



## OWNER'S MANUAL

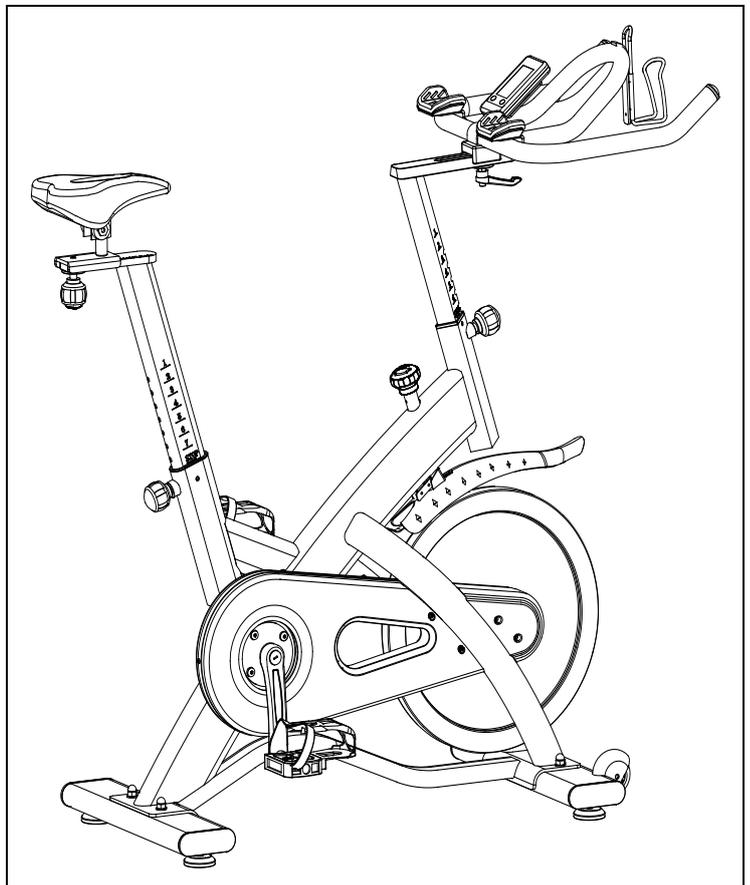
Model No.  
16205970900-1  
M90 Indoor Cycle

- *Assembly*
- *Operation*
- *Exercise*
- *Parts*
- *Warranty*

### **CAUTION:**

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

## *Indoor Cycle Trainer*



**RETAIN FOR FUTURE REFERENCE**

Dyaco Canada Inc. 5955 DON MURIE STREET, NIAGARA FALLS, ONTARIO L2G 0A9

# MANUFACTURE'S LIMITED WARRANTY

Your **EVERLAST** Indoor Cycle Trainer is warranted for one year from the date of purchase against defects in material when used for the purpose intended, under normal conditions and provided it receives proper care. Any part found defective or missing will be sent at no cost when returned in accordance with the terms of this warranty.

Frame: 2 years  
Parts: 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 Indoor Cycle, shown in figure can be ordered from Dyaco Canada Inc. 5955 DON MURIE STREET, NIAGARA FALLS, ONTARIO L2G 0A9. 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) or 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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Customer Service 1-888-707-1880  
Or email [customerservice@dyaco.ca](mailto:customerservice@dyaco.ca)

## 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 exercise cycle and follow it carefully before using your cycle.
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 cycle. 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 cycle
4. The cycle 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 bicycle 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 device. 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 cycle.
13. Always hold the handlebars when mounting, dismounting or using the cycle. When you stop exercising, allow pedals to slowly come to a complete stop before dismounting.
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 330 lbs (150KG).
16. Tie all long hair back.
17. Remove all personal jewelry before exercising.
18. After eating, allow 1-2 hours before exercising as this will help to prevent muscle strain.
19. Injuries may result from incorrect or excessive training and using the equipment otherwise than as directed or recommended by your doctor.
20. The decal shown below has been placed on the exercise cycle. If the decal is missing, or if it is not legible, please call the toll-free telephone number and order a free replacement decal. Apply the decal in the location shown.
21. The exercise cycle does not free-wheel. Spinning pedals can cause injury. Pedal speed should be reduced in a controller manner.



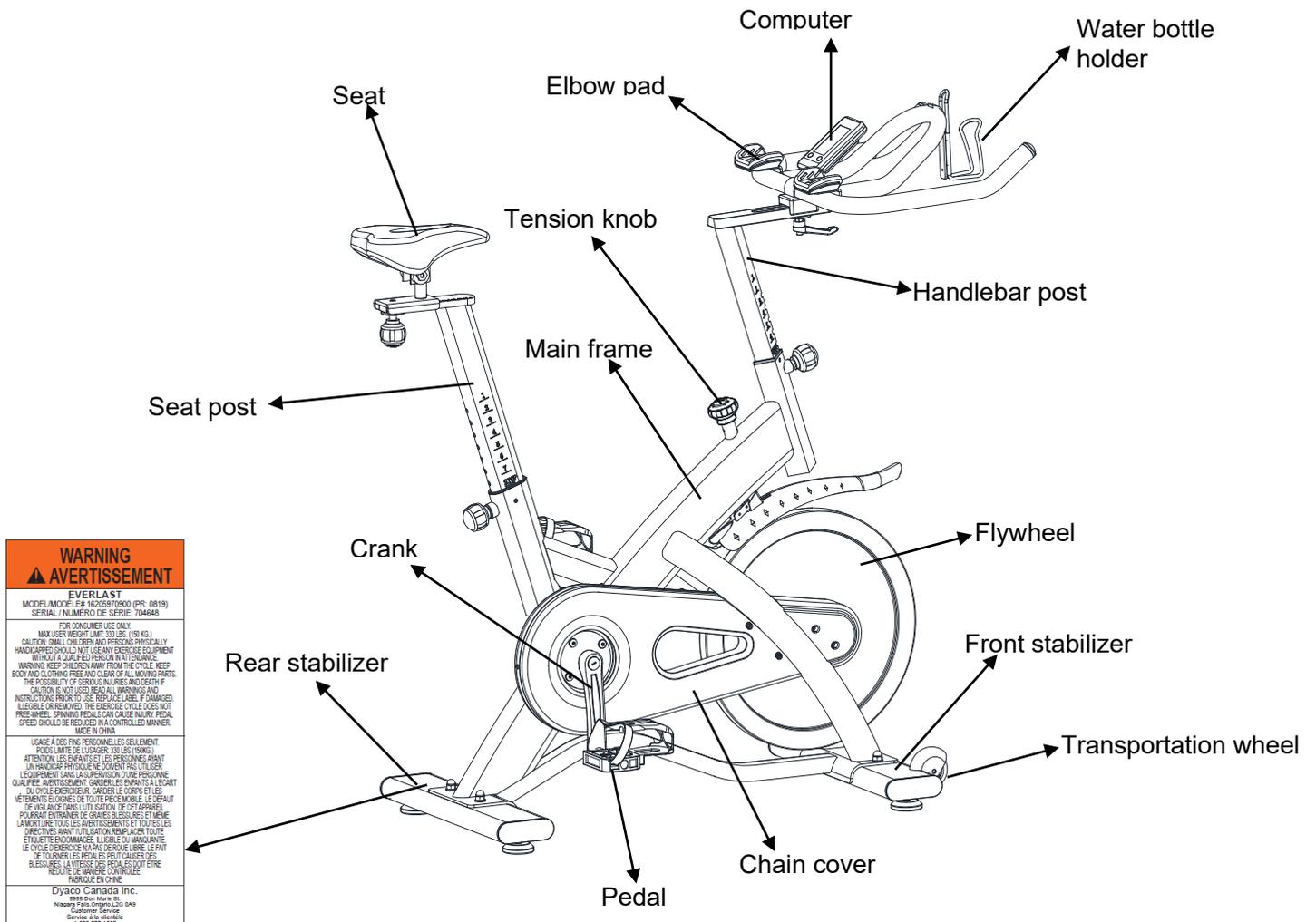
**WARNING: Before beginning any exercise program consult your physician. This is especially important for individuals over the age of 35 or persons with pre-existing health problems. Read all instructions before using any fitness equipment. We assume no responsibility from personal injury or property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

