

**OWNER'S MANUAL**  
**MODEL NO.**  
**16804534000US**

- **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**

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



**Rower**



# **Manufacture's Limited Warranty**

Dyaco Canada Inc. warrants all its home use rower 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	1 Year
All Other Components	1 Year
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 or 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 rower 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](mailto:customerservice@dyaco.ca). You can visit us at [www.dyaco.ca](http://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

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:

1. Read the OWNER'S OPERATING MANUAL and all warnings posted on the unit and follow it carefully before using your rower.
2. 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.
3. Review all warnings labels that affixed to the unit. Inspect your exercise equipment prior to exercising to ensure that all nuts and bolts are fully tightened before each use. Functional and visual inspection of the equipment shall be made after assembling your rower.
4. The rower must be regularly checked for signs of wear and damage. Any part found defective must be replaced with a new part from the manufacturer.
5. Set up and operate the exercise unit on a solid level 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.
6. No changes must be made which might compromise the safety of the equipment.
7. It is recommended to have a minimum of 2' safe clearance around the exercise equipment while in use.
8. The pulse sensor is not a medical devise. Various factors, including the user's movement may affect the accuracy of the heart rate readings. The pulse sensor is intended only as an exercise aid in determining heart rate trends in general.
9. Keep children and pets away from this equipment at all times while exercising.
10. 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.
11. Never hold your breath while exercising. Breathing should remain at a normal rate in conjunction with the level of exercise being performed.
12. Always wear suitable clothing and footwear while exercising. Do not wear loose fitting clothing that could become entangled with the moving parts of your rower.
13. Care must be taken when lifting or moving the equipment, so as not to injure your back. Always use proper lifting techniques.
14. User weight should not exceed 250lbs.
15. Tie all long hair back.
16. Remove all personal jewelry before exercising.
17. After eating, allow 1-2 hours before exercising as this will help to prevent muscle strain.
18. Injuries may result from incorrect or excessive training and using the equipment otherwise than as directed or recommended by your doctor.

# Important Safety Instructions

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

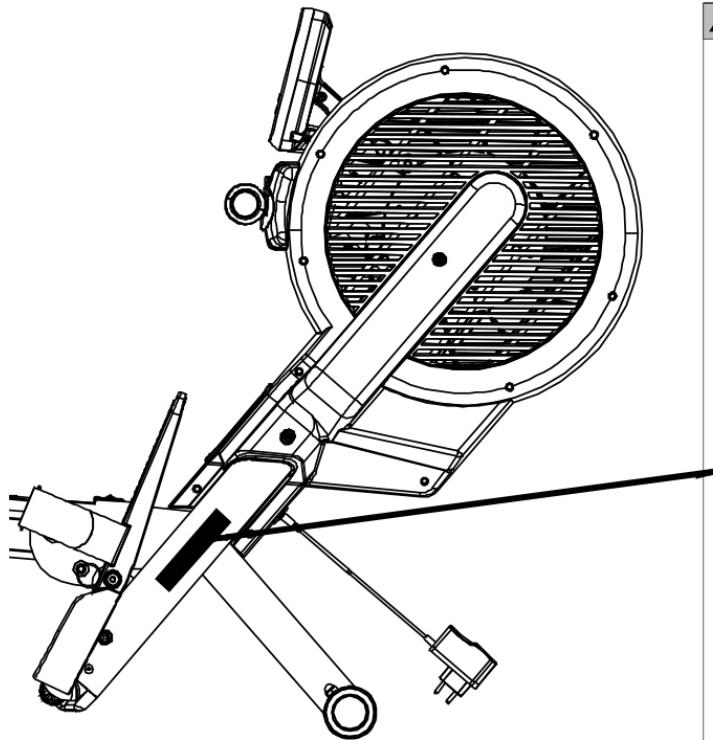


**WARNING** - To reduce the risk of burns, fire, electric shock, or injury to persons:

1. Always unplug this unit from the electrical outlet immediately after using and before cleaning.

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

1. An unit should never be left unattended when plugged in. Unplug from outlet when not in use, and before putting on or taking off parts.
2. Do not operate under blanket or pillow. Excessive heating can occur and cause fire, electric shock, or injury to persons.
3. Close supervision is necessary when this unit is used by, on, or near children, invalids, or disabled persons.
4. Use this unit only for its intended use as described in this manual. Do not use attachments not recommended by the manufacturer.
5. Never operate this unit 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 unit to a service center for examination and repair.
6. Do not carry this unit by the supply cord or use the cord as a handle.
7. Keep the cord away from heated surfaces.
8. Never operate the unit with the air openings blocked. Keep the air openings free of lint, hair, and the like.
9. Never drop or insert any object into any opening.
10. Do not use outdoors.
11. Do not operate where aerosol (spray) products are being use or where oxygen is being administered.
12. Connect this unit to a properly grounded outlet only.
13. The unit is intended for household use.
14. The decal shown below has been placed on the rower. 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.

## **Fitness Equipment Safety Instructions**

- To disconnect, turn all controls to the off position, then remove the plug from the outlet.
- Do not operate equipment on deeply padded, plush or shag carpet. Damage to both carpet and equipment may result.
- Before beginning this or any exercise program, consult a physician. This is especially important for persons over the age of 35 or persons with pre-existing health conditions.
- Keep hands away from all moving parts.
- The pulse sensors are not medical devices. Various factors, including the user's movement, may affect the accuracy of heart rate readings. The pulse sensors are intended only as exercise aids in determining heart rate trends in general.
- Do not attempt to use your equipment for any purpose other than for the purpose it is intended.
- Wear proper shoes. High heels, dress shoes, sandals or bare feet are not suitable for use on your equipment. Quality athletic shoes are recommended to avoid leg fatigue.

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!**

**CAUTION!! Please be careful when unpacking the carton.**

# PRODUCT REGISTRATION

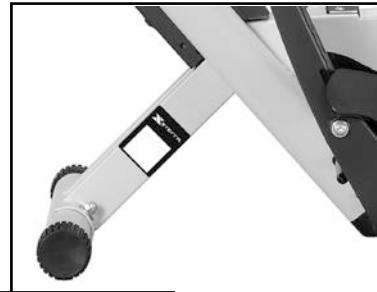
Purchase Location

Purchase Date

## Record Your Serial Number

Please record the Serial Number of this fitness product in the space provided below.

Serial Number



## Register Your Purchase

The self-addressed product registration card must be completed in full and returned to Dyaco Canada Inc. You can also go to [www.dyaco.ca](http://www.dyaco.ca) to register online.

## POWER

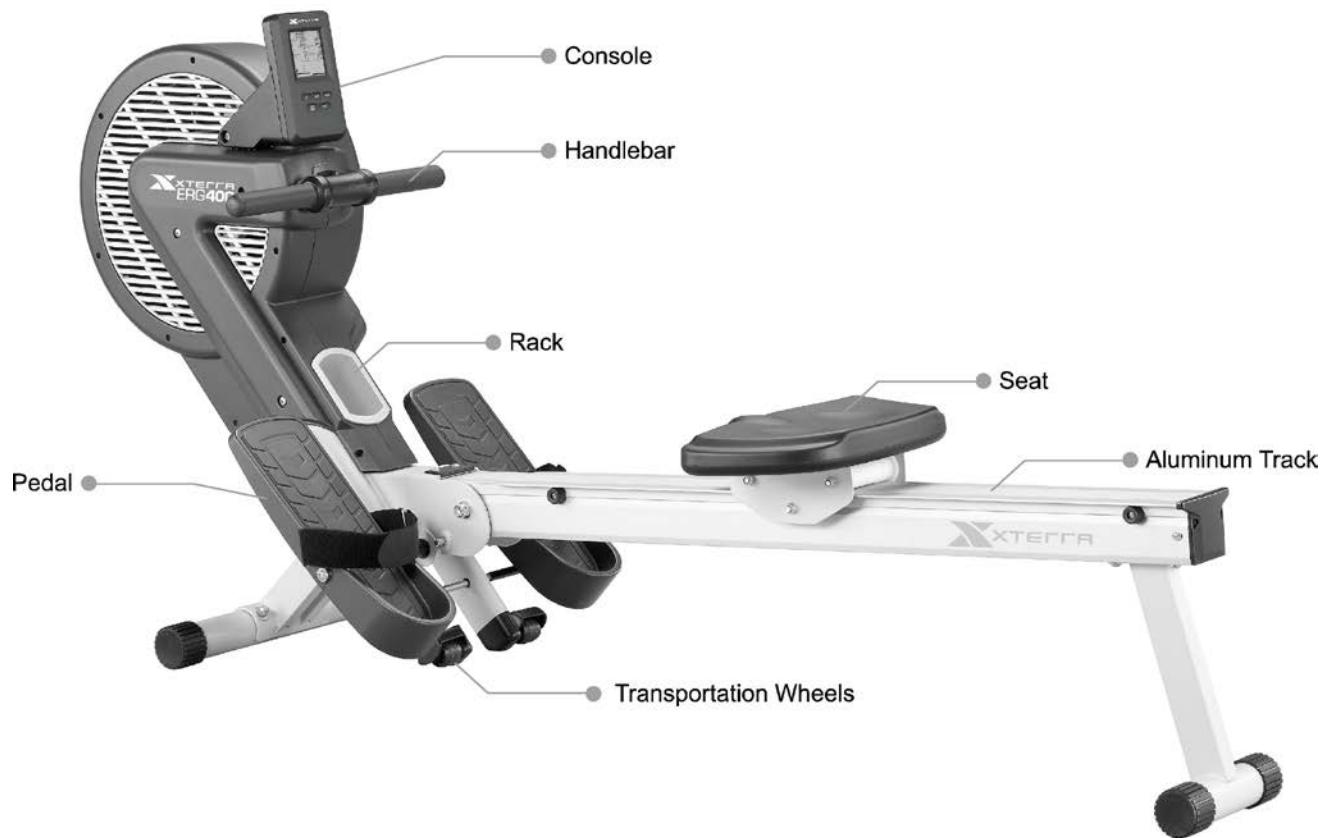
This product uses an external power supply. The power supply must be plugged into the power jack, located on the front of the unit near the stabilizer tube. Next, plug the power supply into the appropriate wall outlet. When not in use, it is recommended to unplug the power supply from the wall outlet.

