XS300B-YS006

Service Manual

dyaco

Service Manual

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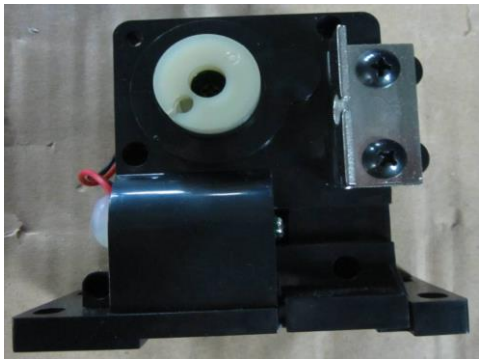
Tension Motor



Speed Sensor

Incline motor

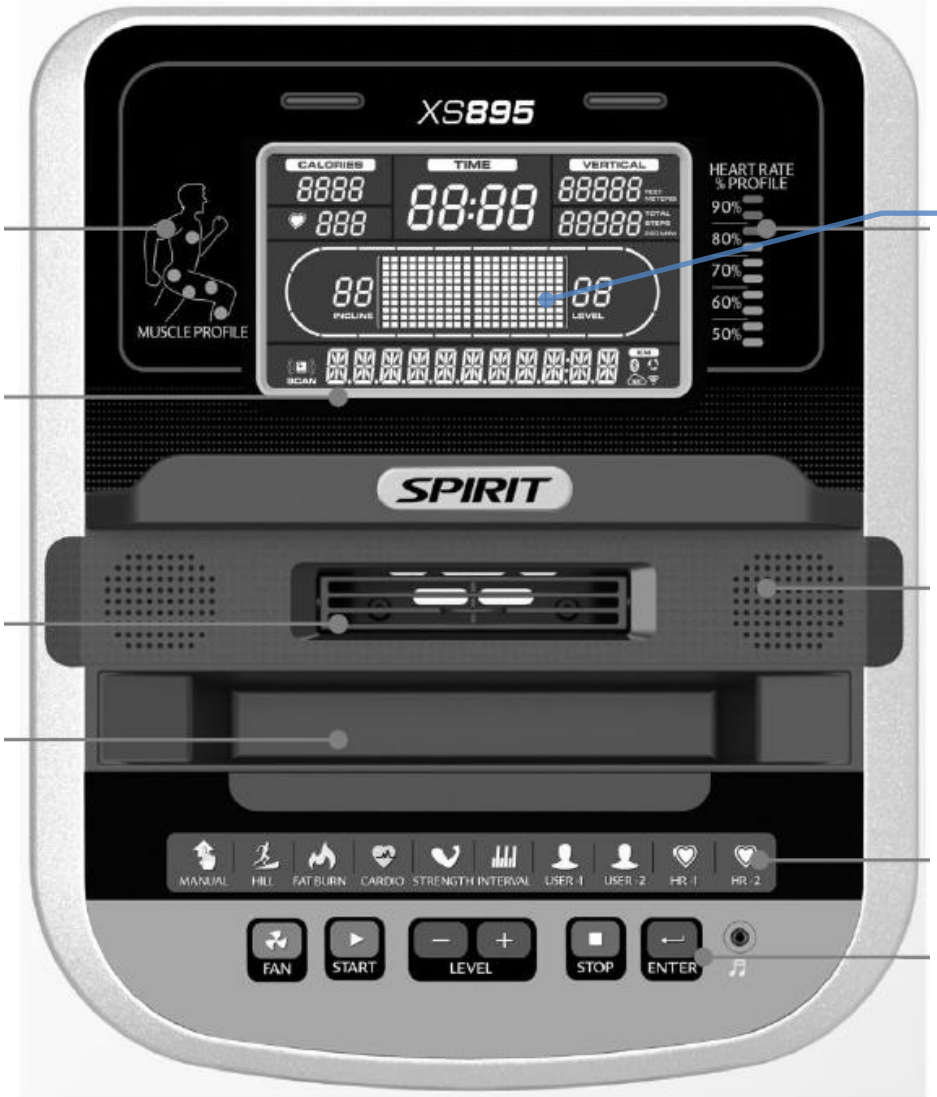
3. Electrical Configurations

Part Name	Part Description
CONSOLE	Interface that controls all functions of the Stepper.
MAIN CONTROLLER	The circuit board consist of the DC power supply for console、incline driver and tension motor driver, link the console to output appropriate voltages for tension motor that control the Stepper functions.
TENSION MOTOR	It can change to increase or decrease resistance level of brake.
INCLINE MOTOR	This is an ac motor. User can to control variable elevation by console within main controller.

GENERAL INFORMATION	
CONSOLE	Contains Key controls and LCD Display. Main controller Include power supply 、 motor driver control circuit and incline control circuit.
TENSION MOTOR	Work voltage: DC 4.5~7.5V Control resistance increases and decreases.
INCLINE MOTOR	This is a AC motor. Have four wires, red, black, white and green. Has one 3 pins cable of position sensor. If there is AC voltage on the Red wire (UP) the incline motor will increase the incline. If there is AC voltage on the Black wire (DOWN) the incline motor will decrease the incline. The White wire (COM) is neutral. The green wire is ground.

4. Product Operation

4-1 Display Windows



7.5” LCD Display

4-2 Operation

4-2-1 POWER

When power is connected to the Incline stepper the console will automatically power up. These models are connected directly to 120-volt,15-amp or 220-volt,10-amp and there is a power switch located where the line cord plugs into the unit on the left side near the middle.
When it is first powered on, the console will perform an internal self-test. During this time all the lights will turn on, the Message Window display will show a software version (i.e.: VER 1.0), and the VERTICAL Window will display an altimeter reading. The Time Window shows how many total hours the Incline stepper has been used.
The altimeter and time will remain displayed for only a few seconds then the console will go to the startup display. The dot matrix display will be scrolling through the different profiles of the programs and the Message Center will be scrolling the startup message. You may now begin to use the console.

4-2-2 Dot Matrix Center Display

Twenty columns of boxes (10 high) indicate each segment of a workout. The boxes only show an approximate level (resistance) of effort. They do not necessarily indicate a specific value - only an approximate percent to compare levels of intensity. In Manual Operation the resistance dot matrix window will build a profile “picture” as values are changed during a workout. The Lap track will move in a counterclockwise direction.

4-2-3 1/4 Mile Track

The 1/4-mile track (one lap) will be displayed around the dot matrix window. The flashing segment indicates your progress. Once the 1/4-mile (Metric - 0.4k) is complete this feature will begin again. There is a lap counter in the message window for monitoring your distance.

4-2-4 Pulse Grip Feature

The Pulse (Heart Rate) window will display your current heart rate in beats per minute during the workout. You must use both stainless steel sensors on the stationary grips or the heart rate transmitter chest strap to display your pulse. Pulse value displays anytime the upper display is receiving a Pulse signal. You may not use the Pulse Grip feature while in Heart Rate Programs.

4-2-5 Calorie Display

Displays the cumulative calories burned at any given time during your workout. Note: This is only a rough guide used for comparison of different exercise sessions, and is not to be used for medical purposes.

4-2-6 Speakers

The console has built-in Speakers and an audio input jack. There is no volume control on the console. The volume must be controlled on the Audio Source.

4-2-7 Quick Start

This is the quickest way to start a workout. After the console powers up you just press the Start key to begin, this will initiate the Quick Start mode. In Quick Start the Time will count up from zero and the workload may be adjusted manually by pressing the Level +/- buttons. The dot matrix display will have only the bottom row lit at first. As you increase the work load more rows will light indicating a harder workout. The Incline Stepper will get harder to pedal as the rows increase. There are 20 levels of resistance available for plenty of variety. The first 5 levels are very easy workloads and the changes between levels are set to a good progression for de-conditioned users. Levels 6-10 are more challenging, but the increases in resistance from one level to the next remain small. Levels 11-15 start getting tough as the levels jump more dramatically. Levels 16-20 are extremely hard and are good for short interval peaks and elite athletic training.

4-2-8 Basic Information

The Message Center will initially be displaying the Program name. When in scan mode during a program, FPM(floors per minute) will be displayed for four seconds, then move on and display FLOORS. The data changes to Laps completed, Segment time, SCAN. Pressing the Enter key again will bring you back to the beginning.
The Stop key actually has several functions. Pressing the Stop key once during a program will pause the program for 5 minutes. If you need to get a drink, answer the phone or any of the many things that could interrupt your workout, this is a great feature. To resume your workout during Pause, just press the Start key. If the Stop key is pressed twice during a workout, the program will end and the console will display your Workout Summary (Total time, Avg. fpm, total floors, Avg. HR, total Laps). If the Stop key is held down for 3 seconds or a third time during the program, the console will perform a complete Reset. During data entry for a program the Stop key performs previous screen or segment function. This allows you to go back to change programming data.

4-2-9 Program Keys

The program keys are used to preview each program. When you first turn the console on you may press each program key to preview what the program profile

looks like. If you decide that you want to try a program, press the corresponding program key and then press the Enter key to select the program and enter into the data-setting mode.

The Incline Stepper has a built in heart rate monitoring system. Simply grasping the hand pulse sensors on the stationary handle bars or wearing the heart rate transmitter (see Using Heart Rate Transmitter section) will start the Heart Icon blinking (this may take a few seconds). The Pulse Display Window will display your heart rate, or Pulse in beats per minute.

The console includes a built-in fan to help keep you cool. To turn the fan on, press the key on the left side of the console.

4-2-10 Muscle Activation Figure

There is an anatomical figure located at the top of the console. This figure will light all areas that are activated when using the Stepper trainer. These will light up during any of the programs. You can control which muscles are activated by customizing the resistance profile during the set up phase of console programming. If you accept the default program profile, the selected program will determine which muscles will be activated by automatically adjusting the resistance. Generally the following guidelines hold true: The upper body LED's will activate when you are either holding onto the swing arms or at anytime your hands aren't onto the pulse grip sensors.

- The lower body lights will activate in three degrees of engagement: Green represents minimal muscle involvement, Amber represents medium involvement, and red represents full or heavy activation.
- Levels 0-7.5 Incline: Amber - Gluteals and Quadriceps light up; Green - Hamstrings and Calves light up.
- Levels 8-20 Incline: Red – Gluteals light up, Amber – Quadriceps light up, Green – Hamstrings and Calves Light up.

4-2-11 Heart Rate % Profile

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

50-60% of maximum is Amber

65-80% of maximum is Amber and Green

85-90% or more is Amber, Green, and Red

4-3 Function Button Locations

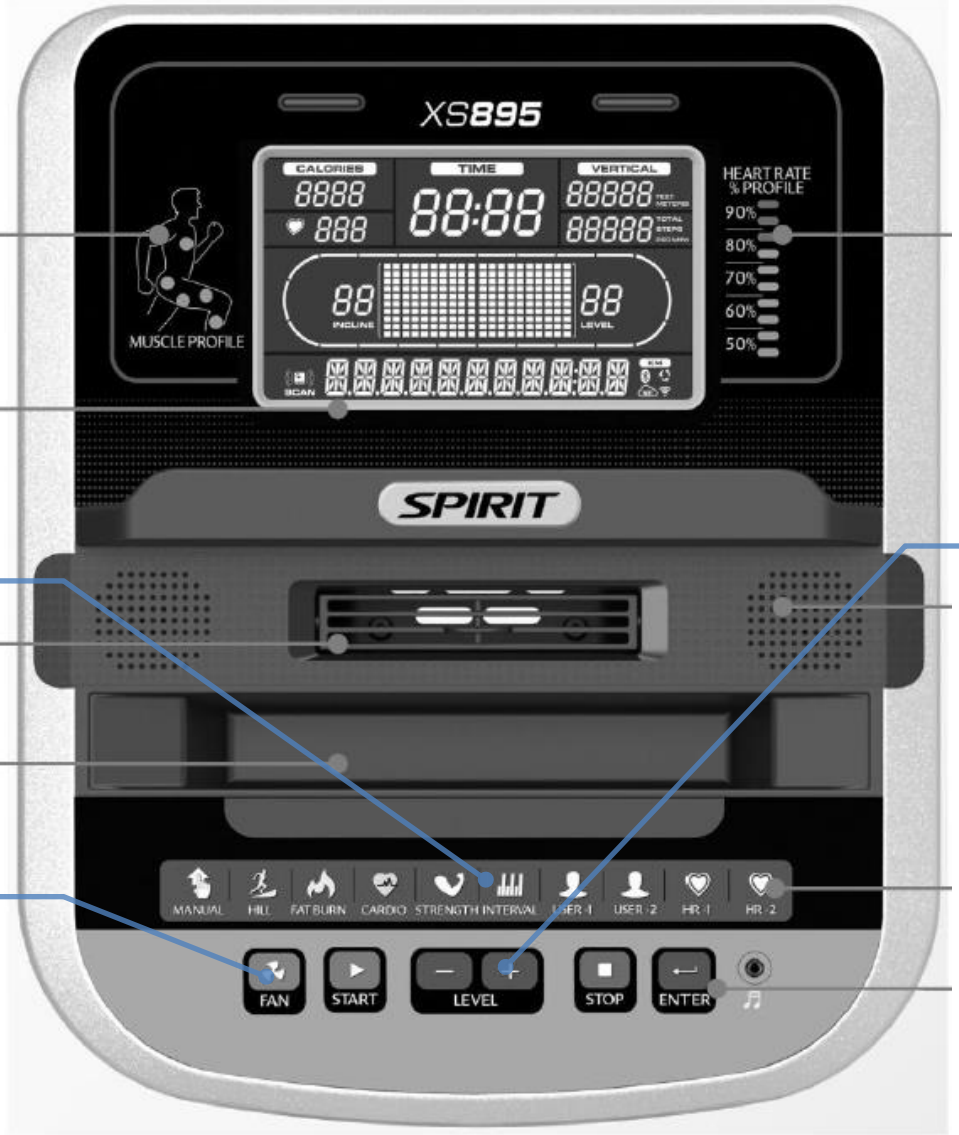
PROGRAM BUTTONS

(Manual, Hill, Fat Burn, Cardio, Strength,

HIIT, 2User, 2HR)

