

Strong. Smart. Beautiful.

C5X-01 CLIMB MILL
SERVICE MANUAL

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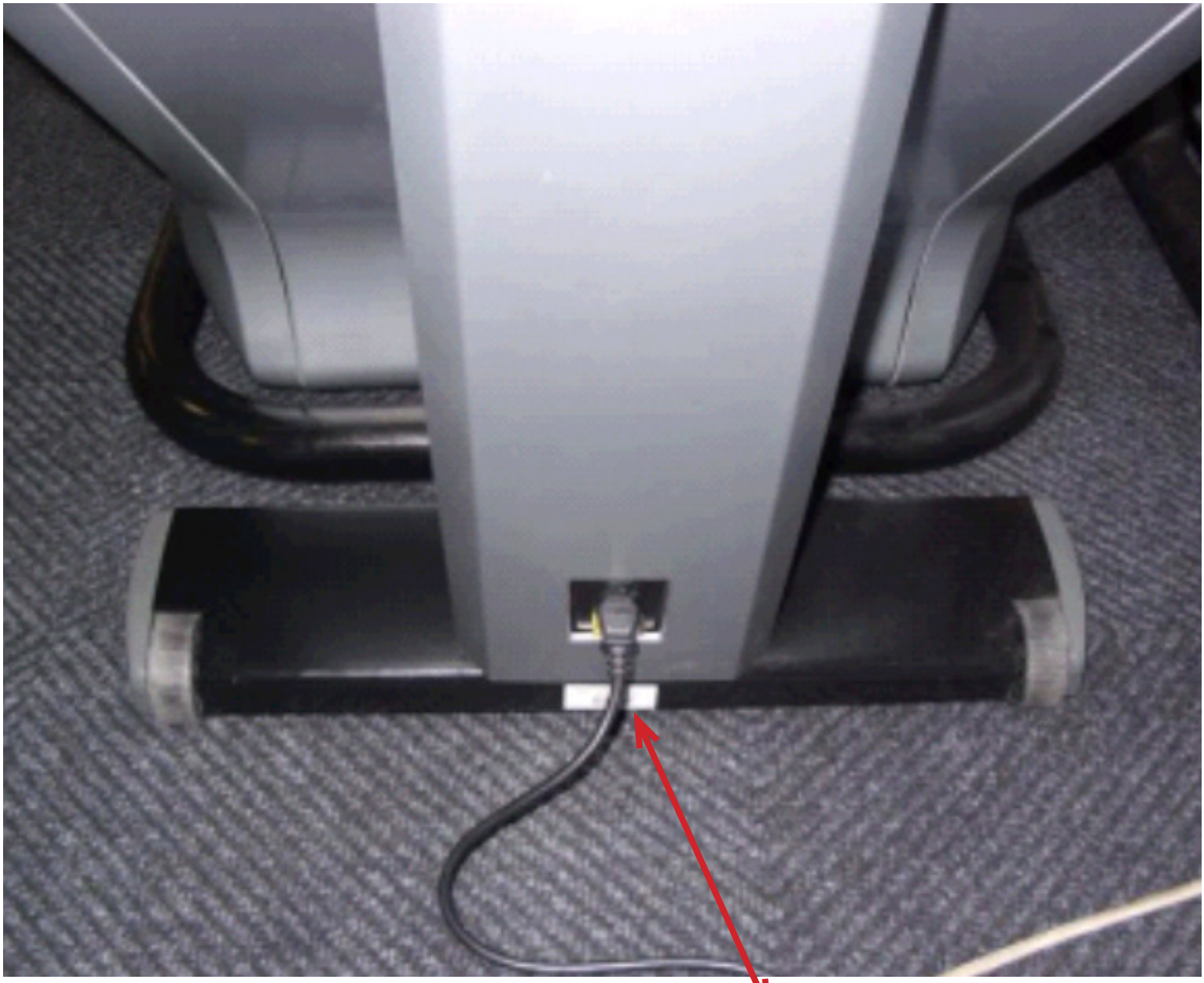
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CHAPTER 1: SERIAL NUMBER LOCATION

1.1 SERIAL NUMBER LOCATION



1.1 SERIAL NUMBER LOCATION - CONTINUED

UNIVERSAL CONSOLE SERIAL NUMBER LOCATION



CONSOLE SERIAL NUMBER LOCATION

CHAPTER 2: IMPORTANT SAFETY INSTRUCTIONS

2.1 READ AND SAVE THESE INSTRUCTIONS

This Climb Mill is intended for commercial use. To ensure your safety and protect the equipment, read all instructions before operating the MATRIX Climb Mill.

When using an electrical product, basic precautions should always be followed including the following:

- ***An appliance should never be left unattended when plugged in. Unplug the unit from the outlet when not in use and before putting on or taking off any parts.***
- ***This product must be used for its intended purpose described in this service manual. Do not use other attachments that are not recommend by the manufacturer. Attachments may cause injury.***
- ***To prevent electrical shock, never drop or insert any object into any opening.***
- ***Do not remove the side covers. Service should only be done by an authorized service technician.***
- ***Never operate the unit with the air opening blocked. Keep the air opening clean, free of lint and hair.***
- ***Never operate the unit if it has a damaged cord or plug, if it is not working properly, if it has been damaged, or immersed in water.***
- ***Close supervision is necessary when the unit is used by or near children or disable persons.***
- ***Do not use outdoors.***
- ***Do not operate where aerosol (spray) products are being used or when oxygen is being administered.***
- ***Do not use the equipment in any way other than designed or intended by the manufacturer. It is imperative that all Matrix Fitness Systems equipment is used properly to avoid injury.***
- ***Keep hands and feet clear of moving parts at all times to avoid injury.***
- ***Unsupervised children must be kept away from this equip ment.***
- ***Do not wear loose clothing while on the equipment.***

* ***At NO time should pets or children under the age of 13 be closer to the unit than 10 feet.***

CAUTION! ***If you experience chest pains, nausea, dizziness, or shortness of breath, stop exercising immediately and consult your physician before continuing.***

CAUTION! ***Any changes or modifications to this equipment could void the product warranty.***

CHAPTER 2: IMPORTANT SAFETY INSTRUCTIONS

2.2 ELECTRICAL REQUIREMENTS

The Matrix Climb Mill must be AC powered. The Climb Mill is capable of being daisy chained together (up to 3 units per dedicated 15 amp circuit) using a Matrix provided daisy chain (sold separately). Any alterations to the standard Matrix power cord will void all warranties.

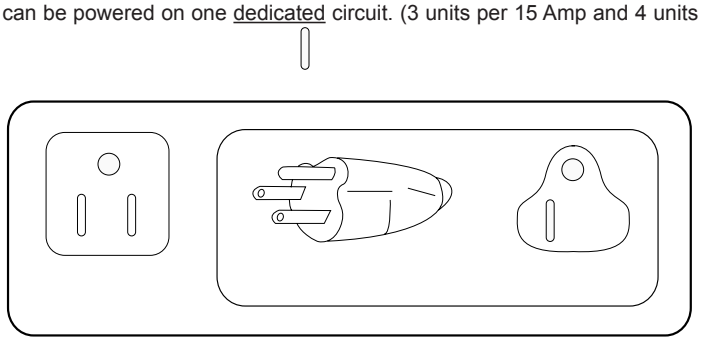
MATRIX DEDICATED CIRCUIT/ELECTRICAL REQUIREMENT INFO

All Matrix Climb Mills require the use of a 15 amp or 20 amp "dedicated circuit," with a non-looped (isolated) neutral/ground, for the power requirement. Quite simply this means that each outlet you plug Climb Mills into should not have anything else running on that same circuit besides other Climb Mills (up to 3 per 15 amp circuit and 4 per 20 amp circuit). The easiest way to verify this is to locate the main circuit breaker box, and turn off the breaker(s) one at a time. Once a breaker has been turned off, the only thing that should not have power to it are the Climb Mills in question. No lamps, vending machines, fans, sound systems, or any other item should lose power when you perform this test.

Non-looped (isolated) neutral/grounding means that each circuit must have an individual neutral/ground connection coming from it, and terminating at an approved earth ground. You cannot "jumper" a single neutral/ground from one circuit to the next.

In addition to the dedicated circuit requirement, the proper gauge wire must be used from the circuit breaker box, to each outlet that will have the maximum number of units running off of it. If the distance from the circuit breaker box, to each outlet, is 100 ft or less, then 12 gauge wire may be used. For any distance greater than 100 ft from the circuit breaker box to the outlet, 10 gauge wire must be used.

For your safety and Climb Mill performance, the ground on this circuit must be non-looped. Please refer to NEC article 210-21 and 210-23. Your Climb Mill is provided with a power cord with a plug listed below and requires the listed outlet. Any alterations of this power cord could void all warranties for this product. Multiple Climb Mills can be powered on one dedicated circuit. (3 units per 15 Amp and 4 units per 20 Amp dedicated circuit.)



GROUNDING INSTRUCTIONS:

The Matrix Climb Mill must be grounded. If it should malfunction or break down, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. The Climb Mill is equipped with a cord having an equipment grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances. If the user does not follow these grounding instructions, the user could void the Matrix limited warranty.

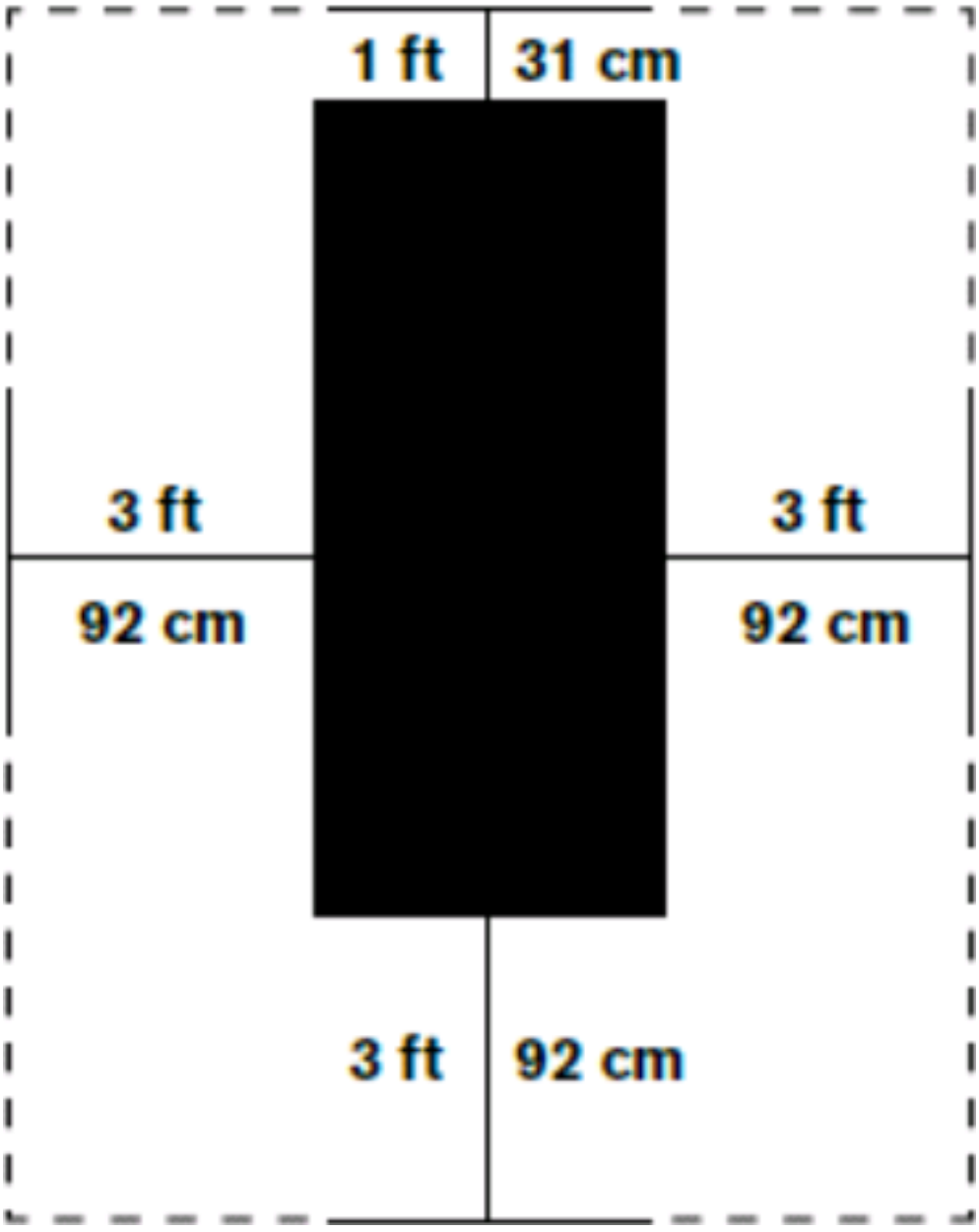
DANGER: Improper connection of the equipment grounding conductor can result in the risk of electric shock. Check with a qualified electrician if the user is in doubt as to whether the product is properly grounded. Do not modify the plug provided with the product if it will not fit the outlet, have a proper outlet installed by an electrician

2.3 LOCATING THE UNIT

LOCATION OF THE UNIT:

Place the unit on a level surface. There should be 3 feet of clearance behind the unit and one foot in front of the unit for the power cord. Do not place the unit in any area that will block any vent or air openings. These products should not be located in a garage, covered patio, near water, or outdoors.

Height Requirements - The Climb Mill adds 30" - 38" (76 - 96cm) to a user's height. For example, a 6' (183cm) tall user will be 7'8" (234.4cm - 254.4cm) off the floor. Total height of the user on the Climb Mill should not exceed 9'10" (300 cm), which means that users taller than 6'8" (204cm) should not use this equipment.



CHAPTER 3: PREVENTATIVE MAINTENANCE

3.1 RECOMMENDED CLEANING TIPS

Preventative maintenance and daily cleaning will prolong the life and look of your MATRIX Climb Mill.

Please read and follow these tips.

- Position the equipment away from direct sunlight. The intense UV light can cause discoloration on plastics.
- Locate your equipment in an area with cool temperatures and low humidity.
- Clean with a soft 100% cotton cloth.
- Clean with soap and water or other non-ammonia based all purpose cleaners.
- Wipe foot pads, handles, heart rate grips, and handlebars clean after each use.
- Do not pour liquids directly onto your equipment. This can cause damage to the equipment and in some cases electrocution.
- Check pedal motion and stability.
- Adjust leveling feet when equipment wobbles or rocks.
- Maintain a clean area around equipment, free from dust and dirt.

DO NOT use any equipment that is damaged or has worn or broken parts. Use only replacement parts supplied by Matrix Fitness Systems.

MAINTAIN LABELS AND NAMEPLATES. Do not remove labels for any reason. They contain important information. If unreadable or missing, contact Matrix Fitness Systems for a replacement. 1-866-693-4863, www.matrixfitness.com

MAINTAIN ALL EQUIPMENT Preventative maintenance is the key to smooth operating equipment. Equipment needs to be inspected at regular intervals. Defective components must be replaced immediately. Improperly working equipment must be kept out of use until it is repaired. Ensure that any person(s) making adjustments or performing maintenance or repair of any kind is qualified to do so. Matrix Fitness Systems will provide service and maintenance training at our corporate facility upon request or in the field if proper arrangements are made.

3.2 CARE AND MAINTENANCE INSTRUCTION

In order to maximize life span, and minimize down time, all MATRIX equipment requires regular cleaning, and maintenance items performed on a scheduled basis. This section contains 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
* #2 Phillips head screwdriver
* Adjustable wrench
* Torque wrench (capability to read foot lbs, and inch lbs)
* Lint free cleaning cloths
* Teflon based spray lubricant
* Mild, water soluble, detergent – such as “Simple Green”, or other Matrix approved product
* Teflon based spray lubricant such as “Super Lube”, or other Matrix approved product
* Vacuum cleaner with an extendable hose and crevasse tool attachment

You may periodically see addendums to this document, as the Matrix Technical Support Team identifies items that require specific attention, the latest version will always be available on the Matrix website, www.matrixfitness.com

DAILY MAINTENANCE ITEMS

1) Clean the entire machine using water and mild detergent such as “Simple Green”, or other Matrix approved solutions (cleaning agents should be alcohol and ammonia free). ***NOTE:*** Never spray cleaner directly onto the equipment, spray cleaner onto a cloth and then wipe the equipment.

QUARTERLY MAINTENANCE ITEMS

1) Check all connecting joint areas for tightness of bolt assemblies.

2) Remove the maintenance cover and check the fans for function.

3) Remove the maintenance cover and check the chain for damage, alignment and proper tension.

YEARLY MAINTENANCE ITEMS

1) Remove the maintenance covers and check the belts for damage, alignment, and proper tension.

2) Remove the maintenance covers and check the brake for function.

CHAPTER 4: CONSOLE OVERLAY AND WORKOUT DESCRIPTION

4.1 CONSOLE DESCRIPTION



C5X CONSOLE DESCRIPTION

WORKOUT KEYS: Simple program view and selection buttons.

GO: One touch start.

ENTER: To confirm each program setting.

UP / DOWN LEVEL: Easy information and level selection.

UP / DOWN TIME: Easy information and time adjustment.

STOP: Ends workout and shows workout summary data.

NUMBER KEYPAD: Workout data input for workout setup. Level adjustment during workout.

COOL DOWN: Puts the Climb Mill into Cool Down Mode.

FAN: Allows for fan speed selection (fan has 3 operating speeds).

TOGGLE DISPLAY: Changes information displayed from top row to bottom one.

4.2 WORKOUT SETUP STEPS

To set up a workout, choose the program wanted, then press ENTER. Follow the prompts to begin your workout.

GO - Press to immediately begin a workout. Workout, resistance level, and time will automatically go to default settings. All energy expenditure values will be calculated using the default weight measurement.

MANUAL - Manual allows the user to input more information while defining their own workout. Calorie expenditure will be more accurate when inputting information in Manual than by pressing GO.

ROLLING HILLS - The Rolling Hills program is a level based program that automatically adjusts the resistance level to simulate real terrain.

INTERVALS - The Intervals program is a level based program that automatically adjusts the resistance of the machine from low to high intensity settings at regular intervals to burn calories.

GOAL TRAINING - The Goal Training program is designed to help users burn a target number of calories.

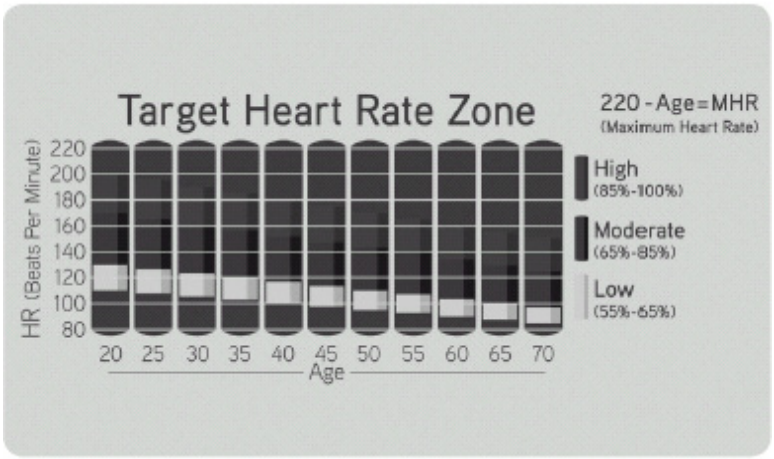
CALORIE TRAINING - The Calorie Training program is designed to help users burn a target number of calories.

CONSTANT WATTS - The Constant Watts program allows you to vary your cadence or SPM and the machine's resistance will adjust according to your selected goal. The quicker you step, the less resistance for the goal selected.

FAT BURN - The Fat Burn program is a level based workout that is designed to help users burn fat through various resistance changes.

TARGET HEART RATE - The Matrix Climb Mill comes with standard digital contact heart rate sensors and are POLAR telemetry compatible. The heart rate control workout mode allows the user to program their desired heart rate zone, and the Climb Mill will automatically adjust the level based upon the user's heart rate. The heart rate zone is calculated using the following equation: (220-Age)*% = target heart rate zone. The user must wear a POLAR telemetric strap or continually hold onto the contact heart rate grips for this workout.

Locate the metal sensors on the handlebars of the Climb Mill. Notice that there are two separate pieces of metal on each grip. You must be making contact with both pieces of each grip to get an accurate heart rate reading. You can grab these sensors in any program to view your current heart rate.



FITNESS TEST (WFI) - The WFI (Wellness Fitness Initiative) protocol is a test used by firefighters in a series of intervals lasting a maximum of 16 minutes, where the speed is increased every minute until the Target Heart Rate is exceeded for 15 seconds. When the test is complete, the display provides a summary of V)2max, Highest SPM, Elapsed Time, and Target Heart Rate. The test requires constant monitoring of the user's heart rate, so the use of a telemetric heart rate strap is highly recommended.

FITNESS TEST (SUBMAXIMAL) - The Submaximal test measures cardiovascular fitness and provides an estimated Sub-maximal VO2 max result. This assessment is a 4 stage test lasting 3-5 minutes where the speed is increased until your Heart Rate is between 115 - 150 bpm for 2 of the stages. When the test is complete, a Fitness Rating is displayed as High, Good, Average, Fair, or Low along with your age and VO2 max. The test requires constant monitoring of the user's heart rate, so the use of a telemetric heart rate strap is highly recommended.

FITNESS RATING NORMS (V02 MAX)						
	AGE	**20-29**	**30-39**	**40-49**	**50-59**	**60+**
MEN						
	HIGH	51.4+	50.4+	48.2+	45.3	42.5+
	GOOD	51.3-46.8	50.3-44.6	48.1-41.8	45.2-38.5	42.4-35.3
	AVERAGE	46.7-42.5	44.5-41.0	41.7-38.1	38.4-35.2	35.2-31.8
	FAIR	42.4-39.5	40.9-37.4	38.0-35.1	35.1-32.3	31.7-28.7
	LOW	39.4 OR LESS	37.3 OR LESS	35.0 OR LESS	32.2 OR LESS	28.6 OR LESS
WOMEN						
	HIGH	44.2+	41.0+	39.5+	35.2+	35.2
	GOOD	44.1-38.1	40.9-36.7	39.4-33.8	35.1-30.9	35.1-29.4
	AVERAGE	38.0-35.2	36.6-33.8	33.7-30.9	30.8-28.2	29.3-25.8
	FAIR	35.1-32.3	33.7-30.5	30.8-28.3	28.1-25.5	25.7-23.8
	LOW	32.2 OR LESS	30.4 OR LESS	28.2 OR LESS	25.4 OR LESS	23.7 OR LESS

CHAPTER 5: MANAGER MODE

5.1 USING MANAGER MODE

The Manager's Custom Mode allows the club owner to customize the Climb Mill for the club.

1) To enter Manager Mode, press and hold down the LEVEL UP and DOWN keys. Continue to hold down these two keys until the display reads Manager Mode and hit ENTER (Figure A).

2) To scroll through the list of options in Manager Mode, use the LEVEL UP and DOWN keys. Each of the custom settings will show on the display.

3) To select a custom setting, press the ENTER key when the desired setting is shown.

4) To change the value of the setting, use the LEVEL UP and DOWN keys.

5) To confirm and save the value of the setting, press the ENTER key.

6) To exit the setting without saving, press the BACK key.

7) Press and hold the STOP key for 3-5 seconds to return to normal operation.