**IMPORTANT:** If the product has been exposed to cold temperatures, allow the product sit in room temperature to warm up before plugging in the power supply. Failure to do so may result in damage to the display or electronic components.

**IMPORTANT:** Do not operate the product if the power supply, its plug, or its cord has been damaged.

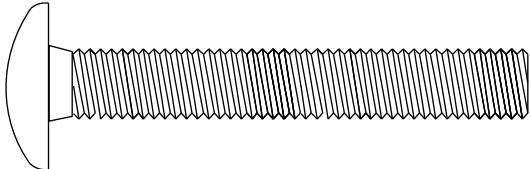


# HOW ROWER WORKS

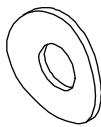


# Assembly Pack Checklist

## Hardware Step 1



**#93.** 3/8" x 2-1/2  
Carriage Bolt  
(2 pcs)

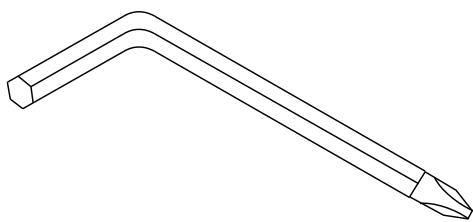


**#94.** 3/8" x 23 x 1.5T  
Curved Washer  
(2 pcs)

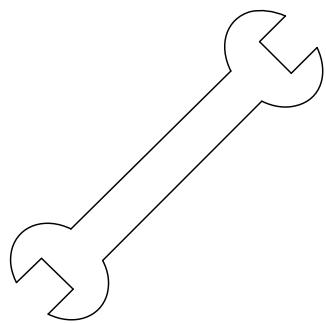


**#95.** 3/8" x 12.5T  
Cap Nut  
(2 pcs)

## Assembly Tools



**#97.** Combination M5 Allen Wrench  
& Phillips Head Screw Driver



**#96.** Wrench

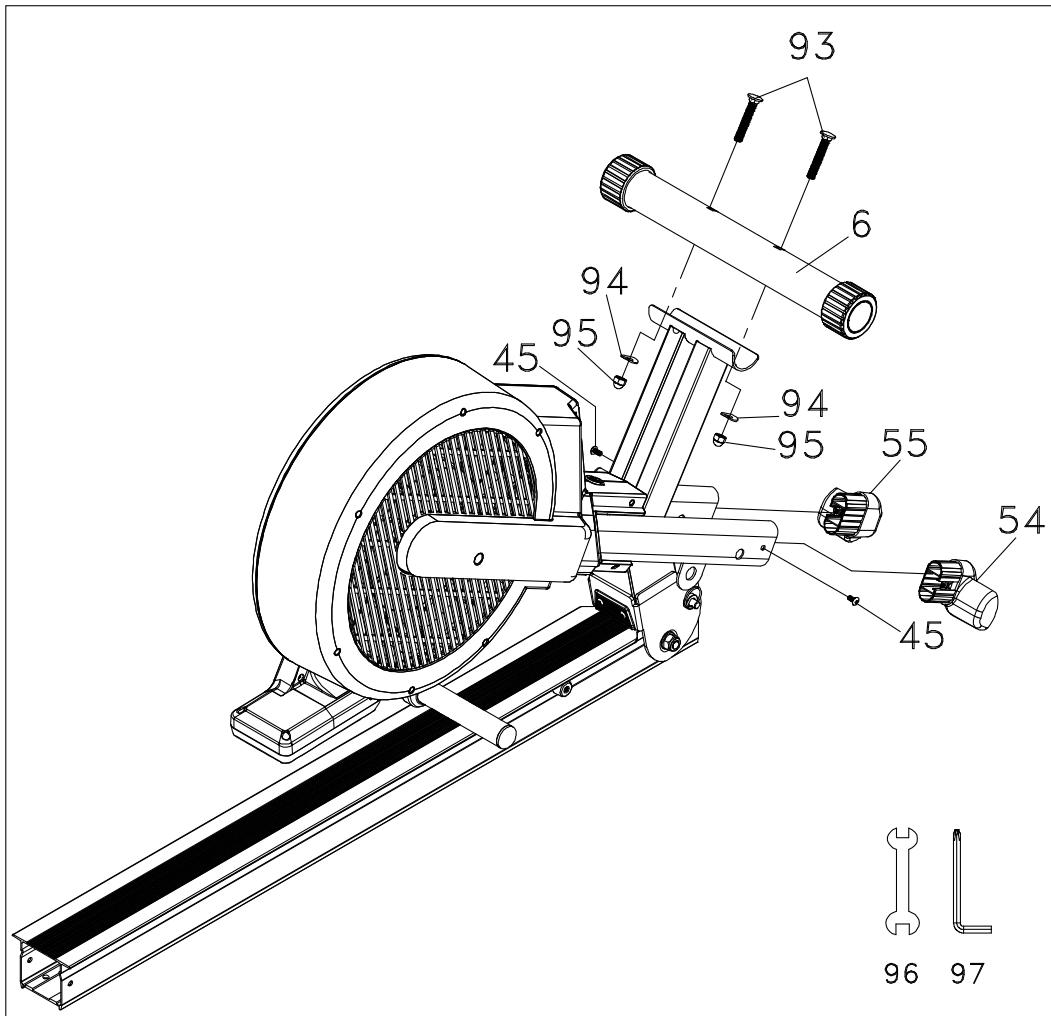
# ASSEMBLY INSTRUCTIONS

This manual is designed to help you easily assemble, adjust and use this machine. Please read this manual carefully. For the sake of familiarizing yourself with the parts identified in the instruction, first study the overview drawing.

Set all parts in a clear area on the floor and remove the packing material. Refer to the parts list for help to identify the parts.

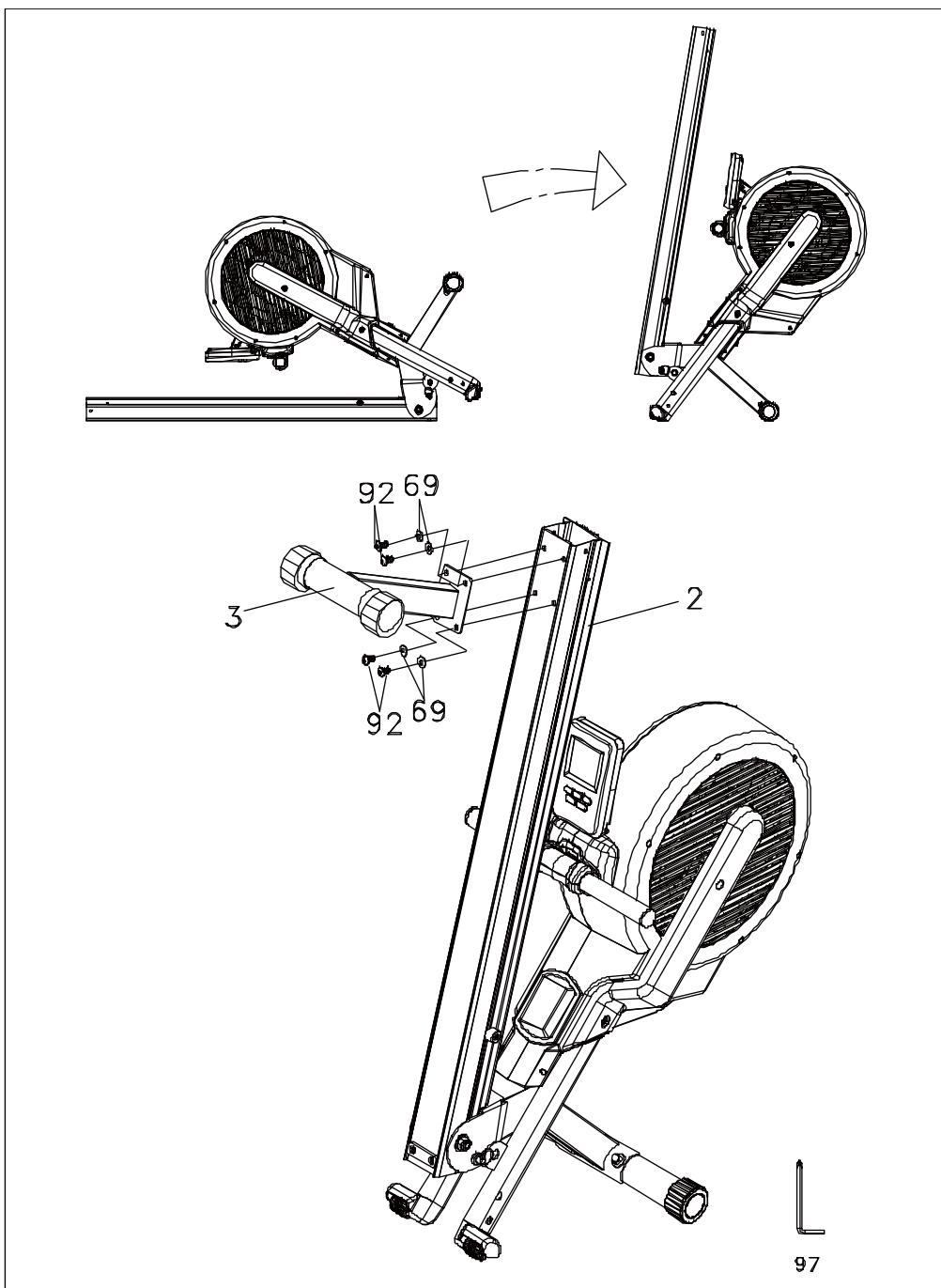
**Note: If a part is not in the hardware kit, check to see if it has been preassembled. To avoid damaging parts, do not use power tools for assembly.**