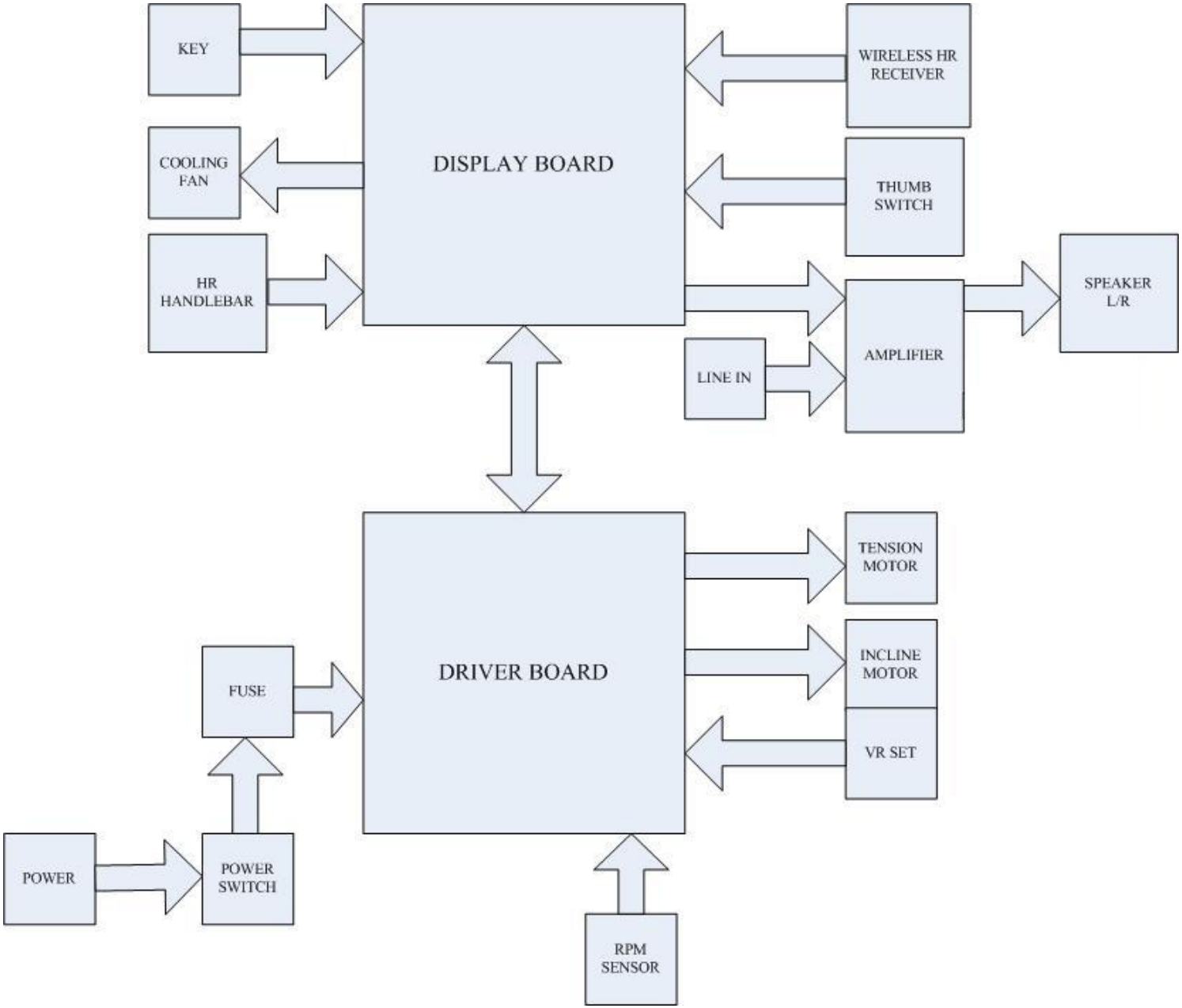
FAN KEY

Cooling fan switch on or off



Control Keys

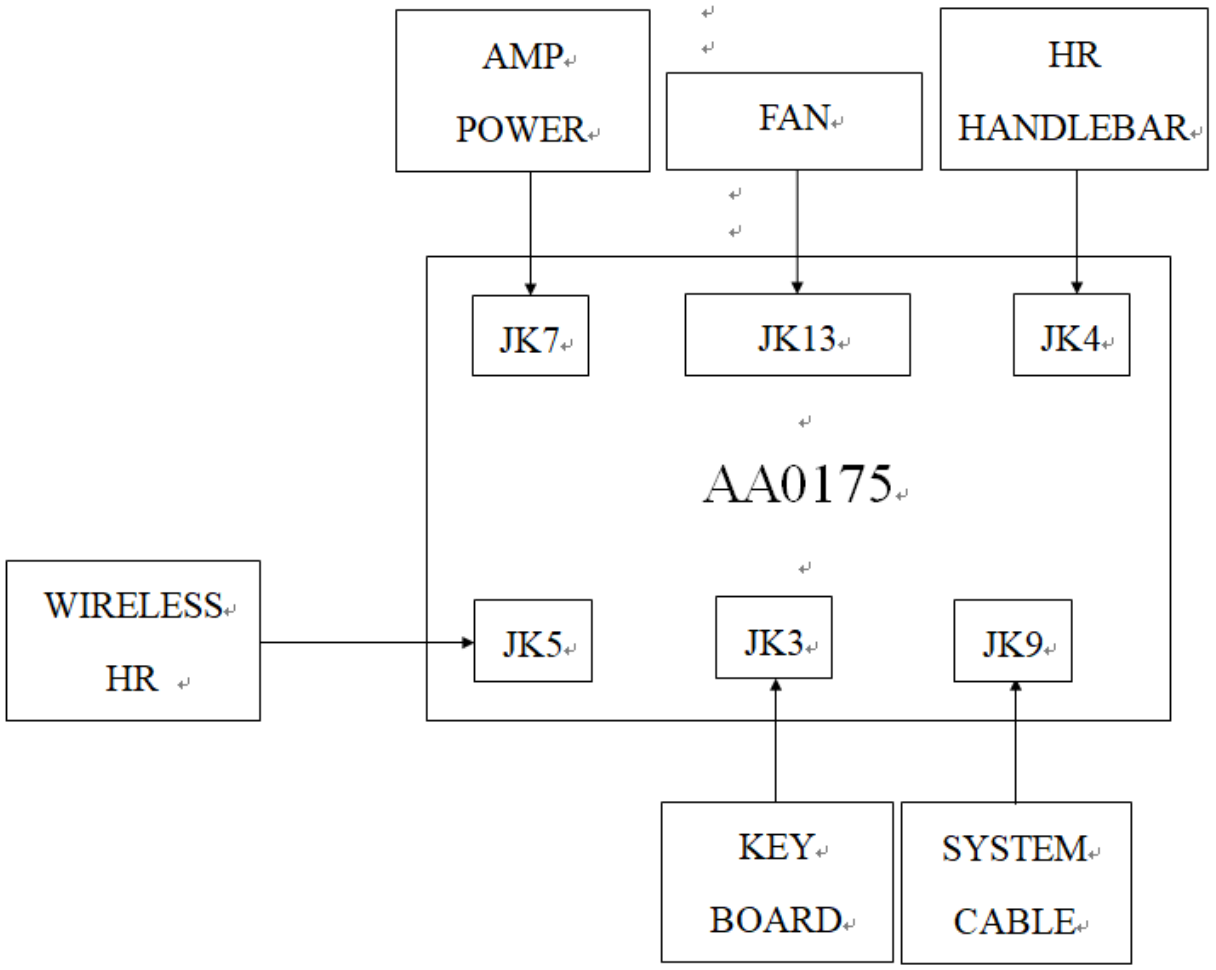
5. Unit Block Diagrams


KEY
COOLING FAN
HR HANDLEBAR
DISPLAY BOARD
WIRELESS HR RECEIVER
THUMB SWITCH
SPEAKER L/R
AMPLIFIER
LINE IN
TENSION MOTOR
INCLINE MOTOR
VR SET
DRIVER BOARD
FUSE
POWER
POWER SWITCH
RPM SENSOR

6. Basic Connections and Wiring

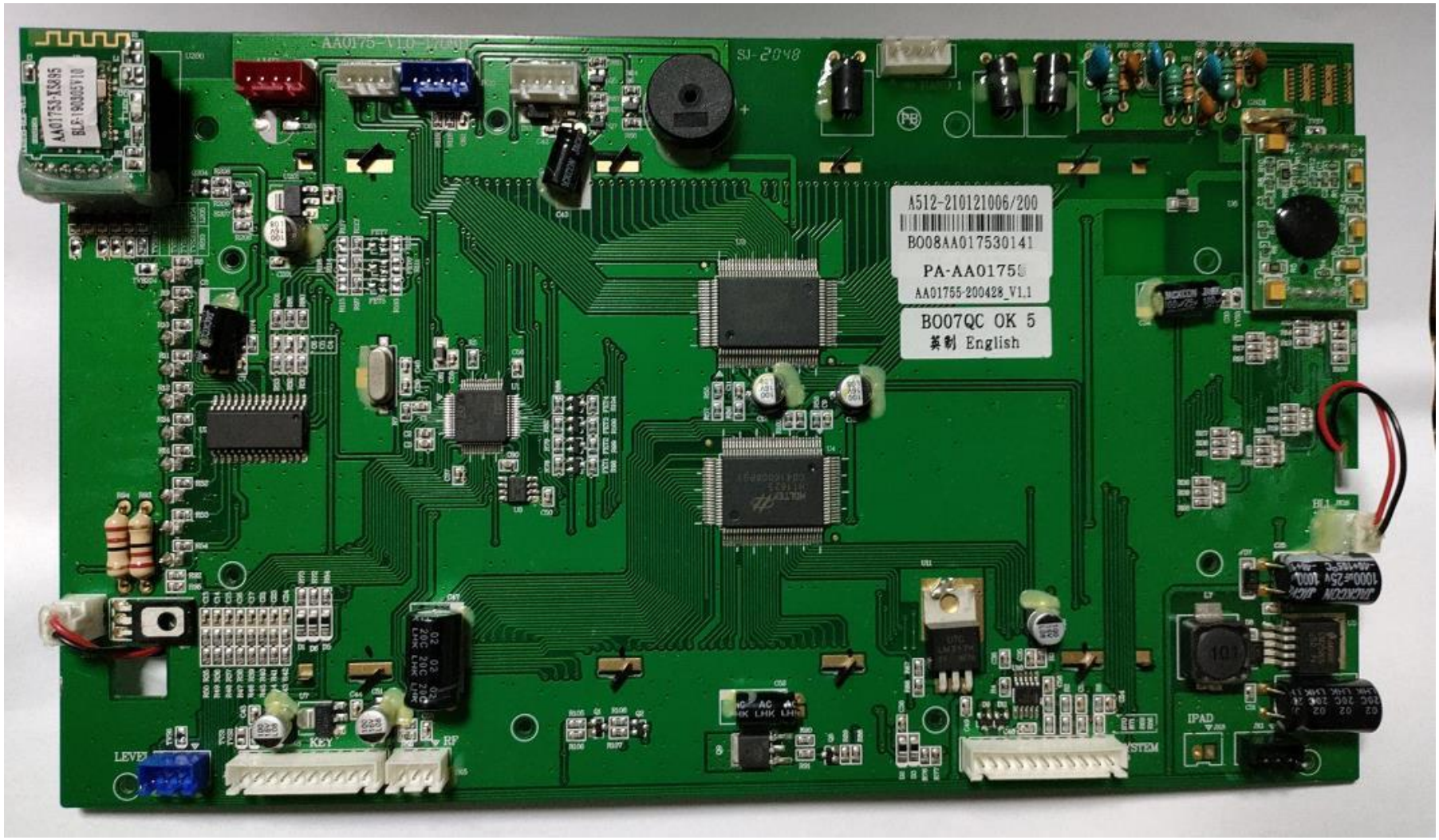
6-1 Display Board PCB Component Locations