FIGURE A

5.2 MANAGER MODE OVERVIEW

CUSTOM SETTING	DEFAULT	MINIMUM	MAXIMUM	DESCRIPTION
Maximum Time	60 min	5 min	99 min	Sets the total run time of any program.
Default Time	30 min	5 min	Maximum Time Setting	Workout time when GO is pressed or when no time is selected during program set up.
Default Age	30	10	100	Starting age when GO is pressed or when no age is selected during program set up.
Default User Weight	150 lbs / 68 kg	80 lbs / 36 kg	400 lbs / 182 kg	Weight used for program calorie expenditure calculations.
Accumulated Distance	N/A	0	99,999 Miles	Total distance for all programs.
Accumulated Time	N/A	0	999,999 hours	Total time for all programs displayed in hours.
Software	N/A	N/A	N/A	Current version of console software.
Out of Order	No	Yes	No	Locks the machine when out of order.
Gender	Male	Male	Female	Determines the gender of the user when not selected during program set up.
Language	English	English	English	Sets the language for the console. Select between English, Spanish, German, French, Italian, Portuguese, Finnish, Japanese, Swedish, and Dutch.
Speed / Distance Mode	Mile	Mile	Kilometer	Displays distance in miles or kilometers.
Sound Mode	On	On	Off	Turns the chime on / off when a button is pressed.
Default Level	Level 1	Level 1	Level 20	Starting resistance when GO is pressed or no resistance level is selected during program setup.
Default Target Calories	100	50	5000	Default target calories used for calories training program.
Default Height	63" / 160cm	40" / 101cm	90" / 228cm	Default height of user.
Default Floors	20 Floors	15 Floors	200 Floors	Default floors used for goal training program.
Max Speed Level	Level 20	Level 20	Level 25	Set the level which is the max usable speed.

CHAPTER 6: ENGINEERING MODE

6.1 USING ENGINEERING MODE

To enter Engineering Mode, hold the LEVEL UP and DOWN keys for 3-5 seconds until Manager Mode appears on the middle LED display. Press the LEVEL UP or DOWN key to scroll to Engineering Mode. Press ENTER to go into Engineering Mode.

CODE	DEFAULT	OPTIONS	DESCRIPTION
Disable Errors	No	Yes or No	No - Shows A-C class error codes. Yes - Shows only C class error codes.
Speed Units	Mile	Mile or Kilometer	Set for Mile or Kilometer.
Machine Type	C5x	C5x	This option selects the current model.
Pause Time	30 Seconds	15 - 120 Seconds	For AC powered frames only. This option controls the length of a user's pause time before reset.
Serial Number	N/A	N/A	Serial Number input is available for both the Console and Frame. Use the number keys and UP / DOWN LEVEL keys to enter Engineering Mode. Due to the limited LED charactors, 2 layers are used to enter the serial number. First Layer: - PPPPP V - PPPPP is the product name (CS17 for the Climb Mill). - V is the version. If the version is A, just leave this blank. Second Layer - YY MM nnnnn. - YY is the year (11, 12). - MM is the month (e.g. 08, 09, 10). - nnnnn is the actual serial number. Use the UP / DOWN LEVEL keys to navigate the layers and the number keys to input the serial number. The product name is dependent on the Machne Type setting. For example, the console is CS17 with ver. A and the manufactured date is 2011.08 with 00123. The frame is CS17 with ver. A and the manufactured date is 2011.07 with 99777. Their serial numbers are: Console SN: CS17 1rst layer, 110800123 2nd layer. Frame SN: CS17 1rst layer, 110799777 2nd layer.
Club ID	N/A	N/A	This sets the club ID for clubs using Asset Management.
Sleep Time	Off	Off or On (1-30 Minutes)	If there is no use of the machine over a period of time, the console LEDs will turn off (go into sleep mode).
E-Stop Switch	On	Off or On	This option selects the E-Stop function.
E-Stop Setting	100	4-100	Adjusts the touched point of the E-Stop.

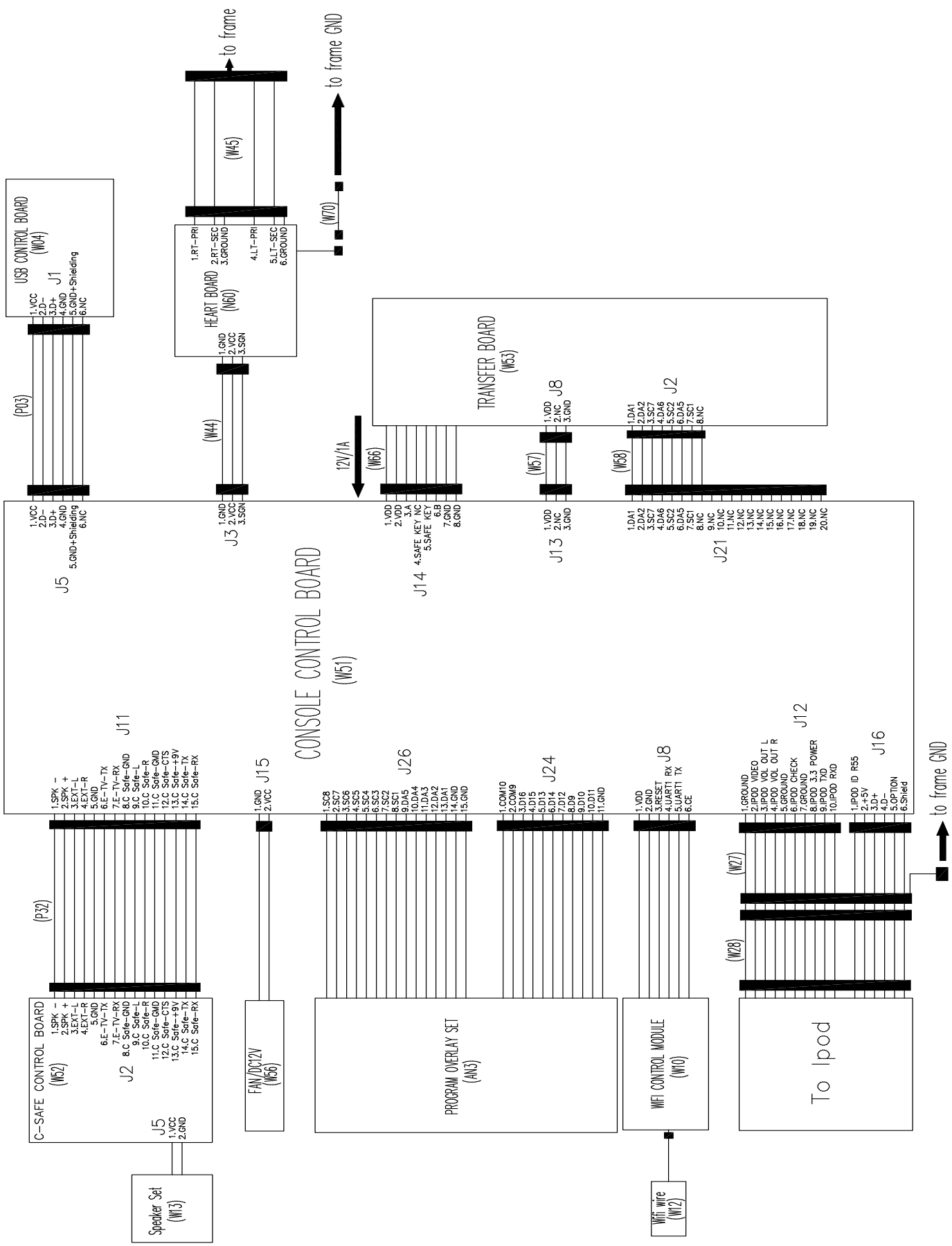
CHAPTER 7: SERVICE MODE

7.1 USING SERVICE MODE

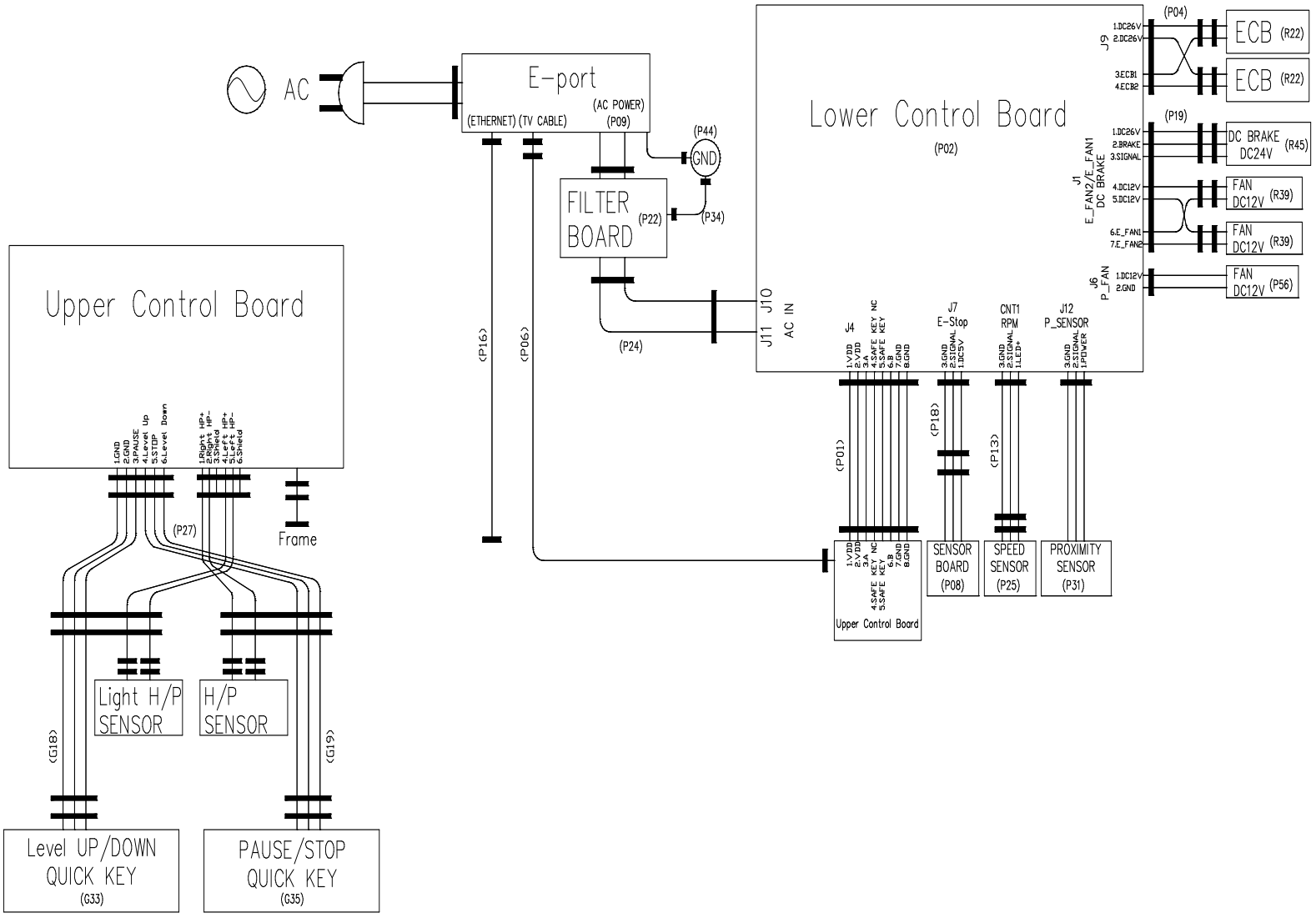
To enter Service Mode, hold the LEVEL UP and DOWN keys for 3-5 seconds until Manager Mode appears on the middle LED display. Press the LEVEL UP or DOWN key to scroll to Service Mode. Press ENTER to go into Service Mode.

CODE	DEFAULT	OPTIONS	DESCRIPTION
Service 1	Display Test		Press the ENTER key repeatedly to check each set of LEDs on the display sequentially.
Service 2	Keypad Test		Press any key and the display should show the corresponding message.
Service 3	Distance / Time	Distance: Mile 0 - 99999 Kilometer 0 - 160898 Time: 0 - 999999	Manually sets the Accumulated Distance and Time.
Service 4	CSafe / RF Test		Press the ENTER key to test CSAFE. Press the ENTER key again to test the RF.
Service 5	Error Log		Shows the last 10 errors. Press and LEVEL UP and DOWN for 3 seconds to clear the errors.
Service 6	Current Time Display		Displays the current time
Service 7	Export and Import Parameter		Export Parameter - Export the engineer parameters to a USB device (the file name will be Premium C5x.backup). Import Parameter 1 - Imports the engineer parameters to a USB device except serial number, accumulated distance and time. Import Parameter 2 - Imports the engineer parameters to a USB device.
Service 8	WiFi Function		Automatically detects the available IP address and displays it.

8.1 ELECTRICAL DIAGRAMS



8.1 ELECTRICAL DIAGRAMS - CONTINUED



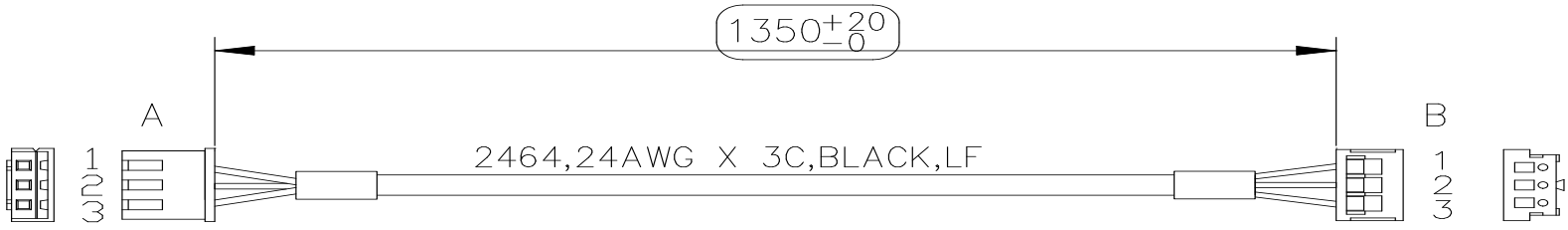
8.1 ELECTRICAL DIAGRAMS - CONTINUED

P01 - DIGITAL COMMUNICATION WIRE



A.HOLE	B.HOLE	FUNCTION	COLOR
1	1	12V	red
2	2	12V	
3	3	RDA	
4	4	SAFE KEY	
5	5	SAFE KEY	
6	6	RDB	
7	7	GND	black
8	8	GND	

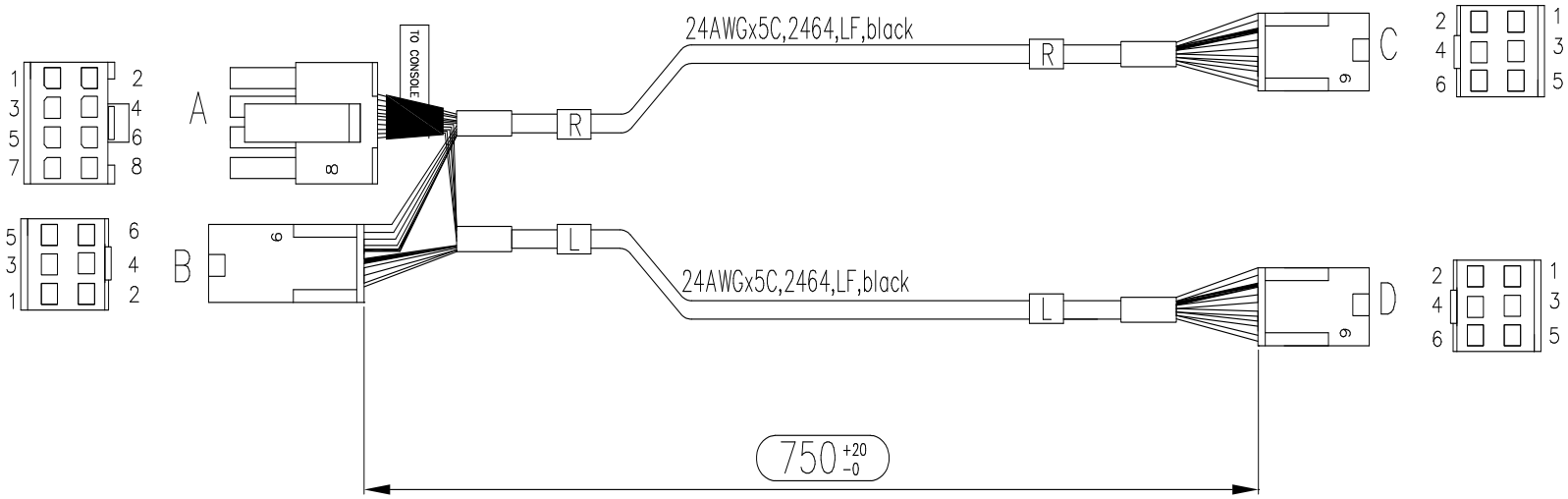
P13- SPEED SENSOR EXTENSION WIRE



A: HOLD	B: HOLD	COLOR	FUNCTION
1	1	RED	LED+
2	2	WHITE	SIGNAL
3	3	BLACK	GND

8.1 ELECTRICAL DIAGRAMS - CONTINUED

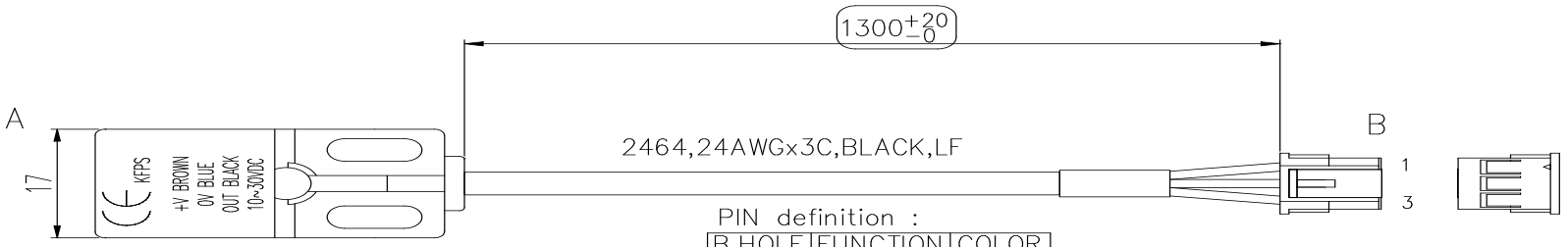
P27 - HAND PULSE WIRES



A.HOLE	B.HOLE	C.HOLE	D.HOLE	COLOR	FUNCTION
	1	4		RED	Right Hand Pulse+
	2	5		WHITE	Right Hand Pulse-
	3	6			Shield
	4		4	RED	Left Hand Pulse+
	5		5	WHITE	Left Hand Pulse-
	6		6		Shield
1		2			Gnd (Right)
2			2		Gnd (Left)
3		1			PAUSE
4			1		Level Up
5		3			Stop
6			3		Level Down
7					
8					

8.1 ELECTRICAL DIAGRAMS - CONTINUED

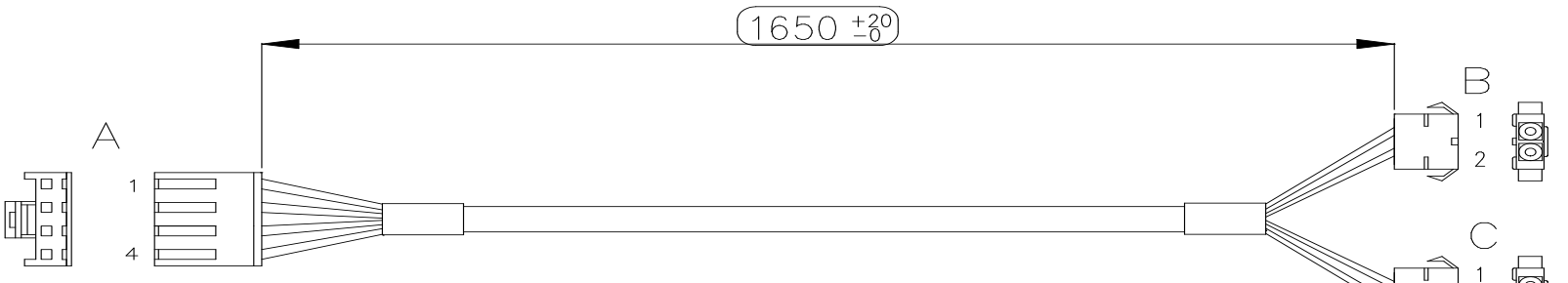
P31 - PROXIMITY SENSOR WIRE



PIN definition :

