



3.5AE & 7.5AE Service Manual

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CHAPTER 1: Serial Number Location

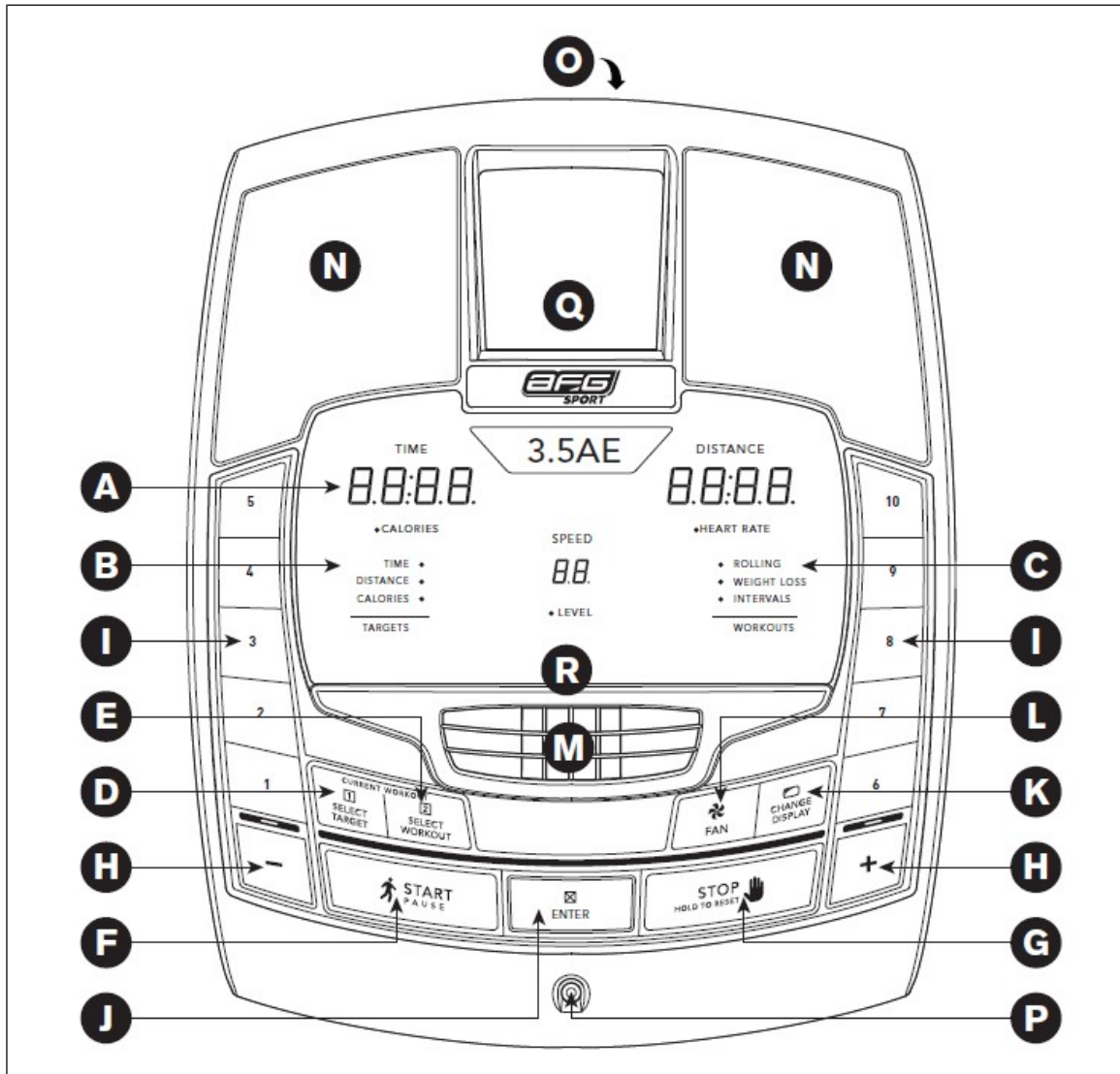
1.1 Serial Number Location



Conforms to Conforme à Se conforma a		: UL STD. 1647		
Certified to Certifié à Certificado a		: CSA STD. C22.2 No. 68-09		
Volts Voltage		120Vac	Model Modèle Modelo	
Current Courant Corriente		13A	Serial NO. No. de Série Num. de Serie	
Freq. Fréq. Frec.		60HZ	MFG date Date de Fabrication Fecha de Fabrica	
Phase Phase		1	HOUSEHOLD USE ONLY UNIQUEMENT POUR L'USAGE DOMESTIQUE USO EN CASA SOLAMENTE	
Johnson Health Tech North America, Inc.				

2.1 CONSOLE OVERVIEW

2.1.13.5AE CONSOLE OPERATION



Note: There is a thin protective sheet of clear plastic on the overlay of the console that should be removed before use.

A) LED DISPLAY WINDOWS: time, distance, calories, heart rate, speed and resistance level.

B) TARGET LED INDICATORS: indicate what target (if any) is set for the current program.

C) WORKOUT LED INDICATORS: indicate what workout (if any) is set for the current program.

D) SELECT TARGET: press to select your desired target.

E) SELECT WORKOUT: press to select your desired workout.

F) START: press to begin exercising, start your workout, or resume exercising after pause.

G) STOP: press to pause/end your workout. Hold for 3 seconds to reset the console.

H) + / - KEYS: used to adjust resistance level.

I) QUICK KEYS: used to reach desired resistance level more quickly.

J) ENTER: used to confirm a selection.

K) CHANGE DISPLAY: press to change display feedback during workout.

L) FAN KEY: press to turn fan on and off.

M) FAN: personal workout fan.

N) SPEAKERS: music plays through speakers when your CD / MP3 player is connected to the console.

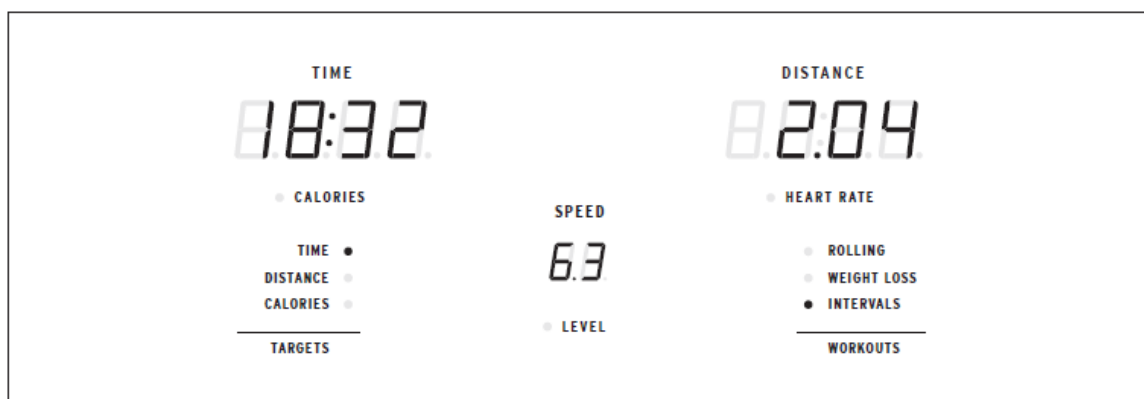
O) AUDIO IN JACK: plug your CD / MP3 player into the console using the included audio adaptor cable.

P) AUDIO OUT / HEADPHONE JACK: plug your headphones into this jack to listen to your music through the headphones.

Note: when headphones are plugged into the headphone jack the sound will no longer come out through the speakers.

Q) MP3 PLAYER POCKET: used to store your MP3 player.

R) READING RACK: holds reading material.



2.1.2 DISPLAY WINDOWS

- **TIME:** Shown as minutes : seconds. View the time remaining or the time elapsed in your workout.
- **DISTANCE:** Shown as miles. Indicates distance traveled or distance remaining during your workout.
- **SPEED:** Shown as MPH. Indicates how fast the foot pedals are moving.
- **CALORIES:** Total calories burned or calories remaining left to burn during your workout.
- **HEART RATE:** Shown as BPM (beats per minute). Used to monitor your heart rate (displayed when contact is made with both pulse grips).
- **LEVEL:** Shows the current level of resistance.
- **TARGETS:**
LED lights up next to currently selected target. If no LED is lit, no target is activated.
- **WORKOUTS:**
LED lights up next to currently selected workout. If no LED is lit, no workout is activated.

PROGRAM INFORMATION



TARGET 1 – TIME: Allows user to set a target based on how long they would like to workout. Time

targets can range from 5:00 – 99:00. TIME will count down. DISTANCE and CALORIES will count up from zero.



TARGET 2 – DISTANCE: Allows user to set a target based on distance they would like to complete.

Distance target can range from 0.25 – 26.25 miles. DISTANCE will count down. TIME and CALORIES will count up from zero.



TARGET 3 – CALORIES: Allows user to set a target based on the number of calories they would like to

burn. Calories target can range from 20 – 980 calories. CALORIES will count down. TIME and DISTANCE will count up from zero.



NO TARGET: Allows user to select a workout profile that has no specified time, distance, or calorie target.

TIME, DISTANCE, and CALORIES will all count up from zero.



WORKOUT 1 – ROLLING: Resistance program. Mimics the feeling of moving up and down hills by gradually increasing and decreasing the resistance.



WORKOUT 2 – WEIGHT LOSS: Promotes weight loss by increasing and decreasing the resistance, while keeping you in your fat burning zone.



WORKOUT 3 – INTERVALS: Improves your strength, speed and endurance by increasing and decreasing the resistance throughout your workout to involve your heart and other muscles.

2.1.3 GETTING STARTED

- 1) Check to make sure no objects are nearby that will hinder the movement of the elliptical.
- 2) Plug in the power cord and turn the elliptical ON. (Switch is located at the bottom-front of the elliptical.) NOTE: Some ellipticals may not have a power switch and will turn on when power is supplied.

A) QUICK START UP

Simply press the START key to begin working out. The time will count up from 0:00, the resistance level will default to level 1. OR...

B) SELECT A TARGET AND WORKOUT

- 1) Select a TARGET using the SELECT TARGET key.
- 2) Adjust the TARGET settings using the ARROW keys.
- 3) Press ENTER to advance.
- 4) Select a WORKOUT using the SELECT WORKOUT key.

5) Press START to begin workout.

NOTE: If no TARGET nor WORKOUT is selected, the program will function as a MANUAL program. All changes in resistance level or incline will need to be from the user in this setting.

TO RESET THE CONSOLE

Hold STOP key for 3 seconds.

FINISHING YOUR WORKOUT

When your workout is complete, the monitor display will flash "FINISHED" and beep. Your workout information will stay displayed on the console for 30 seconds and then reset.

CLEAR CURRENT SELECTION

To clear the current program selection or screen, hold the STOP button for 3 seconds.

USING YOUR CD / MP3 PLAYER



1) Connect the included AUDIO ADAPTOR CABLE to the AUDIO IN JACK on the top right of the console and the headphone jack on your CD / MP3 player.

