

E7

Elliptical

Display type:

LED

Service Manual



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INTRODUCTION

Dear Customer,

Thank you for selecting the Circle Fitness product. The E7 elliptical provides an impressive selection of features designed to make your workouts more effective and enjoyable.

For your benefit, read this manual carefully before you use the Product.

If you have questions after reading this manual, please contact us at the telephone and email addresses shown below. 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 the Product.



ALWAYS MOVING FORWARD

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Email: service@circlefitness.com

Website: <http://www.circlefitness.com/>

1.0 SAFETY INFORMATION

IMPORTANT: Please read all instructions and warnings before assembly and operation.

To assure the correct use of the product, basic safety measures should always be followed including the warnings and cautions listed in this Owner's Manual.

SAFETY SYMBOLS USED IN THIS SERVICE MANUAL	
WARNING	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
CAUTION	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury to the user or patient or damage to the equipment or other property.
DANGER	Indicates a high probability that death, severe bodily injury or major property damage could result.



IMPORTANT: It is essential that this equipment is only used indoors in a climate-controlled room.

WARNING: Only one person at a time should use this equipment. If dizziness, nausea, chest pains, or any other abnormal symptoms are experienced while using this equipment then please stop the workout at once.

WARNING: Always use this equipment on a clear and level surface. Do NOT use outdoors or near water.

WARNING: Do NOT drop or insert any object into any openings.

WARNING: Do NOT wear loose clothing or jewelry. This equipment has moving parts. Do NOT put fingers or other objects into the moving parts.

WARNING: Before using this equipment to exercise, always do stretching exercises first, to properly warm up.

WARNING: It is recommended to replace defective components immediately and keep the equipment out of use until repairs have been made by an approved technician.

WARNING: Always keep children under age 14 and pets away from the equipment.

WARNING: Please consult your physician before starting a workout or a training program. It is best to have your doctor review your training and diet programs first so that they can recommend the best workout routine for you.

WARNING: Make sure all screws and nuts are securely tightened before using this equipment. Periodic maintenance is required on all exercise equipment to keep it in good condition.

WARNING: Keep your back straight while using this equipment; do not arch your back.

1.1. Important Safety Notes

WARNING: Incorrect/excessive training can cause health injuries. Stop using the equipment when feeling uncomfortable.

WARNING: The heart rate sensor is not a medical device. Numerous factors, including the user's movement may affect the accuracy of the heart rate readings. The heart rate sensor is intended only as an exercise aid in determining heart rate trends in general.

WARNING: This equipment should not be used by any person weighing more than 400lbs. (182 kgs).

WARNING: Do not hold the handlebars or the console arms when mounting, dismounting, or using the equipment. Use the handlebars for stability only.

WARNING: Do not leave equipment unattended when plugged in. Turn all controls to OFF and unplug from outlet when not in use and before removing or replacing parts.

WARNING: Close supervision is necessary when the equipment is used by, on, or near children, invalids, or disabled persons.

WARNING: Use the equipment only for its intended use as described in this manual. Do not use attachments not recommended by the manufacturer.

WARNING: Never use the equipment if it has a damaged cord or plug, if it is not working properly, if it has been dropped or damaged, or has been dropped into water. Return the equipment to a service center for examination and repair.

WARNING: Do not carry the equipment by the supply cord or use the cord as a handle.

WARNING: Keep the cord away from heated surfaces.

WARNING: Never use the equipment with the air openings blocked. Keep the air openings free of lint, hair, and the like.

WARNING: Do not use where aerosol (spray) products are being used or where oxygen is being administered.

WARNING: Only connect the equipment to a properly grounded outlet. See Grounding Instructions.

WARNING: This equipment is intended for commercial use.

WARNING: Store the safety key in a secured location while not in use and keep away from children.

CAUTION: Ensure that the power cable is not pinched and that no-one can trip over it.

CAUTION: Never touch the moving belt with your hands. Also ensure that there are no objects close to the belt or the rollers which could be pulled into it thus causing injury or damaging the unit itself.

CAUTION: Repairs on the electrical components in the unit should be conducted by qualified technicians only.

DANGER: To reduce the risk of electric shock, always unplug this appliance from the electric outlet at once after using and before cleaning.

Waste Disposal

Products are recyclable. At the end of its useful life please dispose of this article correctly and safely (local refuse sites).



1.2 Serial Number Location and Specifications

1.2.1 The serial number has 10 characters. The location of the serial number is shown below.



1.3 Equipment Placement and Spacing

1.3.1 Location

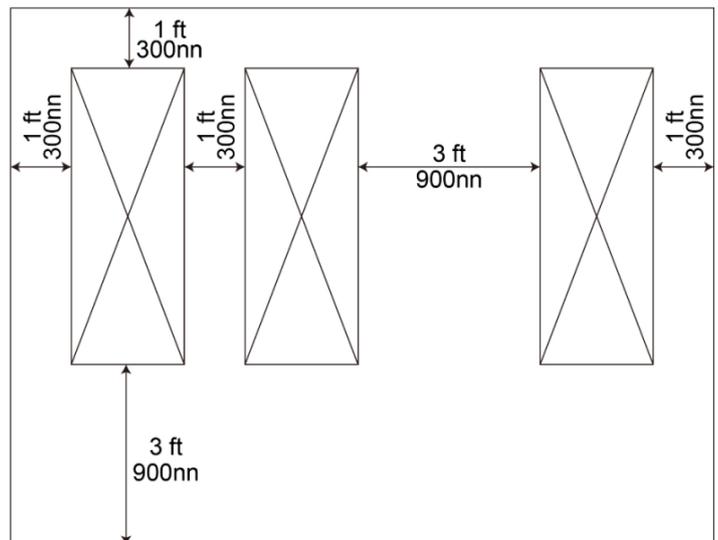
1.3.1.1 Before assembling the unit, verify the chosen site meets the following criteria:

- Area is well lit and well ventilated.
- Surface is structurally sound and properly leveled.
- Place in a location away from direct sunlight. The intense UV light can cause discoloration on the plastics.
- Locate your elliptical in an area with cool temperatures and low humidity.
- Do not install, use, or store the elliptical in an area of high humidity, such as in the vicinity of a steam room, sauna, indoor pool, garage, covered patio, near water or outdoors. Exposure to extensive water vapor, chlorine and/or bromine could adversely affect the electronics as well as other parts of the unit.
- Place the equipment on a level surface. Do NOT place it in any area that will block any vents or air openings.

1.3.2 Spacing

- Free area for access to the unit and emergency dismount. Minimum clearance is 12 inches (0.3 meters) on the sides of the unit and 36 inches (0.914 meters) behind the unit.
- Adjacent units may share the free area.
- The below minimum spacing recommendations are based on a combination of the ASTM (U.S.) voluntary standards and EN (European) regulations as of October 1, 2012, for access, passage around, and emergency dismount:

*ASTM standards are voluntary and may not reflect current industry standards. The actual area for access, passage around, and emergency dismount is the responsibility of the facility. The facility should consider the total space requirements for training on each unit, voluntary and industry standards, and any local, state, and federal regulations. Standards and regulations are subject to change at any time.



1.4 Transportation

1.4.1 To move the equipment, carefully lift the rear end by pushing down on the 2 front transport wheels (Figure 1.4.1-1). Carefully steer the equipment to another location.

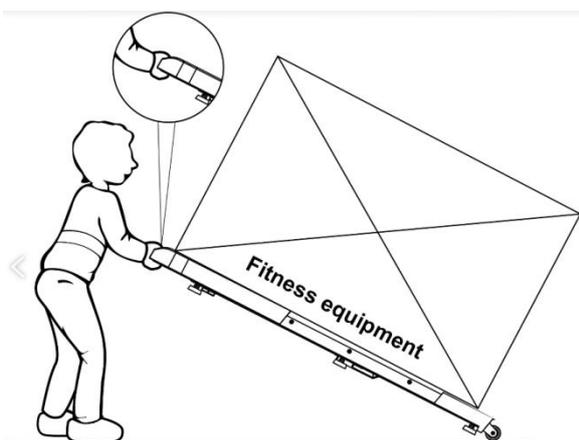


Figure 1.4.1-1

IMPORTANT: Be careful when moving this equipment, as it is heavy and awkward. If you do not feel comfortable moving the unit by yourself, please get help.

NOTE: The transport wheels are designed for indoor use only and should not be used to move the unit over rough surfaces such as concrete or asphalt.

1.5 Grounding Instructions and Power Requirements

All building electrical power and wiring shall comply with the currently adopted electrical codes in your area.

WARNING: Failure to follow these specifications can cause damage to your product and can void the warranty.

- Do not modify the plug provided with this product. If the plug will not fit your electrical outlet, have a proper outlet installed by a qualified electrician.
- All power outlets must be functional the day of delivery/assembly of the product. The client is responsible for any added installation charges associated with return visits.
- Electrical supply may fluctuate in your area. To ensure the stable performance of the product, we require the following wiring gauges be used based on the distance between the unit and the panel: 100 ft. or less = 12-gauge wire; 101 ft. – 125 ft. = 10-gauge wire, 126 ft. – 150 ft. = 8-gauge. A run over 150 ft. is not recommended.
- Circle Fitness recommends circuit breakers designed to manage inductive loads.
An example is the QO-HM120 breaker.

1.5.1 Facility Power Information

Product	Line Voltage (V)	Line Frequency (Hz)	Current (RMS Amp)	Circuit Configuration	Outlet	Max Power Dissipation (Watts)
E7/ B8/ R8 (15.6") (Touchscreen)	120	50-60Hz	5	Dedicated	NEMA 5-15	600
E7/ B8/ R8 (10"T) (Touchscreen) Self-generator	NA	NA	NA	NA	NA	NA
E7/ B8/ R8 (8") (Touchscreen)	120	50-60Hz	5	Dedicated	NEMA 5-15	600
E7/ B8/ R8 (LED) Self-generator	NA	NA	NA	NA	NA	NA
E7/ B8/ R8 (15.6") (Touchscreen)	220	50Hz	5	Dedicated	NEMA 6-15	1100
E7/ B8/ R8 (10"T) (Touchscreen) Self-generator	NA	NA	NA	NA	NA	NA
E7/ B8/ R8 (8") (Touchscreen)	220	50Hz	5	Dedicated	NEMA 6-15	1100
E7/ B8/ R8 (LED) Self-generator	NA	NA	NA	NA	NA	NA

2.0 Preventative Maintenance

2.1 Preventative Maintenance Schedule

2.1.1 Daily Maintenance Items

2.1.1.1 Look and listen for loose fasteners, unusual noises, and any other indications that the equipment may need service.

2.1.1.2 Clean the elliptical trainer before and after each use, including:

2.1.1.3 Use a damp, soft cloth with water or mild liquid detergent to clean all exposed surfaces. DO NOT use ammonia, chlorine, or any acid based cleaners.

2.1.1.4 Keep the console display free of fingerprints and salt build up caused by sweat.

2.1.1.5 Frequently vacuum the floor beneath the unit to prevent the accumulation of dust and dirt which can affect the smooth operation of the unit.

2.1.2 MONTHLY MAINTENANCE ITEMS

2.1.2.1 Inspect the console, handrails, link arms, pedal arms, and pedals for damage.

2.1.2.2 Check the link/pedal arms for loose joints. Tighten hardware as needed.

2.1.2.3 Check pedal motion and stability.

2.1.2.4 Adjust leveling feet if the equipment rocks or wobbles.

2.1.2.5 Remove the Rear Shroud and clean the rollers/tracks to prevent flat spots caused by dust/dirt.

2.1.3 QUARTERLY MAINTENANCE ITEMS

2.1.3.1 Remove the front shrouds and check belts for damage, alignment, and proper tension.

2.2 Check for Damaged Parts

Item	Parts	Daily	Weekly	Monthly	Season	6 Months
1	Console Screws					Visual Inspection (Screws loose)
2	Pedal	Wipe		Visual Inspection (Screws loose)		Visual Inspection (cracks)
3	Power Cord			Visual Inspection		
4	Overlay	Wipe		Visual Inspection (cracks)		
5	Fixed Handlebar	Wipe	Visual Inspection (Screws loose)			
6	Fixed Handlebar(TPR)	Wipe				Visual Inspection (cracks)
7	Fixed Handlebar TPR Cap and heart rate plate	Wipe			Visual Inspection	
8	Drive Belt x 2pcs (Main pulley and small pulley)				Visual Inspection (Deviation and cracks)	
9	Water bottle holder	Wipe				
10	All cosmetic plastics	Wipe				

3.0 REGULAR EQUIPMENT MAINTENANCE

3.1 Follow the above schedule to ensure proper operation of this equipment.

3.1.1 Do Not use any equipment that is damaged or has worn or broken parts.

3.1.2 Maintain labels and name plates. Do not remove labels for any reason. They have essential information. If unreadable or missing, contact Circle Fitness Systems for and replacement at service@circlefitness.com

3.1.3 Maintain all equipment. Preventative maintenance is the key to smoothly operating equipment. Equipment needs to be inspected at regular intervals. Defective components must be kept out of use until they are repaired. Ensure that any person(s) adjusting or performing maintenance or repair of any kind is qualified to do so.

3.2 Care and Maintenance Instructions

3.2.1 To maximize the life span of the equipment, and minimize down time, all equipment requires regular cleaning, and maintenance items performed on a scheduled basis. This section has detailed instructions on how to perform these items, the frequency of which they should be done, and a check list to sign off each time service is completed for a specific machine. Some basic tools and supplies will be necessary to perform these tasks which include (but may not be limited to):

- Metric Allen wrenches
- Phillips's head screw driver
- Adjustable wrench
- Torque wrench (capability to read foot pounds and inch pounds)
- Lint free cleaning cloths (microfiber)
- Teflon based spray lubricant such as "Super Lube" or other approved products.
- Mild water soluble detergent such as "Simple Green" or other approved products
- Vacuum cleaner with an extendable hose and crevasse tool attachment.