## 1 FRONT STABILIZER & WHEEL COVERS



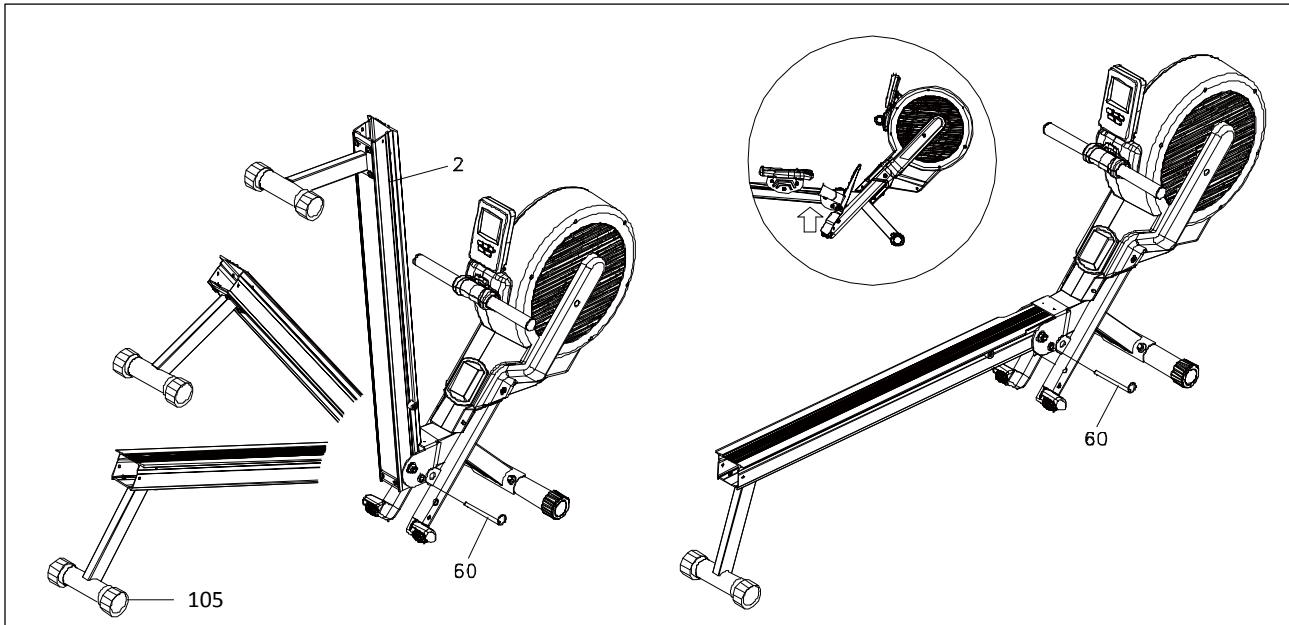
1. Mount the Front Stabilizer (6) onto the Main Frame (1) by using two Carriage Bolts (93) going through Front Stabilizer (6) and Main Frame (1), two Curved Washers (94) and Cap Nuts (95). Tighten up with 12/14mm open end wrench (96).
2. Install right and left Wheel Covers (54, 55) on twin tube ends of the Main Frame, be aware to not mix up between left and right, and use Combination M5 Allen Wrench & Phillips Head Screw Driver (97) to tighten with two Phillips Head Screws (45)

# 2 REAR STABILIZER



1. Pull up the Main frame (1) as shown in figure 2 and install the Rear Stabilizer (3) on the end of the Aluminum Track (2). Use Combination M5 Allen Wrench & Phillips Head Screw Driver (97) to tighten with four Button Head Socket Bolts (92) and four Flat Washers (69).

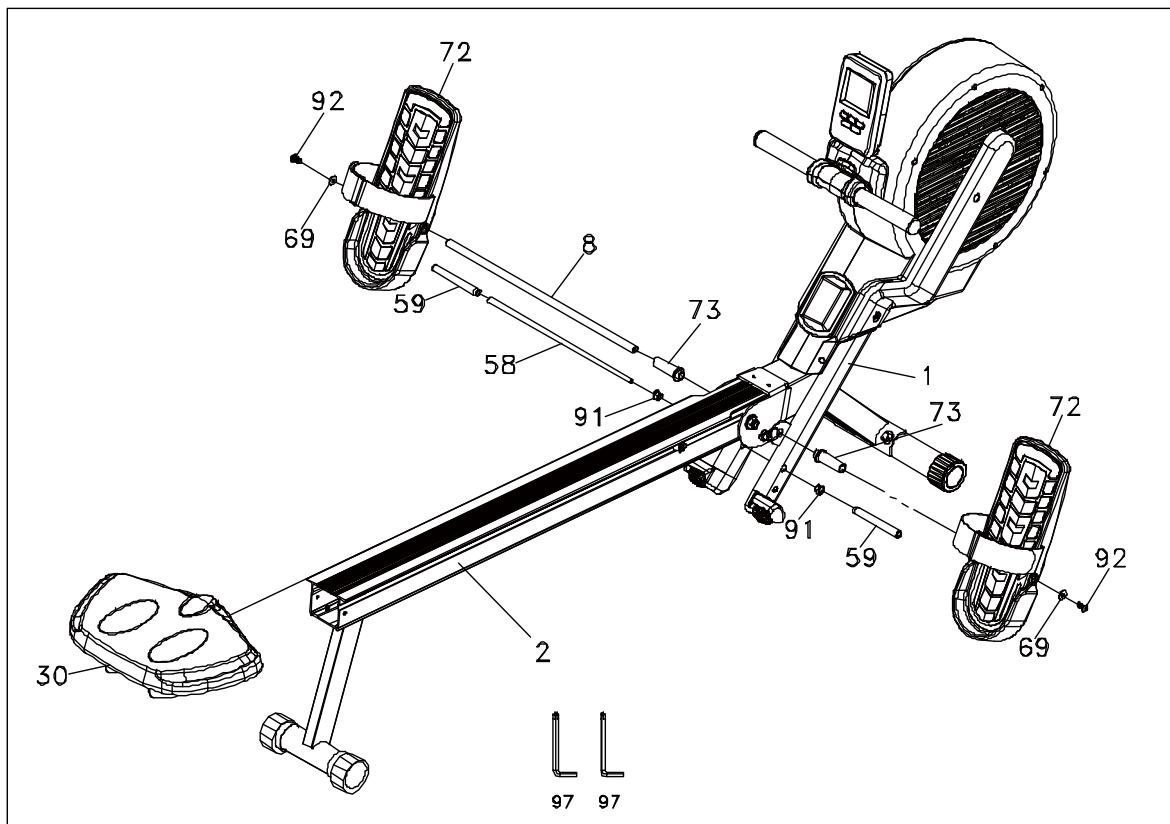
# 3 STABILIZER TUBES & WHEEL COVERS



1. Pull out the Locking Pin (**60**) from of the Aluminum Track (**2**) and make sure the unit is level then reinsert the Locking Pin (**60**) and lock well. Pull down the unit as shown in the figure in circled box when reinserting the Locking Pin (**60**).

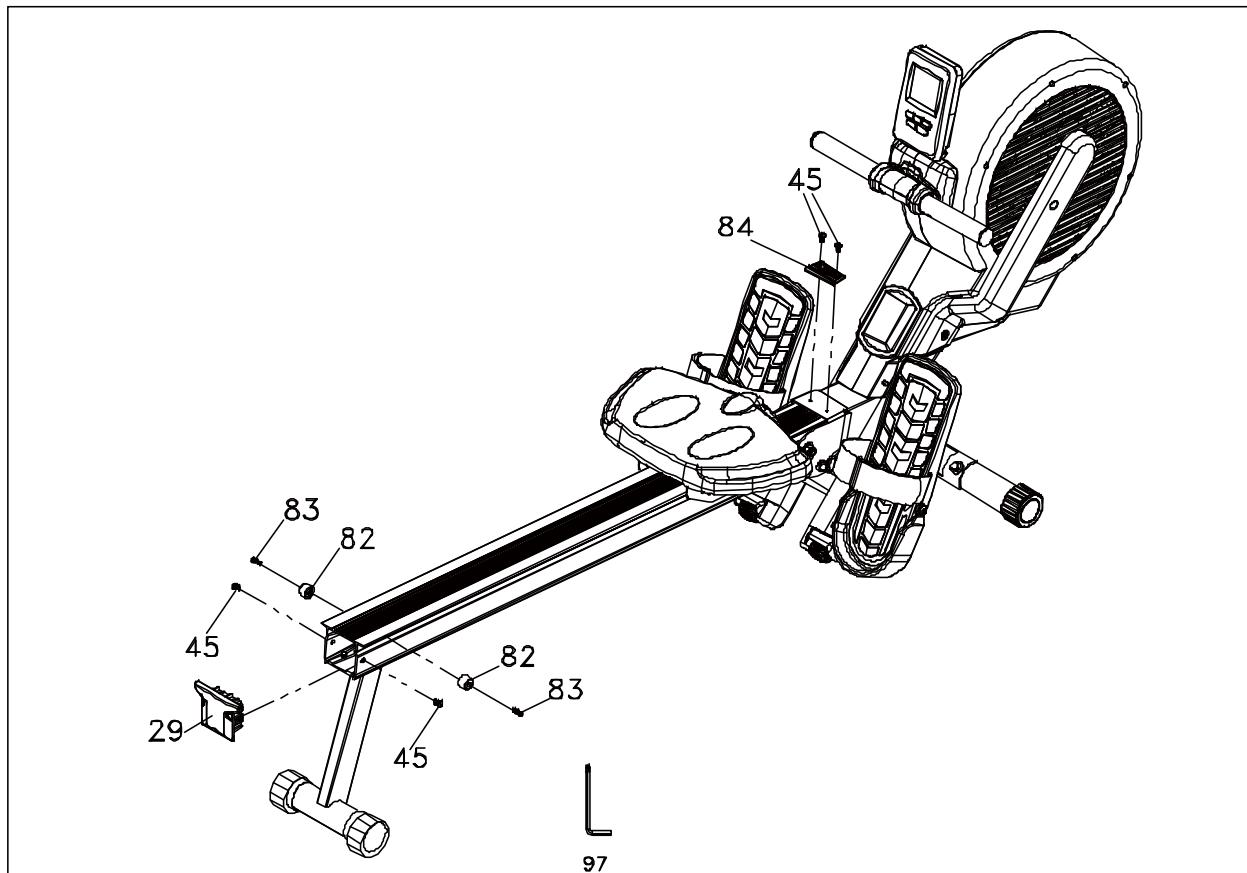
**NOTE:** It is very important to insert the locking pin (60) back as shown in the figure in circled box when the unit is unfolded to prevent injury. **The stabilizer plug(105) can be used for leveling the machine.**

# 4 SEAT & PEDALS



1. Slide the Seat (30) onto the Aluminum Track (2). Be sure of the correct orientation of the Seat (30).
2. Implement one of Axle Bushings (91) on the Pedal Stopper Shaft (58) going through the Main frame (1) and cover with Lever Sleeve (59).
3. Pierce the Pedal Axle (8) through the Main frame (1) and put on two Axle Bushings (73) and Pedals (72) on both ends (make sure pedals are correct for each side) and use Combination M5 Allen Wrench & Phillips Head Screw Driver (97) to tighten the shaft with two Flat Washers (69) and two Button Head Socket Bolts (92).