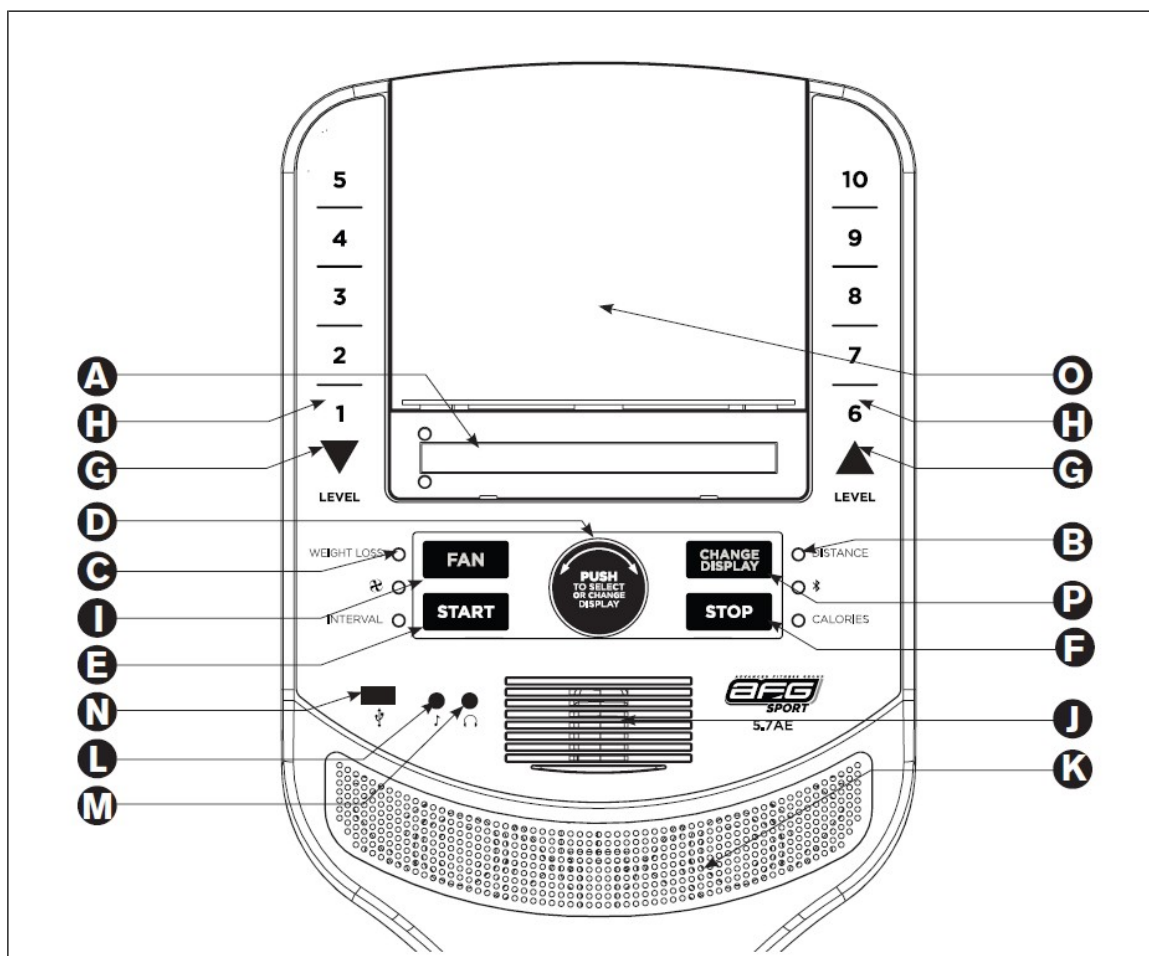
2) Use your CD / MP3 player buttons to adjust song settings.

3) Remove the AUDIO ADAPTOR CABLE when not in use.



4) If you don't want to use the SPEAKERS, you can plug your headphones into the AUDIO OUT JACK at the bottom of the console.

2.2 5.7AE CONSOLE OPERATION



Note: There is a thin protective sheet of clear plastic on the overlay of the console that should be removed before use.

A) LED DISPLAY WINDOWS: time, distance, calories, heart rate, speed, and incline.

B) TARGET LED INDICATORS: indicate what target (if any) is set for the current program.

C) WORKOUT LED INDICATORS: indicate what workout is set for the current program.

D) SELECT TARGET/WORKOUT KNOB: rotate/press to select your desired workout/target

E) START: press to begin exercising, start your workout, or resume exercising after pause.

F) STOP: press to pause/end your workout. Hold for 3 seconds to reset the console.

G) RESISTANCE ▼/▲ KEYS: used to adjust resistance.

H) RESISTANCE QUICK KEYS: used to reach desired resistance more quickly.

I) FAN KEY: press to turn fan on and off.

J) FAN: personal workout fan.

K) SPEAKERS: music plays through speakers when your CD / MP3 player is connected to the console.

L) AUDIO IN JACK: plug your CD / MP3 player into the console using the included audio adaptor cable.

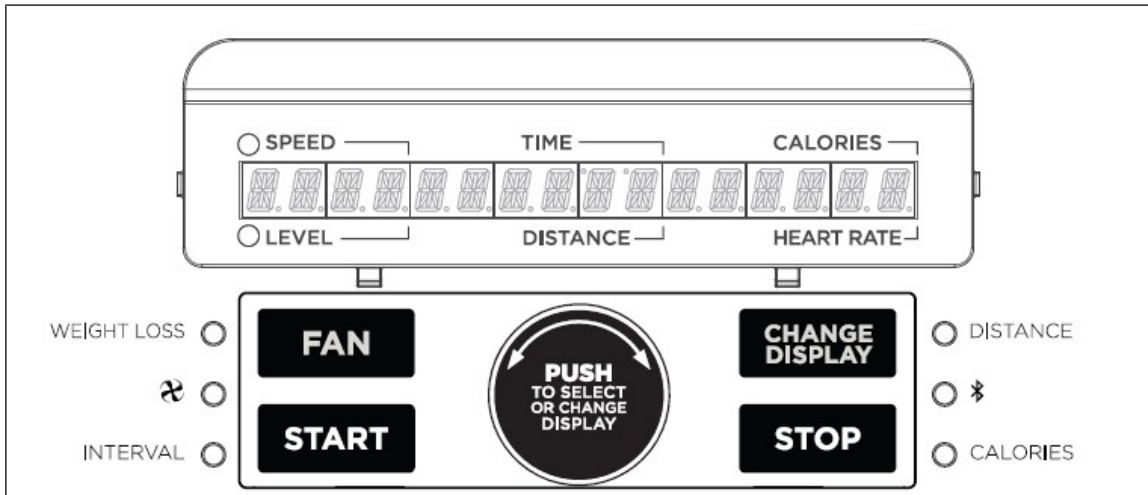
M) AUDIO OUT / HEADPHONE JACK: plug your headphones into this jack to listen to your music through the headphones.

Note: when headphones are plugged into the headphone jack the sound will no longer come out through the speakers.

N) USB INPUT: 1A/5V USB output power.

O) TABLET/READING RACK: holds tablet or reading material.

P) CHANGE DISPLAY: changes display level between top and bottom row.



2.2.1 DISPLAY WINDOWS

- **TIME:** Shown as minutes : seconds. View the time remaining or the time elapsed in your workout.
- **DISTANCE:** Shown as miles. Indicates distance traveled during your workout.
- **SPEED:** Shown as MPH. Indicates how fast the foot pedals are moving.
- **CALORIES:** Total calories burned during your workout.
- **HEART RATE:** Shown as BPM (beats per minute). Used to monitor your heart rate (displayed when contact is made with both pulse grips).
- **LEVEL:** Shows the current level of resistance.
- **TARGETS:**

LED lights up next to currently selected target. If no LED is lit, no target is activated.

- **WORKOUTS:**

LED lights up next to currently selected workout. If no LED is lit, no workout is activated.

2.3 GETTING STARTED & PROGRAM INFORMATION

2.2.2 GETTING STARTED

- 1) Check to make sure no objects are nearby that will hinder the movement of the elliptical.
- 2) Plug in the power cord to turn the elliptical ON.
- 3) **A) QUICK START UP**

Simply press the START key to begin working out. The time will count up from 0:00, the resistance level will default to

CHAPTER 2: Console Overlay and Workout Description

level 1. OR...

B) SELECT A TARGET AND WORKOUT

- 1) Select your USER by turning the workout knob and then pressing when your desired USER is displayed.
- 2) Select your WEIGHT by turning the workout knob and then pressing when your desired WEIGHT is displayed.
- 3) Select your PROGRAM by turning the workout knob and then pressing when your desired PROGRAM is displayed.
- 4) Adjust the SETTING by turning the workout knob and then pressing when your desired SETTING is displayed.
- 5) Press START to begin.

WORKOUT PROFILES

- 1) **MANUAL**: Adjust your resistance manually during your workout.
- 2) **INTERVALS**: Improves your strength, speed and endurance by increasing and decreasing the resistance throughout your workout to involve your heart and other muscles. Includes 10 levels.

Resistance changes and segments repeat 30 seconds and 90 seconds.

Segment	Warm Up				1	2	Cool Down			
Time	60	60	60	60	30	90	60	60	60	60
Level 1	1	1	1	1	3	1	1	1	1	1
Level 2	1	1	1	2	4	1	2	1	1	1
Level 3	1	1	1	2	5	2	2	1	1	1
Level 4	1	1	1	3	5	3	3	1	1	1
Level 5	1	2	3	3	6	3	3	3	2	1
Level 6	1	2	3	4	7	4	4	3	2	1
Level 7	1	2	3	4	7	5	4	3	2	1
Level 8	1	2	3	5	8	5	5	3	2	1
Level 9	2	2	3	5	9	6	5	3	2	2
Level 10	2	2	4	6	10	6	6	4	2	2

- 3) **WEIGHT LOSS**: A workout designed specifically to target fat. Promotes weight loss by increasing and decreasing the resistance, while keeping you in your fat burning zone. Includes 10 levels

Resistance changes, segments repeat every 60 seconds.

Segment	Warm Up				1	2	3	4	5	6	7	8	9	10	11	12	Cool Down			
Time	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
Level 1	1	1	1	1	2	2	2	2	3	3	3	3	2	2	2	2	1	1	1	1
Level 2	1	1	1	2	2	2	3	3	3	3	3	3	3	3	2	2	2	1	1	1
Level 3	1	1	1	2	3	3	3	3	4	4	4	4	3	3	3	3	2	1	1	1
Level 4	1	1	1	3	3	3	4	4	4	4	4	4	4	4	3	3	3	1	1	1
Level 5	1	2	3	3	4	4	4	4	5	5	5	5	4	4	4	4	3	3	2	1
Level 6	1	2	3	4	4	4	5	5	5	5	5	5	5	4	4	4	4	3	2	1
Level 7	1	2	3	4	5	5	5	5	6	6	6	6	5	5	5	5	4	3	2	1
Level 8	1	2	3	5	5	5	6	6	6	6	6	6	6	6	5	5	5	3	2	1
Level 9	2	2	3	5	6	6	6	6	7	7	7	7	6	6	6	6	5	3	2	2
Level 10	2	2	4	6	6	6	7	7	7	7	7	7	7	7	6	6	6	4	2	2

TARGET PROFILES

- 1) **TARGET 1 – DISTANCE**: Push yourself and go further during your workout with 13 distance workouts. Choose from 1

mile, 2 miles, 5k, 5 miles, 10k, 8 miles, 15k, 10 miles, 20k, half marathon, 15 miles, 20 miles and marathon goals. User sets starting resistance levels.

2) TARGET 2 – CALORIES: Set goals for burning calories with nine workouts. Choose from 100, 200, 300, 400, 500, 600, 700, 800, or 900 calorie burn workouts. User sets starting resistance levels. Calories burned are calculated using weight input of user profile.

TO RESET THE CONSOLE

Hold STOP key for 3 seconds.

FINISHING YOUR WORKOUT

When your workout is complete, the unit will beep. Your workout information will stay displayed on the console for 30 seconds and then reset.

USING YOUR CD / MP3 PLAYER



- 1) Connect the included AUDIO ADAPTOR CABLE to the AUDIO IN JACK on the bottom left of the console and the headphone jack on your CD / MP3 player.
- 2) Use your CD / MP3 player buttons to adjust song settings.
- 3) Remove the AUDIO ADAPTOR CABLE when not in use.



