

KEYS FITNESS SERVICE MANUAL



KeysFitness®

TREADMILL

Rev. B- 12/04

DISCLAIMER

CAUTION: AC LINE AND HIGH DC VOLTAGES ARE PRESENT INSIDE THE TREADMILL

QUALIFIED PERSONNEL ONLY!

1. CONNECT TREADMILL TO AC LINE.
2. LOCATE FRONT OF CONTROLLER. THERE IS A RED LAMP (LED) NEAR THE TOP/CENTER OF POWER CONTROL BOARD IT SHOULD BE LIT IF AC POWER IS PRESENT. TO CONFIRM AC OUT-LET IS OK, PLUG IN LAMP OR OTHER ELECTRICAL ITEM.
3. IF AC LINE POWER IS CONFIRMED OK AND RED LED IS STILL OFF, CHECK CIRCUIT BREAKER TO SEE IF IT NEEDS TO BE RESET AND CHECK FUSES (F1) ON MOTOR CONTROLLER.
4. IF AC POWER IS OK AND THE CIRCUIT BREAKER IS OK, AND STILL RED LED IS OFF, CONTROLLER IS DEFECTIVE.
5. WITH AC POWER AND RED LED ON, LOCATE GREEN LED NEAR TRANSFORMERS ON CONTROLLER. WHILE SLOWLY TURNING THE FLYWHEEL, THE LED SHOULD TURN ON AND OFF RAPIDLY. IF IT DOES NOT, OPTO SWITCH, WIRING, FAN OR CONTROLLER MAY BE DEFECTIVE. CHECK IF FAN "TEETH" ARE SUFFICIENTLY ENGAGE IN THE GAP OF THE OPTO SWITCH, THAT OPTO SWITCH CONNECTOR ON THE MOTOR IS PROPERLY SEATED (PINS ON OPTO SWITCH ARE EASILY BENT OUT OF PLACE) AND THAT THE WHITE CONNECTOR IS SEATED CORRECTLY AT THE CONTROLLER. IF THE GREEN LED STILL DOES NOT WORK, CONTROLLER OR OPTO SWITCH IS DEFECTIVE.
6. WITH AC POWER CONNECTED, RED AND GREEN LED CHECKED OK, PRESS THE POWER BUTTON. THERE ARE A TOTAL OF 6 LED's ON THE CONTROLLER. LOCATE THE GREEN ONE LABELED ESR. PRESS START. 4 SECONDS AFTER PRESSING THE START BUTTON, THE GREEN LED SHOULD START TO FLASH RAPIDLY AND THE BELT WILL BEGIN TO MOVE. IF THE LED DOES NOT START TO FLASH, THE CONTROLLER WIRING HARNESS OR CONTROL PANEL MAY BE DEFECTIVE. IF THE LED FLASHES WITH NO BELT MOVEMENT, THE CONTROLLER IS DEFECTIVE OR THE MOTOR FUSE (F2) IS BLOWN.

WARNING

BEFORE ATTEMPTING TO CHANGE A FUSE, DISCONNECT AC LINE CORD. ALSO THE LARGE BLACK CYLINDER (ELECTROLYTIC CAPACITOR) BESIDE THE FUSE HOLDER HOLDS A CHARGE IN EXCESS OF 160 VOLTS, EVEN WHEN POWER IS DISCONNECTED.

A BLOWN LINE FUSE IS THE MOST COMMON FAULT. USING A WOODEN PENCIL, GENTLY PRY LOOSE THE FUSE AND REMOVE. IF FUSE IS A GLASS TYPE, THE ELEMENT CAN BE VISUALLY CHECKED. IF BLOWN REPLACE FUSE WITH "BUSS" TYPE 250V 15 AMPS AVAILABLE AT ELECTRICAL SUPPLY OUTLETS. IF BOTH FUSES ARE OK AND BELT STILL DOES NOT MOVE THE CONTROLLER IS DEFECTIVE.

CHECK DRIVE MOTOR WITH 12 VOLT DC BATTERY. IF MOTOR IS GOOD (RUNS), REPLACE MOTOR CONTROLLER BOARD. IF MOTOR DOES NOT RUN, REPLACE DRIVE MOTOR.

POWER SOURCE INFORMATION

HOW TO PLUG IN THE POWER CORD

DANGER

IMPROPER CONNECTION OF THE EQUIPMENT GROUNDING CONNECTOR CAN RESULT IN A RISK OF AN ELECTRICAL SHOCK. CHECK WITH A QUALIFIED ELECTRICIAN OR SERVICE MAN IF YOU ARE 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 ELECTRICIAN.

THIS TREADMILL CAN BE SERIOUSLY DAMAGED BY SUDDEN VOLTAGE CHANGES IN YOUR HOMES' ELECTRICAL POWER. VOLTAGE SPIKES, SURGES AND NOISE INTERFERENCE CAN RESULT FROM WEATHER CONDITIONS OR FROM OTHER APPLIANCES BEING TURNED ON OR OFF. TO REDUCE THE POSSIBILITY OF YOUR TREADMILL BEING DAMAGED, ALWAYS USE A SURGE PROTECTOR (NOT INCLUDED) WITH YOUR TREADMILL.

SURGE PROTECTORS CAN BE PURCHASED AT MOST HARDWARE STORES AND DEPARTMENT STORES. USE ONLY A UL LISTED SURGE PROTECTOR, RATED AT 15 AMPS, WITH A 14-GAUGE CORD OF FIVE FEET OR LESS IN LENGTH. THIS TREADMILL MUST BE GROUNDED TO REDUCE THE RISK OF ELECTRICAL SHOCK. GROUNDING PROVIDES A PATH OF LEAST RESISTANCE FOR ELECTRIC CURRENT SHOULD THE TREADMILL MALFUNCTION. THIS PRODUCT IS PROVIDED WITH A CORD HAVING AN EQUIPMENT-GROUNDING CONDUCTOR AND A GROUNDING PLUG. ALWAYS PLUG THE POWER CORD INTO A SURGE-PROTECTOR, AND PLUG THE SURGE PROTECTOR INTO AN APPROPRIATE OUTLET THAT IS PROPERLY INSTALLED AND GROUNDED IN ACCORDANCE WITH ALL LOCAL CODES AND ORDINANCES.

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Notes:

MODEL NUMBERS

Before working on any KEYS or IRONMAN treadmill, determine the model number of the treadmill you are servicing.

To determine what model of treadmill you are servicing, look at the sticker on the front of the treadmill frame next to the reset button.

On some models, the serial number tag may be located on the back side of console assembly.



Serial Number Tag

TROUBLE SHOOTING

CONDITION

SOLUTION

1. Treadmill will not start

A. Make sure the power cord is plugged into a surge protector and that the surge protector is plugged into a properly grounded outlet. Only use a UL-listed surge protector, rated at 15 amps, with a 14-gauge cord of five feet or less in length.

B. Check the Safety Key to make sure it is properly installed.

C. Check the circuit breaker located on front of the treadmill. If the switch protrudes, it has tripped. Wait five minutes then press the switch back in.

D. Check the house circuit breaker to make sure it has not tripped and reset or replace.

E. Recalibrate the treadmill.

F. Have a qualified electrician check for inadequate voltage at the outlet.

2. During use of the treadmill power turns off.

A. Check the circuit breaker located in front of the treadmill. If the switch protrudes, it has tripped. Wait five minutes and then press the switch back in.

B. Make sure the power cord is plugged in.

C. Remove the Safety Key from the console and re-attach to console.

D. Recalibrate treadmill.

E. If the treadmill still won't operate, please call our toll-free HELPLINE.

3. The walking belt slows during use.

A. Check to make sure you are using a UL-listed surge protector rated at 15 amps, with a 14-GAUGE cord of five feet or less.

B. Check walking belt lubrication.

C. Re-calibrate treadmill.

D. If walking belt still slows down during use, please call our toll-free HELPLINE.

4. The walking belt does not run in the center of roller

A. Adjust rear roller.

5. The walking belt slips or hesitates during use.

A. Adjust rear roller.

6. Knocking noise from the front of treadmill.

A. Check fan

1. Is fan hitting optical encoder?

2. Is fan hitting flywheel?

B. Disconnect v-belt to determine if noise is from motor or front roller.

7. Knocking noise from back of treadmill

A. Check rear roller.

B. Check elevation wheels on fold up models.

8. Squeaking noise while treadmill is being walked on

A. Make sure belt is not rubbing motor hood or side extrusions.

B. Check side extrusion.

C. Check deck bolts.

D. Make sure motor tension spring is not loose.

9. Scraping noise

A. Make sure belt is not rubbing motor hood or side extrusion.

B. Check pulley on front roller.

C. Check motor for bearing problems.

10. Ticking sound from front of treadmill

A. Check fan on motor.

B. Check torsion springs on uprights.

C. Check bearing on front roller.

11. Vibrating feelings

A. Check front roller.

B. Check alignment of flywheel to front roller & poly V-belt.

ERROR MESSAGES

Error messages appear in incline window. To avoid possible damage to the treadmill it should not be operated until the problem is corrected.

E 8.2

Belt will not move.

- A. Re-calibrate.
- B. If re- calibrate does not work replace console.

E 11

The walking belt is moving at a slower speed than displayed in the speed window.
Indicates a condition of locked rotor.

OR

E 22

Indicates excessive stress on the motor controller under speed condition.

Remove safety key and check walking belt lubrication.

If the belt moves for only 12 seconds after start button is pressed.

- A. Check the SF/B LED flashes while rotating the flywheel, check the connections on the controller and control panel Power Control Board.
- B. Check that fan is securely attached to the motor shaft (tighten if necessary).
- C. If the LED does not flash, check the connections, and replace the optical encoder on the brush end of the belt motor.

NO BELT MOVEMENT

- A. Check fan to see if broken (replace if broken) and if fan is close enough to Optical Encoder without touching.
- B. Check to see if Optical Encoder wire is loose on the motor controller side.
- C. Check to see if motor lead wire (red & black) are loose.

- D. Check to see if wiring harness wires are pinched or frayed.
- E. Re-calibrate.
- F. If re-calibration does not work treadmill has a bad motor controller or DC motor drive.

E 33

The walking belt is moving at a faster speed than displayed in the speed window

- A. Re-calibrate.
- B. Adjust Comp button counter-clockwise gently until it stops. Recalibrate the unit.
- C. If re-calibration does not work replace optical encoder (speed sensor) at drive motor near fan.

E 44

Stuck key detected at power up.

- A. Verify the membrane switches are not stuck or damaged.
- B. Remove overlay and verify proper operation of all buttons.

E 55

Will be displayed if the electronics loses calibration.

- A. Re-calibrate.

SAFETY INTERLOCK ERROR

SI1

Indicates the Safety Key is not attached to the treadmill & belt will not move.

- A. Turn off POWER and pull safety key.
- B. Reattach safety key and turn on power.
- C. If above doesn't work, check magnet on safety key.
- D. Make sure metal slug is underneath "emergency stop" sticker.
- E. All of above fail, try re-calibration.
If recalibration does not work, replace console.

SI2

Indicates the OVP circuit on the controller is active and belt will not move.

- A. Check RLY2 (green) bulb on motor controller. Light should be green when power is on. If bulb is off, check wiring harness.
- B. Check optical disk on actuator.
- C. Check leads on motor controller.
- D. Check wires on actuator.
- E. Check incline reference lights on motor controller.
- F. Check fuses on motor controller.

SI3

Indicates that power up sequence was initiated with the treadmill in the upright folded position.

- A. Fold down the treadmill to normal operating position (treadmill should be folded down to the floor), try again.
- B. If message persists, replace motor controller board, re-calibrate machine and check.
- C. On 20" Folds, check sensor on right side of front roller for proper alignment.

OLD MOTOR CONTROLLER BOARD

1. The OUT LED indicates if there is DC voltage available at the armature of the motor. If this LED is lit but the motor is not moving, check connections to the motor at the controller and at the motor.
2. The POWER LED indicates AC line voltage at the secondary of the transformer.
3. This fuse is for the AC line going to the motor controller. If there is no movement of the motor, check and replace as necessary.
4. This fuse is for the DC line going to the motor. If there is no movement of the motor, check and replace as necessary.
5. IR COMP and MAX are the IR Compensation and Max Speed potentiometer respectively. IR COMP adjusts the sensitivity of the control to response in dynamic loading conditions and Max Speed adjusts sensitivity of the control to the ESR signal. These two adjustments interact with each other; therefore, setting them correctly is a matter of patience.
6. Set the IR COMP pot so that there is reasonably good torque at low speeds with no surging and the Max pot so that the machine, in calibration, finishes at 10 mph (16 kph) at 60-75% duty cycle (ESR). ESR duty cycle is shown in the incline window during speed calibration, and summary speed information is shown in the window at the conclusion of the calibration.

MOTOR CONTROLLER LED DESCRIPTION KEY

1. RLY1, Yellow = Cap Fill Relay

On at Power Up on 08-0050 and 220VAC motor controls, off after 10 seconds.

2. RLY2, Green = Main AC Relay

On 10 seconds after power switch is activated.

3. RAIL, Red = DC Bus Rail

DC power to motor supply.

If M/C is 08-0051, RAIL LED will be on when unit is plugged in (AC applied).

If M/C is 08-0050, RAIL LED will be on unit is plugged in and Power key activated, after RLY1 initiates RLY1/ RLY2 relay sequence procedure.

4. ESR, Green = External Speed Reference Signal.

Initiates belt movement; this is the signal from the display to the motor control telling the motor control how fast to drive the motor.

If ESR LED is blinking and the RAIL and RLY2 is on, unit should have belt movement.

Note: If ESR LED is not on and unit has E11 or E22, check the '16 harness by removing and re-plugging at both the M/C and the display. The belt is not going to move unless this ESR light becomes active after the four second display count down.

5. LVS, Yellow = Low Voltage Supply.

LED will be on when unit is connected to AC.

6. INC+, Yellow = Extend mode for actuator (tube is moving away from body of actuator).

LED is on when drive signal for extend is present.

7. INC-, Red = Retract mode for actuator (tube is moving toward body of actuator).

LED is on when drive signal for retract is present.

8. SF/B, Green = Speed Feedback.

Blinks in conjunction with fan teeth moving through sensor body

No SF/B LED will produce an E11 or E22 condition.

If SF/B LED will blink when flywheel is rotated-

Motor Encoder is OK and signal to M/C is OK- check '16 harness by removing and re-plugging at both the M/C and the display. Check Fan and Bolt if loose.

If SF/B LED is not blinking then Motor Encoder is defective.

SF/B LED

The SF/B LED indicates if the motor encoder is operating correctly.

To check operation, with the treadmill plugged in but not powered up, slowly rotate the motor by hand by pushing the flywheel. The SF/B indicator should flash corresponding to the "teeth" on the plastic fan hub.

CONDITION

1. The SF/B LED indicator does not flash in above test.

SOLUTION

A. Check alignment of fan teeth and adjust accordingly.

B. There is a possibility the encoder may need to be replaced.

2. The SF/B indicator does flash or come on, but there are frequent E22 or E11 messages and during speed calibration the Distance window does not increase above zero and will not calibrate.

A. Replace Encoder.

LVS LED

The LVS LED indicates that the supply to the display panel is operating correctly.

CONDITION

1. The display panel will not power up. Possible problem is the transformer of electronic capacitor adjacent to the LED has broken free from the PCB.

SOLUTION

A. Replace M/C.

ESR LED

The ESR LED indicates if the motor control is receiving a speed reference signal from the control panel.

CONDITION

1. The motor does not move but the ESR LED flashes after hitting the START/STOP, then an error message such as E11 or E22, and the ESR LED extinguishes.

SOLUTION

A. Check the fuses on the Motor Control board and the motor connections, then attempt to re-calibrate (see page 26).

B. Use an external 12VDC battery and check drive motor . If motor runs, replace M/C board.

2. The ESR LED does not begin to flash after hitting the START/STOP button, then an error message such as E11 or E22 appears.

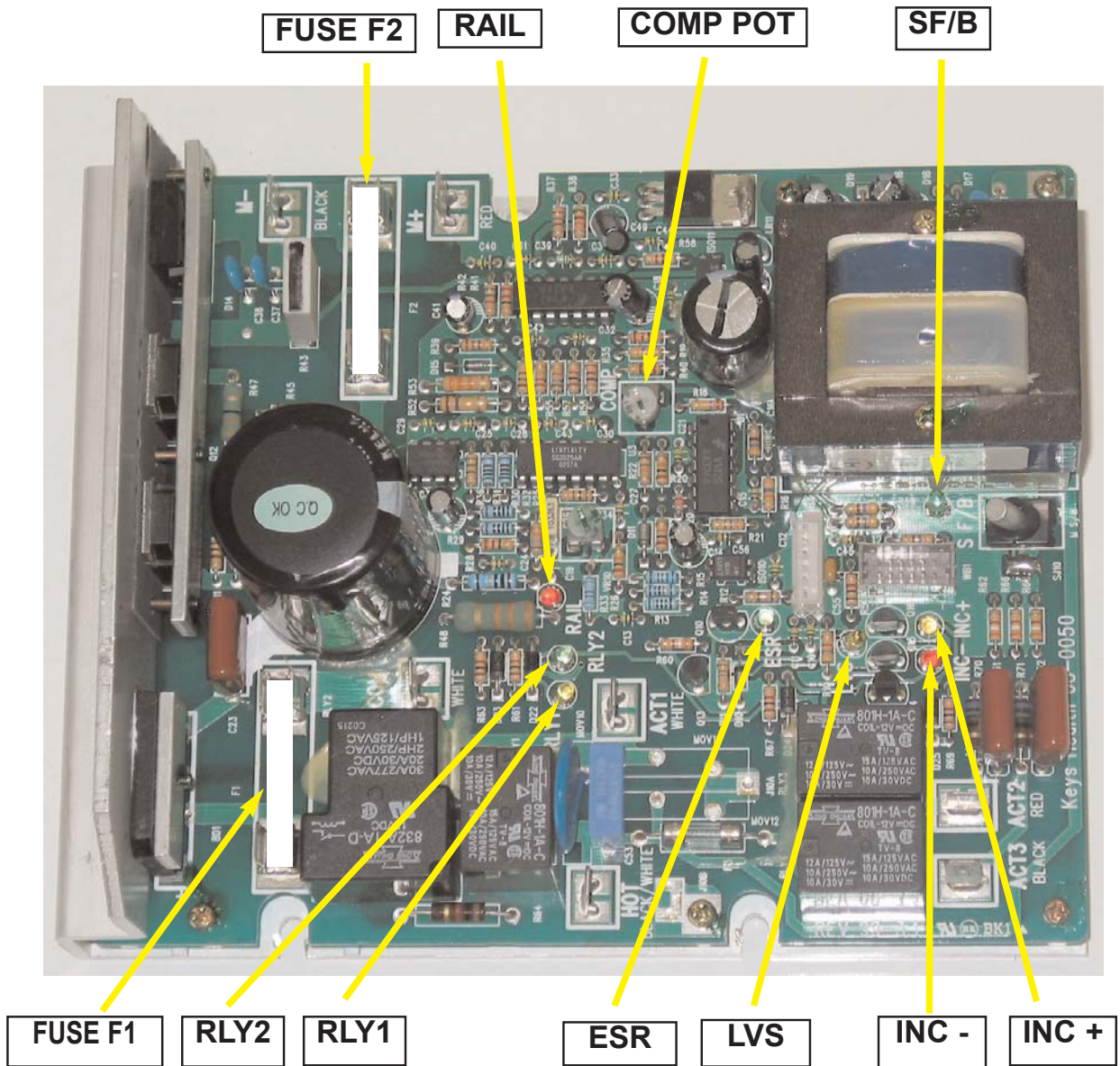
A. Check integrity of the wiring harnesses.