B.HOLE	FUNCTION	COLOR
1	10~30V	BROWN
2	SIGNAL	BLACK
3	GND	BLUE

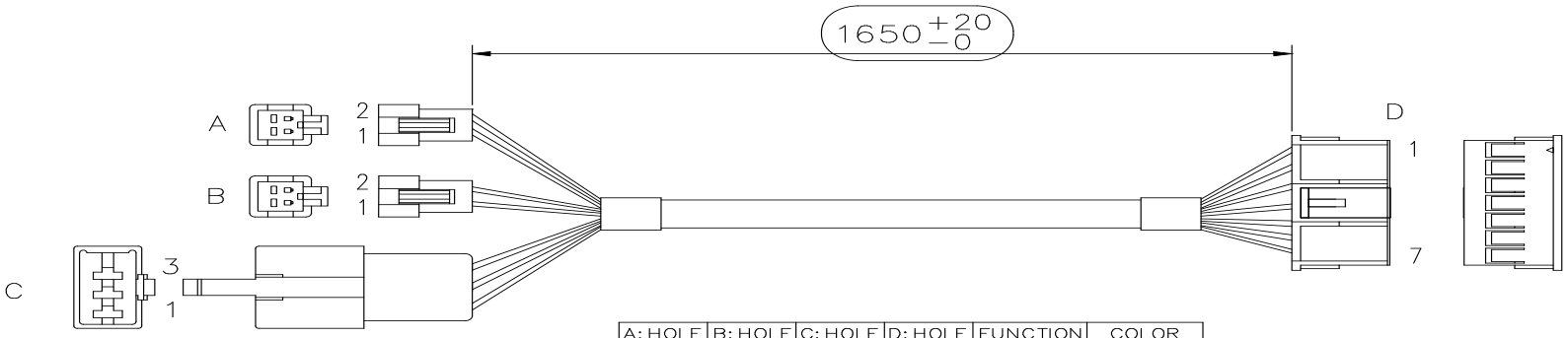
P04 - ECB LOAD WIRE



A: HOLE	B: HOLE	C: HOLE	FUNCTION	COLOR
1	1		VCC	RED
2		1	VCC	WHITE
3	2		ECB1	BLACK
4		2	ECB2	GREEN

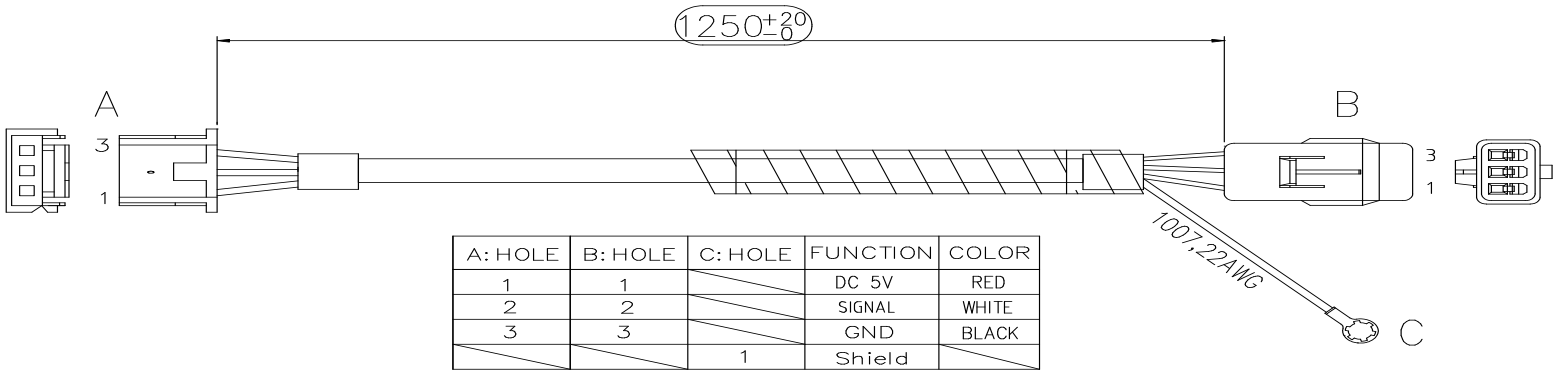
8.1 ELECTRICAL DIAGRAMS - CONTINUED

P19 - POWER SENSOR WIRE



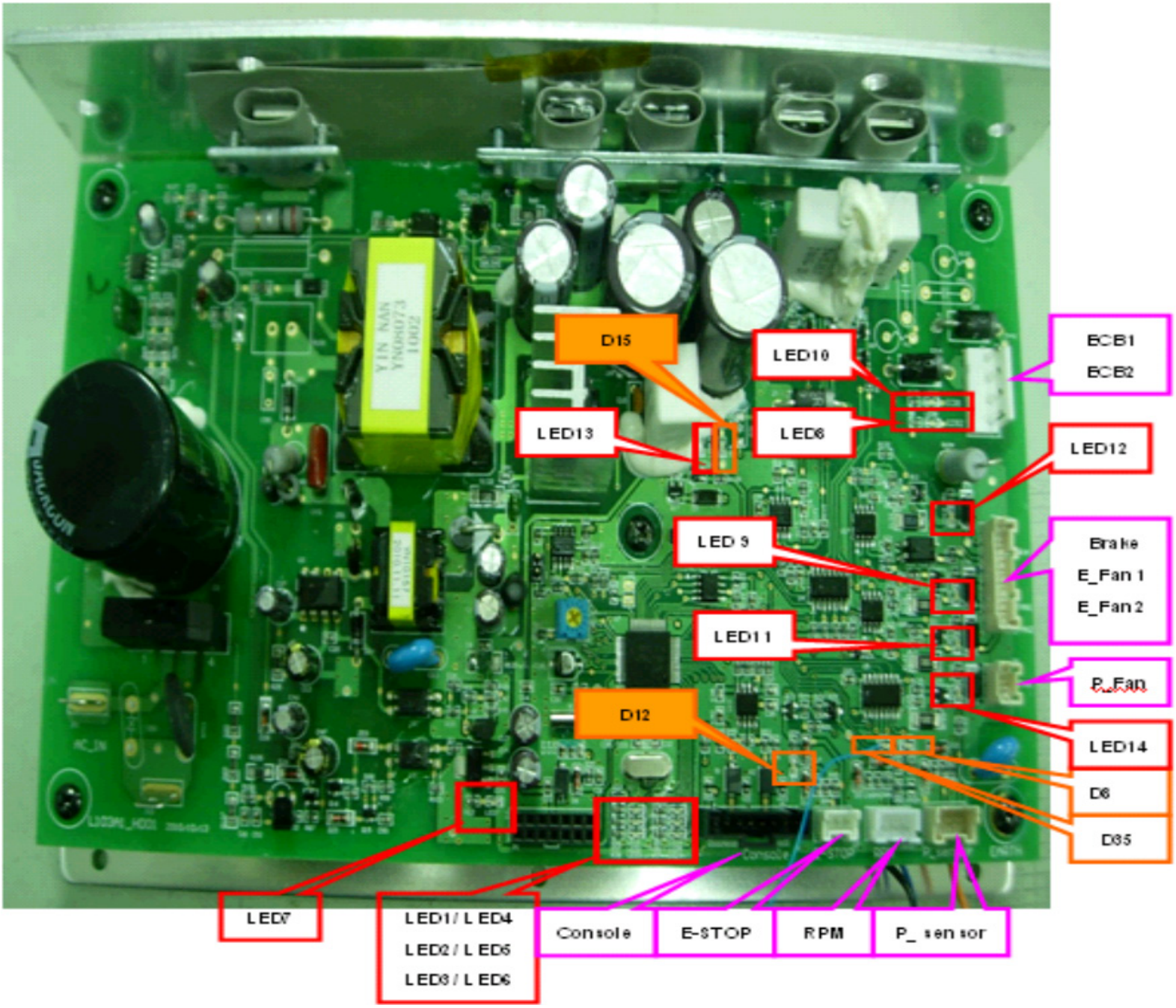
A: HOLE	B: HOLE	C: HOLE	D: HOLE	FUNCTION	COLOR
		1	1	DC24V	WHITE
		2	2	COMMON	GRAY
		3	3	SIGNAL	YELLOW
1			4	DC12V	RED
	1		5	DC12V	BLUE
2			6	E_FAN1	BLACK
	2		7	E_FAN2	GREEN

P18 - CONTROL ZONE SENSOR WIRE



A: HOLE	B: HOLE	C: HOLE	FUNCTION	COLOR
1	1		DC 5V	RED
2	2		SIGNAL	WHITE
3	3		GND	BLACK
		1	Shield	

8.2 LCB ERROR INDICATORS



8.2 LCB ERROR INDICATORS - CONTINUED

LED	DESCRIPTION	DISPLAY STATUS
LED1	LCB Status	Flashing - Normal OFF - Default
LED2	Start or Stop	Flashing - Workout Start Off - Workout Stop
LED3	Safety Stop (E-Stop)	Light - E-Stop Active Off - E-Stop Not Active
LED4	Safety Key action status (Brake)	Light - The brake is triggered. Off - The brake is not triggered.
LED5	LCB Error Status	Light - LCB with error. Off - LCB without error.
LED6	UCB and LCB Communication Status	Indicates if the digital communication is working normally between the console and the MCB. Flashing - Normal. Off - Abnormal
LED7	MCU Power Lamp	Light - MCU working Off - MCU not working
LED8	Electro Magnet Device 2 PWM Lamp.	Light - ECB2 active. Off - ECB2 not active.
LED9	Electro Magnet Device 2 Fan Lamp.	Light - Fan 2 of ECB2 active. Off - Fan 2 of ECB2 not active.
LED10	Electro Magnet Device 1 PWM Lamp.	Light - ECB1 active. Off - ECB1 not active.
LED11	Electro Magnet Device 1 Fan Lamp.	Light - Fan1 of ECB1 active. Off - Fan1 of ECB1 not active.
LED12	DC Brake Release Lamp	Light - The brake is active (release position). Off - The brake is not active (lock position).
LED13	DC 26V Lamp	Indicates if the voltage supply is present. Light - Normal Off - 26V not supplied by LCB.
LED14	Fan of LCB	Light - Fan active on LCB. Off - Fan on LCB has no action.
D8	Safety Switch Power Lamp (E-Stop)	Light - E-Stop function. Off - No E-Stop function.
D12	RPM Lamp	Flashing - Detecting RPM from speed sensor. Light - No RPM from speed sensor detected.
D15	Proximity Sensor Lamp	Light - No signal from proximity sensor detected. Off - Signal from proximity sensor detected.
D35	DC 12V Lamp	Indicates if the voltage supply is present. Light - Normal Off - 12V are not provided by the LCB.

8.3 CONSOLE ERROR CODES

CODE	DESCRIPTION	CONDITION	SOLUTION
01AC	Electro magnet over current.	The electro magnet current is between 1.6 - 2.0 amps for a continuous 60 seconds or over 2.0 amps for 1 second.	1. Check the connection of the electro magnet wire. 2. Check that the resistance on the electro magnet. It should be 13.5 (+/- 5%) ohms under normal conditions.
01AF	The electro magnet is disconnected.	The electro magnet current <200mA for over 2 seconds.	1. Check the connection of the electro magnet wire. 2. Check that the resistance on the electro magnet. It should be 13.5 (+/- 5%) ohms under normal conditions.
02A0	Encoder error.	In the workout, the speed is not detected by the proximity sensor for 5 continuous seconds.	1. Check the connection of the sensor. 2. Turn the pedal and check if LED D35 on the LCB flashes.
02BE	DC brake error.	The brakes in the lock position, but speed is not zero for 5 continuous seconds.	1. Check the connection of the sensor. 2. Check the brake.
02BF	DC brake over current.	The brake current is over 1 amp for 3 continuous seconds.	1. Check the connection of the sensor. 2. Check the brake impedance.
02C0	DC brake in manual mode.	The brake is in the unlocked position when in standby mode.	1. Check the position of the brake, change to the locked position. 2. Replace the brake.
02C1	Speed tracking error.	The speed tracking accuracy is off by over 10 RPMs for 20 continuous seconds.	1. Check the resistance system. 2. Check the LCB.
0440	Timeout packet received.	Over 500 messages. LCB cannot receive any more data.	1. Check the connection of the console cable at the LCB and UCB. Replace the UCB, LCB, or CC as needed.
0441	Correct packet received, but the LCB has no function.	LCB not supporting the command.	1. Check the UCB and LCB software versions are compatible.
04A0	Communication disconnected.	There is a packet gap of over 5 seconds	1. Check the connection of the console cable at the LCB and UCB. Replace the UCB, LCB, or CC as needed.
04B0	UCB no communication response.	LCB has no message to return to the UCB for over 5 seconds.	1. Check LED6 on the LCB. If LED6 is blinking, replace the UCB or console cable. If LED6 is not blinking, replace the LCB.
0249	Fan over current.	The fan control current >..14 amps for 5 continuous seconds.	1. Check to see if the fan is running.
024A	Safety switch error.	No data received for over 5 seconds.	Check the safety switch communication wire.
024B	One step sensor error.	The speed is not zero, and the system cannot detect a signal from the step sensor for 10 seconds.	1. Check the connection of the step. 2. Use metal to touch the sensor wire and check if LCB LED D8 is lit. It is normally off.

8.4 ERROR CODE TROUBLESHOOTING - 01AC

ERROR CODE 01AC

1) SYMPTOM:

a. 01AC - Electro magnet over current.

2) SOLUTION:

a. On standby mode, measure the resistance on ECB1 and ECB2 (Figure A). There should be 13.5 (+/- 5) ohms.
- If the ECB resistance is over the range, replace the ECB.
- If the ECB resistance is under the range, replace the LCB.

b. On workout mode, check the gapping of ECB1 and ECB2 (Figure B). There should be a gap of under .5mm between the ECB and flywheel.
- Try to adjust the gap if possible.
- If the gap is over the range, replace the ECB.
- If the gap is under the range, replace the LCB.



FIGURE A

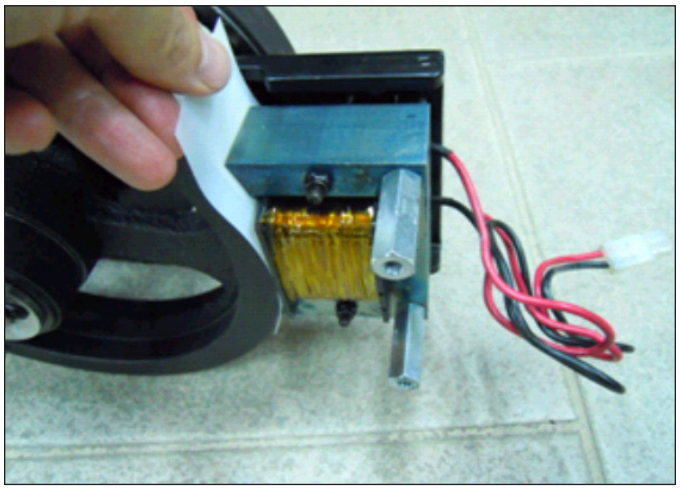


FIGURE B

8.5 ERROR CODE TROUBLESHOOTING - 01AF

ERROR CODE 01AF

1) SYMPTOM:

a. 01AF - Electro magnet disconnected.

2) SOLUTION:

a. Check the connection of the ECB extension cable from the LCB to the ECB (Figure A).
b. Check to see if LED8 and LED10 on the LCB have a brief light when you power on the machine.
- If LED8 and LED10 do not have a brief light, replace the LCB.
- If LED8 and LED10 do have a brief light, check the ECB extension cable connection at the LCB (pins 1 & 3 for ECB1, pins 2 & 4 for ECB2).

c. Check the resistance at the ECB extension cable and at the ECB (Figure B).
- If the ECB resistance has an ohm value but does not when checking after the extension cable, replace the ECB extension cable.
- If the ECB resistance does not have an ohm value at any time, replace the ECB.

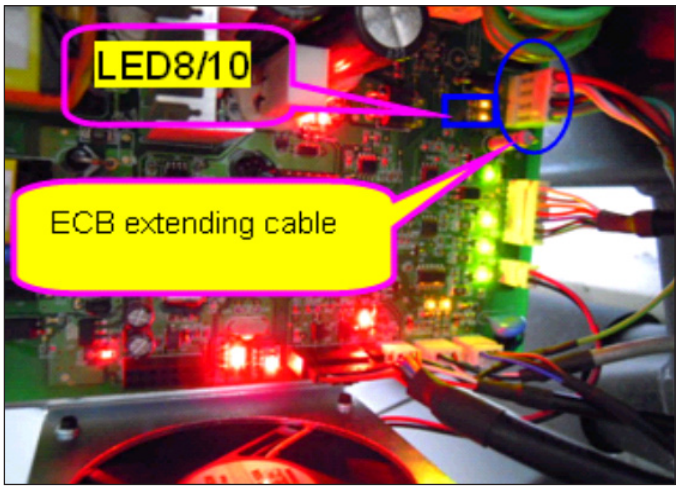


FIGURE A



FIGURE B

ERROR CODE 02A0

1) SYMPTOM:

a. 02A0 - Encoder error.

2) SOLUTION:

a. Check the connection of the speed sensor cable from the LCB to the speed sensor (Figures A & B).
b. Check the 3 pins of the speed sensor connection for broken or bent pins. Replace the speed sensor if needed.
c. In standby mode, turn the brake to the left release position.
d. Check to see if LED D35 on the LCB is lit when the machine is on standby (Figure A).
- If LED D35 is off, check the LCB. Remove the speed sensor cable from the RPM socket on the LCB, set your multi-meter to DC voltage and place both terminals on pins 1 & 3 and 2 & 3 of the RPM socket. There should be a reading of about 5V (Figure C).
- If LED D35 is lit, re-install the speed sensor wire. Set your multi-meter to DC voltage, and place the terminals on pins 1 & 3 and 2 & 4 on the back side of the speed sensor cable. There should be a reading of about 5V (Figure D). if the reading is incorrect, replace the speed sensor.
e. Check to see if LED D35 on the LCB is flashing while in the unit is in use.
- If LED D35 is not flashing while the unit is in use, replace the speed sensor.

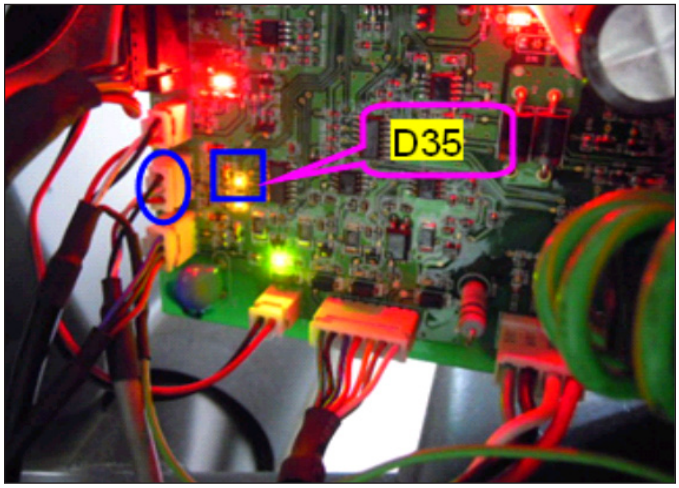


FIGURE A

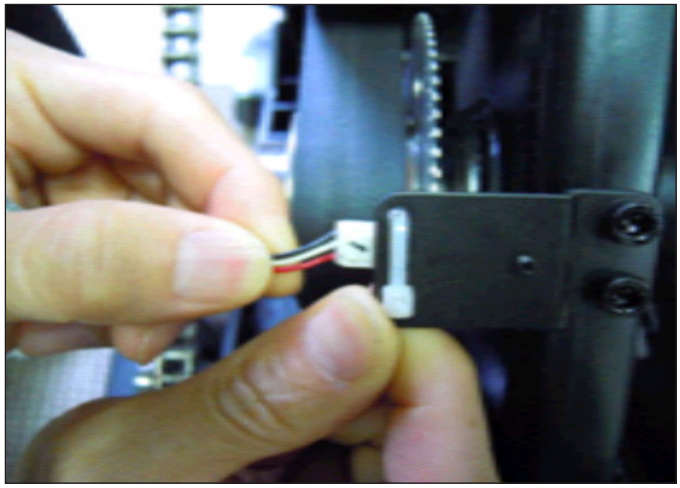


FIGURE B

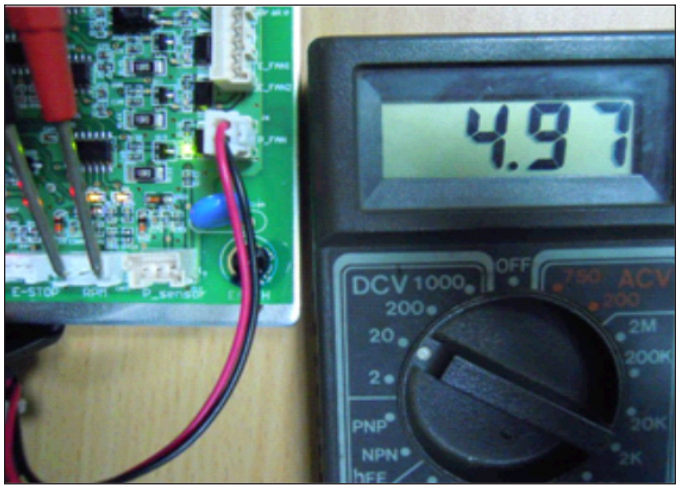


FIGURE C



FIGURE D

ERROR CODE 02BE

1) SYMPTOM:

a. 02BE - DC brake error.

2) SOLUTION:

a. Check to see if the steps are slipping when you move them during standby mode.
- If the brake is slipping, replace it.

ERROR CODE 02BF

1) SYMPTOM:

a. 02BF - The DC brake is over current or no current.

2) SOLUTION:

a. Check the connection of the brake at the brake extension wire (Figure A) and LCB (Figure B).

b. Check to see if LED12 on the LCB is lit when you run the machine.

- If LED12 is not lit, remove the brake extension wire from the J1 socket on the LCB. Measure the voltage across pin 1 and pin 2 of the brake cable. If no voltage is present, replace the LCB. If voltage is present, continue to Step C.

c. Take a resistance reading on pin 1 and pin 2 of the DC brake connector (Figure C). The reading should be approximately 52 ohms.

- If the resistance is lower than 52 (or there is no resistance), replace the brake.
- If the brake does not resolve the issue, replace the brake cable.

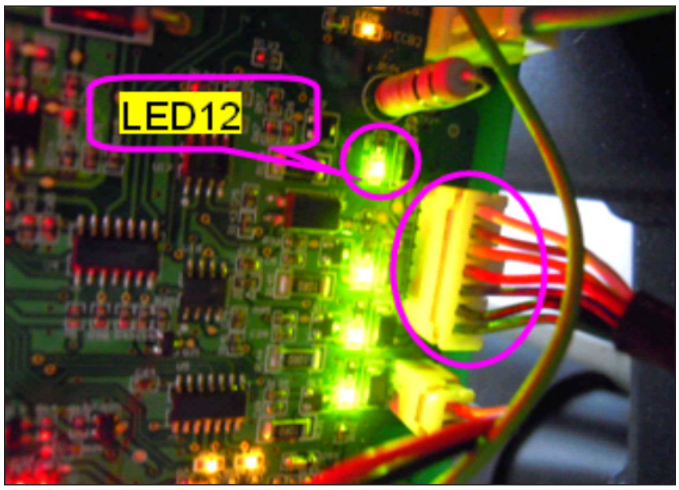


FIGURE A

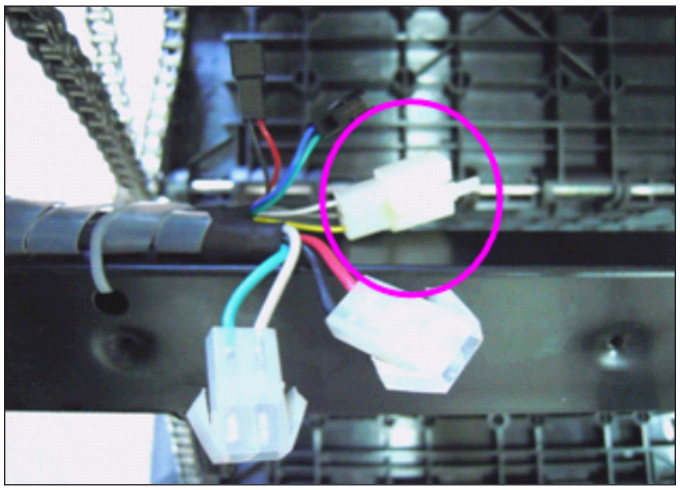


FIGURE B

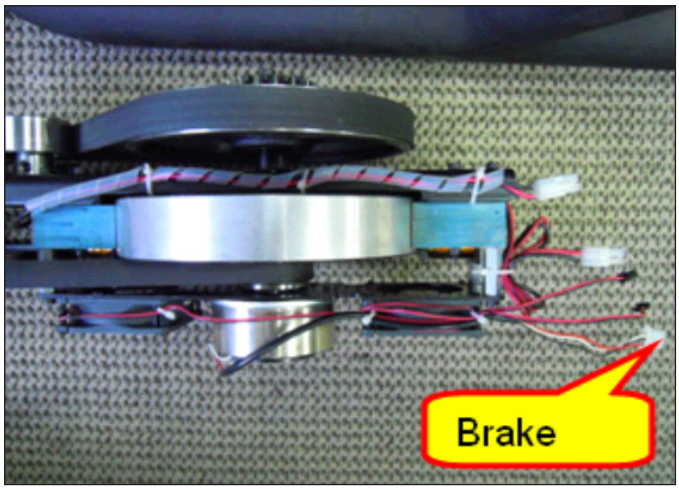


FIGURE C

ERROR CODE 02C0

1) SYMPTOM:

a. 02C0 - DC brake in manual mode.

2) SOLUTION:

a. Check if the DC brake is in the lock position when the unit is on standby (Figure A).
- If the brake is not in the lock position, turn the brake to the right as shown in Figure A.
- If the brake is in the lock position, remove the brake extension wire from the J1 socket on the LCB, then continue to Step b.

b. Measure the resistance across pin 2 and pin 3 on the brake extension wire (Figure B).
- If a resistance reading is shown, replace the brake.
- If no resistance reading is shown, replace the LCB.



FIGURE A

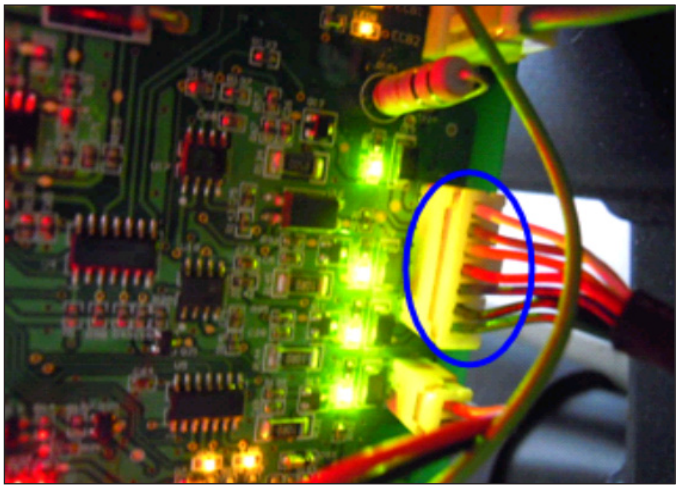


FIGURE B

8.10 ERROR CODE TROUBLESHOOTING - 02C1

ERROR CODE 02C1

1) SYMPTOM:

a. 02C1 - Speed tracking error.

2) SOLUTION:

a. On L1 level, the default RPM should be 10-12. Measure the real RPM on the bearing in front of the sprocket (Figure A). Subtract the default RPM from the real RPM.

- If the result is over 10 RPMs, you need to check the resistance on ECB1 and ECB2. The resistance should be approximately 13.6 ohms (Figure B).
- If the ECBs are outside of this range, replace the defective ECB.
- if the ECB readings are good, check the gap between the ECB and the flywheel (should be approximately .5mm).
- If none of these solutions fix the issue, replace the LCB.



FIGURE A



FIGURE B

8.11 ERROR CODE TROUBLESHOOTING - 0440 / 04A0

ERROR CODES 0440 & 04A0

1) SYMPTOM:

a. 0440 - Timeout packet received.
b. 04A0 - Communication disconnected.