- 4) If you don't want to use the SPEAKERS, you can plug your headphones into the AUDIO OUT JACK at the bottom of the console.

AFG TABLET CONNECTED FITNESS SYSTEM

Your AFG machine is tablet ready, allowing you to use Bluetooth technology to wirelessly connect your tablet to your AFG Sport Elliptical. Using the free downloadable AFG Fitness App will enable you to control your treadmill or elliptical's operating functions via your tablet. The app will also allow you to monitor your workout, track your progress and view your workout history. The AFG Fitness App can be downloaded from either the iTunes store for IOS devices or from the Google store for Android devices.

For information about connecting your tablet to your AFG Sport elliptical, setting up the AFG Fitness App and controlling and monitoring your workout with your tablet, see the AFG Connected Fitness Manual included

with your elliptical.



3.1 ENGINEERING MODE

1. The key combination to enter engineering menu and eng8 menu is different regarding to different machine types.

1.1 TM with powered elevation motor: incline up + speed down

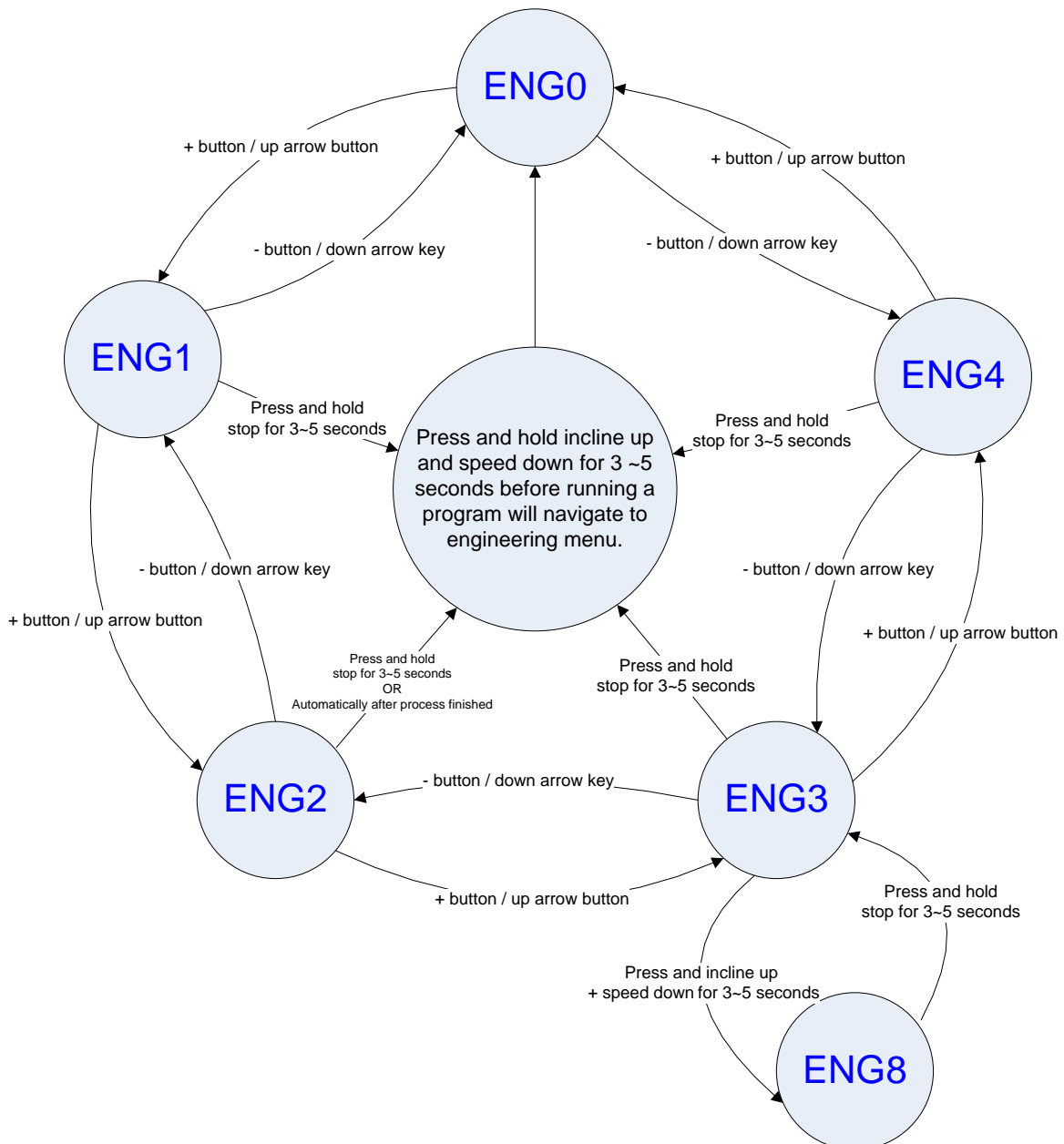
1.2 TM without powered elevation motor: speed up + speed down

1.3 BK,EP and ascent trainer without powered elevation motor: resistance up + resistance down

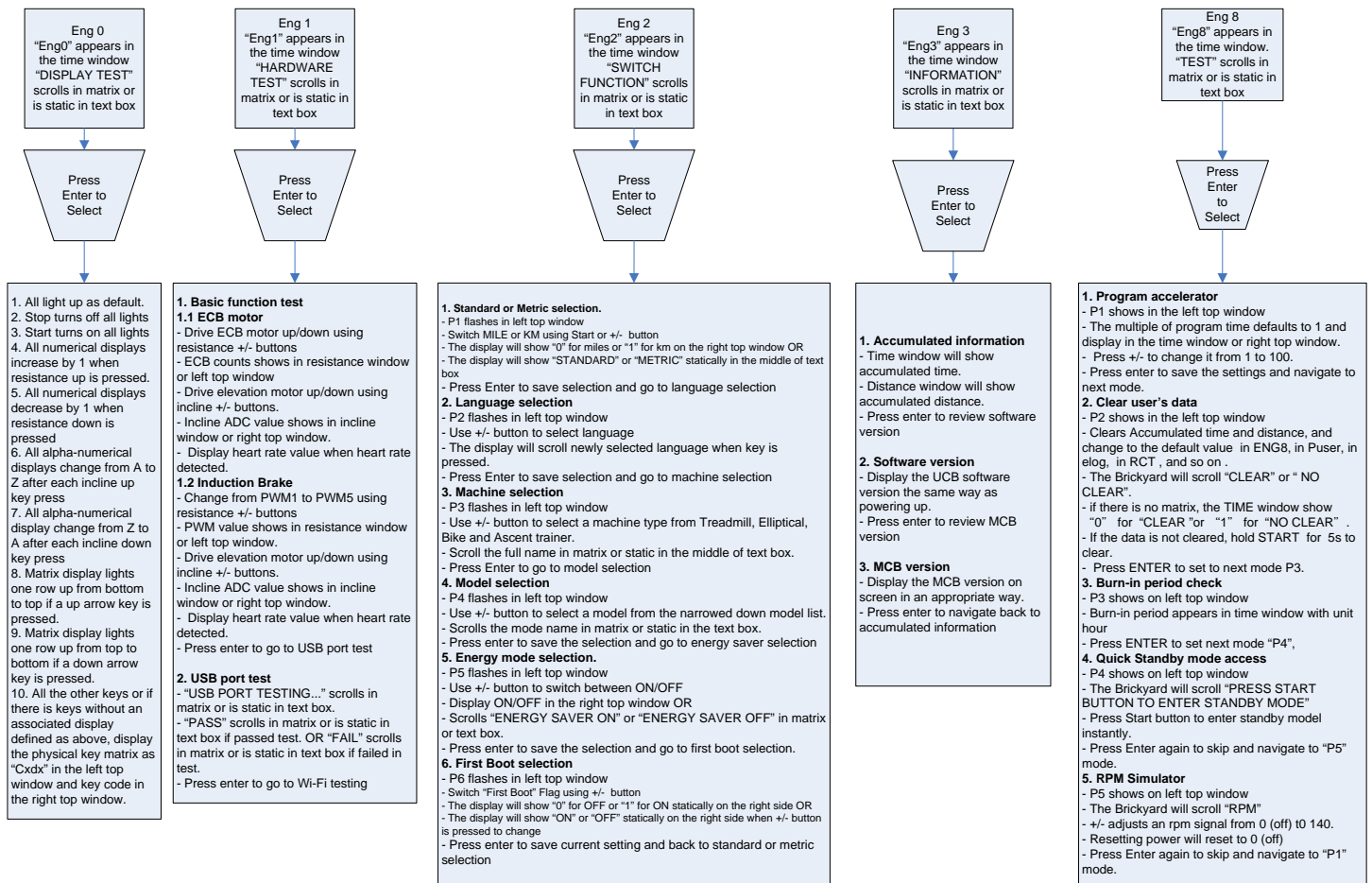
1.4 EP and ascent trainer with powered elevation motor: incline up + resistance down.

2. Some of machine may not have certain engineer menu. Display “NA” or “NOT AVAILABLE” when certain engineer menu is selected.