Motor Controller LED Troubleshooting

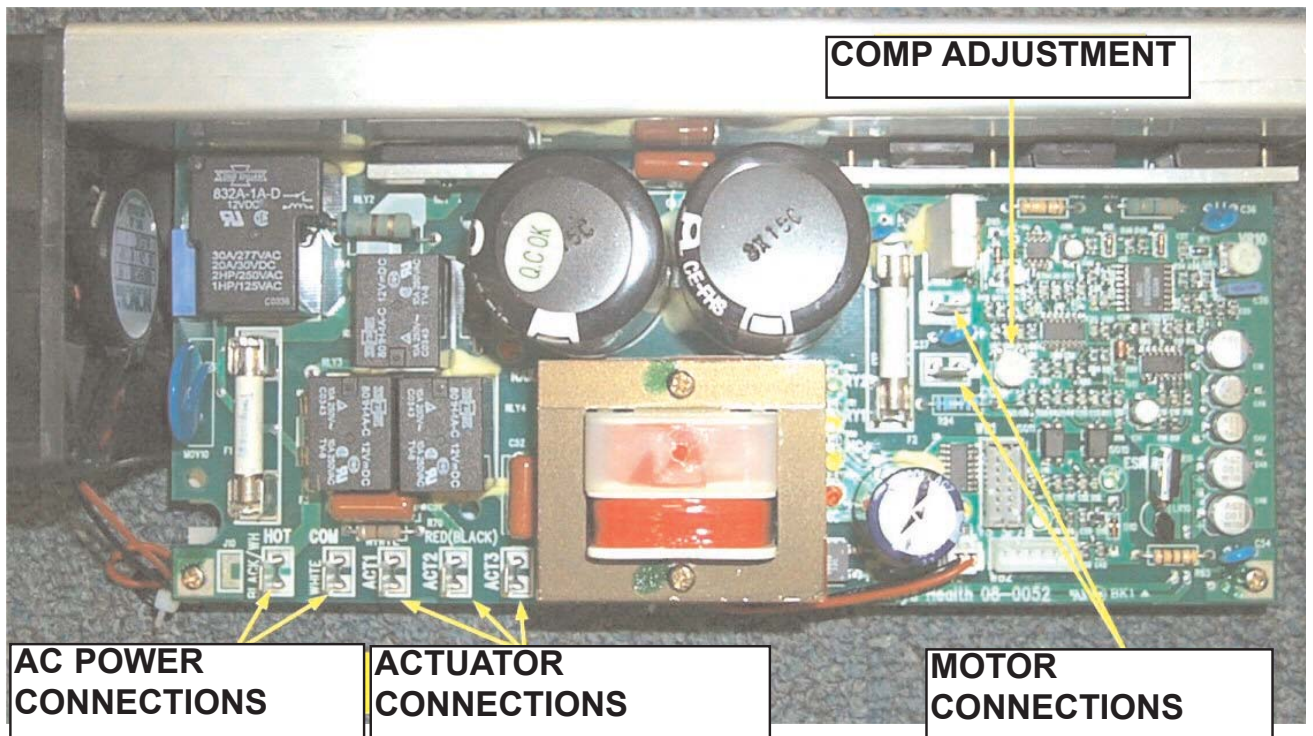
1. **LED OK, unit plugged into wall, but Power Key not activated-**
08-0051, generally LCD display type treadmill-
 - LVS
 - RAIL
 - SF/B- may be on or not and should blink when the flywheel is rotated.
08-0050, generally LED display type treadmill-
 - LVS
 - RAIL- only if the machine was calibrated or otherwise run within 5 minutes.
 - SF/B- may be on or not and should blink when the flywheel is rotated.

2. **LED OK Condition, after Power key activation, but before belt movement-**
08-0051
 - LVS
 - RAIL
 - SF/B may be on or not, and RLY2 should come on approx. 9 seconds after the Power key was activated.
08-0050
 - LVS
 - RAIL only if the machine was calibrated or otherwise power on after 10-15 seconds.
 - SF/B may be on or not
 - RLY1 and RLY2 LED's should sequence, which will activate the RAIL LED if it was not active before.

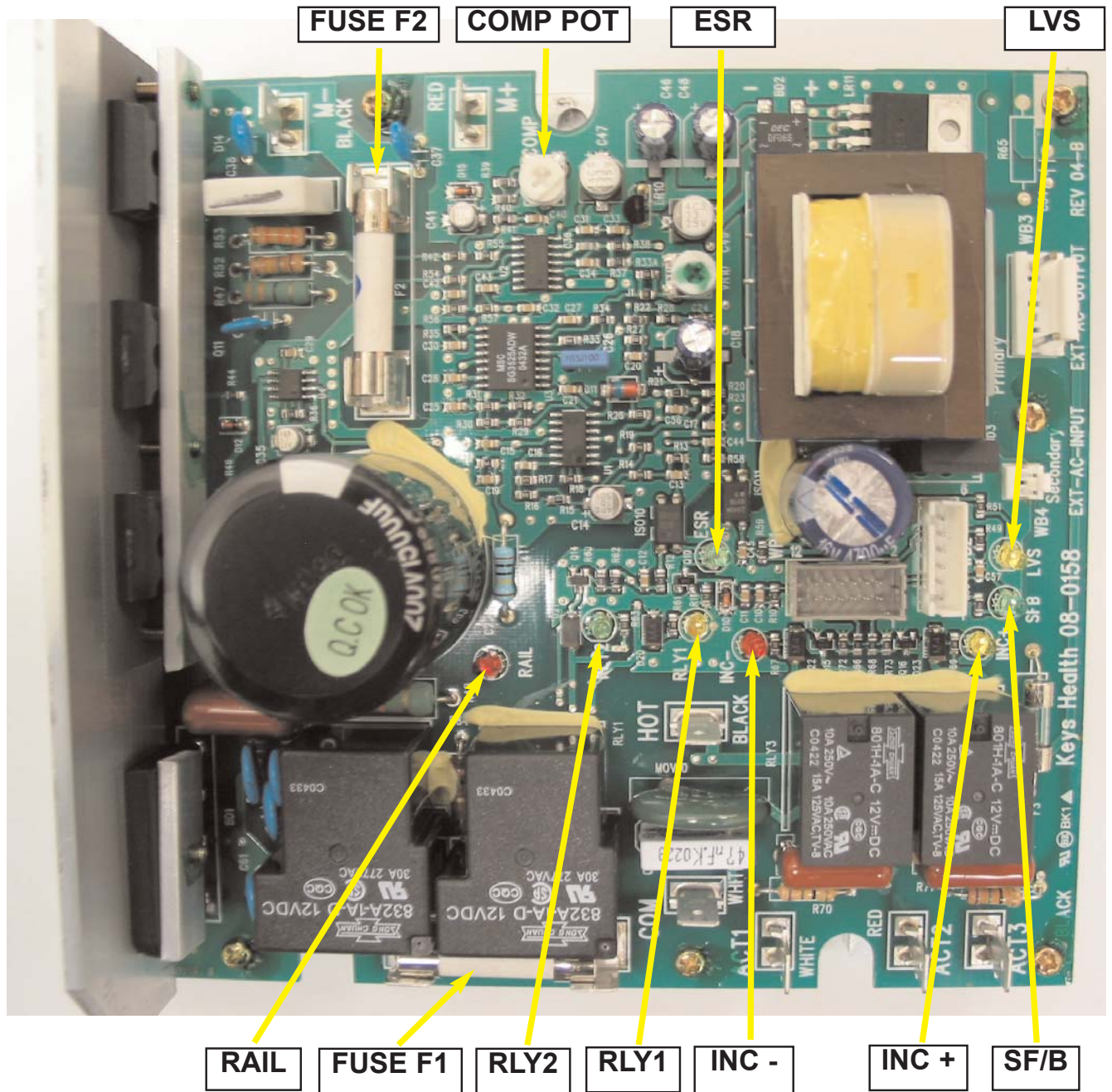
3. **LED OK Condition (After Belt Movement)**
08-0051, 08-0050
 - RLY1 ON (M/C 08-0050 only), RLY2 ON, RAIL ON, LVS ON, ESR Blinking, and SF/B ON.
 - LVS
 - RAIL
 - SF/B
 - RLY2
 - ESR- should be blinking.



