	1
168	173295168	Side Case Plate(L)	1
169	173295169	Side Case Plate(R)	1
170	173295170	Ø19 x Ø14 x Ø10 x (5+4) Bushing	4
171	173295171	5/16" x 25 x 3T Nylon Washer	2
172	173295172	5/16" x 2-1/2" Hex Head Bolt	1
173	173295173	Ø5 x 16 x 1.5T Flat Washer	4
174	173295174	M5 x 20m/m Flat Head Socket Screw	2
175	173295175	Ø10 C Ring	2
176	173295176	3/8" x 2-1/4" Button Head Socket Bolt	6
177	173295177	Combination M5 Allen Wrench & Phillips Head Screw	1
178	173295178	Ø13m/m Bolt Cap	1
179	173295179	Chest Strap	1
180	173295180	Rubber Foot Pad	2
192	173295192	5/16" x 9T Nyloc Nut	2

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 you 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 to 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 principle 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.

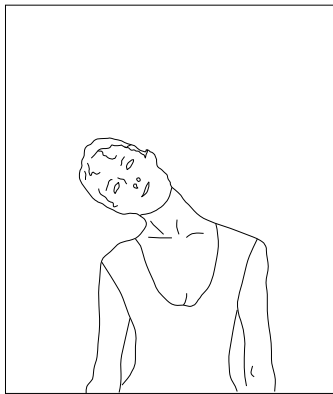
The rest period required between strength training exercises may vary from person to person. This will depend mostly on your level of fitness and the program you have chosen. Rest between exercises by all means, but do not allow this to exceed two minutes. Most people manage with half minute to one minute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

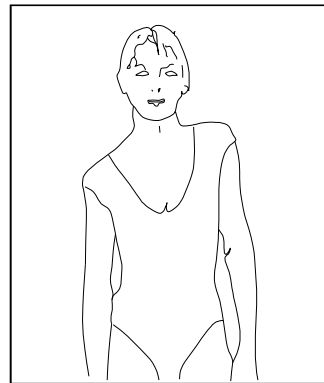
HEAD ROLLS

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.



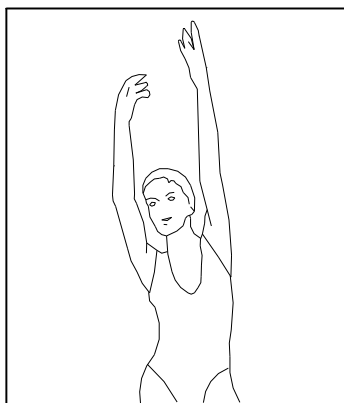
SHOULDER LIFTS

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.



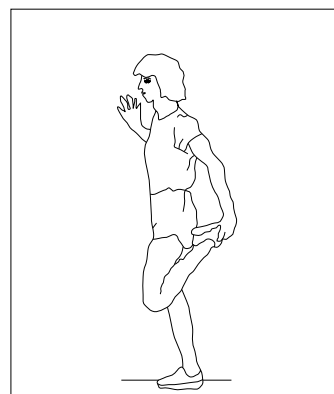
SIDE STRETCHES

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.



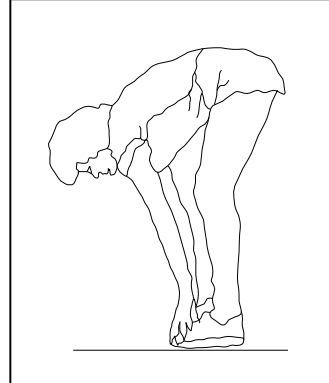
INNER THIGH STRETCH

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.



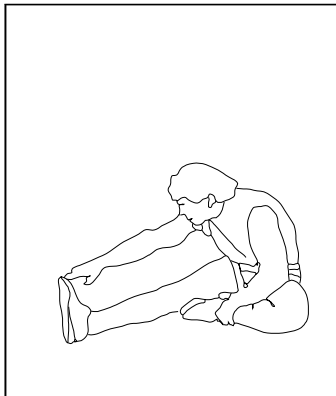
TOUCHES

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 far 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 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.