4.0 Manually Update or Use Online Update for Firmware and Software

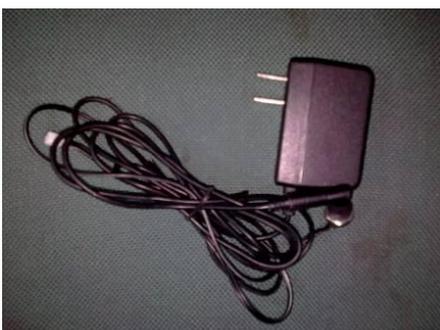
4.1 Tools Required:



Programmer



DC 3V (AA size Battery x 2) for Console PCB



AC Power Adapter



Laptop Computer

4.2 Tool Details:



5.0 Download Tool Program and Install

5.1 USB Driver Installation



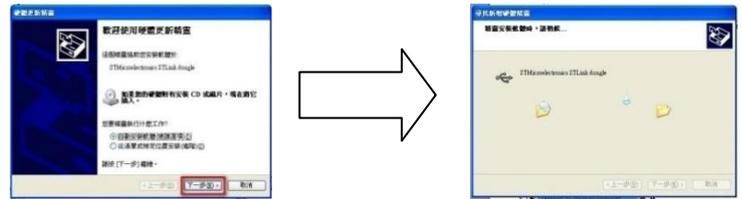
5.2 Tool Program Installation



6.0 Console Update

6.1 Connect Programmer to Computer.

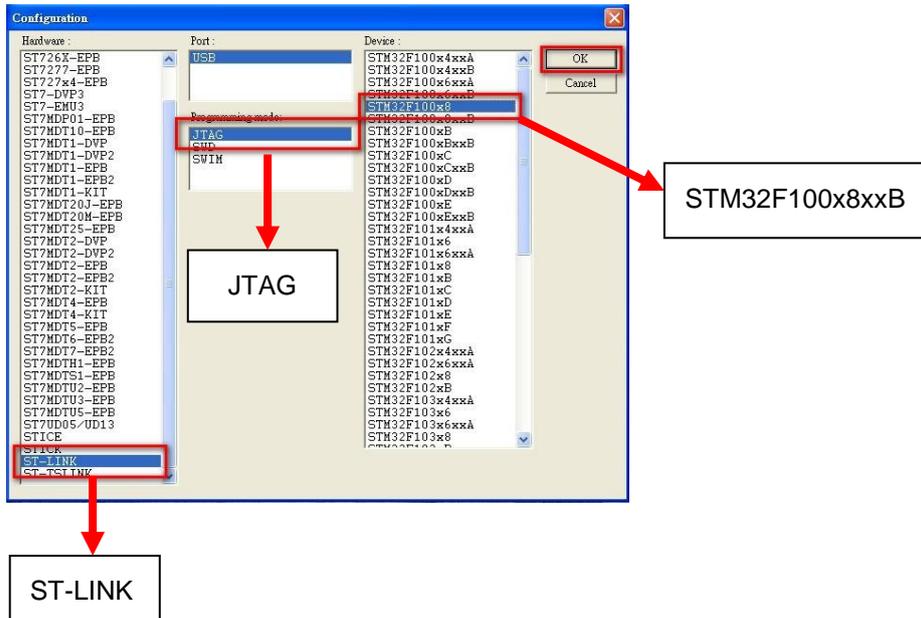
6.1.1 Computer will ask you to install USB driver.



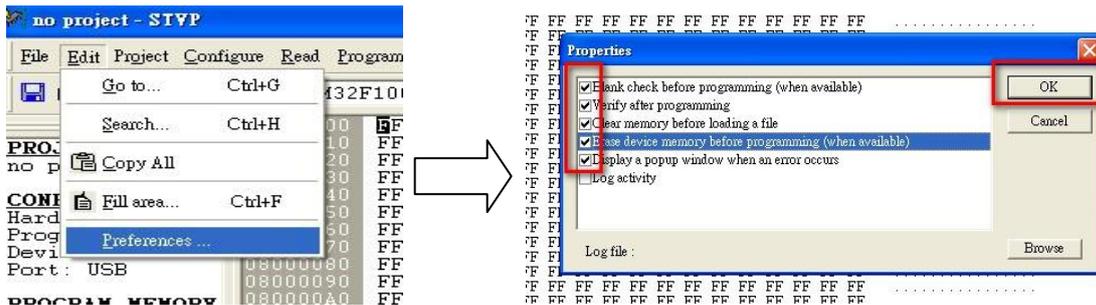
6.2 Execute Tool Program



6.3 Configuration

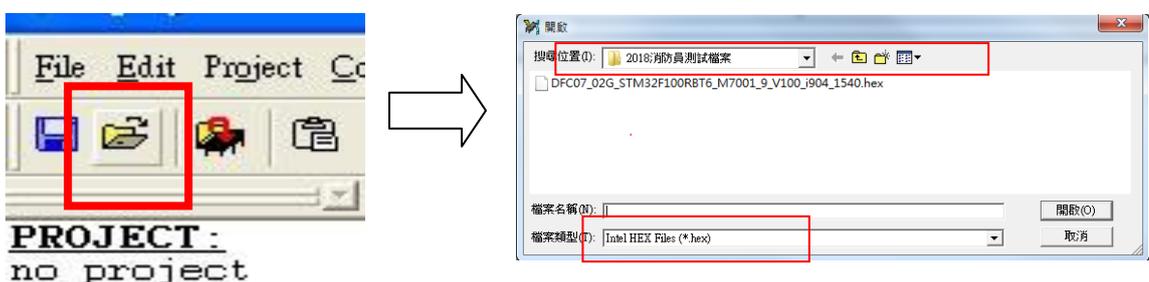


6.4 Updating Preferences



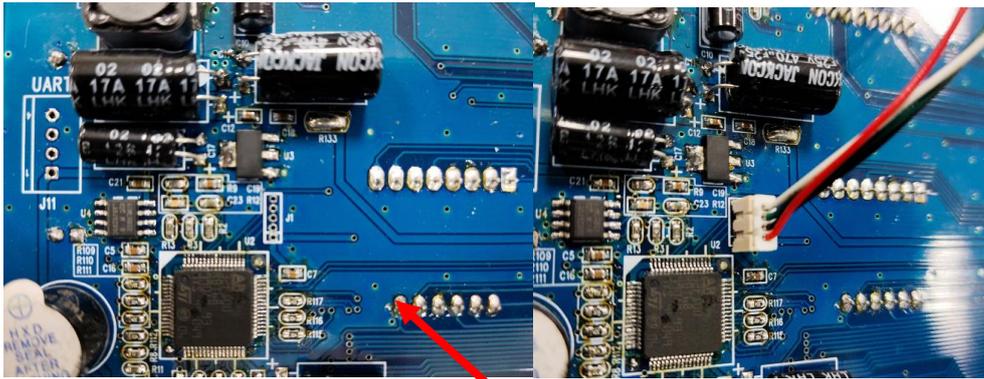
6.5 Open the Update Data

6.5.1 Please be sure not to press any keyboard buttons and change the update hexadecimal data. Otherwise update data would be changed.



6.6 Connect Programmer to Console PCB and Power ON the Console

6.6.1 (Beep indicates power is ON) Need to use your finger to help hold and retain the female connector onto the main board and ensure they are fully contacted during entire programming process



6.7 Unlock the Chip

2. Read protection OFF

1. OPTION BYTE

Wrong device selected! Check the configuration or the device!

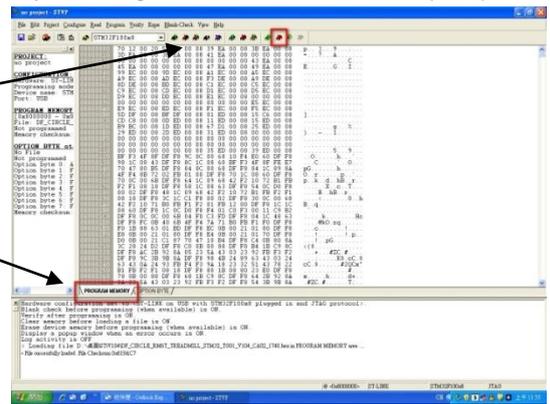
An incompatibility has been found with this device. Do you want to ignore it and ignore all the device compatibility checks on next access in this configuration?

6.8 Program Memory

*If any message shows in the window, just press yes.

2. Program all tabs

1. Program Memory



- > Loading file C:\Users\bruce2792\Desktop\2018\消防員測試檔案\DFC07_02G_STM32F100RB16_M7001_9_V100_4904_1540.hex in PROGRAM MEMORY area ...
- < File successfully loaded. File Checksum 0x601CD4
- > Erasing sector PROGRAM MEMORY ...
- Mass Erasing device...
- Blank Checking device...
- < PROGRAM MEMORY successfully erased and blank checked.
- > Blank checking PROGRAM MEMORY area...
- < Blank checking PROGRAM MEMORY area completed.
- > Programming PROGRAM MEMORY area...
- < PROGRAM MEMORY programming completed.
- > Verifying PROGRAM MEMORY area...
- => Reset done, device Running...

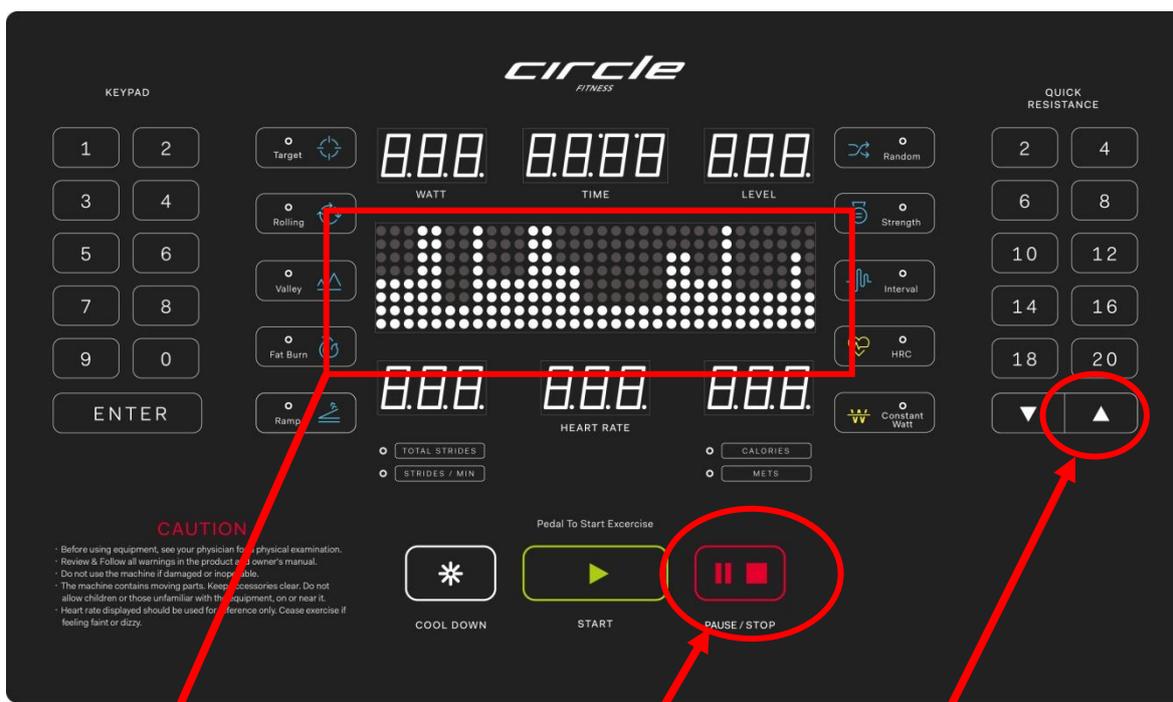
6.9 Updating System



Updating

6.10 Power ON and check the setting (E7-LED)

6.10.1 Push PAUSE/STOP and the UP key for 3 seconds, then push ENTER key for next item.

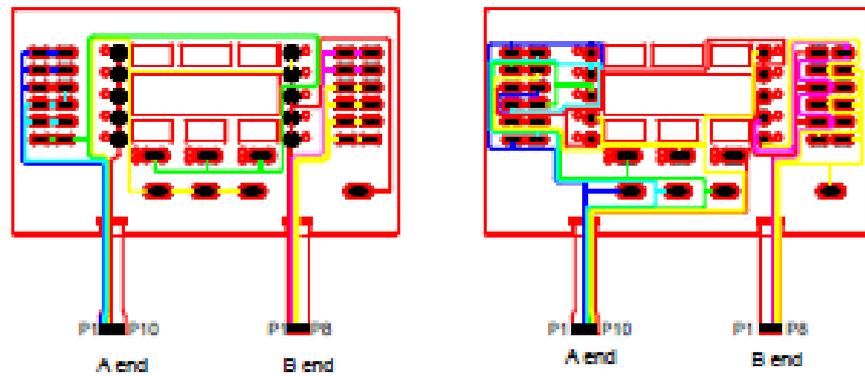


Version



Press and hold the **STOP** button and **UP** arrow button for 3 seconds to show version number.

Membrane keypad
F0530003-01



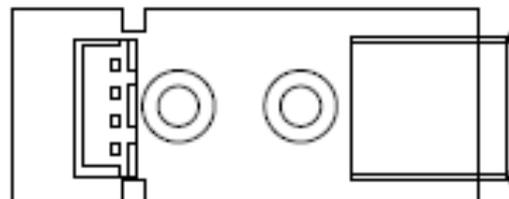
A end

Pin #	Description
P1	KL0
P2	KL1
P3	KL2
P4	KL3
P5	KL4
P6	KL0
P7	KL1
P8	KL2
P9	KL3
P10	KL4

B end

Pin #	Description
P1	KL0
P2	KL1
P3	KL2
P4	KL1,3
P5	KL5
P6	KL6
P7	KL7
P8	KL8

USB board(Hot plugging)
F373440-000



A end

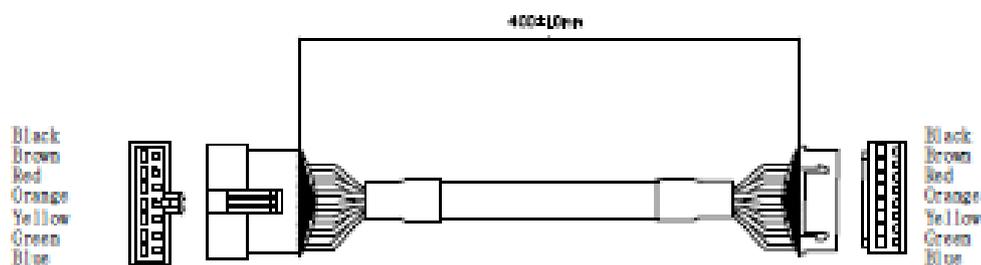
Pin #	Description	Color
P1	+5V	Red
P2	D-	White
P3	D+	Green
P4	GND	Black

B end

Pin #	Description	Color
P1	+5V	Red
P2	D-	White
P3	D+	Green
P4	GND	Black

Upper communication cable

F080117-001



A end

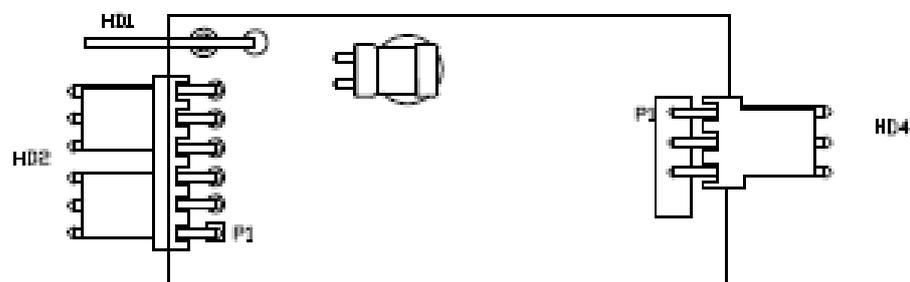
Pin#	Description	Color
P1	PDC+	Black
P2	PDC-	Brown
P3	RS485+	Red
P4	RS485-	Orange
P5	EOG	Yellow
P6	SPVIN+	Green
P7	WK-UP	Blue

B end

Pin#	Description	Color
P1	PDC+	Black
P2	PDC-	Brown
P3	RS485+	Red
P4	RS485-	Orange
P5	EOG	Yellow
P6	SPVIN+	Green
P7	WK-UP	Blue

Salutron heart rate board

F373405-001



HD1

Pin#	Description
P1	Earth Ground

HD2

Pin#	Description
P1	RA, right primary sensor
P2	LL, common sensor
P3	Shield
P4	LA, Left primary sensor
P5	LI, common sensor
P6	Shield