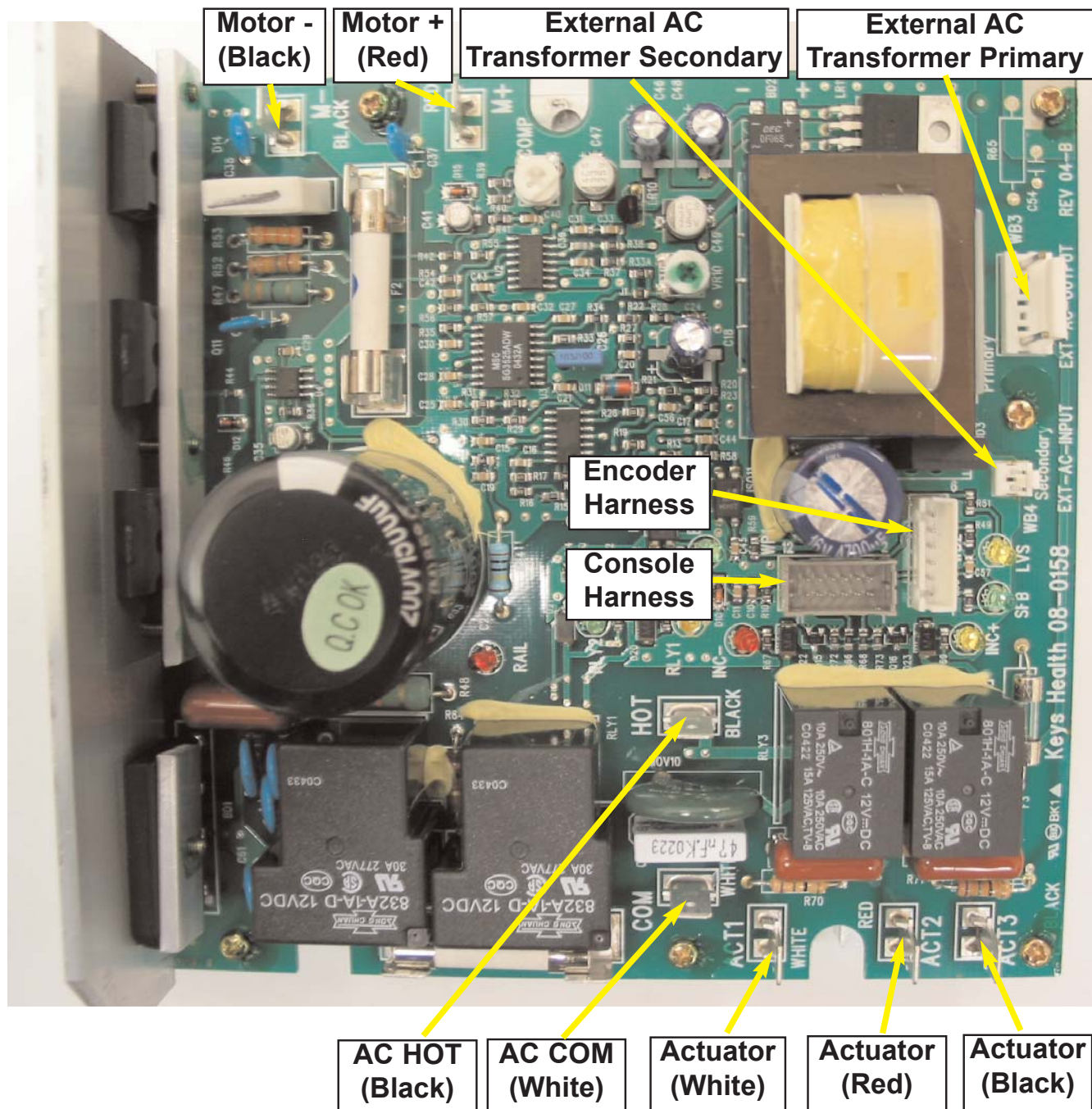
08-0050/51 M/C LED & Fuse Locations



08-0052 M/C LED & Connector Locations

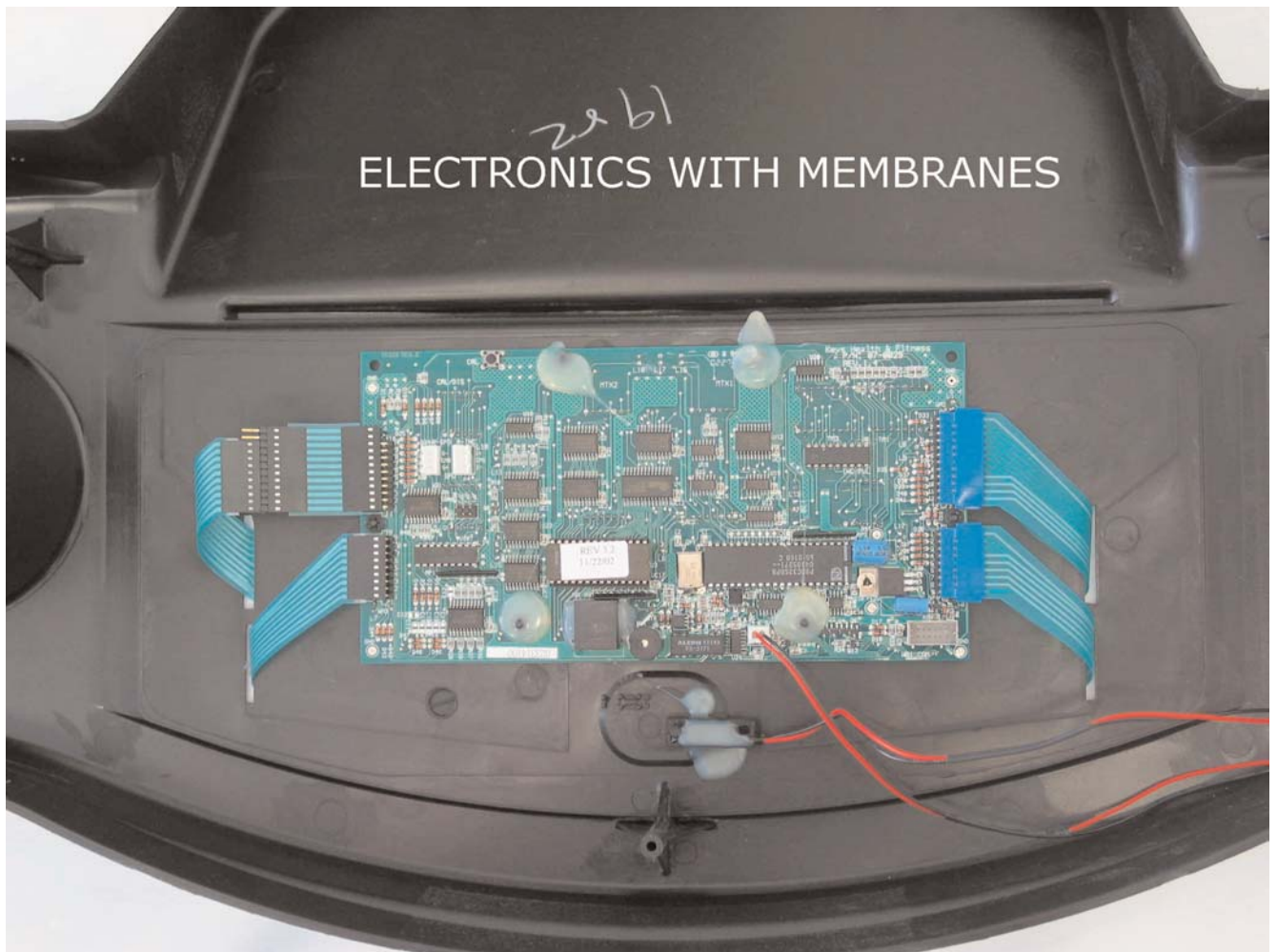


08-0158 M/C LED & Fuse Locations



08-0158 M/C Connector Locations

BLANK- FUTURE USE

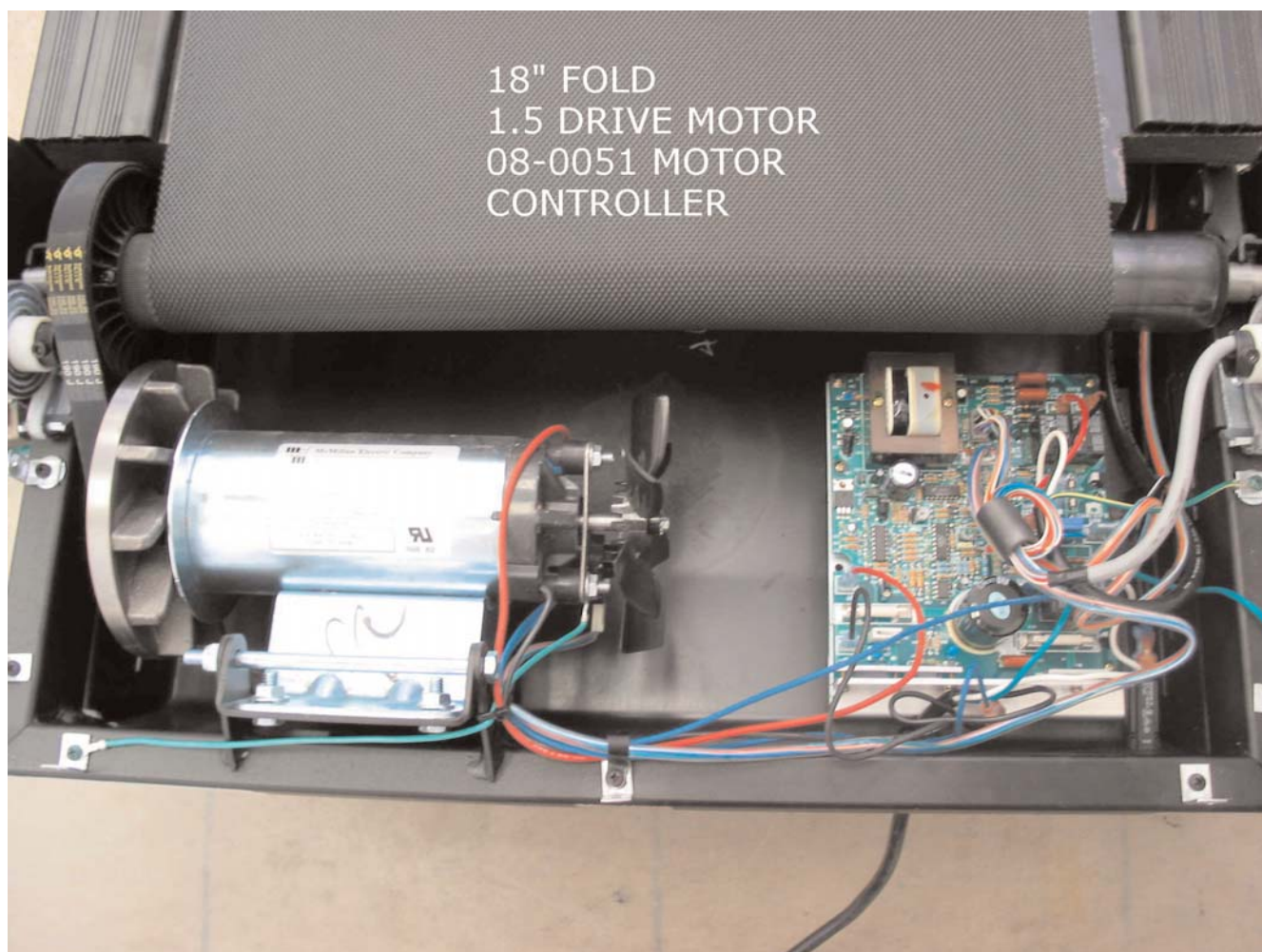


CONSOLE ELECTRONICS WITH MEMBRANES

**NO MEMBRANES
ELECTRONICS (MILESTONE 1200)**



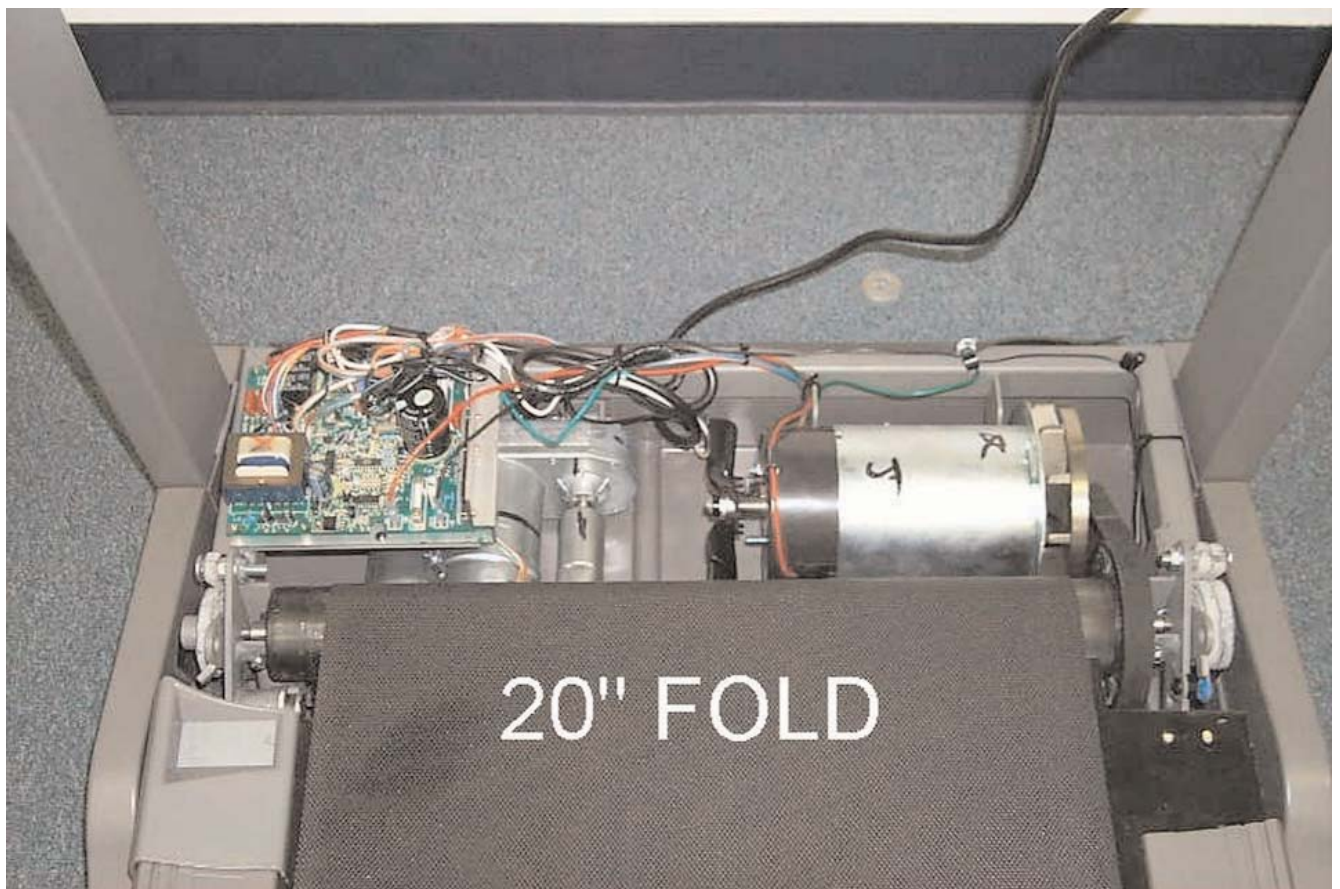
CONSOLE ELECTRONICS- NO MEMBRANES (DOME BUTTON)



18" FOLD- 1.5 HP DRIVE MOTOR, 08-0051 M/C



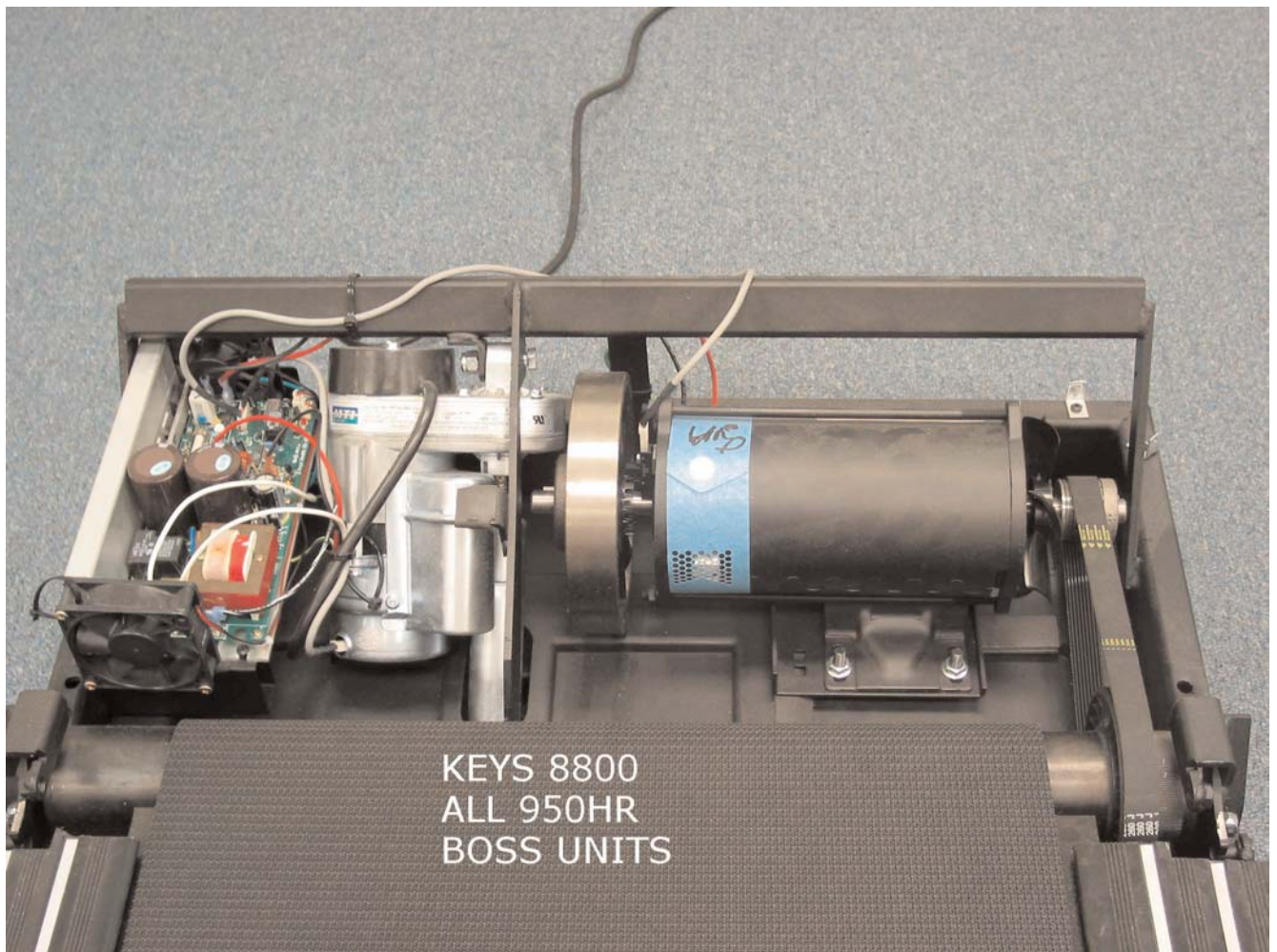
20" FOLD- SENSOR- SI3 CODE



**20" FOLD- MOTOR COVER REMOVED
(MOTOR, MOTOR CONTROLLER, ACTUATOR)**



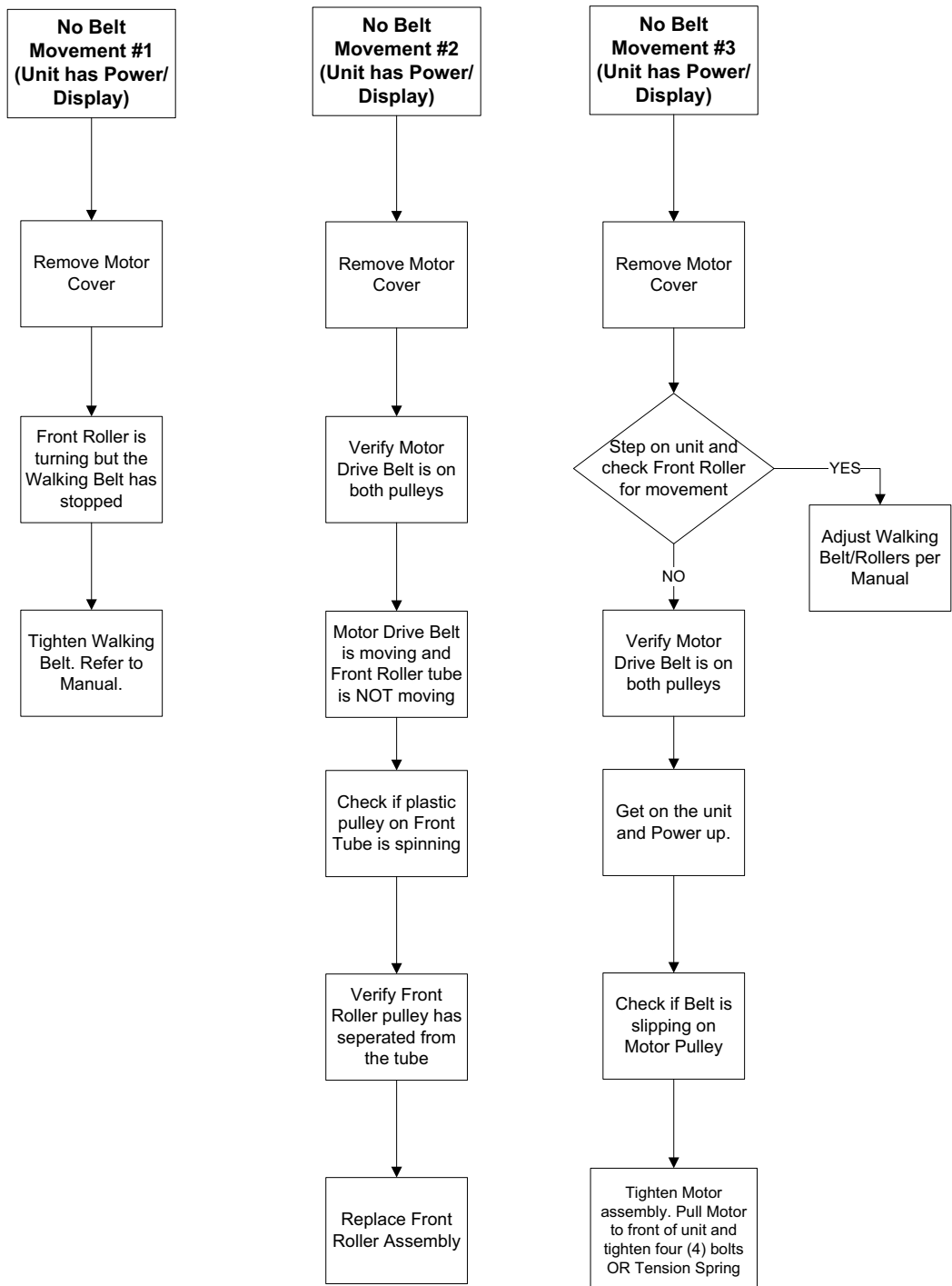
20" FOLD- SAFETY LATCH WITH MOTOR COVER REMOVED



**BOSS UNITS (KEYS 8800, ALL950HR, ALL920, ALL880,
ALL850)- MOTOR COVER REMOVED
(MOTOR, MOTOR CONTROLLER, ACTUATOR)**

Flowchart Procedures

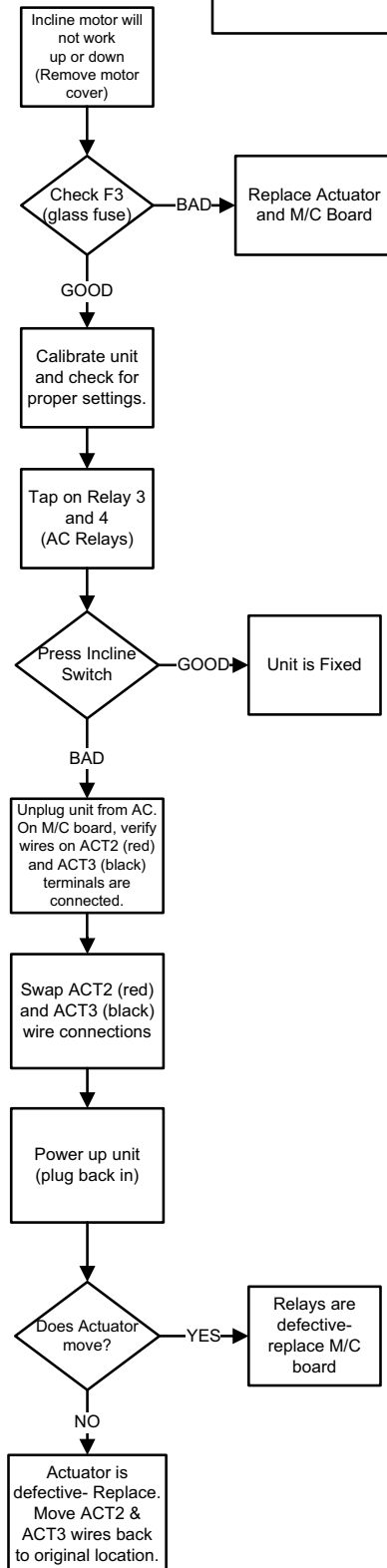
Mechanical Problems



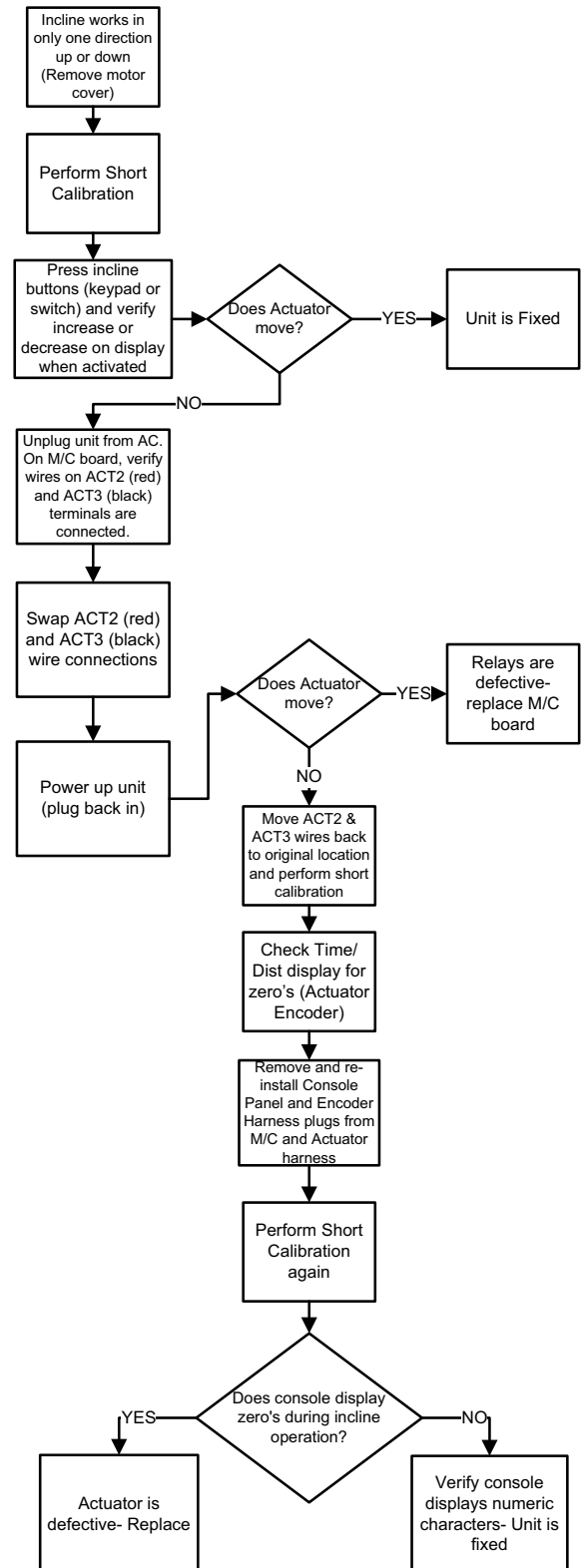
NOTE: Bolt Size= 5/16"
Wrench/Socket Size= 1/2"