***SAVE THESE INSTRUCTIONS***

## BEFORE YOU BEGIN

Thank you for selecting the revolutionary Everlast exercise bike. Cycling is an effective exercise for increasing cardiovascular fitness, building endurance, and toning the body. The exercise bike provides an impressive selection of features designed to make your workouts at home more effective and enjoyable.

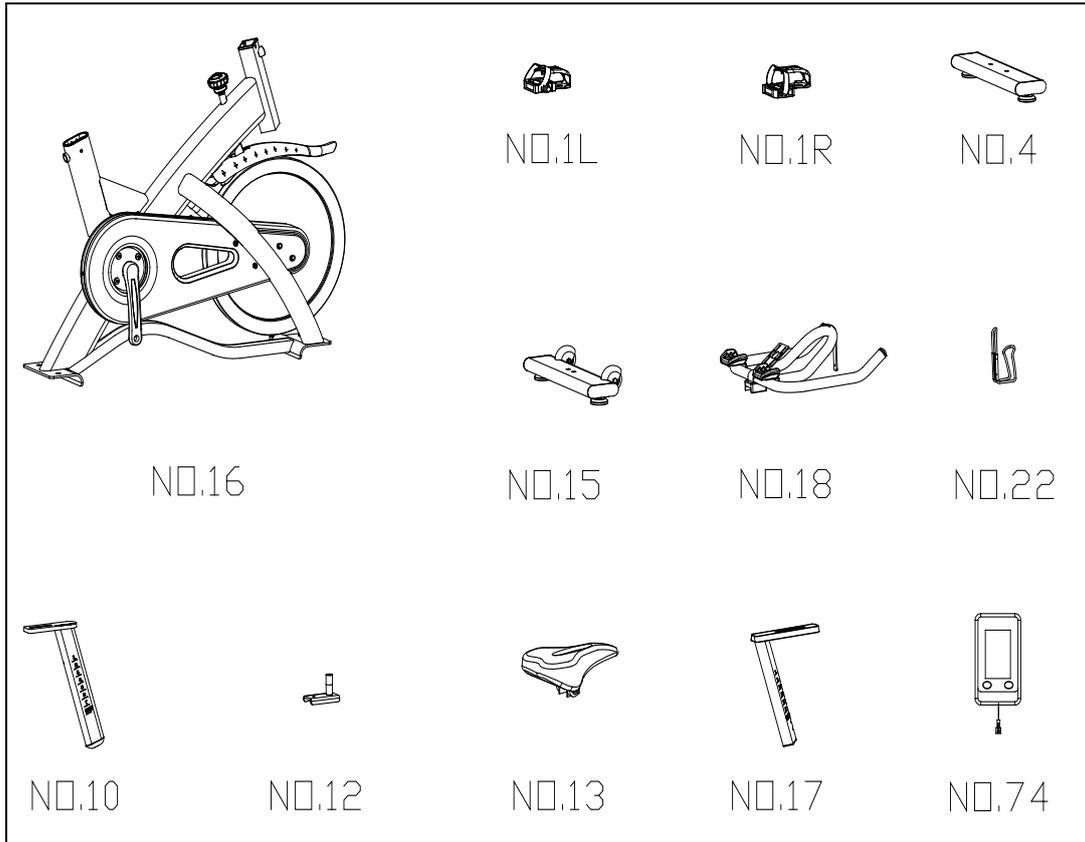
**For your benefit, read this manual carefully before you use the exercise bike.** If you have questions after reading this manual, please see the front cover of this manual. To help us assist you note the product model number and serial number before contacting us. The model number and the location of the serial number decal are shown on the front cover of this manual. Before reading further, please familiarize yourself with the parts that are labeled in the drawing below.