6-1-1 DISPLAY BOARD WIRE CONNECTIONS

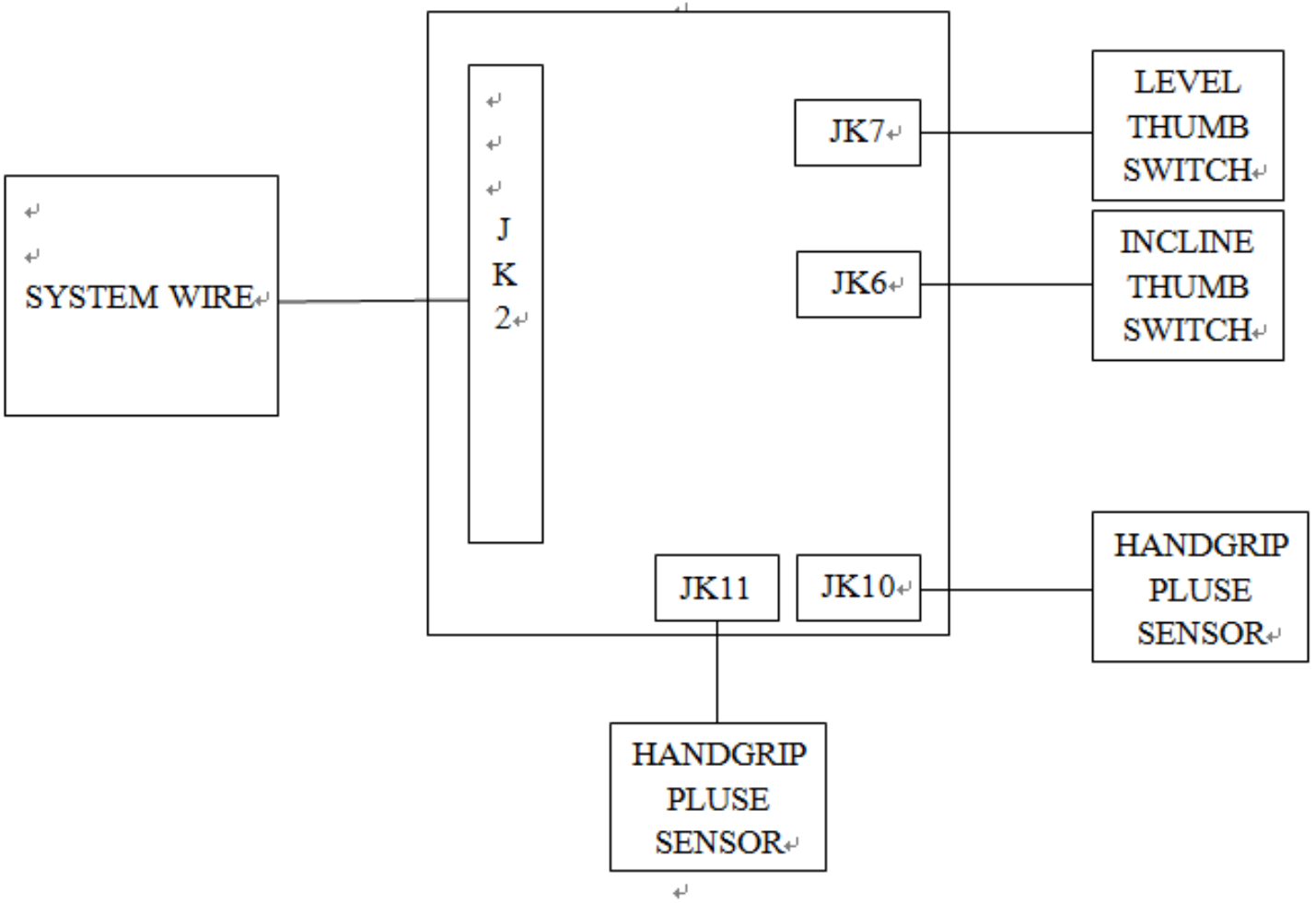


6-1-2 PCB BOARD TOP

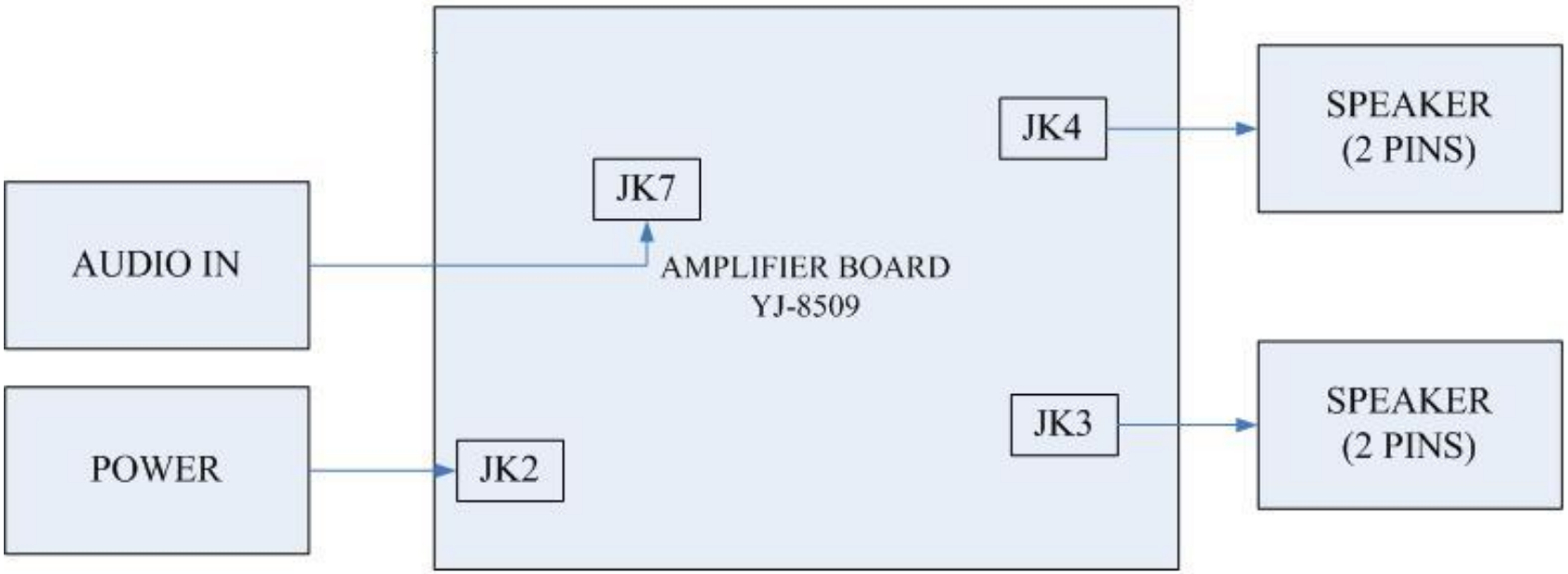
6-1-3 PCB BOARD BOTTOM



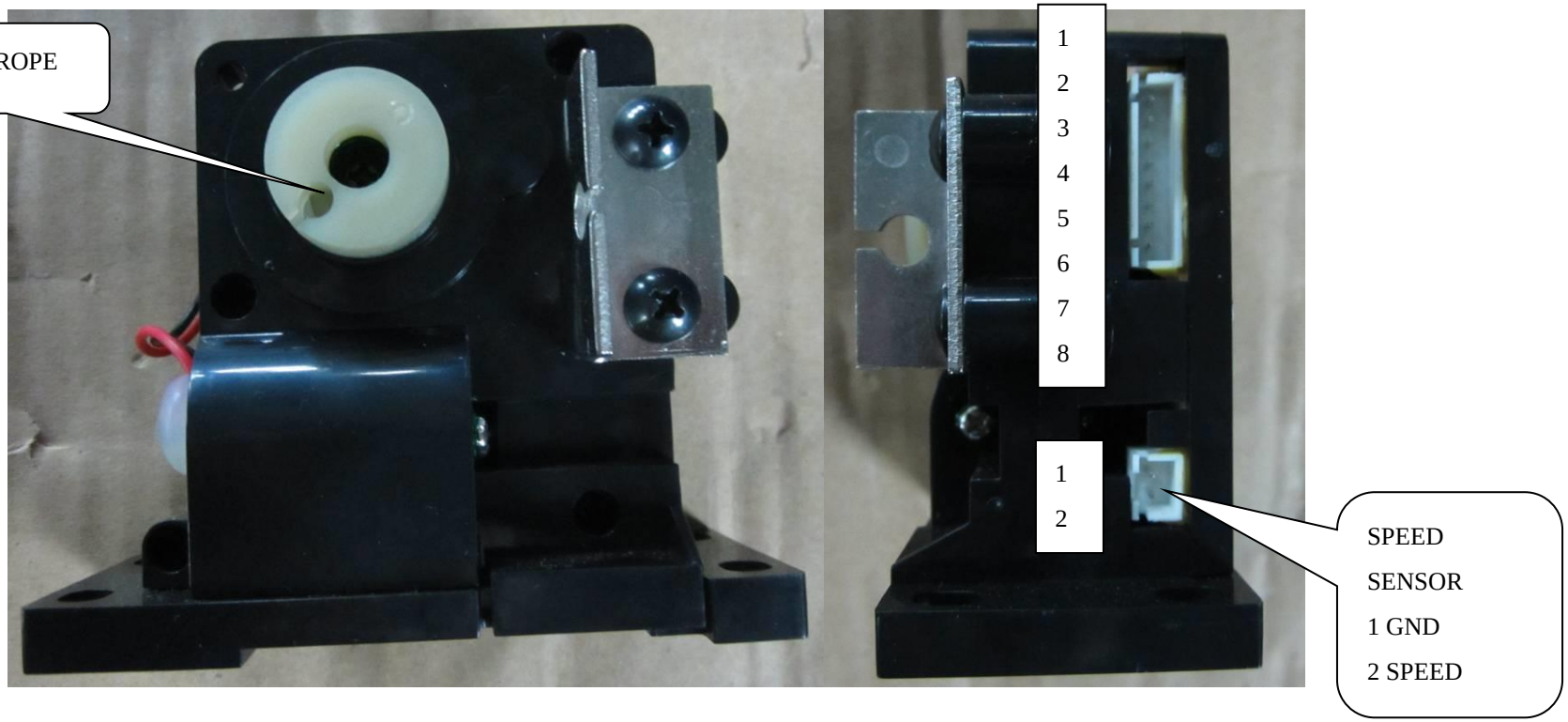
6-1-4 THE CONSOLE INTERFACE BOARD WIRE CONNECTIONS



6-1-5 AMPLIFIER BOARD WIRE CONNECTIONS



6-1-6 TENSION MOTOR CONNECTOR DEFINITION FUNCTION



7. Error Messages / Troubleshooting

7-1 Error Codes

Error Code	CAUSE
E1	EEPROM is defective or operate abnormal.
E2	Tension motor is failure
E3	Incline motor error

7-2 Prepare tools

Multi-meter

7-3 Error Message：E1

Definition

The memory IC of EEPROM is defective.

Troubleshooting

The display board requires replacement.

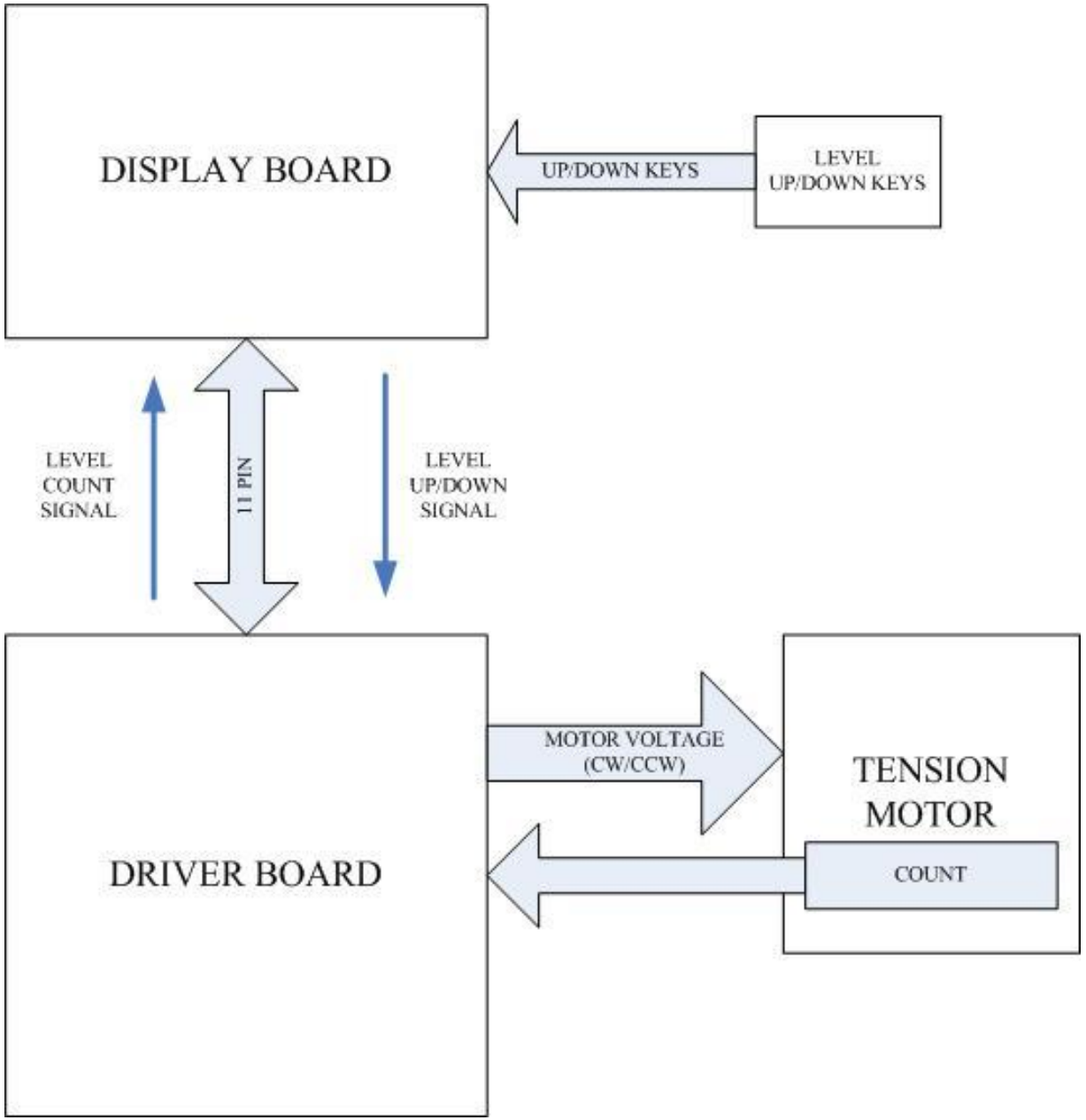
7-4 Error Message：E2

Definition

Gear motor operate abnormal or display board can’t receive signal from gear motor.

Troubleshooting

1. Check the control cable and replug it.
2. Check the tension motor.


DISPLAY BOARD
UP/DOWN KEYS
LEVEL
UP/DOWN KEYS
LEVEL
COUNT
SIGNAL
11 PIN
LEVEL
UP/DOWN
SIGNAL
DRIVER BOARD
MOTOR VOLTAGE
(CW/CCW)
TENSION
MOTOR
COUNT

7-4-1 TENSION MOTOR OPERATION

Display

Key signal travels to the display. The main program IC then sends a command signal to the drive board.

Drive Board

Drive board receives the signal and responds by putting out power to the motor. Level UP:+5VDC;Level DOWN:-5VDC

7-4-2 TENSION MOTOR TROUBLESHOOTING

Display

If the key beeps when pressed, assume that the signal was sent.