HD4

Pin#	Description
P1	GND
P2	+5V
P3	PULSE

Transfer cable
F080221-002



B end

Pin#	Description
P1	GND
P2	+5V
P3	PULSE INPUT

A end

Pin#	Description
P1	GND
P2	+5V
P3	PULSE INPUT

Cable of USB board
F080231-004



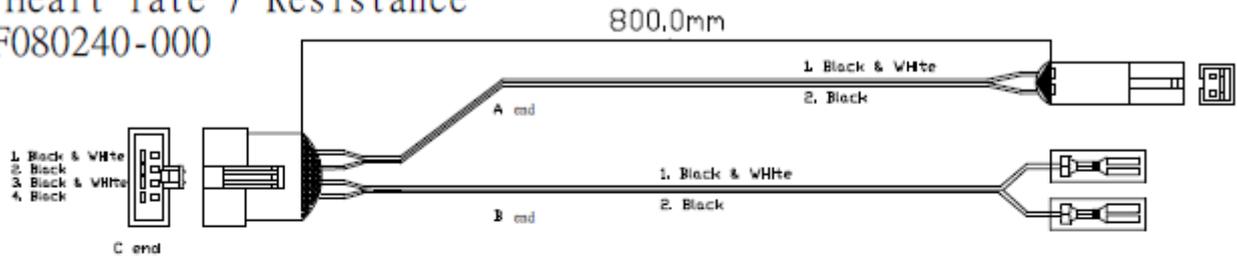
A end

Pin#	Description	Color
P1	+5V	Orange
P2		
P3		
P4	GND	Black

B end

Pin#	Description	Color
P1	+5V	Orange
P2		
P3		
P4	GND	Black

Central cable of shifter
/Heart rate / Resistance
F080240-000



C end

Pin#	Description	Color
P1	LEVEL -	Black & white
P2	COM	Black
P3	LL,common sensor	Black & white
P4	LA,Left primary sensor	Black

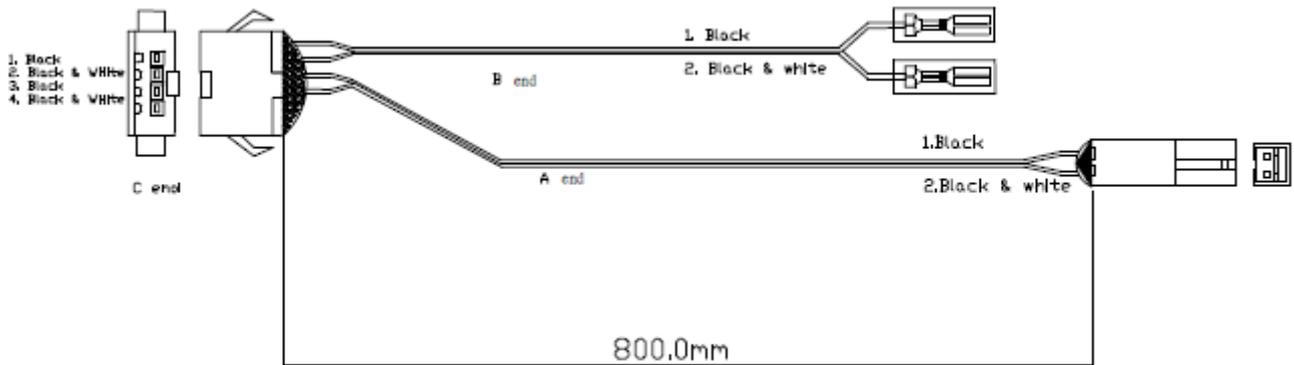
B end

Pin#	Description	Color
P1	LL,common sensor	Black & white
P2	LA,Left primary sensor	Black

A end

Pin#	Description	Color
P1	LEVEL -	Black & white
P2	COM	Black

Central cable of shifter
/Heart rate / Resistance
F080236-000



C end

Pin#	Description	Color
P1	LL,common sensor	Black
P2	RA,right primary sensor	Black & white
P3	LEVEL DOWN	Black
P4	COM	Black & white

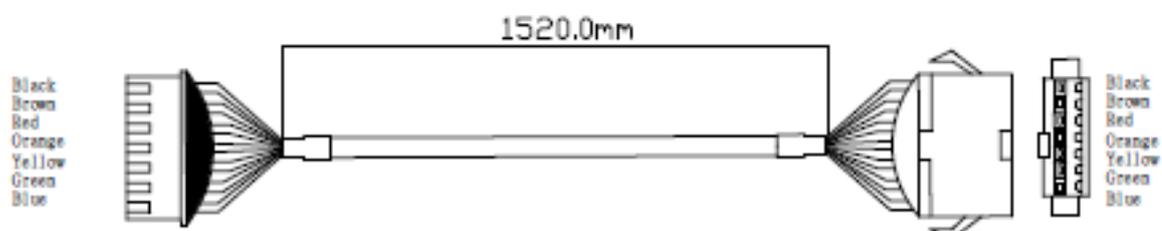
B end

Pin#	Description	Color
P1	LL,common sensor	Black
P2	RA,right primary sensor	Black & white

A end

Pin#	Description	Color
P1	LEVEL DOWN	Black
P2	COM	Black & white

Lower communication cable F080116-000



A end

Pin#	Description	Color
P1	DC12V+	X
P2	GN	X
P3	RS485+	X
P4	RS485-	Green
P5	DC12V+	Green & White
P6	Reserved	Blue
P7	ENABLEP	Orange

B end

Pin#	Description	Color
P1	X	X
P2	X	X
P3	X	X
P4	485 TX+	Green
P5	485 TX-	Green & White
P6	X	Blue
P7	X	Orange

Lower control board F0516001-01

J7

Pin#	Description
P1	485 TX+ (red)
P2	485 TX- (red)

J8

Pin#	Description
P1	DC+
P2	X
P3	GN

J9

Pin#	Description
P1	AC
P2	X
P3	AC
P4	X
P5	AC

J3

Pin#	Description
P1	+12V
P2	GN
P3	RS485+
P4	RS485-
P5	+5V
P6	SPN
P7	Reserved



J12

Pin#	Description
P1	SPN
P2	GN
P3	+5V

J13

Pin#	Description
P1	SPN
P2	GN
P3	+5V

J10

Pin#	Description
P1	+12V (to motor)
P2	+5V (to motor)

J4

Pin#	Description
P1	GN
P2	INCAUX
P3	+3.3V

J11

Pin#	Description
P1	+12V (to motor)
P2	X
P3	X
P4	+5V (to motor)

Brake cable

F080126-000



A end

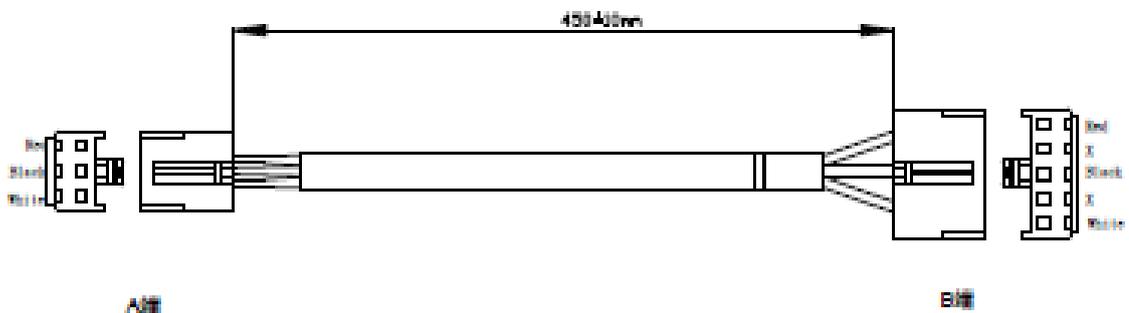
Pin#	Description	Color
P1	+34V	Red
P2	GND	Black

B end

Pin#	Description	Color
P1	+34V	Red
P2	GND	Black

3 phase power cable

F080132-000



Pin#	Description	Color
P1	AC	Red
P2	AC	Black
P3	AC	White

Pin#	Description	Color
P1	AC1	Red
P2	X	X
P3	AC2	Black
P4	X	X
P5	AC3	White

8.0 ENGINEERING MODE SETTINGS

8.1 Engineering Mode 1

- 8.1.1 Test mode (in IDLE mode, first press "PAUSE/STOP" and then press "Start" for 3 seconds.)
- 8.1.2 All on and off flashing mode: the window is all on and off flashing, press START to enter the next mode.
- 8.1.3 LED scanning mode: for production testing of software and hardware, press START to enter the next mode.
- 8.1.4 LED indicator scanning mode: for production testing of software and hardware, press START to enter the next mode.
- 8.1.5 Keyboard test: the matrix window displays "KEY", press each key to display the information as follows: (press START to enter the next mode)
- 8.1.6 IO test mode (detection of heartbeat and RPM), press START to exit.

8.2 Engineering Mode 2

- 8.2.1 Machine information (in IDLE mode, first press "PAUSE/STOP" and then press "LEVEL ▲" for 3 seconds)
- 8.2.2 Software version: HEART RATE window displays E21, DM displays [VER X.XX] mobile string, press START to enter the next setting.
- 8.2.3 Model: HEART RATE window displays E22, DM displays [E8], press START to enter the next setting.
- 8.2.4 Total use time: HEART RATE window displays E23, DM displays [TOTAL HOURS] mobile string, TIME window displays total hours, display range: 00:00 (minutes: seconds) ~ 9999 (hours), added when overflow 3 digits in INCLINE window, press START to enter the next setting.
- 8.2.5 Total use distance: HEART RATE window displays E24, DM display: [TOTAL DISTANCE KM] in metric system / [TOTAL DISTANCE MI] mobile string in imperial system, total distance displayed in TIME window, 0~9999, add INCLINE window when overflow 3 digits, press "START" button to exit to IDLE
- 8.2.6 Clear TOTAL HOURS and TOTAL DISTANCE: PAUSE/STOP + START 5 seconds

8.3 Engineering Mode 3

- 8.3.1 Custom setting (in IDLE mode, first press "PAUSE/STOP" and then press "LEVEL ▼" for 3 seconds)
- 8.3.2 Unit setting: HEART RATE window displays E31, DM displays [UNIT METRIC] mobile string, you can press ▲ or ▼ to modify it to [UNIT IMPERIAL], press START to enter the next setting.
- 8.3.3 Language setting: HEART RATE window displays E32, DM displays [ENGLISH] mobile string, you can press ▲ or ▼ to modify it to "NEDERLANDS"↔"FRANCAIS"↔"DEUTSCH"↔"ITALIANO"↔"ESPANOL"↔"POLAND", Press START to enter the next setting.
- 8.3.4 Maximum time setting: HEART RATE window displays E33, DM displays [MAXIMUM WORKOUT TIME] mobile string, TIME window displays 99:00 flashing, you can press ▲ or ▼ to adjust, the adjustment range is 10:00~99:00, press START Go to the next setting.
- 8.3.5 FAN button setting: HEART RATE window displays E34, DM displays [FAN OFF] mobile character string, you can press ▲ or ▼ to adjust OFF/ON. Press the 『 START 』 button to jump out and return to IDLE.

9.0 Issue Diagnosis, Error Code and Troubleshooting

9.1 Preliminary Diagnosis

CATEGORY	ISSUE DESCRIPTION	INSPECT
MECHANISM	Abnormal sounds occurring on the aluminum ramp when exercising	<ol style="list-style-type: none"> 1. Regular use of lubricating grease and regularly cleaning and maintenance is required. Refer to maintenance instructions in manual. 2. Check if the screw loose causing the abnormal sound. 3. Check if the ramp is misaligned to the main frame after installation and it would cause the screw loose.
MECHANISM	Abnormal sounds occurring on rotary parts	<ol style="list-style-type: none"> 1. If the abnormal sound refers to the bearing, check whether the bearing is worn, whether the screw is loose, whether the gasket is damaged... etc. 2. Check whether the front fisheye bearing is in position and is fastened.
MECHANISM	Pivot shaft wobbles during exercising	Check if the C ring and wave washer are damaged, or the bearing of pivot shaft is damaged.
MECHANISM	Saddle assembly wobble	<ol style="list-style-type: none"> 1. Check if the bolt on the saddle assembly is loose. 2. Check if the recline mechanism is damaged.
MECHANISM	Crank loose	Check if the crank bolt is tightened.
ELECTRICAL	When stopping pedaling, the screen displays for less than 30 seconds	Use multi-meter to measure the battery, its voltage should exceed 12V, if not, replace battery.
ELECTRICAL	UCB functions abnormally	Please check if the connection wire and (flexible flat) cable are loose. If not, replace with a new console and check again.
ELECTRICAL	UCB functions abnormally	<ol style="list-style-type: none"> 1. Check the console connection wiring. 2. Check the connection wiring for the membrane switch.
ELECTRICAL	Resistance cannot be adjusted	<ol style="list-style-type: none"> 1. Remove the connection wiring of fixed speed to check if UCB functions abnormally (UCB mis-communicate to keypad?) 2. Remove the resistance keypad. If issue has disappeared, then the resistance keypad is the root cause.
ELECTRICAL	Keypad function failed	<ol style="list-style-type: none"> 1. Check if the console wiring connected well. 2. Check if the cable connection connected well or not.

9.2 Error Code and Troubleshooting

9.2.1 Error Message and Solutions

Item	Error Message	Descriptions
1.	COMMUNICATION FAIL	<p>CAUSE: Communication timeout. This error message pops up if console and controller lose communication for over 90 seconds.</p> <p>SOLUTION:</p> <ul style="list-style-type: none"> - Check that the console and controller are connected properly. - If the connection is correct, please replace the console or controller.
2.	SHORT CIRCUIT	<p>CAUSE: The IGBT of controller is short circuit.</p> <p>SOLUTION:</p> <ul style="list-style-type: none"> - Stop peddling and wait for the power to shut down. - Peddle to power up the console. If the error message pops up again, replace the controller.
3.	CURRENT STATE NG	<p>CAUSE: The output current of the controller is abnormal or the electromagnetic coil was not connected to the controller.</p> <p>SOLUTION:</p> <ul style="list-style-type: none"> - Check the coil connection. - If coil connection is correct, replace the controller.
4.	LOW BATTERY	<p>CAUSE: The battery's voltage is too low.</p> <p>SOLUTION:</p> <ul style="list-style-type: none"> - Take out the AC power cable, and charge for over 8 hours. - If there is error message pops out again, please replace the battery.