3.2 ENGINEERING MODE OVERVIEW



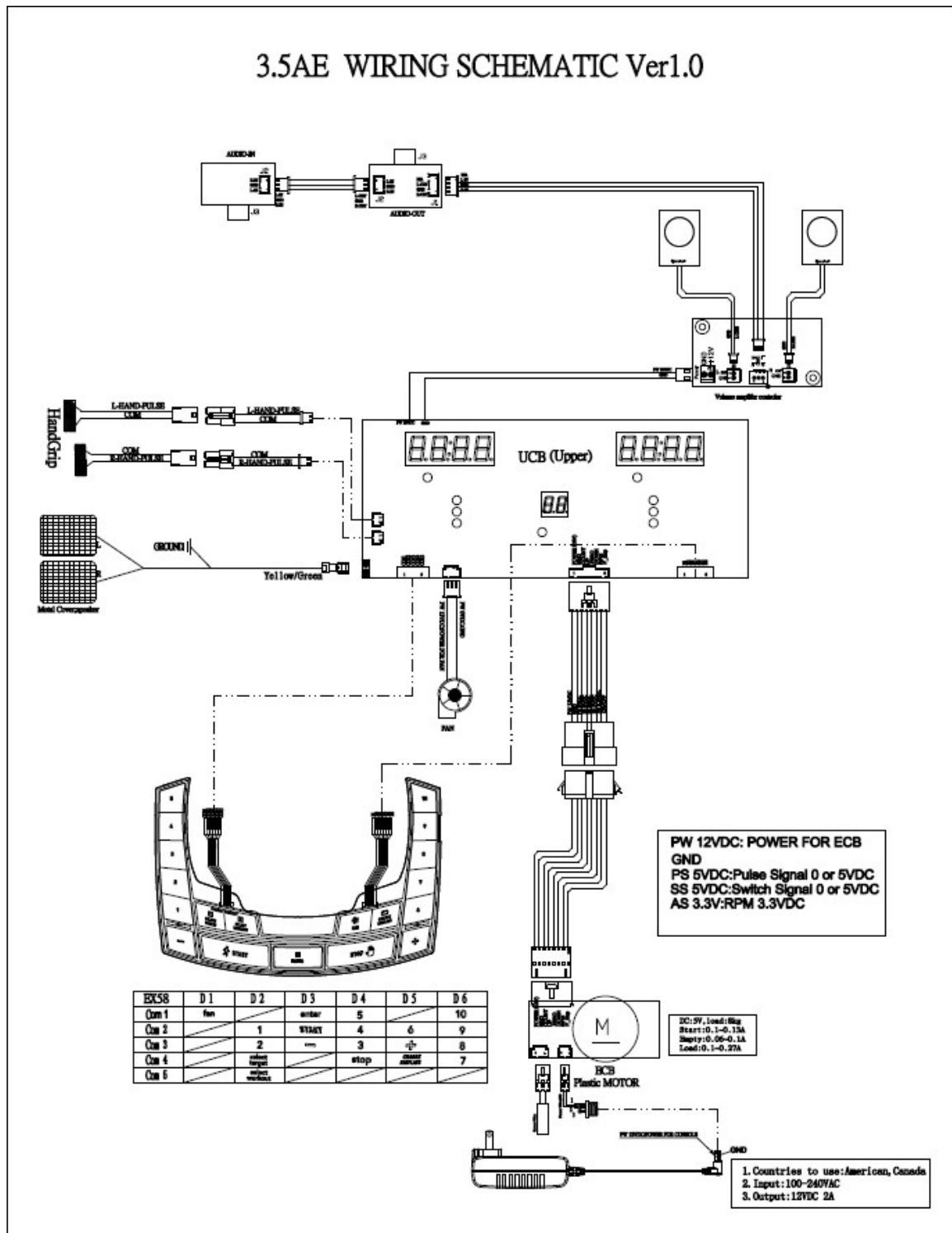
CHAPTER 3: Engineering Mode



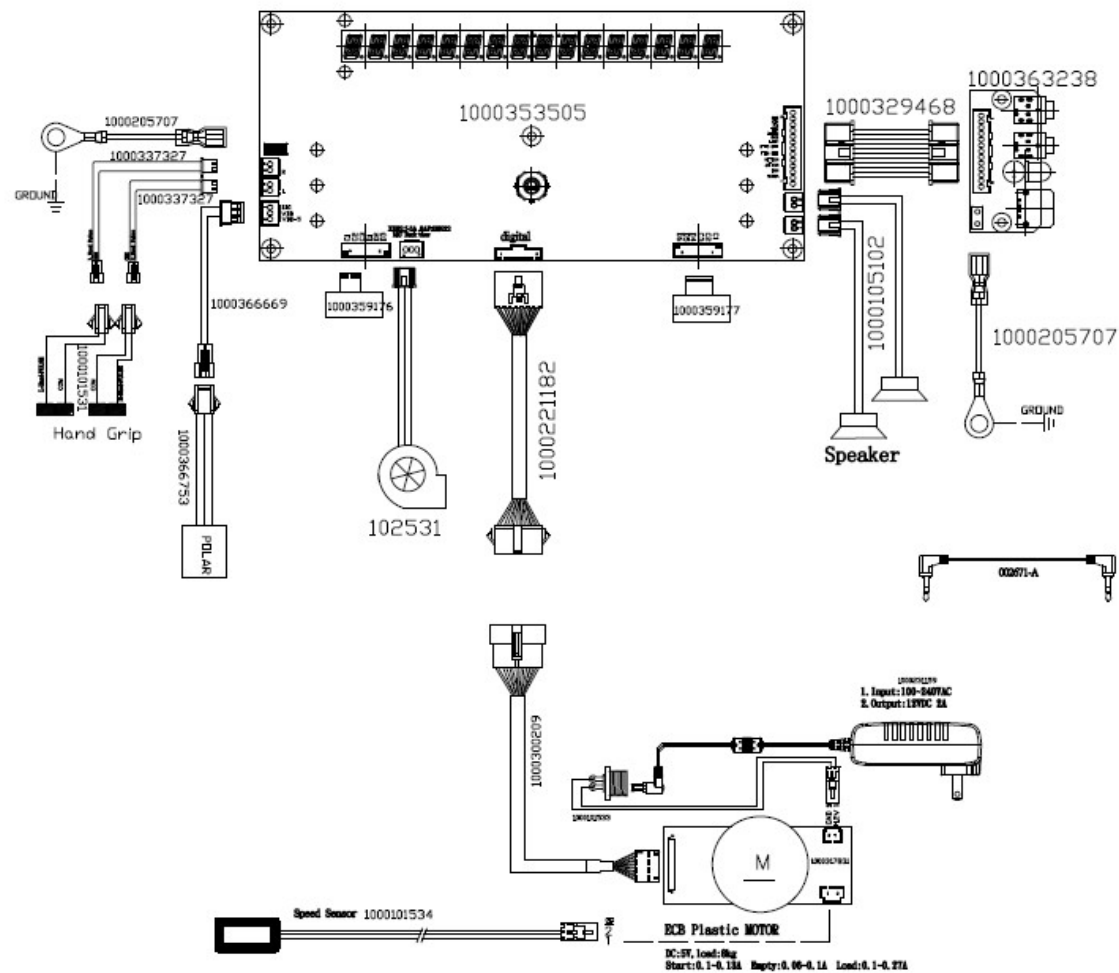
Note:

1. USB port testing is only for the consoles which have USB interface.
2. First Boot flag is only used for consoles which work for different machine and/or model types.
3. A text box must be implemented when multi language is available.
4. Console goes to model selection after cycling the power when First Boot flag is set to ON.
5. If there is conflict between process number "Px" and other display items, the process number will only display for 1 second and then display the real items.
6. Display items alternatively when a few items needs to be displayed in the same window. Light up the indicator if the indicator exists.
7. A text box or LED/LCD matrix is needed if the console work for different machine and/or model types.

4.1 Electrical Diagram



EP595-1US/(5.7AE) WIRING SCHEMATIC Ver1.0



4.2 No power to the console

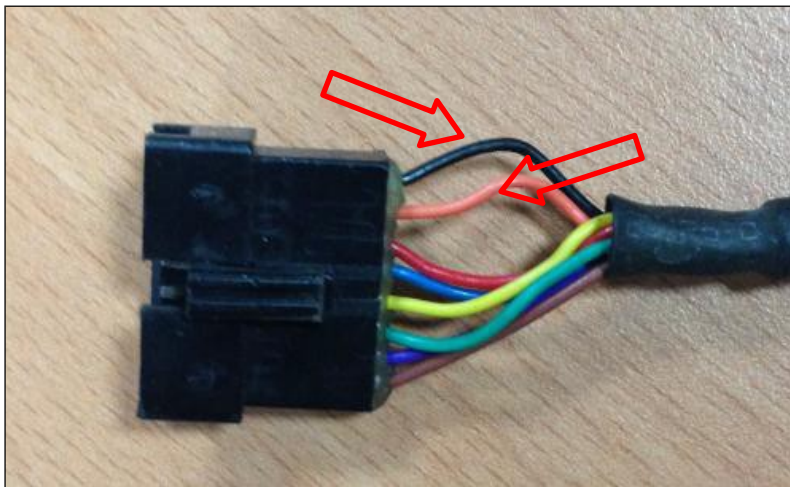
Symptom: Console does not light up.

Reason:

1. Adaptor incorrect or defective.
2. Console cable defective.
3. Console defective.

Solution:

1. The adaptor for this model is 12V -1A. Make sure to use an adaptor with the correct specification, and replace the adaptor if it is defective.
2. A) First, try to reconnect the wires.
B) Test pins 1 & 2 of the connector to verify that the voltage of the console cable is 12V-1A (Figure A). If it is not, make sure that the DC cable and ECB fully connected. Replace cables as necessary.
C) Check the wires in the console to make sure they are all fully connected.



(Figure A)

(Console cable's connectors with PCB)

If the console cable's output is DC 12V but the console does not light up, the console PCB is defective. Replace the console set.

4.3 ECB Controller Instruction



1. Attach the steel cable here.
2. Reposition the orange block to adjust the resistance (left side is minimum and right side is maximum).

4.4 No RPM display

Symptom: No RPM shown on the console.

Reason:

1. Bad connection between the console cable and the console
2. Speed sensor wire defective
3. Magnet has fallen off of pulley
4. Console defective

Solution:

1. Reconnect the console wire.
2. Check the gap between the speed sensor and magnet on pulley. It is normal within 5mm (Figure A). If the gap is larger, adjust the sensor.
3. Install a new magnet (Figure B).
4. Replace the console set



(Figure A)



(Figure B)

4.5 No resistance or Incorrect resistance

Symptom : 1. The resistance cannot be adjusted during exercise.
2. The resistance is reversed or too strong.

Reason :

1. Speed sensor wire is defective.
2. Console cable or ECB motor is defective.
3. ECB motor's steel rope is positioned incorrectly.
4. Inside magnet is defective.

Solution :

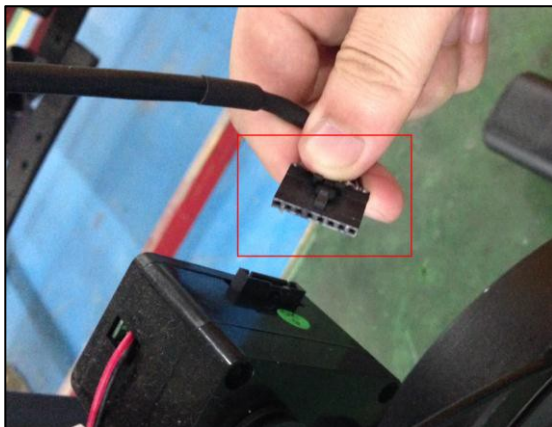
1. Turn on the console and check the ECB motor.

In resistance level 1, the head of the steel rope should point to the top right side (around 45 degree). If the head of the steel rope points to bottom left side, the resistance will be reversed. Adjust the head of the steel rope to the correct position.



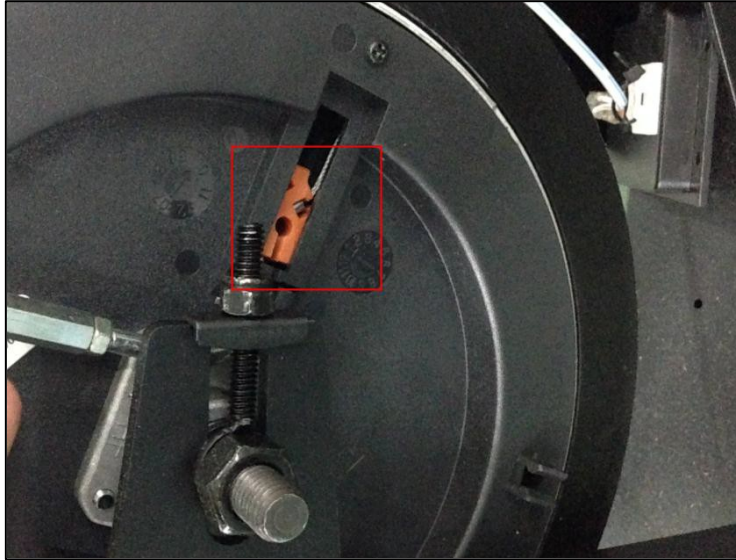
2. Press key "+" to adjust the resistance.

A) If ECB motor cannot move, the resistance will not be changed. The ECB motor or console cable is defective. Make sure the console cable inserted in the ECB motor. Next, try to reconnect the console cable. If the issue remains, replace the console cable. If the issue remains after replacing the console cable, replace the ECB motor.

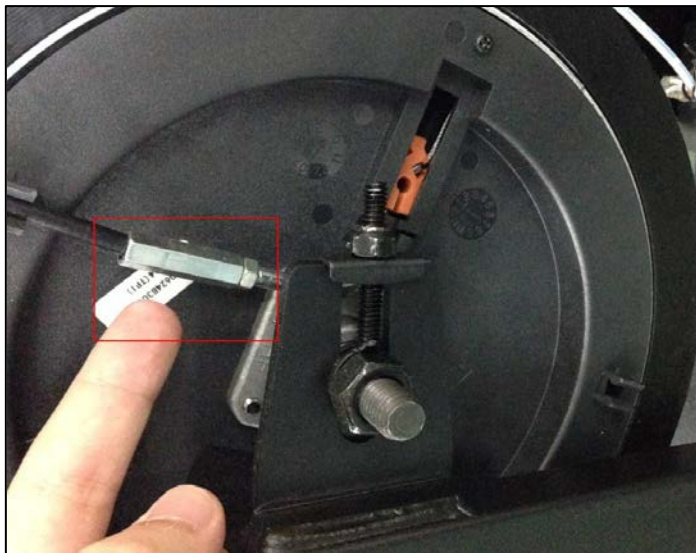


4.5 No resistance or Incorrect resistance (continued)

B) If the ECB motor can move, the resistance can be adjusted. If the resistance is too strong, check the flywheel to make sure that the gap between the orange block and the bottom is within 1-2 mm.