WARNING AVERTISSEMENT
<p><b>EVERLAST</b> MODEL/MODELE# 1620870900 (P/R: 0819) SERIAL/NUMERO DE SERIE: 104644</p> <p>FOR CONSUMER USE ONLY MAX USER WEIGHT LIMIT: 330 LBS (150 KG) CAUTION: SMALL CHILDREN AND PERSONS PHYSICALLY HANDICAPPED SHOULD NOT USE ANY EXERCISE EQUIPMENT WITHOUT A QUALIFIED PERSON IN ATTENDING. WARNING: KEEP CHILDREN AWAY FROM THE CYCLE. KEEP BODY AND CLOTHING FREE AND CLEAR OF ALL MOVING PARTS. THE POSSIBILITY OF SERIOUS INJURY AND DEATH. CAUTION: DO NOT USE RECALL WARNINGS AND INSTRUCTIONS PRIOR TO USE. REPLACE LABEL IF DAMAGED, ILLEGIBLE OR REMOVED. THE EXERCISE CYCLE DOES NOT FREE-WHEEL. SPINNING PEDALS CAN CAUSE FLUOR PEDAL SPEED SHOULD BE REDUCED IN A CONTROLLED MANNER. MADE IN CHINA</p> <p>USAGE A DES FINS PERSONNELLES SEULEMENT POUR LIMITE DE L'USAGER: 330 LBS (150 KG) ATTENTION: LES ENFANTS ET LES PERSONNES AYANT UN HANDICAP PHYSIQUE NE DOIVENT PAS UTILISER L'EQUIPEMENT DANS LA SUPERVISION D'UNE PERSONNE QUALIFIEE. AVERTISSEMENT: GARDER LES ENFANTS A L'ECART DU CYCLE EXERCISEUR. GARDER LE CORPS ET LES VETEMENTS ELOIGNES DE TOUTE PIECE MOBILE. LE RISQUE DE VIGILANCE DANS L'UTILISATION DE CET APPAREIL. POUR VIGILANCE DANS L'UTILISATION DE CET APPAREIL, LA MORTURE TOUTS LES AVERTISSEMENTS ET TOUTES LES ETIQUETTES ENDOMMAGEES, ILLEGIBLES OU MANQUANTES. LE CYCLE EXERCISEUR NE PAS DE LIBRE WHEEL. LE FAIT DE TOURNER LES PEDALES PEUT CAUSER DES BLESSURES. LA VITESSE DES PEDALES DOIT ETRE REDUITE DE MANIERE CONTROLÉE.</p> <p>FABRIQUE EN CHINE Dyaco Canada Inc. 8951 Des Marais St. Newport News, Canada L4S 1A5 Customer Service Service à la clientèle 1-888-707-1880</p>

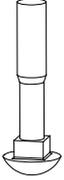
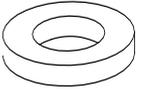
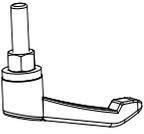
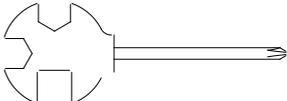
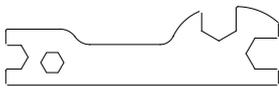
The decal shown above has been placed on the indoor cycle trainer. If the decal is missing or illegible, please call our Customer Service Department toll-free at 1-888-707-1880 to order a replacement decal.

## PRE-ASSEMBLY CHECK LIST



PART NO.	DESCRIPTION	Q'TY
1L	Left pedal	1
1R	Right pedal	1
4	Rear stabilizer	1
10	Seat post	1
12	Sliding tube	1
13	Seat	1
15	Front stabilizer	1
16	Main frame	1
17	Handlebar post	1
18	Handlebar	1
22	Water bottle holder	1
74	Computer	1

## HARDWARE PACKING LIST

Part NO	Description	Q'ty	Drawings	
3	Carriage bolt M10*55	4		
5	Flat washer $\phi$ 10	4		
6	Domed nut M10	4		
19	L type lock knob	1		
20	Flat washer $\phi$ 45* $\phi$ 10.5*4	2		
25	Ball head quick release knob	2		
26	Ball head lock knob	1		
84	Cross head spanner	1		
85	Universal Tool	1		

**Above described parts are all the parts you need to assemble this machine. Before you start to assemble, please check the hardware packing to make sure they are included.**

# 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.

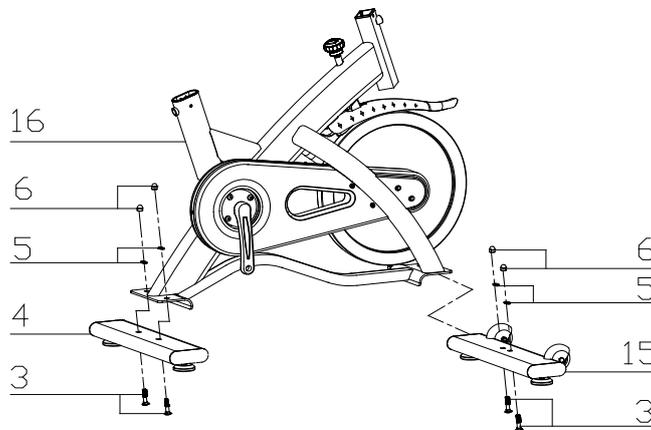
Set all parts in a clear area on the floor and remove the packing material. Refer to the parts list for help to identify the parts.

It will take two people to assemble your unit.

**ENSURE THAT ALL NUTS AND BOLTS ARE FIRMLY TIGHTENED AFTER EACH STEP**

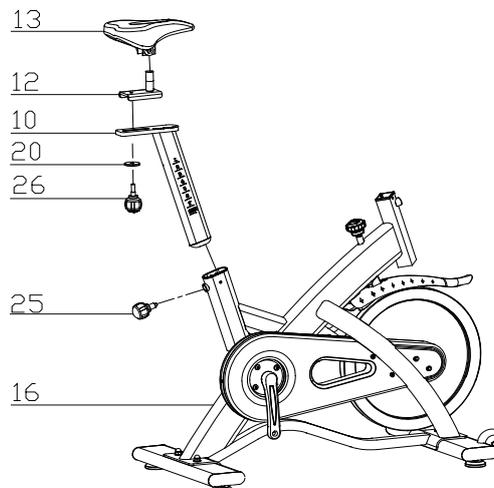
## STEP 1

1. Attach the front stabilizer (15) to the main frame (16). Secure using two carriage bolts (3), two flat washers (5) and two domed nuts (6).
2. Attach the rear stabilizer (4) to the main frame (16). Secure using two carriage bolts (3), two flat washers (5) and two domed nuts (6).