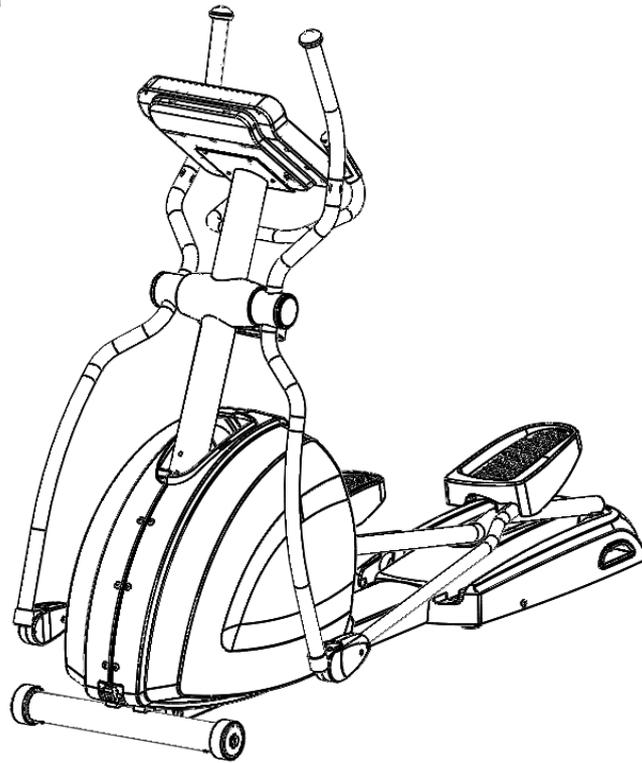
10.0 PART REPLACEMENT

10.1 Part Replacement Guide

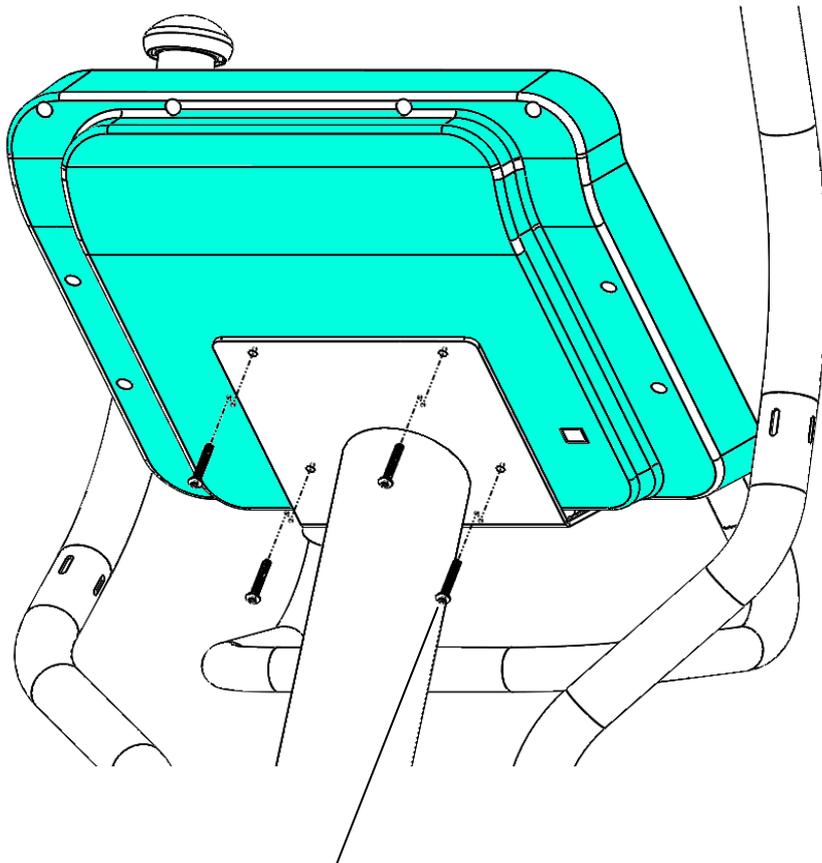
- Tools Required for Replacement and Calibration
- E7 Part Replacement Guide (Repair / Replacement part)



10.2 Console replacement

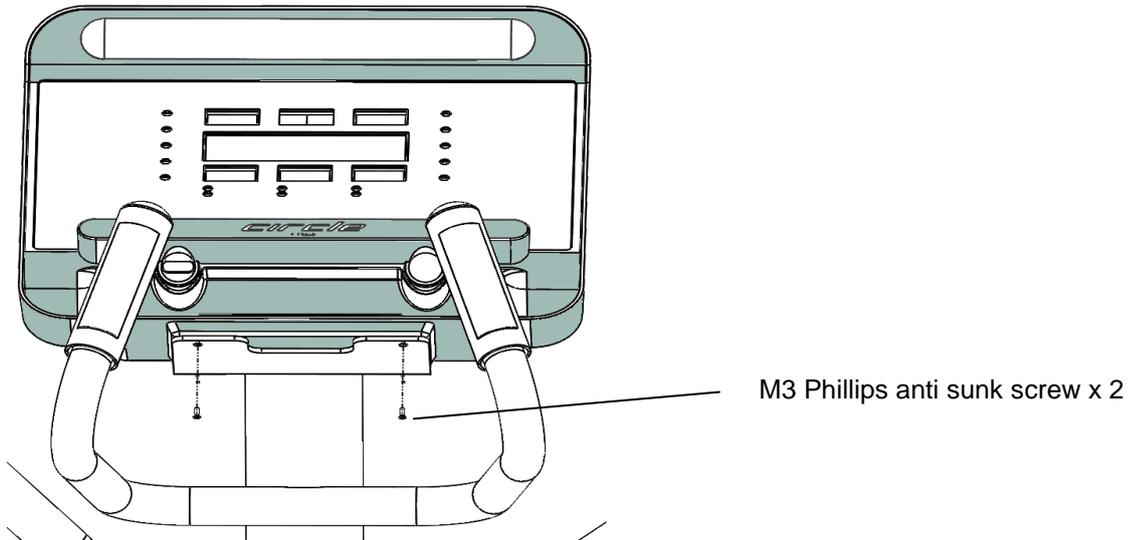


- Remove the pan head hex screw

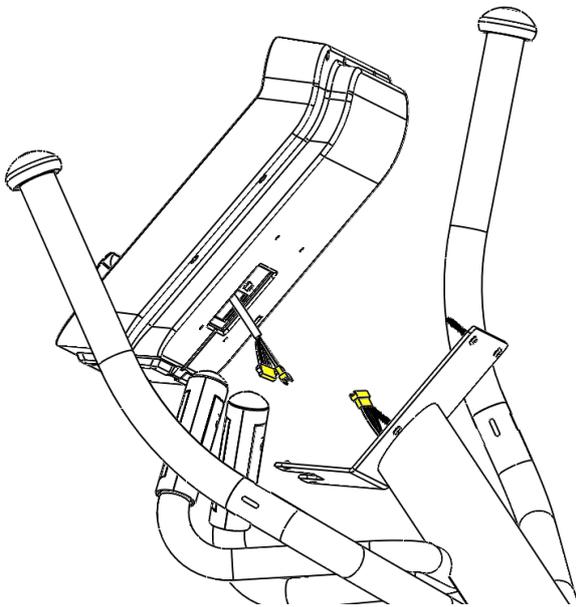


M5 pan head hex screw x 4

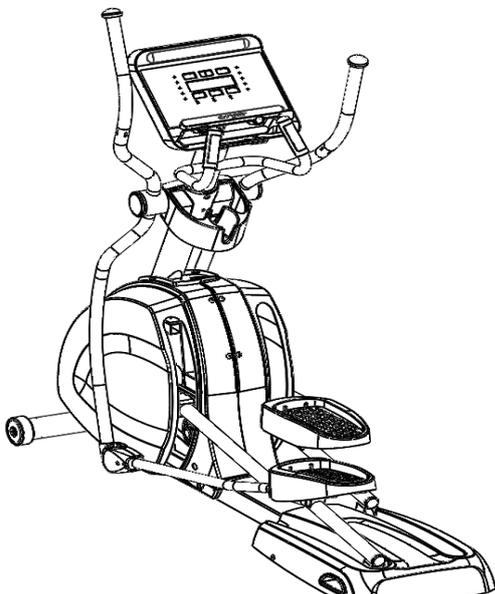
- Remove the Phillips anti sunk screw



- Disconnect all the connectors of cables

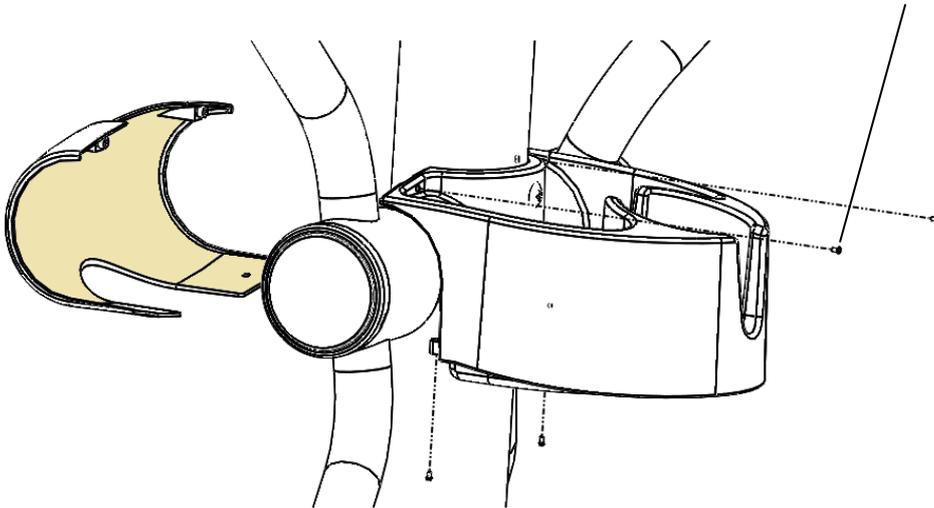


10.3 Water bottle , Water bottle holder replacement

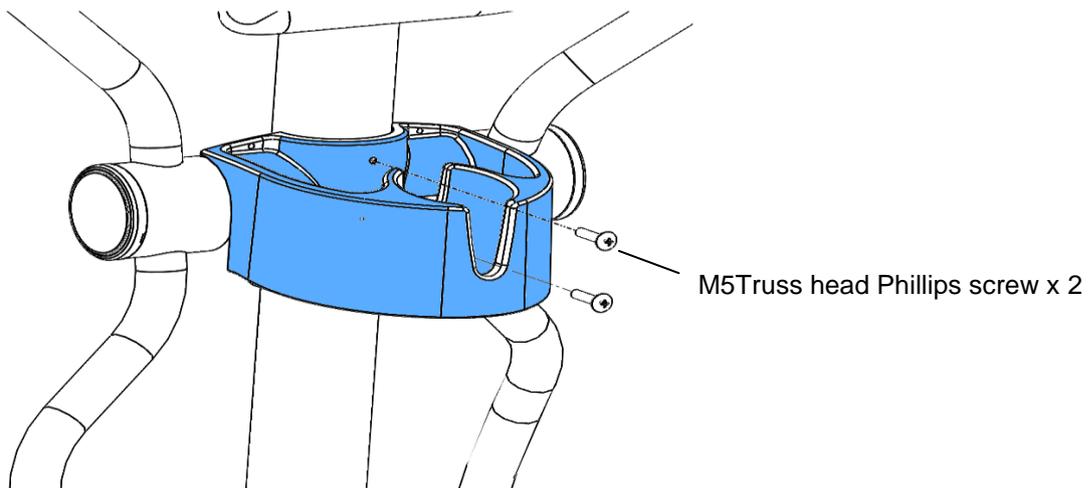


- Remove the Truss head self tapping screw, remove the front cover of the water bottle holder

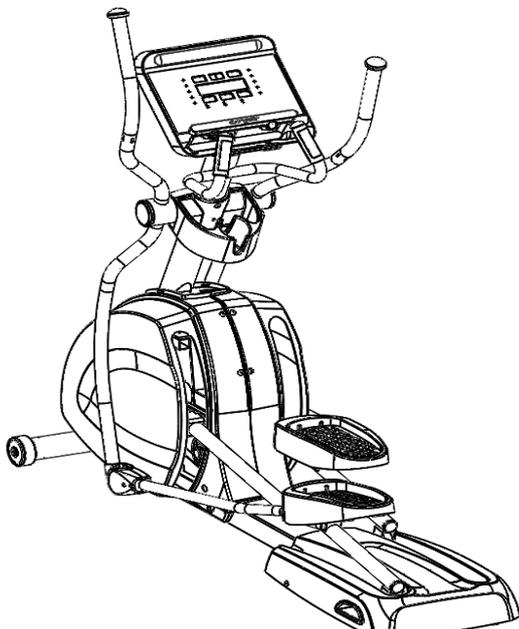
M4 Truss head Phillips screw x 4



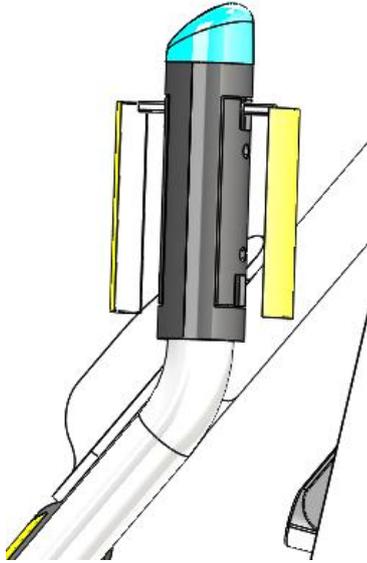
- Remove the truss head screws, remove the water bottle holder



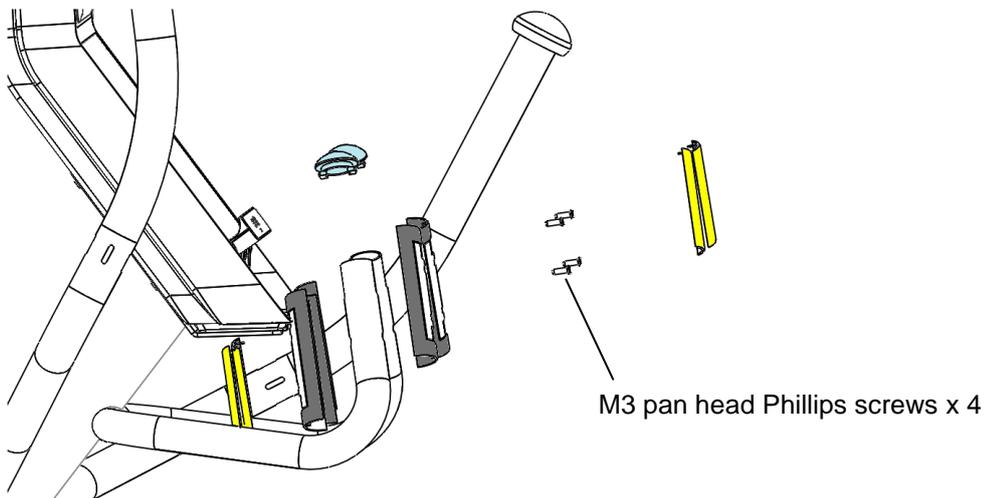
10.4 Pulse sensor plate replacement



- Use small flat screw to pry pulse plate up , and disconnect the membrane cable

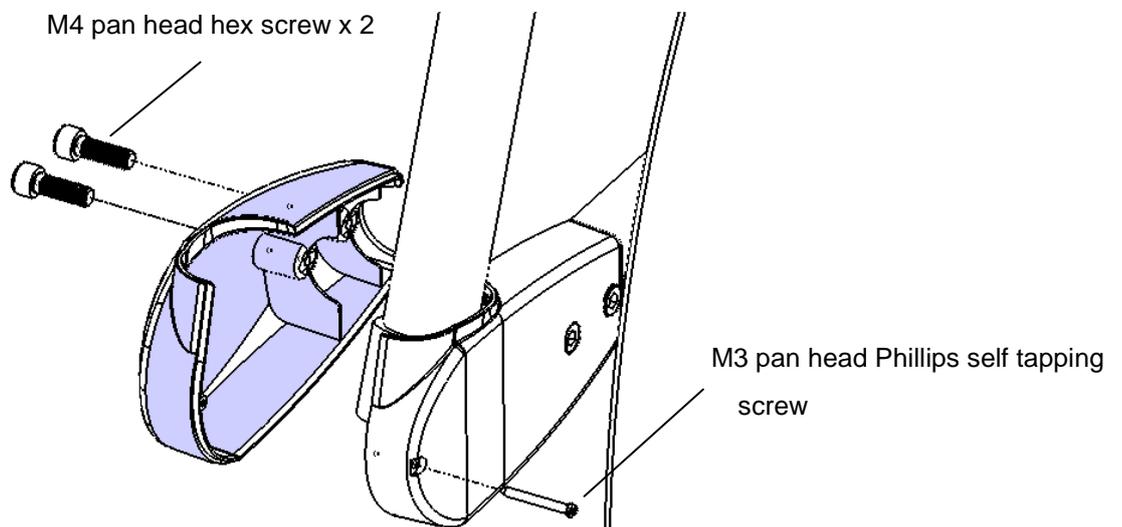


- Dismantle the pan head Phillips self tapping screw, remove the upper & lower pulse sensor assembly as well as the membrane switch assembly

