Matrix T50x-02 / T50x-U-02 SERVICE MANUAL



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SECTION 1 SERIAL NUMBER LOCATION

Matrix T50x Serial Number Location



SECTION 2 MOVING THE UNIT

UNPACKING THE TREADMILL

The MATRIX treadmill is inspected before it is packaged. It is shipped in two separate pack- ages: the frame and the console. Carefully unpack the unit and dispose of the box material.

CAUTION

This unit weights 165 kg / 365 lbs pounds. Be sure to have proper assistance to remove and move the unit, to avoid injury to the user and the unit.

CONTENTS

Frame :

 Treadmill Base
 Console Supports
 Hardware Fasteners and Washer Bag Console:
 Handle Bar Set
 Console

SECTION 3 IMPORTANT SAFETY INSTRUCTIONS

1.1 Before getting Started

It is the sole responsibility of the purchaser of Matrix Fitness Systems products to instruct all individuals, whether they are the end user or supervising personnel, on proper usage of the equipment.

It is recommended that all users of Matrix Fitness Systems exercise equipment be informed of the following information prior to its use.

1.2 proper usage

• 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 equipment.
- Do not wear loose clothing while on equipment.

1.3 READ AND SAVE THESE INSTRUCTIONS

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



Please leave a 78.75" (2000 mm) x 39.50" (1000 mm) landing zone behind the treadmill. This zone is to allow easy access to the treadmill and gives the user an easy exit path from the machine. In case of an emergency, place both hands on the side arm rests to hold yourself up and place your feet onto the side rails.

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

DANGER: To reduce the risk of electric shock: Always unplug this equipment from the electrical outlet immediately after using and before cleaning.

WARNING: To reduce the risk of burns, fire, electrical shock or injury to persons that may be associated with using this product:

• An appliance should never be left unattended when plugged in. Unplug from outlet when not in use and before putting on or taking off parts.

• This product must be used for its intended purpose described in this owner's 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 console covers. Service should only be done by an authorized service technician.

• Never operate the treadmill with the air opening blocked. Keep the air opening clean, free of lint and hair.

• Never operate product if it has a damaged cord or plug, if it is working improperly, if it has been damaged, or immersed in water. Return the unit to a service center for examination and repair.

- Do not carry this unit by it's supply cord or use the cord as a handle.
- Keep any power cord away from heated surfaces.
- Close supervision is necessary when treadmill is used by or near children or disable persons.
- Do not use outdoors.
- The treadmill shall be installed on a stable base.
- Do not operate where aerosol (spray) products are being used or when oxygen is being administered.
- To disconnect, turn all controls to the off position, then remove the plug from outlet.
- Connect this treadmill to a properly grounded outlet only.

• This appliance is not intended for use by persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

• Children should be supervised to ensure that they do not play with the appliance.

• If the supply cord is damaged, it must be replaced by a special cord or assembly available from the manufacturer or its service agent.

WARNING: Heart rate monitoring systems may be inaccurate. Over exercise may result in serious injury or death. If you feel faint stop exercising immediately.

1.4 Electrical Requirements

For your safety and to ensure good treadmills performance, the ground on this circuit must be no-looped. Before connecting the plug into an electrical outlet, make sure that the voltage requirements match that the voltage of the treadmill.

ATTENTION: Your treadmill is provided with a power cord. Please only use with the power cord as supplied, or with Matrix spare part, otherwise this may result in damage.

1.5 grounding instructions

The treadmill must be grounded. If it should malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. The treadmill 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 or serviceman 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 a qualified technician.

120v units

The Matrix T50X, T50X-U 120 treadmill is for use on a nominal 120-volt circuit and has a nonlooped grounding plug. Make sure that the 120-volt treadmill is connected to an outlet, NEMA 5-20R, having the same configuration as the plug. No adapter should be used with this product.

220v units

The Matrix T50X, T50X-U 220 treadmill is for use on a nominal 220-volt circuit and has a nonlooped grounding plug. Make sure that the 220-volt treadmill is connected to an outlet, NEMA 6-20R, having the same configuration as the plug. No adapter should be used with this product.