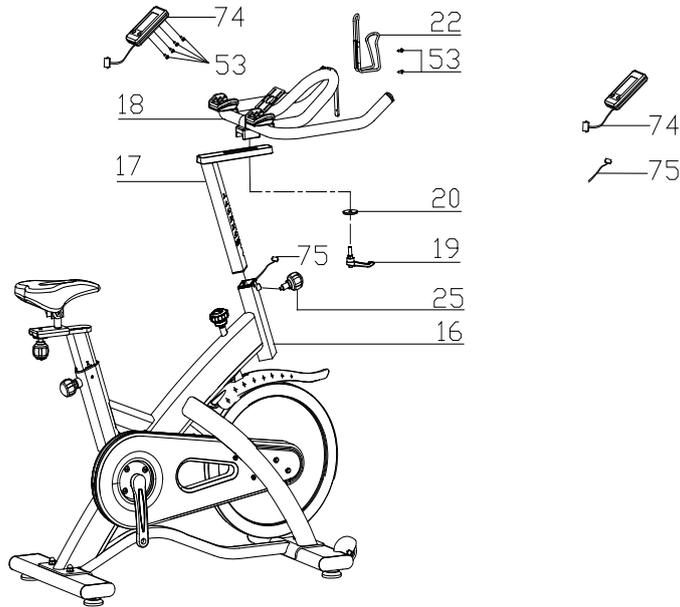
## STEP 2

1. Loosen the nuts from underneath the seat (13). Attach the seat (13) to sliding tube (12) and secure using the nut that you have previously loosened from the seat (13).
  2. Insert the sliding tube (12) into the seat post (10). Secure using a ball head lock knob (26) and flat washer (20).
  3. Insert the seat post (10) into the Main frame (16). Secure using a quick release knob (25).
- Note: The seat can be horizontally and vertically adjustable after your cycle is fully assembled.



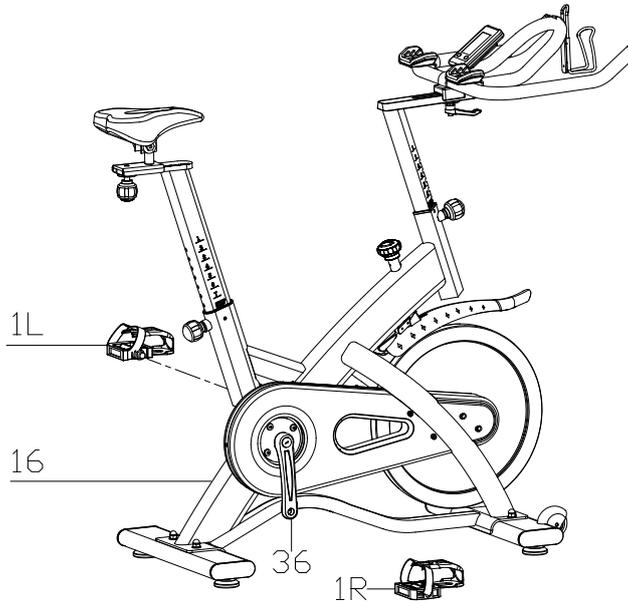
### STEP 3

1. Insert the handlebar post (17) to the main frame (16). Secure using a quick release knob (25).
  2. Attach the handlebar (18) to the handlebar post (17). Secure using L lock knob (19) and flat washer (20).
  3. Attach computer (74) onto the computer bracket and secure using 4 screws (53) which are pre-assembled on the computer (74). Attach sensor wire (75) to monitor (74).
  4. Attach the water bottle holder (22) to the handlebar (18) using 2 screws (53). (if applicable)
- Note:** The handlebar post can be horizontally and vertically adjustable after your cycle is fully assembled.



### STEP 4

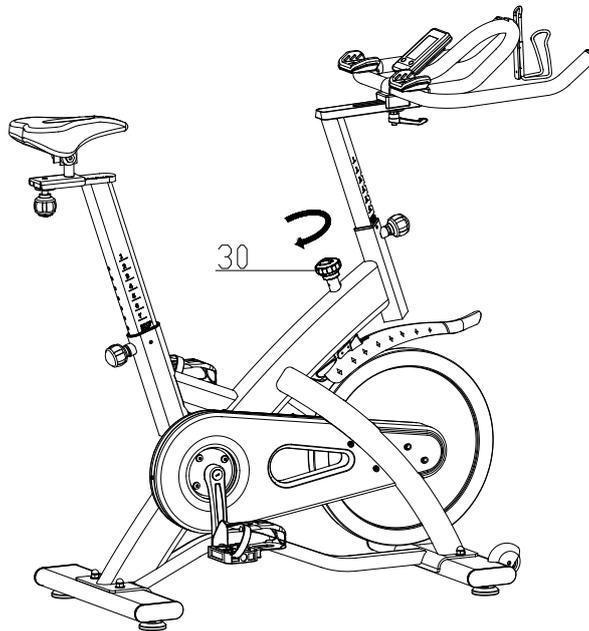
- Attach the left pedal (1L) to the left crank (33).  
Attach the right pedal (1R) to the right crank (36).  
Note: The right pedal should be threaded on clockwise and the left pedal on counter-clockwise.



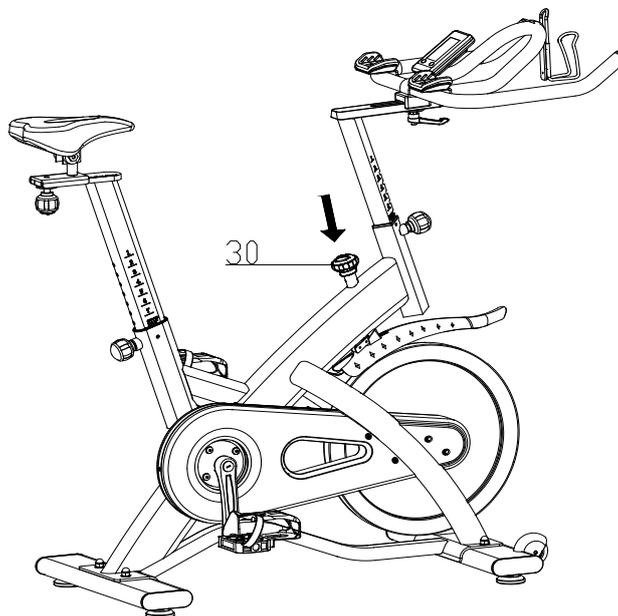
**YOUR UNIT IS NOW FULLY ASSEMBLED**

## ADJUSTING THE TENSION

1. Turn the tension knob (30) clockwise to increase the tension.
2. Turn the tension knob (30) counter-clockwise to decrease the tension.