2) SOLUTION:

a. If the display is giving an 04A0 error, LED6 on the LCB should be off (Figure A). If this light is not lit, and an 04A0 error is present, replace the console.
b. Check the connection of the console cable at the UCB and LCB (FIgures A & B).
c. One at a time, check for resistance through the console cable at both the LCB and UCB.
- If there is no resistance, replace the console cable.
- If the console cable does not resolve the issue, replace the LCB.



FIGURE A

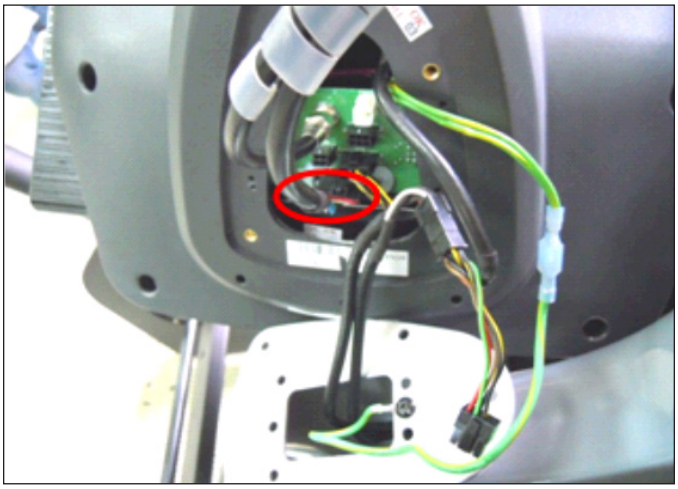


FIGURE B

8.12 TROUBLESHOOTING - NO POWER TO THE CONSOLE

NO POWER TO THE CONSOLE

1) SYMPTOM:

a. The unit is not getting power from the outlet.
b. The LCB is not getting power from the power receptacle.
c & d. The LCB LEDs are lit, but there is no power to the console.

2) SOLUTION:

a. Remove the front cover and check to see if LED D15 is lit on the LCB (Figure A). If it is not, verify power at the outlet. If the outlet is not outputting 120V, check the fitness room power.
- If LED D15 is still not lit after checking fitness room power, replace the power cord.

b. Check if LED D15 on the LCB is lit. If it is not lit, check for incoming AC voltage at the LCB.
- Replace the power components as needed if voltage is not present.
- Replace the LCB if all power components are ok and there is AC voltage to the LCB.

c. Check to see if LED1 is lit on the UCB (Figure B).
- If LED1 is lit, the console should be lit.
- If LED1 is not lit, remove the console and unplug the console communication cable. Measure voltage at Pin1 and Pin3 wires, there should be a reading around 12V. Replace the console cable if needed. If LED1 is still not lit, replace the console.

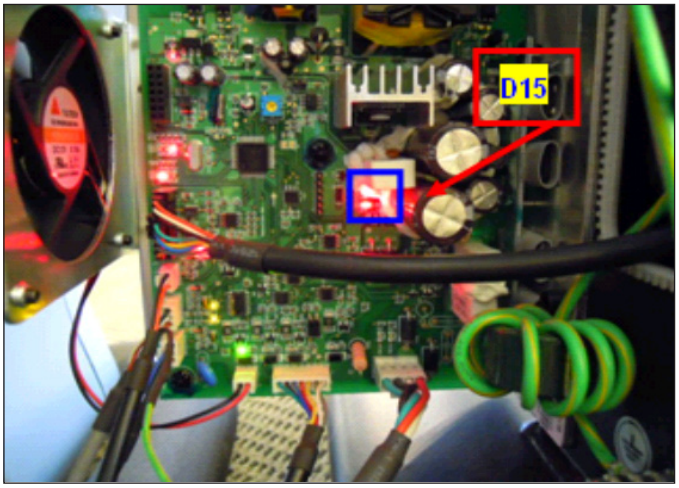


FIGURE A

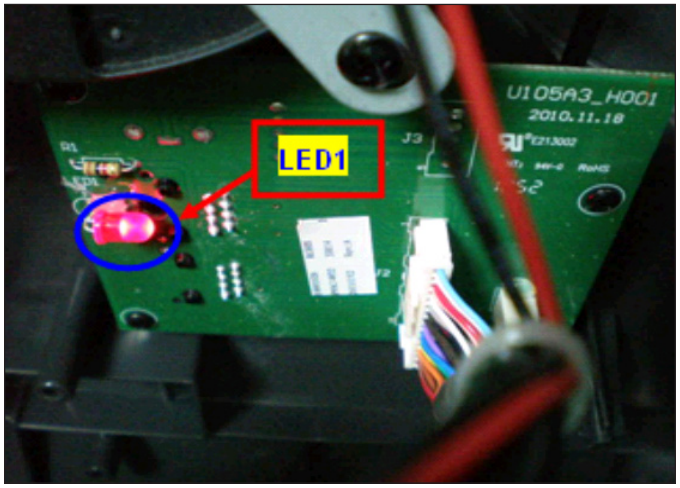


FIGURE B

8.13 TROUBLESHOOTING - HEART RATE ISSUES

HEART RATE ISSUES

1) SYMPTOM:

a. The display is stuck on heart rate.
b. Erratic heart rate.
c. No heart rate.

2) SOLUTION:

a. If the display is stuck on heart rate, it is normally due to the lighting in the workout area.
- Change the lighting in the workout area of the Climb Mill.
- Move the Climb Mill to a different location.
- Make sure no-one is using a telemetric heart rate strap in the area.

b. Something is interfering with the heart rate signal.
- Verify the proper use of the heart rate grips / strap.
- Verify that nothing is touching the heart rate grip plates (for example the safety key strap or head phone cords).
- There are some things that will interfere with heart rate signal including - florescent lighting, electrical dog fences, large electrical motors, cell phone towers, and airports.

c. The console is not recieving a heart rate signal.
- Verify the proper use of the heart rate grips / chest strap.
- Check the connection of the heart rate grip wiring at the heart rate board.
- Remove the screws holing the 2 halves of the heart rate grip togehter. Check the connection of the heart rate grips wiring to the grips (Figure A).
- If the heart rate grips and / or heart rate board do not resolve the issues, repllace the console.



FIGURE A

9.1 SIDE COVER REPLACEMENT

1) Turn off power and disconnect the cord from the machine.
2) Pull up on the Control Zone carefully (Figure A).
3) Unplug the wire connector from the Control Zone and remove the Control Zone from the unit (Figure B).



FIGURE A



FIGURE B

4) Remove the 3 screws and remove the small Matrix logoed cover at the top of the stairs (Figures C & D).

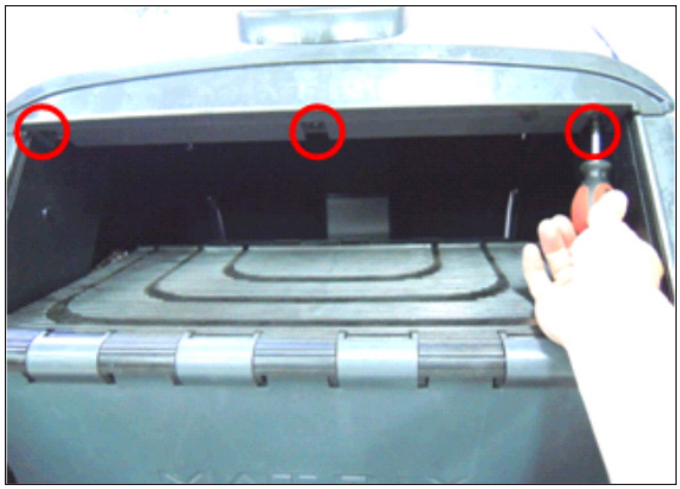


FIGURE C



FIGURE D

9.1 SIDE COVER REPLACEMENT - CONTINUED

5) Rotate the 2 plastic clips counter-clockwise to remove the Matrix logoed cover (Figures E & F).



FIGURE E



FIGURE F

6) Remove the 4 screws holding the side cover to the frame and pull up on the side cover to remove it (Figures G & H).

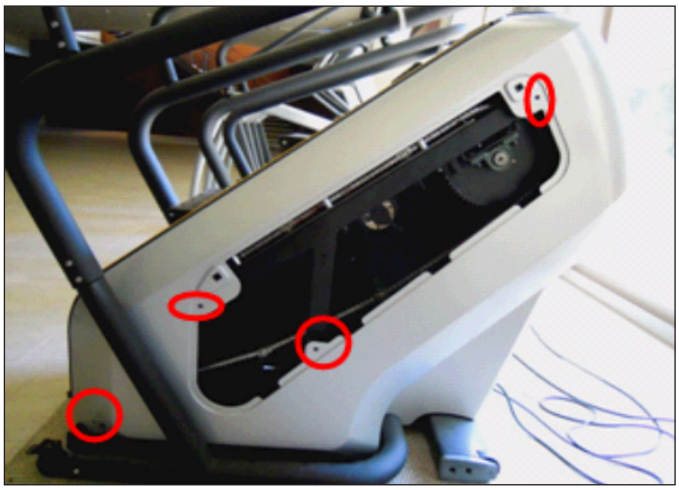


FIGURE G



FIGURE H

7) Reverse Steps 1-6 to install a new side cover.

9.2 CONSOLE REPLACEMENT

1) Turn off power and disconnect the cord from the machine.
2) Remove the 5 screws that hold the console to the console mast (Figure A).
3) Disconnect the console cable and other wiring from the console, then remove the console (Figure B).



FIGURE A

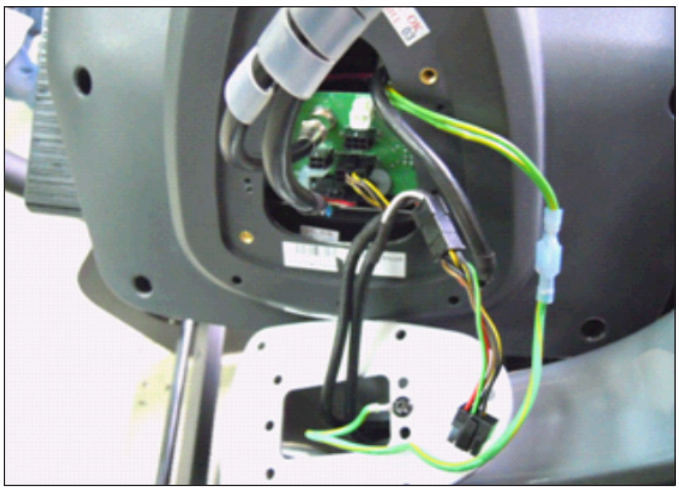


FIGURE B

4) Connect the wiring to the new console.
5) Carefully push the wires into the console and console mast until they are clear of the console / mast connection.
6) Attach the console to the console mast using the screws removed in Step 2.
7) Test the Climb Mill for function as outlined in Section 9.20.

9.3 CONSOLE OVERLAYS & KEYPADS REPLACEMENT

NOTE: The instructions below are for console overlays / keypads, but the procedure is the same regardless of where the overlay / keypad is.

1) Turn off power and disconnect the cord from the machine.
2) Remove the console as outlined in Section 9.2.
3) Remove the back cover of the console (Figure A).
4) Unplug and remove the faulty overlay (Figure B).



FIGURE A



FIGURE B

5) Clean the console area with alcohol to remove any left over adhesive (Figure C).
6) Remove the protective film over the display window of the overlay (Figure D).



FIGURE C



FIGURE D

9.3 CONSOLE KEYPAD / OVERLAY REPLACEMENT - CONTINUED

7) Peel part of the protective film from the back of the overlay (Figure E).
8) Push the overlay ribbon cable through the hole in the console and plug it in (Figure F).



FIGURE E

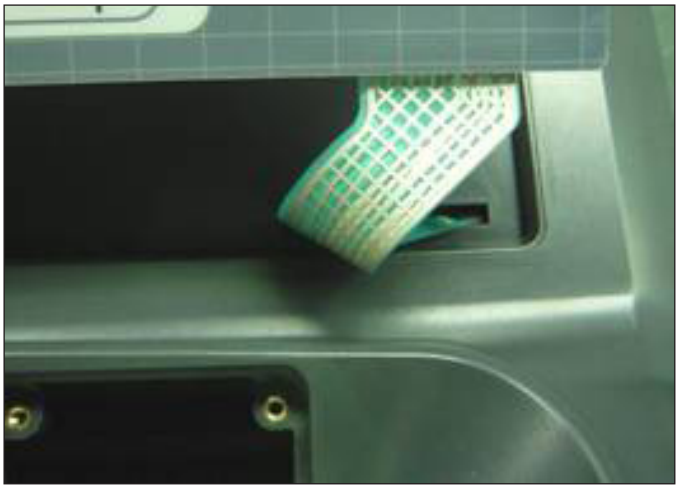


FIGURE F

9) Match the overlay to the cutout on the console (Figure G).
10) Press down on the corners of the overlay to keep it in place, then remove the protective film (Figure H & I).
11) Once the overlay is in the correct position, press down on the overlay with a cloth to adhere it to the console plastic (Figure J).



FIGURE G



FIGURE H



FIGURE I



FIGURE J

12) Use the same procedure to replace any additional faulty overlays. ***NOTE:*** Overlays can not be reused.
13) Test the Climb Mill for function as outlined in Section 9.20.

9.4 FRONT SHROUD REPLACEMENT

1) Turn off power and disconnect the cord from the machine.
2) Remove all of the cables from the front cover (Figure A).
3) Remove the 2 screws from the front cover and remove it (Figure B).



FIGURE A

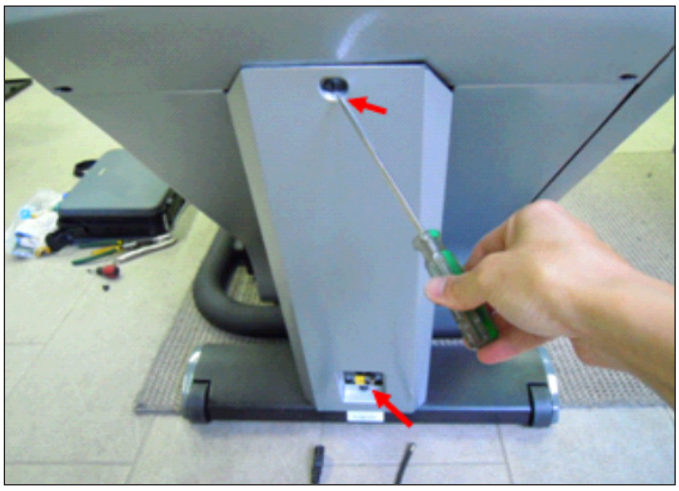


FIGURE B

4) Remove both side covers as outlined in Section 9.1.
5) Remove the console as outlined in Section 9.2.
6) Remove the 3 screws on each side that connect the front shroud to the frame (Figure C).
7) Remove the 5 screws that hold the upper handlebar set to the console mast (Figure D).



FIGURE C

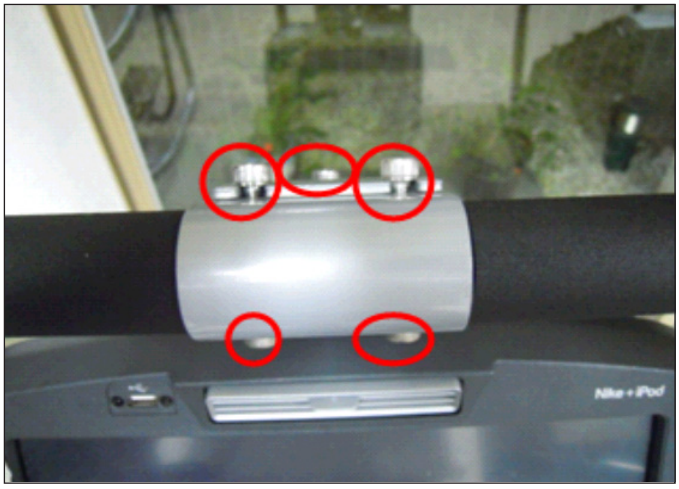


FIGURE D

9.4 FRONT SHROUD REPLACEMENT - CONTINUED

8) Disconnect the hand pulse and quick key cables on the inside of the console mast (Figure E).
9) Remove the 8 screws holding the lower handlebar set to the console mast (Figure F).

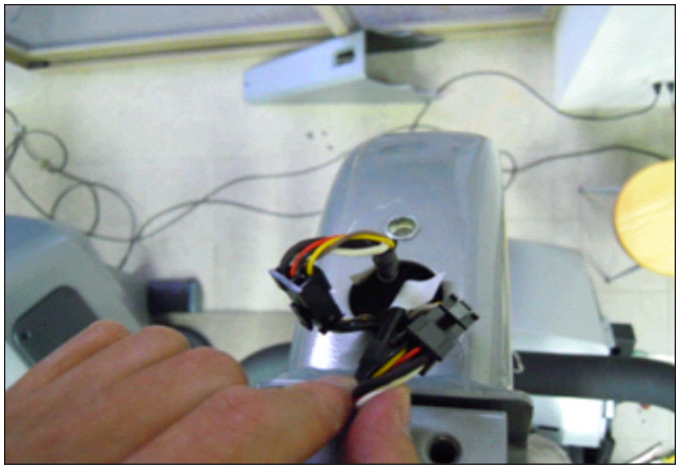


FIGURE E

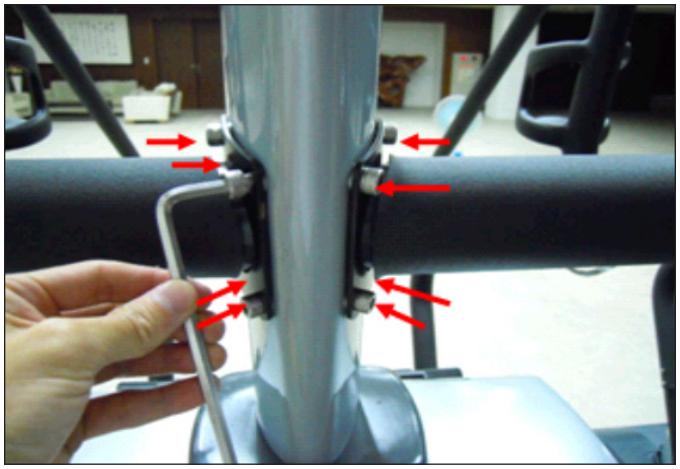


FIGURE F

10) Remove the 4 screws that attach the console mast to the frame (Figure G).
11) Pull the cables out of the console mast and remove it (Figure H).

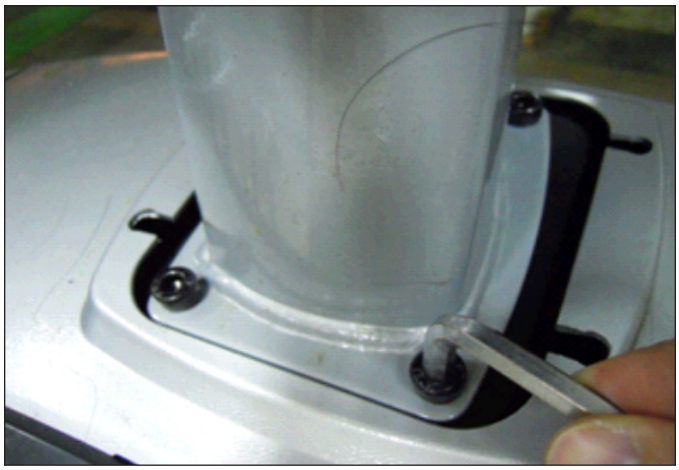


FIGURE G



FIGURE H

12) Remove the 4 screws holding the front shroud to the sides (Figure I).
13) Pull up on the front shroud and remove it (Figure J).



FIGURE I

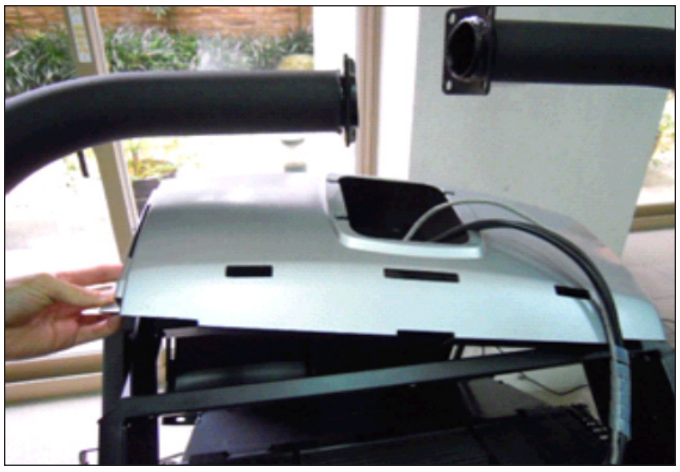


FIGURE J

14) Reverse Steps 1-13 to install a new front shroud.
15) Test the Climb Mill for function as outlined in Section 9.20.

9.5 LOWER CONTROL BOARD (LCB) REPLACEMENT

1) Turn off power and disconnect the cord from the machine.
2) Remove all wiring from the front cover and remove it from the machine as outlined in Section 9.4.
3) Disconnect all wiring from the LCB (Figure A).
4) Remove the 2 screws holding the LCB to the frame and remove the LCB (Figure B).

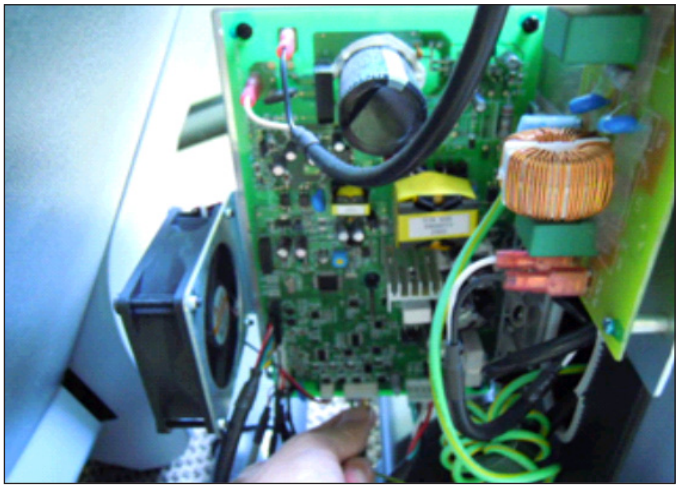


FIGURE A

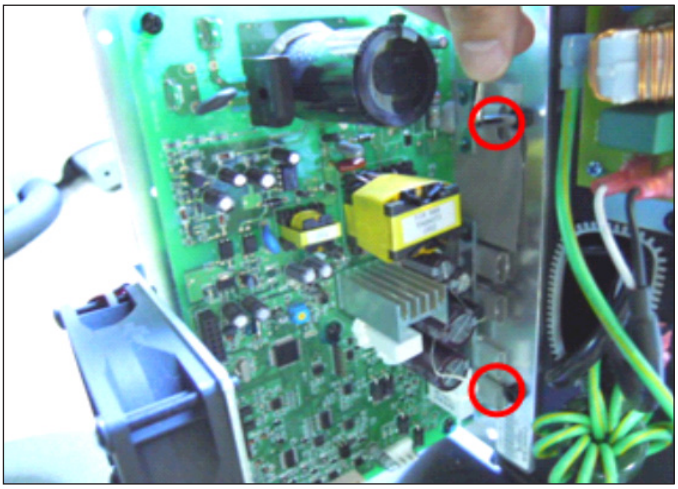


FIGURE B

5) Remove the 2 screws that hold the fan to the LCB and remove it (Figure C).