SECTION 4 PREVENTATIVE MAINTENANCE

4.1 MAINTENANCE CHECKLIST

FOR BEST PERFORMANCE WE RECOMMEND THE FOLLOWING MAINTENANCE SCHEDULE:

Item	Weekly	Monthly	BI-annually	Annually
Console Bolts			Inspect	
Frame	Clean			Inspect
Running Belt	Clean	Assure Tighten	Inspect	
Power Code	Inspect			
Console	Clean	Inspect		
Bottle Holders	Clean			
Handlebars	Clean		Inspect	
Handlebars Bolts			Inspect	
Front / Rear Roller			Inspect	
Stop Key	Inspect			
Motor Drive Belt			Inspect / Tighten	
Deck Bolts			Tighten	

4.2 RECOMMENDED CLEANING TIPS

- 1. Use a soft, clean cotton cloth. DO NOT use paper towels to clean surfaces on the treadmill. Paper towels are abrasive and can damage surfaces.
- 2. Use a mild soap and damp cloth. DO NOT use ammonia based cleaner. This will cause discoloring of the aluminum and plastics it comes into contact with.
- 3. Do not pour water or cleaning solutions on any surface. This could cause electrocution.
- 4. Wipe the console and side rails after every use.
- 5. Brush away any wax deposits from the deck and belt area. This is a common occurrence until the wax is worked into the belt material.
- 6. Be sure to remove any obstructions from the path of the elevation wheels including power cords.
- 7. Monthly, unplug the treadmill and remove the motor cover. Check for debris and clean with a dry cloth or small vacuum nozzle.

WARNING:

Do not plug the treadmill in until the motor cover has been reinstalled.

4.3 DECK AND BELT REPLACEMENT

One of the most common wear and tear items on a treadmill is the Deck and Belt combination. If these two items are not properly maintained they can cause damage to other components. This product has been provided with the most advanced maintenance free lubricating system on the market.

WARNING:

Do not run the treadmill while cleaning the belt and deck. This can cause serious injury and can damage the machine.

Maintain the belt and deck by wiping the sides of the belt and deck with a clean cloth. The user can also wipe under the belt 2 inches / 5 centimeters on both sides removing any dust or debris.

The deck can be flipped and reinstalled or replaced by an authorized service technician. Please contact Matrix Fitness Systems or authorized dealers for more information.

4.4 CHECK FOR DAMAGED PARTS

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 local service window for a replacement.

MAINTAIN ALL EQUIPMENT:

Preventative maintenance is the key to smooth operating equipment, as well as keeping the users liability to a minimum. 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.

4.5 ADJUSTING THE BELT

After placing the treadmill in the position it will be used, the belt must be checked for proper tension and centering. The belt might need to be adjusted after the first two hours of use. Temperature, humidity, and use cause the belt to stretch at different rates. If the belt starts to slip when a user is on it, be sure to follow the directions below.

STEP 1:

Locate the two hex head bolts on the rear of the treadmill. The bolts are located at each end of the frame at the back of the treadmill. These bolts adjust the rear belt roller. Do not adjust until the treadmill is on. This will prevent over tightening of one side.

STEP 2 :

The belt should have equal distance on either side between the frame. If the belt is touching one side, do not start the treadmill. Turn the bolts counter clockwise approximately one full turn on each side. Manually center the belt by pushing the belt from side to side. Tighten the bolts the same amount as when the user loosened them, approximately one full turn. Inspect the belt for damage.

STEP3 :

While the treadmill is running at 3 mph / 4.8 kph, observe the belt position. If it is moving to the right, tighten the right bolt by turning it clockwise ?turn, and loosen the left bolt turn. If it is moving to the left, tighten the left bolt by turning it clockwise ?turn and loosen the right ?turn. Repeat Step 3 until the belt remains centered for several minutes.

STEP 4 :

Check the tension of the belt. The belt should be very snug. When a person walks or runs on the belt, it should not hesitate or slip. If this occurs, tighten the belt by turning both bolts clockwise ?turn. Repeat if necessary.

4.6 CLEAN THE GROOVES PROCEDURE

Frequency: Every 3 months

Caution:

If dirty grooves in the drive belt, motor and roller pulley, there will be noises while running.

Procedure:



1.Remove the drive belt and check the grooves in belt for dirt or dust and clean it.