If the gap is bigger than 1-2 mm, the resistance will be stronger than normal. Adjust the cable to the correct gap range.



3. If steps 1 & 2 do not fix the issue, the inside magnet is defective. Replace the inside magnet.

4.6 Heart Rate Function Issues

Symptom: Heart Rate Function Does Not Work or is Reading Incorrectly

Solution:

1. With a multi-meter set for DC voltage, place one terminal on each of the HR grip plates. The HR grip should give a voltage reading of between 0.5 and 2.0VDC. If the voltage is not between 0.5 and 2.0VDC, remove the 3 screws holding the HR grip together and check the connection of the HR grip wiring.
2. Check continuity of the HR grip wiring.
Place one terminal of a multi-meter set for resistance on the HR grip wiring at the HR grip, and the other terminal on the HR grip wiring at the console. An ohm reading of around 1 should be expected. If the reading is higher than 1, replace the HR grip wiring.
3. Remove the console. Remove the 6 screws holding the front of the console to the rear. Check the connection of the HR board wiring to the UCB. If all the wiring is intact and has good contact, replace the HR board.
4. If the HR board, HR grips, and HR grip wiring do not solve the issue, replace the UCB.

5.1 3.5AE Parts Replacement Guide

5.1.1 Console Replacement

1. Remove the 4 screws of the console mast (Figure A).
2. Take off the console and disconnect the wires (Figure B).

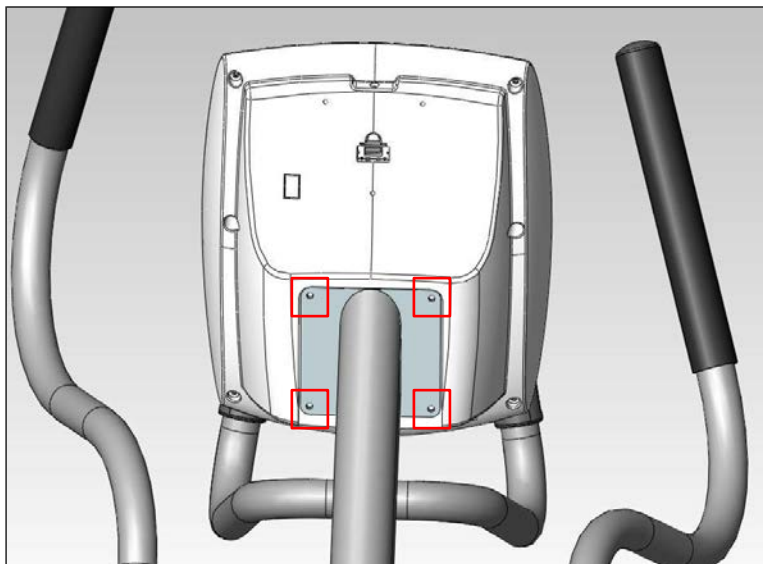


Figure A

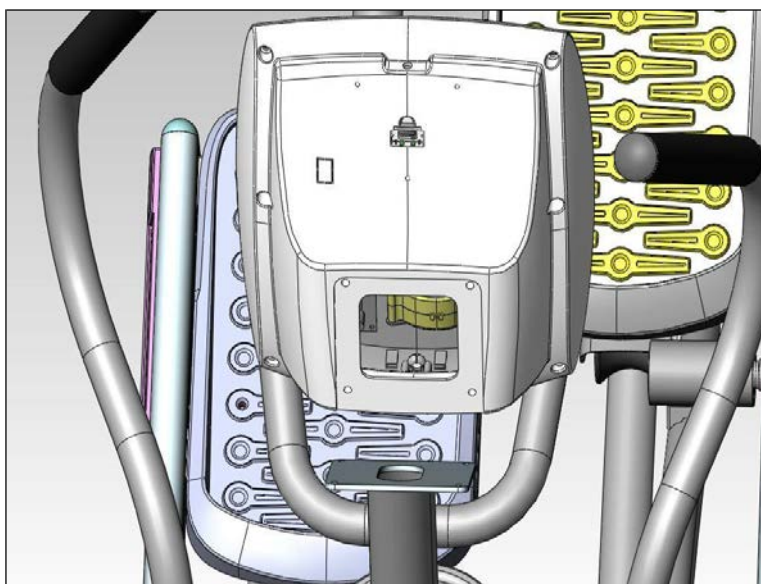
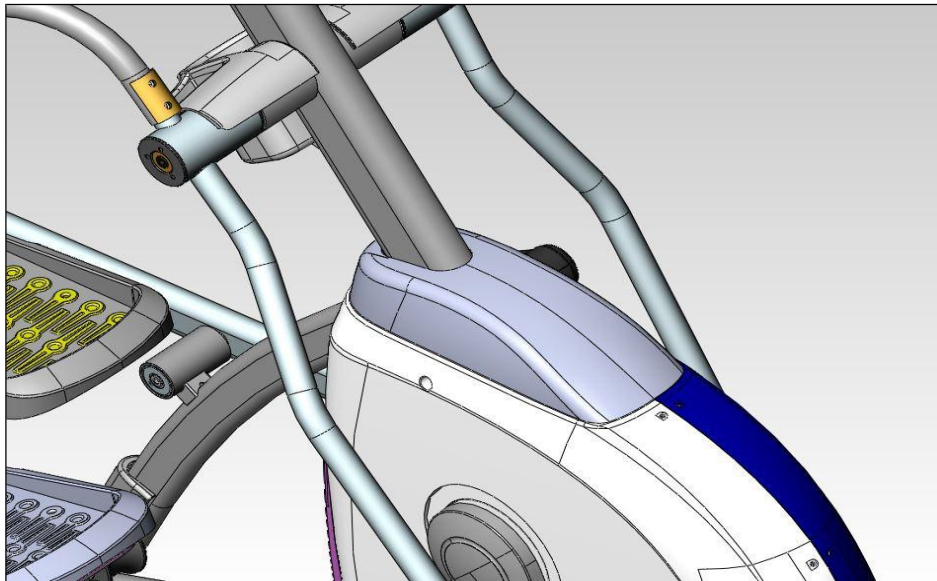


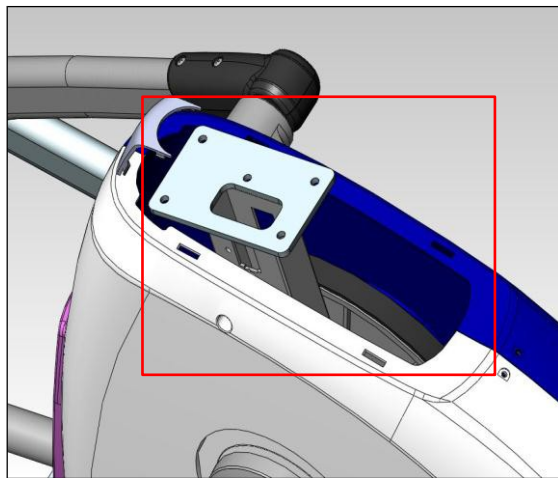
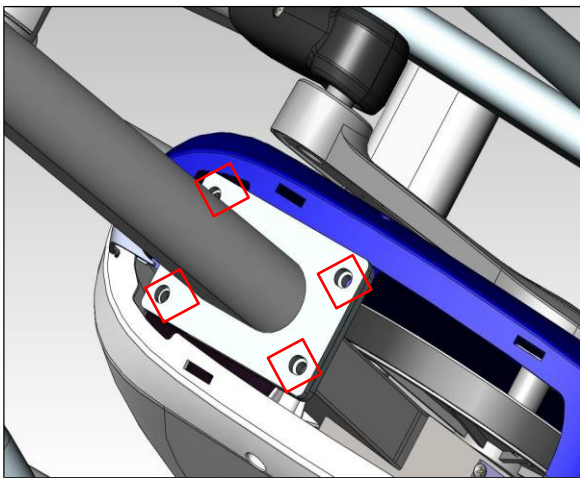
Figure B

5.1.2 Console Mast Replacement

1. Remove the console mast cover.



2. Loosen the 4 nuts and it can take off the console mast.



5.1.3 Arm Set Replacement

1. Loosen the screw and take off the washers, then move to the next step (Figure A)
2. Loosen the screw and remove the washers to take off the whole arm set (Figure B)
3. Take off the arm set (Figure C)