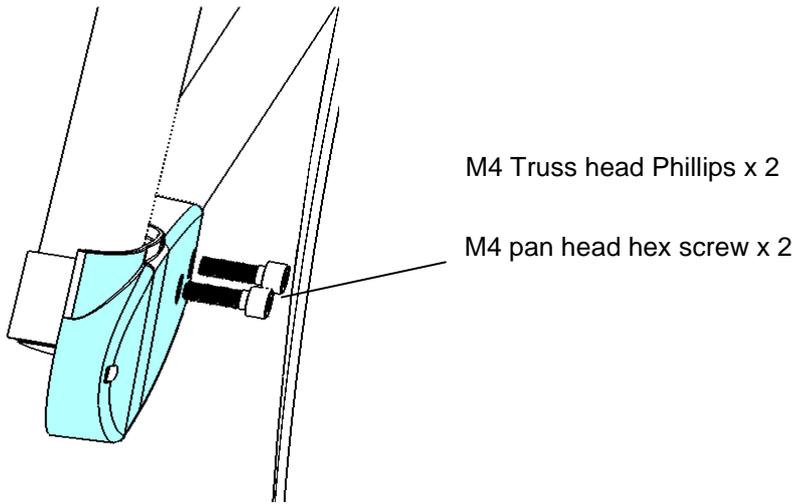


10.5 Leg tube linkage replacement

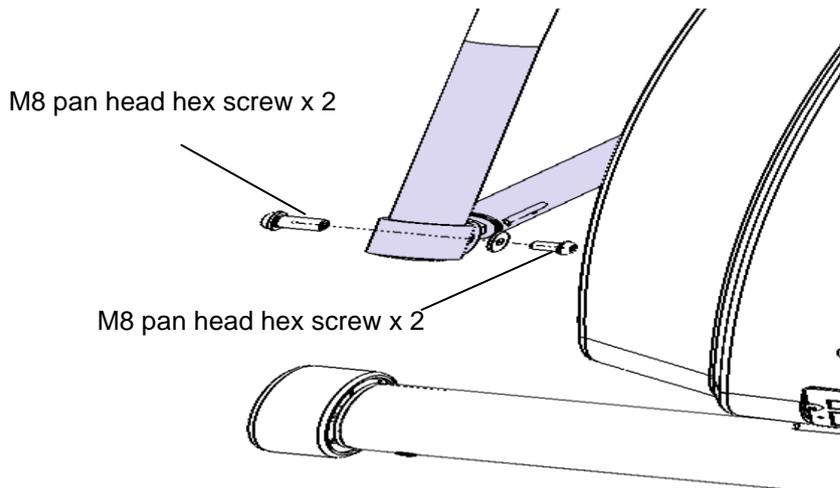
- Remove pan head hex screw & pan head Phillips self tapping screw , remove the left// right joint plastic cover



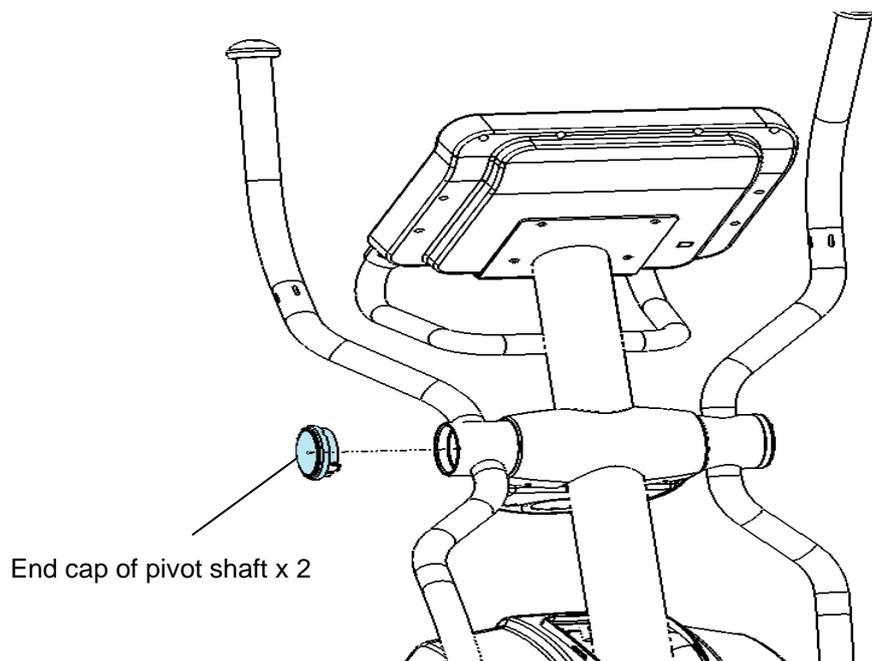
- Remove the pan head hex screw , remove the joint cover



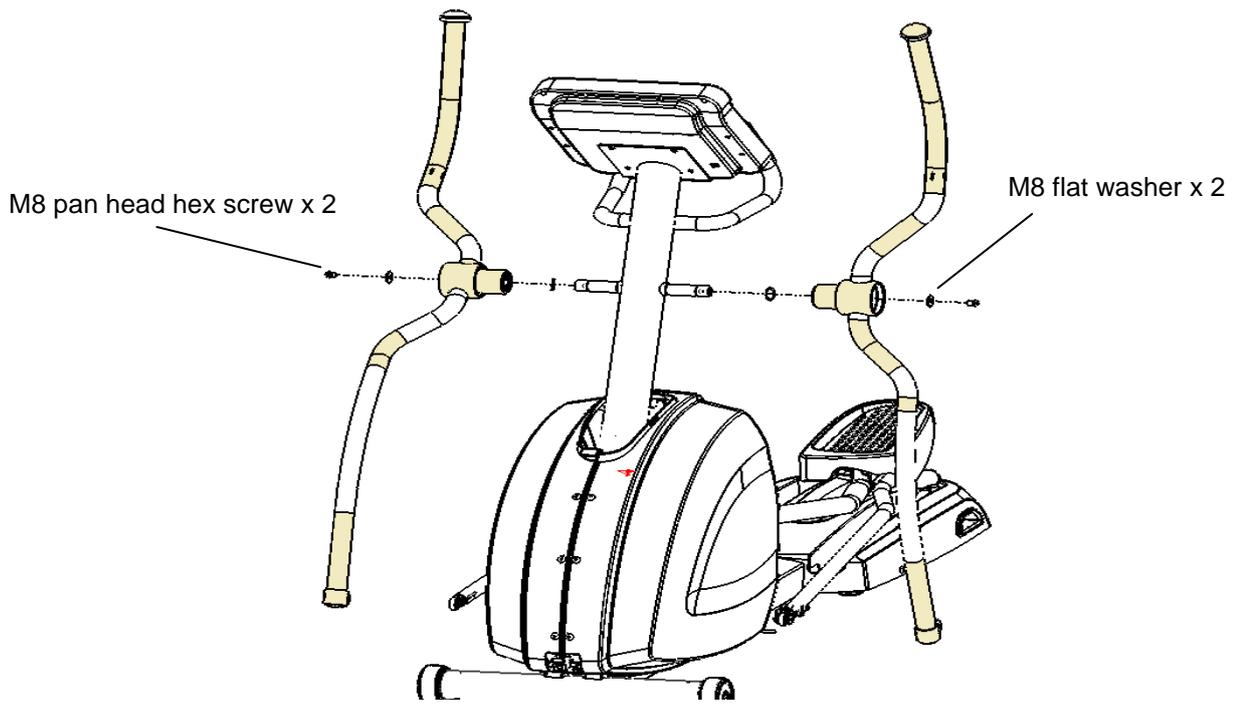
- Remove pan head hex screws



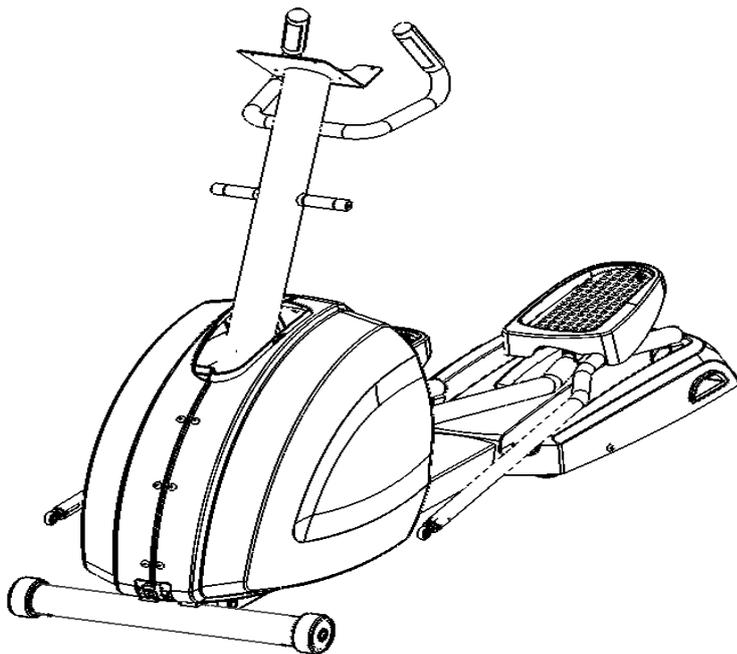
- Remove end cap



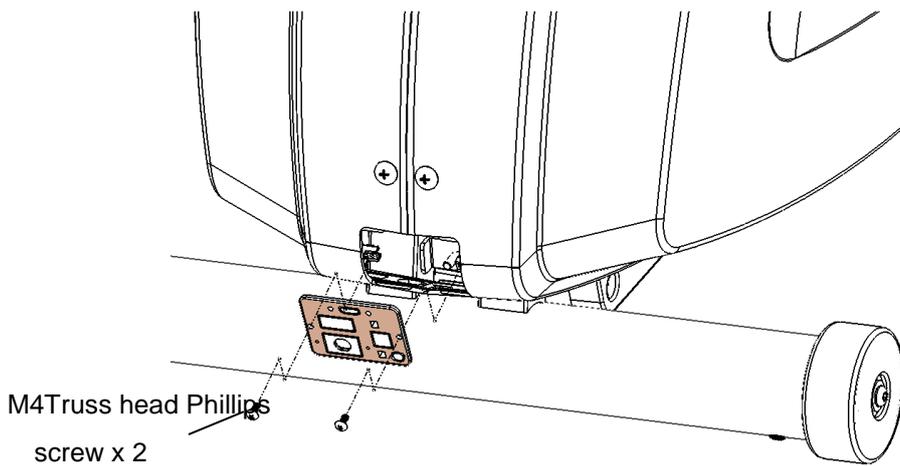
- Dismantle pan head hex screw , flat washer, remove left , right moving arm assembly



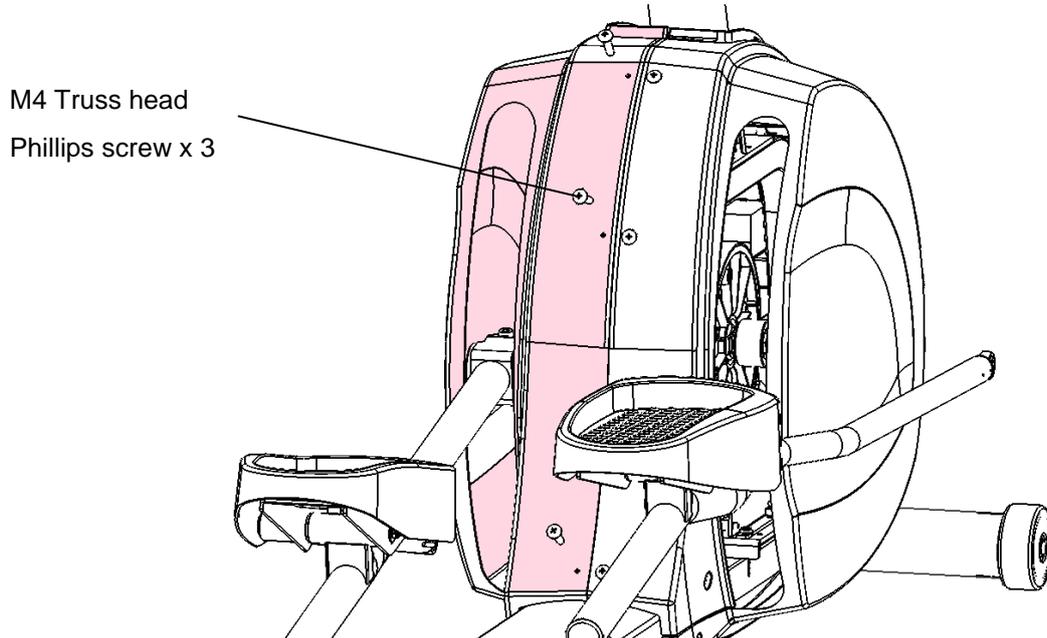
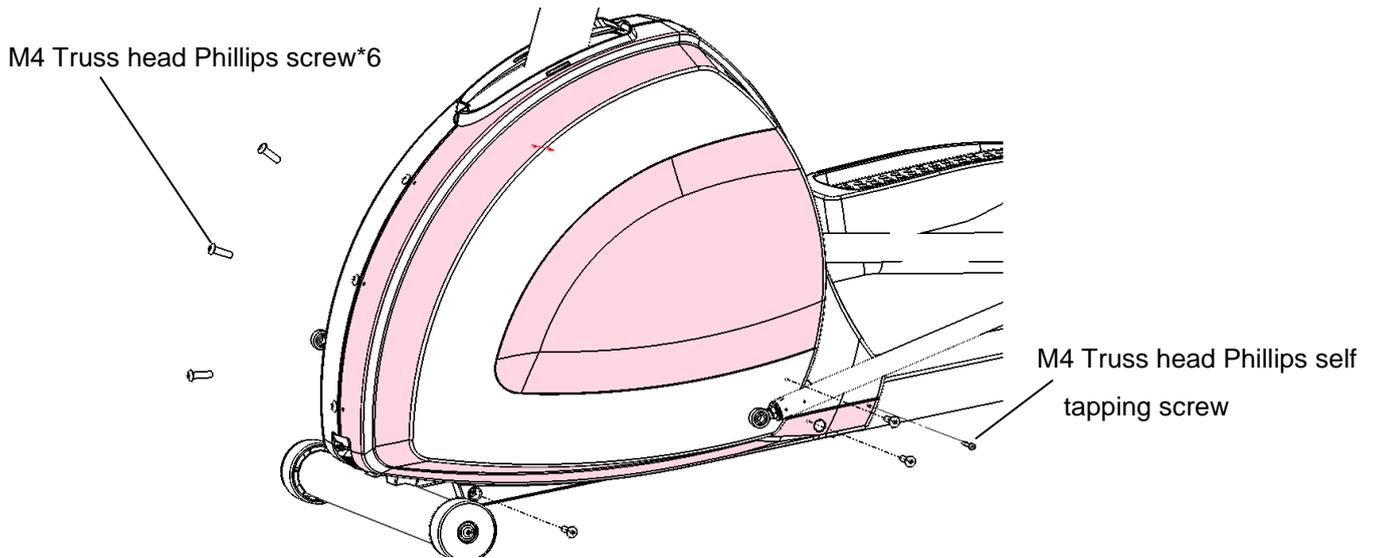
10.6 GEMS & drive belt replacement