2.Check the grooves in motor pulley for dirt or dust and clean it



4.7 DECK RE-WAXING PROCEDURE

<u>Purpose</u>: To ensure the maximum life of your treadmill, follow these steps at regular intervals.

The timing of running belt and deck maintenance :

- 1. Each 6 months to lubricate by wax powder.
- 2. One year to flip the running deck.
- 3. Two years or over 6,000 hrs of usage to replace new running belt and deck.
- 4. In the regular maintain, If the motor over current that has to lubricate by wax powder
- ★ Take a motor current reading while a 70-90 kg user is walking on the machine at 5KM. If it is over limited current, wax the deck.

The limit current for each motor as below :

Motor type	Normal Current	Limited Current	
220V DC	<9A	11A	
110V DC	<15A	20A	
220V AC			
110V AC	<5A	5.5A	

Recheck the motor current as above –

If the motor current is still over limited current, Please flip the deck or replace the belt.

WAXING PROCEDURE:

- 1. Warm deck and belt by walking on treadmill for 3 or more minutes at a minimum speed of 3 mph (4.8 kph).
- 2. Turn off and unplug the treadmill.
- 3. Sprinkle approximately 1/2 scales of wax under the running belt. (It is useful to lightly blow the wax to the center of the belt.)
- 4. Turn the unit on and walk the wax in for 3-4 minutes at 1 mph. Walk all over the belt to ensure smooth wax distribution.
- 5. Once wax is walked into the belt and deck repeat procedure for checking the motor current to ensure that the belt and deck are not to worn for wax to improve the friction.

Be careful to monitor wax buildup on the rollers – too much wax can cause issues and technicians need to monitor the rollers if they continually wax units.







1/2 scale for one machine per one time (around 5gm)

The wax powder set Parts number : MTOOL-052 Price : US\$ 30

Wax powder set including

- 1. One big bottle with 1kg wax powder
- 2. A small bottle for maintenance.

SECTION 5 OVERLAY AND WORKOUT DESCRIPTION

5.1 T50x Console description



WORKOUT keys : Simple program view and selection buttons.

Quick START: One touch Start and Quick Start.

ENTER: To confirm each program setting.

up/down INCLINE: Easy information and incline selection.

up/down speed : Easy information and speed selection.

emergency stop / Immobilization : To stop all functions and immobilize the unit. The emergency stop on this treadmill must be returned to its original position in order to allow normal operation of the unit.

stop: Ends workout and shows workout summary data.

COOL DOWN: Puts treadmill into Cool Down mode. Cool Down time is dependent on the length of the workout. Workouts 19 minutes and shorter will have a cool down length of 2 minutes. Workouts 20 minutes and longer will have a cool down length of 5 minutes.

Clear: Use the CLEAR key to clear data not yet entered during the workout setup.

NUMBER KEYS: Press the numbers to input exercise Time, Weight, Level, Age, Heart Rate, Speed and Incline.

5.2 T50x-U Console description



WORKOUT keys : Simple program view and selection buttons.

Quick START: One touch Start and Quick Start.

ENTER: To confirm each program setting.

up/down INCLINE: Easy information and incline selection.

up/down speed : Easy information and speed selection.

emergency stop / Immobilization : To stop all functions and immobilize the unit. The emergency stop on this treadmill must be returned to its original position in order to allow normal operation of the unit.

stop: Ends workout and shows workout summary data.

COOL DOWN: Puts treadmill into Cool Down mode. Cool Down time is dependent on the length of the workout. Workouts 19 minutes and shorter will have a cool down length of 2 minutes. Workouts 20 minutes and longer will have a cool down length of 5 minutes.

SECTION 6 ENGINEERING MODE

The Engineering Mode allow the club owner to customize the treadmill for the club. To enter the Engineering Mode, press and hold down the "INCLINE ▼ " and "SPEED ▼ " keys. Continue to hold down these two keys until the INSTRUCTION CENTER displays "MANAGER MENU".

- 1. To scroll through the list of Engineering Mode use the SPEED $\checkmark / \blacktriangle$ key. The INSTRUCTION CENTER will display, in turn, each of custom settings.
- 2. To select a custom setting, press the START key to enter.
- 3. To change the value of the setting, use the SPEED $\checkmark / \blacktriangle$ key.
- 4. To confirm and save the value of the setting, press the QUICK START key. "SETTING SAVED" will appear in the INSTRUCTION CENTER. To exit the setting without saving, press the STOP key over 5 seconds, or if there is no key pressed, the system will resume automatically.