**IMPORTANT:** Press the tension knob (30) to stop the flywheel.



**Note:** If the unit is wobbly use the leveling pads on the front and rear stabilizers to level the unit.

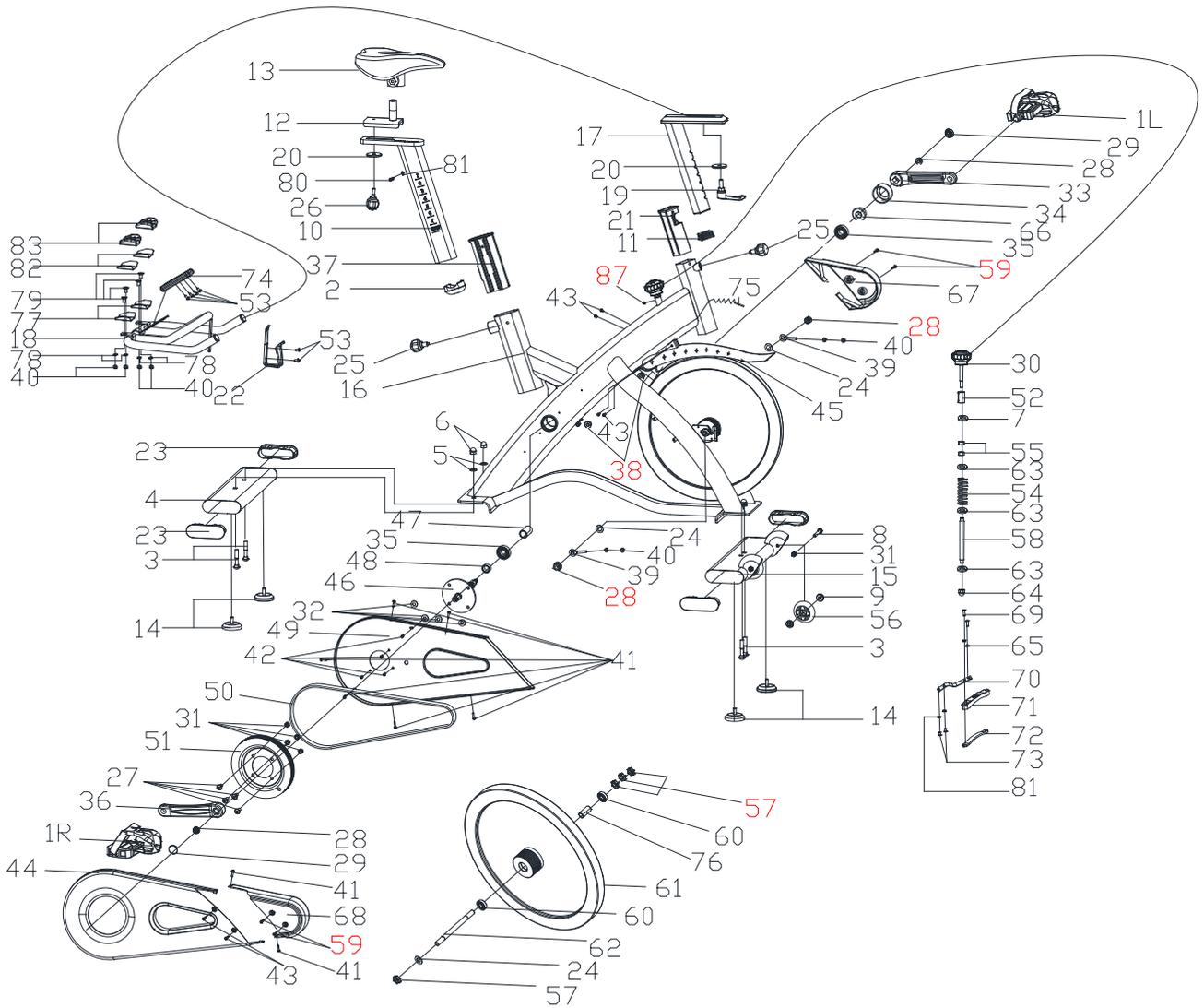
## PARTS LIST

No.	Part No.	Description	Qty
1L	9709001L	Left pedal	1
1R	9709001R	Right pedal	1
2	9709002	End cap 70*30	1
3	9709003	Carriage bolt M10*55	4
4	9709004	Rear stabilizer	1
5	9709005	Flat washer $\phi$ 10	4
6	9709006	Domed nut M10	4
7	9709007	Washer M10	1
8	9709008	Hex head bolt M8*40	2
9	9709009	Bearing 608ZZ	4
10	9709010	Seat Post	1
11	9709011	Inner end cap 38*38	1
12	9709012	Sliding tube	1
13	9709013	Seat	1
14	9709014	Leveling pad	4
15	9709015	Front stabilizer	1
16	9709016	Main frame	1
17	9709017	Handlebar post	1
18	9709018	Handlebar	1
19	9709019	L type lock knob	1
20	9709020	Flat washer $\phi$ 45* $\phi$ 10.5*4	2
21	9709021	Plastic spacer for handlebar post	1
22	9709022	Water bottle holder	1
23	9709023	End cap for stabilizer	4
24	9709024	Flat Washer $\phi$ 12	3
25	9709025	Ball head quick release knob	2
26	9709026	Ball head lock knob	1
27	9709027	Allen screw M8*16	4
28	9709028	Flange nut M12	4
29	9709029	Crank end cap	2
30	9709030	Tension knob	1
31	9709031	Nut M8	6
32	9709032	Small plastic bushing	4
33	9709033	Left crank	1
34	9709034	Crank cover	1
35	9709035	Bearing 6004ZZ	2
36	9709036	Right crank	1
37	9709037	Plastic spacer for seat post	1
38-1	9709038-1	End cap $\phi$ 14	2
39	9709039	Eye bolt M6*58	2
40	9709040	Hex head nut M6	8
41	9709041	Self-tapping screw 1	8
42	9709042	Self-tapping screw 2	4
43	9709043	Self-tapping screw 3	6