# 5 COVERS



1. Cover the aluminum track with Plastic End Cover (**29**) by using Combination M5 Allen Wrench & Phillips Head Screw Driver (**97**) to tighten with two Phillips Head Screws (**45**).
2. Secure two Rubber Stoppers (**82**) at one end of the aluminum track with two Phillips Head Screws (**83**).
3. Secure Protective Cap (**84**) at of the aluminum track with two Phillips Head Screws (**45**).

# Operation of Your Console

## Console



### Power Up

Power the rower on by plugging it into an appropriate wall outlet. When turned on, the display will emit 1 beep sound as all LCD displays.

**Note:** When there is no signal or data input for 4 minutes, the machine will enter sleep mode. Using the rower or key selection will wake-up the computer.

**NEVER** operate this rower 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.

# **KEY FUNCTIONS**

## **START**

1. Pressing this key located under the ENTER or DOWN buttons , starts P0 exercise mode.

## **STOP/RESET**

1. Pressing this key under operational mode, the console enters pause mode.
2. Pressing this key and holding at any time resets all function, the display clears and enters idle mode automatically.

## **ENTER KEY**

1. Press this key for data setting. If “Enter” key is not pressed during adjustment, the data will be also accepted.
2. Press this key to confirm the setting or the data value.

## **UP/DOWN**

1. Use this key to choose the program.
2. Use this key to increase or decrease for data setting
3. During workout, use this key for level adjustment, with increment of 1 for each press. When press and hold for 2 seconds or more, it enters fast key mode.

## **PROGRAM DESCRIPTION**

1. P0 Pressing START key in ready mode starts the unit. Adjust the resistance by using UP/DOWN key and use STOP/RESET to pause. Press and hold START returns to ready mode.
2. P1~P6 In ready mode, use UP / DOWN key to choose the pre-set program and press ENTER key for TIME/DIST/CAL/COUNT editing. Pressing START key finishes editing and starts the program. During the workout, use UP/DOWN key to control the resistance, STOP to pause and press and hold STOP to return to the ready mode.

P1: ROLLING	P2: VALLEY	P3: FAT BURN
P4: RAMP	P5: MOUNTAIN	P6: MOUNTAIN

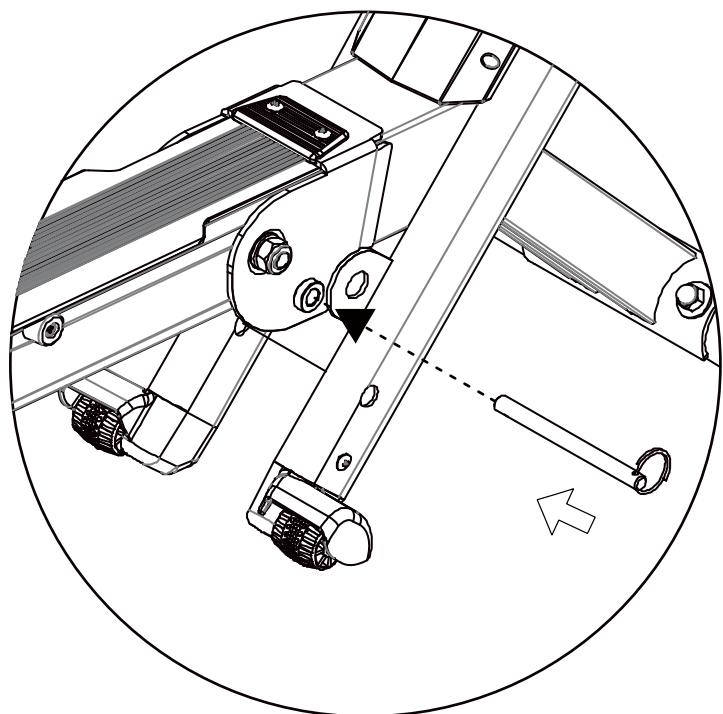
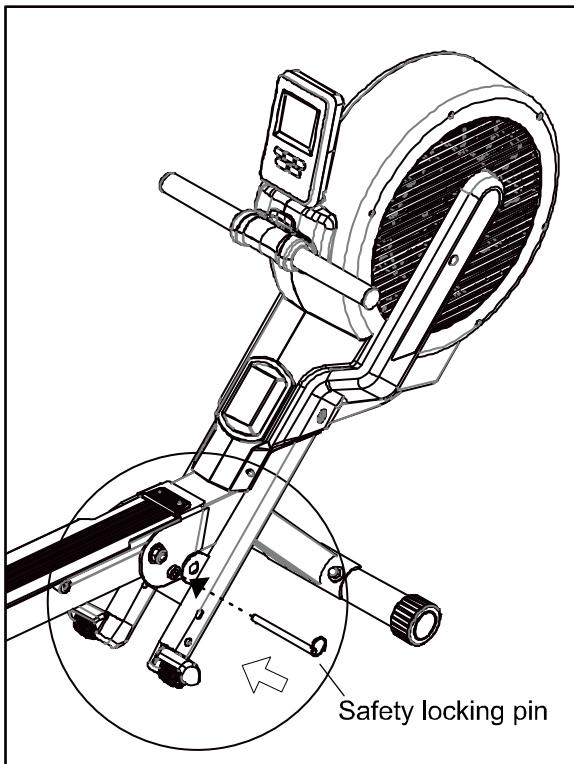
In ready mode, use UP/DOWN key to choose USER PROGRAM, press ENTER key to edit TIME/DIST/CAL/COUNT and 10 segments of resistance setting with setting levels 1~16. Press START key when finish and the program starts. During the workout, use UP/DOWN key to control the resistance, STOP to pause and press and hold STOP to return to the ready mode.

# User's Direction

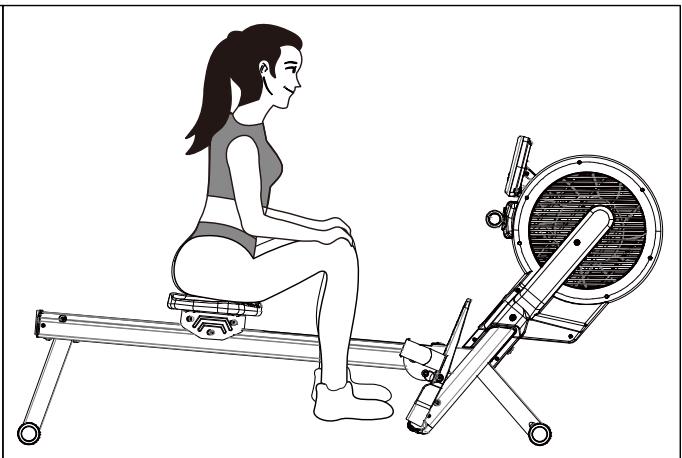
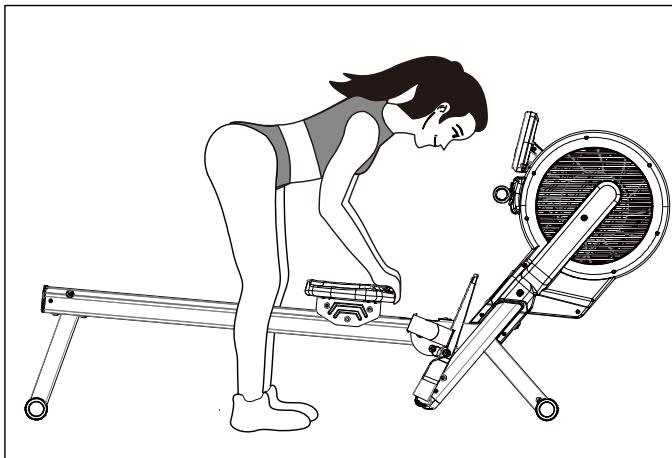
## Important Reminder

Make sure that there is minimum of 2 feet of clearance all around the rower.