Symptom #1

INCLINE PROBLEMS

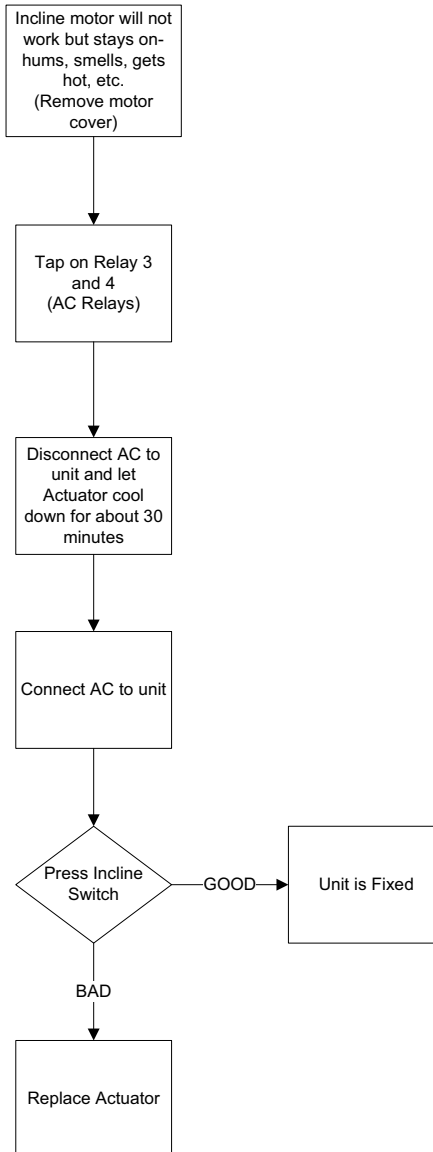


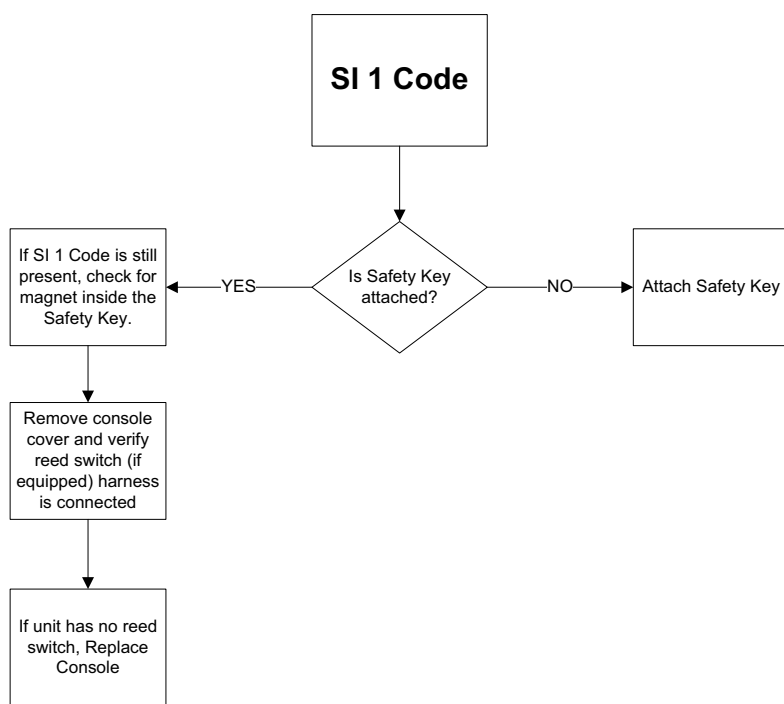
Symptom #2

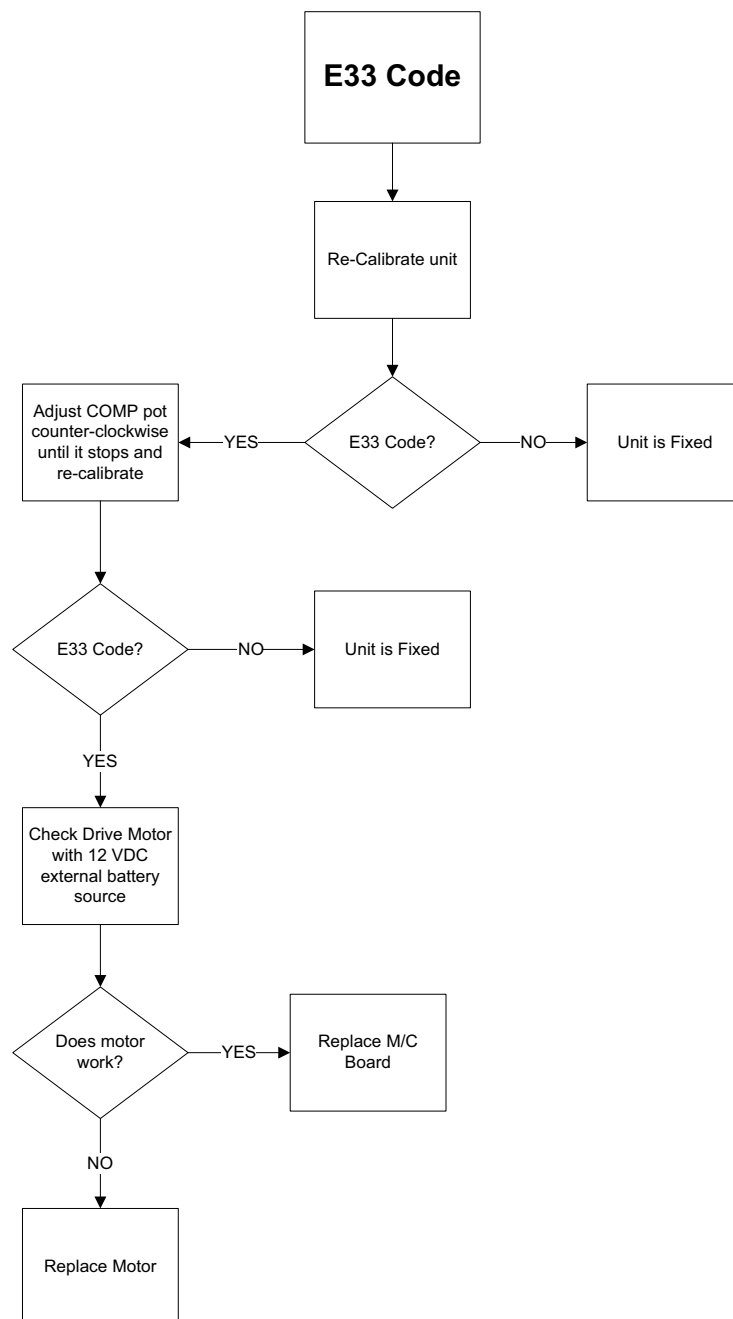


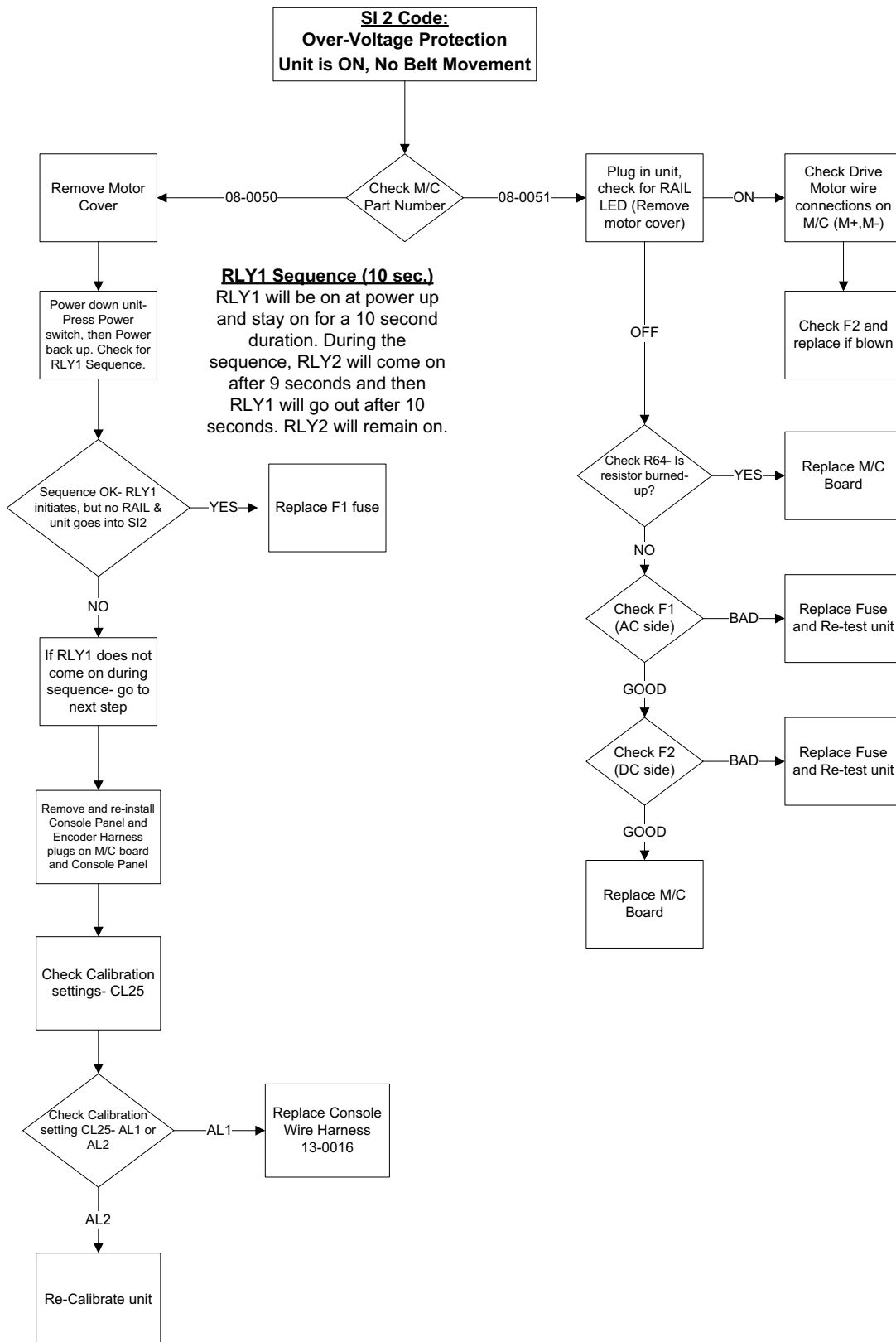
INCLINE PROBLEMS

Symptom #3







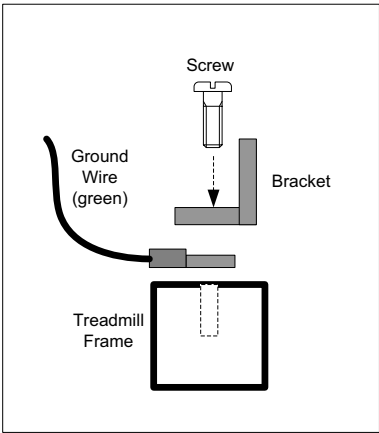


20" Fold Unit - SI 2 Code:
1. Unit shuts down randomly at some point during use.
2. Unit displays SI 2 (most common), E22, or nothing at all.

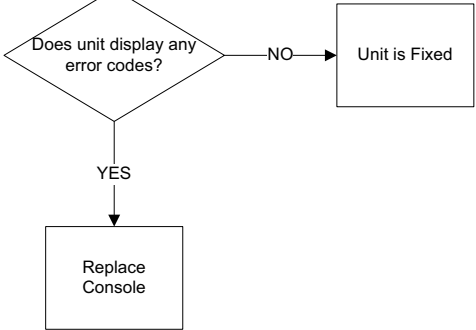
Remove Motor Cover

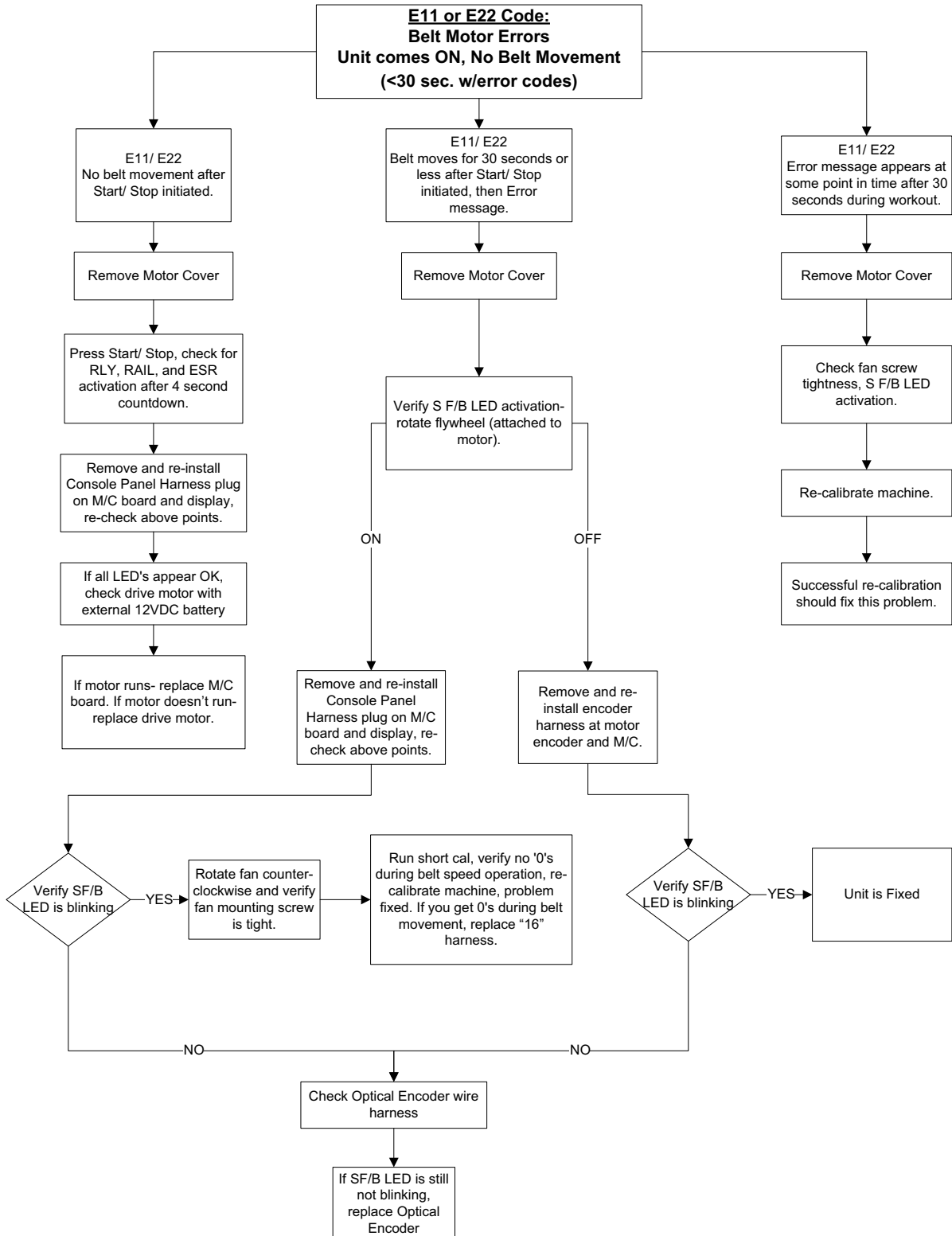
Verify AC Ground wire (Green) is properly attached to frame. See Note below.

NOTE:
1. Pull out all plastic hardware parts attached to AC Ground (green) wire.
2. Put Ground wire directly on frame without plastic hardware.
3. If Ground wire is installed on the frame with bracket ("L"), make sure Ground wire is directly installed on frame chassis.