## PARTS LIST

No.	Part No.	Description	Qty
44	9709044	Chain cover	1
45	9709045	Flywheel cover	1
46	9709046	Axle for crank	1
47	9709047	Long bushing for crank	1
48	9709048	Short bushing for crank	1
49	9709049	Inner chain cover	1
50	9709050	Belt	1
51	9709051	Belt pulley	1
52	9709052	Tension knob fixing bushing	1
53	9709053	Screw M5*10	6
54	9709054	Spring $\phi$ 18	1
55	9709055	Nut M10	2
56	9709056	Transportation wheel	2
57	9709057	Hex head nut M12	4
58	9709058	Screw rod	1
59-1	9709059-1	Screw M5*18	4
60	9709060	Bearing 6001ZZ	2
61	9709061	Flywheel	1
62	9709062	Axle for flywheel	1
63	9709063	Flat washer $\phi$ 20* $\phi$ 14*2.0	3
64	9709064	Domed nut M10	1
65	9709065	Flat washer $\phi$ 6	2
66	9709066	Hex head nut M20	1
67	9709067	Left flywheel cover	1
68	9709068	Right flywheel cover	1
69	9709069	Allen screw M6*12	2
70	9709070	Adjusting metal	1
71	9709071	Brake pad holder	1
72	9709072	Brake pad	1
73	9709073	Hex head bolt M5*10	2
74	9709074	Computer ST-6561	1
75	9709075	Sensor wire	1
76	9709076	Spacer for Flywheel	1
77	9709077	Elbow pad support holder	2
78	9709078	Flat washer $\phi$ 8	4
79	9709079	Screw M6*18	4
80	9709080	Allen screw ST4.8*13	1
81	9709081	Spring washer	3
82	9709082	Elbow pad	2
83	9709083	Velcro for elbow pad	2
84	9709084	Cross head spanner	1
85	9709085	Universal Tool	1
86	9709086	Chest Strap	1
87	9709087	Bolt M6*6	1

# DIAGRAM



# MONITOR INSTRUCTIONS



## FUNCTION BUTTONS

- MODE/ RESET:** Press to select functions between: time, distance, pulse and calorie.  
Press and hold for 2 seconds to reset all values to zero
- SET:** Press to preset the target value of time, distance, pulse and calorie.

## Function:

- RPM:** Displays the rotation per minute
- Time:** Shows your elapsed workout time up to 99:59  
Counts down from your preset target time to 00:00 during your workout
- Calorie:** Displays the cumulative calories burned at any given time during your workout up to 999 cal.  
Counts down from your preset target calorie to 0 cal.  
Note: This is a rough guide used for comparison of different exercise sessions, which cannot be used for medical purposes.
- Pulse:** The monitor will display the user's current heart rate in beats per minute during the workout. Chest strap must be worn to display heart rate.  
Preset target heart rate can be set, pulse value reaches the target heart rate, the console will beep.
- Speed:** Displays the current speed up to 99.9 mph.
- Distance:** Displays the cumulative distance traveled during your workout up to 99.9 miles  
Counts down from your preset target time to 0.0 during your workout

## **Monitor Function:**

### **How to preset time, distance, calories and pulse**

1. Press the mode button until desired function is displayed.
2. Press the set until your desired number is displayed.
3. Press the mode button to accept value

The monitor will count down from your preset value once you start exercising.

The monitor will beep to indicate the completion of your preset value. Press any button to stop the beep and the monitor will now start to count up.

If more than one value is preset, the first to reach the value will sound the alarm. Once you have stopped the alarm the next preset value will sound the alarm until you have reached all preset values.

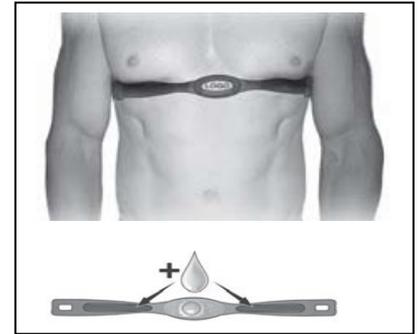
### **Remarks**

1. Monitor requires 3V CR2032 battery
2. The monitor will turn on automatically by pressing any key or when you start pedaling.
3. The monitor will turn off automatically if no signal is detected for four minutes.
4. If monitor is illegible or partial segments appear, remove batteries and wait 15 seconds to re-install.
5. Removing the battery will reset all values to zero.

## USING HEART RATE TRANSMITTER

How to wear your wireless chest strap transmitter:

1. Attach the transmitter to the elastic strap using the locking parts.
2. Adjust the strap as tightly as possible as long as the strap is not too tight to remain comfortable.
3. Position the transmitter with the SOLE 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 treadmill for Heart Rate unless a steady, solid Actual Heart Rate value is being displayed. High, wild, random numbers being displayed indicate a problem.

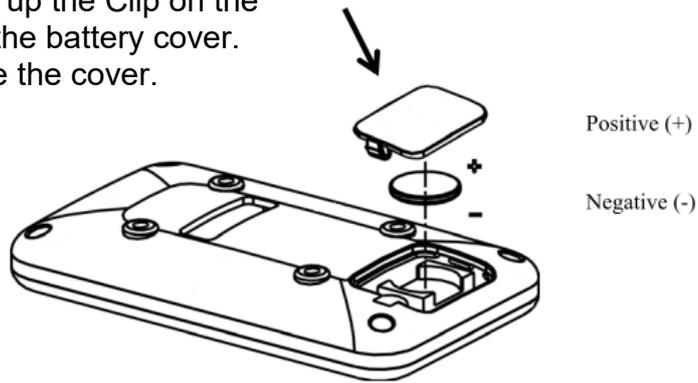
Areas to look for interference which may cause erratic heart rate:

1. Microwave ovens, TV's, small appliances, etc.
2. Fluorescent lights.
3. Some household security systems.
4. Perimeter fence for a pet.
5. 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.

If you continue to experience problems, contact Dyaco Canada

## Battery replacement instruction:

1. Holding up the Clip on the side of the battery cover.
2. Remove the cover.



3. Install a new CR2032 battery by tilting the battery slightly to its side and slide it in.(positive+ at upper side and negative- at down side)



4. For the battery change,please gently holding the clip on the side and the battery will pup up.



5. Put the battery cover back.

## TROUBLESHOOTING

Problem	Cause	Correction
Monitor does not display	Battery is weak or dead	Replace battery
No speed or distance displays on the monitor	Sending unit or sensor not connected	Securely plug sending unit or sensor into extension wire and at the back of the monitor
	Sending unit or sensor not working properly	Replace sending unit
	Monitor not working properly	Replace monitor
Squealing	Brake pads are worn	Replace the brake pads

### Maintenance

The safety of this product can be maintained only if regular periodic checks are made. Most checks can be performed once a week. However, some checks should be made before each workout, and are indicated as such below.