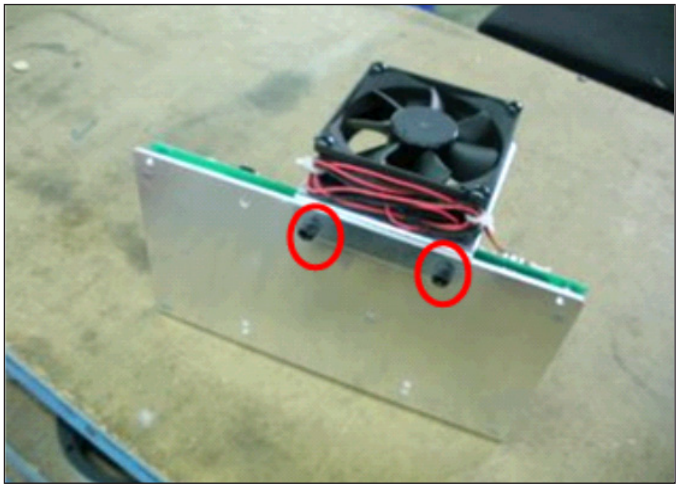


FIGURE C

6) Reverse Steps 1-5 to install a new LCB.
7) Test the Climb Mill for function as outlined in Section 9.20.

9.6 UPPER HANDLEBAR REPLACEMENT

1) Turn off power and disconnect the cord from the machine.
2) Remove the 5 screws holding the upper handlebar set to the console mast (Figure A).
3) Pull out the right handlebar and hand grip cable (Figure B).

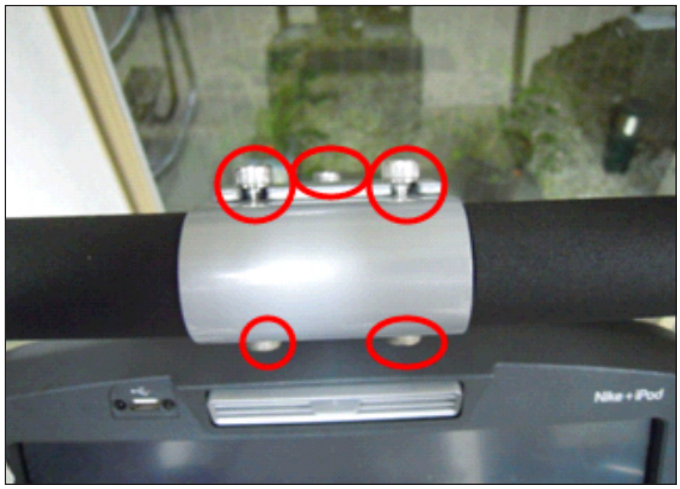


FIGURE A

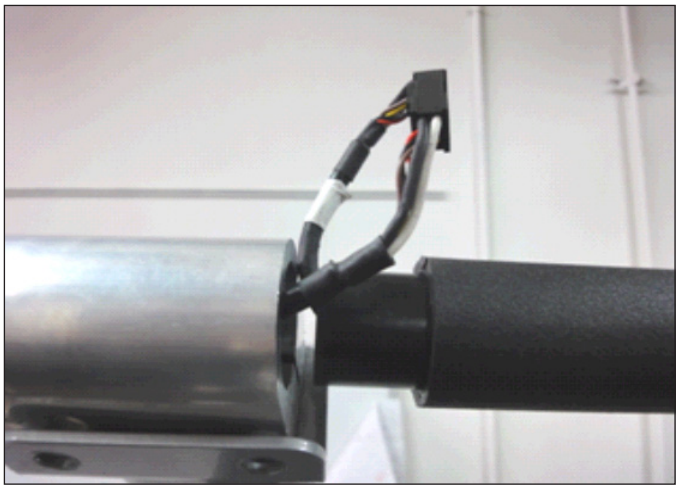


FIGURE B

4) Disconnect the wiring that connects the left hand grip cable to the hand pulse extension wire (Figure C).
5) Pull out the left handlebar and hand grip cable (Figure D).

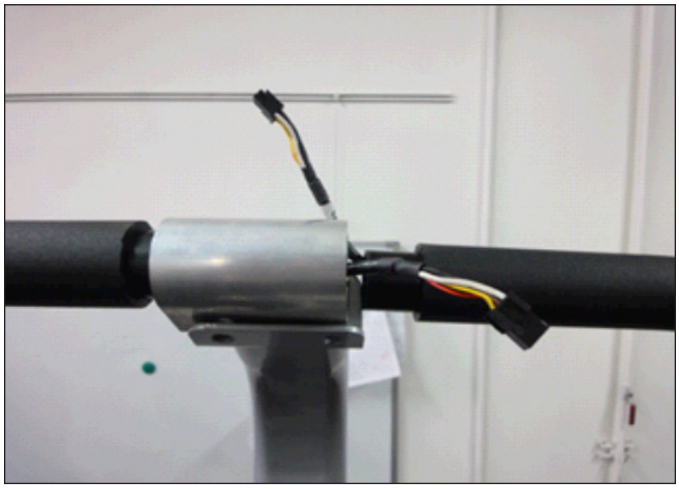


FIGURE C

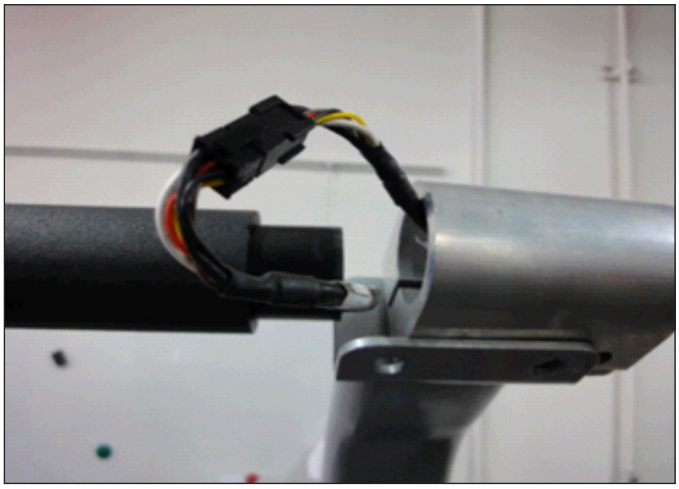


FIGURE D

9.6 UPPER HANDLEBAR REPLACEMENT SET - CONTINUED

6) Disconnect the wire that connects the left hand grip cable to the hand pulse extension wire (Figure E).
7) Remove the 2 screws on each side holding the front of the upper handlebar set to the lower handlebar set (Figure F).

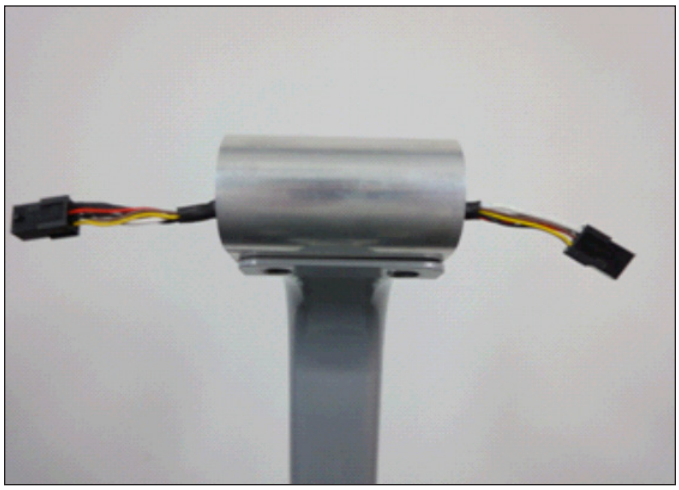


FIGURE E



FIGURE F

8) Remove the 2 screws on each side holding the rear of the upper handlebar set to the lower handlebar set (Figure G).

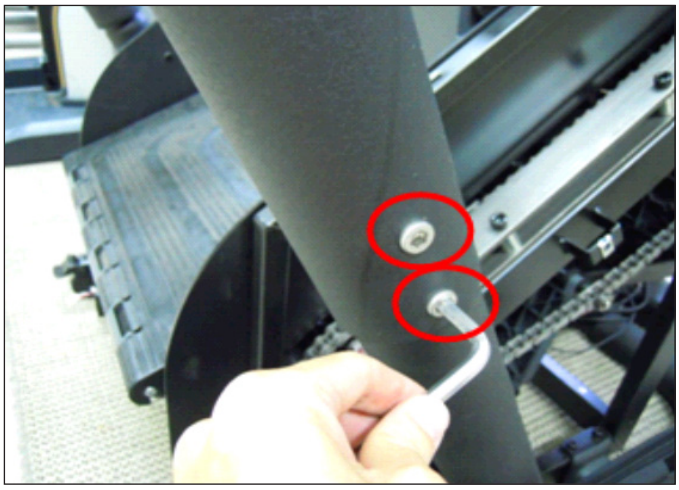


FIGURE G

9) Reverse Steps 1-8 to install a new upper handlebar set.
10) Test the Climb Mill for function as outlined in Section 9.20.

9.7 LOWER HANDLEBAR SET REPLACEMENT

1) Turn off the power and disconnect the cord from the machine.
2) Remove the upper handlebar set as outlined in Section 9.6.
3) Remove the 8 screws holding the lower handlebar set to the console mast (Figure A).
4) Remove the 2 screws holding the lower handlebar set to the frame handlebar set, then remove the lower handlebar (Figure B).

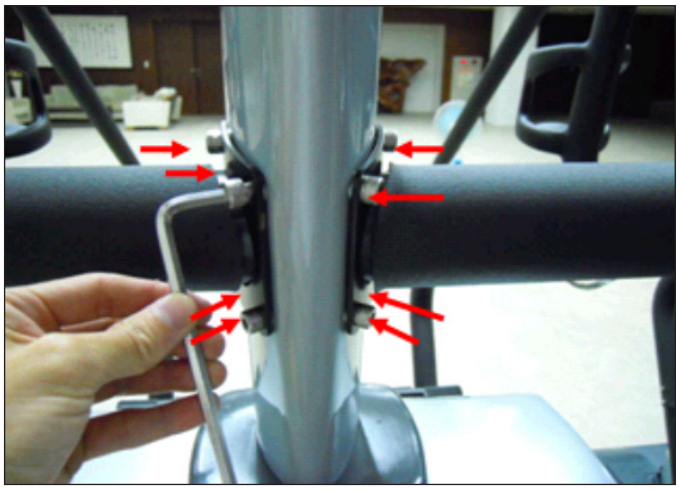


FIGURE A



FIGURE B

5) Reverse Steps 1-4 to install a new lower handlebar set.
6) Test the Climb Mill for function as outlined in Section 9.20.

9.8 HANDLEBAR SERVICE

1) Turn off the power and disconnect the cord from the machine.
2) All items on the handlebar are removed using a Phillips screwdriver from the underside of the bar.
3) Once the screws are removed, lift the part carefully then disconnect any wire connections to fully remove the part. This includes any resistance, pause / stop buttons, and the heart rate grip plates (Figures A & B).

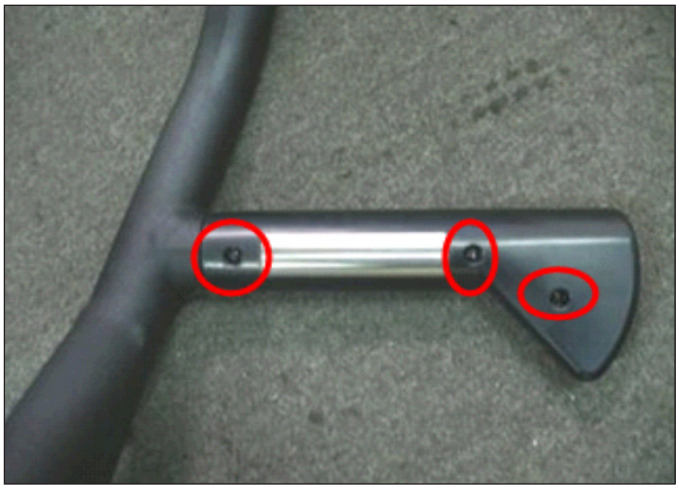


FIGURE A



FIGURE B

4) Test the Climb Mill for function as outlined in Section 9.20.

9.9 STAIR REPLACEMENT

1) Turn off power and disconnect the cord from the machine.
2) Remove the side covers as outlined in Section 9.1.
3) Remove the front shroud as outlined in Section 9.4.
4) Turn the brake bar to the left to lock the stairs in place (Figure A).
5) Remove the E shaped clip from the long axle on the upper side of the stair needing to be replaced (Figure B).



FIGURE A

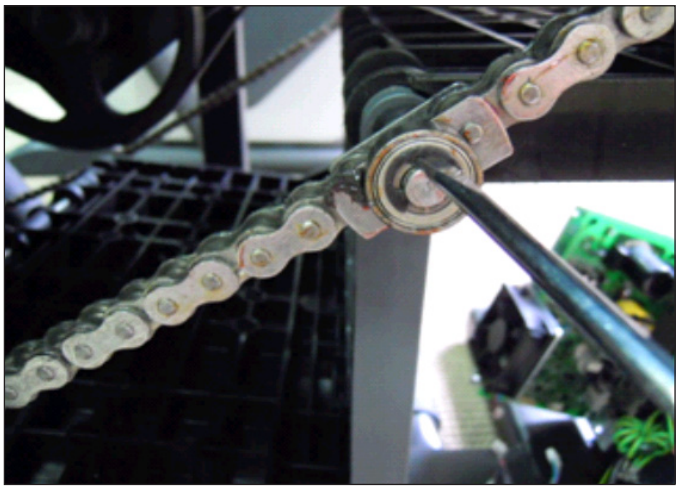


FIGURE B

6) Pull out the axle from the opposite side that you removed the E clip from (Figure C). ***NOTE:*** Pay attention to the order of the parts sequence on the axle as you remove it (Figure D). The correct parts sequence is axle > E shaped clip > bearing > washer > sealed chain > spacer > stair.



FIGURE C

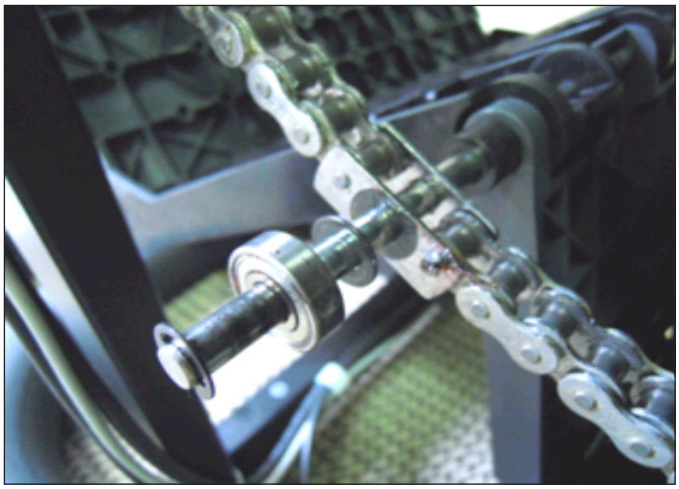


FIGURE D

9.9 STAIR REPLACEMENT - CONTINUED

7) Remove the axle from the lower side of the stairs needing to be replaced following the same procedure as Steps 5-6.
8) Remove the stair set when you have removed both axles (Figure E).
9) Remove the E-shaped clip from the short axle between the 2 portions of the stair set (Figure F). This will allow you to separate the 2 portions of the stair set.

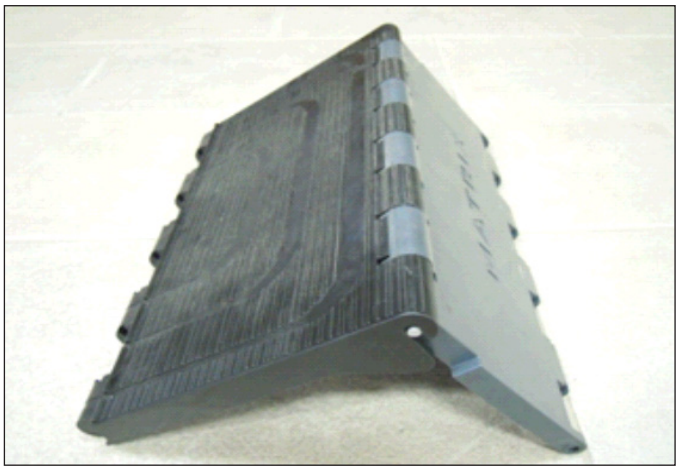


FIGURE E

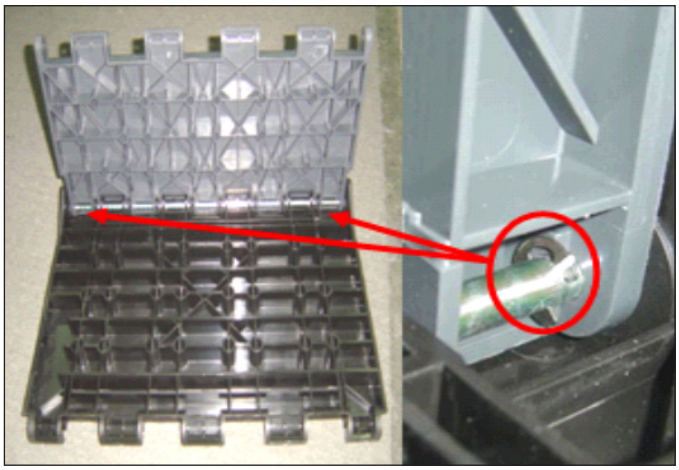


FIGURE F

10) Reverse Steps 1-9 to install a new stair set.
11) Turn the brake bar to the right to unlock the stairs once the replacement is finished.
12) Test the Climb Mill for function as outlined in Section 9.20.

9.10 DRIVE SET REPLACEMENT

**** NOTE: It is recommended that 2 technicians be present when replacing or removing the drive set. While it is not necessary to remove the side covers or a set of stairs, it makes it much easier to remove the drive set if these parts are removed for accessibility.***

1) Turn off power and disconnect the cord from the machine.
2) Turn the 2 plastic screws counter-clockwise and remove the Matrix logoed covers on both sides of the machine.
3) Turn the brake lever to the right to lock the stairs (Figure A) to prevent movement that could cause injury.
4) Disconnect the speed sensor wire (Figure B). ***NOTE:*** Use 2 hands to disconnect the speed sensor wire. Do not pull the socket downwards to disconnect as it will damage the connector.



FIGURE A



FIGURE B

5) Loosen the screw that applies tension to the chain (Figure C).
6) Disconnect the 5 wire connectors at the top of the drive set (Figure D). These include 2 fan wires, 2 ECB wires, and a brake wire.

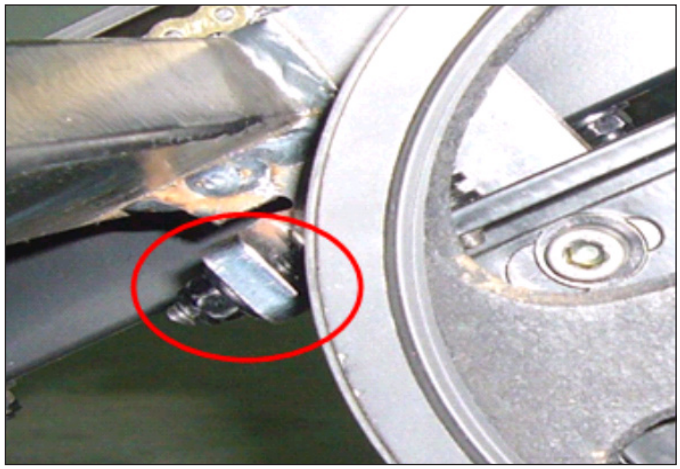


FIGURE C

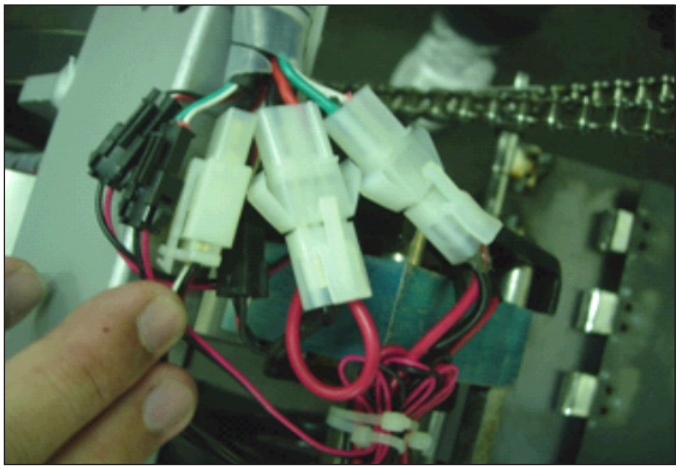


FIGURE D

7) Loosen the drive set guide screw if tight (Figure E).
8) Remove the 4 screws that hold the drive set to the frame (Figure F).

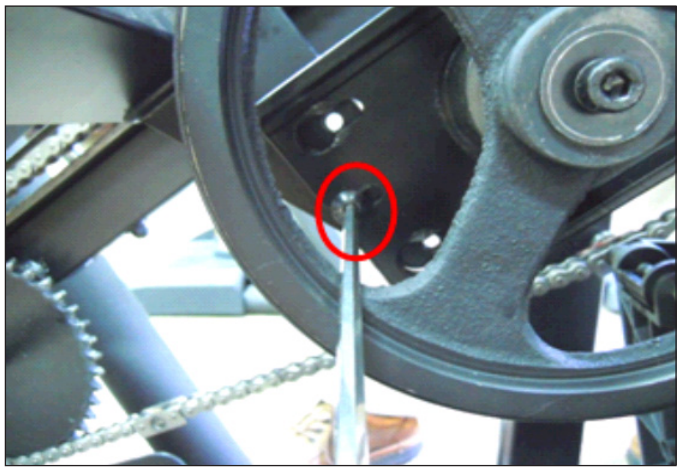


FIGURE E

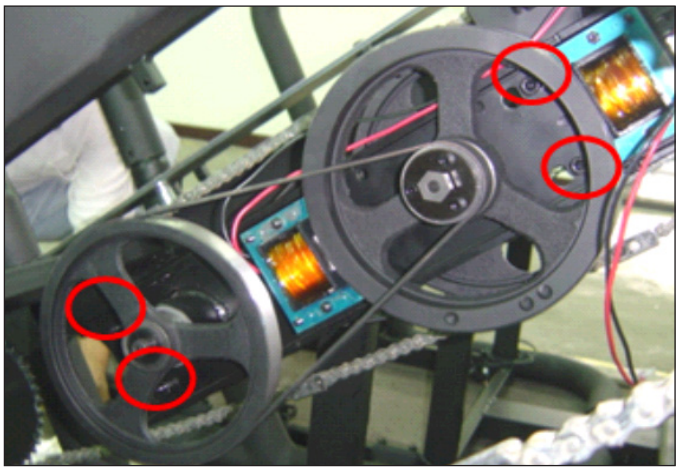


FIGURE F

9.10 DRIVE SET REPLACEMENT - CONTINUED

9) While a tech is pushing the drive set towards the front of the unit (the drive set will still be supported by the guide screw - Figure G), the other tech should remove the chain from the sprocket simultaneously (Figure H).

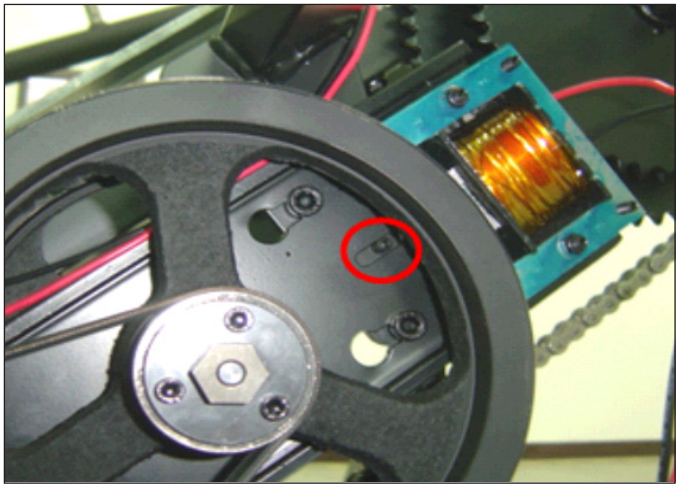


FIGURE G



FIGURE H

10) Remove the drive set from the unit (Figure I). ***NOTE:*** The drive axle will need to be rotated so that the pulleys are horizontal to fit through the side covers (Figure J).