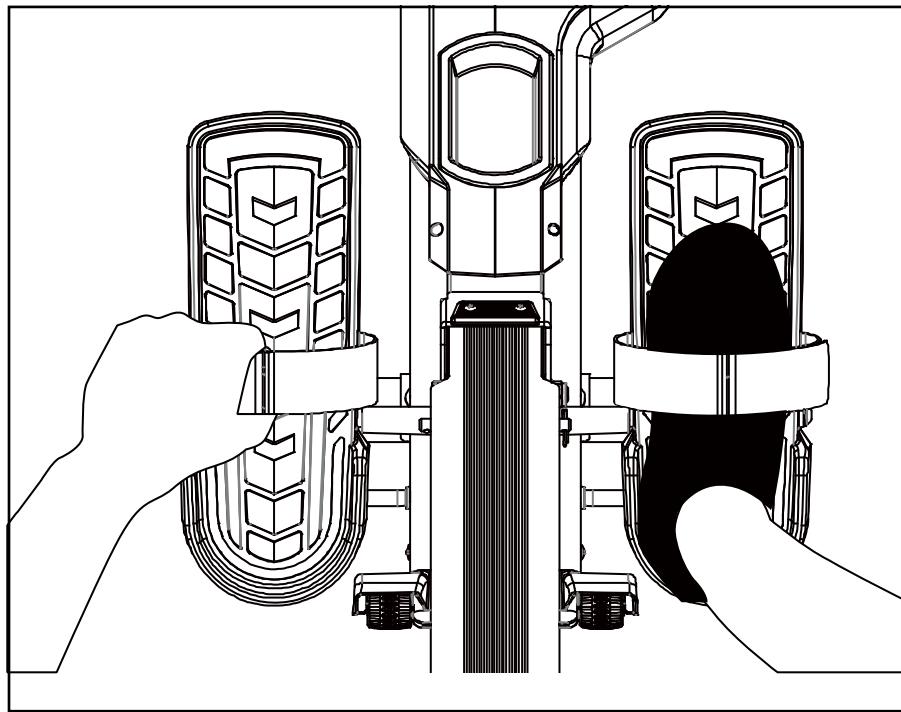
1. While operating, especially when the machine has been extended, make sure the safety locking pin is in position.



2. Stand behind the seat, slide the seat backwards and make sure the seat is in proper position.

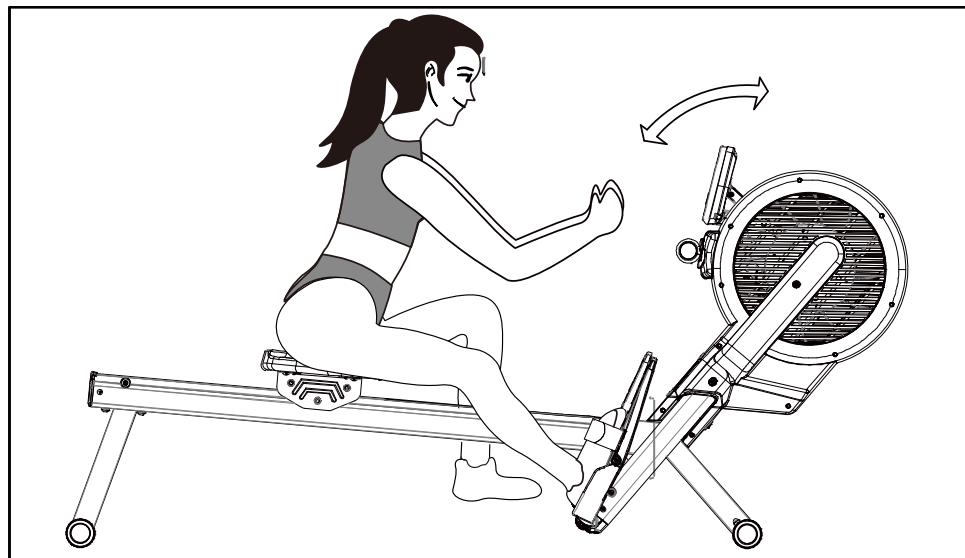


3. Undo the Velcro strap on the pedal for adjustment. Place your foot on the pedal and make sure the ankle is on the rear of the pedal then tighten the strap. (Choose the proper tightness depending on the user)

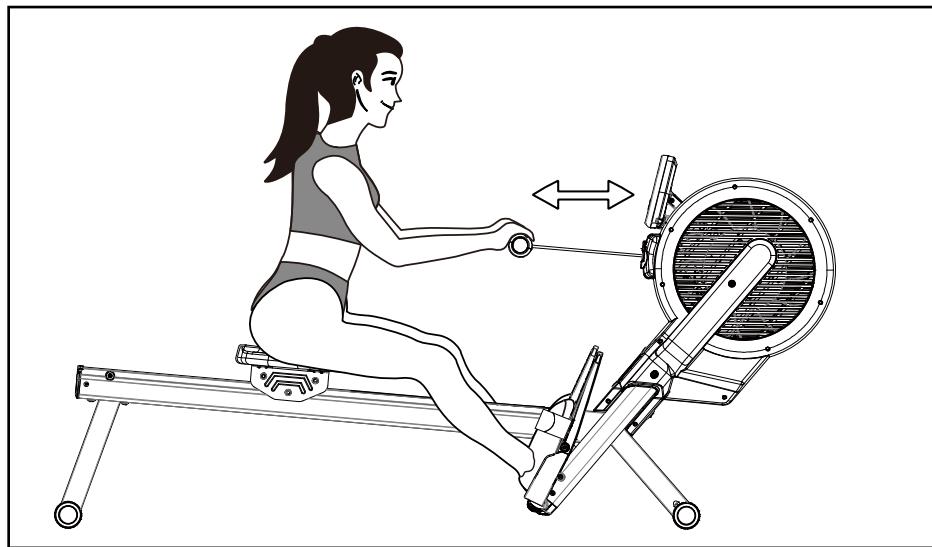


4. Gently adjust the console for proper viewing angle.

(This depends on the height of the user)



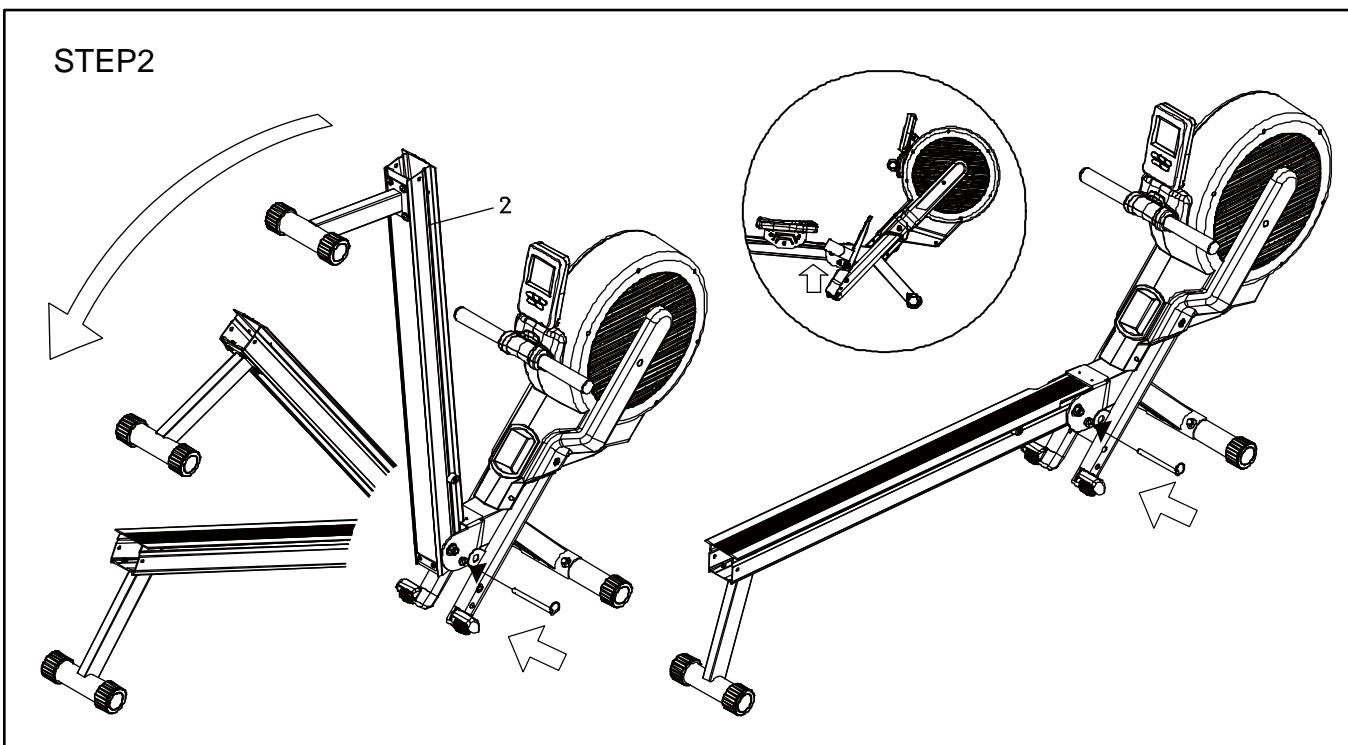
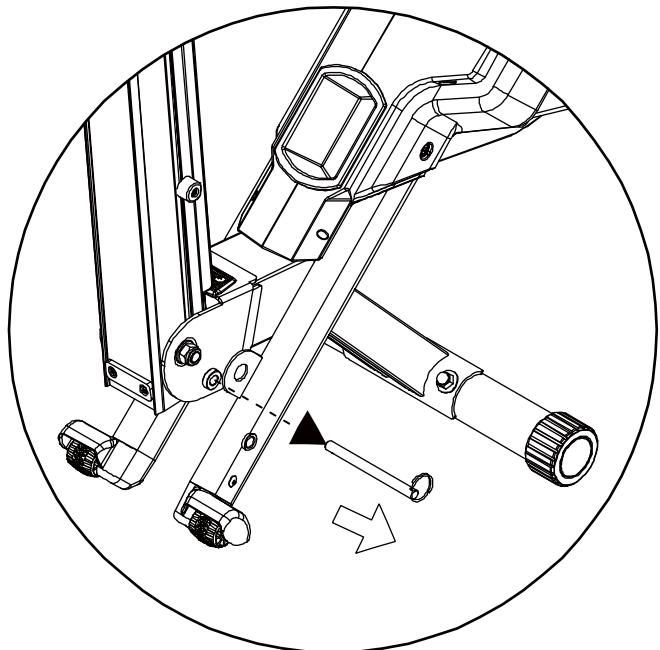
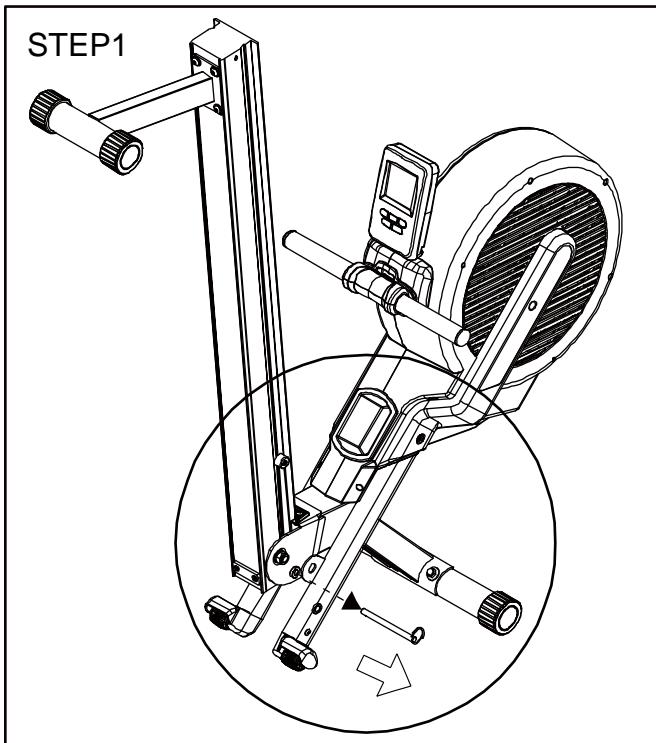
5. When properly seated on the rower. Grasp the handle to start.