### Checks

- Be sure battery is new and electronic connection are clean and tight.
- Check that seat nuts are secure, check before each workout.
- Check that pedals are tight pedals can work loose over time.
- Check that stabilizer bolts are tight, check before each workout this.
- Check that handlebar is secure, if not, tighten, and check before each workout this.
- Should a part become defective, replace it immediately. Do not allow use of the equipment until it has been repaired.

### Cleaning

Almost all surfaces are washable. A damp cloth is sufficient to clean most surfaces of this unit. Be careful not to drip water on the monitor. A mild liquid soap may be added if needed.

**Always ensure battery is fresh and in correctly.**

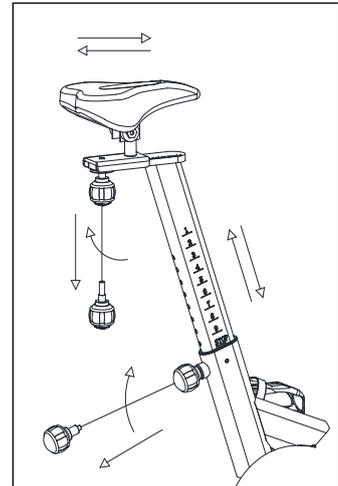
# USER DIRECTION

## HOW TO USE THE EXERCISE BIKE

### HOW TO ADJUST THE SEAT

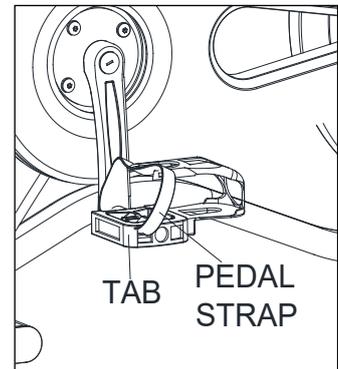
(1) To adjust the height of the seat, first loosen the quick release knob a few turns. Next pull the knob outward, slide the seat post upward or downward to the desired position and then retighten the knob. Do not pass the stop indicator on the post.

(2) To adjust the horizontal position of the seat, first you should release the quick release knob, then move the seat forward or backward to the desired position and then retighten the knob. Do not pass the stop indicator on the post.



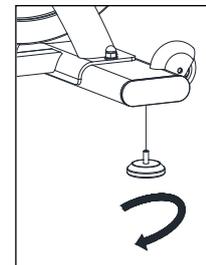
### HOW TO ADJUST THE PEDAL STRAPS

To adjust the pedal straps, first pull the ends of the straps off the tabs on the pedals. Adjust the straps to the desired position, and then press the ends of the straps onto the tabs.



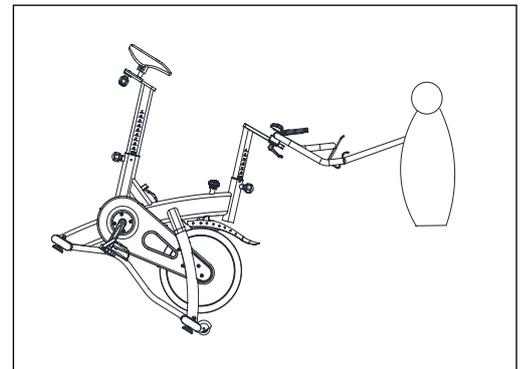
### HOW TO LEVEL THE EXERCISE BIKE

If the exercise bike rocks slightly on your floor during use, turn one or both of the leveling pads on the front or rear stabilizer and adjust the leveling pads until the rocking motion is eliminated.