Display test MODE

The Display test Mode allow the club owner to test display the treadmill for the club.

To enter the Display Mode, press and hold down the "GOAL" & "INTERVAL" keys for 3'S.

	CUSTOM SETTING	DEFAULT	RANGE	UNIT	DESCRIPTION
PO	MAXIMUM TIME	99	10~99	Minute	This option enables fitness club managers to set the program maximum workout duration limits during peak and non-peak hours of club traffic. Active variable displayed in the TIME display after change.
P1	DEFAULT TIME	20	10~Max	Minute	This option controls the default program time.
P2	DEFAULT LEVEL	1	1~10	N/A	This option controls the default program level.
Р3	DEFAULT WEIGHT	68KG / 150LBS	34~182 KG / 75~400 LBS	KG / LBS	This option controls the default weight used in the calorie calculations. Sets to default unit change (kilograms or pounds). Displayed in native units.
P4	DEFAULT AGE	30	10~99	AGE	This option controls the default users age used in the target heart rate calculations.
Р5	MAXIMUM SPEED	20 kph / 12 mph	6.4~20 kph / 4~12 mph	Kph / mph	Controls the maximum speed for all programs. Displayed in native units (kilometers per hour or miles per hour). Reverts to default value on unit change.
P6	MAXIMUM INCLINE	15	4 / 8/ 12 /15	N/A	This option changes the maximum incline grade to 4%, 8%, 12% or 15%.
Р7	ACCUMULATED DISTANCE	N/A	N/A	Km / Mile	Accumulated distance is not editable, for display only. Displayed in native units (miles or kilometers). Holding the INCLINE ▲and SPEED ▲ keys simultanously to reset the accumulated distance. After the treadmill reaches the maximum distance, it will reset to "0" automatically.
Р8	ACCUMULATED TIME	N/A	N/A	Hour	Accumulated distance is not editable, for display only. Displayed in native units (miles or kilometers). Holding the INCLINE ▲ and SPEED ▲ keys simultanously to reset the accumulated distance. After the treadmill reaches the maximum distance, it will reset to "0" automatically.
Р9	START SPEED	0.8kph/ 0.5mph	0.8~3.0kph / 0.5~1.8mph	Kph / mph	Controls the starting speed for all programs (minimum speed not affected). Displayed in native units (kilometers per hour or miles per hour). Reverts to default value on unit change.

	CUSTOM SETTING	DEFAULT	RANGE	UNIT	DESCRIPTION	
P10	PAUSE TIME	60 sec	30~180 sec	sec	This is the maximum time during which a workout can remain in pause mode.	
P11	LANGUAGE	English	N/A	N/A	The language of the INSTRUCTION CENTER Display.	
P12	MODEL	T50x	T50x / T50x-IFI	N/A	When the machine set to T50x-IFI will not have the number keys function.	
P13	SOFTWARE VERSION	N/A	N/A	N/A	Software version is not editable, for display only.	
P14	UNITS	Metric	Metric / English	N/A	The measurement unit type for weight, distance, and speed.	
P15	MAINTENANCE LAMP	ON	ON / OFF	N/A	This option enables fitness club managers to set the maintenance lamp as ON/OFF.	
P16	AUTO CHECK	N/A	N/A	N/A	The function is to calibrate the treadmill's speed and incline after the completion of the installation.	
P17	ERROR LOG	N/A	N/A	N/A	Error log is not editable, for display only. Holding the INCLINE \blacktriangle and SPEED \bigstar keys simultaneously to erase error log.	
P18	RESET ALL	N/A	N/A	N/A	The function would clear all custom settings had stored on the unit as a default value. Holding the INCLINE ▲ and SPEED ▲ key simul-taneously to clear all custom setting as a default value.	
P19	MANUFACTURING TEST	N/A	N/A	N/A	The function is only for manufacturer use.	