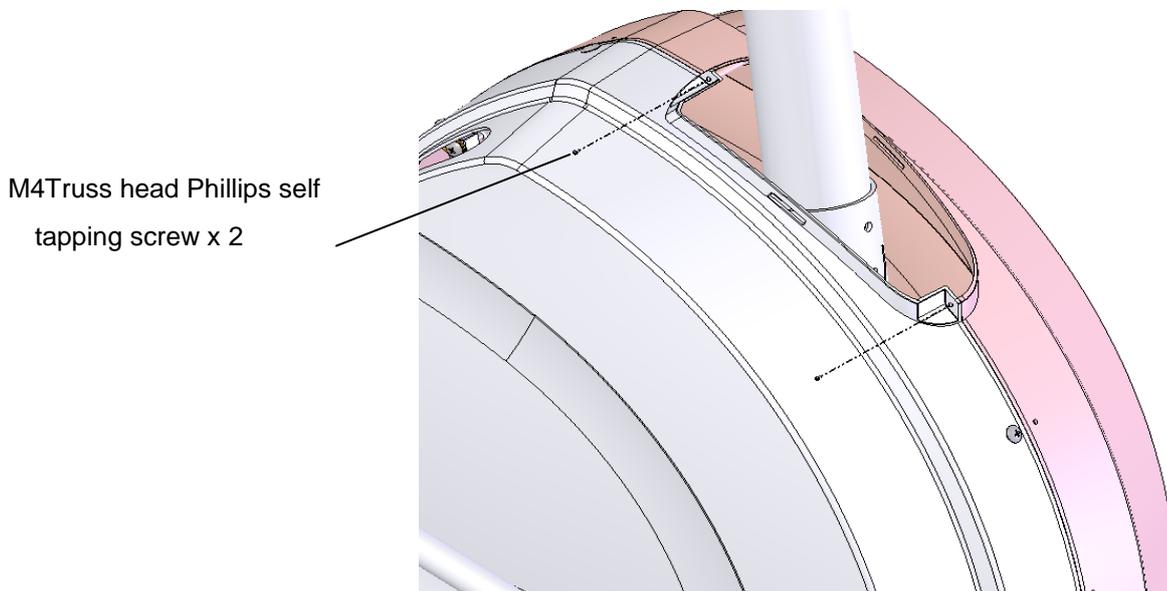
- Dismantle truss head Phillips screw, remove plastic cover of LAN port



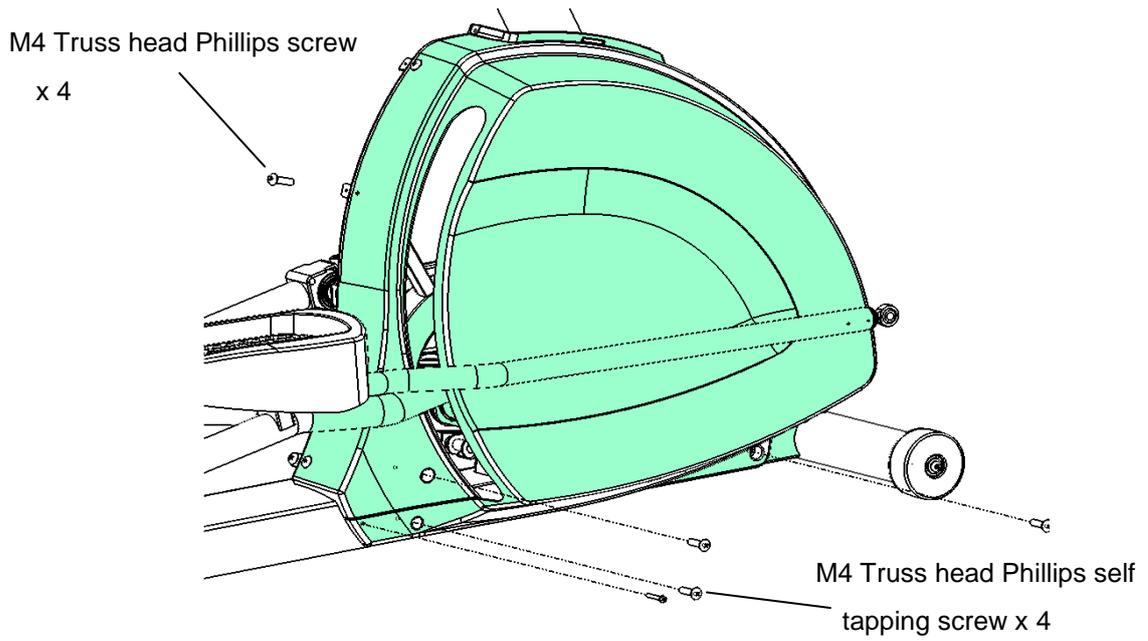
- Dismantle Truss head Phillips screw & self tapping screw



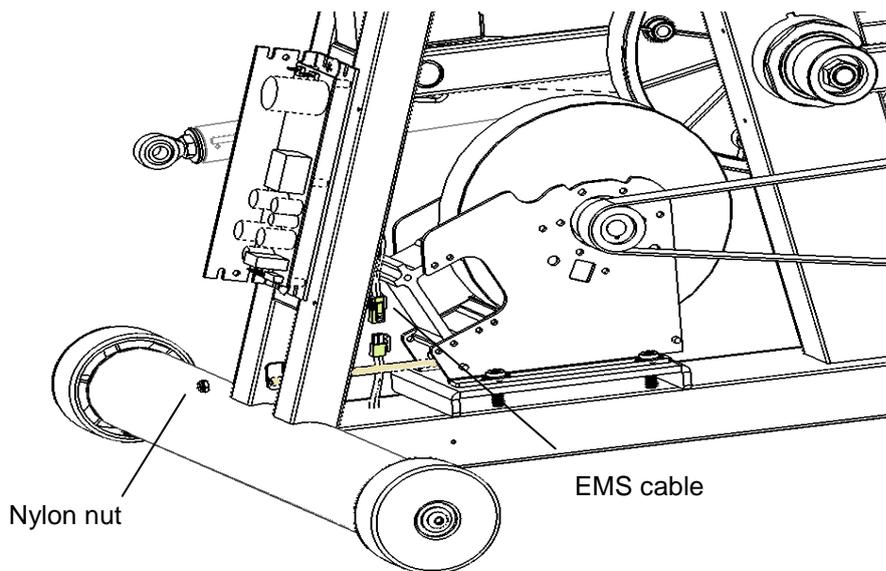
- Dismantle truss head self tapping screw , remove left shroud



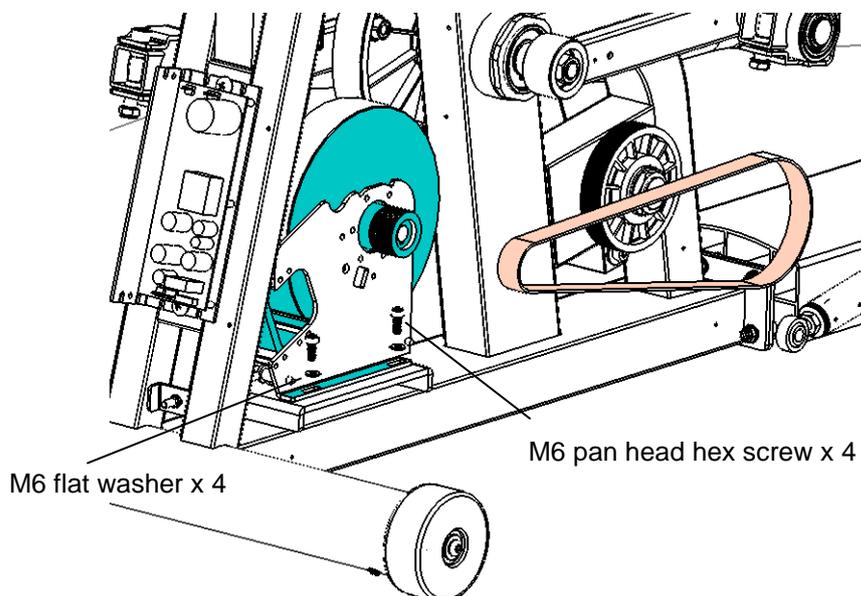
- Dismantle truss head Phillips screw & self tapping screw , remove right shroud



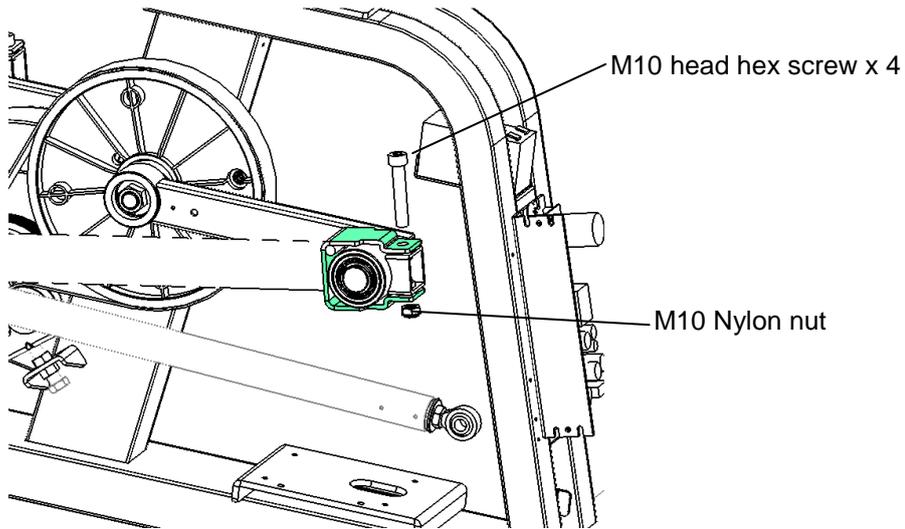
- Dismantle nylon nut , remove brake & EMS cable



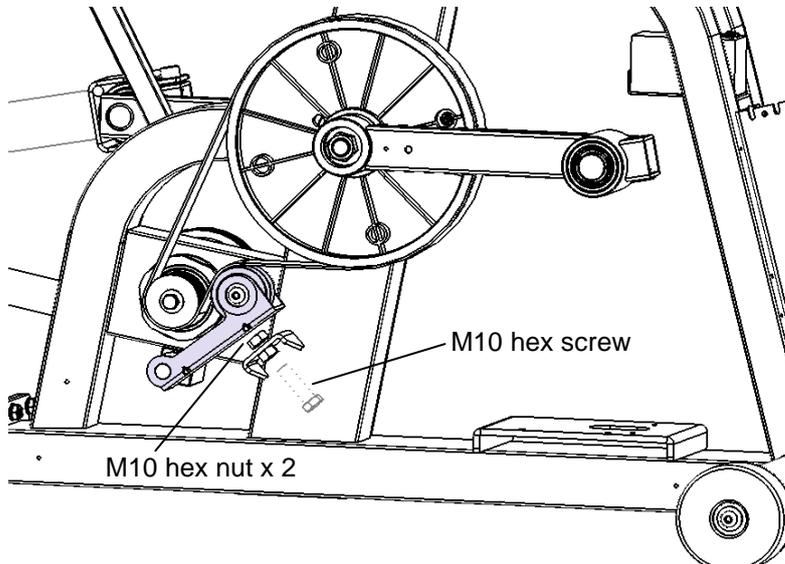
- Dismantle pan head hex screw & flat washer , remove EMS wheel & drive belt



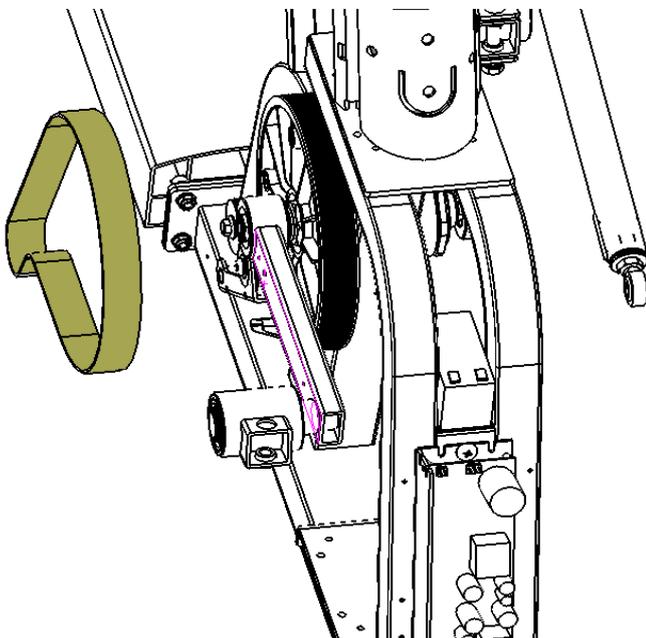
- Dismantle pan head hex screw & nylon nut , remove right crank linkage



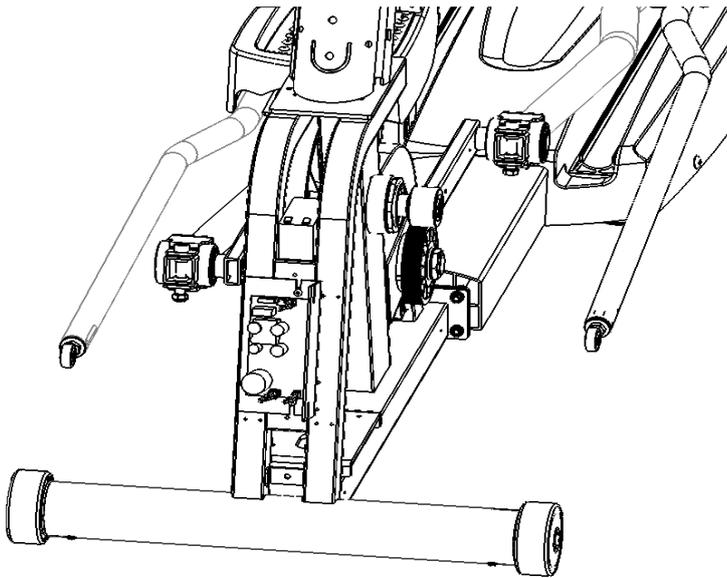
- Dismantle hex nut & hex screw loosen the idle wheel assembly