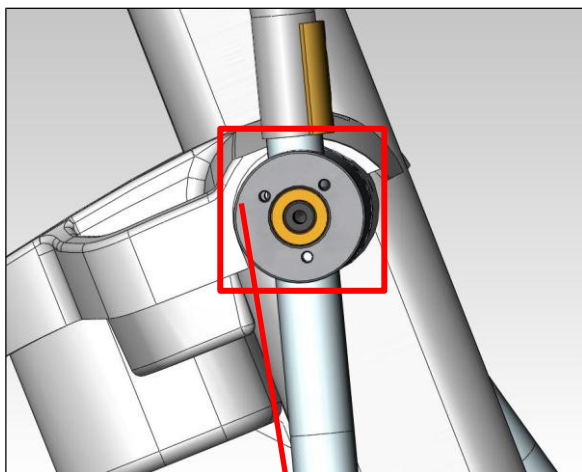


Fig.A

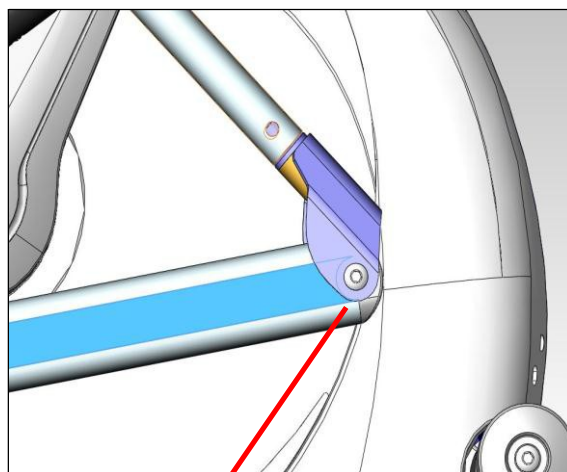


Fig.B

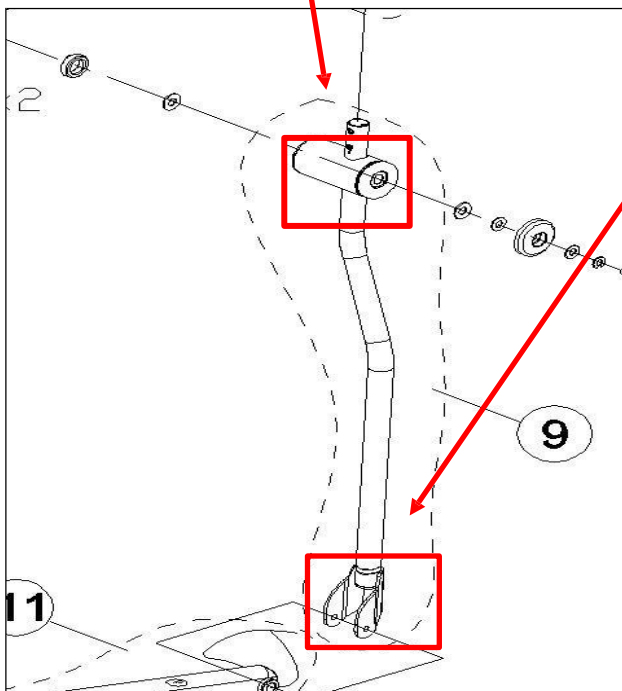
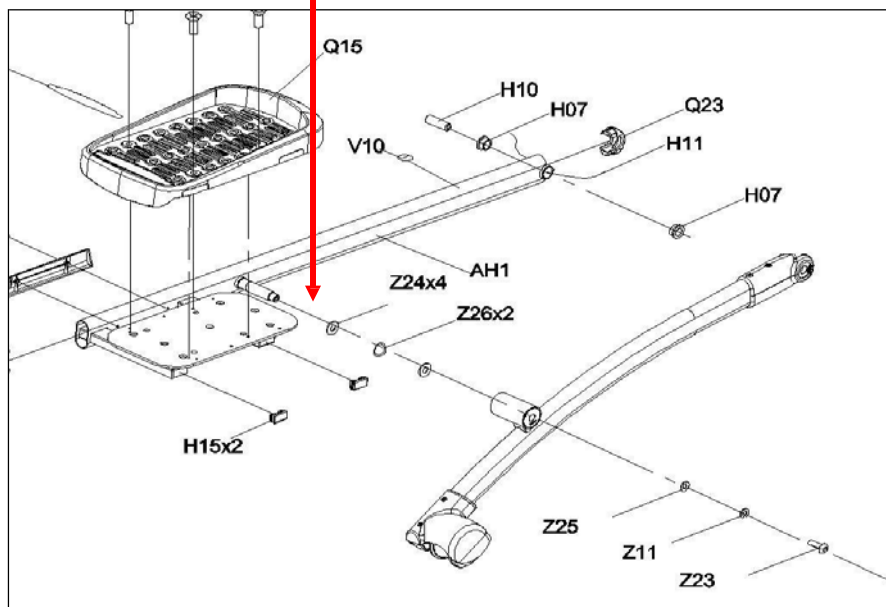
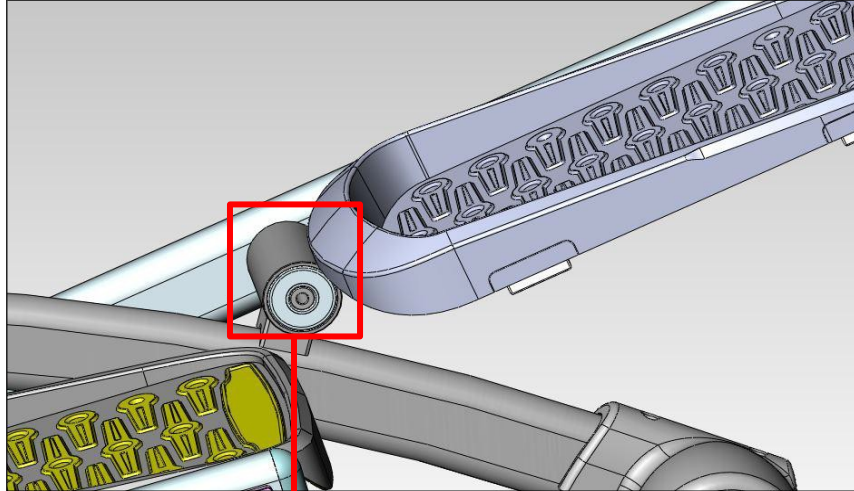


Fig.C

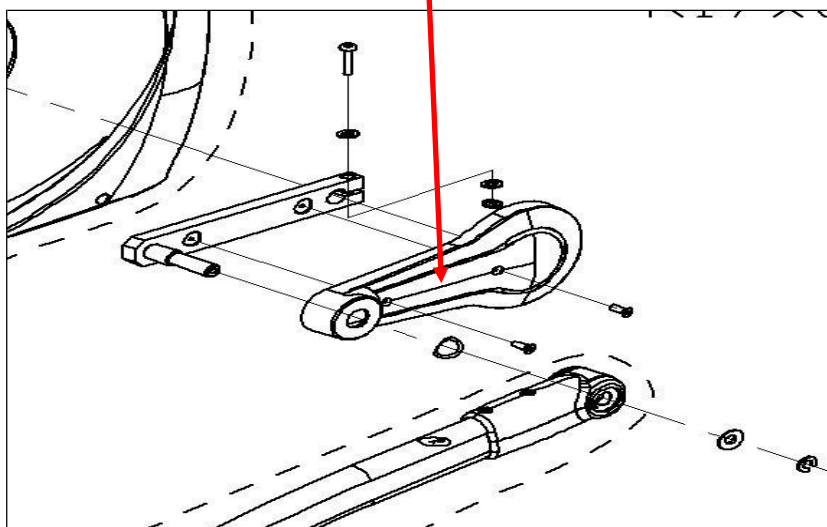
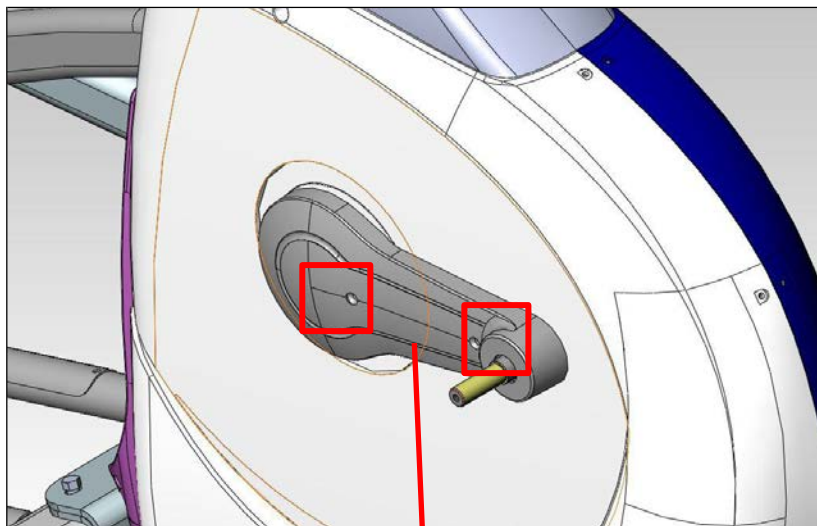
5.1.4 Link Arm Replacement