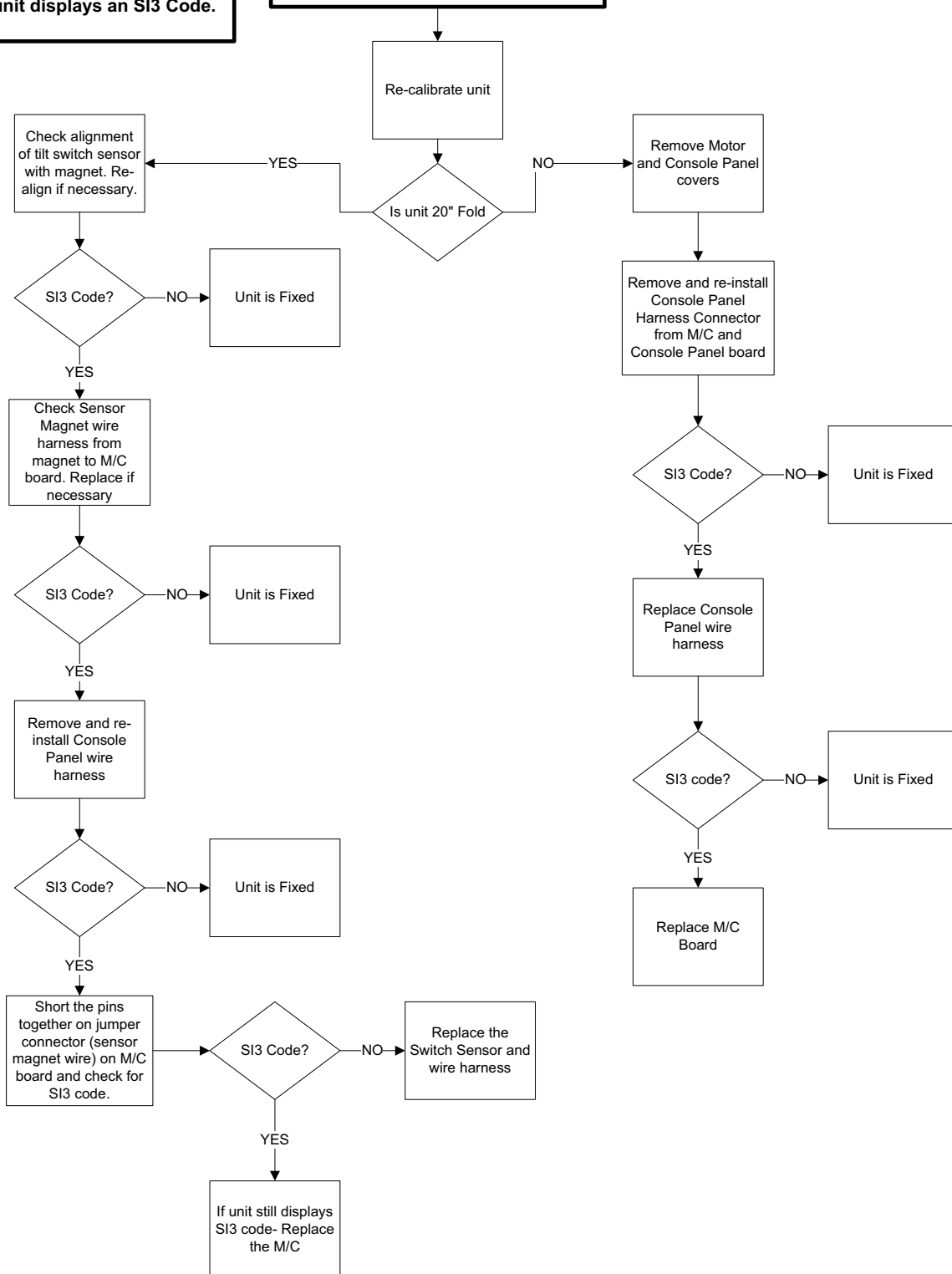
Press Power Switch

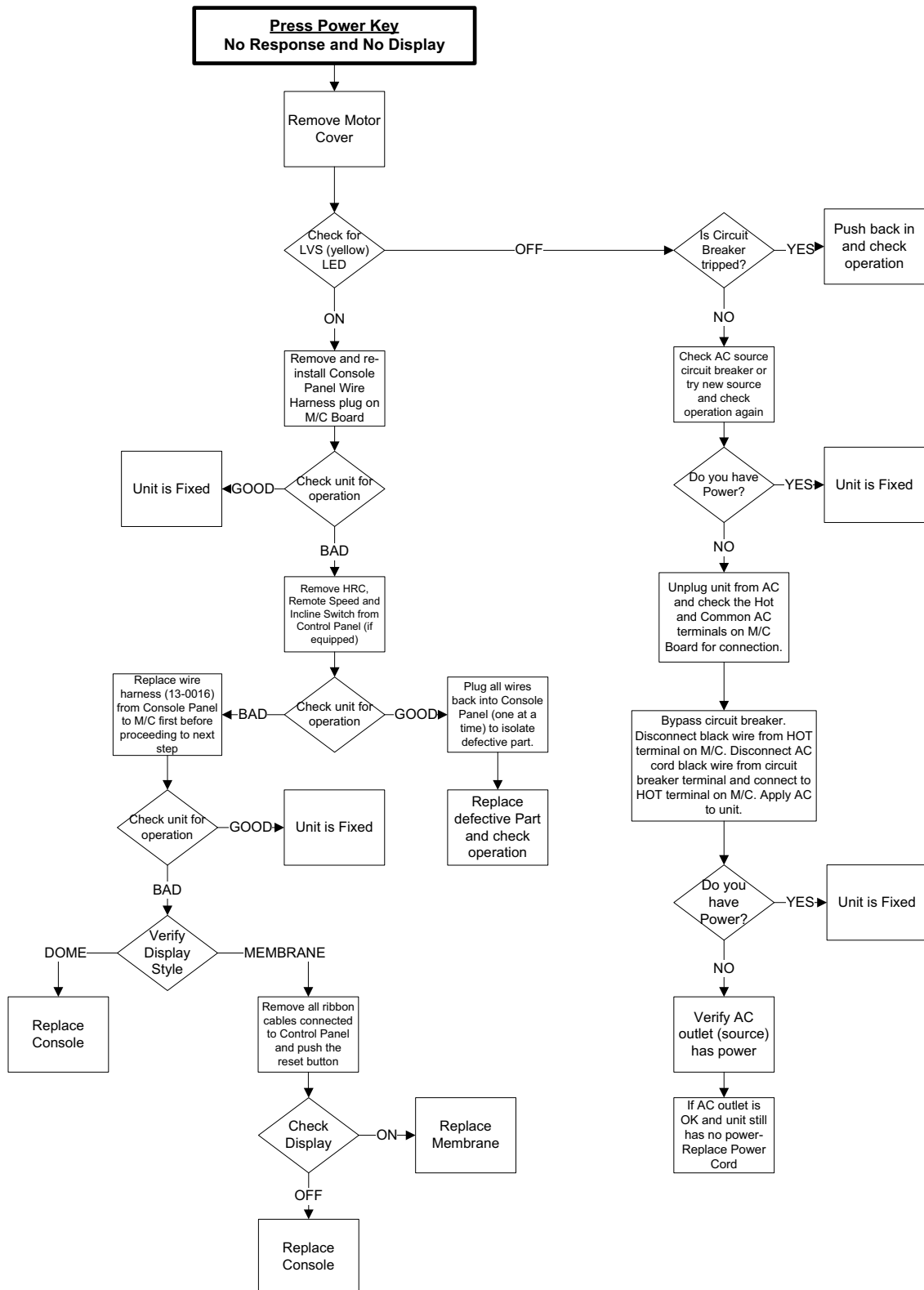




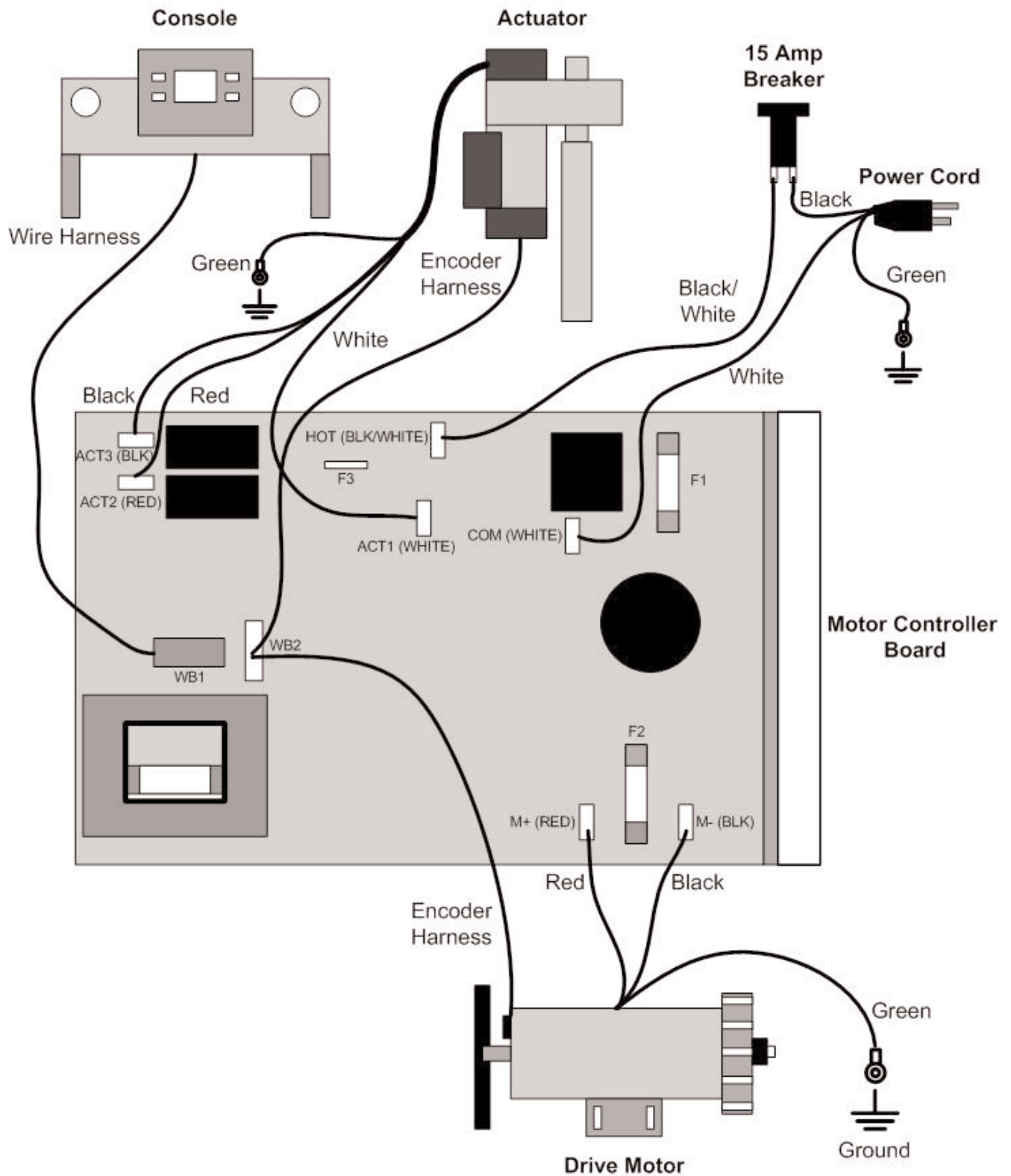
NOTE: On KEYS 8800 Treadmill with M/C Part # 08-0016, replace console when unit displays an SI3 Code.

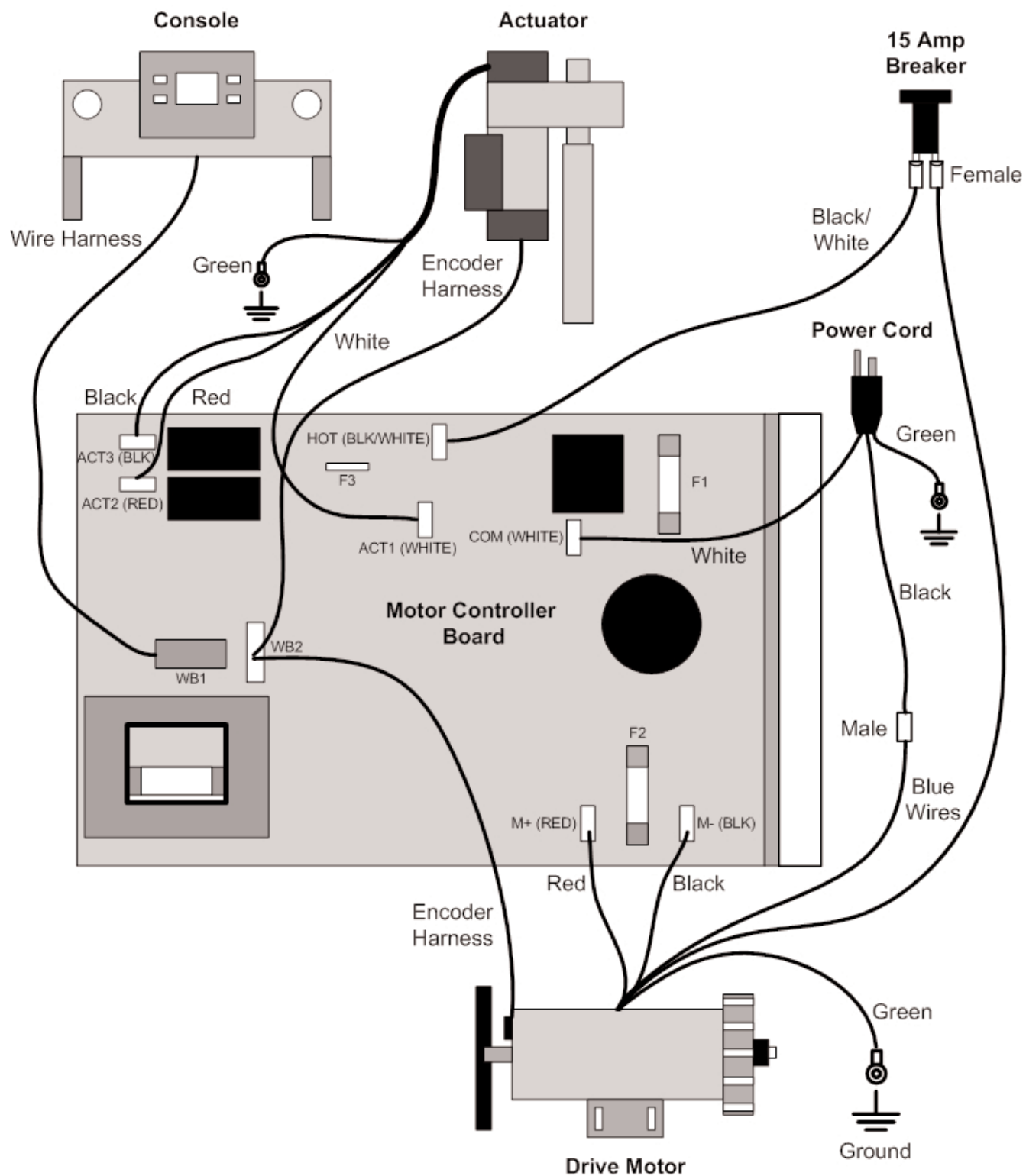
SI3 Code- Tilt Switch Trip





Schematic Diagrams





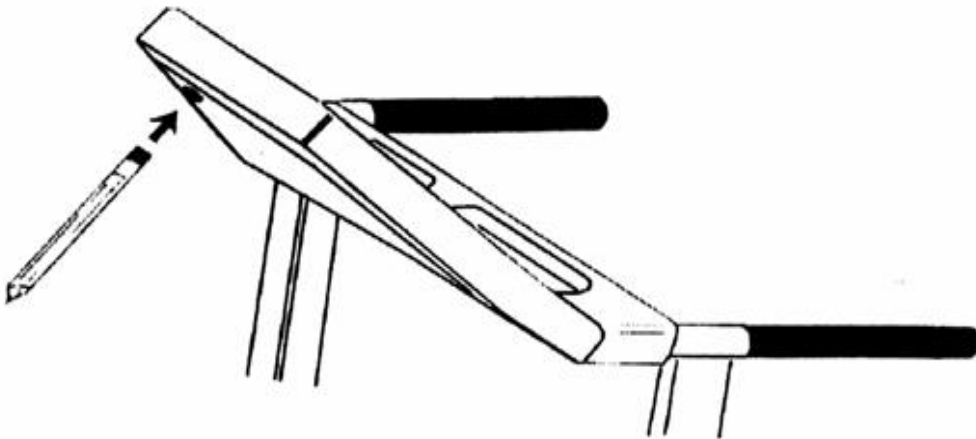
SCHEMATIC DIAGRAM W/ 12-0023 MOTOR

Calibration Procedures

Before performing the calibration, determine the Model # and if the treadmill has an OLD or NEW console display.

Have SAFETY KEY on console. PRESS the RESET button once as shown below with an eraser end of pencil.

If CL11 appears in the TIME window, the treadmill is a NEW model.
If nothing appears in the TIME window, refer to OLD calibration chart.



Calibration Button Location



Calibration New Style Console

Determine Model # and refer to CALIBRATION CHART on pages 28-31. The characters appear in the CONSOLE windows as described below during calibration.

To change any of the settings, use the SPEED +or - button.

1. Insert pencil (eraser end in the hole on back of console.
2. Press reset 2 times (with pencil) until LCD shows CL21 in the time window.
3. Press ENTER. CL22 displays in TIME window and __ mph in the SPEED window.
4. Press ENTER. CL23 displays in TIME window and __ in the SPEED window.
5. Press ENTER. CL24 displays in TIME window and __ in the SPEED window.
6. Press ENTER. CL25 displays in TIME window and __ in the SPEED window.
7. Press ENTER. CL26 displays in the TIME window and __ in the SPEED window.
8. If you get the letter "E", press ENTER.
9. Press ENTER. The time window will show SS. Push the STOP/START button.
10. Push the ENTER button and the Treadmill will start.

WARNING: Do not stand on or touch the treadmill during calibration.

11. When the treadmill belt stops, push the POWER button 2 times. If the letter "F" appears in the SPEED or INCLINE window, the treadmill is indicating a failure in the SPEED or INCLINE during calibration. Call KEYS FITNESS.

18” Fold and Conventional Treadmill Calibration

1. All 18” Fold treadmills that incline at the rear of the unit and have LCD display.

MPH - 10 - FFF - 111 - AL2 - OPA

2. All 18” Fold treadmills that incline at the rear of the unit and have LED display.

MPH - 10 - FFF - 111 - AL1 - OPA

3. All 18” Conventional treadmills with LCD display.

MPH - 10 - UUU - 222 - AL2 - OPA

4. All 18” Conventional treadmills with LED display.

MPH - 10 - UUU - 222 - AL1 - OPA

20” Fold and Conventional Treadmill Calibration

1. All 20” Fold treadmills with LCD display.

MPH - 10 - UUU - 222 - AL2 - OPA

2. All 20” Fold treadmills with LED display.

MPH - 10 - UUU - 222 - AL1 - OPA

3. All Conventional treadmills with LCD display.

MPH - 10 - UUU - 222 - AL2 - OPA

4. All Conventional treadmills with LED display.

MPH - 10 - UUU - 222 - AL1 - OPA

Boss Style Treadmill Calibration

1. All Boss treadmills with LED display.

MPH - 12 - UUU - 222 - AL1 - OPA

<u>ALL 855 OB</u>	<u>MPH-12-UUU(15)-222-AL1-OPA-BLANK</u>
<u>ALL 855 OB (220V)</u>	<u>MPH-12-UUU(15)-222-AL1-OPA-BLANK</u>
<u>ALL 888 HR OB</u>	<u>MPH-12-UUU(15)-222-AL1-OPA-BLANK</u>
<u>ALL 888 HR OB (220V)</u>	<u>MPH-12-UUU(15)-222-AL1-OPA-BLANK</u>
<u>ALL 900</u>	<u>MPH-10-UUU-222-AL1-OPA-BLANK</u>
<u>ALL 900 (220V)</u>	<u>MPH-10-UUU-222-AL1-OPA-BLANK</u>
<u>ALL 910 HR</u>	<u>MPH-10-UUU-222-AL1-OPA-BLANK</u>
<u>ALL 920 OB</u>	<u>MPH-10-UUU-222-AL1-OPA-BLANK</u>
<u>ALL 920 OB (220V)</u>	<u>MPH-10-UUU-222-AL1-OPA-BLANK</u>
<u>ALL 950 HR OB</u>	<u>MPH-12-UUU(15)-222-AL1-OPA-BLANK</u>
<u>ALL 950 HR OB (220V)</u>	<u>MPH-12-UUU(15)-222-AL1-OPA-BLANK</u>
<u>BB 2000</u>	<u>MPH-8-FFF-111-AL2-OPA-a</u>
<u>BB 2000T</u>	<u>MPH-8-FFF-111-AL2-OPA-a</u>
<u>BB 2200T</u>	<u>MPH-8-FFF-111-AL2-OPA-a</u>
<u>BB 2500</u>	<u>MPH-8-FFF-111-AL2-OPA-a</u>
<u>BB 3000 HR</u>	<u>MPH-10-FFF-111-AL1-OPA-a</u>
<u>BB 3500 HR</u>	<u>MPH-10-FFF-111-AL1-OPA-a</u>
<u>BB 4000 EL</u>	<u>MPH-10-FFF-111-AL2-OPA-a</u>
<u>BJ 2500 (Discovery)</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>DCV 100</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>DCV 100 (220V)</u>	<u>MPH-10-FFF-111-AL1-OPA-BLANK</u>
<u>DCV 100 C</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>DCV 300</u>	<u>MPH-10-UUU-222-AL2-OPA-BLANK</u>
<u>DCV 300 (220V)</u>	<u>MPH-10-UUU-222-AL1-OPA-BLANK</u>
<u>DCV 300 C</u>	<u>MPH-10-UUU-222-AL2-OPA-BLANK</u>
<u>DCV 4.0</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>DCV 4.0 (220V)</u>	<u>MPH-10-FFF-111-AL1-OPA-BLANK</u>
<u>DCV 4.0 T</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>DCV 415</u>	<u>MPH-10-UUU-222-AL2-OPA-BLANK</u>
<u>DCV 415 (220V)</u>	<u>MPH-10-UUU-222-AL1-OPA-BLANK</u>
<u>DCV 415 C</u>	<u>MPH-10-UUU-222-AL2-OPA-BLANK</u>
<u>DCV 5.0 HR</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>DCV 5.0 HR (220V)</u>	<u>MPH-10-FFF-111-AL1-OPA-BLANK</u>
<u>DCV 5.0 OLY</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>DCV 560 HR</u>	<u>MPH-10-UUU-222-AL2-OPA-BLANK</u>
<u>DCV 560 HR (220V)</u>	<u>MPH-10-UUU-222-AL1-OPA-BLANK</u>
<u>DCV 560 HR C</u>	<u>MPH-10-UUU-222-AL2-OPA-BLANK</u>
<u>DCV A1</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>DCV A1 T</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>EC 1500</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>EC 1500 B</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>EC 1500 C</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>EC 2500</u>	<u>MPH-10-FFF-111-AL1-OPA-BLANK</u>
<u>EC 2500 B</u>	<u>MPH-10-FFF-111-AL1-OPA-BLANK</u>
<u>EC 2500 C</u>	<u>MPH-10-FFF-111-AL1-OPA-BLANK</u>
<u>EC 2500 T</u>	<u>MPH-10-FFF-111-AL1-OPA-BLANK</u>
<u>EC 3350 HRC</u>	<u>MPH-10-FFF-111-AL1-OPA-BLANK</u>
<u>EC 3500 HR</u>	<u>MPH-10-FFF-111-AL1-OPA-BLANK</u>
<u>EC 3500 HR (220V)</u>	<u>MPH-10-FFF-111-AL1-OPA-BLANK</u>
<u>EC 3500 HR C</u>	<u>MPH-10-FFF-111-AL1-OPA-BLANK</u>