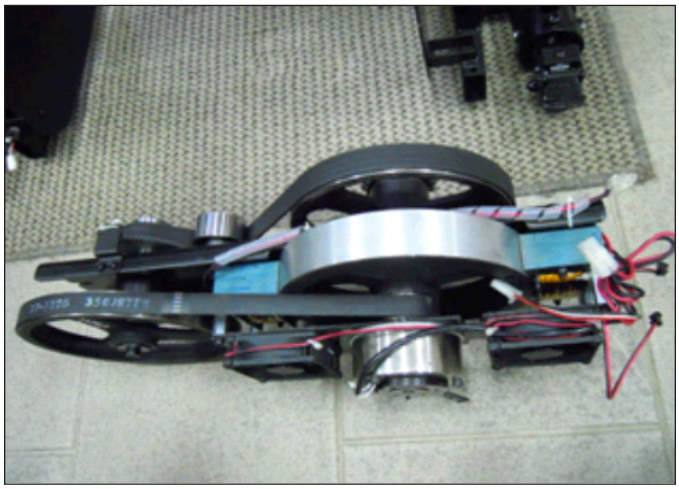


FIGURE I



FIGURE J

11) Reverse Steps 1-10 to install a new drive set. ***NOTE:*** Make sure that the wiring disconnected in Step 5 gets connected correctly. Refer to Figures K & L. ***NOTE:*** Torque the bolts removed in Step 7 to 40N-m.
12) Test the Climb Mill for function as outlined in Section 9.20.

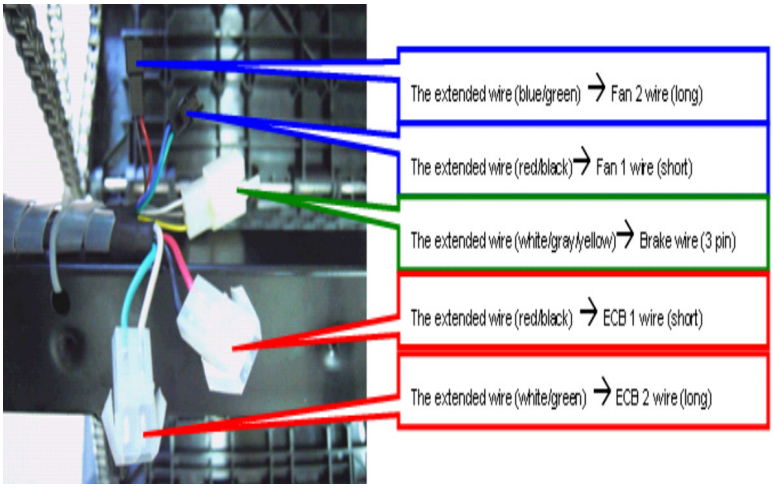


FIGURE K

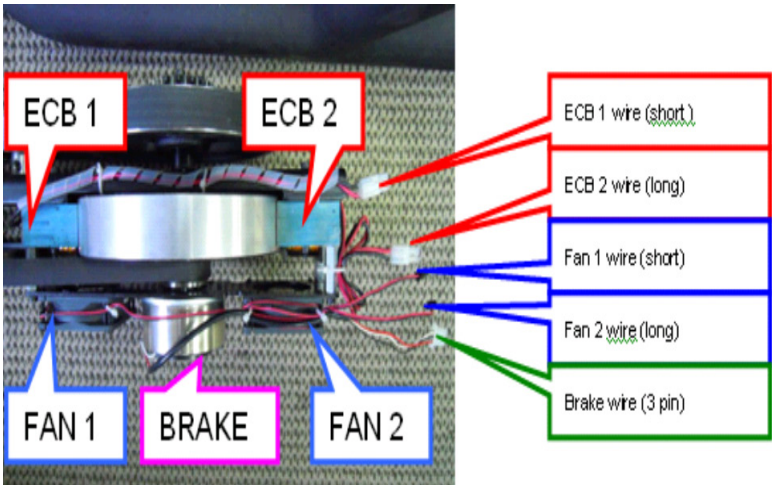


FIGURE L

9.11 CHAIN REPLACEMENT

1) Turn off the power and disconnect the cord from the machine.
2) Remove the side covers as outlined in Section 9.1.
3) Remove the front shroud as outlined in Section 9.2.
4) Remove at least 3 sets of stairs as outlined in Section 9.9 to expose a significant portion of the chain.
5) Before removing the chain, measure the distance of the chain run from the middle of the front bearing seat to the middle of the rear bearing seat (Figure A). This distance should be 941mm.
6) If this length is not 941mm, it needs to be adjusted. Loosen the vertical bolts on the bearing seat, then adjust the length by adjusting the horizontal screw. Tighten the vertical bolts to tighten the bearing seat in place. The vertical bolts should be torqued to 60 N-m.

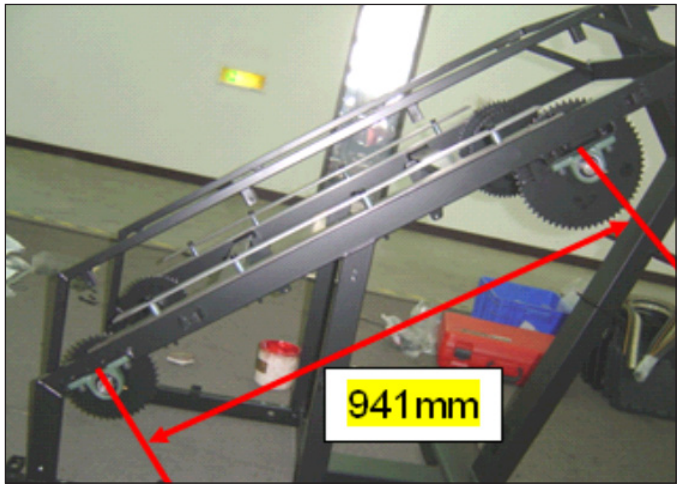


FIGURE A

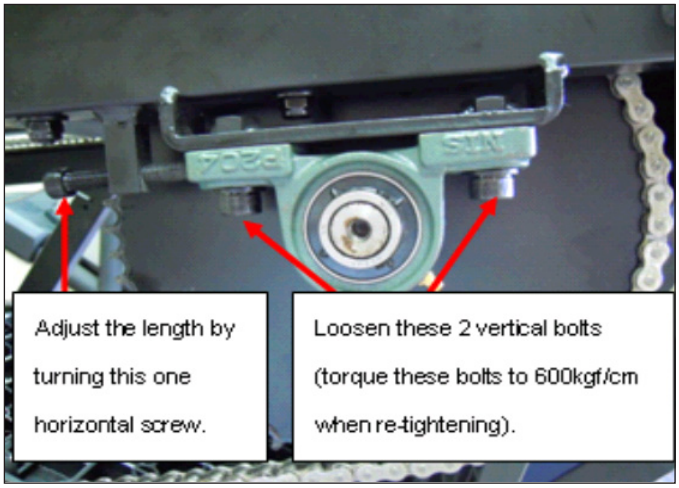


FIGURE B

7) Rotate the chain until a spring clip is in a convenient location and remove it (Figure C). ***NOTE:*** This chain link will normally be painted to make it easier to identify.
8) Remove the join plate on the chain (Figure D).

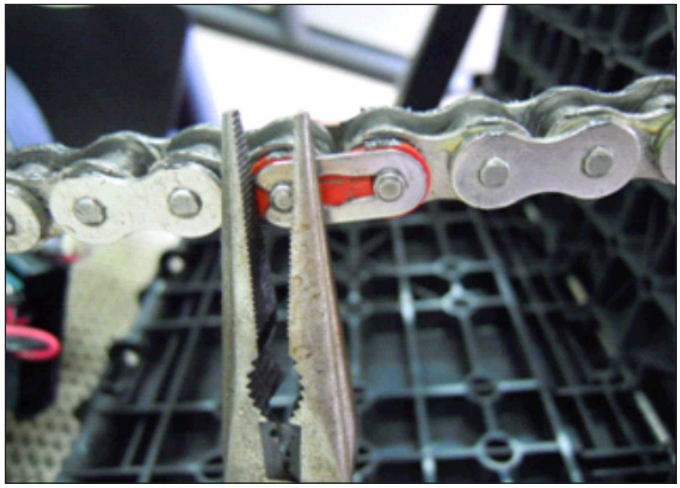


FIGURE C

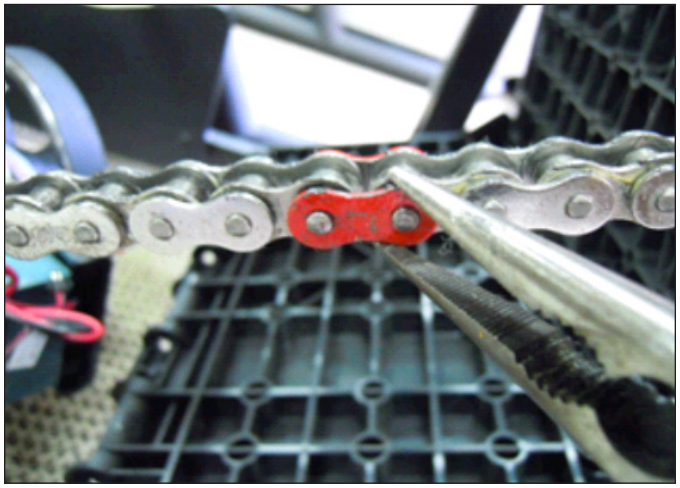


FIGURE D

9.11 CHAIN REPLACEMENT - CONTINUED

9) Remove the 2 seal rings from where the join link was just removed (Figure E).
10) The chain can now be removed.

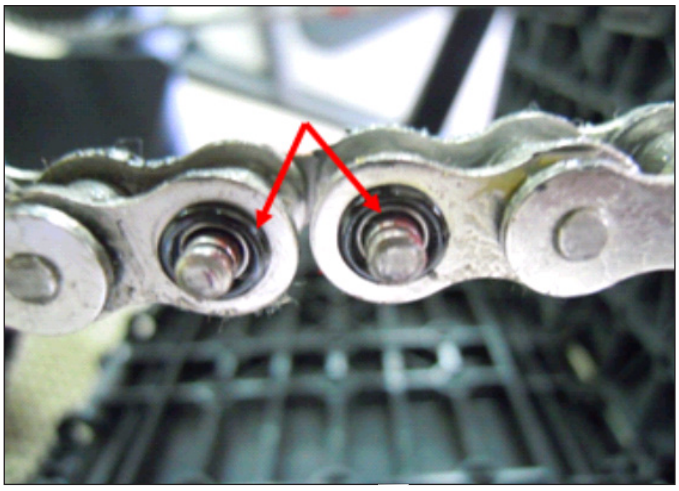


FIGURE E

11) Reverse Steps 1-10 to install a new chain. When installing a new chain, it is important to pay attention to the join plates. The join plates are wider than the chain itself. It is important that the side of the join plates that are flush with the rest of the chain get installed to the inside of the chain path (Figures F & G).

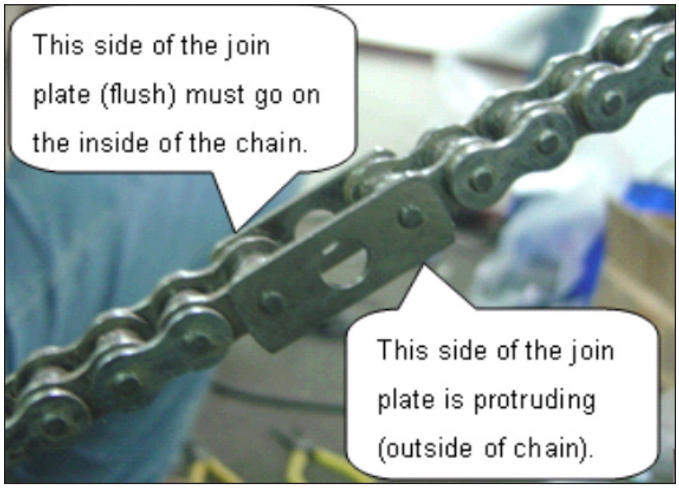


FIGURE F

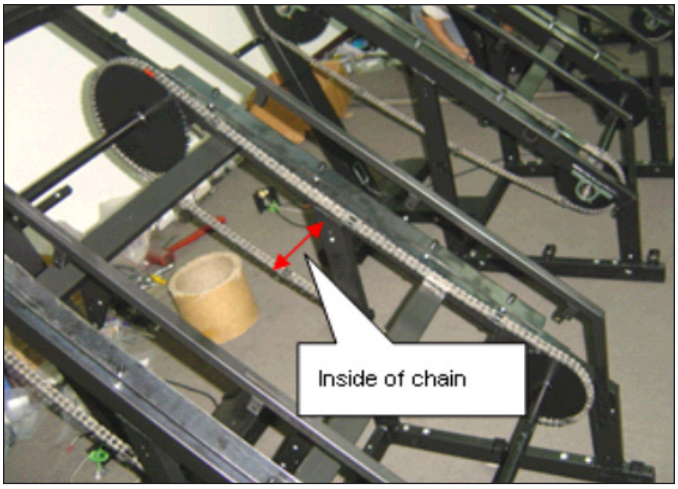


FIGURE G

12) Test the Climb Mill for function as outlined in Section 9.20.

9.12 BRAKE REPLACEMENT

1) Turn off the power and disconnect the cord from the machine.
2) Remove the Matrix logoed covers from each side of the machine.
3) Turn the brake lever to the right to lock the stairs and prevent movement that could cause injury.
4) Disconnect the brake and both fan wire connections (Figure A).
5) Remove the 4 screws holding the brake and fan plate to the drive set (Figure B) and remove the assembly.

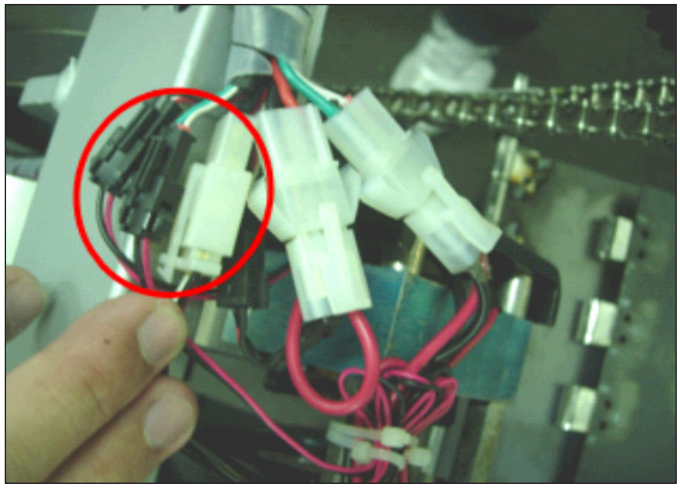


FIGURE A

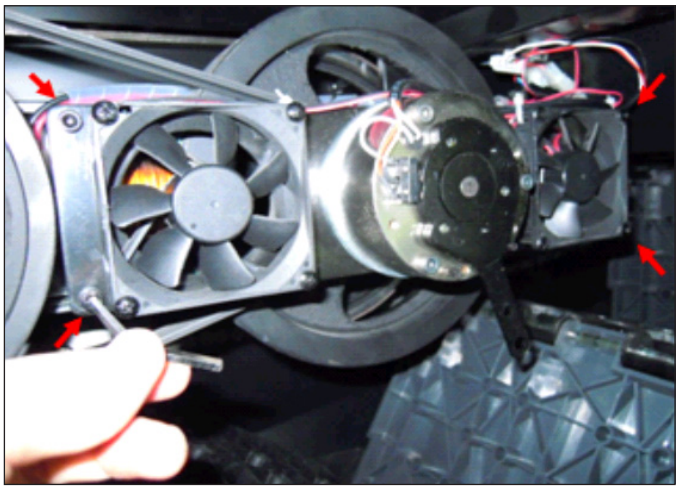


FIGURE B

6) Remove the 3 screws and 2 cable ties holding the brake and brake wire to the plate (Figure C).
7) Reverse Steps 1-6 to install a new brake. ***NOTE:*** When re-installing the plate assembly, make sure that the hexagon shaped plate on the brake lines up with the slots in the shaft of the flywheel (Figure D).

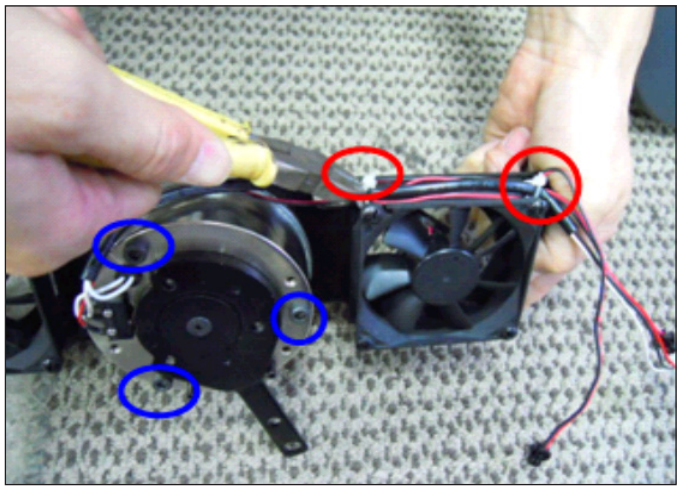


FIGURE C

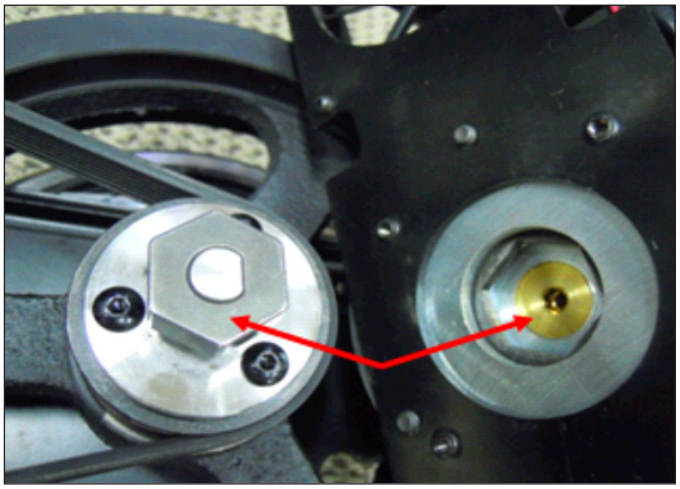


FIGURE D

8) Test the Climb Mill for function as outlined in Section 9.20.

9.13 FAN REPLACEMENT

1) Turn off the power and disconnect the cord from the machine.
2) Remove the Matrix logoed covers from each side of the machine.
3) Turn the brake lever to the right to lock the stairs and prevent movement that could cause injury.
4) Disconnect the brake and both fan wire connections (Figure A).
5) Remove the 4 screws holding the brake and fan plate to the drive set (Figure B) and remove the assembly.

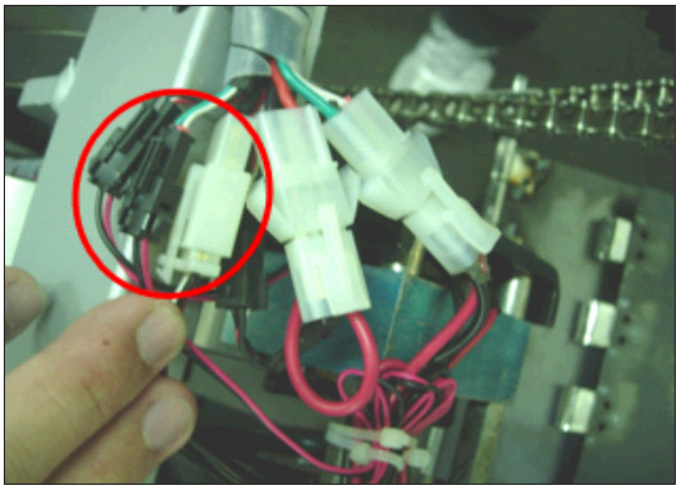


FIGURE A

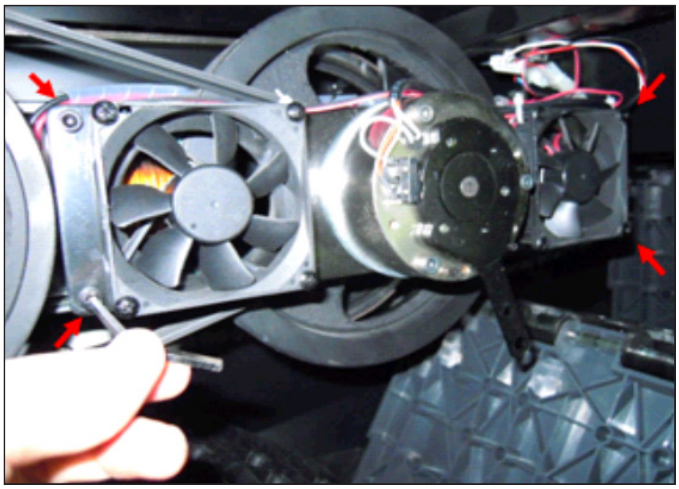


FIGURE B

6) Remove the 4 screws and 2 cable ties holding the fan and fan wire to the plate (Figure C).
7) Reverse Steps 1-6 to install a new fan. ***NOTE:*** When re-installing the plate assembly, make sure that the hexagon shaped plate on the brake lines up with the slots in the shaft of the flywheel (Figure D).

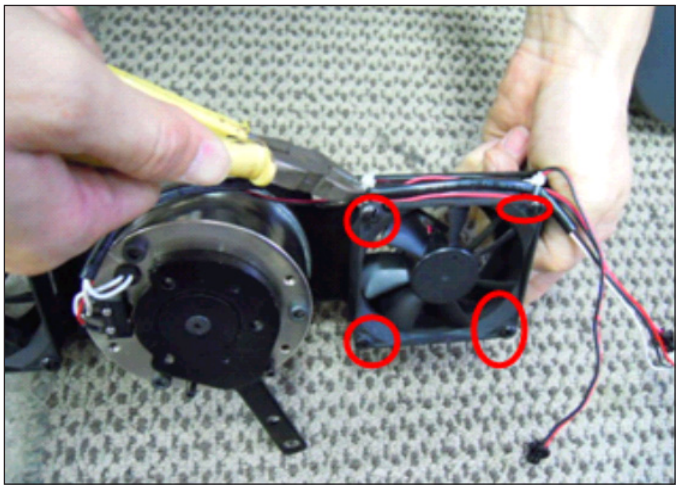


FIGURE C

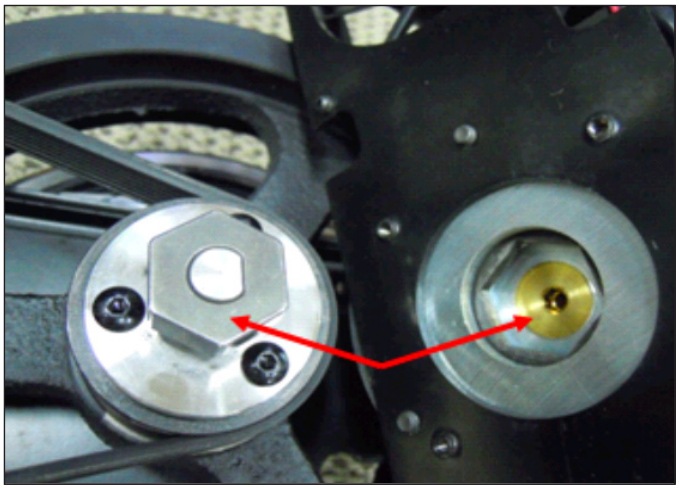


FIGURE D

8) Test the Climb Mill for function as outlined in Section 9.20.

9.14 ECB BELT REPLACEMENT

1) Turn off power and disconnect the cord from the machine.
2) Rotate the 2 plastic clips counter-clockwise to remove the Matrix logoed cover (Figures A & B).



FIGURE A



FIGURE B

3) Turn the brake to the left to lock the stairs.
4) Disconnect the brake and both fan wire connections (Figure C).
5) Remove the 4 screws holding the brake and fan plate to the drive set (Figure D) and remove the assembly.