SECTION 7 TROUBLE SHOOTINGS



7.2 Wire pin definition

W35 -- Digital Comm Wire



W38 -- Grip Pulse Wire



7.3 MCB LED instruction



LED	Reference Designator	Description
DOWN	LED2	Indicates if the upper console is commanding elevation DOWN. LED display: Light : Normally Off : No command from console into elevation motor
UP	LED3	Indicates if the upper console is commanding elevation UP. LED display: Light : Normally Off : No command from console into elevation motor
+12V		Indicates if console voltage supply is present. LED display: Light : Normally Off : No 12 voltage provided by MCB
RS485		Indicates if the digital communication is working normally between upper console and MCB. LED display: Blinking : normally. Off : Fault
MCU		Indicates if the main control unit is working normally. LED display: Blinking : Normally. Light : MCU fault. Off : MSU no power.

7.4 MCB wiring connection

- CN9 -----AC motor cable socket
- CN1-----Input power cable socket
- CN13-----External fan cable socket
- CN7-----Digital communication cable socket
- CN6-----Elevation motor cable socket
- CN8------Adaptor power cable socket (only for T1xe / T3xe)

7.5 T50x switch setting definition

7.6 Error message 0140 / 01A0 / 01A2 troubleshooting

[Symptom]

- 0140 Incline motor operation failed.
- 01A0 Incline motor disconnected.

01A2 - Incline motor is detected in the reverse of the position indicated by the potentiometer.

[Solution]

- a. Check the connection of the incline motor cable at the MCB.
- b. Run auto calibration.
- c. If auto calibration fails, re-enter Engineering Mode and go to Calibration again.
- Select Incline Minimum, and then Go To Value.

- Check the MCB LEDs. If LED2 DOWN (Figure B) has no light, check the console cable connections at the console and MCB. Replace the console or cable as needed. If LED2 DOWN has a light, replace the incline motor.

d. If the issue is not solved by replacing the incline motor, replace the MCB.

Figure A

Motor is disconnected.

[Solution]

- a. Check the connection of the motor cable at the MCB (Figure A).
- b. Check if the MCB LED DSP1 (MCU) is lit (Figure B).
- c. If LED DSP1 is blinking, the motor should be replaced.
- d. If LED DSP1 is a solid light, replace the motor.
- e. If LED DSP1 is not lit, replace the MCB.

Figure A

Figure B

7.8 Error message 0144 / 02B6 / 02B7 / 02B8 / 01A8 / 02B5 troubleshooting

[Symptom]

- 0144 Motor over current.
- 02B6 Speed up is overcurrent.
- 02B7 Speed down is overcurrent.
- 02B8 Running status is overcurrent.
- 01A8 Internal electronic thermal relay protection: motor load is too large.
- 02B5 Inverter sensor the normal rated current over 150% , can hold 60~sec.

[Solution]

a. Check the condition of the running deck and belt. Replace the belt and flip or replace the running deck as needed.

b. Replace the MCB.

a. Motor over temperature.

[Solution]

a. Check the connection of the motor cable at the MCB (Figure A).

b. Use a multi-meter to check the motor wire circuit. Set the multi-meter to Ohms and place both terminals on the blue wires of the motor cable (Figure B). There should be an Ohm reading of 0. If there is an Ohm reading above 0, replace the motor. If the Ohm reading is 0, replace the MCB.

Figure A

Figure B

a. MCB is over temperature.

[Solution]

a. Check if both fans are operating (there is a fan mounted to the MCB itself as well as an external fan). Also check the connection of the fans at the MCB (Figure A).

b. If the fans are running correctly, replace the MCB.

Figure A

The emergency circuit on the interface board active.

[Solution]

a. Check the connection of the safety key (emergency stop) switch (Figure A). If the switch is always open or shorted out, replace the switch.

b. If the emergency stop does not resolve the issue, replace the console.

Figure A

7.12 Error message 02B9 / 02BA/ 02BB / 01AB troubleshooting

[Symptom]

- 02B9 The inner memory IC data write error.
- 02BA The inner memory IC data read error.
- 02BB Inverter hardware interrupt error.
- 01AB Inverter Error

[Solution]

- a. Check LED DSP1 (MCU) on the MCB (Figure A).
- b. If this LED is blinking, replace the console.
- c. If this LED is a constant light, replace the MCB.
- d. If this LED is not lit at all, check the power to the MCB.

Figure A

a. UCB no communication received.