Data cable

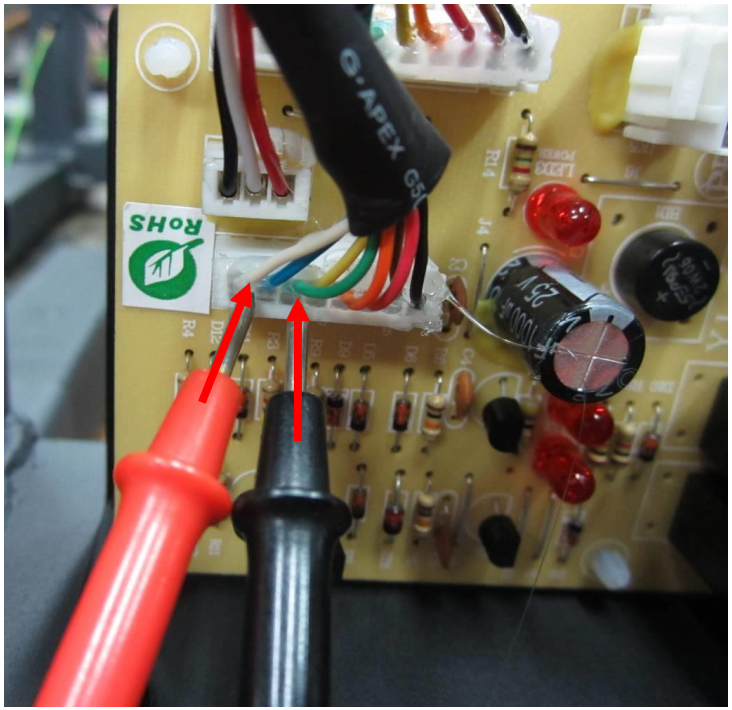
Inspect the cable and connections.

Drive Board

Inspect drive board power output to the motor. Press the Level Up is +5VDC;Level DOWN is -5VDC.If there is power to the motor, but the motor does not operate, replace it. If there is no power output, inspect whether the drive board has power.

7-4-3 TENSION MOTOR VOLTAGE TEST PROCEDURE

1. Put multi-meter to the 20VDC setting.Place probes on the motor control wire(Red probe in blue wire, Black probe in green wire) on the drive board.
2. Turn on unit power.The display lights up.
3. Press LEVEL UP. Normal reading : +5.5~6.0VDC.Motor operates.Resistance increases.
4. Press LEVEL DOWN. Normal reading : -5.5~6.0VDC.Motor operates.Resistance decreases.
5. If there is no voltage,inspect power socket the holder FUSE.If broke replace it.
6. Inspect the drive board POWER LED whether lit.If no lit the drive board is bad.Replace it.



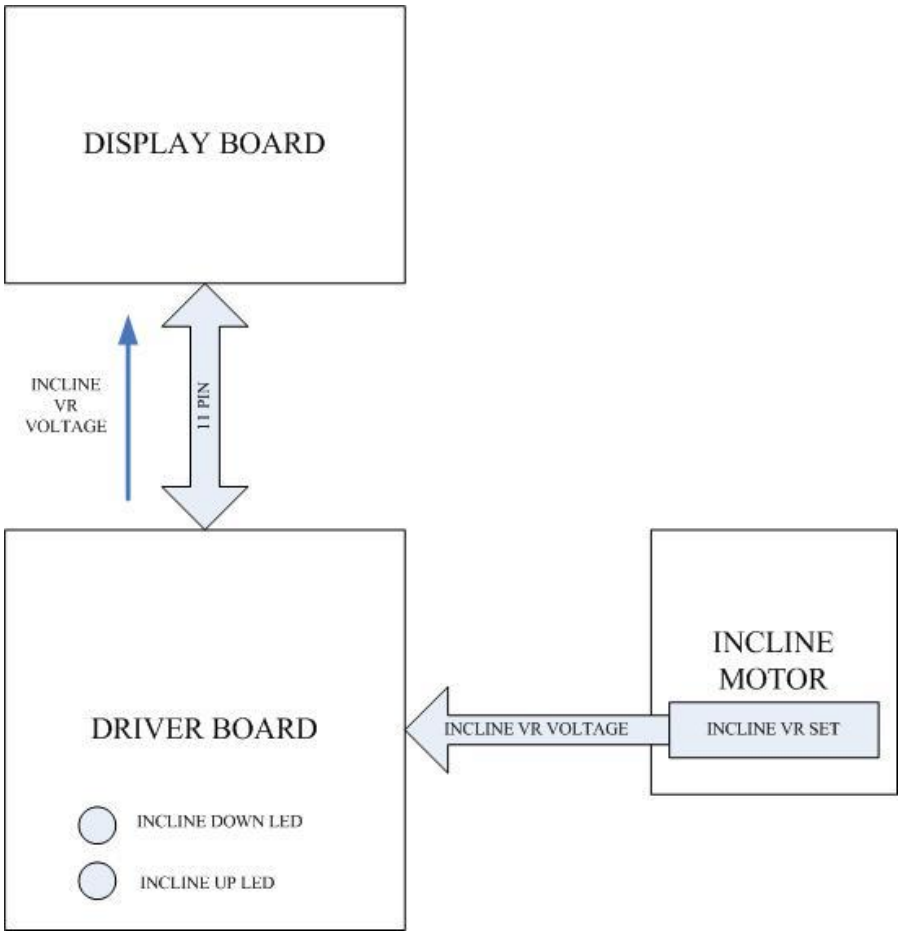
Place probes on the motor control wire(Red probe in blue wire, Black probe in green wire) on the drive board.

7-5 Error Message：E3

Definition

The console board is not detecting the VR voltage value or the voltage value has exceeded the range.” STEP ERROR” appears on the display.

Configuration



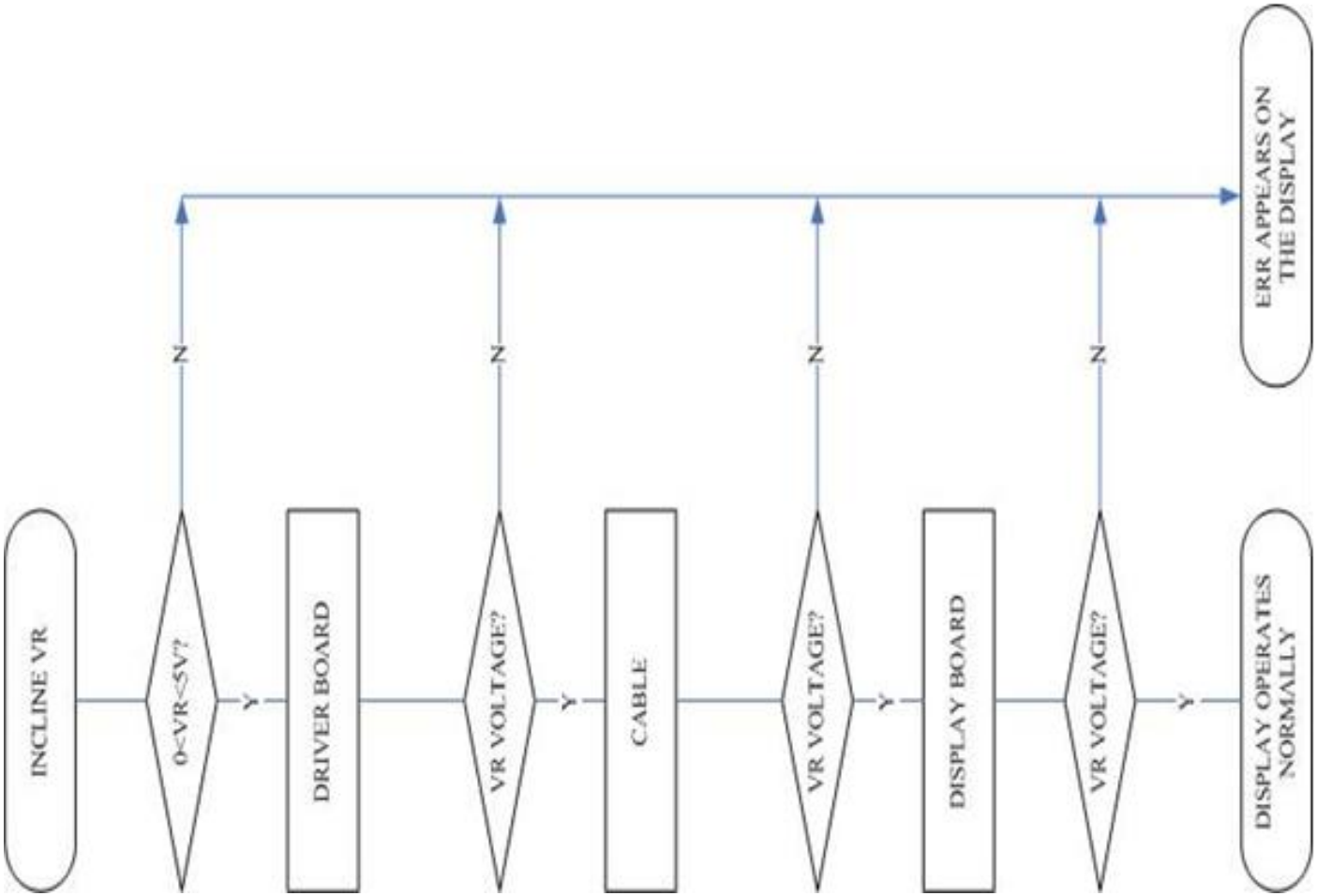
Case of INCLINE E3

Incline VR value exceeds the range. STEP ERROR appears on the display.

Incline motor isn’ t operation up or down, making the VR value exceed the range.

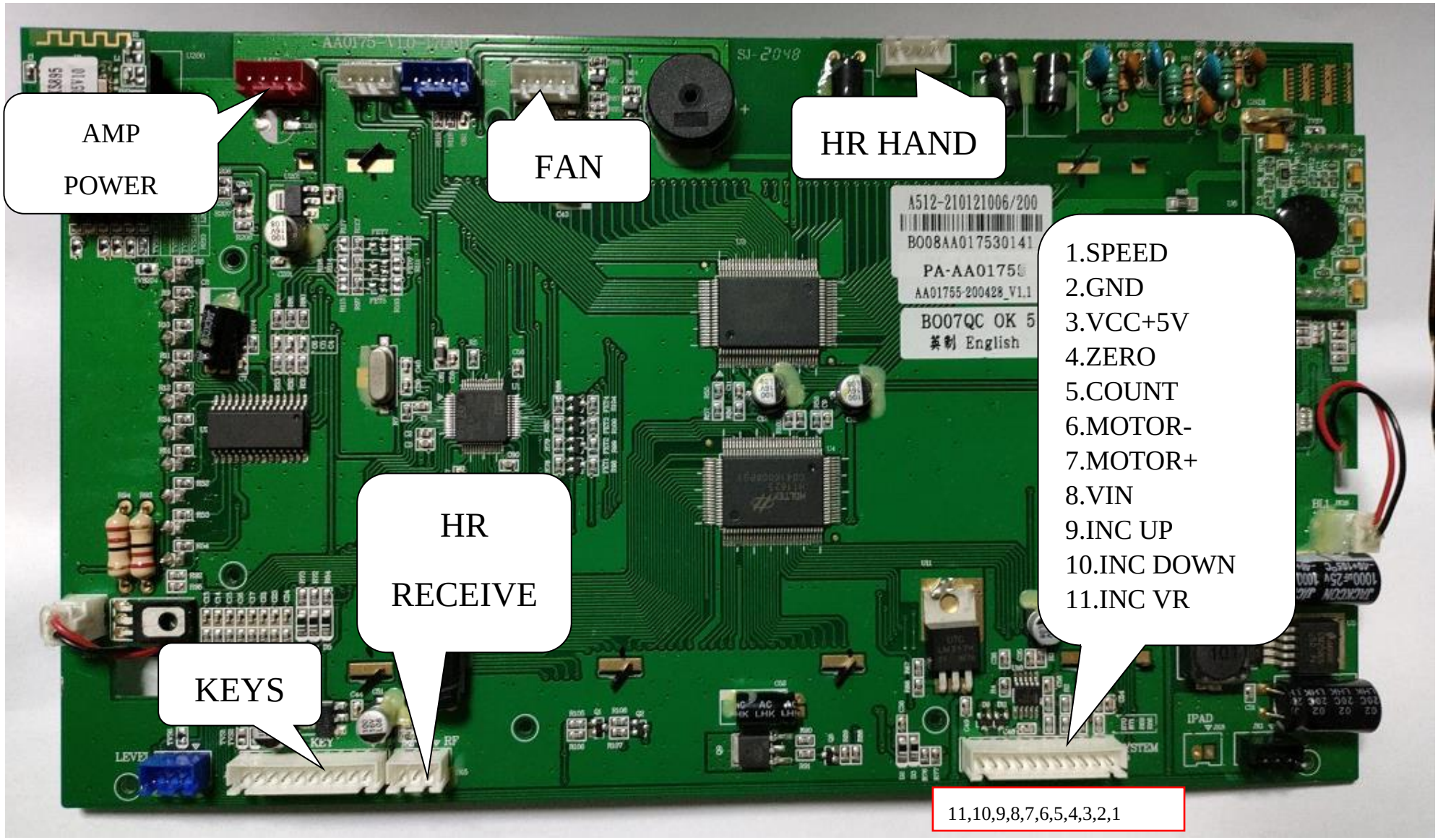
After turning on the unit, the display board detects that the incline VR voltage exceeds the range, so INCLINE E3 appears.

Action Flow Chart



Part	Troubleshooting
Incline VR	1. Reconnect VR wires. 2. Inspect whether the incline wires are broken or disconnected.
Display board	1. Inspect the incline wire and 11-pin cable connections. 2. Test whether the VR voltage varies at the incline wire Stepper.
11-pin cable	1. Inspect the wire connections. 2. Inspect whether wires are broken or crimped. 3. Replace the wires and test again.
Driver board	Inspect the display board 11-pin connections.