<u>EC 4000 C</u>	<u>MPH-10-UUU-111-AL1-OPA-BLANK</u>
<u>EC 4500 C</u>	<u>MPH-10-UUU-111-AL1-OPA-BLANK</u>
<u>EC 4800 COB</u>	<u>MPH-10-FFF-111-AL1-OPA-BLANK</u>
<u>EC 4800 OB</u>	<u>MPH-10-FFF-111-AL1-OPA-BLANK</u>
<u>EC 5500</u>	<u>MPH-10-UUU-111-AL1-OPA-BLANK</u>
<u>EC 6500 HRC</u>	<u>MPH-10-UUU-111-AL1-OPA-BLANK</u>
<u>EC 770</u>	<u>MPH-10-UUU-111-AL2-OPA-BLANK</u>
<u>EC 805</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>EC 810 (CONV)</u>	<u>MPH-10-UUU-222-AL2-OPA-BLANK</u>
<u>EC 810 NB</u>	<u>MPH-10-UUU-222-AL2-OPA-BLANK</u>
<u>EC 815</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>EC 815 (220V)</u>	<u>MPH-10-FFF-111-AL1-OPA-BLANK</u>
<u>EC 825</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>EC 835 (HR)</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>EC 835 (HR) (220V)</u>	<u>MPH-10-FFF-111-AL1-OPA-BLANK</u>
<u>EC 850</u>	<u>MPH-10-UUU (15)-222-AL2-OPA-BLANK</u>
<u>EC 850 (220V)</u>	<u>MPH-10-UUU(15)-222-AL1-OPA-BLANK</u>
<u>EC 850 OB</u>	<u>MPH-10-UUU-222-AL2-OPA-BLANK</u>
<u>EC 855</u>	<u>MPH-10-UUU-222-AL2-OPA-BLANK</u>
<u>EC 880 HR</u>	<u>MPH-12-UUU(15)-222-AL1-OPA-BLANK</u>
<u>EC 880 HR (220V)</u>	<u>MPH-12-UUU(15)-222-AL1-OPA-BLANK</u>
<u>EC 880 HR OB</u>	<u>MPH-12-UUU(15)-222-AL1-OPA-BLANK</u>
<u>EDGE 1000</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>EDGE 1300</u>	<u>MPH-10-UUU-111-AL1-OPA-BLANK</u>
<u>EDGE 1500</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>EX 100</u>	<u>MPH-10-FFF-111-AL2-OPA-d</u>
<u>EX 100 CONV</u>	<u>MPH-10-UUU-111-AL2-OPA-d</u>
<u>EX 100 T</u>	<u>MPH-10-FFF-111-AL2-OPA-d</u>
<u>EX 150</u>	<u>MPH-10-UUU-111-AL2-OPA-d</u>
<u>EX 200 CONV</u>	<u>MPH-10-UUU-111-AL2-OPA-d</u>
<u>EX 200 T</u>	<u>MPH-10-UUU-111-AL2-OPA-d</u>
<u>EX 300 T</u>	<u>MPH-10-FFF-111-AL2-OPA-d</u>
<u>EX 400 HR</u>	<u>MPH-10-FFF-222-AL2-OPA-d</u>
<u>GT 2110 (Tracker)</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>GT 3210 (Grizzly)</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>GT 3510</u>	<u>MPH-10-UUU-111-AL2-OPA-BLANK</u>
<u>GT 5210 (Kodiak)</u>	<u>MPH-10-FFF-111-AL1-OPA-BLANK</u>
<u>GT 5510</u>	<u>MPH-10-UUU-222-AL1-OPA-BLANK</u>
<u>HT 2.0 (Health Trainer)</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>HT 2.0 (Health Trainer) (220V)</u>	<u>MPH-10-FFF-111-AL1-OPA-BLANK</u>
<u>HT 500</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>HT 500 (220V)</u>	<u>MPH-10-FFF-111-AL1-OPA-BLANK</u>
<u>HT 500 C</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>HT 600</u>	<u>MPH-10-UUU-111-AL2-OPA-BLANK</u>
<u>HT 600 C</u>	<u>MPH-10-UUU-111-AL2-OPA-BLANK</u>
<u>HT 700</u>	<u>MPH-10-UUU-222-AL2-OPA-BLANK</u>
<u>HT 700 (220V)</u>	<u>MPH-10-UUU-222-AL1-OPA-BLANK</u>
<u>HT 700 C</u>	<u>MPH-10-UUU-222-AL2-OPA-BLANK</u>
<u>HT 800</u>	<u>MPH-10-UUU-222-AL1-OPA-BLANK</u>
<u>HT 800 C</u>	<u>MPH-10-UUU-222-AL1-OPA-BLANK</u>

HT 800 HR	MPH-10-UUU-222-AL1-OPA-BLANK
HT 9000 HR	MPH-10-UUU-222-AL1-OPA-BLANK
HT 9000 HR C	MPH-10-UUU-222-AL1-OPA-BLANK
HT501	MPH-10-FFF-111-AL1-OPA-BLANK
HT601	MPH-10-FFF-111-AL1-OPA-BLANK
HT701	MPH-10-UUU-222-AL1-OPA-BLANK
HT801	MPH-10-UUU-222-AL1-OPA-BLANK
HT901	MPH-10-UUU-222-AL1-OPA-BLANK
Keys 4000	MPH-10-UUU-111-AL1-OPA-BLANK
Keys 4000 (220V)	MPH-10-UUU-111-AL1-OPA-BLANK
Keys 800 (CONV)	MPH-10-UUU-111-AL2-OPA-BLANK
Keys 8500	MPH-10-UUU(15)-222-AL1-OPA-BLANK
Keys 8500 (220V)	MPH-10-UUU(15)-222-AL1-OPA-BLANK
Keys 8500 OBC	MPH-10-UUU(15)-222-AL1-OPA-BLANK
Keys 8800 (HR)	MPH-12-UUU(15)-222-AL1-OPA-BLANK
Keys 8800 (HR) (220V)	MPH-12-UUU(15)-222-AL1-OPA-BLANK
Keys 8800 (HR) OB	MPH-12-UUU(15)-222-AL1-OPA-BLANK
Keys 8800 HR LI	MPH-12-UUU(15)-222-AL1-OPA-BLANK
Keys 8800 HR LI OB	MPH-12-UUU(15)-222-AL1-OPA-BLANK
Keys 8800 LI	MPH-12-UUU(15)-222-AL1-OPA-BLANK
Keys 8800 OB	MPH-12-UUU(15)-222-AL1-OPA-BLANK
Keys 8800 SCI	MPH-12-UUU(15)-222-AL1-OPA-b
Legend 150	MPH-10-FFF-111-AL2-OPA-BLANK
Legend 175	MPH-10-UUU-111-AL2-OPA-BLANK
MS 1200	MPH-10-FFF-111-AL2-OPA-BLANK
MS 1200 (220V)	MPH-10-FFF-111-AL1-OPA-BLANK
MS 1200 C	MPH-10-FFF-111-AL2-OPA-BLANK
MS 1200 FT	MPH-10-FFF-111-AL2-OPA-BLANK
MS 1200 GT	MPH-10-FFF-111-AL2-OPA-BLANK
MS 1200 T	MPH-10-FFF-111-AL2-OPA-BLANK
MS 2200	MPH-10-FFF-111-AL1-OPA-BLANK
MS 2200 (220V)	MPH-10-FFF-111-AL1-OPA-BLANK
MS 2200 C	MPH-10-FFF-111-AL1-OPA-BLANK
MS 2200 GT	MPH-10-FFF-111-AL1-OPA-BLANK
MS 2200 T	MPH-10-FFF-111-AL1-OPA-BLANK
MS 3200 GT (HR)	MPH-10-FFF-111-AL1-OPA-BLANK
MS 3200 HR	MPH-10-FFF-111-AL1-OPA-BLANK
MS 3200 HR (220V)	MPH-10-FFF-111-AL1-OPA-BLANK
MS 3200 HR C	MPH-10-FFF-111-AL1-OPA-BLANK
MS 4200	MPH-10-UUU-222-AL2-OPA-BLANK
MS 4200 (220V)	MPH-10-UUU-222-AL1-OPA-BLANK
MS 4200 C	MPH-10-UUU-222-AL2-OPA-BLANK
MS 4400 HR	MPH-10-UUU-222-AL2-OPA-BLANK
MS 4400 HR C	MPH-10-UUU-111-AL2-OPA-BLANK
MS 5200	MPH-10-UUU-111-AL2-OPA-BLANK
MS 6200 HR	MPH-10-UUU-222-AL1-OPA-BLANK
MS 6200 HR (220V)	MPH-10-UUU-222-AL1-OPA-BLANK
MS 6200 HR C	MPH-10-UUU-222-AL1-OPA-BLANK
MS 760	MPH-10-UUU-111-AL2-OPA-BLANK
MS 9500 HR	MPH-12-UUU(15)-222-AL1-OPA-BLANK

<u>MS 990</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>PLATINUM HR</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>PRO 1000</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>PRO 1000 (220V)</u>	<u>MPH-10-FFF-111-AL1-OPA-BLANK</u>
<u>PRO 2000</u>	<u>MPH-10-FFF-111-AL1-OPA-BLANK</u>
<u>PRO 2000 (220V)</u>	<u>MPH-10-FFF-111-AL1-OPA-BLANK</u>
<u>PRO 3000 HR</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>PRO 3000 HR (220V)</u>	<u>MPH-10-FFF-111-AL1-OPA-BLANK</u>
<u>PRO 400</u>	<u>MPH-8-HHH- - -AL2-OPA-BLANK</u>
<u>PRO 400 (220V)</u>	<u>MPH-8-HHH- - -AL1-OPA-BLANK</u>
<u>PRO 400 C</u>	<u>MPH-8-HHH- - -AL2-OPA-BLANK</u>
<u>PRO 600</u>	<u>MPH-8-HHH- - -AL2-OPA-BLANK</u>
<u>PRO 650</u>	<u>MPH-8-UUU-111-AL2-OPA-BLANK</u>
<u>PRO 750</u>	<u>MPH-8-UUU-111-AL2-OPA-BLANK</u>
<u>PRO 800</u>	<u>MPH-8-UUU-111-AL2-OPA-BLANK</u>
<u>PRO 850</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>PRO 850 (220V)</u>	<u>MPH-10-FFF-111-AL1-OPA-BLANK</u>
<u>PRO 950</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>PRO 950 (220V)</u>	<u>MPH-10-FFF-111-AL1-OPA-BLANK</u>
<u>PRO 950T</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>PRO 980 HRS</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>PRO 980 S</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>PRO 980 S (220V)</u>	<u>MPH-10-FFF-111-AL1-OPA-BLANK</u>
<u>PRO 995</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>PRO HR</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>PZ40 (PINNACLE)</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>
<u>PZ40 (PINNACLE) (220V)</u>	<u>MPH-10-FFF-111-AL1-OPA-BLANK</u>
<u>SM 5.0 PV2</u>	<u>MPH-10-FFF-111-AL2-OPA-c</u>
<u>SM 5.1 HRC</u>	<u>MPH-10-FFF-111-AL1-OPA-c</u>
<u>SM 5.2 P</u>	<u>MPH-10-UUU-111-AL1-OPA-c</u>
<u>SM 5.3 P</u>	<u>MPH-10-UUU-111-AL1-OPA-c</u>
<u>SM 8.5 P</u>	<u>MPH-12-UUU(15)-222-AL1-OPA-c</u>
<u>SM 8.8 HR</u>	<u>MPH-12-UUU(15)-222-AL1-OPA-c</u>
<u>SM 9.2 AB</u>	<u>MPH-12-UUU(15)-222-AL1-OPA-c</u>
<u>SM 9.2 HR</u>	<u>MPH-12-UUU(15)-222-AL1-OPA-c</u>
<u>SM 9.2 HR (220V)</u>	<u>MPH-12-UUU(15)-222-AL1-OPA-c</u>
<u>SM 9.2 HR AB</u>	<u>MPH-12-UUU(15)-222-AL1-OPA-c</u>
<u>SM 9.2 P</u>	<u>MPH-12-UUU(15)-222-AL1-OPA-c</u>
<u>SM 9.3 AB</u>	<u>MPH-12-UUU(15)-222-AL1-OPA-c</u>
<u>SM 9.3 HR</u>	<u>MPH-12-UUU(15)-222-AL1-OPA-c</u>
<u>SM 9.3 HRAB</u>	<u>MPH-12-UUU(15)-222-AL1-OPA-c</u>
<u>SM 9.3 HRST</u>	<u>MPH-12-UUU(15)-222-AL1-OPA-c</u>
<u>SM 9.3 P</u>	<u>MPH-12-UUU(15)-222-AL1-OPA-c</u>
<u>SM 9.3 ST</u>	<u>MPH-12-UUU(15)-222-AL1-OPA-c</u>
<u>SMT 7.1 HR</u>	<u>MPH-10-UUU-111-AL2-OPA-c</u>
<u>SMT 9.2 AB</u>	<u>MPH-10-UUU-222-AL1-OPA-c</u>
<u>SMT 9.2 HR</u>	<u>MPH-10-UUU-222-AL1-OPA-c</u>
<u>SMT 9.2 HR AB</u>	<u>MPH-10-UUU-222-AL1-OPA-c</u>
<u>SMT 9.2 P</u>	<u>MPH-10-UUU-222-AL1-OPA-c</u>
<u>SR 5.0</u>	<u>MPH-10-FFF-111-AL2-OPA-BLANK</u>

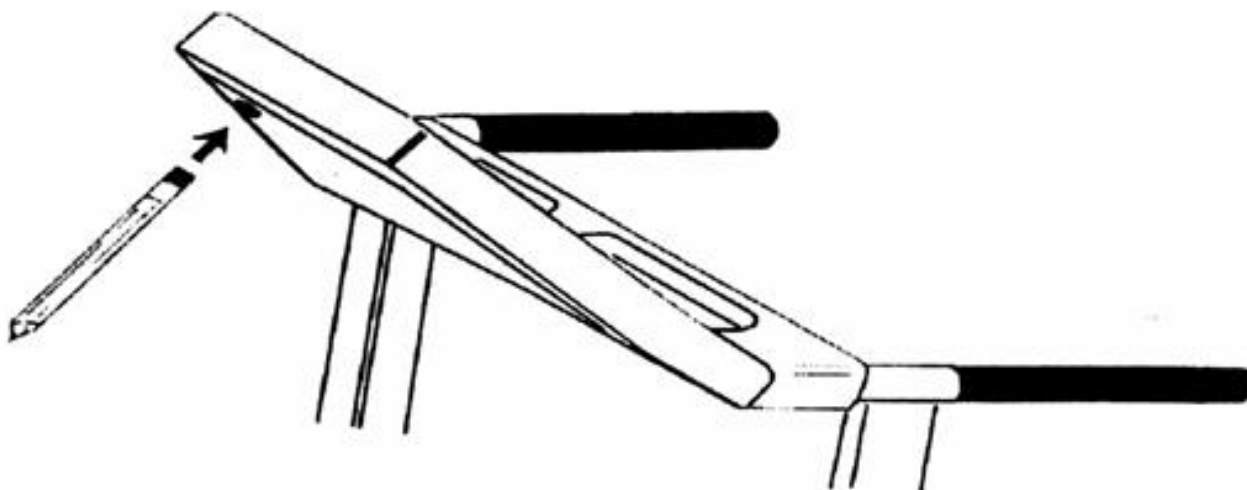
CALIBRATION- LCD DISPLAY

OLD

(LCD) LIQUID CRYSTAL DISPLAY CALIBRATION

1. Unplug power cord for 30 seconds.
2. Remove safety key.
3. Plug in power cord.
4. Push reset button (locate access hole for reset button, located behind console monitor). Insert eraser end of pencil into the hole and gently press button (shown in figure below). 10 in the SPEED Window.
5. Press ENTER 5 times.
6. Push START button.
7. Push ENTER.
8. Replace Safety Key.
9. Push ENTER button.
10. After calibration is complete, push POWER button three times.
11. Treadmill will turn off on its own.

After electrical re-installation of motor actuator, motor controller or electronics, re-calibration is necessary.



Calibration- LCD Display

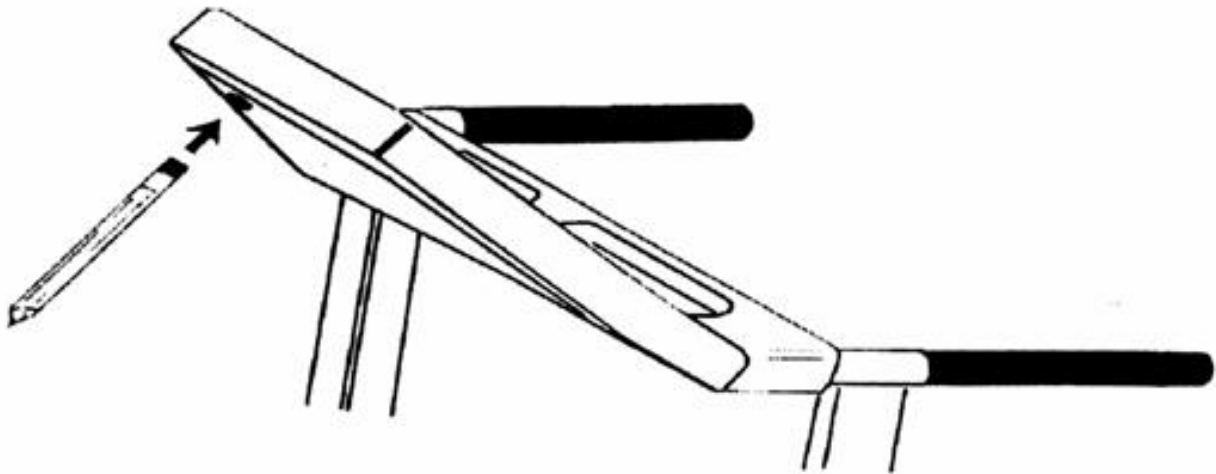
CALIBRATION- LED DISPLAY

OLD

(LED) LIGHT EMITTING DIODE ELECTRONICS CALIBRATION

1. Unplug power cord for 30 seconds
2. Remove safety key
3. Plug in power cord
4. Push reset button (locate access hole for reset button, located behind console monitor). Insert eraser end of pencil into the hole and gently press button (shown in figure below). 10 in the SPEED window.
5. Press ENTER 4 times.
6. Push START button.
7. Push ENTER.
8. Replace Safety Key.
9. Push POWER button (treadmill will take approximately eight minutes to calibrate).
10. After calibration is complete, push POWER button three times.
11. Treadmill will turn off on its own

After electrical re-installation of motor actuator, motor controller or electronics, re-calibration is necessary.