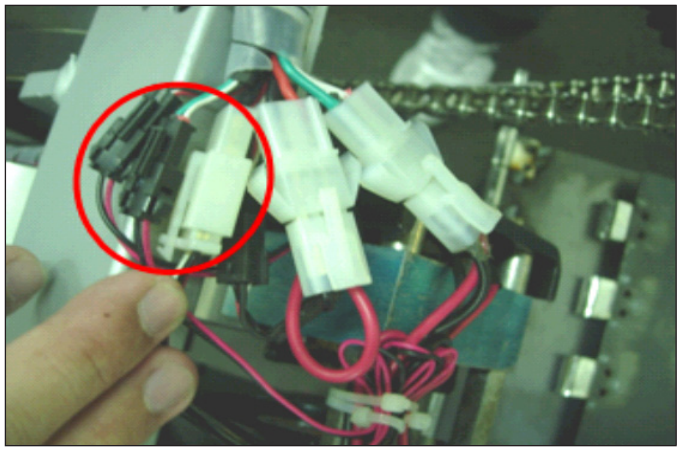


FIGURE C

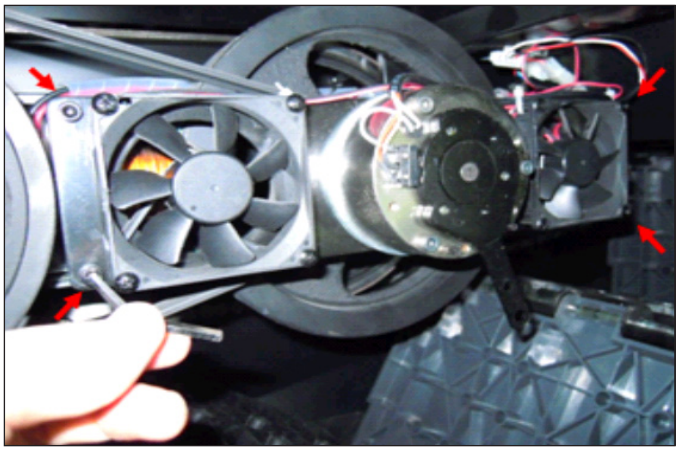


FIGURE D

6) Remove the old ECB belt.
7) Install a new ECB belt. ***NOTE:*** There is a belt installation tool available to assist with installing the Flexonic belt (Figure E - part # 0000093787). After installation, rotate the belt at least 3 full revolutions to insure the belt is centered.



FIGURE E

8) Reverse Steps 1-5 to re-assemble the unit.
9) Test the Climb Mill for function as outlined in Section 9.20.

9.15 DRIVE BELT REPLACEMENT

1) Turn off power and disconnect the cord from the machine.
2) Remove the drive set as outlined in Section 9.10.
3) Loosen the belt tension nut (Figure A) and screw (Figure B) until there is enough slack in the drive belt to remove it (Figure C).
4) Use a straight edge to make sure that the pulley and encoder pulley are in a straight line (Figure D).



FIGURE A

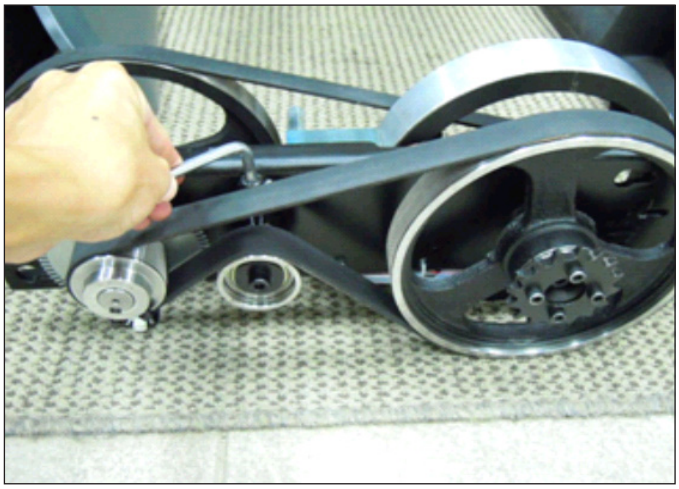


FIGURE B

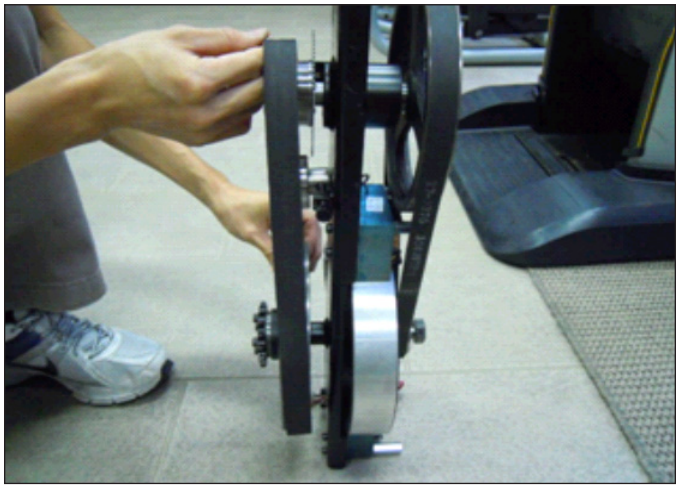


FIGURE C

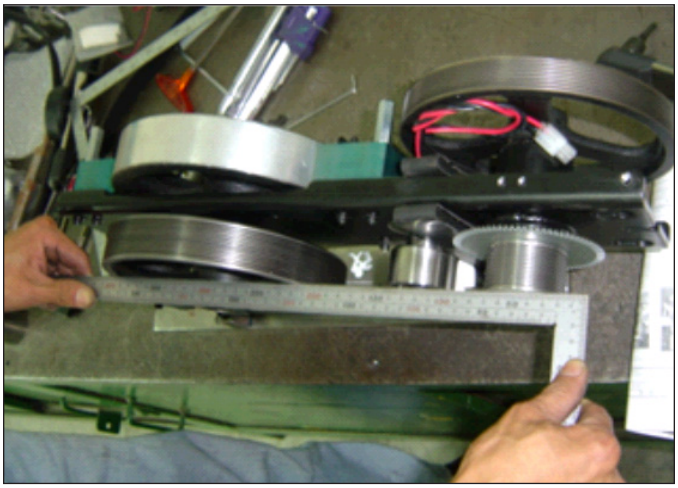


FIGURE D

5) Reverse Steps 1-4 to install a new drive belt. ***NOTE:*** Torque the screw removed in Step 3 to 60 N-m.
6) Test the Climb Mill for function as outlined in Section 9.20.

9.16 ECB REPLACEMENT

1) Turn off power and disconnect the cord from the machine.
2) Remove the drive set as outlined in Section 9.10.
3) Disconnect the brake and both fan wire connections (Figure A).
4) Remove the 4 screws holding the brake and fan plate to the drive set (Figure B) and remove the assembly.

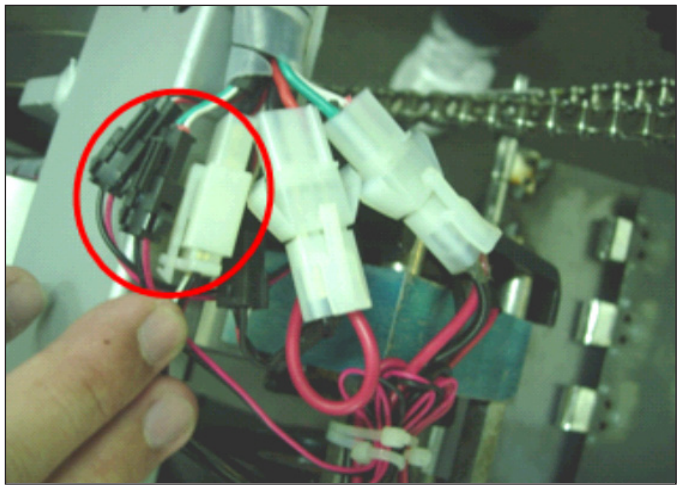


FIGURE A

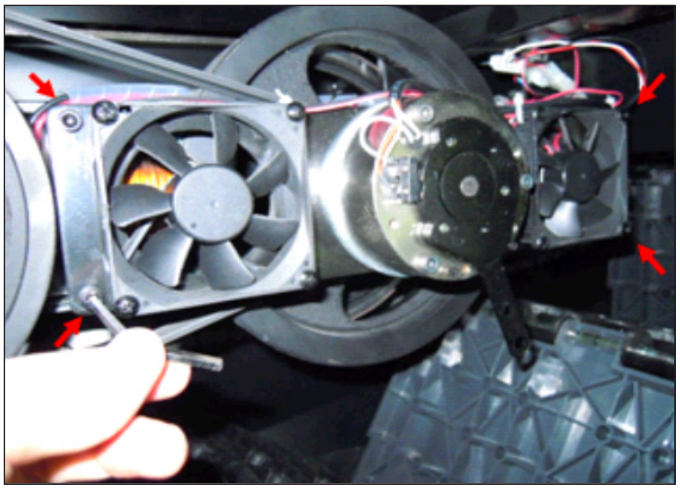


FIGURE B

5) Remove the cable ties holding the ECB wiring to the drive set (Figure C).
6) Loosen 2 screws to remove the nut standoffs off the ECB (Figure D).

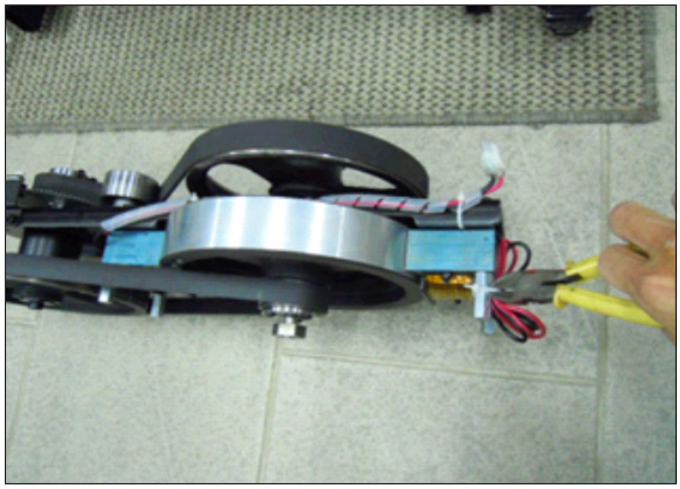


FIGURE C

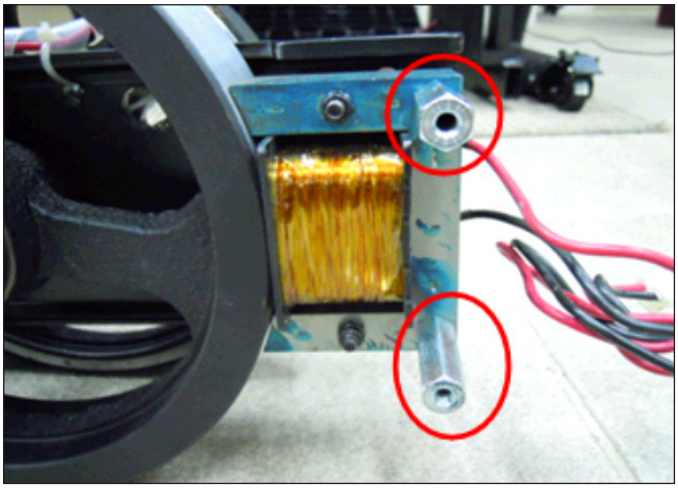


FIGURE D

9.16 ECB REPLACEMENT - CONTINUED

7) Loosen the remaining 2 screws to remove the 2 regular nuts (Figure E). Then remove the ECB.
8) There should be 4 screws & ferrules remaining to mount the new ECB (Figure F).

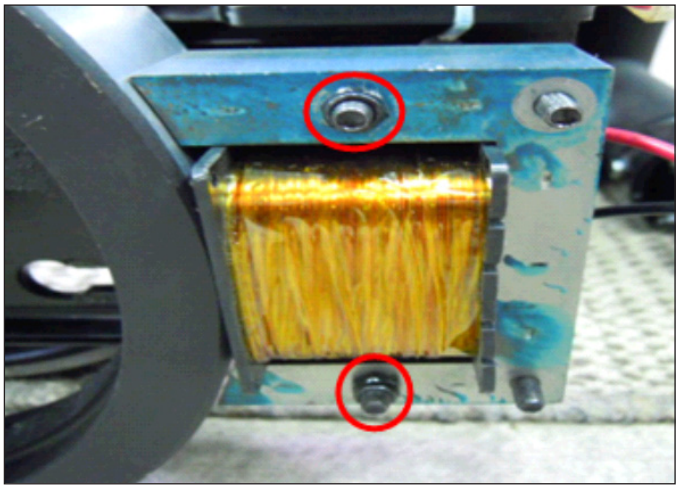


FIGURE E

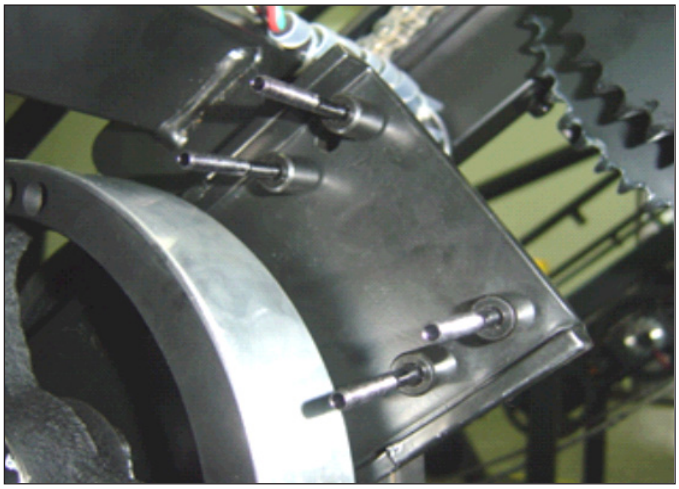


FIGURE F

9) Install a new ECB onto the 4 screws / ferrules.
10) Before tightening the nuts, use a piece of fabric or other material that is approximately 0.5mm thick to adjust the gap between the flywheel and the ECB (Figure G). ***NOTE:*** Once the ECB is in the correct position, torque the 4 ECB screws to 10 N-m. There should normally be a small amount of friction between the flywheel and the ECB.

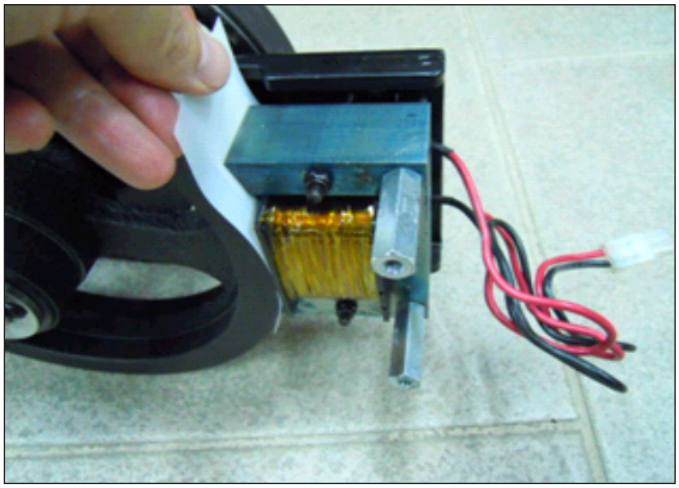


FIGURE G

11) Reverse Steps 1-8 to hook up the ECB and re-assemble the unit.
12) Test the Climb Mill for function as outlined in Section 9.20.

9.17 SPEED SENSOR REPLACEMENT

1) Turn off power and disconnect the cord from the machine.
2) Rotate the 2 plastic clips counter-clockwise to remove the Matrix logoed cover.
3) Disconnect the speed sensor wire (Figure A). ***NOTE:*** Use 2 hands to disconnect the speed sensor wire. Do not pull the socket downwards to disconnect as it will damage the connector.
4) Remove the 2 screws holding the speed sensor plate to the drive set (Figure B), and remove the speed sensor and plate.

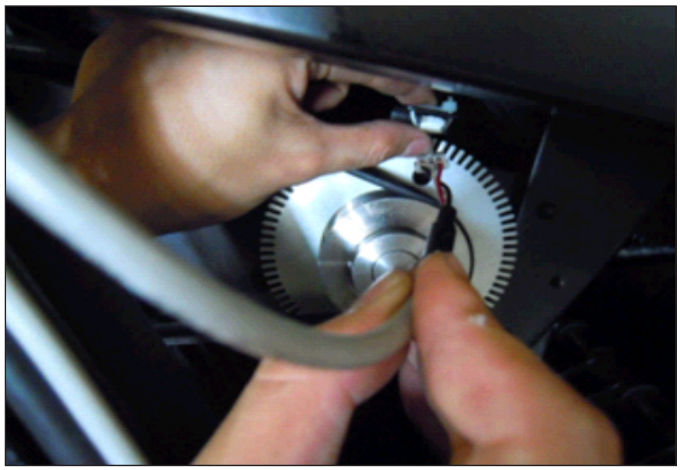


FIGURE A

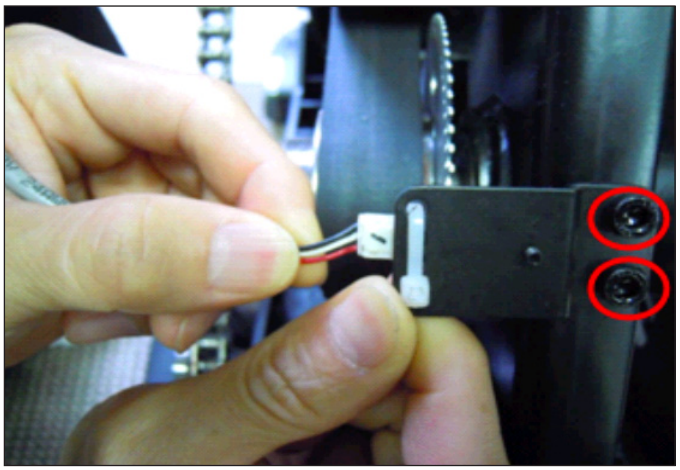


FIGURE B

5) Cut the wire tie and remove the screw holding the speed sensor to the speed sensor plate (Figure C), then remove the speed sensor.

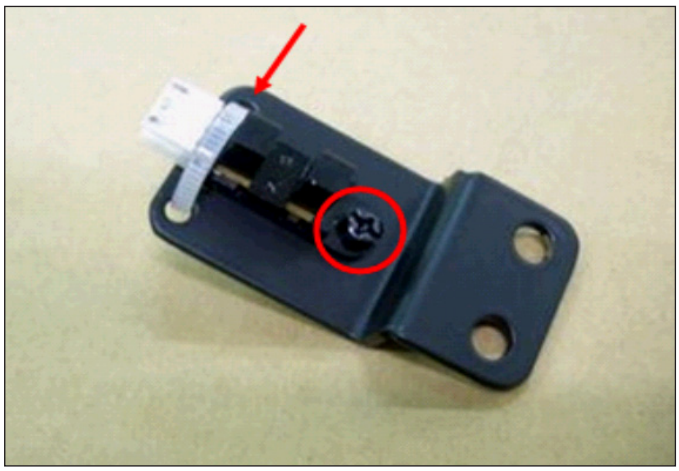


FIGURE C

6) Reverse Steps 1-5 to install a new speed sensor. ***NOTE:*** Install the speed sensor so that the encoder has a distance of 1.5mm from the optic disk on each side (Figures D & E).
7) Test the Climb Mill for function as outlined in Section 9.20.

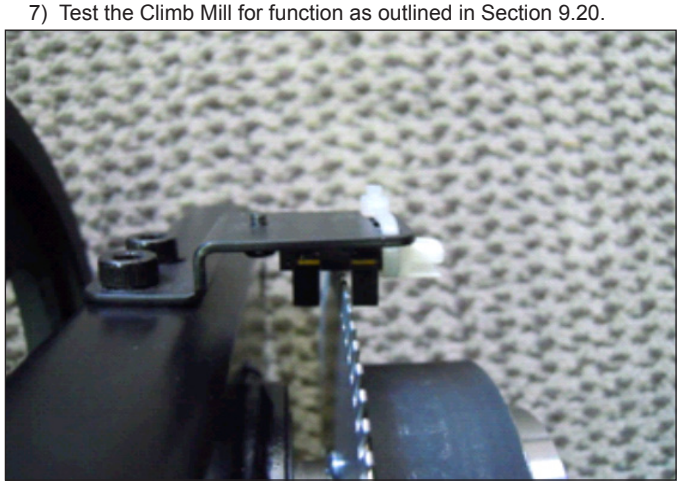


FIGURE D

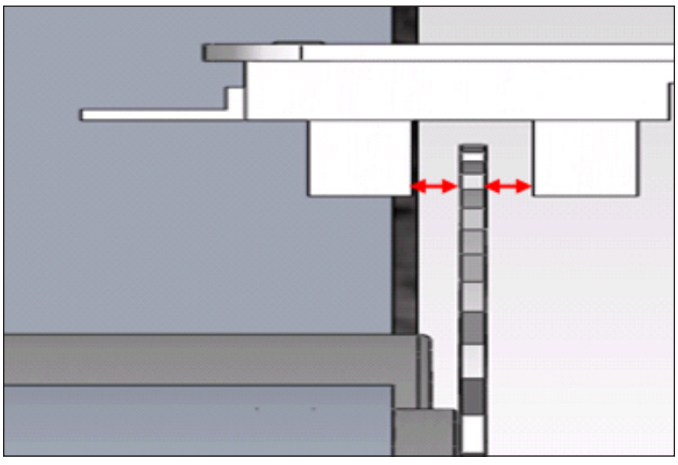


FIGURE E

9.18 CONTROL ZONE SENSOR REPLACEMENT

1) Turn off power and disconnect the cord from the machine.
2) Pull up on the Control Zone carefully (Figure A).
3) Unplug the wire connector from the Control Zone and remove the Control Zone from the unit (Figure B).



FIGURE A



FIGURE B

4) Remove the 8 screws to disassemble the Control Zone sensor from the Control Zone (Figure C), then remove the Control Zone sensor.

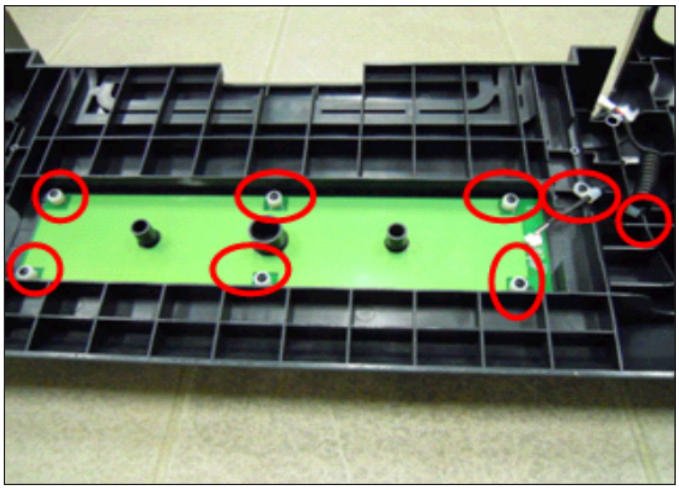


FIGURE C

5) Reverse Steps 1-4 to install a new Control Zone sensor.
6) Test the Climb Mill for function as outlined in Section 9.20.

9.19 PROXIMITY SENSOR REPLACEMENT

1) Turn off power and disconnect the cord from the machine.
2) Rotate the 2 plastic clips counter-clockwise to remove the Matrix logoed cover.
3) Remove the front shroud as outlined in Section 9.4.
4) Remove the proximity sensor cable from the LCB, and cut any wire ties holding the cable to the frame (Figure A).
5) Remove the 2 screws holding the proximity sensor to the frame (Figure B), and remove the proximity sensor.