## Releasing

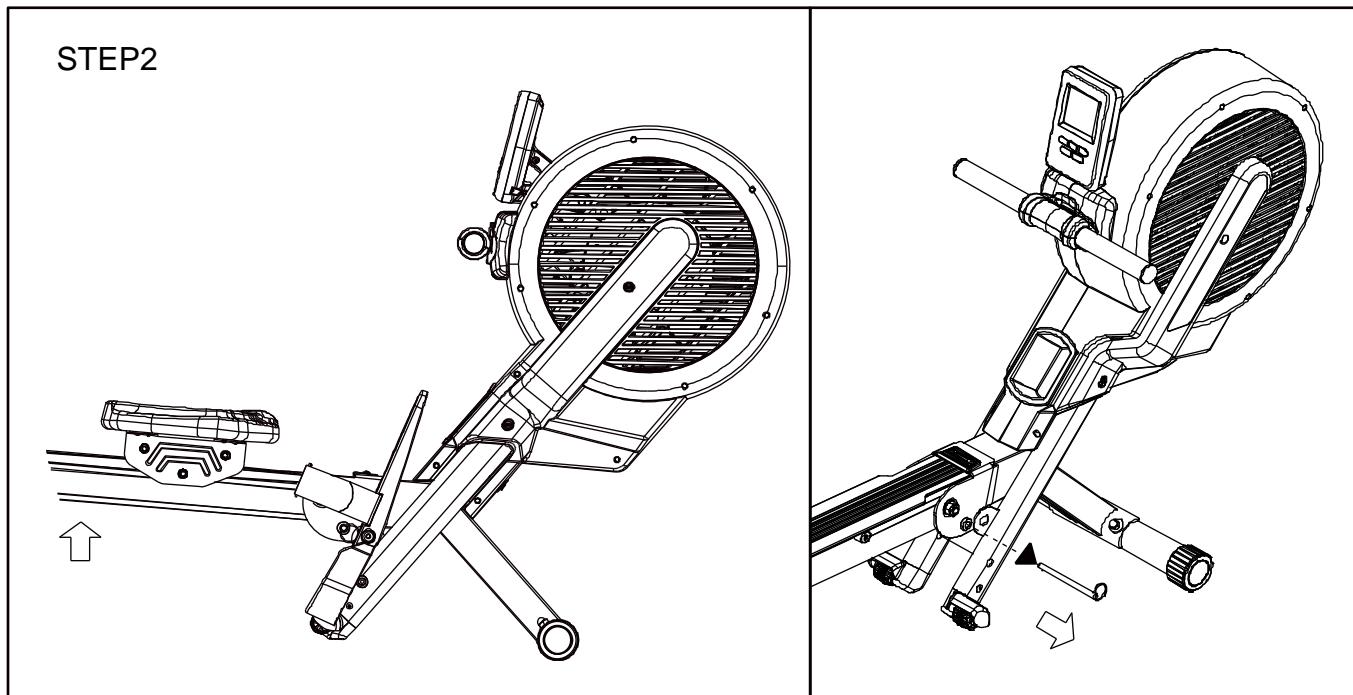
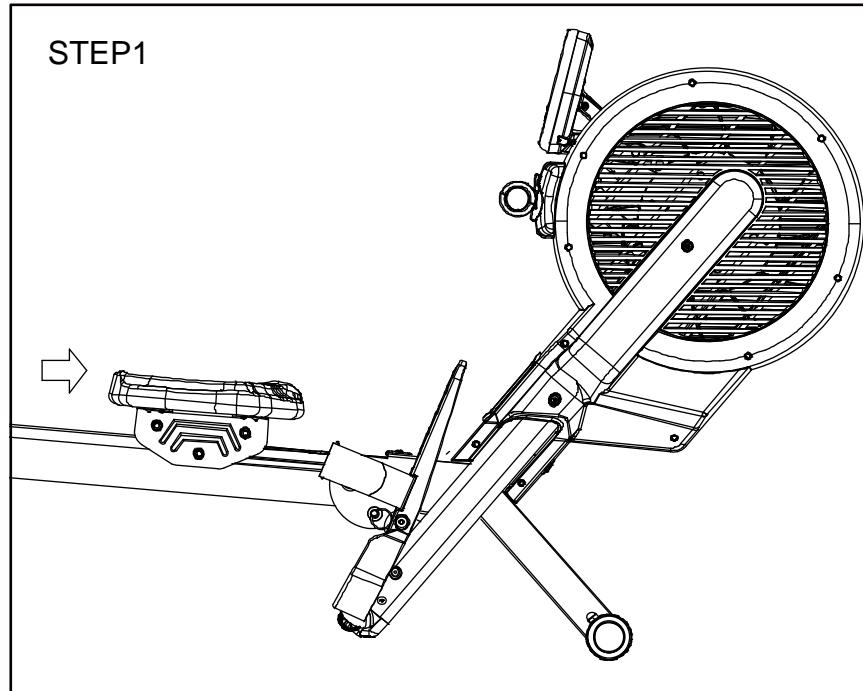
Make sure that there is minimum of 2 feet of clearance all around the rower.

1. Pull out Locking Pin of the Aluminum Track and put in level.
2. Return the Locking Pin and lock well. Pull up the unit as shown in the figure in circled box when returning the Locking Pin.

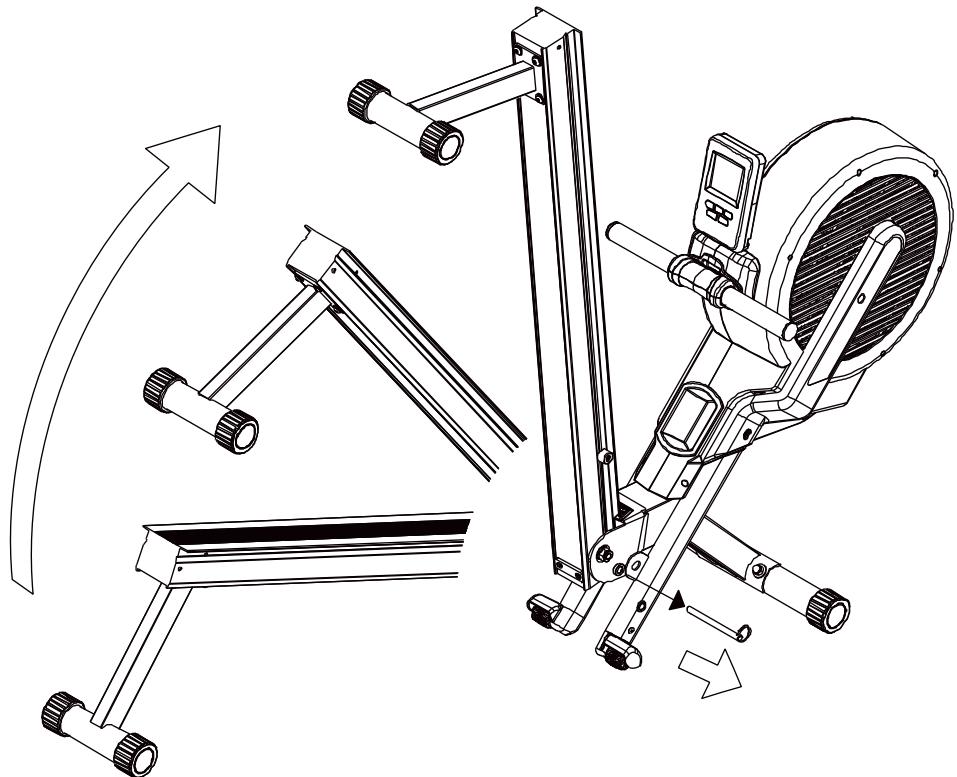


## Folding

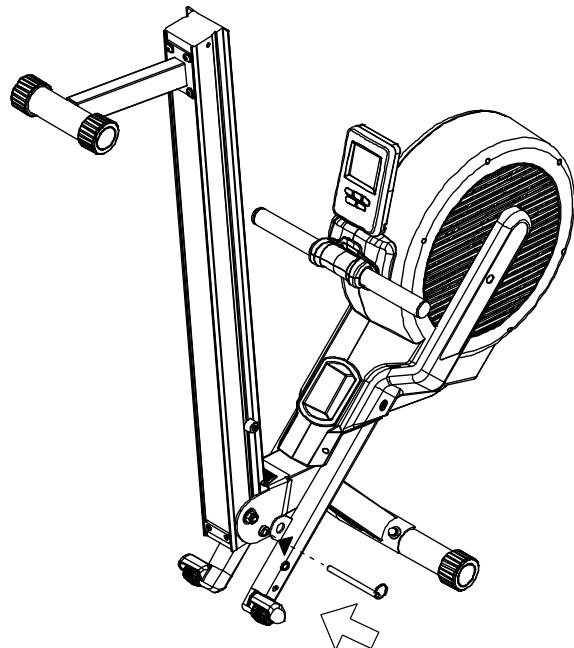
1. To fold it up, slide the seat to the front end and be careful not to pinch your fingers.
  2. Pull out the safety locking pin and fold the rail.
- When pulling out, please pull up the mainframe (as shown by the arrowhead)
3. Return the safety locking pin in its position (Attention: keep the rail in balance to prevent from tipping).