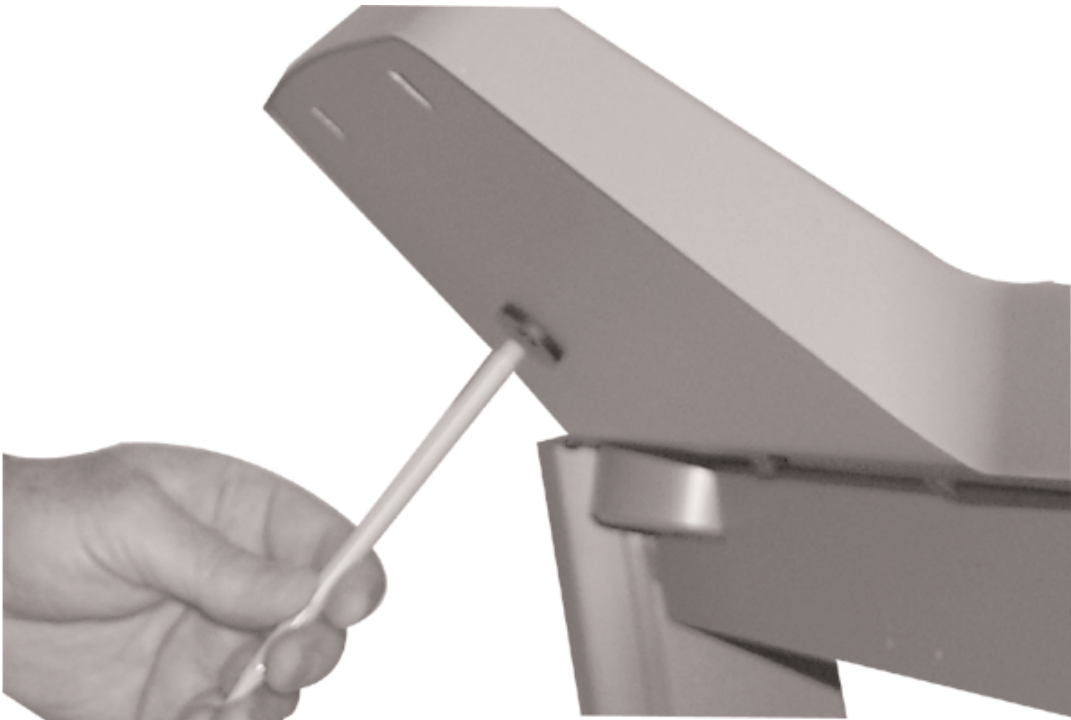


Calibration- LED Display

Change to MPH or KPH

Your treadmill will operate in British Units (miles per hour) or International Units (kilometers per hour). All treadmills are calibrated at the factory for British Units (miles per hour). To change the display to read in kilometers, follow the steps described here:

- 1) Turn power OFF on the console. (Do not unplug treadmill.) Attach the magnet safety key to the console.
- 2) Activate the calibration mode switch by inserting the eraser end of a pencil into the opening in the backside of the console (see diagram below).
- 3) Depress the calibration mode switch ONCE. CL11 should appear in the TIME window.
- 4) Pressing the SPEED +/- button will activate your choice.
- 5) To accept the setting, press the POWER button.



Belt Adjustment

WARNING! Do not over-tighten rollers! This will cause premature roller bearing failure!

Belt adjustment and tension performs two functions: adjustment for tension and centering. Your new treadmill comes pre-adjusted from the factory for tension and centering. Please follow the procedures below if the belt shifts to the left or right while walking:

WALKING BELT IS SHIFTING TO THE LEFT (Diagram 1)

First, turn treadmill on to run at 1 mph. Using the hex key provided, turn the left rear roller adjustment bolt $\frac{1}{4}$ turn in the clockwise direction. Next, run the treadmill at 2.5 mph. You should see the belt start to correct itself by moving back toward the center. Repeat the above procedure until the walking belt is centered. It may be necessary to set walking belt tension once you have completed this procedure if the belt feels like it is slipping while walking. Refer below to the “Walking Belt Slipping” instructions.



Diagram 1

WALKING BELT IS SHIFTING TO THE RIGHT (Diagram 2)

First, turn the treadmill on to run at 1 mph. Using the hex key provided, turn the right rear roller adjustment bolt $\frac{1}{4}$ turn in the clockwise direction. Next, run the treadmill at 2.5 mph. You should see the belt start to correct itself, moving back toward the center. Repeat the above procedure until the walking belt is centered. It may be necessary to set walking belt tension once you have completed this procedure if the belt feels like it is slipping while walking. Refer below to the “Walking Belt Slipping” instructions.



Diagram 2

WALKING BELT IS SLIPPING DURING USE (Diagram 3)

First, unplug the power cord from the surge protector. Using the hex key provided, turn both left and right rear roller adjustment bolts the same distance, usually a $\frac{1}{4}$ turn, in the clockwise direction. Plug the power cord back into the surge protector and run the treadmill at 2.5 mph. You should now walk on the belt to determine if the belt is still slipping. Repeat the above procedure until the walking belt is not slipping. The tension should be just tight enough not to slip.



Diagram 3

Note: Turning the hex key counter clockwise brings the rear rollers and belt towards you.

Turning the hex key clockwise pushes the rear roller and belt away from you.

Maintenance Instructions

WARNING! Before performing any maintenance to your treadmill, always unplug the power cord from the surge protector.

CLEANING: Routine cleaning of your unit will extend the life of your unit.

WARNING! To prevent electrical shock, be sure the power to the treadmill is OFF and the unit is unplugged from the wall electrical outlet before attempting any cleaning or maintenance.

AFTER EACH WORKOUT: Wipe off the console and other treadmill surfaces with a clean, water dampened soft cloth to remove excess perspiration. **USE NO CHEMICALS.**

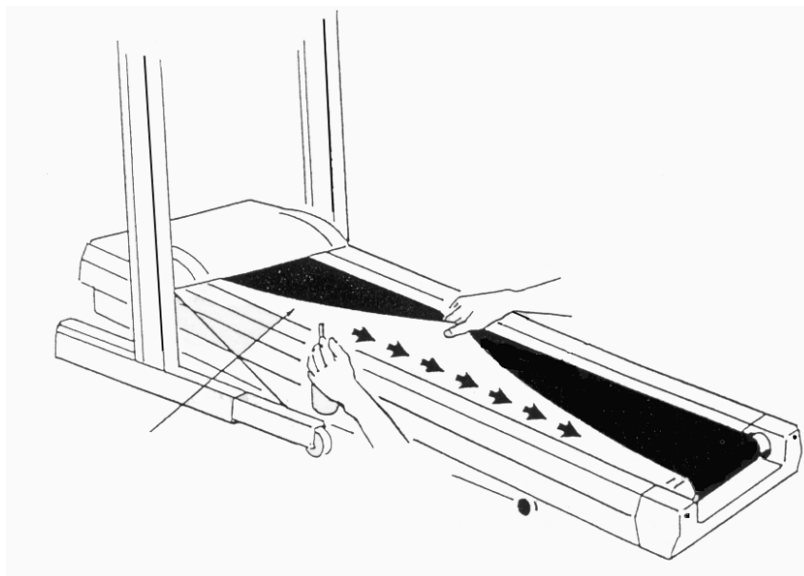
WEEKLY: Use of a treadmill mat is recommended for ease of cleaning. Dirt from your shoes contacts the belt and eventually makes it to underneath the treadmill. Vacuum underneath treadmill once a week.

DECK LUBRICATION: The walking belt has been pre-lubricated at the factory. However, it is recommended that the walking board be checked periodically for lubrication to ensure optimal treadmill performance. Every 30 days or 30 hours of operation, lift the sides of the walking belt and feel the top surface of the walking board as far under as you can reach. If you feel signs of silicone, no further lubrication is required. If it feels dry to the touch, lubrication is needed. Keys Fitness recommends “Lube N Walk” for cleaning and lubricating the treadmill belt and deck. Ask your retailer or call Keys Fitness at 888-340-0482. You may also use silicone such as “Napa 8300” (available at most NAPA Auto Parts stores).

TO APPLY LUBRICANT TO THE WALKING BOARD

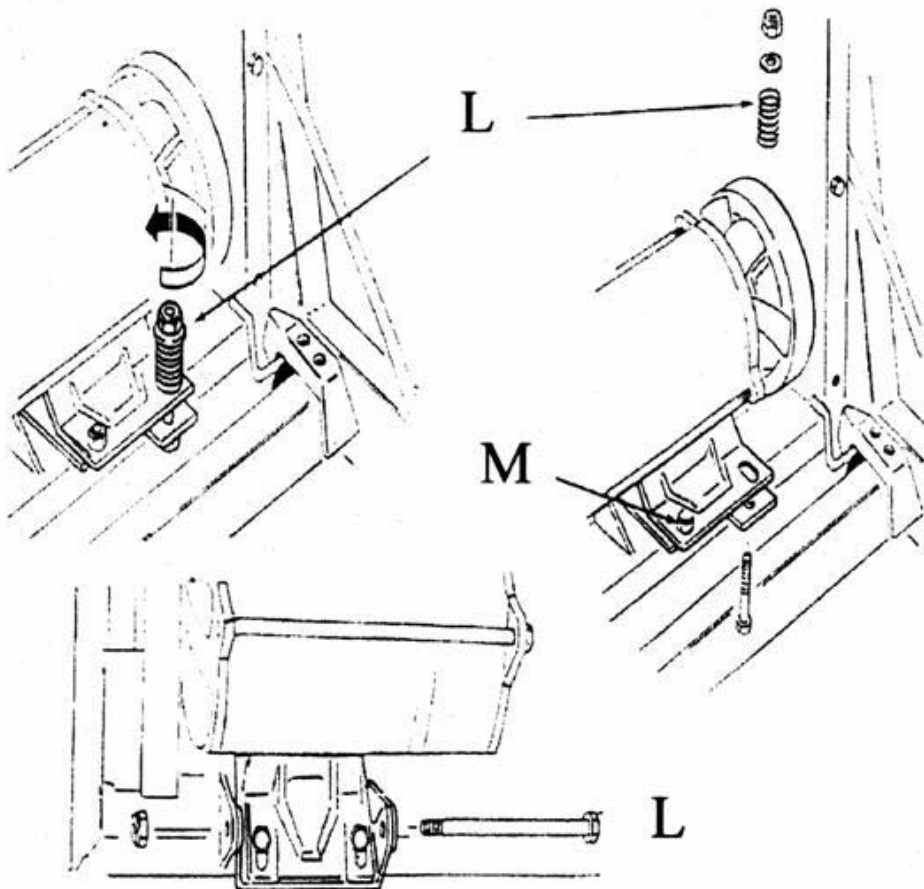
- 1) Position the walking belt so that the seam is located on top and in the center of the center of the walking board.
- 2) Insert the spray nozzle into the spray head of the lubricant can.
- 3) While lifting the side of the walking belt, position the spray nozzle between the walking belt and the board approximately 6” from the front of the treadmill. Apply the silicone spray to the walking board, moving from the front of the treadmill to the rear. Repeat this on the other side of the belt. Spray approximately 4 seconds on each side.
- 4) Allow the silicone to ‘set’ for one minute before using the treadmill.

WARNING: Do not over-lubricate the walking board. Excess lubricant should be wiped off with a clean towel.



Removing the Motor

- A. Unplug the treadmill.
- B. Remove Motor Cover by unscrewing eight #8x5/8" Phillips head screws.
- C. Fold treadmill into stored/upright position.
- D. Remove from bottom pan by unscrewing twelve #8x5/8" Phillips Head screws.
- E. Unfold treadmill into flat position.
- F. Unplug red & black wire running to Motor Controller.
- G. Unscrew green ground wire connected to motor cover bracket.
- H. Fold treadmill into stored/upright position.
- I. Locate Motor Tension spring System (consisting of one 5/16"-18x2 1/2" hex head bolt, one tension spring, one 5/16" flat washer and one 5/16" nylock nut) and remove. **NOTE: Motor should pivot.**
- J. Unfold treadmill into flat position.
- K. Pivot motor forward and remove V-belt from flywheel.
- L. Remove the 5/16"-18x2 1/2" Pivot bolt. **NOTE: At this point the Motor and the motor tension bracket should be free from frame.**
- M. Remove remaining 5/16"-18x2 1/2" bolt that connects the motor to the motor tension bracket.
- N. Remove flywheel using 5/16" hex wrench.
- O. **NOTE: Save flywheel. New optical Sensor and Fans will be sent with replacement motor.**
- P. **NOTE: When replacing flywheel push flush against pre-positioned fan for proper V-belt alignment.**



Motor Removal

Motor Replacement Procedure- Boss Style

Please follow all steps in sequential order to replace drive motor.

You will need the following tools for installation:

Socket Wrench, 1/2" Deep Socket, Swivel for socket, Hammer, and Phillips Screwdriver.

1. Remove motor cover and identify original motor location. See Figure 1.
2. Locate current position of all motor mounting bolts. See Figure 2.



Figure 1: Original Motor Assembly

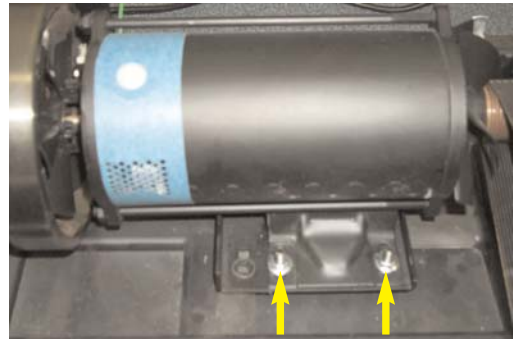


Figure 2: Motor Mounting Bolt Locations

3. Power on unit and set the incline to 10% position. Unplug the unit and remove the three (3) corner screws on the base pan. See Figure 3 for screw locations under base pan.
4. Use 1/2 " deep socket with swivel attachment and remove motor mounting nuts. See Figure 4.

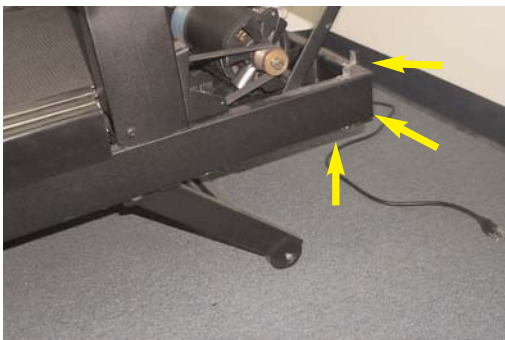


Figure 3: Base Pan Screw Locations



Figure 4: Remove Mounting Nuts (rear)

5. See Figure 5 for location of mounting bolts on the front side of the unit. Make sure all wires are disconnected from motor controller and treadmill frame. Remove motor from bracket assembly.
6. Use hammer to tap bolts carefully out of bracket assembly. See Figure 6.



Figure 5: Remove Mounting Bolts (front)



Figure 6: Remove Bolts in Motor Bracket

7. Verify position of bolts to be moved as shown in Figure 7.

8. Push down on inside corner of base pan to remove bolts from current hole position. See Figure 8.

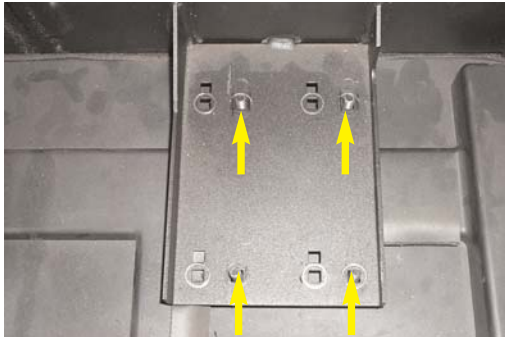


Figure 7: Mounting Bolt Locations



Figure 8: Push Down On Base Pan

9. Re-position the bolts in the hole pattern on the left side of motor bracket. See Figure 9.

10. All (4) four bolts should now be installed in bracket as shown in Figure 10.

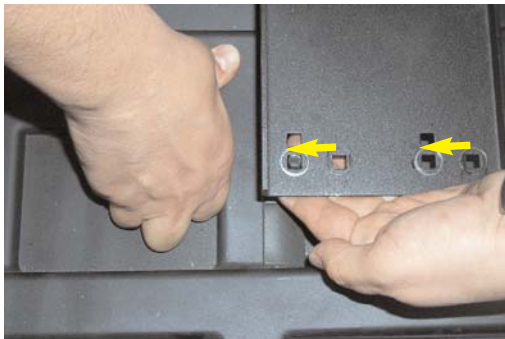


Figure 9: Move Bolts to New Hole Position

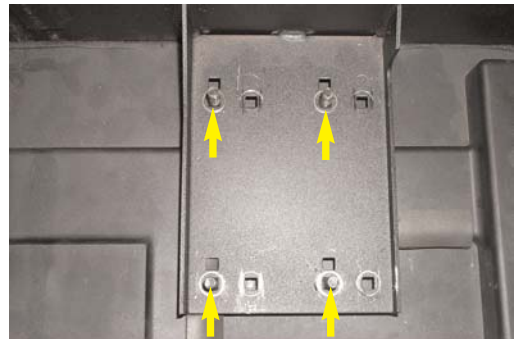


Figure 10: New Mounting Bolt Locations

11. Install nuts (previously removed) on mounting bolts and tighten down. Make sure all (4) four bolts lock back in position on motor bracket. Remove the nuts from all bolts. See Figure 11.

12. Install new drive motor on mounting bolts and attach Poly V Belt to motor pulley and front roller assembly. See Figure 12.



Figure 11: Lock Bolts on Motor Bracket

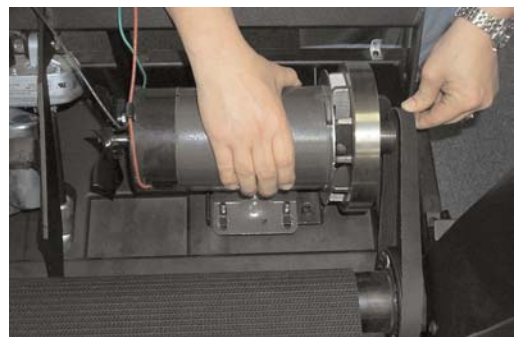


Figure 12: Install New Motor and Poly V Belt

13. Use a hammer to push forward (toward front of unit) to tighten the Poly V Belt. At the same time, tighten all (4) four mounting bolts as shown in Figure 13.
14. Re-connect all power wires to motor controller and install ground wire to frame as shown in Figure 14.



Figure 13: Poly V Belt Tension Adjustment

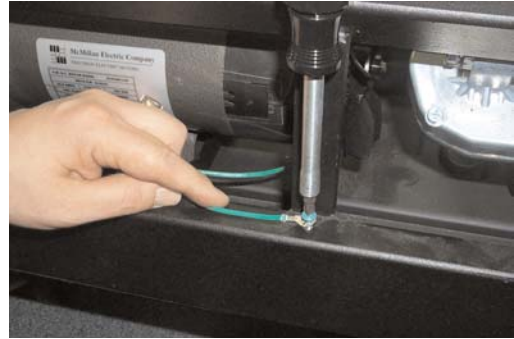


Figure 14: Install Ground Wire to Frame

15. Installation is complete. Re-calibrate unit and install motor cover assembly.

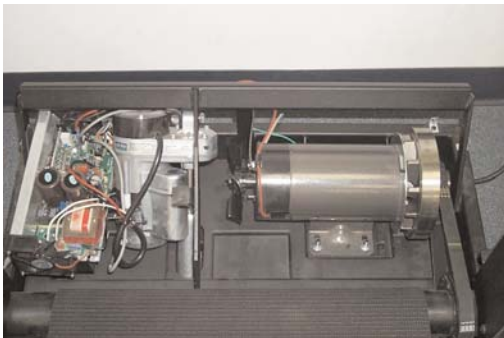


Figure 15: Completed Motor Installation

Boss Treadmill Upright Assembly Procedure

Please follow all steps in sequential order to assemble uprights over mounting bracket located on frame.