7-6 Test configuration. The console to driver board connector pin define function



7-7 Engineering Mode Menu

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

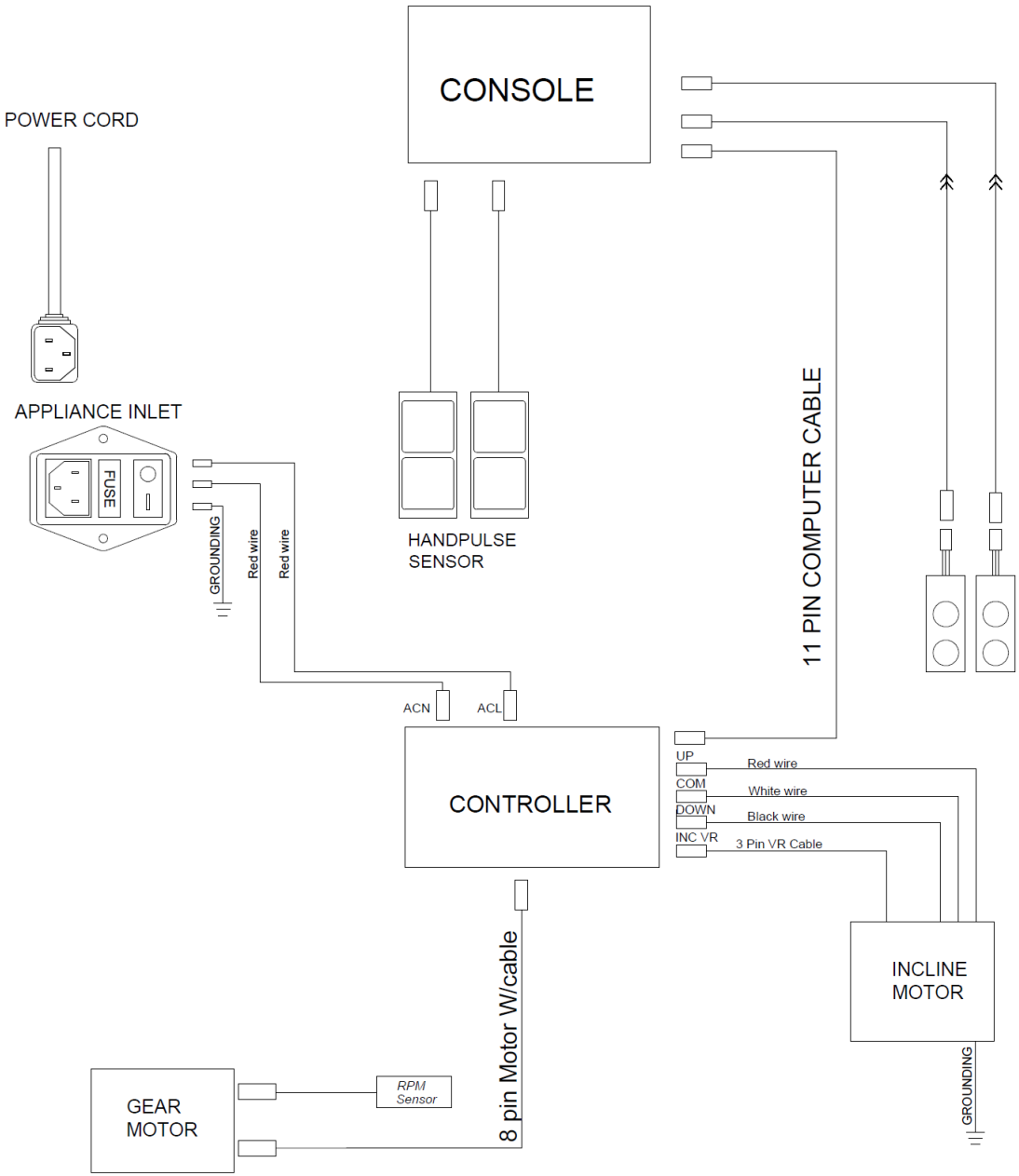
1. Key Test (Will allow you to test all the keys to make sure they are functioning)
2. LCD Test (Tests all the display functions)
3. Functions (Press **Enter** to access settings and **Up** arrow to scroll)
    i. Display Mode (Turn off to have the console power down automatically after 20 minutes of inactivity)
    ii. Pause Mode (Turn on allow 5 minutes of pause, turn off to have the console pause indefinitely)
    iii. ODO Reset (Resets the odometer)
    iv. Units (Sets the display to readout in English or Metric display measurements)
    v. Beep (Turns off the speaker so no beeping sound is heard)
    vi. Motor Test
    vii. Safety
4. Security (Allows the keypad to be locked to prevent unauthorized use)

7-8 Troubleshooting procedure matrix

Condition	Reason	Solve
LCDs not bright, incomplete or imperfect.	1. LCD light is broken. 2. Power to console too low.	1. Replace with new LCD or console. 2. Check AC power is 110-120V or 220-240V. 3. Check power to console. 4. Replace lower controller.
LCD displays not bright, incomplete or imperfect.	1. LCD displays are broken.	1. Replace with new console.
The incline position doesn't match console	1 Console is not calibrated.	1 Calibrate the console.
INCLINE ERR ,INCLINE window displays "STEP ERROR".	1 Position sensor value of incline motor is wrong.	1 Turn off the AC switch and turn on power again. 2. Calibrate the monitor.
Erratic pulse display.	1. Another chest belt in use around Stepper. 2. Other magnetic field disturbance. 3. Receiver is broken.	1. Check for other chest belt use around Stepper. 2. Change the position or direction of Stepper. 3. Replace with new receiver.
UP/DOWN button of INCLINE ADJUSTMENT SWITCH can't be used. Incline button just can press UP, can't press DOWN. Incline button just can press DOWN, can't press UP.	1 The connector of INCLINE CABLE and CONSOLE not connected properly. 2. The connector of INCLINE CABLE and INCLINE ADJUSTMENT SWITCH W/CABLE not connected properly. 3 The connector of INCLINE CABLE or INCLINE ADJUSTMENT SWITCH CABLE got damage. 4. Button of INCLINE ADJUSTMENT SWITCH is broken. 5. The connector of INCLINE CABLE or INCLINE ADJUSTMENT SWITCH CABLE got damage. 6. The connector of INCLINE CABLE or INCLINE ADJUSTMENT SWITCH CABLE damaged.	1 Connect the wires again. 2. Connect the wires again. 3. Replace the cable. 4. Replace buttons. 5. Replace the cable. 6. Replace the cable.
Hand pulse lost its function. (No pulse displayed on monitor)	1. Hands not on the hand pulse sensors or only one hand on sensor. 2. The connector of HANDPULSE W/WIRE and Console not connected properly.	1. Two hands hold the hand pulse. 2. Connect the cable again.

	3. The wires got damaged when connecting the HANDPULSE W/WIRE and Console. 4. Hand pulse board is broken.	3. Replace with new cable. 4. Replace console or Hand pulse board.
Wireless lost its function. (No pulse displayed on monitor)	1. Chest belt not worn properly. 2. Distance is too far and exceeds range of receiver. 3. Chest belt battery is weak or dead.	1. Check chest belt has proper contact with skin and is oriented correctly. 2. User chest belt in front of console within 3 feet. 3. Replace with new lithium battery type is CR2032.
Chest belt too close to the Stepper.	Weak battery.	Replace with new lithium battery with type CR2032.

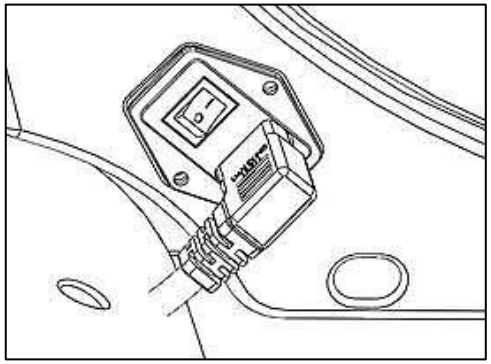
8. Circuit Diagram


CONSOLE
POWER CORD
APPLIANCE INLET
FUSE
GROUNDING
Red wire
Red wire
HANDPULSE
SENSOR
11 PIN COMPUTER CABLE
ACN
ACL
CONTROLLER
UP
COM
DOWN
INC VR
Red wire
White wire
Black wire
3 Pin VR Cable
INCLINE
MOTOR
GROUNDING
8 pin Motor W/cable
GEAR
MOTOR
RPM
Sensor

9. Common Problems

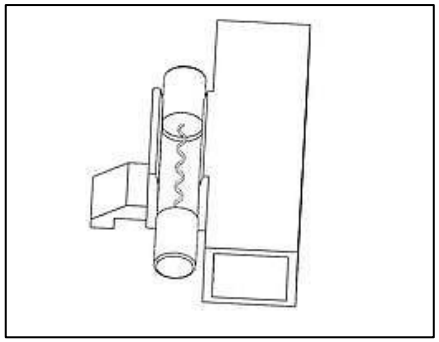
9-1 Troubleshooting For Console

The Screen doesn't lit.



Check AC Switch is on.

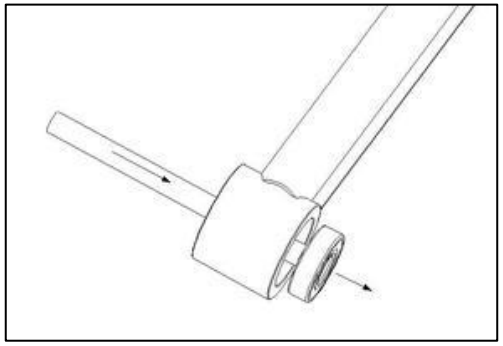
Check all the wires that connect to Console are plug well.



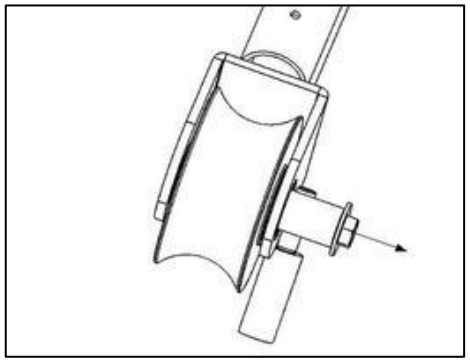
Unmount Fuse from AC Switch and check it. If it is defective to do the replacement.

9-2 Troubleshooting For Pedal arm

Noise from Pedal arm. (It usually cause by the bearing is defective.)



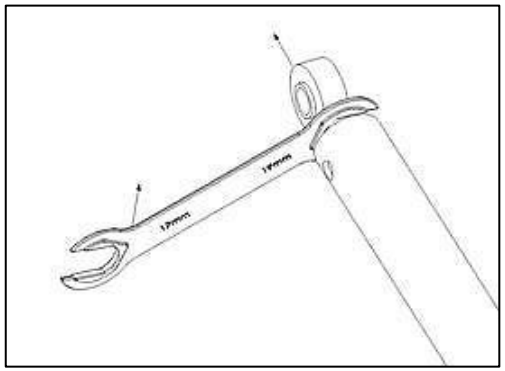
Replace Pedal arm’s bearing.



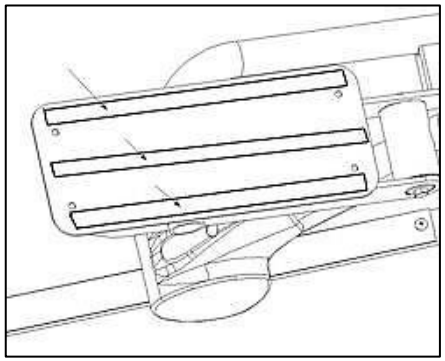
Replace the Slide wheels’ bearing.

9-3 Troubleshooting For Connect arm

Noise from Connect arm.



Check Rod end bearing.
If this bearing has clearance and cause noise please does the replacement.

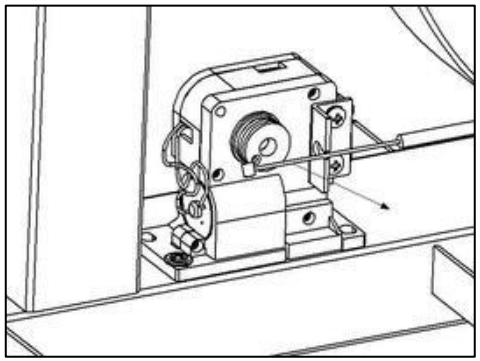


If the noise comes from Pedal assembly, check Pedal locking screws are secured, and the top of the assembly is taped foam tapes.

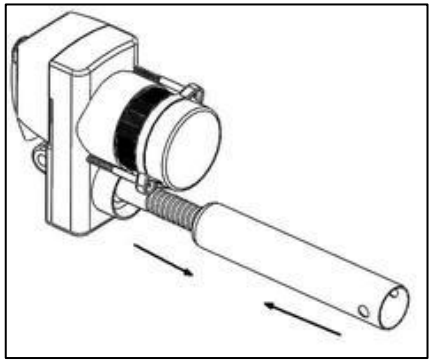
9-4 Troubleshooting For Incline motor and Controller board and Gear motor

Incline motor is no function.

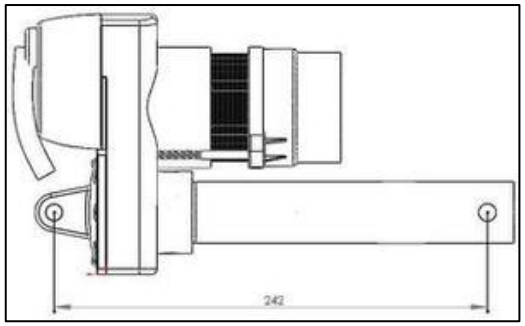
Check all the incline motor wires are plug well and all the electronic parts are good.



If there is no resistance when pedaling, please check console is ok, first.
Then check Gear motor is functional.
If Gear motor is defective then unmount steel cable and replace Gear motor.

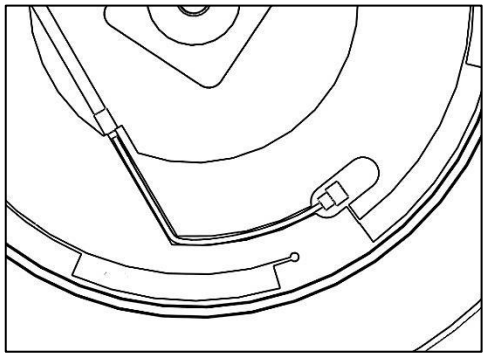


Incline motor needs to be adjusted to the right length when doing the replacement.
Setting the motor to zero then rotate the outer tube to let the distance between two bolt holes is 245mm.