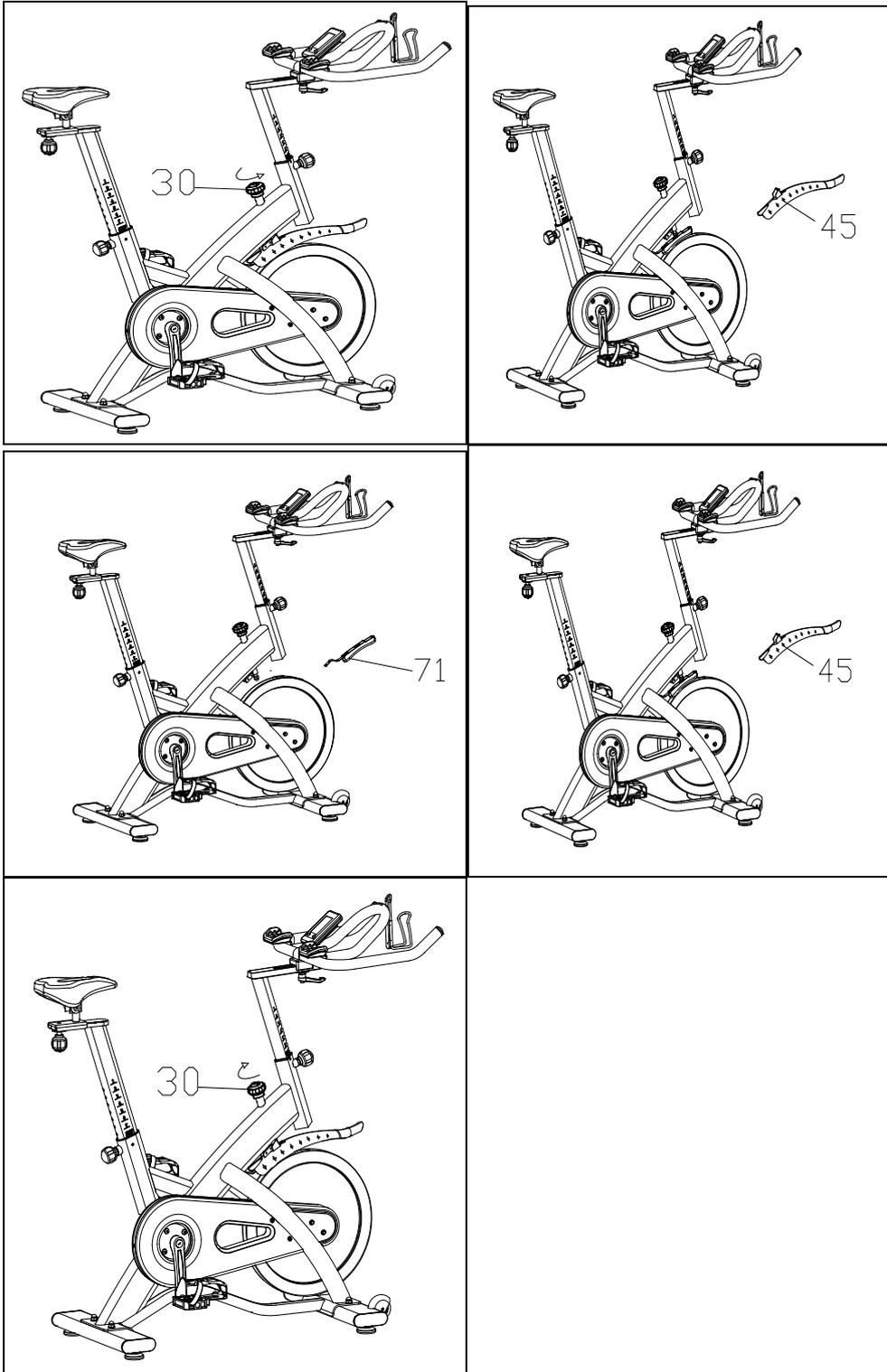
### HOW TO MOVE THE EXERCISE BIKE

To move the exercise bike, grasp the handlebar and carefully lift it until the exercise bike can be moved on the front wheels. Carefully move the exercise bike to the desired location and then lower it.



## HOW TO REPLACE THE BRAKE PADS

1. Turn the tension knob (30) counter-clockwise to decrease the tension.
2. Remove the flywheel cover (45).
3. To remove the brake assembly (70 & 71) remove the two hex head bolts (73) and two spring washers (81). Remove the brake pad (72) from the brake assembly and replace with new brake pad. Secure the brake assembly using the two hex head bolts (73) and two spring washers (81).
4. Re-attach the flywheel cover (45).
5. Turn the tension knob (30) clockwise to adjust the tension.



# 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 (MVo<sub>2</sub>)**. 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 MVO<sub>2</sub> 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

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### **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.

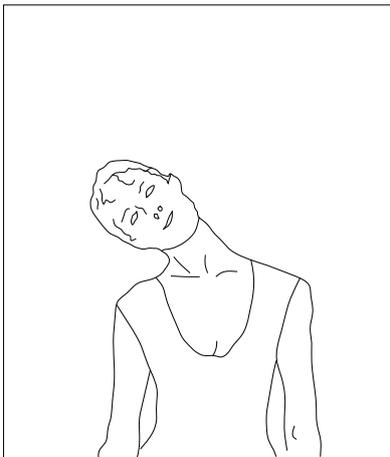
The rest period required between strength training exercises may vary from person to person. This will depend mostly on your level of fitness and the program you have chosen. Rest between exercises by all means, but do not allow this to exceed two minutes. Most people manage with half minute to one minute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

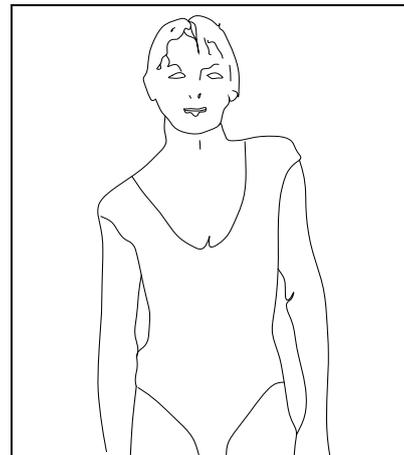
## HEAD ROLLS

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.



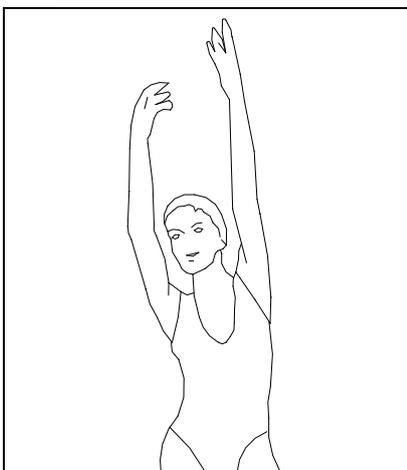
## SHOULDER LIFTS

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.



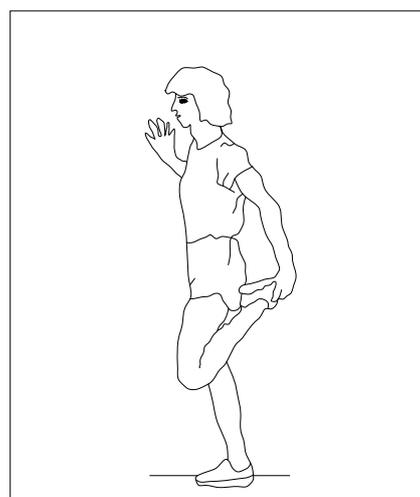
## SIDE STRETCHES

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.



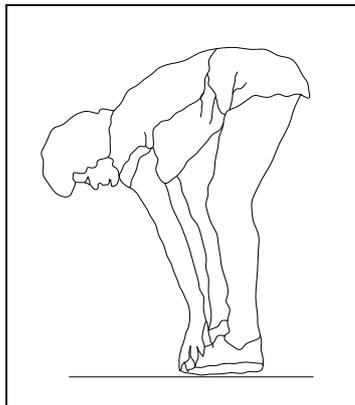
**INNER THIGH STRETCH**

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.



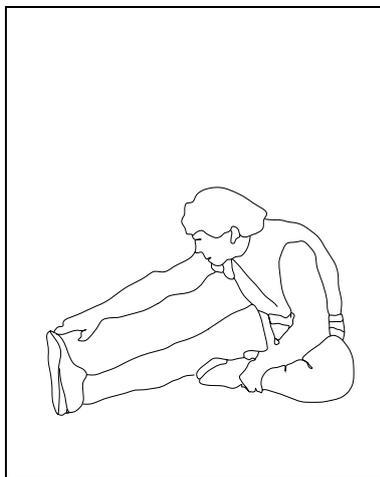
**TOE TOUCHES**

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 your toe 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 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.