1. Loosen the screws and washers to remove the link arm from the arm set.

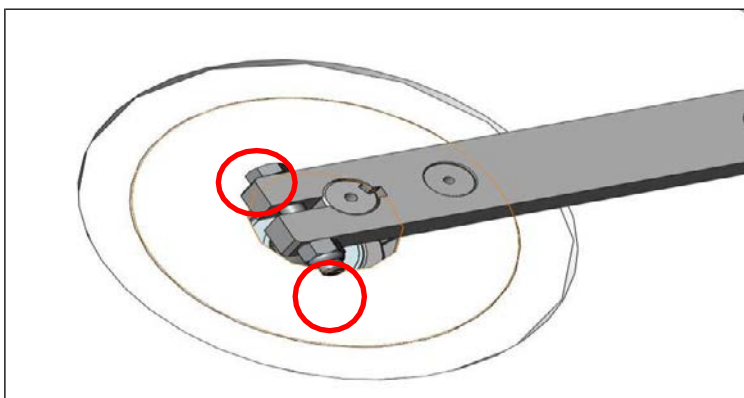


5.1.5 Crank Set Replacement

1. Loosen the screws indicated below and then remove the cover.



2. You will see the crank set. Loosen the screws to take of the crank set.



5.1.6 Side Cover Replacement

1. Loose the 6 screws in the side covers.(Figure A)

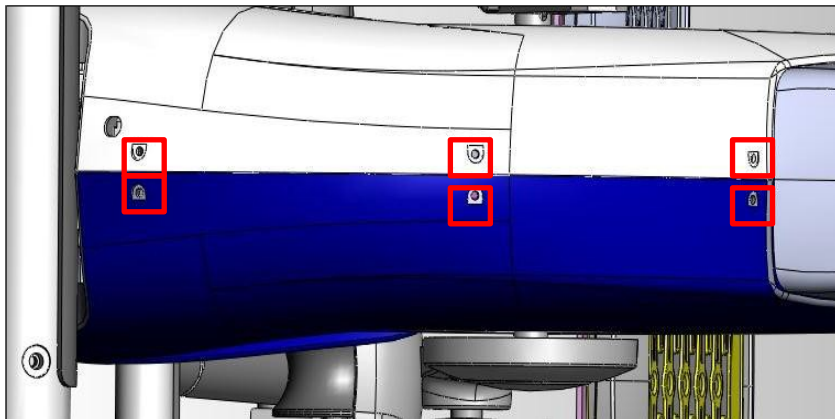


Figure A

2. Loose the 4 screws in the cover as shown below (Figure B)

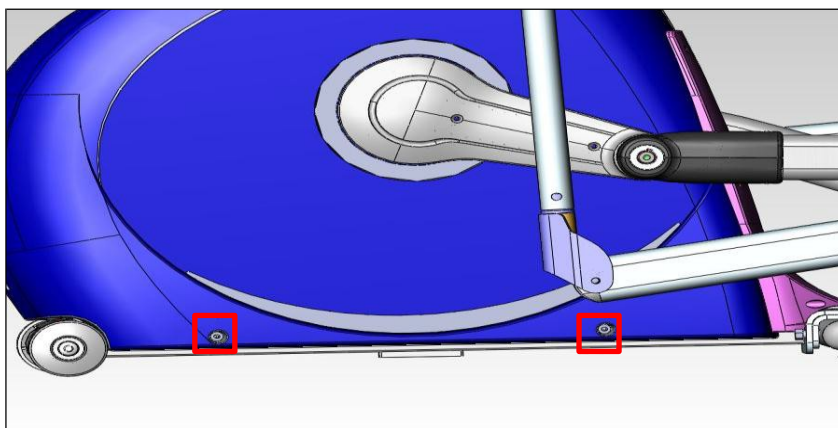


Figure B

3. After removing the side cover, you will see the inside structure (Figure C).

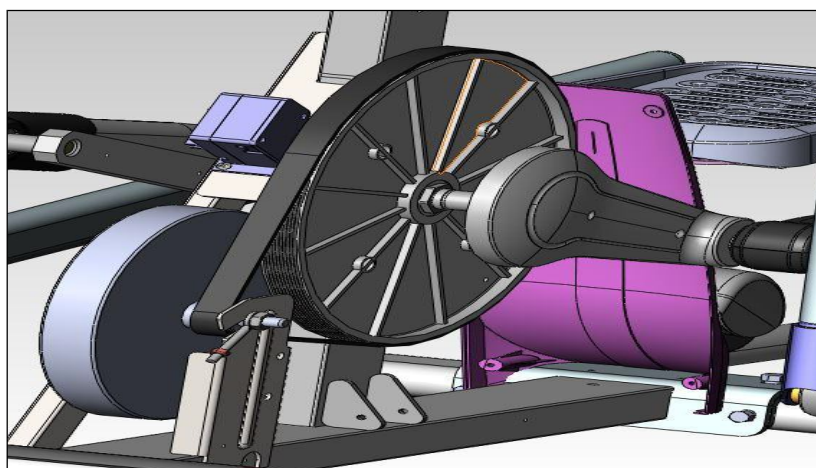


Figure C

5.1.7 **ECB Motor Replacement**

1. Loose the 2 different screws as shown below (Figure A).

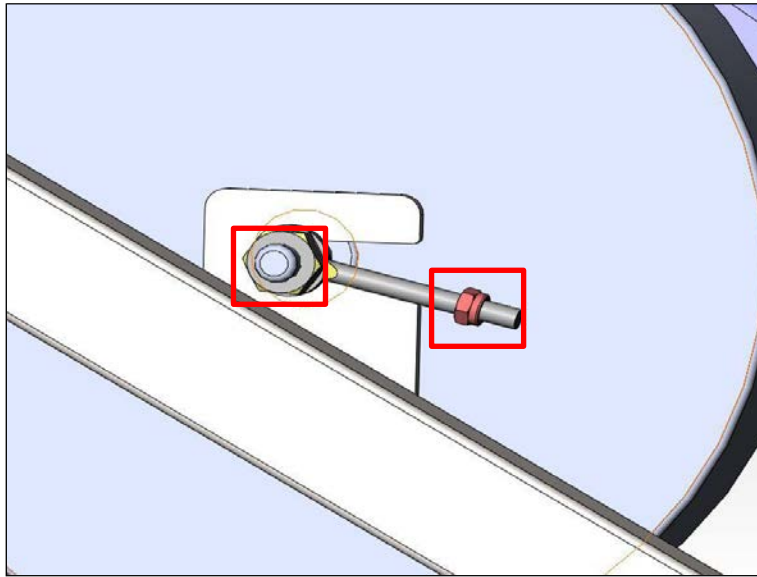


Figure A

2. Loosen the screws on the opposite side. Remove the belt and then take off the ECB (Figure B).

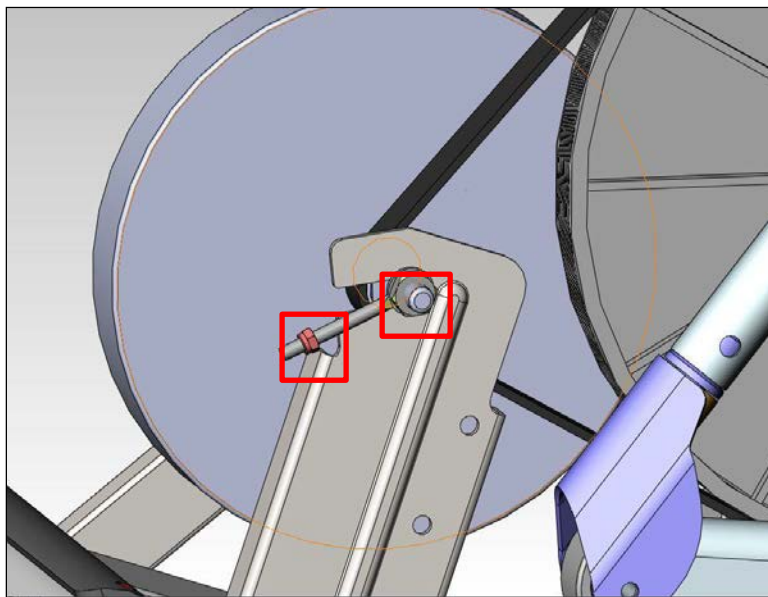


Figure B

5.2 5.7AE Parts Replacement Guide

5.2.1 **Console Replacement**

1. Remove the 4 screws shown below from the console mast (Figure A).
2. Take off the console and disconnect the wires (Figure B).

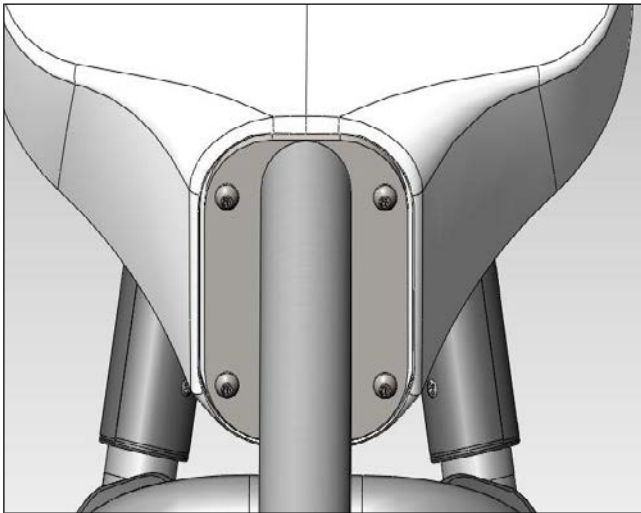


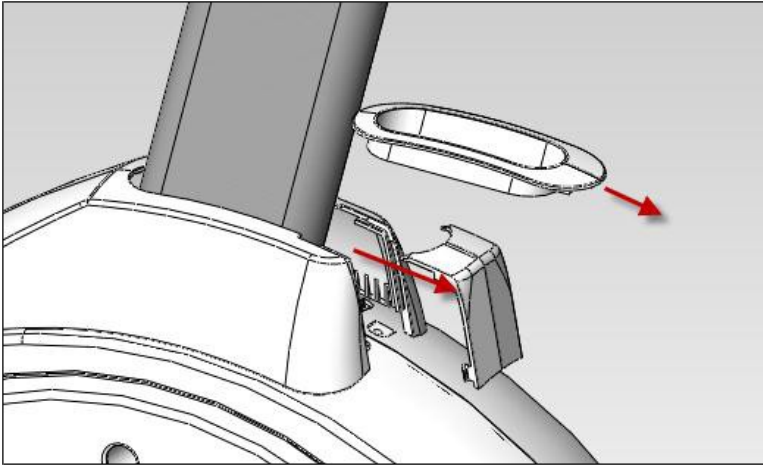
Figure A



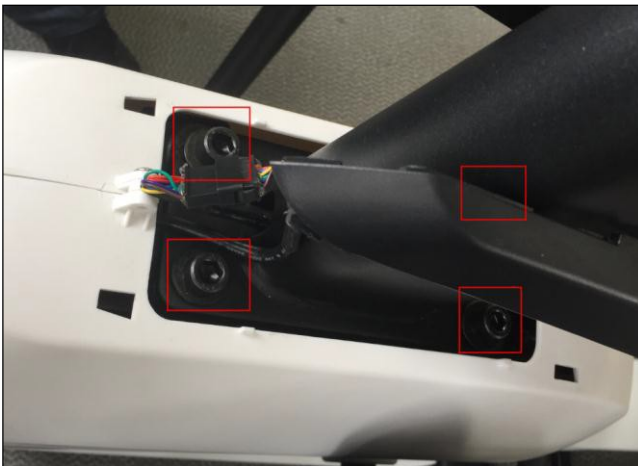
Figure B

5.2.2 Console Mast Replacement

1. Remove the console mast cover.



2. Loosen the 4 nuts shown below, and then off the console mast.



5.2.3 Arm Set Replacement

1. Loose the screw and take off the washers as shown on the following page (Figure A)
2. Loose the screw and remove the washers to take off the whole arm set (Figure B)
3. Take off the arm set (Figure C).

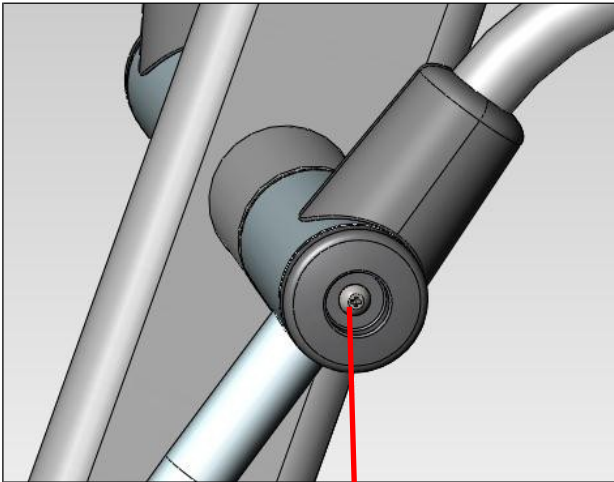


Fig.A



Fig.B

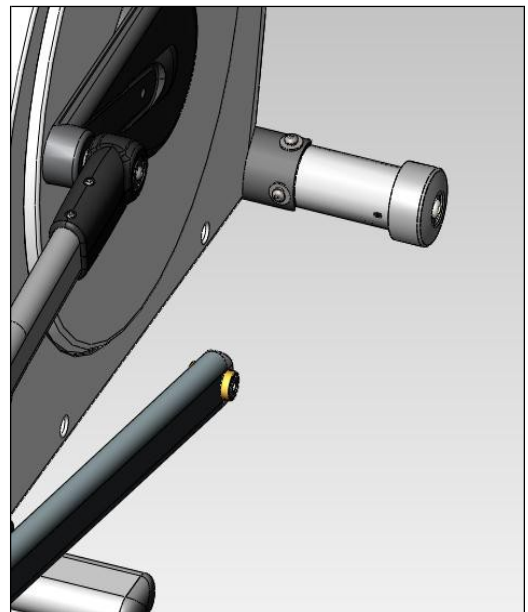
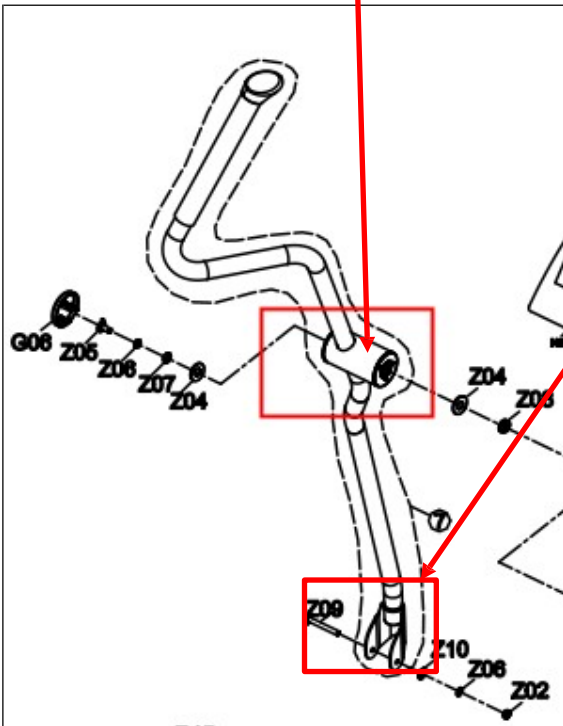
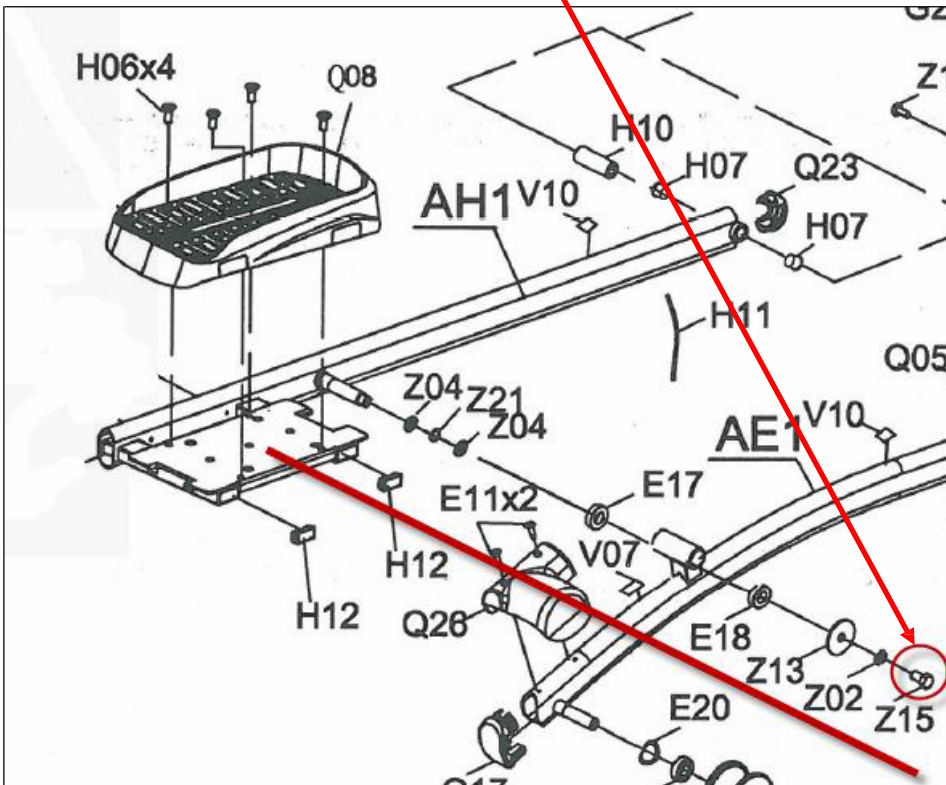
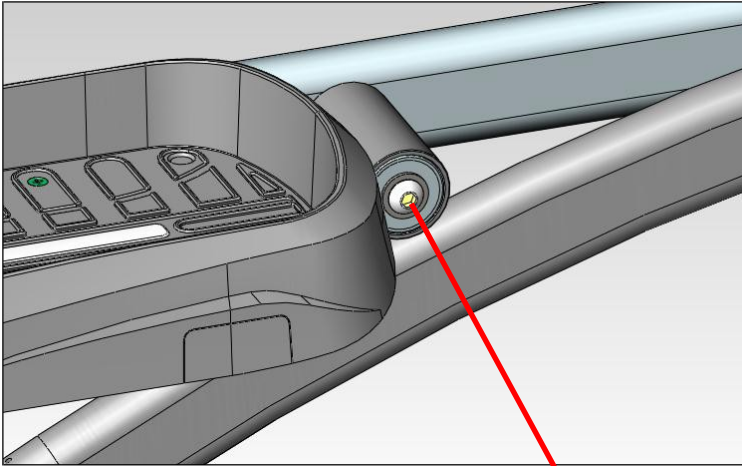