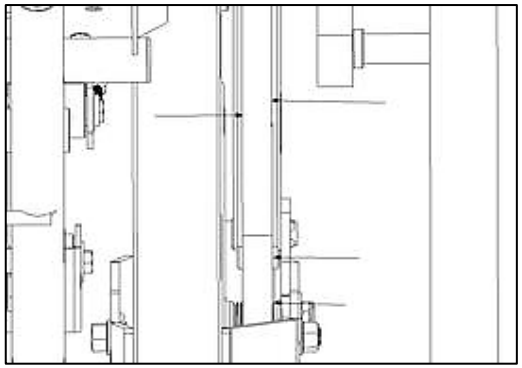
9-5 Troubleshooting For Flywheel and Drive belt

Adjust the resistance level but it is not functional or some noise comes from Flywheel.

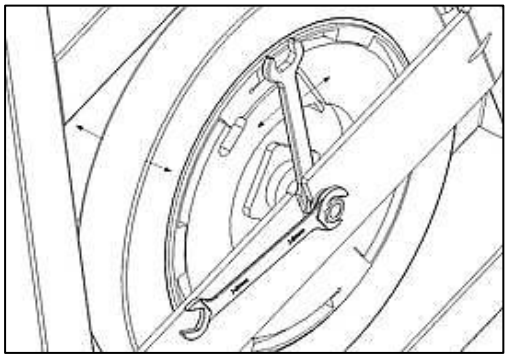


If Gear motor is operating normally, check Steel cable is mounted on Flywheel in the right way.

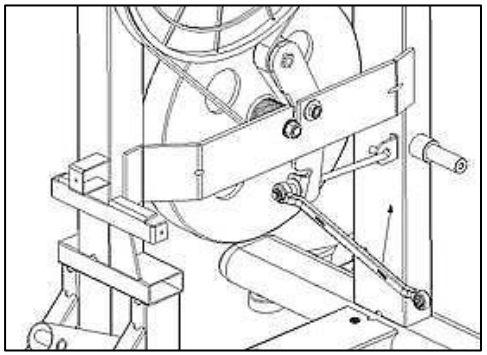
If there is noise coming when Flywheel is spinning.
Check Flywheel, Drive pulley, and Idle wheel assembly friction each other causes the noise. Or Flywheel makes the noise itself.



Drive belt dropping problem, please take off chain cover (R) and loosen idler wheel assembly, and then reassemble the drive belt.
please check the followings:
a With low speed operating. If drive pulley swing too much, please make the replacement.



b. With low speed operating. If drive belt, drive pulley and flywheel are not aligned, please adjust flywheel to make the alignment.



Drive belt slipping problem, please adjust nut on J bolt with 13mm wrench.

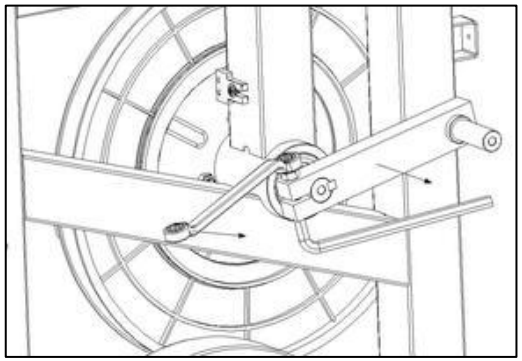
9-6 Troubleshooting For Noise

When the unit has noise problem,
please check the followings and refer
to replaced steps accordingly.

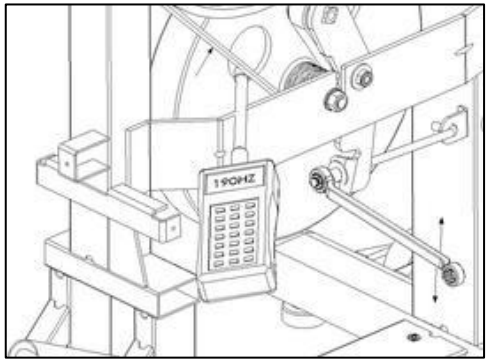
1. Bearings on joint areas.
2. Flywheel.
3. Slide wheels.
4. Pedals.

9-7 Troubleshooting For Drive Belt Slipping

When the unit has drive belt slipping problem



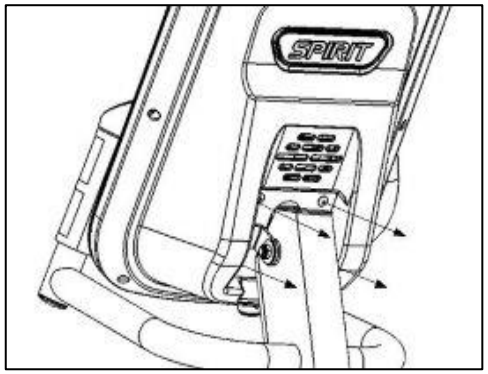
Tighten bolt and nut on crank arm.



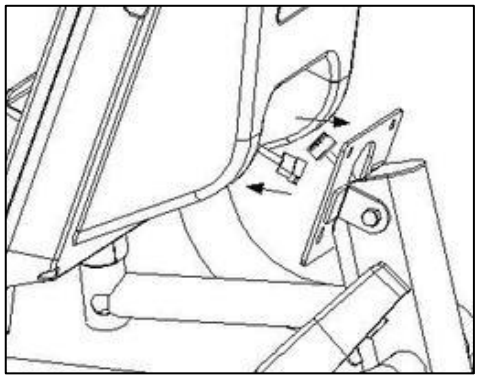
Adjust drive belt tension with 13mm wrench.

10. Parts Replacement Guide

10-1 Console Replacement

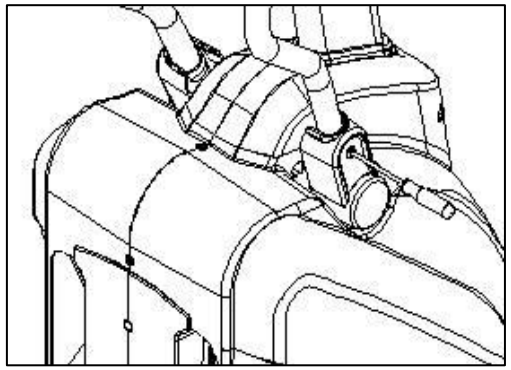


Step 1: Remove 4 Console locking screws then unplug all wires and take off Console.

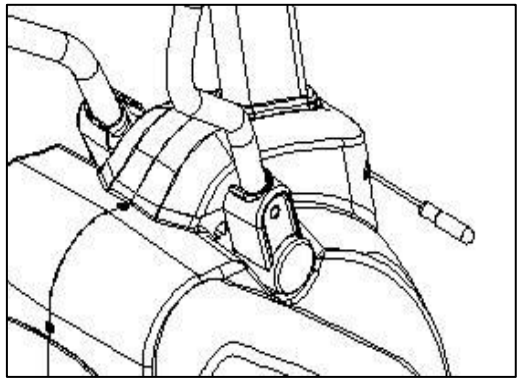


Step 2: To plug all wires first and install Console then secure 4 locking screws. Note: All wires should not be pinched.

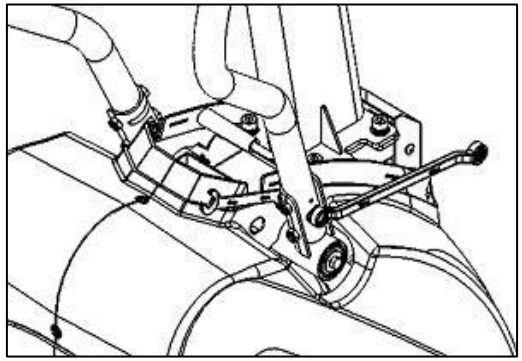
10-2 Side Case Replacement



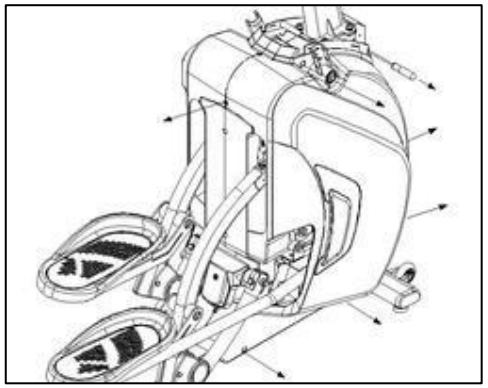
Step 1: Use a screwdriver to remove 2 screws then take off both left and right side Handle Bar Cover.



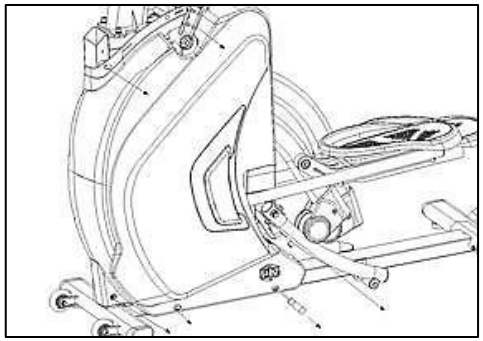
Step 2: Use a screwdriver to remove 3 screws then take off Console mast cover.



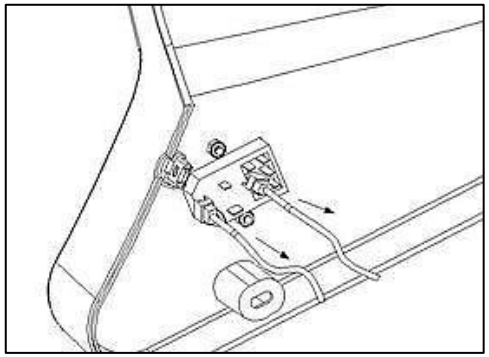
Step 3: Use a 12mm and 13mm box wrench to remove Upper Handle Bar locking bolts and washers then take off both sides of Upper Handle Bar.



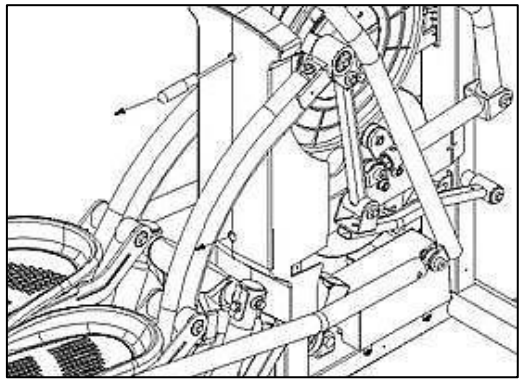
Step 4: Use a screwdriver to remove Chain cover locking screws then take off right Chain Cover.



Step 5: Use a screwdriver to remove left Chain cover locking screws.



Step 6: To record AC switch wires color and location then unplug wires'. Take off left Chain cover.



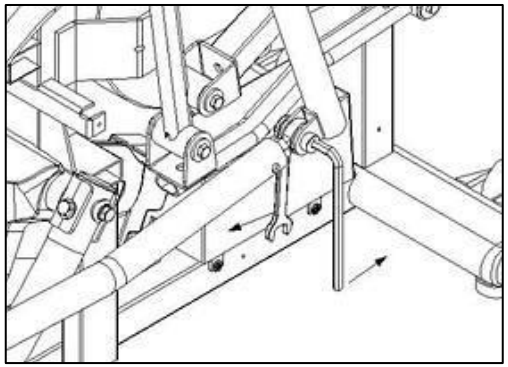
Step 7: Remove Rear Side Case.

Step 8: To do the reverse of above steps to install back.

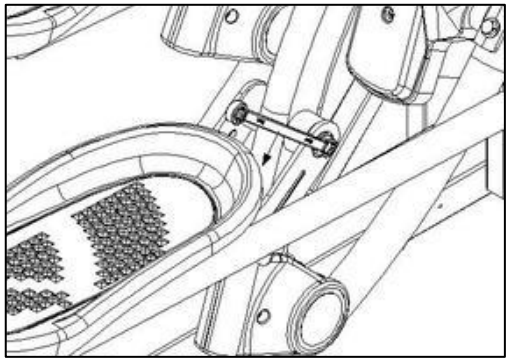
Note: Do not pinched wires.

10-3 Pedal Assembly replacement

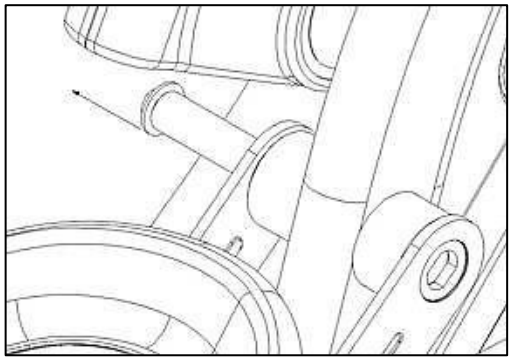
Step 1: Follow the steps of “Chain cover replacement” to remove both Chain covers.



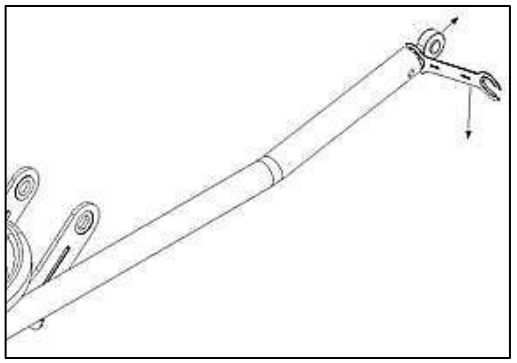
Step 2: Use a 17mm box wrench and an M6 Allen-wrench to remove the rod end bolt which link Pedal Assembly and Pedal Bar Assembly.



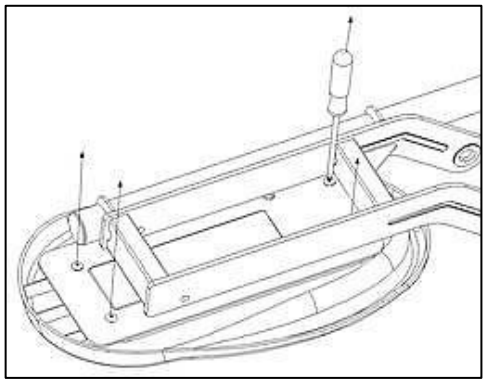
Step 3: Use a 12mm box wrench to remove Pedal Assembly axle locking bolt.