[Solution]

a. If the display is giving a 04A0 error, LED DSP2 (RS485) should be light (Figure A). If this light is not on and a 04A0 error is present, replace the UCB.

- b. Check the connection of the console communication cable at both of the console and the MCB.
- c. Replace the console communication cable.
- d. Replace the UCB.

Figure A

a. MCB no communication received.

[Solution]

a. If the display is giving a 04B0 error, LED DSP2 (RS485) should be light (Figure A). If this light is not on and a 04B0 error is present, replace the UCB.

- b. Check the connection of the console communication cable at both of the console and the MCB.
- c. Replace the console communication cable.
- d. Replace the MCB.

Figure A

7.15 Error message 01A4 / 01A5 / 01A6 / 02A7 troubleshooting

[Symptom]

- 01A4 Main motor U phase disconnection
- 01A5 Main motor V phase disconnection
- 01A6 Main motor W phase disconnection
- 02A7 Inverter output side is detected abnormal sudden increase over current

[Solution]

a. Please check the Motor wire connection between the Motor and MCB. (Figure A)

b. Please use the electric meter to check the 3 points (U / V / W) and see if there's data of inside impedance. (Figure B~C)

If yes, replace MCB.

If no, replace Motor set.

Figure A

W & V (Figure B)

W & U (Figure C)

V & U (Figure D) 45

- 02A2 DC high voltage converter to detect the internal side of over-voltage phenomenon.
- 0241 DC high voltage side of the internal drive is too low to detect.

[Solution]

- a. Please check if the input power is normal and reboot power again.(Figure A)
- b. Replace the MCB.

Figure A

7.17 Error message IMMOBILIZED troubleshooting

[Symptom 2 of treadmill will not start]

Press start the LED display will show "IMMOBILIZED"

[Cause] Machine lock

[Solution]

1. Please hold machine function "FIT TRAINER" & "MULTI FX" key for 3's to unlock

7.18 How to test Incline motor function troubleshooting

[Symptom 2 of treadmill will not start]

To verify Incline motor function (Test VR value)

[Cause]

If the VR value reading show "0" during Auto Check, will cause 01A0.

[Solution]

- 1. Please release incline tube (Figure A), and run "Auto check"
- 2. After start "Auto Check". Will test the Incline motor VR value. (Figure B)

3. If the value show "0" suddenly during Auto Check process. (Figure C)

(Figure C)

4. Will appear "01A0", and this Incline motor is defective part(Due to VR value is variable, If the VR has broken circuit, Will show "0" on screen).

7.19 Incline motor jammed and 01A0 troubleshooting

[Symptom 2 of treadmill will not start]

If the Incline tube jammed with the bottom or error code "01A0" appear.

[Cause] Error code 01A0

[Solution]

- 1. Please release incline tube (Figure A), and turn on the power.
- 2. After turn on the power, Machine will find BDC (bottom dead center) (Figure B)

(Figure B)

- 3. When Incline stop rotated (on BDC position), rotated the tube to bottom. (Figure C)
- 4. When tube touch bottom, reverse the tube <u>2 cycles</u>. (Figure D)
- 5. Fix the incline tube.

(Figure C)

SECTION 8 PARTS REPLACEMENT

8.1 Plastic shroud removal

- 1. Remove the 6 pcs screw using Phillips screwdriver. (Figure A)
- 2. Remove motor cover. (Figure B)

8.2 Rear roller removal

- 1. Turn off power and disconnect the cord from the machine
- 2. Remove one of the end caps using a Phillips screwdriver (Figure A)
- 3. Remove both roller adjustment screws using an 8mm Allen wrench (Figure B and C)
- 4. Remove roller from running belt (Figure D)

8.3 Side rail removal

- 1. Remove the end cap as outlined in section 8.2
- 2. Remove the reinforce tube two screw using a 4mm Allen wrench (Figure A)
- 3. Slide the rail off the back of the treadmill (Figure B)

8.4 Deck removal / Replacement

- 1. Remove the front shroud as outlined in section 8.1
- 2. Remove four deck screws using a 5mm Allen wrench (Figure A)
- 3. Remove deck from the running belt (Figure B)
- 4. Be careful not to pinch fingers during removal/installation of deck board
- 5. *New deck surfaces must ALWAYS be matched to a new running belt*