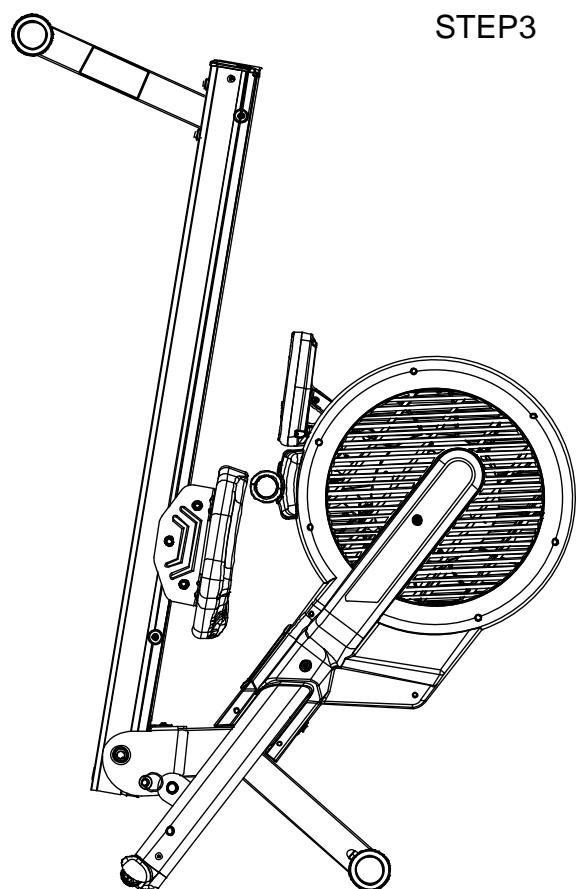
**STEP2**



**STEP3**

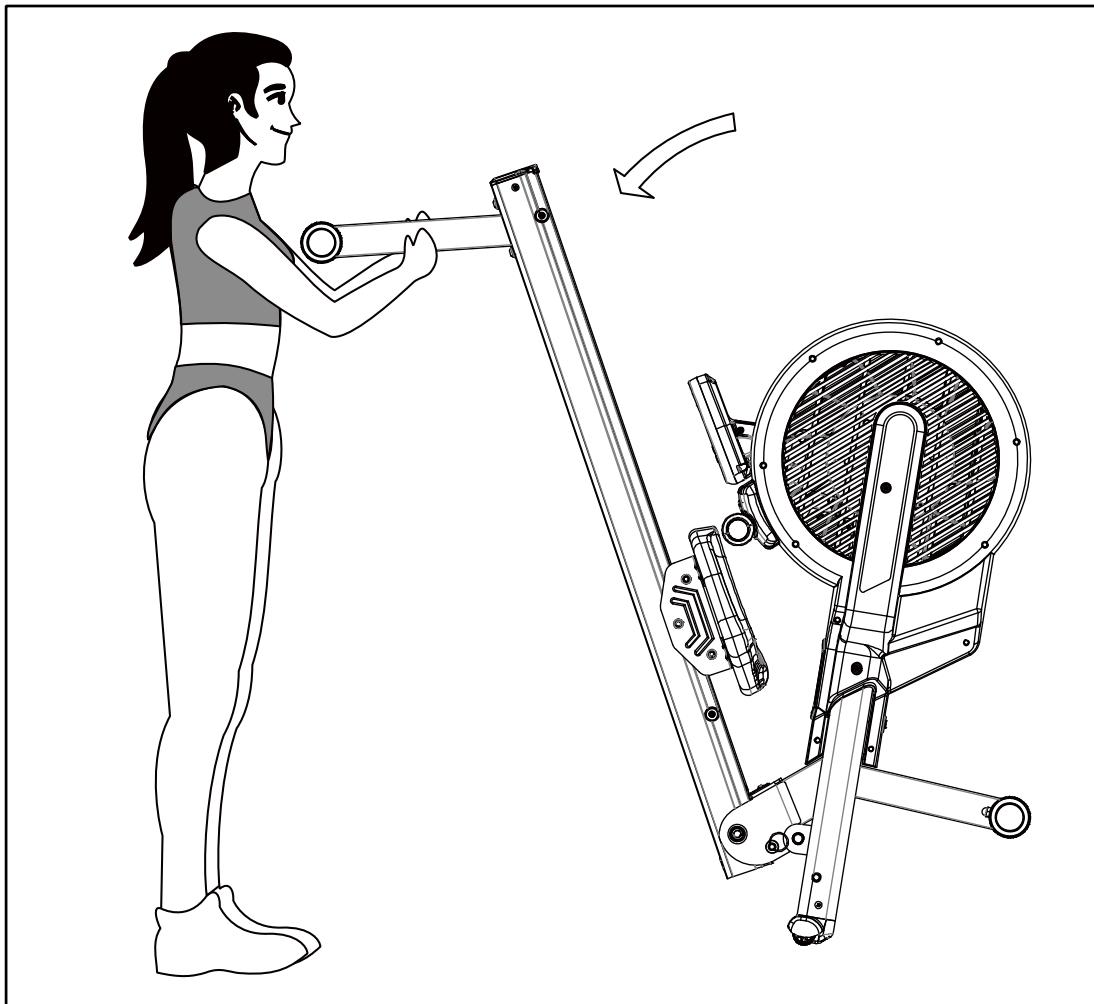


**STEP3**



## Transport

1. To move the rower, keep both hands in balance and lean the machine backward to push and move slowly.



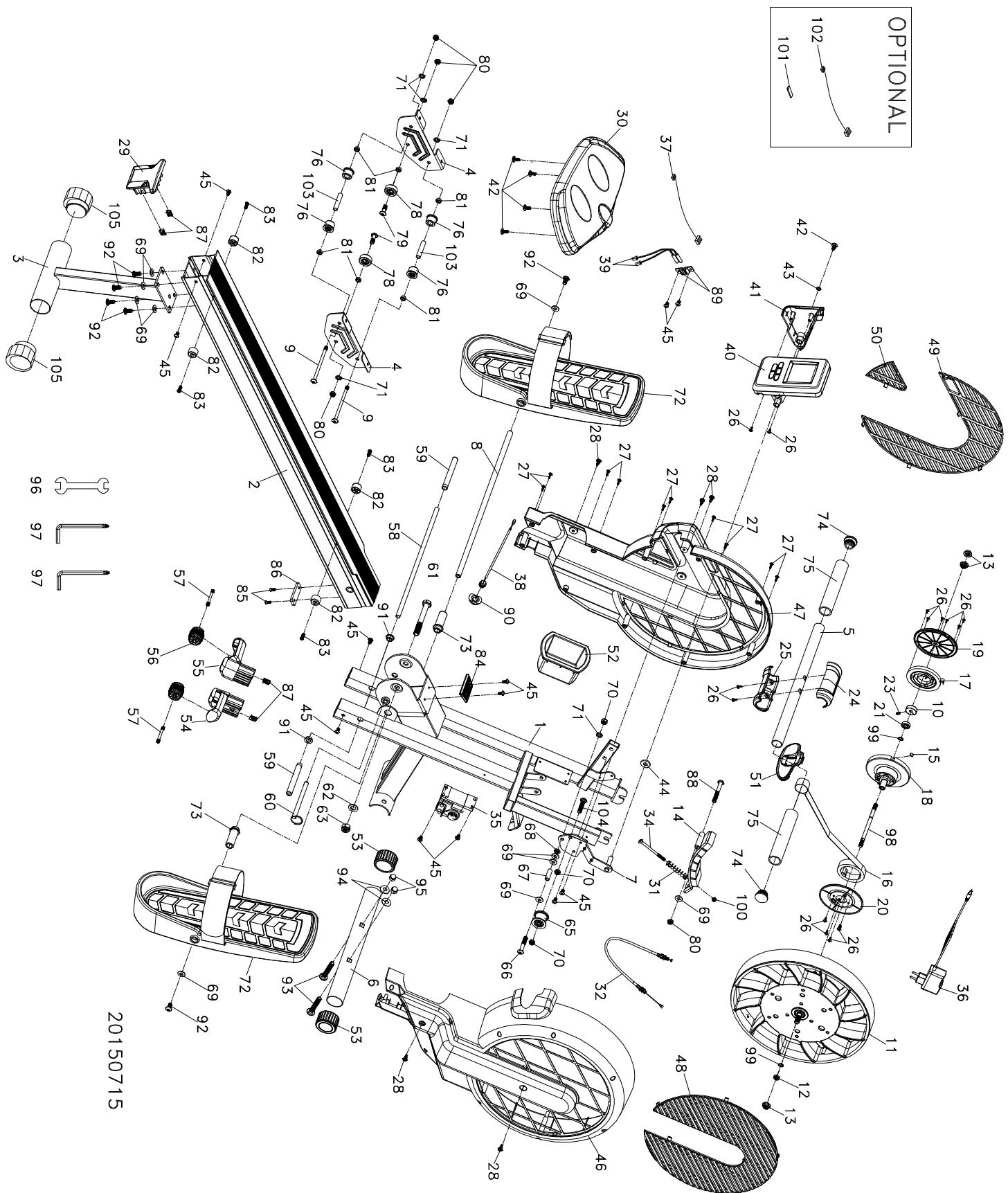
# General Maintenance and Troubleshooting

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 rails being dirty.
  - ii. Dirt build-up on the 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.