Step 4: Take off Pedal Assembly.

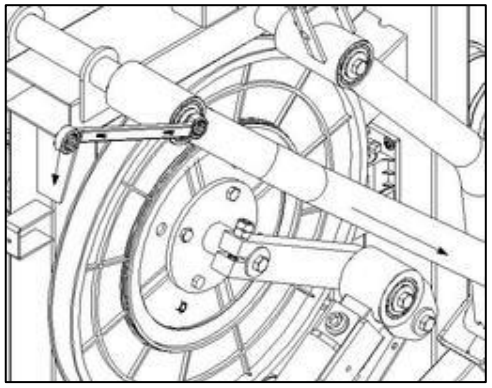


Step 5: Use a 19mm box wrench to loose rod end bearing nut then remove it.

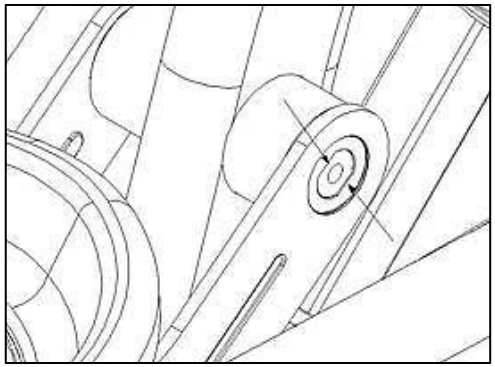


Step 6: Use a screwdriver to remove 4 Pedal locking screws then take off it.

10-4 Pedal Arm replacement

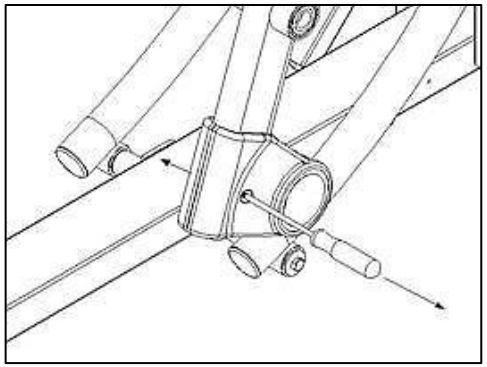


Step 7: Use a 12mm box wrench to remove Pedal Bar Assembly locking bolt and washer then take off it.

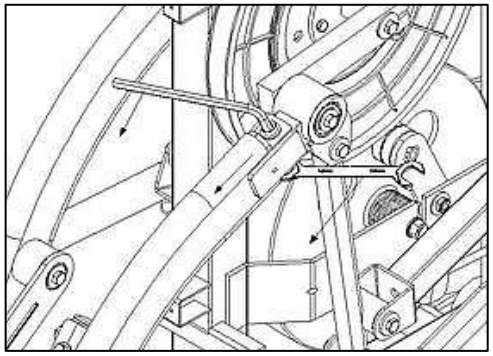


Step 8: To do the reverse of above steps to install back.
Note: The Pedal assembly axle must align with Pedal Bracket.

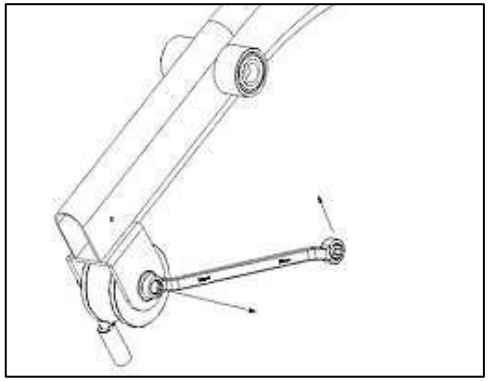
Step 1: Follow the steps of " Pedal Assembly replacement" to take off Pedal Assembly.



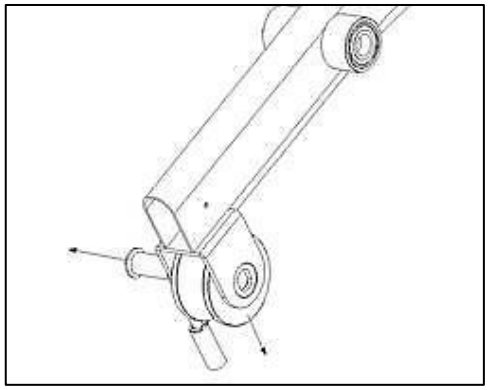
Step 2: Remove Slide Wheel Covers with a screwdriver.

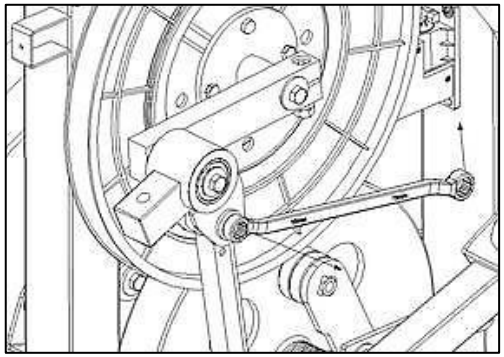


Step 3: Use a 14mm box wrench and a M8 Allen wrench to remove Pedal Arm locking bolt then take off it.

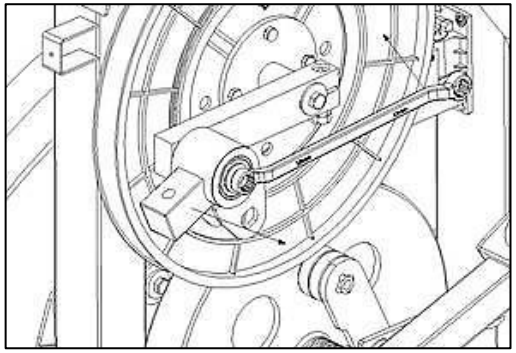


Step 4: Use a 12mm box wrench to unmount Slide wheel.
Note: The axle must be aligned when installing Slide wheel back.

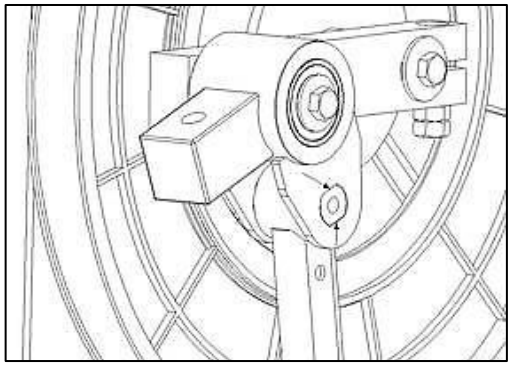




Step 5: Use a 12mm box wrench to remove the bolts which locking Swing Arm A on Pedal Arm Bushing Housing then take off axle.

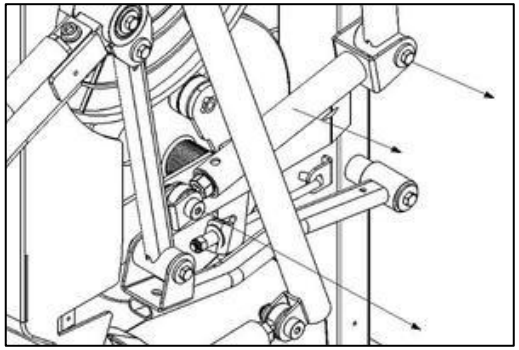


Step 6: Use a 12mm box wrench to remove Bushing Housing locking bolt then take off it.

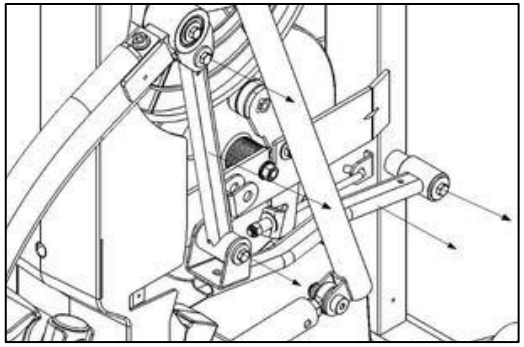


Step 7: To do the reverse of above steps to install all parts.
Note: The axle needs be aligned when installing.

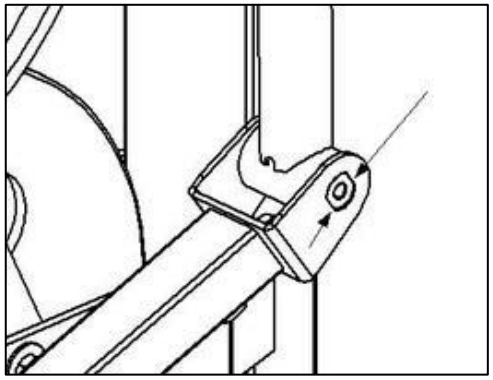
10-5 Swing Arm replacement



Step 1: Follow the steps of “Side Case replacement” to take off Side cases.
Step 2: Use a 12mm box wrench to remove Swing Arm Axle outside locking bolt then unmount axle. Use a 17mm box wrench and a M6 Allen wrench to remove rod end bearing locking bolt then take off Swing Arm C.

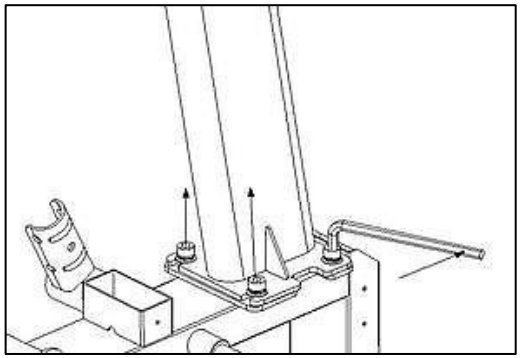


Step 3: Use a 12mm box wrench to remove the bolt which locking Bushing Housing with mainframe. Then take off Swing Arm A and Swing Arm B.

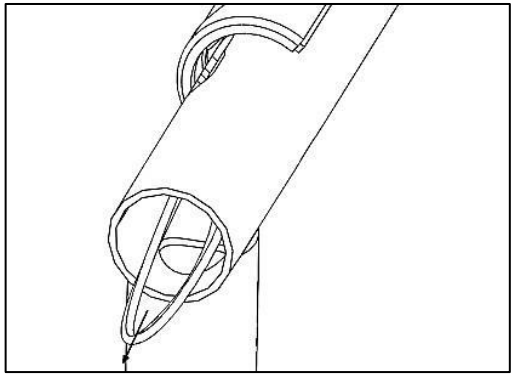


Step 4: To do the reverse of above steps to install all parts.
Note: The axle needs be aligned when installing.

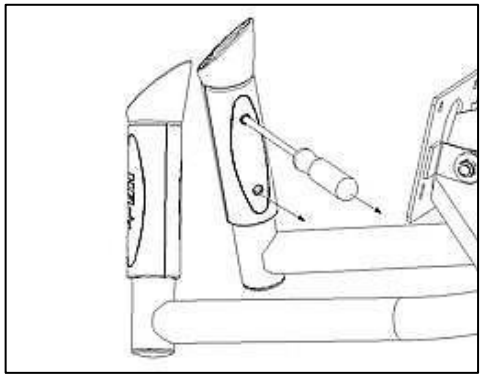
10-6 Up Right replacement



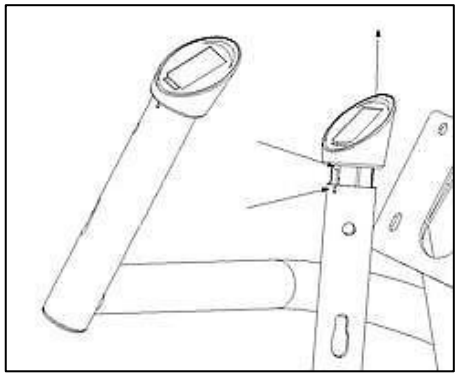
Step 1: Follow the User manual to take off Up Right.



Step 2: Remove Round Caps of Handle bar then pull off hand pulse and rapid key wires from handle bar.



Step 3: Use a screwdriver to remove Hand pulse screws then take off hand pulse set.

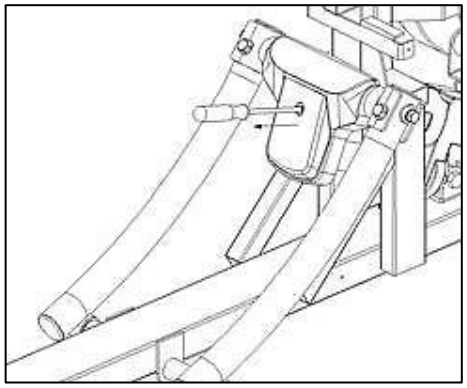


Step 4: Pull out Handle bar Rapid key cap.

Note: Rapid key cap needs be aligned when installing.

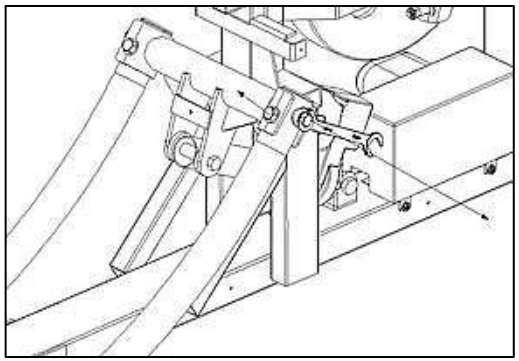
Step 5: To do the reverse of above steps to install all parts.

10-7 Rear Rail Assembly replacement

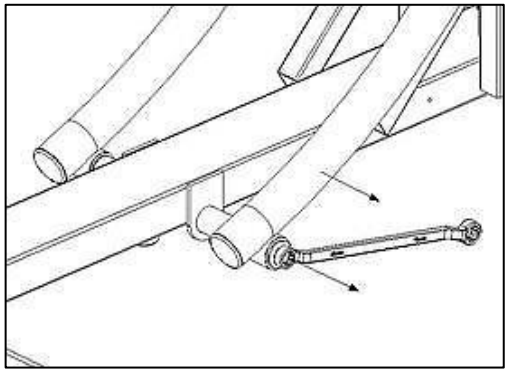


Step 1: Follow the steps of “Pedal Arm replacement” to take off both Pedal Arms.