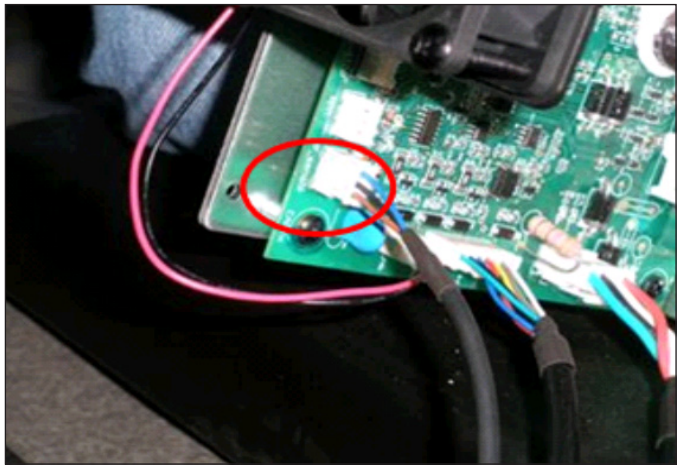


FIGURE A

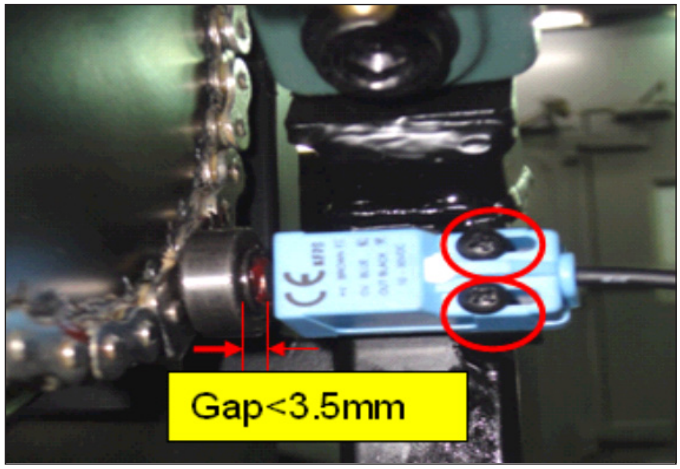


FIGURE B

6) Reverse Steps 1-5 to install a new proximity sensor. NOTE: The proximity sensor should be installed so that there is a gap of 3.5mm between the sensor and the axle (Figure B).
7) Once the proximity sensor is installed, rotate the stairs at least 2 complete revolutions to make sure the sensor does not hit.
8) Test the Climb Mill for function as outlined in Section 9.20.

9.20 TESTING THE CLIMB MILL

ONCE THE UNIT OR REPLACEMENT PART IS FULLY INSTALLED AND ASSEMBLED AND PROPERLY PLACED ON THE FLOOR, USE THE FOLLOWING INSTRUCTIONS TO TEST THE MACHINE:

1) Enter Engineering Mode (LEVEL UP and DOWN for 3 seconds) and input the serial number of the console. Also set the Machine Type and enter Service Mode to verify that the Date and Time are correct.

2) Press the green GO key and begin using the machine. Stand on the machine and hold the handlebars while initiating movement to simulate exercising. While moving listen for any odd noises or squeaks.

3) Grasp the hand grips to check for proper heart rate response.

4) Press the LEVEL UP and DOWN keys on the console to make sure resistance is fully functional.

5) Try stepping off the unit to make sure the proximity sensor is fully functional. Also test the STOP key on the grips and the Control Zone for function. .

CHAPTER 10: CLIMB MILL SPECIFICATIONS AND ASSEMBLY GUIDE

10.1 CLIMB MILL SPECIFICATIONS

FEATURES	
Step Height	10"
Contact and Telemetric Heart Rate Sensors	Yes
Ultra Non-Slip Grips	Yes
Handlebar Design	Ergonomically designed handrails and horn.
Thumb Switch Controls	Yes
RESISTANCE SYSTEM	
Technology	ECB with flywheel
Power Requirements	100V - 240V - 50 / 60 HZ AC
Minimum Watts	N/A
CONSOLE	
Display Type	Dot - Matrix LED
Display Feedback	Time, Speed, SPM, Floors Climbed, Calories, Watts, Level, Heart Rate, SPM
User Defined Multi Language Display	No (accessible through Manager Mode) - English, German, French, Italian, Spanish, Dutch, Portuguese, Japanese, Swedish, Finnish
Resistance Levels	25
Workouts	Manual, Rolling Hill, Interval Training, Fat Burn, Calorie Training, Goal Training, Fitness Test, Constant Watts
CSafe, Fitlinxx Ready	Yes
Netpulse Ready	Yes
Fit Touch Technology	No
On the Fly Program Change	Yes
Integrated Vista Clear™ Digital Ready Television	No
Fitconnexion™ Ready	Yes
Wireless Data Transmitter	Yes
IPod Compatible	Yes - Charging Only
Nike+ IPod Compatible	No
Personal Fan	Yes
USB Workout Tracking	Yes - Via www.livestrong.com
Virtual Active™ Compatible	Yes
TECHNICAL DATA	
Overall Dimensions (L x W x H)	65 x 33.5 x 83.5" (165 x 85 x 212cm)
Maximum User Weight	400 lbs / 181.4 kg
Unit Weight	348 lbs / 157.9 kg
Shipping Weight	368 lbs / 166.9 kg

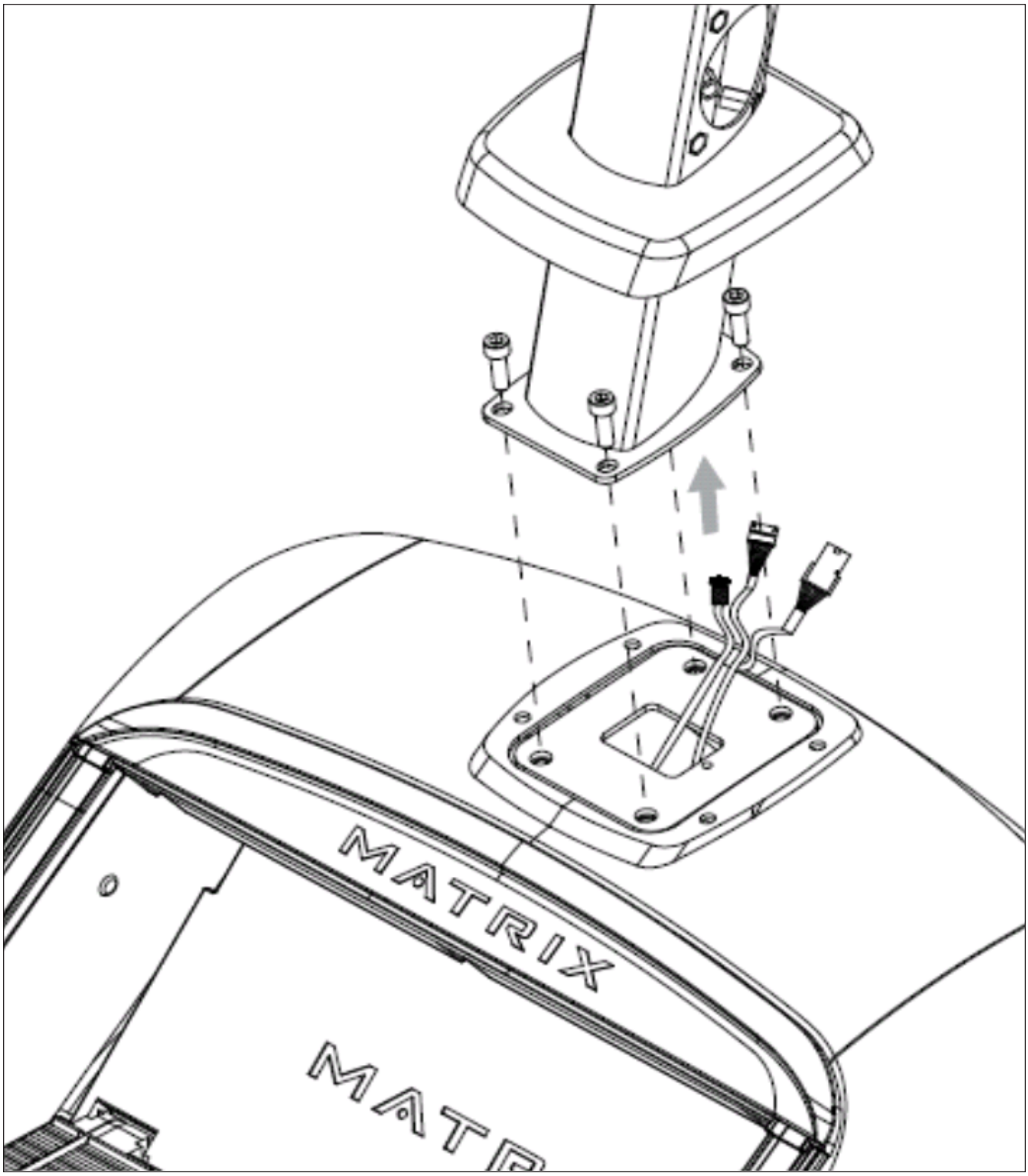
10.2 ASSEMBLY HARDWARE

QUANTITY	SKETCH	DESCRIPTION	PACKAGE COLOR
4		SOCKET HEAD SCREW (M8 X 25L)	BLACK
6		SOCKET HEAD SCREW (M8 X 20L)	BLUE
2		SOCKET HEAD SCREW (M8 X 35L)	GREEN
5		SOCKET HEAD SCREW (M5 X 8L)	GREEN
3		SOCKET HEAD SCREW (M8 X 30L)	GREEN
2		SOCKET HEAD SCREW (M8 X 23L)	GREEN
2		CURVED WASHER	BLUE
4		FLAT WASHER	BLUE
5		FLAT WASHER	GREEN

10.3 CLIMB MILL ASSEMBLY STEPS

STEP 1 - BLACK HARDWARE BAG

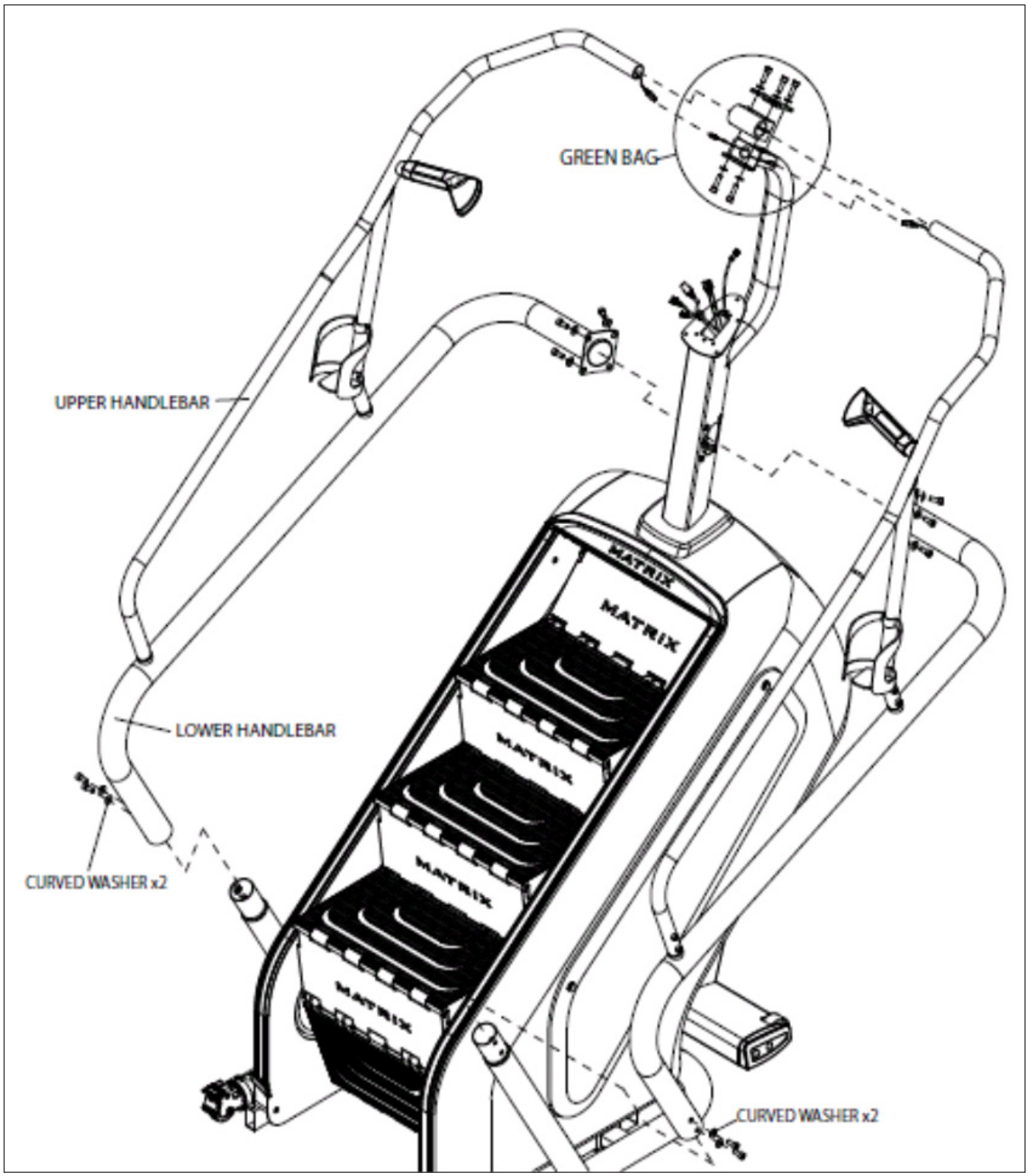
1) Open the Black hardware bag.
2) Carefully route the wires up the console mast.
3) Attach the console mast to the frame using the provided bolts. Secure tightly being careful not to pinch any wires.



10.3 CLIMB MILL ASSEMBLY STEPS - CONTINUED

STEP 2 - BLUE & GREEN HARDWARE BAGS

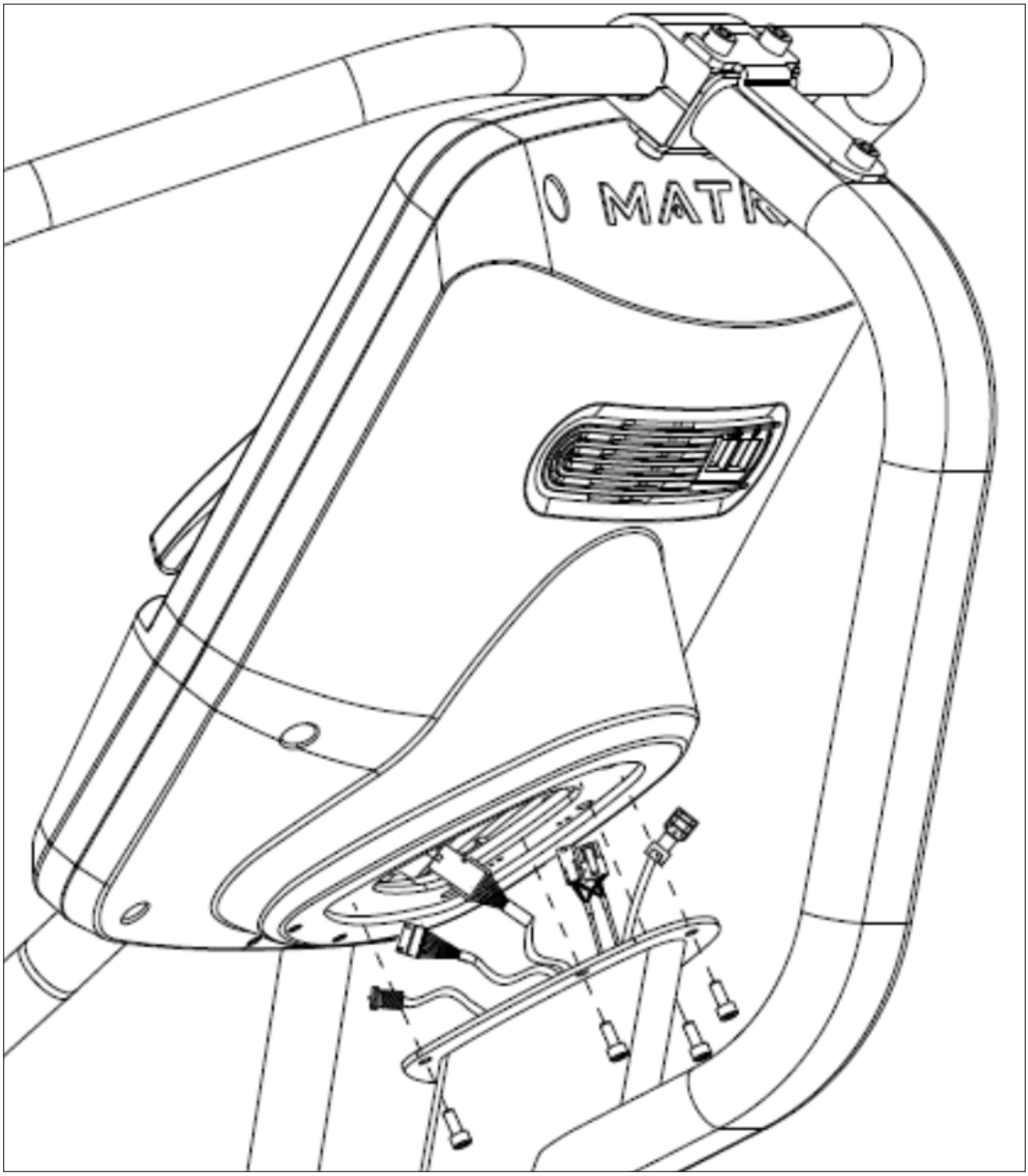
1) Open the Blue and Green hardware bags.
2) Attach the Lower Handlebar using the provided bolts. Tighten securely at the base and mast.
3) Attach the Upper Handlebar using the provided bolts. Carefully route and connect all wires to the console mast. Tighten securely.
4) Repeat on the opposite side.



10.3 CLIMB MILL ASSEMBLY STEPS - CONTINUED

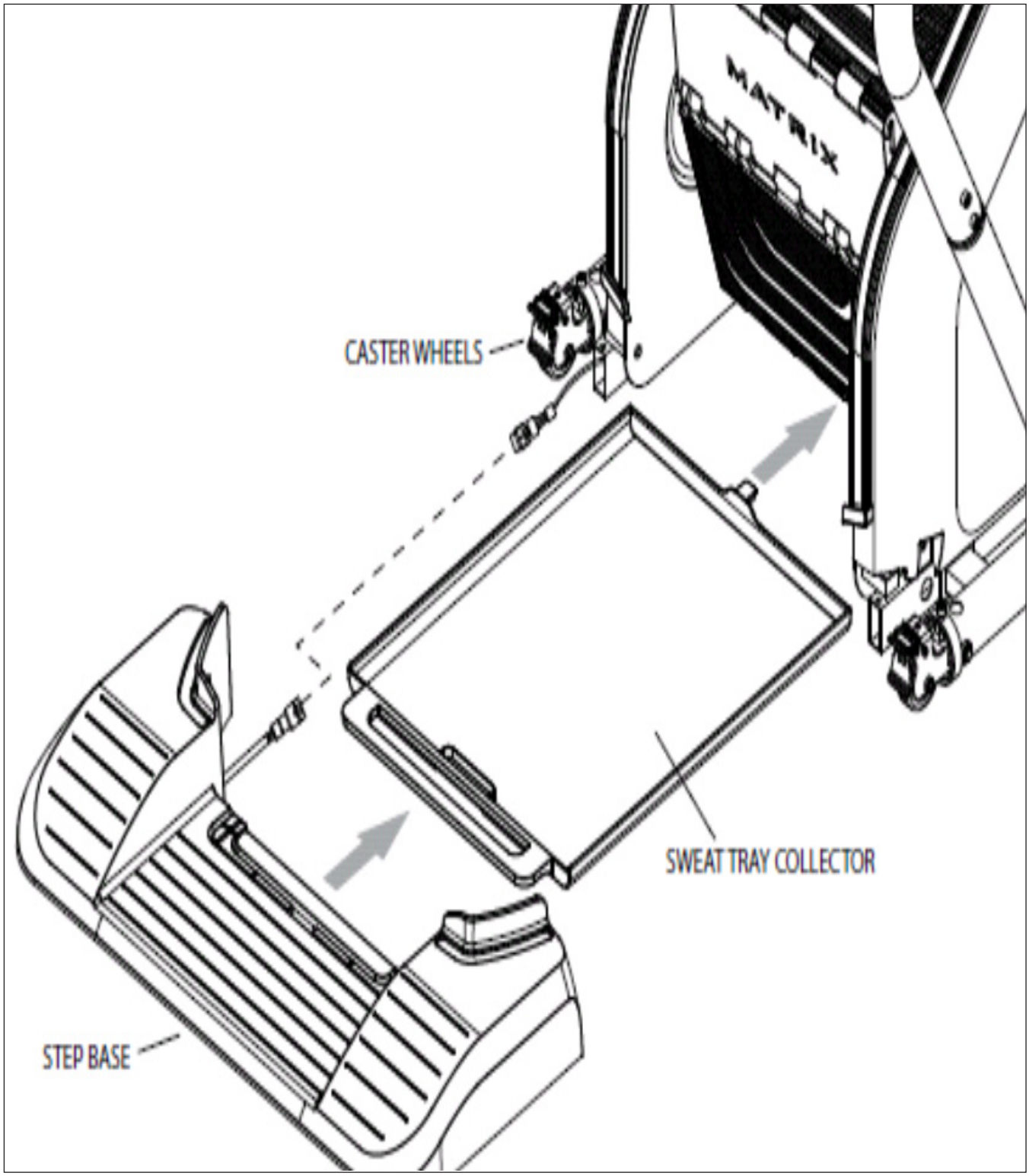
STEP 3 - CONSOLE

1) Remove the five pre-attached console screws from the back of the console.
2) Carefully connect all wires coming from the mast to the inside of the console. ***NOTE:*** Depending on the console, not all cables coming from the mast need to be connected.
3) Attach the console to the console mast using the screws removed from the console earlier. Secure tightly being careful not to pinch any wires.



STEP 4 - BASE STEP

1) Connect the wires from the Base Frame to the Base Step.
2) Lift the Base Step over the caster wheels. Push down firmly on both sides until it seats firmly.
3) Slide the Sweat Collection Tray under the Climb Mill, latching the handle to the base.



10.4 STABILIZING THE CLIMB MILL

STABILIZING THE MATRIX C5X-01 CLIMB MILL

The Matrix Climb Mill should be level for optimum use. Locate a level, stable surface to position the equipment. The equipment has leveling transport wheels located under the "Control Zone" cover (Figure A). To access, grab the left and right sides of the cover and lift off. ***CAUTION:*** There is an electrical plug located under the cover that will need to be unplugged before the cover can be completely removed. With the "Control Zone" cover removed, adjust the transport wheels until the equipment is stable and lock the wheels into place. Once stable, plug the electrical connection back together and place the "Control Zone" cover back into place.



FIGURE A

11.1 SOFTWARE UPGRADE PROCEDURE

1) Turn on the power to the Climb Mill, wait until the standard display picture has come up.
2) Enter Manager Mode by pressing and holding the LEVEL UP and DOWN keys simultaneously.
3) Record the Accumulated Mileage, Accumulated Distance, and Serial Number. ***NOTE:*** This information can be lost during the update procedure and should be recorded so that the information can be re-entered into the console once it is updated.
4) Build a path of folders on the USB drive that will be used. The path should be MATRIX\FW\UCB (create a folder called MATRIX, then a folder within MATRIX called FW, then a folder within FW called UCB).
5) Copy the software files into the UCB folder on the USB drive (the path should read \MATRIX\FW\UCB - Figure A).
6) Insert the USB drive into the USB port on the console (Figure B).
7) From the standard display picture, press ENTER, 9, 0, 0, 1, ENTER on the keypad. Press the LEVEL UP or DOWN keys to choose the correct software (if more than one version is on the USB drive). Once the correct software is shown (Figure C), press ENTER and the upgrade procedure will run.
8) When the console beeps and the standard display picture comes back up (Figure B), the upgrade is complete. Remove the USB drive.
9) Enter into Manager Mode (see Section 5.1) and make sure the software version is correct.
10) Enter into Service Mode (See Section 7.1). Enter the values recorded in Step 3 (if needed).
11) Enter into Engineering Mode (See Section 6.1). Check that the Machine Type is correct.
12) Test the Climb Mill for function as outlined in Section 9.20.



FIGURE A



FIGURE B



FIGURE C

NOTES



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