## Rower Noises

Your new rower is engineered and manufactured to the strictest industry standards and tolerances. All rowers, 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 rower will not be completely silent.

# Exploded View Diagram



# Parts List

KEY NO.	PART NO.	Description	Q'TY
1	5340001	Main Frame	1
2	5340002	Aluminum Track	1
3	5340003	Rear Stabilizer	1
4	5340004	Seat Attaching Board	2
5	5340005	Handlebar	1
6	5340006	Front Stabilizer	1
7	5340007	Console Bracket	1
8	5340008	Pedal Axle	1
9	5340009	5/16" x 130L_Button Head Socket Bolt	2
10	5340010	Aluminum Nut	1
11	5340011	Concrete Flywheel	1
12	5340012	3/8" x UNF26 x 4T_Luck Nut	1
13	5340013	3/8" x UNF26 x 7T_Nut	3
14	5340014	Flywheel Magnets Mounting Plate	1
15	5340015	Magnet	1
16	5340016	Ribbon Roll	1
17	5340017	Metal Spring	1
18	5340018	Spring Seat	1
19	5340019	Spring Cover	1
20	5340020	Roll Base	1
21	5340021	6200_Bearing	1
23	5340023	M5 x 12mm_Slotted Set Screw	1
24	5340024	Handlebar Cover(Upper)	1
25	5340025	Handlebar Cover(Lower)	1
26	5340026	Ø3.5 x 12mm_Sheet Metal Screw	14
27	5340027	Ø3.5 x 16mm_Sheet Metal Screw	10
28	5340028	Ø5 x 16mm_Tapping Screw	5
29	5340029	Plastic End Cover	1
30	5340030	Seat	1
31	5340031	Spring	1
32	5340032	Steel Cable(250L)	1
34	5340034	M5 x 75mm_Phillips Head Screw	1
35	5340035	Gear Motor	1
36	5340036	Power Adaptor	1
37	5340037	600m/m_Computer Cable	1
38	5340038	400m/m_Power Cord	1
39	5340039	250m/m_Sensor W/Cable	2
40	5340040	Console Assembly	1
41	5340041	Console Bracket	1
42	5340042	M6 x 10mm_Phillips Head Screw	5
43	5340043	Ø6 x Ø11_Star Washer	1
44	5340044	Ø10 x Ø24 x 3T_Nylon Washer	1
45	5340045	M5 x 12mm_Phillips Head Screw	12
46	5340046	Chain Cover (R)	1

KEY NO.	PART NO.	Description	Q'TY
47	5340047	Chain Cover (L)	1
48	5340048	Chain Cover Plate (R)	1
49	5340049	Chain Cover Plate (L)(A)	1
50	5340050	Chain Cover Plate (L)(B)	1
51	5340051	Roll Cap	1
52	5340052	Rack	1
53	5340053	Round End Cap	2
54	5340054	Wheel Cover (R)	1
55	5340055	Wheel Cover (L)	1
56	5340056	Ø6.5 x Ø33.5 x 35.5T_Transportation Wheel	2
57	5340057	Ø5 x 50L_Wheel Shaft	2
58	5340058	Ø10 x 370L_Pedal Stopper Shaft	1
59	5340059	Lever Sleeve	2
60	5340060	Locking Pin (Ø10x120L)	1
61	5340061	M12 x P1.5 x 100L_Hex Head Bolt	1
62	5340062	Ø13 x Ø23 x 2T_Flat Washer	1
63	5340063	M12 x 12T_Nyloc Nut	1
65	5340065	Ø8 x Ø35 x 27T_Ribbon Pulley	1
66	5340066	M8 x 50L_Button Head Socket Bolt	1
67	5340067	Ø8 x Ø10 x 30L_Nylon Sleeve	1
68	5340068	M8 x 4T_Nut	1
69	5340069	5/16" x 18mm x 1.5T_Flat Washer	10
70	5340070	M8 x 8T_Nyloc Nut	3
71	5340071	5/16" x 1.5T_Spring Washer	5
72	5340072	Pedal (L.R)	1
73	5340073	Ø13_Axle Bushing	2
74	5340074	Ø1" x 1.5T_Button Head Plug	2
75	5340075	Ø1" x 160 x 3T_Handgrip Foam	2
76	5340076	Aluminum Wheel	4
78	5340078	Ø30 x Ø8 x 11.5T_Wheel	2
79	5340079	5/16" x 1"_Button Head Socket Bolt	2
80	5340080	5/16" x 6T_Nyloc Nut	5
81	5340081	Ø8.2 x Ø12.7 x 5T_Sleeve	6
82	5340082	Ø4.8 x Ø22 x 14.5T_Rubber Stopper	4
83	5340083	M5 x 15L_Phillips Head Screw	4
84	5340084	Protective Cap	1
85	5340085	M5 x 12mm_Flat Head Socket Screw	2
86	5340086	Back Plate	1
87	5340087	Clip	4
88	5340088	5/16" x 2-1/2"_Hex Head Bolt	1
89	5340089	Sensor Rack	2
90	5340090	Power Socket	1
91	5340091	Ø10.2_Axle Bushing	2
92	5340092	5/16" x 5/8"_Button Head Socket Bolt	6
93	5340093	3/8" x 2-1/2"_Carriage Bolt	2
94	5340094	3/8" x 23 x 1.5T_Curved Washer	2
95	5340095	3/8" x 12.5T_Cap Nut	2

<b>KEY NO.</b>	<b>PART NO.</b>	<b>Description</b>	<b>Q'TY</b>
<b>96</b>	5340096	12/14m/m_Wrench	1
<b>97</b>	5340097	Combination M5 Allen Wrench & Phillips Head Screw	2
<b>98</b>	5340098	Fan Axle	1
<b>99</b>	5340099	C Ring	2
<b>100</b>	53400100	M5 × 5T_Nyloc Nut	1
<b>101</b>	53400101	Receiver, HR(Optional)	1
<b>102</b>	53400102	800m/m_Receiver Connecting Cable (Optional)	1
<b>103</b>	53400103	Ø8.1 × Ø12 × 90L_Sleeve	2
<b>104</b>	53400104	M8 × 50L_Button Head Socket Bolt	1
<b>105</b>	53400105-1	Stabilizer Plug	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 ( $\text{MV}_{\text{O}2}$ ). 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  $\text{MVO}_2$  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 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.

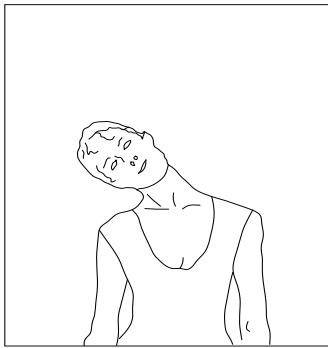
The rest period required between strength training exercises may vary from person to person. This will depend mostly on your level of fitness and the program you have chosen. Rest between exercises by all means, but do not allow this to exceed two minutes. Most people manage with half minute to one minute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

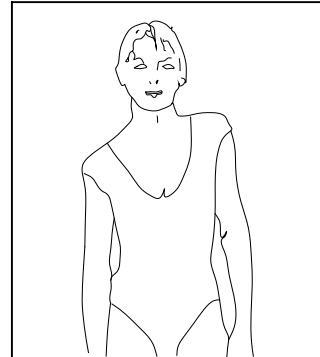
### **HEAD ROLLS**

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.



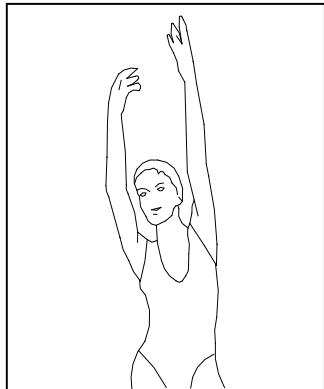
### **SHOULDER LIFTS**

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.



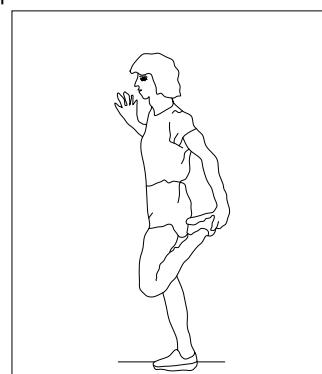
### **SIDE STRETCHES**

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.



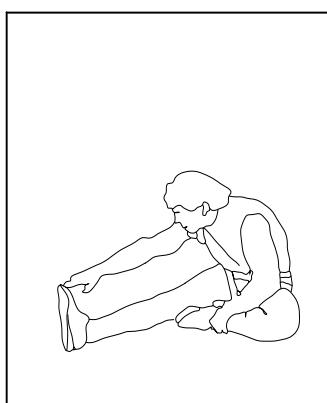
### INNER THIGH STRETCH

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.



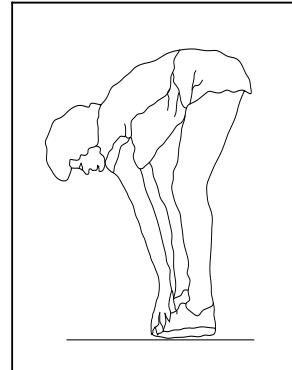
### HAMSTRING STRETCHES

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.



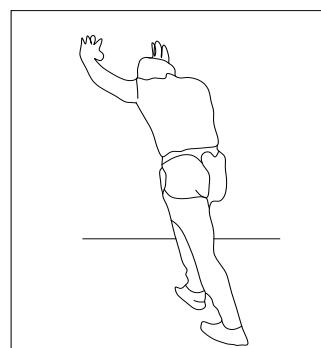
### TOUCHES

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.



### 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.





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