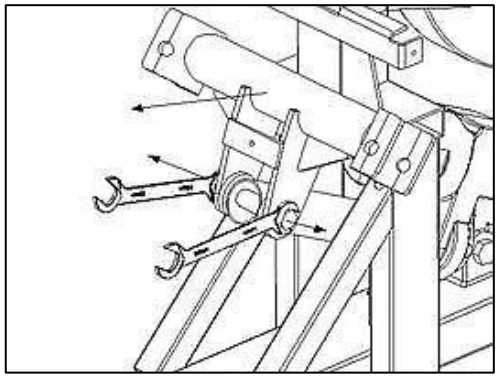
Step 2: Use a screwdriver to remove Incline Cover locking screw then take off Incline Cover.



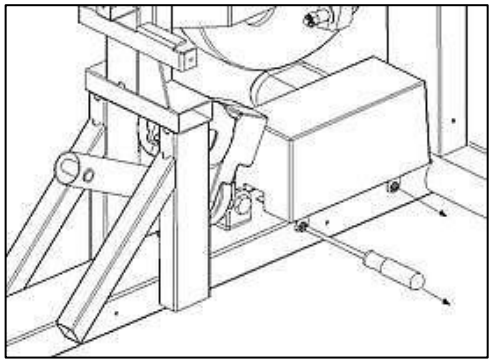
Step 3: Use 2 14mm box wrenches to remove Rear Rail assembly locking bolts then take off Rear Rail assembly.



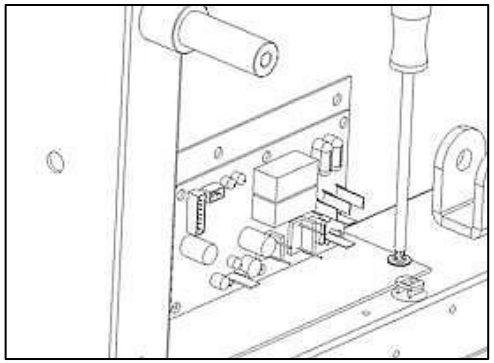
10-8 Incline motor, Gear motor, and Controller board replacement



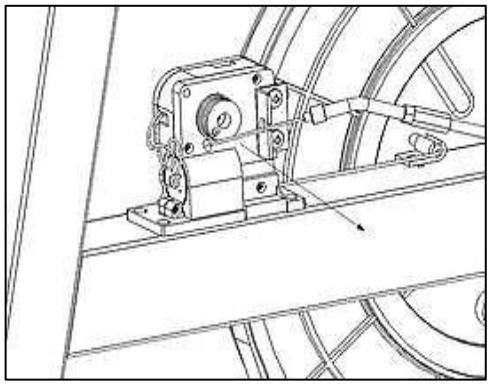
Step 4: Use 2 14mm box wrenches to remove Incline Bracket locking bolt then take off Incline Bracket.
Step 5: To do the reverse of above steps to install all parts.



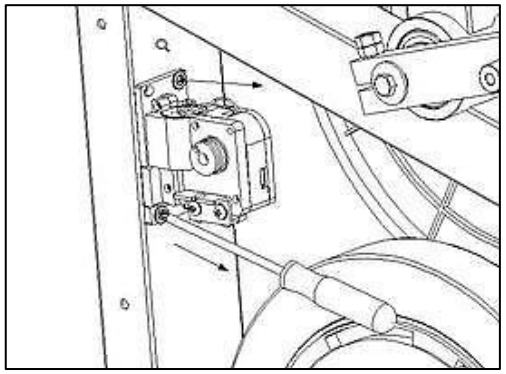
Step 1: Follow the steps of “Side Case replacement” to take off Side case.
Step 2: Use a screwdriver to remove Controller board cover locking screw then take off the cover.



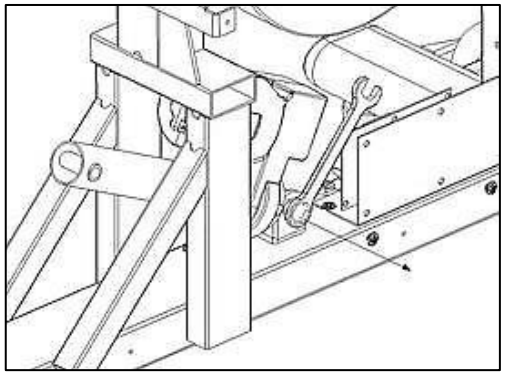
Step 3: Remember all wires location before unplug them. Use a screwdriver to remove Controller board.



Step 4: Before replace gear motor, use Console to adjust resistance level to MAX then cut off power. Unmount steel cable from Gear motor.



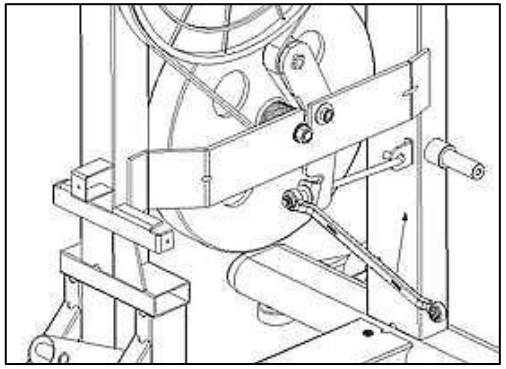
Step 5: Use a screwdriver to remove Gear motor and unplug wire. Then take off Gear motor.



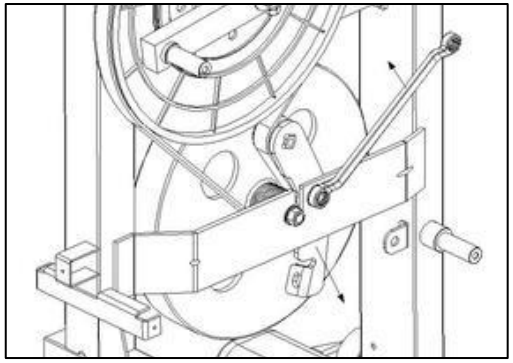
Step 6: Use 2 17mm box wrenches to remove Incline motor locking bolts. Cut off wire ties and remove Incline motor ground wire with a screwdriver. Disconnect Incline motor wires from Controller board then take off Incline motor.

Step 7: To do the reverse of above steps to install all parts.

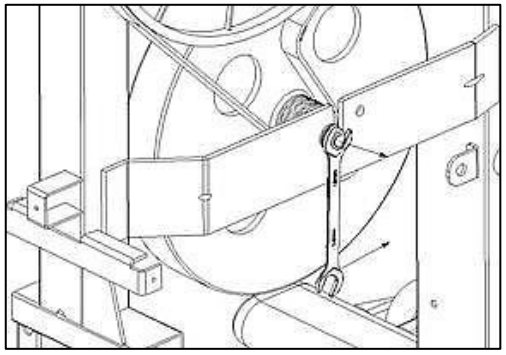
10-9 Idler Wheel Assembly, Flywheel, and Drive belt replacement



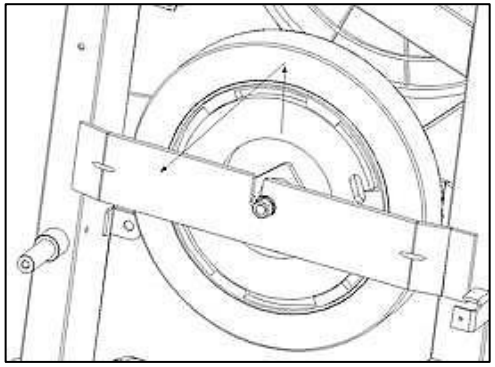
Step 1: Follow the steps of “Gear motor replacement” to unmount steel cable from Flywheel. Then use a 13mm box wrench to remove adjust nut from J-bolt.

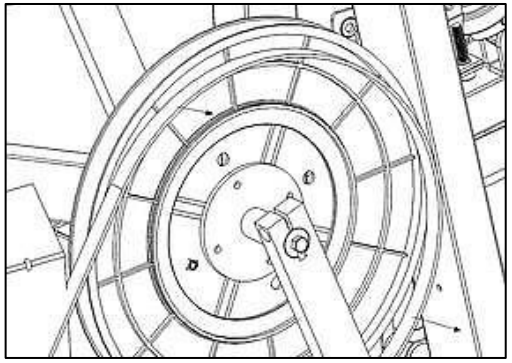


Step 2: Use a 13mm box wrench to remove Idle wheel Carriage Bolt then take off Idle wheel assembly.

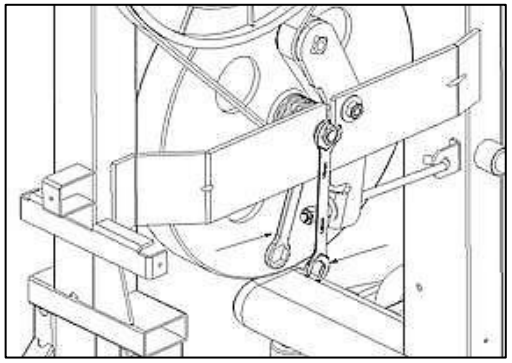


Step 3: Use a 15mm box wrench to remove Flywheel locking nuts then take off Flywheel from mainframe.

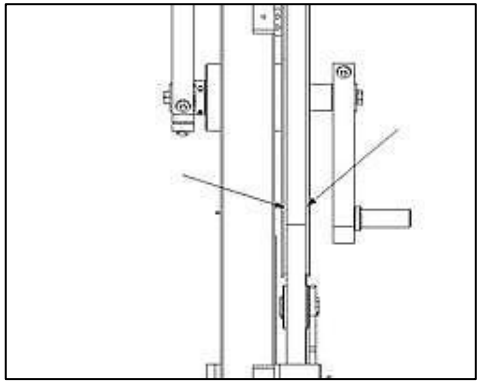


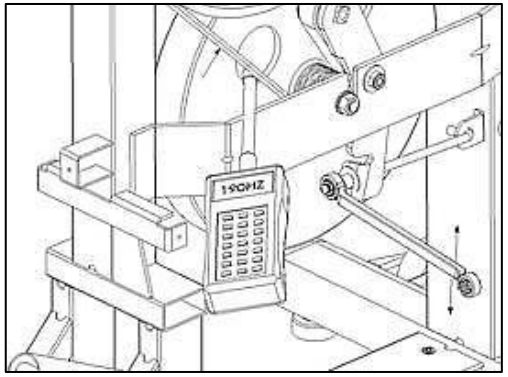


Step 4: Take off Drive belt from Drive pulley.



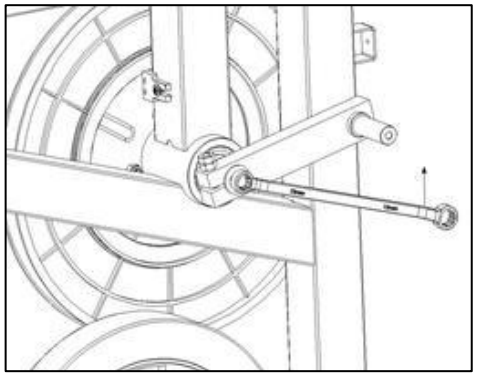
Step 5: To do the reverse of above steps to install Flywheel and Drive belt. Use 17mm box wrenches to adjust Flywheel location to let Drive belt center on Drive pulley then secure Flywheel locking nuts.



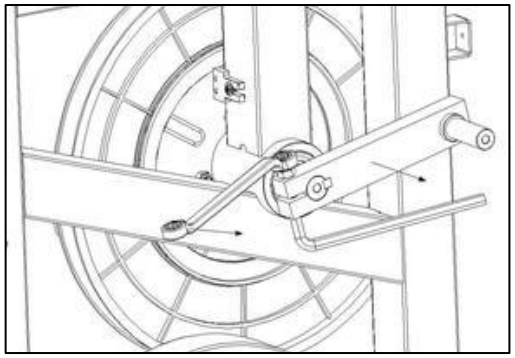


Step 6: Adjust Idle wheel assembly to let Drive belt at right tension. (Use a sonic belt tension meter to measure, the right value is 190Hz+/-10Hz.) Rotate Crank to check Flywheel, Drive belt, and Drive pulley is operating smoothly. Then install all other parts.

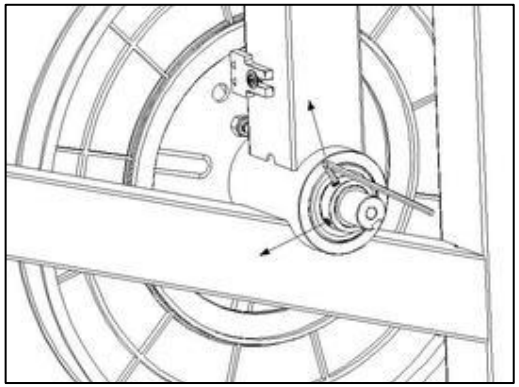
10-9 Crank and Drive pulley replacement



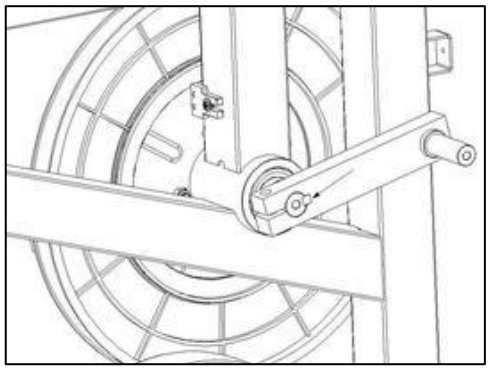
Step 1: Follow the 10-8 steps to unmount Drive belt.
Step 2: Use a 12mm box wrench to remove Crank locking bolt.



Step 3: Use a 13mm box wrench and M6 Allen wrench to loose nuts which locking Crank on Drive pulley Axle. Then take off Crank.



Step 4: Use an M2 Allen wrench to loose 2 bolts which locking axle on Bearing. Then take off Drive pulley assembly.



Step 5: To do the reverse of above steps to install all parts.

Note: The direction of the woodruff key, the round head direct to the axle.