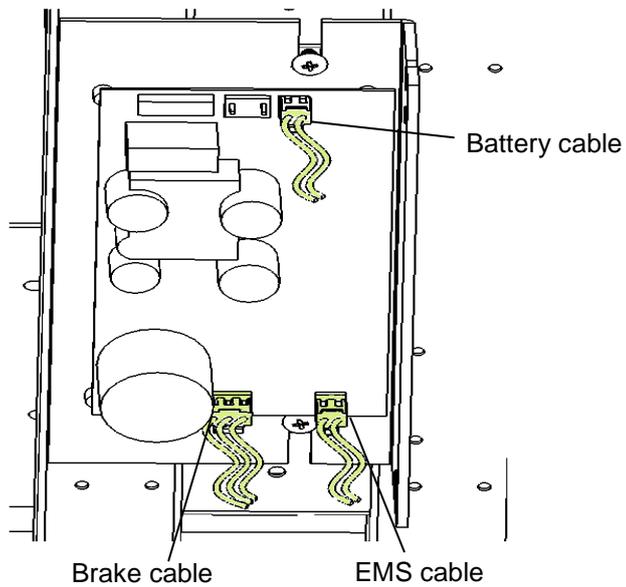
- Remove drive belt



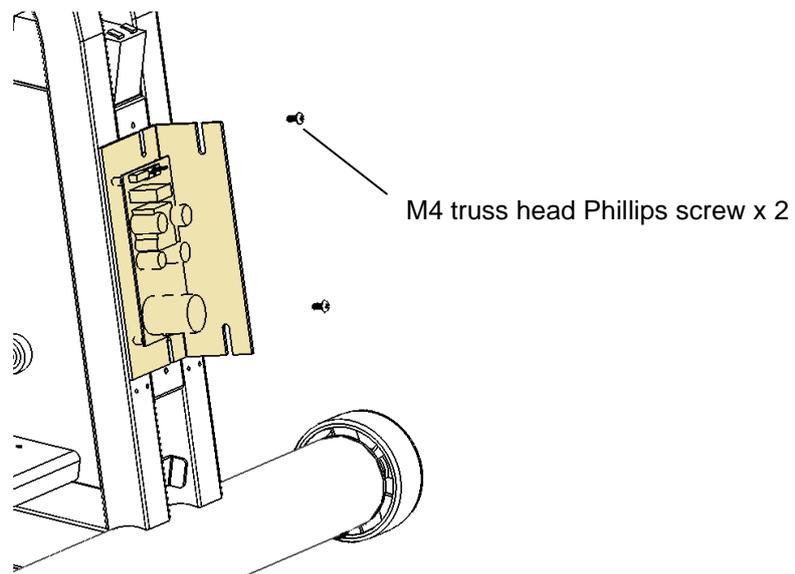
10.7 Lower controller replacement



- Remove the brake wheel & EMS cable

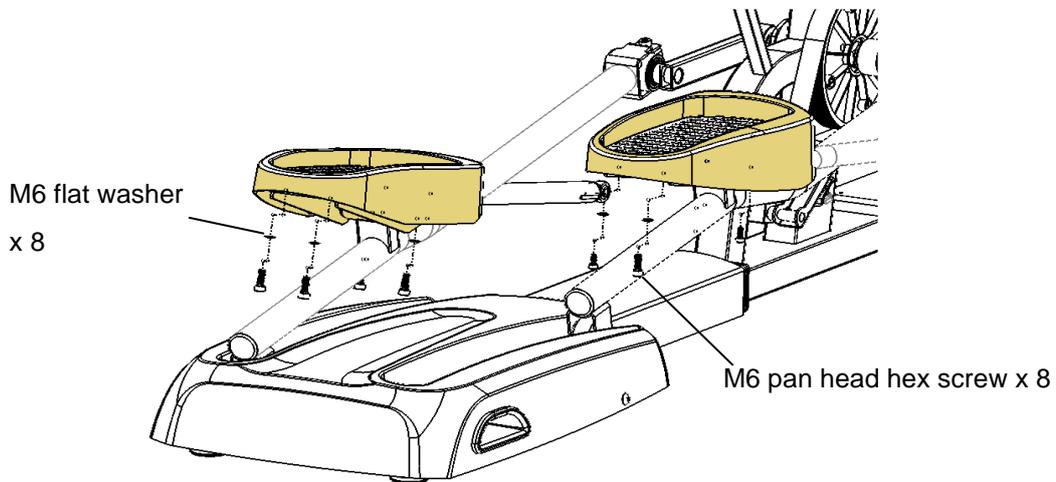


- Truss head Phillips screw



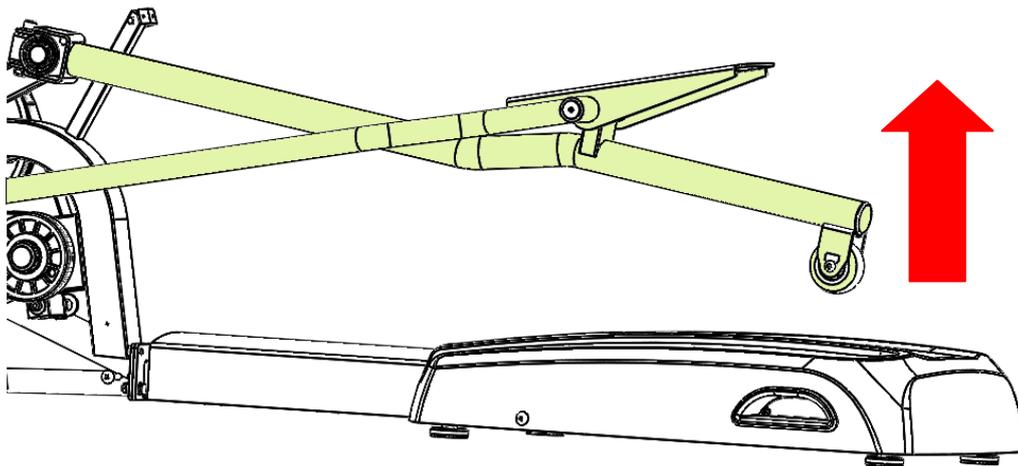
10.8 Pedal replacement

- Dismantle pan head hex screw & flat washer

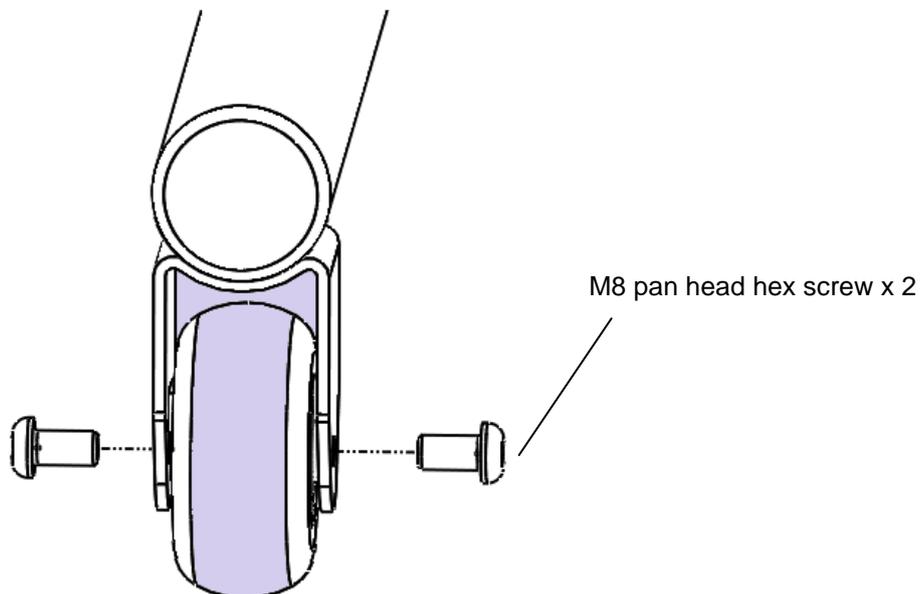


10.9 Roller replacement

- Lift leg tube assembly up

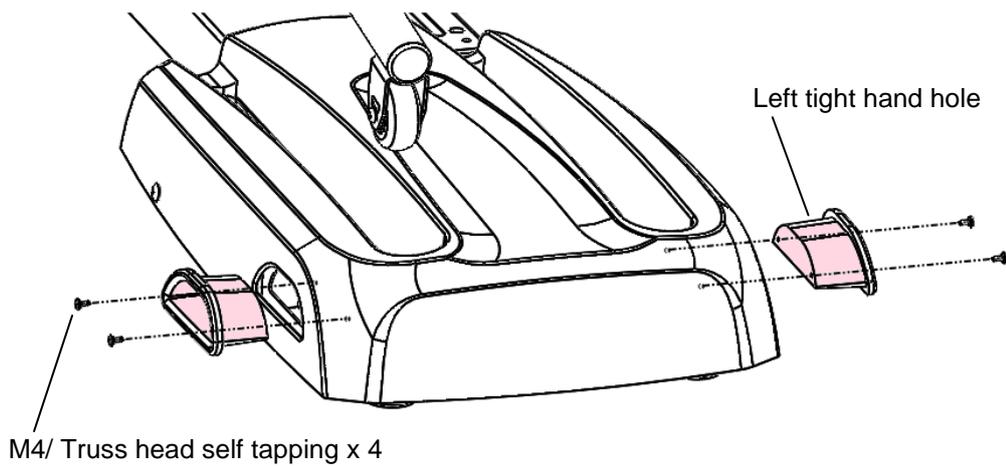


- Dismantle pan head hex screw

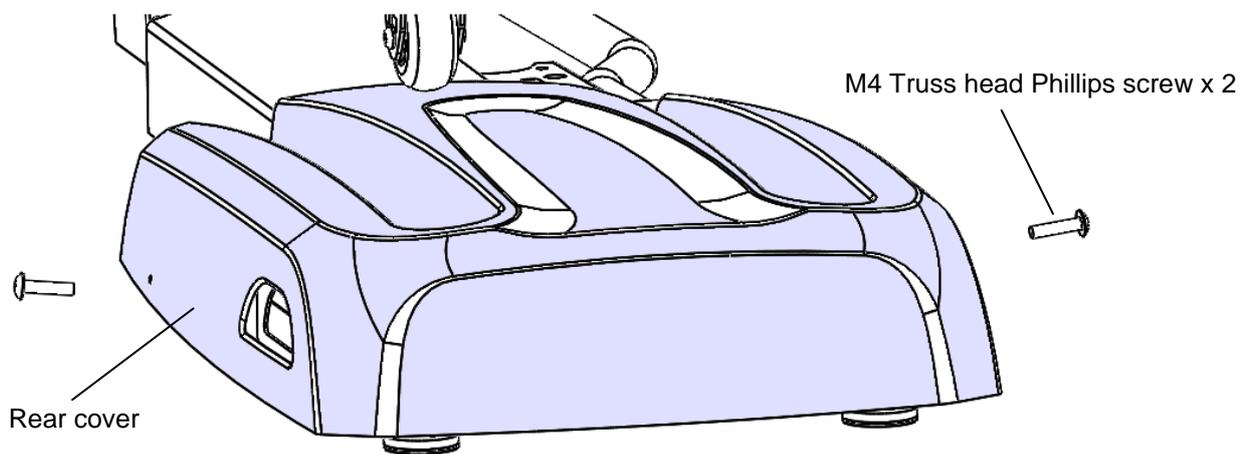


10.10 Ramp assembly replacement

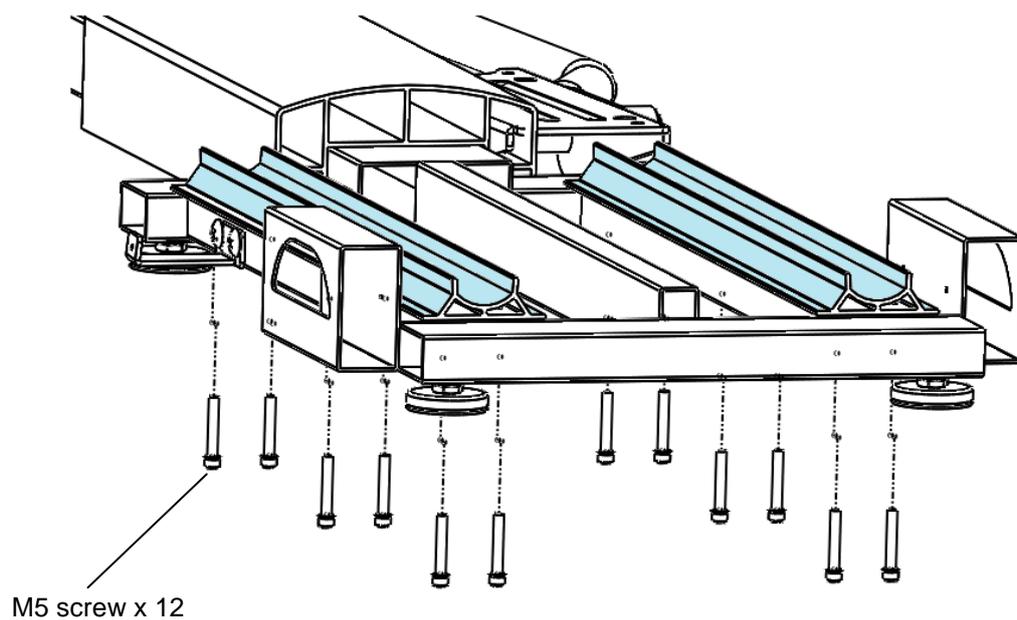
- Dismantle truss head Phillips self tapping screw