Fig.C

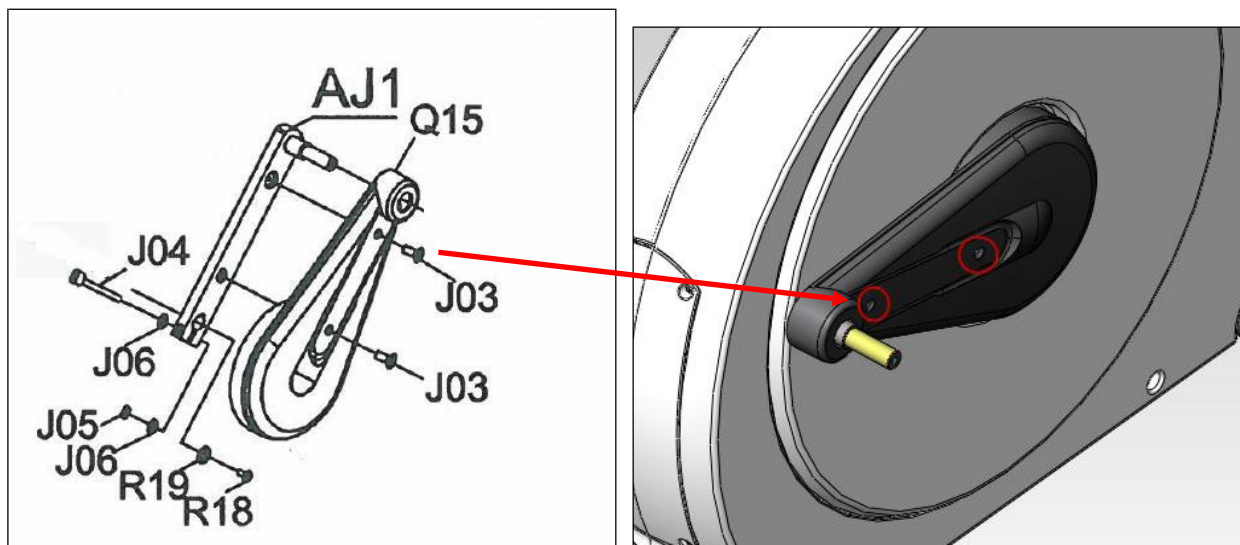
5.2.4 Link Arm Replacement

1. Loosen the screws and washers to remove the link arm from the arm set.

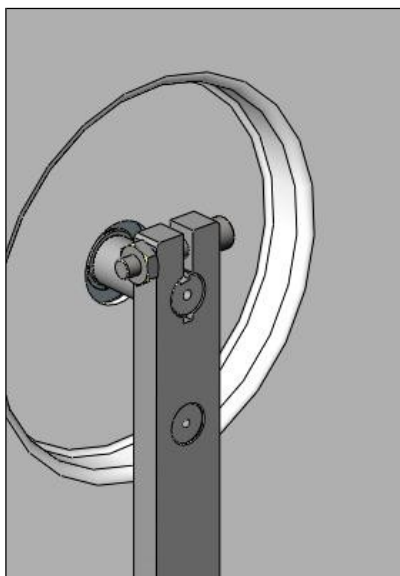


5.2.5 Crank Set Replacement

1. Loosen the screws and then remove the crank over.



2. You will see the crank set. Loosen the screws, then remove the crank set.



5.2.6 Side cover Replacement

1. Loose the 4 screws on the side cover (Figure A)
2. Loosen the screws in the cover as shown below (Figure B)

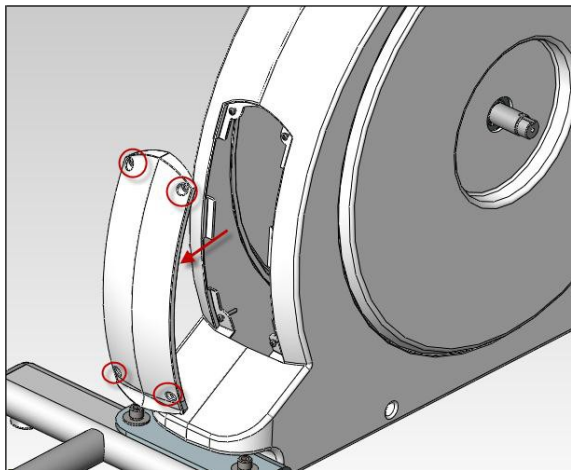


Figure A

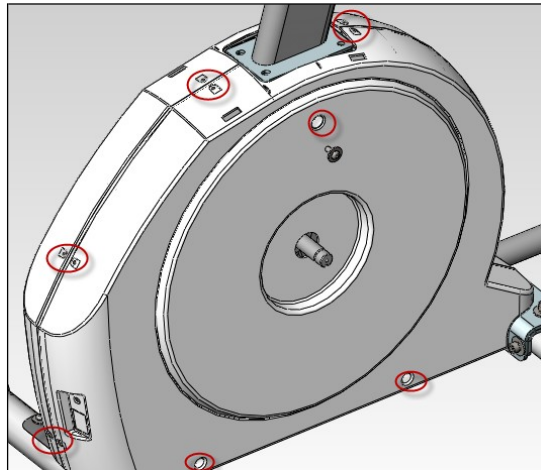


Figure B

3. After removing the side cover, you will see the inside structure (Figure C).

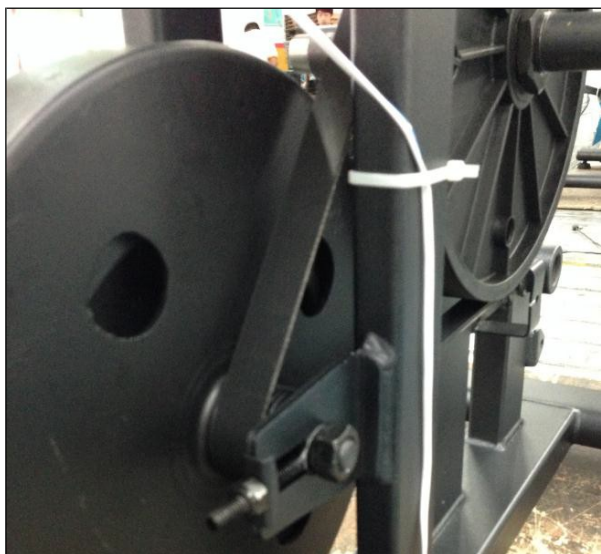


Figure C

5.2.7 ECB Motor Replacement

1. Loosen the 2 different screws as shown below (Figure A).

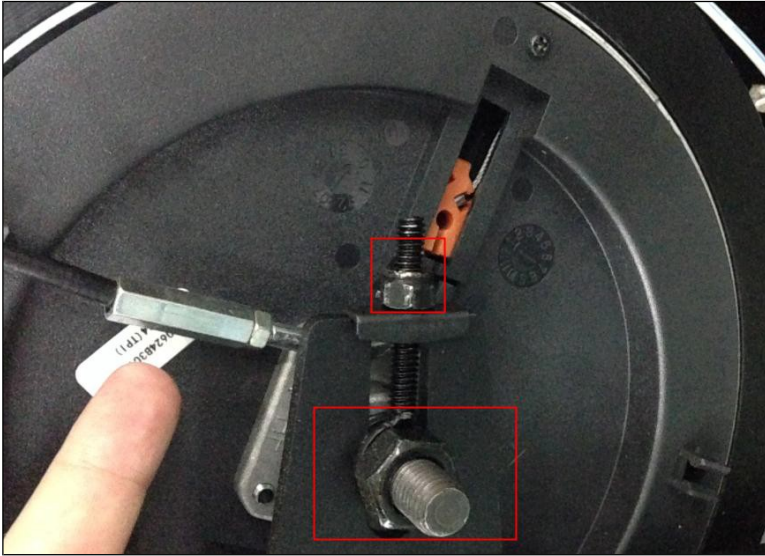


Figure A

2. Loosen the screws on the opposite side (Figure B), and then remove the belt. Take off the ECB.

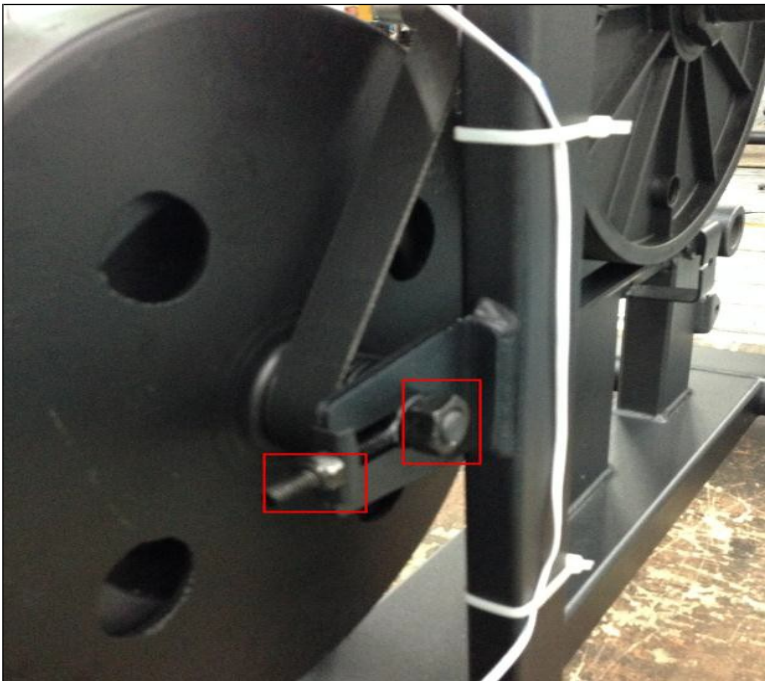


Figure B