You will need the following tools to perform this procedure:
Flat Blade Screwdriver.

1. During the assembly of the upright on Boss style units, you must raise the uprights into position as shown in Figure 1.
- 2 While you are raising the uprights into place, pay attention to the mounting bracket located on the frame. See Figure 2 for location of mounting bracket.



Figure 1: Upright Assembly



Figure 2: Mounting Bracket Location

3. Do not force the upright assembly into place if it catches on the side of this bracket. Use a screwdriver and slightly pry open on the side of the upright to help assist over the mounting bracket as shown in Figure 3.



Figure 3: Upright Assembly w/ Screwdriver

4. Continue treadmill assembly as detailed in Owner's Manual.

Actuator Removal

- A. Unplug treadmill.
- B. Remove Motor Cover by unscrewing seven #8x5/8" Phillips Head Screws.
- C. Fold treadmill into upright/stored position.
- D. Remove Rear Roller Cover by unscrewing seven #8x5/8" Phillips Head Screws.
- E. Remove Mid Bottom Pan by unscrewing nine #8x5/8" Phillips Head Screws.
- F. Unplug Wire connected to Optical Sensor.
- G. Unplug Wires connected to Motor Controller.
- H. Remove 1/4"-20x2 1/2" Hex Head bolt attached to Rear Elevation Assembly.
- I. Remove 3/8"-16x1 3/4" Hex Head Bolt attached to Frame Assembly.
- J. **NOTE: New Optical Sensor Bracket will be sent with replacement Linear Actuator.**

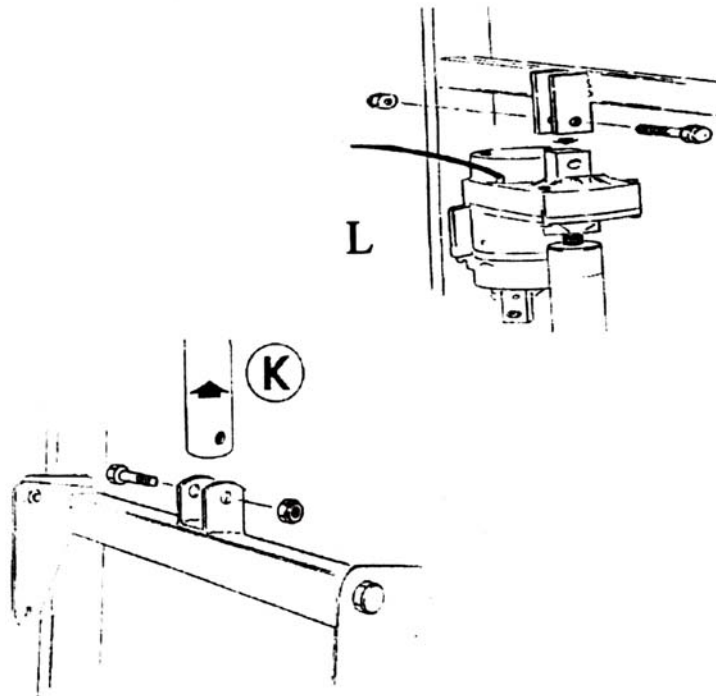
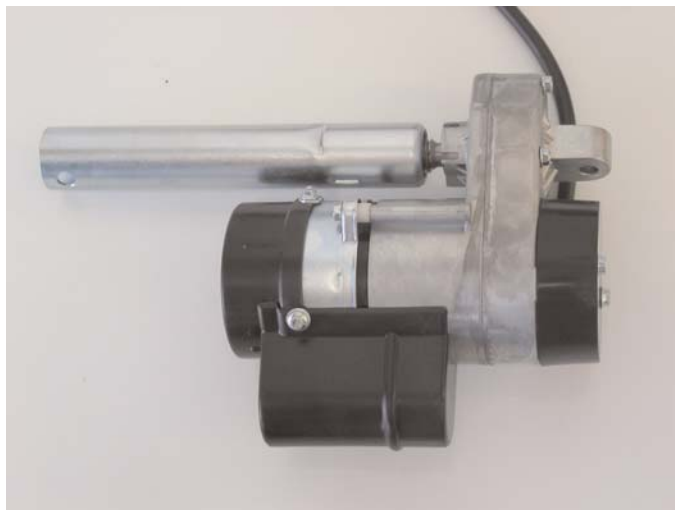


FIGURE 6: Actuator Removal



Front Roller Removal Procedure

Please follow all steps in sequential order to replace front roller assembly.

You will need the following tools for installation:

7/16" Wrench, Phillips Screwdriver and Allen Wrench (supplied with treadmill).

1. Remove motor cover screws from front of treadmill. See Figure 1.
2. Power up treadmill and set incline to 12%. Unplug power cord from surge protector or wall outlet. See Figure 2.

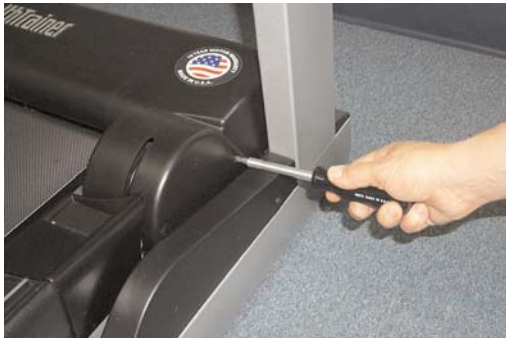


Figure 1: Remove Hardware in Motor Cover



Figure 2: Set Incline to 12%

3. Unit should look similar to Figure 3.
4. Remove motor cover from treadmill by lifting straight up as shown in Figure 4.



Figure 3: Incline Position



Figure 4: Remove Motor Cover

5. Unit should look similar to Figure 5.
6. Remove Poly V Belt from front roller assembly by pushing belt over to one side while rotating belt back and forth. See Figure 6.



Figure 5: Unit without Motor Cover



Figure 6: Remove Drive Belt

7. Continue to push Poly V Belt off front roller pulley and motor assembly. See Figure 7.
8. Loosen front roller allen bolts by using 7/16" Wrench and Allen Wrench (supplied with treadmill). Hold lock nut and turn allen wrench counter-clockwise as shown in Figure 8.



Figure 7: Remove Drive Belt (continued)



Figure 8: Remove Front Roller Bolt (Right)

9. Loosen both sides of front roller by removing allen bolts. Turn allen wrench (supplied with treadmill) counter clockwise. See Figure 9.
10. Remove by lifting up on center axle and removing roller assembly. See Figure 10.

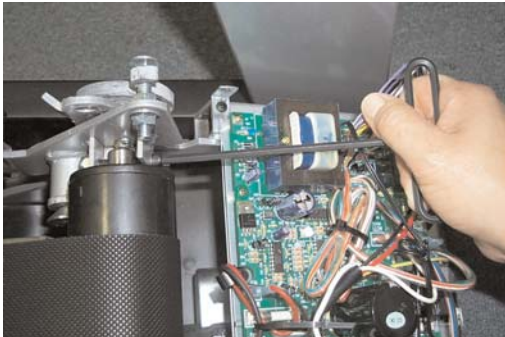


Figure 9: Remove Front Roller Bolt (Left)



Figure 10: Remove Roller Assembly

11. Slide roller back in position. Use a screwdriver to pry center axle into bracket assembly. See Figure 11.
12. Align allen bolt into roller assembly. See Figure 12.



Figure 11: Slide New Roller In Position

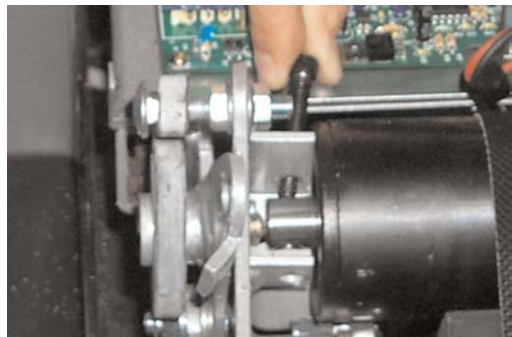


Figure 12: Install Allen Bolts

13. Put screwdriver between roller shaft and pivot pin. Pry the roller in position to start the bolt. See Figure 13.

14. Continue to pry the roller shaft in position while screwing in bolt. Keep the shaft centered in front of pivot pin. See Figure 14



Figure 13: Pry Roller in Position



Figure 14: Center Roller with Pivot Pin

15. Install allen bolts through both sides of roller bracket and install the nut. See Figure 15.

16. Tighten nut using 7/16" wrench. Keep the shaft centered in front of pivot pin. See Figure 16.

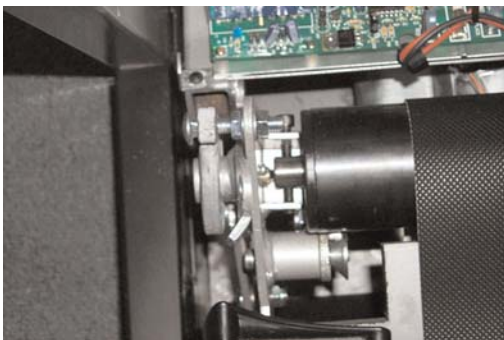


Figure 15: Install Nut on Allen Bolt



Figure 16: Tighten Nut on Allen Bolt

17. Installation and alignment should look similar to Figure 17 below.

18. Slide motor cover back in position as shown in Figure 18. Plug unit back in and treadmill will decline.

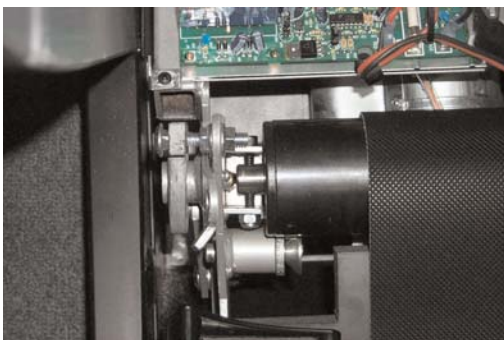


Figure 17: Completed Roller Installation



Figure 18: Install Motor Cover

19. Install motor cover screws as shown in Figure 19.
20..Installation is complete.

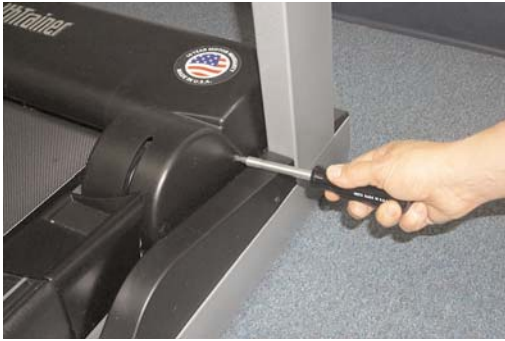


Figure 19: Install Motor Cover Screws



Figure 20: Completed Installation

Rear Roller Removal Procedure

Please follow all steps in sequential order to replace rear roller assembly.

You will need the following tools for installation:

Phillips Screwdriver and Allen Wrench.

1. Remove end caps (Left and Right) from rear of treadmill. See Figure 1.
- 2 .Locate both allen bolts on each side of the roller assembly as shown in Figure 2.



Figure 1: Remove End Caps



Figure 2: Locate Allen Bolts (Left and Right)

3. Use 3/16" Allen Wrench to remove both bolts from rear roller (turn counter-clockwise) See Figure 3.
4. Remove roller assembly by sliding out as shown in Figure 4. Replace with new roller assembly by reversing the procedure above (steps 1-4).

To install new roller assembly, insert Allen Bolts through roller shaft and turn clockwise. The total number of complete revolutions will be 24 to 26 (per side) to completely tighten the walking belt. Only perform 5 complete revolutions at a time (per side) and go back and forth until 24 to 26 total revolutions are complete. Check walking belt for proper tension.



Figure 3: Remove Allen Bolts (Left and Right)



Figure 4: Remove Roller Assembly

Walking Board Removal

- A. Remove end cap on rear roller.
- B. Remove rear roller.
- C. Remove front motor cover.
- D. Remove front roller.
- E. **WARNING: Before removing Walking Board from Frame Assembly, place a heavy object on Frame Assembly so the Frame Assembly does not immediately and rapidly return to upright position: because of Torsion Spring System.**
- F. Unscrew the silver bolts under the walking deck on each side. The first 4 starting from the rear roller side. **DO NOT** unscrew the 5th bolt that is closest to the front of the treadmill.
With treadmill in folded or up position, **ONLY** remove the top 4 bolts (starting from the top work your way down. Again **DO NOT** remove the 5th bolt down. That is your deck lift spring. Do not touch? CONVENTIONAL (non-folding) treadmills do not have the lift spring.
- G. Fold treadmill back down and take off walking belt and deck. Be careful with frame coming up when taking off deck and belt.
- H. Install new deck and belt back on frame and screw bolts back in on each side until tight.
- I. Install front roller with the little belt back on pulleys and tighten back down.
- J. Put the rear roller back in line with walking belt and tighten walking belt (24-27 full rotations evenly on left and right side). Example: 10 on the left side, 10 on the right side. Then, 10 again on left side, and 10 again on the right side. Then, 5 on the left side and 5 on the right side.
- K. Make sure that under the deck the walking belt is riding on TOP of the belt guides and not under them. (or, it will rip the belt).
- L. Start treadmill and get ready to make an adjustment, if needed, on rear roller with adjustment tool. Clockwise pushes belt away from that same side. Counter-clockwise brings the belt towards that side. Make any adjustments when belt is moving if needed.
- M. Install end cap and motor cover. Finished.

Walking Belt Removal Procedure

Please perform all steps for the Front Roller and Rear Roller Removal procedures first before performing the steps below to replace the Walking Belt.

You will need the following tool for removal:
7/16" Socket.

1. With treadmill in the upright position, remove the (4) four 7/16" hex bolts from the left side of treadmill. **On the 18" models, do not remove the bottom hex bolt or the one closest to the motor cover.** Only remove the four bolts starting from the top of unit. See Figure 1.

2. Fold down treadmill and lift up on left side extrusion. See figure 2.

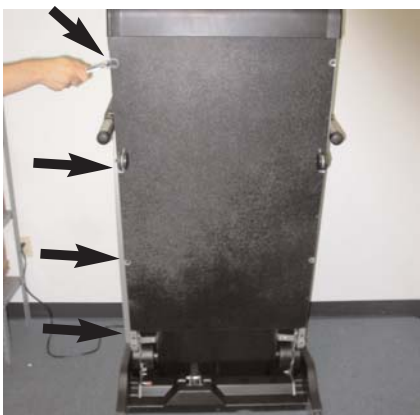


Figure 1: Remove Hex Bolts- Qty. 4



Figure 2: Remove Side Extrusion

3. Hold extrusion up and start to slide belt outward. See Figure 3.

4. Slide old belt off deck. Install new walking belt over deck assembly as shown in Figure 4.



Figure 3: Remove Old Walking Belt



Figure 4: Install New Walking Belt

Foot Latch Release Procedure

1. The foot latch release mechanism is located above the latch and inside mover cover assembly. Please see Figure 1 for a detailed view of where the release button is located. **You do not need to remove the cover to release the foot latch.** Figure 1 is for illustrative purposes only.



FIGURE 1: Release button location



FIGURE 2: Foot latch with cover

2. Figure 2 shows the foot latch with the cover installed. Use a screwdriver and insert through opening where foot latch is located. Push the release button to the right to release the foot latch. See Figure 3.



FIGURE 3: Release with screwdriver

3. At the same time you are releasing the foot latch mechanism, you must also push the deck into the neutral or middle position of its resting state. This will relieve the pressure on the foot latch and allow for easier release. Figure 5 shows the correct deck position during foot latch release procedure.

INCORRECT:
Deck is pushed too far forward



FIGURE 4: Forward Position

CORRECT:
Deck is in the neutral or middle position



FIGURE 5: Neutral Position

INCORRECT:
Deck is leaning too far back or in resting position.



FIGURE 6: Back Position

Treadmill Overlay Removal and Installation

Please perform these steps to remove and install new overlay on console assembly.

1. Use a box cutter or sharp object to lift one corner of overlay from console- See Step 1.
2. After corner is lifted, gently peel back the overlay from side to side. See Step 2 and 3.



STEP 1



STEP 2



STEP 3

3. Make sure the membrane is not removed while peeling back the overlay. If this occurs, hold down the membrane while removing. See Step 4.
4. After overlay is removed, the console should look similar to Step 5.
5. Install new overlay on one side of console first as shown in Step 6.



STEP 4

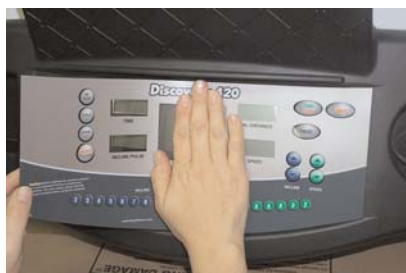


STEP 5



STEP 6

6. After one side of overlay is stuck down on console, begin to smooth out by working the overlay from one side to the other. Lightly apply pressure while overlay adheres to the console assembly. See Step 7 and Step 8.



STEP 7



STEP 8

Rear Elevation Wheel Installation

1. Hammer Push-Nut Hat onto one side of the axle. See Figure 1.
2. Install one (1) wheel assembly on axle. See Figure 2.



Figure 1



Figure 2

3. Insert the axle through elevation mounting bracket. See Figure 3.
4. Insert the other wheel on the axle on opposite side of bracket. See Figure 4.



Figure 3



Figure 4

5. Install the other Push-Nut Hat onto axle. See Figure 5.
6. Use channel locks to snap the Push-Nut Hat onto axle. See Figure 6.



Figure 5



Figure 6

Toggle Switch Removal and Replacement

Rotating toggle switches in the handrail housing assembly.

The connectors used for the speed and incline switches on the console assembly PC board are keyed (one direction) and therefore may need to be reversed at the handrail location.

After the calibration procedure is complete, attempt to use the speed and incline switches on the handrail. If the switches operate in reverse, please perform the following steps.

1. Use two (2) small flat blade screwdrivers to pry the switch from the handrail housing. See Figure 1 and Figure 2
2. Lift switch from housing unit and rotate 180 degrees. See Figure 3 and Figure 4.
3. Snap switch back in handrail housing.

FIGURE 1



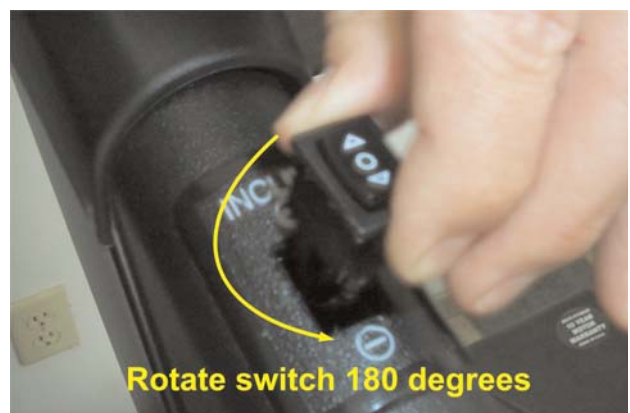
FIGURE 2



FIGURE 3



FIGURE 4





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