8.5 Deck cushion replacement

Figure B

- 1. Remove the deck as outlined in section 8.3
- Holding the bolt with 5mm Allen wrench, loosen the nut with 13mm socket (Figure A and B)
- 3. For the rear cushion, hold the cushion and remove the 13mm nut (Figure C)

8.6 Front roller removal

- 1. Remove shrouds as outlined in section 8.1
- 2. Using a hook or loop of wire, (Figure A) remove the spring from the belt tensioner. The tensioner will now pivot away from the drive belt
- 3. Remove the front roller mounting screws using 8mm Allen (Figure B and C)
- 4. Remove the drive belt from the front roller and remove the roller from the running belt (Figure D)

8.7 Running belt replacement

- 1. Remove shrouds as outlined in section 8.1
- 2. Remove rear roller as outlined in section 8.2
- 3. Remove front roller as outlined in section 8.5
- 4. Remove deck as outlined in section 8.4
- 5. Remove the running belt and replace with new belt (Figure A and B)
- 6. *New running belts must ALWAYS be installed to a new deck surface*

8.8 Motor control board (MCB) removal

- 1. Remove shroud as outlined in section 8.1
- 2. Cut any wire ties that are secured to the MCB panel (Figure A)
- 3. Disconnect wires from the MCB seven connections total (Figure B)
- 4. Remove four MCB mounting screws using Phillips head screwdriver (Figure C)

8.9 Motor removal

- 1. Remove the front shroud as outlined in section 8.1
- 2. Release drive belt tensioner as described in section 8.5
- 3. Disconnect the motor power cable from the motor control board (Figure A)
- 4. Using the 4mm Allen wrench the ground wire from the motor set (Figure B)
- 5. Using the 8mm Allen wrench, remove 4 motor mounting screws (Figure C)
- 5. Lift the motor away from the treadmill (Figure D)
- 6. When reinstalling the motor, make sure the red vibration pad is in place.

8.10 Drive belt removal

- 1. Remove plastic shroud from machine as outlined in section 8.1
- 2. Release belt tensioner from drive belt as outlined in section 8.5
- 3. Remove the front roller screw on the drive belt side, and loosen the screw on the opposite side (Figure A)
- 4. Lift roller and remove old drive belt.
- 5. After installing new belt, check it for correct alignment to the motor pulley before setting tensioner in place

8.11 Incline motor removal / Replacement

 Figure C

- 1. Lift the treadmill and support it so that the wheels are off the floor, or the unit may be tipped onto it's side (Figure A)
- 2. Remove the clip from the pin attaching motor shaft to the rack (Figure B and C)
- 3. Disconnect the incline motor power cable from the motor control board (Figure D)
- 4. Disconnect the bolt from the incline motor (Figure E)
- 5. Lift the incline motor away from the treadmill (Figure F)
- 6. When installing the incline motor, make sure to replace the white washers at the top and bottom (Figure G)

8.12 PCB set removal / replacement

- 1. Remove the four screws from underneath the console. There are arrows stamped in the plastic at the proper openings (Figure A)
- 2. Disconnect the wires from the PCB. (Figure B and C)

8.13 Quick key set removal / replacement

- 1. Remove the quick key set two screws using 2mm Allen (Figure A)
- 2. Disconnect the wires from the quick key set (Figure B)

8.14 Handlebar removal / replacement

- 1. Remove quick key set from machine as outlined in section 8.12
- 2. Remove bottom cover from handlebar below using screwdriver (Figure A)
- 3. Remove handlebar from the frame (Figure B and C)

8.15 PCB software installation SOP

- A. Service Tools & Accessories:
- 1. MSP-FET430 (Please refer the bulletin NB-0506002)
- 2. Parts NO: 010688-00
- 3. Software

Please refer the above photo to set the parameter.

Press the File Name Find out the software version file in the computer and then actuate/open the file.

Install the MSP430 Tools

Press the Load Image, Installation software to MSP430 Tools.

Installing the MSP430 cable to console.

1. Press the MSP430 "START" key, the "MODE" light will to glitter about 10 sec, If installing pass, the OK LET light.

2. Drive the machine to provide power for console and then enter into the engineering mode to confirm if the software had been installed/upgraded