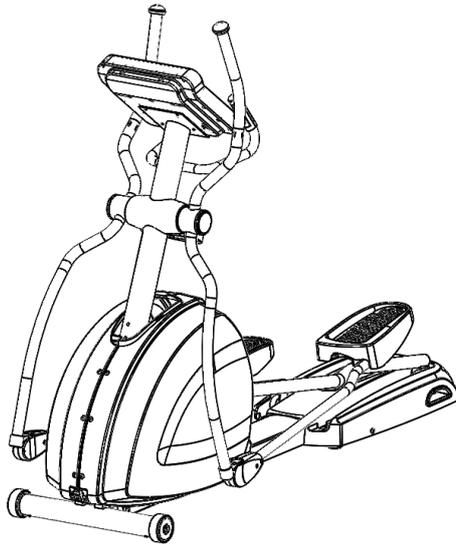
- Dismantle truss head Phillips screw



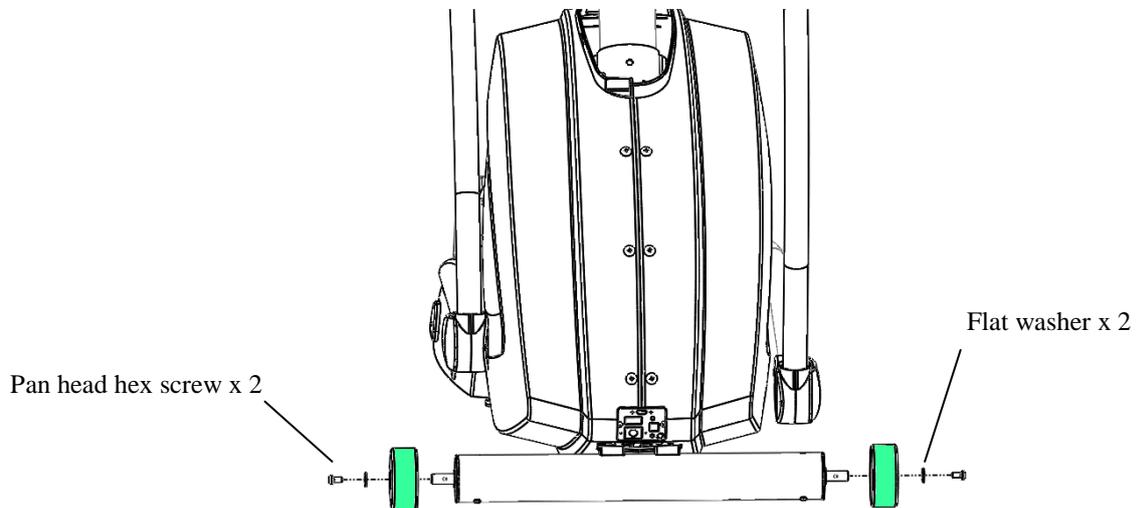
- Dismantle all screws



10.11 Transportation wheel replacement

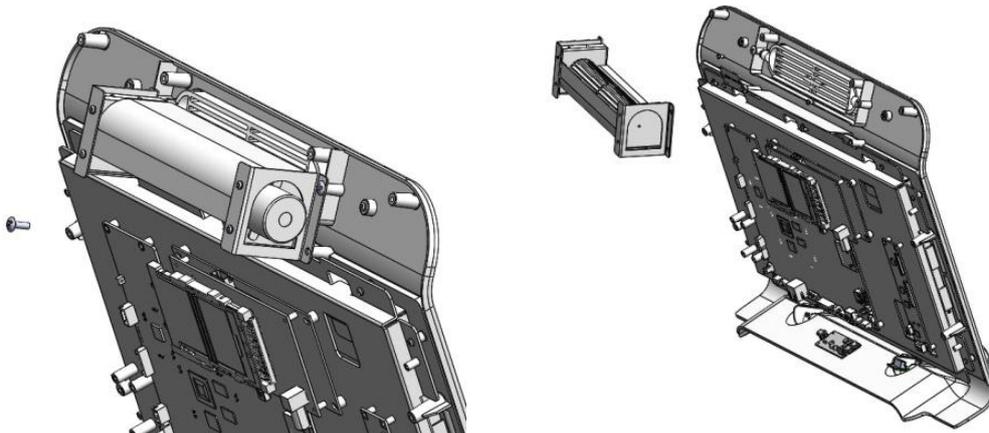


- Dismantle pan head hex screw & flat washer

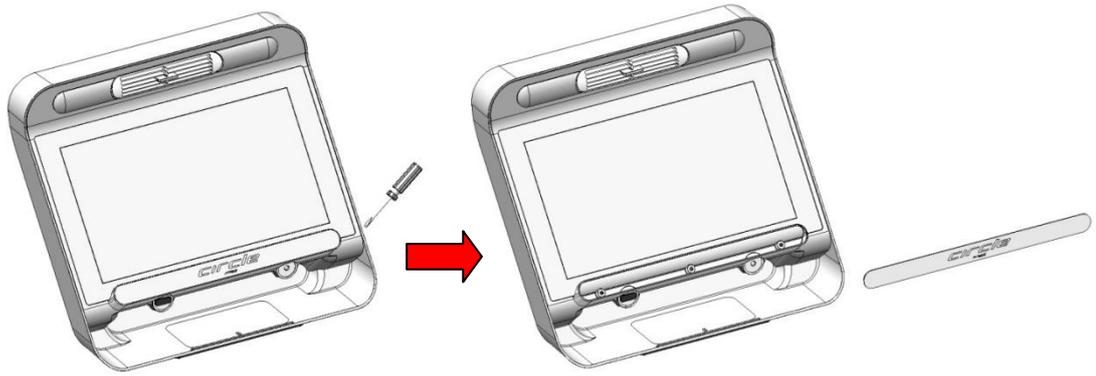


10.12 Fan Assembly replacement

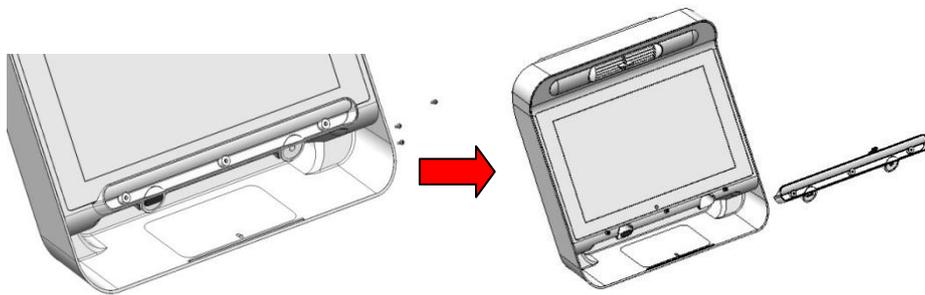
- Disconnect the fan cables and remove the screws which secure the fan assembly.



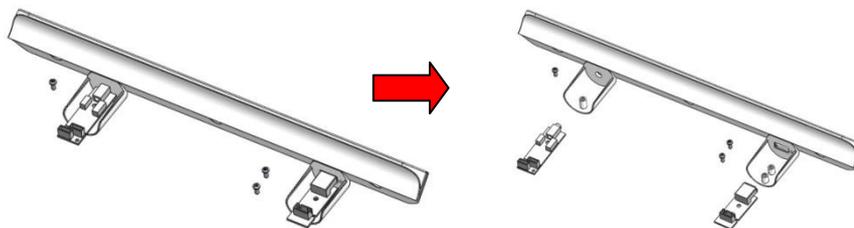
- Replace the USB port.
- Use a flat screwdriver to pry rack plastic Circle logo cover up.



- Remove the (3) screws on reading rack, remove reading rack, and disconnect the related cables.

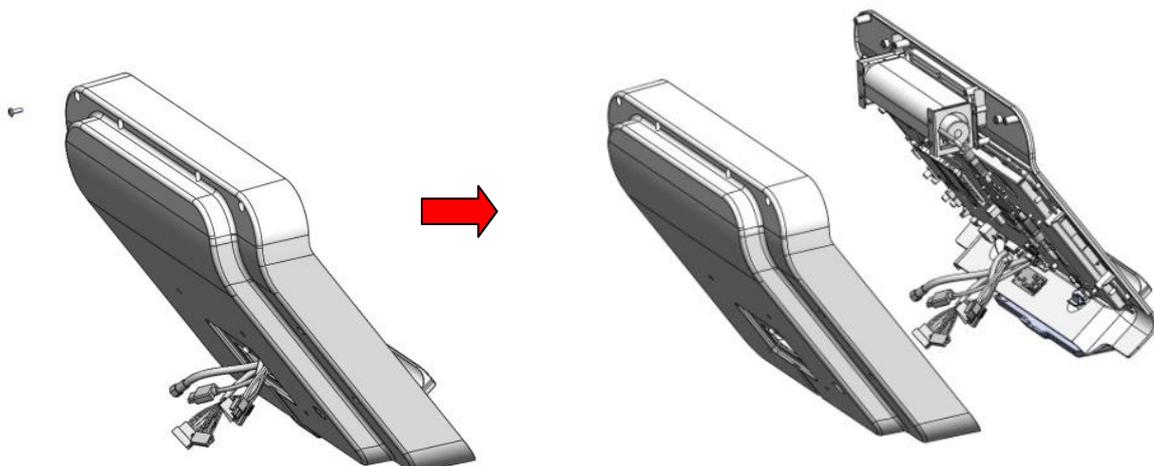


- Remove the screws on USB board and audio jack board, disconnect related cable, replace with a new USB board and audio jack board.

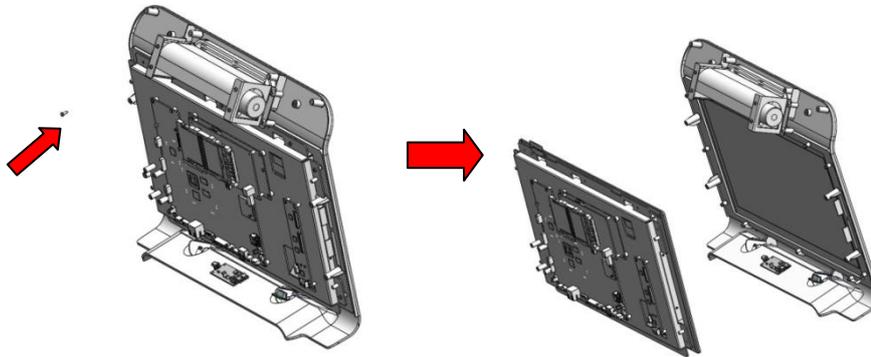


10.13 Upper Control Board (UCB) replacement

- Remove the screws on rear of the console plastic cover then remove the cover.

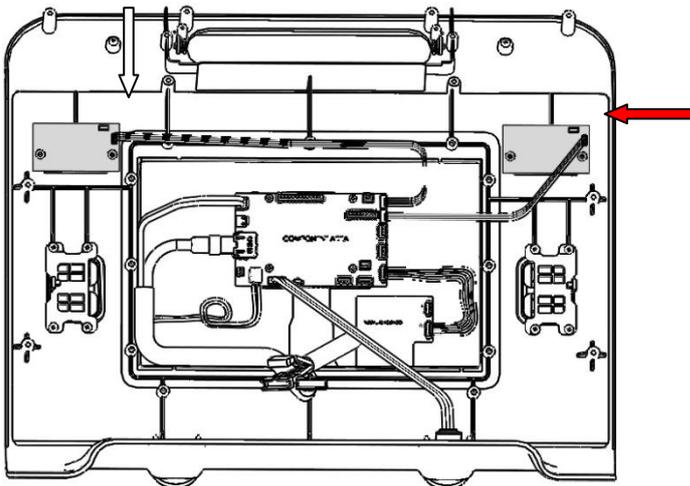


- On the LED Console, disconnect all related cables on UCB, remove all cable connections on the Lower Control Board (LCB). **(It is recommended that a photograph be taken before the disconnection of the cables for re-assembly reference of the cables.)** Remove all screws on main board to replace with new main board.

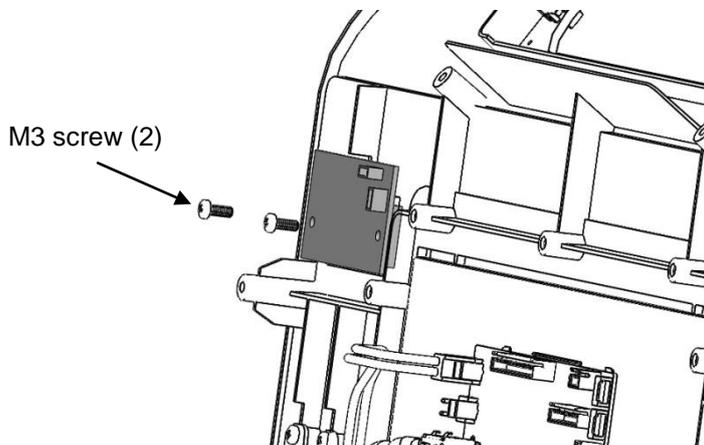


10.14 LED Display Board replacement

10.15.1 Remove the connecting cables.



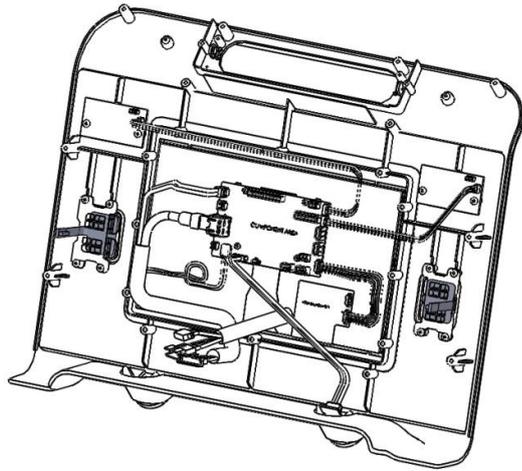
10.15.2 Remove the (2) M3 screws.



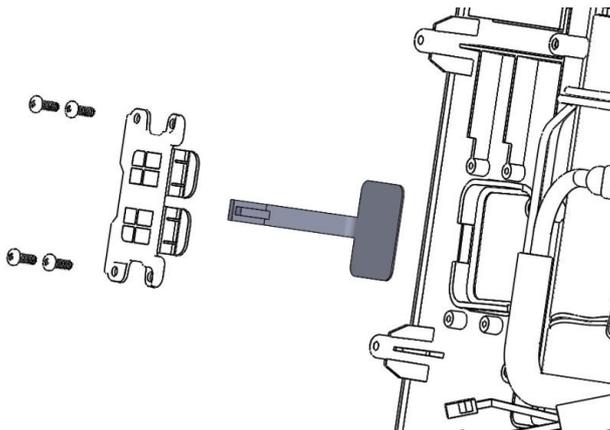
- Use reverse order to install, and it is the same way with the other LED Display Board

10.15 Console Membrane and Overlay replacement

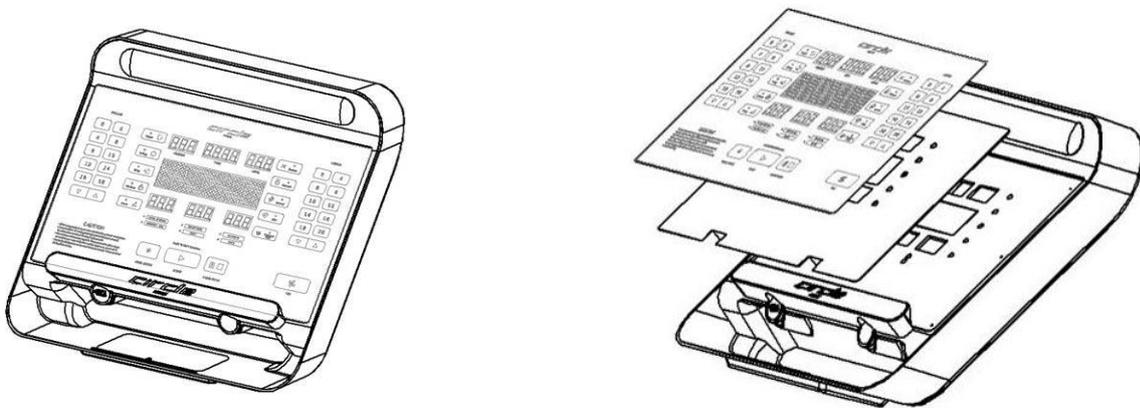
- **Membrane**
- Disconnect the connecting wires of the Membrane switch.



- Remove the screws on the supporting plate and remove the plate.
- The membrane is stuck on the plate, please just tear off it.
- When you install the membrane, please stick it on the supporting plate. Then use the supporting plate to fix on the plastic cover. Please use the same way for the other membrane.



- **Overlay**
- Using a plastic pick or knife, peel the existing overlay and membrane off the console.
- Clean the plastic cover surface thoroughly using a cotton wipe.



- Adhere the membrane first then the overlay. While adhering, pay attention to align with dent on plastic cover ensuring no dust or gap is trapped in between the layers.